

Incubators: Tool for Entrepreneurship?

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ABSTRACT. One of the biggest barriers for the development of incubators in Europe is the lack of entrepreneurship and the underdevelopment of seed financing and business angel networks. While incubation is increasingly being used as a tool for promoting entrepreneurship and start-ups, leading to new policy incentives, the content of the concept is becoming more and more polysemic. Completely different approaches tend to be associated with the incubator concept, which hence becomes more of an umbrella concept. This paper aims to combine a conceptual analysis with an analysis of economic reality, both in the U.S.A. and in Europe. It warns against non-accurate evaluations of the impact of incubators if one does not take into account the different types of incubators. The paper focuses on the dynamic process of *incubatio* and concludes by underlining the importance of close links between incubators and business angels networks.

1. Introduction

It may seem superfluous to start a paper by explaining what incubators are. The concept has become part of the common vocabulary. But as with any concept that is suddenly often used, misunderstandings may be around the corner. Moreover, often when a concept becomes fashionable, candidates try to appropriate it in order to use it as a brand, even if the underlying referee is miles away from what the concept incubator might refer to. Therefore it would not be unreasonable to begin by going back to the roots of the concept.

Although Business incubators are much better developed in the United States than in Europe, and although the process began there much earlier, the etymological roots of the incubation concept lie in Europe. In ancient times, in order to have a visionary dream, people would go to a Roman (or

Greek) temple, and lay themselves down on fresh hide from newly sacrificed animals. This practise was called *incubatio*. One of the most advanced reasons for practising the *incubatio* was to obtain a vision on how to overcome one or another disease, which explains why the *incubatio* preferably took place in the temple of Aesculapius, the God of medicine. *Aesculapius* is well known for his incarnation into the form of an animal, namely a snake. It is his picture that we still find on a lot of medicines today. This leads us to the medical world.

Indeed, gradually an incubator became the place where prematurely born infants were nurtured and taken care of. The principle of the incubator is that premature infants require temporary care in controlled conditions. These conditions should help newborn babies to survive, grow and develop once they have left the incubators. Business incubators nurture young firms, helping them to survive and grow during the start-up period when they are most vulnerable. However instead of speaking about business incubators as a real or virtual place for incubation, perhaps it is better to emphasise the more dynamic elements of the *incubatio*. The American National Business Incubation Association (NBIA) describes business incubation as a dynamic process of business enterprise development.¹ The term refers to an interactive development process where the aim is to encourage people to start their own business and to support start-up companies in the development of innovative products. A true incubator therefore is not only office space with a shared secretary and a common fax machine.² For, besides accommodation, an incubator should offer services such as hands-on management, access to finance (mainly through links with seed capital funds or business angels), legal advice, operational know-how and access to new markets.

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This first approach defines the basic components of a good incubator. A business incubator's main goal is to produce successful firms that will leave the incubator financially viable and free-standing within a reasonable delay. Hence, a good incubator has a big enough number of new, young enterprises with growth potential, an optimal rotation rate, a high survival rate of graduates that continue to do business outside the nurturing premises, a positive impact on the perception of entrepreneurs and on the creation of an entrepreneurial culture, strong links with industry, R&D centres and universities and finally a structure facilitating access to financial markets.

2. Different types of business incubators

The number of business incubators is growing rapidly, from 200 at the beginning of the 1980s to over 3000 in the world today.³ We can assume that they are of an uneven quality. In order to try to assess the incubator quality, we have to fine-tune these rather general statements and avoid comparing apples to pears.

Indeed, the term business incubators is becoming more and more of an "umbrella word", covering a heterogeneous reality. The word incubator is used to denote institutions with completely different objectives. Therefore, keeping in mind the arbitrary nature inherent in each category, we should try to define some types of incubators. We

can categorise them either according to their sponsors/stakeholders or according to their objectives. We follow the latter approach as this criteria is, in our opinion, closer to economic reality.⁴ Each type of incubator tries to cope with market failures or, stated otherwise, with a specific gap. In this sense we can distinguish between three main types and two specific categories.

