

# *Reinventing New York*

COMPETING IN THE NEXT  
CENTURY'S GLOBAL ECONOMY

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## 2 Global Integration and Regional Specialization

The economic fortunes of the New York metropolitan area have been tied for more than three centuries to the evolution of the world trading system. From its earliest days, New York was a center of colonial commerce. By the mid-19th century, it had emerged as the principal link between the Old World and the New. And in the present century, its unique concentration of corporate and financial resources has reinforced its position as the leading center of international business.

New York's roots in the international marketplace are especially significant today. During the past four decades, New York has by most measures lost the dominant position it once enjoyed within America's domestic economy. This decline—at first relative, then absolute—engendered widespread pessimism in the 1970's about New York's future. But in the 1980's the region prospered once again. And its prosperity once again derived primarily from its role as the leading—although by no means unchallenged—urban center in an increasingly integrated world economy.

During the past decade the effects of this process of integration have been visible all around us. Foreign financial institutions, for example, played a major role in the growth of the region's financial services sector. Foreign banks accounted for more than half the growth in banking employment in New York City between 1983 and 1989.<sup>1</sup>

The manufacturing sector also felt the effects of global integration. Many firms became more vulnerable to competition from exports. Others found success in the expansion of overseas sales. Between 1987 and 1989, New York and New Jersey manufacturers increased the value of their exports by 37 percent.<sup>2</sup> Foreign investment in the 17-county region's manufacturing industries also increased sharply in the late 1980's—from \$1.78 billion in 1985 to \$9.49 billion in 1988, though most of this increase represents foreign acquisition of

existing companies, rather than investment in new plant and equipment. Foreign investments in Manhattan real estate also increased, with foreign buyers being especially attracted to first-class office space and hotels.<sup>3</sup>

Business service industries such as advertising and accounting confronted a market that was increasingly international. For many firms, a larger share of sales came from international business; and foreign giants such as KPMG and Saatchi & Saatchi became major players in the New York market. These and other manifestations of change in the regional economy reflect one of the most important realities New York will face as it approaches a new century. *Especially as its importance within the national economy recedes, the scope and character of New York's economy will increasingly be defined by the role it plays in the emerging global marketplace.*

### INTELLECTUAL CAPITAL

As the global economy has become more and more integrated, the role of the New York metropolitan region within it has become more and more specialized. The region's specialization is not, however, built on a competitive advantage that it holds in one or a few industries—as the Detroit, Houston, Seattle and Orlando areas have specialized in the automobile, oil, aerospace and entertainment industries. New York's specialization is instead based on the type of work in which firms that are located here primarily engage. Increasingly, the principal source of the region's strength in the world economy is its role as *a center for the creation and sophisticated application of intellectual capital.*

“Brainpower,” says Thomas A. Stewart, “has always been an essential asset....But it has never before been so important for business. Every company depends increasingly on knowledge—patents, processes, management skills, technologies, information about customers and suppliers, and old-fashioned experience. Added together, this knowledge is intellectual capital.”<sup>4</sup>

Intellectual capital, as the term is used here, simply means the body of ideas that shape the production of goods and services. It includes the products of corporate research and development; corporate strategies formulated in the

region's multinational headquarters; new financial products; innovative medical treatments; designs for apparel and furniture; and the work of authors, architects, playwrights and composers. This intellectual output helps define both what is produced and how it is produced—not only in the metropolitan area but throughout the world. The people who create it are all together only a small fraction of the region's total work force—but they provide much of the energy that drives its economy.

Thousands of firms are also engaged in the sophisticated application of intellectual capital. They include New Jersey companies that make specialty chemicals, Manhattan high-fashion apparel firms, Long Island manufacturers of defense electronics systems, publishers, construction managers who turn architects' grand designs into major construction projects, film and television production companies, and investment bankers. The variety of goods and services produced by these firms is almost infinite. What they have in common is that they are not mass-produced, but are tailored to the needs of specific customers or small groups of customers. These companies compete on the quality of their designs and their customer services, rather than on cost.

The New York region, New York City in particular, is also home to thousands of firms that provide essential support for the creation and application of intellectual capital. These include subcontractors who make samples for dress designers, financial printers, corporate attorneys and advertising firms, air express companies, and institutions that offer highly specialized training in fields from fashion to finance. Even though many of them now sell their services in much wider markets, these companies remain rooted in the metropolitan area because of their continuing close ties to the region's creators and users of intellectual capital. Their ties to New York are further reinforced by what economists call *agglomeration effects*—the benefits that advertising firms, for example, gain from being part of a large, geographically concentrated advertising community.

These three segments of the regional economy—firms engaged in the creation of intellectual capital, firms engaged in its sophisticated application, and firms that provide the first two groups with essential support services—will increasingly define the future of the New York region in an integrated world

economy. Each feeds off the strengths of the others. Together they comprise what might be called New York's *intellectual capital sector*.

### ROUTINE PRODUCTION

Side by side with this first sector there exists a second, comprised of firms engaged in *the routine production and distribution of goods and services*. It includes businesses as diverse as low-end women's garment manufacturers, routine data processing services, bank credit card processing operations, and mail order houses. Their products are typically mass-produced rather than customized, embody relatively low levels of intellectual capital, and compete primarily on the basis of cost.

