

North Carolina Small Business Incubators: What are the Precursors to Their Success as an Economic Development Strategy?

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Executive Summary

State and local governments invested nearly \$13 million from 1984 to 1999 to support North Carolina's 24 small business incubators, which seek to nurture small businesses and create new jobs within the state. This capstone gauges the likelihood that North Carolina's incubators will produce successful businesses that are financially viable and self-sufficient, based on their adherence to nationally identified precursors of successful, high-performing incubators. Several recommendations for potential improvement are described.

## **Introduction**

The North Carolina General Assembly created the North Carolina Technological Development Authority (NCTDA) in July 1983 and directed it to "increase the rate at which new jobs are created throughout the state by stimulating the development of existing and new small businesses."<sup>1</sup> In response to this direction, the NCTDA supervised and financially supported the establishment of small business incubators. A small business incubator is a facility that nurtures and typically houses small businesses during their startup years and seeks to increase their rate of success by providing various services during the early stages of business development. The services offered vary according to the type of incubator and level of commitment and resources available from the incubator's sponsor. A sample of the potential services offered by incubators may be found in Appendix A.

A total of 24 incubators were either operational or under development in North Carolina in 2002, and most of them were initiated with the assistance of the NCTDA in the 1990s.<sup>2</sup> State and local governments invested nearly \$13 million from 1984 to 1999 to support these incubators.<sup>3</sup> The mission of North Carolina's business incubators is to produce successful businesses that are financially viable and self-sufficient.<sup>4</sup> However, because most incubators have only been implemented in North Carolina communities in the last ten years,<sup>5</sup> questions remain about the likelihood that they will succeed at achieving this mission.<sup>6</sup>

This capstone will gauge the likelihood that *North Carolina's incubators will produce successful businesses that are financially viable and self-sufficient, based on their adherence to nationally identified precursors of successful, high-performing incubators*. The results of this analysis are significant for three reasons. First, precursors of high-performing incubators identified in this study can be used as guidelines when establishing or structuring a North Carolina incubator. Second, evaluating North Carolina incubators according to these precursors will reveal areas of strength and weakness that may inform future funding decisions made by state and local government agencies, foundations, non-profits, and private firms that are asked to provide support for the development of North Carolina incubators. Finally, comparing current incubators with a set of precursors of success will reveal areas that warrant attention as officials attempt to increase the rate of success for North Carolina incubators.

## **Research Design**

Precursors of success are conditions or practices that, if in place for a given incubator, forecast a greater likelihood that the incubator will achieve its objectives. The search for such precursors included not only a literature review of business journals, economic development publications, research agencies, and incubator associations but also interviews with individuals affiliated with incubators or organizations that support incubators. The findings of *Incubating in Rural Areas: Challenges and Keys to Success* have been used in this study to define the precursors for high-performing incubators.<sup>7</sup> These findings were consistent with observations elsewhere in the literature and were based on solid research. Raw data from a survey of North Carolina incubators conducted by the North Carolina Business Incubation Association in coordination with the North Carolina Technological Development Authority and the Small Business Technology Development Center in 2001 provided details on North Carolina incubators. This survey included an inventory of North Carolina incubators' personnel, services, and resources and included responses from 13 of North Carolina's 20 operational incubators (65% response rate). After comparing the identified precursors with the data available on North Carolina incubators, a set of measures was established for evaluating the North Carolina incubators. The results of this evaluation were analyzed and used to make recommendations.

## **Effectiveness of Incubators as an Economic Development Strategy**

Small business incubators offer several benefits as an economic development strategy. First, incubators offer the potential to build a community's wealth and a means to keep new wealth in the community. Incubators enable communities to encourage and support an increase in community-based small businesses by stimulating entrepreneurship and reducing the risk of failure. A University of Michigan study concluded that small businesses that participated in incubators performed better than others that did not.<sup>8</sup> Successful small businesses generate new goods and services and increase the community's tax base. Incubators increase a community's wealth by creating new jobs in new businesses, in suppliers associated with these businesses, and in incubator management and support.<sup>9</sup> Every 50 jobs created by an incubator client generate another 25 jobs in the community.<sup>10</sup> Altogether, small and medium-sized firms generated the majority of new jobs created in the economic boom period of the 1990s.<sup>11</sup>

