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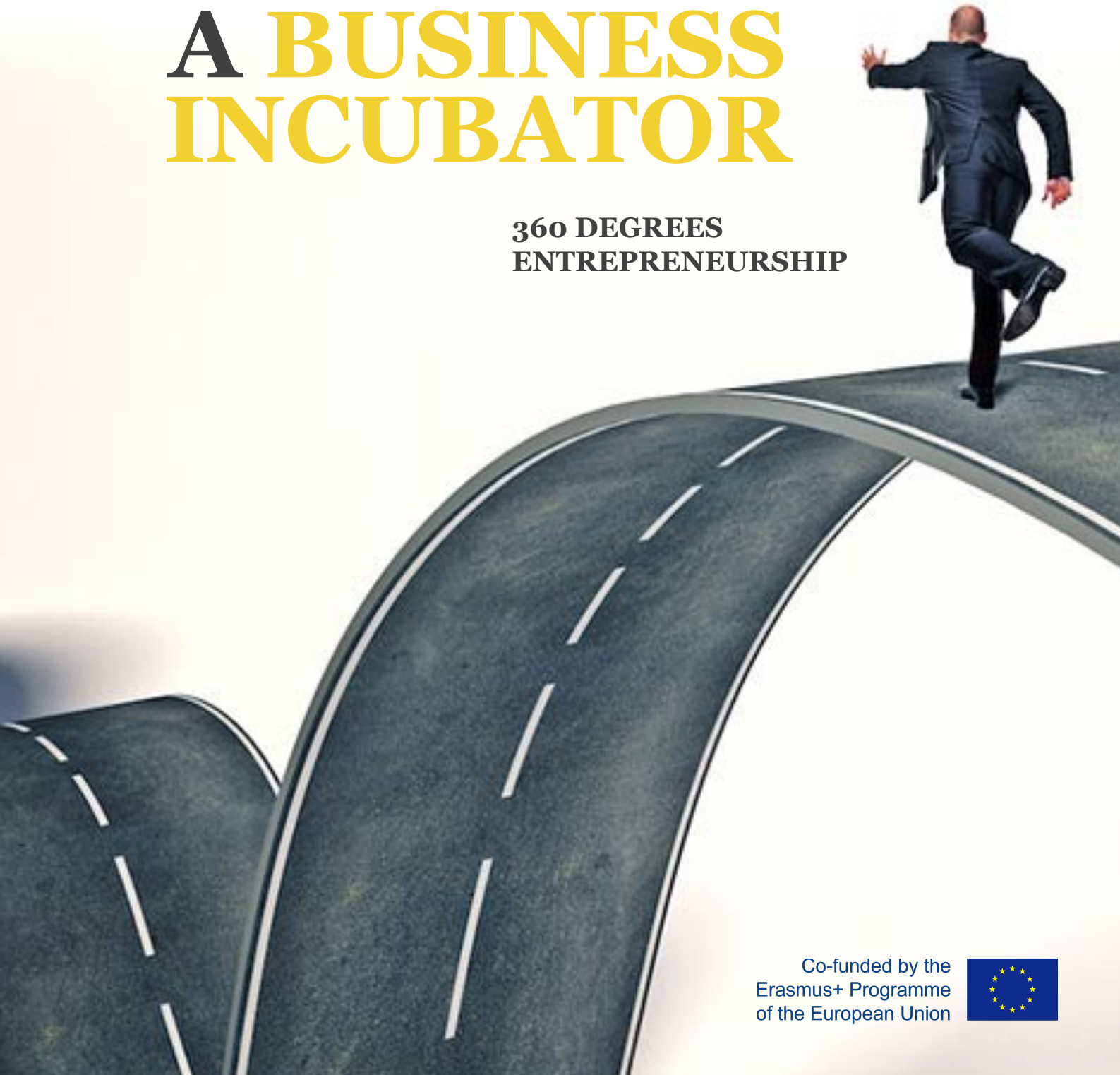
360 DEGREES ENTREPRENEURSHIP

MANUAL ON ESTABLISHING A BUSINESS INCUBATOR

360 DEGREES
ENTREPRENEURSHIP



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A Manual on Establishing a Business Incubator

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Introduction

Business Incubator Manual

The Business Incubator manual was developed as an outcome of 360 Degrees Entrepreneurship in frame of KA2 Strategic partnership of Erasmus+ Programme of European Commission.

This handbook is designed to provide information and examples to help during the process of establishment of an incubator.

In general, an incubator is a physical location that provides a defined set of services to individuals or small companies. This may include specific types of office space,access to technology, financing, and technical assistance (such as marketing, legal, finance, HR, and other business development services). By locating similar or complementary entities in proximity to each other, the incubator may also play a critical role in promoting knowledge transfer, both formally and informally.

Recently in developing countries, incubation has become an interesting approach to accelerate the development of technologies, industries and business skills. However, it should be noted that the needs of these communities can often be radically different to a more mature corporate environment where education, business training, and public institutional support may be a completely different context to Europe.

In this first edition we provide legal steps, examples and some other relevant information of 6 countries which Portugal, Spain, Italy, United Kingdom, Estonia and Turkey.

Last but not least the manual also provides some best practices and interviews with successful managers/directors of different incubators.

This first edition will be revised and expanded over time as we determine the target audience and information required.

360 Degrees Entrepreneurship

Background of Project

360 Degrees Entrepreneurship was a long-term international project. The project is funded by Turkish National Agency under KA2 – Strategic Partnerships for Youth in frame of Erasmus+ Programme of European Commission in 2015. Through "360 Degrees Entrepreneurship" young people will benefit from the combination of the knowledge of universities, the experience of NGOs, and mentors and trainers with experience and knowledge in establishing and sustaining new businesses.

Overall goal and objectives

To develop youth workers skills on entrepreneurship and in particular social entrepreneurship, creativity, financial management, strategic planning, employability and entrepreneurial skills in order to overcome the youth unemployment and to make NGOs sustainable. They will have the opportunity to not only learn these skills, but also to implement them in starting up their business, collaborate with other startups and be mentored through the business incubator model.
The specific objectives are:

- To develop creative thinking, innovation, employability (soft) skills, financial management, strategic planning and entrepreneurial skills of youth workers.
- To create a training module on how to develop, validate and implement social entrepreneurial projects and enterprises.
- To work with and train mentors in how they can support young people in developing entrepreneurial paths.
- To explore practical ways of supporting young people and NGO set up social enterprises, taking into consideration legal, financial, management and social requirements.
- To create new tools and methods designed to develop entrepreneurial skills among young people.
- To provide young people with a platform where they can exchange experience and expertise in the field of social entrepreneurship.
- To develop solidarity, promote tolerance and foster mutual understanding between generations and cultures by creating a common platform for development

Partners of Project

Istanbul Kultur Univesity

Istanbul Kultur University (IKU) is project coordinator of 360 Degrees Entrepreneurship. IKU is a Foundation University with a public entity, which was established on 15 July 1997. IKU was established by a foundation where educators who have successfully been dealing with education since the 1930s. Following inspections and evaluations conducted by the Higher Education Council in Turkey (YÖK), the university became entitled to state support for 14 years. IKU has 7 Faculties (Economics and Administrative Sciences, Law, Engineering, Architecture, Art and Design, Education) and 2 vocational schools (Business Administration and Technical Sciences). Under the roof of the Faculty of Economics and Administrative Sciences there are four departments, namely Business Administration (BA), International Relations, Economics and International Trade.

International Relations Department offers eight undergraduate and four graduate courses on EU related issues. The courses on the undergraduate level are: 1) Introduction to the EU: History, Institutions and Politics, European Security and Defence Issues, European Integration I,European Integration II, European Culture, European Union Law, European Union's Mediterranean Policy, Germany's Foreign and European Policy. The graduate courses offered are: External Relations of the EU, International Politics of the EU, Policy-Making in the EU, The EU-Turkey Relations.
Website: www.iku.edu.tr

Global Ideations

Global Ideations was founded in Michigan, US in February 2013 and in Istanbul, Turkey in September 2014 and in London, United Kingdom in September 2016.
The mission of Global Ideations is to support the development of individuals, organizations, companies and societies in order to solve problems and reach their full potential. This goal is achieved through multiple methods including training, coaching, mentoring, consulting and public speaking. Global offers training, consulting, coaching and long term training academies for individual, companies or societies. Global ideations currently opperates in the UK, Lithuania and Turkey.
Website: www.globalideations.com

International Association of Science Parks and Areas of Innovation (IASP) World Headquarters

Created in 1984, the International Association of Science Parks and Areas of Innovation (IASP) is a knowledge-based network which brings together existing and developing science and technology parks (STPs), areas of innovation (AOIs) and innovation-based business incubators (BICs), as well as R&D institutions, universities, consultants and experts in economic regional development and technology- and knowledge transfer. IASP gathers 381 members in 71 countries, which in turn represent a network of over 142,000 companies, most of them belonging to the innovation and knowledge economy. The mission of the IASP is to be the global network for STPs and AOIs, and to drive worth, internationalization and effectiveness for its members.
Website: www.iasp.ws

Madan Parque

Madan Parque is a science and technology park established in 1995 and active since early 2000, whose mission is to play an interface role between academia and businesses. The core activities consist of the promotion of NTBFs and its acceleration, as well as the development of knowledge intensive projects within the region. Madan Parque runs a technology-based incubator whose role is of a facilitator and accelerator for its tenant companies, namely in what concerns the internationalization of the later. The main goal is thus to stimulate the creation of NTBFs affiliated to various scientific areas, benefiting from the physical proximity to FCT NOVA (Faculty of Sciences and Technology | NOVA University of Lisbon) which is Madan's most important shareholder.
Website: www.madanparque.pt

GEMS, Educacion en Andalucia

GEMS, Educación en Andalucía is a Spanish organization involved in Lifelong Learning programmes that promote the personal and social development of individuals at exclusion risk. The subject areas of our work are children and young people, ethnic minorities, lifelong learning, fundamental human rights, European citizenship and battling discrimination. We implement several projects, on national and international levels, for young people aiming to increase their skills and abilities and make them more competitive, self-confident and brighter.

The overall objectives of the organization are promotion of tolerance and intercultural dialogue among young people; battle against racism, xenophobia and discrimination, promotion of active participation of young people and European citizenship. Fields of Activity: Human rights, International/Cultural relations, youth and education and equal opportunities.
Website: http://geagems.blogspot.lt

Worldview Impact Ltd.

Worldview Impact Ltd. is a global social enterprise that provide bespoke services for cooperatives of small hold organic farmers in developing countries to integrate and expand agroforestry integrated farming systems that bring local products to market and create market linkages with the merging sectors of regenerative supply chains and agro-ecotourism. For our clients we also do project development, feasibility studies, capacity building and training, environmental, social and economical impact assessments, marketing and financing. The vision of Worldview Impact Ltd. is to create a Sustainable Business for a Sustainable Future by attracting impact investment for green growth projects to create green jobs for young people globally. By making your green investments grow, in projects that are mitigating climate change at the grassroots level, we will see sustainable livelihoods created for the poor and poverty reduced. As a global social enterprise it has a three-fold mission: (1) Protecting the environment and biodiversity through the mitigation of climate change. (2) Enabling local economic growth through the creation of sustainable livelihoods for the poor. (3) Supporting social development through poverty reduction initiatives.
Website: www.worldviewimpact.com

Nucleo Educativo per la Formazione Europea al Lavoro Internazionale

Nucleo Educativo per la Formazione Europea al Lavoro Internazionale is a educational organization born with idea to empower civil society to get a better future looking beyond the national borders. Our Trainers and International experts provide a comprehensive service covering all educational needs of our members. Our members get trainings and education thought the high competencies of our internal staff. We combine formal and no formal education using innovative methods and new teaching methodologies. Main aim is to increase the participants' performance in self job coaching and personal skills improvement. We try to help everyone to find its own talent... professional staff follows the educational process of the training's participants since the begining to the end of the training session. We organise meetings for different target groups, with people from different backgrounds. The aim is to enlarge points of view and to share informations, fears and project proposals.
Website: http://www.nefelieducation.eu

Euro Kalliskivid

Euro Kalliskivid is a non-profit organisation established in February 2010 in Tallin which operates in a socially and geographically disadvantaged rural area. Staff and beneficiaries aim to strenght an international and European cooperation in order to share knowledge, ideas and expertises to better develop their activities in the frame of social development with special regards to social inclusion, participative democracy and rural development. It favours educational activities and vocational training involving the local community and the people who come from local rural areas. Euro Kalliskivid is acting to develop European projects in order to involve young adults, adults, students, and socio-disadvantaged people. For this aim it is establishing partnerships with other European countries and promoting life long learning cooperations. Our organization acts to create EU opportunities for our target groups to better improve their awareness of the European dimension and European citizenship.
Website: www.eurokalliskivid.weebly.com

Turkish Informatics Foundation

Turkish Informatics Foundation established in April 1995. The main purpose of the Foundation is to contribute build of infrastructure for Turkey's transformation into an information society, and to conduct economic and social studies by carrying out scientific researches and development activities, to generate project and make effort to have these projects implemented. The Foundation, while carries out services set forth in line with its purposes, aims to perform its works and studies publicly and in a level to affect to lighten public service load of the state. The Foundation is an independent legal entity under the direction of nothing but its Board of Directors. The Foundation is subject to the inspection and audit of the General Directorate of Foundations, and is available for any kind of legal inspection. The Foundation does not engage in political activities and may not be benefited for political aims.
Website: www.tbv.org.tr

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Laura Monasterio – Projects & Services Officer of IASP

Laura Monasterio, Projects & Services Officer at IASP, has a degree in Political Science and Sociology from the University of Granada (Spain). Previous roles have included social and market research projects; analyzing and detecting training needs of employees in SMEs; and handling projects relating to SME cooperation and internationalization.

At IASP, Laura works on the formulation and implementation of a wide variety of projects such as feasibility studies for the creation of new science and technology parks; analysis of the strategic models of science parks; network analysis; international benchmarking; and surveys about the state and evolution of the science and technology park and area of innovation industry.

Catarina Casadinho – Project Manager of Madan Parque

Catarina holds a MSc degree in Energy and Bioenergy, whose topic for dissertation is "Database of Portuguese mainland windfarms" (issued by FCT NOVA) and a degree in Biology (issued by FCUL-UL). Catarina has previous experience as a junior researcher at DGEG (Directorate General for Energy and Geology) and ISEGI (UNL), dealing with wind energy and GIS (geographic information system). Current position as project manager at Madan Parque heading responsibilities also for: innovation ecosystems, social entrepreneurship, and others, working in partnership with a large array of institutions heading from various countries. The former include NGOs, Associations and national/ European networks affiliated to Entrepreneurship, Envirnoment, Technology and others. Since a very young age Catarina has collaborated with various volunteer actions, and is still participating as a volunteer in NGOs linked mainly to the preservation of the oceans.

Huriye Yildiz - Project Assistant of Global Ideations

She has a degree in International Relations at Yalova University in 2016. She also studied for one year at the Marmara University with the Farabi Exchange Program and one year at the University of Lodz in Poland with the Erasmus Exchange Program.She started to work as a volunteer in Dynamic Development Association in 2014, which leads her to become vice president of the association. She took different training for trainers courses on social entrepreneurship in different countries and train more than 30 young people at the local level. Also, she worked on the development of social entrepreneurship education program in Dynamic Development Association. She completed her internship in the Italian company. She is also working as a project assistant at Global Ideations. In addition to it, she is currently involved in the programme of European Commission which is called Erasmus+ for Young Entrepreneurs to understand the conditions of her enterprise. Thanks to the different roles which she has handled, she is capable of training, writing, implementation, reporting of national and international projects especially in the area of entrepreneurship.

List of abbreviations

- ANCES: Asociación Nacional de Centros Europeos de Empresas e Innovación (National Association of European Business and Innovation)
- BASTIC: Baltic Association of Science, Technology Parks and Innovation Centers
- BICS: Association of Portuguese Business and Innovation Centers
- BICs: Business and Innovation Centres
- CAPEX: Capital Expenditure
- CDTI: Centre for the Development of Industrial Technology
- CEEI: Centro Europeo de Empresas e Innovación

- CGM: CustoMem Granular Media
- EBITDA: Earnings Before Interest, Taxes, Depreciation and Amortization
- EBN: European Business Innovation Network
- EC: European Commission
- Enisa: Empresa Nacional de Innovacion
- ERDF: European Regional Development Fund
- ESIF: European Structural and Investment Funds
- EU: European Union
- HEI: Higher Education Institution
- IASP: International Association of Science Parks and Areas of Innovation
- IBI: Innovation Based Incubator
- ICT: Information and communication technology
- InBia: International Business Innovation Association
- IoT: Internet of Things
- IPA: Instrument for Pre-accession Assistance
- IPC: Polytechnic Institute of Coimbra
- IPN: Pedro Nunes Institute
- ITU: Istanbul Technical University
- KPI: Key Performance Indicators
- KOSGEB: Small and Medium Enterprises Development Organization of Turkey
- METU: Middle East Technical University
- MIT: Massachusetts Institute of Technology
- PhD: Doctor of Philosophy
- Q&A: Questions and Answers
- R&D: Research and Development
- RTD: Research and Technical Development
- SMEs: Small and medium-sized enterprises
- TUT: Tallinn University of Technology
- TBI:Technology Business Incubator
- TUBITAK: The Scientific and Technological Research Council of Turkey
- UCL: University College London
- UKSPA: United Kingdom association of Science Parks
- VC: Venture Capital
- XPCAT: Catalan Network of Science and Technology Parks

Acknowledgements

We very gratefully acknowledge the support of the university incubator managers that have participated in the manual providing the data from their organisations and sharing their knowledge and experience about incubation management:
Martin Goroško, Incubator Manager (Tehnopol – Startup Incubator – Estonia), Fabrizio Bugamelli, CEO and Nicolas Sassoli, Business Developer (Almacube S.r.l – Italy), Paulo Santos, Director of IPN Incubadora (Instituto Pedro Nunes – Portugal), Josep M. Piqué, Executive President (La Salle Technova Barcelona – Spain), Tufan Aygüneş Expert in the Incubation Center Operation and Process Management (İTÜ Cekirdek - Turkey), Graham Hewson Graham, Incubator Manager (Imperial College London White City Incubator – UK).

Chapter 1
General Aspects

1. Concepts

1.1. Incubator of technology-based companies

What it is: Business incubators are organizations geared toward speeding up the growth and success of startup and early stage companies. They're often a good path to capital from angel investors, state governments, economic-development coalitions and other investors. Technology incubators, a variant of more traditional business incubation schemes, assist technology-oriented entrepreneurs in the start-up and early development stage of their firms by providing workspace (on preferential and flexible terms), shared facilities and a range of business support services.

How it works: Incubators vary in their strategies. Some are located in an actual physical space meant to foster networking among entrepreneurs and their coaches. Others operate on a virtual basis.

Incubators sometimes call themselves accelerators instead, often when they're geared toward jumpstarting businesses that are more developed. Many have potential capital to invest, or links to potential funding sources. There's access to services such as accountants and lawyers -- not to mention invaluable coaching and networking connections through the staff and other entrepreneurs at the incubator.

Technology incubators represent today an increasing share of existing business incubation programmes. The specific target of technology incubators varies, depending on the single programmes. So, university incubators can either specifically target their own faculty and students or also reach out to people out of the university system who are nevertheless interested in the commercialisation of university research. Similarly, incubation programmes can have a narrow industry focus or can welcome firms from different industries, as long as they are technology-driven or exploit certain technologies.

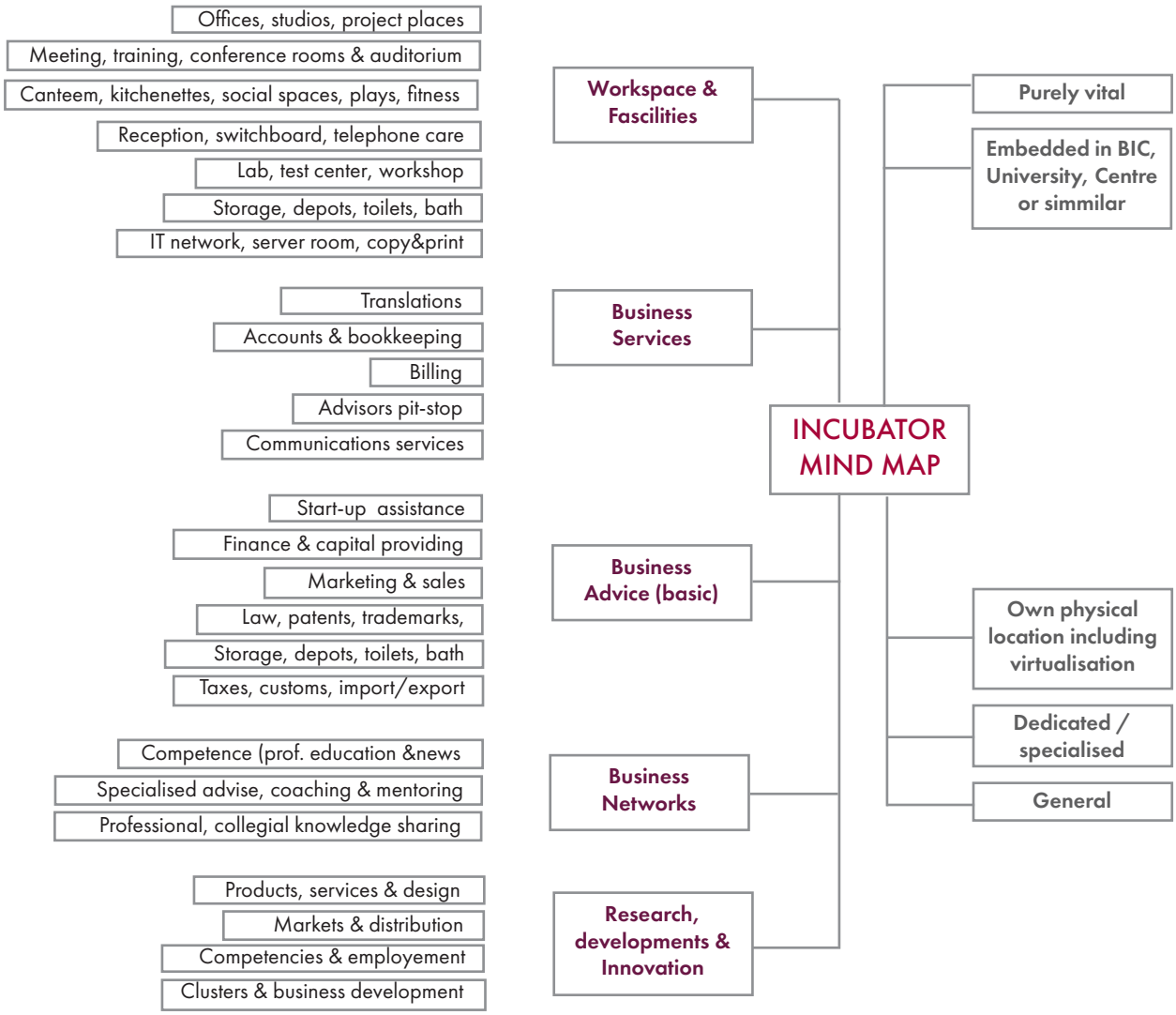
Generally speaking, though, three are the features that enterprises addressed by a technology incubation programme should have:
i) they should be technology-oriented;
ii) they should have the potential to grow in a relatively short period of time and employ skilled workers;
iii) they should closely involve graduates, often in applied sciences, in their management.

The purpose of traditional business incubation schemes has been in the past as different as increasing firm survival rates; combating unemployment; contributing to the regeneration of distressed areas; encouraging ethnic-minority entrepreneurship, etc.

Technology incubators share some of these objectives – e.g. improving the survival rate of new firms – but also have more specific goals such as:

- Strengthening the knowledge component of the local economy, also by engaging more closely the university system with the world of production.
- Creating an environment conducive to technology entrepreneurship; this in turn contributes to local economic competitiveness.

- Providing a nursery for the commercialisation of university research, especially when higher education institutions are directly involved in the promotion and management of the incubator.
- Fostering the development of cross-fertilising technologies such as biotechnologies, nanotechnologies, or material sciences that have several possible industrial applications and have therefore a strong impact on productivity and growth.
- Support the emergence of high potential start-ups that can achieve significant progress in employment, sales and exports within a defined period of time (e.g. 3-5 years).
- Create entrepreneurship ecosystems on a national scale
- Attract national and foreign investors for startups
- Trust in startups, mainly in the creative/idea part
- Promote and accelerate the growth of startups in outside markets
- Implement the Government measures that support entrepreneurship.



Practice. The public and not-for-profit sectors predominate in the establishment and management of incubator schemes, with the private sector generally contributing through time and participation in specific activities at its own costs. The economic characteristics of the location in which an incubator is established affect its operations and usefulness.

Ideally, the area chosen should provide access for tenant firms to markets for goods and services, a degree of business expertise in the surrounding community, and financial resources of both debt and equity nature. These ideal conditions point to the importance for an incubator to develop strong linkages with the local business environment. Indeed, incubators are not required to develop and offer internally all services that new firms need in the start-up and early development phases. Drawing on the external network of existing business development service (BDS) organisations has at least 3 positive effects: i) it reduces overhead costs for the public sector; ii) it prevents the potential displacement of existing private BDS providers; iii) it fosters the development of a private market for BDS organisations.

Key operational issues to consider in the management of a technology incubator include, but are not limited to:

- **Incubator management and staff:** The expertise and commitment of incubator managers is critical to success. Good managers are essential in selecting suitable tenant firms, in providing business and managerial advice to these firms, and in creating links to investors and the wider business community. When incubators make a direct investment in the hosted firm, financially skilled managers are also important. The effectiveness of management can be strengthened through networks of business incubators in which industry best-practices are disseminated.

- **Progression of tenant firms:** As a rule, incubated firms should not be allowed to overstay the agreed period of incubation so as to enable other firms to benefit from the same support. In practice, many technology and non-technology incubators find it difficult to implement a stringent exit policy because young enterprises, after the typical one or two years of the programme, are hardly ready to be fully exposed to open market conditions. In this case, an option can be to require tenant firms to leave the premises of the incubator after the agreed deadline, but still let them benefit for a longer timeframe from the subsidised services of the incubator. Another option is to use increasing rental fees over time to promote the graduation of the incubated firms.

- **Rental and other sources of income:** The previous point suggests that incubators can partly raise their own sources of income by renting out space and facilities or by selling at market prices their support services to external firms. However, this raises a tension between the role of an incubator as a financially self-sustaining venture and as a pure public policy tool.

- **Linkages with higher education institutions (HEI):** In the case of technology incubators, links with universities and research organisations are obviously of key importance. Incubator management will have to get over existing institutional constraints to the involvement of academic staff in enterprise support programmes and to tackle through the right set of incentives the classic dilemma opposing basic to applied research and academic career to industry engagement.

- **Range of support services:** As mentioned, incubators do not need to provide all support services internally; this should rather depend on the availability of equivalent services elsewhere in the proximity of the incubator. Some of the most typical services that can be offered in a technology incubator are listed below:

  Training workshops aimed at specific business skills such as strategy planning, finance, intellectual property, marketing, raising debt and equity finance, etc.

  Individual mentoring sessions with experienced businessmen

  Finance clinics aimed at raising investment finance

  Market research clinics and marketing advice

Technical consultancy on issues related to intellectual property, patenting, and licensing
Business plan evaluation done at different stages of the incubation programme
Scientific support through direct linkages with academic departments and faculty who do work relevant to the business
Provision of loans, grants or, in some instances, participation in the equity of tenant firms
Provision of a small salary, which can be offered to promising participants to sooth the uncertainty related to the move from wage employment to self-employment.

Conclusion

Physical proximity between incubatees and mature firms, by itself, represents an important advantage to both groups of firms, for the advantages it brings in terms of spontaneous networking. Nonetheless, the incubator should have a proactive role in increasing the chances that these firms actually come into contact. Having in mind that not all the variables are manageable by the incubator, some issues have been identified as possible determinants of the success of networking between firms of the same building. The attribution of offices to incubated firms in the park seems to be solely based on a criterion of space needed/ space available. However, in order to increase the probability of firms that share buildings to become partners, some logical criteria should be used.

Among these criteria could be the industry in which the firms operate, the technology used or the horizontal or vertical complementarity of its businesses, skills and competencies. This requires that the incubator knows very well the firms that are in the incubation programs and in the park as a whole. Besides, the incubator should use this knowledge to identify possible opportunities for synergies, and put the firms in contact – entrepreneurs are too busy with their day-to-day activity to take a look around and do this work themselves. A solution-driven spontaneous interaction requires the existence of social links and trust between entrepreneurs.

The creation of common spaces in all buildings would be one of the ways to improve the conditions for entrepreneurs to create this type of networks. Such common areas would allow people from the whole building to meet over coffee or a meal, creating an environment of actual closeness, where people know the faces behind the firms established in the building. Additionally, mechanisms of organized networking need be implemented in order to foster the interaction betwen firms. As discussed by Hansen et al. (2000), and confirmed by Bollingtoft and Ulhoi (2005) and Mcadam (2006), the implementation of mechanisms of organized networking is crucial for the success of networking in an incubator.

Concerning the resources offered by the incubator, a few remarks should be made. It is important that the incubator works on eliminating the gap that was identified between the actual support offered by the incubator and the way firms experience the value of that support. If the different programs and the resources provided to each firm aren't clearly communicated, entrepreneurs will undervalue these resources and feel like the incubator is not putting much effort on supporting them. Still on the resources and services offered, the incubator should use its experience in incubating firms to anticipate the challenges faced by the firms, and offer its help actively rather than waiting for the firms to come ask for it. In futures studies, other dimensions of networking should be explored, namely the relationship between firms and the universities installed in the park. Some authors have stated that this relationship hasn't had the expected effects in terms of synergies. Studies should be undertaken on this subject in order to understand the factors that facilitate and hinder this relationship and in what ways could it be enhanced.

Another important dimension that should also be given attention is the external networking. It was found that the park, through its "competence centre", maintains a network of contacts which is composed of research institutes, universities, business incubation associations, companies, among others. In order to establish the connection between the firms of the park and this network, the competence centre disseminates the information received from this network, which is considered interesting for the firms in the park. Apart from this mechanism, it seems like little more is done concerning external networking, which has been considered by several authors to be as important as the internal networking explored in this paper. Still concerning external networks, this paper raised a discussion about the role of cohabitation with mature firms in giving incubatees privileged access to external networks. We suggest that this topic should be explored in future studies. Furthermore, comparative studies between incubators should be carried out, in order to understand how networking takes place in different Portuguese business incubators.