It is in this *routine production sector* that the region has suffered its most severe job losses. Many of the firms that remain are here for what might be called residual reasons: unamortized investment in plant and equipment, for example, or the residential preferences of a few top executives. Others find particular product or market niches in which they can succeed. Some may even succeed, through continuing improvements in productivity, in competing with rivals in lower-cost regions in the United States or overseas. But overall, the routine production sector seems destined to keep shrinking.

### LOCAL SERVICES

The third element of the regional economy is the *local services sector*. It includes all kinds of service providers, from neighborhood grocers to neurosurgeons. It includes almost all government services, as well as some activities officially classified as manufacturing—local bakeries, for example, or the publication and printing of local newspapers. The defining characteristic of all these enterprises is that they are by nature local. They generally do not serve customers outside the region, nor do firms from outside the region compete with them. Economists sometimes refer to these as *non-traded services*, in that they are not the

subject of trade between this region and other parts of the nation or the world.

The local services sector is highly dynamic and significantly affects the quality of life enjoyed by the region's residents. A healthy local services sector helps make the region attractive to the people whose talents drive its economy. But the health of the local services sector also depends upon the wealth generated by the traded sectors of the regional economy—the intellectual capital and routine production sectors.

### REDEFINING THE REGIONAL ECONOMY

The relative magnitude of these three sectors of the regional economy can only be roughly estimated here, as they do not correspond neatly to the standard definitions of industries and occupations used by most official data sources. Based on the available evidence, however, the intellectual capital sector appears to have accounted for approximately one quarter of the 17-county region's 7.6 million jobs in 1988. The routine production sector accounted for about one fifth, and the local services sector for more than half.

Table 1 contrasts the standard way of looking at the region's economy, segmented by industrial group, with a rough breakdown of regional employment into the three sectors described here. The figures in the lower part of the table should be treated as rough estimates for illustrative purposes only rather than as precise measures, but the overall proportions are probably fairly accurate.

These rough proportions do not, however, adequately measure the relative *importance* of these three sectors. The intellectual capital sector accounts for a disproportionate share of the income generated in the region and it accounted for a significant share of the job growth that occurred here during the 1980's. The routine production sector, in contrast, has continued to shrink both in good times and bad. And while the local services sector also generated many new jobs in the 1980's, its ability to do so is dependent on the strength of the traded sectors. Given the decline of routine production, that inevitably means greater dependence on the intellectual capital sector.

Table 1: Employment in the 17-County Region, 1988

<i>By Industry Group</i>	
Manufacturing _____	1,100,000
Construction _____	309,000
Transportation, Communications, Utilities _____	473,000
Wholesale and Retail Trade _____	1,623,000
Finance, Insurance and Real Estate _____	821,000
Services _____	2,107,000
Government _____	1,157,000
<b>Total _____</b>	<b>7,590,000</b>
<i>By Type of Activity</i>	
The Intellectual Capital Sector _____	1,900,000
Headquarters/R&D _____	350,000
Customized Manufacturing _____	300,000
Financial Engineering and Trading _____	250,000
Arts and Entertainment _____	100,000
Business Services _____	300,000
Trade and Transport _____	200,000
Other Support Services _____	400,000
The Routine Production Sector _____	1,500,000
Routine Manufacturing _____	500,000
Routine Financial Operations _____	300,000
Trade and Transport _____	300,000
Other Services _____	400,000
The Local Services Sector _____	4,200,000
Government _____	1,150,000
Retailing _____	1,100,000
Trade and Transport _____	500,000
Health Care _____	500,000
Finance _____	200,000
Other Services _____	750,000
<b>Total _____</b>	<b>7,600,000</b>

# 3 The Intellectual Capital Sector

The New York region's strength as a center for the creation and sophisticated application of intellectual capital is evident in virtually every segment of its economy—in manufacturing, in finance and in services; in Manhattan's multinational headquarters and in small suburban industrial plants. This section examines several elements of the region's intellectual capital sector and traces how they fared during the 1980's.

## THE HEADQUARTERS COMPLEX

Despite the highly publicized departure of several major corporate headquarters during the 1970's, and to a lesser extent during the 1980's, the New York metropolitan area still maintains a unique concentration of headquarters activity.

<i>Company</i>	<i>Location</i>	<i>Rank</i>	<i>Revenue (billions)</i>
AT&T	New York, NY	1	37
Automatic Data Processing	Roseland, NJ	61	2
Avnet	Great Neck, NY	68	2
CBS	New York, NY	31	4
Capital Cities/ABC	New York, NY	18	5
Computer Associates	Garden City, NY	82	1
Dun and Bradstreet	New York, NY	23	5
Foster Wheeler	Clinton, NJ	62	2
Hertz	Park Ridge, NJ	41	3
Interpublic Group	New York, NY	78	1
JWP	Purchase, NY	40	3
Medco Containment Service	Fair Lawn, NJ	100	1
Ogden	New York, NY	68	2
Omnicom Group	New York, NY	85	1
Paramount Communications	New York, NY	28	4
Pittston	Greenwich, CT	57	2
TLC/Beatrice	New York, NY	69	2
Time Warner	New York, NY	4	12
Turner Corporation	New York, NY	33	3
Viacom	New York, NY	65	2

Source: Fortune



Ninety of the Fortune 500 manufacturing firms have their headquarters in New York City or its suburban counties, as do twenty of Fortune's 100 largest diversified service companies.<sup>5</sup> One recent study found that the headquarters operations of manufacturing companies in the New York-New Jersey region's 17 counties employed about 140,000 people in 1988.<sup>6</sup> Including the nearby Connecticut suburbs would add tens of thousands of additional jobs.

