Case Study: Economic Innovation in Licking County, Ohio

By Mark Schaff, Labor Economist and Consultant, *Workenomics* Committee (at www.workenomics.com), April, 2013

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Executive Summary

(A) **From the invention of fiberglass insulation at the Owens-Corning research works in Newark, Ohio, and the development of the office copying machine at the Columbus Battelle research facility, to the IBM announcement early this year of the location of its international center for advanced data analytics in Columbus, the growth of the Licking County and the central Ohio economy resulted to a significant degree from economic innovation.**

(B) **"Economic growth in innovation economics is the end-product of knowledge (tacit vs. codified); regimes and policies allowing for entrepreneurship and innovation (i.e., R & D expenditures, permits, licenses); technological spillovers and externalities between collaborative firms; and systems of innovation that create innovative environments (i.e., clusters, agglomerations, metropolitan areas)."**

(C) At several industrial parks in Licking County, Ohio, innovative environments or clusters have been developed to spur and support innovation and economic growth. For example, the **"79/Seventy" advanced materials manufacturing cluster** (including silicon, quartz, polymers, steel, aluminum, ceramics, glass, wood, ag/bio, organics, food, fiberglass, and foam), is concentrated along the State Route 79 and the Interstate 70 corridor in Licking County.

(D) **Companies such as Bayer, Acuity, and Boeing opened new product development centers in the 79/Seventy advanced materials manufacturing corridor.**

(E) In support of this concentration of advanced materials manufacturing and innovation, **the Licking County Career-Technology Education Centers (C-TEC) developed the pre-employment, manufacturing certification training program.**

(F) The second, noteworthy example of an industrial park cluster in Licking County supporting economic innovation is the **New Albany cluster of manufacturers and packagers related to personal care, health, and beauty products**.

(G) **Businesses, located close to each other in the Licking County New Albany beauty park, encourage collaboration and quick development and manufacture of beauty industry-related products, thus supporting innovation through close coordination between retailer and related product manufacturer.**

(H) A third Licking County **cluster of economic innovation in the field of logistics is developing at the Etna Corporate Park**, with the recent decisions of Menlo Worldwide Logistics Company, Ascena Retail Group distribution facility, and the Speed FC distribution operations to locate and expand in the Licking County Etna industrial park.

(I) **The linkages between the administration of 1-year, 2-year, and 4-year training programs at the Career-Technology Education Centers (C-TEC) of Licking County, the Central Ohio Technical College (COTC), and the Ohio State University (OSU)/Newark Campus in Licking County represent a similar synergy on the training side, in support of the economic concentrations for innovation and growth on the business side.**

(J) **In addition to the innovative environments of economic clusters in the aforementioned Licking County business parks, economic innovation for growth is also driven by research and its commercialization. Central Ohio, including Licking County, is home to two of the largest and most important research institutions in the nation – the Battelle Memorial Institute and The Ohio State University (OSU) – both of which have their own technology transfer offices to facilitate the commercialization of their respective inventions**

(K) **Headquartered in central Ohio, the "Battelle Memorial Institute is the world's largest nonprofit research and development organization**, with over 20,000 employees at more than 100 locations globally."

(L) **Also located in central Ohio, the Ohio State University (OSU) "recognizes the value of strategic partnerships with business and industry in addressing our global challenges." The OSU "current national ranking of second in industry-sponsored research attests to this," as does the OSU "active participation in the State of Ohio's Third Frontier Program, an initiative to grow Ohio's expertise in targeted high-tech economic sectors**."

(M) The OSU Technology Commercialization Office (TCO) has the operating philosophy that, "Great economies are built around great universities. They attract capital, entrepreneurs, industry and great minds." Consequently, the Technology Commercialization Office of OSU operates "as a 'cradle to grave' manager for OSU inventions," including developing commercialization opportunities through marketing efforts, licensing, and developing economic partners.

(N) Licking County offers businesses the advantages of "proximity to innovation and proximity to users," that is, "the gains from co-location."