The different types of incubators reflect the history of the concept. Initially incubators were a means to revitalise declining manufacturing areas, and they served as a tool for reconversion. They were of the mixed type and offered services to all kinds of enterprises from low-tech, to no-tech, including manufacturing and services. The oldest one is situated in the United States. It was created in the 1950s in response to plant closures in Batavia and New York. Incubation programs sprang up late in the 1970s, mostly of mixed-use types. Until the 1980s only a small number of incubators considered incubation to be an industry.⁵

In Europe, one of the first incubators was set up by the United Kingdom in 1975, when British steel formed a subsidiary called the British Steel Industry (BSI) to create jobs in steel closure areas. Both in the U.S. and in Europe, step by step the concept evolved. The business incubator first became an instrument to promote a more diversified base for regional economies and later became a tool for improving regional competitiveness by

TABLE I
Typology of business incubators

	Main philosophy: dealing with	Main Objective	Secondary	Sectors involved
Mixed incubators	Business gap	Create start-ups	Employment creation	All sectors
Economic development incubators	Regional or local disparity gap	Regional development	Business creation	All sectors
Technology incubators	Entrepreneurial gap	Create entrepreneurship	stimulate innovation, technology Start-ups and graduates	Focus on technology, recently targeted, e.g. IT, speech-, biotechnology
Social incubators	Social gap	Integration of social categories	Employment creation	Non profit sector
Basic research incubators	Discovery gap	Bleu-Sky research	Spin-offs	High tech

fostering the emergence of technology-based firms. That is the reason why they began to seek closer contacts with higher educational and public research institutions. In Germany for instance, the University of Berlin established the first incubator in 1983, aimed at facilitating the transfer of research findings to industry. France followed in 1985 creating an incubator within the Sofia-Antipolis Technology Park. Incubators whose primary goal is to focus on the narrowness of regional development gaps are called economic development incubators; incubators that focus on the development of technology-oriented firms are called technology incubators.

In the 1990s, the trend was to develop technology incubators around specific industrial and technological clusters such as biotechnology, information technology, environmental technology, or, speech technology.

Besides these mainstream types of incubators though, let me mention two other types that are both of very recent date. The first one is the social incubator whose aim is to stimulate and to support the development, growth and continuity of companies employing people with low employment capacities. The aim is to bridge the social gap by increasing employment possibilities for people with low employment capacities such as disabled people, minimum guaranteed income beneficiaries, low-skilled workers, long-term unemployed, immigrants, political refugees, etc. This incubator will offer business development services, business support, business accommodation and logistic support to starters or young businesses.

The second one is a basic research incubator trying to bridge the discovery gap by linking the incubation principle to fundamental research. Based on the American MIT-example, a basic research laboratory was set up in Europe employing 70 scientists from 28 countries, based on multidisciplinary research and covering four fields of research: Bits, Atoms, Neurons and Genes. Ideas are nurtured in labs until they are ready to be launched into the economy. After incubation, technologies take the form of intellectual property that can be licensed by commercial partners or exercised by spin-off companies. Despite hands-on management from some business angels the project failed as third round financing seemed impossible early 2001.

These examples show that the word incubator covers a wide range of activities, services, approaches and objectives. Different incubator types have different missions. Evaluating incubators, or trying to introduce quality standards, has to take these differences into consideration in order to make sense.

3. Basic elements concerning American incubators

As the incubator concept was developed earlier in the U.S. than in Europe, we will try to summarize some of the elements that may be of interest for Europe. In the U.S., the number of estimated active incubators is estimated by the National Business Incubation Association at around 650 with an average of 16 tenants per incubator. To become a graduate a tenant needs three years, which is the average incubation period. Most of the incubators are members of the National Association, which is a private not-for-profit organisation with headquarters in Ohio.

In reference to our typology of business incubators, 25% are technology incubators, 5% are regional development incubators and 61% are considered mixed incubators.⁶ Half of the technology incubators are university-affiliated. Most of the technology incubators were created between 1984 and 1994 and are supported by public funds. This is especially the case of technology incubators, which receive subsidies that equal on average 83% of their annual operating expenses.⁷ Technology incubators claim that it would be impossible to provide services at the current level if these subsidies would cease. None of the technology incubators (including those established in the early 1980s) have reached full financial self-reliance yet. Technology incubator managers have had to spend more time and energy on ensuring financial stability than on providing real value-added entrepreneurial advice to their tenants.⁸

The estimated public subsidy cost per job created was 1100\$. This low public cost can be partly explained by the high survival rate of graduates and the high level of employment creation. Concerning technology incubators, this effect is even more outspoken and one can assume that the public cost is even lower. Politically speaking, it

is worthwhile to note that most graduates (84%) remain in their local communities.

