

# **Entry Strategy of a Prepress Equipment Manufacturer into the Small Commercial Printers Market**

by

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## **ABSTRACT**

Creo is one of the leading suppliers in the global graphic arts market. A key company goal is to achieve annual revenue growth of 15% over the next five years. This paper focuses on Creo's strategy for entering the small commercial printers market. A successful strategy would enable sustainable growth and profitability in this new market and, at the same time, align with the firm's existing strategy and its product offering.

The paper identifies key issues that Creo faces entering this new market. Methodology employed for this analysis includes Porter's 5-force industry analysis, strategic fit analysis and value chain analysis. The conclusion of this paper provides a recommendation for how Creo can address the identified key issues while keeping successful strategies in other markets intact.

Creo should focus on the largest printers within the small commercial printers market. To access this market, Creo should use third party distributors. Creo also needs to manage the relationships with the distributors in a way to maintain its competitive advantages. Creo should enter this market with a product offering which is similar to the one the company already provides to other commercial printers. Product pricing structure should minimize the initial capital expenditure. Finally, the strategy for entering the small commercial printers market should be tested before its global implementation.

## **DEDICATION**

I would like to dedicate this work to my wife Jelena. Along this journey she provided me with love, support and genuine understanding. I feel that completing this program is her success as much as it is mine.

## **ACKNOWLEDGEMENTS**

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# CHAPTER 1 INTRODUCTION: HISTORY OF CREO

## 1.1 Founders

Creo was founded in Vancouver, BC in 1983 by Dan Gelbart and Ken Spencer. The founders originally worked at MacDonald, Dettwiler and Associates Ltd., a Canadian high-technology commercial and defence contractor located in Vancouver. The backgrounds and personalities of the founders had a tremendous impact on the evolution of Creo.

Dan Gelbart was born in Germany in 1947 and grew up in Israel. He has lived in Vancouver since 1973. Gelbart holds a B.Sc. and M.Sc. in electrical engineering from Israel Institute of Technology (Technion). In 1994 he received an Honorary Doctorate from Simon Fraser University, and was awarded the B.C. Science Council Gold Medal and the Gold Medal by the Institute of Printing (WhatTheyThink, 2004).

Inventor and visionary, Gelbart brought to Creo his expertise in electronics, optics and precision mechanics. His work was recognized within the scientific and research community before he co-founded Creo. Prior to Creo, he was involved in two local high-tech start-ups: MDI-Motorola and Cymbolic Sciences. Both companies exploited Gelbart's patented laser imaging technology. Today, Gelbart is the chief technology officer at Creo.

Previous to founding Creo, Ken Spencer was a General Manager at MacDonald Dettwiler and Glenayre Electronics in Vancouver. Spencer has a B.Sc. and a Ph.D. in electrical engineering from the University of British Columbia and Masters Degree in Business Administration and an Honorary Doctorate from Simon Fraser University.

Spencer was the president and the CEO of Creo in its early years. He retired Creo in 1995. He brought to the company his organizational skills and the vision of a corporate culture.

The culture that Spencer created had a tremendous impact on the company's success. The information about Creo culture will be presented in the chapter 3 of this paper.

## **1.2 Creo's Early Days**

In its early years, Creo focused on developing optical storage devices. Its first product, Digital Optical Tape Recorder, was a device capable of storing up to one terabyte of data. However, it took Creo almost eight years to sell its first tape recorder, which was in 1991 to Canadian federal Ministry of Energy, Mines and Resources.

The problem with the Digital Optical Tape Recorder was that its market was limited to a few government agencies. Even though this product never achieved the success of later Creo products, it helped the company to develop its core competency – thermal imaging technology. Particularly important for the later success of Creo thermal digital imaging was the development of thermal imaging with high true optical resolution, thermal expansion compensation and ultra-fast auto-focus mechanism.

In the late 1980s Creo explored another business opportunity, this time through an OEM contracts with the Israeli company Orbotech Ltd., and Dainippon Screen (DS), a Japanese prepress equipment company. Orbotech was a re-seller of the film-imaging engines for the printed circuit board industry. Using technology developed for the digital optical tape recorders, Creo quickly developed high precision optical devices capable of satisfying industry standards. Between 1989 and 1994, Creo supplied over 300 large-format laser-imaging engines for the printed circuit board and graphic arts industries through OEM contracts with Orbotech and DS.

