

**The Changing Structure of the Telecommunications Industry in
New Jersey**

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December 14, 2004

Paper presented at *The Future of the Telecommunications Industry in New Jersey*,
December 14, 2004, New Brunswick, NJ.

I. Introduction

Over the past few decades, telecommunications has played a major role in enhancing the operation of businesses and the lives of individuals across the United States. From cellular and paging services to accessibility to the internet, from cable television to leading-edge software, innovations in the telecommunications industry have changed, and continue to revolutionize, life in the United States. As a result, companies are changing the ways they carry out their business and people are adapting their lives.

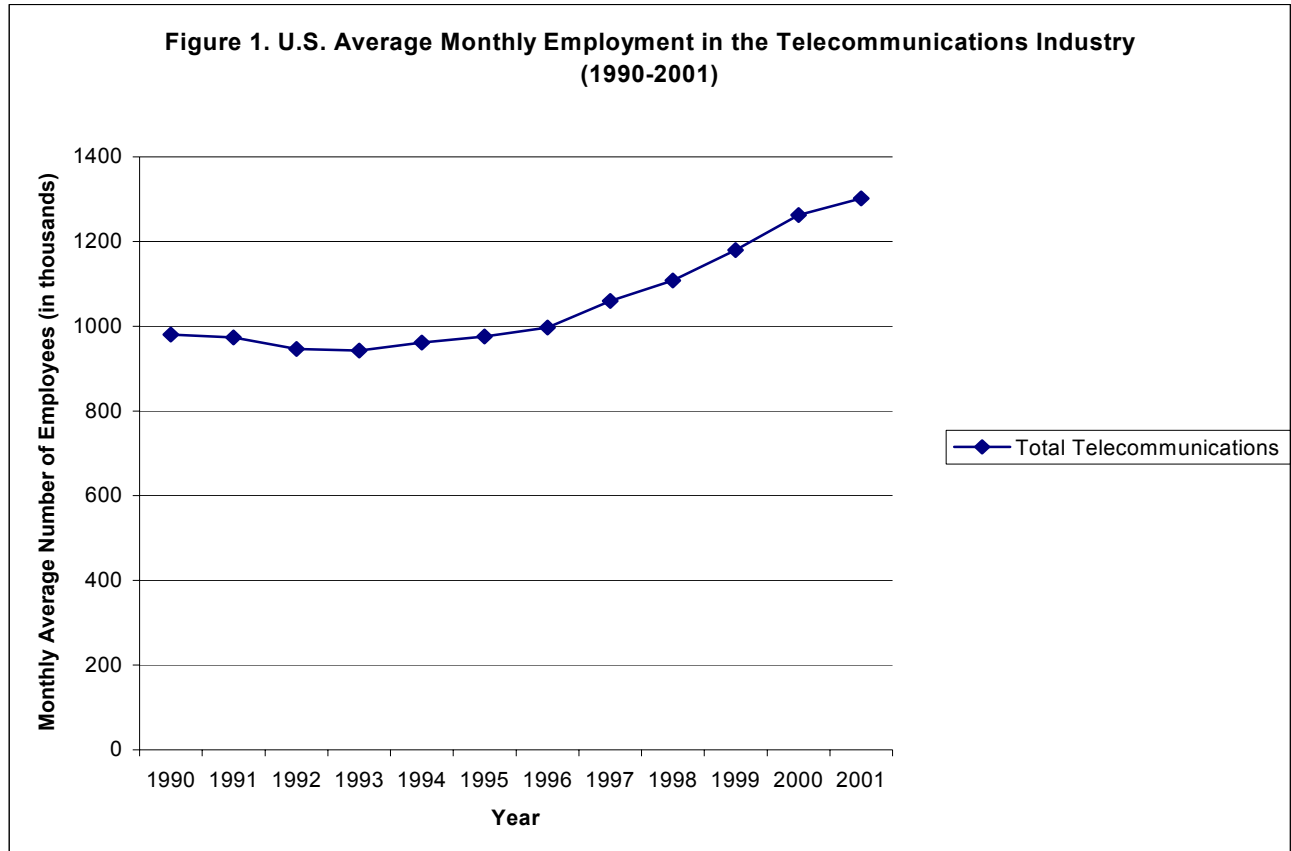
For some time, the telecommunications industry thrived throughout the nation, employing thousands of workers and making great use of the skills of talented professionals. But, then, a series of events combined to severely affect the industry: the 2001 recession, the bust of the dotcoms, rapid technological changes, and an uncertain regulatory environment. Subsequently, many telecommunication companies began laying off large numbers of workers, plunging employment nearly to levels last seen at the start of the telecommunications boom in the mid-1990s.

However, the tide seems to be changing. Job losses in the telecommunications industry in the United States have begun to slow down and hiring and job openings have risen, albeit slightly. Furthermore, new cutting-edge technologies offer promise that the industry will continue to rebound as it evolves to incorporate these new technologies.

This paper explores the ever-changing structure of the telecommunications industry, both in the United States and in New Jersey. First, we look at the genesis of the telecommunications boom during the period from 1990 to 2001. Then, we look at the downturn in the telecommunications industry at the start of the new millennium as the industry experienced firsthand the impact of the recession and the dotcom bust. Next, we examine the current state of the telecommunications industry in the United States and in New Jersey. We specifically look at shifts in the industry, both in relation to the nation's economic struggles and to recent advances in technology. Finally, we summarize our findings and offer a glimpse into the role that New Jersey can play as the industry continues to rebound and reshape itself.

