

White Paper

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The IES Role in Job Creation

By Gray Rinehart

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Gray Rinehart is a staff member of the Industrial Extension Service and the author of over a dozen articles, essays, and papers, as well as one book, *Quality Education: Applying the Philosophy of Dr. W. Edwards Deming to Transform the Educational System*.

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The Industrial Extension Service (IES), the outreach function of North Carolina State University's College of Engineering, works with companies to improve their operations, their physical plants, and their products, and places a premium on helping North Carolina companies retain jobs and create new and better jobs. IES experts help businesses large and small create and retain jobs by improving quality and productivity; implementing or strengthening safety, environmental protection, and energy management programs; and enabling top-line growth. Since 1999, IES clients reported saving or creating nearly 9700 jobs as a result of IES programs.

IES is the North Carolina home for the national Manufacturing Extension Partnership (MEP), and with its MEP partners--the Polymers Center for Excellence in Charlotte and the Hosiery Technology Center in Hickory--focuses much of its attention on helping small- and medium-sized manufacturers. Under the MEP program, 21% of IES manufacturing clients over the last five years reported the economic impact--including job creation and retention--of IES activities to the National Institute of Science and Technology (NIST). The survey results are therefore conservative estimates of IES impacts, especially considering that mineral industry clients served by NC State's Minerals Research Laboratory (MRL) in Asheville are not surveyed, and IES assists many non-manufacturing industries, healthcare providers, and government offices that are not covered under the national MEP charter.

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The NIST surveys ask manufacturing clients to assess the impacts of IES services in terms of improved sales, equipment investments, cost savings, and jobs. NIST conducts surveys one to two years after an IES program wraps up, so that the clients may report actual outcomes and not predictions (optimistic or pessimistic) of possible outcomes. The survey results are thus a lagging indicator of IES efforts, but they provide a starting point for considering IES contributions to the state economy--including contributions to employment.

Since 2000, clients credited IES with saving or creating 8801 jobs, as shown in Figure 1. Client surveys indicated that IES efforts helped them create 3142 new jobs and retain 5659 existing jobs; i.e., the improved client operations and work environments permitted those clients to either hire that many new people or to avoid that many layoffs.

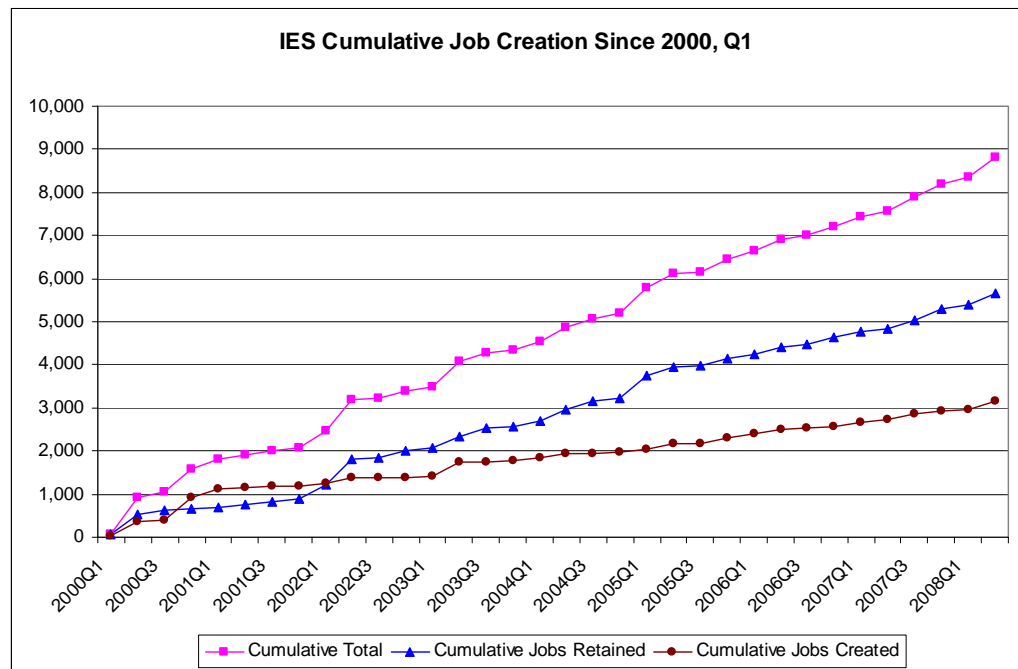


Figure 1. IES Job Creation as Measured by NIST Surveys, 1st Quarter 2000 to Present. MRL and Technology Incubator numbers are not included, nor are non-manufacturing figures.

In addition to the 8800 NIST-reported jobs, the NC State Technology Incubator--an IES-managed facility that provides support, office space, and laboratory space to start-up companies--helped create jobs that were not reflected in the NIST survey results. A 2008 study by the Research Triangle Institute found that companies nurtured in the Technology Incubator created 894 jobs over the eight-year period of 1999 to 2007. As mentioned above, the NIST surveys do not reach every client served by IES, so a complete total of the number of jobs created or retained by IES is impossible to calculate; however, the total of known job impacts since 1999 is 9695.

