

COLOPLAST A/S — ORGANIZATIONAL CHALLENGES IN OFFSHORING

Professor Bo Bernhard Nielsen, Professor Torben Pedersen and Management Consultant Jacob Pyndt wrote this case solely to provide material for class discussion. The authors do not intend to illustrate either effective or ineffective handling of a managerial situation. The authors may have disguised certain names and other identifying information to protect confidentiality.

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INTRODUCTION

Director Allan Rasmussen took a good deal of pride in the achievements of Coloplast A/S¹ (Coloplast) in Tatabánya, Hungary. In consecutive quarters in 2004, the plant had outperformed the company's longer established Danish production units in quality levels (see Exhibit 1). Rasmussen had been the Tatabánya plant's manager, its first, since 2001. Just three and a half years later, he was responsible for the daily management of a plant with a head count of 550 and production valued at 1.5 billion Danish kroner (DKK). In 2005, he resumed his position as director of Coloplast's Danish subsidiary and returned to Denmark.

With the Hungarian operation, Coloplast had learned important lessons in designing and implementing a relocation process, and in managing the communication involved. Although Coloplast had some minor production facilities outside of Denmark, the scope of its involvement in Hungary was unparalleled. When the expansion was completed, the Hungarian unit would employ 900 staff — roughly 15 per cent of the company's total workforce. Coloplast's involvement in Tatabánya was part of the company's manufacturing strategy to increasingly locate scale production in low-cost regions. Internal estimates suggested that Coloplast would double its product volumes by 2010, a goal that required a 50 per cent increase in manufacturing space and staff. As described by Chief Operating Officer (COO) Lars Rasmussen in an interview in 2005 with the Danish daily newspaper *Berlingske Tidende*: "We have experienced an organic growth of 10 per cent annually, which means that we have to expand production facilities continuously. Then you start to think whether it is advantageous to expand on a plowed field on Zealand."²

Tatabánya, in the western part of Hungary, had been chosen as the preferred location for the relocation. The Hungarian project had, from the outset, the top management's attention and support, which turned out to be crucial, because it seemed to have opened a Pandora's box of issues despite the encouraging

¹ A/S is the Nordic equivalent of Ltd. or Inc.

² Coloplast Involved the Employees" (translated), *Berlingske Tidende*, April 27, 2005, p 3.

development of the production unit. The company needed to address many internal challenges before it could fully exploit the unit's potential in Hungary. In particular, it had been difficult to define new task areas and roles for the Danish production workers as the volume production moved to Tatabánya. Management needed to analyze how internal linkages between tasks in pilot and ramp-up production in Denmark interfered with volume production in Hungary, and how knowledge residing in Danish production units could be transferred more effectively to the Tatabánya workers. In addition, Coloplast had to address organizational inertia in Denmark that could slow down the offshoring process. Another concern involved the level of standardization in the two locations' production systems. Coloplast's Danish production units had operated very independently, each with its own unique production planning systems, which created a major challenge in the standardization of systems and internal procedures before the relocation to Hungary.

After three and a half years in Tatabánya, Allan Rasmussen was well aware that many of the issues amplified by the establishment of the Hungarian production unit touched upon organizational assumptions and activities taken for granted in Coloplast. Solving these issues might have profound implications not only for the Hungarian operation but for the entire organization. The main challenge Rasmussen faced as he resumed his directorship in Denmark was to convince the rest of the organization that Coloplast needed to make significant changes in order to exploit the full potential in Hungary.

HISTORY

Coloplast's story began in 1954 with Elise Sørensen and her sister, Thora, who underwent an ostomy surgery. Being a nurse, Elise wanted to help her sister, and so she developed a disposable ostomy bag made from polyethylene that could adhere directly to the skin around the stoma. Then she met with a number of plastic manufacturers to put her idea into production, but none of them saw its business potential. Among these plastic manufacturers was Aage Louis-Hansen at Dansk Plastic Emballage (Danish Plastic Packaging), a packaging company, who only agreed to manufacture the device after his wife, also a nurse, convinced him to do it. As a result, Louis-Hansen produced the world's first disposable ostomy bag in 1955 at Danish Plastic Packaging and two years later, in 1957, founded Coloplast. The company's mission is "throughout the world . . . within our selected business areas, to be the preferred source of medical devices and associated services, contributing to a better quality of life."³

Based on its adhesives technology, Coloplast specializes in five business areas (see Exhibit 2). Ostomy and urology and continence products within the chronic care segment are targeted at people who have undergone an ostomy surgery rerouting their intestinal outlet through the abdominal wall, or who experience problems controlling their bladder or bowel movements. The wound care area produces a variety of dressings to treat difficult-to-heal wounds. Coloplast's skin health division produces antifungal creams, lotions, cleansers and moisturizers to support the natural processes of the skin. Lastly, under the Amoena brand, Coloplast operates as the largest European supplier of external breast forms for women who have undergone mastectomies. For this group, the company also marketed an assortment of specially designed bras and swimwear. In terms of revenue, in 2004 ostomy and continence care comprised the largest business areas, contributing 39.4 per cent and 23.6 per cent, respectively, while breast care, skin health, wound care and other products were responsible for 7.4 per cent, 4.6 per cent, 12.2 per cent and 12.8 per cent, respectively. In terms of operating profit distribution, the chronic care division (ostomy and continence) with its profit margin of 20 per cent, accounted for 92.5 per cent of total group profits, while the strategic business units contributed the remaining 7.5 per cent.

