

Samsung Electronics and Apple, Inc.: A Study in Contrast in Vertical Integration in the 21st Century

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Abstract

Samsung Electronics and Apple, Inc., two of the largest technology firms in today's world, provides a new paradigm on how vertically integrated firms today operate. Technology has been changing how value chains and markets work, so much so that how vertically integrated structures are viewed today are changing, too. While both Samsung and Apple control much of their value chains, they, too, outsource some of the chains to other. This business model allows them to build on their proficiencies and, at the same time, to minimize transaction costs, which allows them to meet the demands of a very dynamic consumer electronics market.

Keywords: Apple, Samsung, Vertical Integration, technology,

1. Introduction

A firm's structure affects how it performs in the market. Ultimately, a firm's bottom line is to maximize its profit—which is why firms carefully choose which structure to undertake. In economics, this means that a firm carefully selects from a “transactional menu of choices”—that is, the value chains or processes that are required to create its product. Traditionally, firms have been seen to either choose to perform all or most of the processes—thereby making it vertically integrated, or to specialize on certain processes only and outsource the other value chains to other firms.

Firms choose to vertically integrate to achieve transaction cost economies—that is to say, to minimize several risks involved in transacting with many parties. These risks include (1) the difficulties in enforcing contracts with many different parties;(2) the challenges of ensuring the quality of raw materials, component parts and/or service reach the required level of standards; and (3) the risks of asymmetric information and opportunistic behavior aimed against the firm. This traditional model of vertical integration, however, assumes two things: (1) that vertical segments are well defined, and (2) that firms operate in existing markets. The problem with these assumptions is that they rarely exist in the real world today.

2. Vertical integration in the 21st century

Technology, for example, has changed how value chains work and blurred the lines separating these segments. Further, technological advances and changing demands have brought about new markets—and as these markets emerge, new products are developed that give way to newly specialized buyers and sellers. But while this may be an argument supporting the need for firm specialization, Cacciatori and Jacobides (2005) points out that, in some sectors, particularly in the services industry, this specialization of segments results in the creation of new products and services that also result in the final buyer abandoning “procurement from a host of specialized suppliers,” and instead purchasing a “packaged solution” from an integrated player. They further posit that integrated solutions came about when buyers “used their increasing influence to enforce major changes in order to reduce the time and costs.” This type of structure became necessary, particularly for the British building industry, where too much specialization contributed to project delays and cost inefficiencies.

Cacciatori and Jacobides (2005) calls this trend re-integration, explaining that firms start out vertically integrated, then move towards specialization and dis-integration, before re-integrating once more due to the current demand for “all-in-one” markets. They argue that firms re-integrate for three reasons: for firms (1) to protect their position, (2) to enter new and related markets, and (3) to find new ways of leveraging their capabilities. What this essentially means is that firms continue to specialize and build on their core competencies, while still able to minimize transaction costs and risks by vertically integrating its processes to address the changing demands in the market.

This unique integration and specialization within a firm is recognizable in the structures and relationship between two technology giants: Apple Inc. and Samsung Electronics. While both firms are considered vertically integrated, they manifest this structure very differently. Furthermore, their unique structures allow them to cultivate a symbiotic relationship that allow them to not only minimize transactional costs, but at the same time manifest Cacciatori and Jacobides’ (2005) argument as to why firms reintegrate.

3. Samsung Electronics, a vertically integrated specialized supplier

Samsung Electronics is an electronics and information technology giant based in South Korea. It “operates using a vertical integration model which leverages all aspects of the manufacturing process from raw materials to electronics components to fully-assembled products” (Eisenberger, Li, Mitrenko, Vajrapu and Xu, 2003). Samsung Electronics is also one of the world’s largest suppliers of electronic components, and a top supplier of Sony, Apple, Dell and Hewlet-Packard (Yoo-chul, 2010). *See Figure 1.*

