



Office of IP Development and Commercialization

Final Report

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August, 2006

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Acknowledgements

The Florida State University Office of Intellectual Property Development and Commercialization (OIPDC) and the Center for Economic Forecasting and Analysis (CEFA) would like to express its sincere thanks to Chris Vanlandingham, of the FSU OIPDC, who spearheaded this project. He attended partnership meetings and encouraged FSU-related start-ups and spin-offs participation for this study. Appreciation is also extended to Ms. Beth Kirkland, of the Economic Development Council of Tallahassee/Leon County, who directed the FSU and local technology companies “First Focus on Business” program initiative and introduced the concept of using a standardized survey instrument, E-Synchronist. Many thanks to CEFA graduate students Andres Proano and Doug Roe for conducting well-detailed personal interviews of the FSU-related companies, and to Jinjin Guo, for creating the “family tree” company charts.

I. Introduction

Florida State University, Leon County and Tallahassee are an important catalyst for growth in North Florida's economy. The FSU Office of IP Development and Commercialization (OIPDC) spearheaded this effort to document and evaluate industry (start-up, spin-offs, and existing) development in the area. Although there is a substantial amount of statistical data at the state level, that is not the case on a local level. This study is an effort to quantify the start-ups and spin-offs associated with FSU, and their contribution to the local economy.

During the summer of 2006, the FSU Office of IP Development and Commercialization contracted with the FSU Center for Economic Forecasting and Analysis (CEFA) to perform survey interviews and analysis, and economic impact analysis regarding FSU-related start-ups and spin-offs. In addition, and as part of another study to be completed in late 2006, CEFA captured the growth of the technology sector and the impact of FSU in those technology sectors, in the region, through a partnership effort with the Economic Development Council of Tallahassee/Leon County.

The combination of technology transfer efforts, plus the entrepreneur initiatives of former students and faculty related to FSU have had an incredible impact on our economy. For example, in 1996, Florida State University's research foundation received more than \$28 million in Taxol royalties. By the year 2000, the university's Taxol revenue would top \$200 million, among the largest patenting pay-offs for a single university in history. The company (start-up) was Taxolog, founded by a current faculty, Dr. Robert Holton, FSU Chemistry Department. Google's founders Larry Page and Sergey Brin developed a new approach to online search that took root in a Stanford University dorm room. Google is now a company with a market capitalization of approximately \$116 billion.

The FSU Office of IP Development and Commercialization assists faculty, staff and students move their innovative research results and creative work into public use by licensing to outside organizations to develop and market products based on FSU research. The OIPDC manages projects that span a wide array of activities that range from music and dance, to the hard sciences. This is achieved by working with faculty, staff and students to create invention and work disclosures. When disclosures show a potential for commercial success, the OIPDC staff seek intellectual property protection (copyrights and patents) for the research and/or creative work, then attempt to identify commercial partners to negotiate a license and option agreements for continued development. Alternatively, they may recommend that a faculty member create a new company to commercialize their own innovation. If a technology is commercialized successfully, the revenues are distributed among the researcher(s), the research school(s) or department(s), and the FSU Research Foundation. This Office is also the point of contact for outside organizations and individuals wanting to locate, for commercial or other public purposes, the skills, inventions, creative works and other resources of the FSU research community.

Table One depicts an active list of start-ups and spin-offs based on FSU licensed technology since 1996 and listed on the following web site:
<http://www.techtransfer.fsu.edu/example.html>.

Primary Services provided by the FSU Office of IP Development and Commercialization include:

- Identifying and assessing new inventions and technologies;
- Evaluating new developments disclosed by faculty, staff and students;
- Obtaining and securing protection of intellectual property through patents, copyrights, trademarks, trade secrets, service marks and other mechanisms;
- Filing provisional and non-provisional patent applications;
- Conducting education and training sessions for faculty, staff and students;
- Drafting, negotiating and monitoring agreements including Research Agreements, Confidentiality and Non-confidentiality Agreements and licensing;
- Managing and distributing revenue generated from university inventions;
- Accepting and commercializing technologies developed by individuals from the community, technologies donated to the University by local, State and Federal governments private industry;
- Preparing technical drawings of novel developments;
- Facilitating prototyping services for new developments;
- Encouraging and assisting with business planning for start-up companies;
- Identifying start-up and venture capital for new and existing ventures;
- Incubating small businesses;
- Assigning International Standard Book Numbers (ISBNs) to books and other published works; and
- Assigning Library of Congress numbers to published works.

Table 1. FSU-Related List of Current Start-Ups and Spin-Offs, 2006

Name	Founder	Founded In	Market
PKV Management Consulting, Inc.	Mr. Benjamin(Woody) Price	FY 1999	Consulting
Integrated Design Tools, Inc.	Dr. Krothapali Louenco	FY 2001	Research Cameras
Weather Predict	Dr. Krishnamurti	FY 2001	Weather Prediction
NanoStrata, Inc.	Dr. Joe Schlenoff	FY 2003	Robotics and Materials
Tai-Yang, Inc.	Dr. Chris Rey	FY 1999	Magnet Systems Design, Manufacture, Testing
Taxolog	Dr. Robert Holton and Dr. Lewis Metts	FY 1997	Development of Drugs for Treatment of Cancer
Security Consulting Partners	Dr. Alec Yasinsac and Dr. Mike Burmester	FY 2006	Security Consulting Services
Florida Lambda Rail	Dr. Larry Conrad	FY 2003	Computer and High Speed Internet Networking
Bellwether, Inc.	Mr. Farhood Basiri	FY 2004	Custom Computer Application
Nanomagnetic Biotech, Inc.	Dr. Yousef Haik	FY 2005	Application of Magnetic Nanoparticles in Biomedical Field

II. Previous Literature

Previous studies have analyzed similar scenarios. For instance, recently the University of Florida produced a report in December 2004 describing the technological transfer in the Gainesville area. They estimated that the economic impact, which includes direct, indirect, and induced impacts, total \$456,164,662, and yielded 1,925 jobs. This study strived to address many of the same issues. In addition, there are also numerous studies that provided useful insight into the issue.

A recent study (Chukuma and Jensen, 2005) showed that University inventions are more likely to occur in start-ups when the technology transfer office's search cost for a partner is high. These "start-ups" will require office space, furniture, utilities, etc. and many more other products and services from the local economy. The study also found that the cost of development or commercialization is lower for a start-up. Moreover, among other key conclusions were that licensing is more likely, in general for established companies and also for in start-ups, by universities in states with larger levels of venture capital. Finally, universities that earn greater licensing royalties have fewer start-ups but more licenses.

Another study (BankBoston, 1997) evaluated the value on the economy and employment from industries generated through the Massachusetts Institute of Technology (MIT). They estimated that "if the companies founded by MIT graduates and faculty formed an independent nation, the revenues produced by the company's would make the nation the 24th largest economy in the world. The 4,000 MIT related companies employed 1.1 million people and had annual world sales of \$232 billion".

III. Defining Start-Ups & Spin-Offs, and Technology & Technology Companies

If the employee of a firm makes a decision to keep their invention private and leave the firm to form a new company, this is termed a start-up, or it can be thought of a company that establishes at the time of FSU technology licensing. A spin-off is established if the employees goal is to transfer knowledge and gain compensation from the firm (Anton and Yao, 1995). A spin-off can also be viewed as a company without FSU technology licensing.

In order to understand this project's operational framework, it's important to establish a firm definition of technology and technology companies. After reviewing the definitions about technology sector in some consulting and investment companies, we have concluded that for our purposes the technology sector is the one conformed by:

- Life sciences such as Biotechnology.
- Alternative Energy.
- Aviation and Aerospace.

- Computers, networking and semiconductors: semiconductors, software, eBusiness infrastructure, enterprise applications, network/security, intelligent network, wireless, wire-line, and hardware.
- IT Services, and Internet & digital media.
- Electronic equipment and electronic manufacturing services (such as Optics & Photonics)

The following table summarizes the various definitions for technology firms or technological sectors provided by private-sector firms:

Firm	Definition
<u>PWC- Global</u>	The technology industries — semiconductors, software, life sciences, computers and networking and the investors that fuel them — profoundly influence our lives. Though the sector has matured over the past 25 years, technology companies wrestle with constant challenges. Access to capital, faster time-to-market, and finding and keeping the right talent is more critical than ever. So is managing stakeholder and financial market expectations. Likewise, convergence — now a common theme running through all technology industries — brings new and fundamental challenges to industry players.
<u>Wachovia</u>	The technology industry specialization includes: I) Software which is composed of business infrastructure, enterprise applications, and network & security II) Equipment which is composed of intelligent network, network & security, wireless, wire line
<u>Raymond James Financial</u>	Technology sectors: Biotechnology and Technology, including Distribution, Hardware, IT Services and Software.
<u>SG Cowen</u>	Technology Sector: Alternative Energy, Computer/Business Services, Digital Media & Electronic Equipment, Electronics Manufacturing Services, Internet & New Media, Semiconductor Equipment, Semiconductors, Software, Technical Software.
<u>Florida High Tech Corridor Council</u>	With a region dedicated to advancing the industry, the information technology (IT) sector is growing and advancing in the Florida High Tech Corridor. The IT industry is thriving in areas such as software development; financial services software; Internet and networking; databases; e-commerce; information retrieval; and computer system design and integration.

As outlined above, there are a wide variety of definitions. A synthesis of these definitions was used for the duration of the study.

IV. Survey Approach

FSU/CEFA, at the beginning of this project, established a working partnership with the Economic Development Council of Tallahassee/Leon County. FSU/CEFA formed a cooperative agreement through the EDC’s “First Focus on Local Business” initiative program, comprising MSA economic development organizations, small business resources, education and workforce development groups, with respect to the high tech survey work. The goal was that, initially, FSU/CEFA would collect survey data and perform economic impact analysis solely on the FSU-related spin-offs and start-ups (ten companies). During the summer of 2006, a list of approximately 300 local high tech companies were obtained and partially surveyed by bankers trained by the aforementioned “First Focus” program. FSU/CEFA will perform survey and economic analysis at the conclusion of the bankers survey work (in the latter half of 2006) and specific to FSU graduates employed by local high tech companies. The survey instrument used to collect the data for both the FSU-related start-ups and spin-offs and for the local high tech companies, was based on the E-Synchronist¹ platform. This survey instrument is used as a standard among economic development councils in the United States. It was developed by economic development professionals and recently received an award for providing fundamental assistance in the process of economic development. It is one of the most complete packages available, as it tabulates, processes, and generates reports in a professional and integrated manner.

Many of the questions and discussion points outlined in the E-sync survey are illustrated in the table below. The FSU/CEFA “custom tab” was integrated into the E-Synchronist survey and only contained questions pertaining to companies that employed FSU alumni. The survey was distributed using a personal interview approach. These survey questions were based on several “Doing business in” reports conducted by PricewaterhouseCoopers LLC and the World Bank as well as on a survey methodology framework of a recent study (December 2004) conducted by the UF Center for Building Better Communities “The Economic Impact of Technology-Based Start-Up and Spin-Off Companies Connected to the University of Florida”. For the complete survey, please refer to Appendix A.

Category	Questions
Company Information	<ul style="list-style-type: none"> i. Company Name ii. Date of visit iii. Contact Name iv. Address and Phone Number v. Interviewer and Organization

¹ Additional information regarding E-Synchronist can be found at <http://www.synchronist.com/>

Product/Service	<ol style="list-style-type: none"> 1. Company's greatest achievement? 2. Where is Company's primary product/service in life cycle; emerging, growing, etc. 3. Introduction of new products. 4. Anticipated new products? 5. Percent of sales spend on R&D Where is R&D facility located? <p style="text-align: center;">Product/Service Notes</p>
Market Status	<ol style="list-style-type: none"> 6. Predominant location of the market the company serves. 7. How are company sales (increasing, etc.)? 8. Status of company's market share of key products (increasing, etc.)? If changing, please explain. 9. Potential for expansion in next 3 years (investment, number of jobs added/lost, etc.) 10. What are exports as a percentage of total sales? 11. What is the percentage of products imported by the company? 12. Does the company have production facilities outside of the county?
Industry	<ol style="list-style-type: none"> 13. Where are primary international competitors? 14. Current status of production outside the industry. 15. Discussion of mergers and acquisitions. 16. Discuss of production within the industry. 17. Anticipation of legislation changes negatively affecting business. 18. Anticipation of legislation changes positively affecting business. <p style="text-align: center;">Industry Notes</p>
Management	<ol style="list-style-type: none"> 19. Ownership changes. 20. Projected employment needs. 21. Community's strengths as a place to do business. 22. Community's weaknesses as a place to do business. 23. Any barriers to growth? 24. How does the attitude of executives differ from local management? 25. Any reasons why the community may not be considered for future expansion? 26. Are there suppliers or service providers that the company would like closer to facility?

