



September 21, 2015

Executive Director John Miller  
North Texas Enterprise Center (NTEC, Inc.)  
6170 Research Road  
Frisco, Texas 75033

Dear Mr. Miller:

It is my pleasure to submit the report for the estimated economic impact of NTEC on the area economy. In addition to the IMPLAN based generated estimate of NTEC's economic impact, the report also includes a description of the model of the Entrepreneurial and Economic Development process and describes how a business incubator/accelerator, such as NTEC, meshes into the model to create a more vibrant and successful community.

Two impact scenarios were conducted - one region was defined as Collin County and another region included a five county impact including Collin, Dallas, Denton, Rockwall, and Tarrant counties. Regarding the Collin County scenario - NTEC's direct employment of 213 jobs in six industry sectors translates, through the multiplier effect, into an estimated total of 495 jobs in Collin County. The total effect includes the direct, indirect, and induced effects which equates to \$55 million in output (or Gross Regional Product) and an additional \$38 million in output when considering the indirect and induced effects of those initial 213 jobs.

Just as important as the quantitative data in this report I had the opportunity to visit with some of the firms on two site visits at NTEC in the last year and a half and I have included some observations of those interactions with the residents of NTEC which as you will see positively correlates with the Heartland Center for Leadership Development's "Clues to a Successful Community."

Indeed when combining the IMPLAN based quantitative analysis with the qualitative part, such as the site visits, NTEC's mission and outcomes positively supports the Frisco Economic Development Corporation's goal of providing the conduit for an "innovation culture through entrepreneurship."

Please let me know if you have any questions regarding the report.

Sincerely,  
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North Texas Enterprise Center (NTEC)  
Regional Economic Development Impact Report

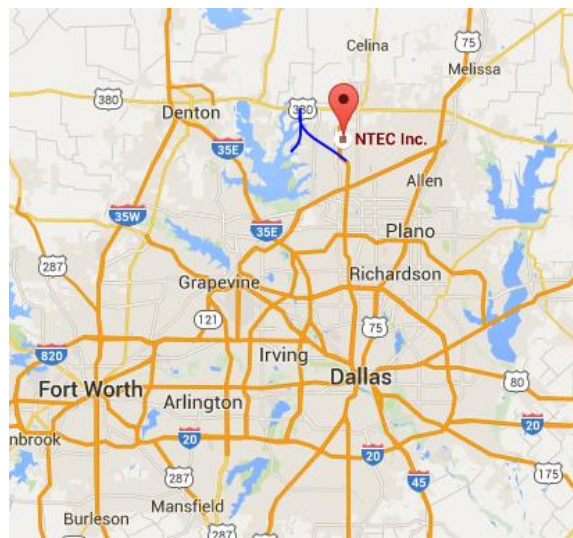
September 19, 2015

Prepared by Clay Randall

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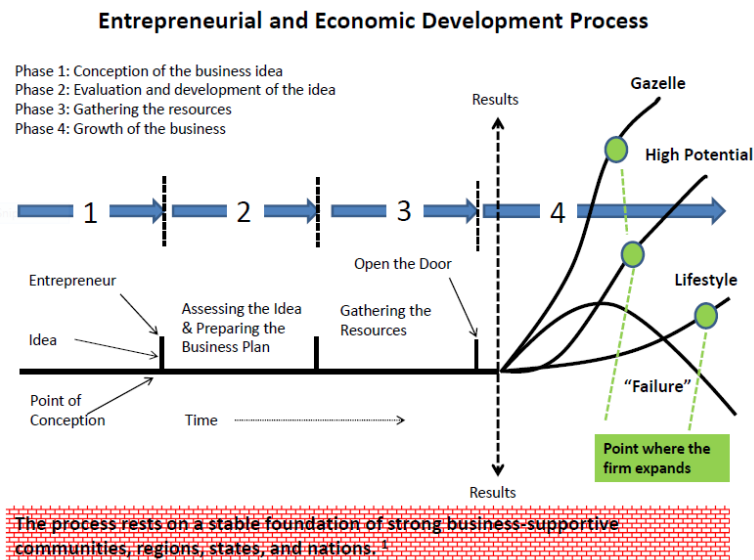
NTEC's Estimated Economic Impact in Collin, Dallas, Denton, Rockwall, and Tarrant Counties



## I. INTRODUCTION – The Entrepreneurial and Economic Development Process

A primary goal of a community is to improve its citizen’s economic well-being which leads to a higher quality of life. Wealth creation in a community is a primary goal of economic development which can be accomplished in three ways – starting businesses, growing and keeping existing businesses, and business attraction. Starting businesses or entrepreneurship may be defined as the opportunity discovery process of turning an idea into a business idea; and, in turn, capturing the value of the business idea through customer acquisition leading to revenues flowing to the firm.

