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THE EMERGENCE OF BUSINESS INCUBATORS AS ENTREPRENEURSHIP DEVELOPMENT TOOLS: A SMALL COUNTRY EXPERIENCE

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Abstract

The purpose of this paper is to examine the design and operations of business incubators in Trinidad and Tobago as facilitators of entrepreneurship development. The study results are expected to serve as a guide to the establishment of incubators in small island developing states. A qualitative methodology was adopted involving a review of secondary data sourced

from published reports and journal articles and primary data obtained from the direct contributions of the incubator managerial and operations staff as co-authors. The major finding is that efforts at business incubation in Trinidad and Tobago have utilized both the virtual and the physical incubator approaches with encouraging prospects for stimulating entrepreneurship and new venture development. The practical implication of this study is that the documentation of the incubation experience offers guidance to incubator developers and managers based in the Caribbean region. The paper constitutes an original contribution to incubator stakeholders such as governments and universities by providing new insights on incubation in an under researched field in the small island context. The research is limited to the extent that the study focuses on the Trinidad experience and excludes consideration of other Caribbean islands, but the documentation of this experience is applicable to small island developing states generally.

Keywords: Business Incubation, Entrepreneurship, New Venture Development, Incubation Ecosystem, Business Innovation, Virtual Incubators

INTRODUCTION

According to the Organization for Economic Cooperation and Development (OECD, 1999), business incubators (BI) have become an increasingly popular policy instrument for local economic development and employment creation. BI generally aim to assist entrepreneurs with enterprise start-ups and for achieving objectives such as the commercialization of university research, providing infrastructure, upgrading the technological capabilities of local firms, and facilitating legitimate entrepreneurial efforts.

The establishment of BI fall within the framework of entrepreneurship and new venture development theory which date back to very early writings on concepts of self-employment, innovation, managerial talents, combining productive factors, tolerance for risk, identifying opportunities, stages of entrepreneurship, and entrepreneurial networks (Ferreira, Reis, & Miranda 2015; McMullan & Long,1990). The concept of opportunity identification features significantly in the field of entrepreneurship theory and is used by the Global Entrepreneurship Monitor (GEM) in their annual global surveys to categorize entrepreneurs as either necessity or opportunity driven (Kelley, Singer, & Herrington, 2016). The theory was extended to go beyond mere generation of ideas to actual start-up of new ventures described as the strategic creativity theory of entrepreneurship (McMullan and Long). This theory is based on the argument that the objective of entrepreneurs is to develop new ventures capable of growth which, in turn, requires strategic creativity. The theory was built on the essential blocks of: risk taking; creativity and

innovation; management; strategic decision making; and venture development (McMullan & Long, 1990). The concept of BI as strategy was further extended to considerations of incubation as indispensable to economic development (Eshun, 2009), and tools of entrepreneurship (Aernoudt, 2004).

This paper adopted a pragmatic worldview which does not adhere to any philosophical system but is oriented to “actions, situations, and consequences rather than antecedent conditions” (Creswell, 2009, p. 10; Saunders, Lewis, & Thornhill, 2009). The pragmatic approach was judged as more relevant to the paper which studied the operation of incubators as an emerging phenomenon in a developing country situation with emphasis on applied practice. The establishment and operations of BI specifically address the issue of the strategic development of growth ventures as will be examined in this paper.

The experience to date confirms that there is no unique BI model. Rather, there is considerable diversity in the types of incubators, their modes of operation and the objectives they pursue.This observation was echoed by Peters, Rice and Sundararajan (2004) who considered incubators as “an evolving innovative organizational form that is a vehicle for enterprise development” (p. 83). However, most incubators tend to be either physical incubators (PI) providing work space for clients, virtual incubators (VI) which utilize computer technology to deliver services, or a hybrid approach incorporating elements of the two main types. Interest in BI comes from a variety of sources including local and regional governments, universities, chambers of commerce, science parks, private real-estate developers, and non-profit organisations some of which are involved in sponsoring, establishing, or running incubation programmes.

The research problem addressed in this paper is the question of the role of BI as an economic development tool for generating the types of business activities that can stimulate the economy of a developing country. However, because of its relative newness, little published research is available on the operation of BI in small developing countries. The research conducted for this paper aims to remedy this deficit by examining two different approaches to BI in Trinidad and Tobago (TT): the Arthur Lok Jack Graduate School of Business (ALJGSB) University of the West Indies (UWI) Business Booster (BizBooster) a university-led initiative; and the National Entrepreneurship Development Company (NEDCO) Integrated Business Incubator System (IBIS) a governmental-led venture.

The paper is intended to fill the gap in the literature on the establishment and operations of BI in small developing countries, with specific reference to their critical features as analyzed in studies by Chandra and Fealey (2009).The relevant research in the area of BI in TT has been very limited to two publications, one article highlighting the issue of client selection as a

determinant of success in relation to one of the cases studied in this paper (Ramkissoon-Babwah & McDavid, 2014), and an analysis of five nascent incubators in TT (Allahar & Brathwaite, 2016). Further, this paper aims to guide the further development of incubation as an entrepreneurial development tool and facilitator of innovation in small islands as promoted by universities, tertiary training institutions, and governmental agencies.