The deal with Orbotech was also important for Creo because it seeded the relationship between Creo's founders and Amos Michelson. Before joining Creo, Michelson was a general manager at Orbotech and the CEO of Opal Inc., a semiconductor equipment company. Michelson had a B.Sc degree in electrical engineering from Technion and Masters of Business

Administration from Stanford. Michelson joined Creo in 1991 as the VP of business strategy. In 1995 he replaced Ken Spencer as a CEO of the company. Michelson brought to the company new energy and un-compromised determination for the large-scale success. It was Michelson who persuaded Creo's founders to focus on developing products for the printing industry.

### **1.3 Creo and the Prepress Industry**

In early 1990s, over thirty vendors provided prepress equipment to the printing market. Gerber Innovations, Obtronics and Kodak dominated the market. Yet, their imagesetters used visible light and could print on film only. Kodak, for example, had already developed thermal imaging technology capable of imaging on aluminium plates. The disadvantage of the Kodak's imaging device was that it took long time to image a plate.

In 1993, the largest print manufacturer in the world, R.R. Donnelly & Sons, was looking to partner with a company capable of developing computer-to-plate (CTP) technology. The idea was to eliminate one step in the process of imaging plates and cut down on print production cost. Combining its experience in manufacturing high-precision engines and thermal lasers used in optical tape recorders, Creo succeeded over the competition and won the partnership with R.R. Donnelly. At the time Creo had 120 employees, \$5.6M of annual sales and \$2.6M of annual research and development (R&D) costs.

The partnership with R.R. Donnelly resulted in the creation a new technology that later become the prepress industry standard – thermal CTP imaging. In 1994, Creo delivered to its first visible-light-based CTP device, Platesetter 3244, to the market. In 1995, Creo introduced thermal CTP, which was a substitute and qualitative improvement for the visible-light imaging technology.

Thermal CTP technology introduced significant improvements in the printing process. First, it improved image quality by enabling higher resolution and improved image sharpness.

Second, it allowed plate handling under daylight conditions and eliminated the need for specialized yellow-light environments or darkrooms, thereby lowering print production costs. Finally, thermal imaging enabled faster plate throughput because the required exposure time is shorter.

The turning point for Creo was in 1995 at Drupa, the largest printing industry tradeshow held every four years in Dusseldorf, Germany. This is where Creo introduced its first thermal CTP system. During the show all media suppliers used Creo CTP devices to promote their new thermal media. Because of success at Drupa 1995, Creo was recognized as the industry trendsetter and technology leader.

Soon after Drupa, Creo completely abandoned visible-light technology and proceeded with promoting its thermal imaging technology. This was a strategic trade-off that enforced Creo's position as the thermal imaging technology leader. This trade-off served Creo as a positive reinforcement of the differentiation of its products in the market.

Another strategic decision that helped Creo win the global prepress market was choosing to distribute products through a direct sales force rather than through third party distributors. Thermal CTP technology required a highly specialized and motivated sales force, which could not be sustained outside of the company.

In 1996, Creo introduced seven major products to the global prepress market. A family of CTP imaging output devices offered customized features to suit needs and abilities of different prepress market segments. Creo also introduced a strong software solution, PlateMaster that allowed prepress departments to manage and manipulate the digital data that is eventually translated into images on plates.

In 1997 Creo entered a joint venture agreement with the German press manufacturer Heidelberg Druckmaschinen. At the time, Heidelberg was the biggest printing press manufacturer

world wide and was interested in broadening its business by entering the prepress market. Despite rapid growth in North America, Creo at the time hardly had any presence in Europe. The company intended to obtain the presence in Europe through this joint venture. Even though the fact that Creo was about 5% of the size of Heidelberg, the partnership was equally attractive for both companies. Financially, the joint venture was structured as 50/50 split of all revenues, R&D costs and manufacturing costs. The joint venture ended in 2000.

During the joint venture Creo continued introducing new products, enter new market segments and improve the performance of the existing products. At the same time Creo introduced a half-tone proofing device, direct-to-press technology and flexographic imaging. Arguably the most successful product that was developed during the joint venture was Prinergy, a workflow management solution based on Adobe Extreme technology and the Portable Document Format (PDF) (Seybold, 1999).