<p>Workforce</p>	<p>27. Rating the availability of the workforce. 28. Rating the quality of the workforce. 29. Rating the stability of the workforce. 30. Rating productivity within facility. 31. Any recruitment problems? 32. Number of unfilled positions. 33. Anticipation of workforce changes. 34. Specific recruitment problems. 35. Company's investment in employee training? Workforce Notes</p>
<p>Workforce Development Services</p>	<p>A. Does your company use workforce development services? B. Request for information regarding workforce services.</p>
<p>Technology</p>	<p>36. Any new technology emerging to change production? 37. Rate company's use of technology. 38. Rate company's investment in technology. 39. Is community's technological infrastructure adequate for growth? Technology Notes</p>
<p>Utility and Community Services</p>	<p>40. Rate consumption of utility services. 41. Rate satisfaction of utility services. 42. Rate the quality of public/community services. Utility Services Notes Comments</p>
<p>Employment and Relationship with FSU</p>	<p>a) Direct employment by the company by FSU (former graduate or alumni): full time, part time or internships, in the last three years. b) Position of FSU (former graduate or alumni) in company (management, technical, sales, or other) c) Relationship between the founder/top management of the company with FSU: former faculty, student, current staff, etc. d) Relationship desired with FSU in the future (training employees, business advisory, technical expertise, other) e) Classification of employment by majors or specialization? f) Does company use FSU Technology Transfer services? g) If Yes, please rank the support (1 through 10) and explain h) Current services provided by FSU Tech Transfer Office? i) Any support needed by FSU Tech Transfer in future?</p> <p>Note: Similar questions apply directly to Florida A & M University and Tallahassee Community College.</p>

V. Limitations of Survey

Time constraints seemed to be the primary difficulty in reaching high response rates. We appreciated the willingness to participate in the survey that many companies exhibited, however, regarding the 300 high tech companies surveyed by the banking community, we also would have appreciated the universal cooperation of all requested firms. For the Tallahassee area, summer proved to be a difficult time to collect survey data, as many CEO's and other executive staff of high tech companies were out of town, etc. FSU/CEFA however, was able to obtain 100% response rate from the start-up and spin-off companies that were FSU-related.

VI. Summary of Survey

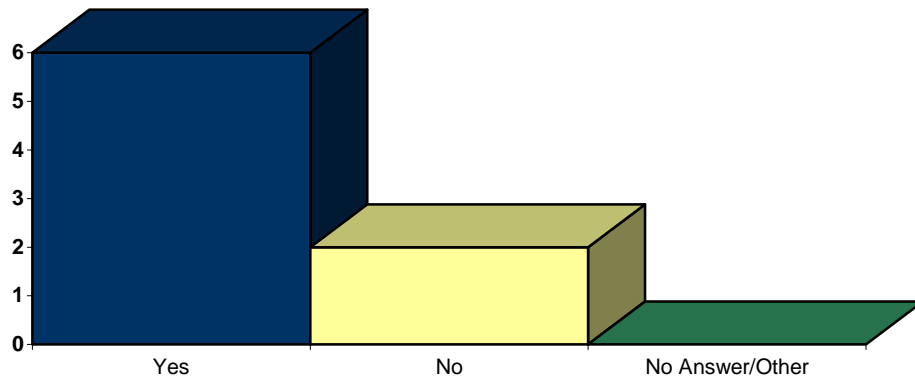
The FSU-related companies ranged in size, revenues, and all other aspects. It is for this reason that the survey was beneficial to conduct in order to analyze the trends and current status of the FSU start-ups and spin-offs. The response rate was 100% regarding the nine local FSU-related start-ups and spin-offs.

This section aggregates that information and provides summary statistics. A few key areas are explored, ranging from products and services to information about the community. Unless otherwise listed, the frequency and summary statistics belong to the completed surveys.

One of the more prevailing comments throughout the entire survey process was the request for a small business incubator. Many feel that this, above all, would immensely help not only their own companies, but to facilitate further growth and development throughout the community.

Product/Service: The results of the survey were to be expected, and the most relevant issues are discussed below, specifically starting with product development history and future. The outlook is particularly good, considering 75% of the firms reported that they have developed new products within the last five years (Figure 1).

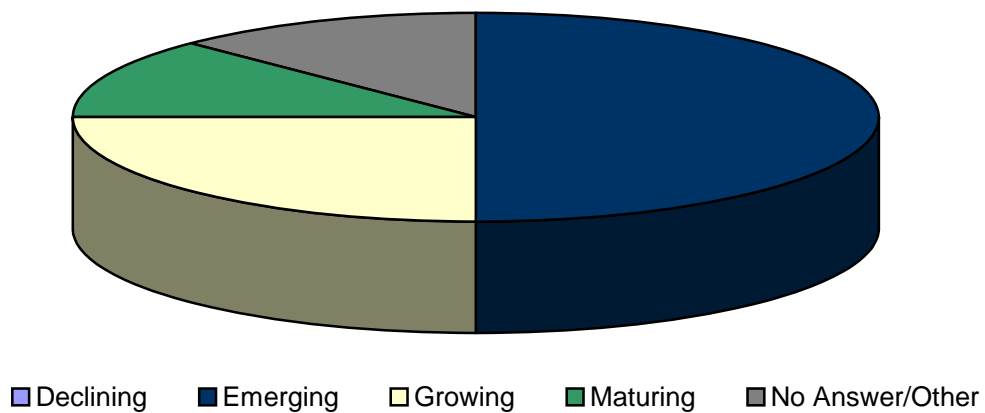
Figure 1. FSU-Related Start-Ups and Spin-Offs New Products/Services Within Last 5 Years



Source: CEFA

A company's status also plays an important role in success of a start-up or spin-off. Figure 2 portrays that half are "emerging" companies, a quarter are growing, and one is in the "maturing" category.

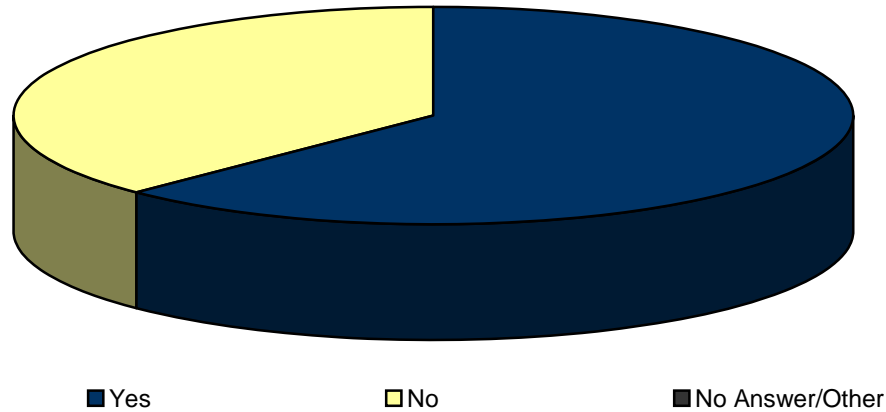
Figure 2. FSU-Related Start-Ups and Spin-Offs Life Cycle Status



Source: CEFA

The majority of the companies stated that they will be producing new items or services within the next two years (Figure 3) provides a prospective for the future of FSU spin-offs and start-ups.

Figure 3. FSU-Related Start-Ups and Spin-Offs Producing New Products/Services in the Next 2 Years



Source: CEFA

Fortunately, only about twenty-five percent of the respondents stated that they are suffering from a decrease in sales, as portrayed in Table 2. This could be due in part to the national decline or merely cyclical sales.

Table 2. FSU-Related Start-Ups and Spin-Offs Total Company Sales

Total Company Sales		
<i>Response</i>	<i>Frequency</i>	<i>Percentage</i>
Increasing	4	50.00%
Stable	0	0.00%
Decreasing	2	25.00%
No Answer/Other	2	25.00%
Total	8	100.00%

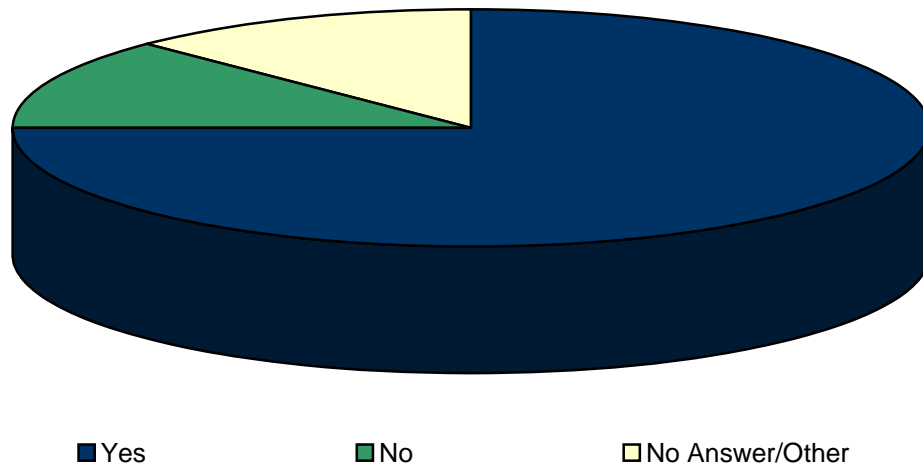
Source: CEFA

Other product/service summary statistics include:

- At least 12.5% responded that 3-6% of their sales revenues are spent on R&D

Market: Regarding future production and success, the issue of expansion is another critical element in a company's evolution. As depicted in Figure 4, seventy-five percent of the respondents stated that they had plans for expansion in the short-term (three years). The average total investment that the firms planned was estimated at \$328,750. One firm, that was not included in this figure (due to its nature of being an outlier) planned to invest \$60 million over the next three years. Of the companies that responded to this question, the estimated total square footage for expansion will be 1,800 square feet. There are an estimated 14 jobs that will be added with the expansion efforts. The start-ups and spin-offs will devote approximately 70% of their investment towards equipment/technology.

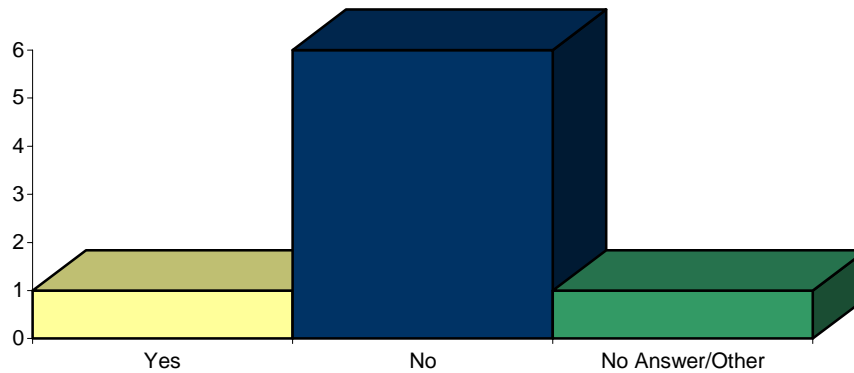
Figure 4. Companies Expansion Plans in Next Three Years.



Source: CEFA

Another issue, is that of overseas production. Many of these FSU start-ups do not possess the market share or power at the moment to contend with overseas producers and competition (Figure 5). This is not necessarily a negative thing, but serves to provide further perspective into the composition of these companies.

Figure 5. Frequency of FSU-Related Start-Ups and Spin-Offs Engaged in Overseas Production



Source: CEFA

Other market summary findings include:

- The majority of the FSU-related start-ups and spin-offs, 87.5%, do not sell their products locally nor regionally. A quarter sell their products/services in national markets and about half sell their products/services globally.
- One quarter of the companies responded that their market share of their companies key products were either increasing or stable.
- One half of the companies do not import any products or components for the manufacture of their product.
- 12.5% of the companies have an overseas production facility.

