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Abstract

POSCO has played a major role in Korea's economic development by supplying domestic manufacturers with high-quality, low-cost steel products. Despite its initial disadvantage and lack of resources such as capital, technology, and raw materials, it has emerged as a world-class steel maker in a short span of time. This case study aims to explore and analyze the key success factors of POSCO through examination of the company's growth and development process. In particular, it examines the role of government policy, top management leadership, technology learning and innovation, cost competitiveness and other factors as important drivers of success. The case also identifies its strategic challenges and key issues for growth in the future.

JEL Classifications: L61, M10, N80

Key words: Growth strategy, key success factors, steel industry, Korea

1. Introduction

In 2009, at the height of the global financial crisis, Korean steel maker POSCO reported the highest earnings ever in the company's history. Its 2008 revenue increased by 38 percent over the previous year to KRW 30.6 trillion, operating profit rose by 21 percent to KRW 6.5 trillion, and net profit increased by 15 percent to KRW 4.4 trillion <See Exhibit 1>. While other global steel giants including Arcelor Mittal, Bao Steel and Nippon Steel Corporation have suffered net losses in the first-half of 2009, POSCO recorded a KRW 760 billion in net profits despite the global economic recession.

POSCO has posted a continual surplus since it first started manufacturing steel in 1973<See Exhibit 2-3>. Today, it is ranked fourth in terms of steel production <See Exhibit 4>, and it outperformed other global steel producers in operating margins <See Exhibit 5> and operating rate<See Exhibit 6>. According to World Steel Dynamics (WSD), POSCO ranked first (2002-2005) and second (2006-2008) in the global competitiveness index <See Exhibit 8>. The company won perfect scores in seven out of twelve categories of the competitiveness evaluation<See Exhibit 9>. The company's market capitalization as of August 2009 was second only to Arcelor Mittal <See Exhibit 10>.

POSCO has played a major role in Korea's economic development. By supplying domestic manufacturers with high-quality steel products at prices 10 to 20 percent lower than imports, it has contributed to the growth and export competitiveness of Korea's major industries such as shipbuilding, automobile, electronics, machinery and construction.

POSCO has been widely recognized by various international institutions. The company was chosen as the most admired steel company by Fortune (2006-2009), the best company in the metals and mining sector (2003) and one of the Forbes Global 200 companies (2008-2009). It was also listed among the world's 50 most innovative companies (2003) and the most admired Asian company (2007) by Business Week, and in the SAM-Dow Jones Sustainability Index, POSCO was recognized as a sustainability leader in the industry (2006-2009) <See Exhibit 11>.

This case study aims to explore and analyze the key success factors of POSCO through examination of the company's growth and development process. In particular, it attempts to draw lessons from the success story of the

steel maker, which overcame its initial disadvantage of limited resources such as capital, technology and raw materials, and emerged as a globally competitive corporation in a short span of time.

2. Start-up and Growth Stage (1968-1992)

POSCO's key success factors vary depending on the time period. This paper divides the period into two stages to analyze the key success factors. In the start-up and growth stage (1968-1992), government policy and support, the leadership of CEO TJ Park, technology acquisition/learning, and cost competitiveness were important drivers of success. In the maturity stage (1993-2009), transformational leadership, technology development, process innovation, and global management were important factors in the company's continuous growth and success<See Exhibit 12>.

(1) Government Policy and Support

Since 1948, the Korean government tried to establish an integrated steel mill in Korea to meet the rising demand for steel and substitute for imports. However, Korea faced extremely tough conditions to build such factories, given its limited resources and experience. This reality was reinforced by a 1968 World Bank report which held a negative view, saying that the steel mill construction plan Korea had been pushing for was premature. Integrated steel manufacturing must satisfy a set of requirements to be globally competitive, such as having advanced technologies, massive amount of capital, a domestic market large enough to enable economies of scale, and access to natural resources such as iron ore and coal. However, none of these existed in Korea back in the 1960s. In fact, Korea had to borrow capital and technology from overseas, its domestic market was small, and it had to rely entirely on imports for natural resources. From the perspective of advanced steel producing countries, Korea was just a poor nation that experienced Japanese colonial rule (1910-1945) and the Korean War (1950-1953). It was not surprising that they belittled Korea as dreaming the impossible dream of building an integrated steel mill.

The President of Korea Park, Chung-Hee, however, had a strong belief in the importance of the steel industry as the foundation for the nation's industrial development and national security. He personally made various diplomatic efforts at the international level to secure capital and technology required for steel mill construction. Having failed to obtain loans from the U.S. and Germany, President Park made a bold decision to divert compensation claims from Japan (about $100 million) as seed money for the steel mill construction. As the construction plan began to materialize, the Park administration enacted the Steel Industry Promotion Act in 1970, which enabled various forms of

government support for the steel industry, such as provision of low-interest long-term loans, tax breaks, and infrastructure subsidies such as low-cost supply of factory construction sites, ports, roads, railroads, and water <See Exhibit 13>. Due to such government support, POSCO could save on the cost of railway use by 40 percent, port use by 50 percent, water by 30 percent, and gas by 20 percent. It was also able to generate 80 percent of its electricity use by building an in-house power generation facilities

Despite the financial support from the government, POSCO was established as a corporation under the Commercial Law. The objective was to avoid the burden of a public enterprise subject to government intervention by relevant agencies such as the National Assembly and the Board of Audit and Inspection. Considered a private corporation by law, POSCO was able to enjoy the autonomy and efficiency of a private company. At the same time, by having government ownership of the majority of its shares, the company could have a sound capital base and secure financial support from the government.

Government support was extended to the construction of the company's second steel mill at Gwangyang. When construction of this second mill was on the government agenda, other potential steel producers such as Hyundai were more than willing to enter the steel industry. However, the government entrusted the project management authority to POSCO, in expectation of its superior execution based on the company's extensive knowledge and experience in steel mill construction and operation.

The government started to keep its distance as the steelmaker began to grow rapidly. In fact, the government made its final investment in 1986, and ended all support upon the abolition of the Steel Industry Promotion Act. POSCO was first listed in the Korean stock exchange in 1988. From 1998 to 2000, the government gradually privatized the company by selling its shares in the stock market. Today, POSCO's shareholders consist mostly of foreign investors and domestic institutional investors<See Exhibit 14>.

During the period from 1968 and 1986, the government invested into POSCO a total of KRW 220.5 billion, and received back a total of KRW 3,889.9 billion including KRW 274.4 billion in cash dividends, and KRW 3,615.5 billion in stock sales and transfer combined. To put these figures into perspective, under the net present value method, the government gained a net profit worth KRW 2 trillion — total revenues of KRW 6 trillion minus the initial investment worth KRW 4 trillion — by 2000 when privatization was completed.

(2) Leadership of CEO TJ Park

POSCO's founder and legendary CEO Park, Tae-Jun played a pivotal role in building the foundation and corporate culture of POSCO. TJ Park, before taking the helm at POSCO, proved his managerial acumen by turning a deficit-ridden public corporation (Daihan Tungsten) into the black in his first year in 1965. Impressed by TJ Park's track record and leadership potential, President Park Chung-Hee saw him as the ideal manager for the integrated steel mill project.

TJ Park accomplished remarkable achievements throughout the company's course of development. Undeterred by the failure to get international loans in 1968, he requested Japan to provide capital and technology support, and closed the deal by using his personal network. His vision and faith in patriotic service through steel, his attention to details and perfectionism, and his people-centered leadership encouraged all employees to unite with a strong sense of commitment and loyalty.

Some of the key words to describe the leadership of CEO Park Tae-Jun could be "commitment to excellence based on patriotic mission". Park stressed a strong commitment to steel mill construction as it borrowed capital and technology from Japan as compensation for its colonial rule, often saying, "Let's turn right and jump into the East Sea, in case we fail in the construction of the steel mill." This has taken hold as what is called "Right-Turn Spirit" of POSCO, which created a unique corporate culture emphasizing a sense of mission, dedication to goal achievement, group loyalty and personal sacrifice.

Park spent most of his time working together with POSCO employees at the construction site, which enabled the company to complete construction of Pohang Works Phase 1, 2, 3 and 4 in a very short span of time. Even on thanksgiving holidays, Chairman Park was on the site and made decisions right on the spot if any problems occurred. When the construction of Phase 1 was delayed for three months, the company came up with emergency plans and completed the project one month ahead of schedule by working 24 hours a day. Nonetheless, he never compromised on quality and never allowed shoddy construction to reduce the construction lead time. When installing facilities for Pohang Works Phase 3, Park discovered major flaws in a ventilation system that was already 80 percent completed. Much to everyone's surprise, he ordered the employees to blow up the system and expel the construction company and the foreign project manager in charge.

Although he may have pressed his people to work without holidays, Park valued talent more than anyone else. In 1968 even before he started building the steel plant, he borrowed KRW 2 billion from a bank and built residences for employees. The residences located near the construction site were clean and comfortable, which helped attract many talents to Pohang. Another program he emphasized prior to factory construction was employee training. Many international organizations including KISA said that Korea had few workers with sufficient experience and knowledge and that the factory operation should be left in the hands of foreign managers. However, Park thought differently. He was convinced that POSCO people should take the initiative in operating and managing the factories. Based on this firm conviction, he had sent POSCO employees to Japan, Australia, Germany, and other leading steel-producing countries around the world for technology training, and they disseminated what they have learned overseas through companywide training programs.

