

## LENOVO EVOLVES DESPITE OBSTACLES

ARTHUR KRAFT  
Chapman University

Lenovo was founded in Beijing in November 1984 as Legend, and incorporated in Hong Kong in 1988. Lenovo designed, developed, manufactured, and sold personal computers, tablet computers, smartphones, workstations, servers, electronic storage devices, IT management software and smart televisions. It was the world's largest personal computer vendor by unit sales as of 2021 (Gartner 2021). Lenovo had operations in more than 60 countries and sold its products in around 160 countries. In 2020, Lenovo had total assets of USD \$32.12 billion (Annual Report 2020). Lenovo was the world's largest PC vendor, claiming a 25.2% market share for the fourth quarter of 2020, well ahead of HP, Dell, and Apple (Fernando 2021).

In 1984, the Chinese Academy of Sciences invested USD \$25,000 in Lenovo to commercialize its research results. The Chinese Academy of Sciences was a research entity, owned by the government. After the investment, Lenovo was run by its management team. The Chinese government was not involved in daily operations, strategic direction, financial management, or nomination of the CEO or top executives. Everything was done by the Lenovo management team. Lenovo operated as a 100% market-oriented company (*Los Angeles Times* 2006).

In early 2006, the U.S. State Department was harshly criticized for purchasing 16,000 computers from Lenovo. Critics argued that Lenovo was controlled by the Chinese government and therefore a potential vehicle for espionage against the United States. Lenovo pioneered China's transition to a market economy and in the early 1990s had fought four state-owned enterprises that dominated the Chinese computer market. Those firms had the full backing of the state while Lenovo received no special treatment (Hamm 2006). The State Department deal went

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through. Despite all assurances, however, questions about Lenovo's connections to the Chinese government became an ongoing issue in the United States and other nations.

## Introduction

Lenovo was part of China's strategic trade policy in technology and telecommunications. The strategic trade policy was established to nurture and protect firms and industries where economies of scale were important, so firms in these industries were allowed to succeed and become competitive multinational enterprises on a global scale. Lenovo benefitted from barriers to trade and investment that protected it from global competitors operating in the Chinese market. Furthermore, Lenovo received direct and indirect subsidies that lowered its costs and allowed it to be competitive in markets outside China. The subsidies not only reduced costs but supported research and development of new products that further enhanced Lenovo's offerings relative to its competitors. Lenovo's position was espoused in "Made in China 2025" (Wei 2019), which set the long-term strategic plan to develop China's manufacturing sector. Lenovo, Huawei, and ZTE were among the key firms in the technology sector that benefited from this strategy. They were protected in the large Chinese market and supported as they became competitive in the global market.

Lenovo realized that the best way to grow was through acquisitions and joint ventures (Ramstad 2005). This approach gave Lenovo access to products, technology, markets, distribution networks, and brand name recognition that it could not have achieved as rapidly on its own. Lenovo obtained a comparative and competitive advantage that allowed it to catch and overcome rivals. Lenovo's growth strategy—"protect and attack"—was implemented to build on its success in China, where it held a dominant position as China's top vendor of PCs. Protecting its competitive advantages in China through its network of distribution channels was a top priority (Fernando 2021).

Lenovo believed PCs were moving toward the “PC+ Era,” where PCs existed as the central hubs linking a network of interconnected devices, such as tablets, smartphones, and smart TVs. While the company focused on diversification, it was far from the huge market share enjoyed by its top competitors in both the smartphone and tablet markets.

Lenovo’s “protect and attack” strategy required it to maintain its leadership position in China and the global PC marketplace while expanding in emerging markets and “PC+” product categories (Fernando 2021).

### IBM Think Pad and Other Acquisitions

In 2005, Lenovo completed its USD \$1.25 billion purchase of the personal-computer division of International Business Machines Corp. (IBM), becoming the third-largest PC maker in the world and the first from China to attain global reach (Ramstad 2005). The acquisition of the IBM Think Pad Division demonstrated that Lenovo was more than a Chinese technology company. It had become a force to be reckoned with on the global stage.

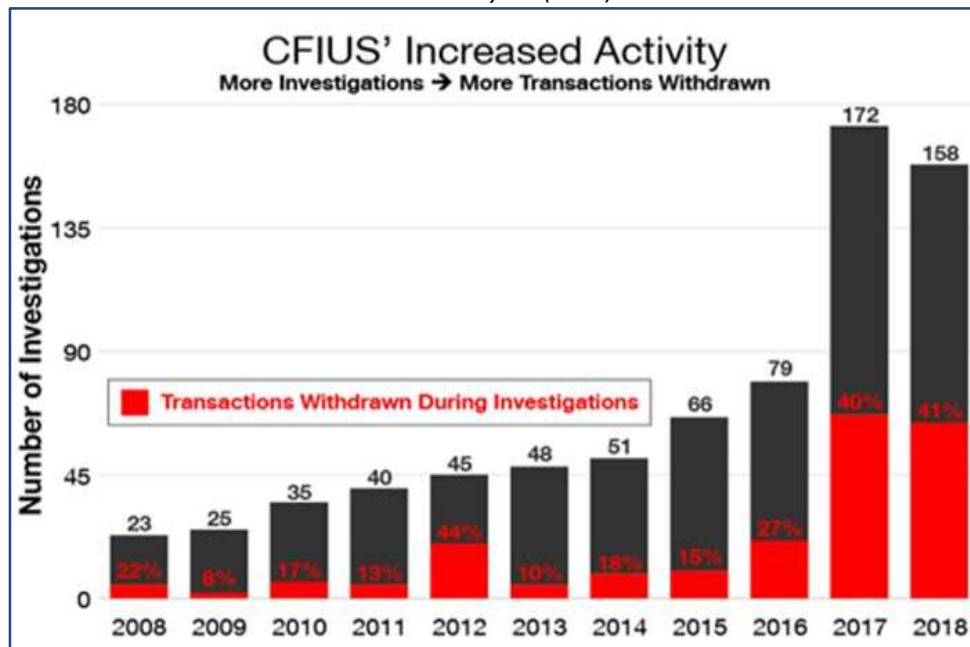
The combined company trailed only Dell, Inc. and Hewlett-Packard Co. in worldwide PC production. The acquisition separated Lenovo from other Chinese technology companies since it transformed Lenovo into a global player with access to a worldwide market and distribution network (Lucas 2013) as well as the IBM brand recognition.

Even though the acquisition of the IBM personal computer business and other acquisitions were subject to scrutiny based on national security concerns and possible loss of a U.S. competitive advantage in technology, no action was taken to stop Lenovo’s acquisitions in the United States. This was not without controversy since many were concerned about a foreign multinational enterprise, especially a Chinese multinational enterprise, having access to key government and military information and technological know-how.