The region's headquarters companies are overwhelmingly multinational—IBM and General Electric, Pfizer and Philip Morris, AT&T and Pepsico. Companies such as these remain rooted here for a variety of reasons: because the region provides them with a pool of executive talent not easily found elsewhere;

Table 3: Headquarters of Fortune 100 Manufacturing Corporations

<i>Company</i>	<i>Location</i>	<i>Rank</i>	<i>Revenue (billions)</i>
Allied Signal	Morristown, NJ	36	12
Amerada Hess	New York, NY	68	7
American Brands	Old Greenwich, CT	57	8
American Home Products	New York, NY	70	7
BASF	Parsippany, NJ	99	5
Borden	New York, NY	64	8
Bristol-Myers Squibb	New York, NY	46	11
CPC International	Englewood Cliffs, NJ	91	6
Colgate Palmolive	New York, NY	94	6
General Electric	Fairfield, CT	6	58
Hanson Industries	New York, NY	75	7
Hoechst Celanese	Bridgewater, NJ	90	6
IBM	Armonk, NY	4	69
International Paper	Purchase, NY	32	13
Johnson and Johnson	New Brunswick, NJ	41	11
Merck	Rahway, NJ	63	8
North American Philips	New York, NY	85	6
Pepsico	Purchase, NY	23	18
Pfizer	New York, NY	73	7
Philip Morris	New York, NY	7	44
RJR Nabisco	New York, NY	28	14
Texaco	White Plains, NY	8	41
Unilever	New York, NY	55	9
Union Carbide	Danbury, CT	65	8
W.R. Grace	New York, NY	71	7
Xerox	Stamford, CT	22	18

Source: Fortune

because their headquarters operations are tied to the corporate services, such as law and advertising, that support them; and because of New York's continuing importance as an international business center. The New York region has historically been attractive to foreign multinationals as well, with notable concentrations in drugs, chemicals, food processing and publishing.<sup>7</sup>

Increasing pressure on costs in the 1980's led many companies, especially those based in Manhattan, to shift large numbers of employees elsewhere. Until 1987, for example, International Paper employed about 1,200 people in its New York City offices. It has since moved most of them to Tennessee, while relocating its corporate headquarters, with a staff of about 120, to Purchase, New York.<sup>8</sup> The result of such shifts is that the headquarters work still done in the region increasingly represents the highest levels of executive, financial, legal and marketing work.

## RESEARCH AND DEVELOPMENT

The New York metropolitan area is home to one of the world's great concentrations of corporate research and development facilities. Of the 100 U.S. corporations with the highest levels of R and D spending, 27 have significant R and D facilities in the RPA's 31-county region, including 13 of the top 25. AT&T's Bell Labs and IBM's Watson Research Center are among the world's leading centers of scientific talent.

This list, moreover, does not include some major research facilities operated by companies whose spending in 1990 did not rank them among the top 100—Grumman's aerospace facilities in Bethpage and Woodbury; North American Philips's television labs in Briarcliff Manor; Colgate Palmolive's technical center in Piscataway; BASF's Clifton research labs; Schlumberger's Ridgefield research center; or Nestle's R and D complex in New Milford. Nor does it include independent research enterprises such as the Sarnoff Research Center in Princeton and Brookhaven National Laboratories and Cold Spring Harbor Laboratories on Long Island.

The pharmaceutical industry is in many ways representative of the

Table 4: R&amp;D Installations of Top 100 Corporations in R&amp;D Spending

<i>Company</i>	<i>Rank</i>	<i>R&amp;D Spending (billions)</i>	<i>Locations</i>
AT&T	4	2.43	Holmdel, NJ Bedminster, NY Murray Hill, NJ
Allied Signal	38	0.43	Teterboro, NJ Morristown, NJ
American Cyanamid	36	0.43	Pearl River, NY Stamford, CT Clifton, NJ Princeton, NJ
Bellcore	11	1.10	Livingston, NJ
Bristol-Myers Squibb	15	0.88	Princeton, NJ New York, NY Hillside, NJ Stamford, CT
Computer Associates	78	0.17	Garden City, NY
Dow Chemical	10	1.13	North Haven, CT
Exxon	25	0.64	Florham Park, NJ Linden, NJ
GTE	55	0.27	Stamford, CT
General Electric	6	1.48	Princeton, NJ
IBM	2	5.34	Yorktown Heights, NY
ITT	29	0.57	Nutley, NJ
Ingersoll-Rand	92	0.13	Woodcliff Lake, NJ
Johnson and Johnson	19	0.83	New Brunswick, NJ
Merck	17	0.85	Rahway, NJ
Mobil	53	0.28	Edison, NJ Princeton, NJ
NCR	32	0.50	Hauppauge, NY
Pfizer	24	0.64	Brooklyn, NY Parsippany, NJ
Philip Morris	45	0.34	Tarrytown, NY White Plains, NY
Proctor and Gamble	23	0.69	Shelton, CT
Schering-Plough	40	0.38	Kenilworth, NJ
Texaco	65	0.23	Beacon, NY
Textron	71	0.20	Stratford, CT
Union Carbide	74	0.19	Tarrytown, NY Bound Brook, NJ Danbury, CT
Unisys	21	0.75	Great Neck, NY
United Technologies	12	1.02	Melville, NY
Warner-Lambert	41	0.38	Morris Plains, NJ

Sources: Inside R&amp;D (June 5, 1991) and Directory of American Research and Technology, 1989.

