



Joint IPI/IKED Working Paper

January 2005

ENRICO CALLEGATI
SILVIA GRANDI
GLENDA NAPIER

**BUSINESS INCUBATION AND
VENTURE CAPITAL**
AN INTERNATIONAL SURVEY
ON SYNERGIES AND CHALLENGES



IKED

INTERNATIONAL ORGANISATION FOR
KNOWLEDGE ECONOMY AND ENTERPRISE DEVELOPMENT



IPI
Istituto per la
Promozione
Industriale

Joint IPI/IKED Working Paper

January 2005

BUSINESS INCUBATION AND VENTURE CAPITAL AN INTERNATIONAL SURVEY ON SYNERGIES AND CHALLENGES

ENRICO CALLEGATI
SILVIA GRANDI
GLENDA NAPIER

ISBN: 91-85281-05-0

Title: Business Incubation and Venture Capital – An International Survey on Synergies and Challenges

Authors: Enrico Callegati, Silvia Grandi, Glenda Napier

Publisher: IPI

© IKED International Organisation for Knowledge Economy and Enterprise Development

Reproduction is not authorised without permission in written form from the publisher. Only minor part of the paper could be utilised and cited provided that the source is acknowledged.

ACKNOWLEDGEMENTS

This working paper is a result of a collaborative work jointly carried out by the Institute for Industrial Promotion (IPI) within the Department for Centres and Networks in Partner Countries - Direction for Transfer of Knowledge and Innovation - and the International Organisation for Knowledge Economy and Enterprise development (IKED).

Although all authors have been thoroughly involved in the working paper, Part I has mainly been prepared by Mr. E. Callegati (callegati@ipi.it), Part II by Mrs. G. Napier (glenda.napier@iked.org) and Part III by Mrs. S. Grandi (grandi@ipi.it). In addition, the authors wish to thank the International Network for SMEs (INSME) Association, which made the creation of the working group possible, and all the incubators and organisations that kindly answered to questionnaires and accepted to be interviewed.

About the Institute for Industrial Promotion (IPI)

IPI is a government agency specialised in the promotion of growth and competitiveness of production systems in an international globalized context, which imposes the adoption of innovative systems of governance intended to seize the opportunities offered by increasingly larger and more competitive markets as well as valorising special territorial characteristics with particular regard to the SME system.

The Institute's operations are oriented towards responding to the needs of the Italian Public Administration and the governments of its partner countries relative to the definition and management of sectoral, factorial and territorial policies. In addition, IPI intervenes in the planning, realization and management of programs, system actions and tools aimed at supporting the development of entrepreneurs as well as manages systems at national and international levels favouring the access of industrial businesses to innovation. IPI operates in the context of international, multilateral processes of industrial cooperation with the objective of creating environments favourable to the development of relations between different productive systems.

IPI

Viale Maresciallo Pilsudski, 124
I - 00197 Rome - Italy
Telephone: (+39) 06809721
Fax (+39) 06.80972.443
E-mail: info@ipi.it
Website: www.ipi.it

About the International Organisation for Knowledge Economy and Enterprise Development (IKED)

IKED is an independent, international non-profit organization focusing on the emerging issues of the knowledge-based economy.

IKED strives to link the primary actors forming the knowledge-based economy: government, industry, academia and civil society – facilitating international networks and policymaking forums; leading projects and forming recommendations to turn policies into action.

In addition to mobilizing and enhancing Nordic expertise, IKED engages in activities that support the successful integration of an expanded European Union, and is an active partner supporting structural policy reforms in various countries worldwide. IKED addresses the driving forces and consequences of new technologies, including information and communications technology (ICT), the rapidly changing innovation processes, and the conditions required for dynamic enterprise development. Focusing on the crosscutting horizontal policy dimension of these issues, IKED is a venue for addressing the broader economic and social implications relevant to the ascent of the knowledge economy. IKED further develops programs that involve prime policy makers, government agencies, private sector associations, NGOs, research institutes and other relevant stakeholders.

IKED

Stortorget 29, 5 floor
S - 211 34 Malmö - Sweden
Telephone: (+46) (0) 40176500
Fax: (+46) (0) 40176501
E-mail: info@iked.org
Website: www.iked.org

TABLE OF CONTENTS

TABLE OF CONTENTS	5
INTRODUCTION	7
I. FOSTERING FIRMS THROUGH BUSINESS INCUBATORS	9
Business Incubation – a Global Concept.....	9
Incubation Activity	10
Classifying Business Incubators	11
Some Incubator Experiences.....	11
II. NEW FIRMS AND VENTURE CAPITAL	15
The Growing Impact of Venture Capital.....	15
Venture Capital Activity.....	15
Classifying Venture Capital Investors	17
III. METHODOLOGY	21
Questionnaire Survey and Interviews	21
Characterisation of the answering sample.....	22
The “Yes” and “No” Incubators	23
IV. SURVEY RESULTS	25
Public/private and Profit/non-for profit	25
Regional, National or International Focus.....	25
Entry Criteria	26
Incubator Staff’s Professional background	27
Tenants’ profile and background	28
Activities for tenant companies	28
Incubators’ Investments	29
External and Internal Provision of Services	30
Service - Help with raising seed and venture capital.....	30
Service - Market Research and Sales	30
Service - Help with Exporting and Partner Search Abroad.....	31
Exit criteria for tenant companies.....	32
Firms’ Development Stages when Leaving Incubator	32
Follow-up activities.....	33
Networking and collaborative structures.....	33

Venture Capital as complementary partners33
 Overall Remarks – Bringing in the Venture Capitalist View.....34

V. RECOMMENDATIONS.....37

VI. CONCLUSIONS.....39

REFERENCES.....40

APPENDIX A: THE SURVEY QUESTIONNAIRE FOR INCUBATORS41

APPENDIX B : LIST OF RESPONDENTS.....46

INTRODUCTION

Regional and national competitiveness and economic growth are increasingly dependent on the underlying conditions supporting risk-taking and innovative ideas. As a result, innovation is increasingly becoming a priority for firms, organisations and governments in most countries throughout the world. At the same time, economic growth has been coupled with access to information and communication technology (ICT), the ability among firms to introduce organisational changes and the level of human capital together with research and development in small and large firms. However, despite many efforts to identify the key factors determining economic growth, a number of countries are still faced with challenges forcing them to rethink their current position. Wealth and social well-being for thousands of people around the globe are dependent on societies' willingness and ability to adapt themselves to the new opportunities evolving in the Knowledge Economy (KE).

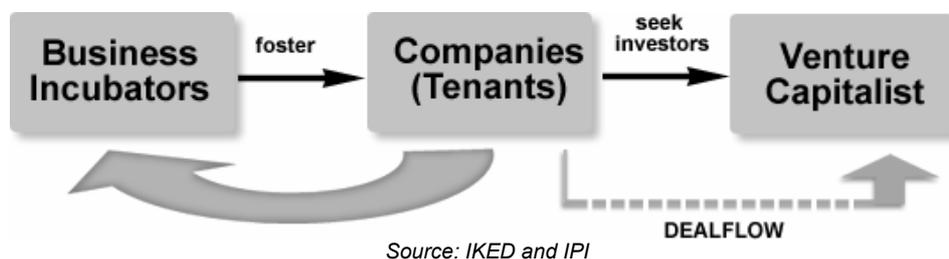
In this new era, innovation is becoming an important national asset, and governments are struggling to find the 'golden key', which will allow them to reap the benefits from the development. But as acknowledged, there are no miracle cures, and while some countries are reforming market structures or reviewing systems of intellectual property rights, others are reshaping financial markets or designing technology-push strategies to increase innovation. In parallel with these efforts, new entrepreneurial firms and small and medium sized enterprises (SMEs) are gradually recognized as generators for innovation and economic wealth. Today, the study of - and policy focus on - entrepreneurship is rapidly gaining importance and initiatives supporting the development of entrepreneurial activity have become a priority issue.

Business incubators are essential for strengthening the development of start-ups. These structures have developed across the world, and are widely accepted as places where professionals offer an organised and resourceful environment for young, entrepreneurial firms. Especially in societies with little entrepreneurial dynamism, the role of business incubators has turned out valuable for local development. Similarly, venture capital (VC) contributes to economic growth in entrepreneurial firms (Kjærgaard and Borup, 2004). Recently, the National Venture Capital Association (NVCA) underlined the importance of venture capital availability by showing how venture capital has been a successful tool in supporting high-risk innovative and growth oriented firms across sectors and regions in the United States (NVCA, 2004).

But despite increased political and economic recognition of both business incubation and venture capital, severe limitations in the research area still exist. While a number of studies on incubators have concentrated on showing best practices, guidelines for fostering new start-ups, business incubation management, evaluation of incubator programmes and effectiveness of business incubators on start-ups, only little research has been devoted to investigate the linkages and interactions between business incubators and venture capital investors and to decide whether they are successful in their attempts to cooperate (Bearsse, 1998; Etzkowitz *et al.*, 2000; Mian, 1996).

As a result, crucial questions such as how do business incubators and venture capitalists collaborate and to what extent are firms fostered in business incubators prepared to meet external investor's investment criteria, are hitherto left unanswered.

Figure 1: Collaboration between Business Incubators and Venture Capitalists



At the same time, empirical indications leave the impression that business incubators' collaboration with venture capitalists is not always working optimally (Gullander & Napier, 2003). Generally, business incubators' roles range from providing affordable space to ensuring core business support such as business development, financing and venture capital availability. However, as illustrated in Figure 1, very often only few entrepreneurial companies developed in business incubators (tenants) are prepared to match VC investors' investment criteria in terms of business maturity, business activity or even in communication and negotiation abilities. Consequently, instead of being targeted by risk capital funds, tenant companies are - when leaving the incubators - forced to look for other financing opportunities in order to expand their businesses. But accessing financial means is not an easy task for entrepreneurial firms. Therefore,

the risk is that low levels of investment readiness among companies fostered in incubators reduce their chance for getting funded, which as a result could prevent them from performing well.

Given the described mismatch between young incubated firms and venture capital investors, business incubators should strengthen their role as facilitator as to ensure that tenant firms can meet the expectations from external investors. In this way, the economic resources and efforts allocated to operate and manage business incubators worldwide could better contribute to the sustainability of tenant companies.

Based on the assumption that business incubators and venture capitalists are complementary sources of support for new start-up companies, this working paper sets out to examine to what extent the described situation is accurate. In addition, it points to possible avenues for improving collaborative complications between business incubators and venture investors. By exploring the interaction and the collaboration between business incubation and venture capitalists from 16 countries worldwide, this paper contributes to the discussions related to innovation, entrepreneurship and financing in different parts of the world.

I. FOSTERING FIRMS THROUGH BUSINESS INCUBATORS

Business incubation is increasingly playing an important role for new start-ups around the globe. In a growing number of countries, incubators that support the development of young, innovative firms are introduced as a way to strengthen the entrepreneurial activity (number of start-ups) and the ability for new companies to survive.

In this chapter, the business incubation concept is discussed and the following sections will serve as background for the analysis in Part IV.

Business Incubation – a Global Concept

The idea that innovation fosters economic growth is broadly shared and accepted among economists worldwide. Therefore, one of the most important challenges for economic systems is to encourage technological innovation among research institutes, universities, agencies, and, above all, firms. With this respect, empirical evidence is increasingly showing that young, innovative enterprises should be supported (AIFI, 2001).

This need stems from market failures and other shortcomings, such as the difficult relation between academic research and business, the lack of innovation services, the absence of a real “market” for technology transfer, and the difficulties connected to the passage from the seed capital to the venture capital stage. The spread of business incubators represents one of the main answers to the needs of emerging, innovative firms.

The first business incubators were established in the early 1970s in most western countries. They originated from the necessity to fight the social costs of economic slowdown through job creation. According to Lalkaka (2001), three «generations» of business incubators can be identified. In the 1970s and early 1980s, incubators were basically providing selected firms with low-priced room and collective services. Then, in the 1990s incubators started benefiting from additional facilities, such as counselling, training and networking services, and access to professional support and seed capital. Finally, starting in 1998, a new incubation model appeared in parallel, aimed at mobilising ICT, focusing exclusively on hi tech-based ventures and relying more and more on intangible assets and services.