(3) Technology Acquisition and Learning

In the initial construction phase, POSCO had to rely on technology experts from Japan Group for the entire installation process of the first blast furnace in the Pohang steel mill. The Japan Group presented the design and procurement plan to establish a steel mill capable of producing one million tons of steel. POSCO, lacking the knowledge and experience to evaluate the business proposal submitted by Japan Group, prepared a double-check system under which Broken Hills Proprietary Corporation (BHP) from Australia was asked to review the design drafts and terms of purchase set forth by Japan Group, while Korean experts based in Japan re-evaluated Japan Group 's reports with BHP's.

POSCO also depended on Japan for the production and operations technologies when Pohang Works Phase 1 got up and running in 1973. Technicians from Japan Group transferred technologies and skills such as inventory management, production scheduling, and maintenance to POSCO employees. At first, POSCO workers teamed up with the Japanese experts to learn necessary skills and discussed every single detail about the project until the construction of Pohang Works Phase 3. Later, however, POSCO workers increasingly built up expertise and assumed a greater role over Japanese engineers.

During its facility expansion from 1970 to 1992, construction projects continued one after another as the company began operating new blast furnaces. The workers had to train themselves for technologies to operate a new blast furnace, while acquiring cutting-edge technologies to construct and install a new form of furnace. The shapes

and technologies of furnaces became more sophisticated and expanded over time. Until the completion of Pohang Works Phase 4, POSCO kept learning new technologies by experimenting with new combination of ingredients, controlling the volume of ingredients, scheduling, managing the flow of raw materials, and reducing bottlenecks.

POSCO made tremendous investments in training their employees. The number of trained workers totaled about 61,400 from 1968 to 1979, of which 4,200 were trained outside the company, while 1,513 joined overseas training programs. The investment in employee training is partly reflected in the rapid improvement of labor productivity. POSCO reduced the number of hours worked per ton of steel shipped from 32.65 in 1975 to 9.62 in 1984, in a relatively short amount of time compared to Japan, which saw a drop from 10.8 hours in 1975 to 6.5 hours in 1984.

POSCO encouraged individual employees to share knowledge learned from overseas training programs with other workers and conduct rehearsals to carry out given tasks before actual production. They were advised to repeat their tasks out loud and put them into execution to get a better picture of each other's work as part of an open training program. They stayed late at night to share knowledge and brush up on what they learned from Japanese technicians during the day.

POSCO workers did not simply follow the rules and instructions, but were encouraged to actively engage in productivity and quality improvement. Thousands of voluntary groups within POSCO were formed to identify and solve problems related to quality and safety. Employees willingly participated in the "proposal system" where they made proposals to enhance quality at the worksite. To minimize downtime, they adopted a preventive maintenance system. To stabilize facility management, they implemented a process monitoring system to identify problems and resolve them through a thorough review of detailed information. It was not until Phase 3 construction that the computer-based process monitoring system was adopted, as the manual monitoring system was considered handy for the workers to absorb technologies and know-how. It was at that time that POSCO went through process innovation by adopting Six Sigma, and reducing defects to the lowest level in the world.

Thanks to such efforts, POSCO was asked by Taiwan-based CSC to teach their workers and transfer technologies in 1975. In 1986, 13 years after it started production, POSCO took part in a renovation project of American USX steel mill and taught their managers and workers about facility management, repair and maintenance. Today, POSCO is rated as the global leader in steel mill design, construction and facility management.

(4) Cost Competitiveness

POSCO sold products at prices 10 to 20 percent lower than imports in the domestic market. The company had to keep its domestic prices low to help improve the competitiveness of its customers such as shipbuilding, automobiles, electronics, construction etc. This is evidenced by the fact that steel prices have risen 3.5 percent on average vis-à-vis the 4.2 percent growth in producer price index since the 1980s. Therefore, achieving cost leadership was critical for POSCO's survival and competitiveness.

When POSCO first began production in 1973, its labor cost was far lower than its global competitors. In 1973, POSCO's labor cost per ton of steel shipped was $7.06, which was far lower than $23.83 in Japan, $27.06 in the U.K., $32.86 in Germany, and $37.83 in the U.S. However, with Korea's economic development, the gap in labor cost narrowed. during the period from 2002-2006, POSCO's labor cost averaged US$38.40, higher than China's Bao Steel (US$9.38), yet lower than Arcelor Mittal (US$79.70), NSC (US$47.60), and JFE (US$62.20) <See Exhibit 7>.

POSCO's labor-management relations is considered to be quite amicable compared to other large manufacturing companies in Korea. In 1987, a union was organized within POSCO. However, it was soon dissolved, and currently, POSCO runs the Management Consultation Committee that stresses mutual cooperation between labor and management. The company is well-known in Korea for its advanced employee welfare system. Massive investment in employee education and training helped employees enhance their capabilities and build loyalty for their company.

POSCO fully leveraged its status of a late comer and raised efficiency in inventory management of raw materials and finished goods by designing a U-shaped lay-out that locates processing lines for raw materials and assembly lines for finished goods close to the port. In particular, POSCO plants are much more efficient than steel mills in other countries in that they arrange the entire production process in one building rather than segmenting the process into separate buildings. Furthermore, the concept of functional connection was already conceived from the design stage of the four Pohang plants, which optimized the entire steel manufacturing process from transportation of raw materials to steel production. The distance between the blast furnace and the pier from which raw materials are transported was reduced, and Plant 2 and 3 were set up to be closely connected and functionally compatible with Plant 1. Furthermore, its location next to a port capable of handling 100,000 tons of steel freight was instrumental in

reducing the logistics costs in comparison with locations of other steel makers situated inland. In particular, the Gwangyang Works was modeled on the Pohang Works and built even better with enhanced technology and accumulated know-how.

A shortened steel mill construction period helped save direct costs such as wages and indirect costs. At the same time, this leads to production ahead of schedule, which in turn reduces the cost of production. While setting up the plants of Pohang Works, POSCO completed 23 facilities out of 26 in total ahead of schedule by as long as over eleven months. POSCO's construction cost was about $400 per ton, which was significantly lower than $1,750 in Brazil, $820 in the U.S., $700 in Europe, and $590 in Japan. Moreover, POSCO was able to reduce costs by strategically purchasing state-of-the-art equipment through competitive bidding procedures during global economic recessions. In particular, the global economy was hit hard by the first and second oil shocks, when the company built production lines in Pohang and Gwangyang. However, the hard times benefited POSCO as equipment suppliers' bidding prices went down. The company also reduced construction costs by increasingly using local suppliers of equipment and materials. Localization rate, which was only 12 percent in the construction of Pohang Works Phase 1 and 2, shot up to 63 percent in the construction of Gwangyang Works Phase 4 <See Exhibit 16>.

Smooth operation since the very first year of production and has also been important. POSCO increased its output-to-input rate from 0.57 in the first month to 1.05 in the second month, 1.33 in the third month, and 1.45 in the fourth month. Its operating rate jumped from 44.5 percent in 1973 to 114 percent in 1974. Its average operating rate now stands at 111 percent, the best among its global competitors.

According to World Steel Dynamics, POSCO's cold-rolled sheet production cost was 20 percent lower than Japanese products, 21 percent lower than British products, 26 percent lower than American products and 28 percent lower than German products (2002). Another global steel industry research institute, Commodity Research Unit (CRU) assessed POSCO's manufacturing cost of hot-rolled and cold-rolled sheets to be 9 percent lower than British products, 27 to 31 percent lower than Japanese products, and 28 percent lower than American products.

3. Continuous Innovation during the Maturity Period (1992-2009)

(1) Transformational Leadership

After achieving both quantitative and qualitative growth for 25 years, POSCO experienced a change in top management leadership with the resignation of Chairman TJ Park in 1992. Efforts were made to fill the leadership gap. Chairman Chung, Myung-Sik took office in 1993 and started to reform the organization under the 'New POSCO Vision.' In an attempt to streamline the organization that had grown huge in line with its rapid growth, reform measures were taken to reduce the number of departments from 85 to 76, teams from 349 to 335, and executives from 49 to 40. There were changes in POSCO's traditional domestic market-oriented strategy and the company pursued diversification into telecommunications and expanded its export markets through a 'Comprehensive Export Strategy'.

In 1994, Chairman Kim, Mahn-Je became the first CEO of POSCO coming outside the company. In response to the rapid changes in the global steel industry environment, Chairman Kim initiated 'Green Management' which aimed at 'flexible organization', 'democratic management' and 'transparent management'. The company established a new vision for 2005, redefined its business domain with three key pillars- steel, engineering & construction, and telecommunications. The company introduced the Responsibility Management System to enhance the accountability of line managers, and established the Committee System for senior executives to streamline its decision-making process and improve horizontal coordination among the departments. Changes in corporate governance were made by bringing in outside directors and auditors on the board to enhance corporate transparency and strengthen the Responsibility Management System.

In 1998, Chairman Yoo, Sang-Boo, a former POSCO executive, took office when the Korean economy was in a deep recession due to the Asian financial crisis. To overcome the sluggish domestic market, Chairman Yoo initiated an aggressive 'export-drive' program, and restructured the company's business portfolio by divesting its telecommunications business and refocusing on the core business of steel. In response to the privatization and digitalization trends, he introduced 'Process Innovation' to streamline the company's key processes and develop a more flexible, customer-oriented culture throughout the company.

