Why Comprehensive Electronics Makers are Undergoing Reorganization

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The comprehensive electronics manufacturers, who form the core of one of Japan's key industries, are initiating extensive reorganizations.

This paper looks at Hitachi and Toshiba, who began reorganizing their corporate structures in April. We trace developments in the electronics industry in Japan and the U.S. since the 1980s, as well as the business results of the five comprehensive electronics makers, to illuminate the factors behind the reorganization movement. Finally, we briefly discuss the issues confronting the comprehensive electronics makers in the future.

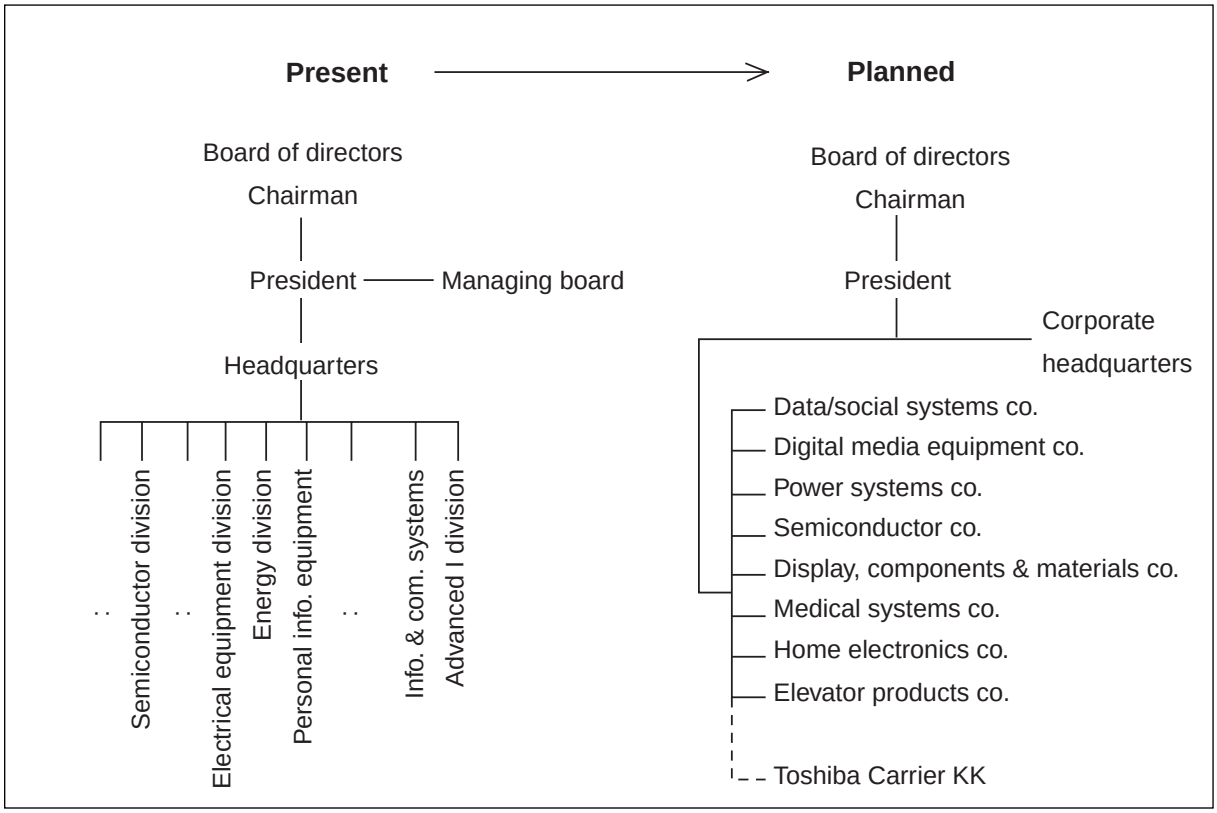
The reorganization activities of Hitachi and Toshiba are being followed with keen interest by industry observers because of the large impact expected on the entire industry.

1. Two Electronics Giants Begin Reorganization

(1) A Selective Focus Strategy

Hitachi and Toshiba have finished basic preparations to reorganize their vast business interests in April (Figure 1), although some aspects of their plans are still tentative. We will attempt to discern the post-reorganization form of both companies based on available information.

Figure 1 Toshiba's Reorganization Plan



Note: Reorganization plans are subject to change.
Source: Securities report for March 1998, interviews, and mass media reports.

The basic pattern of reorganization is similar: downsize headquarters, realign business divisions internally into either "business groups" or separate companies, and place related companies under these groups or companies. In addition, they both plan to deploy a service center for business staff and other support functions, and a center to direct R&D.