We summarize some basic figures in the following table.⁹

The table, which has a high comparative value, reveals that the survival rate of technology incubators is higher than that of the two other types, and employment, both by the tenants and by the graduates, is also higher.

A very important aspect of incubation seems to be the networking, both amongst tenants and between tenants and graduates. More than 45% of the graduates reported engaging in networks with clients of the incubator. Eighty-three percent of these engaged in buying/selling relationships.¹⁰ Seventy-five percent of tenants reported having developed connections with other tenants.¹¹ Well-run technology incubators not only stay in contact with their alumni firms (tenants firms which have graduated) but also encourage these firms to provide advice to the current tenant. However, only a few successful technology incubators have developed formal policies for alumni involvement. The rotation ratio, in other words the time a tenant needs to become an alumni, is on average three years. This provides mature incubators with an interesting portfolio of graduates.

Along the same line of thought, links between incubators are important whether they are used as a platform to exchange experiences, or as a basis for co-operation amongst the tenants and graduates from different incubators. Links between incubators are especially important in the case of sector specific incubators. The National Business Incubation Network of the U.S. and Canada is a good example of this field. Only one out of the three tenants received business-financing assis-

tance. Despite the equity culture developed in the U.S., very few tenants received seed capital or business angel capital. It has been demonstrated that successful technology incubators have a high percentage of tenants supported through external funds.¹²

4. Europe lagging behind?

In Europe, the objectives of the technology incubator differ widely from one country to another. In Belgium and Spain, the focus was initially to attract branches of multinational firms, in Germany the target was clearly innovative start-ups, in France and the Netherlands the university-incubator model was promoted. Besides these national approaches, initiatives linked to incubators were taken at the level of the European Union. This makes it rather difficult to construct a global overview of the European business incubator scene.

Therefore, it may be interesting to analyse certain specific countries. Of course the aim is not to give a complete overview, but simply to highlight a few illustrative examples. It should be kept in mind that other countries or other examples could just as easily be used. The aim of the analysis is hence not to judge one or another country but to try to get a feel for what is happening across Europe in the field of incubators. As incubation reflects the culture of a country, we can state, roughly speaking, that there are three different approaches in Europe: the Anglo-Saxon, the German, and the Latin approach. The best way to explain these approaches is by picking two representative countries and discuss them briefly. These countries will be: the United Kingdom and Finland

TABLE II
U.S. Performances by different type of incubators

	Mixed incubator	Economic development incubator	Technology incubator	(mathematical) Average
Square feet	36314	30833	31041	32729
Survival rate of graduates	87%	86%	90%	87%
Tenants by incubator	15.3	20.3	13.7	16
Employment by tenants	64	84	248	132
Employment created by graduates	196	95	430	240
Graduates remaining in community	97%	95%	97%	96%

for the Anglo-Saxon approach, Germany and Austria for the Germanic model and finally France and Italy for the Latin model. Before looking at these countries however, we will first analyse the European Union initiative.

In 1984 the European Union began a European Business Innovation Network (EBN). Since then, 150 Business Innovation Centres (BICs) have developed across 20 countries. BICs are professional organisations providing consultancy, taking part in technology transfers and organising training sessions for small and medium size innovative companies. Following a survey, 78% of all BICs offer incubation-like support, mainly to technology-based firms.¹³ For example, one of the services that BICs provide is accommodation for newly created enterprises. The aim of the BICs is to support enterprises in their innovation and internationalisation projects mainly in areas of industrial decline. BICs are part of the regional policy of the European Union. They focus not only on starters, but also on existing enterprises. A quality label EC-BIC was developed in order to guarantee the quality of the services delivered by the BICs to their stakeholders.¹⁴

Referring to our typology, we can categorise the incubator activity of the BICs into the economic development type since their main goal is to contribute to the reduction of regional disparities. If we examine BICs as if they were technology incubators, the conclusions are rather unconvincing. For, "a BIC is hardly more than a high technology version of a managed workshop," stated the Financial Times. "Technology parks, in which they are often housed, are no more than pleasantly designed industrial estates, usually with an elegant pavilion style for most of buildings." An enterprise panel based in the United Kingdom concluded that BICs lost impetus after losing the initial EU funding. Perhaps the best way to increase the efficiency of these BICs is to include them into the EU scheme of wider projects instead of leaving them isolated.

