

Employment Relations and Corporate Pensions in the New Economy*

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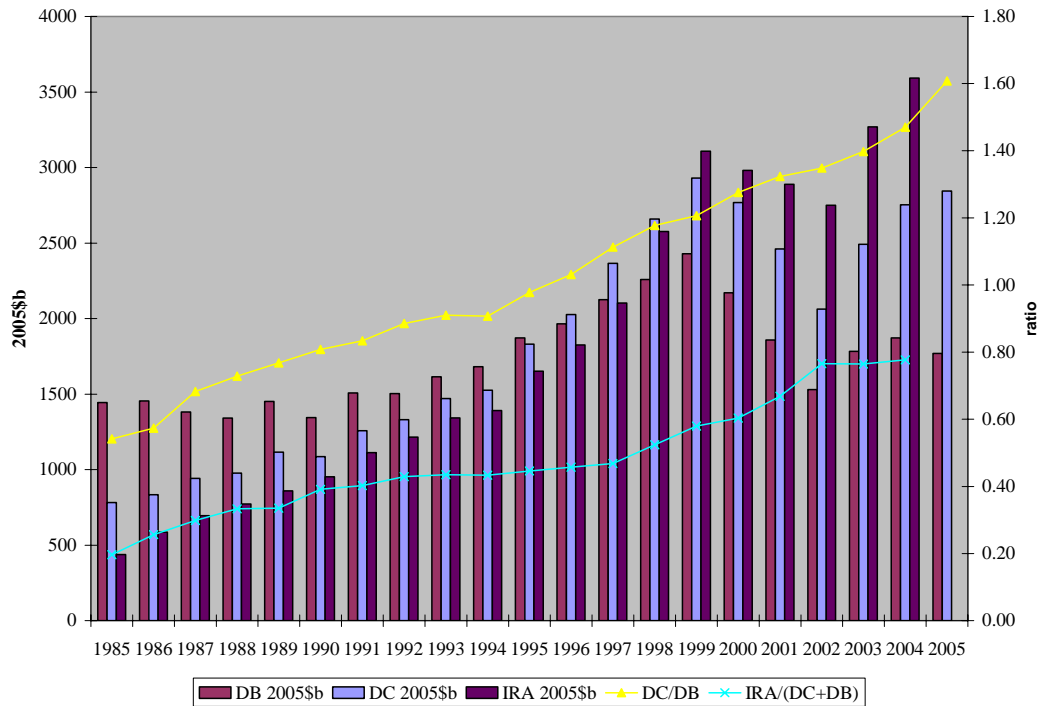
* This paper summarizes a much longer version (with much more extensive references) that will appear in a book that I am currently completing on the New Economy business model and employment opportunities in US high-technology industry. The longer version includes detailed analyzes, drastically summarized here, of the transformation of employment relations at a number of the leading ICT companies, including IBM, Hewlett-Packard, NCR, Xerox, and the companies that since the mid-1980s have evolved out of the old Bell System. To conserve space in this abridged version, I have kept bibliographic references to a minimum. A copy of the longer paper can be accessed at faculty.insead.edu/Lazonick.

1. The Shift to Defined-Contribution Pensions

Since the 1980s two major trends in employer pension coverage of US workers stand out. Firstly, employer pension plans have covered a steadily declining proportion of business-sector workers. In 1980 35 percent of business-sector wage and salary workers were active participants in employer pension plans insured by the US Government’s Pension Benefit Guaranty Corporation (PBGC 2006, Table S-33). Since then this proportion has declined steadily, falling to 19 percent by 2003. Even though the size of the US business-sector labor force increased by 47 percent from 1980 to 2003, there were 6.2 million fewer workers active in an employer pension plan in 2003 than in 1980.

Secondly, among those covered there has been a shift from defined-benefit (DB) to defined-contribution (DC) plans. Between 1985 and 2005 the ratio of assets in DC plans to DB plans rose from 0.54:1 to 1.61:1. Over the past two decades, individual retirement accounts (IRAs) – that is, non-employer pensions -- became increasingly important as a form of retirement saving, rising from 20 percent of combined DB and DC assets in 1985 to 78 percent in 2005 (see Figure 1).

Figure 1. Total US DB, DC, and IRA assets, 1985-2005



Source: Federal Reserve Board, *Flow of Funds Accounts of the United States, Annual Flows and Outstandings, 1985-1994 and 1995-2005*, Board of Governors of the Federal Reserve System, March 9, 2006.

Those business-sector employees who still are covered by DB plans tend to obtain that benefit by working for very large business corporations. Since the 1980s about 80 percent of active participants in DB plans have been in single-employer plans, with the proportion of those in single-employer plans with 10,000 or more participants rising from 43 percent in 1985 to 65 percent in 2005 and with 5,000-9999 participants staying steady at about 11 percent (PBGC

2006, Tables S-30, S-33). In the plans with 10,000 or more participants, there were a total of 12.7 million people in 1985 and 22.3 million in 2005; while in the plans with 5,000-9,999 participants, there were 3.1 million in 1985 and 3.6 million in 2005.

These trends in pension coverage reflect the growing insecurity of employment at major US corporations compared with the post-World War II decades. DB pension coverage became widespread in that era as employment with one company over the course of one’s career became the norm at major US companies. Traditional DB plans rewarded years of service with one company, and, being generally non-portable, discouraged interfirm labor mobility. It was logical to combine the expectation of “lifelong” employment with one company and a non-contributory, non-portable DB pension plan, and in the postwar decades this combination provided millions of corporate employees with secure incomes at work and in retirement.

In the 1980s and 1990s, however, the restructuring of these “Old Economy” business corporations increasingly put an end to the expectation of employment with one company over the course of one’s career (Lazonick 2004). With interfirm labor mobility on the rise, from the 1980s DC pensions, typically in the form of 401(k) savings plans, as well as individual retirement accounts (IRAs) became widespread. High-growth “New Economy” companies never held out the expectation of lifelong employment, and hence had no reason to offer employees a pension plan that rewarded seniority. These trends in pension coverage are, therefore, part and parcel of a more fundamental transformation in the ways in which business enterprises employ people in the US economy.

Over the past quarter century, leading both the growth of the US economy and the transformation of employment relations have been companies in the information and communication technologies (ICT) industries. In ICT, a “New Economy business model” (NEBM) has replaced the “Old Economy business model” (OEBM) (see Lazonick 2006a, 2006b and 2006c). As shown in Table 1 OEBM and NEBM can be compared in terms of the strategy, organization, and finance of their constituent business enterprises.

Table 1. Old Economy Business Model (OEBM) and New Economy Business Model (NEBM) in the Information and Communication Technology Industries

	OEBM	NEBM
Strategy, product	growth by building on internal capabilities; expansion into new product markets based on related technologies; geographic expansion to access national product markets	new firm entry into specialized markets; sell branded components to system integrators; accumulate new capabilities by acquiring young technology firms
Strategy, process	development and patenting of proprietary technologies; vertical integration of the value chain, at home and abroad	cross-license technology based on industry standards; vertical specialization of value chain; outsourcing/offshoring routine work
Organization	secure employment: “organization man” (career with one company); industrial unions; DB pension; employer-funded medical insurance in employment and retirement	insecure employment: interfirm mobility of labor; broad-based stock options; non-union; DC pension; employee bears greater burden of medical insurance
Finance	venture finance from personal savings, family, and business associates; NYSE listing; pay steady dividends; growth finance from retentions leveraged with bond issues	organized venture capital; IPO on NASDAQ; low or no dividends; growth finance from retentions plus stock as an acquisition currency; stock repurchases to support stock price

In this paper, I argue that the change from DB to DC pensions over the past quarter century has been integral to the transition from OEEM to NEEM as the dominant business model in US ICT industries. Section 2 discusses the role of the traditional DB pension as a logical form of deferred compensation for a person with the expectation of a career with one company – what in the mid-1950s William Whyte (1956) called the “organization man” -- at the leading Old Economy ICT companies into the 1980s. In Section 3, I analyze how and why the evolution of employment relations and pension systems at the leading New Economy ICT companies assumed, in sharp contrast to the concept of the “organization man”, interfirm labor mobility in the pursuit of a career. In Section 4, I document the transitions in the 1990s and first half of the 2000s of the pension systems of major Old Economy ICT companies from traditional, non-portable DB plans to portable “cash-balance” DB plans to DC plans, primarily 401(k) savings plans, as key aspects of the transformation from OEEM to NEEM in ICT. In the conclusion, I draw out the implications of the transition from OEEM to NEEM for the future of employee pensions, given both the ongoing globalization of the labor force employed by major US business corporations and the state of the US stock markets on which US pensions have increasingly relied to generate returns.

2. Employment relations and pensions in OEEM

Business models, old and new

In 2005 there were 53 ICT companies in the US Fortune 500, with a total of \$909 billion in revenues and 2.6 million employees. Of these 53 companies, 26, with \$332 billion in revenues and 871,000 employees in 2005, can be defined as “New Economy”. Tables 2 and 3 list the top 20 Old Economy and top 20 New Economy ICT companies by revenues in 2005, and the numbers of people employed by these companies over the previous decade. For inclusion in Table 3 as “New Economy”, a company had to a) be founded in 1955 or later, b) not have been established by the spin-off of an existing division from an Old Economy company, and c) not have grown through acquisition of, or merger with, an Old Economy company (as was the case for EDS, Comcast and IAC, which are included as Old Economy companies).

I have chosen 1955 as the earliest date for inclusion in the New Economy list because that was the year that William Shockley, the co-inventor of the transistor, established Shockley Semiconductor Laboratories in Mountain View, California, inadvertently sparking a chain reaction that resulted in the emergence of Silicon Valley as a center for the development of microelectronics. As I outline in Section 3, it was first and foremost in Silicon Valley, beginning in the late 1950s, that NEEM emerged as a viable, and ultimately dominant, business model. Note that 14 of the 20 New Economy companies in Table 3 are based in California, with 11 of them (all but Qualcomm, Computer Sciences, and SAIC) in Silicon Valley.

Headed by the giants, International Business Machines (IBM) and Hewlett-Packard (HP), six of the Old Economy companies in Table 2, including Xerox, Electronic Data Systems (EDS), First Data, and NCR are strictly information technology companies. The two semiconductor companies, Texas Instruments (TI) and Freescale Semiconductor, supply chips to both the information technology and communication technology sectors of ICT, but TI’s major business is the design and manufacture of digital signal processing chips for the cell phone industry

while Freescale is a recent spinoff of the wireless communications technology company, Motorola. Along with Motorola in the communications equipment segment of ICT is Lucent Technologies, which was spun off from AT&T Corp. in 1996 and which has recently merged with the French telecommunications equipment company, Alcatel, to become Alcatel-Lucent.¹

The remaining ten companies in Table 2 are communications service providers. Five of them are direct descendents of the old Bell System that, until its breakup on January 1, 1984, functioned as a regulated monopoly in the provision of local and long distance telephone services. Besides the parent company, AT&T, the system included a) regional Bell operating companies, or RBOCs, b) Western Electric, wholly-owned by AT&T, which manufactured equipment for the Bell System, and c) Bell Labs, the world famous research organization jointly owned by AT&T and Western Electric. The breakup separated seven RBOCs, also known as the Baby Bells, from AT&T Corp., which now included within its internal organization Western Electric and Bell Labs as its AT&T Technologies division. The seven RBOCs were Ameritech, Bell Atlantic, BellSouth, NYNEX, Pacific Telesis (PacTel), Southwestern Bell Corp. (SBC), and US West. Subsequently Bell Atlantic and NYNEX were merged into Verizon; Ameritech, Pacific Telesis, and AT&T Corp. into SBC, which in 2005 changed its name to AT&T Inc.; and US West into Qwest. In December 2006 AT&T Inc. acquired BellSouth, so that in the 13 years since the breakup of the Bell System AT&T Corp. and the seven Baby Bells have now been consolidated into three companies: AT&T Inc., Verizon, and Qwest.²

In Table 3 only three companies – Cisco Systems which makes Internet routers and switches; EchoStar, a major force in satellite television; and Qualcomm, a wireless equipment manufacturer – are clearly communications technology companies. Cisco's rise to dominance of its industry derives from its development of software that has enabled the convergence of information and communication technology – what is now called the “triple play” of voice, data, and video – using the same infrastructures and equipment. The evolution of those infrastructures and equipment has depended critically on the development of ever more powerful, compact, and affordable computers – in short, the microelectronics revolution. At the center of this revolution were Intel and Microsoft, both of which grew large supplying crucial inputs to the IBM PC and what used to be called its “clones”, including Dell Computer, no. 1 on the 2005 New Economy list. Advanced Micro Devices (AMD), founded in Silicon Valley a year following Intel, sustained its growth for decades by serving as a “second source” for the supply of Intel chips, although in recent years it has increasingly been competing head-to-head with Intel with its own chip designs.

