

Consolidation under the shadow of giants: Marvell and Cavium join forces in \$6bn deal

Marvell Technology Group Ltd. (NASDAQ:MRVL) – market cap as of 24/11/2017: \$11.80bn

Cavium Inc. (NASDAQ:CAVM) – market cap as of 24/11/2017: \$6.14bn

Introduction

On November 20, 2017, Marvell Technology Group has agreed to buy rival chipmaker Cavium in a cash and stock deal which values the target company at around \$6bn. The deal marks yet another transaction in this year's semiconductor industry consolidation frenzy, driven by declining revenues and downstream pricing pressures.

In particular, the deal would grant Marvell access to Cavium's communication and networking chips. While Marvell has a declared strength in producing semiconductors for data-storage devices, Cavium is a leading provider of networking components. A merger would allow the combined company to better compete against increasingly larger competitors the likes of Intel and Broadcom (itself involved in an unsolicited bid for rival Qualcomm).

The combined company is expected to report yearly Revenues north of \$3.4bn, and existing Cavium shareholders would retain around a quarter of the total stake.

About Marvell Technology Group Ltd.

Marvell Technology Group Ltd. is a semiconductor provider of application-specific standard products. The company designs, develops and markets integrated circuits for communications-related markets. Specifically, Marvell's technology is applied to the broadband data communications and the data storage markets. Most of the firm's sales derive from few customers including Western Digital, Toshiba and Samsung Electronics, further incentivising the company to acquire Cavium to gain scale and bargaining power.

In technical jargon, the company is specialized in System-on-a-Chip (SoC) devices. It also develops integrated hardware platforms along with software that incorporates digital computing technologies which are designed and configured to provide an optimized computing solution. Its product portfolio includes devices for storage, networking and connectivity. Specifically, these include read channels, preamplifiers, and ethernet switch controllers and transceivers. In storage, it is engaged in data storage controller solutions spanning consumer, mobile, desktop and enterprise markets. Its storage solutions enable customers to engineer products for hard disk drives and solid-state drives (NAND memory). Its networking products address end markets in cloud, enterprise, small and medium business and service provider networks. The company's connectivity products address end markets in consumer, enterprise, desktop, service provider networks and automotive.

About Cavium Inc.

Cavium Inc. provides semiconductor processors that enable intelligent networking, communications and security applications. The company offers a broad portfolio of software compatible processors and accelerator boards ranging in performance from 10 Mbps to 10 Gbps.

The firm provides customers with integrated semiconductor processors that enable intelligent processing for wired and wireless infrastructure and cloud for networking, communications, storage and security applications. The Company's products consist of multi-core processors for embedded and data center applications, network connectivity for server and switches, storage connectivity, and security processors for offload and appliance. The company designs specialized microprocessors used in secure network transmissions based on ARM and MIPS

architecture technologies. A range of its products also include a suite of embedded security protocols that enable unified threat management (UTM), secure connectivity, network perimeter protection and deep packet inspection (DPI).

The company sells its products to networking original equipment manufacturers (OEM), which sell into the enterprise, datacenter, service provider, and broadband and consumer markets. In the enterprise market, its products are used in routers, switches, storage appliances, server connectivity for networking and storage, wireless local area networks and UTM. Finally, the company is present both in its domestic market (U.S) and abroad, where more than two-thirds of its revenues are generated.

Industry Overview

Since the 1960s, the semiconductor industry has been an ever changing and growing industry. The main drivers in the industry have been changing, and are on a way to reach every object that people use for work and life.

However, Moore's law is reaching saturation as admitted by its inventor and suggested in the industry's forecasts in spite of the record 2016 year with \$339bn in sales. The integrated circuit designers have been generating steeply increasing revenues though large investments in R&D, ending up doubling the number of transistors on a single computer chip every 24 months. The amount of capital required, especially due to the non-recurring engineering required, has become unaffordable for many small-size companies after five decades of exponential development. Consequently, companies specialize in different roles of the value chain.

The producers could be grouped into four main categories: Integrated Designers and Manufacturers, Foundries, Fabless, and Design Service Companies. IDM companies including Intel, Samsung and Texas Instrument are the well-capitalized giants able to sustain the original integration from designing, manufacturing, packaging, testing and selling. Foundries only take charge of manufacturing, packaging and/or testing, represented by Taiwanese firms TSMC, UMC, ASE Group and SPIL. As the upstream part, they are faced with the biggest challenge given the investment scale and stagnant product efficiency rate. Fabless, by outsourcing other business to Foundries, are the designers and sellers of integrated circuits. Highly intellectual property-oriented Design Service companies provide relevant instruments, complete functional units and circuit design for designers. Marvell and Cavium are both Fabless.