Another benefit of incubators lies in the fact that stimulating small businesses expands a community's economic development plan beyond the traditional reliance on industrial recruitment. Industrial recruitment is an expensive economic tool as evidenced by several indicators, and the costs associated with an incubator are much lower. According to the NBIA, publicly supported incubators created jobs at a cost of approximately \$1,100 per job; whereas recruiting a new industry costs more than \$10,000 of public funds per job created.<sup>12</sup> Moreover, 88 percent of North Carolina business incubator graduates stay within a 30-mile radius of the incubator and continue to contribute to the community economy.<sup>13</sup>

However, incubators may only be expected to be a successful economic development strategy if a community operates them according to several guiding principles. Some communities establish an incubator based on the false perception that an incubator is merely a physical space that the sponsor rents to small businesses. A successful incubator involves much more than just a building; communities should not pursue incubators as an economic development strategy unless they are willing to commit the resources necessary to make the incubator successful.

### **What is Incubator Success?**

Because the primary goal of North Carolina incubators is to produce businesses that are financially viable and self-sufficient, successful incubators would achieve the following:

- Produce a high percentage of incubator client businesses that “graduate” from the incubator after a period of incubation. (The term “graduate” refers to the point at which client businesses leave the incubator and proceed to operate independently in the market.)
- Produce a high percentage of graduates that survive for 3, 5, or 7 years after leaving the incubator.
- Generate incubator client businesses that create a substantial number of jobs.
- Operate as an incubator on a break even or profitable basis.

### **Are NC incubators successful?**

On average, 66.6 percent of the small businesses that participated in North Carolina's incubators graduated. Of those that graduated, several were still operational after 3, 5, and 7 years. However, because only a small portion of North Carolina incubators have been operational long enough to track client survival rates for these periods after graduation, no statistically significant aggregate analysis is possible. On average, each North Carolina incubator generates 71.4 employees. While 61.5 percent of North Carolina incubators report breaking even or producing a profit, more than one-third are losing money and are not financially viable.

### **Precursors to Incubator Success**

A Tennessee Valley Authority-sponsored study entitled *Incubating in Rural Areas: Challenges and Keys to Success* (TVA study) surveyed incubators in several states and categorized them as high-performing and low-performing in order to determine what conditions enabled or prevented incubators from achieving high performance.<sup>14</sup> The study identified several precursors to high-performing incubators, or incubator success, which appear in full in Appendix B. One of the precursors is that an incubator be compliant with generally accepted incubator best practices. A complete list of these best practices as catalogued in *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation* is available in Appendix C.<sup>15</sup> After comparing these precursors and best practices with the data available on North Carolina incubators, the author established a set of measures to use in evaluating the North Carolina incubators that appears below.

Successful Incubators:

- Are established following an incubator feasibility study, which ideally would address predicted client base, optimal incubator size, prospective clients, revenues, and expenditures
- Receive funding from stable, and perhaps various, sources of financial support
- Charge fees that are minimally subsidized to client businesses
- Operate with at least one full-time employee and larger budgets than low-performing incubators
- Benefit from managers who work full-time on incubator activities and developing client businesses
- Pay their managers substantial salaries
- Maintain involvement in incubator networks or form incubator networks
- Collect information on client outcomes (performance measures) regularly

- Develop an effective network of local business service providers and other resources
- Utilize physical facilities appropriate to serve their clients and encourage client synergies
- Review client financial statements on a quarterly basis at minimum

**Are NC incubators established following an incubator feasibility study?**

While most North Carolina incubators seem to complete analysis akin to a feasibility study, they do not always refer to it in that terminology. However, some North Carolina incubators were established without the benefit of any sort of feasibility analysis.<sup>16</sup>

**Are NC incubators funded by stable, and perhaps various, sources of financial support?**

Nearly one-third of North Carolina incubators were established through partnerships between at least two funding sources. These sources often include non-profits, government agencies, private firms, community colleges, and colleges or universities. Non-profits, including the state-sponsored NCTDA, are the most commonly identified funding source for North Carolina incubators with 84.6 percent of incubators funded by them at their inception and 30.8 percent of incubators receiving non-profit support in 2001. Half of all responding incubator managers reported that government agencies contributed to their establishment, and 23.1 percent were still receiving government agency funding in 2001. Community colleges are stable sources of financial support, as their rate of funding remained relatively constant between the creations of incubators and funding reported in 2001. When asked about their financial stability, 61.5 percent of incubators reported at least breaking even and 38.5 percent were even producing a profit. However, the remaining 38.5 percent reported that they were losing money.