Applied Materials is the world's largest maker of semiconductor production equipment, while Solectron, Sanmina-SCI, and Jabil Circuit are among the world's leading electronic manufacturing service (EMS) providers, supplying printed circuit boards and other components to companies such as IBM, HP, Dell and Cisco. Apple in innovative computer products, Sun Microsystems in computer workstations, and EMC in information management and storage established their own distinctive niches in the information technology sector. Oracle is the leader in database management software, while Computer Sciences (CS) and SAIC, both of which count the US federal government, including the Department of Defense as main clients, line up behind “Old Economy” EDS in providing information technology services. Finally,

Amazon.com, Google, and Yahoo! are, along with “Old Economy” IAC, in a newly created Fortune industry classification, “Internet Services and Retailing,” and it was the revenues that each of them generated in 2005 that propelled them onto the top 20 New Economy list for the first time.

Old Economy employment relations in the 1980s

In the post-World War II decades, many Americans, both white-collar and blue-collar, the vast majority of whom were white males, enjoyed substantial employment security working for the large-scale corporations that dominated the US economy. From the 1970s, however, this employment security weakened. Corporations that in the conglomerate movement of the 1960s acquired too many companies in too many unrelated lines of business became impossible to manage strategically and overextended financially, and began to unravel. Also in the 1970s US corporations faced new competitive challenges from the Japanese in the very industries – cars, consumer electronics, business machines, machine tools, semiconductors, and steel – in which the United States had been dominant. Then, in the 1980s, US corporate executives embraced the ideology of “maximizing shareholder value” to legitimize downsizing of their labor forces and increasing distributions to shareholders in the forms of not only dividends but also stock buybacks (Lazonick and O’Sullivan 2000; Lazonick 2006c). Among the prime beneficiaries of this “downsize-and-distribute” regime were the top corporate executives themselves who, over the course of the 1980s and 1990s, saw their remuneration explode, mainly because of the gains on the bountiful stock options that their boards of directors bestowed upon them.

Yet, amidst the restructuring of the 1980s and the employment insecurity that it brought with it, most of the top 20 Old Economy ICT companies listed in Table 2 still held out the expectation to their employees of career employment with one company and, in fact, offered a high degree of employment security. Table 4 shows the types of pensions that these 20 companies had in 1985, as well as estimates of their union membership in both the last half of the 1980s and in 2005. Comcast is the only company on the list that that did not have a DB plan in 1985. It inherited a DB plan when it acquired AT&T Broadband in 2002 – an acquisition that made it one of the top 20 Old Economy ICT companies. Note that both Qwest Communications and IAC/InterActiveCorp were founded in the 1990s, but had their origins in Old Economy companies that in 1985 had DB plans. Qwest, moreover, became a major ICT company in 2000 as a result of its acquisition of the former Bell operating company, US West, with its highly unionized labor force and DB pension plan.

Table 2. Employment, 1996 and 2000-2005, at the top 20 “Old Economy” companies by 2005 sales

<i>In parentheses:</i>		Employees							
<i>a) Year of founding</i>	<i>2005</i>								<i>2005</i>
<i>b) State in which headquartered</i>	<i>Sales</i>								<i>Sales/</i>
<i>c) Rank in 2006 Fortune 500 list</i>	<i>\$b</i>								<i>Employee</i>
<i>Old Economy Companies</i>		<u>1996</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
International Business Machines (1911; 10; NY)	91.1	240,615	316,309	319,876	315,889	319,273	329,001	329,373	\$277,000
Hewlett-Packard (1939; CA; 11)	86.7	112,000	88,500	86,200	141,000	142,000	151,000	150,000	\$578,000
Verizon Communications (1885; NY; 18)	75.1	62,600	260,000	247,000	229,500	203,100	210,000	217,000	\$346,000
AT&T Inc. ¹ (1885; TX, 39)	43.9	61,540	220,090	193,420	175,400	168,950	162,000	189,950	\$231,000
Motorola (1928; IL; 54)	36.8	139,000	147,000	111,000	97,000	88,000	68,000	69,000	\$533,000
Sprint Nextel ² (1899; KS; 59)	34.7	48,024	84,100	83,700	72,200	66,900	59,900	79,900	\$434,000
Comcast ³ (1963; PA; 194)	22.3	16,400	35,000	38,000	82,000	68,000	74,000	80,000	\$279,000
Bellsouth (1885; GA; 106)	20.6	81,241	103,900	87,875	77,000	76,000	62,564	63,066	\$326,000
Electronic Data Systems ⁴ (1962; TX; 108)	20.5	100,000	122,000	143,000	137,000	132,000	117,000	117,000	\$175,000
Xerox (1906; CT; 142)	15.7	86,700	92,500	78,900	67,800	61,100	58,100	55,200	\$284,000
Qwest Communications (1885; CO; 160)	13.9	720	67,000	61,000	47,000	47,000	41,401	39,348	\$353,000
Texas Instruments (1930; TX; 167)	13.4	59,927	42,481	34,724	34,589	34,154	35,472	35,207	\$381,000
Directv Group (1932, CA; 168)	13.2	86,000	9,000	13,700	11,600	12,300	11,800	9,200	\$1,435,000
First Data (1871; CO; 224)	10.5	40,000	27,000	29,000	29,000	29,000	32,000	33,000	\$318,000
Alltel (1943; AR; 251)	9.5	16,307	27,257	23,955	25,348	19,986	18,598	21,373	\$444,000
Lucent Technologies (1869; NJ; 255)	9.4	124,000	126,000	77,000	47,000	34,500	31,800	30,500	\$308,000
Cox Communications (1898; GA; 273)	9.0	7,200	19,000	20,700	21,600	22,150	22,350	22,530	\$399,000
IAC/InterActiveCorp ⁵ (1977; NY; 313)	7.1	4,750	20,780	16,900	23,200	25,700	26,000	28,000	\$254,000
NCR (1884; OH; 357)	6.0	38,600	32,900	31,400	30,100	29,000	28,500	28,200	\$213,000
Freescale Semiconductor ⁶ (1928; 368; TX)	5.8	--	--	--	--	--	--	22,700	\$256,000
Averages (per firm, except sales per employee)	27.3	72,808	96,885	89,334	87,621	83,111	81,062	81,027	\$391,000

¹ In 2005 SBC Communications, founded in Texas in 1885 and ranked 33rd on the Fortune 500 2005 list, acquired AT&T, founded in 1877 and ranked 56th on the 2005 list. SBC then changed its name to AT&T Inc. Employment figures for 1996 and 2000-2004 are for SBC. AT&T Corp.'s employment figures were: 1996 130,000; 2000, 166,000; 2001, 117,800; 2002, 71,000; 2003, 61,600; 2004, 47,565.

² In August 2005 Sprint, 65th on the Fortune 500 2005 list, acquired Nextel, founded in 1987 and 157th on the 2005 list.

³ Comcast began its transformation into the largest Internet cable company in the United States through its acquisition of subscribers from ATTBroadband in 2000-2001.

⁴ General Motors bought Electronic Data Systems in 1984 and spun it off as an independent company in 1996.

⁵ In 1998 HSN (formed out of Home Shopping Network) purchased USA networks, which had been owned by Paramount and MCA. In the early 2000s the company changed its name, first to USA Interactive and then to IAC/InterActiveCorp.

⁶ In late 2004 Motorola spun off its semiconductor division as Freescale Semiconductor.

Note: Included in the ICT industries are companies that the Fortune 500 2006 list classifies as being in the following industries: a) Computer Peripherals, b) Computer Software, c) Computers, Office Equipment, d) Financial Data Services, e) Information Technology Services, f) Internet Services and Retailing, g) Network and Other Communications Equipment, h) Semiconductors and Other Electronic Components, and i) Telecommunications.

Sources: *Fortune*, April 17, 2006; www.hoovers.com; Compustat.

Table 3. Employment, 1996 and 2000-2005, at the top 20 “New Economy” companies by 2005 sales

<i>In parentheses:</i>									
<i>a) Year of founding</i>	<i>2005</i>								<i>2005</i>
<i>b) State in which headquartered</i>	<i>Sales</i>								<i>Sales/</i>
<i>c) Rank in 2006 Fortune 500 list</i>	<i>\$b</i>	<i>Employees</i>							<i>Employee</i>
<i>New Economy Companies</i>		<u>1996</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>2003</u>	<u>2004</u>	<u>2005</u>	
Dell Computer (1984; TX; 25)	55.9	8,400	36,500	40,000	34,600	39,100	55,200	65,200	\$857,000
Microsoft (1975; WA; 48)	39.8	20,561	39,100	47,600	50,500	55,000	57,000	61,000	\$652,000
Intel (1968; CA; 49)	38.8	48,500	86,100	83,400	78,700	79,700	85,000	99,900	\$388,888
Cisco Systems (1984; CA; 83)	24.8	8,782	34,000	38,000	36,000	34,000	34,000	38,413	\$646,000
Computer Sciences (1959; CA; 141)	15.8	33,850	58,000	68,000	67,000	90,000	90,000	79,000	\$200,000
Apple Computer (1977; CA; 159)	13.9	10,896	8,568	9,603	10,211	10,912	12,561	15,810	\$879,000
Oracle (1977; CA; 196)	11.8	23,111	41,320	42,297	42,006	40,650	41,658	49,872	\$236,000
Sanmina-SCI (1980; CA; 198)	11.7	1,726	24,000	48,774	46,030	45,008	42,115	42,821	\$273,000
Sun Microsystems (1982; CA; 211)	11.1	17,400	38,900	43,700	39,400	36,100	32,600	31,000	\$358,000
Solectron (1977; CA; 227)	10.5	10,781	65,273	60,000	73,000	66,000	59,500	47,000	\$223,000
EMC (1979; MA; 249)	9.7	4,800	24,100	20,100	17,400	20,000	22,700	21,000	\$462,000
Amazon.com (1994; WA; 272)	8.5	151	9,000	7,800	7,500	7,800	9,000	12,000	\$708,000
EchoStar Communications (1993; CO; 273)	8.4	1,200	11,000	11,000	15,000	15,000	20,000	21,000	\$400,000
SAIC (1969; CA; 285)	8.0	20,931	39,078	41,500	40,400	38,700	44,900	43,800	\$183,000
Jabil Circuit (1966; FL; 303)	7.5	2,649	19,115	17,097	20,000	26,000	34,000	40,000	\$188,000
Applied Materials (1967; CA; 317)	7.0	11,403	19,220	17,365	16,077	12,050	12,960	12,750	\$549,000
Google (1998; CA; 353)	6.1					1,628	3,021	5,680	\$1,074,000
Advanced Micro Devices (1969; CA; 367)	5.8	12,200	14,696	14,415	12,146	14,300	15,900	15,900	\$365,000
Qualcomm (1985; CA; 381)	5.7	6,000	6,300	6,500	8,100	7,400	7,600	9,300	\$613,000
Yahoo! (1995; CA; 412)	5.3	155	3,259	3,000	3,600	5,500	7,600	9,800	\$541,000
Averages (per firm, except sales per employee)	15.3	12,816	30,396	32,640	32,509	32,242	34,366	36,062	\$424,000

Note: Included in the ICT industries are companies that the Fortune 500 2006 list classifies as being in the following industries: a) Computer Peripherals, b) Computer Software, c) Computers, Office Equipment, d) Financial Data Services, e) Information Technology Services, f) Internet Services and Retailing, g) Network and Other Communications Equipment, h) Semiconductors and Other Electronic Components, and i) Telecommunications.

