

LEGO GROUP: AN OUTSOURCING JOURNEY

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PROLOGUE

The last five years' rather adventurous journey from 2004 to 2009 had taught the fifth-largest toy-maker in the world — the LEGO Group — the importance of managing the global supply chain effectively. In order to survive the largest internal financial crisis in the company's roughly 70 years of existence, resulting in a deficit of DKK1.8 billion in 2004, the management had, among many initiatives, decided to offshore and outsource a major chunk of LEGO's production to Flextronics, a large Singaporean electronics manufacturing services (EMS) provider. In this pursuit of rapid cost-cutting sourcing advantages, the LEGO Group planned to license out as much as 80 per cent of its production, besides closing down major parts of the production in high-cost countries. Confident with the prospects of the new partnership, the company signed a long-term contract with Flextronics. "It has been important for us to find the right partner," argued Niels Duedahl, a LEGO vice-president, when announcing the outsourcing collaboration, "and Flextronics is a very professional player in the market with industry-leading plastics capabilities, the right capacity and resources in terms of molding, assembly, packaging and distribution. We know this from looking at the work Flextronics does for other global companies."¹

This decision would eventually prove to have been too hasty, however. Merely three years after the contracts were signed, LEGO management announced that it would phase out the entire sourcing collaboration with Flextronics. In July 2008, the executive vice-president for the global supply chain, Iqbal Padda, proclaimed in an official press release, "We have had an intensive and very valuable cooperation with Flextronics on the relocation of major parts of our production. As expected, this transition has been complicated, but throughout the process we have maintained our high quality level. Jointly we have now come to the conclusion that it is more optimal for the LEGO Group to manage the global manufacturing setup ourselves. With this decision the LEGO supply chain will be developed faster through going for the best, leanest and highest quality solution at all times."²

¹ LEGO press release, December 21, 2005.

² LEGO press release, June 1, 2008.

This sudden change in its sourcing strategy posed LEGO management with a number of caveats. Despite the bright forecasts, the collaboration did not fulfill the initial expectations, and the company needed to understand why this had happened. Secondly, what could LEGO management have done differently? Arguably, with little prior experience in outsourcing this large amount of production, the LEGO Group had had a limited knowledge base to draw on to manage a collaboration like this. Yet, with Flextronics' size and experience with original equipment manufacturers (OEMs), this, in theory, should not have been a problem. Lastly, one could ponder whether the unsuccessful collaboration with Flextronics had been a necessary evil for the LEGO Group. LEGO management's ability to handle its global production network after the Flextronics collaboration had surely changed, and aspects like standardization and documentation had to a much larger extent become valued.

INTRODUCING THE LEGO GROUP: ONLY THE BEST IS GOOD ENOUGH

The LEGO Group's vision was to "inspire children to explore and challenge their own creative potential." Its motto, "Only the Best is Good Enough," had stuck with the company since 1932 when Ole Kirk Christiansen, a Danish carpenter, established the company in the small town of Billund in Jutland, Denmark, to manufacture his wooden toy designs. As the company itself said, "It is LEGO philosophy that 'good play' enriches a child's life — and its subsequent adulthood. With this in mind, the LEGO Group has developed and marketed a wide range of products, all founded on the same basic philosophy of learning and developing — through play."³ With this simple idea, the company, through its history, had grown into a major multinational corporation, and, by 2009, was the world's fifth-largest manufacturer of toys in terms of sales. The same year, the LEGO Group earned DKK11.7 billion in revenues and DKK2.2 billion in profits, and had a workforce of approximately 7,000 employees around the world (see Exhibit 1). Its corporate management consisted, besides the chief executive officer and the chief financial officer, of four executive vice-presidents with respective business areas (markets and products; community, education and direct; corporate centre; and global supply chain) (see Exhibit 2).

Products and Markets

The LEGO brick was the company's main product (see Exhibit 3). The iconic brick with the unique principle of interlocking tubes offering unlimited building possibilities was first introduced in 1958 and had basically remained unchanged ever since. The underlying philosophy of the brick was that it would stimulate creative and structured problem-solving, curiosity and imagination. In the company's own words: "In the hands of children, the products inspire the unique form of LEGO play that is fun, creative, engaging, challenging — all at the same time We strive to accomplish this by offering a range of high quality and fun products centred around our building systems."⁴ The simple yet multi-functional and combinational structure of the brick (there were as many as 915 million possible combinations to choose from with six eight-stud LEGO bricks of the same color) had therefore been core to the company's history and success. In fact, the LEGO brick had been rewarded the "Toy of the Century" designation by both Fortune Magazine and the British Association of Toy Retailers.

