Future Trend of Virtual Machines: A Case Analysis of Broadcom's Acquisition of VMware

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Abstract. On May 26, Broadcom, the U.S. communications chip giant, announced that it will acquire cloud services provider VMware for $61 billion in a stock plus cash deal. Broadcom would assume $8 billion of VMware's debt under the terms of the agreement, while its Broadcom Software Group will continue to operate under the name VMware. In tough economic times, it is customary for large technology companies to double their bets: in the 1990s, the old AA transformed itself from a hardware company into a software and services company during the recession, and in the midst of the global economic downturn, Broadcom has made no secret of its intent to expand and grow its software business by accelerating its investments and acquisitions. If Broadcom and VMware can combine their strengths, not only will customers benefit from the integration of product portfolios, but the synergies between these different products could open up new business models.

Keywords: Competition, Cloud market, Anti-monopoly.

1. Introduction

Broadcom Corporation is a multinational technology business that creates and manufactures a wide range of networking equipment. telecommunications and semiconductor industries. Henry Samueli and Henry T. Nicholas III created the firm in 1991, and it is located in San Jose, California. Broadcom's product portfolio includes a range of semiconductor products such as microprocessors, embedded processors and system-on-chip (SoC) devices. The company also develops and markets a variety of networking and telecommunications products, including switches, routers and modems, as well as software and services for the enterprise market. In addition to its core business, Broadcom has made a number of strategic acquisitions over the years to expand its product offerings and enter new markets. Some of the key acquisitions the company has made include Epigram, SysKonnect, Emulex, Avago Technologies, CA Technologies and Symantec's enterprise security business. Some of the key milestones in the development of Broadcom include: 1991: Broadcom is founded in Irvine, California. The company initially focused on developing high-speed communications chips for the broadband market. 1995:

This acquisition helped Broadcom expand its presence in the broadband market. 2000: Broadcom becomes the leading supplier of Ethernet controllers to the PC market with the acquisition of ServerWorks. 2005: Broadcom acquires SysKonnect, a provider of networking products for storage, data centers and telecommunications, in a $250 million deal [1]. This acquisition helps Broadcom further expand its presence in the networking market. 2013: Broadcom announces the acquisition of Emulex, a provider of networking and storage connectivity products, in a $606 million transaction. 2015: Broadcom announces the acquisition of semiconductor company Avago Technologies in a $37 billion deal. The merger creates one of the largest semiconductor companies in the world. 2018: Broadcom announces a deal to acquire CA Technologies, a provider of software and services for the enterprise market, in a deal valued at $18.9 billion. 2020: Broadcom announced the acquisition of Symantec's enterprise security business in a deal valued at $10.7 billion. The acquisition helps Broadcom expand its presence in the cybersecurity market.

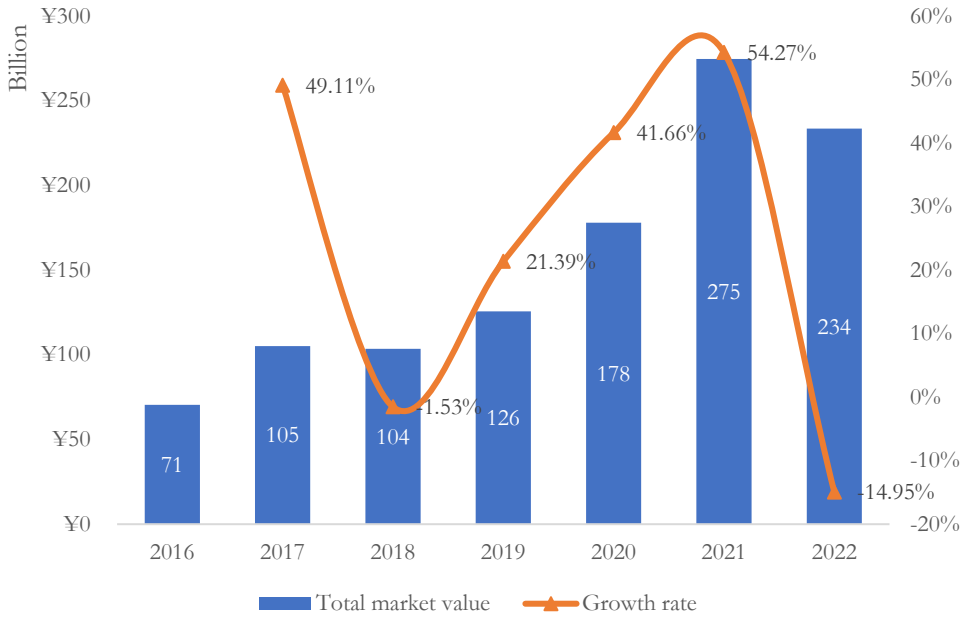


Figure 1. Total market value and its growth rate from 2016 to 2022, Broadcom

Photo credit: Original

Data source: Choice finance.