The Committee on Foreign Investment in the United States (CFIUS) was an inter-agency committee of the United States Government that reviewed the national security implications of foreign investments in U.S. companies or operations. CFIUS activity has picked up in recent years as foreign direct investment had accelerated and raised concerns not only about national security, but about future economic growth as well. (See Exhibit 1.) Thus, a review by CFIUS was not unexpected given the increased scrutiny of foreign acquisitions of U.S. firms (Layton 2020). In the end, however, CFIUS approved Lenovo's acquisitions with some concessions (Bartz 2014).

### Exhibit 1. CFIUS Increased Activity

Source: Layton (2020)



On January 27, 2011, Lenovo formed a joint venture with NEC (Lenovo NEC Holdings) to produce and sell PCs in Japan and avoid the failures that others, such as HP, had experienced when they tried to enter Japan (Fujita & Li 2011). Lenovo gained access to Japan through the joint venture, and both Lenovo and NEC benefitted.

In September 2012, Lenovo followed up on aggressive deals for majority stakes in German PC and consumer electronics-maker Medion AG, and a joint venture with EMC (Lenovo EMC)

which sold network-attached storage solutions. The Medion acquisition doubled Lenovo's share of the German computer market, making it the third-largest vendor by sales after Acer and Hewlett-Packard. It was the first acquisition of a major German firm by a Chinese company (Nicholson 2011).

Lenovo reached an agreement to buy CCE, a group of three Brazilian consumer-electronics makers, for USD \$147 million, as it continued its push into lower-margin emerging markets, including India and Russia (Fick & Chao 2012). Prior to its acquisition of CCE, Lenovo had already established a USD \$30 million factory in Brazil, but Lenovo's management felt that it needed a local partner to maximize regional growth. Lenovo wanted to take advantage of increased sales due to the 2014 World Cup that would be hosted by Brazil, the 2016 Summer Olympics, and CCE's reputation for quality (Mehta 2012).

These acquisitions allowed Lenovo to lower costs by avoiding tariffs and nontariff trade barriers, as well as access to low-cost production facilities and established distribution networks. Lenovo, based on its organizational capabilities and scale, was able to gain a competitive advantage in lower-margin markets giving it an edge over many competitors.

### Foreign Direct Investment in Brazil

The CCE deal beefed up Lenovo's presence in Brazil, where CCE made personal computers, TVs, and phones at its seven factories across Latin America's largest country. Brazil also happened to be one of the world's top five PC markets according to the research firm IDC (Fick & Chao 2012). Brazil, Japan, and Russia ranked number three, four, or five in annual computer sales depending on the year, so Brazil was an important market for Lenovo. The CCE acquisition (as an entry mode) allowed Lenovo to circumvent barriers to trade and investment while serving the market at low cost. The CCE acquisition did more than merely circumvent barriers to trade and investment in Brazil: it gave Lenovo access to an extensive distribution network throughout Brazil. Even more valuable to Lenovo was the technological know-how CCE had in the

development and manufacture of TVs, phones and PCs. Given the ever-declining global market for PCs, TVs and phones represented future growth opportunities. Lenovo came to own CCE's technological know-how which it shared throughout its worldwide operations, further enhancing the value of its processes and products.

The move to Brazil proved fortuitous since inflation in Brazil rose at the fastest monthly pace in almost eight years in early 2013 (Fick & Chao 2012). While this could hurt Brazil's competitive environment, it benefitted Lenovo because of its considerable presence in Brazil through the CCE acquisition (Leahy 2013). Moreover, Lenovo's goods produced in Brazil cost less in the global market. Lenovo benefitted by serving Brazil with local production since its goods cost considerably less than imports did, as imports were adversely affected by the reduced purchasing power of the Brazilian Real as well as the tariffs on the imports of competitors' goods.

At the same time, Lenovo in China was suffering from rising wages that threatened the low costs of its production operations. Unlike many other brands, Lenovo did much of its own manufacturing rather than relying on contract manufacturers. Lenovo manufactured close to half of the computers it sold, far more than its U.S. rivals did (Brown 2012). Thus, Lenovo was always on the lookout for low-cost production locations, such as Brazil, Russia, and India. The CCE acquisition improved Lenovo's competitive position in Brazil as well as the global market since it could take advantage of CCE's technological know-how and Brazil's low-cost production location.

## Establishing Operations in the United States

Even though Lenovo acquired IBM's personal computer business in 2005, it had never manufactured its products in the United States. The PCs that Lenovo sold in the U.S. were produced at the company's Mexican or Chinese factories. All of this changed in October of 2012, when Lenovo announced it would manufacture PCs in North Carolina starting in 2013. (Osawa 2012). Even though Lenovo's Mexican production was able to enter the United States without facing any trade barriers under the North American Free Trade Agreement (NAFTA), Lenovo still felt it was in its best interest to set up production in the United States. In addition, Mexican products were able to enter Canada without any trade barriers under NAFTA, and Lenovo could take advantage of the free trade agreements that Mexico had with more than forty countries.

By establishing production in the United States, Lenovo was closer to its customers and better able to meet the demands of the market. Rising wages in China closed the gap between costs in China and the United States, which made the U.S. an attractive location especially with advanced manufacturing techniques that used little labor in the manufacturing process. Lenovo would be able to satisfy local content requirements and *Buy America* measures if it manufactured in the United States.

The move to North Carolina was consistent with the company's broader strategy of localizing production in major markets as much as possible. The U.S. move alleviated some concerns related to national security, industrial spying, and job losses. Chinese telecommunications suppliers Huawei Technologies Co. and ZTE Corporation were being investigated by the U.S. House of Representatives Intelligence Committee over whether their gear could be used to spy in the United States (Osawa 2012). Lenovo's earlier acquisition of IBM's PC division underwent considerable scrutiny by various U.S. agencies. The acquisition was allowed to proceed; however, some concessions were made, and some customers shied away from purchasing

Lenovo PCs. Locating production operations in the U.S. alleviated some national security concerns surrounding Lenovo.

Lenovo became the world's third-largest smartphone maker by shipments in 2013, when it overtook South Korea's LG Electronics, Inc. Earlier in 2013, it passed Hewlett-Packard Co. as the world's biggest PC maker. While Lenovo's smartphone sales benefitted from its strength in China - the world's largest smartphone market - it faced stiff competition from rivals for Chinese consumers (Kim 2013). Huawei, ZTE, and Xiaomi were among the many Chinese telecommunications companies vying for market share in China. The level of competition in the global mobile device market was equally fierce. Even with Chinese subsidies and barriers to trade and investment in China, Chinese telecommunications firms faced considerable competition in the domestic and global market.