New York region's strength in this area. Fourteen of the world's leading pharmaceutical companies have research and other headquarters operations in the region. Pharmaceutical research employment in the Port Authority's 17-county region increased by about 25 percent during the 1980's. Merck, the leader in this field with an annual research budget of \$1 billion, doubled its research staff to a total of 1,700 in this period.

With the major drug companies moving more and more of their actual manufacturing operations offshore, why has the region retained this commanding position in research and development? Company sources consistently cite the unusual concentration of scientific and technical personnel in the region, and the investments they have made over the years in building up their own research teams.

In the pharmaceutical industry, research and product development are by far the most important determinants of competitive success. Says Merck CEO Roy P. Vagelos, "We guard our research even more carefully than our financial assets."<sup>9</sup> Companies believe it would be costly and quite risky to move these resources or to try to replicate them elsewhere. Thus, even as pharmaceutical production continues to be decentralized, research and product development functions are likely to remain concentrated in the New York area.

### CUSTOMIZED MANUFACTURING

In addition to its strengths in headquarters functions and research, the New York metropolitan region also retains a strong core of companies that produce high-value goods. These companies are quite diverse in terms of what they make and what markets they serve, but they are alike in that they compete more on quality—of design, applications engineering and customer service—than on cost.

The specialty chemicals business, for example, is still an important part of northern New Jersey's manufacturing base, even though the manufacture of commodity chemicals virtually disappeared from the region in the past fifteen years. Similarly, companies that make highly specialized, custom-designed

products are the heart of the New York area's electronics industry, which employs about 120,000 people; mass production in the electronics industry long ago moved to lower-cost areas.

Strength in design and customer-specific applications is not limited to suburban high technology companies. The high end of the apparel industry—women's designer dresses, men's hand-tailored suits and coats—also competes on this basis; it employed nearly 30,000 people in the New York-New Jersey region in 1988.<sup>10</sup> Dozens of small firms that design and build customized contemporary furniture for homes, offices and institutions are clustered in lower Manhattan, Long Island City and Williamsburg. And the Loral Corporation, one of the region's leading defense contractors, has plants in the Bronx and Yonkers.

As Robert Reich has noted, success in customized production requires a highly developed capacity to solve complex and unfamiliar problems, "to put things together in unique ways..." Firms must be able "to help customers understand their needs and how those needs can be met by customized products." Instead of the mass-marketing and advertising techniques involved in selling standardized goods, "selling and marketing customized products requires having an intimate knowledge of a customer's business, where competitive advantage may lie, and how it can be achieved... the art of persuasion is replaced by the identification of opportunity."<sup>11</sup>

Manufacturing firms that thrive on the application of intellectual capital are on the front lines of global economic integration. Many of them compete against foreign firms with similar specialties. For many of them, overseas sales represent an important, and often growing, share of their business.

Hipotronics, a maker of electronic testing and power supply equipment for manufacturing and utility companies, is typical of firms in this sector. It employs 240 people at plants in Brewster and Millerton. It has only two major competitors worldwide—one based in Germany, the other in Switzerland. In 1989, exports accounted for 49 percent of the firm's \$26 million in sales. The company's executives see its intellectual capital (Hipotronics holds thirteen patents in its field) as crucial to its success. They also emphasize customer service, which is provided both by staff from Brewster who regularly

travel abroad, and by a network of overseas representatives.<sup>12</sup>

The impact of global integration on the region's high-value, applications-oriented manufacturers has not been limited to increased competition from foreign rivals, or increased reliance on exports. These firms have also been prime candidates for acquisition by foreign companies. The region's two largest manufacturers of power supply equipment—Veeco Instruments of Melville and Venus Scientific of Farmingdale—are now foreign-owned, as is Materials Research, Inc., a leading manufacturer of semiconductor equipment.<sup>13</sup> Such acquisitions often make good sense for both parties, with the foreign buyer supplying needed capital, access to new technology, and broader access to overseas markets. In some cases, however, local firms acquired by foreign buyers have found themselves shut out of foreign markets where they might compete with the new owner's products, or have been constrained in the development of new products.

### THE INTEGRATORS

One of the most notable developments in global manufacturing in the past decade has been the emergence of companies that don't directly manufacture anything themselves, but instead manage everything from research and design to marketing and distribution, with production being accomplished through a network of subcontractors. They are, in effect, *integrators* of manufacturing activity.

This way of doing business has long been practiced in the publishing industry. More than 65,000 people were employed in book and magazine publishing in the 17-county region in 1987, even though the physical production work is mostly done elsewhere. Only 10,000 people were employed in production jobs in these industries.