Sources: *Fortune*, April 17, 2006; www.hoovers.com; Compustat.

In the mid-1980s, amidst widespread downsizing, two Old Economy ICT companies that were among the top 20 in 2005 stood out as having “no-layoff” policies. They were IBM and HP – the two largest ICT companies by revenues in 2005. In 1985, with revenues of \$50.1 billion and more than 405,000 employees, IBM was by far the largest ICT company, and ranked 5th on the Fortune 500 list; the next largest ICT company in revenues was AT&T. In 1985 HP had revenues of \$6.5 billion, placing it at no. 58 on the Fortune 500 list. HP employed over 90,000 people at that time.

Neither IBM nor HP had unions. Indeed, as Table 4 shows, among the top 20 Old Economy ICT companies in 2005, the only ones with a substantial union presence were those that had evolved out of the Bell System: Verizon, AT&T Inc., BellSouth, and Qwest Communications. Before its breakup at the beginning of 1984, the Bell System, with about one million employees, had about 675,000 union workers, including about 525,000 Communications Workers of America (CWA), 100,000 International Brotherhood of Electrical Workers (IBEW), and 50,000 Telecommunications International Union.

The breakup of the Bell System on January 1, 1984 created a much smaller AT&T, focused on long-distance telephony and supported in-house by the research capabilities of Bell Labs and the manufacturing capabilities of Western Electric. AT&T Technologies, of which Western Electric formed the core, accounted for well over 60 percent of AT&T’s employees. In 1984 AT&T and the seven RBOCs had \$118 billion in revenues and 933,000 employees.

Between 1985 and 2005 unions also played a role in two other companies in Table 2. One was Lucent Technologies in which unions represented 36 percent of 124,000 worldwide employees and 46 percent of 98,000 US employees when the company was spun off from AT&T in 1996, but only ten percent of 30,500 worldwide employees and 16 percent of 18,500 US employees in 2005. Adding in Lucent’s major spinoffs in calculating these percentages, the 6,610 union members at Lucent, Avaya, and Agere in 2005 represented only 12 percent of the 55,800 worldwide employees for the three companies combined and 16 percent of the 40,640 US employees.

The other important unionized ICT company in 1985 was Xerox. The Amalgamated Clothing and Textile Workers Union (ACTWU) organized only about five percent of Xerox’s total labor force in 1985. About 60 percent of the union members, however, were members of Local 14A who worked at Xerox’s main manufacturing facility in Webster, New York. In the 1980s and 1990s employment relations between Local 14A and Xerox provided a textbook case of union-management cooperation in finding ways to improve productivity while collectively bargained contracts provided the workers involved with employment guarantees. The experience at Xerox stands in sharp contrast to that at NCR, where in the 1970s the company deliberately decimated a 16,000-member union based in Dayton, Ohio by locating work on its new electronic business machines in other parts of the United States.

Table 4. 1985 Retirement Plans of 2005 top 20 Old Economy ICT Companies

	Employees 1985	US union members in 1985	Employees 2005	US union members in 2005*	Retirement plan(s) 1985**
IBM	405,535	None	329,373	None	DB (92%); 401(k) (8%), 30% to 5% ¹
Hewlett-Packard	84,000	None	150,000	None	Profit-sharing DB (69%); supplemental DB (19%); 401(k) (12%), 33% to 12%
Verizon Communications ²	79,285	See footnote 3 in text	217,000	CWA 68,492; IBEW 65,600; (99,800)	<i>Bell Atlantic, NYNEX</i> : Bell System DB
AT&T Inc. ²	71,400	See footnote 3 in text	189,950	CWA 110,723; IBEW 12,250	<i>SBC, Ameritech, PacTel. AT&T Corp.</i> : Bell System DB
Motorola	90,200	None	69,000	None	DB (30%); contributory profit-sharing (70%)
Sprint Nextel	27,465	<i>GTE and United Telecom</i> : CWA, IBEW; <i>Southern Pacific</i> : RR unions	79,900	CWA 3,500; IBEW 3,500; (7,000)	<i>GTE-Sprint</i> : for salaried employees, 401(k), 50% to 6%, with extra 25% match depending on performance of company' stock, with match in company stock; <i>GTE, Southern Pacific, United Telecommunications</i> : DB
Comcast	1,318	None	80,000	CWA (4,000)	None ³
Bellsouth ²	92,500	See footnote 3 in text	63,066	CWA 51,005	Bell System DB
Electronic Data Systems	40,000	None	117,000	None	General Motors division, 1984-96: DB
Xerox	102,396	ACWTU 5,500	55,200	UNITE HERE 2,325 IAM and IUOE 225	Profit-sharing; supplemental DB
Qwest Communications ²	70,202	See footnote 3 in text	39,348	CWA 23,642; (23,000)	<i>Southern Pacific Railroad</i> ⁴ : DB
Texas Instruments	77,872	None	35,207	None	DB (59%); profit-sharing (37%); 401(k) (4%)
Directv Group	74,000	<i>Hughes Aircraft</i> : IAM 1,300; ESTU 12,000	9,200	None	<i>GM Hughes Electronics</i> as of 12/31/1985: DB ⁵
First Data	na	None	33,000	CWA (1,100)	DB
Alltel	5,590	CWA, IBEW	21,373	CWA (1,387)	DB
Lucent Technologies ²	na	See footnote 3 in text	30,500	CWA 2,708 (3,000)	<i>AT&T Technologies, 1984-96</i> : Bell System DB
Cox Communications	na	None	22,530	None	DB; TRASOP ⁶ ; PAYSOP ⁷ ; 401(k), 25% to 5% (taken private in 2005)
IAC/InterActiveCorp	na	None	28,000	None	<i>Paramount, MCA</i> : DB
NCR	62,000	UAW	28,200	None	DB (86%); profit-sharing (4%); 401(k) (11%) 25% to 6%; PAYSOP ⁷
Freescale Semiconductor	na	na	22,700	None	<i>Motorola</i> : DB; contributory profit-sharing

Notes to Table 4

DB=traditional non-contributory defined benefit plan
ACTWU=Amalgamated Clothing and Textile Workers Union
CWA=Communication Workers of America
ESTU=Electronic and Space Technicians Union
IAM=International Association of Machinists, and Aerospace Workers
IBEW=International Brotherhood of Electrical Workers
IUOE=International Union of Operating Engineers
UAW=United Auto Workers

na=not applicable

* Figure in parenthesis is the number of union members given in the company's 2005 annual report. CWA figures for 2005 are from the union's membership development report for December 2005. Given that in 2005 Cingular was 60 percent owned by AT&T Inc. and 40 percent by BellSouth, the CWA figures of each of these parent companies include these proportions of Cingular's 21,469 CWA members in 2005. Note also that the 2005 union membership for AT&T Corp. includes 4,897 employees at the formerly independent Southern New England Telephone Company (SNET), which was acquired by SBC in 1998.

** For IBM, HP, and Motorola the italicized percentages in parentheses following different types of retirement plans represent assets in those plans as a proportion of total assets in 1986 (Pensions & Investment Age, January 26, 1987); for TI, percentages are for 1987 (Pensions & Investment Age, March 21, 1988); for NCR, percentages are for 1988 (Pensions & Investment Age, January 13, 1989).

¹ 30% to 5% means that the company matches 30% of employee contributions to 5 percent of the employee's annual salary or wages.

² With the breakup of the Bell System on January 1, 1984, AT&T Inc. and the seven RBOCS all had identical non-contributory DB plans with benefits based on years of service and average career earnings for managerial employees and a flat benefit per year for union employees. At the end of 1986 these DB plans represented 85-90 percent of the total retirement assets held by these companies.

⁴ Comcast became an "Old Economy" company when it acquired AT&T Broadband (with a Bell System DB) in 2002.

⁵ Denver-based Qwest Communications emerged in 1995 when privately-owned Southern Pacific Telecommunications (SPT), a 1989 spinoff from the Southern Pacific Railroad, was renamed after acquiring Dallas-based Qwest Communications in 1995. In 1985 the Santa Fe Southern Pacific Railroad had a DB plan for all employees.

⁶ For salaried, years of service plus salary history for managers; for hourly, flat amount per year of service plus supplement for retirement with 30 years of service before retirement age

⁷ Tax Reduction Act Employee Stock Ownership Plan

⁸ Payroll Based Employee Stock Ownership Plan

Sources: BLS Collective Bargaining Agreements File, <http://www.bls.gov/cba/cbaindex.htm>; company 10-K filings; Compustat; Xerox, 2006 Report on Global Citizenship, 63; information supplied by Communications Works of America (courtesy of Debbie Goldman and Tony Daley, to whom I am grateful).

For the US economy as a whole the 1980s and 1990s was an era of downsizing the labor force in which unions did not do well. Yet “downsizing” only attracted national media attention in the winter of 1996, after AT&T had announced that it would cut its labor force by 40,000 over the next three years, targeting 24,000 salaried and 16,000 hourly employees. In March 1996 the New York Times ran a seven-part front-page series called “the downsizing of America”, subsequently released as a paperback. By the spring of 1996, however, public interest in corporate downsizing suddenly disappeared. Americans had discovered the “New Economy”.

3. The Rise of NEBM and the Transformation of ICT Employment Relations

When in August 1981 IBM launched its Personal Computer, Microsoft retained the right to sell the operating system and Intel the microprocessor to other companies. IBM’s strategy for entering the microcomputer market consolidated and reinforced the vertically specialized structure of the industry in line with what can be viewed as the Silicon Valley model. The subsequent domination by Intel and Microsoft of their product markets created an immense barrier to entry to actual and potential competitors who would directly confront the New Economy giants while at the same time, by defining the “open access” standards for the microcomputer industry, presented countless opportunities for new entrants to develop specialized niche products that conformed to the “Wintel” architecture.

Vertical specialization, however, did not stop there. A number of Silicon Valley design-oriented chip companies that entered the industry in the 1980s, and even more so in the 1990s, did so without investing in the manufacture of semiconductors. The Taiwanese in particular took advantage of the opportunity, as Taiwan Semiconductor Manufacturing Company (TSMC) and United Microelectronics Corporation (UMC) became the largest semiconductor contract manufacturers in the world. If a layer of vertical specialization emerged in the manufacture of chips, so too did it emerge in the assembly of chip sets, printed circuit boards, and, increasingly, even finished products. In the 1980s and early 1990s contract manufacturers, which became known in the industry as electronic manufacturing service (EMS) providers, operated as job shops that took on extra work from integrated original equipment manufacturers (OEMs) in periods of peak demand. Then during the mid-1990s a few Old Economy companies -- in particular IBM, Hewlett-Packard, and the Swedish company Ericsson -- took the lead in selling existing plants to EMS providers. Meanwhile the newest New Economy companies such as Cisco and 3Com that produced in networking equipment outsourced all of their manufacturing from the outset.