While Lenovo' horizontal acquisitions and joint ventures enhanced its product portfolio, increased sales, and lowered costs, Lenovo still sought to diversify outside of the PC market.

### **Server and Mobility Device Acquisition**

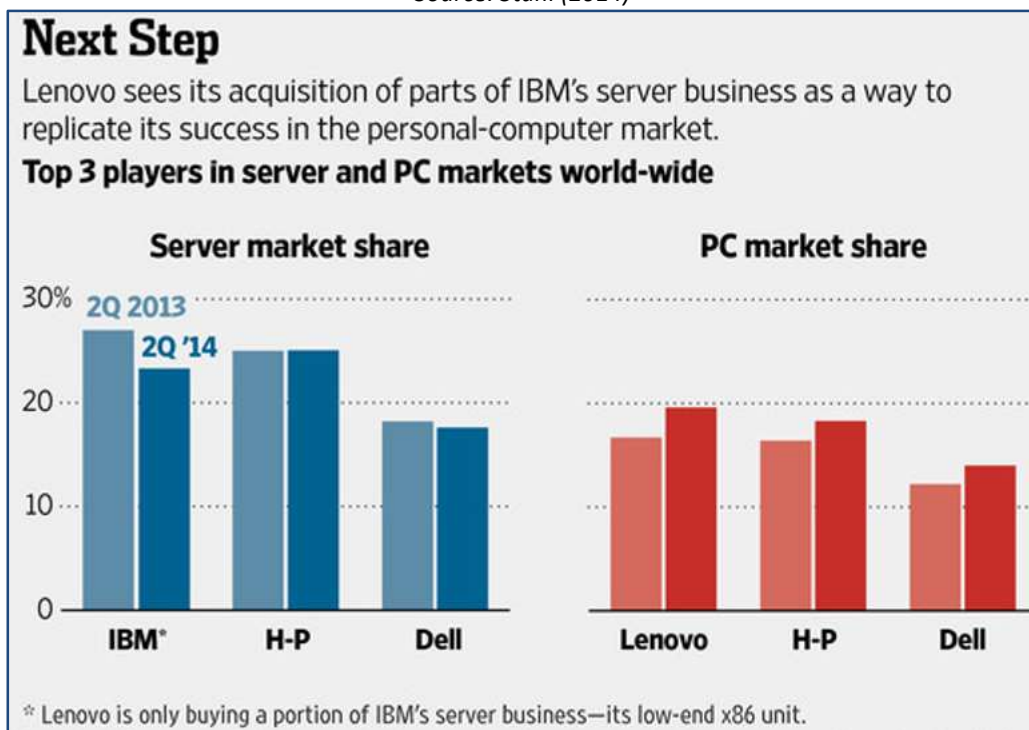
Lenovo purchased IBM's server business for USD \$2.3 billion in January 2014. The acquisition transformed Lenovo into a mobile device, PC, and enterprise server company as it expanded its existing server business (Lee 2014). Even though Lenovo was the No. 1 PC maker, it faced eroding demand and it expected that mobile devices would become the bulk of its business in coming years (Lee 2014). The IBM server acquisition further diversified Lenovo's product line away from PCs. Lenovo had decided that its core competencies were in a mobile devices, TVs, PCs, and servers. The IBM server acquisition accelerated Lenovo's move to expand beyond its traditional PC business into new lines of production (Stahl 2014). Lenovo had its own server business, but it was less than one-fifth the size of the IBM unit. The acquisition moved Lenovo ahead five years in its plan to expand in servers; it raised Lenovo's global ranking from no. 6 to no. 3 and increased its share of global server sales from 2 percent to 14 percent (Lee 2014).



Lenovo wanted to replace Samsung Electronics as the top smartphone vendor in China. It spent USD \$793.5 million in Wuhan to build a plant that produced up to 40 million phones per year (see Exhibit 2). The company's CEO, Yang Yuanqing, said, "*Lenovo does not want to be the second player ... we want to be the best. Lenovo has the confidence to outperform Samsung and Apple, at least in the Chinese market*" (Islam 2013).

### Exhibit 2. Lenovo's Acquisition of IBM's Server Business

Source: Stahl (2014)



Lenovo expressed interest in acquiring the Canadian smartphone maker BlackBerry, Ltd. However, the acquisition was reportedly blocked by the Government of Canada, citing security concerns due to the use of BlackBerry devices by prominent members of the government. An official stated, "*We have been pretty consistent that the message is that Canada is open to foreign investment and investment from China but not at the cost of compromising national security*" (Verge 2013).

Continuing with its shift to mobile, Lenovo purchased Google's Motorola Mobility for USD \$2.9 billion within weeks of the acquisition of IBM's server operation. Lenovo believed it could use the Motorola acquisition to strengthen its position in mobile devices relative to Apple, Inc. and Samsung Electronics Co. (Guynn *et al.* 2014). The Motorola Mobility acquisition further reinforced Lenovo's position in mobile devices, TVs, PCs, and servers. Lenovo believed it could become the world's largest maker of servers (Kay 2018). Lenovo's USD \$2.9 bn purchase of Motorola's handset business - the largest Chinese technology deal in the United States - was closely scrutinized by the Committee on Foreign Investment in the U.S. as had been Lenovo's earlier purchase of IBM's PC business (Bartz 2014).

Lenovo began to emphasize vertical integration following a meeting in 2009 after it analyzed the costs-versus-benefits of in-house manufacturing and decided to make at least 50% of Lenovo's manufacturing in-house. Vertical integration had an important role in product development with most innovations for *"PCs, smartphones, and smart TVs related to innovation of key components—display, battery, and working very closely with key parts suppliers"* (Chao 2012). Previously, lack of integration as the result of numerous foreign acquisitions and an excessive number of *"key performance indicators"* (KPIs) had made Lenovo's expansion expensive and created slow delivery times to end-customers. Lenovo doubled-down on vertical integration and manufacturing near markets to cut costs at a time when its competitors were making increased use of outsourcing and off-shoring. By 2013, Lenovo ranked 20th on Gartner's list of top 50 supply chains, whereas in 2010 the company was unranked (Holstein 2014).

Liu Chuanzhi founded Lenovo (originally called Legend), in 1984 and served as Chairman until 2012. He led Lenovo through its early growth. Chuanzhi discussed his vision, management style and the corporate culture at Lenovo in a Managing Asia interview (CNBC You Tube 2016). See Exhibit 3.