In January 2001 Creo and the digital prepress division of Israeli-based Scitex, announced a merger. At the time Scitex was Creo's biggest competitor. Through the merger agreement Scitex received 13.25 million Creo shares, which amounted to about 27% of the company. The new company was named CreoScitex.

The merger was challenging because each company had a very different culture and background. Scitex was a thirty-year-old company with a rigid corporate structure, a pyramidal line of authority and low ability to change. In contrast, Creo was young and flexible organization with a flat commanding structure. It took at least two years for these two companies to recover from the merger shock.

The merger of Creo and Scitex integrated two very strong product lines capable of producing a broad range of customer solutions. In 2002 the name and brand CreoScitex was retired and replaced by Creo Inc.

## **1.4 Creo Today**

Today Creo Inc. is one of the biggest vendors in the graphic arts industry and the world's leading supplier of the digital prepress solutions. It currently employs over 4,000 people world wide. Headquartered in Burnaby, BC, Creo's product development facilities are located in Delta and Burnaby, BC, and Herzlia, Israel. Most of the manufacturing facilities are located in Delta, BC and Herzlia, Israel, although some of manufacturing is done in Billerica, Massachusetts, South Africa and West Virginia. Its global presence the company establishes through six principal subsidiaries: Creo Americas (Billerica, MS), Creo Asia-Pacific (North Point, Hong Kong), Creo Europe, Middle East and Africa (Waterloo, Belgium) Creo Israel (Herzlia, Israel) and Creo Japan (Tokyo, Japan). The company also explores a variety of growth opportunities.

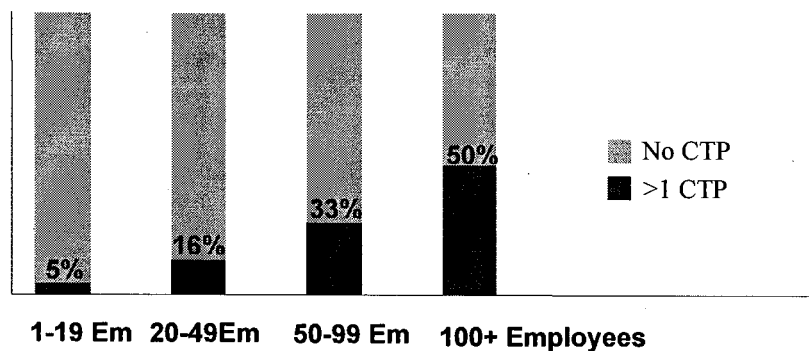
The sale of prepress consumables is an area in the prepress industry with a greatest potential for profit. The players in the prepress industry today are also the biggest suppliers of consumables, such as plates, proofing material, paper and ink. Between 2000 and 2003, Creo developed its own plate manufacturing technology. In September 2003 Creo purchased assets of First Graphics, a plate manufacturer from South Africa, so that it could manufacture Creo Positive Thermal Plate (Creo PTP). A couple of months later, Creo purchased another plate manufacturing facility, Spectratech International Inc. in Middleway, West Virginia. Finally, Creo entered a partnership with China's biggest media manufacturer Juguang. Creo is now a global supplier of the spectrum of prepress consumables for many different prepress market segments. The company's goal is to have 20% of the market share in digital media by 2007.

## **1.5 Creo and the Future of the Prepress Market**

Today printers spend about \$35 billion on prepress consumables, equipment and labour. It is estimated that about 25% or about \$9 billion currently goes to vendors. Around \$24 billion

is spent on the prepress labour and about the same amount for order entry, specification and customer relations management (CRM) systems (Michelson, 2003).

In general, the printing industry is moving towards greater automation to continually lower operational costs in the future. The automation of the printing process has a great potential due to high labour cost. Creo is currently well positioned in the market to capture future growth opportunities, such as converting the customers from film to CTP. The company strives to continue helping printers convert from the analogue and film printing to CTP. Figure 1 shows the current status of the CTP adoption rate within the commercial print segments in North America.