1.2 Business Incubation Key Terms

As with all professional communities, the business incubation community has a set of terms that are common and must be understood in order to be a successful incubator manager. It is also necessary to have a firm understanding of the most common terms in order to continue with the remaining training modules of this training program. This section will examine the core terminology of business incubation, providing definitions for each term and different aspect.

Anchor Tenant - An incubator tenant that is not an incubatee. It is normally an established company that adds credibility to the incubator through its association with it, collaborating with incubatees and providing regular rental income.

Angel Investor - Typically a high net worth successful individual34 who generally makes private equity investments in early stage companies. These investors operate either alone or in informal or formal groups/ networks. They typically provide lower and more flexible investments than venture capitalists and may open their networks, mentoring and coaching opportunities to companies they invest in.

Business Incubation - A public and/or private, entrepreneurial, economic and social development process designed to nurture entrepreneurs with business ideas and start-up companies and, through a comprehensive business support program, help them establish and accelerate their growth and success. (Source: SPICA Directory Online - http://www.spica-directory.net/definitions/ (Global Summit of the Global Network on Business Incubation - New Delhi, India, October 20, 2004 | 'Global' definitions of business incubation).

Business Incubator - A physical space or facility that accommodates a business incubation process. (Source: infoDev, Business Incubation, Definitions and commonly used terms - https://www.infodev.org/infodev-files/m1_traineemanual_20101029.pdf).

There is no standard or common definition of business incubators. According to Hamdani, Nearly three dozen definitions are available in the academic literature and just as many have been adopted by industry associations and policymakers in different countries, reflecting local cultures and national policies. The recent literature further conceptualizes business incubators as intermediaries that stand in between entrepreneurial ventures and their business environments , and that creates a context richer in resources through sponsorship aimed to support the new ventures.

Another definition is Incubation is a process which tends to be activated whenever there is a need to support entrepreneurs in developing their own business.Other definition from the literature, business incubators constitute an environment, specially designed to hatch enterprises. They provide their tenant companies with several facilities, from office space and capital to management support and knowledge. This allows the start-up to concentrate on its business plan and raises the success rate.

Hackett & Dilts asserted the broadness of business incubation: "When discussing the incubator, it is important to keep in mind the totality of the incubator. Specifically, much as a firm is not just an office building, infrastructure and articles of incorporation, the incubator is not simply a shared-space office facility, infrastructure, and mission statement. Rather, the incubator is also a network of individuals and organizations including the incubator manager and staff, incubator advisory board, incubated companies and employees, local universities and university community members, industry contacts, and professional services providers such as lawyers, accountants, consultants, marketing specialists, venture capitalists, angel investors, and volunteers". Definition of them is that a business incubator is a shared office- space facility that seeks to provide its incubatees with a strategic, value-adding intervention system of monitoring and business assistance. According to NBIA, business incubation as a business support process that accelerates the successful development of start-up and fledgling companies by providing entrepreneurs with an array of targeted resources and services.

There is currently no standard or universal definition in the literature. However, some common themes emerge from these reported definitions that can be proposed as a set of common or key characteristics of a 'generic' incubator scheme. They are:

- A local property-based facility, multi-tenanted and managed
- Shared space and back-office services, reducing tenant administration costs
- On-site,in-house business development services and indirect access to management, resources
- Networks and transfer of knowledge/skills building tenant expertise and credibility
- A strong selection policy
- Young, small firms as tenants
- The reduction of initializing costs - reducing financial risk for start-up firms a supportive environment
- The aim of improving tenant survival and growth in formative years

Business Model - The mechanism by which a business intends to generate revenue and profits (also called a business design). (Source: infoDev, Business Incubation Definitions and Principles - https://www.infodev.org/infodev-files/m1_traineemanual_20101029.pdf).

Enabled Environment - The positive "space" an incubator creates for its clients by lowering costs, increasing opportunities, providing access to partners and offering services. This allows firms to focus on establishing and growing their businesses and reaching their full potential.

Entry/ Selection - The process of joining an incubator. Good practice suggests that selection criteria should be applied to start-ups interested in joining an incubator. The selection criteria must take into account the objectives of the incubator, and the outputs against which it will be measured.

Exit - The process by which a client leaves the incubator without graduating. (Source: infoDev, Business Incubation Definitionsand Principles - https://www.infodev.org/infodev-files/m1_traineemanual_20101029.pdf).

Exit (investment industry) - The event at which an investor cashes in an investment and realizes his/her return. This usually takes place during an Initial Public Offering (IPO) or a Trade Sale. It refers to the investor selling their investment in a company through one or several means such as an IPO, Shareholders' buyback, or trade sale of the company.

Graduate - A client who has successfully completed the business incubation program and has reached financial sustainability.

Growth Space for Post Incubation - Accommodation made available for graduates whose businesses successfully grow beyond the start-up stage.

Hot-Desking - Rental of desk and sometimes including on-line PC, on a flexible, short-term or even hourly basis. It is the provision of desk space, incorporating telephone and Internet access, in an open-plan environment sometimes including meeting spaces and reception services.

Incubatee - The client part of the incubation process (resident or non-resident) and may participate in the process on or off site.

Mixed-Use Incubator - Accommodates incubatees in a variety of fields, often linked with the overall regional or national competitiveness strategy of the country or region in which it is based.

Non-resident Client - A client not located in the incubator building, sometimes called an "affiliate client", or an "off-site client" or commonly a virtual client. The client is still able to access many of the support features provided by the incubator

Outreach Business Incubation - Business incubation with clients not located in the incubator. This implies that incubation services are delivered to non-resident clients or 'out-of-wall' clients. It combines traditional incubation space and services with virtual services offered to both on-site tenants and offsite clients.

With outreach incubation, there is a very strong physical element to the virtual incubation service. The business incubator manager meets with the client face-to-face and the business incubation process is facilitated using virtual incubation tools.

Physical Business Incubation - Business incubation with clients accommodated in the business incubation environment's building. These services can include tailored facilities with Internet connection, video conferencing and laboratories, as well as business support services including mentoring, networking, peer-to-peer learning and training.

Resident Client - A client who is part of the incubation process and is renting accommodation in the incubator, sometimes called a "tenant" or an "on-site client".

Tele Center - A community facility where people learn how to use technologies such as computers and the Internet.

Trade Sale - The sale of a company's shares to another company, often one in the same industry sector.

Virtual Business Incubation - On-line business incubation. Sometimes, the term is used to refer to what is called "outreach business incubation".

This component provides the foundation to understanding incubation. It explains how incubation has grown over the years, what services incubators offer their incubatees and when those services are most appropriate. This component also provides an overview of the terms and definitions that are a part of incubation jargon and illustrates how incubators can provide added value to their incubatees and their communities. This is an overview of the incubation process that aims to familiarize trainees with incubation based upon internationally accepted standards and definitions. Completing this component provides the trainee with the knowledge and competencies required to proceed with Component 2 and the other training modules of the training program in order to gain a more in-depth understanding of incubator management.

1.3 Mixed business incubator (different sectors of activity)

Research on business incubation has evolved in the last three decades from a concept of incubator that focuses on providing for the technical aspects of business, such as work space or funding, into the called networked incubator. This last type of incubator focuses on including tenant firms in a wide network that will give them privileged access to resources beyond those the incubator itself can provide, while fostering their entrepreneurial drive and offering economies of scale and scope. Presently, researchers recognize that these are the main advantages that an incubator can offer to its tenant firms, allowing them to establish themselves in the market place ahead of competitors, increasing their chances of long-term survival. In the context of networked incubators, several authors have discussed the importance of the interaction between entrepreneurs of incubated firms; however the possible networking advantages in an incubator model that promotes the cohabitation between incubated and established firms seems to be insufficiently considered so far.

Business incubators (BIs) have emerged in the last few decades as a response to the difficulty of young firms to successfully thrive during their first years of existence. Recognized as the hardest period of the life of a firm, this period poses a series of obstacles to entrepreneurs, often suffocating the new born firm. BIs are organizations that offer a protected environment to these firms, providing a wide range of resources, in an attempt to address market failures, having proved to be efficient in accelerating start-ups growth and development. According to Cutbill (2000), firms that started their activity in a supported environment such as a BI had an 87% chance of succeeding, contrasting with an 80% failure rate among start-ups outside an incubator in their first 5 years of operation. BIs vary in objectives, services and resources offered, organizational models, sponsors and type of clients served, among others, ranging from public funded organizations focused on the creation of jobs in less developed regions, to privately funded corporate incubators that focus on creating synergies between experienced companies and the fresh entrepreneurial drive of new ones, leveraging both towards innovation, although the involvement of the public and non-profit sectors predominates over the private sector.

1.4 Characteristics of Science & Technology Parks (S&T)

Characteristic of S&T parks is that often firms are put in close proximity with universities and research centres. The linkages with universities in S&T parks has been considered very important by some authors, although it has been argued that its role in the success of the business incubation process is less direct than generally assumed and that this physical proximity, alone, accounts little for fostering the technology transfer that's expected from this relationship.

During BIs' first years of existence as a tool for business development, two types of BIs were identified: on one hand there were those focused on providing a physical space, like multi-tenant commercial buildings, and on the other hand, those focused on business development. The latter would often take the form of shared-services office networks, focused on the technical aspects of business, offering not only workspace, but also other shared services that usually included secretarial support, telephone answering services, office equipment, such as photocopiers or information systems. In some cases, incubators helped new ventures with financing, whether through direct investment in the ventures or by arranging contact with investors. The provision of these important, time and resources consuming services, would allow entrepreneurs to concentrate efforts on their core businesses, increasing their chances of survival by allowing a reduction of labour and operational costs.

Nevertheless, it has been argued that one of the main reasons why firms fail in their early years are the lack of managerial skills of the entrepreneurs. Entrepreneurs often have the technical skills, acquired through formal education or from previous professional experience, but few have the necessary knowledge on how to manage the firm effectively. Thus, it became crucial that incubators offered not only the technical services and resources to get the business started, but also on-site provision of business consulting assistance. These services and resources represented an advantage for incubated firms once it often represented a luxury that newly formed firms didn't have access to or couldn't afford at that initial phase. In this way, incubators would not only help entrepreneurs by providing basic services and facilities that allowed cost reductions during the venture's early years, but by providing support services that complemented their existing talents and resources, incubators would allow the maximization of their entrepreneurial talent and potential, augmenting their chances of success.

In addition to the provision of business support services, such as counselling and consulting, another factor that has been considered increasingly important for an effective incubation process was the networking advantage that these firms could get from being integrated in the incubator. Social Capital theory argues that, in addition to purely economics-driven contractual relationships, important socially driven dimensions also need to be taken into account when explaining entrepreneurship. As Aldrich and Zimmer (1986) put it, entrepreneurship is "embedded in a social context, channel led and facilitated or constrained and inhibited by people's position in social networks". These social networks have three important functions for entrepreneurs:1) to provide access to new ideas and resources that support the entrepreneurial process; 2) as a means of gaining credibility and reputability through the formation of alliances with reputable partners; 3) to exchange knowledge and to facilitate the generation of collective learning. In the early years of a business venture, these networks are particularly important to test ideas, gain feedback and gather relevant information. This approach to entrepreneurship lead to the emergence of a new type of business incubator: the networked incubator.

1.5 Networked Incubators

Networked incubators acknowledge the importance of networks in the process of firm creation and development and take as their central role to help entrepreneurs form appropriate social and business networks, knowing that this is a crucial factor to leverage firms' survival and growth. In addressing the role of incubators in the formation of networks, two types of networks must be taken into account: internal and external networks, considered a sequally important in the whole process of entrepreneurship.

The internal network refers to the relationships between start-ups inside of the incubator, enabling entrepreneurs within the incubator to share resources, ideas, experience and expertise, while enhancing entrepreneurial spirit. The external network refers to the relationship between incubated firms and other entities outside of the incubator, such as established firms or universities. Such networks allow the access to resources beyond the incubator itself, from potential partners to customers, business experts or local businesses. According to Hansen et al. (2000), the characteristic that differentiates networked incubators from the commonly called BIs is the existence of mechanisms put in place to foster the creation of partnerships, not only between firms within the incubator, but also with external partners. According to the same authors, the institutionalization of networking allows benefits for the individual firms that surpass their individual ability to network, once there are different mechanisms and people building a network on behalf of numerous firms.

Besides, when the networking activity by an incubator is institutionalized through formal processes and mechanisms, it no longer depends on the connections of a few people, guaranteeing equal access to the network for all firms in the incubator. The privileged access to the referred networks, and the benefits that result from it, help firms establishing themselves in the marketplace ahead of competitors, enabling them to stand on their feet after they leave the protected environment of the incubator, which can be defined as the ultimate indicator of success of an incubator.

1.5.1 Park-level internal networking

This dimension of internal networking represents the linkages between all the entities within the park, regardless of the building they're settled in. These include the linkages between incubatees that were once under the same roof and are now in separate buildings and other linkages involving incubatees, mature firms, universities and R&D institutions installed in the park.

1.5.2 Building-level internal networking

Considered the most relevant in terms of its potential impacts on the networking advantages to incubatees, this dimension has been given the central position in this paper. Unlike the traditional concept of internal networking in an incubator, here a given incubatee is not only surrounded by other incubatees, but also by established firms, usually bigger and more experienced. According to social capital theory, applied to the entrepreneuring process, entrepreneurs need to get in contact with other people who can provide complementary knowledge and resources. Moreover, this theory states that such activities as the exchange of advice and information and access to resources are influenced by the relative position of these actors within social networks. Having more experienced firms within the same building, increases the potential benefits incubatees can draw from this network. In this situation, not only incubatees are placed in the center of a network (a group of firms under the same roof), but also this network is enriched by the presence of mature firms. The resources that these mature firms have to offer incubatees are potentially greater than those offered by another incubatee, who struggles with similar obstacles.

1.6 Cooperation between Start-Ups and Mature Firms

As it has been discussed by Hansen et al. (2000), the cooperation between start-ups and mature firms is very likely to bring mutual advantages. On one hand, start-ups benefit from mature firms' experience and knowledge of a certain market, business or technology, while the latter benefit from the fresh entrepreneurial drive of the first.

It represents a win-win situation, where both mature and young firms benefit from this environment of close proximity, which reveals that some of the established firms do experience these synergies. The potential for deriving advantages from this cohabitation between young and mature firms has been recognized by many groups of firms. Nevertheless, the dissonant findings regarding these benefits reveal that there may be some ingredients missing, which prevent this potential to be fully explored.

In the case study of TagusPark, on the one hand, young firms that had spent their first few months of existence in close proximity with other incubatees in the incubator of ideas are then scattered throughout the park, weakening their links of communication and cooperation, and even causing them to lose contact with each other. On the other hand, incubatees are given the opportunity to create new links with more experienced firms. The way individuals value these two types of linkages and the benefits that they actually draw from each one cause individuals to perceive the advantages of this new environment differently. Furthermore, social capital theory gives a valuable contribution in explaining why are some entrepreneurs benefiting from this cohabitation, and others are not. Using the framework created by Bollingtoft and Ulhoi, (2005), the factors that facilitate or hinder networking between incubatees and mature firms can be divided into 2 types:
1) factors related to the construction of the incubator and
2) factors connected to the individuals.

The first group of factors is concern the way the incubator is organized. Among these is the number of firms in a given building. On the one hand, it seems to be more difficult to establish social relationships with 60 individuals than with 15. On the other hand, as the number of firms increase, individuals tend to undervalue their role in this whole process, reducing their efforts towards networking.

Another factor that may explain the success of networking at a building-level is the criteria used to place firms in the buildings. Bollingtoft and Ulhoi (2005) state that, in general, potential synergies come from complementarity of skills and competencies. Thus, the higher is the complementarity of skills and competencies between firms in a given building, the greater will be the potential for drawing benefits from cohabitation. The existence of common areas within each building where entrepreneurs can meet spontaneously and the implementation of initiatives that foster the encounter of people of the same building are examples of ways of fostering the creation of social relationships that overtime may turn into business relationships. While these factors can explain, to some extent, why is or isn't networking taking place, they do not explain why, in the same conditions, some people do benefit from this networks and some not, once these factors are imposed equally to all firms. Thus we must take a look at the factors that are related to the individuals. One important characteristic of networks that stands out is that they are not given, but created by individuals. Moreover, individuals understand and value networks differently.

As a consequence, given the same set of conditions, it is possible that one entrepreneur builds a solid and useful network, while other just sits in his office thinking it's not worth spending time and energies on networking activities. Consequently, the success of networking between mature and incubated firms within the same building depends much on how individuals are motivated to establish linkages with each other. Furthermore, a solution-driven kind of interaction cannot be established by imposition, but rather by the initiative of entrepreneurs. According to social capital theory, the actual forces behind this interaction are not the economics-driven or contractual relationships, but rather the social relationships and trust between people, which will lead an entrepreneur to walk across the corridor and ask for advice and cooperation from another one when a problem arises.

2. Innovation & Creativity

The establishment of a startup company usually begins as an individual task. It will also usually be accompanied by challenges and a lack of a clear definition of the short-term steps needed to be taken to ensure the success of the startup. This is due to the absence of the financial and moral support that the startup may need, support like consultations and assisted access to funding. The role of business incubators arises in this framework to achieve the goals set by young entrepreneurs, and even put them on the right path to turn their creative ideas into tangible productive projects.

Incubators are a key part of the business ecosystem, which help entrepreneurs transform their innovative ideas into viable projects. Incubators provide an integrated range of services aimed at supporting and stimulating start-ups, especially in the early stages of the establishment, enabling the entrepreneur to focus on the core of the work during those shaky early stages. As the company grows, its dependence on the incubator is greatly reduced until it eventually no longer needs its services.

Business incubators are a basis to the supportive environment which supports projects and young people's creative ideas. These incubators are enabled and enhanced through integrated mechanisms to ensure the success of their new projects. The main inputs of these incubators are the creative youth, financing and supporting parties, while their outputs are to establish economically feasible, technical, creative and unconventional projects. The process of incubation includes an integrated and comprehensive package for all types of support and assistance required by the projects and by the new creative ideas.

This is the reason why a great number of potential entrepreneurs bring their "own ideas" to business incubators and accelerators to facilitate the launch and the management of new projects. These incubators provide incubation programs during the early critical years of the project to increase the chance of success by providing a range of services including for instance, the provision of office space to work, assistance in developing action plans, education and training, legal, administrative and marketing consultancy, making it easier for these projects to accomplish the establishment phase and shorten the time needed to operate, and thus reduce the chances of failure.

The concept of incubators is not fortuitous. It arose a long time ago. The business and micro-projects incubators dated back to the seventies, though the oldest was set in Batavia – New York, USA, in 1959. The real support and thriving of incubators was achieved through the U.S. Small Business Administration that have strived to increase the number of incubators, from 20 in 1984 to more than 70 in 1987. This endeavor was also adopted by the EU countries and then by Southeast Asian countries, where incubators were the most important drivers of the economic growth.

Incubators prevailed and thrived in many regions of the world, especially in developed countries, alike the United States and the United Kingdom and others, as well as in many Arab countries. This concept also extended to the Saudi market, to reach approximately eight business incubators within the official or semi-official institutions.

The entrepreneurial environment in Saudi Arabia is bursting with a number of business incubators, which represent the starting point for many emerging companies. Governmental entities consider the small and emerging companies as the core of the entrepreneurial sector, and it is very important to ensure their stability and success, and to continue to support and guide them through business incubators.

Specifically, in the technical field, King Abdulaziz City for Science and Technology (KACST), represented by Badir Program for Technology Incubators and accelerators, shows a special interest in supporting entrepreneurial technology incubators in the Kingdom in order to establish new technology projects, provide promising investment opportunities and offer various facilitations that help Saudi entrepreneurs transform their technical ideas into successful investment projects that contribute to the income sources diversification and provide more job opportunities for young saudis.

Badir program offers a number of services to business entrepreneurs, such as assistance in developing business plans for the incubated projects, preparing workshops of different subjects to develop the individual skills of the incubated startup owner, offering legal, administrative, and marketing advice, developing research, marketing, and promotional skills, building relationships with the commercial parties in the Saudi and world commercial market, assistance in getting the necessary funding by facilitating access to financial support sources, along with the ongoing follow-up, support to develop the project and make it a success.

All business entrepreneurs and owners of innovative startups who would like to convert their ideas into successful technical companies, can communicate with the program, and the latter will support them.

3. Start-Ups

A **startup incubator** is a collaborative program designed to help new startups succeed. Incubators help entrepreneurs solve some of the problems commonly associated with running a startup by providing workspace, seed funding, mentoring, and training (see list below for a a more extensive list of common incubator services). The sole purpose of a startup incubator is to help entrepreneurs grow their business.

Startup incubators are usually non-profit organizations, which are usually run by both public and private entities. Incubators are often associated with universities, and some business schools allow their students and alumni to take part in these programs. There are several other incubators, however, that are formed by governments, civic groups, startup organizations or successful entrepreneurs.
While most of the media emphasis focuses on tech startups, incubators aren't just limited to one industry. In fact, the focus of incubators varies by region. There are also all-purpose incubators that consider all kinds of startups, regardless of industry.

While many people associate business incubators with the tech boom, this is not a new concept. In fact, the first startup incubator - the **Batavia Industrial Center** - was formed in 1959. The Batavia Industrial Center was founded in response to Batavia, NY's high unemployment rate and as a way to repurpose a vacant industrial building. Given the origins of the business incubator, it makes sense that the concept is making a huge comeback during the time of the Great Recession.

3.1 What are the Most Common Startup Incubator Services

Here is a list of the most common services provided by business incubators:

- Help with business basics
- Networking opportunities
- Marketing assistance
- High-speed Internet access
- Accounting/financial management assistance
- Access to bank loans, loan funds and guarantee programs
- Help with presentation skills
- Connections to higher education resources
- Connections to strategic partners
- Access to angel investors or venture capital
- Comprehensive business training programs
- Advisory boards and mentors
- Management team identification
- Help with business etiquette
- Technology commercialization assistance
- Help with regulatory compliance
- Intellectual property management and legal counsel

4. Why Implement a Business Incubator

4.1. Incubators as agents of Regional Economic Development

Technology incubators are best used to promote the commercialisation of university research, the diffusion of cross-fertilising technologies and the emergence of a selected group of technology-based firms with growth potential. Technology-based incubators should therefore have a narrow focus on firms ready to make significant innovations and on those skills aimed at enterprise growth and opportunity exploitation. Technology incubators should then be in a place where a selection of advanced business support services is available. Particularly important appears the availability of sources of business financing, especially forms of equity (business angels and venture capital funds) and semi-equity (mezzanine capital) capital that are crucial to the development of growth-oriented firms. Technology incubators should moreover be launched with the active involvement of one or more local universities. It is indeed common practice that technology incubators have close links with universities, when they are not directly promoted by HEIs and/or established within university campuses. This entails that technology incubators are more likely to succeed in countries and regions where legal and institutional constraints to the engagement of academics in business support are not too binding.

4.2. Success factors

The following factors are reckoned to contribute positively to the success of a technology incubator:

- The goals of the programme should be made explicit, based on a thorough analysis of local economic circumstances and of the problems which the incubator is intended to address. Setting clear goals beforehand will also ensure the proper monitoring and evaluation of the scheme.

- The incubator management should be of high-quality and consist of professional with business expertise and past work experience in the private sector.

- The incubator's range of services should complement the offer of support services locally available. There is no need for an incubator to replicate BDS already available and the final objective should be that tenant firms have at disposal the widest possible array of services, regardless of whether they are internally or externally provided.

• As a result, close linkages with the local business community, training organisations and financial operators are all relevant to the success of an incubation programme. In particular, the availability of equity and semi-equity capital can facilitate the development of growth-oriented companies.

• When not established or directly promoted by universities, technology incubators should engage with local universities and thereby promote the transfer of knowledge from university to industry and the commercialisation of university research.

• On the other hand, when established by a university, participation in the incubator should still be open to people who do not belong to the same institution. A similar constraint is indeed unnecessary as it prevents the recruitment of the best pool of talents at the local and international levels. Indeed, not few incubation programmes are also open to the participation of skilled entrepreneurs from abroad.

• Some commonalities among tenant firms with regard to industry, use of technologies or background of management (e.g. postgraduates in related disciplines) are likely to encourage interaction and to enhance peer-based learning among participants, which is in turn considered one of the main strengths of business incubation schemes.

• Any training and teaching, even in a campus-based incubator, should be practicerather than academic-oriented so as to be seen as relevant to the reality that startups must deal with. In this respect, the involvement of real-life entrepreneurs as mentors and consultants is generally welcome by participants, as real entrepreneurs can talk by experience about the difficulties they have encountered and how they have overcome them.

• The establishment of alumni networks can also be helpful, as previous participants who have graduated from the programme can give insights on how to successfully move out of the incubator and how to survive and grow in open market conditions.

5. Social Impact

Their societal effects are visible primarily as businesses performance. Relevant parameters that could be taken into consideration for enterprises located in incubators compared to enterprises in the region as a whole:

- Turn-over
- Growth in turn-over
- Growth in profits
- Growth in number of employees
- Start-up rate
- Survival rate

Business incubators can serve as a business enabling environment within the community by helping their incubatees overcome obstacles and become successful, as well as by positively influencing stakeholder groups and policy makers who can bring about appropriate changes to the business environment. The following are some of the ways incubators can establish an enabling environment that assists incubatees, as well as relevant stakeholder groups and policy makers.

6. Incubatees:

• Helping to change the local culture, increasing entrepreneurial and economic growth by promoting local business growth and producing successful role models. Incubators can bring a new way of thinking to communities by providing role models for entrepreneurial success in the form of successful entrepreneurs. Incubators also offer entrepreneurs the tools they need to succeed.

• Improving social capital, trust and fostering innovation and entrepreneurship, by creating cross sector linkages and Public-Private Partnership arrangements. Incubators bring companies and individuals together through networking. Connecting professionals from different sectors can establish trust between different firms and create innovative thinking by exploring fresh perspectives. Incubators also facilitate cooperation between their incubatees and public entities, with the aim of securing public funds as well as support for incubatees. Incubatees whose work is closely aligned with the government's priorities, such as those in incubators supporting green energy technology based start-ups, are usually in a better position to receive support.

• Providing a dynamic learning environment to foster innovation, entrepreneurship and technology transfer. Incubators have the flexibility and opportunities to position themselves at the forefront of innovation, entrepreneurship, and technology transfer. From their experience and that of their tenant companies, they can apply the lessons they have learned to become even better enabling environments.

• Reducing costs by joint procurement. Incubators are able to aggregate orders and hence procure goods and services at a lower cost for their clients. Discounts will help incubatees who have limited financial resources to support their early phases of product or service development.

• Providing access to reliable energy providers with a backup generator if necessary. Incubators must ensure that business operations are not shut down due to unreliable energy sources. Loss of power can cause major IT problems and potentially ruin hardware or harm other production processes. A reliable provider of electrical power can overcome this problem, while a generator can ensure that a constant source will be available regardless of external factors.

• Assisting incubatees to navigate through regulatory environments, thereby reducing their compliance costs and the lengthy time requirement. Incubators can provide information to incubatees on achieving regulatory compliance. In this regard, incubators can help incubatees develop good relationships with government officials, ensuring that all administrative and bureaucratic requirements are met and hence freeing up their time for them to concentrate on developing their businesses.

7. Social Entrepreneurship

Business incubation is a public and/or private, entrepreneurial, economic and social development process designed to nurture businesses from innovative idea generation to start-up companies and, through a comprehensive and creative business support program, help them establish and accelerate their growth and success.

	BUSINESS DEVELOPMENTS SERVICE PROVIDERS	BUSINESS INCUBATORS	TECHNOLOGY PARKS
TARGET ENTREPRENEURS	Any SME	Early-stage enterprises with high growth potential	Emerging and established technology business
KEY FEATURES	• Ad hoc, demand-driven assistance. • Focused on a particular issue for which the entrepreneur asks for assistance. • Usually broad business support, including training and advisory services.	• Emphasis on co-location and the "cluster" effect between enterprises. • Ongoing supply and demand-driven assistance until an agreed upon performance milestone has been reached. • Integrated mix of intensive strategic and operational support focused on the enterprise in its entirety.	• Emphasis on co-location and the "cluster" effect between enterprises. • Demand-driven assistance. • Emphasis on provision of state-of-the-art real estate, office space, and research facilities and networking opportunities.
REVENUE SOURCES	Government / donor subsidies, fee-for-service	Government / donor subsidies, fee-for-service, rent, royalties, equity	Government / donor subsidies, fee-for-service, rent, royalties, equity
BUSINESS MODEL	Non-profit or profit-making		

Table - Intermediary Vehicles for Innovative Enterprise Development

The term entrepreneurship has a wide range of meanings. Many of them can be found with a simple Google search. The Global Entrepreneurship Monitor (GEM) identified two types of entrepreneurs: Firstly, there is the necessity entrepreneur (NE), who is a person who started a business because he/she "has no better choices for work".

GEM distinguishes the NE from an opportunity entrepreneur (OE), who has started a business to take advantage of a business opportunity. This distinction is important because it determines the primary motive for participating in the start-up, whether they are willing volunteers (OE) or feel they are 'forced' into creating a new business (NE).

Economic growth and necessity entrepreneurship (NE) are closely and positively linked (1). The necessity entrepreneur is someone who never considers starting or owning a business until there is no other option (2). The more generous the welfare system is, the lower the rate of necessity entrepreneurship. In a developed nation such as Australia or New Zealand, generous welfare benefits may result in an unemployed person choosing to enjoy a greater amount of leisure time rather than work, commonly referred to as the labor/ leisure trade off. This however is not the case in many developing countries, where (welfare) systems are often less generous.

Additionally, the higher the proportion of the adult population with pension provisions, the lower the rate of NEs. Developed countries rely on pension systems to provide for individuals when they become inactive in the labor market due to old age. This creates an additional incentive to work in order to raise total lifetime income from work related sources, especially in those countries such as South Africa where there is a non-provision of state funded pensions. Similarly, where barriers to market entry by new businesses are high, the rate of necessity entrepreneurship will be low. Entry barriers in the economic sense refer to potential obstacles that operate to discourage entry.