³ Coloplast annual report 2003/04

The concept of early internationalization and “born global” seemed to apply to Coloplast. In 1957, every second ostomy bag was exported. In 2005, more than 97 per cent of the company’s revenue was generated outside of Denmark. Eighty-one per cent of revenue derived from Europe and another 13 per cent from the Americas. Sales were maintained through a vast number of subsidiaries, and manufacturing took place in Denmark, Germany, Hungary, the United States, Costa Rica and China.

STRATEGY 2008

In 2005, Coloplast’s medium-term objective was to achieve a turnover of DKK9 billion and a profit margin of 18 per cent by 2008 (see Exhibit 3). To accomplish this goal, the company focused on two pillars:

- A 10 per cent organic sales growth to be achieved through product innovation. Coloplast’s goal was to have at least 20 per cent of revenue generated by products launched within the past four years. In 2003/04, the share was 22.3 per cent.
- Optimization of processes within production units in Denmark, and relocation of volume production for mature product lines to Hungary and China.

Despite the company’s attention to innovation and marketing of new products, some products enjoyed very long product-life cycles. Coloplast still sold ostomy products that hardly deviated from those produced 30 years earlier. These products were utilized by private people in their homes, where stability and conformity were important parameters.

Industry analysts stated that the company’s growth strategy was ambitious yet realizable. Coloplast needed to confront certain risk factors at the macro level, including reimbursement policy changes, price pressures due to wholesaler concentration and powerful insurance companies, harmonization of health care systems resulting in lower prices in high-price countries, and escalation of parallel importing. Market growth could also be hampered by earlier cancer detection, which reduced the need for radical surgery; improved surgical procedures; and new technologies and treatment alternatives. These trends had shifted power towards the payer and the consumer. Traditionally, Coloplast had nurtured a very close relationship with health care professionals, in particular nurses, to advise ostomy and continence patients.

The fiscal year 2003/04 was very challenging for Coloplast because of the new German health care reform, weak currencies and poorly performing strategic business units. In common with other health care players, Coloplast depended indirectly on public reimbursement schemes and was therefore susceptible to policy changes. As Germany was Coloplast’s largest market, reductions in German reimbursement schemes affected Coloplast substantially. Management projections for 2004/05 were bleak as the reform was to come into effect on January 1, 2005 leading to price reductions for ostomy care and continence care products of 13 per cent and 10 to 15 per cent, respectively. As Coloplast’s German sales for the two segments amounted to DKK1.5 billion in 2003/04, such price cutbacks impeded growth efforts. Management estimated the effect on its profit margin to be one to two per cent, equalling DKK60 to DKK120 million.

At the same time, health care reforms were underway in Italy, Spain and France. If the effects were similar to those seen in Germany, they could neutralize the savings accrued from offshoring, which in turn could spur further cost containment initiatives. In addition, Coloplast retained 65 per cent of its cost base in Denmark, although 97 per cent of sales were generated outside the country. Roughly 80 per cent of revenues stemmed from European Union countries or related areas — a figure that was not likely to change

significantly over the next three to four years. In terms of volume, the European market was expected to grow by 84 per cent between 2003 and 2011, while the volume of sales in the rest of world was projected to grow 197 per cent in the same period (see Exhibit 4). With the greatest share of sales generated outside Denmark, Coloplast was affected by currency fluctuations. Sales were invoiced in local currencies and converted into Danish kroner for consolidation into the Coloplast accounts. In 2004, exchange rate fluctuations had a negative impact on revenue of two percentage points. The company implemented significant organizational changes to improve the company's capability for reaching growth and profit objectives.

Production

Denmark hosted virtually all of Coloplast's production prior to the relocation to Tatabánya. However, since 2001 an increasing share of volume production was relocated to Hungary. Coloplast divided its production into four interconnected phases. First, pilot production involved the verification of the product idea, meaning that manufacturing processes were developed and documented and appropriate materials were selected to produce the right quality. Moreover, pilot production delivered products to support test marketing efforts. The pilot production phase was a trial and error process and engaged resources from various departments, including research and development (R&D), design and marketing. Volume-wise, pilot production comprised roughly four per cent of the company's total production but was largely dependent on close interaction and co-location with R&D units.

