

V viewpoints

DOI:10.1145/1965724.1965734

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Technology Strategy and Management Driving Power in Global Supply Chains

How global and local influences affect product manufacturers.

SUPPLY CHAINS ARE increasingly global. Consequently, we pour energy into managing existing global supply chains efficiently, with their risks (for example, risks arising from geographic dispersion) and rewards (such as the benefits derived from cost arbitrage). Yet we do not know enough about how profits are divided and distributed along a global supply chain that changes over time. This is a question worth posing at a time when new locations have become available not only for production but also for consumption, especially in rapidly growing emerging markets. For example, if the end market for electronic goods shifts from the U.S. to China or India, would the supply chain become driven by global or local corporate entities?

Any supplier to a famous brand, be it Apple or Nike, knows all too well that the corporate client does not need ownership to exert power over the supplier. In this world of cor-



porate control without ownership, what opportunities exist for creating and capturing profit in global supply chains? By comparing the evolution of major players across different industries and service sectors, this column addresses the question: under what circumstances do value-adding activities migrate from the final prod-

uct manufacturer to a component manufacturer? What strategies are available to the final product manufacturer to circumvent this migration of power in global supply chains?

What We Already Know

Many readers of this column are likely familiar with the fate of IBM. In its initial era of dominance, IBM was a classic vertically integrated company. But faced with competition in the personal computer market, IBM decided it could not keep up on all fronts and outsourced its operating system to Microsoft and its microprocessors to Intel in the 1980s. This was the beginning of the end of IBM as a computer hardware company. With IBM's outsourcing decisions, new players came to occupy horizontal industry segments—Microsoft in operating systems and applications software, Intel in microprocessors, and Compaq and HP in IBM-compatible final assembly. Technological advances in subsystems made it more profitable to make microprocessors and software

than hardware. The “Intel Inside” platform strategy to extract high profits extended from desktop computers to notebook PCs with the launch of integrated chipsets.³

Was this horizontally disintegrated structure stable? No. Companies sought opportunities to capture greater profits, not only by specializing in focused technologies but also by bundling products and services. In particular, Microsoft strengthened its market power by bundling its operating system with applications software, Web browser, and networked services. In this competitive landscape, IBM withdrew from hardware by selling its PC division to Lenovo, and struck out for new territory in business services.

A similar cycle of moving from vertical integration to horizontal disintegration and back again to reintegration is evident in the evolution of Apple to become the world’s most valuable technology company in terms of stock market value in May 2010.¹ In the 1980s, Apple Computers was a vertically integrated firm with its own in-house design and factories. The troubles in the 1990s culminated in Apple’s decision to outsource final assembly to SCI Systems in 1996, laying the groundwork for modular thinking. The iPod is a prototypical modular product, enabling Apple to mix and match preexisting components. By leading in product innovation and design, but without doing any manufacturing, Apple pocketed \$80 in gross profit for each 30GB iPod sold at \$299.² The ongoing transformation of Apple Inc., bundling the iPod, iTunes, iPhone, and iPad, is a dramatic example of a company that has been able to reinvent itself by taking advantage of global supply chains. Innovative companies such as Apple have the power to reshape the boundaries of the industries in which they operate.

Thus, we know that value migrates from the final product manufacturer to component suppliers as a result of the former’s outsourcing decisions and the pursuit of platforms by the latter. However, this could be reversed or circumvented if the product manufacturer regains control of its supply chain by reshaping its industry and developing an ecosystem of providers engaged in complementary innovation.

Important though this story is,

there is a less well-known story behind this one, focused around the no-brand supply companies that actually make these products.

A Bit of History: The Rise and Rise of Large Factories

In the 19th century, improvements in transportation (especially railroads) and communication (such as telegraphs) led to the development of mass markets. By the early 20th century, such markets demanded large volumes of standardized products, exemplified by Ford’s Model T, produced in large vertically integrated factories. Fast-forward into the early 21st century, and we see the current wave of improvements in transportation (this time in container shipping) and communication (this time with digital technology) have had a similar impact on the size of factory operations.⁴ We see the rise of large horizontally integrated production factories in low-cost locations supplying products and services to the world.

Consider the case of athletic shoemaking. Several powerful brand owners exist in an oligopolistic market. But today, the largest footwear manufacturer in the world is not one of the brand owners such as Nike or Adidas, but Pou Chen Group. Its shoemaking subsidiary, Yue Yuen Industrial Ltd., has a sales turnover of \$5.8 billion, employs around 300,000 workers, and churns out 186 million pairs of shoes per annum. That is, this company makes one in every six pairs of athletic shoes sold in the world.

Another good example is in laptop computers. In this market, Quanta

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Computer is the world’s largest manufacturer. One in every three laptops is made by Quanta. Its factories make laptop computers for brand owners ranging from Apple, Compaq, Dell, Fujitsu, HP, Lenovo, Sharp, Sony, and Toshiba. One thing it does not do is produce its own brand of computers. Quanta Computer is the largest of the Taiwanese personal computer manufacturers, whose combined output accounts for over 90% of worldwide market share.