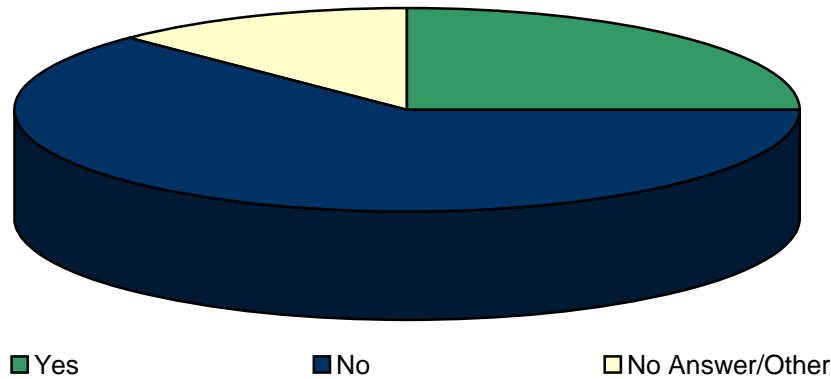
Industry: A few of the companies listed competitors with respect to their company, however, most of the FSU-related start-ups and spin-offs offer a unique product and are experiencing limited competition. Interestingly, 100% of those surveyed did not respond to the question whether overseas production by domestic competitors is increasing, stable or decreasing.

Other industry summary results include:

- 75% of those surveyed thought merger, acquisition, and divestiture activity within their companies was stable.
- Only 12.5 % of the companies thought their production was undercapacity.
- 87.5% did not foresee any legislative changes that would adversely affect their company in the next 5 years, however, the same percentage responded that they didn't project any legislative changes that would benefit their company in the next 5 years, either.

Management: With 75% of the companies developing expansion plans, it can be assumed that the companies are reasonably comfortable with the capacity for expansion, specifically within the community. In this case, a greater proportion of the respondents thought that the community is more than adequate. As presented in Figure 6, only a quarter of the companies expressed concern that the community would not be considered for future expansion.

Figure 6. Are there Reasons that the Community May Not be Considered for Future Expansion.



Source: CEFA

An issue commonly discussed throughout FSU and Tallahassee is workforce-related, mostly due to the lack of a steady workforce level. Nonetheless, the FSU-related start-ups and spin-offs do not attribute recruitment and workforce problems to the students, but rather to the industry, in the event that they do apply. What is certain, however, is that the employment needs for the facility are growing quickly.

Table 3. FSU-Related Start-Ups and Spin-Offs Employment Needs

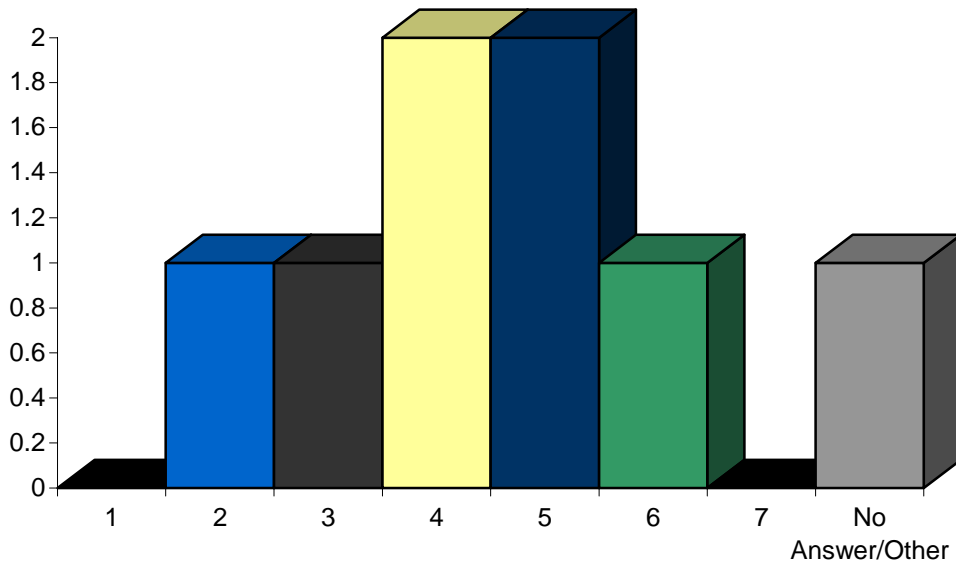
Employment Needs for this Facility...		
<i>Response</i>	<i>Frequency</i>	<i>Percentage</i>
Increasing	5	62.50%
Stable	3	37.50%
Decreasing	0	0.00%
No Answer/Other	0	0.00%
Total	8	100.00%

Other Management Summary Findings Include:

- The company’s ownership has not changed (or is anticipated to change within 18 months) in 87.5% of the FSU-related start-ups and spin-offs.
- Similarly, the company’s top management has not changed (or is anticipated to change within 18 months) in 75% of the companies.
- Hand in glove with increased expansion plans, 62.5% of the companies project increasing employment needs for their facility
- There was a split (25% Yes 25% No) among those responses regarding attitudes of executives at corporate headquarters towards this community differing from local management.
- 37.5% of the companies responded that there are not any suppliers of services that would benefit by being located closer to their facility. Interestingly, none of the companies thought that any suppliers would benefit from being located closer to their facility.

Workforce: One workforce issue is one of quality. The quality has proven to be steady throughout, with the respondents rating the quality about average (Figure 7). The scale that the workforce was judged on ranged from one to seven, with seven being the highest.

Figure 7. FSU-Related Start-ups and Spin-Offs Perception of the Quality of the Workforce



Source: CEFA

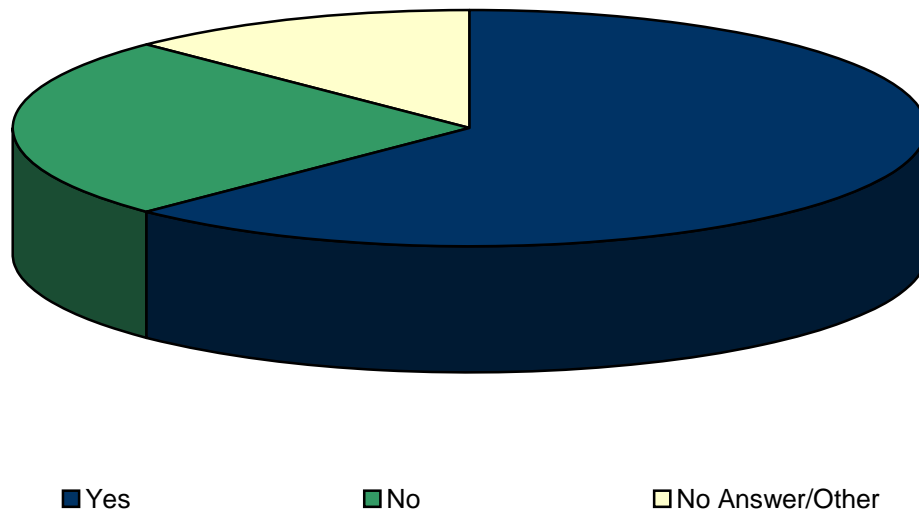
Other workforce summary statistics include:

- One-half the companies rated the workforce availability as being a “4” on a scale of 1 to 7. 25% of the companies rated the availability factor as a 6 (high) out of 7.

- 37.5% of the companies ranked the stability of the workforce with a “3”, which represents a “lower” ranking in the stability factor.
- 50% of the companies did not experience recruiting problems related to employee position or skills.
- 37.5% of the companies viewed the number of unfilled positions in their company as stable, the rest did not respond to that question.
- 37.5% responded favorably and 37.5% responded in the negative with respect to anticipation of significant changes in the workforce.
- 25% of the companies viewed their investment in employee training as stable.

Technology: The FSU-related start-ups and spin-offs, based on the results of this survey, continue to be innovative and active in their research and development. As depicted in Figure 8, there were 62.5% companies that responded that they anticipate the emergence of new technology.

Figure 8. FSU-Related Companies Emergence of New Technology



Source: CEFA

Other Technology summary findings include:

- 37.5% of the companies ranked the use of the company’s use of technology in internal office operations to be 7, or very high (7 being the highest).
- Similarly, 50% of the companies ranked the use of the company’s use of technology in business administration to be a 7.

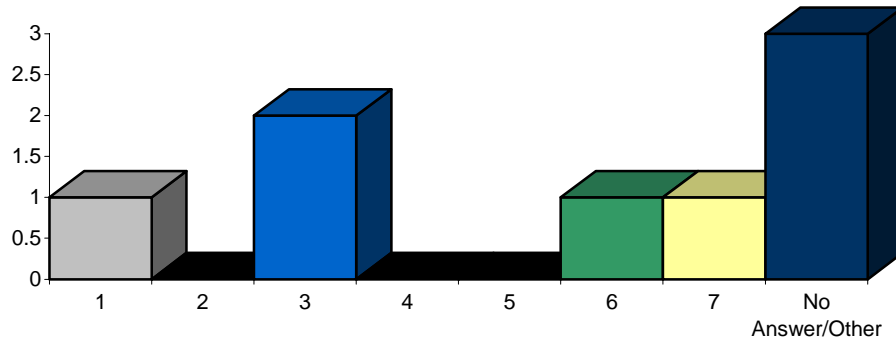
- The companies perception dropped however, regarding the company's use of technology in sales and inventory management; 25% ranked it a 7.
- Likewise, only 25% of the companies ranked it a 7 concerning the company's use of technology in marketing.
- Similarly, 25% of the FSU-related start-ups and spin-offs rated their companies technology investment as highest (7 being highest).
- 37.5% of the companies thought the community infrastructure was adequate for the growth plan, whereas 37.5% of the companies did not think the community infrastructure was adequate for their future.

Utility Services: Having established the current conditions of the companies and their perceptions regarding their future, the remaining issue involves utility consumption and public services. Utility consumption includes anything from electricity to high-speed Internet, while public services include the education system and police departments, among others. Though each services was analyzed individually, an aggregate analysis was performed to assess the current situation. A few of the more interesting responses are provided below, but the companies were generally satisfied with all utilities and services. The respondents were very pleased overall regarding the companies perception of their local economic development organization, however, some would have preferred more interaction with the organization in hopes of better developing their small companies.

Other Utility Summary Statistics include:

- Regarding utility rates, on average, companies ranked utilities (on a scale from 1-7)
- Concerning utility consumption, on average, companies thought their consumption was increasing (x %).
- Regarding community services (police, fire, ambulance, health care, child care) companies ranked these the highest in any category of satisfaction.
- Conversely, the survey responses for area k-12 schools showed that the companies ranked their services in the lower tier (87.5% ranked area schools less 4 or less).
- Public Transportation also ranked lower; 37.5% of the companies perceived local public transportation
- Not surprisingly given that most of the respondents germinated from local universities, the ranks for technical colleges, community colleges and universities hovered ranged from 50% to 62.5% of the companies that selected 5 or above. 37.5% of the companies did not respond to the question.

Figure 9. Community Services Rating: Economic Development Organization



Source: CEFA

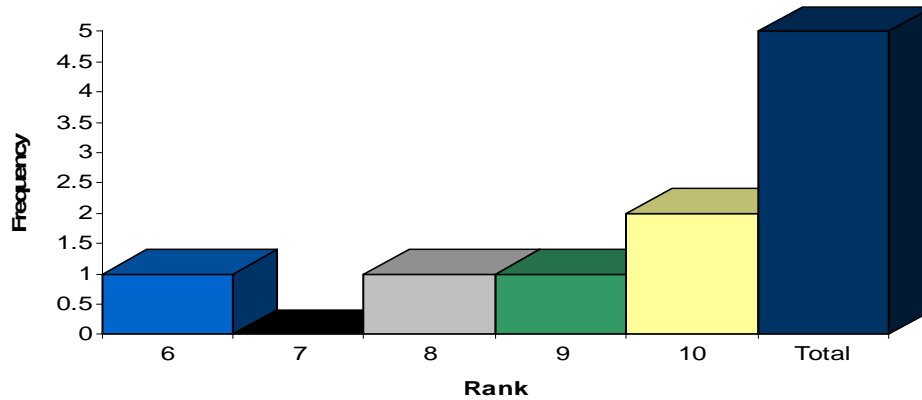
FSU/CEFA Employment and Relationship with FSU

Half of the companies surveyed responded that they had used the FSU Technology Transfer Office (FSU Office of IP Development and Commercialization). Overall, and as presented in Figure 10, the average (on a scale of 1-10, 10 being the highest) ranking of the support they received from the FSU Tech Transfer Office was high, at 8.6. It should be noted that two firms ranked the support as a solid 10. One did refer to, in his opinion, the Director should receive a 10.0, however, the university services should receive a 2.0.