**How highly subsidized are incubator fees charged to client businesses?**

One reason that 38.5 percent of North Carolina incubators are losing money may be that they are heavily subsidizing fees for programs offered to client businesses. One possible subsidy would come in the form of reduced rent for physical facilities. When asked about their rent values, 61.5 percent of North Carolina incubators responded that the rent for their physical facilities is set below market rates for comparable facilities. However, 38.5 percent of incubators indicated that their rental rates are graduated over time, meaning that the rent values paid by client businesses would increase as the amount of time spent in the incubator increases and they should be more capable of paying rents closer to the market value. Moreover, only 23.1 percent of incubators force their client businesses to pay their own utility charges. The majority of incubators either include utility charges in the lease or pro-rate them for the client businesses.

**Are NC incubators operated with at least one full-time employee and sufficient budgets?**

Aggregate staffing levels appear to be low for North Carolina incubators. Only 38.5 percent of incubators have a full-time incubator manager, whereas the TVA study found that successful incubators had an average staff size of three employees including a full-time incubator manager. This staffing level may seem large for a relatively small incubator, but it represents the average staffing level for successful incubators evaluated in previous research. While no hard data are available regarding support staffing levels, qualitative data suggest that North Carolina incubators generally have little or no support staff. Many North Carolina incubators have a part-time administrative assistant or share a full-time clerical assistant with another organization.<sup>17</sup> The TVA study also reported that the average annual expenditures for successful incubators were \$169, 679 per year. No aggregate budgetary data were available for North Carolina incubators.

**Do NC incubator managers work full-time on incubator activities & developing client businesses?**

Only 38.5 percent of incubators employ managers to address incubator activities and develop client businesses on a full-time basis. The majority of North Carolina incubator managers are only employed as part-time managers-- 53.8 percent are managers with another job and 7.7 percent are part-time managers with no other job. The incubator managers who work on incubator activities part-time do so for an average 16.7 hours per week. It appears that several incubator managers are employed full-time at local community college small business centers, and serve as incubator managers in addition to these full-time responsibilities.

**Are NC incubator managers paid substantial salaries?**

A compensation study of incubator managers conducted by the National Business Incubator Association (NBIA) reported that rural incubator managers earn a median salary of \$45,000 and the overall median salary for all incubator managers is \$63,500.<sup>18</sup> Only 38.5 percent of North Carolina's incubator managers receive a salary explicitly for filling the position of incubator manager. Instead the majority of

North Carolina incubator managers (61.5 percent) receive a salary for another position in which managing the incubator is just one of their appointed responsibilities. Only 4 of the 13 incubators surveyed had full-time managers. Three of these managers received a salary of \$30,000-\$39,000, and one received a salary of \$70,000. However, some managers may receive higher salaries for other positions in which managing the incubator is just one of their assigned responsibilities. Small business center directors and community development corporations manage several incubators.

**Are NC incubators involved in incubator networks?**

North Carolina incubators have an opportunity to participate in the North Carolina Business Incubation Association (NCBIA), which sponsors two conferences per year and offers instructional and networking opportunities.<sup>19</sup> However, it appears that most North Carolina incubators do not participate in incubator networks such as the one observed between the Whiteville Business Development Center and the Winnabow Business Development Center. Located in neighboring southeastern North Carolina counties, these two incubators collaborate on daily operation of facilities, services, and training programs, and encourage networking among tenants.<sup>20</sup> Some incubator stakeholders interviewed for this study also indicated the need to establish networks for North Carolina incubators in order to provide increased support and collaboration, and others considered the network represented by NCBIA sufficient.<sup>21</sup>

