Best practices for kick-starting economies: A comparison of university, private, and publicly funded business incubators

Abstract

Business incubators have long been touted as engines for growth of local economies. But paradoxically the management practices for business incubators varies widely. There is not a well-developed method for either measuring success or enabling the success of these incubators. Here, we address this issue by reporting the best practices as perceived by the managers of business incubators. In addition, we contrast best practices as perceived by managers for university, public sector, and private sector business incubators. Our findings demonstrate the thinking by business incubator managers regarding practices that lead to incubator success and show the contrast for the three types. By describing and sharing our findings, we aim to develop a dialog that will help business incubators to optimally impact their local economies.

*Keywords*: Business incubators, Innovation management

Small firms have long been known to be very important in economic development because they are flexible, innovative, and proactive in meeting market needs (Alikhan, 2001; Kloftsen & Jones-Evans, 1996; Masuda, 1980, Oakley, 1991). To facilitate the development of new business, and from a modest beginning in 1957 (Kilcrease. 2012), a number of institutions have started business incubators (Leblebici, & Shah, 2004). While business incubators are started normally for the purpose of economic development, not all have similar practices. Our aim for this paper is to describe the management practices and philosophies of university, private, and public business incubators, and determine the consistency or divergence of these practices. Our focus is on the personal perceptions of business incubator managers that pertain to their work of generating value for the local economy.

We divide the population of business incubators into three categories. University business incubators are those funded primarily by educational institutions. The sponsors range from research institutions to community colleges and technical schools. Public business incubators are primarily funded through state and local government, including economic development agencies. Private business incubators are either independent or primarily funded by private interests such as venture capitalists, foundations, or corporations.

We have reason to believe that business incubator practices are inconsistent. The literature on best practices either lacks theory, or is limited to business incubators of a specific theme. For example, Montgomery (2007) identified incubator practices that separated successful from unsuccessful creative industry business incubators. Practices included offering artists assistance with business operations that help with scalability such as business planning, business advice, marketing expertise, meeting spaces, office administration, access to computers, and whatever else seems to be a barrier to success. Space was designed to facilitate interactions among the artists. Successful incubators also tended to have an anchor business such as a successful gallery or art trader that would facilitate market making. Successful incubators would not have excessive debt, and usually relied on financial support other than loans that had to be paid back. This financing reduced the rent burden on the artists, which was a major contributory factor to business failure. To ensure public support, successful incubators had won the support of local policy makers.

These success factors make a lot of sense, and reflect intuitive thinking about business incubators. The methodology is based on comparing the practices of successful and unsuccessful incubators. However, it is not clear that the optimal practices that would most efficiently stimulate the local economy and society have been identified. It is also not clear that these practices reflect the thinking of incubator managers. The model also seems to rely on gaining public support within a mixed economic framework.

Another approach to best practices is described by Bose and Kiran (2014) who propose a set of best practices in agribusiness. Based on a literature review, these authors identify eight best practices including affiliation with a university. Other best practices focus on clarifying the purpose of the incubator, strategic selection of services, and having qualified incubator management. These best practices significantly differ from the Montgomery (2014) model in that the source of support is a university and not public support. Also, the Bose and Kiran (2014) model seems more focused on selection of clients into the incubator and, once inside, shepherd them to viability and scalability. There is an emphasis on growing new ventures to have significant impact on the local economy. This approach contrasts with the Montgomery approach that seems to allow for a durable community of small, nonviable ventures that engage in cultural production.

While there are differences in policy and industry environments that affect these recommended best practices, we should still expect them to be somewhat similar. Both business incubator types aimed to stimulate the local economy through spreading innovations and launching new ventures. There is no explanation why these lists of best practices differ so much. Without such an explanation, business incubator managers, and the policy makers who support business incubators, will not understand how incubators can optimally promote local economic development.

Our article addresses this gap in theory by describing the perceptions of business incubator managers. These managers are charged with promoting local economic development and have developed insights based on their experience with successful and unsuccessful entrepreneurs. We think that their expertise contains clues that will help us to understand the link between business incubator operations and local economic development.