The sequence followed in this paper is the presentation of an overview of the relevant literature on incubation to provide a framework for the subsequent discussion, a description of the research methodology employed, an exploration of the significant themes from the literature, an analysis of the early experience of BI in TT focusing on two major incubators, documentation of the lessons gleaned from the early incubation experience, and the conclusions and policy implications of the study.

OVERVIEW OF RELEVANT LITERATURE ON BUSINESS INCUBATION

The concept of BI was traced to circa 1959 with the establishment of the Batavia Industrial Center in New York, but modern BI emerged in the UK in the 1970s as managed workshops (industrial incubators) and shared office space (business centres) which utilised disused buildings often donated by cities (Verma, 2004). The concept evolved in the 1980s and 1990s to include science parks and technology centres, and by the mid-1990s specialized technology incubators emerged which focused on software and data storage; and semiconductors and microprocessors. The dot.com era of the late-1990s created the concept of incubator-without-walls, new economy incubators, or the current term virtual incubators (Verma, 2004) which is an example of one of the incubators in TT discussed in this paper.

In the literature, the concept of BI is considered as a systematic effort directed at new venture creation through the provision of physical facilities, technical and administrative support, services to guide firm growth and mitigate against failure. These facilities and services are intended to serve as entrepreneurial development tools in order to enlarge the pool of new business ventures and address their vulnerability in their early stage of development (Theodorakopoulos, Kakabadse, & McGowan, 2014; Al-Mubaraki & Busler, 2013). As is the case in many areas of social science research, the question of definitions frequently arises because of a lack of consensus on what precisely constitutes incubation and the success record. This situation was attributed to the wide variety of definitions in the literature, the trend towards a proliferation of BI, and the diversified configurations employed (Theodorakopoulos et al.; Voisey, Gornall, Jones, & Thomas 2006). The BI studied in this paper is examples of such diversified structures. The one issue on which there is general consensus is that BI have

followed an evolutionary path and the role of the BI manager is critical to success, which suggests that the management dynamics of BI is an area for future research.

In accepting the concept of BI as economic development tools, it was asserted that incubators operated at two levels. At the macro level, the focus was on generating jobs and economic development through linking talent, technology, capital, and know-how which constitutes an effective framework for new business growth (Smilor, Gibson, & Dietrich cited in Chandra & Fealey, 2009). At the firm level, a business support system was employed to provide a range of services to enable the new venture to find its business feet (Chandra & Fealey). In this context, it was asserted that there was ample evidence that BI play a critical role in economic development, job creation, innovation, technology transfer and diversification of the local economy (Anderson and Al-Mubaraki, 2012), which form the typical objectives of most BI. The view was also promoted that BI represented a powerful tool in overcoming the pitfalls encountered by high-tech and other business types, and constituted a key component of regional and national development strategies (Voisey et al., 2006) which remains a major concern of developing countries.

The literature reviewed for this study emphasised that there was a growing body of research on BI in many areas of the world, but the state of knowledge was characterized by: absence of a comprehensive assessment framework for determining effectiveness of BI; increasing emphasis on soft factors such as networking, mentoring and coaching which facilitate access to social, human and seed capital needs of the firm; and predominance of anecdotal and informal research design with a limited theoretical input (Theodorakopoulos et al., 2014).The aim of this paper is to add to the knowledge of the operations of BI in developing countries and particularly in the Caribbean where the practice is growing. The general conclusion from the literature was that BI in advanced and developing countries alike shared similar experiences. However, variations derived from the different institutional and cultural contexts exerted influence at the macro level, while, at the incubator level, the client base and availability of resources were influenced by the strategic focus and the mix of services offered (Chandra & Fealey, 2009). This paper focuses on the experience of a small country's efforts at implementing BI as an economic and entrepreneurial development tool as the main output of the study and an original contribution to the body of research on incubation.

RESEARCH METHODOLOGY

A qualitative strategy of inquiry was adopted for this study which involved: field visits to the incubators to observe the operations in their natural setting; a small focus group meeting with staff to identify the main features and operating characteristics of the incubators; collection of

data by the authors as the key instruments of the research effort; use of multiple sources of data from journals, technical reports from leading multilateral development institutions involved in the promotion of entrepreneurship and creation of BI; information from the US-based International Business Innovation Association (InBIA) and the United Kingdom Business Incubation Association (UKBI); and internet searches of incubation initiatives worldwide.

An inductive approach was used for arriving at the final list of incubator features to be included in the analysis and for a collaborative identification of the major themes to be discussed in the report. The authors interpreted the findings of the study based on the results of the experience of incubation in TT which was reported in a holistic narrative manner (Creswell, 2009).

The study is limited to the two main BI in TT the respective designs of which provided an opportunity for a comparative analysis because different models were adopted. In the case of the BizBooster, the VI model was used, while a PI approach applied to IBIS. The authors incorporated their practical experience in the design and operations of the BI cases and their personal familiarity with the entrepreneurship and incubator ecosystems in TT, in completing the analysis presented in this paper.

EXPLORATION OF MAJOR THEMES OF INCUBATION

Based on the overview of the relevant literature, the critical design and operational issues in relation to BI in developing countries which include: definition and rationale for BI; evolution of business incubation; emergence of an incubator ecosystem; best practices and monitoring and evaluation procedures.