**Exhibit 3. How Lenovo Became China's First Global Company***Source: CNBC (2016)*[https://www.youtube.com/watch?v=zWnywVE\\_5wA](https://www.youtube.com/watch?v=zWnywVE_5wA)

### Motorola Mobility

Lenovo's ability to maintain its third-place position or rise in the standings in the smartphone race proved to be a challenge. Chinese smartphone maker Xiaomi had launched an aggressive push into India in July of 2014. This followed Lenovo's earlier entrance into India. Xiaomi's actions placed increasing competition in India's fast-growing mobile-device sector. India became the world's third-largest market by sales for smartphones in 2014 (Crabtree 2014). Lenovo was always on the lookout for low-cost production locations, such as Brazil, Russia, and India, so it was logical for it to move into India. That Xiaomi followed Lenovo was not unexpected, so Lenovo had to execute its strategy to keep costs in check and to differentiate its products in order to challenge Xiaomi and other low-cost competitors in the Indian market.

Lenovo counted on the Motorola brand to carry its sales in countries such as the U.S., where Lenovo phones have previously had a limited presence. It sought to lower costs in the server

business because of overlapping components with its PCs (Dou 2015). Lenovo needed to expand its presence in the United States; this meant taking full advantage of the IBM server and Motorola Mobility acquisitions. Firms engaged in foreign direct investment to serve international markets, circumvent trade barriers, achieve scale economies, and gain access to valuable technology; Lenovo realized it needed to take full advantage of these opportunities.

Lenovo saw emerging markets, such as India, the Middle East, and Africa as paths to growth amid a slowdown in demand for personal computers while it integrated the acquisitions of Motorola Mobility's smartphone business and IBM's server business (Blumenstein & Safdar 2016), yet the integration of Motorola Mobility's smartphone business and IBM's server business proved to be a challenge.

Although Motorola was still among the top five U.S. phone brands when Lenovo acquired it, Motorola was posting losses and lagged market leaders Apple and Samsung. Two years after buying Motorola, Lenovo cut at least 2,000 U.S. jobs. It had fallen from no. 3 to no. 8 globally in the smartphone world. Lenovo worried about losing momentum in the U.S. and Brazil. In January 2015, Lenovo announced that Motorola was returning to China. It did not spend heavily on marketing, counting instead on nostalgia for Motorola phones from the mid-1990s to propel sales. Lenovo's distribution strategy was to sell the Motorola phones only online, a nod to upstart Chinese phone maker Xiaomi Corp., which had used the online-only model and savvy social-media marketing to become a top seller (Chu & Osawa 2017). Youthful Web shoppers showed little affinity toward Motorola, however, and customers seemed turned off by its prices. With Motorola failing to make major headway in either of the world's two largest economies and demand for personal computers slowing, Lenovo in August 2015 unveiled a plan to cut USD \$1.35 billion in costs annually and to eliminate 3,200 jobs companywide. In September 2015, Lenovo announced another 1,000 layoffs, mostly at Motorola (Chu & Osawa 2017).

## Lenovo Navigates a Trade War

Amicable relations between China and the U.S. helped Lenovo become the world's largest personal-computer maker. PCs and smartphones were not on the Trump administration's tariff list against China. Lenovo made three-quarters of its sales outside of China, including nearly one-third from the Americas. Lenovo had factories in Mexico and Brazil, which helped soften the impact should further tariff increases target PCs and smartphones (Wong 2019).

Strategic trade policy suggested governments should nurture and protect firms and industries where economies of scale were likely to be important. Such a policy increased the chances that a firm achieved economies of scale, had low costs, and ended up a winner in the global market. Strategic trade policy involved luck - and Lenovo had some luck since it was not subject to punitive U.S. tariffs on the goods it shipped from China. Even though Lenovo could have circumvented such tariffs or nontariff barriers by increasing production in Mexico and in the United States, it still relied on China to supply a considerable portion of its U.S. sales.

The risk of blowback from U.S.-China tensions added to concerns that Lenovo's core PC business, which accounted for around three-quarters of overall sales, might have limited growth. People were buying fewer PCs as they spent more time on smartphones. Lenovo managed to boost its margins by focusing on premium products such as ultrathin laptops and gaming PCs. However, it was unclear how far this strategy could be pushed in the face of a shrinking market and two big competitors in HP and Dell. Lenovo had done surprisingly well in the maturing PC industry, but challenges were now piling up (Wong 2019). Lenovo had extended its PC sales well beyond expectations employing a generic broad low-cost strategy based on selling in the budget and premium markets to remain competitive. It kept prices low and continued to develop new products to extend the life of PC sales in a declining PC market. Lenovo used innovation to continue to develop new products and to keep prices low in a crowded market with many challengers.

Even though the trade war continued with tariffs in place well into 2012, PC sales benefited from COVID-19 Pandemic-led demand. Lenovo still held the top spot with a 25.7% market share, followed by HP's 21.6%. The next three positions were held by Dell, Apple, and Acer Group, with a market share of 15.2%, 7.7%, and 7.1%, respectively (Bhaget 2020). Lenovo continued to benefit from luck even in the challenging times of COVID protocols: such an environment spurred sales of PCs, tablets, and smartphones. Lenovo's staying power in the PC market continued into the fourth quarter of 2020 as it dominated sales (Gartner 2021). See Exhibit 4.

#### Exhibit 4. Preliminary Worldwide PC Vendor Unit Shipment Estimates for 4Q20

Source: Gartner (2021)

Company	4Q20 Shipments	4Q20 Market Share (%)	4Q19 Shipments	4Q19 Market Share (%)	4Q20-4Q19 Growth (%)
Lenovo	21,491	27.1	17,713	24.7	21.3
HP Inc.	15,683	19.8	16,155	22.5	-2.9
Dell	13,199	16.6	12,127	16.9	8.8
Apple	6,893	8.7	5,250	7.3	31.3
Acer Group	4,741	6.0	4,035	5.6	17.5
ASUS	4,570	5.8	3,975	5.5	15.0
Others	12,813	16.1	12,493	17.4	2.6
<b>Total</b>	<b>79,392</b>	<b>100.0</b>	<b>71,749</b>	<b>100.0</b>	<b>10.7</b>

Notes: Data are in thousands of units and includes desk-based PCs, notebook PCs and ultramobile premiums (such as Microsoft Surface), but not Chromebooks or iPads. All data is estimated based on a preliminary study. Final estimates subject to change. The statistics are based on shipments selling into channels. Numbers may not add up to totals shown due to rounding.