The same approach is becoming more common in the apparel industry as well. Integrators employed about 50,000 people in the apparel industry in 1988—more than a third of total apparel employment in the New York-New Jersey region. The largest and best known of these firms is Liz Claiborne, which has 3,200 employees in the region and sales of more than \$1.7 billion. All of its

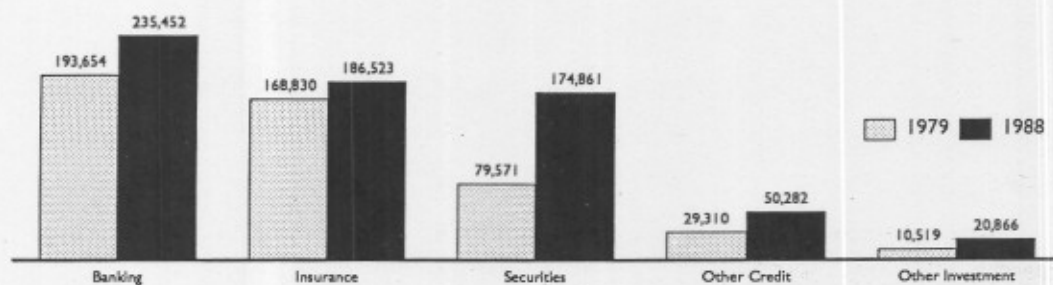
goods are produced through subcontractors—about 85 percent of them overseas. Other examples can be found among the region's defense electronics companies.<sup>14</sup>

### **GLOBAL FINANCIAL SERVICES: COMPETING THROUGH INNOVATION**

Few industries in the 1980's seemed as emblematic of New York's place in a rapidly integrating global economy as did the financial services industry. New York City's leading institutions flourished; foreign banks and securities firms increased their presence in the region; and financial services employment grew by nearly 40 percent.<sup>15</sup> Yet even before the recession began, New York's position in global finance seemed to be coming under increasing competitive pressure from Tokyo, which has greater financial resources, London, which handles a higher volume of international transactions, and a growing group of second-tier cities such as Los Angeles and Frankfurt. How has New York responded to these challenges?

As in manufacturing, the heart of the New York region's competitive advantage in world financial markets is now in the creation of intellectual capital—product and market innovation—and in its sophisticated application—custom-tailored dealmaking and trading. These are functions at which Manhattan's financial services complex excelled during the 1980's. New York

*Figure 2: Employment in Financial Services, 17-County Region*



*Source: Port Authority of New York and New Jersey, Office of Business Development*

City firms, for example, launched the securitization trend of the 1980's, created the global oil futures market, and pioneered in leveraged buyouts, swaps, and other complex financial transactions.

New York's strength as a center for financial innovation can be attributed to several factors. Perhaps most important, competition among local firms in each segment of the financial services industry is intense. Competition leads New York firms to search constantly for new products to offer and new markets to serve. This process is aided by the ready availability in New York City of information about potential new markets and by the proximity of professionals in law, accounting and other fields who can help structure new products. Direct, face-to-face interaction, both formal and informal, on virtually a daily basis, is essential to the search for information and innovation—and the ubiquity of such interaction is one of New York's most distinctive characteristics.

New York firms also operate under a regulatory regime that has in most respects been more open to innovation than those that have governed other global financial centers. As other nations have moved to liberalize their financial markets, however, this distinction has begun to erode. Outmoded federal regulations, such as those that limit interstate banking and mandate the separation of banking and securities business, may put New York at an increasing competitive disadvantage.<sup>16</sup>

## **FINANCIAL ENGINEERING AND TRADING**

Closely associated with New York City's role as a center for financial innovation is its role as a center for complex, custom-tailored dealmaking. This work—the domain of investment bankers, corporate finance officers, institutional investors and nonbank lenders like GE Capital—is the financial services equivalent of applications engineering in the manufacturing sector.

During the 1980's, merger and acquisition activity was one of the fastest-growing—and most visible—forms of financial engineering. Merger and acquisition business in the United States grew from \$44 billion in 1980 to \$248 billion in 1988, with twenty New York firms accounting for most of the



increase.<sup>17</sup> New York firms also dominated other types of corporate finance—all of the top fifteen managers of negotiated corporate debt issues in 1988 were located in New York.<sup>18</sup>

Complex, custom-tailored financial transactions can only be put together through an intensive effort among an intricate network of participants, often working together face-to-face. New York provides a setting for this kind of interaction that no other city can match. Its unique concentration of human, informational and institutional resources is the foundation on which its preeminence in financial engineering is built.

While the volume of mergers and acquisitions, as well as some other forms of financial engineering, has declined in the past two years, trading in securities, commodities and other instruments has continued to grow. Much of this recent growth has been driven by a wave of innovations that began earlier in the decade—almost all of them originating in New York. The common goal of these innovations is to increase trading profits through the application of new technologies and analytic techniques.

It has been observed that:

*While trading was once dominated by those who rely on instinct and guts, it is now driven by computer wizards plucked from academe and let loose on the trading floor. These so-called "quants," who apply advanced mathematics and the laws of the physical sciences to the financial markets, have invented scores of strategies and a raft of sophisticated financial products. Trading has gone high tech.<sup>19</sup>*

The demand for ever more sophisticated products comes from the leading securities firms themselves, since an increasing share of their profits comes from trading for their own accounts, and from major institutional investors, both domestic and foreign. The opportunity to participate in the world's most dynamic and innovative financial market is in fact one of the reasons that foreign financial institutions are drawn to New York.

The growth of trading has in turn stimulated investment in highly specialized facilities—trading rooms and information systems. The concentration of these facilities in New York further reinforces its competitive advantage.