Since there is a direct correlation between NE and economic growth, and that high growth is achieved by raising the necessity rate (GEM 2002), it is important to develop the escalation of NE. Moreover, it is equally important to foster higher levels of OE, as these enterprises are more likely to scale up and grow than NE enterprises. This may include interventions (such as business incubation) that aim at assisting NEs to become more opportunity oriented, with particular reference to the informal sector (unregistered businesses) necessity entrepreneurs and support for OEs to scale up and grow. This will and does include the promotion of knowledge and information flow to start-ups, highlighting issues such as entrepreneurial capacity (skills, motivation), entrepreneurial opportunity, business churning, market replication, market creation, financial support, access to physical infrastructure and commercial infrastructure.

Austrian economist Joseph Schumpeter considered entrepreneurship as an emphasis on innovation and new products, new production methods, new markets and new forms of organization. Many people use the term 'entrepreneur' to encompass any small business owner. While entrepreneurial ventures and small businesses have many aspects in common, this overlooks important differences. Entrepreneurial ventures are more likely to create wealth as opposed to simply generating income for the owner. They are far more likely to grow and to grow faster than other business ventures and involve higher levels of risk and substantial innovation. As Peter F. Drucker noted in 'Innovation and Entrepreneurship', "innovation is the specific tool of entrepreneurs, the means by which they exploit change as an opportunity for a different business or a different service".

1. (Source: Frederick, H (2004) Toward High Growth Enterprise in New Zealand, The Unitec Global Entrepreneurship Monitor New Zealand 2003/4, Research Report Series, Vol 3, No.1.)
2. (Source: Kroll, L (2003) The Accidental Entrepreneur. Forbes, Volume. 171 Issue 10, p. 90.)

7. Social Entrepreneurship

Entrepreneurship is an important driver of our local, national and global economies. Entrepreneurially minded individuals who start small businesses create jobs and wealth. They lead industry sectors through their spirit that encourages innovation. As an incubator manager, you have the ability to promote an entrepreneurial culture that can maximize economic and social success on a local, national and global level. Your role as an incubator manager also requires an entrepreneurial spirit. By having an entrepreneurial spirit and applying the key principles and elements discussed in the following section, you will be better able to create the necessary entrepreneurial environment and setting for incubated business owners.

It is generally agreed that the following five characteristics are what entrepreneurial spirit is all about:

- Technical Preparation
- Business and Management Skills
- The capacity to use resources and information to take advantage of business opportunities (and more specifically for individuals)
- Personal characteristics including genuine passion, flexibility and hard working values
- Interpersonal skills to understand social impact of business development (3).

3. (Source: Hernandez-Gantes, V. M. (1996) Fostering Entrepreneurship through Business Incubation: The Role and Prospects of Postsecondary Vocational-Technical Education. Report 1: Survey of Business Incubator Clients and Managers, National Center for Research in Vocational Education, Berkeley, CA.)

8. Social Enterprise

Business incubation is applicable at the "early-stage entrepreneurial activity" stage of enterprise development, as represented by Figure developed by the Global Entrepreneurship Monitor (GEM). At this stage, the entrepreneur has transformed their idea into a business.

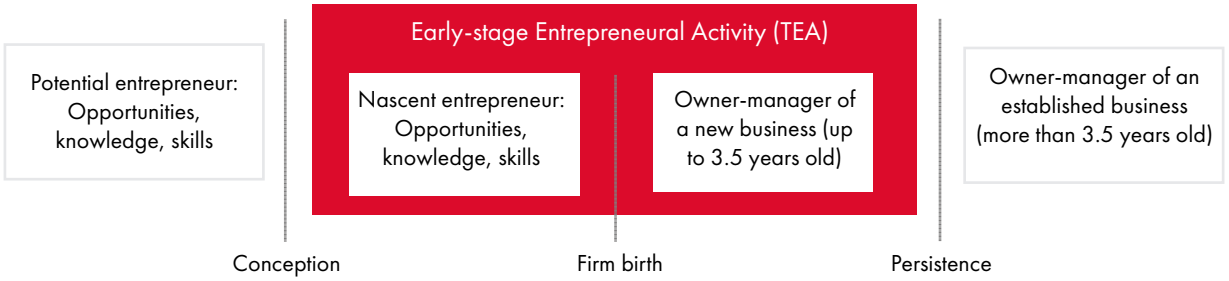


Image - Enterprise development stages

Incubation is a continuous relationship between the incubator and the early-stage entrepreneur with graduation as the target and occurring when the early-stage company has reached sufficient maturity. Through the incubation process, the support provided by the incubator evolves along with the development needs of the business (e.g. the business has developed prototypes, pilot products, has started selling and so on). The BI has four basic components:

SERVICES	VALUE TO THE ENTREPRENEUR
INFRASTRUCTURE e.g. office space, meeting rooms, electricity, phone, internet, lab, facilities, etc.	Economies of scale decrease the cost of starting a business + benefits from a professional look and brand.
BUSINESS SERVICES e.g. help with registration, licenses, accounting, strategy advice, market research, exporting facilitation, etc.	Help with non-care business activities saves time and money
FINANCING e.g. brokering and/or providing financial services such as equity, credit and guarantees.	Leveraging the credibility of the incubator and the portfolio of entrepreneurs to overcome financing gaps.
PEOPLE CONNECTIVITY e.g. mentoring, coaching and interaction with fellow entrepreneurs (a micro cluster), market likages.	Learning exchange of ideas, psycological support, partnership, business relationships.

Image – The four components of BI

Incubators are different from business centers in that business centers only offer rental space, access to office equipment (computers, photocopiers, etc) and meeting rooms. Incubators, on the other hand, typically offer a full range of business support to their clients, helping them through the challenging formative years and allowing them to develop their businesses and focus on bringing products and services to market. Keeping Figure in mind, the most common forms of support include:

- Infrastructure, such as office space
- Business services, such as administration and information services
- Financing, such as providing the incubator's client businesses with information and support that will allow them to access appropriate sources of finance
- "People Connectivity", which includes mentoring and coaching services, and access to networks.

Infrastructure. Most incubators offer "easy in, easy out" conditions; monthly rental terms that allow flexibility for clients when joining or exiting. Some incubators, particularly sector specific incubators, offer technical facilities, such as laboratories and equipment that can be very helpful, especially to a technology based start-up company. Business services Incubators provide access to administration and communication services often at "pay as you use rates", including services such as Internet, telecommunications, photocopy, fax, binding, reception, mail, document receipt and dispatch, and secretarial assistance. These support services help clients to concentrate on their core business rather than on the support infrastructure. Furthermore, the startup companies do not need to make initial investments in expensive office equipment or front office personnel that can be provided by the incubator. Incubators distribute a full tool kit of relevant business information to their clients. This information could include market data and market updates, forthcoming trade events, regulatory issues and administrative procedures, details of access to finance, both public (subsidies and government funds) and private (investors such as Business Angels), and access to other business support partners in the area. They assist in "opening the doors" to corporate markets using their own networks.

Financing. Incubators support businesses in accessing various sources of finance. Depending on the growth stage of the business, the incubator may link its client with government grant schemes, banks, or venture capitalists. Hence, the type of financing may vary from seed grants, to credit, to equity. Some incubators may make their own sources of financing available for their clients as well, for example some incubators manage their own seed fund to invest in their client businesses. In this way, incubators help to build the individual entrepreneurial and business skills of each client. Personal skills, such as financial, marketing and management skills, as well as overall good business judgment, are critical to any business' success. Incubators, therefore, work to improve these skills in their clients.

The experienced incubator manager or mentor provides advice and guidance during the start-up's development. The mentor may also provide the entrepreneur with linkages to his/her own networks. Incubators also facilitate meetings, discussions, links, and alliances between their clients and experts, such as accountants, communications and marketing consultants, and lawyers. Furthermore, incubators facilitate interactions between their clients and industry leaders relevant to their clients' markets. These networks and contacts can help the client companies recruit new customers or enter new markets, identify potential partners and reach potential investors.

Business incubation can also be supported virtually (electronically) and through outreach programs for client companies established outside a physical incubator. Virtual incubation implies that all incubation services are delivered electronically. There is no physical incubation space. Outreach Business Incubation refers to business incubation with clients not located in the incubator and implies that incubation services are delivered to non-resident clients or 'out of wall' clients. It combines traditional incubation space and services with virtual services offered to both on-site tenants and off-site clients. With outreach incubation, there is a very strong physical element to the virtual incubation service. The business incubator manager meets from time to time with the clients face-to-face and the business incubation process is facilitated using virtual incubation tools. This can be described as a bundled offering. This can help build a good relationship between client and incubator and can be a strong value proposition for incubators that need to demonstrate a greater reach and impact of service delivery. Virtual incubation is particularly useful when dealing with technology firms and other businesses where classic incubation services, like office rental and technical support, may not be necessary.

Chapter 2
How to implement a Business Incubator

An incubator is an enabling technology, rather than a critical or a strategic technology

Sean M. Hackett and David M. Dilts on A Real Options-Driven Theory of Business Incubation

1. Technical and economic feasibility study

Caring out a feasibility study is an essential step in the process of designing a business incubator without consideration of sectors. It helps to analyze possible problems and helps to solve them beforehand. Basically, function of feasibility study is investigative. Specifically, the feasibility study seeks answers to questions such as: Is this project or business venture feasible - will it survive and have potential for success? Are there sufficient customers in the proposed market who will buy the product at the price and effort levels required? Are there competitors and competing products and will they make success too difficult? What are the obstacles to success and can they be overcome?

Answering all the possible questions in detail related with the business incubator and its sector helps incubator developers to understand better the conditions which will sustain the business incubator related with the market, financial base, environments, the current situation and future sustainability of business incubator.

In the feasibility studies, understanding the market conditions are essential to start, develop and sustain the business incubator and potential economic impact it might produce because the big part of establishing the business incubator is not only about what the incubator developers want, but more what is right for the market. There are important elements which have to be taken into account during market analyze regarding technical and economic feasibility.

Real Estate
It is one of the most important topics to consider analyzing the places which have available space, low cost, good services like electricity and internet connectivity. In the case the number of proper places is high, the business incubator will compete with the rest of the market. So if business incubator developers can determine that there is a market demand among SMEs for good office space, with a decent profile and address, and can provide excellent and affordable services like telephone, electricity, and internet, and then it is a sign that market will need and appreciate the services of the business incubator.

Culture
It is another critical point to analyze because it helps to determine the market demand for the kinds of services business incubator will offer and design the level and nature of services that business incubator consider. In addition to it, if there is no awareness on the topic of entrepreneurship, role models and success stories in the society, business incubator developers should consider these challenges and build a program to help the change of attitudes.

Policy
The Policy framework, role of government or other public institutions in the development of SMEs is another important point to be considered. Understanding of what kind of policies or real actions has been put into practice by government and what business incubator developers expect from the public sector in terms of advocacy or financial support for the establishment of the business incubator. Good understanding of all these environments regarding the policy will help business incubator developers to further its actions to build.

Industry
Analyzing the key industries and activities in the current economy is essential and the possibilities if the incubator can fit into an already existing economy or not. Understanding the local industries and profiling them is critical to understanding how incubator's facility may serve a community.

Economy

Analyzing the performance of the economy, the potential growth of the country and the SMEs in the last few years should be considered. Looking at GDP, inflation, and getting some other metric and understanding of the market is key to be able to approach investors and say that there will be a continuing and growing SME sector that business incubator is going to service. If the result is opposite, so business incubator developers can process according to it.

Real Estate	Culture	Policy	Industry	Economy
Office spaces	Popular Attitudes	Government	Key Industries	GDP Growth
Occupancy Rates	Success Stories	Results to Date	Target Industries	rates
Quality of Offices	Education Policy	Future Predictions	Initial Surveys	Trends
Services offered	Social Change	Standard of Services	Projected Growth	Days to startup
Market Demand		Public Focus	Known	Doing
Current rates		Real Commitment	Constraints	Business
Shop rates		Demonstrable results	Requirements	Destination
Future Projections				Rank
Planned New				
Build				

Table 1: Checklist about market research for feasibility studies

Analyzing all of these conditions will make clearer the conditions related to the technology business incubator for incubator developers. These analyses will show how many percentages of what incubator developers want matches with what the market wants. In this case, it is easier to understand how appropriate the idea is to serve the community of incubator developers, and how well the community will receive and support it.

A feasibility study helps incubator developers and managers do these crucial things:

- Gain a greater understanding of the market for the incubator.
- Evaluate alternatives for the incubator
- Identify potential clients, including anchor tenants
- Identify needs of potential clients, and use of and satisfaction with existing sources of assistance.
- Suggest the important financial parameters for the project
- Collect and analyze information that is important to those potential funding sources

In addition to it, the Feasibility study improves the skills and knowledge of the planners and developers, builds greater strategic and focused thinking, as well as setting a framework for fiscal carefulness and future fiscal discipline. It also provides the type of in-depth understanding needed by those TBI organizers who are not very well informed about TBI history, values, and impacts. As it is known, the aim of technology incubators is to guide and give intensive strategic and operational support to selected entrepreneurs and business for their potential growth in the early stages of them. To make all these important stages, technology incubators have some support institutions to foster the development of the enterprises in the market.

2. Support Institutions

In the below, the table indicates the support stages of the technology incubator. The process in the all the business incubation is almost the same, but still, it depends on the main establishment idea of the business incubator. For example, business incubators which are for-profit do not have the stages of graduation. In here one of the essential things is that Technology business incubator should select the start-up which benefits to the Technology business incubator and meets its objectives and future aims regarding the growth of both parts. If the Technology business incubator does not have some criteria to select the start-up, this might be unbeneficial for both parts not only terms of money but also time, which is really an essential point for each start-up because so many start-ups fail in the early stage of them.

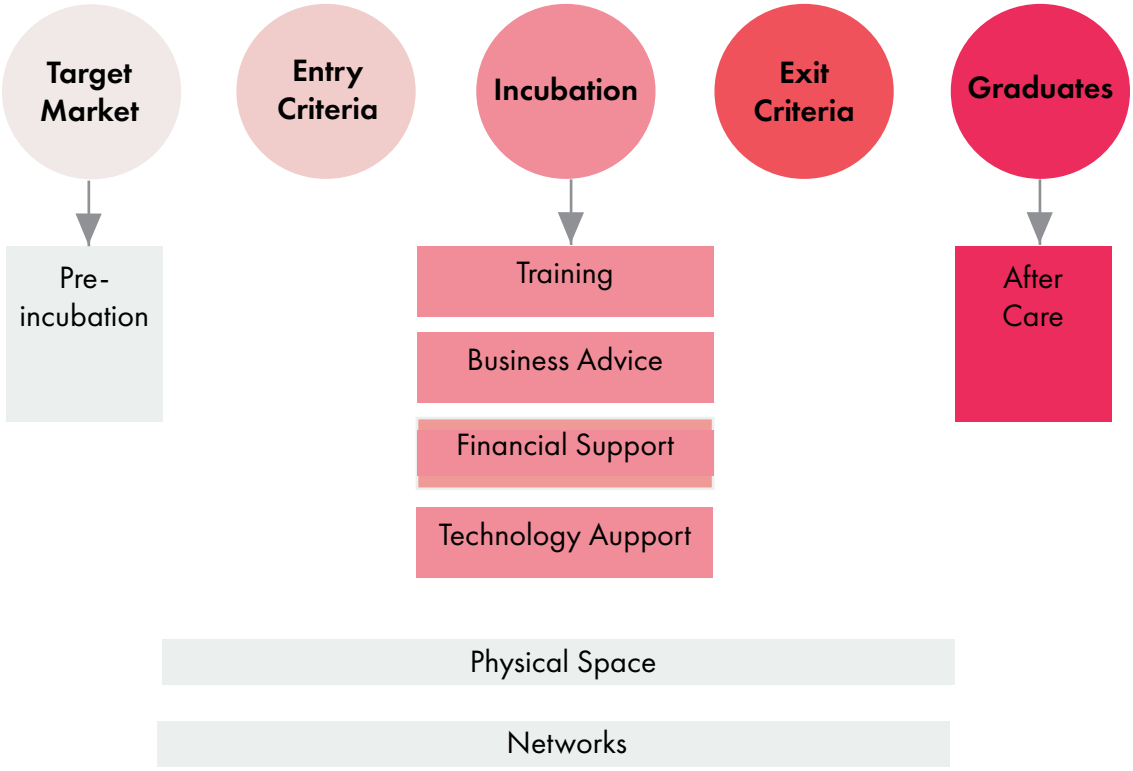


Figure 1: Support Stages of Incubator

Pre-incubation: In this stage, the focus is on helping the people who have an idea. This is the most risky, difficult and expensive stage of the process, which not every incubator can afford. The reason is that of access to public support and private risk capital. That's why only the incubators, which have a link to the universities, can perform this stage of the process.

Incubation: On this level, there is an idea, which is based on a plan, team and initiated operations. Start-up team works on development and expansion. Unfortunately, in this stage companies face many risks, investments for them are expensive when profits are not sufficient yet. This is why the role of technology incubators is really important during this time because they provide a remarkable support through business assistance, help in building the team, resources, access to networks, capital sources and so on.

Post-incubation / Graduation: When completeing incubation, start-ups have been supported being ready to graduate and join the market as a profitable company. There is no need for incubation to continue its supports but according to studies and interview and of course rules of the incubators, there is a number of businesses which continue renting spaces in an incubator. In this time we can say that companies are relatively safe from risks, but, of course, there is always a probability to face unexpected challenges.

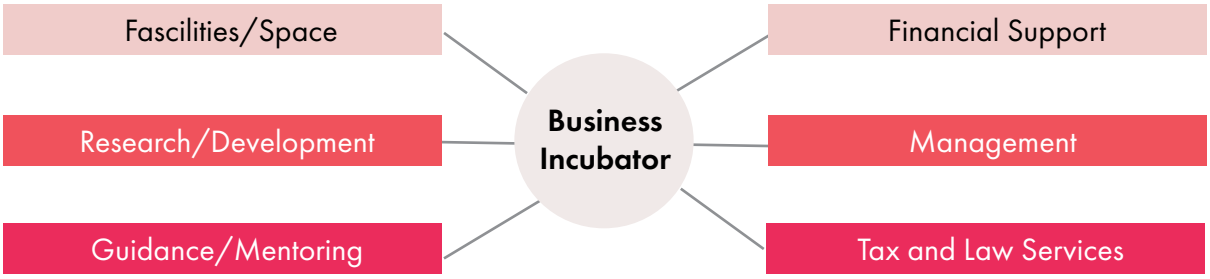


Figure 2. General Support Functions of the Business Incubator
*For TBI, additionally Advanced Tecnology Facilities

Pre-incubation, Incubation, and Graduation stages are the general support institutions of technology business incubators which include support services. The number and kind of support, services provided by a business incubator can be different from each other depending on the model and the objectives of incubator developers. But in any case, business incubators always try to provide their clients-start-ups with a comprehensive range of facilities and services with a 'full-service' incubator offering a combination of incubator space, business support services, and other assistance.

- Pre-incubation services
- Affordable space, on flexible leases
- Shared facilities such as receptionist, conference room, office equipment
- Advanced technology laboratories, equipment/other research and technical resources
- Business planning and forming a company
- Training to develop business skills
- Accounting, legal and other related services
- Market research, sales and marketing
- Help with exporting and/or partner search abroad
- Help with e-business and other aspects of ICT
- Advice on development of new products and services
- Help with raising bank finance, grants, venture capital
- Incubator venture capital fund, business angel network
- Advice on recruitment of staff and personnel management
- Networking, e.g. with other entrepreneurs, customers
- Mentors, board members, and other senior advisers

Technology business incubator has to behave in business structure to provide sufficient and sustainable assistance to the start-up companies. A successful technology business incubator should build networks to serve and support/ guide better to its start-up companies. Networking and connections are essential parts of Technology business incubator because of the opportunity to provide new revenue streams, partnerships or ideas might be financially successful.

These possible networks and connections can be from different groups, which might be even better to foster the diversity regarding the experiences, financial situations, growth strategies, different ideas and might bring new opportunities and advantages. For example; a network which includes lawyers, accountants, and marketing experts might be able to provide services that cannot be provided directly by technology business incubators. Universities, technical centers, and research institutions can bring their long-term experience in the topic of intellectual capital and new technologies.

According to Harvard Review, most business incubators provide office space, funding, and basic services. The better ones also offer an extensive network of powerful business connections, enabling fledgling start-ups to beat their competitors to market. The sentence emphasize the importance of network for incubators. In addition to it, TBI differ in supports offered than other business incubators. TBIs offer slightly different supports such as an access to advanced technology laboratories, equipment, and other research and technical resources such as faculty, staff, students, and libraries.

3. Infrastructure

Infrastructure is another key element to build and sustain a successful technology incubator. The infrastructure of technology business incubator refers to all the facilities such as building, reception, clerical services, meeting rooms, conference rooms, car parking, laboratories, testing facilities, internet services, 24-hours access etc. All the possible opportunities, challenges and problems related to infrastructure development should be analyzed during the process of feasibility studies and detail recommendations should be specified in the business plan. Basically, the process of analyzing the infrastructure of business incubator must reflect a deep understanding of the environment in which it will operate as well as the opportunities and threats inherent to that environment. The building can be built in different types of premises such as new-developed building or restored building.

3.1 Building

To establish technology business incubators, generally old buildings are used for restoration in order to avoid the huge expenses on building a new one. There are upsides and downsides in preferring to adjust a building to the needs of the incubator or constructing a building. Renovating an existing building might be lower than the cost of a new building construction but it is not always the case. This process requires detailed engineering work to address the condition of structures, utilities, and waste-disposal system. To construct a new building specifically for the technology business incubator might be more expensive, but it may have lower maintenance and operating costs. Here, it is important to underline that both choosing the location and the building should be based on the aims and objectives of incubators and targets, not according to the financial structure that will sustain its success. According to Rustam Lalkaka, important considerations for the selection of existing buildings, and for developing a new facility for the incubator, including the following:

- Gross floor space of about 2,000 m2, capable of future expansion: Experience suggests that this is the optimum floor space necessary for the start of a new incubator with about 20 to 25 companies, otherwise rental incomes would be inadequate. It may be possible to begin with less area, provided that prospect of more space is assured when needed.
- Prompt transfer of land or of a vacant building to the incubator entity: In order to minimize delays in start-up, it is crucial that legal title to the premises can be passed promptly, and without encumbrances, to the incubator sponsors.
- Flexible layout: It should be possible to easily and quickly change the layout to adapt to changing tenant needs and to expand the TBI in the future. The following should be avoided: many entrances, wide corridors, high ceilings and high energy costs for heating and cooling. The layout should provide technology-related features such as fast, reliable internet-connectivity, common office facilities, effluent disposal, and shared equipment – in the case of a biotech facility. The need for a warehouse, parking and laboratory facilities must be kept in mind.
- Interaction among clients: The layout has a direct impact on internal traffic to promote interaction between clients. People-flow has to be designed to give opportunities for clients to meet each other and to encounter the management team as often as possible.
- Good security: The interior layout should provide good security through a single entry point. A common office area should be adjacent to the entrance for easy access by both clients and their customers. Interior spaces should provide access to a central office area while ensuring confidentiality and security for individual businesses. The premises should also be environmentally safe and sustainable.
- A good general condition of building: A vacant building should require minimal capital investment for renovation, to ensure that resources dedicated to the TBI reach the clients and are not dissipated on the facility itself.

Whether a building is new or refurbished, is not the critical factor what is important is that the building can serve the needs of its users.

3.2 ICT Infrastructure

The need for accessing the communication and computing facilities, such as telephone, internet and fax subscriptions, desktop and laptop systems, printers, etc. is common to all client companies. Information and telecommunication (IT) systems are a prerequisite to having adequate internet and telecom access, crucial to any businesses. One type of infrastructure that is required by an incubator is a secure IT network in which companies can store their data. Computers, phones, copy machines, fax machines are necessary to carry out professional work and make the most out of the IT system's set up that is why before establishing the technology business incubator, developers should be secure about all of these facilities in the potential location.

3.3 Laboratories

For the activities of technology business incubator such as product development and analyses laboratories are crucial, but it is not necessary for all the business incubators to have laboratories as this depends on the specific nature of the incubator. Laboratories might require additional investment if the building doesn't have them, in this case, to reduce the expenses it would be better to have working agreements with local universities and research centers to utilize their facilities as an alternative.

3.4 Meeting Rooms

For internal meetings and appointments of incubatees, meeting rooms are the necessary elements of the infrastructure. Depending on the available space, the best option is to install smaller rooms instead of large meeting room to use the physical space more efficiently. The meeting rooms should have some essential pieces of equipment such as internet, computer network, whiteboard for notes, a microcomputer, data show projection system to be able to present ideas/products and support them visually.

3.5 Reception

To leave a good impression on clients, incubatees have to control the access to the building because the main entrance has an essential importance. To be able to identify people entering and leaving the building and provide assistance when it is necessary, the main entrance should lead to the reception area. This area of the building should be equipped with clear indications of the different areas of the building, a bulletin board, data on its locations and the areas of activity of the resident companies and finally, basic information on the incubator and its partners, together with seating for clients.

3.6 Facilities For Handicapped

The entire building should be designed with due consideration for handicapped people and to ensure that their access and comfort both inside and outside of the incubator is maintained. In addition, a parking area should be provided for the handicapped.

3.7 24-Hour Access

Every start-up in the incubator might have their own work routines so it is essential for companies to have 24-hour access to their own offices. The management team should consider this policy and create regulations for companies to comply.

4. Availability of Financial Resources

It is known that business incubators can provide entrepreneurs with actual physical office space to conduct their business activities as well as shared administrative and other support services, but more importantly, it can introduce entrepreneurs to venture capitalists and angel investors to help them grow their enterprise through investments and seed funds.

The field of entrepreneurship is constantly expanding and all the initiatives supporting the development of the entrepreneurial activity are crucial. Entrepreneurs develop products and ideas that require substantial capital during the life cycle stages of their enterprise. Lack of capital is one of the primary reasons that businesses flounder. Access to finance is a key component to create an economic environment in which enterprises can grow and flourish and role of business incubators in this mean is essential. Therefore, incubators must address this issue by providing access to sources of finance because together with incubators, venture capital contributes to economic growth in small and medium-sized enterprises (SMEs).

In order for the incubatees to access finance the innovation and entrepreneurship ecosystem would typically be using the incubator as an intermediary.

Investment – through friends and family, bank loans, angel investors, venture capitalists, pre-payment for goods and services by early adopting customers and a broad range of self-supporting techniques.

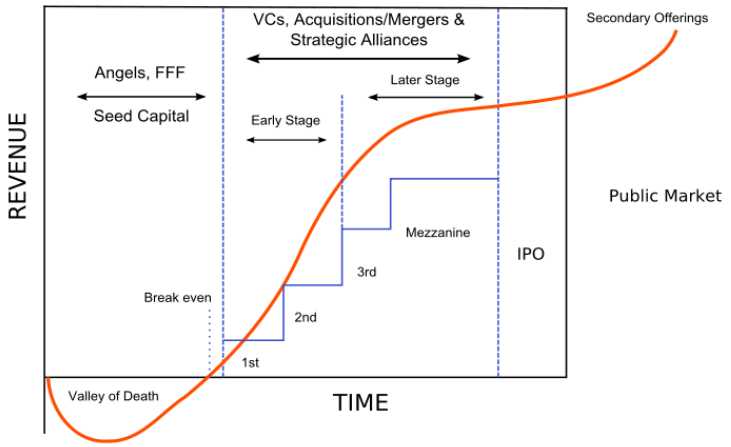


Image - Startup Lifecycle

4.1 Seed Capital

Most incubators provide companies with a certain level of seed capital, usually between 50,000 and 2 million dollars depending on the nature of the venture. This funding is meant to support the venture during the period before its first round of venture capital financing, which normally occurs between three and twelve months after the incubation begins.

4.2 Friends, Family (Informal source of financing)

Before they turn to external formal financing sources entrepreneurs try to collect their initial funds from those people who are closest and familiar to them such as friends and family. Accessing financial resources from friends and family is the most common method for funding negative cash flow of an incubator firm. Unfortunately, according to data, a great number of start-up companies fail within the first three years of doing business that is why this kind of access to finance might be risky when the idea or enterprise fails because it might cause disagreements in the families or between friends.

4.3 Bank Loans

Bank loans are probably one of the oldest formal financial sources for many entrepreneurs and genuinely mean that an individual or company can take a loan from one or more banking institutions to be paid an appropriate interest rate over the life of the loan. But bank loans are usually related to complex procedures and are given based on company`s or individual`s credit history and property. Since start-ups are usually founded by young people who, in many cases do not own property, it is hard to get a bank loan. So incubatees often will not qualify for debt investment until they are more established with a stronger balance sheet and predictable, positive cash flow. Also, the bank loans are limited due to risk level and handling cost.

4.4 Angel Investors

An angel Investor is an affluent individual who provides capital for a business start-up, usually in exchange for convertible debt or ownership equity. The greatest value of business angels is the so-called smart funding that includes providing skills, expertise and business contacts, but the most common reason for investing is the acquisition of profit, encouraging entrepreneurship, business activity and creating new value.

Angels play an important role in the economy, and in many countries, constitute the largest source of external funding in newly established ventures. They are increasingly important in providing risk capital as well as contributing to economic growth and technological advances. They require a very high return on investment. Because a large percentage of angel investments are lost completely when early stage companies fail, professional angel investors seek investments that have the potential to return at least ten or more times their original investment within 5 years, through a defined exit strategy, such as plans for an initial public offering or an acquisition.

A Harvard report by William R. Kerr, Josh Lerner, and Antoinette Schoar provides evidence that angel-funded startups are more likely to succeed than companies that rely on other forms of initial financing. The paper by Kerr et al found that angel funding is positively correlated with higher survival, additional fundraising outside the angel group, and faster growth measured through growth in website traffic. According to the latest EBAN Statistics Compendium, the total European early-stage investment market was estimated to be worth €9,9 billion in 2016. Angels represented the biggest share of the market with a new record of €6,7 billion invested in early stage SMEs, having grown by 5% (from 2014 to 2015) and 10% (from 2015 to 2016) in the past two years. So the fact is that business angels are the most important link between funding and developing companies, from the start-up stage to the entrance into the market.