### National Security Concerns

Leading Chinese technology companies sold equipment to state governments in the U.S. that could be used by Beijing to obtain sensitive information. Contracts for China-based Lexmark and Lenovo implied that the companies could send data from state and local governments to China under a 2017 law that required all Chinese companies to cooperate with Beijing's intelligence services, including granting access to data collected overseas (Gertz 2020). Lenovo was aware that security concerns always remained an issue - especially when it operated in the United States.

CIFUS had approved the purchase of the IBM server business with the concern that the servers could be accessed remotely by Chinese spies or hackers or compromised through maintenance. Lenovo faced similar security questions when it bought IBM's PC business in 2005. Although the PC acquisition was approved by regulators, some divisions of the U.S. government shied away from using Lenovo products (Stahl 2014).

In February 2021, *Bloomberg Business* reported that U.S. investigators found in 2008 that military units in Iraq were using Lenovo laptops in which the hardware had been altered. According to a testimony from the case in 2010, *"A large amount of Lenovo laptops were sold to the U.S. military that had a chip encrypted on the motherboard that would record all the data that was being inputted into that laptop and send it back to China"* (Robertson & Riley 2021).

Even though it lost some customers, Lenovo was able to operate without significant restrictions. Whether or not customers walked away was up to them. However, Lenovo offered excellent products and provided solid service at reasonable prices which allowed it to remain competitive in the market. The two U.S. acquisitions cleared by CFIUS, along with the decision to manufacture in the United States, alleviated many suspicions about Lenovo and further separated Lenovo from Huawei and ZTE.

The security concerns posed by high-profile Chinese companies, such as Huawei Technologies and ZTE, had been widely reported, but the threat posed by other Chinese enterprises, such as Lenovo, had received less attention. The Pentagon's Inspector General highlighted some USD \$33 million in Defense Department purchases of off-the-shelf Lexmark and Lenovo products. These purchases *"have been noted on the National Vulnerability Database because of security deficiencies,"* the report said (Gertz 2020). As much luck as Lenovo enjoyed avoiding retaliatory tariffs imposed on China by the United States, it has enjoyed even more luck when it was not subject to sanctions like those placed on Huawei and ZTE. In addition to the 2017 Chinese Intelligence Law, China enacted an internet law in 2016 that required network operators for all companies in China — including Lexmark and Lenovo — to store data inside the country and



permit Chinese authorities to conduct spot checks of network operations. When the U.S. Navy found that Lenovo servers had been installed on its warships, it pulled out the equipment over cyber spying concerns (Gertz 2020). Despite such concerns, Lenovo was not blocked from selling to agencies of the U.S. government or to state and local agencies. It continued to have healthy sales in the U.S.

While the media focused on U.S. policy restricting Huawei, the Chinese-military backed provider of telecommunications equipment, Huawei was not the only security threat from China. Chinese investment in the U.S. had increased significantly, driven in part by China's strategy of techno-nationalism, which included goals of acquiring top foreign brands and shaping them into Chinese players. Hence China's interest in assets from IBM, Motorola, Smithfield Foods, G.E. consumer electronics group, and other U.S. firms. (Layton 2020). While some Chinese firms faced restrictions or bans from operating in the U.S. or other nations, Lenovo continued to operate with few restrictions.

Lenovo has encountered years of suspicion in Washington, starting back in 2004 when the Chinese government held a much larger stake in the company, and when Lenovo had acquired IBM's PC division. Some federal agencies had banned its products or services, while others like the U.S. Department of Defense and state and local governments continued to make purchases and use its services (Layton 2020). Lenovo had been extremely fortunate that it had been able to continue its operations in the U.S. and in many other countries, even as other Chinese technology companies faced significant opposition and operating restrictions.

## Sanctions

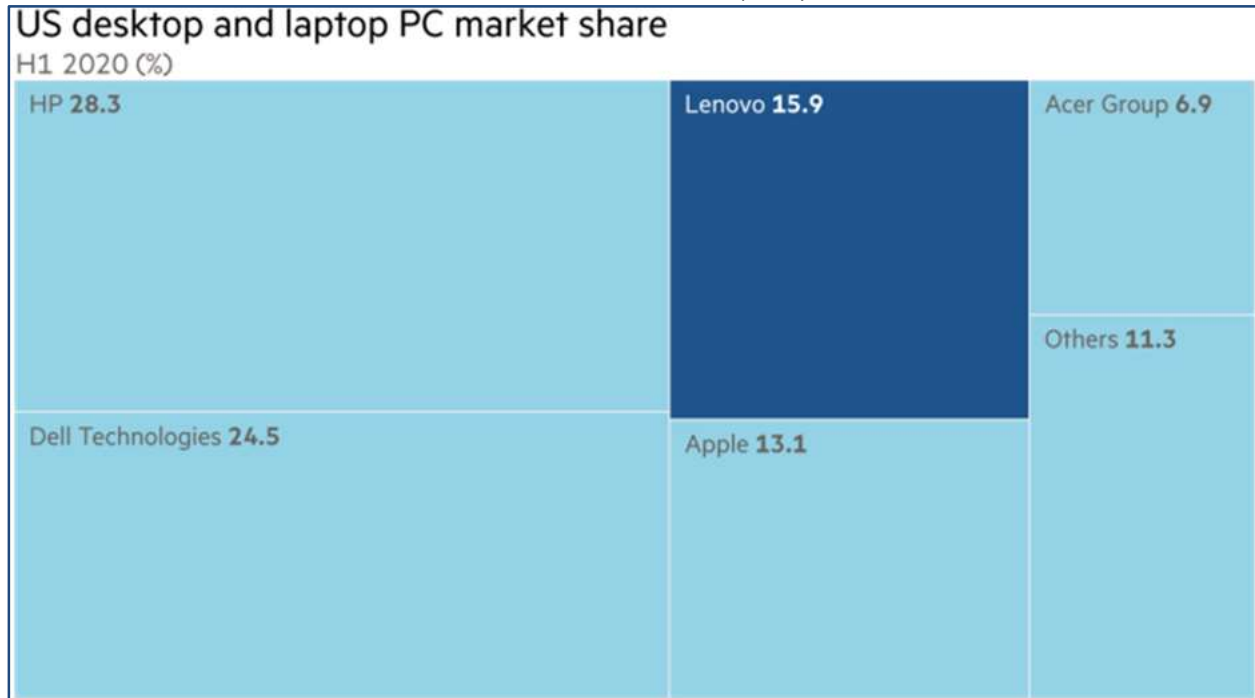
Lenovo reported strong sales and profit growth, gaining U.S. market share even as the threat of sanctions on Chinese companies operating in the U.S. grew. Lenovo grew its U.S. laptop and desktop computer market share, trailing only HP and Dell (McMorrow & Hille 2020). Customers included the U.S. Air Force. Unlike Huawei, which has seen its international business crippled



by a years-long campaign by Washington, Lenovo's international sales were more important to the company than ever, bringing in 79 per cent of revenue in 2020 (McMorrow & Hille 2020). Lenovo has been fortunate to avoid the scrutiny that other Chinese firms had endured (see Exhibit 5).