Other FSU Technology Support Summary Statistics include:

- 85.71% of the companies employed former FSU graduates or alumni full-time.
- The FSU-related employees of the company comprised management (66.7%) and technical positions (33.3%).
- Not surprisingly, 41.7% were current FSU faculty. The rest were: current FSU staff (16.7%), former students (16.7%), current student (8.3%), former faculty (8.3%) and former staff (8.3%).
- In describing their relationship with FSU in the future: 23% would benefit from FSU assistance in training employees, and business advisory capacities. A large percentage 46% would like assistance with FSU's technical expertise.
- Concerning the FSU-related companies, 36% hired FSU Engineering majors, 18% hired Business majors, and the remaining were divided equally among: computer science, public administration, information sciences, biology and physics majors.

Figure 10. FSU Technology Support (Ranking 1-10; 10 being the highest level)



Source: CEFA

In short, these results provide powerful insight into the world of small companies and FSU spin-offs throughout the area. They vary in size and shape, but share many of the same characteristics. Most importantly, they all have plans in place to expand and increase production in order to best take advantage of all the area has to offer.

VII. Economic Impact Results

Staff used Impact Analysis for Planning, or the IMPLAN model, a widely accepted and used, integrated input-output model for this study. IMPLAN is used extensively state by state and local government agencies to measure proposed legislative and other program and policy economic impacts across the private and public sectors. In addition, it is the chosen tool to measure these impacts by a number of universities and private research groups that evaluate economic impacts across the state and nation. There are several advantages to using IMPLAN: 1) It is calibrated to local conditions using a relatively large amount of local county level and State of Florida specific data. 2) It is based on a strong theoretical foundation. 3) It uses a well researched and accepted applied economics impact assessment methodology supported by many years of us across all regions of the US.

The IMPLAN model used for this analysis was specifically developed for the state of, and counties of Florida, and includes 509 sectors. IMPLAN's principal advantage is that it may be used to forecast both direct, indirect and induced economic effects for an initial economic stimulus such as FSU-related start-ups and spin-offs spending.

IMPLAN was founded in 1993, as an extension of two researchers work at the University of Minnesota and involving collaborative work with the U.S. Forest Service Land Use Planning Unit in Colorado. It is non-survey based, and its structure typifies that of input-output models found in the regional science literature. IMPLAN assumes a uniform national production technology and uses the regional purchase coefficient approach to regionalize the technical coefficients. IMPLAN 2003 Florida county-level (current version) was used for the economic analysis for this research. This newer version now has 509 sectors (instead of 528) and includes the conversion from standard industrial classification (SIC) to North American Industrial Classification System (NAICS) codes.

The model generates a number of types of multipliers: Type I, Type II, and the Type SAM (Social Accounting Matrix) multipliers. The difference between IMPLAN's Type I and Type II and SAM multipliers is an induced consumption effect. Type I multipliers yield the direct and indirect effects only. Type II multipliers present the direct, indirect and induced effects, based on income. SAM multipliers are also based on direct, indirect and induced effects, however, they're based on information from the social accounting matrix. They include social security and income tax leakage, institution savings, and commuting. Multipliers are generated for employment, output, value added, personal income, and total income.

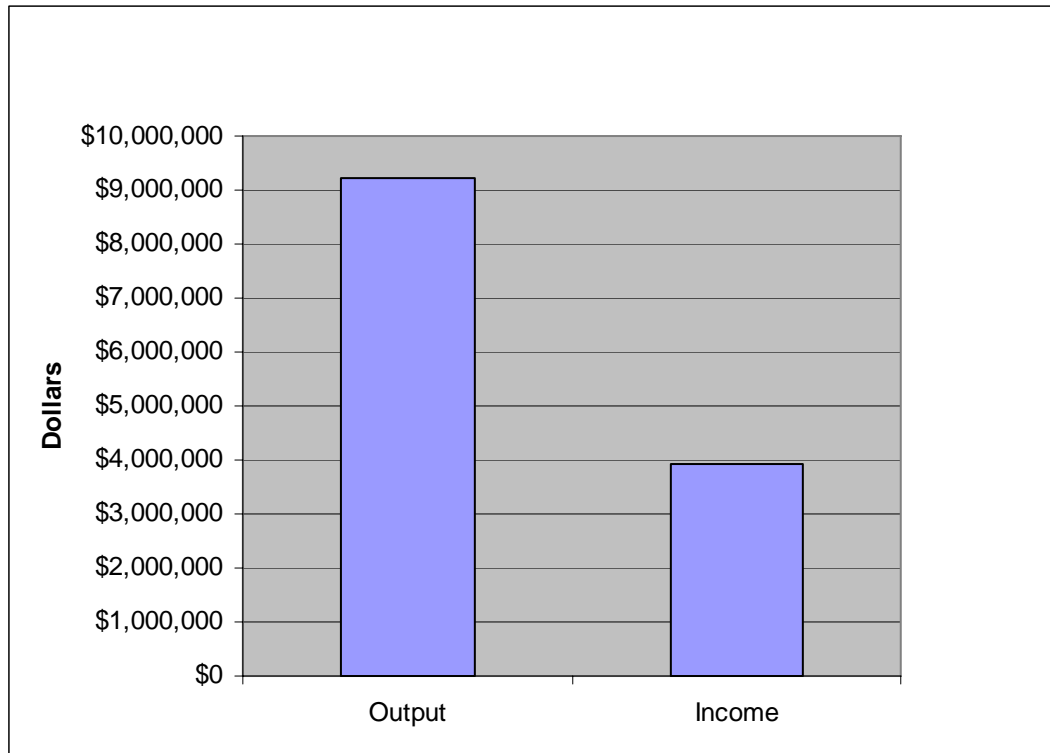
The economic model that was generated in IMPLAN, used pertinent NAICS codes and number of employees associated with each FSU-related start-up and spin-off company. There were three companies that were “built” based on the state of Florida model framework since there were no historical data associated with those companies in the local (Leon County) economy. Those three companies were: Nanostrata, Nanomagnetics and Biotech, Inc., and Integrated Design Tools, Inc. In addition, staff did not include Weather Predict in the economic impact analysis since they are not a local company.

Table 4 depicts the economic impacts (direct, indirect and induced) with respect to output, employment and labor income. The FSU-related company’s annual stimulus in terms of output exceeded \$9 million dollars. This represents the value of final goods and services produced across the local economy. The annual average value of income generated \$3.6 million across the local economy (Figure 11). Finally, the FSU-related start-ups and spin-offs generated 64 jobs across the local economy, which are directly and indirectly stimulated by the spending of the FSU-related start-ups and spin-offs. In terms of an output multiplier and employment multiplier, the results were 1.42, and 1.84, respectively.

Table 4. Economic Impact of FSU-related Start-Ups and Spin-Offs

FSU Office of IT Development and Commercialization Companies	Output	Employment	Income
IMPLAN results 2006 \$	\$9,222,323	64	\$3,610,331

Figure 11. Economic Impact of FSU-related Start-Ups and Spin-Offs in Terms of Dollars of Output and Income, 2006



VIII. Conclusions

This study has served to illustrate the current economic conditions and development of FSU-related start-ups and spin-offs and to provide an estimate of their contribution to the local Tallahassee/Leon County economy.

An average profile of the firms surveyed, portray them to be in emerging, growing or maturing stage of development. No firms were surveyed that appeared to be declining, although one had gone out of business. A majority of the firms were actively involved in research and development and innovation, with new product development in the last five years or projected product development over the next two years. Most FSU-related start-ups and spin-offs are located locally, but with markets out of the region. Most of the firms plan to expand locally and invest \$370,000 in that expansion effort, in the next three years. Those surveyed are very stable in terms of company ownership, and management, with no turnover occurring within the last 18 months. The companies did not express workforce problems, many have hired from the local bevy of FSU graduates, faculty and students. Overall, the companies were satisfied with local utilities (water, sewer, gas, electric, cellular and internet) and highly satisfied with services (police, fire, ambulance, and health care). Differences in levels of satisfaction occurred among the

child care, local schools (K-12) and public transportation categories. There was a high level of satisfaction with local technology colleges, community colleges and universities. The respondents were satisfied with streets and roads, highways, airlines, air cargo, trucking, property tax assessment, zoning changes and building permits, and regulatory enforcement. The companies were across the board with respect to community services, planning county services, and the local Chamber of Commerce. The responses diverged also with regard to the local Economic Development Council, but averaged generally satisfied with their services provided to the companies. One of the more prevailing comments throughout the entire survey process was the request for a small business incubator. Many feel that this, above all, would immensely help not only their own companies, but to facilitate further growth and development throughout the community.

The firms gave the FSU Office of IP Development and Commercialization high levels of satisfaction concerning their support services. Their comments described a fast turn around time in terms of assistance with patent technology licensing. The majority of the companies comprised former FSU graduates/alumni, current and former faculty, staff and students, of FSU. Many of the start-ups and spin-offs commented that they would like to receive technical and financial (or grants) assistance from FSU, in the future. For the FSU-related companies, 40% of the respondents hired Engineering majors.

The FSU-related start-ups and spin-offs contributed substantially to the Tallahassee/Leon County economy. The direct, indirect and induced impacts of output (sales) in the community were greater than \$9 million, in 2006 dollars. In terms of employment, 64 jobs were generated as a result of the local start-ups and spin-offs. Labor income (including employee compensation and proprietary income) was estimated at \$3.6 or \$4 million.

The basic framework of this project was based on a recent study by UF's Office of Technology Licensing that examined companies that have some connection to the University of Florida. The FSU OIPDC project, however, was based solely on start-ups and spin-offs with licensed FSU technologies. Thus, the economic impact results from both studies are not comparable. Further analysis of the local FSU-related high tech companies would allow a more "apples to apples" perspective, and capture a greater range of economic impact in the region. The insights gained from the survey and economic analysis of these companies has proven to be invaluable. The overall average profile of these FSU-related start-ups and spin-offs demonstrate that the majority have plans for expansion, hiring additional employees and new product development. In addition, all the companies expressed keen interest in continuing to excel in innovation, collaborative activities, and research and development efforts.

IX. References

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2. BankBoston (1997). “MIT: The Impact of Innovation.”
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PERSONAL REFERENCES

The following people are acknowledged for their support and cooperation of the study:

1. Dr. Yousef Haik, Nanomagnetics Biotech Inc.
2. Dr. Scott Marshall, Tai-Yang Research Co.
3. Mr. Farhood Basiri, Bellwether Inc.
4. Mr. Larry Conrad, Florida LambdaRail
5. Ms. Kari Myers, Integrated Design Tools, Inc.
6. Dr. Joe Schlenoff, NanoStrata. Inc.
7. Mr. Benjamin Price, PKV Management Consulting
8. Dr. Alec Yasinsac, Security Consulting Partners, Inc.
9. Mr. Thomas Green, TPG Consulting (not currently in operation)
10. Mr. Jayant Khadilkar, Weather Predict, Inc.
11. Dr. Lewis L. Metts, Taxolog

X. Appendices

Appendix A. Survey Instrument

Company Information	
Company Name	Date of Visit (mm/dd/yy)
Contact Name	City/State/ZIP
Phone () -	
Interviewer(s)	
Lead Interviewer	Organization
Other Interviewer(s)	Organization
Product/Service	
1. What is your company's greatest achievement in the last three (3) years? _____ _____	DNA/K Dcl
2. Where is the company's primary product/service in its life cycle? <input type="checkbox"/> Emerging <input type="checkbox"/> Maturing <input type="checkbox"/> Growing <input type="checkbox"/> Declining	DNA/K Dcl
3. Has the company introduced new products/services/capabilities in the last five (5) years? <input type="checkbox"/> Yes <input type="checkbox"/> No	DNA/K Dcl
4. Are new products/services anticipated in the next two years? <input type="checkbox"/> Yes <input type="checkbox"/> No	DNA/K Dcl
5. As a percent of sales, how much does the company spend on R&D? <input type="checkbox"/> 0% <input type="checkbox"/> 3%–6% <input type="checkbox"/> Under 3% <input type="checkbox"/> Over 6%	DNA/K Dcl
As a percentage, approximately how is the R&D budget divided among: Where is the R&D facility located? _____	New product development _____% Product improvement(s) _____% Production improvement(s) _____% DNA/K Dcl
<i>Product/Service Notes</i>	