According to Robert Kiyosaki in *Rich Dad Poor Dad*, true wealth is real asset accumulation to create an income. Entrepreneurship is a primary form of wealth creation. The entrepreneurial process rests on a stable foundation of business supportive communities, as the following model illustrates.



Model adapted from: Summers, David. (2015).

One business friendly community located in Collin County and Denton County is Frisco, Texas. According to the Frisco Economic Development Corporation’s website, “Supported by strong infrastructure, exceptional leadership and quality commercial developments, Frisco has been recognized by Money Magazine as one of the top 100 places to live in the United States. This infrastructure supports an exceptional community and an extraordinary quality of life” (Frisco, 2015).

In fact, the Frisco Economic Development Corporation Board of Directors explicitly set a goal to “enhance Frisco’s innovation culture through entrepreneurship.” One strategy to accomplish this goal was to establish a business incubator or business accelerator – the North Texas Enterprise Center (NTEC).



## II. BUSINESS INCUBATOR/ACCELERATOR BACKGROUND

Just as the name implies, a business incubator nurtures “fledgling firms that share services and equipment and occupy space at a reduced rate. In addition to low-cost shelter and services, one of the biggest benefits provided by incubators is the support and counsel provided by a network of business assistant professionals” (Bygrave and Zacharakis, 2010). According to the National Business Incubation Association, most business incubators foster community job creation, facilitate entrepreneurial climate in a community, assist with a community’s business retention, build growth in a local industry, and diversify a local economy (Business, 2015).

The following table summarizes the types of business incubators as of 2012: (Business, 2015)

Table 2.1

Business incubators in the world	7,000
Business incubators in the U.S.	1,250
Incubators in North America that are nonprofit	93%
Incubators in North America that are for profit	7%
Incubators that are “mixed-use”	54%
Incubators that focus on technology businesses	37%
Incubators that serve manufacturing firms	3%
Incubators that operate in urban areas	47%
Incubators that operate in rural areas	28%
Incubators that operate in suburban areas	25%

Interestingly, “32% of North American business incubators are sponsored by academic institutions; 25% are sponsored by economic development organizations; 16% are sponsored by government entities; 4% are ‘hybrids’ with more than one sponsor; and, 15% of incubators have no sponsor or host organization” (Business, 2015). In 2011, community colleges also played a role in supporting business incubators as “close to 35 business incubators are operated by two-year colleges [U.S.] nationwide” (Kent, 2011). The NBIA also estimates that in 2011, North American business incubators helped 49,000 start-up businesses which employed about 200,000 workers while generating about \$15 billion in annual

revenue (Business, 2015). The NBIA also claims that business incubators reduce small business failure risk citing that “NBIA member incubators have reported that 87% of all firms that have graduated from their incubators are still in business” (Business, 2015).

### III. SPILLOVER BENEFITS of NTEC – NTEC as a conduit for a vibrant and successful community

How does a business incubator/accelerator improve a community’s quality of life? High quality of life communities are where people want to live. Interestingly, the Heartland Center for Leadership Development mentions the following vital characteristics of such communities (Heartland, 2015). Although developed to allow rural communities to benchmark themselves, any community could utilize “the clues of successful communities” listed below.

