World Academy of Science, Engineering and Technology
International Journal of Economics and Management Engineering
Vol:7, No:6, 2013

Entrepreneurship, Innovation, Incubator and Economic Development: A Case Study

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***Abstract*—**The objective of this paper is twofold: (1) discuss and analyze the successful case studies worldwide, and (2) identify the similarities and differences of case studies worldwide. Design methodology/approach: The nature of this research is mainly method qualitative (multi-case studies, literature review). This investigation uses ten case studies, and the data was mainly collected and organizational documents from the international countries. Finding: The finding of this research can help incubator manager, policy maker and government parties for successful implementation. Originality/value: This paper contributes to the current literate review on the best practices worldwide. Additionally, it presents future perspective for academicians and practitioners.

***Keywords*—**Incubators, Economic Development, Entrepreneurship, Innovation.

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I. Introduction

INCUBATOR is an attractive tool for the economic development and helps new business growth through the provision of a support of the start-up companies and business incubation program have been the ability to generate jobs that remain in the community at a generally low public cost [20]. Business incubators play a key role in providing support to emerging entrepreneurs, predominantly in the initial stages of their firm's lifecycle. They provide a range of services from hardware such as shared offices, access to research labs to software such access to knowledge and network pools to start up companies. Business incubators can be particularly valuable in helping to develop local economies, promote technology transfer, create new enterprises and generate jobs and fostering entrepreneurship [4]. Business incubators have evolved from other business development services and grown rapidly. Furthermore, the incubator managers provide ventures with tangible services till the start-up companies reach the market [25]. In this study case, personal skills, career building skill and social inclusion are focused upon in order to analyze the entrepreneurial skills. Business incubators contribute to the international economy and play a vital role not only in the economic recovery but also in economicdevelopment. International adaptation leads to the support of diverse economies, the commercialization of new technologies, jobs creation and wealth building. In addition, more than 7000 incubation programs worldwide are engaged in supporting the development of new high-growth businesses. Today, Europe has funding in incubators with the goal of job creation and economic recovery. They also provide new opportunities for local customisation of products, new employments, creating entrepreneurial talent and leadership that are required for emerging economies. The findings have implications for decision makers as managers, industry and government.

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II. Literature Review

Universal researchers in the field of business incubation agree that incubators contribute optimistically to economic development through their impact on such factors as job creation and promoting innovation. European Union wants to develop greater social cohesion within and between its nations, as is clearly pointed out in many statements such as this. 'In a world of ever-increasing opportunities for exchange, it is essential to prevent misunderstanding and to stem the reflexes towards intolerance from taking root: intercultural dialogue, exchange projects, meeting and working together, actions to promote tolerance, understanding and respect for others, and projects to combat racism and xenophobia have therefore, become a greater priority than ever'. Entrepreneurship stands high on the political European agenda. Reference [22] and [23] categorized the definitions of Entrepreneurship into three levels such as behavioral definition [18], occupational definition, ([19],[13],[21] and synthesis definition [15]. Reference [6] categorized the definitions of incubators into three organizational levels such as National Business Incubation Association (NBIA), United Kingdom Business Incubation (UKBI) and World Bank Group. Reference [24] and [7] view the innovation definition as the implementation of a new or significantly improved product, service, process, a new marketing method, or a new organizational method in business practices, workplace organization or external relations the importance of innovation within the economic cycles, considered entrepreneurship with a specific emphasis on innovation. Innovation deals with new products, new production methods, new markets, and new forms of organization. Therefore, while the basic concepts of entrepreneurship, innovation and incubation and the associated terminology must be commonly accepted and shared, when putting into practice actions towards the creation of new IBIs [12].