Consumers worldwide know Samsung as one of the top makers of televisions. The company has also joined the market for mobile devices when it introduced the Samsung Galaxy S series of smartphones and the Samsung Galaxy Tab, both of which compete head on with Apple’s iPhone and iPad. It is interesting to note that while it is a specialized supplier of electronic parts and components, about a third of its revenue “comes from companies that compete with it in producing the TVs, cellphones, computers, printers and cameras where it gets the rest of its money” (Ramstad, 2009). *See Table 1.*

4. Apple Inc., a vertically integrated specialized buyer

Apple Inc., according to Bajarin (2011), is vertically integrated because it is essentially four companies in one, thereby controlling “all the major critical parts of the chain used to make and sell products.” It is a hardware company (it designs its own hardware), a software company (it owns, develops and optimizes its software), a services company (it equips its products with services such as the iTunes and iCloud) and a retail company (it provides consumers with a unique retail experience)—as opposed to other computer, tablet or smartphone companies that only design or make the hardware, and rely on other suppliers to supply the operating system and related applications (or apps), and to sell the product. *See Figure 2.*

However, while Apple closely controls the design and development of its products, it neither manufactures nor assembles the parts itself to produce any of its products. Apple is not a manufacturing firm—it is a design firm. For this reason, while it vertically integrates the design and development process, it outsources its production to other electronics firms. In fact, one of Apple’s most important suppliers is Samsung, which supplies the iPhone’s flash memory, DRAM and applications processor (AP)—together, these parts make up 26% of the component parts of the iPhone (P.K., 2011). In contrast to Samsung, Apple is a specialized buyer. *See Figure 3.*

5. Apple and Samsung: the Cacciatori and Jacobides Paradigm

While close competitors in the smartphone sector, both Samsung and Apple profit from this unique structure and relationship (P.K., 2011). This symbiotic relationship echoes what Cacciatori and Jacobides’ (2005) paradigm on the shift from specialization and dis-integration towards reintegration. By reintegrating some of its vertical chains, both Samsung and Apple are able to (1) protect their position, (2) enter new and related markets, and (3) find new ways of leveraging capabilities.

Samsung, as a vertically integrated specialized supplier, is able to achieve economies of scale, which allows it to hold on to its position as a consumer electronics giant by leveraging on its ability to produce component parts and assemble its products on a large scale and cost efficient process.

Further, it is able to move to adjacent markets and compete heavily in high growth sectors, particularly in the smartphone market. This segment, which grew 42.5% year-on-year in the first quarter of 2012, is currently dominated by Samsung, dubbed as the world’s largest smartphone vendor(Graziano, 2012).

On the other hand, Apple’s vertically integrated specialized buyer structure frees up its resources to concentrate on its core competency: to design elegant and user-friendly products. That it is able to outsource some of its vertical chains, while at the same time maintaining control over its design and development process, allowed Apple to move from one market (personal computers and portable multimedia devices) into another (the high-growth smartphone market). Apple currently tops the smartphone sector in terms of both profitability and revenue (Valdez, 2012).

6. Conclusion

Because of changing demands and technological advancements, vertical integration has diverged from the cut-and-dry structure of definite and well defined vertical segments connected seamlessly (think agricultural segments: from farming to milling to selling). Technology has changed the way value chains work, or how they are defined. Firms no longer operate in fix and demarcated markets—markets continually change: they may die, integrate or make way to new ones. As both Apple and Samsung have both shown, firms can continue to be vertically integrated, but still able to specialize and leverage on their core competencies. By doing so, they are able to zero-in on the roles and chains where they are good at, allowing them to achieve economies of scale and profitability.