Second, the ramp-up phase was characterized by the attainment of stability and the further validation and documentation of the production processes. An important feature of the production process was that all machinery was built from scratch specifically for a particular production task, and Coloplast was highly involved in building and fine-tuning the machinery. The key objective of the ramp-up process was to develop knowledge and documentation in order to design tailor-made production systems that could be offshored to low-cost areas. These production systems included such operational determinants as volume, cost price, delivery, lead times and error rates, along with quality and maintenance procedures. In terms of volume, 15 per cent of Coloplast's production could be regarded as ramp-up.

Third, 81 per cent of the company's production volume fell under the category of scale or volume production, which took place in Hungary and Denmark. China was expected to be the main geographic volume production location by 2010. The purpose of this type of production was to explore economies of scale, make appropriate capacity expansions, and optimize quality, productivity, delivery, lead time and error rates continuously (see Exhibit 5).

Fourth, range care was performed in Denmark. Range care referred to the incremental innovation on products that were already produced in larger volumes in low-cost regions. These small improvements on various product types took place in Denmark and were subsequently implemented in Hungary.

Offshoring to Tatabánya, Hungary

Moving part of the volume production to Hungary was the first time Coloplast undertook a major relocation process to a low-cost area. The company did not have a template to apply for how to relocate production and could therefore capture important learning effects. In 1999, Coloplast took its first serious look at relocating production to a low-cost region. The executive committee evaluated potential locations through field trips to Poland, Ireland, Czech Republic and Hungary. In conjunction with the Investment

Fund for Central and Eastern Europe, the company carried out extensive feasibility studies in order to optimize its location choice. Moreover, Coloplast interviewed Danish companies already established in the area, which provided hands-on experiences and details on advantages and pitfalls, giving Coloplast a bird's-eye view of key issues involved in relocation. As it turned out, the chosen location in Tatabánya, Hungary, was right next to the Danish pump manufacturer, Grundfos. Grundfos reported positive experiences with location close to the capital Budapest, the airport and other western companies, for example, auto makers.

Commenting on the underlying reasons for the company's engagement in Hungary, Allan Rasmussen said:

Our establishment in Hungary is due to the production costs, which are 20 per cent less than Danish levels. Even factoring in a raise in wages we still believe that producing in Hungary will be financially advantageous in 10 years. Moreover, we have access to positive and well qualified employees at all levels. While sickness absence oscillates between 5 [and] 10 per cent in Denmark, it is less than 1 per cent in Tatabánya.⁴

Furthermore, building costs were 50 per cent lower in Hungary, which allowed for savings on depreciations (see Exhibit 6).

While cost considerations were clearly an issue for the company, Coloplast deemed logistical considerations to be more critical. Large regional differences existed within Hungary in terms of wage levels and infrastructure. Coloplast's production was located in the western part of the country, which was characterized by higher wages and a far better infrastructure. In addition, the fact that Tatabánya was located in an area with many other western companies, including the Danish pump company across the street, also played a psychological role in the location choice.

Actually, Coloplast initiated production on April 1, 2001, in rented facilities in the neighborhood of the new plant, before phase one of construction was finalized. According to Coloplast, this approach allowed it to train new employees, relocate machinery from Denmark and monitor the construction process closely. When the first plant was completed, workers did not need to start from scratch but could easily install machinery and maintain product lines.

Coloplast built up production facilities in Hungary in three phases. Phase one was operational in April 2002 and constituted an investment of DKK65 million, and 13,800 square metres of production and administration areas. With an additional DKK65 million, phase two added 10,000 square metres of space for production and clean rooms. Phase three became operational in October 2004 and involved another 13,000 square metres at a cost of DKK80 million. The product lines relocated to Hungary included Coloplast's most mature products within the ostomy segment, as well as dressings, catheters, baseplates and adhesives. The organization in Hungary was organized around the manufacturing process with four levels down to the operators. As opposed to production units in Denmark, where boundaries between production and support functions appeared more blurred, Coloplast had focused on manufacturing activities when building up the Hungarian facility. This had been done to clearly define roles and responsibilities, and to underline the fact that volume production was the prime activity in Hungary (see Exhibit 7).

In conjunction with the plant, Coloplast had primary support functions including quality, engineering, maintenance, planning and logistics. These functions were kept internally. By contrast, secondary support

⁴ "Coloplast Ready for Expansion" (translation), Børsen, December 12, 2002, p. 14.

functions such as information technology (IT), facility management and accounting all qualified for outsourcing. However, Coloplast had had to in-source finance due to the sluggish reaction time of local suppliers. In the beginning of the offshoring process, three product divisions were involved in the decision-making concerning Tatabánya, which complicated the process. To speed up matters, a direct reference line was established between former plant manager Allan Rasmussen and group management, specifically COO Lars Rasmussen.