In addition to preparing reorganization plans, in 1998 Hitachi and Toshiba began spinning off weaker business segments in earnest. Both have already decided to spin off their air conditioning systems. Toshiba is transferring its air conditioning systems operation to Toshiba Carrier, a joint venture with Carrier of the U.S. Other units already slated for transfer to related or outside companies include Hitachi's semiconductor wafer operation and Toshiba's copiers and ATM (automated transaction machines) units.

In this way, since last year Hitachi and Toshiba have been devising blueprints for reorganization while pursuing a strategy of selective focus. Due partly to their similar business structure, their methods and patterns of reorganization also close resemble each other.

In light of the continued severity of the business environment, the pursuit of selective focus should lead to further consolidation, spinoffs, and mergers and acquisitions even after the reorganization plans have been executed.

(2) Aims of Reorganization

Why are these two comprehensive electronics manufacturers chosen to reorganize operations and effect a full-scale overhaul of their businesses? The direct factor is weak earnings; the purpose of the reforms is to prepare for more intense global competition in the future. The next question is, why have they chosen to reorganize by forming new groups and companies?

There are two main reasons for this: to speed up decision-making processes slowed by massive size, and to reduce dependencies within the industrial group. If we were to add a third reason, it would be to decrease the tendency to be self-contained conglomerates. Internal reorganization is regarded as the first step in solving these problems.

The aim is to increase the independence of business segments and simplify the top management organization of headquarters, thereby making management more responsive, eliminating interdependence, and helping the bottom line.

Another development concerns the troubled semiconductor operations of comprehensive electronics makers. Already engaged in joint development of next-generation memory chips, Toshiba and Fujitsu are expected to cooperate in supplying each other semiconductors. Previously, comprehensive electronics makers, who are also major semiconductor producers, have avoided cooperating with major domestic makers for reasons of competition in technological development, instead turning to cooperation with foreign firms. The recent tie-up may lead to more product-specific production tie-ups that that will increase operating efficiency.

This pattern of cooperation in development and production among Japanese firms is expected to expand into other business areas. Alongside corporate reorganization, industry observers are keen to see to what extent consolidation occurs in the industry transcending corporate groupings, and how it will contribute to the restructuring of the electric and electronics industry.

2. Backdrop to Management Reform

This section briefly examines the background factors that are forcing comprehensive electron-

ics makers to reorganize and make drastic management reforms. We trace the growth of the electronics industry from the 1980s, technology and industry trends in Japan and the U.S., and the business performance of the five comprehensive electronics makers.

(1) Growth of Electronics and Semiconductor Businesses in 1980s

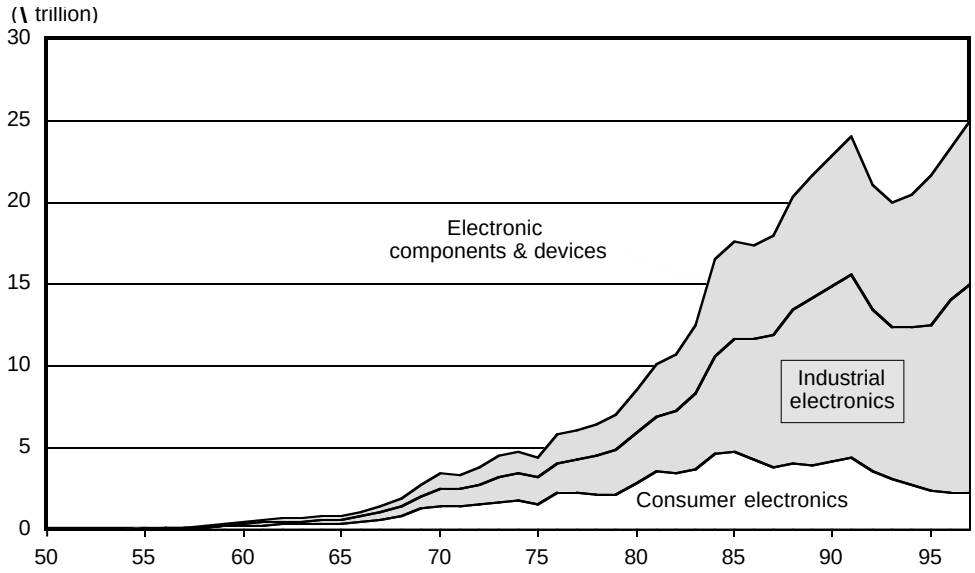
The main business lines driving the strong performance of comprehensive electronics makers during the 1980s were computers and semiconductors. The five comprehensive electronics makers dominated the world memory market during the 1980s with their strong production technology. During this time, they prospered in a vast array of business lines ranging from heavy electric machinery to home electronics, computers, communications, and electronic devices (semiconductors, etc.).