European Commission benchmarking study reveals 107 incubators with RR 18% [1]. Tenants' survival rate is positively correlated with the availability of a more balanced

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screening process. Reliance on one screening process such as market, financial and management screening is positively related to high failure rate. Incubators role in supporting entrepreneurial spirit by any means is critical for firm survival. In contrast to, Europe and US [14] investigate 47 interviews. Both the incubator and the ventures benefit from resource and information flows at the initial phase. The main corporation benefits at the second phase from intangible and tacit knowledge coming from the for-profit incubators and the firms. Further, [17] interviewed 211 in UK incubator firms within a population of about 1000 firms reveals cluster analysis to classify firms, product innovation, radical innovation and competitive performance. Firms are classified into 4 groups according to their capabilities, determination to access resources and to acquire knowledge. Firms that deliberately pursue goals in networking are more successful than others. Strategic networking is a crucial factor behind success and in its absence incubator services may not be important at all. Three practical business incubation European models [5] are discussed based on their adoption as case study examples: the United Kingdom, France and Germany. These three countries contain approximately 83% of all the incubators located throughout Europe today. This study focused on (1) the nature of incubator financing, (2) the incubator's mission and strategy, and (3) graduation that it in turn offers its incubate clients. The S.W.O.T analysis of each case study reflects the strengths of each program and complies with its mission and objectives showing great opportunity with the future plans and performance of each program.

Reference [2] invested 48 incubator firms in Turkey with RR 60%. The study focuses on the Sales growth, employment growth and innovativeness. There are differences between on- and off-incubator firms in terms of sales and employment but, not in innovativeness. Tangible incubator services and seed funding explain this differential. Reference[16] discussed the entrepreneurs can be create a positive externality through bringing new goods to the market and in the process showcase new technology and bringing new goods to market. Reference [23] concluded the consideration of entrepreneurship in development provides three perspectives such as ideas in development economics, entrepreneurship influences development outcomes positively as well as negatively, and entrepreneurship is in turn significantly determined by the dynamics of development. Reference [3] drawing lessons from country experiences to assess the appropriateness of incubators as a tool for entrepreneurship promotion in developing countries. The main weaknesses of incubators in developing countries are the focus on tangible services rather than intangible services, dependence on government, lack of management and qualified personnel, lack of incubator planning and creativeness in solving problems.

InfoDEV's Business Incubator in Asia has currently supported 2,980 incubated client companies created 40,900 jobs and 980 companies that graduated from the incubator since the beginning of operations with total jobs creation 14,100. The National Business Incubation Association (NBIA) reports that throughout the United States, small businesses generate approximately two out of every three new jobs. At almost any time, roughly 7 million people are starting new businesses. All across the country, business incubators are providing entrepreneurs with tools that encourage technology transfer, enhance the local economy, and create new jobs.

Today, the results show quantitative and qualitative responses used to determine success rates and key indicators of incubators in various countries [10]. The best practice model based on the lessons learned from case studies indicates that the success of incubates to sustainable graduation is reliant upon: (1) clear objectives, (2) incubators location, (3) access to services, (4) employment creation, and (5) economic development strategy. When accomplished, the best practice model can lead to a 90% survival rate of companies and reflects sustainability in the market.

Another study [9] proposed measurement models are concerning the international context. The four measured indicators are: 1) Graduation of Businesses Incubated, 2) success of businesses incubated, 3) jobs created by incubation, and 4) salaries paid by incubator clients. The recommendations from the study could be a help to develop business incubation guidelines for best practices in the GCC, which will lead to the economic development worldwide and GCC.

Business incubators can help young firms to survive and grow during their start-up years, and can play a key role in the economic development of a community or region. In developing countries, including Kuwait and the other GCC member states, business incubators can be particularly valuable in helping to develop local economies, promote technology transfer, create new enterprises and generate jobs. In addition, the survey results are used to make recommendations for how to maximize the success of incubators, including matching services offered to the needs of clients and involving a range of community stakeholders in the development of their programs. A number of options are proposed for developing and expanding the business incubator concept in Kuwait and the GCC member states [4].

Recently, [8] discussed on a mixed-method approach. This study has clearly stated that the business incubation as a tool for economic development based on economic indicator from incubation outcomes such as (1) entrepreneurs, (2) companies created, (3) jobs created, and (4) incubator companies. This is evident in both the United States and the developed countries, but still taking shape in the developing countries such as the GCC member states. Finally, [7] examine the case study of 10 incubator organizations in developing countries. The findings of this study indicate business incubators as an effective and innovative tool in supporting the start-up businesses. The empirical results highlight some implications for successfully developing and implementing best practices of business incubation programs. This study makes a contribution to knowledge about the process of business incubation.