**Figure 1 Commercial Printers: North American CTP. Source: Rosin, 2004**

Creo needs to further improve its position in the small commercial printers market. To do so, Creo introduced several strategic initiatives, which will be described in detail further in the text. Finally, Creo now offers one-stop shopping experience to the global prepress market.

In the near future Creo plans to reach 15% annual growth rate. The plan is based on the expected increase in existing market share and intentions to explore new markets. Following are Creo's specific growth targets:

- Emerging the potential of the mid-size and the small printers markets
- Rapid transition of digital proofing
- Increased market share in Europe and Japan

- Capture the opportunity of the other growing market segments

In the past Creo was primarily focused on selling computer-to-plate systems to the large commercial printers. This market was willing to pay premium prices for the state-of-the-art, high throughput equipment. However, customers in other market-segments have different requirements. To meet these requirements, Creo has developed product offerings specifically tailored for each segment. The list of printing market segments where Creo has its presence and the types of the printing they produce is presented in the Figure 2.

<b>Segment</b>	<b>Description</b>	<b>Type of printing</b>
1	High volume 1 and 2 color printers	Books, technical manuals, directories, legal & financial publication
2	High volume 4 color printers	Magazines, catalogues, color books
3	Commercial printers	Advertising, multi-color books, artwork, annual reports
4	Packaging printers	Folding cartons, labels, plastic packaging, corrugated boxes
5	Newspaper	Metropolitan dailies, urban weeklies, inserts
6	Short run color	Direct mail, business cards, variable data printing
7	Trade shops and service bureaus	Supply plate ready film or CTP plates to printers
8	Publishers and creators	Own and prepare the images & data for printing

**Figure 2 Market segments. Source: Adopted from Lines, 1999**

This paper focuses on opportunities for Creo in the small commercial printers market. Specifically, the paper focuses on company's strategy for entering this market. The next chapter proceeds in the following order.



The chapter introduces the small commercial printing market and present an analysis of the industry that supplies prepress equipment to this market. The industry analysis also introduces the industry specific factors that determine a viable competitive strategy for Creo. Finally, the industry analysis presents the forces that shape Creo's rivals' competitive strategy.

## **CHAPTER 2 MARKET AND INDUSTRY ANALYSIS**

This chapter introduces the small commercial printers market, followed by the industry analysis. The chapter first provides a general description of this market, including a definition of the segment. This is followed by a discussion of the market size, and information on the four major vendors in the market.

The second part of the chapter presents the industry analysis. The chapter begins with an analysis of the competitive forces that shape the strategies of Creo's rivals, such as Kodak, Agfa and Fuji. Overall industry attractiveness and key success factors follows. The chapter concludes with projected future for the small commercial printers' market within the context of the prepress industry.

### **2.1 The Small Commercial Printers Market**

Commercial printers are establishments primarily engaged in printing using the lithographic offset process on sheet or web-fed presses. This definition includes "quick" printers, but not establishments that are primarily engaged in photocopying. Segments within the print industry are generally defined by the type of products the printers produce, type of press used, number of employees, assets and annual revenue. Printers in the small commercial segment typically have less than 30 employees and annual revenue of between \$2 million and \$5 million (Rosin, 2004).

Segment definitions can also depend on regional standards and the local labour cost. For example, in China all printers with up to 100 employees are considered small printers. However, for the same reason, in Korea only printers with up to 20 employees are considered small.

Region	Number of Employees
Americas	Less than 30
China	Less than 100
Hong Kong	Less than 50
Japan	Less than 100 and less than ¥ 2,000 mil
Korea	Less than 20

**Figure 3** Creo segment definition. Source: Rosin, 2004

Small commercial printers usually have a single operating plant and print on sheet fed presses. Most printers in this segment have one or two presses. The sizes of the prints the presses produce are typically 32"x30" (4-up print) or smaller. These printers rarely have 32"x44" (8-up print) wide presses, which are designed for higher volume production. Typically middle and large commercial printers use 8-up and larger presses.

Product Category	Product size
4 Page CTP (4-up)	Images up to 32"x30" plate for offset printing
8 Page CTP (8-up)	Images up to 32"x44" plate for offset printing
VLF CTP	Images up to 58"x80" plate for offset printing

**Figure 4** Product categories. Source: Adopted from Lines, 1999

The type of jobs small commercial printers produce is also specific for this segment. Unlike large commercial printers who may run millions of copies of the same print, small commercial printers produce limited quantities. At the same time, small printers deal with much higher variability of jobs. This is extremely demanding and requires a highly flexible printing department.