Economic Innovation, History and Definition

Licking County and central Ohio have a distinguished, modern history of economic innovation.[1] **From the invention of commercial fiberglass insulation at the Owens-Corning pilot production works in Newark, Ohio,[2] and the development of the office copying machine at the Columbus Battelle research facility,[3] to the IBM announcement early this year of the location of its international center for advanced data analytics in Columbus,[4] the growth of the Licking County and the central Ohio economy resulted to a significant degree from economic innovation.**

The economics of innovation focuses upon entrepreneurship, technological change, and research institutions to stimulate economic growth.[5] One method to describe innovation economics is through contrast with neoclassical economics, as shown below.[6]

"Economic thought	Focus	Growth	Context
Neoclassical	Market price signals in using scarce resources	Productive factor accumulation (capital, labor)	Individuals and firms behaving in vacuum
Innovation[7]	Innovative capacity to create more effective processes, products, business models	Knowledge/technology (R&D, patents)	Institutions of research, govern-ment, society"[8]

[1] The Columbus Metropolitan Statistical Area (MSA) includes the counties of Delaware, Fairfield, Franklin, **Licking**, Madison, Morrow, Pickaway and Union counties.

[2] See Hall of Fame Inventor Profile at http://www.invent.org/hall_of_fame/305.html; plus The Licking County Genealogical Society, "Owens-Corning Fiberglas – Newark Plant," *Licking County, Ohio 1982*, Vol. One, p. 91.

[3] Battelle The Business of Innovation, "Battelle Background Information," at www.battelle.org/docs/default-documentlibrary/battelle_background_information_115.pdf?sfvrsn=0.

[4] Williams, Mark, The *Columbus Dispatch* Newspaper, "Ohio tax credits to help companies add 900 area jobs," Dec. 11, 2012.

[5] "Innovation Economics," Wikipedia, at www.en.wikipedia.org/wiki/Innovation_economics.

[6] *Ibid*..

[7] Innovation economics grows largely from the seminal work of Joseph A. Schumpeter, *Capitalism, Socialism, and Democracy* (6th edition), pp. 81-84.

[8] "Innovation Economics," *op.cit.*, at www.en.wikipedia.org/wiki/Innovation_economics.

In terms of practical applications, the critical significance of innovation economics for growth lies in the belief "that what primarily drives economic growth in today's knowledge-based economy is not capital accumulation, . . . , but innovative capacity spurred by appropriable knowledge and technological externalities. **Economic growth in innovation economics is the end-product of knowledge (tacit vs. codified); regimes and policies allowing for entrepreneurship and innovation (i.e., R & D expenditures, permits, licenses); technological spillovers and externalities between collaborative firms; and systems of innovation that create innovative environments (i.e., clusters, agglomerations, metropolitan areas)."**[9]

Clusters for Economic Innovation in Licking County

At several industrial parks in Licking County, Ohio, innovative environments or clusters have been developed to spur and support innovation and economic growth. For example, the **"79/Seventy" advanced materials manufacturing cluster** (including silicon, quartz, polymers, steel, aluminum, ceramics, glass, wood, ag/bio, organics, food, fiberglass, and foam), is concentrated along the State Route 79 and the Interstate 70 corridor in Licking County.[10] As noted in the 79/Seventy Advanced Materials Corridor website, this economic concentration includes companies with unique advanced materials manufacturing requirements, including the only bismuth-annealed steel fabrication plant in North America and the last hot rolled aluminum factory internationally.[11] In addition, **companies such as Bayer, Acuity, and Boeing opened new product development centers in the 79/Seventy corridor.[12] In support of this concentration of advanced materials manufacturing and innovation, the Licking County Career-Technology Education Centers (C-TEC) developed the pre-employment, manufacturing certification training program.[13]**

[9] *Ibid.*
[10] See the **79|Seventy Advanced Materials Corridor website at** www.79seventy.com/?page_id=2**.**
[11] *Ibid.*
[12] *Ibid.*
[13] C-TEC Adult Education Course Catalogue, *Education That Works*, January-June, 2013, pp. 4; and Platt, Rick, *Fact Sheet Advanced Materials*, Heath-Newark-Licking Port Authority, Feb. 11, 2013.