4.5 Venture Capital

Venture capital plays a key role for incubatees to access the finance/funds. To understand the term better, it is important to define it even though there is no standard definition of it. In general, venture capital is one of the most relevant sources of finance for innovative entrepreneurs to fund their investments, and it consists of funds raised on the capital market by specialized operators.

Venture capital funds buy shares or convertible bonds in the company/enterprise. They do not invest in order to receive an immediate dividend but to allow the company to expand and ultimately increase the value of their investment. Hence, they are interested in innovative firms with very rapid growth rates. General Doriot underlined the rules of investing. An investment process entailing Doriot's rules is by definition, a venture-capital process.

4. Availability of Financial Resources

According to Doriot, investments considered by AR&D involved:

- New technology, new marketing concepts, and new product application possibilities
- A significant, although not necessarily controlling, participation by the investors in the company's management
- Investment in ventures staffed by people of outstanding competence and integrity
- Products or processes which have passed through at least the early prototype stage and are adequately protected by patents, copyrights, or trade-secret agreements situations which show promise to mature within a few years to the point of an initial public offering or a sale of the entire company
- Opportunities in which the venture capitalist can make a contribution beyond the capital dollars invested

These are the consideration for investments by investors such as angel investors or venture capitalist but it is not always easy for entrepreneurs to be able to show the matching consideration even though they have it. In this case, business incubators have the great responsibility to prepare its incubates for the funding process to match with the considerations of investors because the process of chasing investment can be so time-consuming that the entrepreneur may not provide sufficient time to managing and developing the business.

According to Aaboen, Lindelof & Lofsten, finding an investor also means the potential of additional contacts to key customers, additional investors and increased credibility and legitimacy for the newly started firm. Incubators, therefore, need to serve as the link between their incubatees and potential sources of capital.

Incubators around the world have developed a variety of programmatic approaches for connecting incubatees and sources of financing. Some of these include:

- An incubator sponsored a training programme for incubatees featuring a panel of investment professionals who make short presentations and engage in Q&A with the incubatees
- Incubator tours in which visits with incubatees are arranged for investment professionals. These can involve multiple or single incubatees, and multiple of single investment professionals
- Networking meetings, with an investment professional as the keynote speaker
- Rocket pitch sessions where incubatees make a pitch for funding to a panel of investors, and the investors critique their presentations
- Business plan competitions or showcases, in which investment professionals serve on a panel of reviewers or judges
- Project courses, co-sponsored by a local university and the incubator, in which teams of students collaborate with incubatees in the development of a business plan, or market research project, or financing plan. In some cases, the student teams are given advisers, who are generally sophisticated investors. In other cases, the final project reports are presented at the end of the course to a panel of outside experts – which may include sophisticated investors and experienced entrepreneurs
- Alumni events at a local university. Often alumni are most interested in engaging with current students or recent alumni. The incubator may be able to sponsor an enterprise that was co-founded by a current student or recent alumni
- Chamber of Commerce or other local meeting of business leaders. Often the sponsoring organization is willing to invite incubatees to attend as guests of the organization

Given the difficulty that enterprise face in trying to secure funding, incubators must reach out to funding sources in order to locate and secure appropriate funding with different ways for its different enterprises.

4.6 International example of funding opportunities for entrepreneurs

4.6.1 EarlyBird Venture Capital:
Earlybird has always invested in companies within a broad range of industries. With investments ranging from cloud-based engineering simulation solutions to mobile-first banking solutions, earlybird are keen to fund business models and technologies with the potential to disrupt B2C and B2B markets. Earlybird is backing early stage companies in Seed, Series A and B with a potential for later follow on investments. Its typical investments range from € 200k to 5 million, with an opportunity to invest total of € 10 – 15 million into one company over its life.

4.6.2 The European Trade Association for Business Angels, Seed Funds and Early Stage Market Players:
EBAN is the pan-European representative for the early stage investor gathering over 150 member organizations more than 50 countries today. Established in 1999 by a group of pioneer angel networks in Europe with the collaboration of the European Commission and EURADA, EBAN represents a sector estimated to invest € 7.5 billion a year and playing a vital role in Europe's future, notably in the funding of SMEs. EBAN fuels Europe's growth through the creation of wealth and jobs.

4.7 Examples of funding opportunities for entrepreneurs in Turkey

4.7.1 Istanbul Start-up Angels:
Istanbul Startup Angels, founded in 2012, is aiming to develop mentoring to potential investors in Turkey and accredited angel investors network. Member angel investors consist of experienced individuals who will accelerate the start-up entrepreneurs to become market leaders. Istanbul Startup Angels invest in seeds and early stages of selected projects. Investment range is usually between 50,000 TL – 500,000 TL with flexibility. Istanbul Startup Angels' investment areas are software, advanced technology, mobile, and internet technology. İstanbul Start-up Angels also hold Angel Academy Labs where they encourage investors to become angel investors. Istanbul Startup Angels also have networks in Ankara and UAE. Some of its success stories include Voscreen, Acilteslim, Mobiroller, and TDSMaker.

4.7.2 E-Tohum:
E-Tohum is a marketplace which wants to bring together entrepreneurs who have knowledge and ideas about the new economy and want to establish their own internet company and, investors and professionals. 40 eligible entrepreneurs from among applicants will present their initiatives to the Etohum Investor Club. The selected entrepreneurs will be located in Startup Turkey and will be coached and guided when they prepare their business plans and will present them to the institutional investors and companies. Office space, consultancy, and many other services will be offered to the entrepreneurs.

4.8. Examples of funding opportunities for entrepreneurs in Estonia

4.8.1 Startup Estonia:
Startup Estonia is a governmental initiative aimed to supercharge the Estonian startup ecosystem in order to be the birthplace of many more startup success stories to come.

For that, They are working on making Estonia one of the world's best places for startups, partnering with and uniting the best of startups, incubators, accelerators, private and public sector into one big successful Estonian Mafia family, a term that has become a recognised brand for the local startup community.

4.8.2 Estonian Business Angels Network:
Estonian Business Angels Network, established in late 2012, is an umbrella organization for business angels and business angel groups seeking investment opportunities in Estonia and its neighbouring regions with an aim to grow the quantity and quality of local seed stage investments.

4.9 Examples of funding opportunities for entrepreneurs in Portugal

4.9.1 Portugal Ventures:
It is a Venture Capital Firm, focusing its investments in innovative, scientific and technology-based companies as well as in companies from the more traditional Portuguese Tourism and Industrial sectors, with significant competitive advantages and export oriented to global markets. Portugal Ventures works alongside entrepreneurs, enabling high-growth Portuguese companies to achieve global status. Current assets under management: €450 million.

4.9.2 Indico Capital Partners:
It is the first institutional independent VC fund in Portugal aiming to cherry pick the best tech startups and help them scale. It's focus is to support the best, high tech companies going from local to global and invest from €200k to €5 million in areas like blockchain, artificial intelligence, big data, enterprise SaaS,fintech, marketplaces, among others. It looks for potentially unique global winners with amazing products, solving a big problem and a clear business model.

4.10 Examples of funding opportunities for entrepreneurs in Spain

4.10.1 KFUND:
K Fund is a new venture capital firm that, with an entrepreneurcentric philosophy,aims to fuel the evolution of the Spanish start-up ecosystem by investing in early stage technology companies.

4.10.2 Kibo Ventures:
Kibo Ventures strive to work with the best entrepreneurs, actively engaging with them, leveraging its broad and deep relationships with investors, corporates and professionals in many markets. It has global-minded teams.The team combines industry experience as entrepreneurs, operators, financiers and C-level executives, which is complemented by the tech-savyness of our Operating Partners, focused in helping portfolio companies overcome tech, product and team scaling challenges to make execution happen.It initially invests €1M to €2 million with simple terms and process, business oriented mentality and go get them attitude, with the capacity to follow-on in the next rounds. Although it occasionally invests smaller and bigger amounts.

4.11 Examples of funding opportunities for entrepreneurs in United Kingdom

4.11.1 Innovate UK:
It is part of UK Research and Innovation, a non-departmental public body funded by a grant-in-aid from the UK government.

With a strong business focus, it drives growth by working with companies to de-risk, enable and support innovation. It connects businesses to the partners, customers and investors that can help them turn ideas into commercially successful products and services and business growth. It funds business and research collaborations to accelerate innovation and drive business investment into research and development.It has several funds option from all the sector and specifically focus on technology. Launchpads is just one of them.

4.11.2 Launchpads:
It provides funds up to £100,000 to turn an innovative idea into a commercial project. It also gives business support and coaching to attract private investment.Innovate UK runs Launchpad funding competitions to help technology-focused companies in specific geographic clusters.To be eligible,there are some conditions like being an early-stage small or medium-sized UK business,working in a high-tech industry,attracting private funding to match the grant project receive.

4.12 Examples of funding opportunities for entrepreneurs in Italy

4.12.1 Italian Angels for Growth:
It aims to finance industrial projects during early-stage presenting a high level of innovation and potential for success, to realise a profitable exit for the Angels in about 5 years. Through the funding supports entrepreneurship, innovation and research in Italy by helping to promote sustainable development in the long term, promotes economic growth and the creation of new qualified jobs.It takes application through web-site.

4.12.2 Smart&Start Italia:
It is a government-funded scheme that encourages new businesses in digital economy and the development of results from the research system. Smart&Start Italia supports three main types of innovative start-up like high-tech, innovative business idea, developing products, services or solutions in the digital economy,exploiting commercial opportunities resulting from research. The support consists of an interest-free loan to cover capital investment and operating costs related to starting the business. Very new start-ups, set up in the last 12 months, are supported with technical and managerial mentoring.

5. The profile of the productive sector, the business sector and market in Turkey

As a result of rapidly increasing global competition, short life cycles of products and technological changes, the ability to obtain new technologies in a short time has become very important. The Technopark model, which consists of universities, companies, legal regulations, incentives, various technological start-up companies, incubation centers and R & D structures has done many innovations in the world. Also, Turkey has taken important steps toward the conversion of generated science to technology by recognizing the legal regulation of Technopark model. Turkey considers Technoparks as a concept of innovation that is why it puts effort into it to know about these centers more and to work in order to use them more effectively.

The movement to establish Technoparks in Turkey began in the 1980s. As a result of these studies, TEKMERs started to be established as the first step of technology centers in cooperation with KOSGEB and universities in 1990. The legal framework for technoparks was formed in 2001 by the enactment of Law No. 4691. Law No. 4691 uses the concept of Technology Development Zones. Turkey's first university technopark is established in ODTÜ(Middle East Technical University) under the law of Technology Development Zones. In the world, there are around 1000 technoparks, this number reaches 4000 together with incubation centers Incubation centers and technoparks operate together to have mutual benefits.

As the end of 2017, 69 technology development zones were declared by Council of Ministery in Turkey. Currently 56 out of 69 technoparks are active and the rest are under development. The number of companies doing R&D in the active technoparks has reached the number of 4624, giving an important contribution to the Gross Domestic Product, technology entrepreneurship, university-industry business cooperation, and employment. It also supports many start-up companies that have the potential to become global companies. Technoparks conduct R & D activities in many sectors such as software, computer, and communication technologies, electronics, machinery, and equipment production, agriculture, medical, energy, chemical, food, defense and automotive sectors.

The numbers of 46,314 personnel were employed in the Technology Development Regions. As of December 2017, the total number of R&D projects (completed and ongoing) in technology development zones are 33895. The export volume of technological products of these companies reach to 2,9 billion USD, and the major export markets are Japan, Israel, the UK, Germany and the US taking the lead. When considered in terms of foreign capital, the number of the foreign enterprise or with foreign shareholders, located in the technology development zones are 185. The number of patents received (national/international) by the companies located in the zones, is accounted as 921 and the number of patents continuing application period is 1121.

According to Law No.4691, the companies located in technoparks can benefit from miscellaneous tax incentives. The companies are officially exempt from corporate tax and their R&D personnel is exempt from income tax. Apart from these, software products are exempt from the VAT. Finally, R&D companies can benefit from 50% social security premium exemption for their personnel for a period of 5 years. In addition to these initiatives and support policies, Turkish government provides funds through TUBITAK and KOSGEB.

Some examples of the funds and support policies in the below:

TUBITAK BİGG (INDIVIDUAL YOUNG INITIATIVE) PROGRAM / 1512 Technology-Enterprise Capital Support Program

TUBITAK is the pioneer of the program and has the mission of «promotion of innovation-oriented ideas» for the purpose of encouraging the entrepreneurs with 1512 TeknoGirişim Capital Support Program. The program provides 150 Thousand Turkish Lira grant support (back non-payment) to the ventures. The program consists of 2 stages. Stage 1 is provided only by some Technoparks and Business Incubator in Turkey which is determined by TUBITAK. At this stage, these incubators/technoparks prepare the entrepreneurs with the training programs for Phase 2.

Another entrepreneurs support programs of TUBITAK and KOSGEB are:

- 2238 - Entrepreneurship and Innovation Competition Program
- 2239 - Entrepreneurship and Innovation Training and Research Activities Support Programs
- 1601 - Support Program for Capacity Building in Innovation and Entrepreneurship Areas
- 1514 - Venture Capital Support Program (GİSDEP)
- Entrepreneurship Support Program
- AR-GE, Innovation Support Program
- International Incubation Center and Accelerator Support Program

Example of successful Technoparks in Turkey:

ODTU TECHNOPARK

The establishment of ODTU TECHNOPARK started at the end of the 1980s. With the support of the World Bank, feasibility studies were initiated and examples from around the world. As a result of these studies, with the goal of founding incubation centers for technology development, ODTU TEKMER was established in collaboration with KOSGEB. The successful outcomes from ODTU Tekmer reinforced the foundation of a science park (Technopark) in ODTU. In 2000, the first building of ODTU TECHNOPARK was put in service and in 2001, Technology Development Zones Law No.4691 that defines the legal framework for Technoparks in Turkey was enacted. The infrastructure and know-how presented by ODTU coupled with the tax exemptions and incentives that are provided to the enterprises by this law turned ODTU TECHNOPARK into a center of attraction.

Being the first and the most innovative technopark of Turkey, ODTU TECHNOPARK's goal is to provide contemporary infrastructure and superstructure to the researchers and companies that develop and produce the technologies which will elevate the international competitiveness of the country. With its activities to facilitate university-industry collaboration, ODTU TECHNOPARK is the catalyst for synergy between the parties.

It export products which cost 1.1 billion dollars in total. With its more than 350 tenant companies, 60% of which were initiated in its premises and employ more than 6700 personnel, 90% of which have bachelor, master or PhD degrees and with the 170000 square meters of closed area reserved for R&D operations, ODTU TECHNOPARK has undersigned exemplary success stories to serve as a model for other technoparks in Turkey.

The companies that are operating at ODTU TECHNOPARK are involved in R&D activities in software and information technologies (50%), electronics (20%), mechanics and design (15%), medical technologies (6%), energy and environment (6%) and advanced materials, agriculture, food, aviation and space, automotive that account for the remaining 3% altogether.

ODTU Technopark runs miscellaneous programs for the companies and entrepreneurs that it hosts. Among these are, "New Businesses New Ideas Acceleration Program" and "Animation Technologies and Game Development Center" namely the pre-incubation programs to promote technology-based entrepreneurship.In addition to this success, ODTU has created world brand which is called UDEMY. UDEMY, an e-learning initiative founded by three students in the ODTU Technoparks area, is a global knowledge platform based on Silicon Valley, with its specialized instructors and a lesson schedule of more than 42 courses, offering many online training from software to personal development.

Please look at the Figure 4 and Figure 5 at the following pages

As it is obvious from the data in the above, the entrepreneurship ecosystem is rapidly growing in Turkey. The government is issuing regulations to support the ecosystem and promote the partnership between government, university, industry and individual investors. Also, the Turkish government has special policies to support and promote women to contribute the entrepreneurship ecosystem. In the Turkish start-ups, there are plenty of successful start-ups which turn into international brand starting with business incubators to their enterprises. In addition to it, Turkey is hosting some international events like start-up İstanbul to create the network, share information and experience and promote entrepreneurship.

Having successful business incubators and Technoparks in Turkey, some countries use Turkish examples in their benchmarking studies. One of the problems which some individual in the sector highlights that even though Turkey has a great deal of successful start-up, the business incubator, and technology incubator, there is no platform which only presents the all the situation regarding the entrepreneurship ecosystem such as the number of incubation center/ technoparks, what is the theme and how many entrepreneurs they host, national and international successful start-ups etc.. With creation of this kind of platform, incubation centers can be kept in contact with each other, and entrepreneurs or business people can easily find the most suitable incubation center for themselves through this kind of platform. The platform can add considerable value to the entrepreneurship ecosystem in Turkey.

Name of the University	City	Technoparks
Anadolu University	Eskişehir	ARİNKOM
İzmir Economy University	İstanbul	İzmir SciencePark /Embriyonix TTO
Hacettepe University	Ankara	Hacettepe Technoparks
İzmir Institute of Technology	İzmir	Technoparks İzmir
İhsan Doğramacı Bilkent University	Ankara	Cyberpark Ankara
Gaziantep University	Gaziantep	Gaziantep Technoparks
Sakarya University	Sakarya	Sakarya Technoparks
Boğaziçi University	İstanbul	Boğaziçi Technoparks
Necmettin Erbakan University	Konya	Konya Technoparks
İstanbul University	İstanbul	İstanbul Technoparks
İstanbul Teknik University	İstanbul	İTÜ Arı Technoparks
Trakya University	Edirne	Trakya Technoparks
Ankara University	Ankara	Ankara Technoparks
Dokuz Eylül University	İzmir	DEPARK Technology Development Area
Ege University	İzmir	ideEGE
Atatürk University	Erzurum	ATATECHNOPARKS
Gazi University	Ankara	Gazi Technoparks
Erciyes University	Kayseri	Erciyes Technoparks
Fırat University	Elazığ	Fırat Technoparks
Kocaeli University	Kocaeli	KOU Technoparks
Uludağ University	Bursa	Ulutek
Selçuk University	Konya	Konya Technoparks
Akdeniz University	Antalya	Antalya Technoparks
Hitit University	Çorum	Corum Technoparks
Namık Kemal University	Tekirdağ	NKÜTEK
Mersin University	Mersin	Technoscope Mersin Technoparks
Gaziosmanpaşa University	Tokat	Tokat Technoparks
İstanbul Ticaret University	İstanbul	Technoparks İstanbul
Orta Doğu Teknik University	Ankara	ODTÜ Technoparks
Yıldız Teknik University	İstanbul	Yıldız Technoparks
Abant İzzet Baysal University	Bolu	Bolu Technoparks
Cumhuriyet University	Sivas	Cumhuriyet Technoparks
Çukurova University	Adana	Çukurova Technoparks
Düzce University	Düzce	Düzce Technoparks
Süleyman Demirel University	Isparta	Göller Area Technoparks
İnönü University	Malatya	Malatya Technoparks
Pamukkale University	Denizli	PAUTECHNOPARKS
Ondokuz Mayıs University	Samsun	Samsun Technoparks
Harran University	Şanlıurfa	Şanlıurfa Technoparks
Çanakkale Onsekiz Mart Uni.	Çanakkale	Technoparks Çanakkale
Karadeniz Teknik University	Trabzon	Trabzon Technoparks

Figure 4: Examples of the Technoparks in Turkey

Name of the University	City	Business Incubator
Anadolu University	Eskişehir	ANAÇ Business Incubator
İzmir Ekonomi University	İstanbul	Bilimpark Business Incubator
Hacettepe University	Ankara	Biyoref Business Incubator
İzmir Yüksek Teknoloji Ens.	İzmir	Classboom
İhsan Doğramacı Bilkent Uni.	Ankara	CyberPark
Gaziantep University	Gaziantep	Enteggre Business Incubator
Sakarya University	Sakarya	GirişimAtölyesiBusiness Incubator
Boğaziçi University	İstanbul	HAYALET Business Incubator
Necmettin Erbakan Uni.	Konya	Innopark Business Incubator
İstanbul University	İstanbul	İnvestİst Business Incubator
İstanbul Teknik University	İstanbul	İTÜ Çekirdek Business Incubator
Trakya University	Edirne	Business Incubator
Ankara University	Ankara	Business Incubator
Dokuz Eylül University	İzmir	Idealab Express
Ege University	İzmir	nüvEGE
Atatürk University	Erzurum	Business Incubator
Gazi University	Ankara	Business Incubator
Erciyes University	Kayseri	Presera /Business Incubator
Fırat University	Elazığ	Tekmer/Business Incubator
Kocaeli University	Kocaeli	Teknopark Business Incubator
Uludağ University	Bursa	ULUKoza Business Incubator
Selçuk University	Konya	Üni Girişim Business Incubator
Namık Kemal University	Tekirdağ	Business Incubator
Orta Doğu Teknik University	Ankara	YFYİ-ATOM Business Incubator
Yıldız Teknik University	İstanbul	Yıldız Business Incubator
Okan University	İstanbul	Business Incubator
Çankaya University	Ankara	Business Incubator
İstanbul Şehir University	İstanbul	IncubaCity Business Incubator
Bahçeşehir University	İstanbul	Accelerator
TOBB Ekonomi ve Tekn. Üni.	Ankara	Business Incubator
Sabancı University	İstanbul	SUCOOL Business Incubator
İstanbul Bilgi University	İstanbul	Sosyal Business Incubator
Koç University	İstanbul	Business Incubator
Kadir Has University	İstanbul	INEO Business Incubator
Özyeğin University	İstanbul	Girişim Fabrikası
İstanbul Kültür University	İstanbul	FiKÜr Pre-Incubation Center
Atılım University	Ankara	Ön Business Incubator
Marmara University	İstanbul	Tekmer/Business Incubator
Başkent University	Ankara	Ekin Business Incubator
Kahramanmaraş Sütçü İmam University	Kahra-man-maraş	Koza Business Incubator

Figure 5: Examples of Business Incubators In Turkey

6. Possibilities of Development of the place where the incubator will be installed

The aims of the technology business incubator are in the parallel line of its locations because depending on the types of businesses to be targeted for occupancy, space and facilities might be different from each other. The geographical location of the incubator plays a major role in the success or failure of the project as well as of the companies housed there. The main criteria for selecting the location should be taken from evidence gathered through an entrepreneur survey conducted as part of the feasibility study. Choosing the location according to existing buildings should not be the option. More importantly, needs of the targets should be taken into consideration. Another essential point which the potential location of the technology business incubator should offer is that existence of available services and supportive business community. Regarding the available services, it might include the ICT, utilities, accessibility including transport links and financial services, free car parking and easy access without traffic and supportive business community refers to the being close proximity to universities, service providers, Industrial and Technology Parks for graduating companies to move to.

As the focus of this handbook on technology business incubator, it is essential to mention the location criteria of it which are underlined by UNESCO-Technology Business Incubator.

Selecting the TBI Location

1. Preliminary Screening Criteria – First, determine the preferred region in terms of:

- Geographic location (region, state, city)
- Linkages and proximity to university, research laboratory, business
- Availability and area of possible sites
- Availability of utilities and services
- Options to renovate or build, lease or buy
- Community support for incubator project
- Availability of potential entrepreneurs as tenant companies
- Availability of professional service providers
- Space for graduating tenant

2. Specific Site Criteria – Then, narrow the list down to 2 or 3 sites based on:

- Topographic considerations
- Geographic features (flood risk, natural surroundings)
- Transportation (access to public transportation)
- Estimated costs of operations
- Proximity to airport, rail, highway systems
- Utilities (location, availability, costs); Security
- Neighbourhood (potential for expansion, security issues)
- Legal (title/ownership, covenants/rights)

NEGOTIATE – RECOMMEND – PURSUE

Figure 6: Selecting TBI Location

Checking each criterion and analyzing the situation of potential location is an important step to further the success of the process of developing the technology business incubators. The environment and surrounding of potential locations should match in favorable means with its operations. Also, In the case of technology business incubators, for instance, it is important that they are located near universities or research centers, which gives them access to relevant staff, students, labs and other specialized facilities. But, when dealing with a traditional incubator, it may be more important to locate it in an area with easy access to marketing facilities. In addition to it, generally, incubators tend to be located in metropolitan areas which they can easily access all the facilities and be able to combine strengths in technology, creative, talent, entrepreneurship, professional services, and finance.

7. The Risks Involved

Despite all best efforts and strategic planning, business incubator planning and operations in developing countries have problems which constitute risks in its successful operation because of the variety of factors. This happens especially when the risk involvement is not done by the great understanding of all conditions and factors which might affect the business incubator that is why while many incubators have proven successful in the OECD Area, others have failed to achieve their objectives. When they fail, the failure has a major impact on many participants in the project and on the community at large. Technology business incubators are even more challenged by the fact that host firms typically deal with intangible assets more than the average enterprise. So, the promoters and sponsors of a potential business incubator should consider potential risks when launching a technology-business incubator.

There is a number of issues which constitute risk:

Feasibility process is often skipped, or not promptly implemented due to political constraints and lack of clarity on incubator strategy. Universities might see the role of the business incubator as a training tool and business support policy might see as a generator of high potential start-ups. These conflict does not help them to establish a successful technology business incubator that is why these approaches need to be reconciled, bearing in mind that a business incubation program that has a purely educational function is questionable and likely to produce poor value for money, through training and mentoring do play an important role in this policy. Initiators, Supporters, Planners / Developers and most important governmental institutions must know and understand the subject and the system of business incubation. Also, there might be conflicts when one part of the business incubator developers involve more than others or vice versa. During all the process involvement of all the parties equally is essential to not lead to poorly designed and insufficiently funded business incubators.

The incubators which are established in the campuses might give the wrong message about the contents of the programme is transmitted to potentially interested participants. It is essential to make it clear that training and teaching for tenant firms are of practical rather than academic nature by the management team of incubators.

The manager is often a state or university official with poor communication skills, abscence of networking and business experience, who has low salary. The team requires intensive training, at home and abroad, with continuous access to books, journals, videos. To provide qualified services and reduce risks it might cause, the management team of the technology business incubator should be of high-quality and consist of professional with business expertise and past work experience in the private sector.

Location or building may be chosen for political or financial considerations. Many empty building spaces seem to be available, but with poor layouts and difficult acquisition process. In the process of choosing the location, the strategic goals/objectives and needs of the business incubator should be firstly considered. Minimal renovation, easy maintenance and low operational cost should be considered after.

Technology business incubators that are created without the direct involvement of a university will still have to develop linkages with local HEIs, which can be a challenge when the local legal and institutional frameworks set barriers and disincentives to the engagement of academics with industry. Also, all the incubators have to give the effort to create international linkages such as NBIA/EBN/ICECE, who in turn need to take special measures to serve emerging country incubators, in self-interest.

In addition to this, there is the risk to be able to establish strategic relationships with key regional partners. To minimize the risk, business incubator developers maintain operational transparency and provide operational, financial and marketing support.

Technology business incubators are established without good understanding of what customers want and what they need, so this imposes significant risks. TBIs need to carry out in-depth market surveys to identify if there is a market for a specific incubator model and what the market expects from the future Incubator. A market survey should also highlight the existing entrepreneur support structure in the region and ways within which the business incubator can add strength.

8. Business Plan

8.1 Mission Statement

The mission defines the long-term vision of the business incubator, what it wants to achieve or accomplish and what it wants to serve for. Basically, the mission is related to the definition of the business incubator itself. The marketplace, services, functions or activities in which the business incubator operates constitute the basic elements of this definition. Also, having a clear mission for business incubators will make the employee aware of working for what, who and why which contribute to the successful achievement of the business incubator. As a result, the good mission statement should underline why the incubator has been established and what the incubator aims to achieve with the scope of its activities.

Mission Statement	Frequency/ %
Contributing to the competitiveness of the local economy	26
Job Creation	20
Supporting SMEs with high growth potential	19
Stimulating entrepreneurial spirit& innovation promotion	16
Supporting specific sectors& industry cluster development	8
Other mission statements: • Identifying exploring and developing regional competitiveness • Enhancing links between universities, research institutions • Contribute to the growth and success of emerging technology businesses • Assessment of company's risk profile • Transfer of knowledge &better leverage intellectual property from the University and area research institutes	9

Figure 7: The list of typical mission statements of business incubators

Example of mission statement to help business incubator developers

Our mission is to stimulate the establishment and growth of technology-based start-up companies and to increase the number of successful companies originating and developing in the area. We help emerging companies gain access to mentors, training, shared space, professional assistance, capital, and other services that will move them onto the fast track to success. By fulfilling our mission, we contribute to job creation and enhanced economic health in the region.

Examples of mission statement of successful Technoparks/Technology Business Incubators in Turkey

Mission statement of Technopark Istanbul

- Contributing national innovation ecosystem
- Accelerating the national transformation process into information society
- Helping the evolution of academic and scientific research into high-tech products
- Supporting the development of entrepreneurial abilities of R&D firms
- Creating a mutual interaction among science and business worlds

Mission statement of ODTÜ Teknopark Animation Technologies and Game Development Center (ATOM)

ODTÜ Teknokent ATOM's main aim is to promote R&D activities and support commercialization of existing business ideas in animation and gaming technologies, which are under the most strategic media position in the sector that produces high added value in the global market to encourage entrepreneurship and to train qualified labor force for the sector

Mission Statement of TTO HayalEt Business Incubator in Boğaziçi University

- Development of entrepreneurial capacity for information and technology generation and economic value transformation, and the development of new technologies or innovation capacity
- Development of cooperations on information and technology generation
- Commercialization of R & D and innovation activities aimed at developing products and production processes based on advanced technology and advanced technologies, increasing the number of patents
- Establishing a bridge between enterprise which is seeking investment and investors. As it is obvious from the examples, mission statements can vary depending on the incubators/technoparks

8.2 Vision Statement

A vision explanation condenses the picture that the incubator might want to pass on in regards to its future. Vision statements can range in length from short sentences to multiple pages. A consensus does not exist on the characteristics of a good or bad vision statement, but commonly it includes:

- Concise: able to be easily remembered and repeated
- Clear: defines a prime goal
- Time horizon: defines a time horizon
- Future-oriented: describes what the technology business incubator is willing to achieve
- Stable: offers a long-term perspective and is unlikely to be impacted by market or technology changes
- Challenging: not something that can be easily met and discarded
- Abstract: general enough to encompass all of the organization's interests and strategic direction
- Inspiring: motivates employees and is something that employees view as desirable.