### Exhibit 5. U.S. Desktop and Laptop PC Market Share

Source: McMorrow & Hille (2020)



Hefei Bitland was among the Chinese manufacturers that used “state-sponsored forced labor” at internment camps dedicated to persecuting the Uyghur Muslim minority in China, according to U.S. federal officials. The U.S. Customs and Border Protection (CBP) announced it would begin confiscating imports from Hefei Bitland, a laptop and smartphone manufacturer that once publicly counted Lenovo and Google as its customers (Kan 2020).

Lenovo informed custom officials that it was no longer building products at Hefei Bitland manufacturing sites - after the U.S. Commerce Department sanctioned Bitland for taking part in the forced labor activities. As a result, U.S. companies were barred from exporting technology to the manufacturer unless they received government approval (Kan 2020). Lenovo informed

its customers that it had stopped manufacturing with Bitland and was moving production of related devices to other suppliers. Lenovo was not subject to any sanctions and continued to operate as it had in the past with little, if any, impact.

### Issues and Concerns

Lenovo had not been immune to controversy and lingering questions remained concerning the reliability of its software products and corporate governance. While having enjoyed a reputation of reliable product quality, recent software upgrades had proven to be less than reliable. The Lenovo Service Engine appeared on PCs shipped from October 2014 to June 2015. It sent non-identifiable system information from each PC to Lenovo the first time the PC went online. Meanwhile, Lenovo OneKey Optimizer bloatware was installed on laptops. The same behaviors occurred following a clean install. It turned out that the Lenovo Service Engine had various security issues and did not meet guidelines intended for anti-theft software. Furthermore, the Lenovo Solution Center allowed malicious code execution. Lenovo computer users had been placed repeatedly at risk from security issues in the past and the present (Cawley 2020).

In early 2015, it was discovered that Lenovo laptops shipped to stores and consumers in late 2014 had malware pre-installed. Masquerading as a piece of typical manufacturer bloatware, Superfish Visual Discovery was a browser extension that analyzed images, checked if they were products, and then displayed cheaper alternatives. On September 6, 2015 Lenovo settled with the Federal Trade Commission paying a reported USD \$3.5 million in fines and agreeing to other security concessions to prevent a repeat of the Superfish debacle. According to the FTC, the software allowed VisualDiscovery to see a consumer's sensitive personal information transmitted over the Internet, including log-in information, Social Security numbers, and more. In 2015, Lenovo said the decision to use Superfish was a "*significant mistake*" and that it had not been aware of Superfish software exploiting any vulnerabilities. Lenovo previously published details on how to remove Superfish from existing laptops. Superfish had not been

loaded on Lenovo laptops since 2015. Two key facts were never communicated to consumers: first, Superfish software on a laptop slowed Internet speeds by as much as 125 percent, and second, dismissing the Superfish software actually opted consumers into it.

Lenovo was prohibited from misrepresenting any features of software pre-loaded on laptops that injected advertising into consumers' Internet browsing sessions. For 20 years, Lenovo was required to put in place a *"comprehensive software security program for most consumer software preloaded on its laptop,"* subject to external audits. If Lenovo did put adware onto its laptops, it was required to have consumers' affirmative consent (Hachman 2015). Aside from the settlement costs, this proved to be a public relations nightmare for Lenovo. Even though it was a serious matter, it appeared to have been another stumble from which Lenovo recovered.

On October 9, 2021, Lenovo said it would withdraw its application for its shares to be listed, days after it had been accepted by Shanghai's STAR Market. On October 11, 2021, Lenovo said it had done so because of the possibility of the validity of financial information in its prospectus lapsing during the application's vetting. It also cited *"relevant capital market conditions such as the latest circumstances in connection with the listing."* Lenovo's shares were already listed on the New York and Hong Kong exchanges, but it had planned to raise up to HK \$13.6 billion (USD \$1.8 billion) in Shanghai, making it the first Chinese company to sell so-called Chinese Depositary Receipts (CDRs) on China's financial marketplace for technology companies (Goh & Xue 2021). Aside from the lost opportunity to raise USD \$1.8 billion, Lenovo recovered from the embarrassment.

Another issue was long-term corporate control. Over the years, Lenovo tried to reduce concerns about Chinese government influence. Steps taken by Lenovo included reduced government ownership, increased ownership of foreign firms associated with acquisitions (IBM, Motorola, etc.), and the appointment of non-Chinese citizens to the Board of Directors, such as Jerry Yang, Yahoo founder.

## Lenovo in 2022

Lenovo capitalized on two booming markets, Chinese stocks, and the global PC industry, to list in Shanghai on the STAR Market, China's answer to the NASDAQ (Chiu & Wang 2021). Lenovo planned to use the funds for research and development, strategic investments and to replenish working capital. The offering remained subject to market conditions and needed approval from shareholders, exchanges, and regulators. Like its rivals, Lenovo benefited from the pandemic, which led to a surge in remote work and study, as well as home entertainment. PC sales reached a decade high (Chiu & Wang 2021).

Lenovo designed, developed, manufactured, and sold PCs, tablets, smartphones, servers, workstations, electronic storage devices, IT management software, and smart televisions. To compete, Lenovo unveiled its digital solutions service and expanded cloud computing service (Tech World 2021). See Exhibit 6. Lenovo had impressive competitive advantages over its rivals in the PC marketplace, including its large distribution network and its ability to expand its presence in emerging markets (Bhaget 2020). Over the years, Lenovo used strategic acquisitions and partnerships to access new markets, extend its product portfolio, and increase sales. Lenovo lagged in market share behind its rivals in both tablet and smartphone sales (Fernando 2021).