Similarly, Hon Hai Precision Industry Co. (Foxconn) heads the league table of electronic manufacturing service (EMS) providers, which include such firms as Flextronics, Jabil Circuit, Celestica, and Sanmina SCI. Having achieved a very rapid growth, FoxConn employs nearly one million workers mostly in China to assemble Apple’s iPod, iPhone and iPad, cellphones for Nokia and Motorola, Nintendo’s video game consoles, and Sony’s PlayStation, among other things.

“Behind-the-Scenes Champions” Profit from Size and Diversification

These companies—Pou Chen, Quanta, Foxconn—are no-brand manufacturing firms that supply retailers or brand-owning firms, some with no factories. They are called CM (contract manufacturers) or ODM (original design manufacturers) if they undertake design as well as the manufacture of products for sale under the client’s brand. The brand owners may command and drive power in global supply chains, but the behind-the-scene supply firms have not been totally powerless. The most obvious source of bargaining power for these no-brand suppliers is the sheer size of the operation. For example, Quanta Computer supplies nine out of the world’s top 10 notebook PC brands. As such, it exercises power by being discriminating among these clients, setting up dedicated business units with product development and mass production capacity for some of the best (but not all) clients.

A small number of ODMs, such as Acer and Lenovo, transitioned to selling products with their own brand. However, turning your corporate client into a competitor is a risky move, as Lenovo initially found out with IBM when it terminated its contract with Lenovo. As an alternative strategy,

therefore, no-brand contract manufacturers turn to various modes of diversifying into related areas. Pou Chen Group went into the manufacturing of LCDs and later into retailing; Flextronics went into electronic repair.

A similar logic applies not only to manufacturing but also to services. In professional services, in particular, intangibles such as brand and reputation count for a lot in driving power in global supply chains. In management consulting, for example, the likes of McKinsey and Bain have outsourced business research, while in financial services, investment banks outsource and offshore financial research and analytics. With the disintegration in global supply chains, so-called knowledge process outsourcing (KPO) providers, such as Genpact and Evaluateserve, have been pursuing strategies in three steps. They consist of climbing up, scaling up, and broadening out.

First, just as CM evolved into ODM, KPO suppliers have “climbed up the value chain” by providing higher value-adding services. This may involve writing an entire research report on the basis of business research for a consulting client or on the basis of the analysis of a valuation model for an investment-banking client; the clients then put their own brand onto the report. Second, KPO suppliers have also scaled up their operations, investing heavily not only in IT infrastructure but also in process and quality improvements for their “information processing” factories. Third, some KPO suppliers have pursued a diversification strategy by bundling different professional services, for example by pulling together business, financial, and legal research under one roof.

Shifting the End Market

Competing head-to-head with brand owners in established developed economy markets seems incredibly difficult in many cases. However, when the end market shifts from old to new emerging markets, this dynamic may change. For example, when cellphones are intended for purchase in China rather than in the U.S. or Europe brands matter less for the mass low-end market. This creates certain advantages for indigenous firms within global supply chains.

Companies pursue similar strategies in their attempt to drive power in global supply chains.

A decade of growth has made China by far the largest mobile phone handset market in the world, with over 800 million users in early 2011. Moreover, China has emerged as the largest exporter of mobile handsets. Initially, in the 2G market, foreign brands such as Nokia worked closely with chipset manufacturers (for example, Texas Instruments) to design handsets, which were in turn assembled by contract manufacturers such as Flextronics. In China, indigenous local firms' initial point of entry was not in assembly/manufacturing, but in sales and marketing for the local market. By being closer to the ultimate market than foreign brands, these firms evolved into independent design houses (IDH), with better knowledge of Chinese consumers' preferences in styling and the agility to respond quickly to the market. IDHs undertake the development of handsets from highly modularized components. Modularization was further enhanced in the transition to 3G multimedia phones for low-end markets, with MediaTek, a Taiwan-based chip design firm, providing an integrated chipset module that incorporated multimedia functions such as music and video players.⁵

Thus, when the end market shifts to emerging markets, we observe a “reverse pattern” in the way foreign firms and local firms interact to occupy different parts of the global supply chain. Traditionally, consumers for products made with global supply chains were in high-income locations, and low-income locations were for manufacturing. Also, local firms positioned themselves in global supply chains by doing assembly, leaving marketing to brand-owning foreign firms. But when emerging economies serve not only as manufacturing locations but also as huge consumer markets, local firms'

competitive advantage lies in sales and marketing, tailoring products to local markets using modular components. Foreign firms may of course respond by investing in sales and marketing to meet the ultimate demand for “good enough” products.

Conclusion

What the economist Joseph Schumpeter wrote a century ago is still relevant today: discontinuous change happens as a result of five things: the introduction of a new product or process, the opening of a new market or source of supply of intermediate goods, and a new organization design.⁶ Economic globalization, as typified by the rise of global supply chains, involves all the Schumpeterian forces. Although differences remain across sectors, companies pursue similar strategies in their attempt to drive power in global supply chains.

In particular, the final product manufacturer drives power typically by owning a brand, initiating innovation, and controlling the supply chain. However, value may migrate from the final product system manufacturer to component suppliers, if suppliers create significant value in their components and find horizontal markets to sell them. Beyond this, this column highlighted the role of two other significant entities that have come out to play the power game: the sizeable no-brand suppliers who climb up, scale up, and diversify and the indigenous emerging market operators that focus on local sales and marketing. □

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