However, following the stronger yen from 1985 and collapse of the bubble economy in 1991, production slowed down at an accelerating pace. The growth strategy of constant diversification, which gave the companies their horizontal conglomerate structure, was fine as long as the new markets kept growing, but became increasingly difficult to sustain as the economic climate worsened.

The slower growth is due not to the diminishing growth potential of the electronics industry or decline in technology level, but to the fact that the comprehensive manufacturer's business model has been rendered obsolete by a deflationary economy and tough business climate.

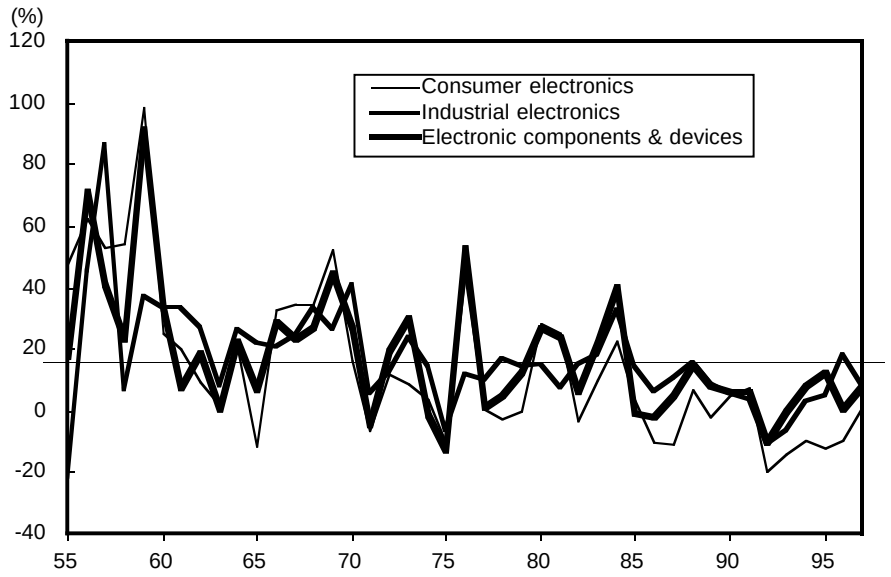
What seems clear from the growth process of the electronics industry is that companies will need to focus their activities more sharply. This is one factor behind today's reorganization drive to spin off unprofitable operations or consolidate them with other companies.

Figure 2 Production Value of Electronics Equipment



Source: EIAJ, 50-Year History of the Electronics Industry.

Figure 3 Growth in Production Value of Electronic Equipment (yoy)



Source EIAJ, 50-Year History of the Electronics Industry.

(2) Technology and Industry Trends Since the 1980s

Table 1 traces product developments related to personal computers and relevant government policies in the U.S. and Japan since the 1980s. Of particular significance is the information technology (IT) revolution in the U.S. since the early 1990s.

Table 1 Developments in the U.S. Personal Computer Industry and Policies for Competitiveness and Intellectual Property Rights

Year	Developments in personal computers	Year	Developments in competitiveness, intellectual property rights
1971	Intel announces i4004 processor	1970 -	Diminishing competitivenss of U.S. cited
1977	Apple Computer established, ships Apple II	1972	IBM software unbundling policy
1978	Intel announces i8086 processor	1979	President Carter's State of Union Address on industrial technology policy
1981	IBM announces PC	1980-81	U.S. revises copyright and patent laws for software
1982	Compaq Computer established; Sun Microsystems established	1982	U.S. Justice Dept. withdraws anti-monopoly suit against IBM
1983	Lotus 123 announced; IBM PC-XT announced; Novell, Adobe Systems established	1983	Advisory group releases report evaluating U.S. high tech industry; Presidential advisory group (1982) is reorganized into Committee on Industrial Competitiveness
1984	Microsoft announces Windows; Apple Computer announces Macintosh	1984	U.S. establishes semiconductor chip protection law
1985	Microsoft releases Windows 1.0; MIT Media Lab established	1985	Young Committee releases report: Global Competition--The New Reality
1987	IBM announces PS/2	1986	TI sues 8 Japanese companies for violating DRAM basic patent
	Microsoft announces Windows 2.0		U.S.-Japan Semiconductor Agreement established
1989	Intel announces 486	1988	Omnibus Trade Act established
	Toshiba releases PC DynaBook; NEC releases 98 Note	1989	TI 's Kilby patent is established in Japan (applied for in 1960, public notification 1986)
1990	Microsoft announces Windows 3.0	1991	Senator Gore's HPC law passed
1992	Intel announces Pentium	1992	NII (information super highway) concept
1993	Microsoft announces Japanese version of Windows 3.1	1993	Clinton administration begins
		1994	Vice president Gore makes GII proposal at ITU conference
1995	Microsoft releases Windows 95	1995	WTO begins
1997	Intel releases MMX Pentium	1996	U.S. reforms Telecommunications Act
1998	Apple releases iMAC	1998	U.S. Justice Dept. brings anti-trust suit against Microsoft