In the new environment of rapid technological advances and globalizing trade, modern small businesses are playing a significant role in creating innovations, employment, income and growth with equity.

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III. The Methodology

The study employs successful multi-case study methodology which describes a number of aspects of business incubation worldwide. In addition, the paper looks at additional ways to compare between twelve incubation models worldwide based on the five dimensions: 1) Incubators graduate firms, 2) Incubators goals, 3) Incubators services, 4) incubators funded year, and 5) incubators types. This study is also based on a study of the current academic literature and work currently being undertaken with finding from Europe model, Middle East model and Asia model. Furthermore, the case study method is recognised as the most effective research strategy to capture the "rich" experience of complex projects [11] [26].

TABLE I
Table of Case Studies Worldwide

Case	Key Dimensions				
	Goals	Types	Services	Funded year	No. of Graduate Firms
1) UK	1) Entrepreneurship awareness 2) Job creation 3) Commercializing technology 4) Technology transfer	Mixed technology	1) Facilities 2) Finance 3) Advisory services 4) Mentoring/coaching 5) Incubation services 6) International Business Services 7) Networks and Synergy 8) Technology Transfer 9) Commercializing technology	1994	111
2) France	1) Entrepreneurship awareness 2) Job creation 3) Commercializing technology 4) Technology transfer	Mixed technology	1) Facilities 2) Finance 3) Advisory services 4) Mentoring/coaching 5) Incubation services 6) International business services 7) Networks and synergy 8) Technology transfer 9) Commercializing technology	1999	75
3) Sweden	1) Export revenues 2) Job creation 3) Profitable enterprises	Academic	1) Facilities 2) Finance 3) Incubation and Business Development 4) International Business Services 5) Networks and Synergy 6) Technology Transfer	2001	64
4) Austria	1) Entrepreneurship awareness 2) Job creation 3) Commercializing technology 4) Technology transfer	Technology	1) Facilities 2) Finance 3) Advisory services 4) Mentoring/coaching 5) Incubation services 6) International business services 7) Networks and synergy 8) Technology transfer 9) Commercializing technology	1981	404
5) Jordan	1) Entrepreneurship awareness 2) Income generation 3) Job creation 4) Profitable enterprises 5) Research commercialization	NGO (This incubator is associated with a technology park)	1) Facilities 2) Finance 3) Advisory services 4) Virtual incubation 5) International business services 6) Networks and synergy 7) Technology transfer	2004	3
6) Morocco	1) Entrepreneurship awareness 2) Export revenues 3) Job creation 4) Policy impact 5) Profitable enterprises	Private sector (This incubator is associated with a technology park)	1) Facilities 2) Finance 3) Advisory services 4) Mentoring/coaching 5) Incubation services 6) International business services 7) Networks and synergy 8) Technology transfer	2005	4
7) Bahrain	1) Entrepreneurship awareness 2) Export revenues 3) Job creation 4) Policy impact 5) Profitable enterprises 6) Research commercialization	Government	1) Facilities 2) Finance 3) Business information 4) Advisory services 5) Virtual incubation 6) International business services 7) Networking 8) Commercializing technology	2003	30
8) Saudi Arabia	1) Entrepreneurship awareness 2) Job creation 3) Profitable enterprises	Government	1) Facilities 2) Finance 3) Incubation and Business Development	2009	0