Table 5: Japanese Investments in New York Securities Firms

<i>Japanese Buyer</i>	<i>U.S. Firm</i>	<i>Percent Share</i>
Yasuda Mutual	Paine Webber	25
Nippon Life	Shearson Lehman	13
Sumitomo Bank	Goldman, Sachs	12.5
Industrial Bank of Japan	Aubrey G. Lanston	100
Nomura	Wasserstein Perella	20
Yamaichi	Lodestar Group	20
Nikko	Blackstone Group	20

Source: McGahey et. al., *Financial Services, Financial Centers*, Boulder: Westview Press, 1990.

## THE ROLE OF FOREIGN FIRMS

Global financial integration has expanded the role that foreign firms play in the New York region's financial services industries. The number of foreign banking establishments in New York City grew from 294 to 392 between 1983 and 1989. During the same years their share of total bank employment in the region increased from 16.7 to 27.2 percent. Foreign institutions accounted for more than half the increase in bank employment in New York during the decade.<sup>20</sup>

Foreign banks come to New York for a variety of reasons. Some have come here to serve home-country corporate clients who do business in the U.S., or to finance trade. Others find America's vast domestic market attractive. Still others are here to participate in New York's international capital market activity. In all these cases, New York's unique role as a center for face-to-face interaction and informal networking stands out. Japanese banks, for example, find that a New York location gives them ready access not only to their customers and to their U.S. counterparts, but to the U.S. offices of the Ministry of Finance—a key player in their business.<sup>21</sup>

Foreign securities firms also sought during the 1980's to enter New York's surging securities business. By 1989, fourteen Japanese securities firms were operating in New York City, and four of them (Nomura, Daiwa, Yamaichi and Nikko) had captured 25 percent of the fiercely competitive market for U.S. Treasury financing.<sup>22</sup>

In the late 1980's, the financial difficulties experienced by many New

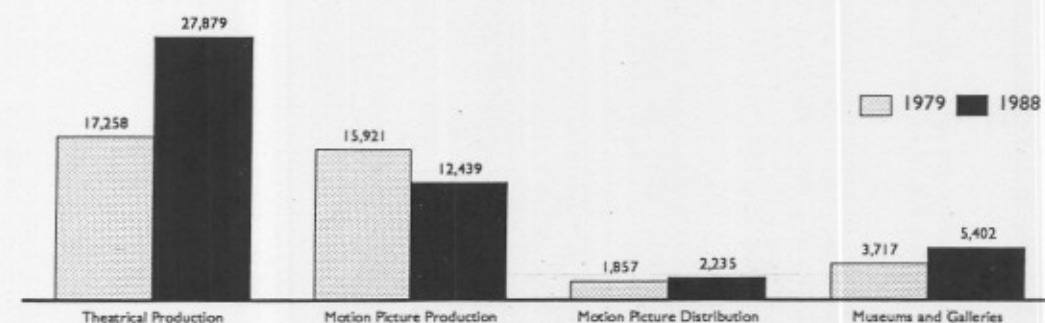
York firms led them to seek infusions of foreign capital. Japanese institutions have been a favorite source for such investment. The Japanese have seen these arrangements as a way to bring their capital resources into deals to which they could never gain access on their own.

The Japanese firms recognize, in effect, that they have more to gain by becoming part of New York's informal network than by attempting to operate outside it. Even a firm like Nomura, which has been more committed than most to developing its own expertise in financial engineering and complex trading, has done so by aggressively recruiting local professional talent; as of 1990, only 12 percent of Nomura's New York staff was Japanese.<sup>23</sup> The influx of foreign firms in the 1980's may thus mean stiffer competition for some New York firms—but it has only served to reinforce New York's central role in the global financial marketplace.

## THE ARTS

Among the many groups that contribute to the unique character of New York City, few are as important as the diverse array of talented people who constitute what might be called New York's creative community. They include playwrights, actors, theatrical producers, movie and television production companies, writers, composers, concert musicians, painters and sculptors, museum and

Figure 3: Employment in Arts-Related Industries, 17-County Region



Source: Port Authority of New York and New Jersey, Office of Business Development

gallery workers, graphic artists, and architects. Their work is vital to the health of the New York region's economy.

The arts represent, first of all, an important industry in themselves. Employment in this area is difficult to gauge with any precision; people employed in artistic pursuits are scattered among many industry groups, and many are self-employed. Even a partial accounting, however, such as Figure 3 provides, indicates that employment in several arts-related industry groups grew substantially during the 1980's.

The arts are also a powerful magnet for the millions of people who visit New York from elsewhere in the country or from overseas each year. In 1989, 4.9 million foreign visitors came to New York, and pumped nearly \$3 billion into the local economy. Both domestic and foreign visitors helped fuel the surge in restaurant and hotel employment that occurred in the city in the 1980's.<sup>24</sup>

Less quantifiable, but just as important, is the contribution that New York City's artistic and cultural complex makes to the regional economy by making the entire metropolitan area a livelier, more interesting place to live for hundreds of thousands of people whose talents drive the intellectual capital sector. This factor seems especially important in attracting foreign businesses to New York.

Even more subtle, but perhaps most important of all, is the contribution that New York's artists and cultural institutions make to an environment that helps stimulate and sustain creativity throughout the intellectual capital sector. Painters influence the work of fabric designers; sculptors influence the design of contemporary furniture. A new exhibit at the Metropolitan Museum of Art simultaneously inspires a dozen jewelry designers; a hit show on Broadway inspires a new set of advertising images. The oft-heard refrain among creative professionals, "New York is the only place I could work," reflects neither snobbery nor parochialism, but rather the importance of a cultural milieu in which creativity feeds on creativity in a hundred different ways, year in and year out.

