

Workforce Analysis of the Optics & Imaging Cluster in the Finger Lakes Economic Development District September 2000

Introduction

Industry clusters are generally defined as interrelated industries and firms that have similar operational, technical, labor, and other resource needs and produce goods or services that may compete with or have strong alliances to each other and are concentrated geographically. Empire State Development Corporation (ESD), New York State's economic development agency, has used a cluster strategy to focus efforts on firms that interact with each other based on buyer-supplier relationships, shared technology, perceived membership in a common set of industries, and/or (as in this case) a common workforce in the State's economic development districts (EDDs). The clusters identified throughout New York State are "basic" or "traded"; that is these groups of industries as a whole export goods and services bringing out-of-area spending to an EDD.

Through a grant from the US Economic Development Administration, ESD and their consultant Regional Technology Strategies, Inc. (RTS) collaborated with the New York State Association of Regional Councils (NYSARC) to administer a survey requesting information on workforce development trends, issues, and priorities in the primary clusters of the State's EDDs. For the Genesee/Finger Lakes Region, the optics and imaging cluster was chosen given the high location quotient (LQ)¹ of firms engaged in these industries in the EDD.

The following analysis includes a brief discussion of the survey methodology used to gather information on the cluster's workforce, the results of the returned surveys, and significant trends or priorities identified through the survey responses. For a full report on workforce and training trends (including the survey responses and further quantitative and qualitative analysis) in the optics and imaging cluster in the Finger Lakes EDD and other clusters throughout New York State refer to RTS's *Building Skilled Workforces for New York's Regional Economies*.

Methodology

The Genesee/Finger Lakes Regional Planning Council (G/FLRPC) sent a three-page survey containing fourteen questions on employment and training to firms in the optics and imaging cluster as identified by ESD and received 21 completed surveys. The individual industries that make up the optics and imaging cluster are presented along with their corresponding Standard Industrial Classification (SIC) code in Table 1.

¹ Location quotients are coefficients used to determine the amount of representation a particular industry or set of industries has in a region. Essentially, location quotients are the ratio of a variable (usually jobs) in an industry against the total number of the variable in an area compared to ratio of the same variable for a reference area (usually the nation or a state). A location quotient above one (1) represents a higher representation of a particular industry or set of industries in the region compared to the reference area.

The survey's questions included the establishment's number of employees, educational attainment of the workforce, shortage of employees by type of skills, percent of employees hired locally and from other labor markets, workforce skill levels, future skills requirements, and training expenditures, sources, and willingness to invest in training. A copy of the ESD-NYSARC survey is provided in its entirety in Appendix A at the conclusion of this report.

Table 1

Industries Included in the Optics & Imaging Cluster in the Finger Lakes EDD	
<i>SIC Code</i>	<i>Industry Description</i>
357	Computer and Office Equipment
366	Communications Equipment
367	Electronic Components and Accessories
3695	Magnetic and Optical Recording Media
381	Search, Detection, Navigation, Guidance, Aeronautical, and Nautical Systems, Instruments, and Equipment
3825	Instruments for Measuring and Testing Electricity and Electrical Signals
3827	Optical Instruments and Lenses
385	Ophthalmic Goods
386	Photographic Equipment and Supplies

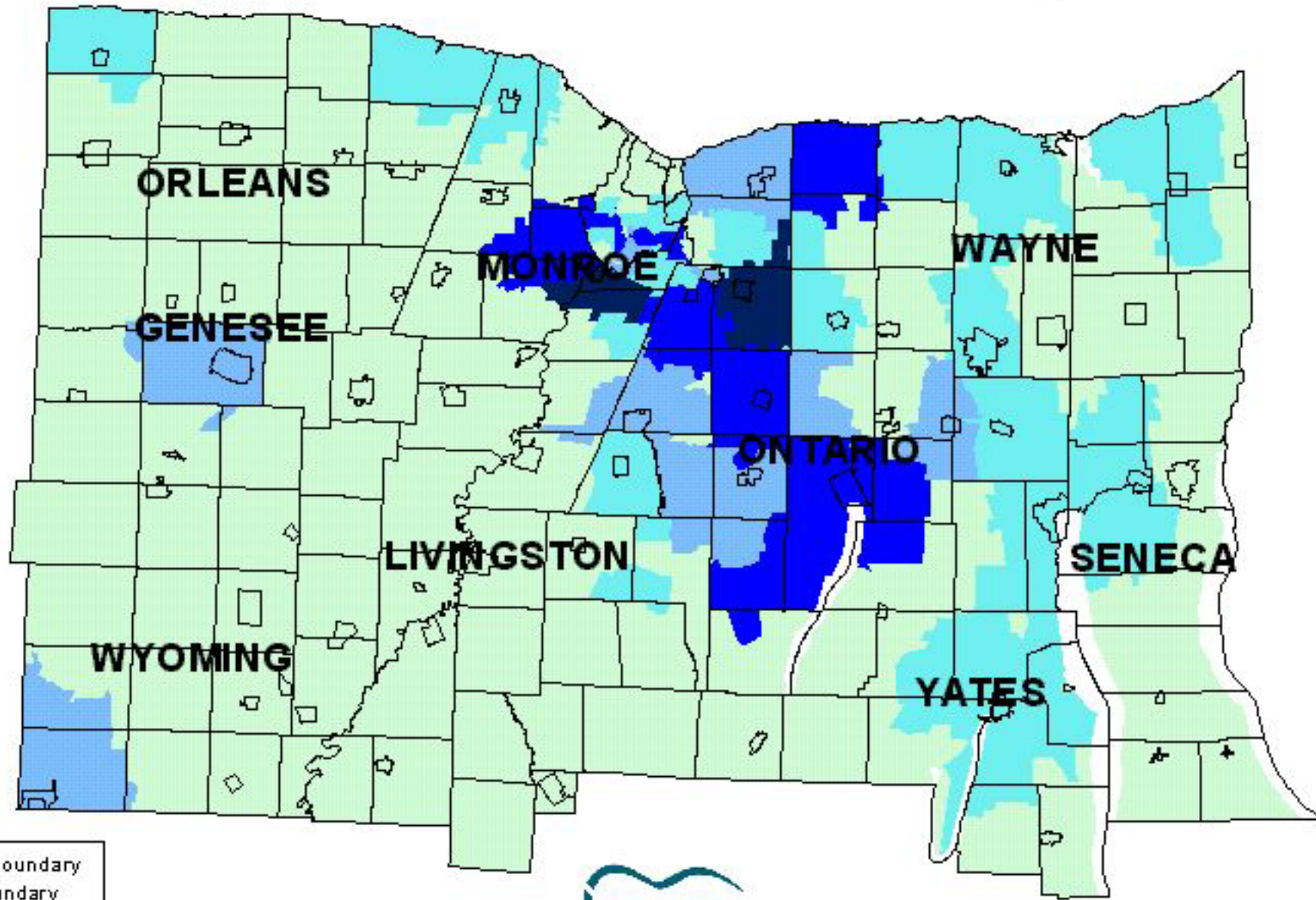
Source: Empire State Development, 1996.