**Do NC incubators regularly collect information on client outcomes?**

Although data were not available regarding the exact timeline or collection methods used by each incubator to collect information on client outcomes, it was possible to evaluate the incubator managers' familiarity with their client outcomes by analyzing the breadth of responses offered to the questions concerning tenant outcomes. Of the 13 incubators that responded to the survey, seven answered questions regarding tenant outcomes thoroughly. These questions involved the average length of stay for tenants, the number of workers employed by tenants, the total number of tenants since the incubator opened, the percentage of tenants that graduate, and the number of businesses that are still operational after 3, 5, and 7 years. The NCTDA and NCBIA conducted surveys to collect client outcomes from all North Carolina incubators in 1996 and 2001.

**Do NC incubators develop a network of local business service providers?**

The development of a network of local business service providers enables an incubator to refer its clients to other businesses in the community that can provide services beyond those offered by the incubator, which benefits the client as well as other local businesses. However, the majority of North Carolina incubators rely on government agencies for additional services rather than referring tenants to a network of local business providers. North Carolina incubator managers refer clients to local community colleges and small business centers (84.6 percent), to the State Business Technology Development Center (76.9 percent), or to private companies (15.4 percent). These figures indicate that North Carolina incubators have not effectively developed a network of local business service providers.

**Are NC incubator facilities adequate to serve their clients and encourage client synergies?**

North Carolina incubators offer facilities customized to suit the sector of businesses they intend to target. For example, Gateway Center offers office space to attract its targeted sectors of the market, including legal and financial services, commercial cleaning services, and construction trades. Eastern Carolina Technology Center goes so far as to offer a common wet laboratory designed to meet the needs of its chosen industry. The majority of incubators with physical buildings also offer shared spaces in order to encourage client synergies. Only one incubator with a physical building reported that it did not contain any shared space. A combined 11.2 percent of the space available in North Carolina incubators is reserved for shared usage.

**Do NC incubator managers review client financial statements?**

When asked what professional services they provide, 54 percent of North Carolina incubators responded that they provide accounting management. No data were available regarding systematic review of client financial statements by incubator managers.

**Are the North Carolina Incubators that Adhere to More of the Precursors More Successful?**

Five of the thirteen North Carolina incubators for which data were available have existed long enough to record information regarding the measures of indicator success identified on page 2. After evaluating the rate at which these five incubators adhere to the precursors to incubator success, it is clear that

the incubator that is most successful is also the one most in compliance with these precursors. The most successful incubator also employs more than one employee and pays a full-time manager a substantial salary, unlike any of the other 4 incubators. In addition, the three most successful incubators all collect information on client outcomes and utilize physical facilities adequate to serve their clients and encourage client synergies. A table displaying this analysis is available in Appendix D.

### **Recommendations**

While the argument could be made that North Carolina incubators are successful in aggregate, room still exists for improvement.<sup>22</sup> Of the approximately 500 client businesses that have participated in North Carolina incubators, 66.6 percent graduated from the incubator and continue to operate independently in the market.<sup>23</sup> Statistics indicate that each of these graduating businesses has created six jobs by the time they graduate,<sup>24</sup> so North Carolina incubators created approximately 2000 new jobs.<sup>25</sup> However, 38.5 percent of North Carolina's incubator operations report losing money. The evaluation of North Carolina's incubators according to accepted precursors to incubator success reveal several areas that warrant attention, which may improve the financial viability of North Carolina's incubators and increase their rate of success:

- North Carolina incubator sponsors should complete an incubator feasibility study prior to establishing an incubator. Such a study would ideally address the incubator's predicted client base, optimal incubator size, prospective clients, and projected revenues and expenditures.
- Incubator sponsors should attempt to form more partnerships and collect funding from more than one source when establishing incubators, rather than relying heavily on only one or two non-profits or government agencies. Doing so may benefit incubators by increasing their levels of financial support, improving their bottom line, and building more partnerships within the community.
- North Carolina incubators should consider charging graduated rates for rent and service fees. Incrementally increasing rates based on the client's length of stay will not only help to recover the costs of incubator services, but also prepare clients for the market realities encountered upon graduation.
- North Carolina incubators should evaluate their staffing levels and consider establishing a full-time manager position and more support staff in order to match the guideline of staffing levels set by successful incubators. This staffing level would enable the incubator to recruit more clients, offer improved programs for client businesses, and increase the likelihood of client success. Although it is conceivable that a North Carolina incubator could provide the array of desired services with a smaller staffing level, previous research indicates that it is unlikely.
- The NCBIA and NCTDA should collect aggregate incubator data regarding individual incubator budget size, support-staffing levels, and criteria used to select client businesses in addition to the data currently collected.
- North Carolina incubators may need to increase the salaries paid to incubator managers in order to attract and retain skilled professionals capable of coordinating the array of services necessary for a successful incubator. Employment of a full-time incubator manager would most likely necessitate higher personnel expenditures for an incubator.
- North Carolina incubators should make efforts to establish incubator networks, similar to the one described in southeastern North Carolina. These networks could be based on geographic proximity, shared sector targets, or mutual goals. The NCBIA and NCTDA should adopt plans to encourage and stimulate these sorts of networks.
- North Carolina incubators should ensure that they collect data that would enable them to monitor client outcomes. The NCBIA and NCTDA should advise the incubators concerning the types and frequency of data collected.
- North Carolina incubators should develop a network of local business service providers. By doing so incubators would assist their clients in locating additional needed services and benefit the community's economy by supporting local businesses beyond those who are tenants of the incubator.
- The NCBIA and NCTDA should encourage incubator sponsors to use the precursors of success for guidance in structuring their incubators. They should also encourage the development of performance measures that could be used to monitor incubator progress.

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- <sup>1</sup> House Bill 1222 The New Technology Jobs Act, North Carolina General Assembly 1983.
- <sup>2</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>3</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>4</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>5</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>6</sup> Maccherone, Christina. "Business Incubators: Is There Life After Incubation?" Self Employed Professional, November/December 1997, p.40-42.
- <sup>7</sup> Adkins, Dinah, Hugh Sherman, and Christine Yost. *Incubating in Rural Areas: Challenges and Keys to Success*. Sponsored by The Tennessee Valley Authority. NBIA Publications. Athens, Ohio. 2001.
- <sup>8</sup> National Business Incubator Association website: [www.nbia.org](http://www.nbia.org)
- <sup>9</sup> Each small business that participates in NBIA member incubators created an average of 3.7 new jobs per year. National Business Incubator Association website: [www.nbia.org](http://www.nbia.org)
- <sup>10</sup> National Business Incubator Association website: [www.nbia.org](http://www.nbia.org)
- <sup>11</sup> Henderson, Jason. "Building the Rural Economy with High-Growth Entrepreneurs", Federal Reserve Bank of Kansas City Economic Review, Third Quarter 2002.
- <sup>12</sup> National Business Incubator Association website: [www.nbia.org](http://www.nbia.org)
- <sup>13</sup> North Carolina Technological Development Authority, Inc.
- <sup>14</sup> Adkins, Dinah, Hugh Sherman, and Christine Yost. *Incubating in Rural Areas: Challenges and Keys to Success*. NBIA Publications. Athens, Ohio. 2001.
- <sup>15</sup> Rice M. and Matthews, J. *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation*, National Business Incubator Association, 1995.
- <sup>16</sup> Interview with Dean Kanipe, North Carolina Business Incubation Association, 1/31/03.
- <sup>17</sup> Interview with Dean Kanipe, North Carolina Business Incubation Association, 1/31/03.
- <sup>18</sup> *The Compensation Question: NBIA's 2000 Survey of Incubation Executives*, National Business Incubation Association, 2001.
- <sup>19</sup> Interview with Dean Kanipe, North Carolina Business Incubation Association, 1/31/03.
- <sup>20</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>21</sup> Interviews conducted from August 2002-February 2003 with researchers, service providers, and incubator managers.
- <sup>22</sup> Successful means that incubators produce businesses that are financially viable and self-sufficient
- <sup>23</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>24</sup> 1999 North Carolina Business Incubators report, North Carolina Technological Development Authority, Inc.
- <sup>25</sup> 500 clients multiplied by graduation rate of 66.6 percent, then multiplied by 6 jobs would equal 1,998 jobs.