The vision of TGB (Technlogy Development Zones)

- Creating a common platform of knowledge transfer
- Performing studies for the development of Techno Parks
- Expressing opinions and suggestions for technology politics and Research and Development policies
- Improving the cooperation among public, industry and university
- Raising awareness on technology and research and development

Some examples of vision statement of Technoparks / Technology Business Incubators in Turkey

Vision Statement of TTO HayalEt Business Incubator in Boğaziçi University

- Being the first application center for those who want to spend their life with products and services that create economic value by using information and technology
- Be an efficient and constantly evolving platform where ideas and capital meet confidently

Vision Statement Of Technopark Istanbul

- Becoming hub for the R&D centers and the centers of excellence in Turkey
- Constructing a new model for economic development and innovation
- Becoming an internationally respected science and technology park
- Structuring a dynamic and productive environment for business professionals and entrepreneurs
- Helping to transform ideas into products and brands quickly

Mission Statement of 3M Buckley Innovation Centre (3MBIC) in United Kingdom

We want to ensure cutting edge research has maximum impact by providing businesses with the tools they need to thrive in a tough economy. Whether it's signposting them to funding options, giving them access to state-of-the-art technology and international and national markets, or simply providing them with the workspace to operate, we can help drive entrepreneurship leading to greater levels of innovation and commercialisation.

Mission Statement of Play in Portugal

The Creative and Technological Incubator – PLAY-, presents itself as a platform for proximity to support the development of business plans and business creation, oriented to the whole community of Lusófona Group and also for external and public community. Its mission is to identify, incubate, accelerate and grow creative ideas transforming them into innovative designs and structured to lead the market of creative and technological industries.

8.3 Strategic Objectives and Goals

Defining the strategic objectives and goals plays key role in the process of technology business incubators. Strategic goals are even more closely related to the specificities of the regions in which an TBI operates because they will be directly linked to the definition of the services and actions it will undertake in the area it serves. They define clearly the direction that the actions of the TBI will follow, as well as the quali-quantitative objectives they should reach in the mid-term.

- Engineer and deliver services to the regional entrepreneurial community and to the public authorities to accomplish the mission and to realize the vision
- Create innovative and sustainable start-up companies
- Create high added-value and sustainable jobs
- Stimulating local entrepreneurship
- Developing innovation in existing SMEs
- Wealth creation

Figure 8 : Typical most popular objectives of business incubation

Strategic Objectives and Goals of Technoparks/ Technology Business Incubators in Turkey

TTO HayalEt Incubation Center

The main focus of the Center is the ideas that will create competitive power technologies, products, and services that will improve humans life. The Center helps in project management, commercialization and investments aiming to transform ideas into economic value.

ODTU Teknopark Animation Technologies and Game Development Center (ATOM)

- To base institutional work on the basis of long-term partnership and to find suitable professional work and materials
- To promote entrepreneurship in the game and animation sector
- To provide qualified labor force for the sector
- Creating a cluster that specializes in games and animation
- Creating new technology-based companies
- To make the university-industry business association effective and continuous
- To develop business cooperation with other countries in the sector
- To provide the necessary infrastructure for commercialization of creative and innovative business ideas
- To reduce the number of risk which is taken by entrepreneurs in the sector
- To provide the necessary training and physical support for the development of entrepreneurs

Vision Statement of Play in Portugal

- To be one of the leading European centers transforming ideas of creative and technological industries into business projects

Vision Statement of Launch22 in United Kingdom

- "A business incubator for young entrepreneurs from all walks of life"

9. Regulation and Establishments of Incubators

9.1 EU and national level

One of the main objectives of the European Union for the 2014-2020 period is to give financial and non-financial support to SMEs. Moreover, the European Structural and Investment Funds (ESIF) has SMEs as one of their top priorities. In order to achieve it, the role of Innovation-Based Incubators (IBI) has been key throughout this period and a new regulatory framework was created.

According to The Smart Guide to Innovation-Based Incubators (1) an incubator is a place where the incubation activities are carried out, and where the would-be entrepreneurs and the existing SMEs find a suitable place, in terms of facilities and expertise, to address their needs and develop their business ideas, and transform them into sustainable realities. Furthermore, an incubator may still be an incubator even if it doesn't provide physical incubation services, and concentrates on virtual incubation.

The primary role of the ERDF incubators is to promote the development of start-ups. Support offered to businesses beyond the scope of physical incubation can be achieved by other means. As an example, business support in the UK is often provided by service companies which offer a wide variety of business advice.

One important distinction between business incubators is that made between General purpose incubators and Sector-specific incubators. General purpose incubators provide all the services of the pre and post incubation regardless the origin and the economic sector involve, whereas sector-specific incubators provide services in a specific economic sector. According to the sector these may require a specific infrastructure to meet the needs of the companies.

Moreover, there are other types of incubators like pre-incubators and academic incubators. Pre-incubators offer the expertise and the facilities to support potential entrepreneurs in the development and elaboration of their business plan whereas academic incubators are usually located in universities and research centres to provide support to the business ideas elaborated by students.

It is also important to know the differences between incubators and accelerators. While incubators have been around since 1959, accelerators are a more recent phenomenon. In contrast with incubators, accelerators typically provide services through a highly selective, cohort-based programme of limited duration (usually 3-12 months). Services often include assistance in developing the business plan, investor pitch deck, prototypes, and initial market testing. Furthermore, whilst incubators typically charge rent or membership fees, accelerators more often base their business model on equity from the startups. This means that they are more growth-driven, typically aiming to produce companies that will scale rapidly or fail fast, thus minimising wasted resources.

Under the new 2014-2020 legal framework, the European Commission has strengthened the necessary conditions to apply for the funds, supporting the need to establish business incubators on the basis of detailed and realistic business plans. Therefore, incubator activities are conditional on the existence of an appropriate development strategy. Incubation skills are new in some of the European regions and newly built incubation infrastructure triggers the process of building the skills.

1. (Source: EBN team. (2010). The Smart Guide to Innovation-Based Incubators (IBI). Luxembourg. Publications Office of the European Union, 39pp.)

Therefore regions have to be very prudential when considering incorporating an incubator. The incubation activity should be sustainable after the ERDF co-financing comes to an end and the continuity of the project should be ensured without full reliance on public financing.

What is clear in the 2014-2020 legal framework is that the role played by incubators in the region's business infrastructure differs depending on Member States and each specific national context.

One of the main problems faced by the ERDF in the previous period was the lack of external funding when supporting SMEs or R&D activities. The business incubators were built in regions and after the sustainability period as defined in the ERDF regulation, their switch to other activities was allowed. This was primarily caused by improper definition of selection criteria; therefore in this programming period, and in line with the subsidiarity principle, the Commission recommends to managing authorities to pay more attention to this aspect in particular, by establishing more demanding selection criteria in operation selection process.

Thus, as it has been exposed, access to finance represents a critical factor in many regions. The IBI should provide services for the companies to facilitate their access to early-stage funding opportunities; seed-capital funds, networking with business angels or to grant schemes at regional and national levels.

Under the 2007-2013 legal framework, the project assessment and selection process fell under the responsibilities of national authorities, Managing Authority and Monitoring Committee, the Commission having only an advisory role in the latter. Under the 2014-2020 legal framework, contribution of an operation to the expected results of a priority axis is required to be included in the selection criteria.

Investments in business incubators are more of an enabler, than a driver of growth. Business incubators cannot generate economic growth by themselves; they need to be combined with other external factors. In addition, the interventions may have significant externalities, both having negative and positive influence on the development of a region. Therefore, establishing a direct link between the investment in a business incubator and regional benefits requires in-depth evaluation. The Commission assesses the stated objectives of priority axes of Operational Programmes. This may not only be jobs created, but for example new products developed, or exports generated.

When referring to the legal status, an innovation-based incubator could take the form of a private body, a public body, a public-equivalent body, or a mix public-private organization. The decision would depend of the influence of the public or the private sector and the need of funding, however, given that the majority of the funding usually comes from a public entity, incubators are normally non-profit. Moreover, incubators could be part of a bigger organisation like a University or a technology company or they can act in their own.

Another important issue regarding incubators in EU is that they must have clear visibility in the territory. All potential SMEs should know where the incubator is based, what service it provides, and what is it role in the system. In order to achieve this, a communicational and promotional campaign is needed.

9.2 National level

9.2.1 Italy

The definition of a certified incubator was introduced in the Legal system by Decree-Law 179/2012, art. 25, par 5, a "certified startup incubator": An incubator is an entity that satisfies a number of specific quality requirements, defined by the Ministerial Decree of 22 December 2016. The legal criteria concerns the physical facilities of the company, its management, and its track record in the incubation and acceleration of new innovative companies, aiming to identify and enhance those national structures that are able to offer efficient incubation services for hi-tech innovative enterprises.

The certified incubator should demonstrate that it has enough experience in supporting the launch and development of innovative enterprises through the provision of physical incubation services. Virtual incubation is not targeted by this policy.

Certified incubators must register in the relevant sections of the Business Register, created by the Italian Chambers of Commerce system. The registration process is free-of-charge and it takes place by transmitting to the local Chamber of Commerce an online declaration of self-certification of fulfilment of the legal requirements (2).

Despite its flexible entry process, it has two counterweights: They have to pass an ex-post supervision by the Chambers of Commerce on the content of self-certifications and incubators have the duty to update twice a year the data given at the moment of the registration and to confirm once a year the fulfilment of all requirements. Since 2012 the Italian Government has been engaged in the creation of a coherent, all-encompassing legislation in order to promote the establishment and the growth of new innovative enterprises with a high technological value.

The simplified and free-of-charge access for innovative startups and certified incubators to the SME Guarantee Fund should be highlighted. This is a State Fund that supports access to credit through guarantees on bank loans. The guarantee covers up to 80% of the bank loans granted to innovative startups and certified incubators, up to a maximum of €2.5 million per company, and it is provided through a simplified fast-track procedure.

From statistics taken from statista webpage, there were a total of 37 certified incubators in 2016. According to the data, Lombardy is the region with the highest number of business incubators (12) possibly due to the number of business incubators located in the capital of the region, Milan, Italy's biggest startup Hub.

9.2.2 United Kingdom

Although incubators seem to be a recent phenomenon in UK, the oldest incubator in the UK is St John's Innovation Centre in Cambridge, launched in 1987 (3). However, 111 of the actual 205 incubator programmes being developed in UK have been created since the beginning of 2012.

2. Italian Ministry of Economic Development. (2017). The Italian legislation in support of innovative startups. 27 pp
3. Bone J, Allen O and Haley C. (2017). Business Incubators and Accelerators: The national picture. 76pp

Nowadays, there are about 205 active incubators in the UK, supporting around 3,450 new business a year (6,900 businesses at any one time). It is particularly interesting that just over half of the incubators in the UK offer mentoring or networking connections and access to investors. Furthermore, more than 25% of incubators offer other forms of support such as training, direct funding, access to experts, demo days and legal and accountancy support.

It is important to take into account that the majority of incubators are partly self-funded through the membership fees or the rent they charge to their residents. The fees vary from £100 per month for a hot desk to £1860 for laboratory and office space. However, the fees are often subsidised using public or university funding. Focusing now on the sector distribution of incubators in the UK, it was mentioned in the report that 45% of the incubators do not have a particular sectoral focus, and the ones that do have appointed that they were categorized as being part of non-specific digital technology and very few companies were concentrated in a particular digital trend such as Fintech, Agritech, Edtech, Cybersecurity or Smart cities.

About the distribution of incubators across UK, it is evident that London has more incubators (29) than any other UK region, however, given the importance of London as one of the major Fintech companies, it is particularly interesting that they only have 15% of all the incubators in the UK. Furthermore, London has one of the lowest concentrations of incubators of all UK regions.

Scotland is just below London in the number of incubators with 23, the North West of England has 18, East of England with 17 and Yorkshire and Humber with 12. On the other hand, Northern Ireland and Wales have a low number of incubators. Furthermore, it is notable that all the incubators in the North East of England are completely founded by public or university money.

Public funding appears to be more significant in some geographies and sectors than others. It was found that business incubation in the Agritech, Transport and Space and Satellite sectors, and in North East of England, Wales and the West Midlands is reliant on public and university funding. It is important to note that the objectives of publicly funded incubators and accelerators are likely to differ from those of corporately funded programmes: for example, while public funding typically comes with the goal of local economic development, corporate funding is often aimed at tackling a specific problem, or building an ecosystem around a core technology.

9.2.3 Portugal

As in many European countries, incubators arrived in Portugal around the 2000s with only 23 incubators in the country according to reports. Nonetheless, it intensified in 2010s reaching the amount of around 70 incubators that Portugal has nowadays.

The first incubator in Portugal came in 1987, with the European Union's incentive to create a network to support the creation of new businesses. BIC (Business and Innovation Center), and with the success of companies such as Novabase, Link, TecMic or Buzdrect.

Incubators or capital companies are considered organizations that support companies in their early stages of life. Providing a work space, business, accounting, financial and legal advice, in addition to a great entrepreneurial environment, in exchange for a very competitive monthly fee. In the case of a home-based company, companies have also been providing a supported service, among which advice and assistance.

9. Regulation and Establishments of Incubators

In a country rich in talent and with the public investments made in education, infrastructure and technology, Portugal is a country with one of the best entrepreneurship ecosystems in Europe and Business Incubators have been key in stimulating the growth and development of science and technology based SMEs in recent years.

Through north to south of the country, passing through the islands, there are over 130 incubators dedicated to supporting entrepreneurs. They serve to develop skills and help those who «are typically dedicated to developing innovative business models with cutting-edge technologies, and in most cases are highly likely to fail,» says João Mendes Borga, head of the National Incubator Network (RNI), a project created by Startup Portugal. Together with these institutions, «entrepreneurs achieve much higher success rates than those who do not benefit from their networks, promotion initiatives and accumulated experience.» «The failure rate of startups created outside the incubators is more than double compared to those created inside incubators,» he said.

The map of incubators and entrepreneurial activity, designed by RNI, tracks what is the population distribution in the territory and the level of existing business activity, as well as the knowledge poles and the availability of capital. It is in Lisbon, in the Center and in the North Coast of the country that more infrastructure is concentrated to support entrepreneurs. Incubators, accelerators or nests of companies that are promoted by many entities and with different objectives. From this universe, the RNI leader highlights Startup Lisboa and Beta-i, for its international profiles, the Pedro Nunes Institute (IPN) or the University of Porto Science and Technology Park (UPTEC), «with a high number of companies and billing value.

LISPOLIS, a member of RNI, has launched a document in which it presents the 2017 numbers regarding the activity of incubators and accelerators in Portugal. In sum, in 2017, there was an increase of 11% over 2016 in the number of institutions operating under the business incubation activity. The number of projects of entrepreneurs in the incubators of the National Network of Incubators also increased by 37%. Also note the relevance of the more than 769 projects supported by incubators under the Startup Voucher, Empreende Al, Incubation Valley, Turism Explorers, Spin + and Apreender 3.0 programs, among which the 9 projects accompanied by LISPOLIS in the Startup Voucher program and the two companies supported in Vale Incubação.

The National Network of Incubators also carried out a survey of data for 2017 at the National Encounter of Incubators, which took place on November 6 and 7 in the Beato Creative Hub, from which the following data are presented:

- 3270 incubation halls
- 3004 startups in incubation (1022 in virtual incubation and 1983 in physical incubation)
- 2543 jobs created by new startups in the first 12 months
- 80.43% survival rate of startups incubated after 12 months of initiation of incubation
- 67.76% survival rate of startups incubated after 24 months of incubation start

Furthermore, the BICS has also been key in the development of technology in this country. The BICS is a non-profit institution which represents Portuguese BICs nationally and internationally. Moreover, the BICS aims to bring together all European Business and Innovation Centres, recognized as such by the European Commission, which have their offices in Portugal.

The reduced labour costs and qualified human resources are also often denoted as key factors to developing a business in Portugal and that's also why starting in this country is viewed as a strategic entrance into the European Market. It is also notable that the majority of entrepreneurs in Portugal have recognized that networking is the main advantage of business accelerators, leading to the so-called Networked Incubator.

An example of this is the emergence of several Science and Technology Parks with Business Incubators inside, such as Lispolis, Taguspark, Madan Parque, Madeira Tecnopolo, Parkurbis, Beira Atlântico Parque or Tagus Valley. Incubation aims to foster local innovation capacity and technology development.

Portuguese public financing policies for startups are focused on offering alternatives to bank loans, namely by regulating and promoting new methods of financing, such as equity crowdfunding and peertopeer lending, but also by the State coinvesting with the best national and international investors. Portugal Ventures, the public VC institute, has a new public venture capital strategy in key sectors for the national economy and in projects at a stage at which the risk is perceived to be too high for private investors. Other policies for financing startups in Portugal include vouchers for startups to acquire professional incubation services, and for young people who live in Portugal or abroad and wish to create a startup in Portugal, regardless of their financial situation. There is also the Seed Programme, the most favourable tax regime for startups in Europe, and job creation incentives for companies with less than 5 years.

Difference between concepts of portuguese companies' nests in areas of business location:

Nests of companies: denominated CACE (Center for Incubation and Business Acceleration) an initiative of the national employment center (IEFP);

Accelerators: Support to Start-Ups with programs of short duration (up to 6 months of incubation). From that period they migrate to another business entity. Co-working spaces (eg. Start-Up Voucher)

Incubators:

- Social Economy: covers all undertakings and initiatives that are based on a perspective of mutual aid, self-management, that share the principles of cooperativism (MIES- Map of Innovation and Social Entrepreneurship, http://www.mies.pt/index.php/en/)

- Technological: provide support during the nascent phase of new innovative and/or technology-based and advanced services business projects (e.g. IPN - Pedro Nunes's Institute, Awarded the Best Tech Incubator of 2010)

- Non-technological: provide support during the nascent phase of new innovative business projects (e.g. Quarteirão das Artes, NovaAlmadaVelha)

Technological Parks: instruments deployed in developed and developing countries to boost regional and national economies by aggregating knowledge content. As a result, these economies become more competitive on the international stage and generate jobs of quality, social welfare, and taxes. Typically, these parks are located ventures for the promotion of science, technology and innovation, without connection to a university.

Science and Technology Park: enterprises for the promotion of science, technology and innovation, with connection to a university. (e.g. Madan Parque and TecParques)
Map of Incubators: http://www.rni.pt/

Types of Companies:

Start-Up: Starting Company
Growth Company: Start-Up with more than 3 years of activity
Snipoff: Companies that result from initiatives of academic research groups, which are in PROs (Public Research Organization, typically Universities) or ROR (Research Organization, Public (e.g. LNEC) or Private (e.g. UNINOVA)

9.2.4 Spain

Business Incubators are described by the Ministry of Economy, Industry and Competitiveness as financing options to help to create a business idea from a scratch, and accompany startups for a limited period of time until they get the first benefits and can take off.

Business incubators in Spain are usually sponsored, supported and operated by private companies, government entities or universities. As in the rest of Europe, their primary purpose is to provide young businesses with the necessary support in technical and financial services.

There are currently a total of 250 incubators in Spain that provide assistance in the form of spaces and services to create and develop a startup. Many of them offer interesting development programs and others are limited to offering a work space in good economic conditions. Most are driven by municipalities, Autonomous Communities and development groups, which sometimes help to channel certain subsidies. It should be noted that while 47% of the companies created in Spain close only 2 or 3 years after its creation, 80% of those startups that were born under the shelter of one of the best incubators in the country managed to survive.

Within the panorama of incubation in Spain, the association ANCES (National Association of European Business and Innovation) stands out with more than 4,700 incubated companies, 126,238 supervised entrepreneurs, 102,530 job positions created (4) and more than 34,500 companies created , being a point of reference in the economic development of the country.

9.2.5 Estonia

Estonia is famous for its digital innovation and rapidly growing startup ecosystem. In fact, according to The Economist, Estonia has the world record for the number of startups per citizen. Moreover, it takes only five minutes to register a firm in Estonia and Estonia´s capital, Tallinn, is now mentioned in the same breath as Berlin, London and even Silicon Valley.

People could argue that this boom is fuelled by government subsidies, however, the key of this success seems to be their digitised bureaucracy (government cabinet has said goodbye to paper) together with very welcoming ecosystem to foreigners.

4. ANCES. (2014). XX Aniversario Ances 1993-2013. 61 pp.

Among the most important incubators in Estonia we can find BuildIt, which focuses on hardware and the creative industries and it accepts startups all over the world. BioMed, with almost 15 years experience, it has attracted about 17M euros of funding for its startups, or ClimateLaunchpad, an international incubation program that offers intensive mentoring for idea-stage and very early-stage cleantech startups.

Moreover, it is also really important the role of Startup Estonia, a governmental organization to support the start-up ecosystem in Estonia. The main goals of the organization are to map the ecosystem, monitor the performance of the ecosystem (including supporting organizations), find out the bottlenecks in the ecosystem and eliminate them. Furthermore, they are the ones representing start-up scene abroad and attracting new start-ups/investors/talent.

9.2.6 Turkey

Despite the political upheavals in the recent years, Turkey is still one of the most innovative countries. With a fast-growing economy with lots of market opportunities and a sizeable market, Turkey is strategically located between key markets in Europe, the Middle East, Russia and Central Asia, with Istanbul being the access point to the EMEA region. Moreover, it is notable that half of the Turkish population is under the age of 30, being one of the youngest countries in Europe creating an entrepreneurial and internet savvy population driven by the fact that the cost of living and doing business is lower than in most major tech hubs in Europe, USA or Asia and a corporate tax rate of 20%.

In Turkey, new laws are issued to support the entrepreneurship ecosystem.A new law, named "Technology Development Zones Law-Law No: 4691", which was accepted on June 26, 2001, provides important compensations to the tenant companies. Various incentives, tax exemptions and waiver mechanisms introduced in the law create important potential opportunities and benefits to universities, academicians and companies that have R&D activities and/or are developing software.

These discounts, exceptions, and incentives are:
- Corporate Tax Exemption
- VAT Exemption
- Exemption from income tax withholding tax and stamp tax on wages
- Insurance Premium Incorporation

An example of this are several pre-incubation and acceleration programs at the techno park of the Middle East Technical University (METU) like YFYI, ATOM and Teknojump This techno park has several programs and support start-ups of every stage and size. The YFYI is one of Turkey's largest technology-based entrepreneurship programs and Teknojump is an accelerator program mostly known for its international business focus, helping start-ups move to Silicon Valley. The METU technopark is again a good example of a Turkish brewing place for innovative companies.

Furthermore, Business incubators, accelerators and Coworking spaces are mushrooming around the city and local incubator Endeavor Turkey also works to connect entrepreneurs to mentors, investors and even potential partners to keep ideas flowing and people sharing. With regard to European financing, Turkey is now under the IPA financial assistance for the period of 2014-2020 with a total budget of €4,453.9 million. This European aid has been key increasing business competitiveness, strengthening research, innovation, and technological development.

10. Legal Aspects

The legal part is one of the essential parts which should be considered during the establishment of the business incubator. Entrepreneurship, the business incubator, technology business incubators, technoparks and others are the new topics in business area so the law applicable to them also considerably new and be adaptable in the last few years according to the entrepreneurship ecosystem of the country. The countries have adopted different law according to their ecosystem, but the main idea behind of it is almost the same in every country.

The aims to reach with all the adapted laws are:

- Develop entrepreneur friendly regulatory framework
- Support Innovative entrepreneurship
- Develop and apply sustainable support system for priority thematic areas and general areas such as Women's entrepreneurship, young entrepreneurs, Eco entrepreneurship, Social entrepreneurship and Global entrepreneurship and ensure execution
- Develop the culture of entrepreneurship
- Generalize entrepreneurship training at the level of formal and mass education basis and develop consultancy system entrepreneurs oriented
- Facilitate entrepreneurs access to the finance
- Eliminate the barriers and bureaucracy
- Access to microcredits and seed capital
- Development of Economy through entrepreneurship
- Entrepreneurship training Technology Transfer Network development services

For example, in Turkey, new laws are issued to support the entrepreneurship ecosystem.A new law, named "Technology Development Zones Law-Law No: 4691", which was accepted on June 26, 2001, provides important compensations to the tenant companies. Various incentives, tax exemptions and waiver mechanisms introduced in the law create important potential opportunities and benefits to universities, academicians and companies that have R&D activities and/or are developing software.

These discounts, exceptions, and incentives are:

- Corporate Tax Exemption
- VAT Exemption
- Exemption from income tax withholding tax and stamp tax on wages
- Insurance Premium Incorporation

In addition to the laws which create a suitable and sustainable environment for incubators and entrepreneurs, another essential point is the legal status of technology business Incubators. The legal structure selected should be relevant to the nature of the technology business incubator, the incubator's strategy, the financial model which sustains it and of course the legal requirements of the country or region in which it is operating. In developed countries and some developing countries, many of the technology business incubators are operated as separate legal entities as it is recommended the incubator should be a separate legal entity, and not an adjunct or sub-unit of an existing government agency, university, or research laboratory. The governmental influence is limited to financial support and to a controlling/ monitoring function via a board member. It is likely, that the government will be represented among the shareholders/ associates or founders (depending on the chosen legal form).

In any case, the strategy of the incubator will determine whether the optimal legal status for the incubator should be as a separate legal entity or as a connected unit of an existing institution such as a university, a company or a local government body.

The objective of key parties who involves in the setting up process of technology business incubator plays an important role defining the status of technology business incubator such as for-profit and no-profit. According to a survey of Rustam Lalkaka who present the result from both the EU and the US shows that the percentage of for-profit incubators are 21.8 in the EU and 11.55 in the US. Percentages of non-profit incubators are 76.9 in the EU and 86.5 in the US. The result shows obviously the high percentage of incubator ecosystem consist of non-for profit companies.

Legal Statues of Incubator in Europe	Number	Percentage
For profit	17	21.8
Not for profit	60	76.9
No answer/ don't know	1	1.3
Total	78	100.0

Source: CSES analysis of sample

10.1 Private Entity/ For-profit incubators

Private Incubators have been supported by venture capital companies, corporations, large companies and private service providers and are privately funded and managed. They generally provide similar services like public incubators such as co-working space, support in areas of engineering and product development, online marketing, business intelligence, operations, human resource, and finance. The incubation period varies depending on the business model of the incubator; however, ranging from 9-12 months. The primary motive in funding the incubator by a private sector is to make the profit and they also contribute to the betterment of the economy and the community.

10.2 Public Entity or Private Entity /For non-profit incubators

The primary motive of this kind of incubator is social return and not-for-profit incubators are not driven by return on investment to shareholders and therefore can be well-suited to serve promising ventures that would provide for job creation and economic benefit to a region. Most of the incubators are nonprofit. They provide services such as co-working space, support in areas of engineering and product development, online marketing, business intelligence, operations, human resource, and finance.

The potential problem of public entity incubators which might constitute risk is that having generally been too cautious and employed people without sufficient business experience to deliver the level of services required. Managers might be more focused on bureaucratic aspects and devote less time for engagement with clients or tend to link incubator clients with sources of financial assistance and can be less selective in entry procedures. As a result, most of the new start-ups were going out of business, showing a lack of support to their activities and sometimes poor entry procedures.

11. Organizational structure

The quality of the personnel involved with all aspects of an incubator program such as its operations, including its board of management, its staff, mentors, advisers, business network all influence the enterprise development capacity of an incubator. The management team of incubator does not only provide assistance to the incubated companies but also bear responsibility for the independent development of the Business Incubator as a business company. The dual responsibility emphasizes the key role of the management team to generate success and respond to day-to-day needs, the stresses of constant interruptions and emergencies for both its incubate and incubator in national and international level. In addition to it, consensus among staff and major stakeholders on the mission of the incubator should be achieved for the successful operation and organizational structure.

The staffing of technology business incubator can vary enormously depending on its size and resourcing. However, the research of CSES suggests that a typical business incubator will have on average 2.3 management level staff (giving a ratio of management to tenant firms of about 1:9, based on the median of 18 tenant firms per incubator). An analysis of the number and type of staff is shown in the following table.

Personnel Category	Average Number
Managers and Professional	2.3
Secretarial	1.4
Other Personnel	1.9
Average Staff per Incubator	5.6

Figure 9 Incubator Personel
Source: CSES analysis of sample

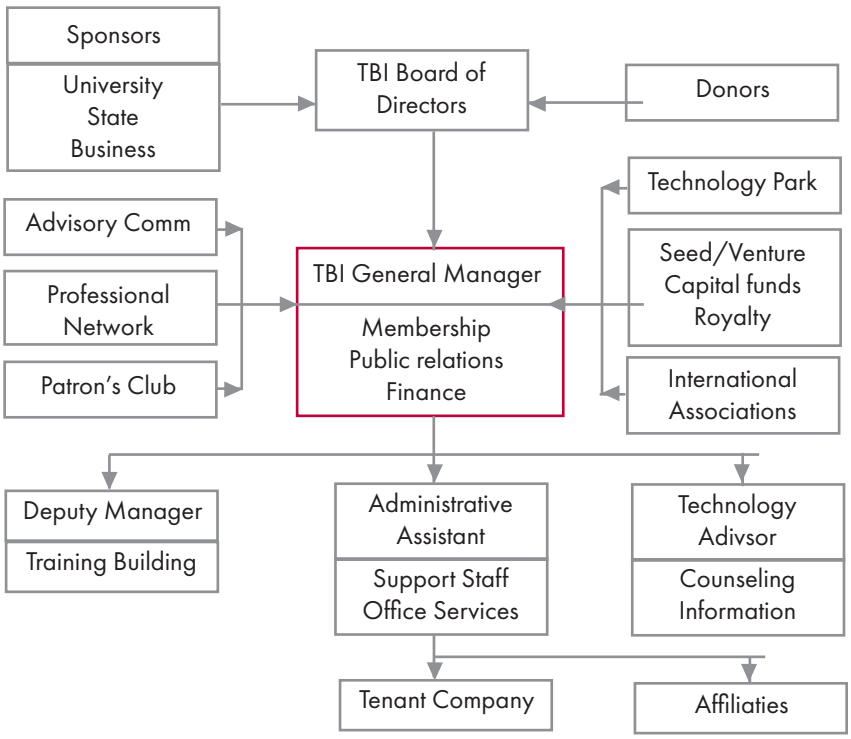


Figure 10. Typical TBI Organization Structure

11. Organizational structure

The general and purposed organizational structure of TBI is shown in the chart above. Each department has its own role, responsibilities and required skills. But to give a guide in the selection process of the organizational chart, there are some key skills which are necessary to establish and maintain sustainable TBI.