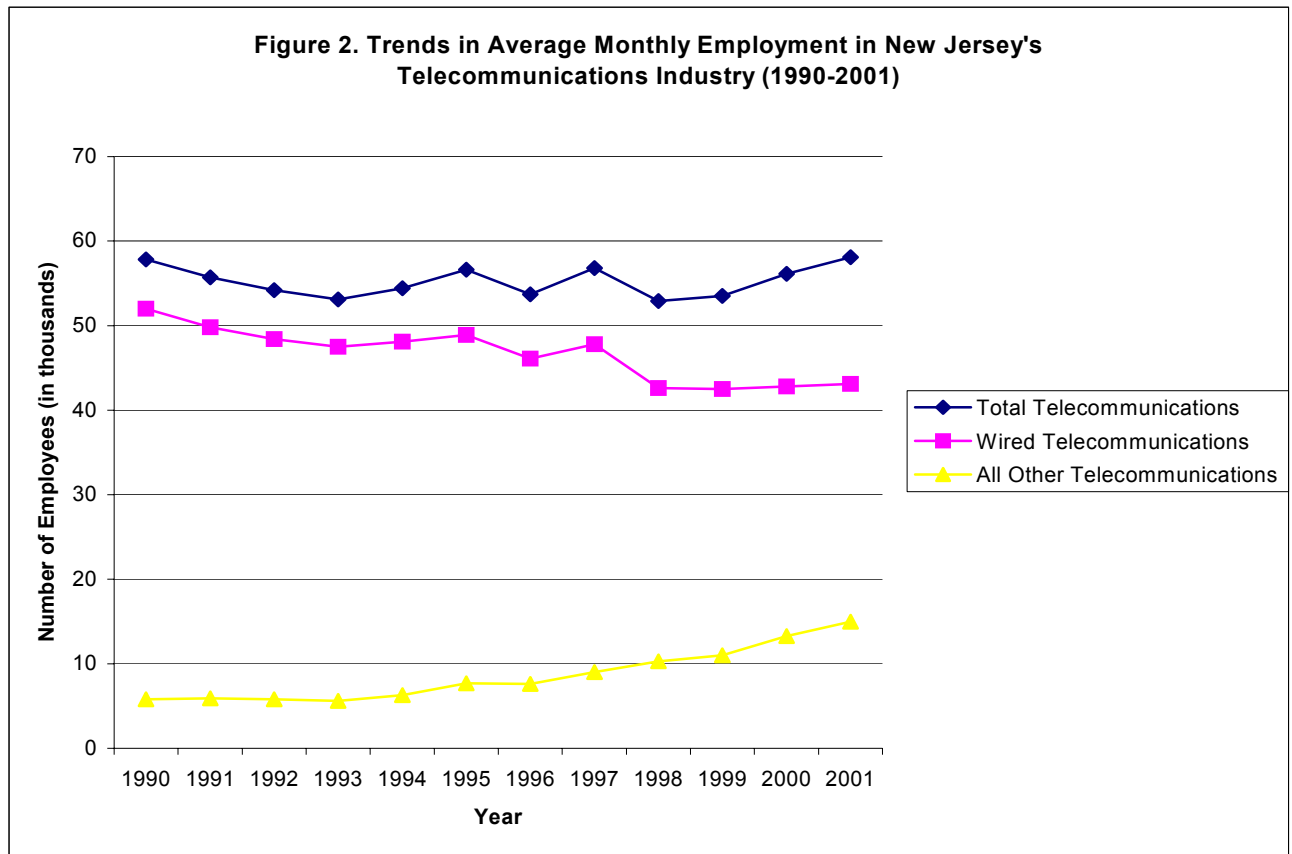
II. 1990-2001: The Birth of the Telecommunications Boom

Between 1990 and 1996, employment in the telecommunications industry remained relatively stable nationwide and hovered at nearly one million workers. However, in the late 1990s, the industry underwent a period of dramatic growth. This growth was fueled by venture capital and dotcom booms, as well as by the Telecommunications Act of 1996, which introduced more competition into local telephone markets. Between 1997 and 2001, national employment increased by anywhere from 3% to 7% each year, finally topping out at over 1.3 million employees in early 2001, an increase of over 300,000 workers since 1996. (See Figure 1.)