Internal calculations suggested that Coloplast's unit in Hungary would employ 900 people by 2007. Given Hungary's low labor costs and a favorable corporate tax rate of 16 per cent, as compared to 28 per cent in Denmark, the plant would realize yearly savings of minimum DKK75 million before tax. The opening of Coloplast's plants in Tatabánya was satisfactory and the company then considered how operations in Hungary could be further developed. Inspired by the positive experiences, Coloplast's CEO Sten Scheibye stated: "When we have established a knowledge base in Hungary, then we may also relocate some development activities to Hungary. If we relocate development, it is not necessary to maintain the same relatively large employee representation in Denmark."⁵

Internal Organizational Challenges

During the Hungarian offshoring project, Allan Rasmussen had encountered internal challenges on two levels. One involved systems and the transformation of organizational structures (such as IT) to facilitate the relocation of production systems, and the other concerned human resource aspects, such as limiting attrition rates, transferring knowledge effectively and limiting social hardship.

As the relocation project unfolded, Coloplast discovered that its Danish production facilities were characterized by a decentralized organizational structure with a high degree of autonomy in its production planning systems and documentation. Coloplast had six different plants in Denmark, each of which specialized in one of Coloplast's three main business areas: ostomy, continence products and adhesives (see Exhibit 8). The decentralized production facilities and the lack of fixed procedures and structured interfaces worked very well in a purely Danish context, because communication was still relatively easy with most facilities located within half an hour's drive from each other. However, adding the Hungarian production unit complicated communication and amplified the weaknesses of the decentralized, informal and loose structure.

Although the relocation involved mature product lines, the decentralized structure complicated the task of documenting production and planning systems. Standardization did not mark the way production was organized in Coloplast's Danish factories. For instance, each factory used different programmable logic controllers (PLCs), simple computers to control and manage automatic production machines. In addition, each factory felt that its way of organizing production was unique and could not be altered. Furthermore, Coloplast needed to address the issue of documentation. Coloplast relocated the most mature product lines first, and manuals for these lines were virtually non-existent. Therefore, the company had to document its production techniques and equipment operation. The Danish process operators knew how to tackle operational inconsistencies in the machinery, but this knowledge was embedded in the minds of the operators and had not been written down in manuals.

One complicating factor was that knowledge of production processes not only had to be documented but translated into Hungarian. Another was that the training and knowledge transfer required human interaction. The company's challenge was to facilitate effective knowledge transfer to local employees. At

⁵ "Competitiveness Calls for Relocation" (translation), *Børsen*, October 17, 2003, p. 8.

first, Coloplast planned to bring the Hungarian employees to Denmark so that they could gain insight into production systems and techniques. However, this plan stalled as Danish unions required that the Hungarians work under the Danish collective agreement, an obligation that Coloplast found hard to accommodate. To meet this requirement, Coloplast would have to pay the Hungarian workers a salary in line with Danish standards during the training period, but then, when operations started in Hungary, the employees would be receiving 20 per cent of the Danish wages, in line with Hungarian standards. Instead, the company sent Danish operators to Tatabánya to train their colleagues. Paradoxically, this solution worked well on a psychological level, as the Danish employees had the feeling of “giving something” to their new colleagues, rather than the feeling of being deprived (or even replaced) that might have arisen if the Hungarians had been trained in Denmark. Nevertheless, the language barrier constituted a major problem as the Hungarians’ English skills were inadequate. As a solution, Coloplast used Danish-Hungarian interpreters to help with communication between the Danish and Hungarian employees.

Overall, the transfer of knowledge to the plant in Tatabánya worked acceptably and solutions to problems were improvised. However, Coloplast felt that it could further improve its incentives to strengthen the transfer of knowledge. The Danish operators’ expectations and approaches were, in some instances, not aligned with the Hungarian workers’ backgrounds and professional profiles. On average, the Hungarians had a very high technical level and enjoyed considerable experience from working for other Western multinationals in Hungary. Some workers had worked between five and 10 years for car companies, such as Audi, where quality controls and production planning were even more structured and systematized than at Coloplast. Yet the Danish employees had a tendency to simplify instructions excessively or act passively in the knowledge transfer process, approaches that created some misunderstandings and an underestimation of the Hungarian workers’ skills. Although a common platform of knowledge exchange was established gradually, in hindsight Coloplast realized the exchange mechanisms could be improved. Coloplast’s management felt that the Hungarian employees clearly had something to give the Danish workers in terms of production planning and quality controls. The key was to create a forum in which best practices could be shared, to make the most of the strengths of each group.

Communication and Employee Commitment

Right from the outset of the relocation to Hungary, Coloplast involved employee representatives in a liaison committee to plan communications with production workers. The preparatory work took three months and was undertaken in order to avoid unnecessary problems. “The process was very important as it enabled those involved to tell about the consequences with confidence. We [employee representatives] evaluated the decision and were quite confident when we delivered the message to the employees,”⁶ said Lise Schachtschabel, senior shop steward and a member of the liaison committee; “the most important thing in a situation like this is to maintain a high level of information and tell things in a direct manner. We discovered that some employees started guessing. Honesty and openness are key issues in this situation.” Lars Rasmussen added: “Some become deaf when they hear that jobs are to be relocated. Thus, we did our utmost to communicate clearly. We have approximately 1,500 employees affected by the relocation and, if communication is vague, misunderstandings may arise and work stoppages can occur.”⁷

As of July 2005, Coloplast had not experienced stoppages. Over the prior three years, Coloplast had moved 600 jobs to Tatabánya in Hungary. Hence, the employees knew that the relocation of production was a strategic avenue that management might choose. The fact that Coloplast had experienced consecutive years of over 10 per cent organic growth also lessened concerns over layoffs and provided leeway in Denmark to

⁶ “Coloplast Involved the Employees” (translated), *Berlingske Tidende*, April 27, 2005, p. 3.