Key incubator staff skills required:

- Marketing
- Stakeholder management and PR
- Administration – financial, legal, HR, IT
- Facilities Management and ICT infrastructure
- Planning, reporting, monitoring, and evaluation
- Provision of quality business development services to clients
- Provision of quality office and infrastructure services to clients

TBI Board of Directors: It consists of a group of people who wants to or should play a major role and which also commit financially to the incubator development, can become shareholders, associates or founders; shareholders should have a majority position. The stakeholders and shareholders usually are represented on the board of directors or council.They share the vision for the incubator and provide expertise that would contribute to the ability of the incubator to fulfill its mission.

According to Rice and Matthews, a board of directors ideally consist of members from each of the following groups:

- Leaders/Champions Committed to the Principles of Successful Business Incubation
- Networkers
- Real Estate and Business Operations Professionals
- Investment Professionals
- Entrepreneurs
- Product/Service Assessment Professionals

They are responsible for:

- Defining the general strategy for the TBI
- Selection, approval, and dismissal of the Managing Director/ CEO
- Approval of the yearly target plan and budget
- Approval of the annual report
- Monitoring and controlling the TBI
- The establishment of policies and procedures including tenant admission/exit
- The employment of the incubator management team, and the setting of the terms and assisting the management with the expertise of the different board- members

Basically, TBI Board of Directors bears responsibility for the overall supervision of operations. Importantly, the Board must develop the Strategic Business Plan and monitor it honestly and regularly towards meeting its objectives and outcomes.

TBI General Manager: The individual hired for this position should have prior experience managing a business incubator, especially during the initial years as the incubator is established and grows to capacity because according to research more experienced managers are more effective. General Manager should also be able to attract sponsors, investors, financial stakeholders and clients.

The role of the manager or chief executive officer of the incubator is both internal and exter¬nal. Typically, TBI General Manager qualifications include:

- A background in small-enterprise development, preferably with experience in starting and growing a self-owned business
- Knowledge of the local community and of the formal/ an informal network of contacts within university, government, private, and non-governmental organizations
- Consulting skills, in order to provide managerially, technical, and business strategy advice to clients
- Familiarity with the problems of creating enterprises in advanced technologies in the rapidly globalizing environment
- Excellent written/verbal communications skills and computer literacy and in English
- Interpersonal skills to interact with clients, the Board, service providers, bureaucrats, and politicians; to raise funds; to liaise effectively with the stakeholders; and to handle staff – all under conditions of uncertainty
- Unqualified integrity, unsurpassed enthusiasm, mature business judgment, and total commitment to the success of the incubator, its clients, and the owners
- Understands the design and implementation of accounting and control systems to ensure proper stewardship of resources
- Available to work long hours with a dedication to make the incubator succeed

The director will:

- Assist in developing and the incubator's strategic plan and annual work plans.
- Build relationships with public and private organizations that may support the mission of the incubator.
- Develop, coordinate, and market programs and services provided through the incubator.
- Market the incubator, screen potential tenants, and negotiate leases or other agreements.
- Establish and manage the incubator's professional services, mentor, and investor networks.
- Provide financial management, prepare annual budgets, and report routinely to the board.
- Support fundraising and grant activities
- Collect data to measure outcomes.
- Manage operations of the incubator facility.

It might be difficult to find a person who has all these qualifications and be able to perform all the task successfully. But TBI Board of Directors should pay special attention to this process and take as much as the time needed because the qualified manager will enable TBI to stand with success. Here, it is important to mention that experience indicates that in many cases women have the nurturing skills to support the entrepreneur, and make good incubator managers.In addition to it, the incubator manager's stability is essential because it creates the opportunity to develop networks with key stakeholders and enhance trust, both of which contribute to boosting client firm outcomes.

TBI Deputy Manager: The deputy manager should have complementary experience and skills to those of the manager, focusing on day to- day operational issues. These generally include:

- Consulting and training skills, to provide management/ marketing support
- Excellent written and verbal communication skills and computer literacy
- The ability to organize maintenance of the building, equipment and facilities
- Skills in collecting accounts receivable.

The final selection of the deputy manager is done by the manager, with support from Board.

TBI Administrative Assistant/Receptionist: The receptionist would answer telephones, greet visitors, provide fee for service administrative support to tenants, and maintain equipment and supplies. Based on the number of tenants projected, this would begin as a part-time position and could increase over time as tenant occupancy and revenues increase.

The following skills are desirable:

- Strong work ethic and a caring personality
- Professional appearance and demeanor
- Excellent computing and communication skills
- Capability to organize all office equipment and shared facilities
- General knowledge of business and office procedures

Technology Adviser: In a TBI, a person with a strong interest in, and experience with, issues of technology venture creation is necessary.

- While he/she need not be a scientist, technologist or engineer, a technology orientation is essential, including counseling and training experience on IPR, ethics and environmental issues.
- Experience in running a knowledge company would be valuable.
- Familiarity and contacts with the local technology establishment in order to access expertise and equipment.
- Knowledge of sources of risk finance and due diligence process, to help firms secure research and operating capital.

12. Manual for the Implementation of Incubators

There can be various settings and categories of incubators, in terms of economic development, technology commercialization, profitability, and enhancement of entrepreneurship. The priorities might be to create new business from the standpoint of economic development, employment, industrial advancement, revitalization of the local economy, and solving economic problems. To reach all of these objectives, successful preparatory, implementation, operation and sustainability studies should be done with high level of importance. The success of the technology business incubator depends on the implementation, and the successful implementation depends on thorough evaluations. Typically, the preparatory work comprising feasibility and business planning for an incubator requires six to nine months, and the implementation may take about another nine months – that is, a total of over a year before the TBI can start operations.

According to Lalkaka, in the preparatory process:
Reconnaissance survey of selected locations during which potential stakeholders should be briefed frankly on probable benefits and costs of starting and sustaining an incubator, including their long-term responsibilities:

- Local consultants who are familiar with local conditions.
- Careful identification of a strong sponsor group to take local implementation responsibility, including a champion.
- Issues concerning feasibility, particular analyses of the entrepreneurial pool of potential tenants, linkages to universities, the support services network, the availability of suitable building space, and financial cash flow estimates.
- Commitment by state agencies at the central, provincial, and city levels to provide policy and financial support for investment as well as initial operating expenses.

During the preparatory work, feasibility studies and business plan should be done in details.

At the end of the feasibility studies, the TBI teams should know whether there is sufficient demand from prospective entrepreneurs for the kind of infrastructures and support services that a TBI provides. In this phase, it is also important to find out if and how stakeholders will support the development and operation of the future TBI.

The outcome of the feasibility study provides the basis for the TBI's business plan. In this stage, the concrete TBI model is elaborated specifying in words and in financial figures the kind of support that can be provided by the TBI to meet the needs of its customers; how the TBI will be organized and operated; and how all of this can be financed. The business plan helps the TBI teams to acquire funding and is a guide for the management team on how to implement the TBI.

At the end of these stages, if the incubator developers see the establishment and growth opportunities for the TBI, next step should be implementation stage.

According to Lalkaka, The implementation process consist of:

- Forming a strong managing board with advisory structure and enabling them to observe incubator operations
- An appropriate legal person for the incubator
- Careful selection, training at home and abroad, and proper remuneration of the manager and team
- Screening of the technical, business and market potential of tenants
- Prudent capital expenditures on building renovation and furnishing
- Promotional campaign to mobilize community support

Activity	Months
Appoint a Board of Directors and hold the first Board meeting. All actions hereafter are the responsibility of the Board	1–2
Secure a consensus among key stakeholders on the purposes, type and mission of incubator	1–2
Finalize a consultancy contract for advisory services on implementation and initial operations	1-2
Complete the legal work for the establishment of the TBI	2-3
Establish the project implementation and construction management structure	2-3
Finalize negotiations and sign lease agreements for the incubator's use of land on a low or no rent basis for an initial 10-year period	2-3
Select a competent manager and arrange for hands-on apprenticeship training on operating incubators	2-4
Prepare engineering specifications, invite bids and finalize contracts for construction/ renovation work	3-4
Set up a Steering Committee and an Advisory Committee	3-5
The Board must finalize operating procedures, including selection criteria, rentals, service charges and member agreement	4–6
Initiate a selection process for 4–8 entrepreneurs to enter	4-7
Initiate arrangements for tenant financing	4-6
Organize a pre-incubation/entrepreneurial workshop	5-6
The Board and management organizes services for members	5-8
Complete the construction and procure office equipment/furniture	5-9
Promote outreach services and enrol affiliate members	6-9
Install the furniture and equipment and prepare to induct the first batch of clients	7-9

Figure 11: Milestones in establishing an incubator

As it is obvious from the figure, establishing the business incubator requires considerable amount of knowledge, effort, cooperation, teamwork, financial support and time that is why it is essential for incubator developers to stick to their commitments, objectives and goals regarding the establishing the technology business incubator.

Here are some key fundings from existing business incubators to guide new technology business incubators for better development.

Rice and Matthews present a set of core principles that can guide both policy and practice, and from these principles they propose a typology of 'best' practices.

The Three Principles of Successful Business Incubation

1. Focus the energy and resources of the incubator on developing companies

2. Manage the incubator as a business, i.e. minimise the resources spent on 'overhead' and develop a self-sustainable, efficient business operation

3. Develop a sophisticated array of services and programmes that can be targeted to companies, depending on their needs and stage of development

Ten Best Practices of Successful Business Incubation

1. Commit to the core principles of business incubation as the first step in developing a best-practices business incubator

2. Collect and assess key information. Decide whether the incubator is feasible or not

3. Structure the incubator programme to be financially self-sustainable

4. Structure the incubator organisation to minimise governance and maximise assistance to incubator companies

5. Engage stakeholders to help companies and to support incubator operations

6. Recruit staff who will manage the incubator like a business and a president who has the capacity to help companies grow

7. Choose a building that will enable the incubator to generate sufficient revenue and also support business incubation

8. Recruit and select client companies that provide revenue required in the financial model and have the potential to grow and create jobs

9. Customise the delivery of assistance and address the developmental needs of each company

10. Engage in continual evaluation and improvement as the incubator progresses through various stages of development and as the needs of client companies change over time

13. Financial Structure

Even though the numbers of business incubators around the world are increasing, the question of financing and sustainability is still one of the challenges which business incubator face. The business incubators are usually funded by a group of government, universities, private institutions, research centers, or a mixture of all those depending on ways to support business incubators. The main sponsor normally plays a key role in determining the outcomes of the incubator. There are some partner institutions which offer the contribution in kind in the returning of innovation, research commercialization and student involvement based on their strategic goals, achievements and interest.

Business incubators generally consist of three types of revenue models.

The first method is rental methods where the business incubators finance itself with revenue from rental income from tenants and also other services provided by incubators such as consulting and other services. In this method, mostly public grants are provided to the business incubators but in some situations, funds regarding the rent also can be given to directly to the entrepreneurs /clients in the incubator to support their efforts on developing a competitive advantage within the market. This model can be beneficial because of the reason that making a progressively growing contribution towards the financial sustainability of the incubator, financially being self-sufficient, given free-buildings, having minimum economic of scale.

The second model is that success sharing with incubated business. Basically, Incubator has the potential to generate revenues from sharing in client success by small equity stake as a condition of incubation (up to 5%), own funds invested, royalty arrangements on gross sales for a period – 2% to 5%, brokerage fees for capital raised or gross sales. This method, however, requires substantial initial investment and a great deal of patience, as it may take up to 10 years to generate revenues.

The third method is ongoing government or donor funding, such as the University, government at the federal / state / local levels, of private foundation or industry support. In this method, being integrated with government policies, having long-term reliable funding and being self-sufficient with the government as the market are beneficial for business incubator not only for financing but also for sustainability.

Other sources of revenue:
Consultancy Assignments
Funding Advisory/Funds Facilitation Fee
Marketing Facilitation Fee
Capacity Building& Training
Handholding and mentoring
Events (Seminars, conferences, exhibitions etc.)

Even though there are different sources to maintain finance and sustainability of business incubators, these sources on the below might leave no time for incubation to focus its initial strategic aims and objectives that is why it is essential to not only rely on these kinds of sources. In this point, there might be a question which asks about best model to choose in the process of establishing the incubator. Unfortunately, there is no such a thing as best revenue method when it comes to business incubator revenue models because it should be adapted to local potential and business environment and have diversified revenue sources.

14. Operational Structure

The Incubator operating system is basically the model with a focus on the components of the process and the goals and strategies. A basic model can be described in two dimensions with three basic elements: the incubator, enterprise, and the investor. The relationship between those elements is described in the chart below.

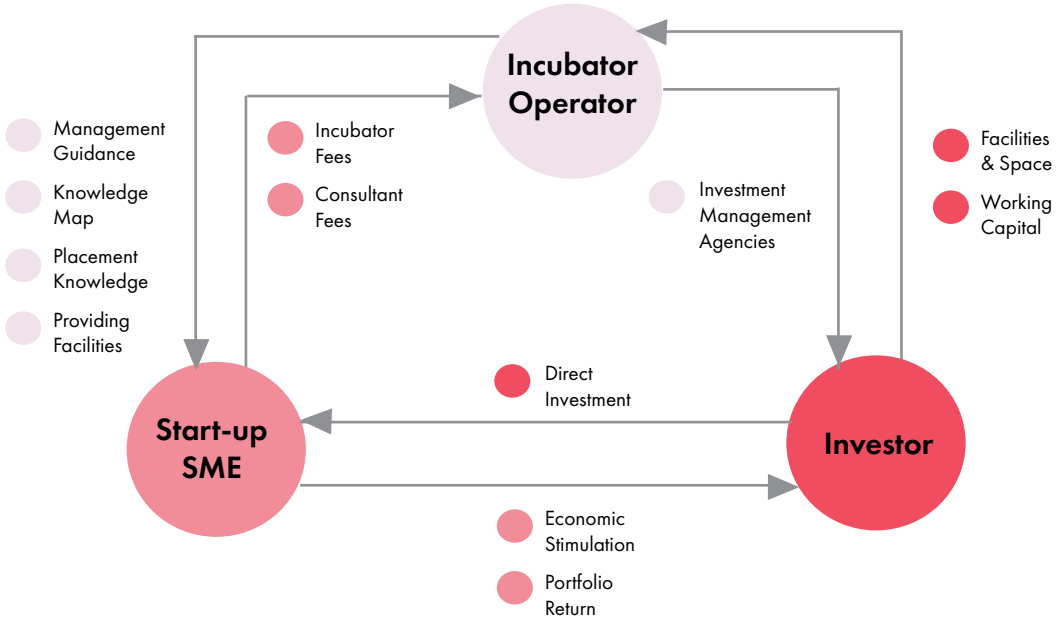


Figure: 12 Basic Model of the Incubator Operating System

The operators of the business incubators receive financial support from investors into the business incubators. Business incubator operation provides the necessary services to start-ups and enterprises and gets some fees based on facilities. The enterprises and start-ups get investment from the investor. In the end, thanks to the successful combination of the operating process, the start-up, and small enterprises are the companies that can contribute to regional or national economic development and bring innovation to the community. To be successful and sustainable technology business incubator, incubator developers should pay special attention to the operating framework such as admission and exit criteria, client monitoring and role of the management team. Admission of enterprise which shows a great deal of growth and supporting them with highly skilled management team will increase the growth, value, and sustainability of operating framework in the technology business incubator.

15. Role of Management Team and Procedures

The quality and commitment of the management team is another significant factor for the viability of incubators. Selecting suitable tenant firms, providing business and managerial advice to these firms, creating links with investors and the wider business environment are:

- Objectives of Incubator's Management team
- Routine management of incubator affairs
- Providing advice and assistance to companies
- Networking with other incubators/organization
- The effectiveness of management can be strengthened through networks of business incubators in which industry best-practices are disseminated

15.1 Admission Criteria

It is important for incubators to have a clearly defined target market and to have this target market reflected in its admission criteria. Having advanced selection criteria improve the interaction through a structured incubation process and increase the quality of supported ventures. Merrifield state that no analytical scheme can guarantee 100% success, but careful incubatee selection can increase the probability of incubate and thus incubator success. Even though having sophisticated criteria for admission process is an essential part of the successful incubator, there are no structured criteria for all types of incubators. So, the criteria can vary depending on the types of incubator and vacancies present in the incubator. But still according to Rustam Lalkaka, criteria for tenant selection are on three levels, of which the most important are the business aspects:

General

- The potential for business growth
- Ability to create jobs
- Ability to generate net profit and pay incubator rentals
- Potential to strengthen and diversify the economy
- Ability to increase the local tax base
- Understanding that the management resides in the community
- Compatibility with incubator objectives and existing clients.

Technical

- Value-added by innovation
- Core competence
- Time to market
- The patent situation
- The uniqueness of concept
- Access to external expertise/faculty/facilities.

Business

- Market knowledge and focus on the specific industry
- People-oriented manager, able to attract a good staff
- Ability to develop a network of cooperative relationships
- Good communicator, with knowledge of English and computing
- Small business management and marketing skills
- Integrity and capacity for hard work
- Ability to handle crisis and risk.

Based on these criteria or other specific criteria which is applied by the incubator, the management of the TBI review an applicants qualifications through an application form, a face-to-face interview, background research, and discussion of the market potential and the technology with TBI advisors. University-based business incubators should continuously enrich their selection criteria strategy in order to attract and incubate only the very potential incubatees.

15.2 Exit Criteria

The exit policies mark the end of the incubation process. Most incubators limit the time incubatees can stay in the program, and moreover, companies move on because they need space to grow. The time which a tenant can stay should be specified in the contract. But according to research, the average length of tenancies is 43 months. It is important to mention that length of tenancy depends on the types of the incubator, country, and vacancies present in the incubator. For example, in Spain and France, the average maximum tenancy is 6 months or so longer, whereas, in Italy, a typical incubator tenant can remain in the incubator environment for as long as 53 months. There are also important sectoral factors that influence exit rules. In the case of technology business incubators, because of regulatory approvals on processes, patents, trials, tenants might require lengthier incubator stays than 3-5 years.

Time Period	Number	Percentage
No maximum tenancy	6	7.7
Less than 1 year	5	6.4
1- 2 years	10	12.8
2-3 years	22	28.2
3-4 years	13	16.7
4-5 years	9	11.5
Over 5 years	7	9.0
No response/don't know	17	21.8
Total	78	100.0

Figure 13: Lenght of tenancies in the incubator
Source: CSES analysis of sample

In addition to specific exit dates according to contract, Peters et al. found in their interviews that some incubators increase the rent as an incentive for non-performing start-ups to leave the incubator. Another important point is Johan Bruneel et al found out that none of the incubators had clearly specified exit policies. The strictest criteria for exit found was a statement that all incubatees should leave after a maximum of 36 months within the incubator. So, incubators should pay special attention to exit criteria in a same way they pay attention on admission criteria because exit policies is an important factor in the incubation process as it involves the closing stage.

Example of admission and exit criteria from HayalEt Business Incubator in the Boğaziçi University in Turkey

HayalEt Incubation Center, which continues its activities within the Technology Transfer Office of Boğaziçi University since 2013, was established with financial support from the Istanbul Development Agency in 2011.

15. Role of Management Team and Procedures

Admission Criteria:

Evaluation board seeks proper answers to following questions to eliminate non-growth potential enterprise and contribute to the market with growth potential enterprise.

- Are there comparisons with similar or competing products / services in terms of innovation?
- Has competition analysis been conducted and competition methods considered?
- Is the initial market analysis well done?
- On which issues is R & D work clearly specified?
- Are the basic problems and possible solutions to be solved in terms of development and production stages defined in the business idea?
- Is the project team structured to take the necessary disciplines?
- Are the required collaborations, consulting and service procurement identified to put project into practice?
- Are basic expense items for development of project/ product set up?
- Are the basic principles of marketing strategy considered?

Each project is evaluated based on these criteria. The enterprise who provide all these criteria can benefit from the advantages of incubator.

Exit Criteria:

- Establishing a company and becoming able to pay the bills
- Enlarging the enterprise through investment and needing a larger area
- Moving to a new location by receiving support / office from KOSGEB TEKMER or Teknopark
- Converting the developed product or technology into a product by selling / licensing it

It is decided that incubates should be graduated by making necessary evaluation in accordance with these criteria.

Since the day of its establishment, HayalEt has received 900 applications, 200 entrepreneurs gave 250 hours of entrepreneurship and business development trainings and seminars, 60 entrepreneurship have been provided mentoring services on the topic of strategy, innovation, 10 enterprises have been graduated and 8 projects received investment. Business incubator should be always operated as business that is why it is like a chain which every elements of it affects the successful implementation or development of others,and one of them doesnot work properly it also affect the rest.

It is important to mention Lee &. Osteryoung identified 14 factors emerged as important to the effective operation of the incubator system:

15. Role of Management Team and Procedures

Goal / Operations Strategy	• Goal (clarity, achievement) • Operation strategy (concreteness, realization)
Physical/Human Resources	• Easy access to facility and equipment • Common access to service space and office equipments • Networking of entrepreneurial support • Expert organization Incubator Services • Technology transfer and research and development • Business and law consulting • Financial support and consulting • Entrepreneurial education program Networked Program • Institutional networking • Networking of tenant/off-line firm • Networking of financing/ business consulting firm • Government/local community support

Chapter 3
International Perspectives

1.Partnership & cooperation on global level with other incubators

One of the most important factors of a business incubator is their positioning, and within it, the search of agreements and partnership with other incubators or other actors that could interact in the incubation process. It is key for a business incubator to find grounds to network and benchmark with its own kind. This relationship can be made at a national or international level, in other regions of the country, or, indeed, with other incubators around the world.

Among the main advantages of cooperate with other incubators is that it facilitates IBIs to promote the innovations at an international level leading to commercialization and internationalization opportunities for the entrepreneurs supported. Moreover, it helps Business Incubators to catch inspiration and develop common ideas that could benefit the regional (or national) system and the users of the IBI.

Furthermore, with an international partnership, some innovative companies could "born global", allowing these companies to explore international markets at very low costs, supporting them to participate in many European markets at a time.

1.1 InBIA

Association brief:
Located: Orlando, USA
Founded: 1986
Website: https://inbia.org/

2200 members

InBIA is a global non profit organization that has welcomed and supported entrepreneurial organizations for over 30 years. Serving a diverse group of entrepreneurship centers, program managers, directors and policymakers they help guide, mentor and develop sustainable entrepreneur support programs in every industry and demographic around the globe.

32 years of experience

Summary
InBIA provides a wide range of services that enables members to build high-impact entrepreneurial ecosystems in every type of community or industry. They annually host international conferences, leadership summits and advanced forums while providing globally-recognized thought leadership, research, education and professional development and program accreditation for top-tier entrepreneurship centers. Moreover, they facilitate authentic connections, mentorship, and peer-to-peer collaboration for all of our members and their client entrepreneurs.

Mission
InBIA help guide, mentor and develop sustainable entrepreneur support programs in every industry and demographic around the globe. Their goal is to enrich the entire ecosystem by providing industry resources, education, events and global programming to help our members better serve the needs of their unique communities and regions. Their mission is to help communities enable their entrepreneurs transform their dreams into innovative businesses that make global prosperity a reality.

Services
Global Community Membership: The global community includes over 2,200 members across 62 nations. Member portfolio companies include business incubators, accelerators, coworking spaces, makerspaces, university commercialization & entrepreneurship centers, small business development centers, and economic development organizations focused on building sustainable entrepreneurial ecosystems in their communities.

Training & Education: InBIA's Training and Educational Program is truly the only one of its kind. Our comprehensive set of courses provides 360-degree insight into the best practices for building sustainable entrepreneurship programs.

Industry News & Resources: They partner with some of the best in the business. We curate industry news that is created in collaboration with some of our partners, sponsors, members, and global ambassadors. Our team is consistently researching and publishing the most up-to-date information in the industry.

Designations & Accreditations: They currently offer a rigorous Soft Landings designation that recognizes entrepreneurship centers excelling in providing foreign companies with critical knowledge and services to assist them in expanding their businesses into international markets.

1.2 The European Business Innovation Network

Association brief:
Location: Brussels, Belgium.
Founded: 1984
Website: www.ebn.eu

11-50 full-time employees

34 years of experience

250 organizations part of their network

Quality-certified EU|BICs

The European Business Innovation Network was established on the initiative of the European Commission with the aim of promoting and supporting BICs throughout Europe. This network gathers around 150 quality-certified EU|BICs (business and innovation centres) and 70 other organisations supporting the development and growth of innovative entrepreneurs, start-ups and SMEs.

Mission

EBN (European Business and Innovation Centers) with more than 150 BIC's in the 25 countries of the European Union, seeks to increase cooperation between the instruments to support innovative projects. The co-ordination of this network, based in Brussels, aims to ensure a set of competences with the aim of:

- Guarantee the quality of the services provided by BIC's;
- To promote the activities developed by the BIC's;
- Disclose the BIC concept;
- Support the participation of BICs in European Programs

EBN Ecosystem

EBN's community includes seasoned EU|BIC managers, experts in the establishment and operation of incubators and accelerators, professionals in economic development and innovation, consultants, creators of tools that enable better support, network partners, and of course, the entrepreneurs themselves.

Services

• EU|BICs Services Certification & benchmarking system for technology-based incubators & accelerators. are quality-certified business support organisations, which dedicate their efforts and resources to help entrepreneurs with innovative ideas, turn those ideas into viable, successful and sustainable businesses.

• International Hub
International networking platform for intermediaries and an international soft-landing business platform for Start-ups, SMEs and Entrepreneurs

• Project Lab
EBN's Project Lab offers Members access to relevant opportunities for EC funded grants and tenders.

• Networking

Associazione Italiana degli Incubatori Universitari e delle Business Plan Competitio

1.3 PniCube

Association brief:
Located: Torino, Italy
Founded: 2004
Website: www.pnicube.it

14 Partner universities

12 years of experience

PniCube is an Italian association that brings together incubators and businesses plan competition (called Start Cup). PniCube was founded with the aim to stimulate and support new high knowledge companies coming from universities.

Summary

The Association today counts 44 associates between Universities and incubators academics and is a promoter of two important initiatives: the Award National Innovation Center - PNI, which select the best business ideas innovative, and the Italian Master event Startup Award (former Start Up of the Year) that rewards the young Hi-Tech company which has achieved the greatest success market.

Mission

- Promote the emergence of incubators university
- Exchange experiences between members and foster mutual cooperation
- Promote the adoption of policies in favour of business incubation initiatives
- Acquire resources addressed to activities of business creation
- Promote and support the members in the international collaboration
- Promote the creation of start-ups from search

1.4 Startup Estonia

Association brief:
Location: Tallin, Estonia
Founded: 2006
Website: www.startupestonia.ee

440 start-ups in Estonia

12 years of experience

Startup Estonia is a governmental organization supporting the start-up ecosystem in Estonia.

Mission
The main goals of the organization are to map the ecosystem, monitor the performance of the ecosystem (including supporting organizations), find out the bottlenecks in the ecosystem and eliminate them.

Services
- Events and activities, creating and executing unified marketing and branding strategies to strengthen the Estonia startup ecosystem.
- Training programs for startups.
- Formation for local investors focusing on smarter investment, foreign investors attractions and kickstart new accelerator funds.
- Work on legislation in order to eliminate barriers and offer an ecosystem propitious to startup growth, investment and fun raising.

1.5 The BICS - Association of Portuguese Business and Innovation Centers

Association brief:
Location: Braga, Portugal
Founded: 1998
Website: www.bics.pt

8 Portuguese BICS members

10 years of experience

The BICS - Association of Portuguese Business and Innovation Centers, is a non-profit institution, which represents the Portuguese BICS, both nationally and internationally. The association is part of the European innovation network (EBN).

Mission
To foster synergies between all Portuguese BICs recognized by the European Union and reaffirm their role as important Regional and National Development Instruments in terms of Entrepreneurship, Innovation, Creation and Modernization of SMEs.

BICS aims to bring together all European Business and Innovation Centres, recognized as such by the European Commission, which have their offices in Portugal. Born with the aim of enhancing the activity of all its members, through a common framework for sharing resources, methodologies, means, activities and experiences that enable concerted joint actions.

1.6 National Association of European Centres of Enterprises and Innovation

Association brief:
Location: Braga, Portugal
Founded: 1998
Website: www.bics.pt

800 entrepreneurs

650 companies

35 CEEI

3000 employees

The Asociación Nacional de Centros Europeos de Empresas e Innovación (national association of European centres of enterprises and innovation), also known as ANCES, brings together interests, and working, innovation and entrepreneurship methods. Its 35 members, which are BICs, are located in numerous regions of Spain and have been founded by local actors, both public and private, as a promotional strategy to encourage innovation in their areas.

This network belongs to the European Business and Innovation Centre Network

Mission

- Promote the development of Spanish BICS.
- Help members reach their objectives by providing them efficient services
- Maintain and strengthen relationship with European CEEI (EBN) y other national association

UKSPA
BUILDING · TECHNOLOGY · BUSINESS

1.7 UKSPA

Association brief:
Location: Chesterford Research Park, United Kingdom
Founded: 1984
Website: www.ukspa.org.uk

200 members

4000 companies supported

10 years of experience

UKSPA is the United Kingdom association of Science Parks. UKSPA aims to be an authoritative body on the planning, the development and creation of Science Park and Incubators. The association facilitates the development of Innovative, high growth and knowledge based organisation.

Mission

- Encourage and support the start-up and incubation of innovation-led, high-growth, knowledge-based businesses.
- Foster an environment where international businesses can interact with a particular centre of knowledge creation for their mutual benefit.
- Have formal and operational links with centres of knowledge creation such as universities, higher education institutes and research organisations.

UKSPA incubation resources

UKSPA members can benefit from a wild range of resources, such as their online library including the UKSPA Incubation good practices guide and various fact sheet on incubation.

In 2014, UKSPA also launched the Inspire Certificate in Business Incubator Management, certificating the skills and competencies of the teams within the incubators and their 'professional development' and therefore of the industry as a whole. The Inspire Certificate in Business Incubator Management is a series of five workshops, completion of which leads to the awarding of the certificate.