Source: United States Bureau of Labor Statistics

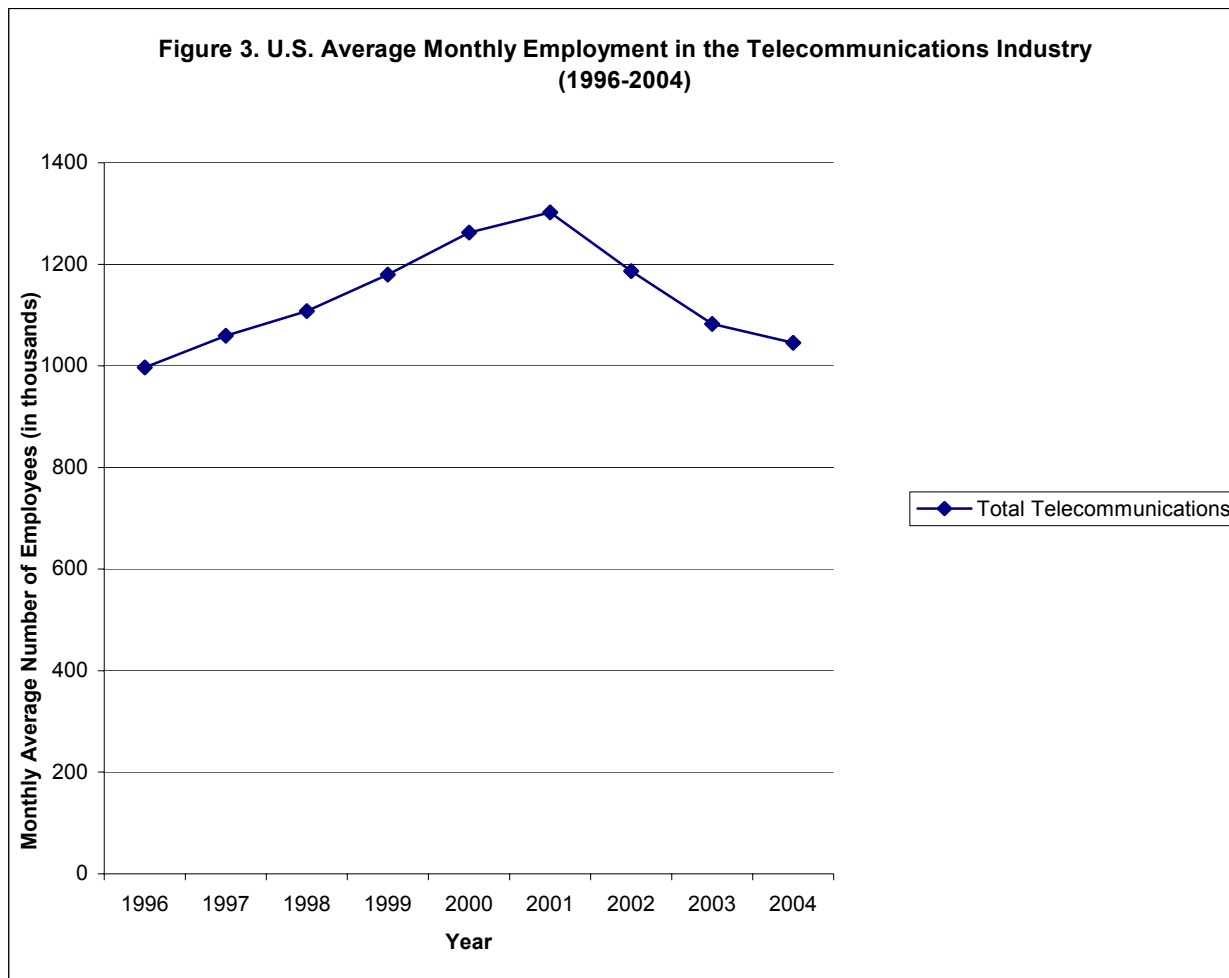
In New Jersey, overall employment in the telecommunications industry increased by 8% during the 1996 to 2001 boom period. (See Figure 2.) However, the increase was driven entirely by a sharp rise in employment within the non-wired sectors of the industry, which includes wireless, cable, and satellite providers, as well as other types of telecommunications firms. Employment in these firms practically doubled during this period, shifting from 7,600 workers in 1996 to 15,000 employees by 2001. However, the wired carriers, which include traditional telephone companies, saw their employment numbers fall by 6.5% during the same period. These changes were the early signals of a dramatic shift in the industry's structure from wired communications to companies that relied on newer types of technology to deliver telecommunications services.



Source: New Jersey Department of Labor and Workforce Development, Division of Labor Planning and Analysis

III. 2001-2003: Downturn in the Telecommunications Industry

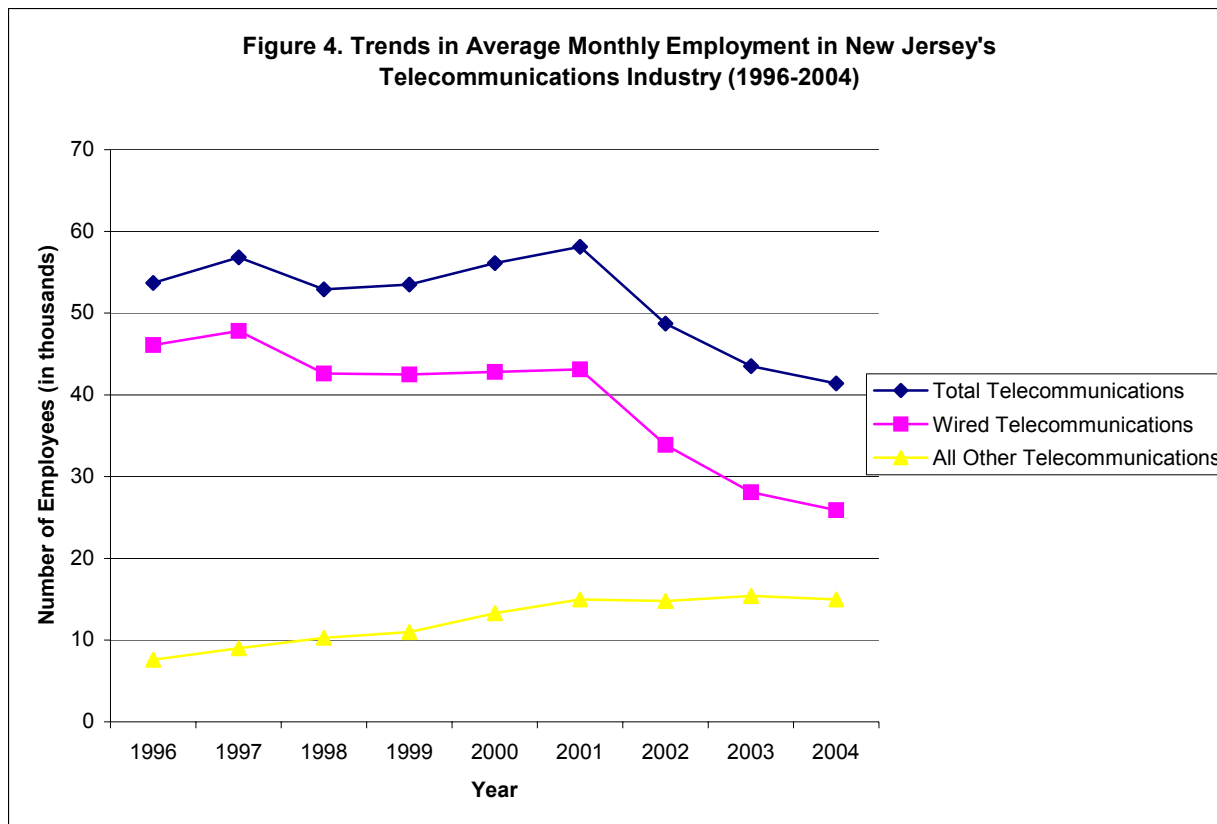
The 2001 recession and the dotcom bust, which affected the entire U.S. economy, also had a dramatic impact on the telecommunications industry at both the national and state levels. Rapid technological changes and an uncertain regulatory environment combined with economic effects to impact telecommunications firms. Nationally, total employment in the industry dropped by nearly 17%, or over 200,000 workers, between 2001 and 2003. (See Figure 3.) In 2001 alone, nearly 35,000 U.S. telecommunications workers were laid off or otherwise discharged from their jobs. By 2003, employment in the industry had nearly returned to pre-boom 1997 levels, with only 1.1 million workers employed nationwide.