Chairman Lee, Ku-Taek became the new CEO of POSCO in 2003. To develop POSCO as a socially respected and trusted global company, he emphasized the following five management priorities: 1)transparent operation through management by principles, 2)sustainable growth, 3)competitive advantage through innovation, 4)management valuing human resources, 5)trust-building with stakeholders. As POSCO had already achieved world-class level in terms of cost and operational performance, the company put more emphasis on developing its own technologies and high value-added strategic products. In addition, the company actively pursued global business opportunities in emerging markets such as China, India, Vietnam, Brazil and Mexico to develop production bases and secure raw materials.

(2) Technology Development

POSCO reinforced its own R&D activities as leading steel companies concerned with "boomerang effect" refused to transfer advanced technologies to POSCO. The company set up a collaborative R&D network among industry, academia and research centers by establishing Pohang University of Science and Technology (POSTECH) in 1986, the Research Institute of Industrial Science and Technology (RIST) in 1987, and reorganized its R&D organization in 1996 to accelerate the development of new technologies. In particular, as customers' needs became more sophisticated and more demanding, the company had to change its existing strategy which mainly focused on producing low-cost, commodity steel, and develop more high value-added specialty products. As a result, since the 1990s, production of low value-added hot-rolled products decreased, while the production of high value-added products such as cold-rolled sheet, steel plates, stainless steel and electrical steel plate continuously increased. <See Exhibit 17>

In order to upgrade its product mix and develop cutting-edge innovative technologies, POSCO selected automotive steel sheet, high-end API steel materials, 400 series stainless technology and high-end electrical steel sheet as the 'Four Major Strategic Products' in 2002. The company also selected the commercialization of FINEX technology and Strip Casting method as the 'Two Major Innovation Projects.' In 2004, high-end high-carbon steel, TMCP steel for shipbuilding, high-end tire cord steel, and Cr-Free surface processed steel were newly added as the 'Eight Major Strategic Products'. In 2005 and 2006, high-end stainless, premium wire rod, premium hot and cold-rolled products were newly added. The share of strategic products in terms of total sales as of 2008 was 5.9 percent, but its production has continuously increased over the last five years <See Exhibit 18>. R&D investment grew from KRW 161.1 billion in 1995 to KRW 203.2 billion in 2007.

In order to successfully implement the selected strategic goals, POSCO granted ownership to the executives in charge and ran a cross-functional Mega Y Organization composed of sales, operations and research departments. POSCO developed a corporate monitoring system to check the progress on technology and product development, evaluate the commercial viability of pilot projects, and analyze profitability throughout the development cycle.

The development of FINEX is a good example of POSCO's recent technology development efforts. Compared to the blast furnace process, the FINEX method enables cost reduction in facility investment as it does not require coke or sinter plants that pre-process iron ore and bituminous coal. This method can save raw material costs as it uses powdered iron ores that are cheaper and more abundant and general coal that is also cheaper. POSCO worked on new methods that could improve the existing blast furnace technology since 1992. It constructed the FINEX pilot plant in 1998, and started to develop base technologies of the FINEX method by test-producing 150 tons a day. In November 1999, POSCO signed a Mutual Agreement on the Development of the FINEX Technology with Voest Alpine of Austria. In January 2001, it constructed a FINEX demo plant that could produce 600,000 tons per annum and started to successfully operate the plant from May 2003. In May 2007, POSCO built the world's first FINEX commercialization facility that could produce 1.5 million tons a year.

Strip Casting is a technology that makes hot coils of 2-6mm by solidifying the hot metal over 1,500 degrees Celsius through casting rolls in just 0.2 seconds. With most of the hot rolling process being eliminated, this technology reduces facility investment and energy costs, and it has a huge advantage in making steel with a relatively higher load on hot-rolling even thinner. In December 1991, through technical cooperation with Davy Distington of the UK and through industry-academia cooperation with POSTECH, POSCO developed a 350mm wide strip caster and conducted over 150 test casting. In 1994, POSCO succeeded in developing a strip caster with a width of 1,300mm on its own. By the end of 2000, POSCO conducted more than 500 tests on casting, eventually accumulating a technology to produce zero-defect 304 stainless steel sheet coils. In June 2004, the company constructed a strip casting demo plant with an annual production capacity of 600,000 tons, and for the first time in the world, it proved the safety of its process by succeeding in continuously casting 500 tons of stainless steel.

(3) Process Innovation

Process Innovation (PI) that started in 1999 was aimed at streamlining the company's core processes from raw material purchasing, production to customer delivery, and transforming the company's systems and culture into one that is more customer and profit-oriented. POSCO implemented the whole process in a comprehensive and disciplined manner and achieved significant cost savings and operational improvement<See Exhibit 19>

PI Phase 1: The ISPP (Integrated Sales & Production Planning) that was developed during PI had the following characteristics. First, SCM (Supply Chain Management) and ERP (Enterprise Resource Planning) were integrated by items and this enabled managers to obtain basic data on budget management of all areas. Second, the budgeting lead-time that was shortened to 15 days enabled the conversion of the existing annual budget planning into a quarterly planning. Third, the system calculated not only the profitability of steel mills and unit plants but also that of each product line, enabling a more profitability-centered planning. Fourth, more accurate and timely delivery was made possible by improving communication with customers.

In order to promote ERP, POSCO set up Item, BOM (Bill of Material) and Routing databases. Item refers to all the materials managed throughout the company. It can be classified into internally produced items and externally procured items. All materials were codified and task criteria were integrated and standardized. Bill of Material specifies all the components used in the production of a certain item such as raw materials, semi-manufactured goods, as well as error rates and usage units. Routing defines standard manufacturing process and processing time required to produce certain item, as well as the types and the usage of relevant facilities, labor, electricity, etc. Throughout this process, all tasks at POSCO were saved into standardized and quantifiable data which eventually served as a basis for the company's integrated management system.

PI Phase 1 targeted to change the available to promise (ATP) lead-time for hot-rolled coils from 30 days to 14 days, the delivery fulfillment rate from 82.7 percent to 95 percent, and days of product inventory 10 days to 8 days. Most of the targets were successfully achieved and POSCO moved on to Process Innovation Phase 2.

PI Phase 2: Since May 2002, all innovation activities started to center around Six Sigma. POSCO's ISPP was completed by refreshing the obsolete operation system of steel mills, and the system expanded into other areas that were excluded during PI Phase 1 such as CRM and SRM. During the three years of Six Sigma implementation,

employees learned scientific methods, developed problem-solving abilities and acquired a more customer-oriented view. Cross-functional projects were launched in order to eliminate invisible barriers and build trust among different functions. In November 2004, a faster 'Real-time Enterprise' was realized through MES (Manufacturing Execution System). The IT systems of 81 plants and 47 yards at Pohang and Gwangyang Works were integrated, as well.

PI Phase 3: Phase 3 focused on building a corporate culture and way of working that meets global standard of excellence. It also focused on innovation activities that could engage everyone. The roles and responsibilities of each employee were made clear, and an RAI chart was made to check whether those responsibilities were fulfilled. Measures were taken to make ordering, reporting and meetings more efficient. In particular, ordering, reporting and meetings by company executives and department heads were diagnosed more often to provide them with feedback and tips. In 2008, small teams were consolidated into groups, and overlapping functions were integrated. In addition, cost reduction was further achieved by upgrading and integrating the SCM and the ERP that had been completed during Phase 2.

(4) Global Management

Due to market maturity and sluggish domestic market growth, POSCO had to look for international markets for its continuous growth. The percentage of export has been increasing and reached 39 percent as of 2008, with regional exports to Asian countries such as China, India and Japan accounting for more than 60 percent. As steel demand from China and Southeast Asian countries was relatively robust, POSCO established production bases in those regions. POSCO currently has 4 plants in China and 4 plants in Southeast Asia<See Exhibit 20>.

POSCO targeted China's huge market since the 1990s, and is currently producing products from Dalian POSCO-CFM Coated Steel Co., Ltd. (100,000 tons of color steel sheets) and Zhangjiagang Pohang Stainless Steel (500,000 tons of zinc coated steel sheets and 500,000 tons of stainless cold-rolled coils). Vietnam is another strategic market in which POSCO has three production facilities-POSVINA (30,000 tons of color steel sheets), a cold-rolled product plant (1.2 million tons of cold-rolled products), and ASC (30,000 tons of stainless cold-rolled steel sheets). The company plans to further increase its investment in this region<See Exhibit 21-22>.

The CGL (Continuous Galvanizing Line) plant that was completed in Altamira, Mexico in August 2009 galvanizes zinc on the cold-rolled coils imported from Korea. The car manufacturers in Mexico are the major clients of CGL for automobiles produced from this plant. By supplying products that can manufacture up to 400,000 cars per annum, POSCO aims to target not only the Mexican market, but also the US market in the near future. POSCO has been working on the construction of an integrated steel mill in India, but has recently faced many difficulties in getting it launched.