Referring to the United Kingdom, analysing the efficiency of the 40 technology parks, the aforementioned critical British view concluded that good-quality houses, four-star hotels, good restaurants and proximity to an international airport are much more important than proximity to the university. Incubators are profit-driven, and a survey

conducted in the 1990s showed that accountants, insurance companies and providers of financial services occupied about 35 percent of the technology parks in the United Kingdom.

To cite an example, the British Steel Industry – as stated above, the oldest incubator in the United Kingdom – aimed to nurture tenants and allow them to grow. However, the reality is quite different. Only a quarter of the companies in the British Steel Industry moved out. The majority stayed where they were.¹⁵ This is of course in full incoherence with the initial concept of *incubatio* that was developed before. Indeed the aim of an incubator should be that successful tenants move to bigger premises and leave their place for newcomers.

A well-known example is the Cambridge Science Park, founded in 1970 and considered to be one of the greatest successes of business incubation in the U.K. It is indeed an outstanding success. However its success is not due to the fact that academics spun out of Cambridge colleges to translate ideas into commercial reality. On the contrary, its success is due to the image of one of the world's greatest seats of learning and this cachet has encouraged people to start up high technology businesses there or relocate from outside. Indeed, many businesses have no connection with the university.¹⁶ In sum, if incubators are meant to bridge the entrepreneurial gap, they should of course be entrepreneurial themselves, however the examples cited do not indicate that this is always the case.

In Finland, incubator activity effectively began only after Finland joined the EU. For example: in the region of Helsinki, in 1995, there was only one active incubator. Five years later, 16 are active. One third of them can be considered to be of the mixed type, another third as economic development and the last third as technology incubators. For the mixed type, incubators in the fields of art and tourism are worth mentioning. The technology incubators, which are often part of one of the 16 Finnish Science or Technology parks, are strongly affiliated with university research sources from which most projects originate. A survey showed that the biggest precondition for success was indeed sufficient supply of business ideas and potential entrepreneurs in the region concerned. Not long ago the general opinion did not look

favourably upon entrepreneurs, and well-educated people did not favour starting their own businesses.¹⁷ As the manager of the Jyväskylä Science park stated: “one of the biggest problems was to explain to scientists the meaning of entrepreneurship versus a carrier in science.”¹⁸ Incubators in Finland also have a very important role to play in order to bridge the entrepreneurial gap.

In Germany, the Association of Technology and Business incubator centre estimates that today there are over 300 innovation centres in Germany. They define innovation centres, which is the collective term used for business incubators and also technology and innovation centres, as entities offering start-up advice, office space, technical and technological-oriented services.¹⁹ The aims are to support regional economic development contributing to the revitalization of neglected areas; to help unemployed people foster entrepreneurship and to promote the transfer of technology. Given these objectives, the incubators are non-profit centres. Technology-oriented start-ups nevertheless account for 77% of all companies in business incubators. Business incubation centres support around 1000 start-ups a year and the average incubation period is between 3 and 7 years. The survival rate of graduates is very high.²⁰

In Austria, a virtual incubator was set up in the province of Carinthia. Real estate services offered were restricted to a minimum. Online assistance is given in fields such as fiscal advice, hands-on management, marketing assistance, videoconferences and so on. In this case, the initial expenses foreseen for the construction of the incubation centre were instead used as seed money for the tenants.²¹

The South of Europe is determined by the preponderance of the previously discussed European BICs. Italy, France, Spain and Portugal account for more than two-thirds of the 150 BICs. Incubation is mainly part of regional economic development. In an attempt to harmonize definitions, the French standardisation organisation AFNOR, an agency under the supervision of the Ministry of Industry, conducted a study and fixed a norm (NF X 50–70). A business incubator must be a place of reception and lodging, can propose shared services, must be hands-on with the start-up, and must ensure a follow-up during the launching phase of the company.²² This norm fixed

the conditions to be fulfilled in order to get recognition.