⁷ Ibid.

upgrade production workers to more advanced assignments. Each time a machine was relocated to a low-cost area, the worker affected was offered a new position in the company. "We managed to remove the uncertainty among many employees. Those employees that are committed know that they will have a future here," commented Lars Rasmussen.

Contemplating an international relocation of production normally involves social hardship and brings about substantial one-off costs, such as severance payments. In the Hungarian project, Coloplast had managed to minimize these costs primarily through internal redeployment. The company also leveraged voluntary attrition and early retirement. Coloplast had been able to control the process by offering additional training to employees whose jobs were affected. Thereby, the company avoided some of the negative impact on employee motivation and performance that comes along with a restructuring program. However, looking ahead, Coloplast could not expect to tackle the employment situation in Denmark with the same ease as it handled the relocation to Hungary. The number of full-time production workers in Denmark was expected to fall quite significantly, from 1,660 to 1,077, during the period from 2004 to 2011. These projections in employee requirements underlined the necessity of addressing the issue in an early stage.

Local Sourcing and Distribution

Despite the positive results of the Hungarian production unit, the offshoring process had consumed substantial managerial resources. The number one priority had been to streamline production processes, which meant that other attractive opportunities were missed, including the possibility of sourcing materials and machines locally. The granulate material that Coloplast used in its production in Tatabánya was a case in point. The Hungarian unit bought the material from Coloplast Denmark, which in turn sourced it from a German supplier, who had bought it from a Hungarian producer. This cumbersome process added layers of margins on the purchasing price. By buying directly from the Hungarian producer, Coloplast Hungary could save up to 66 per cent. However, cultivating these opportunities required concerted efforts and significant managerial capacities. The experience with the Hungarian offshoring project made Coloplast aware that local sourcing needed to be part of the offshoring strategy.

Along the same line, Coloplast also learned the hard way that benefits gained in Hungary could quickly be offset by costs in other parts of the value chain. The distribution centre for Coloplast products was located in Hamburg in Northern Germany, which was a perfect gateway for products produced in Denmark and to be distributed in Europe. However, for products produced in Hungary (Central Europe) it meant extra costs to transport them first to Hamburg and then back to the Central European countries.

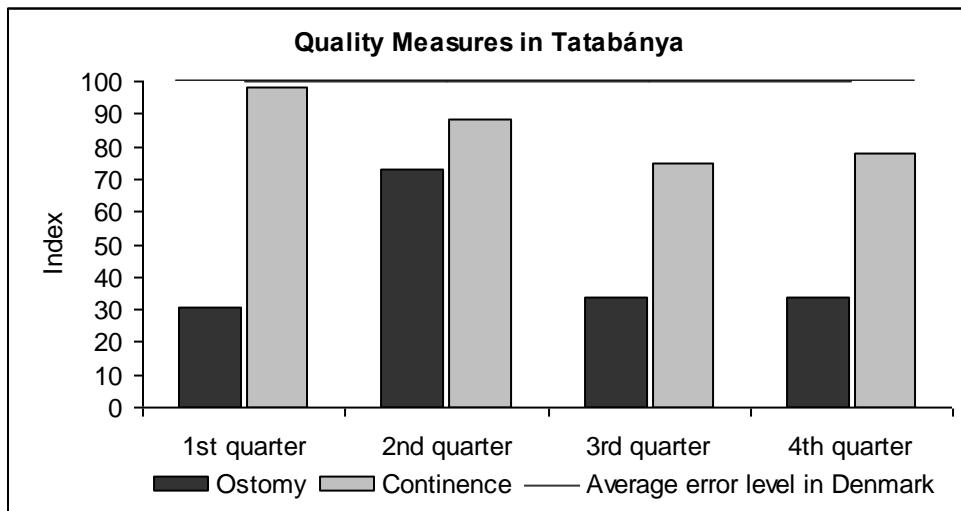
EPILOGUE

As Allan Rasmussen made his way home to Denmark, he considered the situation he had just left in Tatabánya. While Coloplast's Hungarian production unit was successful, there was still some way to go to make it the best possible organizational set-up with which to exploit new offshoring opportunities. The Hungarian project had given Coloplast valuable insight into how to design and implement offshoring projects, but it also highlighted the weaknesses of the current organization. During the process of relocation, it became evident that Coloplast needed to reconsider its organizational structure and to face the challenges of centralization, standardization and the structuring of interfaces. An important lesson learned in the Hungarian experience was that relocating production lines brought about profound changes in the internal organization. Offshoring could not be considered as just an extra activity or organizational layer. If