Business Incubation Definition and Rationale

Varying definitions of BI are adopted in different regions of the world by different incubator associations which was attributed to the multiple typologies, range of sponsors, differences in objectives, development interests, and menu of services offered (Bakkali, Messeghem, & Sammut, 2014; Khalid, Gilbert, & Huq, 2014). For example, the InBIA of the U.S., the largest and oldest incubation industry organization, sees BI as designed to provide client companies with business support services and resources such as: management guidance; business planning assistance; identification of financing sources; rental space with flexible leases; shared office services and equipment, all under one roof (InBIA, 2015). A similar explanation of BI in the UK was cited by Voisey et al (2006)as: “a unique and highly flexible combination of business development processes, infrastructure and people, designed to nurture and grow new and small

businesses by supporting them through the early stages of development and change" (p. 456). These approaches are consistent with the traditional PI design.

A more recent approach to incubation is the concept of VI which takes the services and business development tools to the entrepreneur providing a more diverse menu including: outreach services; drop-in services and facilities; online tools; consultancy; mentoring; and networking (infoDev/The World Bank, 2014). Although the definitions differ in a nuanced manner, there is a convergence of opinion on the different types of incubators and the range of services offered which will be explored in the description of the TT case in this paper. The rationale for creating BI is that they are an effective initiative for promoting entrepreneurship which leads to economic and social development through enhanced innovation policy, innovative ventures, job creation, and social cohesion (Caiazza, 2014; Theodorakopoulos et al., 2014; Al-Mubaraki & Busler, 2010). This rationale was also accepted by Robinson and Stubberud (2014) who added providing an environment conducive to business development, and facilitating commercialisation of research and technology which is consistent with the theory of entrepreneurship and new venture development.

Evolution of Business Incubation

Historical Development

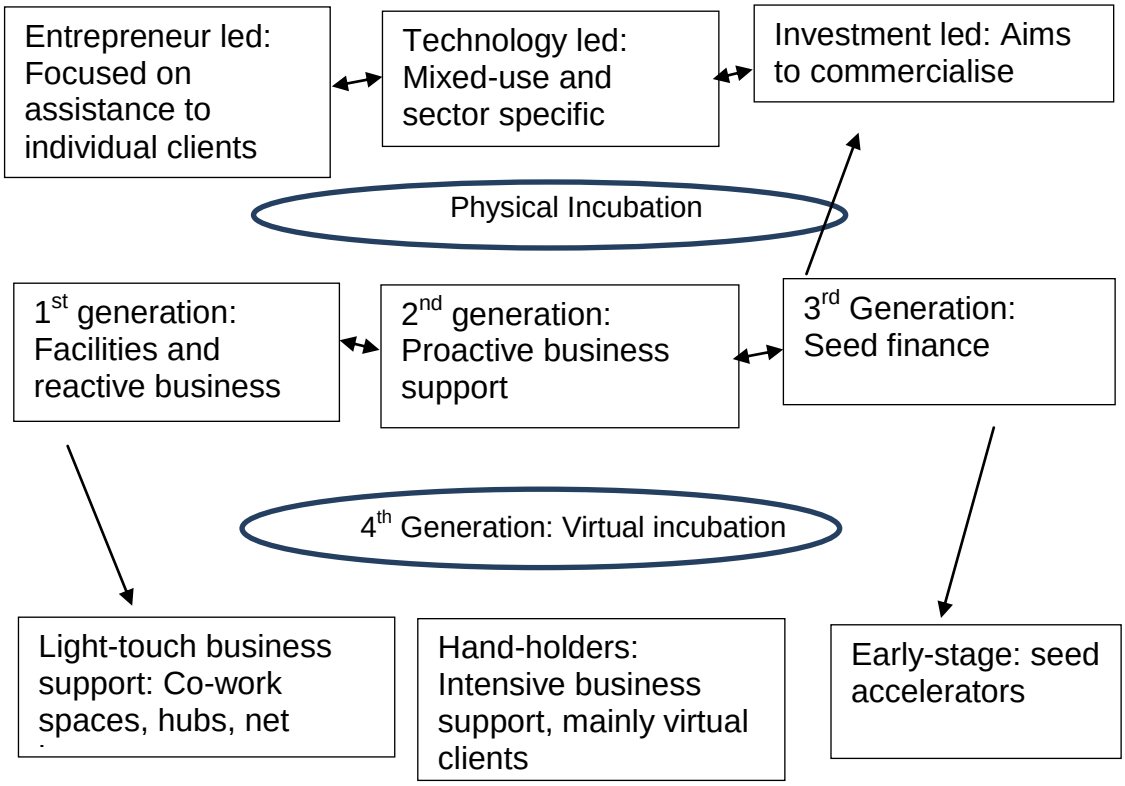
Incubators are not only diverse but comprise different types, models, development stages, and menu of services reflecting evolving trends based on operating experience. The trends were observed from the 1970s when industrial incubators, enterprise agencies, and shared office space were all linked to the development of the BI concept. In the 1980s business centers and science parks were added as part of the incubator ecosystem, and by the mid to late 1990s, incubator models emerged as physical, specialised, technology related, sector related, and virtual, thus expanding the types and range (Verma, 2004). This evolutionary process is an acknowledgment that no one-model can fit all business environments, economic conditions, and cultural contexts which is demonstrated in the case experience explored in this paper.