Market	
6. Is the company's primary market: <input type="checkbox"/> Local <input type="checkbox"/> Regional <input type="checkbox"/> National <input type="checkbox"/> International	DNA/K Dcl
7. Are total company sales: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing	DNA/K Dcl

8. Is the market share of the company's key product(s) : <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing	DNA/K Dcl
<i>If changing, please explain:</i> _____	

9. Does the company plan to expand in the next three years: <input type="checkbox"/> Yes <input type="checkbox"/> No	DNA/K Dcl
<i>If yes, estimated total investment</i> \$ _____	
Approximate percentage equipment/technology _____	%
Approximate percentage real estate _____	%
Estimated number of jobs added or lost (-) _____	
Estimated facility size increase _____	sq. ft.
Approximate date of expansion _____	(mm/yy)
Comments: _____	

10. Are export sales as a percentage of total sales: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing <input type="checkbox"/> No exports	DNA/K Dcl
<i>If exporting, approximately what percentage of sales comes from export sales?</i>	1-20% 41-60% 81-100%
	21-40% 61-80%
Where are your export markets? _____	

11. Is the percentage of products and/or components imported by the company : <input type="checkbox"/> Increasing <input type="checkbox"/> Decreasing	DNA/K Dcl
<input type="checkbox"/> Stable <input type="checkbox"/> No imports	

12. Does the company have production facilities outside the country ? <input type="checkbox"/> Yes <input type="checkbox"/> No	DNA/K Dcl
<i>If yes, are they contract production or a company facility:</i> <input type="checkbox"/> Contract production <input type="checkbox"/> Company facility <input type="checkbox"/> Both	
What is the function of the overseas location(s) _____	
Where is foreign production located? _____	

Market Notes

Industry	
13. Where are primary international competitors located (City and Country)? _____	DNA/K Dcl
14. Is overseas production by domestic competitors: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing	DNA/K Dcl
Please explain: _____	
15. Is merger, acquisition or divestiture activity in your industry: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing	DNA/K Dcl
16. In your industry, is production: <input type="checkbox"/> Under capacity <input type="checkbox"/> Balanced <input type="checkbox"/> Over capacity	DNA/K Dcl

17. Do you anticipate any federal, state, or local legislation changes that will **adversely affect** your business in the next five years:

Yes No

DNA/K Dcl

If yes, what changes? _____

How will they affect the company? _____

18. Do you anticipate any federal, state, or local legislation changes that will **benefit** your business in the next five years:

Yes No

DNA/K Dcl

If yes, what changes? _____

How will they affect the company? _____

Industry Notes

Management

19. Has the company's ownership changed in the last 18 months, or do you anticipate a change: Changed Change Pending No | DNA/K Dcl

If changing, please explain: _____

Has the company's top management changed or is it expected to change in the next 18 months: Changed Change Pending No | DNA/K Dcl

If changing, please explain: _____

If changed, what impact will this/these changes have on the local operation? _____

20. Are the projected employment needs for this facility: Increasing Stable Decreasing | DNA/K Dcl

21. What are the community's **strengths** as a place to do business? | DNA/K Dcl

22. What are the community's **weaknesses** as a place to do business? | DNA/K Dcl

23. Are there any **barriers to growth** in this community? Yes No | DNA/K Dcl

If yes, what? _____

24. Does the attitude among **executives at corporate headquarters** toward this community as a place to do business differ from local management: Yes No | DNA/K Dcl

If yes, please explain? _____

25. Are there any reasons the community may not be considered for future expansion? <input type="checkbox"/>Yes <input type="checkbox"/> No <i>If yes, please explain?</i> _____ _____	DNA/K	Dcl
26. Are there suppliers or service providers that the company would like to have located closer to this facility: <input type="checkbox"/>Yes <input type="checkbox"/> No <i>If yes, product/service, company, and current location?</i> _____	DNA/K	Dcl
<i>Management Notes</i>		

Workforce										
	Low	1	2	3	4	5	6	7	High	
27. How do you rate the availability of workers in this area:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K Dcl
28. How do you rate the quality of workforce in this area:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K Dcl
29. How do you rate the stability of workforce in this area:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K Dcl
30. As compared to other company facilities, how would you rate productivity in this facility:	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K Dcl
31. Is the company experiencing recruitment problems with any employee positions or skills: <input type="checkbox"/>Yes <input type="checkbox"/> No <i>If yes, what problems, positions, skills?</i> _____ _____										DNA/K Dcl
32. Is the number of unfilled positions: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing Estimated number of unfilled positions today: _____ Approximately when will these jobs be filled? _____ (mm/yy)										DNA/K Dcl
33. Have you experienced or do you anticipate any significant changes in the make-up of your workforce? <input type="checkbox"/> Yes <input type="checkbox"/> No <i>If yes, how did/will you deal with this change?</i> _____ _____										DNA/K Dcl
34. Are primary recruitment problems limited to: <input type="checkbox"/>Community <input type="checkbox"/>Industry										DNA/K Dcl
35. Is company investment in employee training: <input type="checkbox"/> Increasing <input type="checkbox"/> Stable <input type="checkbox"/> Decreasing <input type="checkbox"/> None <i>If investing in employee training, what percentage of the training budget is for:</i>										DNA/K Dcl
								New job skills training	_____ %	
								Proficiency training	_____ %	
								Remedial skill training	_____ %	
<i>Workforce Notes</i>										

Workforce Development Services

A. Does your company use Workforce Development / One-Stop Career Center services? Yes No
 (These services include: job posting, recruitment, screening, referral, customized employee training, labor market information, etc.)

If yes, On a scale of 1 to 7 with 1 being Very Dissatisfied and 7 being Very Satisfied, what was your level of satisfaction with these workforce services? 1 2 3 4 5 6 7

Can you suggest any improvements in these workforce services? Yes No
 please explain: _____

If no, Why is your company not using these workforce services? (Check all that apply)

Did not know services were available

Services not needed

Tried the services and was dissatisfied

Other (please indicate below):

B. If unfamiliar with these workforce services,

Would you like to receive information about workforce services? Yes No

Would you like someone to contact you? Yes No

Technology

36. Is there new technology emerging that will substantially change either your company's primary product/service or how it is produced? Yes No DNA/K Dcl
 Comment: (Interviewer: Circle one – Positive, Negative, Both): _____

37. Compared to your business segment, how would you rank your company's use of technology for:

Use	Low							High		
Internal office operations	1	2	3	4	5	6	7			DNA/K Dcl
Production	1	2	3	4	5	6	7			DNA/K Dcl
Sales and inventory management	1	2	3	4	5	6	7			DNA/K Dcl
Marketing	1	2	3	4	5	6	7			DNA/K Dcl

Comments: _____

38. Compared to your business segment, rate your company's technology investment: Comments: _____ _____	Low 1 2 3 4 5 6 High 7	DNA/K Dcl
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39. Is the community's technology infrastructure adequate for your company's growth plan? <input type="checkbox"/> Yes <input type="checkbox"/> No Comments: _____ _____	DNA/K Dcl
--	-----------

Technology Notes

Utility Services

40. How is the consumption of the following utilities changing? <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;"><u>Type of Utility</u></th> <th style="text-align: center;">I*</th> <th style="text-align: center;">S*</th> <th style="text-align: center;">D*</th> <th style="text-align: center;">DNA/K</th> <th style="text-align: center;">Dcl</th> </tr> </thead> <tbody> <tr><td>A) Water</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>B) Sewer</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>C) Natural Gas</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>D) Electric</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>E) Telecom (voice)</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>F) Cellular service</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>G) Internet access</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td>H) Internet speed</td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> </tbody> </table> <p style="font-size: small;">* I = Increasing, S = Stable, D = Decreasing</p>	<u>Type of Utility</u>	I*	S*	D*	DNA/K	Dcl	A) Water	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	B) Sewer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	C) Natural Gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	D) Electric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	E) Telecom (voice)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	F) Cellular service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	G) Internet access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	H) Internet speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	41. Please rate your satisfaction with your utility providers <table style="width:100%; border-collapse: collapse;"> <thead> <tr> <th style="text-align: left;">Low</th> <th colspan="6"></th> <th style="text-align: right;">High</th> <th style="text-align: center;">DNA/K</th> <th style="text-align: center;">Dcl</th> </tr> <tr> <th style="text-align: center;">1</th> <th style="text-align: center;">2</th> <th style="text-align: center;">3</th> <th style="text-align: center;">4</th> <th style="text-align: center;">5</th> <th style="text-align: center;">6</th> <th style="text-align: center;">7</th> <th style="text-align: center;">DNA/K</th> <th style="text-align: center;">Dcl</th> </tr> </thead> <tbody> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> <tr><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;"><input type="checkbox"/></td><td style="text-align: center;">DNA/K</td><td style="text-align: center;">Dcl</td></tr> </tbody> </table>	Low							High	DNA/K	Dcl	1	2	3	4	5	6	7	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
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C) Natural Gas	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
D) Electric	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
E) Telecom (voice)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
F) Cellular service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
G) Internet access	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
H) Internet speed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl																																																																																																																											
Low							High	DNA/K	Dcl																																																																																																																							
1	2	3	4	5	6	7	DNA/K	Dcl																																																																																																																								
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For any utility services with satisfaction rated 3 or below, please comment:

Utility service issue 1 (<i>circle one</i>) A B C D E F G H	Low Rank Comment 1: _____ _____ _____
Utility service issue 2 (<i>circle one</i>) A B C D E F G H	Low Rank Comment 2: _____ _____ _____
Utility service issue 3 (<i>circle one</i>) A B C D E F G H	Low Rank Comment 3: _____ _____ _____

Utility Notes

Community Services

42. Please rate the quality of the following services provided by the community on a scale of 1 to 7, 7 being high.

	Low						High		
	1	2	3	4	5	6	7		
A) Police protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
B) Fire protection	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
C) Ambulance paramedic service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
D) Health care services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
E) Child care services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
F) School (K-12)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
G) Tech college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
H) Community college	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
I) College(s) and university(ies)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
J) Public transportation	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
K) Traffic control	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
L) Streets and roads (local)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
M) Highways (State & Federal)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
N) Airline passenger service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
O) Air cargo service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
P) Trucking	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
Q) Property tax assessment (fair & equitable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
R) Zoning changes and building permits	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
S) Regulatory enforcement (fair & equitable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
T) Community planning	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
U) Community services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
V) County services	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
W) Chamber of Commerce or business association	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl
X) Economic development organization	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	DNA/K	Dcl

For services with satisfaction rated 3 or below, please comment:

Service issue 1 (circle one) A B C D E F G H I J K L M N O P Q R S T U V W X	Low Rank Comment 1: _____ _____ _____
--	---

Service issue 2 (circle one) A B C D E F G H I J K L M N O P Q R S T U V W X	Low Rank Comment 2: _____ _____ _____
--	---

Service issue 3 (circle one)
A B C D E F G H I J K L
M N O P Q R S T U V W X

Low Rank Comment 3: _____

Community Service Notes

Do you have any other comments you would like to share?

Confidentiality

Confidentiality request signed?

Yes

No

CEFA

If there is no relationship with FSU, then do not continue with these questions.

FSU

Employment and relationship with FSU

Direct employment by the company

FSU (former graduate or alumni) Full time:_____ Part time _____ Freelance_____

FSU (former graduate or alumni) Management:_____ Technical _____ Sales_____

Other: _____

Relationship between the founder/top management of the company with FSU:

No relationship Current Faculty Current Staff Current Student

Former Faculty Former Staff Former Student

What sort of relationship would you like to establish with FSU in the future? Rank and Explain:

Training employees Technical Expertise

Business Advisory Other:

What are the most popular major(s) you typically hire:

1st Business 3rd Information 5th Medicine

2nd Engineering 4th Law 6th Others, please specify:

Technology Transfer-FSU

Does your company use FSU Technology Transfer services? (assists faculty, staff and students move their innovative research results and creative work into public use by licensing to outside organizations to develop and market products based on FSU research.) Yes No

If YES please rank the support(1-10)

10 excellent and 1 not good: 1 2 3 4 5 6 7 8 9 10

Explain:

What services does the company get from FSU at the moment:

Is there support you might need from FSU in the future?