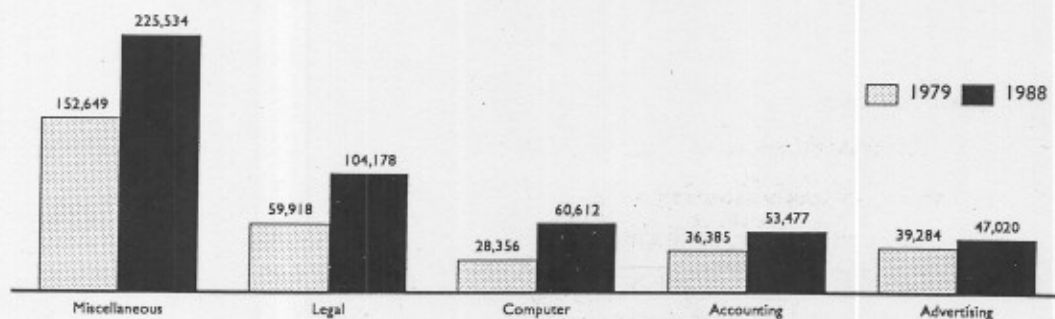
## SUPPORT SERVICES

Success in the creation and sophisticated application of intellectual capital depends in part on the availability of a wide array of supporting services. These services—which include such diverse enterprises as business services, air transport, telecommunications, higher education, and a variety of specialized manufacturing businesses—constitute a third segment of the New York region's intellectual capital sector. They were an important source of employment growth for the region in the 1980's and one of its most enduring sources of competitive advantage. But along with these strengths, these are some notable weak spots in the region's network of support services—weaknesses that could spell trouble in the years ahead.

### Advanced business services

Despite a gradual process of decentralization, New York City is still America's leading center for advanced business services—and perhaps the world's. Five of the six largest accounting firms in the United States, eight of the top ten advertising firms, and seven of the top ten management consulting firms are headquartered here. Between 1979 and 1988, advertising employment in New York City grew by 13 percent, accounting employment by 30 percent, legal services employment by 69 percent, and computer services employment

*Figure 4: Employment in Advanced Business Services, 17-County Region*



Source: Port Authority of New York and New Jersey, Office of Business Development

by 109 percent. Increases in the surrounding counties were even greater.<sup>25</sup>

Many of these businesses originally grew up here to serve the great corporations clustered in and around New York City. They have since become important export businesses in their own right—although proximity to multinational headquarters and financial institutions is still a very important reason why they remain anchored in New York. John Mollenkopf cites a partner in one of Manhattan's leading law firms, for example, who declares, "the key to the law firms' relationship to New York is that it is the money center. We're here because the investment banks are here."<sup>26</sup>

New York's business service firms operated during the 1980's in an increasingly integrated global market. The top New York accounting firms, for example, now have more offices overseas than in the rest of the United States. Global integration is also evident in the internationalization of ownership. This trend has been most pronounced in advertising, which saw the emergence in the 1980's of several large, multinational networks of what had previously been independent firms, such as Saatchi & Saatchi, the Interpublic Group and WPP.

### Air transport

Transportation and trade services also provide important support to firms engaged in the creation and application of intellectual capital. To function effectively in an integrated global economy, these firms must have quick and easy access to, and be accessible from, every corner of the world. The region's major airports provide that access. The route network that links them to the rest of the nation and to other countries is the most extensive in the world. In 1990 the New York region handled 27 percent of America's international passenger traffic and 33 percent of its international air cargo. The aviation industry is also in itself a major source of jobs—more than 143,000 people worked in air transportation and related services such as ground transportation and freight forwarding services in metropolitan New York and New Jersey in 1990.<sup>27</sup>

As great as its contribution to the regional economy is, the New York region's air transport industry is also plagued by serious problems. Kennedy Airport is old and poorly designed and its strength as an international gateway

has in recent years been undermined by the loss of connecting domestic flights. All three of the region's major airports—Kennedy especially—suffer from serious ground traffic congestion. Major improvements are underway, but the persistent financial problems of many major airlines may yet cause difficulty in financing these improvements.

### Telecommunications

The progressive integration of the New York area into the global economy has also been made possible by—and has in turn stimulated—advances in telecommunications services. New York is in many ways the center of the rapidly expanding global communications network. Ten of America's fifteen largest corporate telecommunications users have their headquarters here. In 1988 New York generated more than a third of America's international phone traffic—more than any other *country*, with the sole exception of Germany.

Despite rapid growth in phone traffic, employment in telecommunications in the region actually declined slightly between 1979 and 1988 as a result of automation in the more routine aspects of telephone operations. Still, more than 96,000 people were employed in the telecommunications industry in the 17-county region in 1988 and this total does not include the growing army of telecommunications specialists employed by major corporate and institutional users of these services.