Types and Generations of Incubators

The progress of incubator development was viewed as spanning four generations (infoDev/The World Bank, 2014; Khalid et al., 2014). The first three generations focused on PI and were identified as: entrepreneur-led which focused on assistance to individual entrepreneurs directly; technology-led which accommodated mixed-use businesses and tended to specialize in particular sectors; and university-led which aimed at commercializing research and development initiatives generated by staff and students. The fourth generation emerged as VI which

infoDev/The World Bank (2014) described as benefitting from 'light-touch' business support, hand-holding with intensive business support, and early stage seed accelerators which provided funding. In terms of approach, the first generation of incubators focused on facilities and reactive business support, the second generation is distinguished by more proactive support, the third generation provided access to seed finance, and the fourth generation providing services via internet technology virtually (Figure 1).

Figure 1: Generations of Incubator Development



Source: Adopted from infoDev/The World Bank (2014)

Incubation Process

The tested incubation formula comprises a process based on: pre-incubators which offer the core services of business advice, coaching, and a workstation to assist with preparation of start-up business plans; academic incubators which are based at universities and research centres to support business ideas generated by students or the output of R&D activities; general purpose incubators which provide the full range of support services from pre to post incubation, irrespective of the business sector; sector-specific incubators which focus on areas such as the environment, agribusiness, ICT, and tourism all of which reflect the context of the location and may require special infrastructure to meet client needs; and enterprise hotels which offer

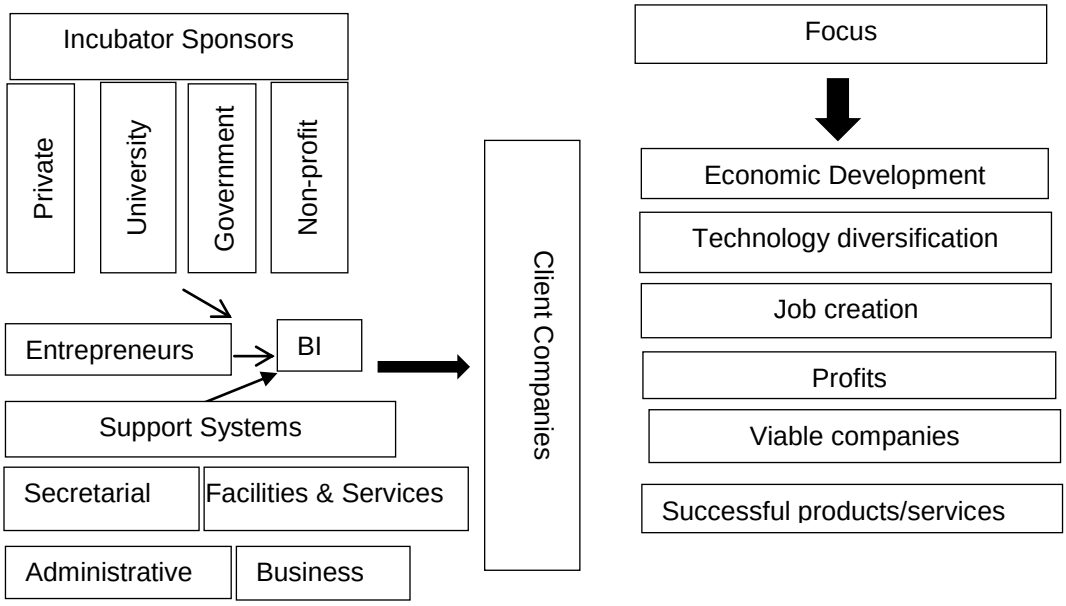
physical incubation services especially office space where these present an access problem such as in cities (EU, 2010).

Emergence of an Incubator Ecosystem

Incubation Ecosystem

The incubation ecosystem has evolved into a complex of facilities and services which are provided within a physical space, or through virtual links depending on the incubator's orientation whether: mixed with a focus on start-ups; economic development concentrating on specific regions; technology emphasising entrepreneurship stimulation; social which integrates societal concerns; and basic research (Barbero, Casillas, Wright, & Garcia, 2014; Aernoudt, 2004). The incubation complex was described by Verma (2004) as combining sponsoring agencies, entrepreneurs, BI with different areas of concentration, and support systems. The sponsors can be private firms, universities, governmental agencies, or non-profit organizations. Client entrepreneurs are selected from a process of screening and interviews to establish capacity for entering an incubator. The key support systems include secretarial and administrative support personnel and provision of facilities, services; and access to business expertise, coaching and mentorship. The specific focus of incubators may vary but specific objectives remain common such as economic development, job creation, technology diversification, profitability objectives, creation of viable enterprises, and production of successful products and services (Figure 2).