APPENDIX B: Comments Regarding Survey

Comments regarding FSU technology support:

- Helpful with business advice
- The support and the receptivity they get from the Tech Transfer office every time they communicated with them is very high.
- When he was establishing his business he considered the Tech Transfer Office poor service however, now as part of the CIS staff he believes they've improved substantially.
- process for licenses was smooth, obtained licenses patents without any problems and info on time.
- They did not use the services of the Technology Transfer office since they are a different kind of company. It is not the case that needed to be the distributors of a technology that belongs to the university. However, they used the services of the Office of Research and they consider Betty Southard one of the very important persons in that office that helped them to establish the company.

General Comments:

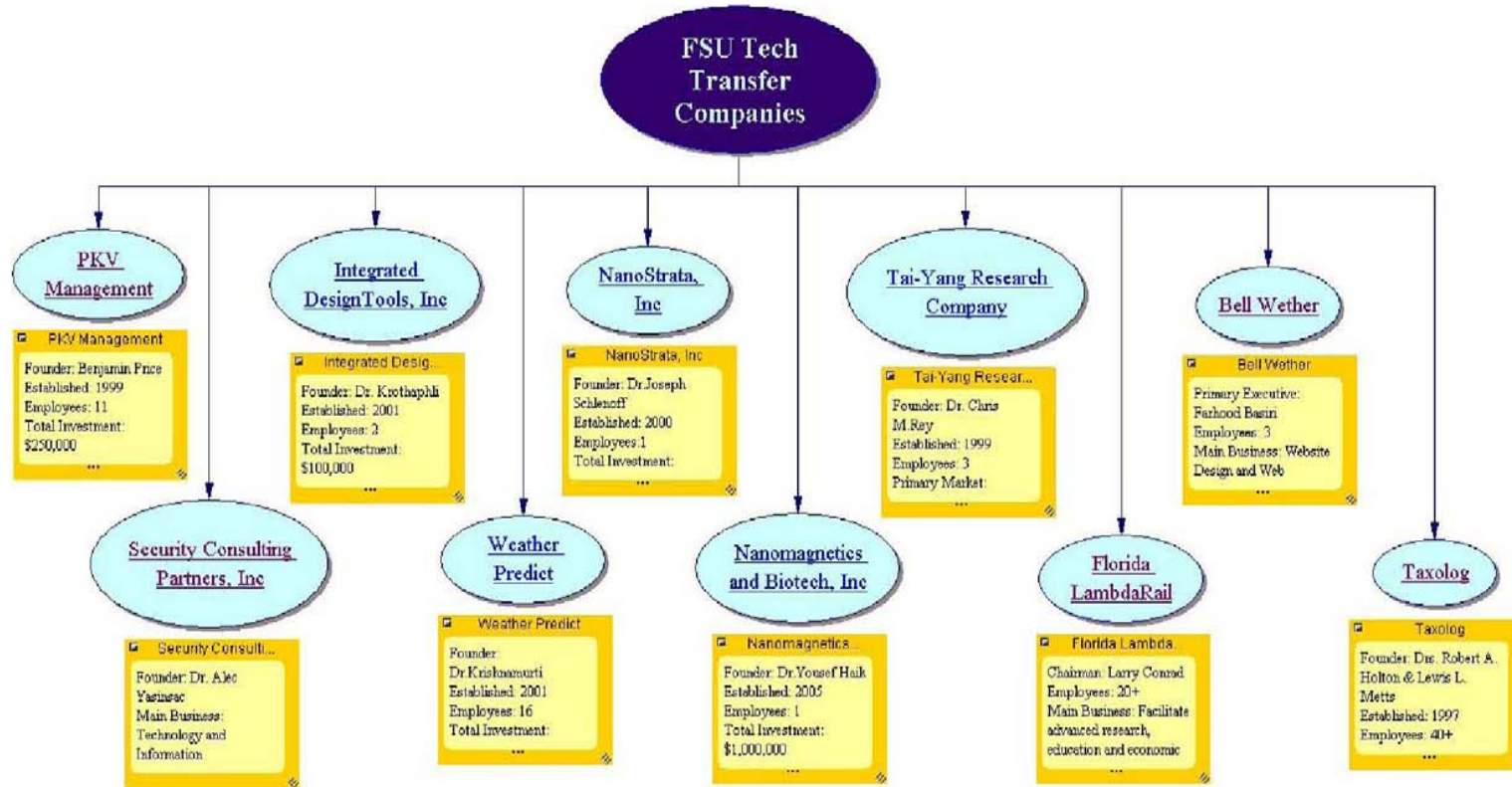
- We are increasing exponentially in sales each year.
- Telco service in our area does not meet our communications needs. We utilize more online tools to communicate than through telephone service. Skype, MSN Messenger, Webex, etc. are some of the tools that we rely on. We have a dedicated T1 internet line that provides the bandwidth we need to make the services comparable and least costly than using long distance telephone services.
- It is becoming increasingly difficult to return to TLH when flight schedules are slightly interrupted. Airlines have decreased the frequency of flights to TLH. Direct flights are increasingly rare. Lack of competition keeps fares high
- The rent of offices is relatively cheap here in Tallahassee
- Lack of Machine Chops and Shops. They have to go to Bonifay, Florida for that.
- Public transportation; without a car, Tallahassee is a difficult city to live in.
- For the company the government is a big client therefore a change in the procurement process of getting services will probably add more steps for the government in order to get an external service.
- The code of enforcement and development rules in the community are highly subjective
- Commented that many of the questions merely do not apply because of the infancy of their company. However, they said that for the success of small businesses, it would be vital to have a resource or reference list that they can use when attempting to find lawyers, accountants, and the like for the purposes of maintaining and operating their business. He stated that he would like it to be a “canned” process. He also commented that he feels it is a mistake to have staff meddling in affairs, or as he puts it “double-dipping”, that a lawyer or accountant could handle. Instead, the staff needs to be concerned solely with their duties.
- Community strengths include FSU. Community weaknesses, high cost of living, limited access to technology services.

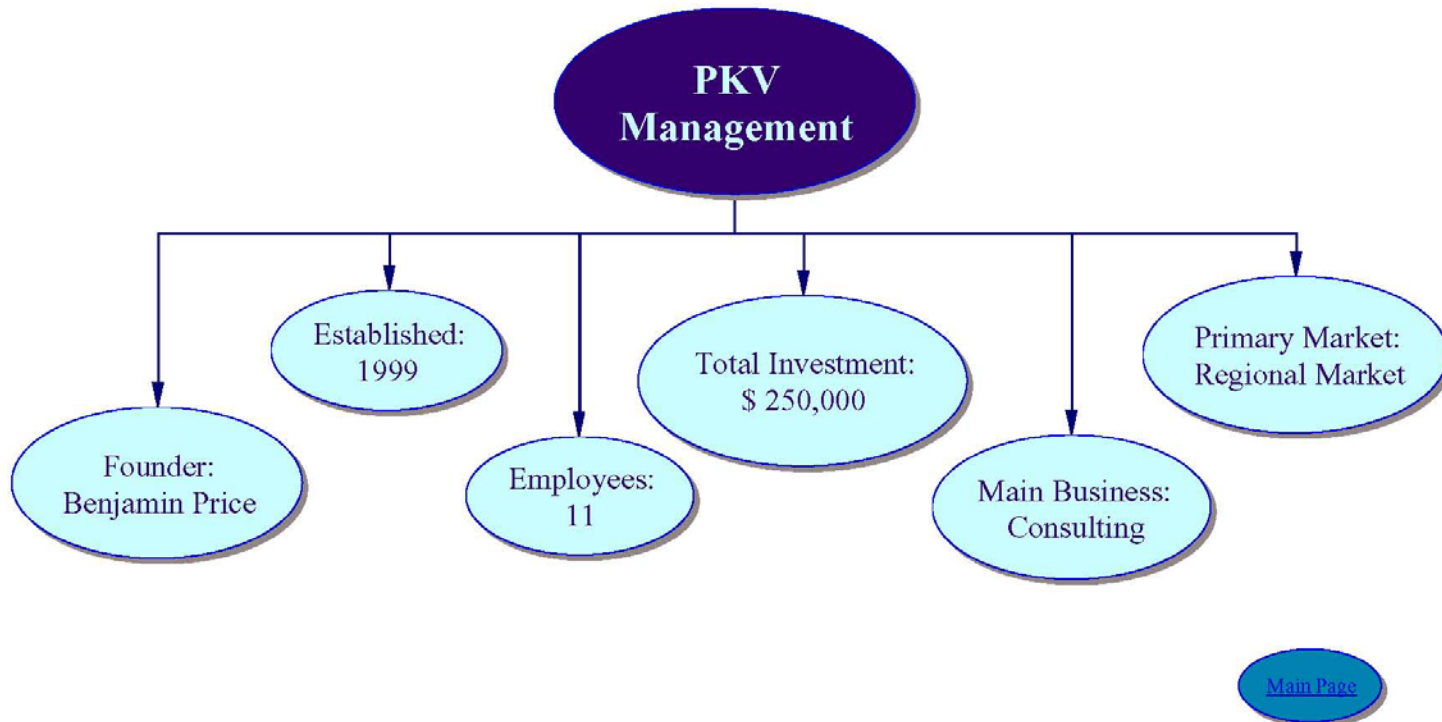
- Would like assistance with grant support.
- Good pool of qualified workers at the technical level
- Sometimes hard to get service for certain items; limited pool for qualified workers at Sr. Staff (Ph.D.) level
- High cost and frequent loss of power due to grid failure
- Access to specialty care in the Tallahassee area is very limited

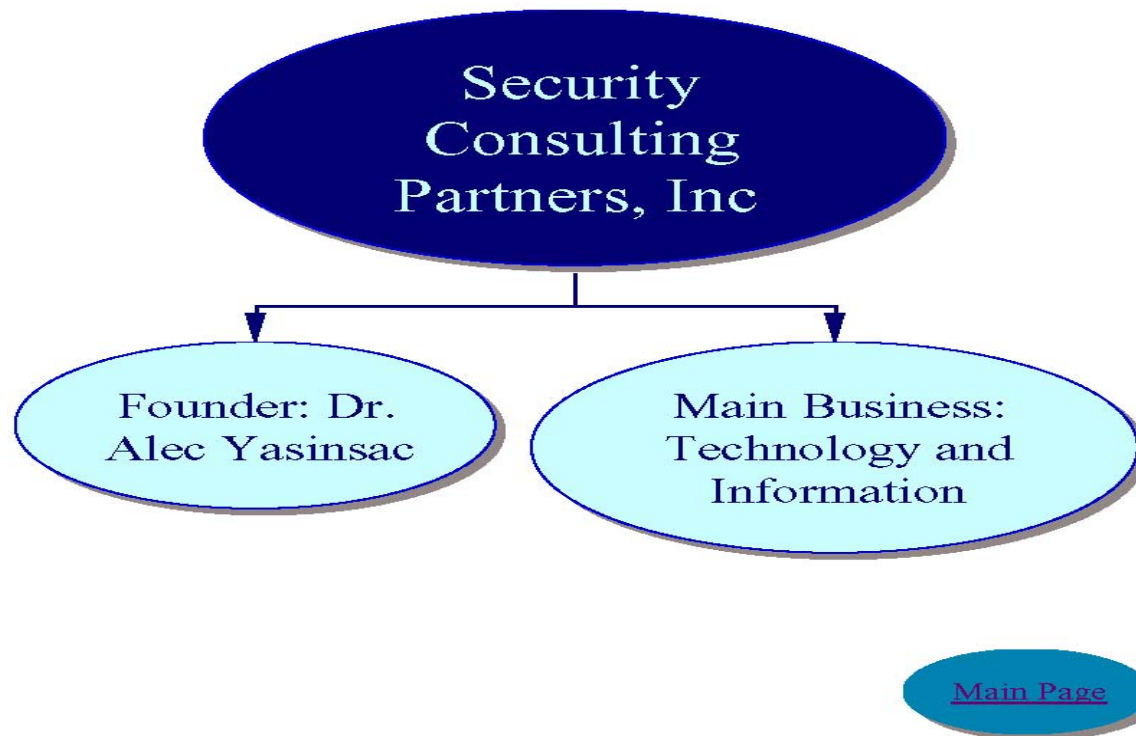
Schools in both Leon & Gadsden County are over crowded and some still offer outdated curriculum and are not meeting the current set standards; Florida in general is not a leader in education.