2. Good Practices and Success Stories

2.1.1 Tehnopol – Startup Incubator - Estonia

Incubator brief
Location: Tallinn, Estonia
Funded: 2003
Mission and vision of the incubator: The incubator invests up to €10,000 worth of expertise in a start-up company in one year to bring the company to sustainable revenue phase or reach the first seed-stage private investment.
Website: https://www.tehnopol.ee/en/

182 incubated companies

118 graduated companies

12 months maximum incubation period

Summary
Startup Incubator is a business development program for early stage technology start-up companies, one of the strategic services provided by Tallinn Science Park Tehnopol. Startup Incubator has been operational from 2003, providing a one-year development program including coaching, trainings and physical co-working location for the start-up companies in the areas of ICT, health technologies and green technologies. Startup Incubator has worked with 160 start-up companies. 60% of these companies are sustainably operating today and have raised around 12MEUR of follow up private investments. The portfolio of Startup Incubator has 30 start-up companies in the program constantly.

Value proposition and position
Startup Incubator works with early stage start-up companies that have scalable business models, prototypes of the product or service and full scale teams to launch the product in international markets. Startup Incubator invests up to 10 000 euros' worth of expertize to a start-up company in one-year program to bring the company to sustainable revenue (200 000+ euros annually) or seed round private investment (100 000+ euros).

Incubator does not have seed fund

Publicly established but private self-sustainable incubator

Sector focus: ICT, green-tech, health-tech

200 Submissions received annually

600K yearly operational budget

3 full-time employees

Key resources and main services

Throughout the years of operations Startup Incubator has developed a set of services tailored for high-growth start-up companies. The main components of the service portfolio are the following:

1.**Hands-on coaching** – Startup Incubator has more than 50 hands on business coaching working with the companies daily. The main areas of expertise covered by the business coaches are business model development, sales and marketing, investor readiness and raising capital, legal, product development and design, team-building etc. On average the business coaches dedicate around 1000 hours to coach the portfolio of Startup Incubator.

2. **Training program** – Startup Incubator organises trainings, seminars, networking events, investor panels and business missions to the start-up companies. The aim of the program is to level the skills of start-up entrepreneurs and bring the companies closer to the investment or potential client. There are around 50 different events annually with more than 1300 community members participating.

3. **Co-working hub** – The co-working hub at Tallinn Science Park Tehnopol has around 500m2 of open office areas, small offices and meeting rooms for the companies.

4. **International partner network** – Startup Incubator has developed a wide network of partners providing services for tenant start-up companies. These services include support for entering export markets, help in product development, legal services, help in finding investment opportunities (mainly in Europe, angel investments).

65 business coaches

10 sponsors

55 events organised or co-organised peryear

Dealflow

Startup Incubator receives around 80 applications annually to enter the program. The review panels of the applications take place weekly and the final decision about approving the application is made by the business coaches of Startup Incubator. The decision of approving a start-up is made based on the 5-minute elevator pitch and Q&A session each applicant needs to attend. After the positive decision, each start-up will be assigned a key-coach who reviews the progress of the company weekly and connects the company to additional expertize if the need occurs. The main sources of the pipeline are: Universities (13%), specialists (30%), Prototron (15%), e-residents (6%), start-up community (36%).

Key statistics

Startup Incubator is the biggest incubator in the Baltics and in Estonia. Each year around 35 complete the program.

In 2015:

- 82 start-up companies applied to the program
- 30 companies were in the portfolio on average
- 550 000 euros was raised in seed stage by the portfolio companies
- 1030 hours of coaching throughout the portfolio
- 1350 community members took part of the events of Startup Incubator
- 3 success stories (raised above 100k euros or reached he 200k revenue par)

2.1.1 Best Practices And Insights of Tehnopol – Startup Incubator

An interview with Martin Goroško, Manager of the Startup Incubator.

Mr. Goroško is a co-founder of the Virtual Garden project and a former Member of the Board for BASTIC (Baltic Association of Science, Technology Parks and Innovation Centers).

Why was the incubator created?

Startup Incubator is a strategic branch of Tallinn Science Park Tehnopol. Tehnopol brings together more than 200 technology companies and is located in the campus of Tallinn University of Technology and IT College with more than 14000 students and 3000 researchers. Startup Incubator was created with the mission to encourage and boost the technology based entrepreneurship in Estonia and to provide first-hand support for newly established companies. Over the years the focus of the Startup Incubator has switched to investment deals and linking the start-ups to external private investments to support scaling and expansion.

Obstacles faced when setting up and developing the incubator. (If any)

There are four main obstacles when setting up an incubator:

Financial – self-sustainability is something that is hard to achieve. You need to develop a good mix of income sources like fee from start-ups, sponsorship deals, success fees etc. to make the model sustainable.

Building pipeline – the essential part of running an incubator is to grant the sustainable flow of good-quality business ideas and start-up companies. To do that, an incubator needs to invest in marketing and sales and build up communication channels.

Mentors and coaches – the team working worth the companies is essential and the pool of mentors needs to be updated and motivated.

Links to investments – start-ups need investments to scale up and incubation program needs to have strong links to VCs or business angels. This system and pipeline proceeding is hard to build up and needs a lot of effort.

What is your relationship with the university that founded the incubator?

We are mostly collaborating with Tallinn University of Technology (TTU), the founder of Tehnopol. TUT has an innovation unit called MEKTORY that runs together with us the business idea competition and hackathons annually. The best teams from these events will be taken into the Incubation program at Tehnopol. It accounts for 15% of the start-up companies in our portfolio. The students (directly from the university) account for 12% of our pipeline at Startup Incubator. We also train the students and give lectures on start-up topics.

The Tallinn University of Technology (TTU) is a public university and the only technological university in Estonia. It was established in 1918 and it has four schools, the Estonian Maritime Academy and 20 departments (University website: https://www.ttu.ee/).

What is your relationship with any other universities nearby?

All the universities in Estonia are mostly taking care of the pre-incubation phase in the universities (building teams, validating business ideas). After that the teams will be directed to business incubators or acceleration programs. We do not have any systematic action plan towards the universities, but we promote ourselves as the follow-up program for start-up teams in the universities.

What is the incubator business model?

We have a mix of income sources:
1. Companies in the portfolio pay a monthly fee for the services (mentoring, trainings etc.);
2. Companies pay a success fee for the investments that we help to close;
3. Companies pay for the office if they want to work separately from open office:
4 Promotional deals – sponsorship deals, direct support as services or products.

How do you spend your operational budget?

Most of the budget is allocated for the labour costs and mentors. All our mentors get the hours they work with the companies reimbursed and that accounts for around 35% of the total budget. 15% real estate and maintenance related costs. 20% trainings and networking events.

Providing and managing successful incubation services and programmes - do you have any good practices to share?

Yes, Prototron for building pipeline is definitely one of those. Then I think partnering up with Business Angel Networks could be the recommendation I could give – it really makes the program more attractive as the investors are lined up for the companies.In 2012, Swedbank, Tallinn University of Technology (TTU) and Tallinn Science Park Tehnopol founded the Prototron fund to support business ideas.

Prototron is the first fund in Europe granting free funding to start-ups so they could build their first working prototype to test on customers. It gives seed funding of 5,000 – 10,000€ for a start-up idea and in 4 years more than 310,000€ were given to 25 ideas focusing on: electronics, mechatronics, greentech and ICT.

Prototron supports TTU research teams whose applications are based on inventions of TTU with up to 50,000€. The applications are evaluated by the expert committee who makes the final financing decision (Prototron website: http://prototron.ee/).

How do you attract companies and talent? Do you have any good practice to share?

Prototron – the financial fund together with private capital helps to support the development of prototypes. Prototron grants really good quality start-ups to enter our program and has around 600 applications annually.

Collaboration with Business Angels Network – the pipeline that is not ready to raise funding from business angels is directed to Startup Incubator. If the business model is fixed, product and market validated we create the investment readiness in the companies and prepare them for seed stage investments.

How do you monitor your incubator's performance?

Our main KPI's are:
1. Number of companies in the program
2. Amount of investments in the portfolio
3. Number of events for the portfolio
4. Number of participants of these events
5. Success rate of the portfolio companies

Could you provide any tips or advice on how to set up and manage a university business incubator?

In my opinion the key role of the university is to provide practical know-how to students about starting the business. There is no good reason why the university should be operating the incubator. In the US for example and in universities like MIT the incubation is well established and it is due to two main reasons: a) the university is investing in companies (taking equity from the companies who are using university's knowledge, IP or resources), b) the university has strong industrial and business links and they are spinning their knowledge through start-ups to corporations. If something similar, or at least similar models can be applied then it is reasonable to run the incubation at the universities. In our case it is more reasonable to direct the start-up initiatives from the universities to accelerators or incubator because they have established growth program and they know how to launch products or raise the capital.

2.1.2 DEFENDEC

Defendec is developing a wireless boarder guarding solutions that have been implemented to guard the boarder of EU and Russia. The wireless sensors are also implemented in other areas like manufacturing and maintenance, private security solutions etc.
Website: www.defendec.com

2.1.3 TOGGL

A time management solution to track the time you spend on projects and activities. They have around 300 000 users and they are a great example to show how to expand globally without having external investors.
Website: www.toggl.com

2.1.4 DEEKIT

Deekit is an online whiteboard for remote teams who work together. Having 100k users they have raised a substantial amount of capital to expand globally.
Website: www.deekit.com

2.2.1 IPN Incubator – Portugal

269 incubated companies

100 graduated companies

48 months maximum incubation period

Best Science-Based Incubator 2010

Incubator brief
Location: Coimbra, Portugal
Funded: 1995
Vision: Promote spin-off creation
Mission: Support innovative and tech-based ideas coming from IPN Research Labs, private sector and R&D Projects involving other companies
Website: https://www.ipn.pt/

Summary
IPN Incubator - an association for the Development of Incubation Activities for Ideas and Businesses - is a private, non-profit institution created in 2002 on the initiative of Pedro Nunes Institute (IPN) and the University of Coimbra.

At the Incubator, companies in the first years of existence have access to conditions that promote access to the scientific and technological system and a wide range of services facilitating the startup process and entrance to the market through training in technical and management areas and contact with national and international markets.

The Incubator provides support for the early stages of new innovative, technology-based or advanced services business projects. Priority projects are spin-offs arising from the University of Coimbra and startups that ensure a strong connection to the university environment, whether through students, faculty or RTD activities.

Sector focus: Tech based and innovative companies (ICT, Biotech, Cleantech, IOT, etc)

Not for profit private Association with 2 members: Instituto Pedro Nunes (IPN) and University of Coimbra

575K yearly operational budget

50 events organised or co-organised per year

200 Submissions received annually

13 full-time employees

There are 2 different incubator formats:

PHYSICAL INCUBATION

The Physical Incubation program requires, as the name implies, the physical installation of the company within the Incubator facilities. In this programme, the company has one or more incubation modules in which to install its activity. These incubation spaces are furnished and the company has access to a set of basic services, already included in the price: reception, security, cleaning and access to two telephone lines, among others.

The incubator currently has several spaces / incubation modules with areas of 20-28m2, 33-40 m2, 56 m2 and 66 m2, fully infra-structured with lighting, data networking, phone, etc. The 33 and 66 m2 modules also have a water supply available. The current limit for physical incubation of a company is 4 years. In special cases, duly justified and evaluated by the management of the incubator, the period may be slightly extended.

VIRTUAL INCUBATION

The Virtual Incubation programme provides a similar range of services and facilities to the Physical Incubation programme, except for those relating to the exclusive occupation of modules or incubation areas. All projects approved in the pre-application stage are automatically approved for the Virtual Incubation programme and can start using the services and facilities provided, even while writing the proposal for the Physical Incubation programme. There are two types of virtual incubation: Start and Follow-up.

• START: Virtual Incubation Start is aimed at entrepreneurs who have recently started their project or business but do not require a physical space. The company may not even be incorporated yet. The Virtual Incubation Start contract has an initial term of three months and may be renewed for equal periods when needed and appropriate.

• FOLLOW-UP: Graduated companies, i.e. successful projects that have completed the Physical Incubation Programme or the Virtual Start Programme (those didn't need physical space and have only been in virtual incubation) and wish to continue to enjoy the Incubator services, may sign a new Virtual Incubation contract, in this case with the status of «Follow-up». This contract has a duration of three months, automatically renewable for equal periods.

2.2.1 Best Practices And Insights of IPN Incubator

Why was the incubator created?

It was created to promote tech based and innovative entrepreneurship at University of Coimbra, foster innovation and technology transfer in the city and Region, creating high qualified jobs and wealth for the local community.

Obstacles faced when setting up and developing the incubator. (If any).

IPN Incubadora has developed a self-sustainable business model based on a broad offer of services to its incubated and graduated companies. The Institution doesn't have any direct regular transfers of funds from the University, the City or any other entity to cover running costs of the incubator.

At the beginning (1995 to 2000) IPN's incubation program was relatively under scaled and strongly dependent on the fees paid by the incubatees, occasionally recurring to financial support through other functional units inside IPN, which were more profitable by then (R&D Labs). Nevertheless, at that time the incubator's operation costs were not much high (only 1 staff member and just 12 start-ups in a max occupation of incubation space of 800m2/year, on average); it was plain to see that the incubator ought to grow in order to achieve sustainability.

Since then, and with the recruitment of an Executive Director in 2001, the option was clearly to expand the incubation space, increase the team staff and widen the set of services made available. Thus, as gradually we registered enough demand of our support, we decided to build a new incubation centre with capacity for 35 to 40 start-ups. This new centre started operation in 2007, driving us up to reach an activity level and critical mass of tenants enough to enable a more sustainable operation; meanwhile, we also increased and diversified our income sources, creating a virtual incubation program, setting up an offer of specialized services such as certified accountability and business consultancy, in order to support the start-ups to more successfully apply for national and European funding, securing IP protection rights, and many other benefits.

What is your relationship with the university that founded the incubator?

The relationship with University of Coimbra is excellent. Actually it is an "umbilical" relation since the majority of the ideas and projects we work on at the Incubator come from students, graduates or researchers from Coimbra University.

We organize many events with and for the students every year and run, since 2009, a pre-acceleration program (INEO) in cooperation with the University. IPN and IPN Incubadora are also promotors in cooperation with Coimbra University of one of the biggest Business Plan and Ideas competition that happens in Portugal every year: "Arrisca C". Furthermore, some of the members of the technical staff of the Incubator are invited professors at the University in areas such as entrepreneurship, management, innovation and Intellectual Property, especially at the Faculty of Science and Engineering.

The 2 executive members (out of 5) of the Board of Directors of IPN Incubadora must always be Professors from the University of Coimbra.

What is your relationship with any other universities nearby?

We have good relationships with other Universities in Central Region of Portugal (University of Aveiro and University of Beira Interior) and with their own business incubators. We have a very good record of cooperation in common projects to foster entrepreneurship and innovation at our region. But our privileged relationship is with the Polytechnic Institute of Coimbra (IPC), which is also a member of the Association IPN an indirectly of IPN Incubadora. With IPC, since it is in the same city we have even stronger links of cooperation, for instance promoting their annual Business Plan competition: "Poliempreende".

What is the incubator business model?

In 2016 our revenues (~460k) came from:

- Incubation fees (Physical + Virtual + Cowork: 45%.
- Specialized services: 45%
- Competitive Grants: 10%

As said before, we do not have the "comfort" of regular/periodic transfers or financial contributions to our activities from any public or private organization, not even from our founders, since their entries were merely at the inception of the incubator and in very few moments of large investments in CAPEX (e.g. buildings).

Therefore, the business model adopted by the incubator (and also by IPN as a whole), and mainly since the strategic plan designed in 2000, was very entrepreneurial in its nature, considering the development of diverse operational revenue streams (physical and virtual incubation fees, accountancy services, marketing services, very specialized R&D and Innovation services or even Internationalization grants' application services for start-ups, fundraising services, competitive grants related to national and European projects for stimulating entrepreneurship, innovation and internationalization, etc) which were crucial to the success achieved.

How do you spend your operational budget?

- Buildings/Maintenance: 20%
- Consultants: 10%
- Travel & Events: 3%
- Marketing and Communications: 2%
- Staff Salaries: 58%
- Others: 7%

Providing and managing successful incubation services and programmes - do you have any good practices to share?

I usually say that our business model, being entrepreneurial itself, is our most important good practice. The fact that we have members of our staff as invited professors at University is another good practice as it is a very good way to identify potential entrepreneurs at early stage at the university and allows to show IPN activities to them and to many other students giving a good awareness to IPN brand in the academic community.

How do you attract companies and talent? Do you have any good practice to share?

We screen and access around 70 formal applications every year (indirectly more than 200 that come from Business Ideas/plans competitions that we organize and sponsored). Start-ups are selected based on firmly established criteria: Innovation / Technological basis / Connection to R&D activities / Potential synergies with IPN and incubated companies / Promoters' background and profile / Business drive and potential.

Most of the projects that apply to our incubation programs may be at a very early stage of development; and although many of them may not be immediately admitted, we keep track of them and as they evolve, some eventually come to be accepted in the future.

As part of the jury, we are invited to many contests of business ideas and start-up competitions, where it is possible to get to know the founders team and get them motivated to apply to our incubation programs. I would highlight the ARRISCA C competition: www.arrisca-c.pt/ : it is held every year and attracts many good teams, grouped in different categories across the country and even abroad.

As part of our internal activities to attract and select start-ups, there is a special focus on an initiative that we have been hosting for 8 years now: INEO START http://start.ineo.pt/.

It began as a week-end boot camp for potential entrepreneurs, but it has evolved to a 6-week-long program, dedicated to help researchers to modulate their ideas into a comprehensive business plan and to train them in such themes as finances or marketing. At the end of the program it takes place a concurred demo day.

We considered it to be a pre-acceleration program, designed to attract and select the best ideas coming to us from academia, for then to turn them into potentially successful businesses.
In the 8 yearly editions of Ineo Start, we had more than 300 entrepreneur-candidate participants coming from about 120 teams (12 to 14 teams are selected, per year, out of 25 to 30 initial applicant teams)

How do you monitor your incubator's performance?

We keep a lot of KPIs under monitoring every quarter, of both an operational and financial nature, comparing each time period with previous quarters, homologous periods in former years and also with forecasts, in order to assess the Incubator's operation performance and financial position. Some of the more important of this KPIs are:

Operational:

- Total number of applications to our incubation programs
- Number of companies or projects (not incorporated yet) admitted to Virtual Incubation program
- Number of companies admitted to Physical Incubation program
- Number of graduated companies
- General Costs
- EBITDA

2.2.2 Critical Software (1998-2002)*

Established in 1998, CRITICAL Software provides systems and software services for safety, mission and business-critical applications, with almost 600 employees in 4 continents. We help to ensure our clients meet the most demanding quality standards for software safety, performance and reliability. Our data management solutions and services also provide clients with the information they need to manage their important assets and processes, helping them to achieve better business performance.
Website: https://www.criticalsoftware.com

2.2.3 Wit Software (2000-2003)

WIT is a software company that creates advanced solutions and white-label products for the mobile telecommunications industry. It has 250 employees in Portugal, United States and United Kingdom.
Website: https://www.wit-software.com

2.2.4 FEEDZAI (2009-2013)

Feedzai is a data science company that detects fraud in omnichannel commerce. The company uses real-time, machine-based learning to analyze big data to identify fraudulent payment transactions and minimize risk in the financial industry. This company is going to be probably in a couple of years the first Unicorn company that was born in Portugal. They employ now around 200 people.
Website: https://feedzai.com

2.3.1 La Salle Technova Barcelona - Spain

Incubator brief
Location: Barcelona, Spain
Funded: 2001
Mission: To promote the deployment of both knowledge and technology, and therefore boost entrepreneurship and innovation.
Vision of the incubator: Be the benchmark for Entrepreneurship and technologically based Innovation for the city of Barcelona and be one of the international hubs of the IASP.
Website: http://www.technovabarcelona.org/

65 incubated companies

300 graduated companies

2 years maximum incubation period

Summary
Based in Barcelona La Salle Technova Barcelona is one of Europe's leading incubators for innovative technology start-ups. They offer end-to-end services such as business plan building, funding, acceleration, technology development, office space and lots more, working with start-ups from idea, to going global.

Services

1. Assignment of spaces
Companies that are part of the community of La Salle Technova are able to be physically located in offices approx. 20 or 40 m2 depending on their needs. Their stay in La Salle Technova may last for up to two years. Transfer rates have the following uses:
- Electricity + climate: flat rate
- Clean office and common areas: daily
- Use meeting room: 20 hours / month
- Internet: contract the best that suits your needs

Governance and ownership: Foundation - University

Incubator does not have seed fund

Sector focus: IT

24 events organised or co-organised per year

200 Submissions received annually

10 full-time employees

2. Co-working space
Companies that are part of the community are able to keep their workers at the plug & play. This area consists of 6 workshops, which can be rented by companies. La Salle Technova can provide only a desk, the entrepreneurs that need specific machinery to develop their work must provide it on their own.

3. Affiliate Programme
Technova offers the affiliation program to every startup incubated in our park and to some selected startups not placed physically in the park. The affiliated program consist in a pool of high added services (advisory board/mentoring, finance research, training, support, etc) addressed and accelerate the growth of the companies.

FUNDING
La Salle Technova Barcelona has a wide experience in handling public and private funds for technology start-ups. In recent years, we have achieved more than € 23M public funds for the companies in their community. And boost the growth of entrepreneurial and investment activity at national and international levels; promoting, educating and managing a Business Angel Network (EIX Technova) that seeks to be a reference in the world of private investment in the field of innovation and technology.

Grants and Programs
- ENISA: Young Entrepreneurs. Loans between 25000-75000 €.
- ENISA: Competitiveness, Technology. Loans up to € 1.5 million.
- CDTI: NEOTEC. Loans up to € 250,000.
- CDTI: PID. Loans from € 240,000.
- Caixa Capital Risc & BStartUp. Participative loan from € 50,000, convertible investment in the company. Further investment of VC. Connection with Corporate Venturing.

BUSINESS ANGEL SCHOOL
Technova celebrates every year a Business Angel School designed to provide new investors with the tools to act safely. The course analyses:

- Types of investor
- How to spot investment opportunities?
- How to evaluate projects?
- What further steps to formalize the investment?
- What are the legal and tax issues to consider?
- Exit strategies ... and more.

Technova also exports the Business Angel School Model to other parks and universities around the World in order to help them to increase investors community in their environment.

575K yearly operational budget

6 sponsors

TECHNOVA PREACCELERATOR

Technova Pre-Accelerator it's a 10 week program of pre-acceleration for people that would like to create a start-up in the field of ICT. The program combines weekly training and custom meeting sessions. Once the program is completed, the entrepreneurs will have defined their business models and their validation on the market by defining an MVP (Minimum Viable Product). The program combines general training for the definition and launch of a start-up, specific training in specific areas such as Big Data, Internet of Things, Smart City or Mobile, and networking with ecosystem players -investors, accelerators, entrepreneurs and business people. The teams will have access to the co-working space during the 10 weeks in the incubator of La Salle Technova. The program has a specific space with 24/7 accessibility to facilitate the growth of start-ups in an entrepreneurial environment.

OPEN INNOVATION

Program for large companies through which, based on a specific need, a call is made for start-ups and international talent that can provide solutions, providing the company with a steady flow of innovation.

The program is divided into the following phases:

- Defining the challenge.
- International call.
- Filter and selection of proposals.
- Definition of pilots.
- Assistance in the acceleration. Linking with the company.

The objectives of the program are companies supplying a flow of innovation to large enterprises, accelerating time to market and increasing the effectiveness rate.

CHALLENGES

Implementation of programs that promote the resolution of challenges proposed by private companies or public bodies, providing proposals for disruptive innovation and talent detection.

Under the use of agile methodologies, participants with entrepreneurial skills from different disciplines are linked (engineering, business and multimedia). Companies will have the opportunity to explore innovative solutions to the challenges, learn new ways of working, detect talent, and to position themselves in university environments.

The program objectives are:

- Transmission techniques of creativity, co-creation and methodology, for both companies and students.
- Increase knowledge of students in a particular area.
- Opportunity to apply the knowledge gained in real projects.
- Awakening the creativity of the participants.
- Working methodology in multidisciplinary teams.
- Contact with companies.

2.3.1 Best Practices And Insights Of La Salle Technova Barcelona

An interview with Josep M. Piqué, Executive President of La Salle Technova Barcelona since 2015.

Why was the incubator created?

La Salle decided to create the Park in order to develop the Third function of the University: Knowledge Transfer (beyond Education and Research). We discover that the best way to transfer knowledge is the tech entrepreneur.

Obstacles faced when setting up and developing the incubator. (If any).

First, to include Entrepreneurship Programs in all the Undergraduate, Masters and PhD Programs. The goal is to be sure that everyone in the campus has the entrepreneurial skills. For this reason, we created the programme 'Business Idea Contest', a tool to encourage innovative and entrepreneurial skills among students at the Barcelona Campus.

Second, to develop our Business Angels Network taking advantage of our Alumni. The goal is to provide at the new start-ups the first (and the best) smart money (equity + experience), and to rise the Business Angel community to support the start-ups.

What is your relationship with the university that founded the incubator?

The University is the owner of the Park. We are inside the University Campus. The entrepreneurs and the investors share common spaces with students, researchers and professors. Technova is a Foundation with its own budget.

What is your relationship with any other universities nearby?

We are members of XPCAT (Catalan Network of Science and Technology Parks) linked with other university parks. We share projects and co-organize public events. Currently, the Network has 15 members and more than 60% are directly linked with another Catalan Universities, such as the Polytechnic University of Catalonia, University of Barcelona or Pompeu Fa.

La Salle is also part of the Ramon Llull University and 11 higher education and research institutions with a long tradition and a prestigious reputation in Catalonia such as IQS, Blanquerna, La Salle, ESADE, i Barraquer Mental Health University Institute, and ESDi Higher School of Design, among others. It is one of the most innovative teaching institutions in Catalonia and in Spain as a whole. And also through La Salle Campus La Salle Technova Barcelona collaborates with other universities around the world in a large numbers of projects, especially linked with Engineering and ICT.

What is the incubator business model?

Our income comes from the Services, Consulting and Events.
At the Affiliate Programme we accompany the entrepreneurs from the generation of the idea to the market, growth and consolidation, as well as support them to get funding for their projects.
How do you spend your operational budget?
We spend our budget in the Technova staff, technical facilities and events.

Providing and managing successful incubation services and programmes - do you have any good practices to share?

Technova is considered one of the best Top 10 Incubators in Europe. Our PreAccelerator Program is teaching, coaching and networking the entrepreneurs in order to transform ideas in validated prototypes in 10 weeks.
Our Business Angels School is transforming Alumni and Family Offices in expert investors that increases our Network of Business Angels.

How do you attract companies and talent? Do you have any good practice to share?

We celebrate every year our Business Idea Contest and also we participate in external (local and international) competitions such as Jury. We also organize Open Innovation Forums where we identify a great deal of qualified entrepreneurs.

We organize Investment Morning every month where we select the best entrepreneurs for our investors, as well as we also organize Investment Forums, where many entrepreneurs apply.

How do you monitor your incubator's performance?

In relation at the start-ups, we have weekly meetings with the entrepreneurs in the Pre-Incubation. With the Start Ups of the Incubator, we have quarterly meeting with the entrepreneurs and their mentors.

Could you provide any tips or advice on how to set up and manage a university business incubator?

- Be sure that you are in the strategy of the university developing the third function.
- Impact the whole university: in the way of doing education (learning by challenge) and in the way of transferring the research to the market (tech base entrepreneurs).
- Connect your Incubator (Park) with the world using networks (like IASP).

We transfer our experience to universities

2.3.2 BIOO

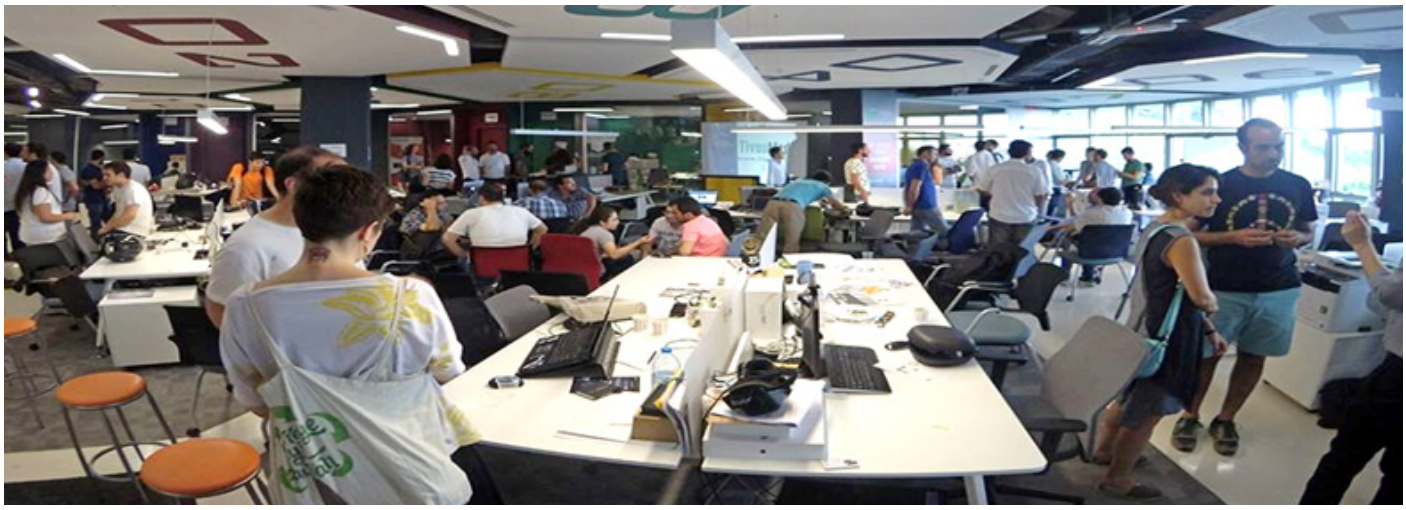
Bioo, developed by Arkyne Technologies. Specializing in the innovation of renewable energies, telecommunication hardware and software development.