In order to secure a stable supply of raw materials, POSCO participated in the iron ore and coal mine development of POSMEC in the western region of Australia, acquiring a 20-percent share. Since then, POSCO has been actively engaged in acquiring equity stakes in mines around the world such as NAMISA's iron ore mine in Brazil, MacArthur's coal mine in Australia, and a manganese mine in South Africa. The company plans to enhance its raw material self-sufficiency rate to 30 percent by 2012.

In order to increase export to areas with growing demand, POSCO established 8 more SCM (Supply Chain Management) bases - processing and sales centers - in China, Slovakia and Mexico, to bring the total number of the company's bases to 35. Leveraging those SCM bases, POSCO will strengthen its customer service, promote the sales of its products and maximize the synergy effect of overseas production and sales. As of 2007, POSCO has invested globally in 46 companies. It has management control rights in 28 companies and has minority equity investments in 18 companies.

4. Strategic Challenges

Due to the global financial crisis, growth in global steel demand fell for the first time since 1998. International steel prices in July 2008 stood at US$1,170 per ton, but dropped to US$606 per ton by December, forcing major global steelmakers to reduce production. In line with the global economic stagnation, the domestic steel market has also witnessed a significant drop. Furthermore, competition is heating up in the domestic market with the entry of Hyundai Steel. By 2010, when Hyundai Steel's integrated steel mill is completed, demand for steel from POSCO's major customers such as Hyundai/Kia Motors, Hyundai Heavy Industries, and Hyundai Construction will most likely decrease.

Global industry consolidation is expected to continue as global steel companies merge to achieve economies of scale and scope. It is predicted that competition among the 5 to 6 companies producing more than 50 million tons will accelerate. Competition for raw materials will also heat up, and regulations regarding climate change and carbon dioxide emissions will become stronger, creating more uncertainties in the management environment.

As of March 2009, Chairman Chung, Joon-Yang became the new CEO of POSCO. Despite the global economic recession and uncertainty both at home and abroad, Chairman Chung has announced an ambitious vision for POSCO of becoming the Global Big 3 & Global Top 3. He is now pondering how to best achieve the goal and lead the world's top steel producer into the future. Although POSCO's profitability remains high, bright days are not necessarily ahead for the global steel industry. In light of stagnant growth in steel demand, the price of steel products and raw materials cannot be expected to remain stable. Furthermore, large-scale Chinese players with low labor costs are rapidly catching up with POSCO. In July 2009, Arcelor-Mittal proposed to POSCO the establishment of a joint venture in the stainless sector. In the domestic market, potential M&A opportunities, such as Daewoo Construction and Daewoo Shipbuilding are appearing on the scene.

The new CEO had to reflect on some fundamental strategic questions. What are POSCO's future growth strategies and options? Should it focus solely on steel, pursue international expansion or should it diversify into new business areas? If international expansion is the preferred path, where should it build its main production base and how should it enter the market? Is greenfield investment better than acquisitions or alliances? What are the key organizational capabilities that need to be developed to effectively compete in the global marketplace?

<Exhibit 1> Financial Performance of Global Steel Companies for the FY 2008

(Million Dollar, %)

	A-Mittal	POSCO	NSC	Baosteel	JFE	U.S. Steel
Sales	124,936	23,391	48,178	29,505	35,593	23,754
Operating Income	12,236 (9.7%)	4,992 (21.3%)	5,445 (11.3%)	1,298 (4.4%)	5,133 (14.4%)	3,069 (12.9%)
Net Income	9,399 (7.5%)	3,394 (14.5%)	3,543 (7.3%)	1,028 (3.5%)	2,632 (7.3%)	2,112 (8.8%)

*NSC, JFE 2008 FY(April, 2008~March, 2009)

<Exhibit 2> Financial Statement of POSCO

<Million KRW>

FY	Assets	Liabilities	Equity	Revenues	Gross Margin	Operating Profit	Net Profit
1986	4,479,527	2,919,768	1,559,759	2,241,622	484,244	370,474	62,010
1987	5,139,175	3,506,268	1,632,906	2,919,369	574,023	440,316	70,331
1988	5,562,519	3,805,195	1,757,324	3,701,118	914,995	750,371	134,357
1989	8,944,004	4,434,458	4,509,546	4,364,288	511,506	329,742	144,511
1990	9,874,822	5,336,381	4,538,441	4,805,023	469,676	254,109	79,025
1991	10,646,231	6,017,289	4,628,942	5,827,412	749,317	465,920	145,680
1992	11,758,019	6,987,977	4,770,042	6,182,056	879,148	537,334	185,061
1993	11,585,818	6,589,312	4,996,506	6,920,870	1,391,778	1,010,545	294,617
1994	12,426,916	7,218,557	5,208,359	7,314,003	1,296,160	882,132	383,221
1995	13,317,317	7,254,025	6,063,292	8,218,742	1,784,875	1,356,311	839,707
1996	14,336,020	7,774,962	6,561,058	8,445,451	1,700,111	1,264,439	623,962
1997	17,326,178	10,145,416	7,180,762	9,718,093	2,248,363	1,794,639	729,708
1998	17,971,572	9,586,251	8,385,321	11,137,684	2,232,296	1,720,182	1,125,644
1999	17,227,457	8,140,937	9,086,520	10,696,148	2,304,851	1,819,452	1,558,032
2000	17,766,566	8,336,620	9,429,946	11,692,000	2,636,856	2,099,224	1,636,991
2001	17,615,530	7,419,037	10,196,493	11,086,119	2,097,453	1,429,457	819,319
2002	17,244,486	5,922,906	11,321,580	11,728,595	2,596,937	1,833,485	1,101,325
2003	18,406,600	5,448,602	12,957,997	14,359,329	3,943,189	3,058,534	1,980,572
2004	21,367,060	5,257,216	16,109,844	19,792,478	6,085,019	5,053,728	3,826,016
2005	24,206,950	4,684,948	19,522,002	21,695,044	6,992,241	5,911,886	4,012,932
2006	26,362,873	4,571,215	21,791,658	20,043,409	5,009,959	3,892,307	3,206,605
2007	30,492,798	5,989,566	24,503,232	22,206,685	5,600,598	4,308,275	3,679,431
2008	37,033,454	9,249,797	27,783,657	30,642,409	7,935,425	6,540,059	4,446,933

<Source: TS2000>

< Exhibit 3> Financial Performance of POSCO

FY	EPS (KRW)	Operating Margin (%)	Net Profit Margin (%)	Debt/Equity Ratio (%)	Equity Turnover Ratio (%)	Value-Added per Employee(KRW, million)
1986	0					
1987	0	15.1	2.4	214.7	0.6	58.6
1988	0	20.3	3.6	216.5	0.7	82
1989	0	7.6	3.3	98.3	0.6	89.1
1990	0	5.3	1.6	117.6	0.5	85.5
1991	1,587	8	2.5	130	0.6	90.9
1992	2,016	8.7	3	146.5	0.6	95.6
1993	3,210	14.6	4.3	131.9	0.6	108.4
1994	4,181	12.1	5.2	138.6	0.6	121
1995	9,155	16.5	10.2	119.6	0.6	156.2
1996	6,688	15	7.4	118.5	0.6	148
1997	7,826	18.5	7.5	141.3	0.6	149.7
1998	11,968	15.4	10.1	114.3	0.6	176.2
1999	16,242	17	14.6	89.6	0.6	233.4
2000	19,170	18	14	88.4	0.7	242.7
2001	10,043	12.9	7.4	72.8	0.6	183.5
2002	13,442	15.6	9.4	52.3	0.7	217.5
2003	24,306	21.3	13.8	42.1	0.8	289.5
2004	47,331	25.5	19.3	32.6	1	356.9
2005	50,670	27.3	18.5	24	1	368.9
2006	40,748	19.4	16	21	0.8	331.4
2007	48,444	19.4	16.6	24.4	0.8	383.9
2008	58,905	21.3	14.5	33.3	0.9	470

<Source: TS2000>

< Exhibit 4> 10 Largest Steel-Producing Companies

<MMT>

	1980		1990		2000		2006		2008	
	Company	Prod.	Company	Prod.	Company	Prod.	Company	Prod.	Company	Prod.
1	NSC	32.9	NSC	28.8	NSC	27.8	A-Mittal	117	A-Mittal	103.3
2	USX	21.1	Usinor Sacilor	23.3	POSCO	23.4	NSC	32.7	NSC	37.5
3	NKK	14	POSCO	16.2	British Steel	15.7	JFE	32	Baosteel	35.4
4	Finsiter	13.7	British Steel	13.8	Usinor Sacilor	15.5	POSCO	30.1	POSCO	34.7
5	Bethlehem	13.6	USX	12.4	Riva	14.4	Baosteel	22.5	Hebei	33.3
6	Sumitomo	12.7	NKK	12.1	USX	12.1	USS	21.2	JFE	33.0
7	Kawasaki	12.7	ILVA	11.5	NKK	12	Nucor	20.3	Wuhan	27.7
8	Thyssen-Arkien	12.4	Thyssen	11.1	Arbed	11.5	Tisco	19.1	Tata	24.4
9	Usinor	9.2	Sumitomo	11.1	Kawasaki	11.1	Corus Group	18.3	Jiangsu Shagang	23.3
10	Jones& Laughlim	8.8	Kawasaki	11.1	Sumitomo	10.7	Riva	18.2	U.S. Steel	23.2