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## Bibliography

- Adkins, Dinah, Hugh Sherman, and Christine Yost. *Incubating in Rural Areas: Challenges and Keys to Success*. Sponsored by the Tennessee Valley Authority. NBIA Publications. Athens, Ohio. 2001.
- Bartle, Diane. Interview (11/1/02). Western Piedmont Community College Small Business Center, Morganton, NC.
- Blizzard, Jennie. "The Dingman Center: A 411 Center for Entrepreneurship," Community Affairs Office of the Federal Reserve Bank of Richmond newsletter, p.30-35, August 2002.
- Bluestone, Barry and Bennett Harrison. *The Deindustrialization of America: Plant Closings, Community Abandonment, and the Dismantling of Basic Industry*, Chapter 1 "Capital and Community." Basic Books, Inc., New York, 1982.
- Bonnett, Thomas W. "Strategies for Rural Competitiveness: Policy Options for State Governments."
- Burger, Frederick. "Business Incubators: How Successful Are They?" Area Development Online, January 1999.
- DeBellis, Jeff. Interview (11/4/02). Small Business & Technology Development Center, Raleigh, NC.
- Downey, John. "Incubator Hatches Plan for Its Revival," *The Business Journal*. Charlotte, North Carolina. Volume 15, Number 31.
- East Carolina University Regional Development Institute and Edward Brent Lane, *North Carolina Entrepreneurial Rural Growth Study Final Report*, 1998.
- Henderson, Jason. "Building the Rural Economy with High-Growth Entrepreneurs," Federal Reserve Bank of Kansas City Economic Review, Third Quarter 2002.
- Hoyman, Michele. *Power Steering*. University Press of Kansas. Lawrence, Kansas. 1997.
- Johnson, Tom. Interview 8/29/02. Burke Economic Development Council.
- Kanipe, Dean. Interview 1/31/03. North Carolina Business Incubation Association and McDowell Small Business and Industry Development Center.
- Maccherone, Christina. "Business Incubators: Is There Life After Incubation?" Self Employed Professional, November/December 1997, p.40-42.
- Marvel, Mary K, and William Shkurti. "The Economic Impact of Development: Honda in Ohio," Economic Development Quarterly, Vol 7, No.1, February 1993, p.50-62.
- MDC, Inc., "Strengthening the Rural Carolinas: A Conceptual Framework for the Program for the Rural Carolinas," June 2002.
- MDC, Inc. *The Building Blocks of Community Development*. Chapel Hill, NC, 2002.

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MDC, Inc., “The State of the South 2002: Shadows in the Sunbelt Revisited,” September 2002.

National Business Incubation Association website: [www.nbia.org](http://www.nbia.org)

National Business Incubation Association, *The Compensation Question: NBIA's 2000 Survey of Incubation Executives*, 2001.

North Carolina Business Incubators report, North Carolina Technological Development Authority, Incorporated, 1999.

Okagaki, Alan, Kris Palmer, Neil S. Mayer. “Strengthening Rural Economies: Programs that Target Promising Sectors of a Local Economy,” Center for Community Change, December 1998.

Perry, Jonathan. “Benefit-Cost Analysis for a Small Business Incubator at UNC-CH”, a report for The Office of Economic Development, The University of North Carolina at Chapel Hill.

Rice M. and Matthews J. *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation*, National Business Incubator Association, 1995.

Small Business & Technology Development Center, *Hendersonville Business Incubator Feasibility Study*, Raleigh, NC. June 2002.

Stewart, Leslie. Interview 8/22/02. Office of Economic Development, University of North Carolina at Chapel Hill.

Taylor, Sarah Stewart. “High Tech Incubators: Not Hatching Up to Expectations,” Community College Week, Volume 14, Number 2 (September 3, 2001).

