



Causes of Reorganization in East Asia's Major Industries

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Industrial reorganization has been accelerating since the global financial crisis as protracted low growth, market shifts, and increased protectionism take their toll. Reductions in production and manpower and increased M&A and business alliances are having a profound impact on East Asia, the world's center of global manufacturing. This paper will examine the factors behind the changing competitive landscape in East Asia, including semiconductors, mobile phones, automobiles and petrochemicals, and the reorganization of the industry that has taken place since 2008.

CHANGE IN THE COMPETITIVE LANDSCAPE IN EAST ASIA

Changes in East Asia's competitive landscape are rapidly unfolding in semiconductors, mobile phones, automobiles and petrochemicals.¹ In semiconductors, massive changes are arriving in the application processor and foundry markets. In the past, when PCs accounted for the majority of chip demand, chipmakers enjoyed clearly defined fiefdoms. Intel dominated in CPUs, Samsung led in DRAM, TSMC was the major foundry business, and Qualcomm controlled communications chips. Rapid growth in the mobile market, however, has brought about a new era of competition for the application processor and foundry markets. Competition in the application processor market is now emerging between Samsung Electronics, Qualcomm and Intel, with Taiwan's Media Tek and China's Spreadtrum appearing as rivals in the mid to low-end market. In foundries, Samsung Electronics and Intel have

entered the business to challenge TSMC.

In the smartphone industry, Chinese makers are rapidly rising to prominence as China becomes the world's largest market. Chinese smartphone manufacturers, including Huawei, ZTE and Lenovo, are now among the global top five manufacturers after Samsung and Apple, and account for more than 50 percent of China's huge domestic market. Chinese firms have attained this position by pursuing product differentiation on the low end of the market, while leveraging the free and open source Android platform. Moreover, Chinese smartphone manufacturers are not content simply with supplying the low end, and are quickly moving to the mid and high-end market while pursuing new business around the world.

In automobiles, a similar dramatic shift is occurring as emerging markets replace the advanced countries as the industry's main markets, and as climate change and environmental problems shift the technological focus of the industry. The shift to emerging markets in particular requires new tactics, as each market has its own regional characteristics (India, for example, is dominated by two wheel and three wheel vehicles). China, ASEAN and India will be the primary markets of the future for the world's automakers.

Automakers will also need to adapt their production methods to deal with the realities of environmental degradation and the threats posed by climate change. The production methods of the past that focused on quality, cost, delivery, and engineering will need to incorporate envi-

¹ Refer to following chapters for detailed analysis of each industry

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ronmental technology and strategy if they are to continue sustainable growth.

In petrochemicals, the drive for reorganization will be spurred by demand from China, the securing of new facilities by Middle Eastern firms, and the revolution in the industry brought on by the wide availability of shale gas. The biggest threat for Korea's petrochemical industry is the possibility of a decline in demand in China. Chinese companies have been massively expanding facilities, leading to increased self-sufficiency in petrochemical raw materials. At the same time, Middle Eastern petrochemical exports to China are rising, as Arab oil exporters seek alternatives to Europe, their main market. Finally, gas-based petrochemicals from North America are also increasing their share as shale gas floods the market.

CAUSES FOR REORGANIZATION

Demand Side

The demand side factors shaping the reorganization of the industry include market stagnation and market shifts. Protracted low growth has prompted production cuts and downsizing in many industries, including steel, shipbuilding and automobiles. As companies compete intensely for a shrinking market, marginal companies are leaving the industry, with the remaining survivors consolidating.

Falling demand has brought about a series of reorganizations throughout the value chain. For example, the decline in transported goods has led to a recession in the shipping industry, which has brought about a slump in shipbuilding, leading to a downturn in steel. Likewise, a recession in the automobile industry has caused a chain reaction of setbacks in related industries, as automobile manufacturing consumes

Table 1 Factory Closures and Manpower Reductions in the Automobile Industry

Company	Closures	Production Cuts	Manpower Cuts (No. of persons)
PSA	Aulnay	Rene, Slovakia	9,500
Renault	-	Four in France and Slovenia	7,500
Fiat	Two including Sicily	Three including Delphi	110
Opel	Bochum	Three including Russelsheim	5,000

Source: Korean Automobile Manufacturers Association (2013).

products from many other industries.

Market shifts are also playing a significant role in reshaping the industry. The rise of emerging market countries and the mobile market in particular have presented significant opportunities for East Asian economies.

Emerging market economies have come into their own after the financial and fiscal crises, and performance in emerging markets now determines the fate of many companies. Korean companies have shown strong performance in these regions by entering them relatively early. Samsung, LG and Hyundai, for example, have grown rapidly by pursuing market share in emerging economies even as developed markets stagnated. This stands in contrast to Japanese companies, who entered relatively late. Japanese firms' initial focus on domestic and advanced country demand for high-end goods has caused its firms to suffer as the advanced economies sputtered. Japanese companies are now currently refocusing on emerging markets by developing low-priced products suitable for the needs of these new consumers.