<Source: WSD, WSA>

< Exhibit 5> Performance Data of Major Global Steel Companies

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
POSCO	G.M.	2729.3	2283.4	1922.9	2636	2410.5	1985.6	2370.2	3514.7	5769.6	6482.4	5800.4
	ROA	4.4	4.2	6.2	9	9.2	4.7	6.4	10.8	17.9	16.3	12.2
	ROE	9.4	10.2	13.4	17.1	17.4	8	9.5	15.3	23.7	20.2	14.7
	O.P.	14.2	14	16.9	18.4	14.4	13.3	14.9	20.1	27.2	24.9	20.9
	V.A.	36.8	31.9	33	38.3	32.6	31.9	34.2	37.6	40.5	37.9	34
Nippon	G.M.	2179.3	2126.2	1452.3	1866.8	2088.8	1158.6	1654.1	2252	3469.2	4382.6	4245.1
	ROA	0.6	1.1	0	0	0.6	-1	-0.8	1.2	5.2	7.1	6.7
	ROE	2.4	4.1	0.1	0	2.1	-3.5	-2.9	3.7	14.3	17.5	16.9
	O.P.	5.4	6.1	4.4	4.2	5.7	1.5	3.9	7.3	12.2	15.4	15.7
	V.A.	25.2	24.2	24.1	23.9	24.4	20.7	22.2	24.2	27.2	28.2	27.9
JFE	G.M.	1387.3	1200.2	809.9	964.3	1078.4	640.1	903.9	2439.5	4163.5	4402.7	4212.7
	ROA	0.6	0.6	-3.7	0.4	-1.9	-0.7	0	2.9	3.9	9.1	8.3
	ROE	2	2	-13.7	1.4	-6	-2.6	0.1	10.5	12	23.4	23.7
	O.P.	5.5	6.7	3.4	4.4	7.1	3.3	7.1	13.4	21.9	21.6	20.4
	V.A.	31.4	29.3	27.1	28.8	29.7	26.3	28.7	37.1	41.3	38.4	36.2
Arcelor Mittal	G.M.	295	374	495	472	492	-17	319	334	6699	5928	10096
	ROA	12	8.2	4	1.4	1.7	-5.9	0.9	1.2	24.5	9.7	4.7
	ROE	-218.7	35.6	29.6	10	11.2	-92.3	38.3	44.3	80.4	25.4	10.4
	O.P.	18	16.5	13.3	6.9	6.8	-3.9	4.4	4.1	28.6	17.9	13.3
	V.A.	35.9	32.8	37.3	27	25.9	19	25.4	23	45.8	49.1	41.4
Baosteel	G.M.	959.7	890.8	774.4	1109.6	1111.3	974.3	1481.9	2193.2	2701.1	3311.8	3310
	ROA	2.8	1.8	0.9	1.3	7.7	4.4	6.9	11.7	15	10.8	9.7
	ROE	3.9	2.7	1.4	2	11.8	9.7	13.9	19.8	22.6	17.4	16.1
	O.P.	16.3	11	5.3	10.7	16.4	13.6	20.4	24.5	24.1	18.5	13.9
	V.A.	38.8	30.5	24.9	36	32	30.6	38.9	43.3	40.7	29.2	24.1

<Source: WSD>

G.M. = Gross Margin(Million Dollars), ROA = Return on Total Assets(Percent), ROE = Return on Shareholders' Equity(Percent)

O.P. = Operating Profit to sales(Percent) V.A. = Value Added to sales(Percent)

< Exhibit 6> Background Information of Major Global Steel Companies

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
POSCO	Capacity	25.3	27	27	27.5	28.3	28.3	28.3	28.6	29.3	29.8	30.3
	O.R.	96.1	97.8	94.7	96.4	97.9	98.3	99.1	101	103.2	102.5	99.2
	Yield	97.1	95.2	97.1	97	96.6	97.4	96.9	97.6	94.9	95.6	95
	Employees	20,289	19,867	19,547	19,513	19,382	19,236	19,205	19,295	19,375	19,191	18,264
	Share	3.24	3.31	3.29	3.36	3.27	3.27	3.1	2.98	2.82	2.66	2.4
	Equity	8271.6	7548.4	5983.4	7642.7	8338	7898.1	9245.4	10874.3	14064.5	19062.3	22826.3
	I.T.	5.94	6.13	6.51	6.01	6.52	6.02	6.64	7.19	7.19	6.24	5.32
Nippon	Capacity	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.1	30.3	31.7	32.1
	O.R.	85.3	88.3	77	85	92.4	86.7	99.2	100	98.5	98.3	98.3
	Yield	100.6	99.9	103.6	100.1	96.2	100.7	97.6	97.5	98.8	94.8	99.7
	Employees	26,055	23,544	21,987	20,615	19,367	18,144	16,926	15,810	15,110	15,147	14,779
	Share	3.43	3.33	2.98	3.25	3.28	3.07	3.31	3.11	2.79	2.72	2.53
	Equity	7490.1	7024.1	6123.9	6940	7841.7	6342.2	5851.6	7476.4	9475.2	12290	12612.6
	I.T.	3.81	3.86	3.44	3.45	3.62	3.48	3.95	4.5	5.16	5.55	4.95
JFE	Capacity	17	17	17	17	17	17	17.3	32.6	32.6	32.6	32.6
	O.R.	60.2	64.1	55.2	64.3	71.5	72.4	74.5	82.8	84.8	81.9	89.1
	Yield	99.1	96.6	103.6	96.1	94.7	95	95.1	93.5	93	92	91
	Employees	12,838	11,893	11,240	10,697	10,163	9,593	9,130	14,431	16,059	14,001	14,194
	Share	1.36	1.36	1.21	1.38	1.43	1.44	1.42	2.78	2.59	2.33	2.32
	Equity	4572.2	4202.2	3563	4148.4	4128	3294.8	3289.1	7019.5	8423.9	9602.3	9062.2
	I.T.	3.26	3.36	3.26	3.37	3.66	3.77	3.89	4.98	4.2	4.51	4.45
Arcelor Mittal	Capacity	8	9.5	13.3	16.7	17.5	17.5	17.5	17.5	48	69.7	131.8
	O.R.	801	81.8	87.8	91.9	97.7	83.5	88.6	89.1	89.3	90.4	89.5
	Yield	92.6	93.3	92.7	100.6	95.6	96.7	97	97.2	89.1	89.4	93.6
	Employees	7,000	7,300	16,500	17,200	16,800	16,500	15,992	15,226	140,100	194,093	326,789
	Share	0.85	0.97	1.5	1.94	2.01	1.71	1.71	1.61	4.01	5.5	9.44
	Equity	-107	662	801	854	884	338	128	149	5846	12991	50191
	I.T.	3.89	3.87	3.67	4.13	4.71	4.95	5.45	6	6.4	4.44	3.87
Baosteel	Capacity	9	9	10.5	11	7.2	8.6	12	12.2	13	19	22.4
	O.R.	88.4	95.4	93.9	99.8	98.8	99.8	96.5	94.6	91.3	96.6	97.1
	Yield	92.5	88.9	91.9	92.6	103.3	100.3	92.9	96.2	97.7	102.3	98.5
	Employees	10,542	11,414	14,308	14,500	14,255	15,745	15,693	15,325	15,358	21,280	27,096
	Share	1.06	1.07	1.27	1.39	0.84	1.01	1.28	1.19	1.11	1.6	1.74
	Equity	6475.8	6834.9	6910.9	7120.4	3053.9	3176.2	3707.6	4289.5	5083.7	9160.2	10397.5
	I.T.	6.3	3.78	4.8	4.22	6.22	7.41	6.49	6.85	6.68	6.99	5.69

<Source: WSD>

Capacity(Million Metric Tons) O.R. = Operating Rate(percent) Yield(Shipments/Production)(Percent)

Employees=Number of Employees, Share=Share of World Steel Production(Percent), Equity=Shareholder's Equity(Million dollars)

I.T.=Inventory Turnover(Ratio)