According to the American National Business Incubators Association (NBIA),

“Business incubation is a dynamic process of business enterprise development. Incubators nurture young firms, helping them to survive and grow during the start-up period when they are most vulnerable. Incubators provide hands-on management assistance, access to financing and orchestrated exposure to critical business or technical support services. Most also offer entrepreneurial firms shared office services, access to equipment, flexible leases and expandable space — all under one roof. An incubation program’s main goal is to produce successful graduates — businesses that are financially viable and freestanding when they leave the incubator, usually in two to three years. [...] Incubator clients are at the forefront of developing new and innovative technologies — creating products and services that improve the quality of our lives — on a small scale today, and on a much grander scale tomorrow” (NBIA, 2004).

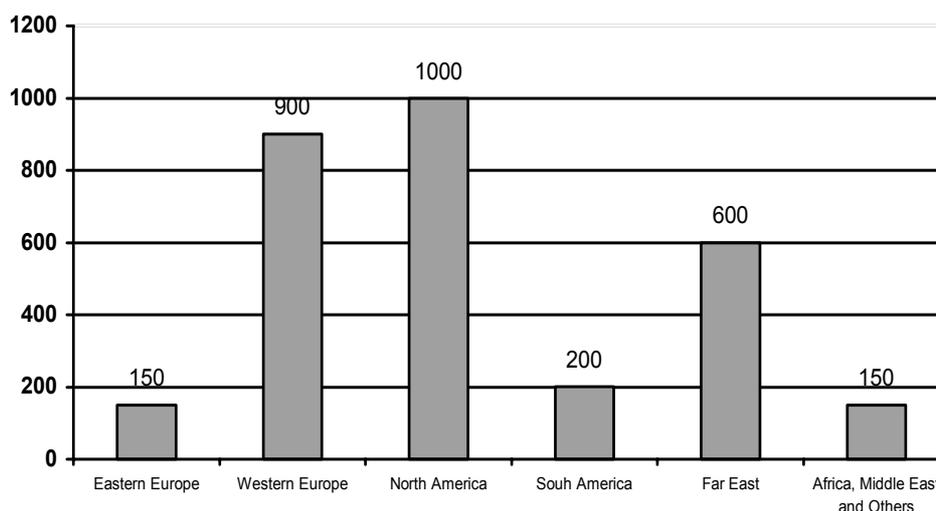
In this definition all the main elements which characterize the activity of business incubators are outlined and possible variations among different structure are taken into account. Nevertheless, some argue that the emphasis is too much focused on physical features, and this is less applicable to “third generation” incubators - which sometimes are called virtual incubators - because of the intangible nature of their facilities. Accordingly, a possible alternative definition may be the following one:

“A business incubator is an organisation that accelerates and systematises the process of creating successful enterprises by providing them with a comprehensive and integrated range of support, including: Incubator space, business support services, and clustering and networking opportunities. By providing their clients with services on a ‘one-stop-shop’ basis and enabling overheads to be reduced by sharing costs, business incubators significantly improve the survival and growth prospects of new start-ups” (European Commission, 2002).

This definition can be considered broader and perhaps more able to capture the whole variety of business incubator activities. Nevertheless, simplicity is perhaps sacrificed in the attempt to grasp new, not yet well established evolutions. Therefore, the future path of the development in business incubation activity will probably determine more exactly the scope and the basic features of incubators. Hence, a better understanding of the business incubation activity requires a classification of the various categories of incubators.

Incubation Activity

According to recent estimates carried out by the European Commission, there are around 3,000 business incubators worldwide (European Commission, 2002).

Figure 2: Geographical Distribution of Incubators, numbers per region

Source: (European Commission, 2002)

A rough breakdown of incubators by country is shown in Figure 2. Evidently, North America has the highest concentration of business incubators worldwide, which, not surprisingly, is explained by the strong tradition of incubators in the country as the first ones appeared in the United States.

Today American business incubators are pioneering new models and practices in the area, such as virtual structures and “dotcoms”. The American NBIA network involves more than 500 business incubators, mainly located in the US, and it can be regarded as one of the most important, influential and largest incubator networks worldwide.

Turning to South America, Brazil now has about 160 business incubators, starting with ten a decade ago. Incubators are also operating or being planned in other South American countries although the programmes elsewhere are less advanced than in Brazil. In the Far East, from its beginnings in 1987 with a catalytic UNDP input, the China incubation program has developed into the largest of its type in the developing world. In Japan and Korea, starting from more autonomous resources, incubators steadily increased in number and importance throughout the 1990s, and similar developments are taking place in Thailand, Malaysia and Indonesia. Africa and Middle East are among the least economically developed regions in the world, and this is reflected in the poor presence of business incubators, too. Nevertheless, several UN agencies and governmental programmes established significant incubation initiatives, for instance, in Egypt, Tunisia, South Africa and Turkey, and numbers are expected to increase in the future.

Box 1: The Impact of Business Incubation in Europe

- 90% of all start-ups set up inside a business incubator are still active three years later.
- The public cost of creating jobs inside incubators is €4,000, which is very low compared with other public means and programmes.
- The 900 European business incubators assist in creating 29,000 new sustainable jobs every year in enterprises, which are much more viable than enterprises set up outside incubators.

Source: (European Commission, 2002)

With regards to Eastern Europe, UNDP technical assistance in 1990 helped pioneer the concept in Poland, starting with the first incubator in Poznan. The creation in 1992 of the Association of Polish Business Incubators and Innovation Centres became the catalyst for growth. Nowadays, mainly through the European Business and Innovation Network (EBN), incubators are being established throughout the region, benefiting from best practices, resources and networking in Western Europe¹.

Applying a broad definition of incubators, there are currently thought to be around 900 business incubators in the Western Europe (EU15). The European Commission (2002) calculated for each EU country the Incubators/SMEs ratio, which can provide a rough estimate of the development of business incubation activity. Incubators were mostly present in Scandinavia, France, and the UK and they were least present in Greece, Italy and the Netherlands.

Classifying Business Incubators

A number of incubator definitions exist and many attempts have been made to classify the business incubators (OECD, 1997; AIFI, 2001; European Commission, 2002). Naturally the definition varies according to the chosen criteria. OECD (1997) has proposed a typology of incubators based on their overriding objective and characteristics of tenant firms. Three main types can be classified in this way:

- *General/Mixed-Use Incubators* are mainly committed to promoting continuous regional industrial and economic growth through general business development.
- *Economic Development Incubators* are business incubators whose main aim is to stimulate specific economic objectives such as job creation and industrial restructuring, often the result of local government initiatives.
- *Technology Incubators* are incubators whose primary goal is to promote the development of technology-based firms, as spin-offs from universities and science parks, in order to promote technology transfer while encouraging entrepreneurship among researchers and academics (OECD, 1997).

In a study commissioned by the European Commission and published in 2002, the authors propose a more clear-cut classification. They differentiate incubators by identifying those that are for-profit from those that are not. This typology, although simplistic, addresses the need for a clear and always applicable division, whereas other classifications may create ambiguities and overlapping. In any case, this approach acknowledges the difficulty of classifying structures whose evolution does not follow predefined patterns, but on the contrary are constantly innovating and renovating, in order to adapt to the new developments and needs arising from the economic environment.

Some Incubator Experiences

A number of incubator studies collect best practices and practical advices for business incubator managers. Among those, NBIA (2004) identifies two core principles characterizing effective business incubation. First, the incubator aspires to have a positive impact on its community's economic health by maximizing the success of emerging companies. Second, the incubator itself is a dynamic model of a sustainable, efficient business operation. Coming to more operational measures, several studies attempted at selecting best practices for business incubators (OECD, 1997; European Commission, 2002; NBIA, 2004), and they can be summarized as detailed in Box 2.

¹ In Europe, EBN (www.ebn.be) is the most relevant incubator network. It fosters the establishment and development of Business and Innovation Centres (BICs), which carry out incubation and other business support activities, throughout the European Union and neighbouring states, including candidate and associated countries.

Box 2: Examples of Best Practices for Business Incubators

- Obtain consensus on a mission that defines the incubator's role as integrated in a broader framework, territorially or sector oriented (especially when non profit oriented). Therefore, a partnership of public and private stakeholders is desirable in the setting up of incubators.
- The most successful incubators have a definite target market, and tenants are screened on that basis. In addition, focusing on "cluster-based" technology can increase efficiency and synergies.
- A realistic business plan has to be developed. It should entail public funding but dependence on subsidies should be minimised.
- Managers play a key role for the overall performance of incubators. Their competences and motivation must be carefully assessed.
- Business support services are also a core element for the survival and growth of tenant companies. They should be charged, but their price should be below that of outside market.
- Experience share and international networking can be useful both for the spread of more precise best practices and for the potential access to a larger span of resources and opportunities.
- Exit criteria should be adopted so as to ensure an efficient turnover of enterprises. On the other hand, aftercare to graduate companies is also important.
- Evaluation mechanisms should be put in place. They can provide a tool for assessment of incubator and company performance, thus suggest changes and improvements in activities.
- Location should be chosen carefully and the principle of location advantages should be considered.

Sources: (NBIA, 2004; OECD, 1997)

Nevertheless, the activity of incubating young enterprises is far from straightforward. When an incubator is not carefully planned, or managed, it can be of limited value - or even harmful - to the economic system as a whole. Some of business incubators' deficiencies are listed in Box 3 (OECD, 2002; NBIA, 2004).

Box 3: Examples of Business Incubator Deficiencies

- Business incubators tend to rely solely on public funding, thus not correlating expenses with overall performance.
- Incubators can have the tendency to overemphasize the activity of providing tailored services to client enterprises, to the detriment of networking with industry and investors.
- When business incubators have functions, business model and operative modalities, which are not tailored to, the community they are serving (whether this is real or virtual), their impact on the overall economic performance could be limited.
- Incubators that are not part of a broader economic development strategy can prove themselves useless, as they could be facing too hard a task for their potential.

Sources: (NBIA, 2004; OECD, 1997)

As detailed in Box 3, most inadequacies found in business incubators are related to the lack of networking with other actors of economic development. In fact, the object of our research is a particular case of this relation, that is, the connection between business incubators and venture capitalists. Therefore, the following chapter will address the second element of our research, namely the venture capital investors.

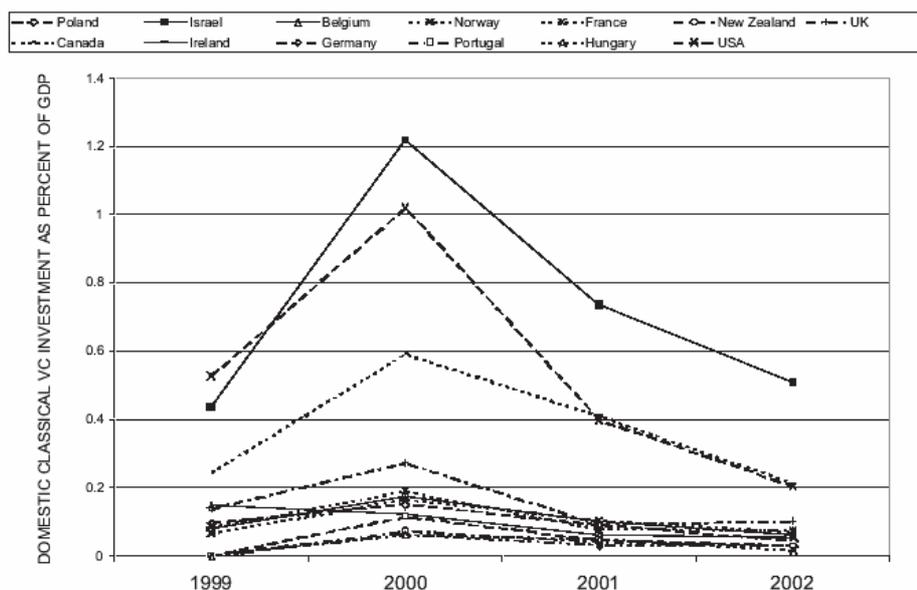
II. NEW FIRMS AND VENTURE CAPITAL

For many entrepreneurial firms around the world, getting access to external capital is a difficult task, and a shortage of risk capital is one of the greatest hurdles when starting up a new company, particularly in high-tech and high-growth business areas. In this chapter, the role of venture capital investor is highlighted and some recent trends from venture capital markets around the globe are brought forward. As with the Part I, this chapter will serve as background information for the analysis in Part IV.