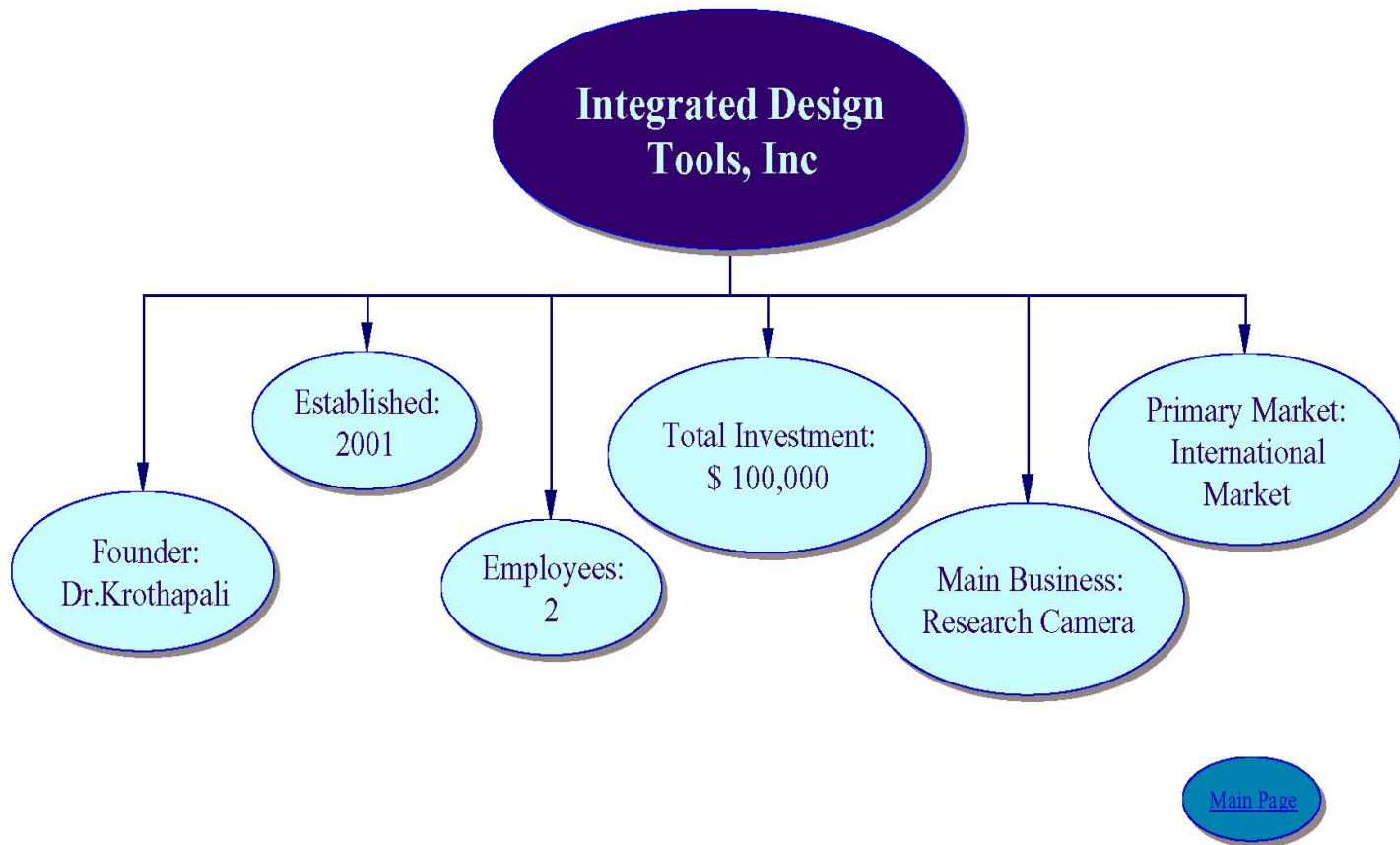
- Very underdeveloped airport
- Community strength; availability of diversified talent

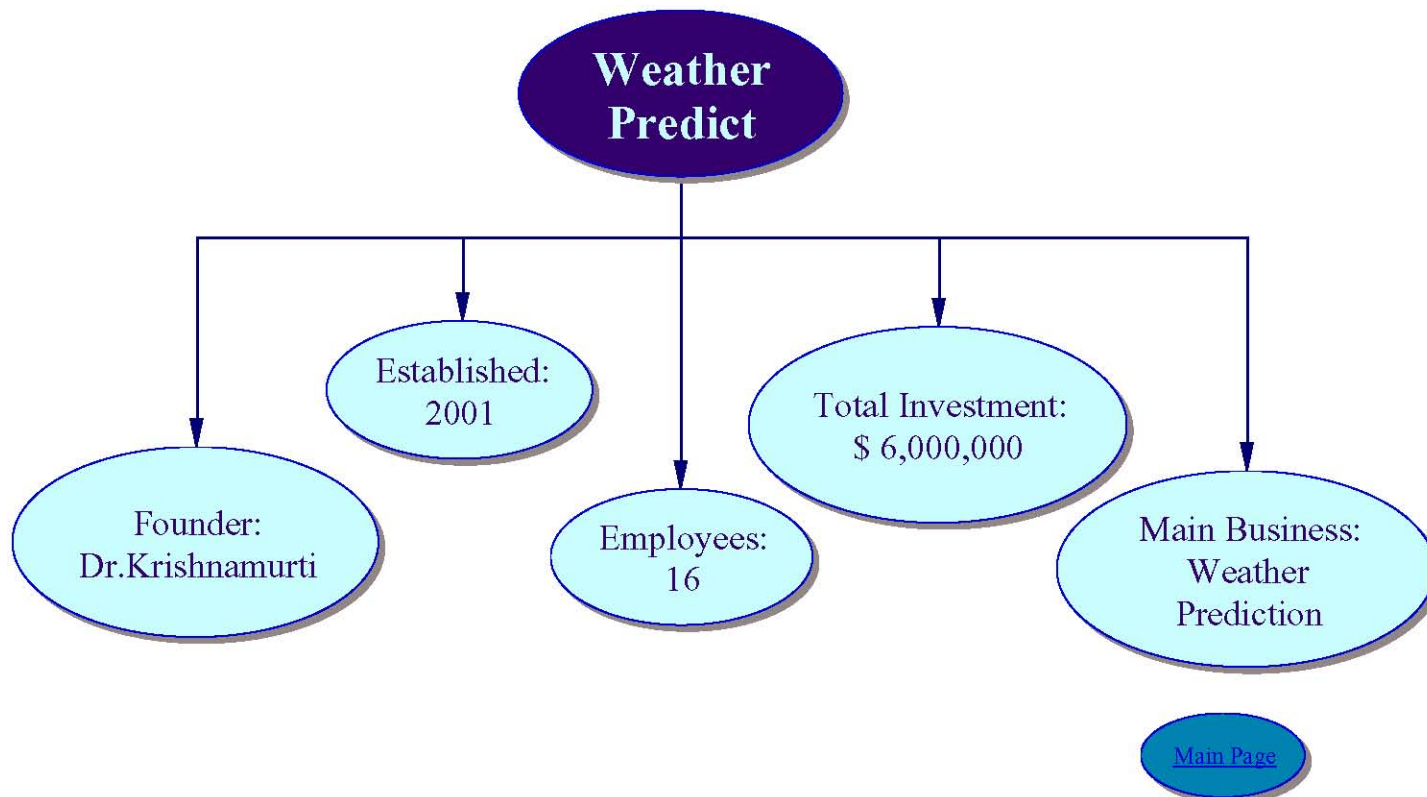
Appendix C. FSU-Related Start-Ups and Spin-Off Companies.