In the Internet boom of the late 1990s the demand for EMS capacity soared. New Economy companies that did no manufacturing relied on EMS providers for not only assembly but also an increasing array of services including testing, design, documentation and shipping. From 1993 to 2003, the largest EMS provider, Flextronics, increased its revenues from \$93 million to \$13.4 billion and its employment from 2,000 to 95,000, while the second largest EMS provider, Solectron, increased its revenues from \$836 million to \$11.0 billion and its employment from 4,500 to 66,000.

These changes in the organization of industry had far-reaching implications for the employment of labor. Vertical specialization and the startup phenomenon depended upon, and over time reinforced, the existence of industry-wide standards as distinct from the in-house proprietary standards that had characterized OEBM with its vertically integrated enterprises such as AT&T/Western Electric and IBM. The existence of industry-wide standards facilitated the movement of high-tech labor from one company to another over the course of a career. Indeed, while New Economy companies did not like to see valued employees leave via this highly mobile labor market, they nevertheless valued the industry-wide experience, including knowledge of the latest developments in technology and product markets, that new employees often brought with them. The regional concentration of ICT firms in Silicon Valley further facilitated this movement of labor from one firm to another – one could change employment without moving house -- while the networks created by both this concentration and interfirm mobility generated new learning to which participants in the regional labor force had privileged access relative to high-tech labor outside the region.

The interfirm mobility of high-tech labor led New Economy firms to use stock options to attract and retain employees. Stock options are granted to an employee as part of a compensation package that includes a salary based on one's hierarchical and functional position. Over the past two decades both academics and journalists have focused most of their attention on the excesses of *executive* stock options. Yet the vast majority of employee stock options in the United States have been issued to *non-executive* personnel as part of what have become known as “broad-based” programs. The widespread use of stock options for non-executive employees originated in the 1960s and 1970s when Silicon Valley high-tech startups began to offer options to scientists, engineers, and managerial personnel at all levels, and not just top executives, to lure them away from employment at established companies. Old Economy corporations could credibly promise secure employment to these employees with superior compensation taking the form of pay increases tied to promotion up the managerial hierarchy. Startups, their futures highly uncertain, could not realistically hold out the expectation of employment security. They could, however, use stock options, with exercise prices often at pennies a share, to attract educated and experienced personnel. If the startup did an IPO or was sold to an already listed company, these stock options could become very valuable.

The high concentration of startups in Silicon Valley meant that increasingly in the 1980s new ventures not only used stock options to induce high-tech labor to leave secure employment with established corporations, but also competed among themselves for personnel, with an emphasis on stock options in their compensation packages. Besides attracting “talent” and giving them a stake in getting the startup to an IPO, ample stock options could substitute to some extent for cash salaries. In their early years, some Silicon Valley startups like Intel, Oracle, Sun Microsystems, and Cisco Systems granted stock options to substantial proportions of their employees, and during the 1980s and 1990s they maintained, and in some cases enlarged, their broad-based stock option programs even as they grew to employ tens of thousands of people. Coming into the 1990s non-executive employee stock options remained predominantly a Silicon Valley

phenomenon, and even in the mid-2000s they are more prevalent among high-tech companies in Silicon Valley than in any other part of the United States, much less the world.

The growing importance of stock options to attract new employees placed pressure on high-tech firms to look to this form of compensation to perform a retention function as well. For this reason, the practice evolved in New Economy firms of making *annual* option grants. Without creating the Old Economy expectation among employees of “lifelong careers” with the company, the perpetual existence of unvested options functioned as a tangible retention mechanism. Indeed, the amount of options that an individual employee could expect to receive became tied to his or her position in the firm’s hierarchical and functional division of labor so that the retention function of stock options became integrally related to the employee’s career progress within the business organization.

In the Internet boom, characterized as it was by a highly speculative stock market, the payoffs from stock options could be enormous. Table 5 shows estimates of the average gains per employee (excluding the five highest paid executives whose actual gains companies must report) from exercising options for the six companies from the New Economy top 20 list as well as top two companies, IBM and HP, from the Old Economy list. IBM and HP were exemplary companies in providing employment security in the Old Economy. As I discuss in the next section of this paper, however, in the 1990s and 2000s IBM and HP made the transition to NEBM.

Table 5. Average gains per employee (excluding CEO and other four highest paid executives) from the exercise of stock options, Cisco Systems, Dell, HP, IBM, Intel, Microsoft, Oracle, and Sun Microsystems, 1995-2005

	Cisco	Dell	HP	IBM	Intel	Microsoft	Oracle	Sun
1995	\$60,894	\$3,833	\$2,362	\$671	\$1,116	\$51,829	na	\$2,468
1996	\$93,399	\$7,194	\$2,213	\$1,823	\$0 ¹	\$79,022	\$7,367	\$7,992
1997	\$85,159	\$11,219	\$3,156	\$3,615	\$5,044	\$154,196	\$6,588	\$7,626
1998	\$92,947	\$40,547	\$2,676	\$4,066	\$11,596	\$238,377	\$5,019	\$10,799
1999	\$193,476	\$126,639	\$6,613	\$5,790	\$8,380	\$369,693	\$5,650	\$27,477
2000	\$290,870	\$84,818	\$17,987	\$4,200	\$17,375	\$449,142	\$37,214	\$60,431
2001	\$105,865	\$76,122	\$1,498	\$4,011	\$5,410	\$143,772	\$88,723	\$46,763
2002	\$13,596	\$33,167	\$838	\$1,195	\$8,654	\$95,310	\$6,950	\$4,550
2003	\$8,917	\$10,739	\$936	\$1,553	\$9,007	\$80,283	\$6,193	\$1,182
2004	\$32,804	\$12,216	\$638	\$1,842	\$8,232	\$50,690	\$7,908	\$1,960
2005	\$24,432	\$11,297	\$1,816	\$1,256	\$6,549	\$14,500	\$6,926	\$1,187

¹ When the \$123 million that Intel’s top5 gained from stock options in 1996 is subtracted from the total estimated gains for all company employees, the average gains per employee for the other 45,047 employees is -\$278. Since no one would exercise a stock option with the market price below its exercise price, we set average earnings per employee to zero. Note, however, that if we had used the highest monthly market price for these estimates, the average gains per employee in 1996 would have been \$556.

na=not available (Oracle did not report a weighted average exercise price for 1995).

Source: Company 10-K filings.

While the gains from stock options were always highly uncertain, employees at these New Economy companies could view them as a way to accumulate capital to fund their retirements, thus reducing or eliminating the need for a retirement savings plan. Insofar as 17 New Economy companies on the top 20 list have offered their employees a pension plan alongside stock options, it has been portable, reflecting the labor market reality of interfirm mobility. As Table 6 shows, 15 of these companies have had only DC plans for US employees throughout their histories. Two others – EMC and Sanmina – found themselves with DB when they acquired other companies, but on completion of the acquisitions, they immediately froze those plans. The New Economy business model, against which increasingly in the 1990s Old Economy ICT companies had to compete was one in which DC pensions had become overwhelmingly the norm.

Table 6. US Pension Plans in 2005 of Top 20 New Economy Companies

Company	Year founded	US pension plan	Company 401(k) match	
			% of employee contribution that company matches	maximum % of employee compensation matched
Dell	1984	401(k)	100	4
Microsoft	1975	401(k)	50	3
Intel¹	1968	DB		
Cisco Systems	1984	401(k)	50	3
Computer Sciences²	1959	DB		
Apple³	1977	401(k)	50-100	6
Oracle	1977	401(k)		6
Sanmina-SCI⁴	1980	401(k)		discretionary
Sun Microsystems	1982	401(k)		4
Solectron	1977	401(k)		discretionary
EMC⁵	1979	401(k)	limited to \$750/quarter	6
Amazon.com	1994	401(k)	from 2003, using stock	discretionary
SAIC	1969	ESOP		
EchoStar	1993	401(k)	50 up to \$1000	plus discretionary contribution
Jabil Circuit	1966	401(k)		discretionary
Applied Materials⁶	1967	401(k)	"a percentage"	
Google	1998	401(k)	up to \$2200	
AMD⁷	1969	401(k)	50	6
Qualcomm	1985	401(k)	"a portion"	
Yahoo!⁸	1995	401(k)	25	

NOTE: Most of these companies do not provide post-retirement medical benefits. In 1998 Intel began offering post-retirement medical benefits in the form of dollar credits based on years of service). In 1999 Applied Materials began providing medical and vision benefits to retirees who are at least age 55, and whose age plus years of service is at least 65 at date of retirement, and coverage for a spouse or domestic partner, until they become eligible for Medicare.

Computer Sciences provided medical benefits and life insurance for employees until 1992.

¹ Includes profit-sharing retirement plan begun in 1979

² In 1988, replaced a DB plan with a DC plan for its principle subsidiary, Associated Credit Services.

³ Percentage contribution depends on years of service

⁴ SCI had a non-contributory DB plan that was frozen when Sanmina acquired SCI in 2000. Unvested SCI employees were credited with years of service until vested occurred but no additional benefits.

⁵ Includes profit-sharing plan from 1983, supplemented by 401(k) from 1991. In 1999 EMC acquired Data General, and then froze its DB plan.

⁶ Company match vests 20% after 2nd year to fully vest in 6 years.

⁷ Company match was 50% of employee contribution to a maximum of 3% of compensation from 1992 to 1999.

⁸ Employer contribution vests 33% per year of employment

4. The Transition of Old Economy ICT Companies to NEBM

Of the top 20 New Economy companies, only two, Intel, founded in 1968, and Computer Sciences, founded in 1959 (the oldest company on the list) have traditional non-contributory DBs. In the manner of its Silicon Valley neighbor, Hewlett-Packard, Intel's DB plan was originally meant to supplement its deferred profit-sharing scheme. One company on the list, SAIC, founded in 1969, has been one of the largest employee-owned companies in the United States. In October 2006 SAIC did a \$1.1 billion IPO that enables its employees to sell their shares, which serve as their pensions, on the open market rather than to the company.

In the mid-1980s all but one of the companies (or their predecessors) that would be in the top 20 Old Economy ICT companies in 2005 had traditional DB plans (see Table 4, above). The one exception was Comcast, which would acquire DB plans for union workers along with its purchase of AT&T Broadband in 2002. IAC was not in existence in 1985, but its predecessors, Paramount and MCA, had DB. In the 1990s and 2000s, however, these Old Economy companies found themselves competing against New Economy companies, the vast majority of which never contemplated the adoption of DB.

How did the Old Economy companies respond? In 2005, as can be seen in Table 7, 12 companies – HP, Verizon, AT&T Inc. (SBC before it acquired the AT&T Corp.), Motorola, Comcast, Xerox, Qwest, TI, Directv, Lucent, Cox, and NCR -- still had DB for *some or all of their existing* employees, as distinct from new hires. But at only three of these companies – Motorola, Xerox, and Cox – did *all existing employees* have the option to be on DB. At four others – HP, Qwest, TI, and Lucent – only employees with a certain level of seniority or who had been employed with the company before a stipulated date -- prior to December 1997 in the case of TI -- remained eligible for DB. At Qwest, however, the cutoff date for DB applied only to salaried employees; all union members at Qwest, numbering over 23,000, had DB. At NCR “certain hourly employees” (NCR 2005 Annual Report, 43) – that is, union members -- were eligible for DB, but given that the company had become non-union, NCR essentially offered all employees a 401(k). At Directv, the information provided in the 10-K filings only states vaguely that “many of our employees” have DB (Directv 2005 10-K, 90), with the alternative for those who do not being a 401(k). At two others – Verizon and Comcast – only union members had DB, while at AT&T Inc., former SBC employees, both salaried and union, had DB, while former AT&T Corp. employees, also both salaried and union, had a cash balance (CB) plan.