The Growing Impact of Venture Capital

Venture capital markets have evolved rapidly around the world since the 1980s and 1990s fuelled by both private and public efforts. However, today's size of the global venture capital market is remarkably smaller compared to before the crash of markets in 2001. Venture capital markets displayed a sharp reversal, and the provision of funding to the industries experienced heavy consolidation as the numbers of venture funds were reduced worldwide. Equity markets collapsed and many of the "dotcoms" that had obtained heavy funding rapidly faltered.

Figure 3: Venture Capital Investments in Selected Countries (1999-2002)



Source: (Global Entrepreneurship Monitor, 2004)

As shown in Figure 3, the level of venture capital investments differs between countries, and whereas countries such as Israel and the United States invested up to 1.2% of GDP in new ventures in 2000, other countries such as Poland, Belgium, Norway and Portugal invested much less. In 2001, the \$100 billion invested globally was less than half of the \$250 billion invested in the previous year (PriceWaterhouseCoopers, 2003). Evidently, the flows of investments have changed remarkably along with the economic downturn in 2001. Today, most countries are recovering and investment activities are generally back at the pre-bubble level in 1998.

Venture Capital Activity

A broad assessment of financial sources is important for companies during the various stages of business development. At the pre-seed stage, firms are generally financed through owner/inventor, family and friends and a variety of creative

methods of acquiring access to resources without raising capital from external sources. The demand for funding is relatively small, and the period of self financing is limited with an increasing need of funding following the development of the project.

Figure 4: The Business Finance Chain

	VENTURE CAPITAL			PRIVATE EQUITY	
	Low Firm Evaluation		Medium Firm Evaluation	High Firm Evaluation	
High	Informal market	Informal/Formal Market	Institutional Market	Institutional Market	High
Amount of Investment	Business angels	Corporate Venture Capital Public investors Venture capital funds Business angels	Corporate Venture Capital Public investors Venture capital funds	Stock Markets Private Equity	Investor's Risk Aversion
Low	1. Stage	2. Stage	3. Stage	4. Stage	Low
	Pre-seed Financing provided to research, assess and develop an initial concept before a business has reached the start-up phase. Firm has no track record and little business development.	Seed Financing provided to companies for product development and initial marketing. Firm may be in the process of setting up or may have been in business for a short time, but have not sold their product commercially. Some sales might have been demonstrated on small scale.	Expansion Financing provided for the growth and expansion of an operating company, which may or may not be breaking even or trading profitably. Capital may be used to finance increased production capacity, market or product development, and/or to provide additional working capital.	Bridge Financing made available to companies in a period of transition such as turnaround, MBO, MBI or when the company develops from being privately owned to becoming publicly quoted.	

Source: (Andersson et al., 2005)

As shown in Figure 4, different investors complement each other successively as the development of the firm proceeds. The entry of new investors does not necessarily imply that the existing investors are diluted, but rather that they remain, sometimes with a lower profile becoming more or less “silent partners”.

As the entrepreneurial company grows, so does the urgent need for additional risk capital. First, informal private investors, i.e. the business angels are considered the main source of funding. At a later stage the formal venture capitalists, managing funds originating from sources such as pension funds and insurance companies, enter the development scene.

In general, entrepreneurs are faced with two funding gaps. The first funding gap arises when the investment-seeking firm has to identify external investors (after having supported the firm himself with founder’s capital). At this stage, the entrepreneur typically needs capital for prototyping and investigating different marketing strategies. In this period business angels play a crucial role as investors. The second funding gap arises once the business angel’s financial

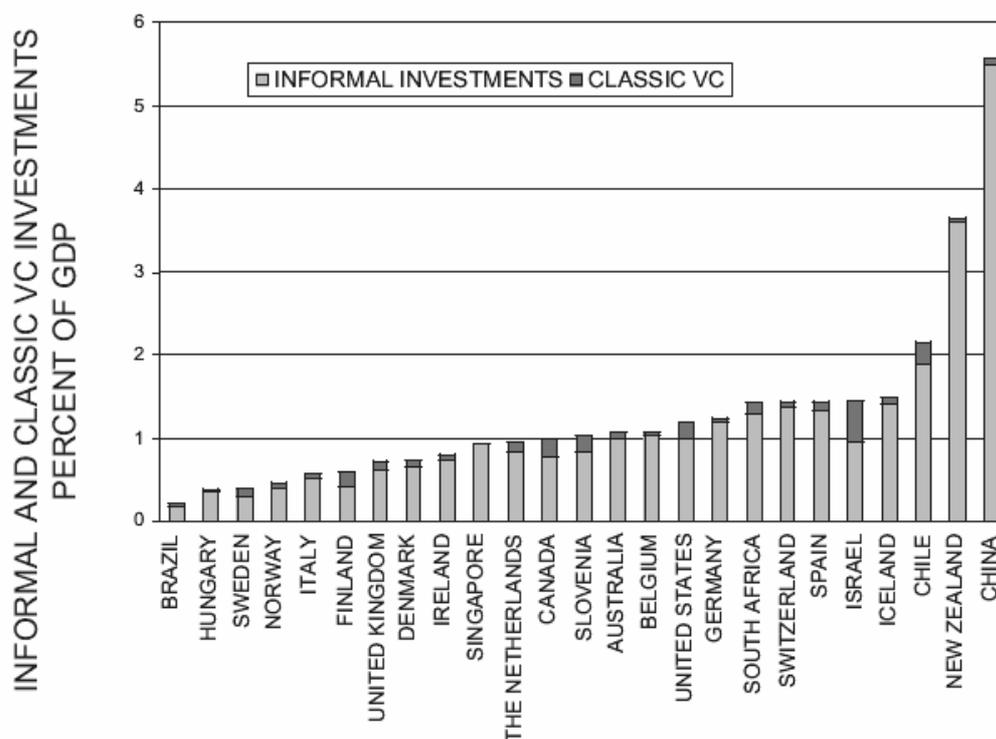
sources are not sufficient and large investments are needed for the growth stage of the firm, often focusing on heavy marketing investments. At this stage the formal venture capitalist often enters the financing scene for the start-up firm.

Classifying Venture Capital Investors

According to the Global Entrepreneurship Monitor 2004, only less than 0.01% of entrepreneurs launched their new business with the support from classic venture capital or business angel investments (Global Entrepreneurship Monitor, 2004). In other words, most entrepreneurs are forced to look for alternative financing opportunities such as banks, or to develop their business without any financial support. However, for those lucky few, business angels or classic venture capital funds are typically the main option.

Business angels are high net-worth individuals who provide early-stage companies with financial and non-financial assets such as skills, professional networking, coaching and expertise. Angel investors often have a background as successful entrepreneurs/businessmen and accumulated sustainable amounts of capital. Generally, business angels hold unique insights within certain business areas and they tend to operate with a very committed, strong hands-on approach. Normally business angels invest smaller amounts compared to the institutionalized venture capital firms ranging between € 25,000 - € 250,000 (Harrison & Mason, 2002; Vækstfonden, 2002).

Figure 5: Informal and Classic Venture Capital Investment (by country)



Source: (Global Entrepreneurship Monitor, 2004)

As shown in Figure 5, informal types of investors invest up to 10 times more capital in start-up companies compared with classic venture capital. Especially in countries such as China, New Zealand and Chile, informal investors play a crucial role as grassroots financing for new firms. Other countries like the Nordic countries have experiences with building business angel networks in order to increase the flow of business angel investments to entrepreneurial firms. Business angel networks are new types of public or private organisations that increase business angel investments by providing screening of entrepreneurial projects and matchmaking events (Gullander & Napier, 2003).

Classic venture capital also plays a significant role for fuelling entrepreneurship, although most venture capitalists invest in slightly later stages compared with business angels. Venture capitalists are often key actors in the division of labor between universities or other institutions breeding new technologies and commercial activities.

Generally, the funds are administrated by investment managers and have an average investment horizon between 2-5 years in each portfolio company. In this working paper, venture capitalists are understood as investments by business angels or classic venture capital funds in early stages of business development. Their objective is to help build a company from conception, add value and, when the company reaches maturity, realize profits from their investments. Obviously, venture capital fund invests either before there is a tangible product, or before the company has developed an organisation, or they provide capital to a company in its primary or secondary stages of development. They can also provide the finance required for helping the company to reach critical mass on its way to success e.g. in the expansion stage.

The funds take ownership stakes in portfolio companies and engage actively in the management and development of a firm.

Table 1: Examples of Investors' Investment Criteria

Suppliers of capital	Criteria for accessing funding sources
Family, Friends and Fools	Personal relationship based on trust
Business angels	Meeting or matching of individual entrepreneurs with business an-gels Atmosphere of trust between individuals Credible business plan in the eyes of the Business Angel Good management team Fiscal incentives Market knowledge of the entrepreneur Availability of exit route Return on investment (capital gain)
Banks	Availability of guarantees or collateral Perceived ability to repay the loan Company track record Rating Good management
Repayable short-term loans	Innovative nature of business projects Business plan quality Management team
Venture capital	Business plan credibility Business plan with patent technology Track record (over previous years) Ability to grow fast and deliver quick ROI Management team quality
Public funding	New jobs Investment in productive tools

Source: (Adapted from EURADA, 2004)

As found in Table 1, different investors have varying criteria for investments. Whereas business angels weight a factor such as the atmosphere of trust between entrepreneurs and business angels and the personal meeting with the

entrepreneurs high, classic venture capital investors tend to weight growth potential, technology and track record higher. In contrast, banks are more focused on guarantee and collateral and the firms' ability to repay the loan. For public investors, employment and productive tools are important reflecting the public sector's social and economic responsibility. Consequently, policies designed to foster more investments should acknowledge these differences and investment seeking entrepreneurs should be aware of the varying motives and criteria when they look for capital in the market.

III. METHODOLOGY

The need of further investigation in the relationship between risk capital and incubators emerged as one of the not fully developed and unsolved questions; therefore it was decided to attempt shed light on and draw attention to this topic through a survey, which would cover a large span of countries, i.e. following the INSME² rationale.

Based on direct visits to incubators and some preliminary interviews as well as reviews of literature and secondary data analysis, the research idea and objectives have been identified. It has to be specified that the intention was to collect a significant number of inputs and multiplicity of points of view that could be of support to analyse the complex reality, rather than conducting a comprehensive study with a full statistical significance.

In this chapter, the methodology in the study is briefly outlined and some consequences of the applied method are discussed as well as some characteristics of the interviewed incubators are highlighted.

Questionnaire Survey and Interviews

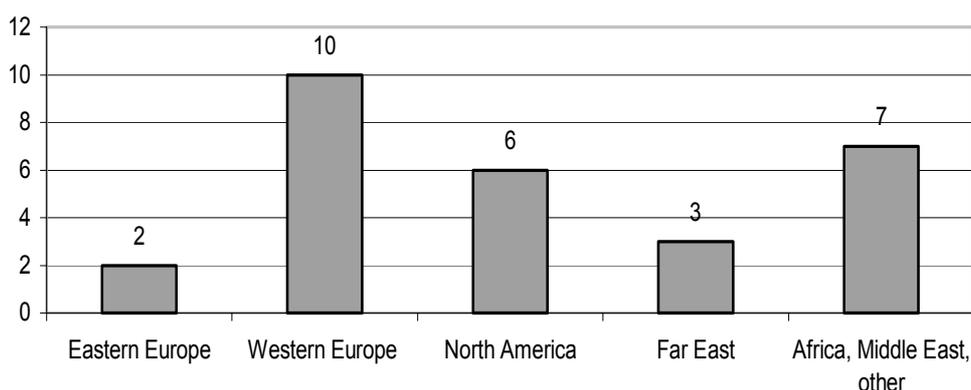
In order to investigate the research field, a questionnaire survey has been designed in order to collect quail-quantitative primary data. The task has been carried out through the work of a joint group consisting of IPI and IKED officers, whose expertise are in risk capital or intermediary organisations, among which incubators are classified.