### **Exhibit 6. Lenovo Tech World 2021 Highlights**

Source: Tech World (2021)
















) <https://www.youtube.com/watch?v=-Xte2949XGM>



While Lenovo remained a positive force in the industry, it had not duplicated its early success in smartphones. Apple, Samsung, and other Chinese technology companies, such as Huawei, ZTE, and Xiaomi, dominated the market. The acquisition of Motorola Mobility did not meet expectations to support Lenovo's ambitions in smartphone development and sales. Despite setbacks, Lenovo was a significant multinational enterprise and was counted among the world's largest technology companies (Fortune 2021). See Exhibit 7. The most impressive advantage enjoyed by Lenovo in China was its immense network of distribution channels. Lenovo had access to thousands of sales points in its Chinese distribution network, the majority of which were exclusive distributors of Lenovo products (Fernando 2021). When Lenovo purchased IBM's PC division, it gained access to a worldwide distribution network (Lucas 2013). Access to similar distribution networks occurred with many of Lenovo's other acquisitions. Having extensive distribution networks enhanced Lenovo's ability to serve its customers and meet the needs of the market.

**Exhibit 7. Largest Technology Companies by Revenue**

Source: Fortune (2021)

Rank	Company	Revenue (\$B) USD	Employees	Headquarters
1	 Apple	\$274.515	147,000	Cupertino, California, U.S.
2	 Samsung	\$200.734	267,937	Suwon, South Korea
3	 Alphabet	\$182.527	135,301	Mountain View, California, U.S.
4	 Foxconn	\$181.945	878,429	New Taipei City, Taiwan
5	 Microsoft	\$143.015	163,000	Redmond, Washington, U.S.
6	 Huawei	\$129.184	197,000	Shenzhen, China
7	 Dell	\$92.224	158,000	Round Rock, Texas, U.S.
8	 Meta	\$85.965	58,604	Menlo Park, California, U.S.
9	 Sony	\$84.893	109,700	Tokyo, Japan
10	 Hitachi	\$82.345	350,864	Tokyo, Japan
11	 Intel	\$77.867	110,600	Santa Clara, California, U.S.
12	 IBM	\$73.620	364,800	Armonk, New York, U.S.
13	 Tencent	\$69.864	85,858	Shenzhen, China
14	 Panasonic	\$63.191	243,540	Osaka, Japan
15	 Lenovo	\$60.742	71,500	Hong Kong, China/ Morrisville, North Carolina, U.S.
16	 HP	\$56.639	53,000	Palo Alto, California, U.S.
17	 LG	\$53.625	75,000	Seoul, South Korea

Lenovo had a history of negotiating strategic acquisitions and partnerships. See Exhibit 8. It was not satisfied with being a market leader in China. It looked beyond China to the global market. Lenovo expanded into emerging markets, such as India, Russia, and Brazil, as it switched its priority toward a balance of continued growth and profitability. Lenovo’s long-term goal was to re-create the dominant position it enjoyed in China in each of its expansion markets. However, this has proved to be more of a challenge than anticipated. Lenovo recognized that the diverse markets where it operated, such as the Americas, Europe, Africa, the Middle East, and Asia were each home to unique consumer preferences, competitive landscapes, and regulatory regimes (Fernando 2021). These differences complicated Lenovo’s ability to operate effectively in the global market as a multinational enterprise.

### Exhibit 8. Important Dates in Lenovo History

Source: Author's Notes

- 1984 - Lenovo founded by academics at the government-backed Chinese Academy of Sciences.
- November 1984 - Lenovo founded in Beijing as Legend and was incorporated in Hong Kong in 1988, produced and sold PCs in Japan.
- September 2012 - Lenovo acquired majority stakes in German PC and consumer electronics-maker Medion AG and a joint venture with EMC, Lenovo EMC.
- January 2, 2013 - Lenovo acquires CCE, widely known in Brazil as a leader in PCs and consumer electronics.
- October of 2012 - Lenovo announces it will manufacture PCs in North Carolina starting in 2013.
- 2013 - Lenovo passed Hewlett-Packard Co. to become the world's biggest PC maker.
- 2013 - Lenovo became the world's third-largest smart phone maker by shipments when it overtook South Korea's LG Electronics, Inc.
- January 23, 2014 - Lenovo purchased IBM's server business for \$2.3 billion.
- January 29, 2014 - Lenovo purchased Google's Motorola Mobility for \$2.9 billion.
- May 1, 2005 - \$1.25 billion acquisition of IBM's personal computer business, IBM Think Pad.
- January 27, 2011 - Lenovo formed joint venture (Lenovo NEC Holdings) with NEC.

Lenovo acquired Fujitsu's personal computer business in 2017 (Shilov 2017). In November 2017, Lenovo announced its purchase of a 51% stake in Fujitsu's PC division. The deal was part of a joint venture between Lenovo, Fujitsu, and the Development Bank of Japan. The goal was to drive growth in the development and manufacture of Client Computing Devices (CCD) for the global PC market (Fernando 2021). Lenovo realized that it needed to differentiate its product to meet the consumer preferences, competitive landscapes, and regulatory regimes of its diverse markets.

Lenovo was moving toward the "PC+ Era," in which PCs existed as central hubs linking a network of interconnected devices, such as tablets, smartphones, and smart TVs. The vision was to steer Lenovo away from a world leader in traditional PCs to a world leader across the range of "PC+" devices. While the company focused on diversification, it had a long way to go

to achieve the huge market share enjoyed by its top competitors in both the smartphone and tablet markets (Fernando 2021).

To succeed, Lenovo needed to continue its leadership position in China and the global PC marketplace while it expanded its foothold in emerging markets and “PC+” product categories. This required Lenovo to enhance its core competencies in smartphones and tablets beyond those developed internally or through its various acquisitions.

Despite some missteps, national security concerns in the United States and other countries, the trade war, the COVID 19 pandemic, and ever-present China tensions, Lenovo had become a successful multinational enterprise with revenue growth averaging over 10% per year (Lenovo 2021C). It had a USD \$62 million operating loss in 2015 when it booked a charge of \$923 million for costs related to restructuring some of its businesses and as it cleared out its smartphone inventories (Lenovo 2021C). The drop in profits was attributed to the Motorola acquisitions that never met expectations.

Smartphones were Lenovo’s biggest challenge - especially in emerging markets such as India and Brazil. More recently, Lenovo had a 6.32% increase in profits and a 19.77 % increase in revenue over the previous year from March 31, 2020, to March 31, 2021 (Lenovo 2021B). Furthermore, the amount of debt on Lenovo’s balance sheet had been relatively stable, demonstrating that improvements were not the result of taking on more risk (Lenovo 2021A). Finally, examining performance ratios shows that Lenovo improved over the previous four years: Return on Assets improved from 1.4% to 5.7% while Return on Equity increased from -3.0% to 34.0%. See Exhibits 9, 10, and 11.