79/Seventy Advanced Manufacturing Industrial Parks in Licking County, Ohio:

Source: 79/Seventy Website at www.79seventy.com.

The second, noteworthy example of an industrial park cluster in Licking County supporting economic innovation is the **New Albany cluster of manufacturers and packagers related to personal care, health, and beauty products**.[14] The Limited Brands retail corporation helped to establish a focused industrial park in New Albany for manufacturers and packaging firms of health-related and beauty products for the Limited Brands and other companies, with the supply chain firms in one industrial park to reduce costs and speed product time to market.[15] Hence, **the following firms, located close to each other in the Licking County New Albany beauty park, encourage collaboration and quick development and manufacture of beauty industry-related products, thus supporting innovation through close coordination between retailer and related product manufacturer.**[16]

[14] Wartenberg, Steve, "1.4 million-square-foot park in New Albany unites the assembly process for beauty supplies," *The Columbus Dispatch* Newspaper, March 25, 2012.
[15] *Ibid.*
[16] Ibid.

New Albany Personal Care, Health, and Beauty Park in Licking County, Ohio:

Personal Care, Health and Beauty Park

COMPANY	HEADQUARTERS	PRODUCTS	BUILDING SIZE (SQ. FEET)	ON-SITE EMPLOYEES
1. Accel	New Albany	Packaging, distribution	510,000	400
2. Alene Candles	Milford, N.H.	Candles, home-fragrance products	300,000	135
3. Anomatic	Newark, Ohio	Anodized aluminum packaging	83,000	185
4. Axium	Mississauga, Ontario	Plastic containers	110,000	165
5. Jeyes	Cambridge, England	Household cleaning, home fragrance	300,000	150
6. Knowlton Development	Knowlton, Quebec	Shower gels, lotions, soap, cosmetics, toiletries	200,000	250
7. Sonoco	Hartsville, S.C.	Consumer, industrial, protective packaging	120,000	60
8. Vee Pak	Countryside, Ill.	Labels, personal-care products	105,000	120