	4) Research commercialization		4) Networks and Synergy 5) Technology Transfer 6) Other: Access to IP support, R&D support		
9) China	1) Entrepreneurship awareness 2) Income generation 3) Job creation 4) Policy impact 5) Profitable enterprises 6) Research commercialization	Government	1) Facilities 2) Finance 3) Business information 4) Advisory services 5) Mentoring/coaching 6) Training in business management 7) International business services 8) Networks and synergy: Facilitation of linkages between incubates 9) Networking events 10) Networking referrals to business professionals 11) Technology transfer	1998	45
10) Indonesia	1) Entrepreneurship awareness 2) Income generation 3) Job creation 4) Policy impact 5) Profitable enterprises 6) Research commercialization	Not-for-profit	1) Facilities 2) Finance 3) Virtual incubation 4) Training in business management 5) Networking between incubates 6) Technology transfer	1995	11

IV. The Findings

Most of the studies present aneffective tool for the development of the economic, entrepreneurship and the positive impact of the adoption of incubators. This act as an accelerator for the job creation, economic growth, local economic development, urban industrial regeneration, venture creation, technology transfer, innovation and the important goals of business incubators programs [6].Table II summarizes the analysis of similarities and differences between international case studies based on the key dimension.

- The similarities for all case studies indicate that less than 3 graduate companies for each country. But the differences between countries can be indicated more than 10 graduate companies presented in 7 case studies however, less than 10 graduate companies presented in 2 countries.
- Also, the similarities for all case studies in incubator goals focus on the four goals such as fostering entrepreneurship, jobs creation, technology transfer and technology commercialization but the differences between the countries can be Income generation, Policy impact, Profitable enterprises and Export revenues.
- The similarities for all countries indicated Medium Tangible services offered by incubators but the differences present medium to strong Tangible and intangible services.
- The similarities for all countries indicated non-profit incubators types, however, the difference between case studies categorize to five types such as mixed technology types present in the 3 countries, government types present in the 3 countries, technology park types present in the 2 countries, non-profit types and academic types.
- Finally, the similarities for all countries funded program after 1980 but the differences between the countries can be categorized to two group the first group the funded year between 1980 to 2000 presented in 5 case studies and the second group funded year between 2000-2009 presented in 5 case studies.

TABLE II
SIMILARITIES AND DIFFERENCES ANALYSIS

Dimension	Similarities	Differences
1) Incubators Graduate Firms	Less than 3 graduate companies	1) Less than 10 graduate companies (2 case studies) 2) More than 10graduate companies (7 case studies)
2) Incubators goals	1) Entrepreneurship awareness 2) Jobs creation 3) Commercializing technology 4) Technology transfer	1) Income generation 2) Policy impact 3) Profitable enterprises 4) Export revenues
3) Incubators services	Medium Tangible services	Medium –high tangible and intangible services
4) Incubators types	Non-profit types	1) Mixed technology types (3 case studies) 2) Academic types (1 case study) 3) Government types (3 case studies) 4) Non-profit types (1 case study) 5) Technology park types (2 case studies)
5) IncubatorsFunded year	Funded after 1980	1) Funded between 1980-2000 (5 case studies) 2) Funded between 2000-2009 (5 case studies)