Source: United States Bureau of Labor Statistics

In New Jersey, the effects of the recession and other factors on the telecommunications industry were even more striking than they were for the nation as a whole. Statewide, the number of employees in the telecommunications industry decreased from a high of 58,000 in 2001 to 43,500 in 2003, a decline of more than 25%, or over 14,000 workers. (See Figure 4.) However, all of this loss occurred among wired carriers, including industry giants such as AT&T and Lucent Technologies.

As firms shed jobs, total employment in the wired sector of the industry decreased by 35%, or 15,000 jobs. At the same time, other sectors of the telecommunications industry in the state actually increased their employment by 2.6%, adding about 400 jobs and staving off the dramatic losses suffered by the wired sector. This period highlights the growing advantage that other types of telecommunications firms began to gain over wired carriers following the passage of the 1996 Telecommunications Act and continued to gain throughout the bust period.



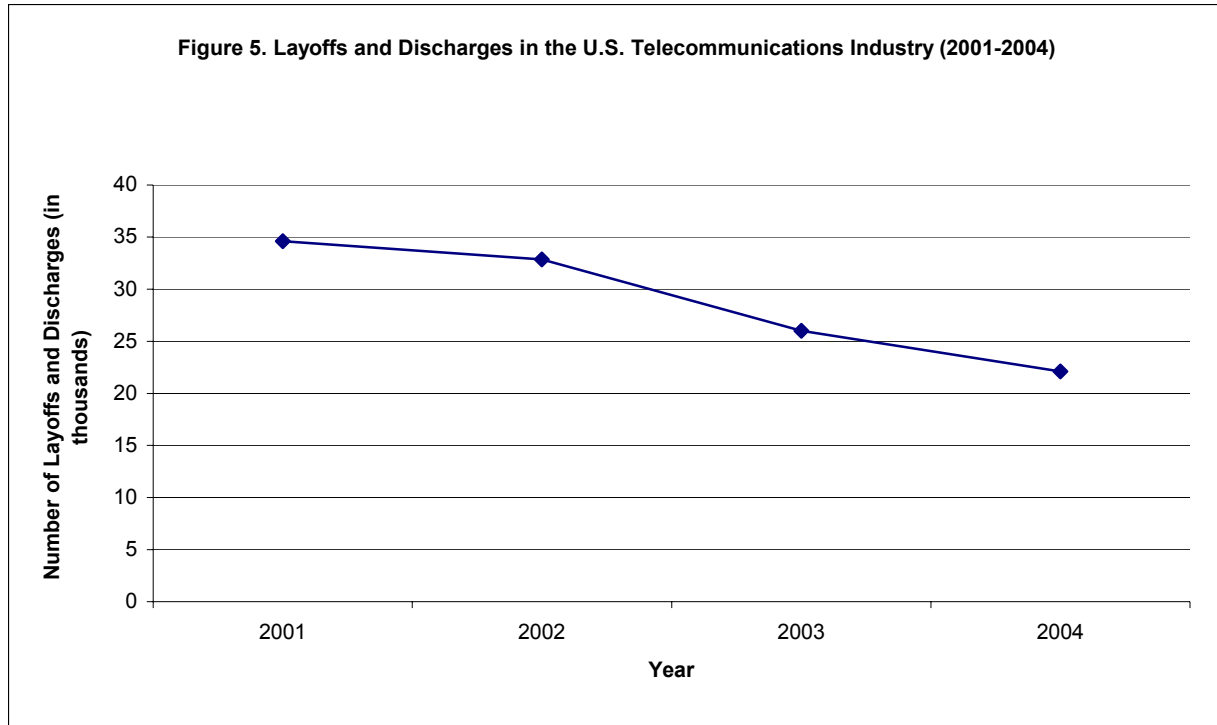
Source: New Jersey Department of Labor and Workforce Development, Division of Labor Planning and Analysis

IV. Current Environment: Telecommunications Industry

Between 2003 and 2004, job losses in the nation's telecommunications industry began to slow and hiring and job openings rose slightly. Nationally, industry employment dropped by an average of just over 3% between 2003 and 2004 (based on a 10-month average in 2004). (See Figure 5.) This is a significantly lower rate than the 9% average annual job losses experienced by the industry over the 2001-2002 and 2002-2003 periods.