We can conclude that in Europe, total different approaches are named *incubatio*. We remark that “incubators without walls” are excluded from both the French and German definitions. Quality and variety of responsibilities, multiplicity in denominations and a diversity of objectives have contributed to give a hybrid image to the incubator’s businesses. But one of the biggest underlying problems is the lack of entrepreneurship and one of the biggest weaknesses is the missing link towards financing start-ups.

5. *Incubatio*, entrepreneurship and start-up financing

Therefore it is necessary to examine the interaction between *incubatio*, entrepreneurship and start-up financing. In particular, there are three elements that need to be taken into account:

1. *Entrepreneurship* is still considered to be an anomaly in most European countries.²³ This of course has an impact on incubators, on the supply of projects and on the eagerness of tenants to quickly become sustainable graduates. A lack of entrepreneurship is at the same time an obstacle for a real incubator, and a determinant for change. Bridging the entrepreneurial gap and exploring how Europe can become more enterprise friendly, without infringing upon our traditions and cultural background, is one of the goals of the incubators.
2. *Incubators* have developed very quickly in Europe but have been, to a large extent, integrated in a non-profit culture. Their aim is to contribute to regional or local development. These first-generation incubators have their role to play. However, real incubators should hatch primarily fast-growing companies, or “gazelles”, which ensure the most added value and jobs. Incubators focused on the new economy are in this sense crucial but might suffer from the overall unidentified object that the incubator is today. Incubator quality and identity is thus very important.
3. *Business angel networks* do provide, through their angels, financing and hands-on manage-

ment to starting companies. Up to 90% of business' angels investments are seed or pre-seed money. The major impediment for their future development in Europe is the lack of good projects, the lack of entrepreneurship at the level of the so-called virgin angels and the lack of formal seed money facilitating exits.²⁴

In practise we see that links between incubators and start-up financing are underdeveloped. Following a study realised by the Harvard business School, more than 60% of all incubators in the world did never raise funds for their start-ups and only 10% did ever realise an IPO.²⁵ Therefore, an interaction between business angel networks and real incubator managers should be developed as their combined action might have a great influence on the entrepreneurial climate in Europe, leading to more New Technology Based firms, more entrepreneurship and consequently, to more projects for the incubators and for the business angel networks.

This relationship can be graphically illustrated as in Figure 1.

We have seen that real *incubatio* leads to real entrepreneurship (arrow 1). Real entrepreneurs manage risk, they don't avoid them. A better entrepreneurship can be stimulated directly by further developing business angel networks (arrow 3), and indirectly by encouraging the networks to orientate their smart money towards projects embedded in incubators (arrow 2). Increased entrepreneurship will lead to a growth in new tech-

nology based firms (arrow 4). This will in turn have a positive impact on regional and social issues.

This will be the basis to a virtuous circle. As American evidence proves, the growth of new technology based firms leads to an increase in entrepreneurial activity (arrow 5).²⁶ Which in turn leads to more projects for incubators and entrepreneurs driven to proving that they are self-supporting and economically viable outside controlled conditions at reasonable delays (arrow 6). This will increase the rotation ratios for the incubators, both for the real and the virtual, increasing their efficiency and augmenting their possibility of networking between tenants and graduates.

This virtuous circle should be stimulated by European policy. The American example has shown that this can be done in a way that good value for public money is guaranteed. If we can add to this the setting of quality standards without falling into the pitfall of bureaucracy, Europe will have the winning hand. In such a context we can all learn from each other. Benchmarking, best practises and network building are crucial for developing entrepreneurship, incubators and business angel networks in Europe.

At the European level, the topic of incubators and business angel networks has been included in its policy. Actions were set up in the field of incubators, especially where they can be linked with financial instruments focused on business angel financing plus seed and risk capital.²⁷ Moreover, benchmark exercises are running with the different