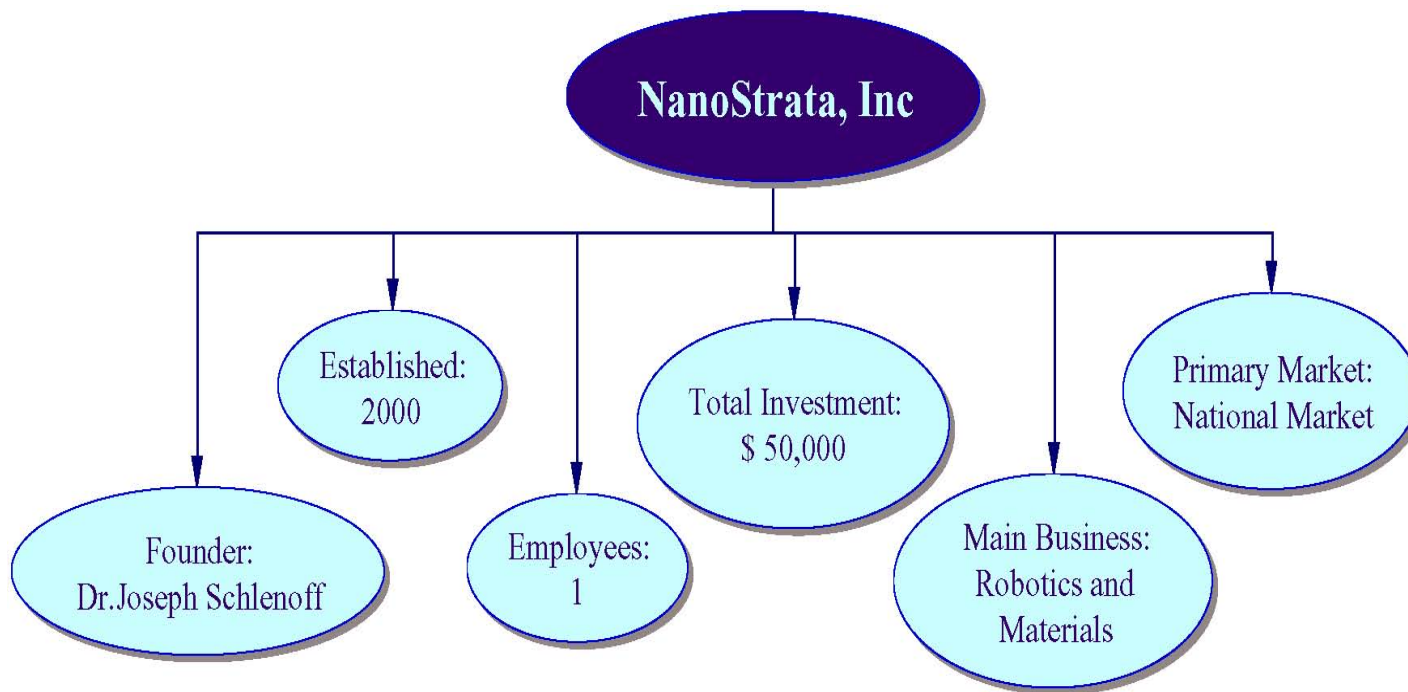




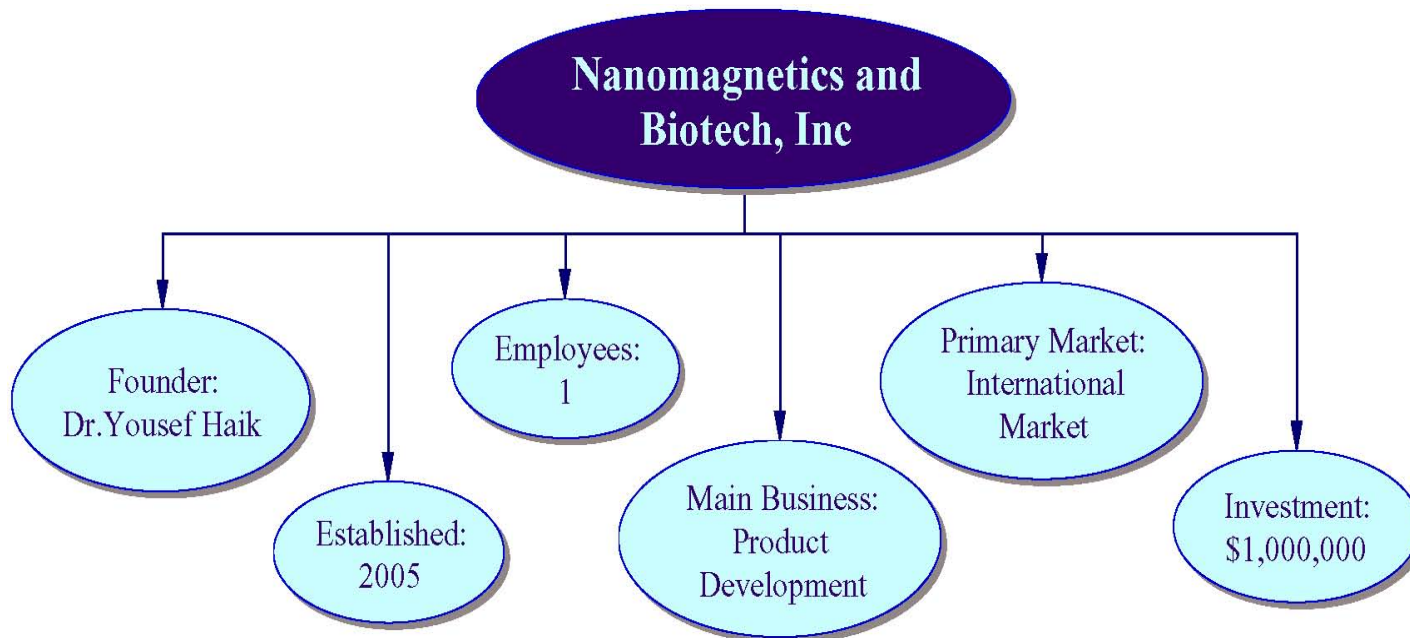




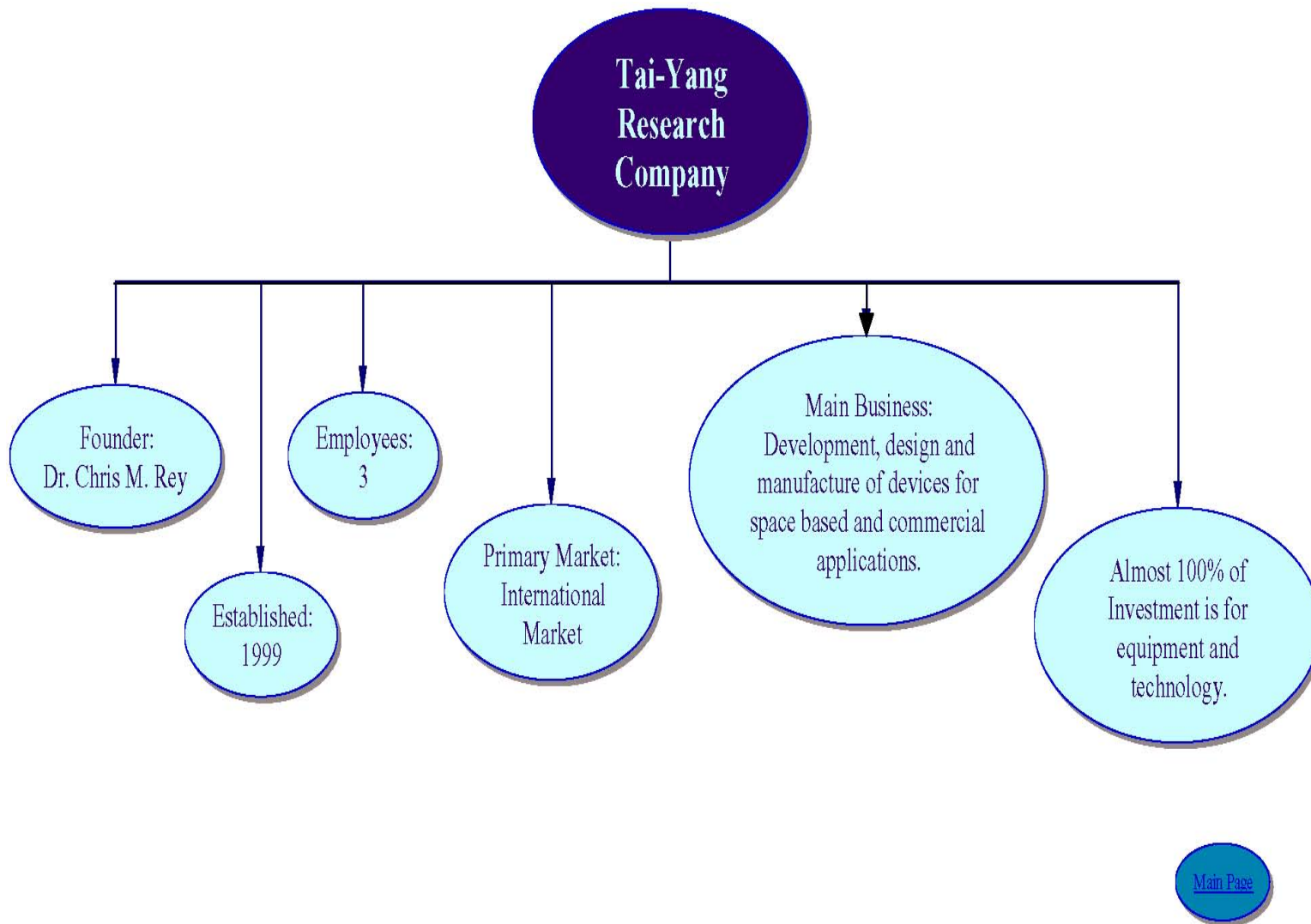




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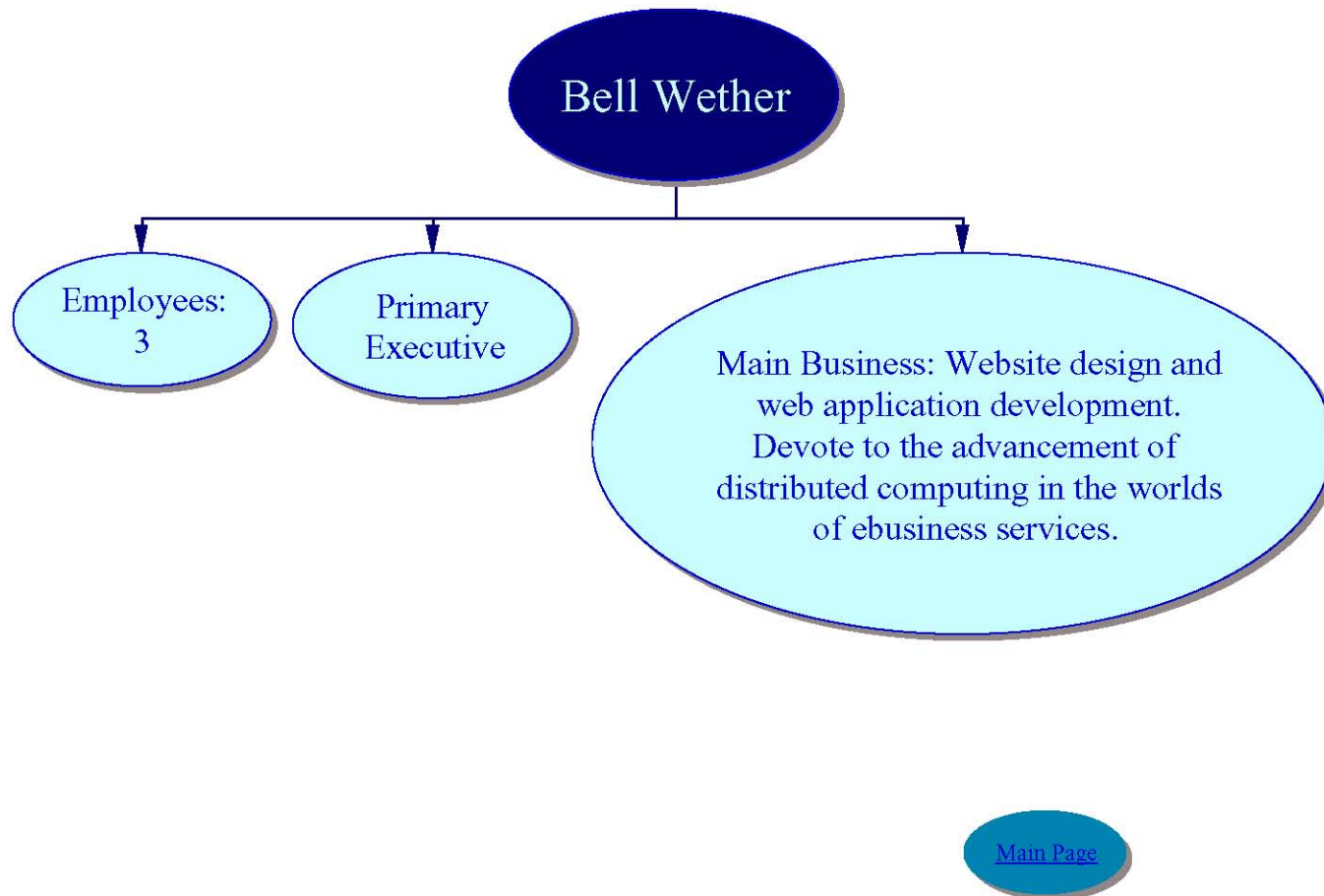
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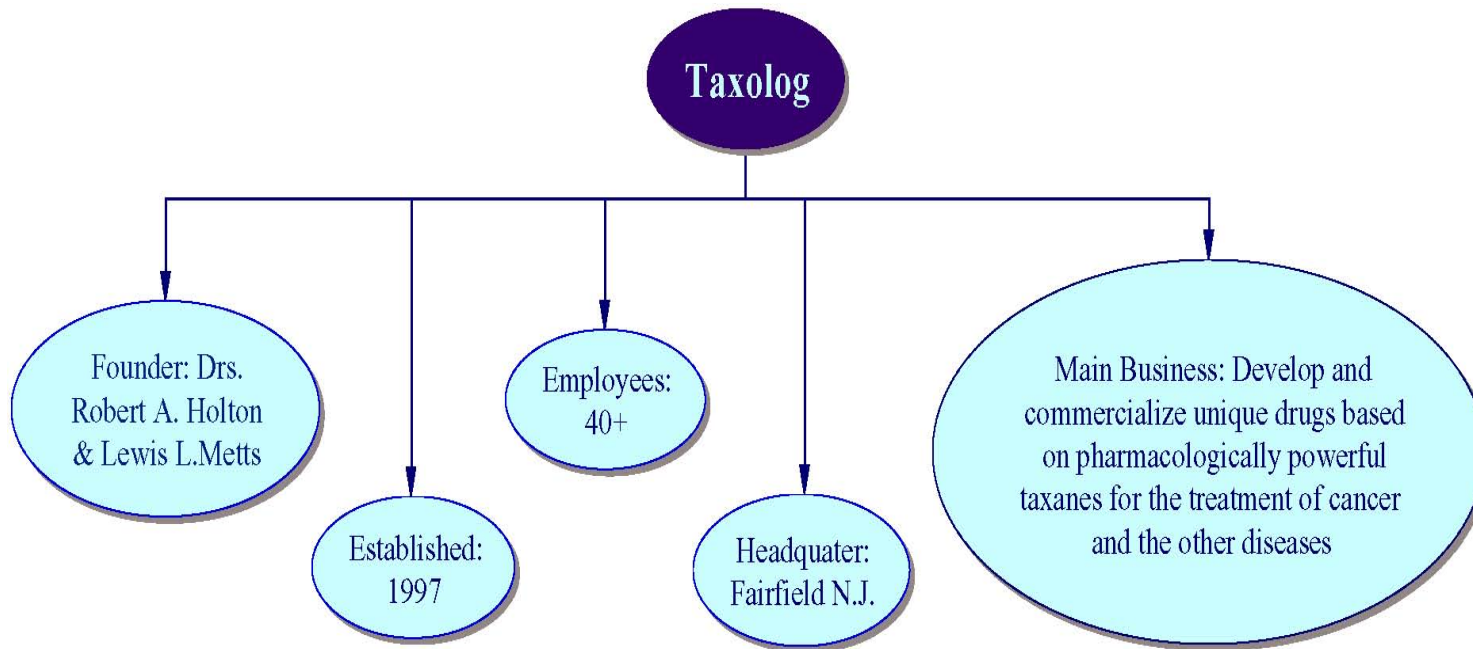






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