## Exhibit 9. Lenovo Twelve Months Ended Cost, Profits and Revenue Statement

Source: Lenovo (2021C)

Lenovo Cost, Profits and Revenue For the twelve months ended March 31						
(US\$ million)	FY2020/21	FY2019/20	FY2018/19	FY2017/18	FY2016/17	FY2015/16
Revenue	60,742	50,716	51,038	45,350	43,035	44,912
Gross Profit	9,768	8,357	7,371	6,272	6,106	6,624
Operating Expenses	(7,587)	(6,918)	(6,193)	(5,885)	(5,434)	(6,686)
Operating Profit	2,180	1,439	1,178	387	672	(62)
Pre-tax Income	1,774	1,018	856	153	490	(277)
Profit/(loss) attributable to	1,178	665	597	(189)	535	(128)
EPS (US cents) - Basic	9.54	5.58	5.01	-1.67	4.86	-1.16

## Exhibit 10. Lenovo Year-End 2021 Income Statement

Source: Lenovo (2021B)

Lenovo Income Statement For the year ended March 31, 2021		
	2021 US\$'000	2020 US\$'000
Revenue	60,742,312	50,716,349
Cost of sales	(50,974,425)	(42,359,045)
<b>Gross Profit</b>	<b>9,767,887</b>	<b>8,357,304</b>
Other income - net		
Selling and distribution expenses	(3,044,966)	(2,972,260)
Administrative expenses	(2,984,356)	(2,524,818)
Research and development expenses	(1,453,913)	(1,335,744)
Other operating (expense)/income - net	(104,244)	(85,886)
<b>Operating profit</b>	<b>2,180,406</b>	<b>1,438,595</b>
Finance income	34,753	47,850
Finance costs	(408,641)	(454,194)
Share of gains of associated companies	(32,323)	(14,545)
<b>Profit before taxation</b>	<b>1,774,196</b>	<b>1,017,707</b>
Taxation	(461,197)	(213,204)
<b>Profit for the year</b>	<b>1,312,999</b>	<b>804,503</b>
<b>Profit/(loss) attributable to:</b>		
Equity holders of the Company	1,178,310	665,091
Perpetual securities holders	32,532	53,760
Other non-controlling interests	102,159	85,652
<b>Earnings/(loss) per share attributable to equity holders of the Company</b>		
Basic	US9.54 cents	US5.58 cents
Diluted	US8.91 cents	US5.43 cents
<b>Dividends</b>	<b>HK30.6 cents</b>	<b>HK27.8 cents</b>

## Exhibit 11. Lenovo Year-End 2021 Balance Sheet

Source: Lenovo (2021A)

Lenovo Balance Sheet		
For the year ended March 31, 2021		
	2021 US\$'000	2020 US\$'000
<b>Non-current assets</b>		
Property, plant and equipment	1,573,875	1,398,440
Right-of-use assets	893,422	812,235
Construction-in-progress	207,614	304,241
Intangible assets	8,405,005	7,984,582
Interests in associates and joint ventures	65,455	60,307
Deferred income tax assets	2,344,740	2,059,582
Financial assets at fair value through profit or loss	805,013	494,807
Financial assets at fair value through other comprehensive income	84,796	56,136
Other non-current assets	275,359	224,396
	14,655,279	13,394,726
<b>Current assets</b>		
Inventories	6,380,576	4,946,914
Trade, notes and other receivables	13,454,265	9,833,780
Derivative financial assets	118,299	138,813
Income tax recoverable	254,442	196,464
Bank deposits and cash	3,127,770	3,617,470
	23,335,352	18,733,441
<b>Total assets</b>	37,990,631	32,128,167
Share capital	3,203,913	3,185,923
Reserves	355,123	11,619
Equity attributable to owners of the Company	3,559,036	3,197,542
Perpetual securities		993,670
Other non-controlling interests	817,735	634,321
Put option written on non-controlling interest	(766,238)	(766,238)
<b>Total equity</b>	3,610,533	4,059,295
<b>Non-current liabilities</b>		
Borrowings	3,299,582	1,564,619
Warranty provision	266,313	258,840
Deferred revenue	1,183,247	864,805
Retirement benefit obligations	431,905	458,386
Deferred income tax liabilities	391,258	342,805
Other non-current liabilities	1,436,156	1,321,296
	7,008,461	4,810,751
<b>Current liabilities</b>		
Trade payables	10,220,796	7,509,724
Notes payable	885,628	1,458,645
Derivative financial liabilities	35,944	73,784
Provisions, other payables and accruals	14,088,878	9,744,414
Deferred revenue	1,046,677	819,199
Income tax payable	395,443	357,375
Borrowings	698,271	3,294,980
	27,371,637	23,258,121
<b>Total liabilities</b>	34,380,098	28,068,872
<b>Total equity and liabilities</b>	37,990,631	32,128,167



**Arthur Kraft** served as the Robert J. and Carolyn A. Waltos, Jr. Dean of the George L. Argyros School of Business and Economics at Chapman University from January 1, 2006 through July 31, 2012. He received his Ph.D. in economics in 1970 and a master's degree in economics in 1969 from the State University of New York at Buffalo. He received his Bachelor of Science degree in mathematics magna cum laude from St. Bonaventure University in 1966. A native of Eden, N.Y., Kraft served as business school dean at Georgia Institute of Technology, Rutgers University and West Virginia University before he joined DePaul. He began his career in higher education at Ohio University in 1969 and was promoted to full professor in 1975. He served as professor from 1977-83 and associate dean from 1977-83 of the College of Business Administration at the University of Nebraska-Lincoln.

Dr. Kraft served as Dean of the College of Business and Economics at West Virginia University from 1983-1987. In 1987, he joined Rutgers-The State University of New Jersey, as the first dean of the newly established School of Business at Rutgers' New Brunswick campus. Six years later, Kraft became dean of the School of Management at Georgia Institute of Technology, a position he held until 1997. He was professor of international and strategic management from 1997-1999 and served as chair of the school's doctoral program from 1998-1999. He was named Dean of the College of Commerce at DePaul University in 1999.

Dr. Kraft's involvement with AACSB International includes numerous activities in support of accreditation. He served as Chair of the Board of Directors, 2006-2007 and was a member of the AACSB Board of Directors from 2003-2008. He chaired the Committee on Issues in Management Education (CIME), the Executive Committee, the Nominating Committee, the Board of the Global Foundation for Management Education, and the Pre-Accreditation Committee (PAC). He was a member of the Accreditation Coordinating Committee (ACC) and chaired or served on numerous accreditation visits.

Dr. Kraft has published in major journals (*Journal of Finance*, *Review of Economics and Statistics*, *Decision Sciences*, etc.) and books, made numerous presentations to professional societies, written many working papers, and published a book, *Statistical Analysis for Decision Making*, with Jeffrey E. Jarrett.

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