The questionnaire (see full text in Appendix A) includes 38 questions organised in seven sections, starting from general data regarding the incubators and useful to characterise the sample, i.e. their tenant companies, their provided services and their partnerships. While in this part some questions related to financing and innovative finance were included, the last three sections were designed to investigate the core issue of this research.

The questionnaire was sent by email, with a phone pre-contact or post-contact to enhance response motivation, to 40 incubators worldwide. In particular, the incubators were selected through the international networks of IPI, IKED, NBIA and INSME databases and the sample was constructed to reflect the proportionality in the geographical distribution of business incubators in the world regions as reported by the European Commission (2002) and represented in Figure 2.

Out of the 40 incubators that received the questionnaire, a total of 28 returned the questionnaire (see list of respondents in Appendix B), which results in a response rate of 66%. As shown in Figure 6, the respondents represent 16 different countries worldwide including Cyprus, Denmark, Finland, Germany, India, Ireland, Italy, Japan, Palestine, Romania, Singapore, South Africa, Sweden, Tunisia, Turkey and the United States.

Figure 6: Surveyed Business Incubators, by geographical region



Source: IPI and IKED

² INSME, The International Network for Small and Medium Sized Enterprises, is a non-profit Association open to international membership. Its mission is to stimulate transnational cooperation and public and private partnership in the field of innovation and technology transfer to SMEs and in this framework particular attention is devoted to the promotion of North-South multilateral dialogue and co-operation (www.insme.org).

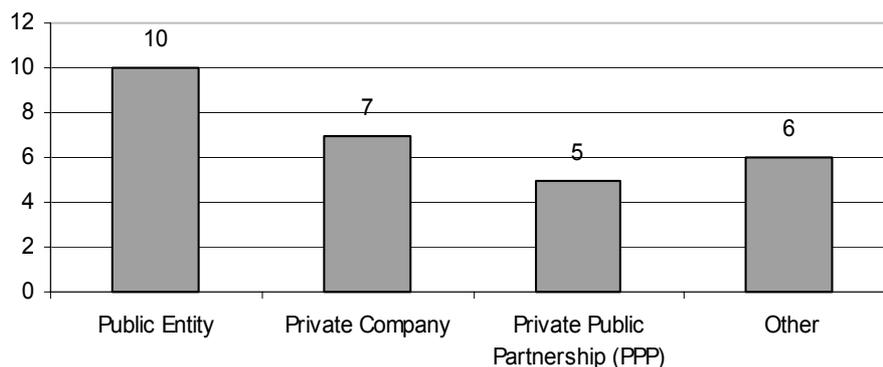
As shown, the majority of the respondents are from Western Europe, followed by North America and Africa, Middle East and others. This distribution is to some extent similar to the estimates of incubators worldwide carried out by the European Commission in 2002 (Figure 2).

Furthermore, to collect the point of view of representatives of the innovative finance system four direct interviews were organised with Danish and Italian Venture Capital Organisations as well as with the European Venture Capital Association and the European Investment Bank (Appendix B). The interviews were carried out either by telephone or personal meetings.

Characterisation of the answering sample

Thanks to some introductory questions, the set of organisations that answered to the questionnaire can be described according to some variables. In the survey, the majority of incubators operate as public entities, while only 25% of the incubators are organised as private companies. Compared to other incubator surveys carried out in Europe (see for instance European Commission, 2002, in which the largest part of the incubators consisted of private entities), the percentage of privately held incubators in this survey is lower. Yet, there are no clear patterns in terms of countries or regions, as both public and private incubators are roughly equally distributed throughout the regions.

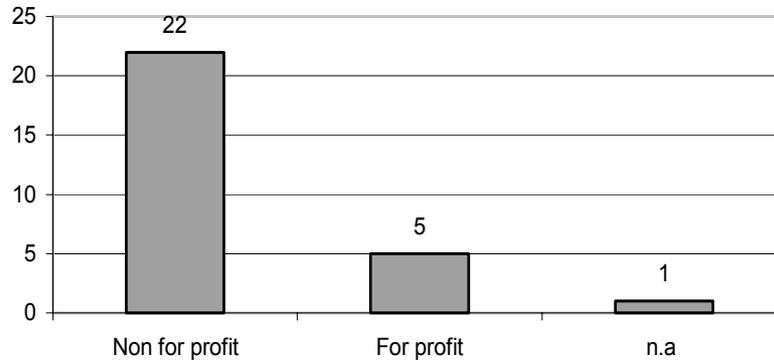
Figure 7: Legal Status of Business Incubators



Source: IPI and IKED

Furthermore, 20 out of 28 incubators are operating as non-for-profit organisations, whereas only five describe themselves as for-profit incubators. However, when comparing the profit orientation with the legal status, it is seen that the profit-oriented incubators are both found among the private companies as well as public entities. In other words, we confirm that the sample was chosen in line with the observation that profit orientation is not necessarily limited to private-sector incubators.

Figure 8: Non-for-profit or profit oriented incubators, numbers



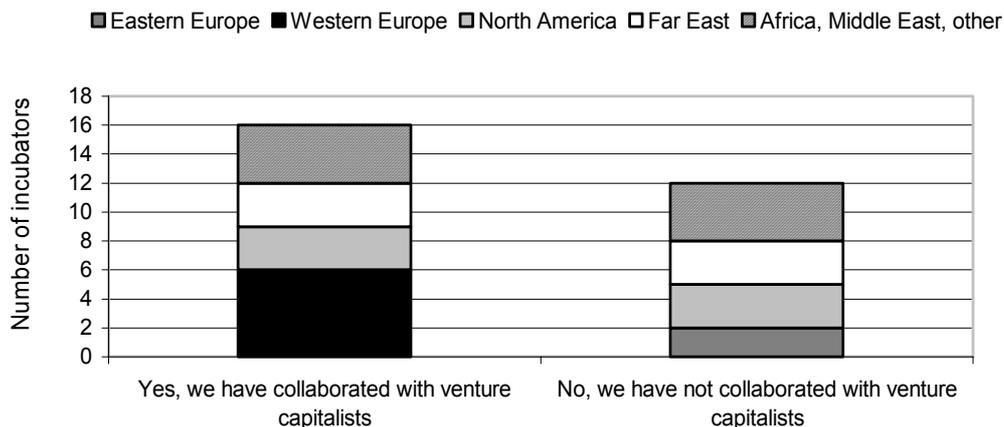
Source: IPI and IKED

The “Yes” and “No” Incubators

In order to examine the collaboration between the incubators and venture capitalists, the incubators were asked to consider if they had been collaborating with venture capital investors or not (see Appendix A question 5.2)³. In the following analysis, the results were clustered based on whether the respondents have or have not experienced some kind of collaboration with venture capitalists. In practice, those incubators who have collaborated with VCs have either presented some of their tenant companies to investors and/or venture capitalists have invested in the firms.

In the following analysis, we will refer to those incubators, which have collaborated with venture capitalists as ‘Yes’ incubators, while those that have not collaborated with VC are referred to as ‘No’ incubators. Then, for the questions with a major difference between the answers from the two groups of incubators, the results are presented and compared for the ‘Yes’ incubators and the ‘No’ incubators, respectively. This is done in order to identify the key factors determining a positive collaboration between incubators and VCs.

Figure 9: “YES” and “NO” Incubators



Source: IPI and IKED

As shown in Figure 9, among the 28 interviewed incubators, 16 respondents have experienced some kind of collaboration with venture capitalists in connection with their work as incubator managers and will be referred to as the ‘Yes’ incubators. On the other hand, the ‘No’ group consists of 12 incubators.

³Question 5.2 “Did you ever collaborate with Venture Capital? If yes, please fill out box 6, if no, please fill out box 7”.

In the “Yes” and “No” perspective, the sample seems quite balanced and, therefore, potentially useful to the objective of the study to collect inputs and insights on the relationships among incubators and the innovation finance system.

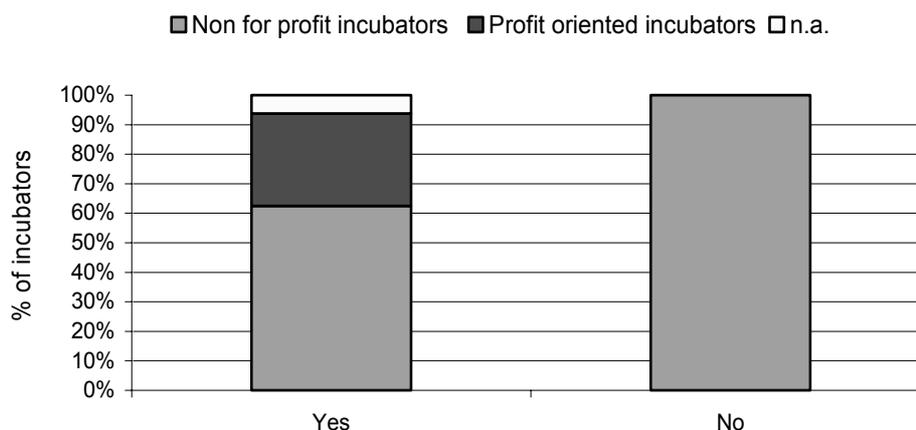
IV. SURVEY RESULTS

As discussed, business incubation has increased its impact on firm formation along with venture capitalists increasingly being recognized as fuel for entrepreneurship and economic growth. Despite the somewhat significant role played by both incubators and venture capitalists so far, their mutual relationship and impact are somehow uncertain. Based on the quantitative survey of business incubators in 16 different countries worldwide, some aspects in the collaboration between incubators and venture capital investors are reviewed in this chapter. It should be underlined that the following results are not viewed as fully applicable for all other incubators in the world, but rather they reflect the current situation in the interviewed incubators. Based on this analysis, some synergies between incubators and venture capitalists are discussed and some future challenges in the collaboration are brought forward in order to provide policymakers and business incubators with recommendations in this field.

Public/private and Profit/non-for profit

Comparing the origin of the incubators, public or private, no differences are found between the business incubators that have collaborated with venture capital (the “Yes incubators”) and those incubators that have not collaborated with VC (the “No incubators”). However, the difference between non-for-profit and for-profit incubators is significant between the two groups.

Figure 10: Profit Orientation and VC Collaboration



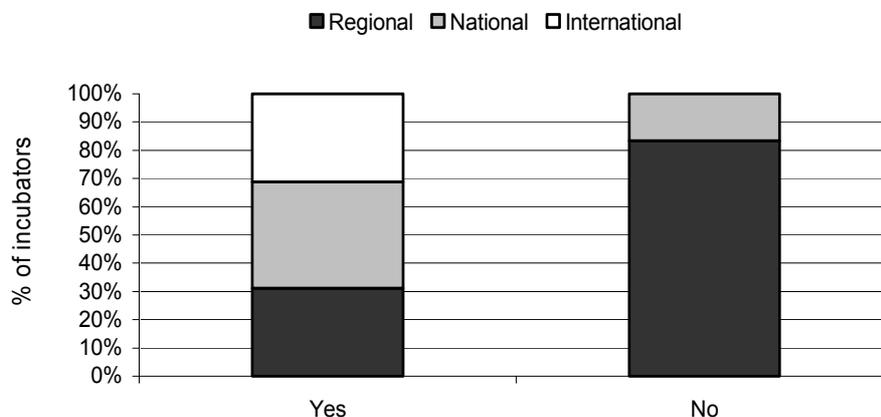
Source: IPI and IKED

While 100% of the ‘No incubators’ are characterising their incubator activity as non-for-profit, as shown in Figure 10, one third of the ‘Yes incubators’ are working for-profit.

These results indicate that profit oriented incubators –compared with non profit incubators - tend to have more contact with VCs. This could be explained by the assumed stronger emphasis on revenues among profit oriented incubators, as venture capital usually is an opportunity for the incubators to increase investments and thereby achieve higher revenues.

Regional, National or International Focus

Generally, incubators can operate with regional, national or international scopes. However, when examining the interviewed incubators, we find that the majority (80%) of the incubators that have not collaborated with VC is primarily operating regionally in their business activities and none of them are international oriented in their work.