< Exhibit 7> Expenses Data of Major Global Steel Companies

		1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006
POSCO	RPTS	456.2	414.2	324.8	353.9	388.7	318.6	346.0	429.6	606.7	730.0	740.9
	SPTS	444.8	405.9	319	349.6	386	316.7	344.7	427.3	602.9	725.4	735.6
	LCPTS	36.6	30.2	22.4	27.2	33	25.9	29.5	33.5	38.9	48.4	41.9
	MOCPTS	292.6	284.9	219.4	220	263	217.6	228.1	269.1	362.7	455.1	490.5
	ICPTS	22.9	20.9	14.2	10.2	11.4	10.4	8.3	6.4	4.4	3	2.9
	DCPTS	63.8	42.4	28.9	42.4	37.3	32.9	37	41.3	41.2	46.2	54.4
	TEPTS	415.9	378.4	284.9	299.7	344.7	286.8	302.9	350.3	447.2	552.6	589.7
	LCVA	22.4	23.4	21.2	20.3	26.2	25.6	25	20.9	15.9	17.6	16.7
	SBOR	71.7	70.7	59.1	57.7	64.9	68.5	64.4	52.8	38	38.9	42.1
Nippon	RPTS	607.0	559.0	505.3	505.6	503.8	411.4	416.7	472.4	573.2	673.2	607.0
	SPTS	601.1	553.7	495.4	499.8	496.7	405.5	412.9	468.8	568.3	665	598.2
	LCPTS	84.9	67.2	67.7	62.1	57.1	47.4	43.9	47.3	52.5	52.2	42.3
	MOCPTS	442.1	416.1	374.3	378.4	378.4	321.9	322.7	361	422.5	493.5	447.3
	ICPTS	9.8	8	9.5	9.9	7.6	6	5.1	4.4	3.8	2.8	2.9
	DCPTS	44.1	39.1	39	46.1	41.8	36	34.1	33.2	33.6	32	29.9
	TEPTS	580.9	530.3	490.6	496.5	484.9	411.3	105.8	445.9	512.3	580.4	522.4
	LCVA	51.4	47	51.6	47.1	43.1	51.5	45.1	40.1	32.8	27.5	25
	SBOR	72.2	71.4	68.3	79.1	78.9	86.7	88.4	77.7	61	50.1	48.6
JFE	RPTS	628.5	578.6	513.0	500.3	467.9	373.1	372.9	482.1	608.3	712.6	682.6
	SPTS	616.6	567.5	503.1	490.6	459.4	366	367.3	467.7	592.9	696.1	665.1
	LCPTS	88.8	73.8	70.8	67.1	57.6	50.1	46.1	62.6	67.3	71.4	63.8
	MOCPTS	409.5	393.6	360.6	347.6	322.1	270.4	258.4	308.5	363.7	445.5	441.9
	ICPTS	20.6	16.7	14.3	11.2	7.6	5.4	5.1	7.9	6.6	4.9	4.1
	DCPTS	90.3	66.4	62.1	61.1	49.4	38.7	37.3	48.6	47.3	45.5	40.9
	TEPTS	609.3	550.5	507.9	487	436.7	364.6	346.9	427.5	484.9	567.3	550.7
	LCVA	41.3	41	47	44.4	42.2	50	42.1	36	27.5	26.7	26.5
	SBOR	54.7	54.2	53.4	58.6	56.1	66.4	57.7	55.5	40.8	36.7	39.4
Arcelor Mittal	RPTS	294.1	294.0	319.4	309.7	319.7	309.5	320.0	352.8	551.5	453.1	479.9
	SPTS	283.3	290.2	313.9	307.9	316.9	308.2	315.4	348.1	546.7	449.7	479.2
	LCPTS	42.5	40.8	67	51.5	50.1	58.4	55	54	77.3	109.1	103.1
	MOCPTS	192.5	199.5	202.4	226.7	237.6	251	239.8	272.7	304.3	245.9	294.1
	ICPTS	6.7	12.8	16	13.1	14.3	16.6	13.4	10.7	5.1	5.6	5.3
	DCPTS	8	6.7	8.2	10.3	10.5	12.2	11.4	11.7	13.6	17.8	18.7
	TEPTS	249.7	259.7	293.6	301.7	312.5	338.8	319.6	349.1	400.4	378.4	421.3
	LCVA	41.9	42.8	57.2	62.1	61	99.9	68.5	67.5	32.2	55.6	58.4
	SBOR	41.1	50.6	66.6	82.8	88.9	125.8	88.1	84.9	33.3	55.4	60.1
Baosteel	RPTS	382.1	390.0	367.4	325.4	483.5	389.4	361.5	457.1	571.1	609	655.4

	SPTS	367.6	388.1	364.6	320.8	483.2	388.9	361.3	456.4	570.2	608.2	654.6
	LCPTS	4.1	5.6	6.8	7.2	10.9	11	9.4	9.3	9.7	8.5	10
	MOCPTS	239.6	271.7	276.6	210	328.7	270.3	221.1	259.5	339.1	431.2	497.7
	ICPTS	11.2	9.9	6.5	17.5	10.9	3.4	8.4	7.8	4.2	4.7	5
	DCPTS	78.5	69.9	64.8	73.8	64.9	55.2	57.4	76.4	85	57	56.5
	TEPTS	333.3	357	354.7	308.4	415.3	339.9	296.3	353	438	501.3	569.2
	LCVA	2.9	1.7	7.5	6.2	7	9.3	6.7	4.7	4.2	4.8	6.3
	SBOR	56.5	70.4	81.7	85.2	58.2	61.2	53.7	46.6	41.2	43.2	50

<Source: WSD>

RPTS=Steel Sector Revenue Per Ton Shipped (Dollars), SPTS=Steel Sector Sales Per Ton Shipped (Dollars), LCPTS=Steel Sector Labor Cost Per Ton Shipped (Dollars), MOCPTS= Steel Sector Material & Other Costs Per Ton Shipped (Dollars), ICPTS=Steel Sector Interest Cost Per Ton Shipped (Dollars), DCPTS=Steel Sector Depreciation Cost Per Ton Shipped (Dollars), TEPTS=Steel Sector Total Expenses Per Ton Shipped (Dollars), LCVA=Labor Cost to Value Added (Percent), SBOR=Steel Break-Even Operating Rate (Percent)

< Exhibit 8> 10 Most Competitive Steel Companies

	2002.2	2003.6	2004.8	2005.2	2006.6	2007.4	2008.6
1	POSCO	POSCO	POSCO	POSCO	Tata	Severstal	Severstal
2	Nucor	Baosteel	Severstal	Severstal	POSCO	POSCO	POSCO
3	Tata	Tata	Baosteel	Baosteel	Baosteel	Arcelor-Mittal	Baosteel
4	Baosteel	Nucor	Tata	Tata	Severstal	Baosteel	Arcelor Mittal
5	Gerdau	Gerdau	Bluescope	Gerdau	Nucor	Tata Corus	NLMK
6	China Steel	BHP Steel	Maanshan	Bluescope	Mittal Steel	Nucor	Nucor
7	Severstal	Severstal	CST	CST	SDI	Bluescope	Tata Corus
8	CSN	CST	Gerdau	China Steel	Bluescope	Gerdau	JSW Steel
9	NSC	China Steel	China Steel	Anshan	CSN	NSC	SDI
10	Arcelor	SDI	Nucor	Maanshan	Gerdau	CSN	EZZ

<Source: WSD>

< Exhibit 9> Competitiveness Ranking and Scores of Major Steel Companies (2008)

Rank		1	2	3	4	5	6	7	8	9	10
Company		Sever - stal	POSCO	Baosteel	A-Mittal	NLMK	Nucor	Tata/ Corus	JSW Steel	SDI	EZZ
Nation		Russia, U.S., EU	S. Korea	China	Int.	Russia	U.S.	India, EU	India	U.S.	Egypt
Annual Steel Shipments(MMT)		19	35	32	129	10	24	25	7	6	6
Factor	Weight										
Size	6%	6	8	7	10	6	7	7	4	3	3
Expanding capacity	6%	8	6	10	7	9	6	9	10	9	10
Location in high-growth markets	6%	8	6	10	6	10	2	7	9	2	10
Dominance in mature markets	4%	5	10	2	9	1	6	7	1	5	1
Downstream businesses	4%	8	6	5	5	4	10	7	3	7	2
Alliances, M&A, JVs	6%	10	9	10	10	8	9	10	8	9	3
Harnessing tech revolution	6%	8	10	9	7	8	10	7	9	9	9
Environment & safety	4%	9	9	9	9	9	9	9	9	9	9
Country risk	6%	6	10	7	7	6	10	9	7	10	5
"Pricing Power" with large buyers	6%	8	10	9	8	8	5	8	5	5	9
Threat from nearby competitors	4%	8	5	5	7	7	5	6	7	5	10
Conversion costs; yields	5%	7	10	8	8	7	10	9	10	10	8
Cost-cutting efforts	4%	8	6	9	10	7	6	6	7	7	7
Raw material costs(14% of total)	3%	9	5	7	7	9	5	6	8	5	8
Iron ore	3%	9	3	4	8	9		10	10		
Coking coal	3%	9	3	6	6	8		3	5		
Location to procure raw materials	3%	8	7	7	7	7	6	8	8	6	7
Labor costs(7% of total)	4%	10	7	9	7	10	7	6	10	8	10
Skilled and productive workers	3%	7	10	9	8	7	10	8	8	10	8
Liabilities for retired workers	3%	9	8	9	5	9	9	8	9	9	8

Energy costs	4%	7	7	6	6	7	6	5	7	6	6
Profitability	4%	9	10	8	8	10	8	8	9	10	10
Balance sheet	3%	9	10	9	9	9	10	6	9	9	8
Average Weighted Score		7.95	7.82	7.77	7.61	7.53	7.52	7.5	7.45	7.36	7.29

<Source: WSD>

< Exhibit 10> Market Value of Major Steel Companies

<$100million>

		POSCO	A-M	NSC	Baosteel	JFE	TKS	Nucor	USS
Market Value	March, 2008	477	1,095	344	386	261	292	209	136
	August, 2009	331	503	264	192	223	89	147	52

< Exhibit 11> Recognition of International Institutions (2006 ~ 2009)