To segment the products, however, a number of categories had been created: First, "pre-school products" comprised products for the youngest children, who had yet to start school. The LEGO DUPLO products were examples of this category. Second, the "creative building" category targeted sets or buckets of traditional LEGO bricks without building instructions. Third, "play themes" products were the products

³ *LEGO Annual Report, 2009.*

⁴ *Ibid.*

that had a particular story as their basis. This could be themes such as airports, hospitals and racing tracks. The classic LEGO City line and futuristic BIONICLE theme products were examples of this category. Fourth, and related to the play themes, were the “licensed products,” which were built up around movies or books that the LEGO Group had acquired the rights for, such as Harry Potter, Star Wars and Indiana Jones. Fifth, “MINDSTORM NXT” was a programmable robot kit, where consumers could construct and program robots to perform different tasks and operations. Sixth, “LEGO Education” comprised products that had been specifically developed for educational purposes. Last, in 2009 the LEGO Group made its first move into the board game category with the launch of the “LEGO Games” product line. The underlying logic of the entire product portfolio was to reflect the fact that children grow older and develop, and thus demand more challenging stimulation.

LEGO products were sold in more than 130 countries. The largest single market was the United States, which in 2007 accounted for 30 per cent of the revenue in combination with Australia, New Zealand and the United Kingdom. Central and Southern Europe represented 27 per cent, while Scandinavia, Benelux, Eastern Europe and Asia represented 26.5 per cent.

Dealing with a Crisis

In 2004, radical changes took place within the LEGO organization as a consequence of a major internal crisis that drew the company near bankruptcy. The crisis, which could be traced back to the end of the 1990s, had accumulated with net losses worth DKK888 million and DKK1.8 billion in 2003 and 2004, respectively. Sales had fallen by 30 per cent in 2003 and 40 per cent in 2004. These results had been the most disappointing in the history of the company. On average, the toy maker had made economic losses equivalent to DKK2.2 million per day in the period from 1998 to 2004.

The reasons for the crisis had been many. The immediate explanation was the company’s general loss of confidence in its core product — the LEGO brick. With an initiative to create new engines of growth and to address a decline in the traditional toy market, LEGO had sought over the last decade to broaden its portfolio into new, rather discrete areas, including computer games, television and clothing. This act of diversification had resulted in vast complexity and inefficiencies, as well as highly confused customers and employees. For instance, with the surge of licensed products like Harry Potter and Star Wars, the LEGO Group produced a range of unique bricks for each single new product. The LEGO Group had at the time roughly 11,000 suppliers — a number almost twice what Boeing used for its planes. Unfavorable developments in the global toy market as well as in the exchange rates of key currencies of important markets had not made matters easier. As former chief executive officer Kjeld Kirk Kristiansen argued, “We have been pursuing a strategy which was based on growth, increase in market shares and growth by focusing on totally new products. This strategy did not give the expected results.”⁵ Moreover, he noted that “we shifted the focus from our actual core product, which at the same time faced difficulties in a more competitive and dynamic market.”⁶

In October 2004, Jørgen Vig Knudstorp was appointed as Kristiansen’s successor. Kristiansen, who was the grandson of the founder, Ole Kirk Christiansen, had been the president and CEO of the LEGO Group since 1979. Knudstorp was only the second person outside the founding family who held the position of CEO, and his primary task was to steer the company back on track. “I don’t have any miracle cure,” he explained as to how he would put an end to the financial turmoil. “LEGO shall first and foremost drop its arrogance. We have been too sacred with our own virtues, not open enough, and not willing to listen to

⁵ LEGO press release, January 8, 2004.

⁶ LEGO Life, September 2007.

what other people say. We shall now listen to customers and consumers; simply drop the sacredness. We must be aggressive in the market; work closely with retailers; and manage LEGO very tightly, also financially.”⁷ Accordingly, a strategy titled “Shared Vision” was soon implemented, and was defined around three core principles:

- “Be the best at creating value for our customers and sales channels.”
- “Refocus on the value we offer our customers.”
- “Increase operational excellence.”

After divesting its theme parks and receiving an extraordinary loan from the founding family of 800 million DKK, the LEGO Group embarked on the comprehensive strategy of right-sizing its activities, its cost base and its many assets. In particular, careful scrutiny of the organization made the LEGO Group aware of the fact that its ineffective and inflexible supply chain was a key problem for the creation of a sound business platform. The degree of organizational complexity on multiple levels had basically undermined an otherwise sound business platform. According to Knudstorp: “From my perspective, the supply chain is a company’s circulation system. You have to fix it to keep the blood flowing.”⁸

LEARNING FROM OFFSHORE OUTSOURCING: A STORY IN THREE PARTS

1. Preparing for Outsourcing

A key revelation of the comprehensive analysis that was initiated in 2004 was that urgent transformations in all major areas of the supply chain were needed. In the development function, the main focus was to simplify the LEGO sets, which over the years had grown highly elaborate. One LEGO senior director noted, “This excessive complexity of shapes and colors of LEGO elements that was coming from the development was badly hitting the supply chain.”⁹ A major challenge was to ensure that the right components were constantly in stock. Significant forecast errors and seasonal demand fluctuations coupled with customers’ expectations of short delivery times resulted in large stocks of many different components. The high numbers of components also required heavy investment in molds. The decision was therefore made to limit the growth in the number of product components and then to gradually reduce it. This was not only supposed to drive costs out of the supply chain, but was also to prepare the company for the new scenarios of the outsourced production set-up.