Figure 11: Internationalisation and VC collaboration

Source: IPI and IKED

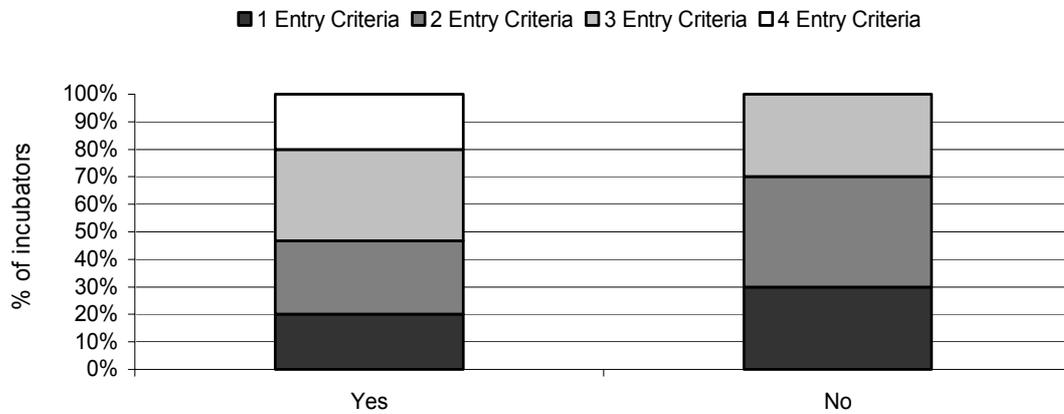
Meanwhile, as shown in Figure 11, the “Yes incubators” tend to span their activities more widely. About one third of incubators that have experienced VC collaboration have a regional focus, 38% operate nationally and 30% of the incubators extent their business internationally. Hence, apparently the broader the incubators are focusing geographically, the more the incubators are likely to collaborate with VCs.

One explanation could be that venture capitalists are not always located within the specific region of a single incubator. Therefore, incubators with a broad geographical focus tend to increase the chance for accessing venture capital funds. Similarly, it is assumed that venture capitalists - due to the potential wider market vision in these companies - prefer to invest in tenant companies located in incubators with international links and networks.

Entry Criteria

Most of the interviewed incubators apply some kind of entry criteria defining the profiles of the tenant companies entering the business incubators. Among the interviewed incubators factors such as established businesses, certain geographical location, high growth potential or innovation, are used as entry criteria. However, while “No incubators” in average apply two entry criteria for new firms entering the incubator, the “Yes incubators” apply a higher number of entry criteria – in many cases up to 3-4 entry criteria per new tenant. In other words, it seems that the more selective the incubator managers are when selecting new firms, the more positive experiences they have when trying to access venture capital funds.

Figure12: Entry Criteria and VC Collaboration



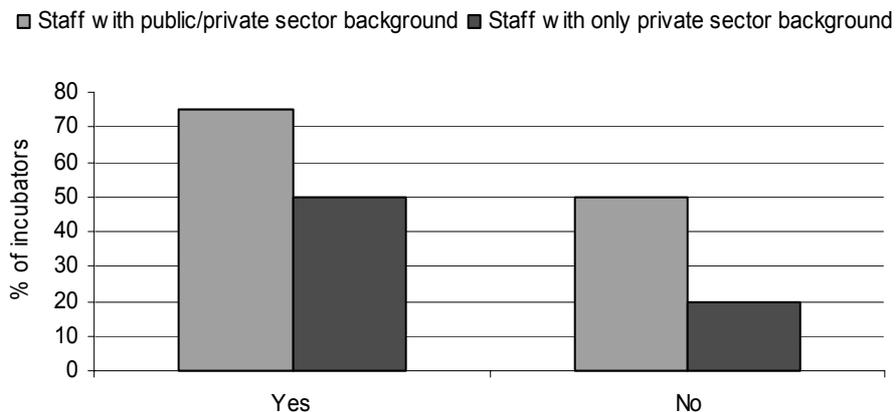
Source: IPI and IKED

Moreover, a single entry criterion such as innovation seems to be more important for the “Yes incubators” compared with the “No incubators”. Whereas half of the business incubators without VC experiences require that new tenant companies’ business models are based on innovation, 75% of the “Yes incubators” prefer innovative tenants. These findings suggest, that the incubators that have succeeded in collaborating with venture capitalists tend to be more selective and prefer innovative firms more often compared to the “No incubators”, and are therefore more likely to present innovative firms to the investors compared to the “No incubators”.

Incubator Staff’s Professional background

Generally, business incubators are often accused for not establishing or maintaining sufficient contacts with the private sector. As a result, the final outputs and products from incubators are not always adapted to the needs of the market. Exploring the ability among incubators to respond to the need of venture capitalists, we examined whether the professional background of the incubators’ staff would influence their ability to communicate with VC.

Figure 13: Private sector background and VC Collaboration



Source: IPI and IKED

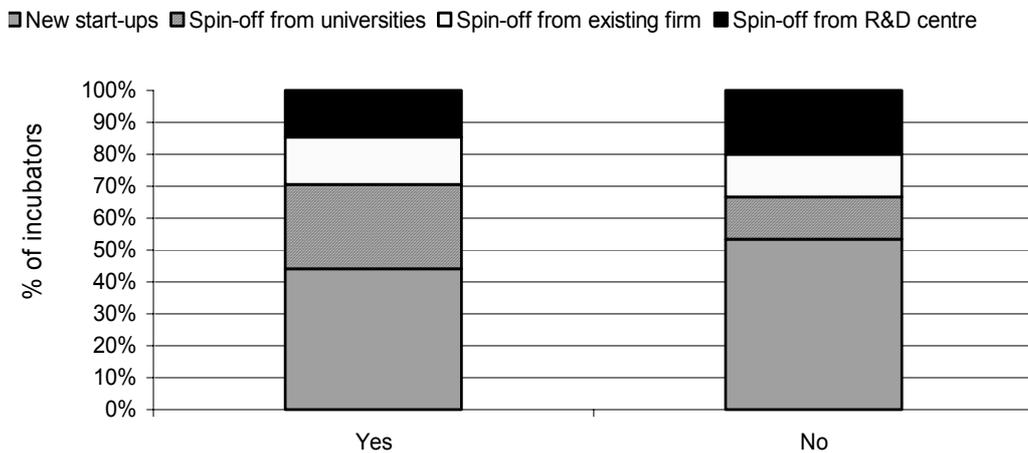
According to the survey, differences between the staff members’ background in the ‘No’ and ‘Yes’ incubators occur. Whereas only around 50% of the staff in incubators without VC collaboration has a professional background in the private sector (they have previously worked either as entrepreneurs, firm managers or firm consultants), about 75% of

the staff in incubators with VC experiences has professional backgrounds from the private sector. Moreover, while 20% of “No incubators” has staff members that have only been working in the private sector, this number is more than double in the “Yes incubators”. Therefore, these figures indicate that business incubators with primarily private sector staff are more likely to have good relations with VC.

Tenants’ profile and background

In order to increase the number of tenant companies leaving business incubators and instantly becoming targets for venture capital investors, it is necessary to understand (in order to improve) the business profile and background of the companies fostered in incubators.

Figure 14: Spin-offs from Universities and VC Collaboration



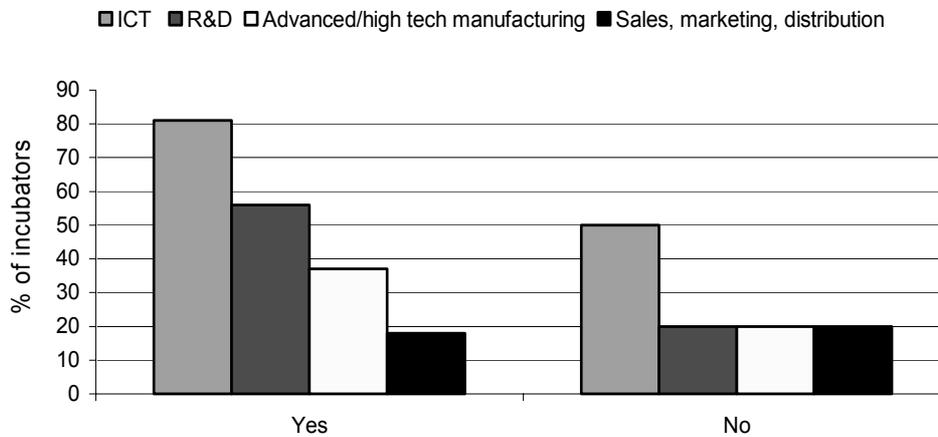
Source: IPI and IKED

As shown in Figure 14, spin-offs from universities and existing firms are more often found within the incubators having experienced some kind of collaboration with venture capitalists. On the opposite, incubators without VC experience tend more often to foster either new firms or spin-offs from R&D centres.

Activities for tenant companies

Another indicator for the company profiles is the type of business activities, which the tenants are carrying out.

Figure 15: Tenant Companies' Activities and VC Collaboration



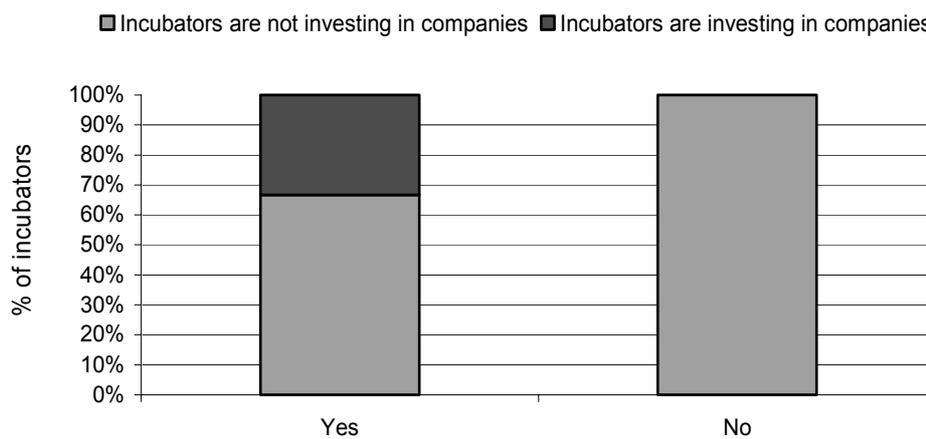
Source: IPI and IKED

As shown in Figure 15, firms working with research and development and information and communication technologies are more often found in the incubators, which have collaborated with venture capitalists compared to those incubators that have not collaborated with VC. Whereas up to 80% of the firms in the “Yes incubators” have ICT as their main business activity, only half of the firms in the “No incubators” are occupied with ICT. The results in Figure 14 and 15 indicate that incubators, fostering technology and research-based firms, tend to be more attractive for venture investors.

Incubators' Investments

As discussed, for most investors factors such as the “personal feeling”, trust and strong confidence in the entrepreneurial firm are paramount when making a new investment. Normally, VCs realise new investments because they believe in both the new business idea and in the entrepreneurial team behind the idea. However, investors can be encouraged to invest. Sometimes one investor manages to convince other investors that an idea is worth “believing” in, simply by investing in the idea himself. Similarly, this mechanism could describe incubators' seed investments in tenants. If a business incubator invests in one of its own tenant companies, it signals to other investors such as venture capitalists, that this company is worth investing in.

Figure 16: Incubators' own Investments and VC Collaboration



Source: IPI and IKED

According to the survey, as shown in Figure 16, the business incubators that have financed some of their companies with either loans or equity tend to have better collaboration with VC compared with the incubators that have not invested in the tenants. Whereas more than 30% of the “Yes incubators” have invested capital in their firms, none of the “No incubators” has invested in their tenants before presenting them to the VC.

As discussed, it is very often viewed positively - when presenting tenants to VCs - if the incubators can show that they have been willing to risk and invest in the companies themselves.

Another explanation could be that many of the firms, which have been invested in by incubators, are presumably more developed and matured (due to the extra capital) compared to those firms which have not received any additional capital from incubators, and they therefore appear more attractive for investors. This point will be turned to later.