New communications technologies have both centrifugal and centripetal effects. While technology does make it easier to move back-office operations to sites in Delaware, Florida and even overseas, the same technologies have also made it easier for foreign financial institutions to establish operations in the New York region. Furthermore, telecommunications technologies have enhanced the capacity of the region's headquarters to manage complex global operations and have expanded the market for New York's sophisticated trading activities. Rather than substituting for face-to-face interaction, telecommunications has increased the distance and multiplied the ways in which the value created by face-to-face transactions can be distributed. Its real effect is thus not just to hasten decentralization, but to hasten the process of regional specialization.<sup>28</sup>

The New York area's telecommunications infrastructure is an asset of great value to its economy. Its telecommunications advantage could disappear rapidly, however; competitors from London to Singapore are moving more aggressively to increase investments in their own infrastructure, and to exploit new technologies. In a business that it has long taken for granted, New York needs to become more aggressive in order to remain competitive.

### Higher education

The creation and sophisticated application of intellectual capital are enterprises that by their nature require an ample supply of well-trained, highly-skilled people. Many of these people are supplied by the region's colleges and universities. As a result, these institutions are among the most important support services for the intellectual capital sector.

The New York area's educational institutions include leading centers of graduate and professional education such as Columbia University and New York University; numerous public and private four-year colleges; specialized, industry-oriented schools such as the Fashion Institute of Technology and the College of Insurance; and the community colleges that train front-line workers for many of the region's industries. These schools—more than 150 in all—have a total enrollment of more than 500,000 students and employ more than

Table 6: Foreign Student Enrollment, 1990

<i>Institution</i>	<i>Foreign Students</i>	<i>Total Enrollment</i>	<i>% of Total</i>
Columbia University	2,849	19,231	14.8
New York University	2,081	30,989	6.8
Rutgers University	1,988	33,024	6.0
New Jersey Institute of Technology	1,864	7,801	23.9
City College, CUNY	1,610	16,327	9.9
SUNY, Stony Brook	1,566	15,107	10.4
Baruch College, CUNY	1,343	16,630	8.1
Yale University	1,082	10,839	10.0
New York Institute of Technology	1,040	15,000	6.9

Source: Institute of International Education



150,000 people. Total employment in higher education in the region grew by more than 30 percent between 1979 and 1988.<sup>29</sup>

During the 1980's the region's colleges and universities served growing numbers of foreign students—in effect a form of service export. In the 1989-1990 academic year, more than 34,000 foreign students were enrolled here. No other U.S. metropolitan area educates as many foreign students; indeed, only four countries (France, the Soviet Union, the United Kingdom and Germany) serve more foreign students than does the New York area.<sup>30</sup>

Important as the New York region's colleges and universities are as providers of skilled personnel, they nevertheless lag behind their counterparts elsewhere in the U.S. as centers for scientific and technical research. Only two universities in the RPA's 31-county region ranked among the top 25 in spend-

Top 10 United States Institutions			
Rank	Institution	R&D Spending (millions)	
		Total	Industry-Funded
1	Johns Hopkins University	264	7.8
2	MIT	264	35.1
3	University of Wisconsin	254	8.6
4	Cornell University	245	17.2
5	Stanford University	241	11.0
6	University of Michigan	225	14.5
7	University of Minnesota	222	11.1
8	Texas A&M	220	13.4
9	UCLA	189	14.4
10	University of Illinois	189	11.4
New York Area Institutions in Top 100			
Rank	Institution	R&D Spending (millions)	
		Total	Industry-Funded
19	Columbia University	150	3.9
20	Yale University	146	5.6
36	New York University	99	3.0
37	Rutgers University	95	3.1
52	Yeshiva University	78	0.0
57	Rockefeller University	67	3.5
61	Princeton University	65	4.1
73	SUNY Stony Brook	54	1.3
86	Mt. Sinai Hospital	46	2.9

Source: National Science Foundation

ing for research and development in 1987, according to the National Science Foundation—Columbia ranked 19th, and Yale 20th. Somewhat surprisingly, given the region's strength in corporate R and D, the region's institutions fall farther behind when measured by corporate financing of university R and D. Yale, the region's leader in this category, ranked 36th nationally. Princeton, at 47th, and Columbia, at 49th, were the only other regional institutions in the top 50. This relative weakness in industry-university relations could pose a long-term threat to the region's leading position in corporate R and D.

### **Manufacturing support**

The support services segment of the intellectual capital sector is not limited to what we normally think of as service businesses. It also includes a wide range of enterprises normally classified as manufacturing.

The largest group of firms in this category comprises those that provide a variety of specialized printing services—financial printers, for example, and firms specializing in high-quality reproductions of works of art. Support manufacturers also include small firms that supply patterns, samples, one-of-a-kind items, or short runs of high-fashion garments, under contract with the region's fashion designers. In the same category are a few dozen small firms that provide miscellaneous items needed by theatrical, motion picture and television producers—props, scenery, lighting, costumes, etc.—as well as metal-working firms that fabricate specialized components for producers of sophisticated, highly customized electronic equipment.

All of these firms succeed by providing custom-tailored products to clients who care more about speed, quality and reliability than they do about cost. In that respect they are much like the creators and sophisticated users of intellectual capital that they serve.

## WHAT DEFINES NEW YORK

If there is a single theme running through our description of the various segments of the New York area's intellectual capital sector, it is that the metropolitan area, with New York City at its heart, provides a sustaining environment for the creation and creative application of intellectual capital that is not readily found elsewhere. The exact nature of that environment is difficult to define and impossible to quantify, but it is, perhaps more than anything else, what makes New York New York. Maintaining and continually enhancing that environment should be the central concern of state and local economic development policy in the metropolitan region.