In the area of distribution, the analysis uncovered the need for major changes in how the company approached its retailers. Describing the situation, a senior director was quoted as saying, “It was impossible to be efficient and manage the supply chain with the level of flexibility we had towards all retailers, including the smallest outlets. We clearly needed to put certain rules here.”¹⁰ To manage this, clearly defined service policies were established. The new policies distinguished explicitly between different approaches to the retailers and helped the company to focus more on the large retail chains that were increasingly gaining dominance in the toy market. This immediately helped to drive down the cost of distribution, provided a more reliable overview of demand and, along with reducing complexity, took some pressure away from the supply chain. Moreover, the company’s five European distribution facilities (Flensburg and Hohenwestedt in Germany, Billund in Denmark, and Lyon and Dunkerque in France) were all centralized in Jirny, 10 kilometres east of Prague, Czech Republic. Occupying 51,000 square metres,

⁷ *Politiken*, October 23, 2004.

⁸ *s+b*, Autumn 2007.

⁹ *Interview with LEGO manager*, August 27, 2007.

¹⁰ *Ibid.*

the new European distribution centre was in full operation at the beginning of 2007 and handled customers in Europe and distribution centres throughout the world (except North America). The operation was outsourced to DHL Solutions. In addition, the distribution of LEGO products in the United States and Canada was outsourced to Exel Inc., a contract logistics provider operating in Alliance, Texas.

However, no matter how significant the problems were in product development and distribution, sub-optimizing only those areas without improving various aspects of the actual production could hardly bring the company back on track. The LEGO Group's production value chain was divided into the following steps: the development of the molding machine, molding, assembling, pre-packing and post-packing (see Exhibit 4). Assembling and post-packing were the most cost-intensive parts of the value chain. Prior to the crisis, the company owned and operated production plants in Denmark, the United States, Switzerland, the Czech Republic and South Korea. Allocation of roles and responsibilities to most of these factories followed a branding strategy in which one of the Swiss factories only produced DUPLO toys and another produced Technic products. Furthermore, the Danish factory only manufactured LEGO System products, while the U.S. facility predominately served American demands. The vast majority of the production took place in the Danish and U.S. sites, while roughly five to 10 per cent of the LEGO Group's total production was outsourced to Chinese contract manufacturers.

With the new strategic direction of achieving a lighter production portfolio, however, the company started to look for external partners to carry out a larger bulk of its production. There were two main strategic rationales for this. First of all, there was the cost-saving rationale. With the majority of the production in high-cost countries, the management saw major potential for cutting costs by relocating production to low-cost countries. "We were basically turning the 50 year old idea that Denmark and Switzerland were good countries for automatic production upside down," recalled Duedahl, a LEGO vice-president. "The new mantra was: aggressive outsourcing to low-cost countries."¹¹

In spite of the fact that up to 95 per cent of global toy production was located in China, the LEGO Group decided to avoid relocating production facilities to Asia and instead emphasized proximity to its main markets in Europe and the United States. Based on the fact that the European market accounted for approximately 60 per cent of the company's sales, the Czech Republic and Hungary, two low-cost Eastern European countries, fulfilled both the market proximity and cost-saving criteria. These countries were supposed to accommodate most of the capacity transferred from Denmark and Switzerland. In addition, the decision was made to move the company's U.S. plant in Enfield to Mexico in order to supply the North American market, which constituted approximately 30 per cent of the LEGO Group's sales.

Secondly, with a production of approximately 24 billion bricks per year, the LEGO Group rationalized sourcing through potential economies of scale as well as the opportunity to drastically reduce production complexity by targeting large subcontractors. Thus, besides scaling down production in Denmark and closing sites in Switzerland and Korea, it was decided that production should be outsourced to a number of partners. These included Sonoco (a global manufacturer of consumer and industrial packaging products and provider of packaging services); Greiner (a global manufacturer of consumer and industrial packaging products); Weldenhammer (packaging products and services); 2B Pack (packaging products and services); and Flextronics (an electronics manufacturing services company). While the Technic and Bionicle product lines, to a large extent, were to be retained in-house, the Duplo and System lines (characterized by their high-volume production) were predominantly outsourced to Flextronics.

¹¹ *Ingenøren*, October 24, 2008.

Flextronics, a leading multinational electronics manufacturing services (EMS) provider based in Singapore, had a long history of offering services to original equipment manufacturers (OEMs), and was going to be the LEGO Group's largest partner in terms of production undertaken. Flextronics was actually founded in 1969 in Silicon Valley, California, and became in 1981 the first U.S. manufacturer to formally start offshoring production by establishing a manufacturing facility in Singapore. In 1990, however, the company moved its headquarters to Singapore, and had since succeeded in building a network of manufacturing facilities in 30 countries on four different continents. By 2009, Flextronics' net sales were US\$31 billion, and it had a workforce of approximately 160,000 employees (see Exhibit 5). Flextronics' major clients included large multinational companies like Cisco Systems (consumer electronics products), Hewlett-Packard Company (inkjet printers and storage devices), Microsoft Corporation (computer peripherals and consumer electronics gaming products) and Sony-Ericsson (cellular phones). The company had focused its segments into six core areas — automotive, computing, industrial, infrastructure, medical, and mobile and consumer — and it operated with five business units that consisted of “strategic technologies and augmented services that are leveraged across all segments and customer product categories to create scalability and to add flexibility and speed to our segments.”¹² The five business units were Multek (multi-layer printed and flexible circuit boards, interconnected technologies and complex display technologies); Vista Point Technologies (unique product solutions for camera modules); Global Services (logistics, reverse logistics and repair operations); FlexPower (design and manufacturing of semi-custom and custom power supplies and battery chargers); and Retail Technological Services (competitive and flexible field services for customer operations) (see Exhibit 6 for Flextronics' service model).