External and Internal Provision of Services

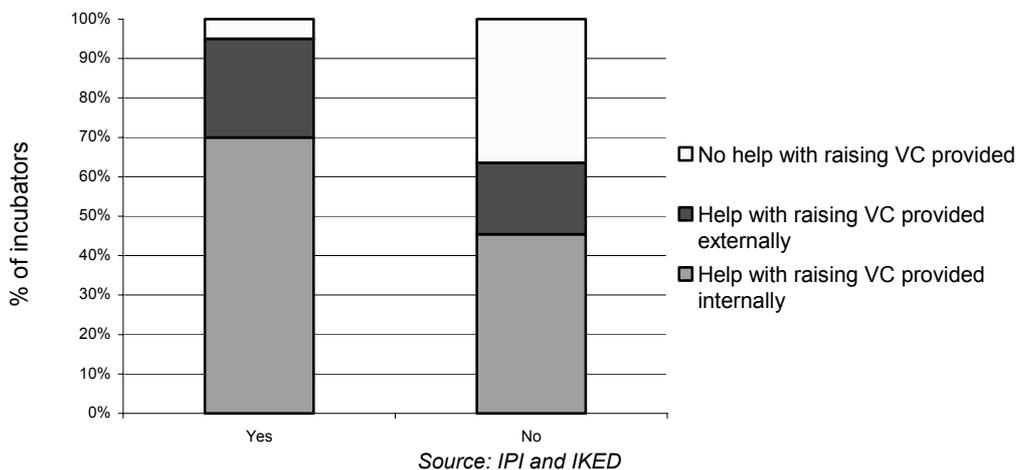
Generally, business incubators provide a number of services to the tenant companies during the period in the incubator. Analysing these services, it is found that the “Yes incubators” tend to provide more services externally (services provided from sources outside the incubators), whereas the “No incubators” more often provide services internally (services provided from sources inside the incubators). In other words, outsourcing of incubator services tend to co-exist with increased venture capital in incubators.

The openness to external sources - both in services and in networking - facilitates a better collaboration with VC. Presumably, the benefits of being more open are that the tenants can benefit from a larger span of views and services, thus reaching potentially the best service in the market. In that way, incubators provide more competitive services, which in turn are expected to make the enterprises better equipped and prepared for external investments. In the following, some examples of incubator services are highlighted.

Service - Help with raising seed and venture capital

The “Yes incubators” tend to provide assistance with raising venture capital more often compared to the ‘No’ group of incubators. In addition, when the ‘Yes’ group provides the service, it is likely to be provided by person working inside the incubator.

Figure 17: Help with Raising VC and VC Collaboration

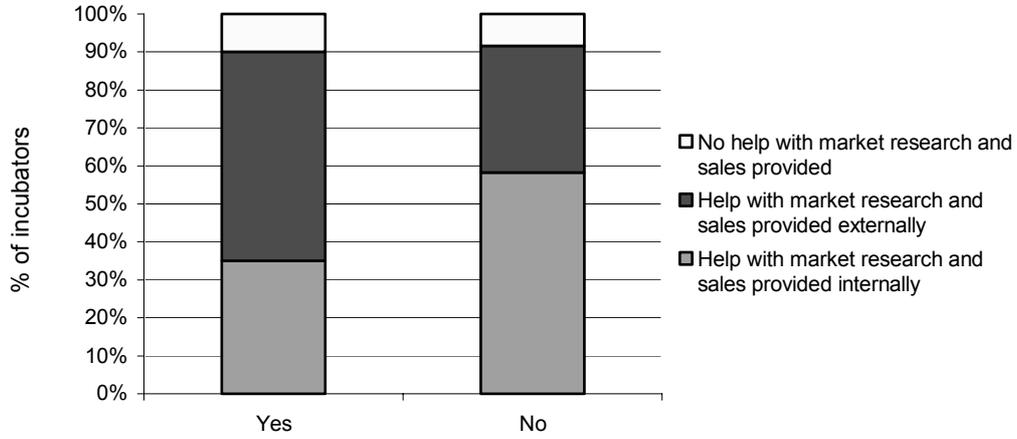


This survey result could indicate that those incubators, which have been collaborating with venture capitalists, have in-house human resources capable of advising and communicate with external investors.

Service - Market Research and Sales

The ‘No’ group of incubators tends to provide help with market research and sales more internally. As shown in Figure 17, 57% of the incubators provide the service internally, while 36.4% use external consultancy.

Figure 17: Market Research and Sales and VC Collaboration



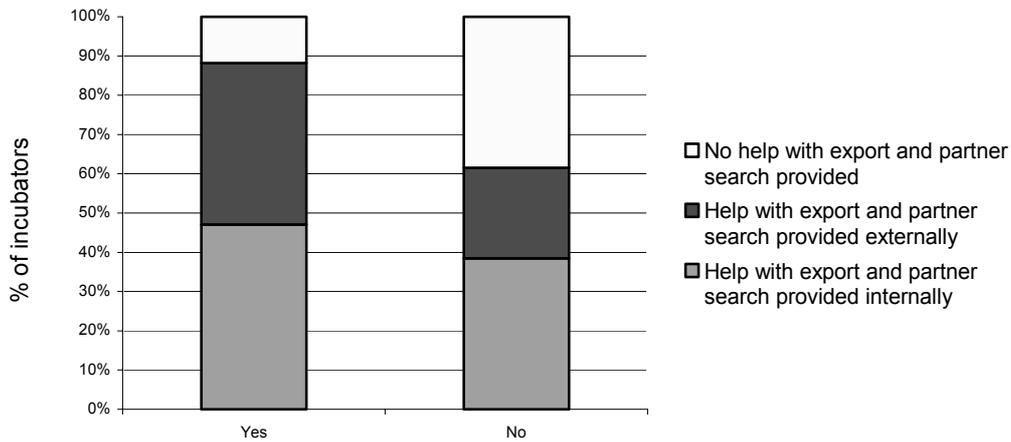
Source: IPI and IKED

On the other hand, the 'Yes' group of incubators tends to provide the service externally, which might indicate that they have a better contact with professionals outside the incubators regarding market research and sales. Therefore, external consulting in market research and sales seems more likely to be associated with a successful performance in relation to Venture Capital.

Service - Help with Exporting and Partner Search Abroad

When the 'No' group of incubators provides help with exporting and partnering, it is more often based on internal resources, and around 40% of incubators do not offer this service at all.

Figure 18: Export Help and Partner Search and VC Collaboration



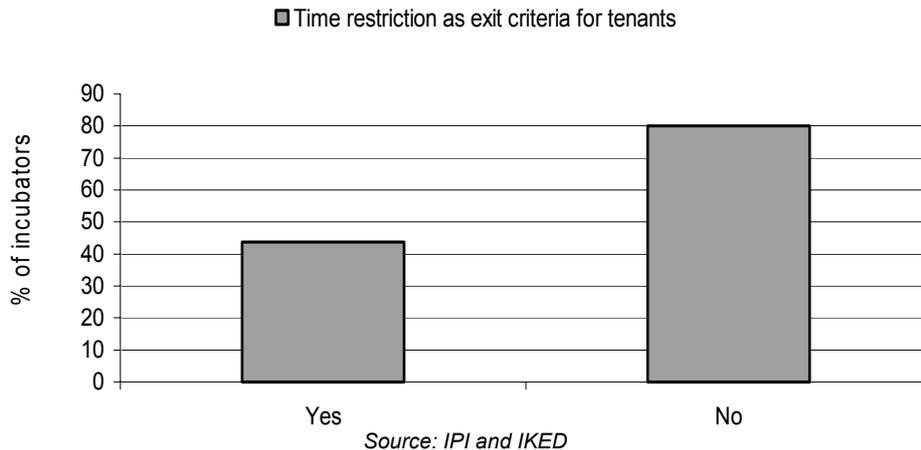
Source: IPI and IKED

On the contrary, the 'Yes' group has a higher percentage of incubators that provide the service through external professionals. Hence, the export and partner search service seems more likely to be associated with a successful performance in relation to venture capital, and even more if the service is provided externally.

Exit criteria for tenant companies

Incubating is by definition supposed to be limited in time, as its core function is to support start-up firms in certain stages of business development. Therefore, once the tenants companies have spent certain a period of time, reached a certain turnover or implemented certain activities inside the incubator, the firms are requested to leave and forced to continue the business development outside the incubators.

Figure 19: Time restriction as Exit Criteria and VC Collaboration

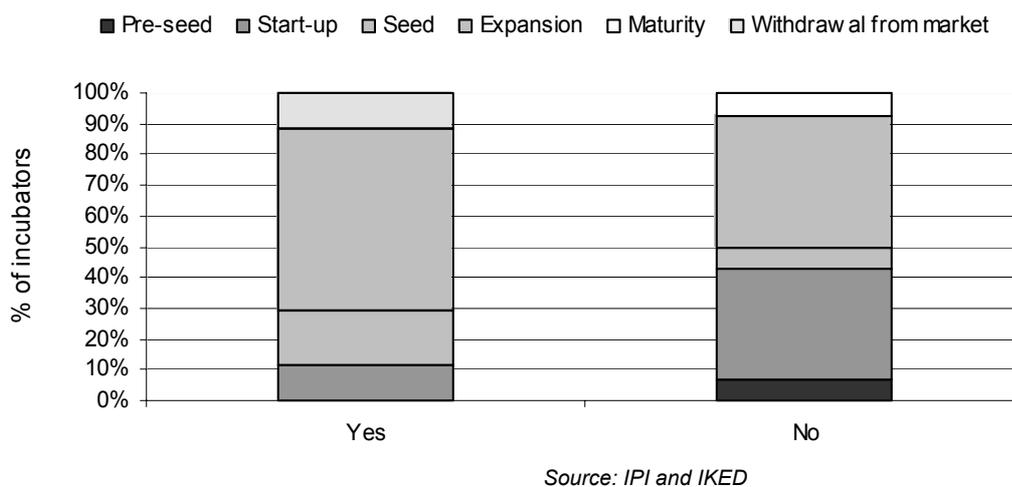


As shown in Figure 19, for the majority of the 'No' incubators companies must leave the incubator after a certain period of time, normally after 2-3 years. On the other hand, the 'Yes' group of incubators tends to use time as a criterion for the firms less often, but they rather refer to a certain development stage or employment status as a reason to change location.

Firms' Development Stages when Leaving Incubator

As discussed previously, entrepreneurial firms go through certain stages of business development (pre-seed, start-up, seed, expansion) before reaching maturity and a number of activities characterise each development stage (see also Part II).

Figure 20: Expansion and VC Collaboration



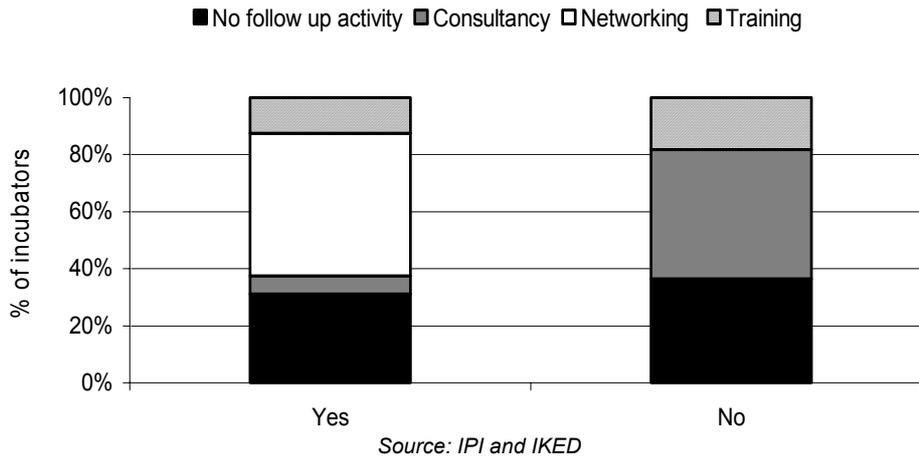
Following the findings in Figure 20, 'Yes' incubators claim that the development stage is usually the expansion one for firms leaving the incubators. On the other hand, more start-up firms in 'No' incubators leave the incubators as shown in Figure 20. These results could indicate that the 'No' incubators - due to decisions on more rigorous time restrictions are

asking the tenant firms to leave too early. As a result, investors might not willing to invest in them because of the higher risk connected to these firms.

Follow-up activities

According to the research, incubators experienced with collaborating with VC tend to offer more follow up activities to companies that have left the incubators compared to incubators that have not collaborated with VC.