Overall, Broadcom's market capitalization has been fairly stable over the past several years, with some fluctuations. In general, the company's market capitalization has trended upwards, with a significant increase between 2016 and 2017, followed by relatively steady growth through 2021 (see Figure 1).

There are a number of factors that may have contributed to the changes in Broadcom's market capitalization over this time period. These could include the company's financial performance, market conditions, and investor sentiment. In addition, external events such as economic downturns or shifts in technology trends could also impact the company's market capitalization. From 2016 to 2021, Broadcom's revenues grew from approximately $15.8 billion to $26.2 billion, an increase of approximately 66%. This growth was driven in part by strong demand for the company's products and services, as well as acquisitions and partnerships that helped expand the company's offerings and customer base.

In addition to revenue growth, Broadcom has also experienced growth in other areas such as profits and market capitalization. From 2016 to 2021, the company's net income increased from $3.4 billion to $10.4 billion, a more than three-fold increase. Over the same period, the company's market capitalization also grew from approximately $36.6 billion to $120.3 billion, an increase of more than 230%.

2. Development of VMware

VMware is a software business that focuses on virtualization. Diane Greene, Mendel Rosenblum, Scott Devine, and Edouard Bugnion created it in 1998. The company's flagship product is VMware vSphere, a suite of virtualization products that includes a hypervisor, virtual machine management tools and other related products. VMware vSphere is used to create virtual machines (VMs) on a single physical host, allowing multiple operating systems to run on the same hardware. Since then, VMware has developed a range of products for cloud computing, networking, storage and security, and it has become one of the world's leading providers of virtualization software. VMware was founded in 1998 by Diane Greene, Mendel Rosenblum, Scott Devine and Edouard Bugnion. The company initially focused on developing software that enabled Intel x86-based computers to run multiple operating systems simultaneously, a technology known as hardware virtualization. In 2001,

VMware released VMware Workstation, a desktop virtualization product that allowed users to run multiple operating systems on a single physical computer. This product was followed by VMware GSX Server and VMware ESX Server, which were designed to be used in server environments. Mware went public in 2004 and grew significantly over the next few years. in 2008, the company acquired Zimbra, a provider of open-source messaging and collaboration software, and in 2011, it acquired Nicira, a company specializing in software-defined networking.

Since its inception, VMware has continued to expand its portfolio and acquire other companies to add to its offerings. Today, the company is a major player in the virtualization and cloud computing market with a range of cloud infrastructure, networking, storage and security products