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## Appendix A

Table 1: Potential Services Offered by Incubators

Physical rental space
Help with business basics (developing business plan, etc)
Human resources/ personnel development/ training
Management team development
Comprehensive business training programs
Shared administrative/ office services
Specialized equipment/ facilities; equipment leasing
Accounting/ financial management
Shadow boards/ mentors
Linkages to angel or venture capital investors
Linkages to strategic partners
Help access commercial bank loans
Help access specialized non-commercial loan funds/ loan guarantee programs
Business management process/ customer assessment service/ inventory management
Marketing assistance
Regulatory compliance
Networking activities among incubation program clients
Federal procurement assistance
Commercializing technology
International trade assistance
Intellectual property management
Assistance with manufacturing practices, processes, and technology
Assistance with product design and development practices
Linkages to higher education resources
Child care services
Loaned executive to act in management capacity
Internet access
Economic literacy training
Assistance with e-commerce
General legal services

Source: *Incubating in Rural Areas: Challenges and Keys to Success*. Adkins, Dinah, Hugh Sherman, and Christine Yost. Sponsored by the Tennessee Valley Authority. NBIA Publications. Athens, Ohio. 2001.

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## Appendix B

### High-performing incubators:

- Are established following an incubator feasibility study, which ideally would address predicted client base, optimal incubator size, prospective clients, revenues, and expenditures
- Are organized to achieve high performance and client outcomes
- Receive funding from stable sources of financial support
- Charge fees that are minimally subsidized to client businesses
- Operate with larger budgets & more employees
- Employ managers paid higher salaries than managers of low performing incubators (salaries greater than 36% of total expenses)
- Maintain involvement in incubator networks or form incubator networks
- Benefit from managers who spend more time working on incubator activities and developing client businesses (40 hours/week)
- Focus on clearly identified mission and program goals
- Comply with generally accepted incubator best practices

Source: *Incubating in Rural Areas: Challenges and Keys to Success*. Adkins, Dinah, Hugh Sherman, and Christine Yost. Sponsored by the Tennessee Valley Authority. NBIA Publications. Athens, Ohio. 2001.

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## Appendix C

Generally Accepted Incubator Best Practices include:

1. Developing a strategic plan containing quantifiable objectives to achieve the program mission
2. Selecting only applicants that meet approved criteria
3. Regularly collecting information on client outcomes (performance measures)
4. Developing an effective network of local business service providers and other resources
5. Evaluating the contributions of members of its service network to ensure high-quality service to all its clients
6. Being highly visible within its service area
7. Maintaining contacts with various funding sources
8. Offering a facility appropriate to serve its clients and to encourage client synergies
9. Reviewing client financial statements on a quarterly basis at minimum
10. Incorporating program changes as the result of thorough, systemic evaluation

Source: *Growing New Ventures, Creating New Jobs: Principles and Practices of Successful Business Incubation*, Rice M. and Matthews, J., National Business Incubator Association, 1995.

## Appendix D

Table 2 NC Incubators: Compliance to Precursors and Indicators of Success

Precursors to Incubator Success	Incubator A	Incubator B	Incubator C	Incubator D	Incubator E
Receive funding from stable, and perhaps various, sources of financial support					
Charge fees that are minimally subsidized to client businesses			♦		
Operate with more than one employee and larger budgets than low-performing incubators				♦	
Benefit from managers who work full-time on incubator activities and developing client businesses				♦	
Employ managers paid higher salaries than managers of low performing incubators				♦	
Maintain involvement in incubator networks or form incubator networks					
Collect information on client outcomes (performance measures) regularly		♦	♦	♦	♦
Develop an effective network of local business service providers and other resources				♦	♦
Utilize physical facilities appropriate to serve their clients and encourage client synergies	♦	♦	♦	♦	
Review client financial statements on a quarterly basis at minimum			♦	♦	
<b>Indicators of Success</b>					
Percent of clients who graduate		♦		♦	
Number of graduates who survive after graduation				♦	
Number of jobs created by incubator clients currently				♦	
Incubator Is Self-Sustaining or Breaking Even			♦	♦	

Source: Data provided by the North Carolina Technological Development Authority, Small Business Technology Development Center, and North Carolina Business Incubation Association; and analyzed by Emily L. Williamson.