Note: Product announcement date is also date of market introduction.
Source: Media reports.

Many of today's prominent U.S. high tech companies got their start with the introduction of IBM's personal computer in 1981. The growth of these companies and the PC and workstation markets was given a big push by the computer downsizing trend of the late 1980s. In the 1990s, changes in the information environment led to the explosive growth of the Internet. Mainframe computer makers in Japan were also drawn into a price competition while they expanded their businesses in PC and workstation markets and services. However, profit margins fell compared to the 1980s as mainframe prices declined and the growing low-margin PC business was dominated by U.S. companies.

Furthermore, measures to strengthen intellectual property rights since the 1980s, combined with policies to boost U.S. competitiveness, proved to be instrumental in sustaining the

extended economic expansion in the U.S. The enhancement of industrial property rights to go beyond patents and include intellectual copyrights for everything from computer programs to semiconductor circuitry and other software helped propel the high tech, information and communications, and media industries.

From the mid 1990s, advances in the information environment have provided U.S. industries and companies with business models and tools that incorporate Japanese production methods while adding valuable improvements. As a result, manufacturing and venture business groups have emerged in the U.S. that are achieving high growth and taking full advantage of characteristics unique to information technology (freedom from time and space restrictions).

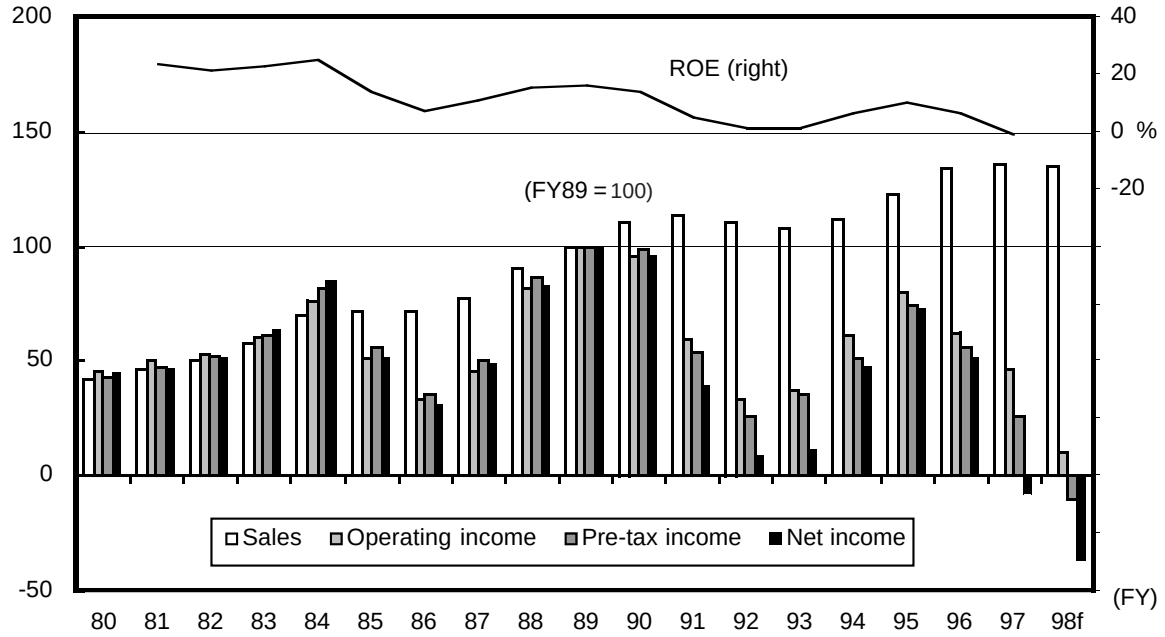
For the U.S., the course of events from the technology friction in the late 1980s to the IT revolution in the early 1990s all contributed to the increased competitiveness of U.S. industries and companies.