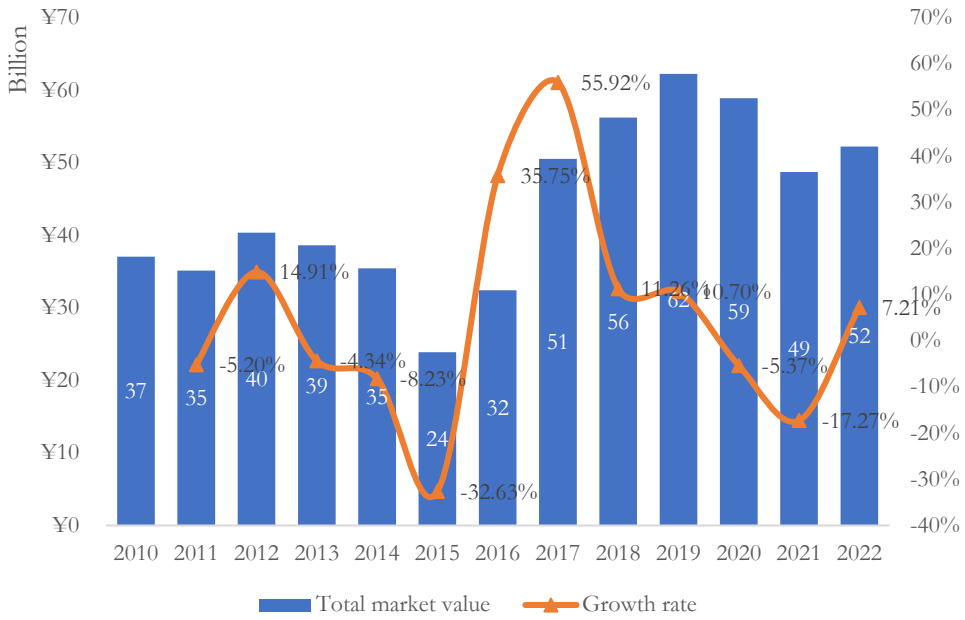


Figure 2. Total market value and its growth rate from 2016 to 2022, VMware

Photo credit: Original

Data source: Choice finance.

From 2016 to 2021, VMware's revenues grew from approximately $7.1 billion to $11.9 billion (please see Figure 2), an increase of approximately 67%. This growth was driven in part by strong demand for the company's products and services, as well as acquisitions and partnerships that helped expand the company's offerings and customer base. In addition to revenue growth, VMware has also experienced growth in other areas such as profits and market capitalization. From 2016 to 2021, the company's net income increased from $1.5 billion to $3.2 billion, more than doubling. Over the same period, the company's market capitalization also grew from approximately $33.5 billion to $93.7 billion, an increase of more than 180%. It can be seen that VMware's market capitalization has generally trended upwards over the past several years, with some fluctuations. The company has experienced strong growth in market capitalization, with an increase of more than 180% from 2016 to 2021.

There are a number of factors that may have contributed to the changes in VMware's market capitalization over this time period. These could include the company's financial performance, market conditions, and investor sentiment. In addition, external events such as economic downturns or shifts in technology trends could also impact the company's market capitalization.

3. Broadcom acquires VMware: Potential Benefit and Risks

Beijing, China, May 26, 2022 - Broadcom (NASDAQ: AVGO), Broadcom (NASDAQ: BRCM), a leading global innovator in enterprise software, and VMware (NYSE: VMW), a leading global

innovator in the design, development, and delivery of semiconductor and infrastructure software solutions, formally announced an agreement under which Broadcom will acquire all outstanding shares of VMware for cash plus stock [2].

VMware is valued at around $61 billion based on the closing price of Broadcom common stock on May 25, 2022. Broadcom would also take up $8 billion of VMware's net debt in addition. Virtualization technology was developed at the forefront by VMware, the top multi-cloud provider for all applications, and it revolutionized x86 server-based computing. Before becoming a pioneer in hybrid clouds and digital workplaces, VMware first invented the software-defined data center and played a key role in virtualizing networking and storage. Today, VMware's multi-cloud portfolio includes solutions for application modernization, cloud management, large infrastructure, networking, security, and workspaces anywhere. Together, these solutions create a flexible and unified digital foundation that helps leading businesses across industries create, run, connect, and secure their most important and complex workloads for the benefit of their clients. Broadcom announces proposed acquisition of VMware, the second largest M&A case of the year for U.S. stocks. Broadcom recently issued an announcement Broadcom recently announced that it has reached an agreement to acquire cloud infrastructure vendor VMware for $61 billion in cash and the company will acquire VMware for $61 billion in cash and stock and will assume approximately $8 billion of VMware's net debt. Shareholders of VMware will have the choice to swap each share of stock for either $142.50 in cash or 0.2520 shares of Broadcom common stock. Upon completion of the transaction, Broadcom's existing shareholders will own approximately 88 percent of the combined company (fully diluted). The transaction is expected to close in Broadcom's FY2023. If the transaction closes successfully, Broadcom Software Group will change its name to VMware and operate as such and integrate its existing infrastructure and security software solutions into the VMware product portfolio. into the VMware product portfolio, providing enterprise customers with an extended platform of critical infrastructure solutions to meet complex information technology infrastructure requirements. to provide enterprise customers with an extended platform of critical infrastructure solutions to meet complex information technology infrastructure requirements. The company believes this transaction will increase the size of its software The company believes this transaction will increase the size of its software business, which is expected to exceed $40 billion in annual revenue (49 percent of software revenue) and expects to add approximately $8.5 billion over three years following the transaction The company expects to add approximately $8.5 billion in EBITDA over the three years following the transaction. Broadcom's acquisition of VMware was not a whim, but a bet on the data center and cloud computing technology boom. Broadcom purchased the enterprise security division of antivirus software maker Symantec in 2009 for $10.7 billion in cash, the enterprise security division of American enterprise software company CA Technologies in August 2018 for a reported $18.9 billion, and the business software company CA Technologies in August 2021 for a reported $18.9 billion.