	Institutions	
2006~2009	Fortune	Most Admired Steel Company
2006	Finance Asia	The Most Excellent Company in Corporate Governance
2006~2009	WSJA	Korea's Most Admired Company (2^{nd})
2007	Business Week	Most Admired Company
2005~2009	SAM Dow-Jones	Sustainable Management Award
2006~2008	WSD(World Steel Dynamics)	Ranked 2^{nd} in Competitiveness
2008	MerComm	ARC Award
2008~2009	Suzuki Automobil, GM	Excellent Supplier Award
2008~2009	Financial Times	Global 500 Companies
2008~2009	KMA Consulting	Most Admired Company
2008~2009	Forbes	Global 200 Companies

< Exhibit 12> External Environment of POSCO since 1970

	Start-up Period (1968-1972)	Growth 1 (1973-1981)	Growth 2 (1982-1992)	Mature (1993-2002)	Globalization (2003-2008)
World Economy	Developed Countries-Driven Prosperity	1, 2nd Oil Shock	Restructuring	IT-driven Growth	BRICs -driven Prosperity
CEO	TJ Park	TJ Park	TJ Park	MS Chung MJ Kim SB Yoo	KT Lee
Growth Rate of World Steel Demand	6.1%	0.8%	0.9%	2.5%	7.8%
Domestic Economy	Rapid Growth	Growth	3-Low Prosperity,, Asset Bubble	Economic Crisis	Slow Growth
Growth Rate of Domestic Steel Demand	20.6%	14.6%	13.3%	6.1%	3.1%

<Source: POSRI>

< Exhibit 13> Government Support for Infrastructure Development

		Projects
Harbor Construction	Berth	Pier 1,370m(Harbor for Raw Materials 710m, Harbor for Products 440m, General Harbor 220m) , Bank Protection 830m
	Outer Facilities	Breakwater 2,807m(North 1,917m, East 890m), Others 480m
	Dredge	Dredge 10million ㎥

Industrial Water	Angye Reservoir	Dam Expansion 223.5m Dam Heights 32.5m Access Road 6 ㎞
	Forebay	Pumping Station 12×25m, Pump: 500HP (3), 300HP (2)
	Water Pipe	Length 16.4 ㎞ PC (Concrete & Steel), Diameter of Pipe: 1,100 ㎜ & 1,000 ㎜
	Incidental Facilities	Substation 22,000/3,300(1,000 kV A×3)
Urban Engineering	Road Construction	Repair 96 ㎞, Construction 9.3 ㎞, 3 Bridges
	Pavement	10.3 ㎞
Rail Road	Roadbed	6.6 ㎞(Hyoja Station – Gyedong Station)
	Track	16.6 ㎞
	Bridge	Hyungsan River Rail Bridge
	Shunting Yard	Gyedong Station(150 trains per day, 1.5million tones per year)

<Source: POSCO 35-Year History>

<Exhibit 14> Major Shareholders of POSCO

(%)

	Government	Daihan Tungsten	KDB	Financial Institutions	Treasury Stock	Employees	Foreign Investors	Others
1968	56.2	43.8	-	-	-	-	-	
1983	32.7	2.5	39.2	25.6	-	-	-	
1992	20.0	1.2	15.0	14.3	-	8.1	8.0	33.4
1998	-	-	21.08	11.72	2.71	0.22	38.1	26.2
2000	-	-	-	17.3	19.07	0.05	48.9	14.7
2006	-	-	-	11.2	11.0	1.5	62.3	16.0
2007	-	-	-	15.3	13.36	0.71	48.9	21.7
2008				18.7	12.2	0.01	42.8	30.0

<Source: POSCO>

< Exhibit 15> Domestic Economy and Steel Production

	GDP per Capita (Nominal, $)	GDP (Growth Rate)	Steel Demand	Steel Prod. (POSCO's)	Self-support Ratio
Unit	$	%	10,000 tones	10,000 tones	%
1975	602	5.9	209	256(123)	122%
1980	1,645	-1.5	427	856(590)	200%
1985	2,309	6.8	873	1354(928)	155%
1990	6,147	9.2	2,148	2313(1622)	108%
1995	11,432	9.2	3,731	3677(2343)	99%
2000	10,841	8.5	4,000	4311(2774)	108%
2005	17,531	4	4,900	4782(3055)	98%
2007	21,695	5.1	5,510	5151(3177)	93%

<Source: KOSA,>

< Exhibit 16> Construction Cost of Plants

		unit	Pohang Works				Gwangyang Works			
			1st	2nd	3rd	4th	1st	2nd	3rd	4th
Capacity		10,000 tones	103	157	290	300	270	270	270	330
Construction Cost		$/ton	287	352	469	460	723	473	1048	761
Localization Ratio		%	12.5	15.5	22.6	38.3	49.4	55.4	61.3	63.1
Foreign Company	Company	-	India SAIL 1st	Taiwan CSC 1st	Japan Ogishima	Brazil Tubarao	China Bosan 1st	Taiwan CSC 2nd	-	Taiwan CSC 4th
	Capacity	10,000 Tones	170	150	300	300	300	240	-	240
	Cost/ton	$/ton	430	667	626	700	748	624	-	1056

<Source: POSCO 35-Year History>

< Exhibit 17> Production by Products

(1,000 tones)

	Hot-rolled	Steel Plate	Wire Rod	Cold-rolled	Electric Steel Plate	Stainless Steel	Others
1995	9,275	2,335	1,682	6,924	270	631	1,760
2000	9,349	3,106	1,921	9,148	540	1,212	1,626
2005	9,765	3,236	1,977	10,750	749	1,900	1,118
2006	8,768	3,635	1,853	10,862	668	1,899	1,219
2007	7,600	4,300	2,000	11,800	900	1,600	1,400

<Source: POSCO>

< Exhibit 18> Production of Strategic Products

(1,000 tones)

	Steel Sheet (Automotive)	API	Premium SS	Premium E.S.P.	TMCP Steel	Premium Wire Rod	Premium Hot-rolled	Premium Cold-rolled
2004	3,523	322	461	105	747	1,012	1,478	3,142
2005	4,357	425	561	135	810	1,193	1,556	3,526
2006	4,958	689	648	188	1,250	1,229	1,892	3,836
2007	5,673	841	1,013	438	1,306	1,403	2,187	4,649

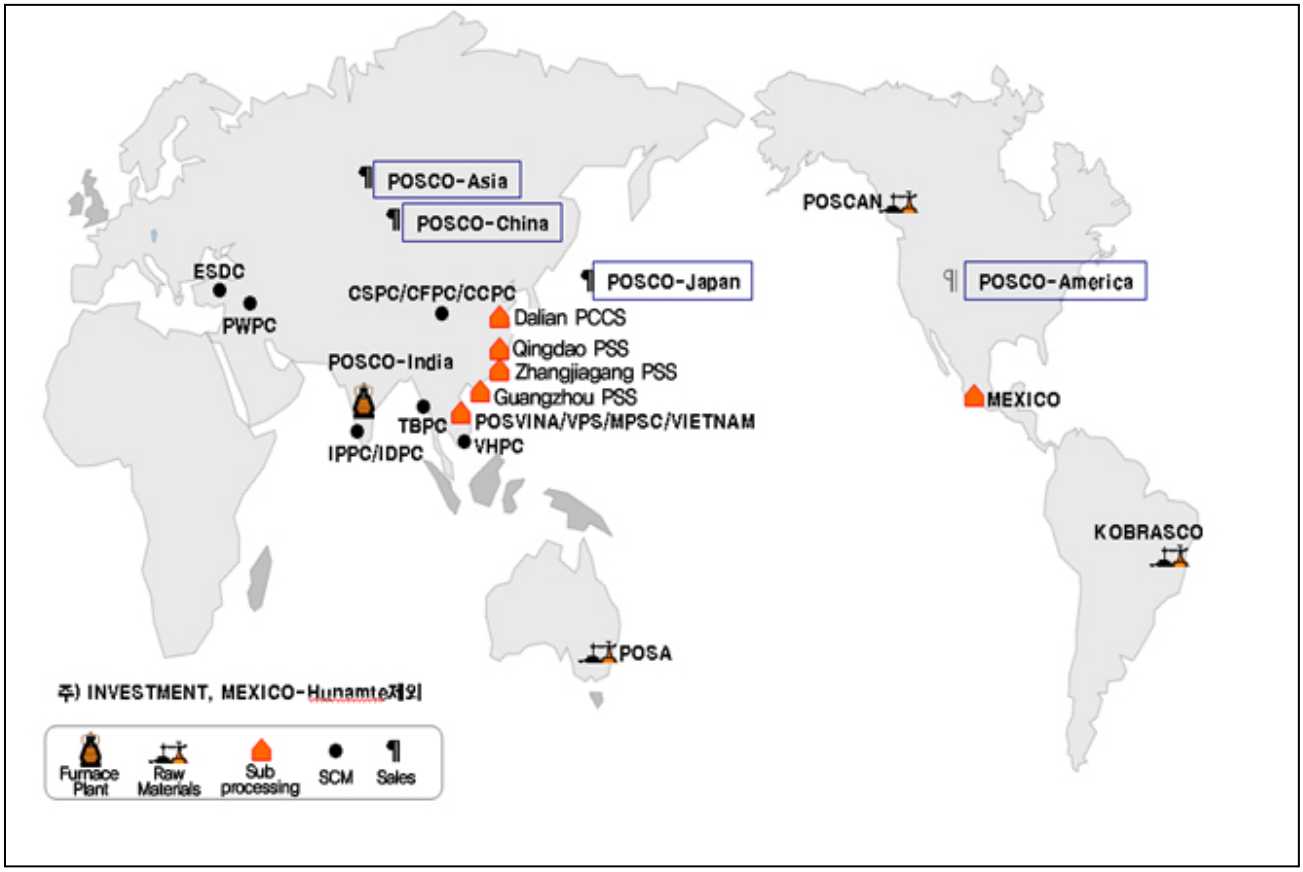
<Source: POSCO>

< Exhibit 19> Outcome of Process Innovation (Phase 1)