Clue	Characteristics or Clues of a Successful Community	How would you rate Frisco? 0 None 1 Low 2 Med 3
1	Evidence of community pride ( <i>successful communities are often showplaces of care, attention, history, and heritage</i> )	
2	Emphasis on quality in business and community life ( <i>people believe that something worth doing is worth doing right</i> )	
3	Willingness to invest in the future ( <i>in addition to the brick-and-mortar investments, all decisions are made with an outlook on the future</i> )	
4	Participatory approach to community decision making ( <i>even the most powerful of opinion leaders seem to work toward building consensus</i> )	
5	Cooperative community spirit ( <i>the stress is on working together toward a common goal and the focus is on positive results</i> )	
6	Realistic appraisal of future opportunities ( <i>successful communities have learned how to build on strengths and minimize weaknesses</i> )	
7	Awareness of competitive positioning ( <i>local loyalty is emphasized, but thriving communities who know how their competitors are and position themselves accordingly</i> )	
8	Knowledge of the physical environment ( <i>relative location and available natural resources underscore decision-making</i> )	
9	Active economic development program ( <i>there is an organized, public/private approach to economic development</i> )	
10	Deliberate transition of power to a younger generation of leaders ( <i>people under 40 regularly hold key positions in civic and business affairs</i> )	
11	Celebration of diversity in leadership ( <i>women, minorities, youth, and newcomers are welcomed into leadership circles where their ideas are treated as opportunities</i> )	
12	Strong belief in and support of education ( <i>good schools are the norm and centers of community activity</i> )	

13	Problem-solving approach to providing health care ( <i>health care is considered essential, and smart strategies are in place for diverse methods of delivery</i> )	
14	Strong multi-generational family orientation ( <i>the definition of family is broad, and activities include younger as well as older generations</i> )	
15	Strong presence of traditional institutions that are integral to community life ( <i>churches, schools and service clubs are strong influences on community development and social activities</i> )	
16	Sound and well-maintained infrastructure ( <i>leaders work hard to maintain and improve streets, sidewalks, water systems, and sewage facilities</i> )	
17	Careful use of fiscal resources ( <i>frugality is a way of life and expenditures are considered investments in the future</i> )	
18	Sophisticated use of technology resources ( <i>leaders access information that is beyond the knowledge base available in the community</i> )	
19	Willingness to seek help from the outside ( <i>people seek outside help for community needs, and many compete for government grants and contracts for economic and social programs</i> )	
20	Conviction that, in the long run, you have to do it yourself ( <i>thriving rural communities believe their destiny is in their own hands – making their communities good places is a pro-active assignment, and they willingly accept it</i> )	

It is this writer’s opinion that the partnership that makes NTEC function, especially the existing staff’s interaction with NTEC residents and potential residents, adds a very important dimension to this checklist and NTEC elevates the overall score for the city of Frisco compared to if the City did not have the accelerator. For example, see #1, #5, #9, #14, and #20. In my visits to NTEC and with discussions with NTEC residents, there is indeed a sense of family between staff and staff, staff and residents, and resident and resident – the nurturing of ideas into business ideas in an effort to capture value (wealth) is impressive and is a source of community pride (#1) for Frisco. As further evidence, in a discussion with the owner of PhotoSculpt (“making memories tangible”) the owner mentioned how his business model was a bonding opportunity for him and his son – the business is a way for him and his son to spend time together (see #14 above) in an innovative and creative way while providing value to the customer.



Photo source: Retrieved on 9/18/2015 from <http://photosculpt.com/>

Although this report will focus on jobs associated with NTEC and the potential economic impact of those jobs on the north Texas economy, we should not forget other quality of life measures that NTEC

epitomizes – many of NTEC’s qualities and outcomes provide evidence of the 20 clues to vibrant and successful communities as published by the Heartland Center for Leadership Development.

**IV. OVERALL ECONOMY AND ECONOMIC CONDITION**

What is the overall economic climate that NTEC operates in? For the economic impact study a Collin County and a 5 county regional impact is estimated.

Table 4.1: Raw Numbers

	Population (2014)	Land Area Sq Miles	Persons / sq mile	One Way Commute Time
Collin	885,241	841.23	1,052	27.5 minutes
Dallas	2,518,638	871.28	2,891	26.0
Denton	753,363	878.43	858	27.4
Rockwall	87,809	127.04	691	30.8
Tarrant	1,945,360	863.61	2,253	26.0
5 County	6,190,411	3,582	1,728	27.5
Texas	26,956,958	261,231.71	103	25.0
USA	318,857,056	3,531,905.43	90	25.5

Source: State and County QuickFacts, The United States Census Bureau. Retrieved on 9/16/2015.