The team is composed of specialists experienced in the areas of nanotechnology, industrial and computer engineering. They are creative, distinctive and hard workers entrepreneurs.
Website: https://www.bioo-tech.com/

2.3.3 NEKTRIA

Nektria's products focus on developing SaaS (Software as a Service) solutions for optimizing fleet management, cost-effective delivery, dynamic pricing and increasing customer satisfaction. Nektria aims at becoming the new gold standard for last mile delivery management.

The team combines a strong multidisciplinary skillset with extensive expertise in logistics, AI, software engineering and business management.
Website: http://www.nektria.com



ITUÇEKİRDEK | EARLY STAGE INCUBATION CENTER

2.4.1 ITU Cekirdek - Turkey

175 incubated companies

322 graduated companies

18 months maximum incubation period

Incubator does not have seed fund

Incubator brief
Location: İstanbul, Turkey
Funded: 2012
Vision: Promote and support technology based entrepreneurship start-ups and scale-ups in Turkey.
Mission: Create a supportive environment for the birth of new and successful start-ups and lead them to get investment. In addition, lead startups and scaleups to sell their products and to reach sales traction nationally and internationally.
Website: http://www.itucekirdek.com/

Summary
ITU Cekirdek was established by Istanbul Technical University (ITU) and ITU ARI Teknokent in 2012, and strongly supported by ITUNOVA TTO to contribute to the entrepreneurial ecosystem of Turkey. It is a start-up ecosystem with a mission to encourage, support and guide the entrepreneurs as the driving force of today's economy. They foresee all business needs of an entrepreneur at the pre-incubation, acceleration and incubation stages in addition to a competition show that they organise, called the Big Bang.

ITU Cekirdek is open to all industries from fintech to healthcare, from IT to hardware. In addition to the general category, they announce special categories every year to trigger and attract new start-ups in specific verticals, such as Automotive Technologies.

Since its establishment, ITU Cekirdek has supported more than 722 start-ups and 1613 entrepreneurs and according to UBI Global, it is ranked 8th in Europe, 18th in the World.

Owned by the Turkey and Istanbul Technical University

25 sponsors

1.5M yearly operational budget

239 events organised or co-organised per year

2500 Submissions received annually

11-12 full-time employees

The four stages of ITU Cekirdek

- Pre-Incubation
- Acceleration
- The Big Bang Contest
- Incubation

Three programmes

The General Category

Entrepreneurs with ideas or projects in all sectors from financial technologies to medical technologies, augmented reality and hardware projects can apply to this category and set out on a process that leads to the Big Bang Contest.

The Automative Category

The ITU Cekirdek Automotive Technologies Category is exclusive to entrepreneurs who have projects in automotive technologies.

Entrepreneurs with ideas or projects on driving safety systems, sensors, battery technologies, efficiency technologies, composites and interior fabric technologies and other parts or accessories that make up a car may apply to this category. Entrepreneurs in this category may also be eligible for a dedicated R&D Wallet and a cash prize of TL 250,000 provided by ITU Cekirdek and the Association of Automobile Exporters (OIB) in the BIG BANG event.

The BIGG ITU Cekirdek Category

BIGG | ITU Cekirdek is looking for entrepreneurs who wish to build their ventures using TÜBİTAK support.

Entrepreneurs who wish to build the venture of their dreams with a capital of TL 150,000 provided as a grant by the TÜBİTAK Individual Young Entrepreneur program may apply to BIGG | ITU Cekirdek. Seeking to reinforce the R&D- and innovation-based technological infrastructure in Turkey, ITU Cekirdek is a «1512 Technological Venture Capital Support Program 1st Phase Implementer» of the TÜBİTAK 1601 program, and prepares its entrepreneurs to apply to the second phase of the program. In other words, ITU Cekirdek paves the way to TÜBİTAK 1512 Techno-venture Capital.

Sector focus: Communication & Transportation, Creative & Cultural, Retail & E-commerce, Materials & Manufacturing, Education & Governance, Finance & Accounting, Green & Energy, Health & Bio

The assessment process

All applications will go through the Online Assessment phase. The online phase will assess the structure of the entrepreneur teams, project qualities and innovative points, economic and technological feasibility of the projects, and how and to what extent the entrepreneur teams can benefit from ITU Cekirdek. Teams who pass the Online Assessment will be invited to ITU Cekirdek to make a project presentation.

Teams invited to the Pre-Evaluation Jury will be expected to deliver a 4-minute presentation on their projects and team members. The jury will then select projects based on ITU Cekirdek objectives and evaluation criteria.

Istanbul Technical University (ITU)

Istanbul Technical University is the world's third oldest technical university with a long history of 250 years. It offers 39 graduate programs at 13 faculties, 39 postgraduate and doctoral programs at 6 institutes on five different campuses, all of them located in the heart of Istanbul.

ITU is the cradle of science, industry and technology conducting over 200 R&D projects in the scope of ARI Teknokent. In cooperation with the entrepreneurship ecosystem ITU Seed, the university provides support to students-entrepreneurs (University website: http://www.itu.edu.tr/en/homepage).

2.4.1 Best Practices And Insights Of Itu Cekirdek

An interview with Tufan Aygüneş, Expert in the Incubation Center Operation and Process Management at İTÜ ARI Teknokent A.Ş.

Why was the incubator created?

ITU Cekirdek was created to promote and support technology based entrepreneurship start-ups and scale-ups in Turkey.

Obstacles faced when setting up and developing the incubator. (If any).

- Reach qualified entrepreneurs and fast growing startups
- Attract sponsors and investors
- Track alumni startups

What is your relationship with the university that founded the incubator?

Not managed by but affiliated with the university.

What is your relationship with any other universities nearby?

- ITU Cekirdek partnership programme
- Know-how and experience transfer
- Support of PR and communication

What is the incubator business model?

ITU Cekirdek is mainly self-funded by ITU ARI Teknokent and also funded by corporate sponsorships and government grants. Starting from 2016, ITU ARI Teknokent has started to ask for 3% of shares of ITU Cekirdek start-ups but there is no return on investment from the client start-ups yet.

How do you spend your operational budget?

- 11% Building & Maintenance
- 6% Consultants & Contractors
- 8% Events
- 29% Investment fund
- 3% Legal and Accounting
- 6% Marketing & Communication
- 1% Staff training
- 9% Staff salaries & Human resources
- 4% Utilities
- 23% Other

Providing and managing successful incubation services and programmes - do you have any good practices to share?

ITU Cekirdek has 3 types of programmes and provides different services in each programme.

1. Pre-incubation: ITU Cekirdek provides the enabling infrastructures and services for entrepreneurs primarily to develop their ideas into a project/product/service towards commercialization. Entrepreneurs can use ITU Cekirdek the 800m2 Pre-incubation area located in ARI 3 Building at ITU Maslak campus as an office, to develop their prototypes. Entrepreneurs make their business plans and receive free training, mentorship and consultancy services during the pre-incubation.

2. Acceleration: In the process from idea to the business plan and the prototype, ITU Cekirdek provides the necessary training programs and mentorship sessions for entrepreneurs to help them become successful business peoplea.

During the acceleration stage, entrepreneurs receive more than 25 hours of hands-on business and entrepreneurship training on business plan development, marketing and finance etc. to develop their own projects with the help of mentors. In addition to that, start-ups can also benefit from ITU Cekirdek partners in cloud, payment infrastructure and accounting domains.

3. Incubation: Entrepreneurs who succeed in Big Bang (After pre-incubation and acceleration program, 20 most successful start-ups pitch their start up ideas on Big Bang Start-up Challenge organization) and start their companies benefit from a 1-year «Incubation» programme where they continue to develop their entrepreneurial talents and opportunities. During their incubation period, ITU Cekirdek provides them space for establishing company and one to one coaching.

How do you attract companies and talent? Do you have any good practice to share?

ITU Cekirdek actively provides to start-ups:

- Access to funds (e.g. pitch days)
- Access to markets (e.g. demo days)
- Accounting/tax (e.g. accounting workshops)
- Business education (e.g. business plan workshops)
- Coaching/mentoring (e.g. alumni advisors)
- Human resources (e.g. recruitment support)
- Incorporation (e.g. registration support)
- Legal (e.g. intellectual property advice)
- Office space (e.g. hot desking)
- Skill development (e.g. programming courses)
- Technology transfer (e.g. spin-off advice)
- Tools and equipment (e.g. maker space/research lab)

How do you monitor your incubator's performance?

ITU Cekirdek compares what start up stage was when they have entered ITU Cekirdek and how they progressed during the program. For instance, last year 8 start-ups were in sales stage before the program and this number increased to 14 after the program.

Could you provide any tips or advice on how to set up and manage a university business incubator?

First, incubators should focus on creating community and attracting entrepreneurs. Then, sponsors and other companies which might be customers of the start-ups come to the incubation centre to be a part of this environment.

2.4.2 PUBINNO

Pubinno's products bring maximum visibility and efficiency to draft beer operations. With patented IoT-enabled automated beer tap at its core, Taptronics provides you with twenty-percent operational cost savings. Pubinno gives you access to tracking data via multi-platform remote control.
Website: http://www.pubinno.com

2.4.3 BUY BUDDY

Hitag is a device for retailers to be attach to items in the shop. It allows customers to directly pay through their mobiles and check out, skipping the queues at cash counters and it collects in-store efficiency data for retailers in real-time.
Website: http://buybuddy.co

2.4.4 ANLATSIN.COM

Tellbout your jobs, sector and company with your employees. While you are lightening people's career paths, your potential employees get to know you better.
Website: https://tellbout.com

Imperial College London
White City Incubator

2.5.1 Imperial White City Incubator – UK

Incubator brief

Location: London, England

Mission and vision of the incubator: With a focus on deep science spin-outs supporting both academics, students and local residents. The Incubator is developing an ecosystem of support and Innovation on the new Imperial White City Campus

Website: https://www.imperialincubator.com

Information on the incubator

Imperial White City Incubator is a hub for innovation and entrepreneurship, providing office, laboratory space and support for early-stage companies. The two-storey 18,000 square foot Incubator facility contains 10 laboratories, 12 offices, meeting rooms and break-out areas. This state of the art premises opened on White City Campus in 2016, and forms a key part of London's newest Innovation District, making it an ideal location for young start-up companies focused on science and technology. White City Campus will bring business and researchers together in a 23-acre ecosystem, translating scientific ideas into value. The Incubator contains a true entrepreneurial community who share the experience of developing a deep science business. Imperial Innovations runs a programme of seminars and events at the Incubator, designed specifically for entrepreneurs and inventors. The Incubator also houses a shared laboratory providing space for smaller start-ups. Imperial White City Incubator is managed by Imperial White City Incubator Ltd with Imperial Innovations providing incubation services. Imperial Innovations is the technology transfer office for Imperial College London, and forms part of IP Group plc.

>60 incubated companies

>30 graduated companies

3 years maximum incubation period

Incubator does not have seed fund

65 business coaches

Sector: Bio Science

10 Submissions received annually

2.5.1 Best Practices And Insights of Imperial White City Incubator

An interview with Graham Hewson Graham joined Innovations as the Incubator Manager in 2010. The Imperial Incubator is a hub for innovation and entrepreneurship, providing office and laboratory space for early-stage companies including many spinouts from Imperial College London.

Why was the incubator created?

The incubator was initially created to help with the lack of commercial lab space in London to support deep science spin outs. Back in 2004/5 there was a lack of commercial lab space for spin outs and companies in London and most companies went to Oxford or Cambridge, so there was a knowledge drain happening within London. The London Development Agency at the time actually put some funds in, and so more than half of the cost of our original build was covered by them, and Imperial paid the rest.

In the case of Imperial Innovations, we invest in these companies (although not all of them) and we wanted to keep these investments close to be able to look after them, providing co-locations on campus, where founders, academic, researchers and potential investors, students can all interact. We have proved that this works really well. So that was the initial idea, starting with a 5 year reporting project with a 10 year project overall, and we were very successful. Other such science incubators have since been built.

The incubator itself is now full, with Imperial in fact constructing the next building, and we have space above us which means that our companies are able to grow as they graduate. This is a satisfying evolution to witness – to see the companies go from having one bench in a shared lab to then move to their own labs and even space beyond the incubator.

Obstacles faced when setting up and developing the incubator. (If any).

Space in London is limited, and you need to find a site/building that can provide all that is needed, as well as being well located, in the case linked to the university.

Other obstacles encountered were mainly around the design of the building. Architects think along two main lines – a certain style/image, but also the space and how much space can be fitted in (and therefore subsequently make money from the space). We currently have a smaller breakout space than we had before at South Kensington, a 'bump space' where companies have a bumper car moment and meet and talk to each other and I think that is a very important thing to have in an incubator, a nice big coworking space, which could also double up as event space.

In our case, we also recommend making sure that the space relating to science use, specifications of machines etc, is designed well. In some cases it was found that there wasn't enough room for the intended equipment! This obviously depends on the type of incubator/incubatees but in the case of Imperial Innovations the design also needed to factor in waste rooms for hazardous materials, plumbing, gas lines, and other services relating to deep science. These things were considered, but perhaps not placed as a priority compared with other items such as plumbing or even views. However, you cannot promise space for certain machines etc, only to find it has not been taken into account in the planning phase.

A final obstacle was that it was a building site, and still in in fact (a huge block of flats is being built right next door). The location (in West London) was a part of London which was very under served, a poor area, and had little government support. This was prior to the BBC moving there and the more recent developments of the university which all contributed to the regenerating of the area. This meant that potential users could be put off initially. Now however, the site is busy, well developed and very well connected, but people really want to come to be in our building.

What is your relationship with the university that founded the incubator?

We have a very close relationship with the Imperial advisory and company board. In terms of the incubator itself historically all of the companies are spin outs from the university. There are a number of other activities that we also organise with the university. For example, there are talks organised and given by the incubator to the undergraduate students; we provide an innovation academy aimed at talking to academics about how to start a business; we bring students in for pitching days; bring in alumni to share their experiences and aim at putting ourselves as the centre of the activity as much as possible. Lots of activity is needed because it is all research focused and we need to be at heart of what is going on. We have found that we can show real impact, and this is backed up by numbers of academics/students involved.

What is your relationship with any other universities nearby?

We also work with Royal College of Art, UCL (University College London), and Kings College London – many people from there come to Imperial.

What is the incubator business model?

We charge market rates for goods and services. All money that comes in, goes back in to incubator. The incubator is not aimed at earning money.

How do you spend your operational budget?

We spend it mainly on space, events and support for clients. There are three main categories for this - Inspire (aimed at students); Ecosystem events (aimed at clients), and knowledge events where knowledge and experience and other relevant information is shared. We also provide mentorship to clients and companies, and meet at least every few months to talk through what they are doing. For students we provide links to internships, projects etc. A lot of our time is spent 'signposting' - connecting suppliers or contacts.

Providing and managing successful incubation services and programmes - do you have any good practices to share?

Yes, it's all about the community. Having a shared 'bump space' – areas where clients can meet each other over coffee etc - is essential.

It is also important to apply strict entry and exit criteria. You should not let just anyone enter. In our case the Board at Imperial set the criteria (some based on discussions and feedback, others based on their own needs/ideas) and we have a 3 year policy. However, in this regard we have found that some companies may need more time.

Companies have to pay for services, and so prior to entering the incubator part of the process is to review the business plan, CVs of the people working there as the company needs to be something that is sufficiently financially stable. The incubator manager will do due diligence, investigating more about the company itself, and then based on all this information make a decision to present it to the Board.

How do you attract companies and talent? Do you have any good practice to share?

We do not have a specific policy regarding this, but much of our attraction is due to branding – many people want to be part of brand. Some people come to us for the location, as they wish to be close to the hospital and links to the NHS etc.

In our case we don't do any hard selling or chasing of clients. We make sure we are visible where possible via UKSPA and other associations, but what we do a lot is cultivate our relationship with other incubators. We meet up with them, discuss occupancy etc, and this works well to have such an open transparent relationship. We often get recommendations and companies from these other incubators, and vice versa, if we are full, we recommend others.

How do you monitor your incubator's performance?

We have key performance indicators along with the usual metrics of occupancy. These metrics include recording the number of events held, graduations, current occupancy etc. We also measure customer satisfaction via an annual survey going out to clients, where they rate the incubator team as well as the services and events. We have quite a high return rate for this survey.

Something else to take into consideration as mentioned before is when buildings are designed, it's not all about the money invested, the use of the whole building should be thought about – incubators are often stuck at bottom of the building and it is nice to be located elsewhere at times.
Can you bring into same room as your companies people who are going to advise and help them, suppliers, mentors, investors (business angels or VCs)? If you have all these elements in one place, you have the opportunity to make something exciting - get all of those things that each business needs and bring them all into one building, that's when you are really incubating!

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Could you provide any tips or advice on how to set up and manage a university business incubator?

One simple but important piece of advice is to talk to potential customers, consult with them. They think they know what they need or want, but you actually need to talk to clients to see what may be necessary, understand what is required and assist where possible. There may be possibly conflicting views on what is expected and it is important to reach an agreement. The incubator needs to be up front early on if certain aspects or services cannot be provided.

Before setting up, and consulting with potential clients/customers it would be recommended that as well as talking to the CEOs, conversations should be had with technicians, to really understand all perspectives and working needs of a company.

Basic but important features would be to have good internet & coffee!

The location of the incubator itself is obviously is important, but also within the building there should be somewhere for food and other practical day-to-day issues. Provide a kitchen, for example, as well as ensuring there is a café or restaurant nearby, which will allow people to be more flexible as well as being comfortable. You can remind clients that there are 'extras' included, as well as the main facilities. These areas can often be catalysts for collaboration. This needs to be taken into account when designing the buildings, and also to incorporate breakout space in the design. Large open coworking areas, modern design, where people can meet and interact

Something else to take into consideration as mentioned before is when buildings are designed, it's not all about the money invested, the use of the whole building should be thought about – incubators are often stuck at bottom of the building and it is nice to be located elsewhere at times.
Can you bring into same room as your companies people who are going to advise and help them, suppliers, mentors, investors (business angels or VCs)? If you have all these elements in one place, you have the opportunity to make something exciting - get all of those things that each business needs and bring them all into one building, that's when you are really incubating!

2.5.2 Polymateria

Founded by Chief Scientific Officer and Imperial alumnus Dr Graham Chapman, Polymateria is a technology licensing company specialising in the development of additives that promote biodegradability in plastics. Their mission is to develop biodegradable, recyclable, customizable and cost-effective plastic products and beat global plastic pollution. The technology start-up was recently recognised by local government with a Green Company of the Year award for its approach to tackling 'fugitive' plastic waste: meaning plastic waste that escapes into the environment despite the best efforts to recycle and reuse it. The company uses new 'time-controlled biodegradation technology', ensuring that plastics that have slipped through the net can be broken down more quickly when they reach the end of their use-life.
Website: www.polymateria.com

2.5.3 Customem

CustoMem, founded in 2015 by two Imperial College London graduates, Henrik Hagemann and Gabi Santosa, has received a substantial €1.4m grant that will accelerate its pilot phase. The award will enable the company to bring its next generation granular media, optimised to capture and recycle specific challenging micropollutants found in industrial waste water, to market. CustoMem, based at the Imperial College Innovation Hub in London, has combined its leading expertise in biomaterials and synthetic biology to create CGM (CustoMem Granular Media). This novel bio-adsorbent can selectively capture micropollutants, like Perfluorinated Compounds (PFCs) from wastewater in standard steel tank processing equipment that provides significant cost savings to customers compared with traditional adsorbent materials like anion-exchange media and granular activated carbon.
Website: www.customem.com

2.5.4 Nexeon

Nexeon is a battery materials and licensing company developing unique silicon anodes for the next generation of lithium-ion batteries. The company has patented a unique way of structuring silicon so that it delivers extended cycle life and significantly increases battery capacity. Nexeon was founded in 2005 as a spinout from Imperial College London, based on the work of Professor Mino Green in the Department of Electrical and Electronic Engineering. Imperial Innovations supported the company's formation, filing patents and helping build the management team. Innovations has led a number of investment rounds into Nexeon, which has raised over £80 million in total.
Website: http://www.nexeon.co.uk/

2.5.5 Dearman Engine

Dearman technology uniquely harnesses liquid air to deliver zero-emission power and cooling. The London-based clean cold technology company is developing and demonstrating a portfolio of proprietary technologies, products and services. These will deliver significant reductions in operating cost, fuel usage and emissions, at low-capital cost.

The first Dearman engine was the brainchild of Peter Dearman, a lifelong inventor and engineer. After entering the Imperial Incubator in 2013 the Company has undergone a period of rapid growth. Now employing more than 60 people, Dearman has recently moved into its own dedicated liquid air engine R&D technology centre in London. The Incubator has been key in enabling Dearman to gear up in preparation for this next step.
Website: https://dearman.co.uk/

ALMA MATER STUDIORUM
UNIVERSITÀ DI BOLOGNA

2.6.1 Alma – Italy

43 incubated companies

3 graduated companies

1 years maximum incubation period

Incubator does not have seed fund

Incubator brief
Location: Bologna, Italy
Funded: 2001
Mission: To favour the professional and career growth of students and graduated of the University of Bologna and to foster the development of local economic ecosystem.
Website: https://www.almacube.com/en/

Summary
AlmaCube S.r.l. was founded in March 2013 from the University of Bologna together with Unindustria Bologna (now Confindustria Emilia) to help generate excellent and highly innovative start-ups, supporting young talents in successful business venture.

The first Italian experience where a university and an association of entrepreneurs founded an organization to accelerate the process of business projects born from the academic research frame, sharing with them the business risk with a participation in the capital of the company. AlmaCube is the Incubator of the University of Bologna with Unindustria Bologna that generates excellent and hightly innovative start-ups, accompanying young talents in a success business

AlmaCube can offer logistic structure (office, wiring, phone connection, administrative office, etc) that give the first physical identity to new companies in their first phase. The incubator would also provide services such as marketing and management consultancy and many others, to help the start-ups getting profitable connections with other businesses and Institutions.

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Governance and ownership: 50% public university-50%

1 sponsor

250K yearly operational budget

2 events organised or co-organised per year

400 Submissions received annually

7 full-time employees

The incubator would also provide services such as marketing and management consultancy and many others, to help the start-ups getting profitable connections with other businesses and Institutions. The incubator has also the assignment of identify other companies in the country such as private investments, interested and perceptive about the new businesses world, to connect with the hosted start-ups.

Aspiring Enterpreneurs Programme

Who can apply
Everyone that has an innovative business idea and intends to create a new science-based company with a valid grow potential. Entrepreneurs who have founded an innovative start-up no longer than 12 months before the submitting of the application.

Business Project Characteristics
The business idea must be innovative and might leverage the knowledge gained during the academic studies.

For more information
The aspiring entrepreneurs who want to prove their business idea with the help of professionals at AlmaCube or avail of the services reserved, can send an email to Professor Fabrizio Bugamelli. (fabrizio.bugamelli@almacube.com).
Innovative Start-ups Programme

The Business Project's Characteristics
The business idea must be innovative and it can value the knowledge learned during the academic studies.

The procedure of the applies selection
Entrepreneurs interested in AlmaCube's incubation must send a well-structured business plan of their business to Fabrizio Bugamelli, AlmaCube MD (fabrizio.bugamelli@almacube.com). The document will be rated from the Board of Directors that will give a response within 15 days.

2.6.1 Best Practices and Insights of AlmaCube

An interview with Mr. Fabrizio Bugamelli, CEO of AlmaCube.

Why was the incubator created?

- To support the development of business ideas based on the academic research results of the University of Bologna
- To favour the professional and career growth of students and graduated of the University of Bologna
- To foster the development of local economic ecosystem

Obstacles faced when setting up and developing the incubator. (If any).

AlmaCube's main challenge is fostering the growth of an entrepreneurial mind-set in University of Bologna researchers and students. Second, increasing quality and quantity of the deal flow of applicants for AlmaCube's services. Third, build a strong network of investors and partners for AlmaCube's spin-offs and start-ups.

What is your relationship with the university that founded the incubator?

Università di Bologna owns 50% shareholding. The university provides Spaces and Support.
What is your relationship with any other universities nearby?
We have no formal relationship with other universities.

What is the incubator business model?

3 business units:
1. SPIN-OFF & STARTUP UNIT
We provide incubation services and business development support for hi-tech startups originated from academic research.

2. STUDENTS UNIT (born in 2017)
From Start Up Day to Investor Time: annual program to scout, select and accelerate business ideas of students and graduate of the University of Bologna. The Students Unit works as follow:

Ignition program
30 selected teams from May to October follow the Start-You-Up (a students association) formation program, which provides them with the basis of Lean Startup methodologies.

Co-Working
In October, the 12 best teams begin a period of Co-Working within the AlmaCube offices. Here they work on the development of their business model and benefit of: mentoring with local entrepreneurs, office space, business development consulting.

Incubation
In January, up to 5 teams are selected on which AlmaCube invests 20,000 euros in cash and about 20,000 euros in kind. The startups continue the path of Incubation until 19 May 2018, the day on which they are presented to investors invited to StartUp Day.
The program operative goal is to help early stage teams to prove that their business is an opportunity for the world and the investors.

3. CORPORATE ACCELERATION (in test phase, expected born in 2018/2019)
Open Innovation and Corporate Accelerator projects for medium and big companies.
How we make money:
- By selling participations in portfolio's companies
- By renting offices to companies
- By selling services to companies

How do you spend your operational budget?

- 2/3 of the operational budget are spent in human rosurces.
- The rest of the budget is spent in communication material and utilities.

Providing and managing successful incubation services and programmes - do you have any good practices to share?

- Invest in founders first (intelligence, pleasant to work with, passion and commitment, knowledge in the field), then in the idea and the market. So we suggest to invest a lot of resources in knowing personally founders that apply.
- The first important milestone is to create something amazing and sell it to the market. Everything else has to be made for this goal in the first stage. So we suggest to help founders testing their problem/solution fit and then the product/market fit. Growth also maters.

How do you attract companies and talent? Do you have any good practice to share?

AlmaCube LTD is strictly linked to the Knowledge Transfer Office (KTO) of the University of Bologna and the different Research Departments within the University to attract new potential business ideas or proposers. AlmaCube LTD is Organizing Member of the StartCup Emilia-Romagna that is a yearly Business Plan Competition designed to attract new business ideas from Young talented graduated from the Emilia-Romagna Region.

Within the Association Marzotto National Prize, committed to search and finance most promising business projects of young entrepreneurs, AlmaCube LTD is one of the Italian Business Incubator that offers to under-35 winner startuppers specific programmes for transforming ideas into a valid business plan.

AlmaCube LTD is Beneficiary of the GreenEYE Project financed by European Commission (under the Horizon2020 programme). The objective is to help young entrepreneurs from Participating Countries in enriching their experience, deepen their knowledge and expand their network by spending periods in enterprises run by experienced entrepreneurs in other participating countries. Cooperating with Startup Day we are able to meet 1.500 interested in entrepreneurship people every year along with the startup ecosystem that is invited to take a desk at the event.

How do you monitor your incubator's performance?

The main KPI are:
- the deal flow of applicants for AlmaCube's services (number and quality in terms of growth potential)
- the number of spin-offs and start-up supported/hosted
- financial resources raised from private and public organizations
- equity investments in spin-offs and exits
- business results of supported spin-offs and start-ups: financial resources raised (equity, debt and grants); revenues and personnel growth; involvement of new partners; exits
- commitment and professional growth (as entrepreneur and/or manager) of spin-off and start-up founders.

Could you provide any tips or advice on how to set up and manage a university business incubator?

It's crucial to support and help the incubated companies in the day-by-day activities. Furthermore, we consider important to create a direct bridge between our incubated companies and different kind of investors (banks, business angels, venture capitalist, private funds) as well as big companies searching for breakthrough innovations.

Direct connection with the Academic Research Departments and Technology Transfer office are two key points to successfully manage a University Business Incubator

2.6.2 Miamed

In 2016 MiaMed, a company founded in 2014 for the development of a patent from the University of Bologna and participated by AlmaCube (10% of equity), is acquired by the American multinational Amicus Therapeutics for 6.6 million euro.
Website: https://www.miamed.de/

2.6.3 Horticurtural Knowledge

In 2017, Horticultural Knowledge, incubated by AlmaCube, obtains 409% of the funding requested in an Equity Crowdfunding campaign, raising € 286,000.

Perfrutto is a high-tech service used to forecast production in the orchards of apples, pears and kiwifruit. It arises from a predictive algorithm developed n 30 years of university research.
Website: http://www.hkconsulting.it/?lang=en

Conclusion

Conclusion

This manual was written with the aim to explain the ins and outs of business incubators and to examine their implementation and development in Europe. The main objective is to be a reference point for those interested in starting out in this complex but satisfying world, with the aim of increasing their understanding of what is involved in the process, and what the main challenges are that they may encounter. The manual should also serve as a useful guide to anyone wishing to discover more about the fundamental nature of business incubation, looking at how various models and strategies may vary, or also what points they may have in common despite different geographic locations and economic conditions.

After defining the main concepts of business incubators, the first question addressed in this manual was why a business incubator should be implemented. Among the main reasons, the fact that a business incubator is a key agent of regional economic development stands out. These incubators can be used to promote the commercialisation of university research, as well as contributing to the diffusion of cross-fertilising technologies and the emergence of a selected group of technology-based firms with growth potential. In addition, another highlight is to take into account the positive social impact of business incubators.

This manual establishes a quantitative framework applicable specifically for business incubators, from the technical and economic viability of the incubators, including the availability of financial resources, to the supporting institutions, the potential profile of the start-ups and the possibilities for development of the location where the incubator will be set-up. This manual also has presented a series of risks which should be considered, based on previous experiences and expertise on how to start up and run a business incubator.

From reading and using this manual, the reader will have gained insights into how to carry out the business plan, knowing truly what a business incubator is, from all perspectives, covering its legal aspects and organizational structure, the vision, the mission statement and the strategic objectives and goals as well as possible financial and operational structures.

Moreover, the empirical part in this manual with interviews and hearing real experiences has provided an understanding of good practices and regulations in six different countries: Estonia, Italy, Portugal, Spain, Turkey and UK. This section highlights the differences in the implementation of business incubators in each country and allows the reader to draw their own conclusions from these interesting cases in order to apply this knowledge and experience to their own situations.

One of the most significant conclusions to emerge from this manual is the importance of business incubators in today's Europe, and, overall, the importance that they will have in tomorrow's Europe.

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