Researchers have investigated the value of insights from business incubator managers. For example, Nair and Blomquist (2018) reveal that incubator managers may not always promote ventures. If there are problems with the talent mix, organization, or business model, incubator managers may engage in failure management. Failure management may involve taking entrepreneurs in struggling ventures and teaming them with other entrepreneurs in different ventures. The struggling entrepreneurs therefore avoid much of the psychological damage associated with venture failure. The incubator and local economy benefit because the valuable ideas and insights of the struggling entrepreneur are retained and contributed to a scalable venture with potential to generate value for the local economy.

The Nair and Blomquist (2018) article deals with how business incubator managers approach venture failure. It is based on extensive interviews with incubator managers and entrepreneurs in publicly funded, privately funded, and university funded incubators, but does not contrast between the three types. Our research takes a similar approach in that we base our insights on interviews, but we extend this approach to focus on best practices, and explicitly distinguish best practice between the three types.

Research has shown some important differences between public and private business incubators. Frenkel, Shefer, and Miller (2008) investigated whether the growth of private sector incubators in Israel could substitute for the public sector. They found that while private sector incubators were useful for fostering new firms in select and specific fields, public sector ones were better at sponsoring a wide variety of new ventures. For optimal economic development, they suggest that both types of business incubators were necessary.

Methodology

We investigate management practices of business incubators through structured interviews. Our instrument was first developed through a review of the literature on best practices in business incubator management. We refined the areas of inquiry based on our team’s own experience as entrepreneurs and scholars of entrepreneurship. We then pilot tested the instrument on a small set of experienced incubator managers and appropriately refined the questions. Balancing the need a) to obtain a comprehensive view of incubator management and b) to respect the time commitment of incubator management led to further revisions. Our final instrument is shown in Figure 1.

Our sample frame includes a variety of business incubators from the east coast to the Midwest. Our goal was to survey as wide a range of business incubators as possible. Our convenience sample built on our interpersonal relationships with incubator managers, as the time commitment required to complete an interview was substantial. Our interpersonal relationships helped to ensure honest feedback from managers as well as extended follow-up dialog on important issues. For example, incubator managers felt free to discuss the reasons for their practices in multiple cases, which gave us additional beneficial insights.

Findings

The convenience sample that forms the basis for this study draws on a major urban area on the eastern seaboard of the United States. The geographic region parallels the history of business incubators. In 2012 there was one primary business incubator and today there are fifty including a variety of types of business incubators plus accelerator programs, co-working spaces, and maker-spaces.

The business incubators surveyed for this pilot study are powerhouse incubators and, interestingly, share much consistency in regard to management practices. The points of divergence are specific to incubator type versus being true points of divergence.

**Consistent Management Practices**. The business incubators surveyed emphasized the importance of their physical spaces, were of relative size rangingfrom 40,000- 68,000 square feet, and focused on creating collaborative, collision-prone working environments. None of the incubators declared an industry focus although some of the physical space of a university incubator skewed the balance of the startups in favor of particular academic emphasis. All incubators offered a variety of work spaces from private offices to dedicated and non-dedicated work spaces and prices were comparable indicating a desire to make business incubation accessible while not sacrificing admission criteria. Similarly, each incubator offered a variety of options correlating to various levels of engagement from more traditional affiliate and resident membership to short-term programs requiring a smaller time commitment. Occupancy levels were consistent at 70- 100%, and the average number of employees is three to five.

The leadership of the incubators emphasized two things in considering incubator applicants (1) the value creation potential of the startup over admitting or focusing on specific industries, and (2) to the extent to which the incubator team could actually be helpful to the startup. If the incubator team could not be of significant assistance, they connected the startup with people who are better suited to support them.

In addition to all the factors and variables, an overarching influencing factor regarding incubator success was the attitude of incubator leadership. The leadership of the incubators in the survey demonstrated a high level of commitment to the startups in their incubators, and the importance of applicants truly wanting to be an interactive part of a collaborative community.

**Divergent Management Practices**. Incubator leadership varied and reflected selection criteria. A university-incubator required a one-time five percent common equity stake in admitted startups while a quasi-government incubator did not. One of the primary selection criteria for a university incubator was the strong likelihood of the startups attracting venture funding. The senior leadership of that incubator had an investment banking background. In incubators where this was not a selection criteria, the senior leadership were serial entrepreneurs who had experience starting, running, and funding startups.