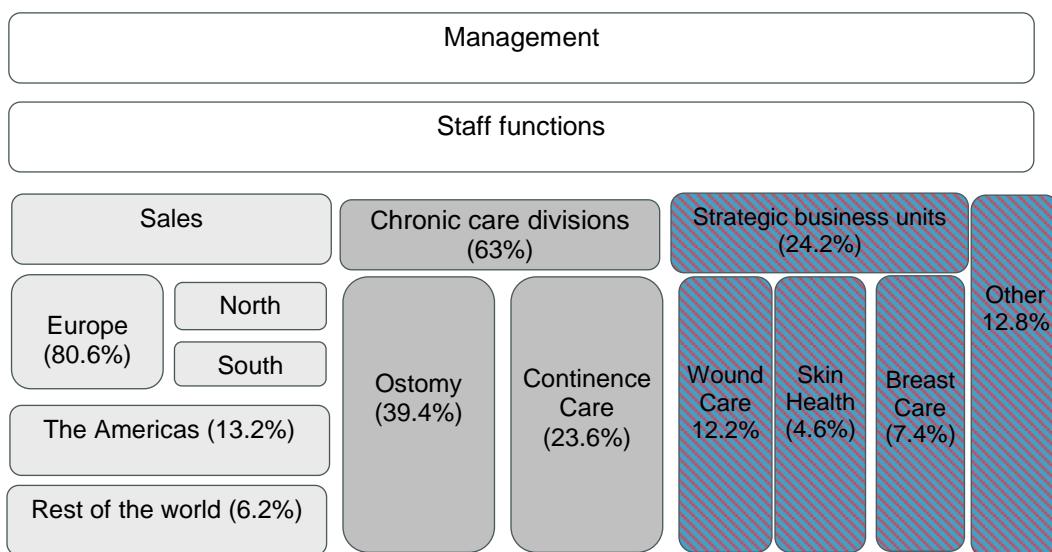
its full potential was to materialize, the offshoring project needed to be deeply rooted in the organization as a whole.

One crucial task was to define and apply the best practices not only from the Danish but also from the Hungarian facilities. Coloplast would need to devote substantial resources to fine-tune its internal decision-making processes and procedures so that the Hungarian production unit was integrated with headquarters and production in Denmark. The corporate guidelines on how to relocate and manage production sites abroad, developed during the offshoring to Tatabánya, would undoubtedly be a useful tool in further offshoring, for example, to China.

Exploiting further offshoring opportunities would require major changes in the mindset of the Danish headquarters. A truly global line of thinking was required to succeed in unknown territory, Allan Rasmussen thought. After all, the Hungarian project was an eye-opener for the company and many changes had been implemented. Rasmussen wondered whether Coloplast was ready to take the next step in a major offshoring project to China, or whether it was better to first tackle the internal organizational challenges that might otherwise become obstacles when adding Chinese production units.