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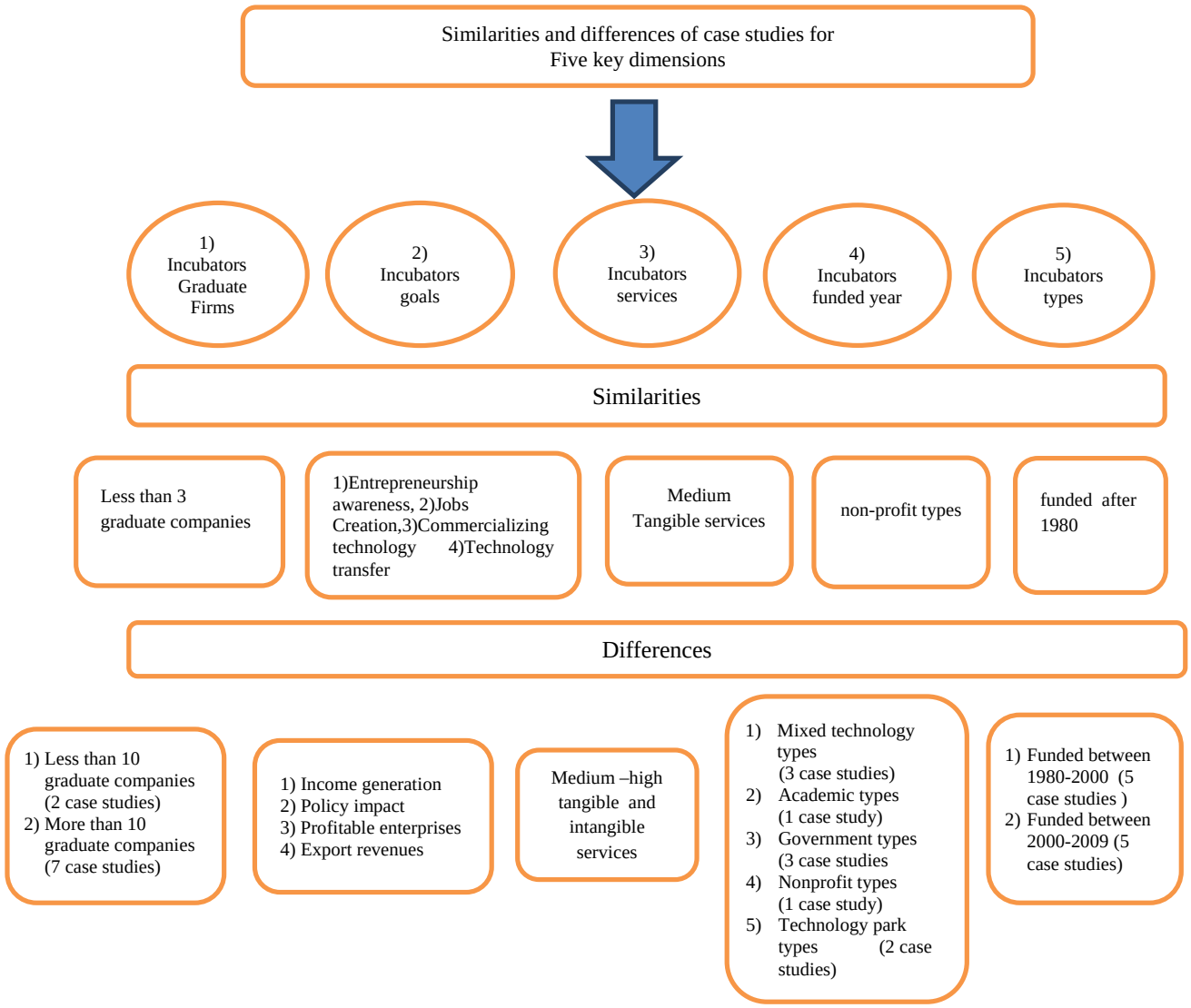


Fig. 1 Similarities and differences of case studieschart

V. Summary and Conclusions

It has been widely acknowledged that the shape of 21st century will be built by entrepreneurship, incubators, innovation and technologies. The Innovation will create new jobs and catalyze broadly shared economic growth. The incubators acts as a positive active tool for economic growth by fostering the entrepreneurship, innovation and technology commercialization. The authors in this paper have highlighted the importance of the similarities and differences between the studies countries as indicated specifically in section 4 of this paper. Also, the authors have identified the five key dimensions for the case studies focused on 1) incubators graduate firms, 2) incubators goals, 3) incubators services, 4) incubators funded year and, 5) incubators types, as mentioned in section 3. Therefore, this paper attempts to provide a new line of thinking and further scope for researchers in areas of entrepreneurship, incubators, innovation and technologies. The research findings indicate the similarities and differences between the international countries as mentioned in Fig. 1. This paper is based on a multi case study that has investigated, addressed and explained the successful adaptation worldwide. To get a clear picture of the phenomenon, a further research needs to be conducted. Moreover, a mixed-method approach using both qualitative and quantitative methods would provide a deeper insight and understanding into the phenomenon under investigation. For future research and from the findings that highlighted in this paper, the authors aim to conduct more case studies in different Middle Eastern and Gulf states. Hence the authors are planning to develop blueprint shape of 21st century.

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