2. A Troubled Marriage

Following the decision to outsource major parts of production to Flextronics, a contract with Flextronics was finalized in June 2006. This was, according to the Danish company, a “brilliant idea,” as it locked the prices over a long period and thus eliminated the risk of production price fluctuations. In the period from 2004 to 2006, the following were outsourced to Flextronics: parts of the production facilities' capacity in Denmark and Switzerland were relocated to Flextronics' plants in Nyíregyháza and Sarvar, Hungary; the operating control of the LEGO Group's Kladno site in the Czech Republic was handed over to Flextronics; and the Enfield plant in the United States was closed in favour of using Flextronics' newly opened site in Juárez, Mexico. Throughout the transition phase, the LEGO Group was working intensely towards reducing its in-house production capacity from 90 to 95 per cent to the set target of approximately 20 per cent. Actually, the 20 per cent target had never been a strategic goal in itself. “It is very difficult to give such an estimate,” a LEGO vice-president explained. “Right from the beginning, the 80/20 per cent [outsourcing/in-house] ratio was more a communication way. What we have decided is that there are two competences that we need to keep in-house in Billund; that is, molding and packing competences. Whether it is 20 or 10 per cent of production it doesn't matter; what matters is that in the future we will still be able to do what we are doing from the production point of view.”¹³

Flextronics had indeed been the LEGO Group's preferred partner to undertake this task. Because of Flextronics' long history and vast experience in standardizing and documenting work routines and processes to move business activities from site to site, LEGO management was convinced that Flextronics would excel in reducing the complexity of the LEGO production and organization in general. Knudstrup commented after ramping up the collaboration: “We have come to know Flextronics as a very professional partner in connection with the outsourcing of our DUPLO products, which has taken place over the past year. They understand and appreciate the unique values that LEGO products represent, not least the

¹² *Flextronics Annual Report, 2009.*

¹³ *Interview with LEGO manager, August 27, 2004.*

importance of quality and safety which are fundamental to the good play experience.”¹⁴ In an equal manner, Matt Ryan, executive vice-president of Flextronics’ worldwide operations, stated that the relationship “is characterized by intense supply chain collaboration that provides strategic and efficient cost-savings to help improve the company’s competitive market positioning. We are excited to expand our partnership with the LEGO Group as this allows Flextronics further market diversification and enhanced plastic molding capabilities in low-cost regions.”¹⁵ A large part of Flextronics’ motivation for getting into business with the LEGO Group had thus been its interest in getting more competencies and knowledge about plastics, which constituted an important part of its electronics manufacturing activities.

However, the collaboration did not last for long. Despite LEGO’s goal of optimizing its global supply chain, the outsourcing collaboration was cancelled after merely three years. As became evident, the result of attempting to manage and overcome the complexity of the production network by outsourcing it to external providers was actually only a more complex global manufacturing footprint. In particular, the collaboration with Flextronics presented the LEGO Group with some rather daunting and unexpected challenges. Considering the extreme pace of the transition, it eventually turned out problematic for LEGO to coordinate and control the increasingly global and complex network of production facilities as well as to ensure a reliable and seamless transfer of production knowledge between the two. For example, there was the challenge of aligning the LEGO products’ seasonal fluctuations and unpredictable demand with Flextronics’ business model. About 60 per cent of the LEGO production was made in the second half of the year, the product had an average lifespan of 16 to 18 months, and the demand uncertainty fluctuated with plus or minus 30 per cent. The LEGO Group’s need for flexible and market-responsive business solutions presented a strategic misfit with Flextronics’ more stable and predictable operations in which economies of scale was a key phrase. Divergence and misalignments between the two had therefore become the outcome.

3. A Bounded New Start

In 2008, as the LEGO Group announced that it would phase out the cooperation with Flextronics, the process of sourcing back the production was initiated. This was embarked on by the LEGO Group taking over the control of the Kladno factory in the Czech Republic in February 2008. Flextronics was still in charge of molding LEGO products at two sites in Hungary (Sarvar and Nyíregyháza) and one site in Mexico (Juárez) until July 2008, when LEGO management affirmed that these would follow suit with the site in the Czech Republic. In Hungary, LEGO concentrated its activities at the Nyíregyháza facility by taking over the plant and its workforce. During the first quarter of 2009, the Juárez production moved to a new site fully owned by the LEGO Group in Monterrey in northeast Mexico, and the site was up and running in the second quarter of 2009.