Exhibit 1**COMPARISON OF ERROR LEVELS IN DENMARK AND HUNGARY 2004 (DENMARK = 100)**

Source: Coloplast presentation at capital market day in Tatabánya, April 2005

Exhibit 2**ORGANIZATIONAL STRUCTURE AND SALES SPLIT IN 2004**

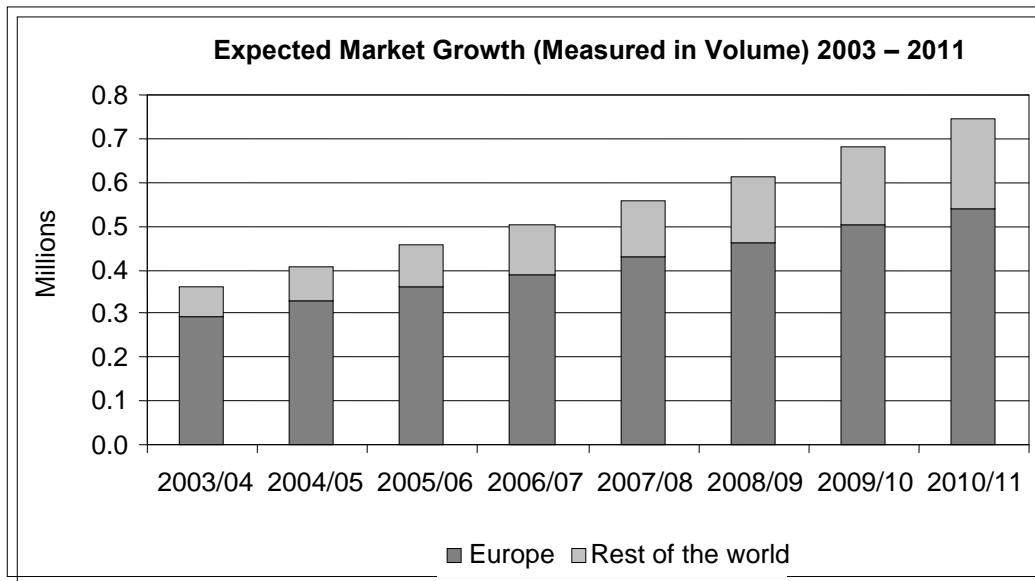
Source: Coloplast annual report 2003/04

Exhibit 3**FIVE YEARS' KEY FIGURES AND RATIOS**

Fiscal Year	1999/00	2000/01	2001/02	2002/03	2003/04
Income Statement (in millions DKK)					
Revenue	3,556	4,018	5,567	5,610	6,069
Research and development costs	128	137	173	168	203
Operating profit before amortization and depreciation	720	878	1,157	1,195	1,295
Operating profit before amortization of goodwill	498	618	884	909	988
Operating profit	498	618	875	909	988
Net financial income and expense	-48	-31	-60	-21	-89
Profit before tax	474	613	1,232	889	899
Coloplast's share of profit for the year	292	405	768	567	577
Revenue Growth (%)					
Annual growth in revenue	18	13	38	1	8
Organic growth	12	12	14	11	10
Currency effect	6	1	-2	-5	-2
Acquired business	0	0	26	0	0
Divested business	0	0	0	-5	0
Cash Flow Statement (in millions DKK)					
From operations	467	600	913	911	845
From investments	-334	-1,292	-878	-783	-621
Free cash flow	133	-692	35	128	224
Cash flow from financing activities	-202	-243	-1,051	307	-239
Acquisition of tangible assets, gross	339	389	449	578	544
Key Ratios (%)					
Profit margin, EBIT	14	15	16	16	16
Return on equity	18	28	62	32	27
Return on average invested capital	18	18	18	17	17
Number of Employees					
Head count, all operations	3,754	3,987	4,859	5,774	6,084
in Denmark	2,046	2,241	2,442	2,621	2,638
Sales per employee (in millions DKK)					
	0.947	1.007	1.145	0.971	0.997

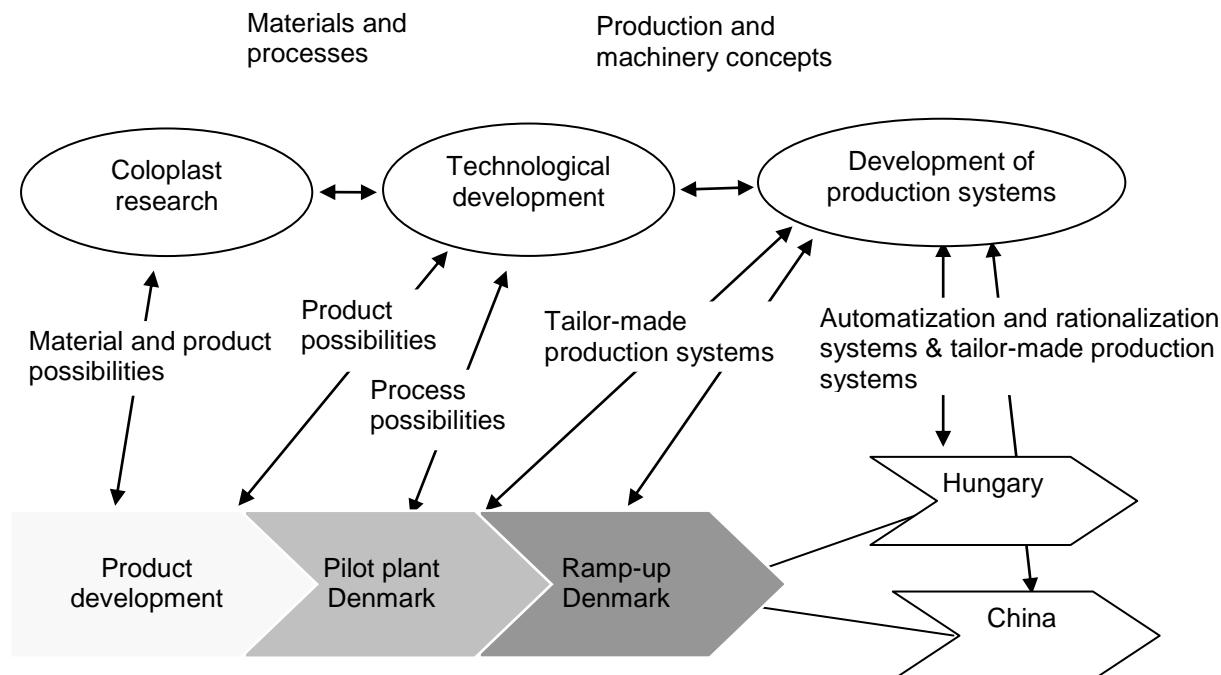
* EBIT: earnings before interest and taxes