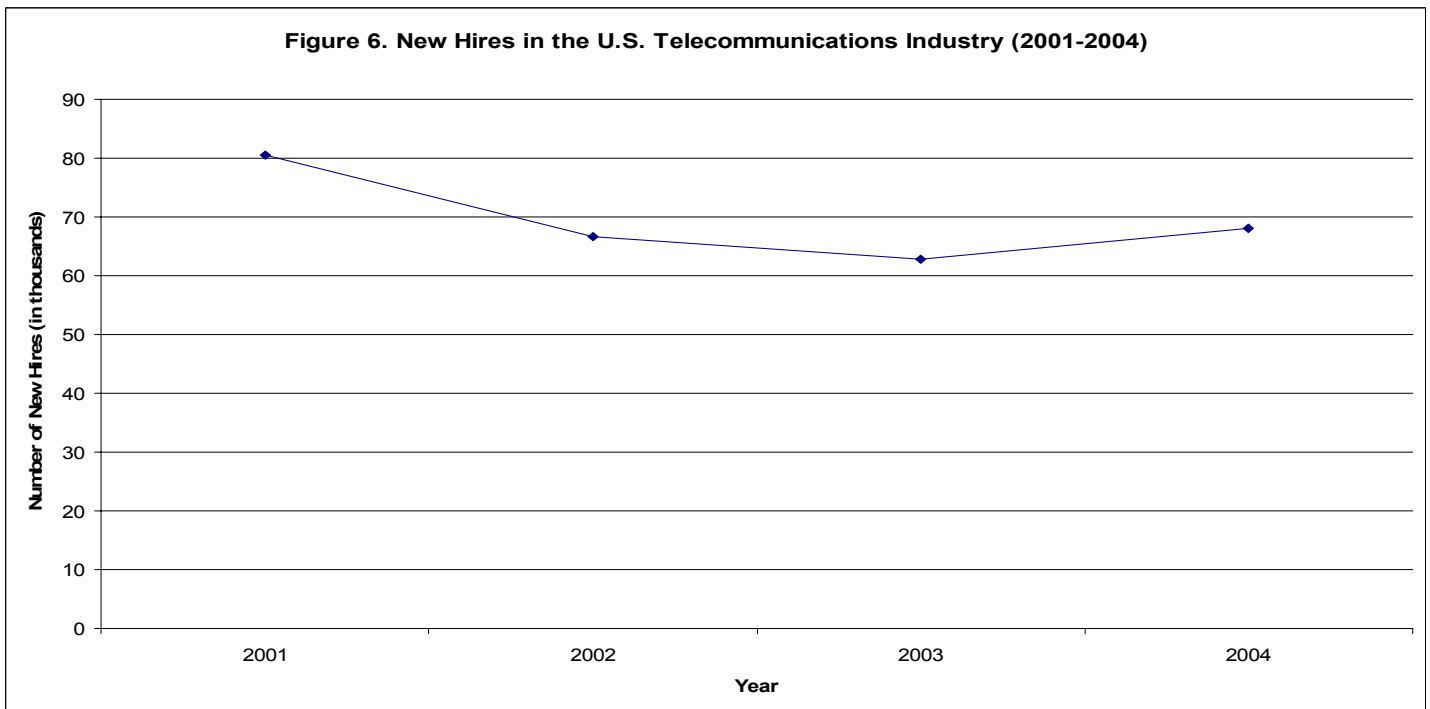
In addition, the number of individuals being laid off or discharged from the industry is at its lowest level in four years. In 2001, an average of nearly 35,000 individuals were laid off or discharged each month from jobs in the telecommunications industry nationwide. In 2004, the average number of individuals laid off or discharged each month had decreased to 22,000.

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Source: United States Census Bureau, Job Openings and Labor Turnover (JOLT) survey

Despite overall reductions in the total number of employees in the industry, the average annual number of new hires has also begun to increase. In 2004, telecommunication companies hired nearly 70,000 new workers, an increase over the 60,000 new workers firms hired in 2003. (See Figure 6.)



Source: United States Census Bureau Job Openings and Labor Turnover (JOLT) survey

While the impacts of the economic recession on the telecommunications industry were more dramatic in New Jersey than for the nation as a whole, the rate of job loss began to slow earlier in the state than it did at the national level. Between 2001 and 2002, the state's telecommunications industry experienced a 16.2% decrease in employment — far more than the 9% drop seen nationwide. However, between 2002 and 2003, employment decreased by only 10.7%, a figure that was much closer to the national average, which remained at 9% during this period.

Despite a continued loss of overall jobs between 2002 and 2003, New Jersey's telecommunications sector experienced a 31% increase in hiring, one of the largest hiring growth rates for the period among all of the state's industries. Much of this increase was driven by the non-wired telecommunications firms, which grew by 4%, adding over 600 jobs during this period, a fact that again reinforces the structural shift in the industry toward non-wired telecommunications.