In light of these moves, Broadcom is rapidly expanding its footprint from semiconductors to enterprise software.3 To date, Broadcom's acquisition of VMware is the second largest publicly announced acquisition in the world, behind Microsoft's $68.7 billion purchase of World of Warcraft developer Activision Blizzard. Founded in 1998, VA Aware is a California-based enterprise software company focused on disruptive technologies such as edge computing, artificial intelligence and machine learning. It is worth noting that VMware's annual revenue of approximately $80 billion is almost twice the size of Broadcom's current software business. The global semiconductor market has seen some ups and downs due to the new pneumonia epidemic [3]. supply chain and other issues, and chip companies are generally under pressure to maintain stable growth. The acquisition of VMware allows Broadcom to enter the enterprise ik software and infrastructure market, especially the emerging edge computing sector, and may create synergies with its previous acquisitions of CA Technologies, Symantec, and other software companies [4].

In 2003, VMware was acquired by EMC for $625 million; in 2015, Dell acquired EMC for $67 billion and VMware became a subsidiary of Dell Technologies; in 2021, VMware was spun off from

Dell Technologies and became an independent public company; and now it will be taken into the arms of Broadcom [5]. After nearly 20 years of disruption, VMware has grown from $635 million to $61 billion, bringing new growth for Broadcom, both in terms of value of technology innovation and market capitalization [6]. Finally, the move into software has also improved Broadcom's overall operating margin, which is expected to grow from 15 percent in 2016 to 32 percent today, one of the highest in the semiconductor industry [7]. HockE. Tan, president and CEO of Broadcom, said that 26 percent of Broadcom's revenue currently comes from software, and with the addition of VMware, the software business will account for 49 percent of revenue: the expected goal of the deal is to add approximately $8.5 billion in EBITDA over the three years following the transaction: while the deal will provide a significant business opportunity for Broadcom, it will also provide a significant opportunity for the company [8]. Although the transaction will present significant business opportunities for Broadcom, the transaction is expected to take 6 to 12 months to complete, during which time there are still variables. Experts have noted that Broadcom's previous bid to acquire Qualcomm for $117 billion was rejected by the U.S. government [9]. citing national security concerns: now that antitrust regulators are increasingly wary of mergers and acquisitions by large technology companies, Broadcom's acquisition of VMware may encounter antitrust resistance [10].

4. Conclusion

In the traditional virtualization market and the rapidly developing public cloud market, VMware is faced with strong competition and potential substitutes, and these competitors are basically American manufacturers, so there should be no strong policy resistance. In short, Broadcom's acquisition of VMware at this time is a good opportunity to expand the software market. If Broadcom can effectively integrate the existing semiconductor business with VMware's software business, the data center market will usher in new changes. As the leader of global virtualization software, VMware is expected to continue to play an important role in the data center, private cloud and multi cloud fields

If the acquisition of VMware by Broadcom is successfully completed, the advantages of Broadcom in network chips, underlying infrastructure software and VMware will continue to play an important role. If the acquisition of Broadcom is successfully completed, the advantages of Broadcom in network chips and underlying infrastructure software are expected to achieve a certain synergy with VMware, and VMware's solid market position and strong cash flow create a strong market position.

VMware's solid market position and strong ability to create cash flow also meet the goal of Broadcom to continuously optimize shareholder returns through buybacks and dividends. The company's stable market position and strong cash flow generation ability are consistent with the goal of Broadcom to optimize shareholder returns through repurchase and dividend. Software is one of the most prominent medium-term growth and certainty industries in the US technology industry. Combined with the recent sharp market pullback, it is also expected that the M&A activity of the US software sector will continue to improve. It is suggested that investors should actively pay attention to the short, medium and long-term investment opportunities in the current software sector, especially the changes in the basic software sector in the period of major changes.

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