Table 4.2: Percentages and Variance

	Population	Land Area	Persons/sqmi	Commute Time
Collin	14%	23%	61%	0.0
Dallas	41%	24%	167%	-1.5
Denton	12%	25%	50%	-0.1
Rockwall	1%	4%	40%	3.3
Tarrant	31%	24%	130%	-1.5
5 County to TX	23%	1%	1675%	2.5

Collin County has 14% and 23% of the population and land area, respectively; while the commute time for Collin County residents is the same as the mean commute time for the 5 counties. While only occupying 1% of the Texas land area, the 5 counties possess 23% of the Texas population.

Table 4.3

	High School	BA	Veterans	Median Income	Poverty
Collin	93.4%	49.3%	42,843	\$82,762	7.8%
Dallas	77.4%	28.6%	106,414	\$49,481	19.1%
Denton	91.8%	40.5%	39,891	\$74,155	8.7%
Rockwall	91.2%	36.5%	5,062	\$86,119	5.9%
Tarrant	84.5%	29.5%	118,263	\$56,853	15.2%
5 county	87.7%	36.9%	312,473	\$69,874	11.3%
Texas	81.2%	26.7%	1,583,272	\$51,900	17.6%
USA	86.0%	28.8%	21,263,779	\$53,046	15.4%

Source: State and County QuickFacts, The United States Census Bureau. Retrieved on 9/16/2015.

In Collin County, 93.4% of persons age 25 and higher have a high school diploma compared to the 5 county average of 87.7%; 49.3% of persons age 25 and higher have a bachelor’s degree. In Collin County, 7.8% of the population is below the poverty level (2009-2013).

Table 4.4

	Private Nonfarm Establishments	Private Nonfarm Employment	Nonemployer Establishments	Building Permits
Collin	19,906	336,461	75,827	10,635
Dallas	62,501	1,322,022	210,881	14,360
Denton	12,517	182,916	59,107	3,565
Rockwall	1,885	20,809	8,134	965
Tarrant	38,782	729,252	151,025	8,985
5 county	135,591	2,591,460	504,974	38,510
Texas	547,190	9,663,567	2,039,732	166,982
USA	7,488,353	118,266,253	23,055,620	1,046,363

Source: State and County QuickFacts, The United States Census Bureau. Retrieved on 9/16/2015.