Figure 21: Networking and VC Collaboration

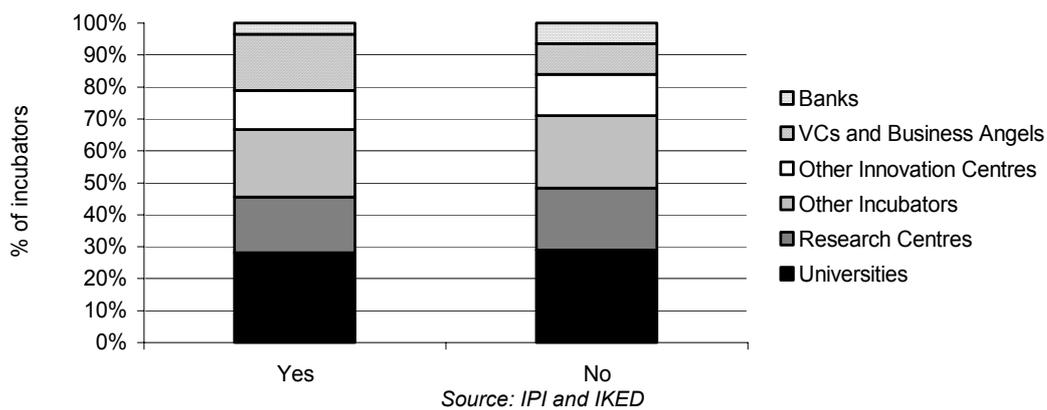


Evidently, external networking activities seem to be more often among the follow-up activities provided by the ‘Yes’ incubators.

Networking and collaborative structures

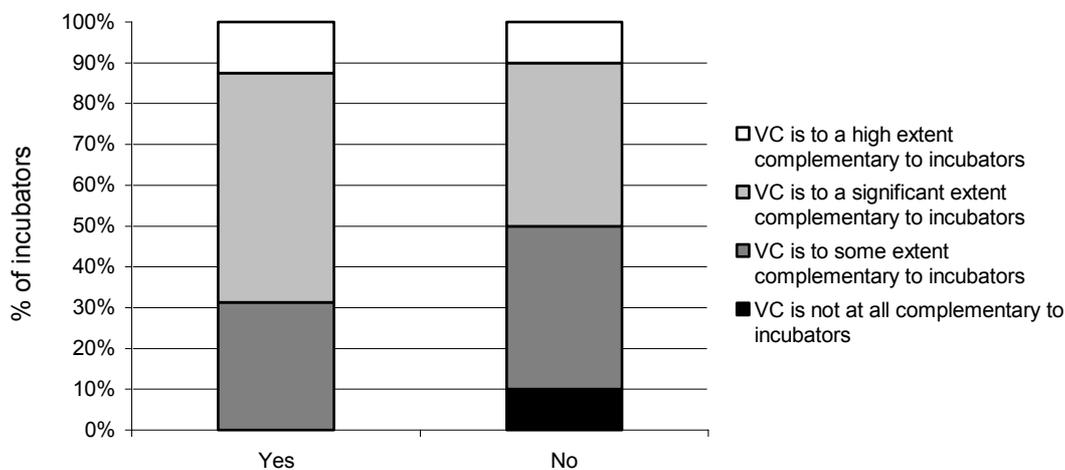
Not surprisingly, the group of “Yes incubators” tends to view venture capital investors and business angels as integrated external structures with which they can collaborate. On the contrary, the “No incubators” tend to view Banks more as a part of their external networks compared to “Yes incubators”.

Figure 22: Collaborating Structures and VC Collaboration



Venture Capital as Complementary Partners

As shown in the survey, the ‘Yes’ incubators are generally more positive towards the value of venture capital, and tend to see venture capital investors more as complementary to incubators compared to the ‘No’ group of incubators.

Figure 23: VC as Complementary to Incubators and VC Collaboration

Source: IPI and IKED

As shown in Figure 23, 10% of the 'No' incubators view venture capital as not relevant for incubators, and whereas all incubators in the 'Yes' group see venture capital as a complementary partner to incubator, 90% of the 'No' incubator answer this. These findings reflect that although, the 'No' incubators have not collaborated with venture capital investors, the majority of the incubators still view incubators as valuable and complementary to their work.

Overall Remarks – Bringing in the Venture Capitalist View

In theory, incubator and venture capital investor are complementary actors playing a crucial role in the innovation system by equally supporting the breeding ground of new firms.

In practice, the situation is somewhat different, however. Whereas incubators have difficulties in accessing venture capital sources either because they are prevented from doing so or simply have no interest in interacting with VC, the VC investors tend to view their role as slightly more later-stage compared to the incubators. In the following the various qualitative inputs collected from both incubators and venture capitalists are discussed.

It seems for those incubators that have collaborated with venture capitalists, that initiating contact with the venture capital investors is not the most challenging part. The main challenges are rather related to follow up activities with investors, which is difficult because investment decisions apparently take long time to realize for investors. Among the incubators that have tried to collaborate with venture capitalist, more frequent contacts and closer dialogues between incubator and VC are brought forward as tools to improve the collaboration.

On the other hand, there is the group of incubators that has never succeeded in cooperating with venture capitalists (referred to as the "No" group). According to this group, the lack of collaboration is explained by the difficulties in locating or contacting VCs or because VCs are not interested in their tenant companies. Other incubators refer to venture capital's risk aversion against young start-up companies or that tenant companies are not interested in venture capital.

According to the interviews carried out with venture capitalists (see Appendix B), the collaboration with incubators can be viewed as an excellent constellation (alias public-private partnership) since venture capitalists contribute with the hands-on, business-oriented experiences and external networking activity that some incubators lack. In fact, the combination of networking and active involvement provided by the investors can be the single leading factor determining whether an investment (in a tenant company) turns out successfully or not. However, regardless of these positive elements, the collaboration is also viewed as somewhat troublesome.

In many cases, venture capital investors point to the lacking ability among incubators to plug into market oriented and relevant activities and research, hence listing this issue as one of the main reasons for not collaborating more with business incubators. Moreover, generally seed investors are limited in numbers and represent a scarce source of capital particularly since the global economic downturn as previously highlighted. Following, the shortage of risk capital makes the competition between incubators harder, and not surprisingly venture capital firms choose to invest their capital in the most promising and secure firms. The increased risk aversion among investors is accumulated the capital around a few

firms, and – if given the possibility – only the most investment-ready firms are invested in. The venture capital funds underline the necessity of increasing the investment readiness among the tenants firms, which likely requires a strengthened dialogue with VC in order to understand what their investment criteria are.

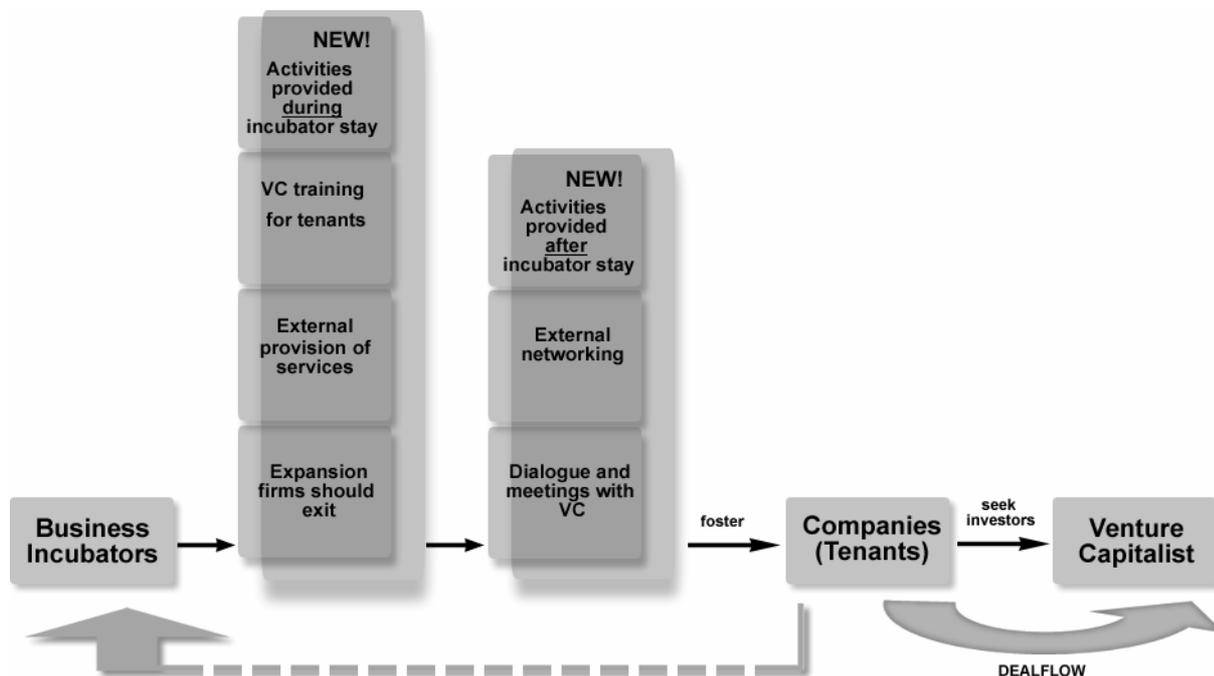
V. RECOMMENDATIONS

Based on the survey and analysis of the incubators from 16 countries, it is found that venture capital availability is a major challenge for business incubators across the world. Generally, risk aversion and lack of interest among VC, poor communication channels and little follow-up activities are listed as the main obstacles in the collaboration between business incubators and venture investors. However, despite the difficulties, some business incubators have been more successful in collaborating with VC than others.

Challenges vary between the two groups of business incubators in the survey. For those incubators that have never been successful in cooperating with VC (the so-called “No incubators”), creating the preliminary contact, developing a sufficient deal flow of tenant companies, widening the geographical focus and strengthening their own financial engagement in the firms are issues that should be addressed in order to improve access to VC. Among this group of incubators, one could foresee to plan and to implement an action directed to raise the awareness of the importance of VC funds for the development of enterprises. This is because several managers from “no” incubators did not seem to give importance to the availability of VC funds for their enterprises. In addition, in many countries, namely the developing ones, a proper VC activity does not exist. Therefore, here incubators activity will always be prevented from seizing the fruitful opportunity of establishing a good relation with VC, and also their role with respect to their community will be negatively influenced by these conditions.

On the other hand, the incubators which already are in some dialogue or collaboration with VC (the “Yes incubators”) face different challenges such as developing sufficient follow-up activities and meeting with venture capital, strengthening their position in the venture capital investment processes and ensuring mutual awareness about VC and companies.

Figure 24: Strengthening the Collaboration between Business Incubators and Venture Capitalists



Source: IPI and IKED

According to the result of the studies certain sectors are more interesting for VC than others (i.e. ICT and high knowledge content ones). Accordingly, those incubators that are focusing on factors that are not considered attractive by VC will have to take into account the fact that their tenant companies will need to make a stronger effort get funded by VC. Positive factors that seem to influence VC’s investment decision are longer incubation retention time of tenants, in line with the fact that companies reaching later stages gradually become more interesting for institutional investors. In

general, seed capital is more appropriate in the early stage and the fact that it is generally connected with high risk is coherent to the often impossibility to be rentable.

Similarly, the provision of services also after leaving the incubators, showing trust between the incubator management and the company, seems to improve the relationship with VC. In addition, this characteristic can potentially improve the performance of enterprises, as the period after leaving incubator units is usually a critical one for their survival. Follow-up activities, if carefully planned, tailored and implemented, can represent a bridge between the incubator-supported stage and the VC-supported stage of a company.

In addition, selectivity (i.e. tight and/or multiple entry criteria) is helping as well to be more interesting to institutional investors. This probably indicates that incubators that tend to have a mission more linked to job creation in an under-development area will have less chance of being interesting for VC, as their mission might not be focused on highly profitable and innovative businesses. Moreover, the fact that enterprises already passed a selection when they leave the incubator helps the further selection activity performed by VC.

Furthermore, among the positive factors that influence the correlation between the existences of relationships with VC is the profit vocation of the incubator as well as the tendency to directly invest capital in the tenants companies.