Source: Coloplast annual report 2003/04

Exhibit 4**EXPECTED MARKET GROWTH**

Source: Coloplast presentation at capital market day in Tatabánya, April 2005

Exhibit 5
LINKS BETWEEN VARIOUS PRODUCTION TYPES



Source: Coloplast Presentation at Copenhagen Business School, February 2005

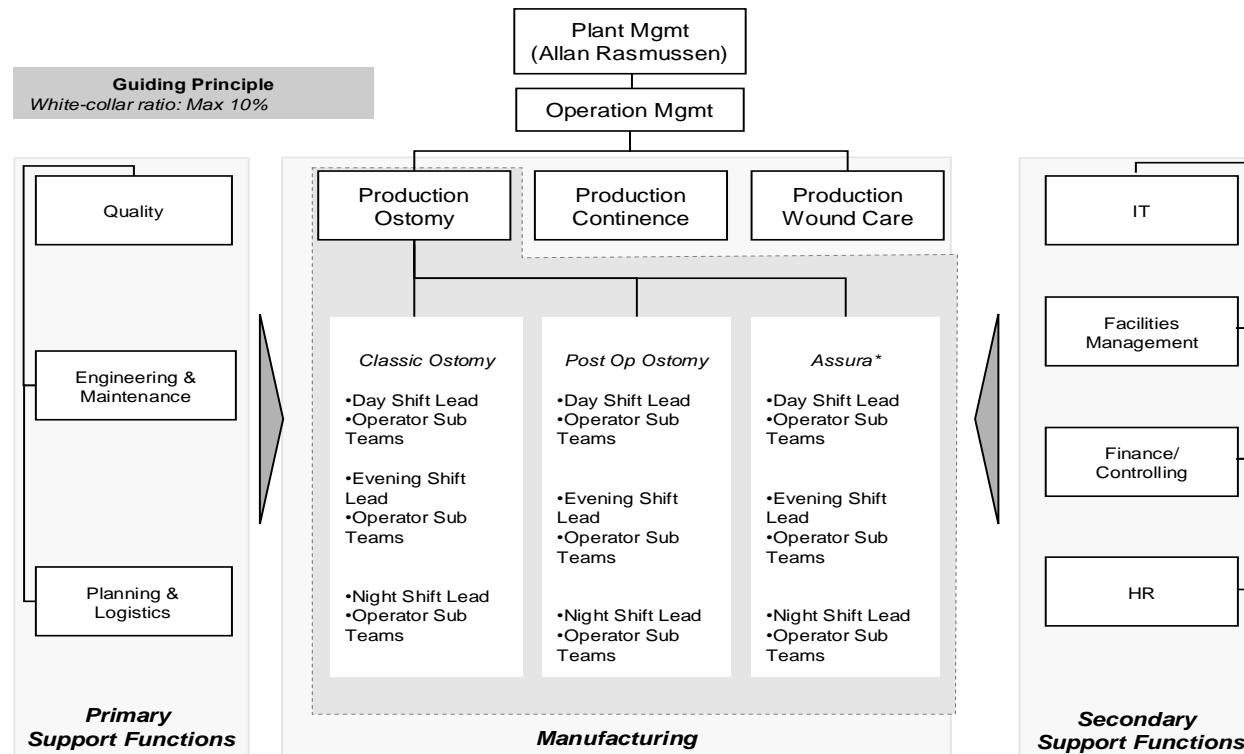
Exhibit 6**BUILDING COSTS IN VARIOUS LOCATIONS**

Building Costs*	DKK per square metre
Denmark	
• Factory/administration (Humlebæk)	10,000
• Clean room	25,000
Hungary	
• Factory/administration	5,000
• Clean room	10,000
China	
• Factory/administration	4,000
• Clean room	8,000
*Costs do not include the site	

Source: Coloplast presentation at capital market day in Tatabánya, April 2005

Exhibit 7

ORGANIZATIONAL CHART OF COLOPLAST'S HUNGARIAN FACILITIES



Source: Coloplast internal documents

*Assura is a product line of particularly discreet or less bulky ostomy bags.

Exhibit 8

OVERVIEW OF COLOPLAST'S DANISH PRODUCTION UNITS

Plant	Number of Employees (as of September 30, 2004)	Main Activity	Secondary Activity
Humlebæk (two factories)	762	Ostomy: production of urostomy bags and Convex plates Wound care: production of wound dressings based on skin-friendly hydrocolloid adhesives	Ostomy: production of ostomy plugs of polyurethane foam Wound care: production of polyurethane foam dressings
Espergærde	305	Production of skin-friendly adhesives used in most of Coloplast's product portfolio. Manufacturing of adhesives for ostomy products.	
Kokkedal	414	Continence: Production of EasiCath-catheter; anal irrigation sets and plugs; urine-collecting bags; latex urisheaths	
Mørdrup	270	Continence: production of catheters	Manufacturing of granulate components. Are used as an intermediate good in Coloplast's other factories, including Hungary.
Thisted	391	Ostomy: production of disposable ostomy bags	Manufacturing of plastic components, folios, adhesives that are used as raw material in Coloplast's other factories
Kvistgård	425	Wound care: production and packaging of dressings within wound and foot care segment	

Source: Environmental reports 2004, www.coloplast.com