In the 1990s some ICT companies with DB plans made the transition to CB plans because in the new world of industry-wide technology standards and interfirm mobility of high-tech personnel, they wanted to be able to attract younger workers with education and experience in new technologies and, by the same token, they found it less beneficial to retain older workers who had the Old Economy expectation of “lifelong” employment with the company. CB plans have two features that are attractive to younger workers: 1) They can be structured to increase the accrual of pension benefits to younger employees, although, if the company's total pension costs are to remain the same, this increase will

be at the expense of the company's older employees; and 2) CB plans are "portable", meaning that workers are not penalized by loss of vesting rights when they change employers, while, at the same time, these plans are defined benefit, with the company guaranteeing a specified rate of return on the accrued cash balances of the employee. At the end of 2004, four companies – IBM, BellSouth, EDS, and Xerox – offered all existing employees CB, along with 401(k) plans, although Xerox employees could also opt for a DB.

Finally, five companies – Sprint Nextel, First Data, Alltel, IAC, and Freescale (recently spun off from Motorola) -- offered all employees, both existing and new hires, a 401(k), with varying company matches. When it came to new hires, however, ten of the companies, including the five just mentioned plus IBM, HP, Motorola, TI, and NCR, offered only 401(k) plans. In addition, at Xerox, under the collective bargaining agreement concluded in March 2005, new union employees can only expect a 401(k). TI had instituted this "new hires" rule toward the end of 1997, while NCR had made the change in 2004, IBM and Motorola at the beginning of 2005, and HP at the beginning of 2006. Directv probably had a 401(k) for most, if not all, of its new hires. At both Verizon and Comcast, new union employees continued to get a DB, but salaried employees only a 401(k). By 2005-2006, therefore, the only retirement plan that 13 of the 20 Old Economy companies offered salaried employees was a 401(k). Only two companies – AT&T Inc., and Cox – offered a DB to all new hires in 2005.. Three companies – BellSouth, EDS, Lucent – offered all new hires a CB, while Qwest offered new salaried employees a CB.

In the 1990s and 2000s, the transitions from traditional DB to CB to DC in these Old Economy ICT companies were integrally related to transformations in their employment relations that reflected the adoption of some or all of the elements of NEBM. The cases of IBM and HP show how the leading ICT companies have made the transition to NEBM and consolidated it as the dominant business model. In contrast, the cases of Xerox and the companies that evolved out of the former Bell System – Verizon, AT&T Inc., Bellsouth, Qwest, and Lucent -- show how in the 2000s unions remain the last bulwarks against the erosion of traditional DB pension plans. Exceptions that prove the rule are the cases of AT&T Corp. and Bellsouth, where, in the 1998 contracts, the CWA agreed to CB plans that preserved or enhanced the cash benefits that would accrue to members of all ages while giving their members the added benefit of pension portability. In addition, in 2005, in the process of acquiring AT&T Corp., SBC became unique among major US corporations in changing its salaried employees back from a CB to a DB.

Table 7. Retirement plans of top 20 Old Economy ICT companies, 1985 and 2005-2006

Company	Retirement plans in place 1985	Retirement plan(s) in place, 2005-2006
IBM	DB	1/1/2005: new hires not eligible for PPA, only 401(k), enhanced to 100% to 6%, still 50% to 6% for previous employees
Hewlett-Packard	Deferred profit-sharing DB plan plus Supplemental DB; 401(k), 33% to 12%	1/1/2006: no DB pension or medical benefits to new US hires; freeze on pension and medical benefits for employees without sufficient seniority; increase 401(k) match to 6%
Verizon Communications	<i>Bell Atlantic, NYNEX:</i> Bell System DB	1/1/2006: new management hires not eligible for pension benefits; 6/30/2006: salaried no longer earn pension benefits or service toward company retiree medical subsidy; salaried with less than 13.5 years of service not eligible for company-subsidized retiree healthcare or retiree life insurance benefits; 7/1/2006: salaried employees receive increased company match on 401(k)
AT&T Inc.	<i>SBC, Ameritech, Pacific Telesis, AT&T Corp.:</i> Bell System DB; DC, 100% to 6%, for salaried	2005: SBC acquires AT&T Corp., and renames itself AT&T Inc; SBC changes from CB to DB for salaried; AT&T Inc. changed back to DB for 55,000 salaried; AT&T Corp. keeps CB for both salaried and union workers (in 1998 CWA had agreed to a CB favorable to members of all ages)
Motorola	DB and contributory 401(k) profit-sharing plan	1/1/2005: DB plan closed to new hires; profit-sharing component of 401(k) terminated; new hires get 401(k) match of 67% to 6% compared with 50% to 6% for those hired previously
Sprint Nextel	<i>GTE-Sprint:</i> for salaried, 401(k), 50% to 6%, with extra 25% match depending on performance of company's stock, with match in company stock; <i>GTE, Southern Pacific, United Telecommunications:</i> DB	12/31/2005: in wake of the merger with Nextel, Sprint DB plan amended to freeze benefit accruals for current employees, except those designated to work for Embarq (local telephone spinoff from Sprint) and Sprint employees who were unvested prior to August 2005 -- they will be permitted to accumulate the five years of service credit needed for vesting, but pension accruals frozen after that; 1/1/2006: only Sprint Nextel pension plan is 401(k), 100% to 5%, no longer paid in company stock
Comcast	None	AT&T Broadband DB for "some union groups" (12/31/2005: Comcast had 4,000 union members); 401(k), "we match a percentage of the employees' contributions up to certain limits"
Bellsouth	Bell System DB	CB (in 1998 CWA agreed to a CB favorable to members of all ages); 401(k)
Electronic Data Systems	DB	CB; 401(k)
Xerox	DB with deferred profit-sharing component	Choice of DB or CB (in place since 1990); 401(k) 6 % match; 03/14/2005: only 401(k) for new union hires
Qwest Communications	<i>Southern Pacific Railroad:</i> DB	DB for all union and salaried with 20 years of service by 12/31/2000 or service pension eligible by 12/31/2003; CB for all others, based on 3% of pay while employed plus investment return
Texas Instruments	DB; Deferred profit-sharing plan, invested in company stock	<i>For employees as of 11/1997 who declined enhanced DC plan:</i> DB plus DC, 50% to 4%. <i>For employees as of 11/30/1997 who chose enhanced DC plan and employees hired 12/1/1997 through 12/31/2003:</i> DC, 2% of salary plus 100% to 4%; <i>For employees hired after 12/31/2003:</i> DC, 100% to 4%
Directv Group	<i>GM Hughes Electronics</i> as of 12/31/1985: DB	DB plans for "many of our employees"; 401(k)
First Data	DB	DC
Alltel	DB	Non-contributory profit sharing DC plan and 401(k); DB plan frozen -- no further accruals for salaried employees if under forty as of 12/31/2005, or if 40 years old or more and with at least 2 years of service as of 12/31/2010
Lucent Technologies	<i>AT&T Technologies:</i> Bell System DB; DC, 100% to 6%, for salaried	CB for new hires; DB for employees on DB plan prior to 1/1/1999
Cox Communications	DB; TRASOP; PAYSOP; 401(k), 25% to 5%	DB, 401(k); 2005: Cox went private
IAC/ InterActiveCorp	<i>Paramount, MCA:</i> DB	401(k)
NCR	DB; deferred profit-sharing plan; 401(k) 25% to 6%; PAYSOP	2005: DC plan for all new hires; certain hourly employees will still get DB based on years of service
Freescale Semiconductor	<i>Motorola:</i> DB	401(k)

NOTE: The term "salaried" is used to mean "managerial employees", "non-bargaining unit employees", "non-union employees", "unrepresented employees", etc.

IBM

IBM's organizational transformation during the 1990s and 2000s has played a major role in ensuring the dominance of NEBM in the US ICT industries. IBM explicitly changed its pension system because it wanted to attract and retain younger employees who did not have the expectation of spending a career with one company. Changes in IBM pension system from DB to 401(k) via CB represented important elements in a radical transformation of the company's employment relations, and set the trend for other high-tech firms.

IBM's decision to begin this transformation in the early 1990s was a direct result of the business model that it had adopted in making its rapid and successful entry into the microcomputer industry in first half of the 1980s. The IBM PC, as we have seen, consolidated the vertical structure of the microcomputer industry by outsourcing the microprocessor to Intel and the operating system to Microsoft. In the process IBM played a major role in setting industry-wide standards that favored cross-licensing of technology and strategic alliances rather than in-house proprietary research.

As a result, the retention of older employees with career-long experience with the company became much less valuable, and the recruitment of younger employees with experience at other companies much more valuable, to the company. In the early 1990s IBM took advantage of a slowdown in the computer industry to rid itself of its system of lifelong employment. From the end of 1990 to the end of 1994, IBM – a company that had entered this period renowned for its lifelong employment policies – reduced its employment level by 153,977 people, or by 41.2 percent of its 1990 labor force.

Much of IBM's downsizing in the early 1990s was accomplished by making it attractive for its employees to accept voluntary severance packages, including early retirement at age 55. Toward this end IBM had in 1989 decreased the vesting period for retirement benefits to the completion of five years of service from the previous ten. Of IBM's losses of \$15.9 billion for 1991-1993 – including the \$8.1 billion deficit in 1993 that at the time was the largest annual loss in US corporate history -- \$13.7 billion were because of workforce-related restructuring charges (including the cost of employee separations and relocations). This loss of \$13.7 billion in effect represented the cost to the company of ridding itself of its once-hallowed tradition of lifelong employment.

During the 1990s IBM pursued a strategy of shifting its business out of hardware into services. These changes in product market strategy were accompanied by significant reductions in IBM's R&D expenditures as a percentage of sales, reflecting the company's much greater orientation toward product development rather than basic research. Integral to this strategy has been extensive patenting for the purposes of cross-licensing and IP (intellectual property) revenue generation. Cross-licensing has enabled IBM to gain access to technology developed by other companies rather than relying on in-house R&D. During the 1990s, as IBM scaled back its rate of R&D expenditure, it ramped up its patenting activity.

During the last half of the 1990s, while IBM was using its intellectual property as the basis for multibillion dollar OEM partnerships with other ICT companies such as 3Com, Acer, Cisco, Dell, and EMC, it was also taking the lead among Old Economy companies in outsourcing routine production to EMS providers. IBM's new emphasis on cross-licensing and technology partnerships as well as the vertically specialized structure of the ICT industry that IBM itself had played a major role in creating rendered the use of a fluid and flexible high-tech labor force much more desirable and possible for the company than had been the case in the 1980s. Given the absence of in-house investments in proprietary systems, the organizational and technological rationales for Old Economy lifelong employment no longer existed at IBM. IBM now favored younger employees whose higher education was up-to-date and who had work experience at other companies within the ICT industries over older employees who had spent their careers with IBM.