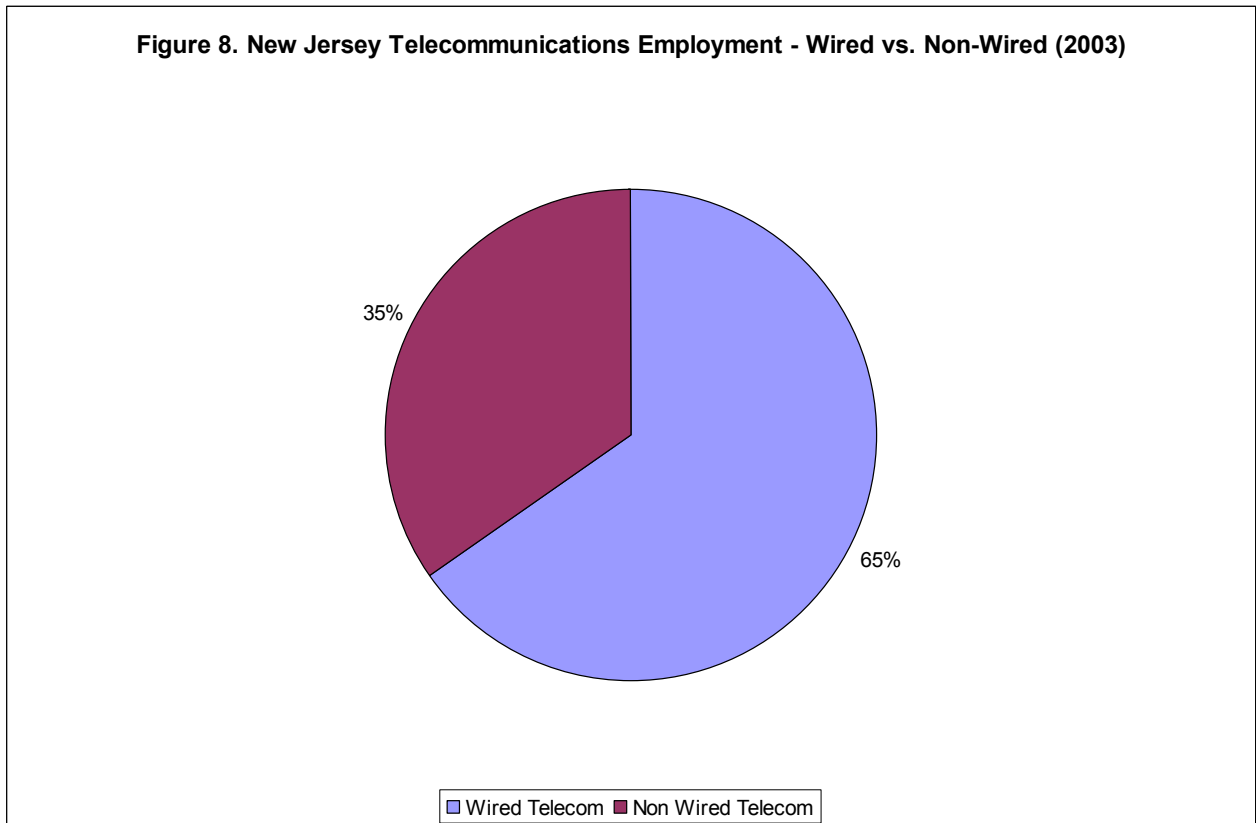
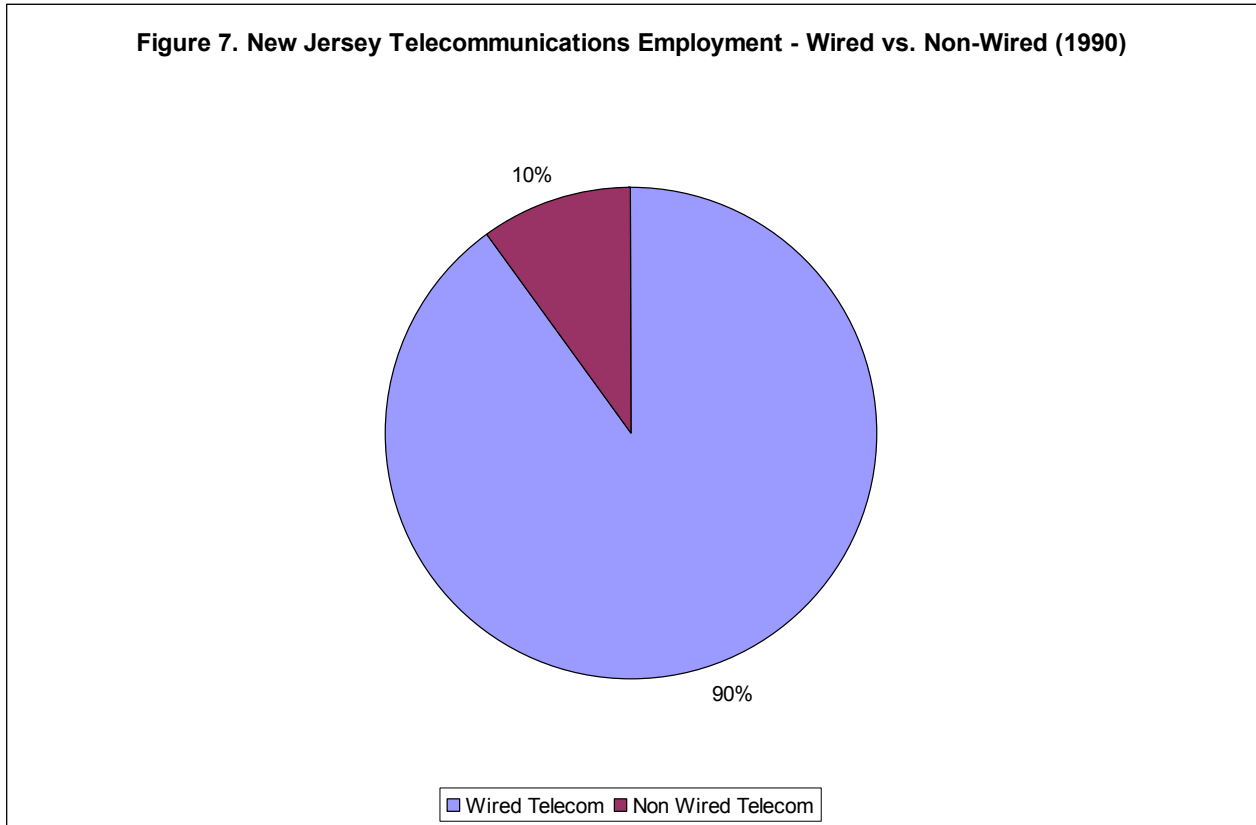
A Closer Look at Structural Shifts in the Industry