“We are not satisfied with the effectiveness in the outsourced facilities,” commented Knudstorp briefly after the decision to end the cooperation was made. “It takes more time to educate people than we had expected, and that means that we are still more effective in Billund.”¹⁶ Duedahl, however, argued that it might just as well have been the LEGO Group that had not been correct for Flextronics as the other way around: “All in all, we had to realize that our contract also made it difficult for Flextronics to carry out the responsibilities of the collaboration with LEGO in a sound manner. The supplier, like us, has the same need for a profitable business model.”¹⁷

¹⁴ LEGO press release, June 20, 2006.

¹⁵ Ibid.

¹⁶ *Jydske Vestkysten*, July 1, 2008.

¹⁷ *Ingenøren*, October 24, 2008.

Looking back, the attempt to cut costs and reduce complexity quickly had, in fact, complicated matters for the worse, and thus hindered a conducive foundation for creating profitable synergies. At a glance, the Flextronics adventure therefore looked like a failure. “We have learned that even though everything points at outsourcing, it might still not be the best solution,” said Duedahl.¹⁸ Still, however, the collaboration had brought along a number of positive externalities. The engagement had first of all helped LEGO to expand its global operations footprint despite its difficult financial situation. Prior to Flextronics, it was hardly possible to establish the new and needed operating bases in Mexico and Hungary. Flextronics had thus provided the Danish company with the necessary impetus for altering its global production network to serve important markets while saving costs.

Perhaps more importantly, the collaboration had given the LEGO Group an indispensable lesson in understanding its own processes and structures. As Duedahl explained, “We have learned that we are more special than we expected to be.”¹⁹ In addition, Flextronics possessed valuable experience and knowledge in relation to the documentation and standardization of the production. Previously, the LEGO Group, to a large extent, had carried out its production processes without paying too much attention to the documentation of it. “We had had the pleasure of being in Billund for 40 years with many loyal colleagues,” said Thomas Nielsen, a LEGO manufacturing vice-president. “The downside to this, however, is that you become rather lazy on the documentation side as everybody with many years of experience knows exactly what to do.”²⁰

As the LEGO Group went from producing the absolute majority in-house to becoming highly dependent on external partners, changes were unavoidable. With the Flextronics collaboration, LEGO management came to realize not only the need, but also the value, of documenting work processes, communication lines and interfaces between activities and tasks in the production. “Production in another country — even within the same company — requires ten times more documentation than in the company that it is moved from,” rationalized Michael Vaag, a LEGO supply chain manager.²¹ The increased employment of process documentation had given the LEGO Group transparency and control, and thus ample room to manage challenges of complexity and to identify the stronger and weaker parts and links of the production network. In this respect, LEGO management had introduced in 2005 a deliberate sales and operations planning (S&OP) process to monitor and coordinate the different production facilities’ roles, capacities and responsibilities in relation to the supply. This approach had stuck with the company also after the break-up with Flextronics and was considered “a strong fundament for the process.” Before being introduced in 2005 as a global process covering all LEGO in-house and outsourced sites, S&OP ran for a year at the company’s site in Enfield, United States, resulting in significant operations performance improvements. Michael Kehlet, a LEGO flow planning director, described S&OP as “a process gluing all operations’ work flows together.”²² The global S&OP process at LEGO was organized around three key areas: sales, production and product development. Monitoring and coordinating these areas took place through a multi-stage cycle, which started with data consolidation at the site level and concluded at a global executive S&OP meeting. The S&OP cycle took place every month, providing LEGO with a reliable and constantly updated overview of global operations for the following 12 months. Gradually, the S&OP process evolved into a rather critical tool for creating transparency and supporting management efforts in a relatively fragmented and globally distributed operations set-up, which involved numerous capacity groups and outsourcing partners.

¹⁸ *Ibid.*

¹⁹ *Ibid.*

²⁰ *Interview with Thomas Nielsen, October 7, 2009.*

²¹ *Ingenøren, March 14, 2008.*

²² *Interview with Michael Kehlet, September 13, 2008.*

Along with its surge in documenting business processes, the LEGO Group, through Flextronics, had also recognized the strength of standardizing its processes. Actually, standardizing the business processes had always been an integral part of the LEGO Group's approach to production. With the production of around 24 billion bricks per year, a high degree of standardization was obviously imperative for the extreme accuracy required. The collaboration with Flextronics, however, had illuminated LEGO management's perception of how standardization could be used more strategically in the firm. Chresten Bruun, a senior production director, explained how the virtues of standardization had been taken to new frontiers within the company. "We are standardizing on three levels," he said, "the upper level: that is our way of thinking, our mindset, values, attitudes; on the mid level: how we operate our planning processes, follow-up processes, etc.; and the lower level: that is more the hardware part, the machines, lines and the layout in the production."²³ The total number of component portfolios had accordingly decreased from approximately 12,000 in 2004 to roughly half that number in 2008 (reaching levels that existed before 1996), with the final target being 5,500 for the year 2011. The LEGO mini figure policeman, for instance, was reduced from 16 different versions to only four. The standardization had implications throughout the whole value chain starting with the design of new products — as every new product should contain at least 70 per cent "evergreen" bricks — i.e., bricks that could be used in more products. Reducing the more unique and product-specific bricks to only 30 per cent of all bricks allowed for a more flexible and smooth supply chain.