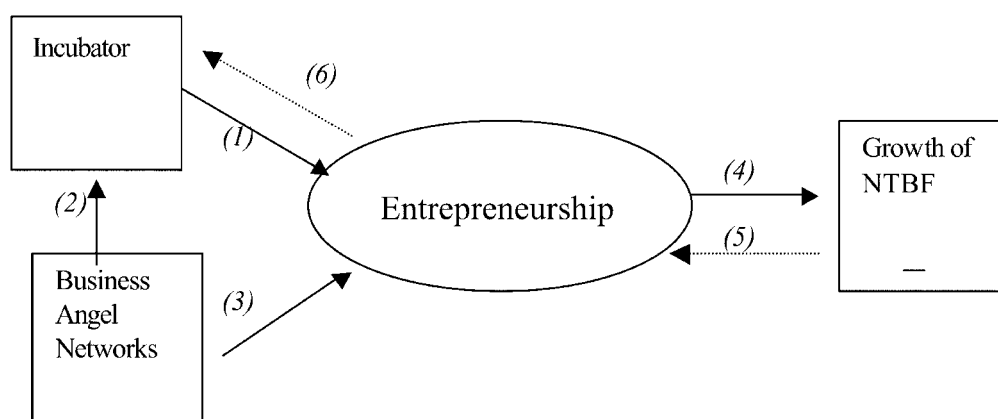


Figure 1. The dynamic process of entrepreneurship, incubatio and business angel networks.

Member States in order to seek the best policies to be implemented in order to stimulate the use of incubators and the development of business angel financing as a tool for enterprise policy.²⁸

Finally, mandated by the Commission, a rating methodology was developed by six countries, involving innovation agencies and venture capitalists, in order to set up a technology rating system. The main idea is that investors use the maximum of their capabilities to assess the inherent risks: market risks, development risks, business model risks, competition risks, and management risks. In order to assist venture capitalists, a methodology has been developed that aims to help in the assessment of innovative projects. This technology rating methodology, is based on both a multi-criteria approach and on an evaluation.²⁹ The rating could be a tool to narrow the gap between incubators and business angel networks.

In addition, Europe is trying to make the old continent more enterprise friendly. The Barcelona European Council of March 2002 confirmed the Lisbon objective for a "more entrepreneurial and innovative Europe". A twin strategy is needed, first to build a dynamic business environment, in which companies can be created, grow, and innovate within competitive markets. This environment, supported by an effective innovation policy, must be attractive, simple, and must help to finance small businesses with risk capital. Secondly, risk taking and an entrepreneurial spirit should be encouraged. In this case, barriers to risk-taking should be removed at all levels. The European Commission is committed to take all this into account in its Community policies – internal market, competence, taxation, environment and social policy.

6. Conclusion

One of the biggest barriers for the development of incubators in Europe is the lack of entrepreneurship and the underdevelopment of seed financing and business angels networks. But even incubators developed in a business friendly climate and having close links with start-up financing, are faced with huge problems in order to assure their own financing in a sustainable way. Targeted subsidies, focused both on real incubators and business angel networks, especially

in the launching phase, are hence unavoidable. As shown by the American experience, this can be done in a cost-effective way. Moreover, both, incubators and business angel networks are a tool for bridging the entrepreneurial gap and can contribute to the development of a virtuous circle for the (regional) economy in which they are embedded. Seed financing, links with business angels and business angel networks, as well as involvement in second round financing and IPO assistance should be part of, or integrated into the real business incubation concept. This is not only a problem in Europe, but also in the U.S. (in spite of its legendary equity culture). An inventory of good practise in this matter should be useful.

Notes

¹ Definition used by the National Business Incubation Association, NBIA (see www.nbia.com).

² Impact of Incubator Investments, EDA, Universities of Michigan and Ohio, report prepared under award from the U.S. Department of Commerce Economic Development Administration, NBIA, 1997, p. 7.

³ See Best Practice in Business Incubation, Economic Commission for Europe, United Nations, 2000, p. 27.

⁴ The NBIA uses the sponsor/stakeholder approach and has identified five types of incubators: for profit property development ventures, non-profit development corporations, academic institutions, venture capital firms and a hybrid of the above. In Australia they are categorised following their autonomy, which lead to three different types: integrated, independent and technological.

⁵ Impact of Incubator Investments, op. cit., p. 8.

⁶ Figures May 2000 NBIA. The remaining 9% are incubators that are targeted; this means that they focus on assisting start-ups from a specific sector such as wood products, arts, food, biomedical, and so on.

⁷ Figures quoted in this chapter are, unless indicated otherwise, based on NBIA data and on the previously mentioned report of the universities of Ohio and Michigan.

⁸ Sarfraz A. Mian, Technology Business Incubation, University of New York at Oswego, 1998.

⁹ Mainly based on NBIA report 2000.

¹⁰ Lyons T., Birthing economic development: How effective are Michigan's business incubators?, Social Science Research Bureau, Michigan State University.