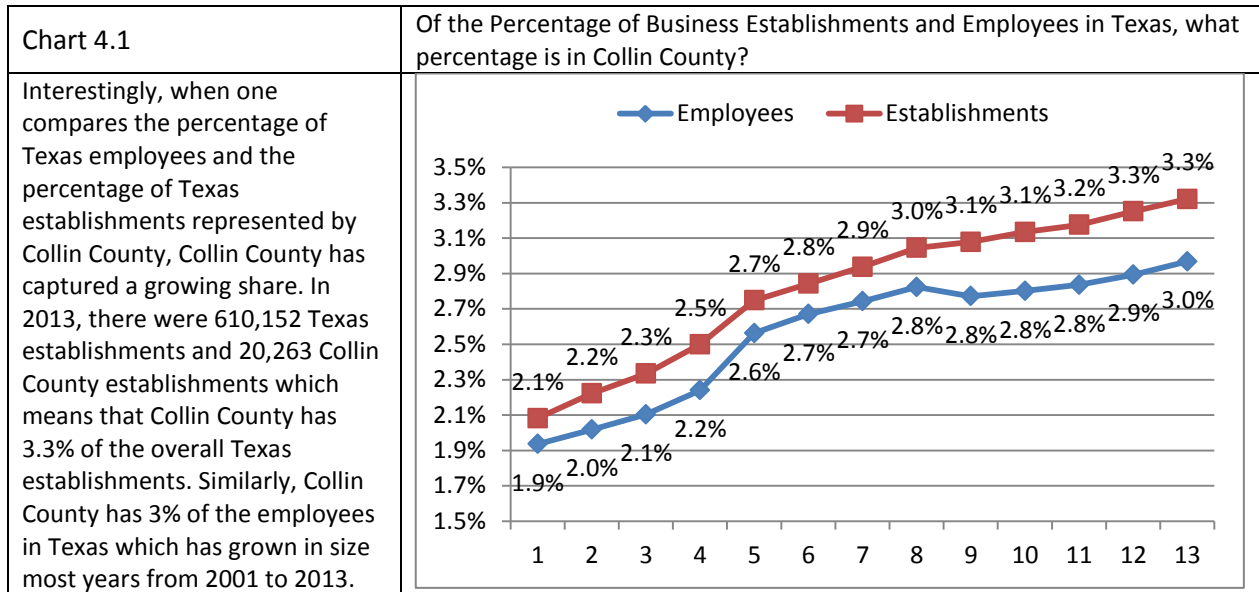
Table 4.5

	Private Nonfarm Establishments	Private Nonfarm Employment	Nonemployer Establishments	Building Permits
Collin	15%	13%	15%	28%
Dallas	46%	51%	42%	37%
Denton	9%	7%	12%	9%
Rockwall	1%	1%	2%	3%
Tarrant	29%	28%	30%	23%
5 CTY to TX	25%	27%	25%	23%

Source: State and County QuickFacts, The United States Census Bureau. Retrieved on 9/16/2015.

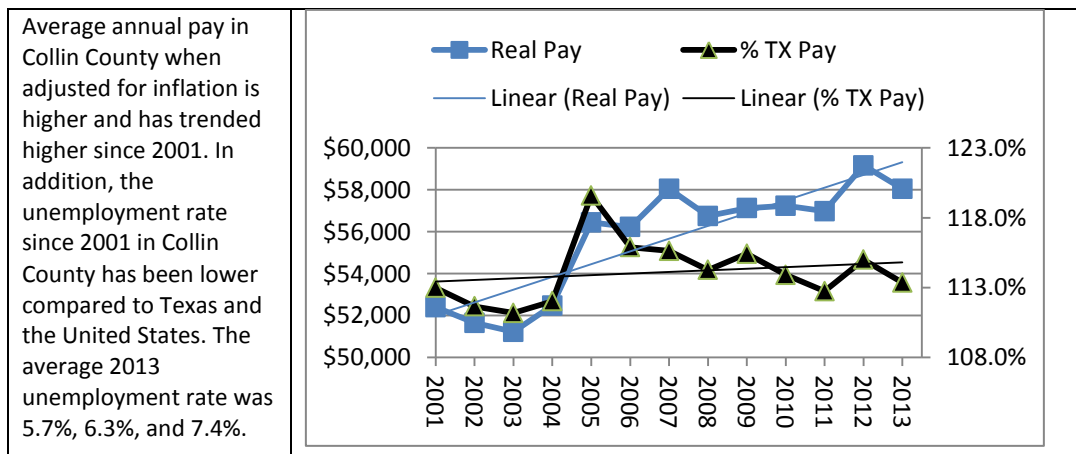
Collin County has 15% of the 5 County nonfarm establishments, 13% of the employees, 15% of nonemployer firms, and 28% of the recorded building permits. Similar to population, the 5 counties had about one quarter of the businesses and employees in the State.

The historical and current state of the economy in Collin County is strong in terms of both quantity and quality. From a quantity standpoint, the number of business establishments in 2001 was 10,284 and in 2013 was 20,263 while the number of employees in 2001 was 181,007 and in 2013 was 327,418 (Please note these numbers represent a point in time as a result of my analysis of the Collin County economy as a result of retrieving the data in December 2014 to produce the following calculations).



Regarding economic quality, Collin County seems to be growing over time as well. One way to measure quality is through real income in the County compared to the state of Texas. Collin County's annual pay for employees trends at about 114% of the state of Texas.

Chart 4.2



## V. ECONOMIC MODEL ANALYSIS

In order to conduct the economic impact of NTEC on the Collin County and regional economy, IMPLAN (IMPact analysis for PLANning) data and the IMPLAN online modeling package was utilized. NTEC provided NAICs codes of their resident firms and provided full time and part time employment numbers per firm as of September 2015.

Table 5.1

NAICS Code	Implan Sector	Base Industry	Employment
333314	272	Manufacturing	9.5
339113	380	Manufacturing	17.5
512110	423	Information	3.5
518210	430	Information	5.5
519130	432	Information	28
522320	434	Finance and Insurance	2
524210	438	Finance and Insurance	2
541110	447	Professional and Technical Services	5
541511	451	Professional and Technical Services	21
541512	452	Professional and Technical Services	6
5416XX	454	Professional and Technical Services	14
541820	457	Professional and Technical Services	1
561621	467	Administrative and Waste Services	17.5
621511	479	Healthcare and Social Assistance	80
			<b>212.5</b>

Two regions were built in IMPLAN – Collin County and a combined region representing Collin County, Dallas County, Denton County, Rockwall County, and Tarrant County. The following are the summary statistics of the economy.