The returned surveys were then recorded and tabulated in total as well as by number of employees to gain insights into the associations between the size of the establishment and current and future workforce needs, willingness to invest in training, and familiarity with training providers.

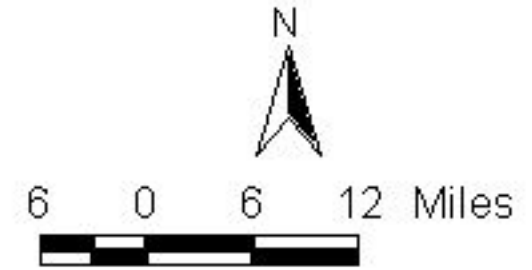
It should be noted that all but two (90%) of the responses were from optics and imaging firms located in Monroe County. Based on the G/FLRPC/Rochester Business Journal's *Rochester-Finger Lakes Region 1999 Directory of Manufacturers*, there were 85 establishments in the nine-county EDD (Genesee, Livingston, Monroe, Ontario, Orleans, Seneca, Wayne, Wyoming, and Yates) having SIC codes matching those in Table 1. Of those eighty-five establishments, sixty percent (52 firms) were located in Monroe County. The only other county with more than ten optics and imaging firms was Ontario County with 15 (18%). Map 1 on the following page, presents the number of optics and imaging firms by zip code in the Genesee/Finger Lakes Region (EDD).

Map 1

Optics and Imaging Firms by Zip Code in the Finger Lakes EDD - February 2000



□ Municipal Boundary
 □ County Boundary
 Number of Optics and Imaging Firms by Zip Code
 0
 1
 2
 3 - 4
 5 - 6



Source: G/FLRPC & Rochester Business Journal, February 2000.
 NYS Dept. of Transportation, February 1998.
 Geographic Data Technology, Inc., September 1998.

While the optics and imaging cluster is heavily concentrated within Monroe County, the lack of responses from firms in the other counties of the EDD should be taken into account. The skills required by establishments in the optics and imaging cluster will be industry-specific with minor variances due to firm-specific procedures, production processes, and cultures. However, the ability to attract employees from the local or regional labor market and training expenses and providers may differ significantly due to location and this will be understated based on the available data.

Analysis

Two-thirds of the establishments returning surveys (14 firms) have between 10 and 150 employees with an equal number (seven) of firms with 10 to 50 employees and 51 to 150 employees. Only two respondents employ less than 10 persons and the same was true for those with over 250 employees. The remaining three survey respondents employ between 151 and 250 workers. For the purposes of this analysis the firms are categorized as follows:

- ❑ Less than 10 employees – Small
- ❑ Between 10 and 50 employees – Small-to-Medium
- ❑ Between 51 and 150 employees – Medium
- ❑ Between 151 employees and 250 employees – Medium-to-Large
- ❑ Over 250 employees - Large

Just over half of the workers employed by the survey respondents have only a high school degree and nearly 30% have a bachelor's degree (BA or BS) or higher. However, in the small and small-to-medium size firms over half of all employees have completed some college level work. The two small establishments that responded reported that 55% of their workforce has an associate's degree or higher: the highest percentage of any size category. Conversely, over 75% of employees in the medium size firms have only a high school diploma.

When questioned on difficulty in finding employees with certain skills levels, the answers varied according to establishment size. Firms were asked to assign a score between one (very low) and five (very high) to the degree that shortages in 1.) basic skills, 2.) information technology (IT) skills, 3.) non-IT production skills, and 4.) the availability of scientists, engineers, and managers limited their business success. Across all four categories, the two small firms reported the lowest degree of difficulty in finding employees with the necessary skills (1.85). The medium-to-large firms expressed the greatest difficulty with an average of 3.5 mainly due to a 4.7 score in recruiting and hiring scientists, engineers, and managers.

The vast majority of workers employed in the EDD's optics and imaging cluster are from the local labor market. Across all firms in the cluster, 99.5% of low-skilled employees, 97.8% of medium-skilled employees, and 84% of high-skilled employees were hired from within the local labor market. The majority of those hired from outside the local