Figure 2: The Incubation System



Source: Adapted with modifications from S. Verma (2004)

Models and Services

The current models of BI are characterized as: providing managerial advice, mentoring, and access to networks as critical components; focused on specific sectors particularly technology; comprising university-based and for profit incubators; and linked to regional and state networks (Mattare, Ashley-Cotleur, and Masciocchi, 2012). The increasing appeal of networks imposes a responsibility on incubator managers to be inventive and to disseminate knowledge by establishing broad-based professional networks. The provision of networking opportunities was deemed most critical to the success of new ventures (Ferreira, Reis, & Miranda, 2015), while a client's private external network resources were found to be more important than incubator-provided networks (Pettersen, Aarstad, Øystein & Tobiassen, 2016). Access to and utilization of networks by clients in BI is credited with being a critical determinant in successfully graduating from incubators which is discussed in the case examined in this paper.

It is accepted that within the incubation system, access to resources and services provided by incubators largely determine the extent of their use by clients, but the quality of management was the main factor in their acceptability (Arlotto, Sahut, & Teulon, 2011). While it is acknowledged that BI provides a wide range of services, the actual utilization of such services was not clear. Mattare et al., (2012) surveyed 77 incubator tenants in Maryland, US and ranked the top 10 services desired in rounded figures as: networking (44%); marketing plan assistance (39%); social media marketing (30%); training/workshops (30%); counseling/consulting (29%); financial planning (29%); website development (27%); business plan development (26%); peer network (26%); and meeting space (25%) (p. 53). In a European example, a study of incubator services in Norway revealed the most frequent services tapped in order of preference were: financial consulting; business development; physical services; specialized services; and general services (Robinson & Stubberud, 2014, p.33). The latter survey results identified the services incubator clients in Norway judged as important to their ventures. However, the choice of services offered by the BI in the TT case vary from the Norway results as was to be expected in countries at different levels of economic development.

A significant finding on incubation models is that the evolution of the incubator ecosystem is pointing to the introduction of innovation-based incubators (IBIs) in small developing countries as a competitiveness enhancement initiative. The development of IBIs points to the need for the creation of a national and regional innovation system which recognizes the role of incubators in advancing the innovation objectives of the ED countries (2015).

Best Practices and Monitoring and Evaluation

A case study of best practices in incubator development in Australian BI considered the key components as relating to incubator set-up, management, services offered, and performance. The conclusion was that service offerings must focus on client needs, creating a wide network of business support services, and systematic performance evaluation (OECD, 1999).Consistent with the OECDs conclusions, the InBIA (2015), identified successful business incubators as: committed to industry best practices; structured for financial sustainability; recruited and compensated management with appropriate skills; built an effective board of directors; and ensured management emphasises client assistance in allocating time. Additionally, Graham (2010) argued that a BI "must be lean, sustainable, based on value-derived funding, and culturally consistent with the tenant companies" (p. 37).

The final component in incubation best practice is instituting a system of regular monitoring and evaluation of the performance of BI as indispensable to ensuring success and sustainability because, if these activities are ignored, problems and constraints will not be recognised in time for corrective action to be taken by the incubator management. infoDev/The World Bank (2013) identified the key areas to be monitored and evaluated as: dynamics of the ecosystem including the feasibility of infrastructure adequacy and progress towards strengthening; level of customer demand based on feasible markets at the local, regional, national, and global levels; accessibility and viability of markets; adequacy of the pool of entrepreneurs and trainability; level of funding available for training, R&D, commercialisation, and expansion, and sources and amounts of funding; and scope for leveraging incubator operations to support initiatives, and achieving progress in removing entry barriers. A distillation of the best practices in designing BI structures and services point to a focus on the needs of client and the capability of the managers.

RESULTS AND DISCUSSION OF A SMALL DEVELOPING COUNTRY EXPERIENCE

The implementation of BI as a tool for spurring entrepreneurship and economic development is relatively new to TT as an earlier effort in 1986 based on food technology did not get off the ground. A more systematic approach to incubation did not take place in TT until the establishment of IBIS in 2011 as a government-sponsored PI, and, in 2012, the BizBooster a university-led VI. These two incubators are the subject of the analysis presented in this paper because of their longer operating experience in TT, and the different models they employed.

Comparative studies of incubators were undertaken by several researchers who investigated their operations in countries such as the US, China, Brazil, and Chile (Tietz, Anholon, Ordoñez, & Quelhas, 2015; Charry, Peréz, & Barahona, 2014; Bakkali, Messeghem, & Sammut, 2014; Al-

Murabaki & Busler, 2013b; Chandra & Silva, 2012; and Chandra & Fealey, 2009). Based on data from the literature on features of incubators, and the focus group discussions with the incubator leaders and operators, the critical characteristics of BI design and operations of the TT examples were identified as: type of sponsor; organisation structure; strategic focus and model; businesses targeted and source of clients; incubation process and delivery of services; client funding and sustainability; and graduation of incubate firms. The authors concluded the analysis with an examination of the lessons learnt from the results of the early experience of BI in TT. The comparison of the key comparative elements of the BizBooster and IBIS incubators are summarized in Table 1.