National- and state-level increases in employment in wireless, cable, and other new areas signal a change in the industry's structure.

The shift from wired to non-wired carriers in telecommunications is being fueled by the advent of new technologies, as well as a regulatory environment that provides some competitive advantages to certain types of new companies. Advances have been made in a number of new technologies, including wireless technology, fiber optics, telecommunications software, and especially voice-over-internet protocol. This technology has allowed cable providers and growing firms like Vonage to offer telephone service that works over the Internet. With technology advancing faster than regulators can react, these advances mean that some new companies, like Vonage, can remain largely unregulated while more traditional telecommunications firms must adhere to myriad state and federal regulatory demands.

Nationally, companies in the non-wired sector of the industry employed 308,000 workers, 31% of all jobs in the industry. By 2003, employment in the non-wired sector had increased to 504,000, accounting for 47% of the jobs in the industry. During this period, employment in the wired sector of the industry decreased by 14% while employment in the non-wired sector increased by 64%.

This structural shift in the industry has also occurred in New Jersey. In 1990, non-wired companies employed only 10% of the workers in the state's telecommunications industry. By 2003, this percentage increased to over 35%. (See Figures 7 and 8.) Thus far in 2004, the figure stands at over 36%.



Source: New Jersey Department of Labor and Workforce Development, Division of Labor Planning and Analysis

Telecommunications Remains an Important Industry in New Jersey

Telecommunications companies are among New Jersey's largest employers. In fact, two telecommunications companies appear in the top four largest private sector employers in the state in 2002.¹ Verizon is the state's third largest private sector employer with 17,000 employees in the state. Verizon's employment in the state increased by 20% from 1994 to 2002. AT&T is the state's fourth largest private sector employer in the state with 16,000 employees. AT&T's employment in the state decreased by 68% from 1994 to 2002.

Workers in New Jersey's telecommunications industry earn substantially more than workers in other industries and specific occupations in the industry have even higher incomes. In 2003, workers in the telecommunications industry earned an average of \$55,170. (See Table 1.) This is substantially higher than that the average annual salary of \$40,575 for all occupations in the state.

Table 1. Average Salaries for Occupations in the Telecommunications Industry, New Jersey, 2003