Table 5.2

2013, IMPLAN 9/14/2015	USA	Texas	5 Counties	Collin
Gross Regional Product	\$16,688,149,561,355	\$1,415,032,633,366	\$376,587,058,187	\$46,827,522,773
Personal Income	\$14,081,240,000,000	\$1,151,869,000,000	\$290,766,500,000	\$48,389,660,000
Employment	182,645,331	15,396,816	3,966,490	508,853
# Industries	532	519	487	334
Population	316,128,800	26,448,190	6,060,694	854,778
Households	119,745,800	9,304,923	2,150,716	302,063
Average Household Income	\$117,593	\$123,791	\$135,195	\$160,197

Table 5.3

2013, % of USA by:	USA	Texas	5 Counties	Collin
Gross Regional Product	100%	8.5%	2.3%	0.3%
Personal Income	100%	8.2%	2.1%	0.3%
Employment	100%	8.4%	2.2%	0.3%
# Industries	100%	97.6%	91.5%	62.8%
Population	100%	8.4%	1.9%	0.3%
Households	100%	7.8%	1.8%	0.3%
Average Household Income	100%	105.3%	115.0%	136.2%

Table 5.4

2013, % of TX & 5 counties by:	5 Counties / TX	Collin / TX	Collin / 5 Counties
Gross Regional Product	26.6%	3.3%	12.4%
Personal Income	25.2%	4.2%	16.6%
Employment	25.8%	3.3%	12.8%
# Industries	93.8%	64.4%	68.6%
Population	22.9%	3.2%	14.1%
Households	23.1%	3.2%	14.0%
Average Household Income	109.2%	129.4%	118.5%

## VI. ECONOMIC MODEL RESULTS

Prior to viewing the results of the model, some definitions of terms used in the model report include:

- **Employment** – Employment represents jobs. NTEC provided the number of full time jobs and part time jobs for each firm and the respective NAICS code. The full time equivalent was calculated to use in the IMPLAN model which totaled 212.5.
- **Output** – Output “represents the value of industry production” (IMPLAN, 2015).
- **Labor Income** - “Labor Income is the estimate of all forms of employment income, including employee compensation (wages and benefits) and proprietor income” (IMPLAN, 2015)
- **Value Added** - Value Added is the estimate of the contribution to Gross Domestic Product (GDP) by the firms (or industry or sector) and represents “the difference between an industry's or an establishment's total output and the cost of its intermediate inputs” (IMPLAN, 2015).

The 212.5 full time equivalent jobs at NTEC through the multiplier effects utilized by IMPLAN results in the following yearly 2015 estimates for Collin County (impact is measured in 2015 jobs and 2015 dollars):

Table 6.1 – Collin County Scenario





Collin County	Direct	Indirect	Induced	Total
Employment	213	139	143	495
Output	\$55,195,146	\$19,714,255	\$18,873,424	\$93,782,825
Labor Income	\$23,006,296	\$8,160,962	\$6,515,535	\$37,682,793
Value Added	\$27,082,706	\$12,380,835	\$11,417,419	\$50,880,960

Table 6.2 – Collin, Dallas, Denton, Rockwall, and Tarrant Counties Scenario

5 Counties 2015	Direct	Indirect	Induced	Total
Employment	213	210	208	631
Output	\$55,216,263	\$31,934,604	\$29,936,525	\$117,087,392
Labor Income	\$23,019,690	\$13,052,799	\$10,901,786	\$46,974,275
Value Added	\$27,098,473	\$19,340,541	\$17,741,525	\$64,180,539

Regarding employment, the 213 NTEC jobs are associated with 139 indirect jobs. The indirect effect can be considered business to business transactions. A firm that locates at NTEC will spend money at other firms which affects the jobs in other industries. Indirect jobs are jobs that are needed to support business (the new NTEC firm) to business transactions (the new NTEC firm buys supplies from another firm). The induced effect of the initial 213 direct jobs is estimated to be 143 jobs. For example, as a result of the new NTEC firm buying supplies from another store, employees at the store earn income which is then used to spend at say, a Frisco RoughRiders baseball game.