Type of Sponsors

Incubators are typically sponsored by universities, governments, research centres, private corporations, and non-profit organisations (Bakkali et al., 2014; Barbero et al., 2014). The examples described in this paper are incubators sponsored by a university and a state-owned company but not with significantly different mandates. The BizBooster was established in 2012 and incorporated as a non-profit subsidiary company of the ALJGSB-UWI, and is an example of a university-based incubator with an open advertisement procedure. IBIS was established in 2011 as an enterprise development unit within the state-owned company NEDCO, a small and medium enterprises (SMEs) support organization which is an example of a government-sponsored incubator common in developing countries. The operating experience of both incubators range between four and five years and are therefore relatively young but nevertheless have acquired start-up and early incubation experience documented in this paper.

Organization Structure

The organisation structures adopted by incubators were described as: missionary, supporting social projects; entrepreneurial, tending to be specialized and focused on the manager; bureaucratic, which are larger in size with a mechanistic approach, and an emphasis on standards; professional, developed within an academic environment; and adhocratic, with a focus on technology and innovation (Bakkali et al., 2014).

The BizBooster participates in the national incubator system in TT but operates within a university business school environment yet governed by an independent board of directors. The daily functions are performed by an incubator manager and four staff members with support services provided by ALJGSB faculty and external consultants. The BizBooster's structure does not fit any of the pure types but displays elements of an entrepreneurial, professional, and adhocratic structures. The IBIS is governed by the board of its parent NEDCO and located

within its Entrepreneurship Development Department. IBIS currently operates four incubators in different areas of the country which are managed by a programme manager with incubator managers immediately responsible for the individual locations. However, the provision of services to clients, such as mentorship, is outsourced to external professionals. The structure combines the missionary and bureaucratic approaches with some elements of the entrepreneurial and adhocratic structures incorporated. The risk in such a structural arrangement is that IBIS, as a government-sponsored entity, becomes exposed to political intervention.

Strategic Focus and Incubator Model

Incubators worldwide focus on aspects of economic and entrepreneurship development, job creation, commercialization of research, technology and innovation, and regional and national development (Caiazza, 2014; Theodorakopoulos et al., 2014; Al-Mubaraki & Busler, 2013b; Robinson & Stubberud, 2014). The incubators studied in this paper both share a strategic focus on economic development, job creation, and technology, but the BizBooster added social impact as a focal point, while IBIS emphasized community development consistent with its role as a state-owned business development vehicle. However, the incubators differed in the model of incubation adopted in that the BizBooster is a VI but provides face-to-face orientation before entry into the incubator using the Babson College, Moore-Bygrave model because of the incubator manager's links to that college as a former MBA graduate. IBIS follows the traditional PI model by providing space for clients with leases for three years and training and mentorship provided on-site. The incubators utilize both dominant models of BI with some mix of models as a learning experience because of their relative recent entry into the field of incubation.

Table 1: Comparison of BizBooster and IBIS Incubators

Incubator Name & Features	UWI-ALJGSB: Business Booster (BizBooster)	NEDCO: National Integrated Business Incubator System (IBIS)
Sponsor	ALJGSB-UWI. Incubator incorporated as a non-profit company and subsidiary of ALJGSB.	NEDCO - Fully state-owned company with IBIS a function of the Entrepreneurship Development Department.
Organization Structure	Established in 2012 as university-based with a separate board of directors, incubator manager and 4 staff members. Support personnel available from the ALJGSB faculty.	Established in 2011 as a state-owned enterprise led incubator system. Governed by the board of NEDCO. Operates as a unit of NEDCO. IBIS managed by a Programme Manager and separate managers for the incubators
Strategic	Economic development, job	Job creation, community development,

Table 1...

Focus & Model	creation, entrepreneurship development, social impact. Virtual model with services delivered or coordinated from the ALJGSB campus.	innovation, client revenue generation. PI model with 4 urban locations. Option to operate off-site. Community-based and commercial incubators.
Businesses Targeted & Source of Clients	Broad-based but targets ICT, social network apps, agribusiness. University graduates and start-up or existing SMEs constitute main clients.	Wide range of traditional SME type businesses nationally. Community-based open to all residents in a community and new and existing SMEs. Commercial incubators seek high-value businesses with potential for economic transformation
Incubation Process & Delivery of Services	Process: pre-incubation, incubation, and post incubation stages. Services: Full range of business support services provided by incubator manager and mentors via email, online contact, and social media.	Process: selection; orientation; skills development; business proposal; incubation; and post-incubation. Services delivered at its physical incubator facilities. Option to access services through virtual technology.
Client Funding & Sustainability	Arranges access to angel investors and VC. BizBooster does not charge for services and is fully funded by the ALJGSB and the government.	Seed funding from US$ 1,000 to 8,000 provided. Access to finance from NEDCO general business loan facility. Fully dependent on government transfers but has a self-sustainability goal within 4 years.
Graduation of Incubate Firms	6 businesses moved to incubation stage. 2nd intake of 5-8 from a cohort of 12-16 in progress.	90 active clients arrayed over 4 incubator units.

Source: Compiled from authors' research

Businesses Targeted and Source of Clients

Initially, BI targeted a wide range of businesses involved in light manufacturing, consumer products, services, and technology- related activities. Modern BI tend to emphasise client businesses that are oriented to development of entrepreneurial ventures, technology and innovation, and high growth-high impact enterprises (Al-Mubaraki & Busler, 2013b; Chandra & Silva, 2012; EU 2010). Both incubators in this study casted the net widely targeting businesses involved in technology application, ICT, social media applications, agro-based industries, creative industries, and traditional business ventures that are consistent with the individual incubator orientation. In order to identify clients, the incubators advertise in the press for clients who may be university graduates, existing businesses, or start-up ventures. Clients are also sourced from their respective captive markets of business school graduates in the case of the BizBooster, and from the SME community in the case of IBIS.