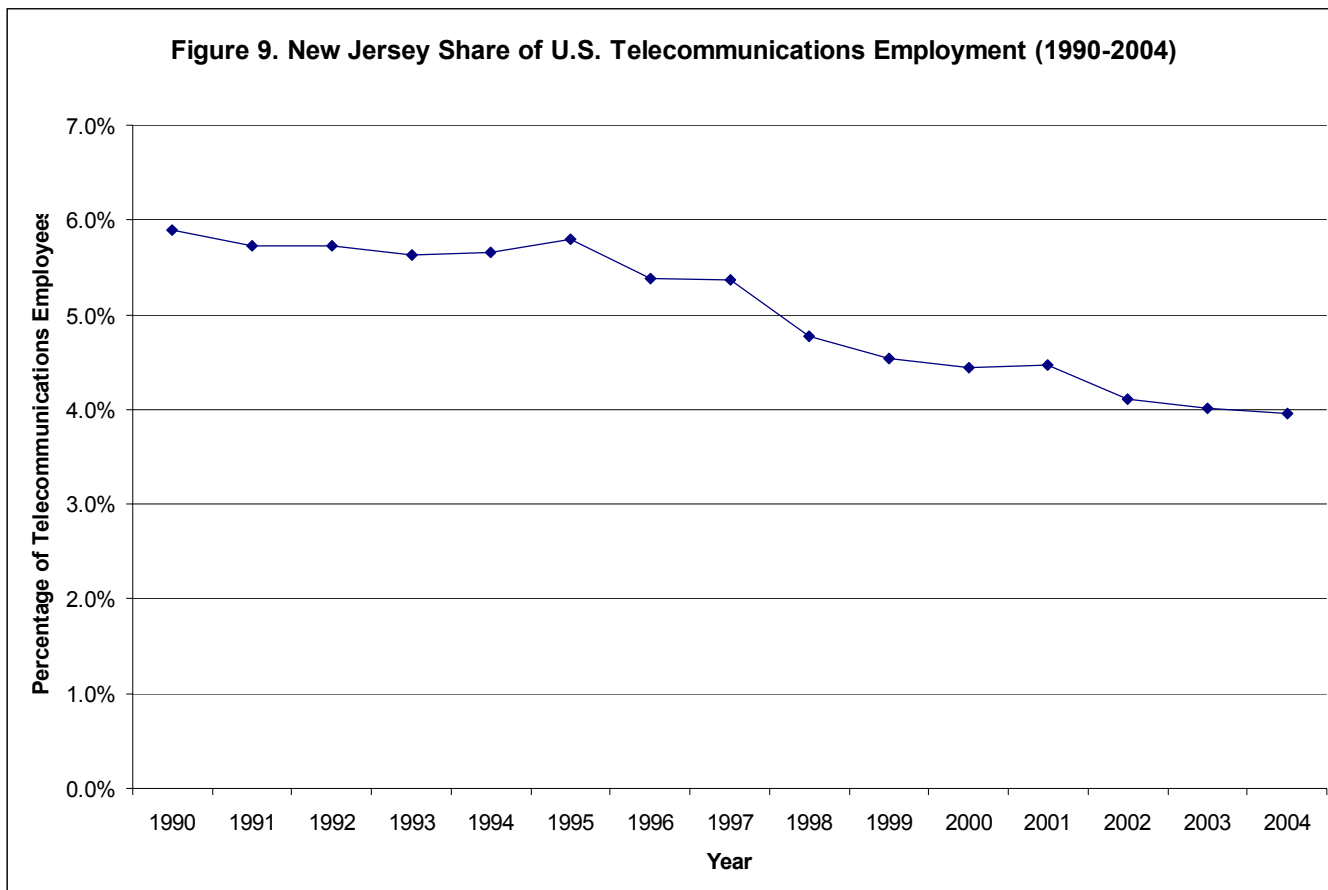
	Average Annual Salary
TOTAL NJ TELECOM OCCUPATIONS	\$55,170
Managers, All Other	\$88,452
Business and Financial Operations Occupations	\$69,536
First-Line Supervisors/Managers of Mechanics, Installers, and Repairers	\$67,293
Sales and Related Workers, All Other	\$59,999
First-Line Supervisors/Managers of Office and Administrative Support Workers	\$57,205
Telecommunications Equipment Installers and Repairers, Except Line Installers	\$54,697

Source: New Jersey Department of Labor and Workforce Development, Division of Labor Planning and Analysis

Loss in Share for New Jersey

Despite the state's long history with telecommunications employers, New Jersey is losing ground in terms of its share of total U.S. telecommunications industry employment. In 1994, there were 54,300 individuals employed in the state in the telecommunications industry and New Jersey accounted for 5.6% of telecommunications employment in the U.S. (See Figure 9.) From 1994 to 2003, the number of jobs in the telecommunications industry in the state decreased by 20%. In that year, the percentage of the nation's telecommunications jobs that were located in New Jersey had dropped to 4%.

¹ *New Jersey Business Magazine*



Source: New Jersey Department of Labor and Workforce Development, Division of Labor Planning and Analysis and Bureau of Labor Statistics

No other state with a sizable number of jobs in the telecommunications industry lost a greater percentage of jobs or experienced a greater decline in its share of national employment than did New Jersey. (See Table 2.)

New York experienced a decrease in employment of 8%. The share of national employment in that state decreased from 7% in 1994 to 5.7% in 2003. Other states experiencing a decrease in the share of national employment included California, Connecticut, Maryland, and Massachusetts.

While Pennsylvania's share of national employment increased slightly during this period, other states such as Arizona, Colorado, Florida, Texas, and Virginia experienced larger increases in their shares of national employment. For example, the number of jobs in the telecommunications industry in Texas increased from 73,300 in 1994 to 100,800 in 2003 and the state's share of national employment increased from 7.6% to 9.3%.

Table 2. Change in Share of National Telecommunications Employment for Selected States

States With a DECREASING Share of National Telecommunications Employment

	Share of National Employment		Change in Share
	1994	2003	
New Jersey	5.6%	4.0%	-1.6%
New York	7.0%	5.7%	-1.3%
California	11.8%	11.2%	-0.6%
Maryland	2.1%	1.9%	-0.3%
Connecticut	1.5%	1.3%	-0.1%
Massachusetts	2.3%	2.2%	-0.1%

States with an INCREASING Share of National Telecommunications Employment

	Share of National Employment		Change in Share
	1994	2003	
Pennsylvania	3.8%	3.8%	0.03%
Colorado	2.7%	3.2%	0.5%
Arizona	1.3%	1.8%	0.5%
Virginia	2.9%	3.4%	0.5%
Florida	5.6%	6.4%	0.8%
Texas	7.6%	9.3%	1.7%

Source: Bureau of Labor Statistics

V. Conclusion

As shown, there has been a serious decline in employment in the telecommunications industry in New Jersey in recent years. Statewide, the number of employees in the industry dropped more than 25% during the period from 2001 to 2003. The state also lost footing in its portion of the total U.S. telecommunications industry employment, dropping from 6% in 1990 to 4% by 2004. At the same time, the composition of the industry is changing dramatically with the wireless sector increasing in prominence.

Telecommunications continues to be a vital industry in New Jersey. Additionally, telecommunications firms are still among the largest private sector employers in the state. Jobs in the telecommunications industry also remain among the highest of any industry in New Jersey. However, there continues to be increased competition from other states, thus contributing to the state losing some of its share of the nation's telecommunications jobs.