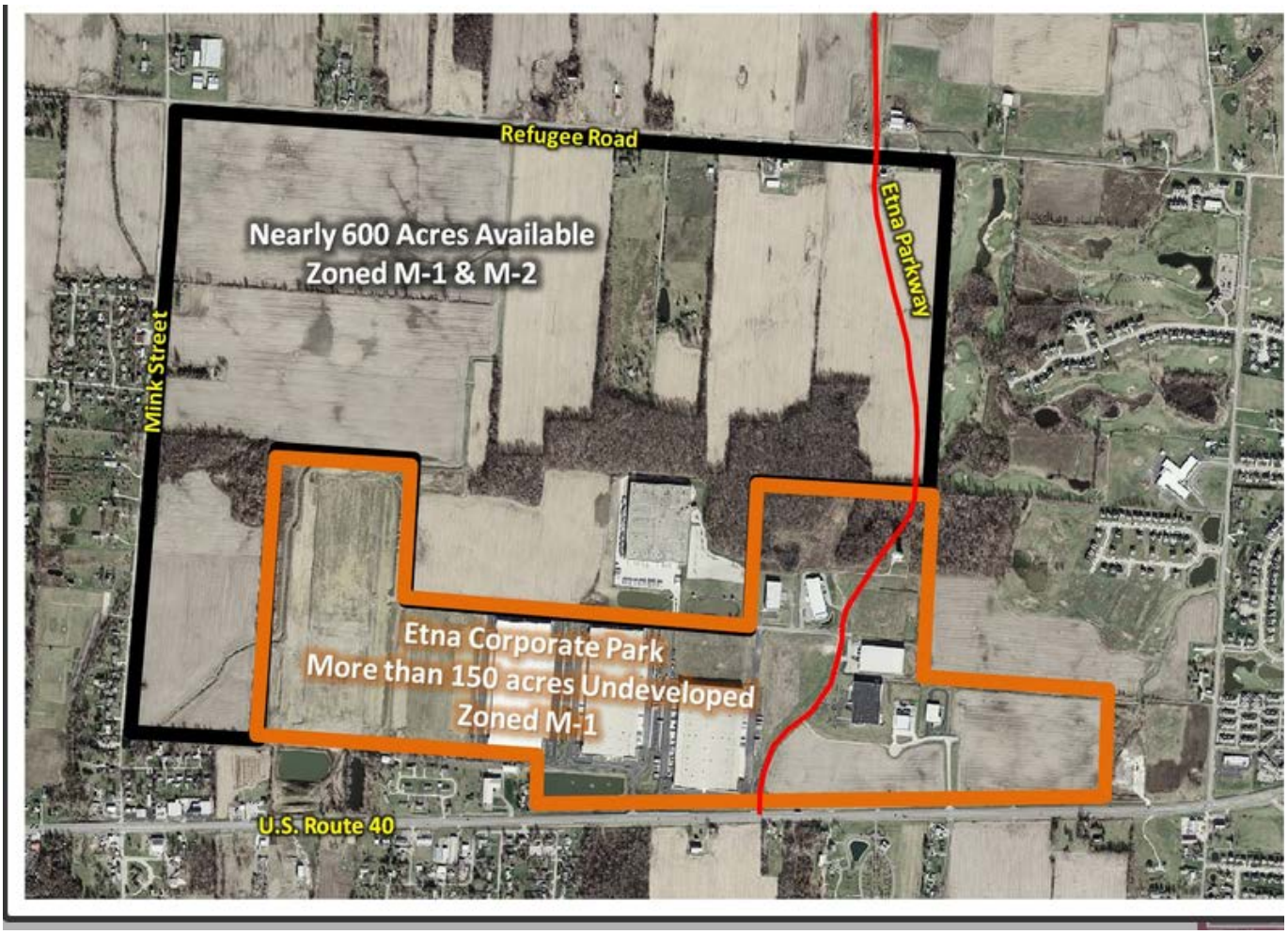
Sources: New Albany Co., company websites

THE COLUMBUS DISPATCH

Source: *The Columbus Dispatch* Newspaper, March 25, 2012.

A third Licking County **cluster of economic innovation in the field of logistics is developing at the Etna Corporate Park**, with the recent decisions of Menlo Worldwide Logistics Company, Ascena Retail Group distribution facility, and the Speed FC distribution operations to locate and expand in the Licking County Etna industrial park.

<u>Etna Corporate Logistics Park in Licking County, Ohio</u>:



Source: Etna Township Website, Development Section, at www.etnatownship.com/development.html.

In each case of the clusters of economic innovation, the concentration of complementary firms in the same industrial parks facilitates cooperation and accelerates product development and delivery time to market, especially when workforce development programs support these economic concentrations. For this reason, **the linkages between the administration of 1-year, 2-year, and 4-year training programs at the Career-Technology Education Centers (C-TEC) of Licking County, the Central Ohio Technical College (COTC), and the Ohio State University (OSU)/Newark Campus in Licking County represent a similar synergy on the training side, in support of the economic concentrations for innovation and growth on the business side.**

Leading International Centers for Applied Research and Economic Innovation Located in Central Ohio

In addition to the innovative environments of economic clusters in the aforementioned Licking County business parks, economic innovation for growth is also driven by research and its commercialization. Central Ohio, including Licking County, is home to two of the largest and most important research institutions in the nation – the Battelle Memorial Institute and The Ohio State University (OSU) – both of which have their own technology transfer offices to facilitate the commercialization of their respective inventions.[17]

The Battelle Memorial Institute describes its focus in the following terms:

> **Battelle Memorial Institute is the world's largest nonprofit research and development organization**, with over 20,000 employees at more than 100 locations globally. Based in Columbus, Ohio, Battelle is a 501(c)(3) charitable trust founded in 1929 on industrialist Gordon Battelle's vision that business and scientific interests can go hand-in-hand as forces for positive change. Today, Battelle manages the world's leading national laboratories and maintains a contract research portfolio spanning National Security; Health & Life Sciences; Energy, Environment & Material Sciences; and Education.[18]

The research impact of The Ohio State University (OSU) upon economic innovation is similarly prodigious, of a magnitude in the same order as the Battelle Memorial Institute. As explained by OSU:

> **Ohio State also recognizes the value of strategic partnerships with business and industry in addressing our global challenges. Our current national ranking of second in industry-sponsored research attests to this, as does our active participation in the State of Ohio's Third Frontier Program, an initiative to grow Ohio's expertise in targeted high-tech economic sectors**. The university is actively engaged in more than 340 industry partnerships

[17] See the Battelle Memorial Institute website at www.battelle.org; and the Ohio State University Technology Commercialization Office (TCO) at www.tco.osu.edu.
[18] See the Battelle Memorial Institute website at www.battelle.org/about-us.

> across Ohio with companies that are producing new cures for diseases, revolutionizing information technology, and transforming the way we live on almost every level. Ohio State has more than 760 active partnerships with industries around the nation and the world, in such critical areas as conversion of biomass to alternative energy and the creation of nanomaterials for novel implantable medical devices.[19]

Furthermore, **the OSU Technology Commercialization Office (TCO) has the operating philosophy that, "Great economies are built around great universities. They attract capital, entrepreneurs, industry and great minds."[20] Consequently, the TCO of The Ohio State University operates "as a 'cradle to grave' manager for OSU inventions,"[21] including developing commercialization opportunities through marketing efforts, licensing, and developing economic partners.[22]**

Conclusion

Innovation economics describes well much of the economy and recent economic growth of Licking County and the Columbus Metropolitan Statistical Area (MSA), which includes Licking County. Central Ohio offers all of the major attributes of a knowledge-based, regional economy, including a history of recent, major economic inventions and developments (e.g., fiberglass, xerography, and data analytics). Licking County is developing and expanding clusters of economic innovation, i.e., the Licking County industrial park concentrations of advanced manufacturing firms at the 79/seventy industrial parks; the personal care, health, and beauty-related businesses at the New Albany industrial park; and the logistics and distribution centers at the Etna Corporate Park. Furthermore, research and development activities in Central Ohio are carried out on a prodigious scale by the international research institutions of the Battelle Memorial Institute and the Ohio State University (OSU). These research efforts become commercialization efforts and new businesses through the technology commercialization offices of both Battelle and OSU. Hence, **Licking County and the Columbus MSA have demonstrated the capacity to meet all of the prerequisites of innovation economics – that is, (1) demonstrated innovative capacity to create more effective processes, products, and business models; (2) successful research and development efforts reflected in large research and development funding levels, numbers of research projects, and resulting patents; and (3) significant, international institutions of research such as The Ohio State University and**

[19] The Ohio State University Office of Research, "The Ohio State University: Leading Innovation and Discovery with World-Class Research Programs," at www.research.osu.edu/osu-research/profile.
[20] The Ohio State University (OSU), Technology Commercialization Office (TCO) at www.tco.osu.edu.
[21] *Ibid.*
[22] *Ibid.*

the Battelle Memorial Institute.[23] Licking County offers businesses the advantages of "proximity to innovation and proximity to users,"[24] that is, "the gains from co-location."[25]

[23] "Innovation Economics," Wikipedia, at www.en.wikipedia.org/wiki/Innovation_economics.

[24] *A Preview of the MIT Production in the Innovation Economy Report*, Feb. 22, 2013, Massachusetts Institute of Technology, p. 30, at www.web.mit.edu/press/images/documents/pie-report.pdf.

[25] *Ibid.*