Apart from specialization, the recent years witnessed unprecedented M&A deals within the industry, which indicate a convergence to traditional industries like oil & gas, and steel in terms of entry barriers and capital requirements. For example, Qualcomm announced that it agreed to buy NXP for \$38bn last year, seeking to expand the reach of its chips from phones to cars. Then just earlier this month, Broadcom, one of the leaders in the semiconductors industry, announced an unsolicited \$130bn offer to acquire Qualcomm.

Such an increasingly acquisitive semi-conductor industry shows the potential for synergies to be realised, and the turn of the industry from emerging to mature. The maturity of this industry, heavy-reliable on R&D, will contribute to the block of new entrants.

Deal Structure

Marvell will acquire all outstanding shares of Cavium common stock, in exchange for consideration of \$40.00 per share in cash and 2.1757 Marvell common shares for each Cavium share. The exchange ratio is based on Marvell's undisturbed price as of November 3rd, of \$80.00 per share. Thus, the represented transaction value stands at around \$6bn.

After the deal, Cavium shareholders are expected to own approximately 25% of the combined company on a pro forma basis.

Marvell intends to fund the transaction using a combination of cash on hand and \$1.75bn debt financing. The committed debt consists of an \$850m bridge loan commitment and a \$900m committed term loan from Goldman Sachs Bank USA and Bank of America Merrill Lynch. The transaction will be additionally backed by a \$500m uncommitted undrawn revolving credit facility.

The transaction is expected to be closed by mid-year 2018. It is, however, subject to regulatory approval as well as other customary closing conditions, which include the adoption by Cavium shareholders of the merger agreement and the approval by Marvell shareholders of the issuance of approximately 170m new Marvell common shares in the transaction.

The combined company will be led by Marvell's Matt Murphy, while Cavium's Co-founder and CEO Syed Ali will continue with the combined company as a strategic advisor and will join Marvell's Board of Directors, along with two additional board members from Cavium's board of directors, effective upon closing of the transaction. The combined company's Board of Directors will consist of 12 people, 9 from Marvell and 3 from Cavium.

Deal Rationale

Marvell has strength in producing semiconductors for data-storage devices, while Cavium is a leader in communications and networking chips. These businesses are strongly complementary, so from a strategic perspective, this means that Marvell will be able not only to offer more products to existing customers, but also diversify its client portfolio and businesses. Marvell derives 40% of its sales from the hard drive business and after the acquisition the CEO has stated that this source will represent no more than 25%. This business has stagnated and with the deal Marvell wants to acquire Cavium's portfolio of CPUs as well as development teams in order to gain market share in emerging areas such as automotive technologies and connectivity. According to the press release, thanks to the acquisition the serviceable addressable market (SAM) of Marvell will increase to more than \$16bn.

As foreshadowed above, one of the main issues for Marvell in the most recent years has been growth. Although profitable in four of the last five years, the company's revenues have fallen from \$3.637bn in FY2015 to \$2.318bn in FY2017. Cavium, on the other hand, has been growing rapidly, from nearly \$373m in FY2014 to \$603.3m in FY2016. The flip side of the coin, however, is that Cavium has been operating at a loss in the last five years. Following an overarching trend of the semiconductor business, therefore, Marvell is looking to kickstart growth externally rather than organically.

Furthermore, in the chip making industry, one where economies of scale and scope are pivotal, size matters and the combined player would have a market capitalization of approximately \$14bn (up from the current \$9bn of Marvell), so the combined company would be able to more effectively compete against giants such as Intel and Broadcom.

Besides these strategic synergies, there is a big financial component to rationalize the deal as well. Synergies should run at \$150m to \$175m per annum as soon as 18 months after the deal is set to close. Ultimately, the deal is expected to be significantly accretive to revenue growth, margins and EPS.

Market Reaction

Market shares for Cavium rose 10.3% and shares for Marvell rose 4.9% pre-market on Monday. The fact that the shares of the latter rose following the disclosure of the agreement is a rare occurrence, as the share price of the buyer tends to fall. This is probably due to how accretive the deal is expected to be.

Deal Advisors

Goldman Sachs was the sole financial advisor of Marvell, while Qatalyst Partners and JPMorgan served as financial advisers to Cavium.