The size of the various incubator teams varied significantly from four to twelve full-time employees, thus screening processes varied from two person screenings to twelve person screenings. Each incubator is deeply committed to the startups they admit developing strong relationships with the founders and their teams thus, larger the incubator teams may be more effective in connecting the startups with the resources that will help them succeed.

Each incubator included specific programs to their program offerings that were distinct from other incubators, and some of these programs catered to specific industries.

Discussion

Although there seemed to be a common attitude that the business of business incubation does not vary that widely, and thus there are not really unique incubator program offerings, the question uncovered points of differentiation which could be extrapolated and innovated upon, and business incubation methodology has been in a period of rapid expansion since the late 1990s/early 2000s.

Incubator leadership consistently indicated that they connected applicants to other incubators if they themselves were unable to effectively assist. Does a collaborative entrepreneurial ecosystem correlate to a stronger economy and does this have geographical limits? This is one area of future investigation not currently emphasized in the literature.

As a pilot study, our initial findings show the nuanced and complex nature of effective incubator management. As perceived by business incubator managers, successful operations appear to have the following characteristics:

Weak industry focus

Space designed for “collisions” between entrepreneurs that will spur interpersonal interactions and new venture ideas

Significant efforts to find the right combinations of entrepreneurs, even if that means reaching out to other business incubators.

Further research in this area will seek to build on these findings. We plan to extend our interviews to university-funded incubators and incubators in other geographical areas. This approach will investigate whether the practices we identify are artifacts of a specific region. Further, we plan to complement the interview methodology with investigations of venture success after leaving the incubator. These investigations will give more insight into our original question of determining business incubator practices that best contribute to local economic development.

Reference list

Alikhan, S. (2001). Intellectual Property Management for Enhancing Competitiveness Particularly in Small and Medium Enterprises. *Journal of Intellectual Property Rights, 6*, 85-93.

Bose, S. C., & Kiran, R. (2014). Identification of Success Factors for Business Incubation in Agribusiness for Achieving Higher Productivity. *Productivity*, *55*(1), 64–69.

Burrone, E. (2005). Intellectual Property Rights and Innovation in SMEs in OECD Countries [Abstract]. *Journal of Intellectual Property Rights, 10*, 33-43.

Cohen, W. M., Nelson, R. R., Walsh, J. P. (2000) Protecting their intellectual assets: Appropriability conditions and why U.S. manufacturing firms patent (or not). National Bureau of Economic Research Working Paper Series number 7552. NBER: Cambridge, MA.

Castillo, J. & Meyer, H. (February 2018). World Rankings 17/18 Report, Rankings and Recognition of University-Linked Business Incubators and Accelerators. UBI Global Incubation Impact and Network. <https://ubi-global.com/rankings/>, retrieved November 15, 2018.

Castillo, J. & Meyer, H. (March 2018). Case Studies Report 2018, Best Practices at University-Linked Business Incubators and Accelerators. UBI Global Incubation Impact and Network. Volume 1. <https://ubi-global.com/publication/>, retrieved November 15, 2018.

Castillo, J. & Meyer, H. (December 2017). Success Stories 2017, Successful Startups at University-Linked Business Incubators and Accelerators. UBI Global Incubation Impact and Network. <https://ubi-global.com/publication/>, retrieved November 15, 2018.

Douglass, J. A., & University of California, B. C. for S. in H. E. (2016). *Knowledge Based Economic Areas and Flagship Universities: A Look at the New Growth Ecosystems in the US and California. Research & Occasional Paper Series: CSHE.9.16*. *Center for Studies in Higher Education*. Center for Studies in Higher Education.

Frenkel, A., Shefer, D. & Miller, M. (2008) Public versus Private Technological Incubator Programmes: Privatizing the Technological Incubators in Israel, European Planning Studies, 16:2, 189-210.

Global Accelerator Learning Initiative. (February 2018) The Entrepreneurship Database Program at Emory University, 2017 Year-End Data Summary. <https://www.galidata.org/assets/report/pdf/2017%20Year%20End%20Data%20Summary.pdf>, retrieved November 15, 2018.

Kilcrease. (2012). The Batavia Industrial Center: The Hatching of the World’s First Business Incubator. *New York History*, *93*(1), 71–93.