Changes in IBM's retirement plans were direct reflections of these changes in employment relations. In 1989 IBM changed the vesting period for pension benefits from ten years of service to five. Then in 1991 the company created a hybrid "Personal Retirement Plan" that included a CB feature to enable departing employees to take more pension benefits with them. In 1995, with the massive downsizing having been completed, IBM implemented a "Pension Equity Plan" (PEP) that placed CB front and center in the retirement plans that the company offered.

In contrast to most CBs, IBM's PEP offered a relatively even accrual of benefits by age that was structured to favor mid-career employees. Upon retirement, employees close to retirement would get the higher benefit from the pre-existing DB or the new PEP. Donald Sauvigne, IBM director of retirement programs, explained that in adopting PEP, "[w]e were responding to the different makeup of the workforce. The reality is that fewer people will be spending their entire careers at IBM" (Geisel 1995).

That labor market logic was taken a major step further in 1999 when IBM announced that it was adopting a new CB plan, dubbed a "Personal Pension Account", targeted at attracting younger, as distinct from mid-career, employees. IBM did permit some 30,000 employees who were within five years of the 30 years of service required for retirement to remain on the traditional plan, and the company also provided extra contributions to the CB plans of other employees age 45 or older. It was estimated, nevertheless, that these mid-career employees could lose 30 to 50 percent of their expected pensions. Political intervention convinced IBM to permit those employees who were at least 40 years old and had at least 10 years of service -- some 65,000 people -- to remain on the traditional plan.

In December 2004 it became clear that the adoption of CB was a first step in the eventual elimination of DB plans of any kind, as IBM announced that new employees would not be eligible for the CB plan. Instead the company would offer them a 401(k). Responding to the 2006 pension resolution at the annual shareholders' meeting, IBM's management argued (IBM 2006 Proxy Statement, 28):

After analyzing its own workforce and the practices of the companies against which it competes for employee talent, IBM found that over 50%

of its U.S. employees have 5 years or less with the Company, validating the Company's decision to change its pension plan in 1995. The Company also found that approximately 75% of its competitors did not offer a pension plan. As a result of these studies, the Company concluded that its pension plans were not delivering the kind of benefit this workforce valued, and effective in January 2005 moved forward with a new 401(k) plan for new employees, under which they would receive a new, enhanced benefit in lieu of traditional pension benefits, including an increased Company match on employee investments — from 50% to 100% of the first 6% of eligible pay....These changes continue IBM's global strategy of shifting the future focus of retirement benefits toward the more predictable cost structure of defined contribution plans.

Hewlett-Packard

Unlike IBM, which, as we have seen, deliberately and dramatically made the transition to New Economy employment relations in the first half of the 1990s, HP sustained its commitment to employment security through the 1990s. That this commitment lasted as long as it did is testimony to the legacy of "The HP Way", a corporate philosophy whose life at the company was probably prolonged by the publication of founder David Packard's best-selling autobiography in 1995.

By the mid-2000s, however, HP, with 150,000 employees, had become what Packard would have called a "hire-and-fire" company (see Wong 2006). As was the case at IBM, HP's transition to NEBM, including the employment of a more mobile, highly educated, and flexible labor force, was encouraged by a shift from proprietary to industry technology standards that had begun to take root in the early 1980s. In the 1980s and 1990s HP found itself at the center of the microelectronics revolution because of not only its location in Palo Alto, California, where it acquired iconic status as the pioneering Silicon Valley firm, but also a business strategy that focused increasingly on consumer-oriented computer products and peripherals.

In the last half of the 1970s, when proprietary standards prevailed, HP derived 43 percent of its sales and 61 percent of its profits from the electronic test and measurement (ETM) business on which the engineering company had been founded. Another 44 percent of its sales and 45 percent of its profits came from electronic data products (EDP), a business that had been launched in 1966 when HP developed its first computer. In 1984, with the PC revolution in full swing, HP made a strategic decision to manufacture its computer products to comply with the open standards that had emerged in the information technology industry. In building its competitive strategy around open systems, HP acquired a greater interest in employing a labor force with industry-wide experience as distinct from one that had experience in proprietary technology.

In 1999 HP spun off its non-computer related businesses -- test and measurement instrumentation, medical electronic equipment, and analytical instrumentation -- as Agilent Technologies. Combined these businesses had \$6.5 billion of HP's \$47.1 billion

1998 revenues and 43,000 of HP's 125,000 employees. As a result, without Agilent, sales per employee (in 1999 dollars) shot up 30 percent, from \$386,000 in 1998 to \$502,000 in 1999. In 1999 "imaging and printing systems" represented 43 percent of HP's revenues and 63 percent of earnings from operations, and "computing systems" 40 percent of revenues and 27 percent of earnings from operations. The only other important business segment (but one that HP was eager to expand) was IT services, with 15 percent of revenues and 13 percent of earnings from operations.

HP's dependence on printers and ink refills would have become even greater in the 2000s but for the company's controversial merger with Compaq Computer in 2002. In 2005 imaging and printing generated 29 percent of HP's revenues and 59 percent of earnings from operations, while personal systems, where Compaq made the biggest contribution, had a 30 percent share of revenues and 11 percent of earnings. Selling consumer-oriented products in markets in which price competition is intense, HP is no longer the "engineers' company" that Hewlett and Packard built. These changes in HP's product-market strategy have had far-reaching consequences for the company's employment relations. One consequence is that since the mid-1980s HP has been a leader among ICT companies in the outsourcing of employment to contract manufacturers.

In early 2001, with economic recession setting in, HP announced that it would cut 1,700 marketing jobs and 3,000 management positions. The company continued to adhere to the traditional policy that gave these employees the opportunity to find another position within HP. In late July, however, HP announced that it would chop 6,000 jobs, amounting to 6.5 percent of its global labor force. With 10,700 jobs being eliminated within just seven months, displaced employees faced dim prospects of finding new positions within HP. While HP's management never officially announced the demise of "The HP Way", neither would it henceforth invoke it as the prevailing corporate philosophy.

Then in September 2001 HP declared its intention to merge with Compaq Computer, the world's second largest PC producer and largest enterprise server producer, with a total of \$33.6 billion in sales and 63,700 employees. It was the possibility of cost-savings through post-combination consolidation that made the merger financially attractive. One year after the merger, employment at HP had declined from 153,500 to 141,400, the net result of 18,900 layoffs and 6,800 new hires. Year-end employment increased to 151,000 in 2004 before declining to 150,000 in 2005 and remaining at that level at the end of fiscal 2006. It has been estimated that from the time of the merger with Compaq through 2006, HP laid off 45,000 employees, while hiring almost as many new employees (Wong 2006). The purpose of this "churn" has been to reduce costs. HP's employment strategy included substantial offshoring of production to China where the company has had a longstanding presence, as well as to India where, with 50,000 employees between them at the end of 2005, HP and IBM have been the largest foreign employers in ICT.

In July 2005 HP announced that it would cut 14,500 jobs over the next 18 months. At the same time, the company announced that as of January 2006 new hires would no longer be eligible for the DB pension, while workers whose age and years of service totaled less

than 62 would stop accruing benefits under the plan. Instead the company would increase its matching contribution to the 401(k) plan from four percent to six percent of employee pay. In a video message to employees HP CEO Mark Hurd explained why the cost-cutting measures were necessary:

Our cost structure is putting HP at a competitive disadvantage. It's simply not sustainable. When a company is structurally inefficient like we are, short-term fixes don't work....I know this is not the best news you can get, but it's what's required for HP to become the great company it can be, once again (quoted in Poletti and Wong 2005).

Xerox

With 2,550 union members (of which 2,325 UNITE HERE) at 17 locations in North America at the end of 2005, Xerox's website proclaimed that "Xerox is the only union-represented office equipment manufacturer worldwide". At the time Xerox employed 36,000 people in North America, 16,000 in Europe, and 5,000 in developing countries. In its 2006 Report on Global Citizenship (p.63), Xerox stated that "[i]n 2005, Xerox and its unions successfully negotiated new four-year contracts at all locations. The relationship fostered by Xerox and union leadership continues to be noted as a model in American industry and is a source of great pride for Xerox and our people."

The case of Xerox suggests that even a small union presence that is taken seriously by the employer can help to preserve pension benefits for all employees (55,000 at the end 2005). With the exception of new union employees (who are likely to be very few in number), all Xerox employees can still take advantage of an arrangement put in place in 1990, when the company introduced a CB plan, of choosing between a DB and CB. In addition, in 2003, the company added a match of up to six percent of total pay to employer 401(k) contributions.

Nevertheless, however much the company may proclaim the value of its relationship with the union, the fact is that over the past decade, in terms of both numbers and influence, the union at Xerox has been on the decline. In 1994, when ACTWU obtained a seven-year contract with an employment guarantee for employees at Xerox's Webster plant, it represented 3,850 employees there. That number had declined to 1,955 in 2002 when the Union of Needletrades, Industrial and Textile Employees, or UNITE – the result of the 1995 merger of ACTWU with the International Ladies Garment Workers Union -- concluded its next contract with Xerox. When UNITE HERE – the product of the 2004 merger of UNITE with the Hotel Employees and Restaurant Employees International Union – signed the current four-year contract in March 2005, it covered 1,517 employees, just 39 percent of the membership level eleven years before. For all locations, union membership at Xerox declined from about 6,200 in 1994 to 2,550 in 2005.

In the prior three-year contract, signed in March 2002, the union got the same employment earnings guarantee that was in the 1994 contract, now applicable to the remaining 1,955 union workers at Webster. Union members also secured wage increases

totaling 16.8 percent over the life of the contract plus cost-of-living adjustments, and retained their existing medical and dental benefits. They also obtained an increased company contribution to individual 401(k) accounts, plus some stock options and a 1.5 percent bonus on total pay for 2001. What the union lost, however, was the right to form joint study teams – an innovative form of union-management cooperation that dates back to 1980 -- to seek to find ways of keeping work in the plant that would otherwise be outsourced.

When the contract bargained in 2002 came up for renewal in March 2005, Local 14A active membership had declined to 1,517. In the new contract the union got the employment guarantee for another four years, pay increases of 10.7 percent over the life of the contract plus cost-of-living adjustments, and their right to retain their existing medical and dental benefits. While the study-team arrangement, defunct since 2002, was not even a subject of collective bargaining at this point, the new contract did stipulate that workers at the Webster plant would continue to do final assembly and testing of specific Xerox printers, copiers, and digital presses. The one concession that the union did have to make was that any new union hires would not be eligible to receive the choice between the DB and CB plan that had been available to existing employees since 1990, but would instead be offered a 401(k) plan with the six percent company match. Given the union's employment trajectory at Webster since the early 1990s, however, it is unlikely that, going forward, there will be many new hires to whom the new pension regime will apply.

The Bell System legacy

In 2005 the companies that evolved out of the breakup of the Bell System had a total of about 629,000 employees, 304,000 less than they had in 1984 (see Table 8). From its post-breakup peak of 950,000 in 1985, employment had already fallen to less than 681,000 in 1996. In that year the Telecommunications Act opened up competition to all comers in all telecommunications markets – local and long-distance, wired and wireless, voice (circuit-switched) and data (packet-switched) – and helped set off the Internet boom. Employment at the companies of the former Bell System increased in the boom, peaking at 893,000 in 2000. With the bursting of the Internet bubble, major new service providers such as WorldCom, Global Crossing, and Enron (with its Broadband division) went down in flames, while the former Bell companies all cut back employment in order to avoid or limit losses. From 2000 to 2004, the five former Bell service providers – Verizon, SBC, BellSouth, AT&T Corp., and Qwest – reduced their employment levels by a combined 213,000, or 29 percent of the level in 2000, while the three equipment manufacturers -- Lucent and its two spinoffs, Avaya and Agere -- reduced their employment by 103,000, or 66 percent of the 2000 level. These employment losses were partially offset by the growth of the wireless firms – AT&T Wireless and Cingular -- owned by former Bell companies.