¹¹ Allen D. and Bazan E., Value added contributions of Pennsylvania's business incubators to tenant firms and local economies, State college, Pennsylvania, 1990.

¹² Sarfraz, op. cit., p. 59.

¹³ Survey was realised in 1995. See European Business and innovation centre network, EC-BIC Observatory, 1996, Brussels.

¹⁴ For the interested reader we refer to Business Innovation

Centres, an instrument for regional development and for the enterprises, European Commission, Brussels, 2000.

¹⁵ Ian Hamilton, The U.K. experience with technology incubators, in *Technology Incubators, nurturing small firms*, OECD Paris, 1998.

¹⁶ Ian Hamilton, *ibid.*, p. 45.

¹⁷ Taavetti Mutanen, Incubators in Helsinki Region, in *Best Practises in Incubator infrastructure*, European Commission, 1999., p. 34.

¹⁸ Esko Peltonen, Director of the Jyväskylä Science park, Practical experience from a technology spin-off from the University of Jyväskylä, in *Best Practises in Incubator infrastructure*, European Commission, p. 48.

¹⁹ Based on Best Practice in Business Incubation, United Nations, 2000, *op. cit.*, p. 8 en 36.

²⁰ Bernd Gross, Association of German Technology and Business Incubation Centres, in *Technology incubators: Nurturing small firms*, *op. cit.*, 86.

²¹ Best practises for support for the creation of an enterprise, European Commission, 2000.

²² Boivert F., Networking strength in professional organisation in incubators: the French NORM, in *Best practices in Incubator Infrastructure and Innovation Support*, European Commission, 1998, p. 63.

²³ P. Reynolds and R. Hay, *Global Entrepreneurship monitoring*, Babson College, 2001.

²⁴ For a detailed analysis of business angel networks see R. Aernoudt, European policy towards Business Angels, in *Venture capital, An International Journal of Entrepreneurial Finance*, 1999.

²⁵ Moten T. Hansen, Nitin Horhia and Jeffrey A. Berger, *The State of the incubator Market space*, Harvard Business School, 2000.

²⁶ Business incubators: a source for jobs and growth, in *Technology incubators: Nurturing small firms*, OECD, *op. cit.*, p. 8.

²⁷ European Commission, review of financial instruments, October 2000, ECOFIN Council conclusions of 7/11/2000, and adoption of the multi-annual program for enterprise and entrepreneurship 2001–2005, of 20 December 2000.

²⁸ Aernoudt R. and Erikson T., *Business Angel Networks: Towards European Best Practises*, 2002.

²⁹ The methodology was developed by six innovation agencies and three banks and venture capital firms involving six countries (Austria, Finland, France, Germany, Norway, Spain).

References

- Aernoudt, R., 1999, 'European Policy Towards Business Angels, in *Venture Capital*', *An International Journal of Entrepreneurial Finance*.
- Aernoudt, R. and T. Erikson, 2002, *Business Angel Networks: Towards European Best Practises*, Stockholm.
- Allen, D. and E. Bazan, 1990, *Value Added Contributions of Pennsylvania's Business Incubators to Tenant Firms and Local Economies*, State College, Pennsylvania.
- European Commission, 2000, *Business Innovation Centres, an instrument for regional development and for the enterprises*.
- European Commission, 2000, *Best practises for support for the creation of an enterprise*.
- Hansen M., N. Horhia and J. Berger, 2000, *The State of the Incubator Market Space*, Harvard Business School.
- Lyons, T., 2000, *Birthing Economic Development: How Effective are Michigan's Business Incubators?*, Social Science Research Bureau, Michigan State University.
- NBIA, 1997, *Impact of Incubator Investments*, EDA, Universities of Michigan and Ohio, report prepared under award from the U.S. Department of Commerce Economic Development Administration.
- OECD, 1998, *Technology Incubators, nurturing small firms*.
- Reynolds, P. and R. Hay, 2001, *Global Entrepreneurship Monitor*, Babson College.
- Sarfraz, A., 1998, *Technology Business Incubation*, University of New York at Oswego.
- Taavetti, M., 1999, *Incubators in Helsinki Region, in Best Practises in Incubator Infrastructure*, European Commission.
- United Nations, 2000, *Best Practice in Business Incubation*, Economic Commission for Europe.

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