	Before PI	After PI('03.12)
ISPP(Integrated sales & production planning)	60days	15days
Available to promise lead-time	2~3hours	2.5seconds
Order lead-time(hot-rolled)	30days	14days
Days of product inventory	14days	7days
Budgeting lead-time	110days	30days
Month-end close lead-time	6days	1day
Data standardization	193,000 items	46,000 items
Standardization of MRO* items	590,000	280,000

<Source: POSCO 35-Year History> * MRO: Maintenance, Repair, and Operation

< Exhibit 20> Global Network of POSCO



<Source: POSRI 40Years Performance Report>

< Exhibit 21> Global Network of POSCO

	2002		2007	
	Management Control	Equity Investment	Management Control	Equity Investment
Production Plant	7	3	10	6
SCM	1	5	9	10
Raw Materials	3	1	3	2
Sales	4	-	4	-
Others	1	-	2	-
Total	16	9	28	18

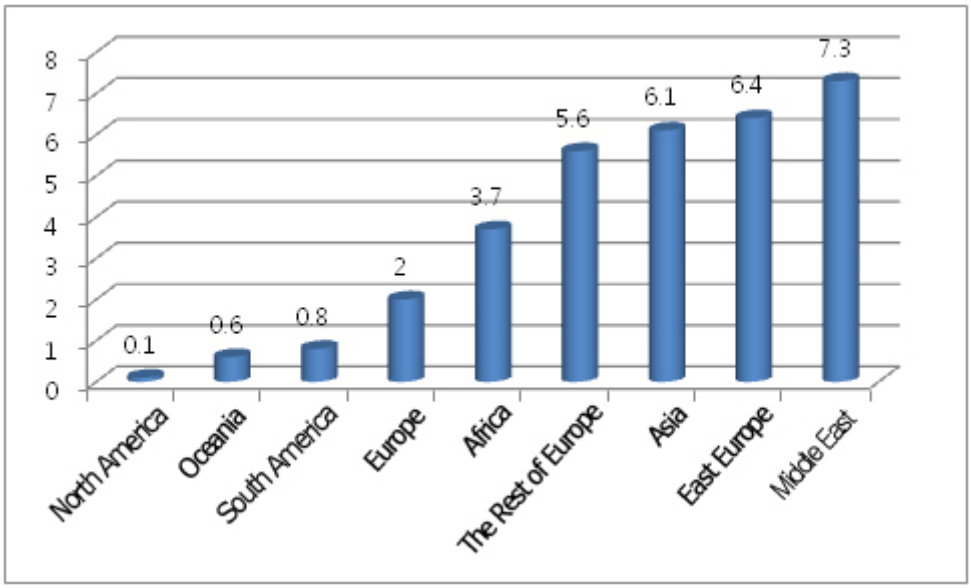
*Excluded Grand-son Companies <Source: POSCO 40 Years Performance Report>

< Exhibit 22> Global Network by Regions

	China	Japan	South-East Asia	India	Eastern Europe	South. America	North America	Australia	Africa
Production Plant	4(3)	(1)	4(2)	1			1		
SCM	3(5)		2(3)	2(1)	2(1)				
Raw Materials						1	1	1	(2)
Sales	2	1					1		
Total	9(8)	1(1)	6(5)	3(1)	2(1)	1	3	1	(2)

<Source: POSCO 40 Years Performance Report>

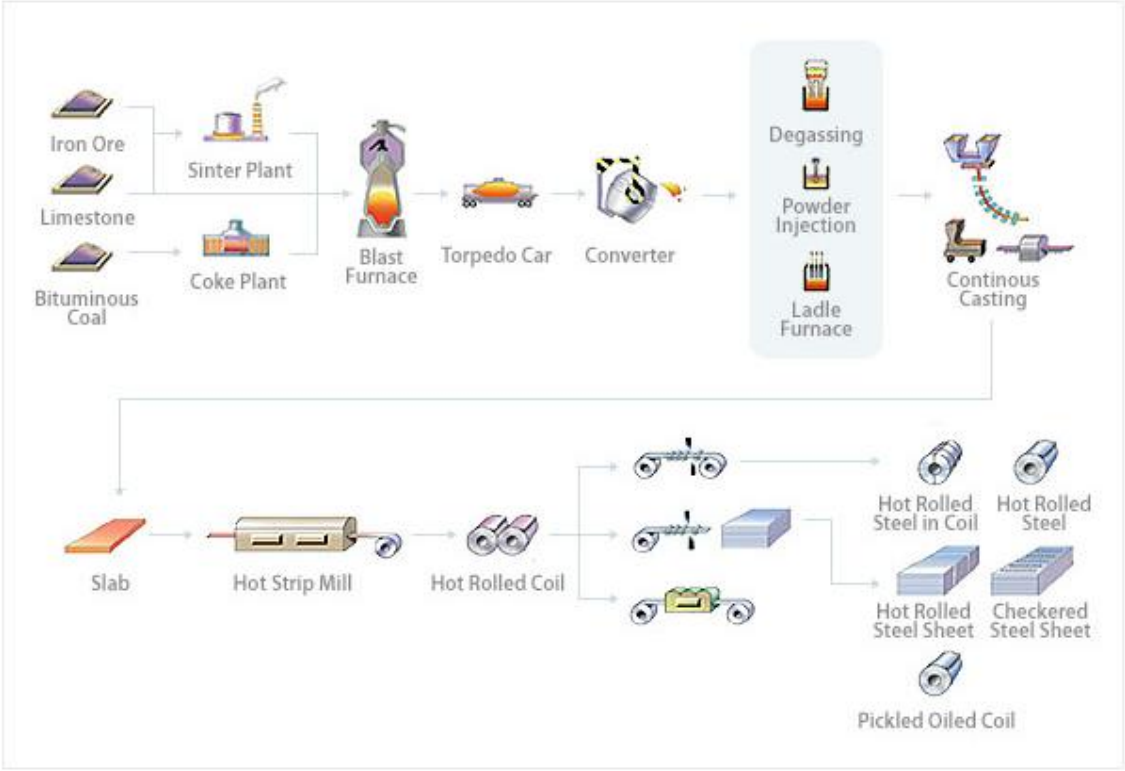
< Exhibit 23> Average Growth Rate of Steel Consumption per Capita ('97~'06)



<Source: IISI>

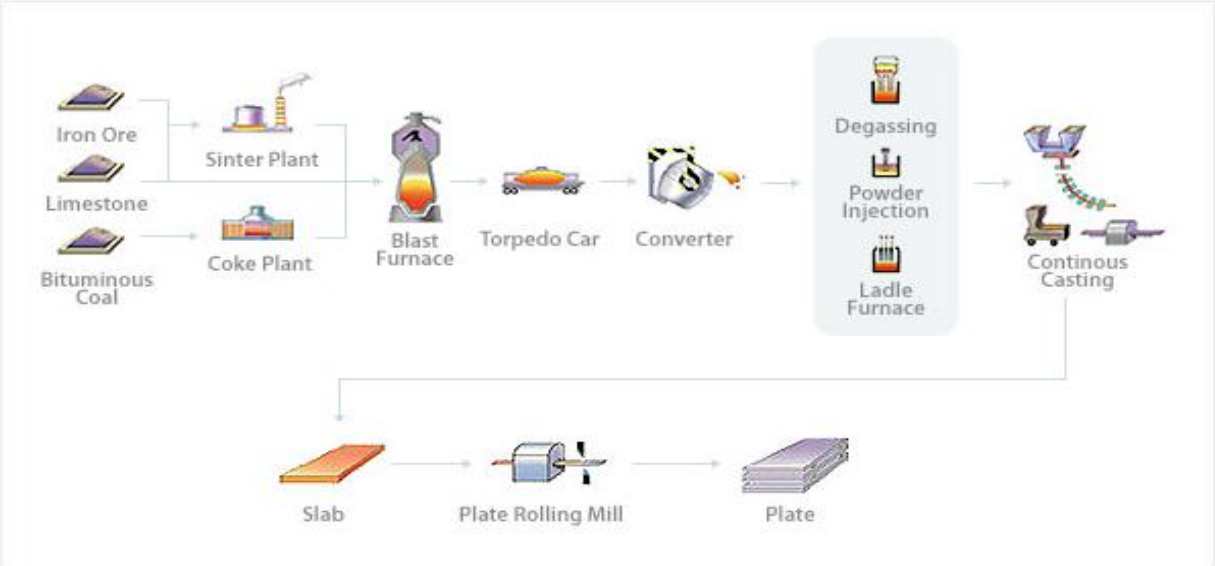
< Exhibit 24> Process Flow by Products

A. Blast Furnace Hot-rolled Coil



B. Blast Furnace Cold-rolled Coil

C. Blast Furnace Steel Plate



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