Table 8. Number of employees, former Bell System companies, 1984-2005

	SBC/ ATTI	BELL SOUTH	BA/ VERIZON	USWEST/ QWEST	ATTC	AMERI- TECH	NYNEX	PACTEL	AT&T WIRE- LESS	CINGU- LAR	LUCENT	AVAYA	AGERE	TOTAL
1984	71,860	96,000	79,500	70,765	365,550	77,514	94,862	76,881						932,932
1985	71,400	92,500	79,285	70,202	337,600	74,883	89,600	71,488						886,958
1986	67,500	96,900	80,185	69,375	316,900	77,538	90,200	74,937						873,535
1987	67,100	98,700	80,950	68,523	303,000	78,510	95,300	71,877						863,960
1988	64,930	100,280	81,000	69,765	304,200	77,334	97,400	69,696						864,605
1989	66,200	101,230	79,100	70,587	283,500	77,326	95,400	68,452						841,795
1990	66,690	101,945	81,600	65,469	273,700	75,780	93,800	65,829						824,813
1991	61,230	96,084	75,700	65,829	317,100	73,967	83,900	62,236						836,046
1992	59,500	97,112	71,400	63,707	312,700	71,300	81,860	61,346						818,925
1993	58,400	95,084	73,600	60,778	308,700	67,192	76,200	60,050						800,004
1994	58,750	92,100	72,300	55,246	304,500	63,594	70,600	51,590						768,680
1995	59,300	87,571	61,800	54,552	299,300	65,345	65,800	48,889						742,557
1996	61,540	81,241	62,600	51,477	130,400	66,128	68,100	48,330			124,000			693,816
1997	118,340	81,000	141,000	51,110	127,800	74,359	BA	SBC			134,000			727,609
1998	129,850	88,450	140,000	54,483	107,800	70,525					141,600			732,708
1999	204,530	96,162	145,000	58,272	147,800	SBC					153,000			804,764
2000	220,090	103,900	260,000	67,000	165,600						126,000	31,000		973,590
2001	193,420	87,875	247,000	61,000	117,800				33,000	36,000	77,000	23,000	14,400	890,495
2002	175,400	77,000	229,500	47,000	71,000				31,000	33,800	47,000	18,800	10,700	741,200
2003	168,950	76,000	203,100	47,000	61,600				31,000	39,400	34,500	16,900	6,800	685,250
2004	162,000	62,564	210,000	41,000	47,600				CING	70,300	31,800	14,900	6,600	646,764
2005	189,950	63,066	217,000	39,000	ATTI					64,000	30,500	19,100	6,200	628,816

Notes:

ATTI=AT&T Inc.; ATTC=ATT&T Corp.; BA=Bell Atlantic

Since 2000 Cellphone Partnership, also known as Verizon Wireless, has been a subsidiary of Verizon Communications, and is included in the parent company's consolidated accounts. At the end of 2005, 55,700 of Verizon Communications' 217,000 employees were with Verizon Wireless.

Source: Compustat

Between 1997 and 2005 the seven Baby Bells consolidated into four companies: Verizon, AT&T Inc., BellSouth, and Qwest. The approval by the Federal Communications Commission (FCC) of AT&T Inc.'s acquisition of BellSouth at the end of 2006 reduced the four to three. Cingular, the wireless company previously co-owned by AT&T Inc. and BellSouth, is now an internal division of AT&T, renamed AT&T Mobility. Verizon (with its origins in Bell Atlantic) and AT&T Inc. (with its origins in SBC) dominate the local US wireline segment of the telecommunications industry, while Qwest, which as US West was about the same size as SBC two decades ago, has fallen far behind the others. Both Verizon and AT&T are now also leaders in the rapidly growing wireless segment of the US telecommunications industry; in 2005 the wireless revenues of Cingular were \$34.4 billion, Verizon \$32.3 billion, Sprint Nextel \$22.3 billion, and T-Mobile \$14.1 billion.

As can be seen in Table 9, since 1984 Bell Atlantic/Verizon, SBC/AT&T Inc., and BellSouth have been profitable, as was Qwest, as US West, until the 2000s. The traditional local wireline business has remained a very important source of revenues and profits for all four of these companies, although in 2005 AT&T Inc. and Qwest were far more dependent on wireline earnings than were the other two. Indeed, in 2005 for the first time Verizon's wireless profits, at \$2.2 billion, surpassed its wireline profits at \$1.9 billion. The directory (Yellow Pages) businesses of AT&T Inc., Verizon, and BellSouth, while relatively small, have always been lucrative, with profit margins typically at 30 percent or more. From 1996 through 2005, for example, SBC/AT&T Inc. raked in \$21.7 billion in 2005 dollars (\$19.5 billion current) from its directory listings and advertising, with a profit margin of over 53 percent.

The wireline and directory businesses of these companies are the living legacies of their regulated monopoly status in the former Bell System. The Federal Communications Commission (FCC) and state public utility commissions regulate the return that RBOCs can obtain from their control of local telephone infrastructures. From 1984 through 1989 the RBOCs, as local exchange carriers (LECs) were permitted a maximum rate of return on assets of 12 percent, lowered to 11.25 percent in 1990. The following year the FCC changed the regulatory formula to a "price cap" that, after adjusting for inflation, annually lowered the maximum prices that LECs could charge by the expected rate of productivity growth. Companies that could exceed this expected rate, while maintaining quality of service, could capture additional profits. The Telecommunications Act of 1996 did not put an end to regulation of the local phone business, but only required that, as a condition for the RBOCs to enter the long-distance markets, LECs make their local networks available at reasonable rental rates to any "competitive local exchange carrier" (CLEC) that might want to deliver local telephone service.

Table 9. Sales, net income, and profit margins, Verizon, AT&T Inc., BellSouth, and Qwest

Year	Verizon			AT&T Inc.			BellSouth			Qwest		
	Sales \$m.	Net income \$m.	Profit margin %	Sales \$m.	Net income \$m.	Profit margin %	Sales \$m.	Net income \$m.	Profit margin %	Sales \$m.	Net income \$m.	Profit margin %
1984	8,090	973	12.0	7,191	883	12.3	9,519	1,257	13.2	7,280	887	12.2
1985	9,084	1,093	12.0	7,925	996	12.6	10,664	1,418	13.3	7,813	926	11.8
1986	9,921	1,167	11.8	7,902	1,023	12.9	11,444	1,589	13.9	8,308	924	11.1
1987	10,298	1,240	12.0	8,003	1,047	13.1	12,269	1,665	13.6	8,445	1,006	11.9
1988	10,880	1,317	12.1	8,453	1,060	12.5	13,597	1,666	12.2	9,221	1,132	12.3
1989	11,449	1,075	9.4	8,730	1,093	12.5	13,996	1,695	12.1	9,691	1,111	11.5
1990	12,298	1,313	10.7	9,113	1,101	12.1	14,345	1,632	11.4	9,957	1,199	12.0
1991	12,280	1,332	10.8	9,332	1,157	12.4	14,446	1,507	10.4	10,577	553	5.2
1992	12,647	1,382	10.9	10,015	1,302	13.0	15,149	1,658	10.9	10,281	1,179	11.5
1993	12,990	1,482	11.4	10,690	1,435	13.4	15,880	1,034	6.5	10,294	476	4.6
1994	13,791	1,402	10.2	11,619	1,649	14.2	16,845	2,160	12.8	9,176	1,150	12.5
1995	13,430	1,862	13.9	12,670	1,889	14.9	17,886	1,564	8.7	9,484	1,184	12.5
1996	13,081	1,739	13.3	13,898	2,101	15.1	19,040	2,863	15.0	10,079	1,215	12.1
1997	30,368	2,455	8.1	24,856	1,474	5.9	20,633	3,270	15.8	10,319	1,180	11.4
1998	31,566	2,991	9.5	28,777	4,068	14.1	23,123	3,527	15.3	12,378	1,508	12.2
1999	33,174	4,208	12.7	49,489	6,573	13.3	25,224	3,448	13.7	13,182	1,102	8.4
2000	64,826	10,810	16.7	51,476	7,967	15.5	26,151	4,220	16.1	16,610	-81	-0.5
2001	67,190	590	0.9	45,908	7,260	15.8	24,130	2,570	10.7	19,695	-3,958	-20.1
2002	67,625	4,584	6.8	43,138	7,473	17.3	22,711	2,708	11.9	15,385	-17,625	-114.6
2003	67,752	3,509	5.2	40,843	5,971	14.6	22,635	3,589	15.9	14,288	-1,313	-9.2
2004	71,283	7,261	10.2	40,787	4,979	12.2	20,350	3,394	16.7	13,809	-1,794	-13.0
2005	75,112	7,397	9.8	43,862	4,786	10.9	20,547	2,913	14.2	13,903	-757	-5.4

Source: Compustat

In 1989 AT&T Corp., whose long-distance service had previously been subject to a rate-of-return maximum of 12.2 percent, had been placed under price cap regulation. Unlike, local telephone service, however, which the LECs still dominate, during the 1990s long-distance service became a highly competitive segment of the telecommunications industry, rendering rate regulation irrelevant. By the 2000s the long-distance segment was subject to extreme price competition both from resellers of overabundant long-distance capacity -- the result of massive overinvestment in fiber optic transmission cables by companies such as Qwest and Global Crossing during the Internet boom -- and from wireless companies that provided nationwide access as part of their service plans. Highly dependent on the long-distance segment, AT&T Corp. saw its standalone consumer long-distance revenues, already in decline at the end of the Internet boom, plunge from \$13,973 million in 2001 to \$5,161 million in 2004, while its consumer bundled services revenues (based on local voice subscribers) only reached \$2,743 million from a very low base of \$870 million three years earlier. From the perspective of the second half of the 2000s, the two companies that emanated from the former Bell System that came out on top -- namely, Verizon and AT&T Inc. -- were those that built upon their regulated monopolies over local wireline exchanges to enter the expanding wireless industry without getting caught up, as was the case of Qwest, AT&T Inc., and Lucent -- in the speculative machinations of the late 1990s Internet boom.

The embeddedness of industrial unions in the Bell System in the decades prior to the breakup and the ongoing regulation of the local wireline industry in the decades since explain the extraordinary high level of unionization that still prevails in this sector. At the end of 2005 Verizon, AT&T Inc., Bell South, Qwest, and Cingular together employed 573,016 people, of whom 253,862, or 44 percent, were CWA members and an estimated 77,850, another 14 percent, were IBEW members. The proportion of the potential labor force organized by the CWA in these companies was 94 percent at Verizon, 92 percent at AT&T Inc., 84 percent at BellSouth, 89 percent at Qwest, and 65 percent at Cingular. Total employment at the former Bell System telecommunications service providers was down substantially from the 735,995 people employed by these companies (including the still independent AT&T Corp. and AT&T Wireless) in 2001. Nevertheless in the mid-2000s, these companies remained bastions of business-sector union organization in the US economy.

On occasion, the CWA and IBEW have been able to secure “no-layoff” clauses in collective bargaining with former Bell System companies, including one with Pacific Telesis in 1986, NYNEX in 1994, Bell Atlantic in 1998 followed by Verizon in 2000 and 2003, and SBC in 2004. That degree of employment security, however, has been the exception rather than the rule; before the breakup of the Bell System and since, large-scale layoffs of union employees have been common at these companies. Nevertheless seniority provisions in union contracts have meant that those union employees with the most years of service with a company have had, and continue to have, realistic expectations of continuous employment until retirement age, at which point they can count on retirement incomes secured from collectively bargained pensions. Notwithstanding the radical technological and organizational transformations that have

taken place in the telecommunications industry since the mid-1990s, at Verizon and AT&T Inc. in the last half of the 2000s OEBM still prevails.