Consider the case of Oracle Packaging of Wilmington, makers of a diverse range of flexible packaging services including dairy product containers, gum wrappers, beverage cartons and more. When Oracle reported economic impact of \$22 million in late 2006, the tally included 100 jobs saved or retained. A previous IES effort two years earlier had enabled Oracle to save 30 jobs and post an economic impact of \$5 million. IES helped Oracle implement lean manufacturing techniques which eliminated wasted time and efforts in key processes, and Oracle re-invested the savings from their increased efficiencies and expanded their business by purchasing a fifth press. “With the cost savings we experienced through lean, the purchase of a new \$8 million press was justifiable,” said James Hummer, director of manufacturing services.

The Oracle example--30 jobs created or saved by one project and 100 more two years later--illustrates the variable nature of job creation results. IES job creation results have never been steady, as shown in Figure 2, but they have been consistently positive.

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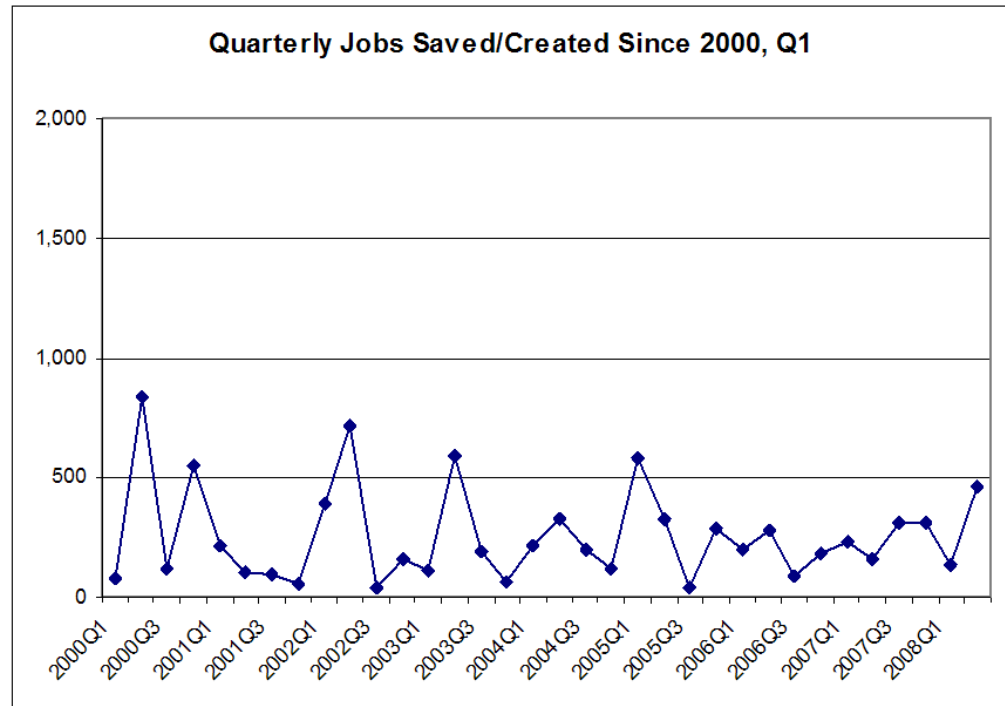


Figure 2. IES Job Creation as Measured by NIST Surveys, Quarter by Quarter. MRL and Technology Incubator numbers are not included, nor are non-manufacturing figures.

Another recent example of IES job creation results is Hickory Chair, a manufacturer of fine customized and designer furniture. Faced with the death of their company president and mounting overseas competition, they began an in-depth improvement program--including the home-grown EDGE (Employees Dedicated to Growth and Excellence) system--that saved their company from extinction.¹ Along the way, Hickory Chair turned to IES for additional help applying lean manufacturing techniques on their factory floor. IES worked with Hickory Chair over a period of several years as they improved their operations and, as Oracle Packaging did, Hickory Chair used their streamlined operations to save jobs. NIST surveyed Hickory Chair three times between 2003 and 2007, during which they reported over \$18.3 million in economic impact, including 140 jobs created or saved: 20 in the first quarter of 2003, 50 in the fourth quarter of 2005, and 70 in the third quarter of 2007.

¹ See Deborah Porto and Michael Smith, "Re-Making Furniture Making at Hickory Chair Company," *Target*, Volume 22, Number 1, 2007, pp. 16-34.

Conclusion

IES helps businesses improve their operations, products, and facilities, and create and retain well-paying (manufacturing wages in 2005 were 8th among the state's 18 industrial sectors), productive jobs for North Carolina citizens. On NIST surveys of the economic impact of IES programs, some clients reported hundreds of jobs created or saved, some reported dozens, and some only a few--but each one is important, and not only to the individuals affected. To small- or medium-sized companies, saving a dozen jobs can be as significant as a larger company saving a hundred. To small communities in tight economic times, creating a handful of new jobs can be vital. IES will continue to assist North Carolina businesses as a partner in prosperity, to keep the state economy strong and North Carolinians employed in meaningful work.

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White Paper Series

The Industrial Extension Service periodically produces white papers on topics of interest to our clients and the general public. Suggestions for additional white papers are always welcome.

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IES is the outreach function of North Carolina State University's College of Engineering. We help new businesses grow and good businesses get better. We work with industries from the coast to the mountains, from 1,000 feet underground to 30,000 feet up, and we deliver results in quality, productivity, safety, environmental protection, energy management, and top-line growth. In 2007, working with IES typically offered a return on investment of \$13 for every dollar spent by our client companies. IES ... We Solve Problems.