Mobile computing has likewise brought on a tectonic shift in the consumer electronics and IT industries. As consumers increasingly abandon PCs for mobile devices like smartphones and tablets, former PC stalwarts like Microsoft, Intel and Hewlett-Packard are now following

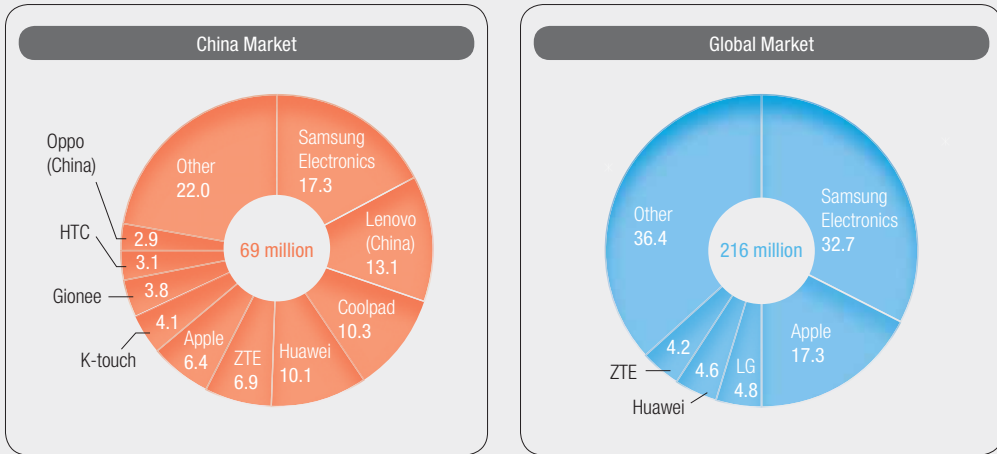
them to the mobile space. In mobile phones, the iPhone ushered in a new era of touch screen mobile communications that brought down Nokia, the former leader, and made Apple and Samsung the market leaders.

Supply Side

Causes of industry reorganization on the supply side include the rise of new companies and convergence between industries.

New companies in East Asia can be divided into two categories. One is companies in emerging market economies (including China and India), while the other is companies advancing into businesses outside their core line. Emerging market companies, powered by vast domestic demand and government support, are fostering their own technologies to become global companies. Lenovo, Coolpad, Huawei and ZTE, for example, are growing fast in the mobile market. Chinese companies with experience in the low-priced domestic market are aggressively making inroads into emerging market economies by supplying smartphones in the 500 yuan range. At the same time, Chinese firms are also targeting advanced markets with high-end smartphones. China's mobile phone makers shipped 69 million mobile phones in the first quarter of 2013, up 119 percent year on year. This accounts for around one-third of the global shipments of 216 million phones during the period. China is

Figure 1 The Rise of China's Mobile Phone Makers (No. of Units Shipped)



Note: Market share based on sales. Unit is percent.
Source: IDC.

forecast to ship 312 million phones in 2013, becoming the No. 1 phone making country.

Established IT companies, including Apple and Google, have expanded new businesses. Apple has expanded far beyond the Macintosh to dominate music players, phones, and tablets, which now constitute its primary business. Google, once strictly a search firm, is now also a hardware firm that produces mobile phones (the Nexus 7), wearable computers (Google Glass), self-driving cars and the industry's most popular mobile OS (Android). Based on their innovative business models, these firms have advanced into consumer electronics and IT, and then to mobile phones, automobiles and software, vastly altering the competitive landscape in the process. As established firms move beyond existing businesses, competition is becoming ubiquitous, without any industry demarcations.

Convergence is the other significant supply side factor. Through smart cars (IT and automobiles), smart homes (IT and housing) and smart

cities (IT and urban planning), IT is rapidly converging with other industries. This is spurring alliances between IT companies and companies in many other industries.

Other Causes

Other causes that are reshaping East Asia's industry include changes in energy sources, government regulations and stronger measures to foster industries. As previously mentioned, shale gas and shale oil are having a major impact on the petrochemical industry. In the US, a chemical plant using shale gas is already under construction, and as fuel and electricity costs decline due to gas price cuts, manufacturing industries, including petrochemical plants, are being reshored to the US.

At the same time, government safety and environmental regulations and industrial policies have been strengthened, which is in turn recasting industry in Asia. To support the massive costs and technologies required for compliance, alliances are being forged between major firms.

Table 2 Petrochemical Companies' US Investment from Shale Development

Company	Announcement Date	Details
Chevron Phillips Chemical	February 2010	Established ethylene plant in Texas
Dow Chemical	April 2012	Established ethylene plant in Texas
Kuraray	June 2012	Invested 20 billion yen to build a functional resin plant
Methanex	July 2012	Relocated ethanol plant in Chile to Louisiana

Source: JETRO Sensor (May 2013).

One case in point is Toyota and BMW, who recently finalized a partnership to jointly develop fuel cells and light weight vehicle technology.

RESPONSES FROM EAST ASIAN GOVERNMENTS AND BUSINESSES

East Asian governments and companies need to devise response strategies that strengthen their existing role as the center of world industry. To this end, East Asia can take advantage of the present reorganization to build a stronger competitive edge and expand production networks within the region. Strategies to upgrade East Asia as an innovation center will also be crucial.

First, building a stronger competitive edge requires embracing rather than ignoring the changing structure of industry, while making rigorous attempts to ease the transition. Over the longer term, adjustments should be made to areas with existing overinvestment, while providing reeducation and training for sectors undergoing reorganization.

Second, East Asian countries need to expand opening of trade and investment to build advanced production networks. East Asian countries need to be on particular guard against protectionism if they are to remain the center of global manufacturing.

Finally, East Asia should shape strategies and policies to upgrade itself into an innovation-oriented area where new products and services are created. Although East Asia is now the undisputed center of global manufacturing, it remains more oriented to production rather than innovation. To upgrade value added and sustain growth, innovation will become increasingly crucial. To this end, East Asia needs to develop its own innovation ecosystem by facilitating convergence among industries and creating a venture ecosystem. **SQ**

Translation: RHEE Oak-Jung

Keywords

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