In sum, the high and steady revenues that the RBOCs have derived from their ongoing control over regulated local telephone exchanges have enabled these companies to maintain high, even if declining, levels of employment that in turn have provided employment security to very large numbers of senior union members. In addition, the secure jobs available to union members are supported by two characteristics of RBOC employment that run counter to general employment trends in the ICT industries. Firstly, the RBOCs have not as a rule outsourced or offshored employment. Secondly, RBOCs themselves are not “high-tech” companies – they do virtually no R&D -- and hence the types of labor that they require are much less affected by the technological transformations that characterize ICT than is the case for companies in other segments of these industries.

While the RBOCs have not employed scientists and engineers, they have employed large numbers of managerial personnel. Rosemary Batt (1996, 60) has shown that for the whole Bell System, excluding Bell Labs, the proportion of total employees who were managers rose from 13.7 percent in 1950 to 29.4 percent in 1980. Under the old Bell System, AT&T and its operating companies were expansive bureaucracies in which managerial personnel viewed themselves as public service employees. After the breakup each of the former Bell companies began to restructure their organizations to be better suited to the regulatory and competitive environments that each of them faced, given the resources that they had inherited from the Bell System. For example, AT&T and PacTel both downsized their labor forces significantly in the late 1980s while BellSouth, after reducing the size of its labor force by almost four percent in its first two years as an independent company, expanded it by over ten percent from 1986 through 1990.

In the first half of the 1990s, however, all eight companies downsized significantly, each one laying off large numbers of salaried managers as well as unionized workers. The recession of 1990-1992 was widely known as a “white-collar” recession, with US corporations in general downsizing their salaried workforces to an extent that had no precedent in the post-World War II decades. The recessionary conditions, however, had little impact on the RBOCs, given their regulated rates and the relatively stable demand for local telephone service over the business cycle. Probably of much more importance in the downsizing decisions of the RBOCs was the move in 1991 to price-cap regulation, which meant that the RBOCs could reap the extra profits derived from a “leaner” labor force. As company-level research by Batt (1996) has shown, by the early 1990s RBOC lower and middle level managers were working longer and harder, pressured by their superiors and fearful of termination.

Reinforcing this corporate response to the new regulatory mechanism was the fact that, beyond their salaries, the remuneration of top executives of AT&T and the RBOCs depended in part on annual bonuses and in part on gains from the exercise of stock options. For annual bonus awards, annual profitability was ostensibly the main performance criterion. In addition, in the last half of the 1980s, for the first time, some of

the remuneration of the top executives of the former Bell companies took the form of stock options. For paying attention to profits and stock prices, the top executives of AT&T and the RBOCs were very well paid.

A prime way in which top executives of the former Bell companies earned their keep in the first half of the 1990s was by reducing the number of people that their company employed. After the breakup, BellSouth was the largest RBOC in terms of both sales and employees, just ahead of NYNEX. After trimming its labor force in 1985, in part through an early-retirement program, the company steadily increased both revenues and employment through 1990. From the end of 1990 to the end of 1996, however, BellSouth reduced its labor force from 101,945 to 81,241, even as its sales rose from \$14.3 billion in 1990 (\$17.2 billion in 1996 dollars) to \$19.0 billion in 1996.

First, in 1990 and 1991, BellSouth went through two rounds of early-retirement in which 4,250 managers left the company. The downsizing of BellSouth, however, has just begun. In successive layoff announcements in 1992, 1993 and 1995, the company said that it would terminate as many as 16,000 employees, and since most of the people who could be eligible for early retirement had already left in 1990 and 1991, that type of program would not be repeated. Indeed, at the end of 1996 BellSouth recorded 81,241 employees, 15,871 fewer than at the end of 1992.

Along the way, BellSouth also changed its pension plan for managers. In 1993, with the targeted reduction of 8,000 managers in process, BellSouth became the first RBOC to adopt a CB plan. Applicable only to non-represented workers, the BellSouth CB may have helped the company recruit younger salaried personnel, but given the downsizing context in which the plan was introduced, that was not its main purpose. Rather, with the stock of older managers eligible for early-retirement having been substantially depleted by the departures under the 1990 and 1991 programs, BellSouth wanted to create an incentive to quit the company for mid-career managers who lacked the years of service with the company to be eligible for early retirement. When the BellSouth CB went into effect in July 1993, the company employed 25,000 managers with an average age of 44 and average years with the company of 24 (Wyatt 1996). In introducing the CB plan, BellSouth had a provision that employees who resigned before June 30, 1996 could have their choice of receiving the greater of the CB account balance or the present value of annuity. Those older managers who remained at BellSouth did not complain about the adoption of the CB plan because the percentage of pay credited to an employee's account increased from three percent to eight percent with years of service, and employees who retired from the company before the end of 2005 would have their choice of the better of the benefits under the CB plan or the traditional DB plan (Wyatt 1996).

BellSouth would be the first of six RBOCs to move to a CB plan. Next was Ameritech in 1995 followed by Bell Atlantic and Pacific Telesis in 1996 and SBC and US West in 1997. All of these CB plans were for managerial personnel only; the RBOCs continued to bargain DB plans with the unions. Among the original seven RBOCs, only NYNEX did not make the transition from DB to some form of CB for managers as an independent

company. After NYNEX was merged into Bell Atlantic in 1997, however, its managers also had a CB plan.

The last of the service providers from the former Bell System to transition to a CB plan was AT&T. In late January, top management announced that over the coming year the company would cut 15,000 to 18,000 jobs, of which 10,000 to 11,000 would be achieved through pension incentives to managers under what was called the “Voluntary Retirement Incentive Program” (VRIP). The expectation was that the managerial ranks would be reduced by 25 percent. Indeed, AT&T had adopted the CB plan specifically for the purpose of downsizing the organization (see Burlingame and Gulotta 1998).

AT&T offered the VRIP to 43,000 AT&T managers. Older workers could get a 20 percent increase in their pension benefits. Eligibility for lifetime health benefits required that one’s age plus years of service summed up to 65, whereas previously they had to add up to 75. Up to certain limits, the pension benefits could be taken in a lump sum.

About 17,000 managers opted for the VRIP, an uptake that surpassed what AT&T’s top management had hoped to achieve. The high response rate was attributable to both the value of the VRIP offer and the ease with which in the boom conditions of 1998 a departing AT&T manager could expect to land another well-paying job. To avoid losing key people in key areas, top management had put limits on the number of people in specific departments who could be offered the VRIP. As a result of these restrictions, AT&T turned down 1,700 applications. For not being given the opportunity to quit their jobs, these people subsequently filed a lawsuit against AT&T, but it was thrown out of court.

By the end of 1998 14,700 of the 15,300 VRIP managers had already left AT&T, with the remaining 600 leaving in early 1999. The company paid out a total of \$4.6 billion in lump sum settlements, an average of over \$300,000 per VRIP recipient. AT&T’s management pension fund could afford this cash flow; at the end of 1997 it had a surplus of over \$12.5 billion.

With pension money so plentiful, even the unions jumped on the CB bandwagon. In mid-1988 CWA and IBEW negotiated a contract that included a CB plan. With about 50,000 union employees at AT&T, this CB was thought to have been the largest ever to cover union members. Morton Bahr, president of the CWA, contended that “our agreement increased the value of pension benefits for employees at every stage of their careers.” Now union members had the benefit of “pension portability in case of downsizing or change in career plans” (Bahr 1999). Union members with 15 years of more of service with AT&T as of June 30, 1998 could when they retired choose to receive benefits based on either a traditional DB, enhanced by 7 percent immediately and another 8 percent by 2000, or a CB. It is not clear how many union members took advantage of the negotiated CB to leave AT&T, but at the end of 1998 the company employed 42,036 CWA workers, down from 48,787 a year earlier. The number of CWA members employed at AT&T continued to decline steadily over the subsequent years, falling to 14,920 in 2004, after which AT&T Corp. became absorbed into AT&T Inc.

5. Conclusion

This paper has shown that in a leading sector of the US economy, the type of pension that one receives tends to conform to the logic of the employment relations that prevail in the place, or places, in which one works. Those employment relations are in turn embedded in distinctive business models that reflect the product markets in which a company competes and the ways in which it organizes and finances the particular productive activities in which it engages to generate competitive products. Business models can change, and when they do, employment relations and the arrangements for supporting employees in retirement will change as well.

I have argued that over the past few decades there has been a profound change in the business model that prevails in the US ICT industries, one that has made employment much more insecure and retirement incomes much more dependent on the savings strategies of employed individuals rather than on the highly collectivized corporate structure on which incomes at work and in old age previously depended. But for the persistence of labor unions in a particular segment of the ICT industry that still enjoys the legacy of a highly regulated industry that collectivized structure has all but disappeared.

At the same time, however, the corporate power that had its foundation in the Old Economy business model has not disappeared. Indeed, in the absence of not only the countervailing power of unions but also an employee-oriented corporate culture that once influenced the allocation of resources at companies such as IBM and HP, corporate power has become even more centralized and concentrated in the hands of a few top executives. They claim to be running their companies for the benefit of their shareholders, but given the ways in which they are remunerated combined with the fact that in the US corporate economy shareholders are primarily rentiers or speculators, they are really running the corporations for themselves (see Lazonick and O'Sullivan 2000, and Lazonick 2006c).

As I have researched the evolution of employment relations in the ICT industries over the past quarter century, I have found that in virtually every instance in which corporate decisions have rendered employment and retirement more insecure the executives who made those decisions have invoked the imperative of competition and their responsibility to shareholders. Yet such arguments do not stand up when confronted with research of the much more cooperative business models of many of the most successful global competitors that US corporations face as well as, beyond the rhetoric of competition and shareholder value, the actual ways in which successful US corporations mobilize resources, human and financial, to generate competitive products (for my general perspective on these issues, see Lazonick 2007a and 2007b).

Based in such research, the US labor movement could be making cogent arguments that more, not less, cooperative employment relations are needed to sustain the prosperity of the companies in which the people that they represent work – or worked -- and the US economy in which, even in a globalized world, those companies remain embedded. Unfortunately in the boom of the late 1990s, in which NEBM consolidated its position as

the dominant business model in US high-tech industry, the US labor movement was much more concerned with getting its share of “shareholder value” than with challenging the legitimacy of the institutions whereby US corporations are governed. In the absence of a movement to transform the institutions of corporate governance, the result in the 2000s is ever more obscene levels of top executive pay, and what is the flip side of the “shareholder value” coin, ever more insecure employment for US workers, regardless of their “salaried” or “hourly” status.

Endnotes:

- ¹ In addition, Lucent spun off, first in 2000, Avaya, an enterprise networking company that with \$4.9 billion in revenues and 18,555 employees, ranked 434th among the Fortune 500 in 2005, and, then in 2001, Agere Systems, a communications chips company that with \$1.7 billion in revenues and 6,200 employees, ranked 904th among the Fortune 1000 in 2005.
- ² With the growth of wireless communications, in 2001 AT&T Corp. spun off AT&T Wireless as a separate company, while in the same year SBC and Bell South created the wireless company, Cingular, as a joint venture. In 2004 Cingular acquired AT&T Wireless. Most recently, in December 2006, AT&T Inc. (formerly SBC) acquired BellSouth, and as a result Cingular is now wholly owned by AT&T Inc.

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