Also the openness to external sources, both in services or in networking, facilitates the collaboration with VC, indicating that providing services with internal resources may not be the best choice, as this, indeed, could lead to services that are not at market quality level, due to internal limited resources or experiences that can be gained by incubators managers.

These factors can lead us to elaborate some further recommendations, which could be directed to incubator managers, to public authorities, and to other stakeholders involved in the process of setting up and running business incubators (Figure 24).

Incubators should ensure that they are providing sufficient training to the companies preparing them to meet venture capital investors and they should engage in follow-up activities allowing them to join and influence the investment decisions among VC.

Communication and links between VC and business incubators should be improved, both by offering more training to incubators management, providing them with higher visibility of procedures, practises and names of VC as well as by creating more opportunities to foster relationship between them. This would improve mutual awareness and knowledge and, therefore, improve convergence of incubation management strategies to those of VC and vice-versa, thus improving numbers of deals and shorten lead-time

Awareness and training should also be done at enterprise level, in order to facilitate their professionalism when meeting institutional investors, fostering their chances to be attractive. Indeed, lack of "marketing" and capacity of promoting themselves could represent a major source of loss of investment opportunities, both for VC and enterprises. Marketing strategies towards VC should be also carefully and periodically addressed in order to make an incubator, and especially its tenants, more attractive and visible compared to others. Finally, public financing to incubators seems to be needed even more when incubators have non-profit and job development missions, as companies retained might not be fully on the market, thus less interesting for VC, although important for local development.

VI. CONCLUSIONS

Venture capital funds can provide a vital help to enterprise development, which by definition is complementary to that of business incubators. Therefore, a good and fruitful relation between business incubators and venture capital can possibly guarantee a vital and fertile economic environment, in which entrepreneurial ideas can grow easily and with a trouble-free availability of financial, material and immaterial help at each and every development stage, hence ensuring a maximization of job and well being creation.

Nevertheless, in reality, relations between business incubators and venture capitalists are not always as efficient as one could expect. Not surprisingly, this is due to several factors such as the general intrinsic mistrust of stakeholders when it comes to risky investments or the lack of essential reciprocal information between business incubators and venture capital investors.

To conclude, several interesting findings emerged in this survey, whose objective was to improve the understanding of the factors influencing the relation between business incubators and VCs. The multiplicity of elements resulting from this study partly confirms the thesis of the relevance of the chosen subject, and hopefully will start paving the way for a broader and deeper research activity, which could in turn help investigating, developing and strengthening the best instruments to ensure a profitable and successful relation between business incubators and VC, thus improving the efficacy of local economic development strategies worldwide.

A possible field of investigation could be the relation between business incubators and single sources of innovative and traditional finance, such as business angels, traditional banking and public source of capital, seed capital and so on; this could help to better understand the connection between the development stage of enterprises when they leave the incubator, and the availability of finance for them, eventually estimating the optimal critical mass of financing flow requested.

Furthermore, possible future research trends could regard the connection between access criteria of incubators and the performance of VC financing.

Finally, region or country-focused researches could also be carried out, so as to take into account specific country factors affecting the treated variables and analyse the influence of "territorial" factors into venture capital and SMEs growth.

REFERENCES

- AIFI (2001), "Incubatori privati: realtà internazionale e modello italiano", internal publication, Milan.
- AIFI (2001), "Il mercato italiano del Venture Capital e Private Equity", internal publication, Milan.
- AIFI (2002), "L'incubazione non profit in Italia", internal publication, Milan.
- Andersson, T., Napier, G. and Schwaag Serger, S. (2005), "The Venture Capital Market – Trends and Issues in the Nordic Countries", IKED, Malmo. Forthcoming.
- Bearse, P. (1998), "A question of Evaluation: NBIA's Assessment of Business Incubators", *Economic Development Quarterly*, 12(4): 322-333.
- Etzkowitz H., Webster A., Gebhardt C., Cantisano Terra B.R. (2000), "The future of the university of the fu-ture: evolution of ivory tower to entrepreneurial paradigm", *Research Policy*, 29, 313-330.
- EURADA (2004), "All Money is not the same – SME Access to Finance", Brussels.
- European Commission, DG Enterprise (2002), "Benchmarking of Business Incubators", Brussels.
- France Technopoles Entreprises Innovation (2003), "Annuaire 2003", FTEI, Nantes.
- Global Entrepreneurship Monitor (2004), "Global Entrepreneurship Monitor – 2003 Executive Report" Bab-son College.
- Gullander, S. and Napier, G., (2003), "Business Angel Network Handbook". Handbook prepared for the Nordic Innovation Centre, Stockholm School of Entrepreneurship.
- Harrison, R. and Mason, C. (2002) "Barriers to Investment in the Informal Venture Capital Sector", *Entrepreneurship and Regional Development*, pp. 1-17, Routledge, London
- Kjærsgaard, R. and Borup, J. (2004), "The Significance of Venture Capital for Firm Growth", Vækstfonden, Copenhagen.
- Lalkala, R. (2001), "Best Practices in Business Incubation", paper presented at the International Conference on Business Centres: Actors for Economic and Social Development, Brussels, November 2001.
- Mian, S.L. (1996), "Evidence on Corporate Hedging Policy," *Journal of Financial and Quantitative Analysis* (September), 419-439.
- NBIA (2004), website: www.nbia.org
- NVCA (2004), "Venture Impact 2004", Arlington.
- OECD (1995), "Government Venture Capital for Technology Based Firms", Paris.
- OECD (1996), "Venture Capital and Innovation", Paris.
- OECD (1997), "Technology Incubators: nurturing small firms", Paris.
- PriceWaterhouseCoopers (2002), "Global Private Equity 2002".
- Vækstfonden (2002), "Business Angels i Danmark", Copenhagen.

2. GENERAL DATA ON TENANT COMPANIES

<p>2.1 How many businesses has the incubator assisted since it started operating?</p>	<p>2.4 What are the main business activity/ies of tenant companies?</p> <p><input type="checkbox"/> Sales, marketing and distribution</p> <p><input type="checkbox"/> Business and financial services</p> <p><input type="checkbox"/> Advanced/high tech manufacturing</p> <p><input type="checkbox"/> Information and communication technologies</p> <p><input type="checkbox"/> Research and development</p> <p><input type="checkbox"/> Other manufacturing activities</p> <p><input type="checkbox"/> Other service activities– please specify</p> <p><input type="checkbox"/> A combination of some/all these activities</p>
<p>2.2 How many tenant companies are currently located in the incubator?</p>	
<p>2.3 How many people on average work in your tenant companies?</p>	
<p>2.5 How would you best describe tenant companies when they entered the incubator? Please indicate the main category/ies:</p> <p><input type="checkbox"/> New start up</p> <p><input type="checkbox"/> Spin off from university</p> <p><input type="checkbox"/> Spin off from R&D centre</p> <p><input type="checkbox"/> Spin off of existing firm</p> <p><input type="checkbox"/> Other - please specify</p>	<p>2.7 What sort of criteria are used to screen tenants for admission to the incubator?</p> <p><input type="checkbox"/> A business plan must have been prepared</p> <p><input type="checkbox"/> Financing must be in place</p> <p><input type="checkbox"/> Business must have an innovative project</p> <p><input type="checkbox"/> Business must demonstrate high growth potential</p> <p><input type="checkbox"/> Other criteria - please specify:</p> <p><input type="checkbox"/> No criteria</p>
<p>2.6 How do you finance tenant companies?</p> <p><input type="checkbox"/> No financing <input type="checkbox"/> Equity <input type="checkbox"/> Non refundable grants</p>	
<p>2.8 Do you have an esteem of the survival rate of your tenant companies one year after they left the incubator?</p>	<p>2.9 Do you have an esteem of the average number of jobs per year created by tenant companies?</p>

4. Partnership

<p>4.1 Do you operate within a cluster or an industrial district? Which one? What sector of activity?</p>	<p>4.3 What structures are you cooperating with?</p> <p><input type="checkbox"/> Universities</p> <p><input type="checkbox"/> Research centres</p> <p><input type="checkbox"/> S&T Parks</p> <p><input type="checkbox"/> Other incubators</p> <p><input type="checkbox"/> Other Innovation centres</p> <p><input type="checkbox"/> Chambers of commerce</p> <p><input type="checkbox"/> Entrepreneurial Associations</p> <p><input type="checkbox"/> Banks</p> <p><input type="checkbox"/> Business Angels – Venture capitalist</p> <p><input type="checkbox"/> Other:</p>
<p>4.2 Are you a member of international networks? Which one(s)?</p>	

5. Investment and relations with venture capital

<p>5.1 To what extent do you think that venture capital investors are complementary to the incubator activities?</p> <p><input type="checkbox"/> Not at all <input type="checkbox"/> To some extent</p> <p><input type="checkbox"/> To a significant extent <input type="checkbox"/> To a very high extent</p>	<p>5.2 Did you ever collaborate with venture capital? If the answer is “yes”, please fill box n. 6; if the answer is “no”, please fill box n. 7</p> <p><input type="checkbox"/> Yes <input type="checkbox"/> No</p>
--	--

6. YES

6.1 How many of your tenant companies were able to obtain finance through venture capitalists?	6.2 How many of your tenant companies did you present to venture capitalists?
6.3 To what extent do you think that it was easy to make the first contact with venture capital investors region?	
6.4 At what stage did the VC-funded tenant companies meet the venture capitalists for the first time? <input type="checkbox"/> Pre-start <input type="checkbox"/> Start up <input type="checkbox"/> Seed <input type="checkbox"/> Expansion <input type="checkbox"/> Maturity	6.6 Besides investing, what other functions did the venture capitalists carry out within the tenant companies? <input type="checkbox"/> Advice & mentoring <input type="checkbox"/> Monitoring economic development <input type="checkbox"/> Administration <input type="checkbox"/> Networking <input type="checkbox"/> Strategic planning
6.5 To what extent do you think your relation with venture capital could be improved? <input type="checkbox"/> Not at all <input type="checkbox"/> To some extent <input type="checkbox"/> To a significant extent <input type="checkbox"/> To a very high extent	6.7 What do you think could be done to improve your contact with VC?

7. NO

7.1 Please describe the main reason(s) why you have no contact to venture capitalists <input type="checkbox"/> They are not interested in my incubator <input type="checkbox"/> I am not interested in Venture Capital <input type="checkbox"/> Companies are not interested in Venture Capital <input type="checkbox"/> It is impossible for me to contact them <input type="checkbox"/> Other-please specify:
7.2 To what extent do you think your relation with venture capital could be improved? <input type="checkbox"/> Not at all <input type="checkbox"/> To some extent <input type="checkbox"/> To a significant extent <input type="checkbox"/> To a very high extent
7.3 What do you think could be done to improve your contact with VC?

APPENDIX B : LIST OF RESPONDENTS

COUNTRY	INCUBATOR
Cyprus	Athena hi-tech incubator
Denmark	Østjysk Innovation
Germany	BIC (Business and Innovation Centre), Frankfurt an der Oder
India	Technology Business Incubation Unit (TBIU), Indian Institute of Technology, New Delhi
Ireland	Invent-DCU Ireland
Italy	Almacube – Bolgna
Italy	Incubatore Multimediale Lugo
Italy	I3P Torino
Japan	Sunbridge Corporation
Palestine	PICTI Incubator
Romania	BIC Romania
Singapore	National University of Singapore Business Incubator
South Africa	eGoli BIO
South Africa	GODISA TRUST
South Africa	Softstart
South Africa	Chemical Technology Incubator
Sweden	Uminova Innovation AB, Umeå
Sweden	Företagsgeneratorm i Teknikbyn;
Sweden	The Holdingcompany of Göteborg university
Tunisia	Pépinière du Pôle Technologique des Communications El Ghazela
Tunisia	Sfax-innovation
Turkey	Ege University Science and Technology Centre
USA	Connecticut Enterprise Centre
USA	Bessemer Business Incubation System
USA	Arizona Centre for Innovation

USA	San José SBC - California
USA	Delaware Technology Park -
USA/Finland	UCLA GAP virtual incubator
COUNTRY	VENTURE CAPITALISTS
Denmark	Biolink Capital
Europe	European Venture Capital Association
Europe	European Investment Bank
Italy	Pino Venture Partners