Its international network of production facilities had also changed from mainly branding factories, where each facility had been responsible for one single product, to facilities that were more standardized, with their main purpose being to serve their respective markets. This gave the company considerable room to benchmark the factories, and thus optimize the total cost advantage of the production facilities in which the reaction time to market was a decisive parameter. In the aftermath of Flextronics, Michael Vaag, supply chain manager, summarized his success criteria for global production in four ways: "1) It is easy to move technology — it takes more time to build competences; 2) a clear plan for training and education shall be present; 3) there shall be local leaders who know the working culture in the country; and 4) there shall be a clear key figure structure which ensures actual benchmarks/KPI between the factories."²⁴

In sum, the LEGO Group read the collaboration with Flextronics in three different stages — before, during and after — each stage with different challenges and opportunities (see Exhibit 7). What seemed to be the recurring theme throughout the entire process, however, was how LEGO management continuously increased its stock of knowledge concerning how to optimize its processes and organization to overcome and manage the multitude of complex issues deriving from having a global network of production.

EPILOGUE

The LEGO Group's recent financial record showed that Knudstorp and his executive management had indeed been successful with the turnaround strategy: the profits for 2008 and 2009 of DKK1.85 billion and DKK2.2 billion, respectively, were the largest in the Group's history. Commenting on this, Knudstorp said, "Our results for 2008 have been extraordinarily good. And this applies not only to the financial results. During 2008, we also took over two factories in the Czech Republic and Hungary, and we began the construction of a factory in Mexico. The successful change to [more in-house] production, combined with strong sales increases, is attributable to the impressive performance by all our employees."²⁵ The back-sourcing from Flextronics had played an inevitable part in achieving this. The new dominantly in-house

²³ Interview Chresten Bruun, January 8, 2010.

²⁴ *Ingenøren*, March 14, 2008.

²⁵ LEGO press release, February 23, 2009.

production network consisting of factories in Denmark, Hungary, the Czech Republic and Mexico seemingly gave the LEGO Group enough controllable flexibility to balance market demands with its network of offshoring activities. However, the LEGO executive management knew not to rest on its laurels. Although looking promising, the new production network was, in fact, a mere result of avoiding the emerging unexpected costs from having outsourced the production. A central question was therefore: What had the LEGO Group learned from the Flextronics collaboration and how could it use this knowledge constructively in the future?