Incubation Process and Services Offered

The incubation process involves the established stages of pre-incubation, incubation, and post incubation but with variations tailored to their individual operating modes. Potential clients are subjected to a rigorous screening and interview process to ensure consistency with the incubator's objectives. The BizBooster is more selective in its approach and utilizes the Saville Consulting "Entrepreneurial Report" to identify opportunities for entrepreneurial growth in an individual. IBIS adopted a more broad-based system for sourcing clients by accommodating both commercial and community-based incubation and operating from four physical locations while offering a limited option to operate off-site.

Critical to the establishment and operation of BI, are the specific services offered and the delivery mode. Both incubators offer the accepted menu of support services with the BizBooster providing its services remotely via networks of professionals and business persons who either volunteer their services or are paid a stipend. IBIS provides mentors who are paid a fee, work spaces, meeting rooms, and training rooms. The BizBooster benefits from its linkage to the university and services are delivered by incubator in-house staff and academic staff sourced from its affiliated business school which created a relationship that Rothaermel and Thursby (2005) considered as likely to increase the potential for success. Because of the need for specialist and experienced business persons, the standard practice is to utilise outside mentors and consultants who are selected from a register of qualified persons. The BI generally do not employ full-time staff to provide services to clients but outsource the skills required from the community. Typically, client contact is through physical meetings with mentors at the incubator facility, in the case of IBIS, and via email, in the case of the BizBoostrer. This indicates that there is scope for the incubators gaining access to an online business support portal for incubatees such as the recently launched EU facility for Caribbean territories (www.caribconnect.net).

Client Funding and Incubator Sustainability

New businesses invariably experience difficulty in accessing finance for pilot-testing their business idea, and launching the venture as a start-up. Traditionally, BI did not directly fund client businesses, but increasingly incubator managers have found it necessary to provide access to business finance for clients. Such access is currently facilitated through identification of government grants, links to financial institutions, contacts with angel financiers, and introductions to venture capitalists (Chandra & Fealey, 2009). In some cases, BI are taking equity in select clients' businesses, promoting angel financing networks, and establishing funds

to provide seed capital and risk capital for growth, a prime example of which is the Chilean Economic Development Agency(Santa Cruz, Bitrán, & Núñez,, 2014; Chandra & Silva, 2012).

The BizBooster does not finance clients' business capital needs but, through its evolving network, links clients to financiers and business angels. IBIS provides seed funding directly to clients, and as a unit of NEDCO refers clients to its SME loan facility to access additional finance which is offered at preferential rates. The incubators have not yet achieved financial sustainability and are generally funded from state resources which are channeled through their parent organisations. Clients are not currently charged for services or only required to pay nominal sums, however, charges are likely to be introduced in the near future. For example, IBIS charges a subsidized lease rent for its incubator spaces with a 6-month rent free period on a 3-year lease, while the BizBooster makes meeting rooms available at a fee. The incubators seem to be focused more on operational viability rather than financial sustainability at this point in their development.

Sustainability of incubation initiatives presents critical challenges especially in developing country contexts. Such challenges include: providing affordable infrastructure, office space, and connectivity; creating an innovation ecosystem; recruiting experienced business mentors; providing training opportunities; creating access to seed capital and angel financing; stimulating institutional support; devising sound policy and regulatory frameworks; and forming viable connections to marketing channels (infoDev/The World Bank, 2013). In terms of financial sustainability, it is recognised that incubator programmes need support in the start-up phase before financial sustainability can be achieved, which OECD (1999) cites as between 3-5 years. In developing countries this period may be extended and the aim should be for reduced dependence on governments for achieving the sustainability objective.

Graduation of Incubatee Firms

The performance of BI is often measured by the number of graduates who launch successful businesses and move onto a growth path contributing to the achievement of the main incubator objectives of economic development, establishment of entrepreneurial ventures, and meaningful job creation. Comparative studies of successful graduation of incubator clients in small developing countries delivered results of Bahrain (30), Jordan (3), and Morocco (4) (Al-Mubaraki & Busler, 2013a). However, these results did not provide much insight for the TT because the period of incubation and types of businesses were unspecified. Nevertheless, these examples demonstrate that nascent incubators do not recruit large numbers of clients and successful graduation is not an immediate result. Rather, the attractive result was that a 90

percent survival rate of businesses was generally recorded for businesses within the incubator (Mubaraki & Busler, 2013a).