By comparison, leaving aside the impact of the prolonged post-bubble recession since the early 1990s, Japanese industry has not striven diligently enough to improve existing management systems and creating new markets.

(3) Poor Performance

The third background factor to the current situation concerns business performance trends. Figure 4 shows combined performance indexes of the consolidated five comprehensive electronics firms (Hitachi, Toshiba, Mitsubishi Electric, NEC, and Fujitsu) for business performance measures such as sales and operating income. The base year is fiscal 1989, the peak year for the combined profit of the five firms.

Figure 4 Consolidated Performance and ROE Trends of the 5 Comprehensive Electronics Makers



Note: The values, which are indexed with fiscal 1989 as base year, show the combined performance of the five comprehensive electronics makers on a consolidated basis. Effect of changes in the number of consolidated subsidiaries is included.
Source: Securities reports.

What becomes evident is a general decline in return on equity (ROE). Furthermore, the pattern of decline coincides with the strong yen recession from fiscal 1985, post-bubble recession from fiscal 1991, and from fiscal 1997, the economic downturn triggered by the consumption tax hike and Asian economic crisis.

The ROE of the five firms moves with the condition of the economy. However, even after accounting for an increase in companies being reported on a consolidated basis, semiconductor losses, and write-offs for extraordinary restructuring expenses, the five firms predict record sales for fiscal 1998 but the lowest operating income since fiscal 1980.

The primary factors behind this are losses from semiconductor operations, weak earnings in existing heavy electric, industrial, and home electronics businesses due to the slump in domestic capital investment and consumer spending, and price declines ("price destruction") from excess supply. Moreover, the outlook for the economy remains bleak.

Since fiscal 1996, amid declining earnings of existing businesses, the semiconductor memory business, a major profit source for the companies, has suffered a slump for the past three years. All five firms predict losses from semiconductor operations for fiscal 1998. Underlying

factors include the growing competitiveness of Asian and U.S. firms in the semiconductor memory market and excess global production.

Amid declining demand across a wide range of business segments, price competition makes it increasingly difficult to cover deteriorating profit margins with sales growth. In particular, massive losses caused by reduced price competitiveness in the DRAM memory market have played a part in driving the corporate reorganization movement.

3. Future Issues

(1) Expected Issues in Reorganization

In general, the following results are expected from corporate reorganization: (1) slimming down of bloated organizational structures, transfer of authority to companies, and swifter decision-making processes; (2) clearer accountability for performance of individual companies, leading to higher earnings power; and (3) greater overall strategic functioning of a slimmed-down headquarters, and a synergistic effect among companies.

However, among companies that have already reorganized, the pursuit of profit among newly formed companies or independent divisions tends to interfere with inter-company communication and joint projects. Companies may thus be disappointed if they expect reorganization to quickly solve their earnings problems.

At Toshiba and Hitachi, the aim of reorganization is not simply to form new companies or business groups, but to eventually shift toward a pure holding company structure in the future. If legal issues are worked out, such as tax payment on a consolidated basis, and the reorganized company can function properly, the likelihood of establishing a pure holding company is high. Toward this end, top management needs to use the reorganization to acquire management expertise and systems, and the capability to produce synergy among group companies. In addition, they need to form a new corporate culture.

(2) Important Post-Reorganization Issues

While interest is presently focused on reorganization and the possibility of holding companies, we also need to consider the bigger issue of strategic vision for the overall corporate group. The eventual form comprehensive electronics makers will take in the future will

depend on whether they intend to remain strictly in manufacturing, or venture into diverse industries such as services and financial services through strategic alliances. Holding companies will increase in importance from the viewpoint of conducting M&A activity in pursuit of an optimal business structure. In manufacturing, companies need to construct an efficient production system that is more responsive to changes in market demand.

On this point, several Japanese industries are looking at a growing practice in the U.S. called supply chain management (SCM). This method incorporates the advantages of Japan's just-in-time (JIT) and keiretsu production systems, while reconstructing the management system along the lines of U.S. systems engineering concepts. Using advanced information networks and forming close ties with the parts industry and distributors, it optimizes the entire supply process from order taking to production, delivery and sales, while pursuing customer satisfaction.

Of course, SCM is only one of many approaches and methods in the management revolution. While adopting such new management methods, cash flow management will improve the efficiency of overall business activities in grasping and responding to market needs.

The post-reorganization issues are diverse. And in the rapidly changing economic environment, it will be critical to construct a dynamic management system that effectively uses all possible resources, including information and knowledge within and outside the group, to continually redefine the group and improve earnings.