Exhibit 1

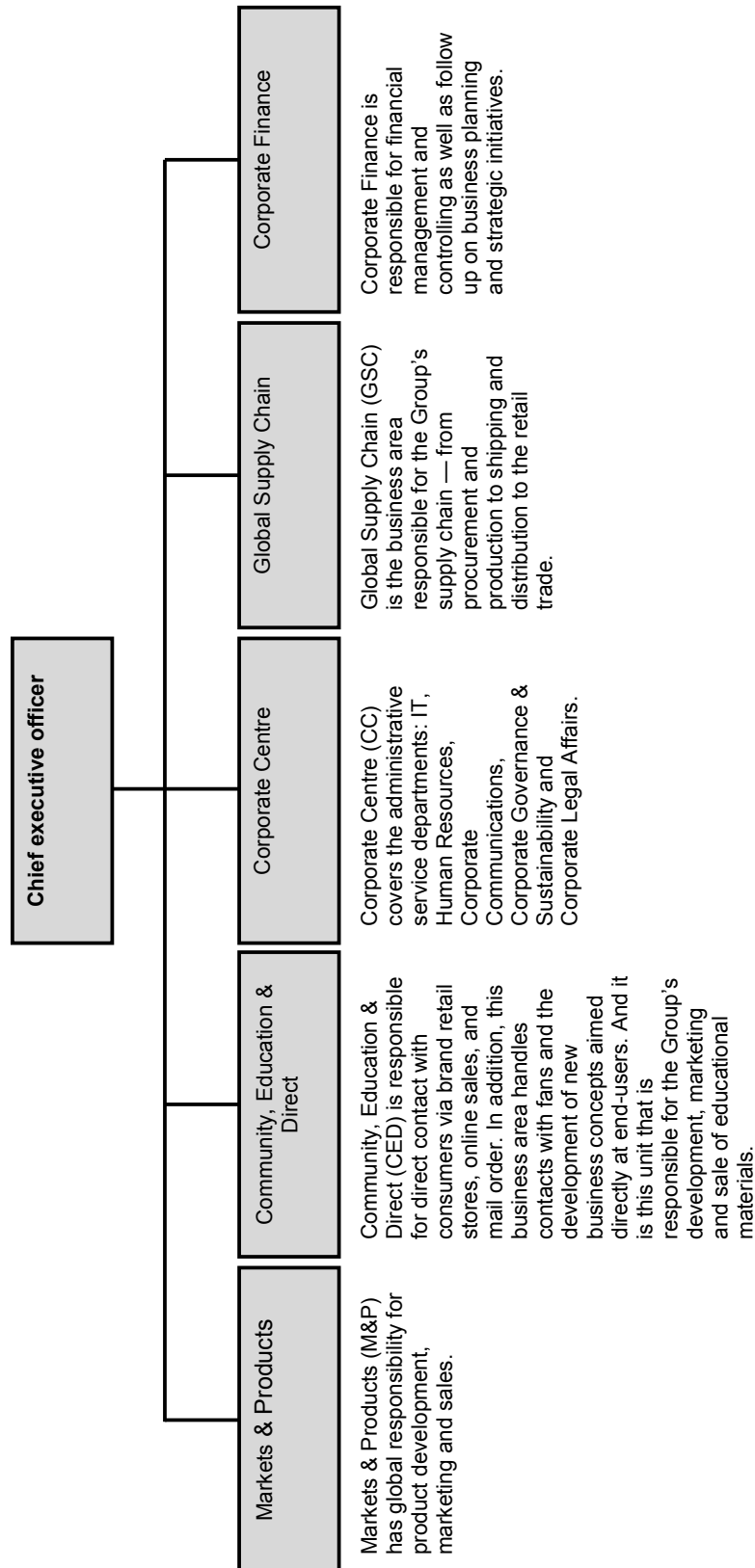
THE LEGO GROUP FINANCIAL FIGURES

mDKK	2009	2008	2007	2006	2005
HIGHLIGHTS					
Income statement					
Revenue	11,661	9,526	8,027	7,798	7,027
Expenses	(8,659)	(7,522)	(6,556)	(6,393)	(6,605)
Operating profit	3,002	2,002	1,471	1,405	423
Financial income and expenses	(15)	(248)	(35)	(44)	(51)
Profit before tax	2,887	1,852	1,414	1,281	329
Net profit for the year	2,204	1,352	1,028	1,290	214
Balance sheet					
Total assets	7,788	6,496	6,009	6,907	7,058
Equity	3,291	2,066	1,679	1,191	563
Liabilities	4,497	4,430	4,330	5,716	6,495
Cash flow statement					
Cash flow from operating activities	2,655	1,954	1,033	1,157	587
Investment in activities, plans and equipment	1,042	368	399	316	237
Investment in intangible assets	216	75	34	-	-
Cash flow from financing activities	(906)	(1,682)	(467)	597	(656)
Total cash flow	501	128	592	1,925	1,570
Employees					
Average number of employees	7,058	5,388	4,199	4,908	5,302
RATIO					
Financial ratios (in %)					
Gross margin	70.3	66.8	65.0	64.9	58.0
Operating margin (ROS)	24.9	22.0	18.1	17.0	5.4
Net profit margin	18.9	14.2	12.8	16.5	3.0
Return on equity (ROE)	82.3	72.2	71.6	147.1	44.2
Equity rate	42.3	31.8	27.9	17.2	8.0

Source: The LEGO Group Annual Report, 2009.

Exhibit 2

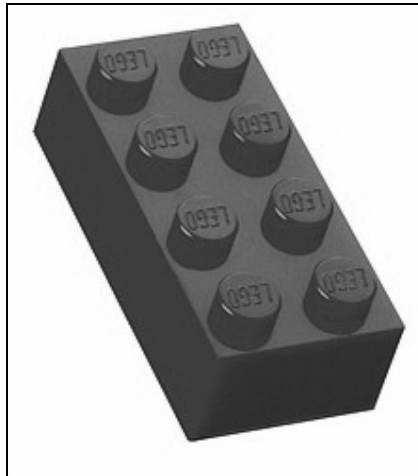
THE LEGO GROUP STRUCTURE



Source: The LEGO Group Annual Report, 2009.

Exhibit 3

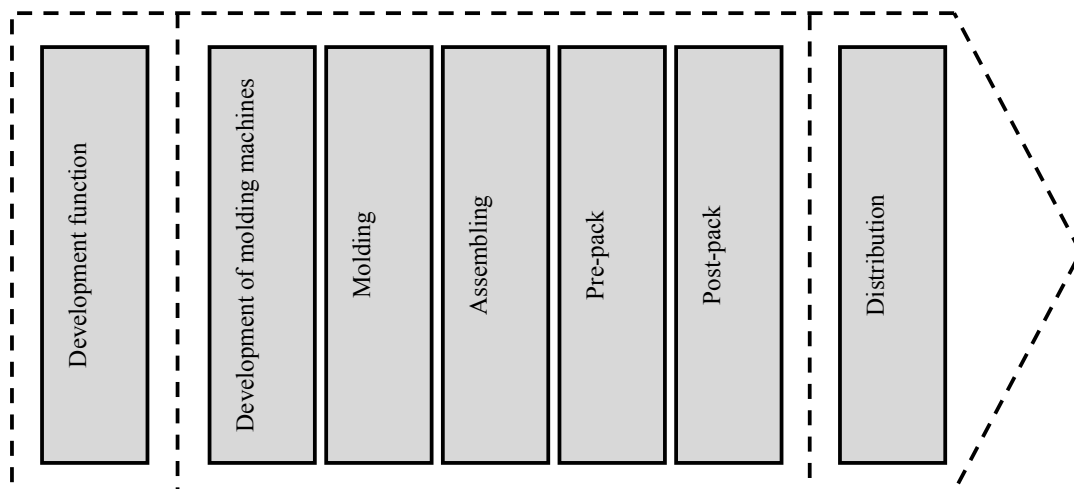
THE LEGO BRICK



Source: www.lego.com.