Kirby, D. A., & Cox, J. (2006). Guest editorial: New technology based firms in the knowledge economy. *International Entrepreneurship and Management Journal*, *2*(2), 139–144.

Kitching, J. & Blackburn, R. (1998) "Intellectual property management in the small and medium enterprise (SME)", Journal of Small Business and Enterprise Development, Vol. 5 Issue: 4, pp.327-335.

Kloftsen, M., & Jones-Evans, D. (1996). Stimulation of technology-based small firms—a case study of university-industry cooperation. Technovation, 16(4), 187–193.

Leblebici, H., & Shah, N. (2004). The birth, transformation and regeneration of business incubators as new organisational forms: Understanding the interplay between organisational history and organisational theory. *Business History*, *46*(3), 353–380.

 Masuda, Y. (1980). The information society as a post-industrial society. Tokyo: Institute for the Information Society.

Montgomery, J. (2007). Creative industry business incubators and managed workspaces: A review of best practice. *Planning Practice & Research*, *22*(4), 601–617.

Nair, S. & Blomquist, T. (2018). Failure prevention and management in business incubation: practices towards a scalable business model, Technology Analysis & Strategic Management,

Oakey, R. P. (1991). High technology small firms; their potential for rapid industrial growth. International Small Business Journal, 9(4), 30–42.

Ravindran, S. R. (n.d.). Innovation Capacity and Infrastructure. *Capacity Building for Innovation: Role of IP Infrastructure,9*, 462-470.

Solow, R. M. (1957). Technical change and the aggregate production function. Review of Economics and Statistics, 39, 312–320.

The Johns Hopkins University (May 2014). Report of the Committee on the Innovation Ecosystem. <https://ventures.jhu.edu/wp-content/uploads/2014/11/Innovation-Report-5-30-2014-fnl2.pdf>, retrieved November 20, 2018.

The Johns Hopkins University (March 4, 2015). University Implementation Plan for the Innovation Ecosystem. <https://ventures.jhu.edu/wp-content/uploads/2014/11/University_Implementation_Plan_for_the_Innovation_Ecosystem.pdf>, retrieved November 20, 2018.

Figure 1

Survey instrument for structured interviews

**Business Incubator Research Project**

[General]

1. How do you classify your business incubator? University-affiliated, government-sponsored, or private sector?
2. What is your current occupancy level? Highest and lowest occupancy rates? What is your typical occupancy rate? What contributes to occupancy levels?

 (location, industry focus, programs offered, type of incubator, etc.)

1. Does your incubator have an industry focus or specialization?
2. What types of industries are represented in your incubator?
3. Do you target different types of companies?
4. How do companies find your incubator?
5. How do you go about attracting companies to your incubator?
6. What is the process for joining the incubator? What are the criteria? Is there a screening process, and if yes, who does the screening?
7. If a company meets your screening criteria but is outside an industry focus/specialization, do you invite them to join your incubator?
8. When companies join the incubator have they established themselves as a formal business? (LLC, inc., etc.)
9. What is the average number of employees of the companies in your incubator?
10. What percentage of your companies have participated in either another incubator or accelerator prior to joining your incubator?
11. What is the size of the staff at your incubator?
12. How are you funded?
13. What is the dollar range for how much companies pay to be part of your incubator? How do your rates compare to commercial prices?

[Programs]

1. What services does your incubator offer? Who provides those services (i.e. staff, outside subject matter experts)?
2. How do you determine which services to offer?
3. How do you inform members of events, showcasing opportunities, and financing opportunities?
4. What special programs do you have that are unique to your incubator?
5. Do you have a mentor network? How do you identify and engage the mentors? What is the structure for mentor engagement?
6. What events do you have to facilitate effective networking? How do you measure this?
7. How engaged are the member companies in the services and programs you offer?

[Assessment]

1. What are the advantages of being a a(n) (university, government, private sector) business incubator versus the other types?
2. How many successful companies have left your incubator, sustainably, after two to five years?
3. Is there a maximum number of years or time that a company can stay in the incubator? What is the criteria?
4. How do you measure (overall) success?
5. Does your incubator take an equity stake in companies?
6. Do you offer special incentives to clients? Give examples.
7. How do you work with other incubators? (network/effect)