Figure 1. Samsung’s Vertical Integration

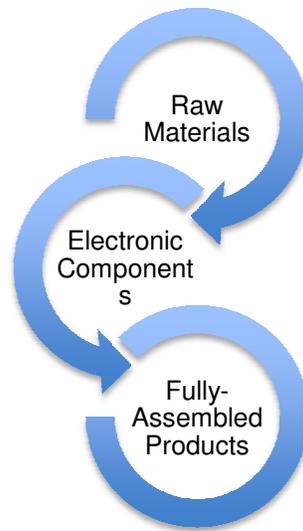


Table 1. Samsung’s Largest Clients, Q1 2010

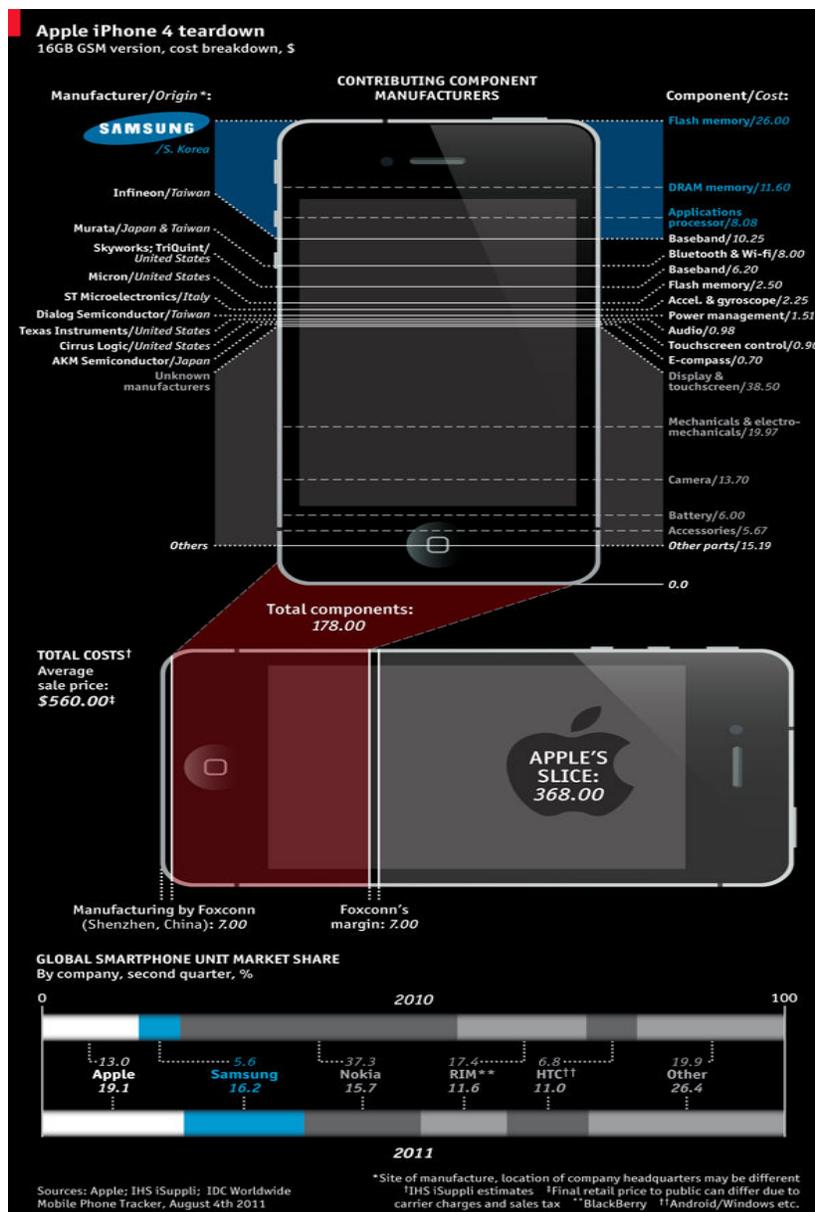
Rank	Company	Parts Supplied	% of Total Sales
1	Sony	DRAM, NAND flash, LCD panels, etc.	3.7
2	Apple Inc.	AP (mobile processor), DRAM, NAND flash, etc.	2.6
3	Dell	DRAM, flat-panels, lithium-ion batteries, etc.	2.5
4	Hewlett-Packard	DRAM, flat-panels, lithium-ion batteries, etc.	2.2
5	Verizon Communication	Handsets, etc.	1.3
6	AT&T	Handsets, etc.	1.3

Source: Wikipedia.org (http://en.wikipedia.org/wiki/Samsung_Electronics#Products), quoting Yoo-chul (2010)

Figure 2. Apple's Vertical Integration



Figure 3. Apple iPhone's Component Parts



Source: <http://www.economist.com/node/21525685>

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