Exhibit 4

PRODUCTION VALUE CHAIN



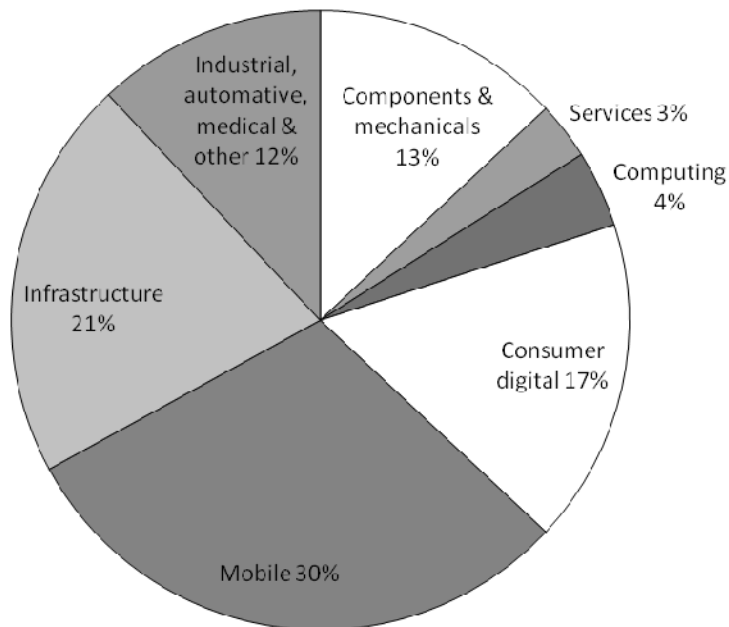
Source: Authors' own creation.

Exhibit 5

FLEXTRONICS IN BRIEF

- \$31 billion in annual sales
- 160,000+ employees worldwide
- 120,000 employees in Asia (90,000 in China)
- Operating in 30 countries
- 27 million square feet of capacity (nine industrial parks)
- Large customers: Casio, Cisco Systems, Dell, Eastman Kodak, Ericsson, Hewlett-Packard, Microsoft, Motorola, Research in Motion, Sony, Sony-Ericsson, Sun Microsystems, and Xerox.

Flextronics' Market Segment Portfolio, 2007



Source: www.flextronics.com.

Exhibit 6
FLEXTRONICS' SERVICE MODEL

Design	Build	Ship	Service
<ul style="list-style-type: none"> Flextronics employs over 4,000 design engineers. Flextronics owns 364 patents. <p><u>Capabilities</u></p> <ul style="list-style-type: none"> Industrial design Systemic architecture Mechanical design Embedded systems design Software systems Product launch/NPI DFx Services 	<ul style="list-style-type: none"> Flextronics runs nine industrial parks around the world focused on building the world's leading technology products. <p><u>Capabilities</u></p> <ul style="list-style-type: none"> PCB/Flex circuits Optomechanics LCD displays Cables Machining Plastics Metal fabrications SMT assembling System integration and final test 	<ul style="list-style-type: none"> Flextronics is involved in doing BTO and CTO for many of the most complex technology products in the world from industry leading companies such as Cisco, HP, Huawei, and Lenovo. <p><u>Capabilities</u></p> <ul style="list-style-type: none"> Build-to-order (BTO) Configure-to-order (CTO) Distribution and direct fulfillment Outbound logistics and hubbing 	<ul style="list-style-type: none"> Flextronics Global Services is the global repair leader for electronic products servicing 3 million (M) cell phones, 2M laptops, 9M PCBAs, and 2M game consoles every year. RTS Technicians handle 600,000+ customer transactions per month. Global Services' sites dedicated to Service Parts Logistics process and ship over 12M spare parts for customers every year. <p><u>Capabilities</u></p> <ul style="list-style-type: none"> Repair/refurbishment and warranty support Service parts logistics Remarketing Retail technical services Asset recovery Reverse logistics

Source: www.flextronics.com.

Exhibit 7

THE THREE STAGES OF THE LEGO GROUP'S OFFSHORE OUTSOURCING

Pre-Flextronics			Flextronics		Post-Flextronics	
2003	2004	2005	2006	2007	2008	2009
<ul style="list-style-type: none">Tight control of all elements of the value chain			<ul style="list-style-type: none">Plan to outsource up to 80% of production capacity to external partners		<ul style="list-style-type: none">Backsourcing of the plants operated by the strategic external partner FlextronicsLEGO maintains relationships with a number of smaller external suppliers	
Challenges: <ul style="list-style-type: none">Cost of production located in predominantly high-cost countriesOver-diversified and complex products portfolioUnderperforming in-house supply chainNegative financial resultsHigh capital investment requirementsHigh fixed costs			Challenges: <ul style="list-style-type: none">Fast pace of transitionProduction know-how transfer to external partnersBrand vulnerability and dependency on partnersSupply uncertaintyDeveloping new capabilitiesMaintaining knowledge about productionManagement of new relationshipsIncreasing complexity of production footprint		Challenges: <ul style="list-style-type: none">Stabilizing and optimizing the operations after another stage of transitionBalancing predominately internal supply capacity with market demands	

Source: Authors' own assessment.