The operation of any BI must be evaluated against the adequacy and quality of the pool of clients seeking to enter the incubator and the level of sustainability achieved. Although the case study incubators are still at the early learning stages in the field of incubation, the experience has begun to generate positive results. In the case of the IBIS system, the results of incubation up to September 2015, were as follows: an initial intake of 240 clients; 134 completing the pre-incubation stage; 102 emerged from full incubation and moved to post-incubation; 63 businesses graduated and began active operation; and 129 businesses benefited from seed capital and or equipment financing. Because IBIS targets a broad community market, the graduated business are categorized as belonging to the typical SME sector but with some graduates in ICT. In the case of the BizBooster, from a small initial intake of 10 businesses, six clients, including IT and agri-business ventures, graduated and are currently at the post-incubation stage while a second intake,targetting5-8 clients, is currently being screened from a cohort of 12-16 aspirants. The incubators accept that BI is not a mass market initiative, but must be highly focused on high growth businesses if the objectives of economic development, entrepreneurship promotion, and job creation are to be realised. This is supported by the Latin American example of Chile, where BI is strongly supported by the government, had 17 operational BI with businesses ranging from 1 to 17 per incubator (Chandra & Silva, 2012). While a categorical claim cannot be made that the BI are producing entrepreneurial business, there are early promising signs that the objective of becoming contributors to economic development will be achieved by 2020.

LESSONS LEARNT

Although the case study experience of TT presented here is still relatively new, insights were gleaned from the early start-up and pre-incubation activities of the two incubators to provide lessons and guidance for further forays into BI, whether in TT or the wider Caribbean community. The case study results highlighted the inescapable need for detailed planning before implementing a BI in order to minimise mistakes in matters dictated by the requirements of the general entrepreneurship ecosystem. Client selection was critical to success which could be achieved through detailed screening for suitability for the specific incubator, consistency with its objectives, and assessment of entrepreneurial mindsets. In this context, the first published study of BI in TT, a mere two year old, identified the client selection process as the most critical success factor and suggested that strategies for promoting BI should cover: staff selection and orientation including the incubator management; community engagement by including

stakeholders in the communities; development of communication materials before launch; allowing for early linkages between clients and mentors; formulating a process for referring clients to other incubators or facilities where the fit may be better; and devising key performance indicators for best practice (Ramkissoon-Babwah & Mc David, 2014).

While a template of business support services exists, the most important issue is to link services to particular client and market needs so as to optimize resources. Overwhelmingly, the most vital ingredient in the BI support system is the quality of incubator leadership and management and the effectiveness of the internal networks available through the BI and the private networks developed by clients. The managers must have a passion for business development among SMEs and committed to success, which in most cases, is not achievable in the short term but require a sustained effort over several years. The networks provided must be as extensive as required to address client general needs, and intensive to meet specialized needs such as technology development and innovation.

CONCLUSIONS AND POLICY IMPLICATIONS

The main conclusion from the study is that, while incubation initiatives are new in TT, the experience to-date indicates that the prospects for BI contributing to economic development through the launch of successful business are real, and BI as a developmental tool should be supported with relevant policies and requisite funding from public and private stakeholders.

The international experience of BI in more advanced countries indicates a reasonably high level of success where the incubator ecosystem is more developed and evidence of increased economic development and creation of better jobs were identifiable. In this regard, Aernoudt (2004) argued that incubators and business angel networks are a tool for bridging the entrepreneurial gap identified in several countries, including Europe. However, the evidence of success in small developing countries, especially island states, is not clear because the experience of BI is relatively new and the search for an appropriate model continues.

This paper fills a research gap by advancing the knowledge of BI design and operations in small developing countries through detailing the evidence of the application of the two dominant incubation models of VI and PI as practiced in the small Caribbean island of TT; as the most advanced country-example of BI in the Caribbean, the results of the study can serve as a guide to similarly placed small countries which are currently engaged in operating BI, or contemplating the establishment of new BI.

The BI studied in this paper, faced significant challenges including: a small pool of potential entrepreneurs; unavailability of sufficient experienced mentors; underdeveloped networks; and the financial challenges faced by business people and incubators alike. The

expectation is that the progress demonstrated in the early results recorded in this study, will trigger positive responses from among key stakeholders and members of the community at large.

Future research should address the performance of the two case study incubators in TT with a focus on the generation of innovations as suggested by Barbero et al. (2014). In relation to university-led incubators, the "Faculty Cooperative Model" espoused by Zeng and Callaghan (2016) as a means of "aligning academic attributes and faculty efforts in driving academic spin-out companies" (p. 14) is relevant to the TT case where tertiary education institutions are increasingly embracing incubation initiatives.

The experience of BI operations is not widely documented and the literature lacks policy guidelines specific to developing countries. This paper therefore relied on an older study of an Australian case (OECD, 1999) because the suggested guidelines are considered relevant by the authors to the specific TT business and cultural context. The critical policy requirements include: a coordinated strategy for the delivery of training programmes, provision of information, and creation of networks; a business environment with ease of market access, an acceptable pool of entrepreneurially-minded persons; an adequate supply of business trainers, access to finance, and existence of community commitment and spirit; type and size of incubators consistent with local conditions with scope for amalgamating incubators with other business support organizations; existence of persons with competent business advisory and training skills; and hiring capable incubator managers. Based on these policy areas, a comprehensive policy framework can be fashioned for supporting the establishment and operation of incubators in small developing countries.

Based on the results from the study and the lessons learnt, there is a clear case for future research in the areas of incubator performance linked to the progress of graduates in operating their businesses, and the role of the incubator managers in establishing a high quality business development initiative in TT.

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