In a summary table:

	Direct Effect	Indirect Effect	Induced Effect
Example using the firm, True Health	True Health has “x” number of employees at NTEC and is considered the initial change in the economy (212.5 initial jobs counting all the firms at NTEC in 2015).	True Health purchases goods and services from other vendors/businesses in their supply chain. These consist of business to business transactions and inter-industry transactions.	Expenditures generate income for the firm which flow into consumption. Employees are paid in the directly and indirectly affected industry sectors which get infused in the economy. The True Health and Office Depot employees may purchase gasoline and RoughRiders tickets.
			

In reflecting on earlier comments regarding benchmarking Frisco's business and economic climate with the 20 clues published by the Heartland Center for Leadership Development, one could use the IMPLAN model results in a similar fashion.

For the Collin County scenario, the following table takes the direct effect results from the IMPLAN model and divides by the number of employees which is 212.5.

Table 6.3

NTEC	Direct
Output / Employee	\$259,132
Labor Income / Employee	\$108,011
Value Added / Employee	\$127,149

The IMPLAN results imply that each worker provides \$259,132 of total production value to the firm. Is each firm at NTEC hitting this benchmark or are they above or below this number? Of course, if a firm is in Phase 1 and 2 of the Entrepreneurship and Economic Development Process then the firm is likely below the \$259,132 of output / employee contribution to the respective industry sector. By the way, IMPLAN allows one to see the results of each firm's results or each NAICS code industry results. For example, True Health executives could see what the average employee in Collin County in True Health's industry (NAICS code) contributes to output. If the firm's average contribution is below the Collin County average then this could indicate the competitor's have an advantage or perhaps the firm is still transitioning from a start-up to a growth firm and expects revenue to hit the books in a later quarter.

In addition to the entrepreneur using IMPLAN results, another interpretation of the numbers is from an economic development perspective. If, on average, NTEC brings in a firm and that firm produces an output per employee number, for example, of \$300,000 then this will cause the average to go up and improve the quality of the local economy. Similar to the RoughRiders signing a player and the new players batting average is higher than the team average, this marginal change will pull the team average up and vice versa. In general, local economies grow or decline based on the number of primary employers in the area. True Health seems to be a primary employer for Frisco. A primary employer is one who imports wealth into the community by securing customers from outside of the local economy. True Health likely contracts with customers outside of the Frisco area and dollars flow from outside Frisco into the Frisco economy. Without primary employers many of the retail businesses we see in communities would not exist. Suppose that in the next two years, NTEC has 30 new firms move in and just one of the firms becomes a growth or a gazelle company as illustrated in the Entrepreneurship and Economic Development Process chart, this could be viewed as a success especially if the firm graduates

and relocates within the local economy. According to IMPLAN, the average household income in Collin County is \$160,197. If the firm is able to pay its employees a wage such that the employee's household income is above the average in the County, then this will bring the average up which is a signal that the local economy is strengthening.

Another perspective at an individual household level and referencing one of Robert Kiyosaki's points in *Rich Dad Poor Dad*, a business could be viewed as a success if the business helps the household accrue real assets and as a result incrementally increasing wealth within the household. However, from an economic development macro perspective, we may see that a certain business could actually "hurt" the local economy because the income to the proprietor and employees is below the existing overall average. But, within the economics of the household the business income may be viewed as a "success" as the income may help the household reach a household income goal as well as an accumulation of assets such as capital equipment that can be used to generate future income.

In addition, one limitation of the IMPLAN results assume no opportunity cost such as what would the firms have earned if resources had been allocated to the next best alternative (opportunity cost) such as not starting the business and working for someone else?

## **VII. Conclusion**

In conclusion, a snapshot of the regional economy was provided which indicates a regional economy that is growing in size and in quality. Secondly, an analysis of results on the potential impact of NTEC on the regional economy was reported with interpretations of the numbers provided as well as a mention of limitations of the IMPLAN calculations and interpretations. Overall, NTEC enhances Frisco's stature in the regional economy and supports the Frisco EDC goal of providing the conduit for an "innovation culture through entrepreneurship." NTEC's outcomes and results help to produce both direct benefits in terms of jobs and spillover benefits onto the regional economy.

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