Typically small commercial printers print brochures, reports, magazines etc. These jobs usually do not require the highest image quality, which means, small commercial printers are less likely to purchase expensive state-of-the-art printing equipment. On the contrary, small commercial printers are extremely price sensitive. Usually they are not willing to risk borrowing money for expensive equipment. They know what is required for them to deliver results that meet expectations, and they will not go beyond those expectations.

Small commercial printing shops are typically owned by a family or a single entrepreneur. Family ownership is an important characteristic of this market segment. Family members often make up the majority of the employees. As a result, small commercial printers usually do not see labour as a potential area for cost reduction.

Limited marketing, sales and distribution abilities are characteristic of this market. The local character of small commercial printers limits the printers' potential for growth. A large portion of this market operates long term making minimal profit that is well below the market return.

There are two major reasons why these printers stay in this industry despite low returns. First, this industry has a high exit barrier. This is because the investment in a printing facility carries a large endogenous sunk cost: printing presses, prepress equipment, desktop publishing, etc. The second reason is the existence of a common sense of pride that comes with making a living in this industry. Some small commercial printing shops are more than 100 years old and run by many generations of the same family.

## **2.2 Market Size**

There are approximately 95,000 establishments worldwide that fall into the category of a small commercial printer. Out of this number, about 58% have less than 10 employees and annual revenue of less than \$1million. 36% have between 10 and 20 employees and annual revenue of \$1 to \$2 million. Finally, about 6% have 20-30 employees and annual revenue of \$2 to \$3 million (Rosin, 2004).

<b>Number of Employees</b>	<b>Segment Size</b>	<b>Annual Revenue</b>
Less than 10	58%	Less than US \$1mil.
10 to 20	36%	US \$1-2 mil.
20 to 30	6%	US \$2-3 mil.

**Figure 5 Segments within the small commercial printers market. Souce: Rosin, 2004**

The total market size for the entire prepress industry is roughly \$2.5 to \$3 billion. This is the amount that the current market will spend annually on a one-time purchase of prepress equipment. Within this number, about \$550 million represents printers with annual revenue below \$1 million, and \$1.7 billion represents printers with \$1 to \$2 million in annual revenue. Finally, about \$570 million represents printers with annual revenue of \$2 to \$3 million.

<b>Number of Employees</b>	<b>Market Size</b>
Less than 10	US \$550 mil.
10 to 20	US \$1.7bil.
20 to 30	US \$570 mil.

**Figure 6 Market size for the prepress industry. Source: Rosin, 2004**

Figure 7 presents opportunities for suppliers of the equipment and consumables in printing market worldwide. Opportunities for the offset and digital printing segments are presented separately.

Offset		Digital printing	
Paper \$21b	CTP&DFE \$300m	Digital Print Equipment \$2.2b	
	CTP plates \$160m	Wear parts & Service \$2.4b	
	Other plates \$1.1b		
	Film \$1.25b	Toner \$1.2b	
Ink \$1.7b	Proofing \$1.25b	Paper \$1.2b	

Figure 7 Annual World Wide market opportunities. Source: Rosin, 2004

## 2.3 Vendors

There are four major vendors in the global small commercial printing market: Kodak Polychrome Graphics (KPG), Fuji, Agfa and Creo. All of these vendors are capable of providing customers with complete prepress solutions, including workflow, output devices and consumables.

### 2.3.1 Creo

Since the introduction of CTP technology in 1995, Creo's business strategy was primarily driven by the requirements of the large commercial printers. Creo provides the printing market with the highest throughput and quality solutions. Its position in the market is based on the requirements of market segments other than the small commercial printers market. Creo has several major concerns about entering this market.

First, Creo's core competency is thermal imaging. This technology provides the highest image quality, but at a high price. The high price is an issue in a price-sensitive market like small commercial printers. Second, selling products at low cost to the small commercial printers could

cannibalize Creo's existing product offerings. Finally, it is possible that getting into the small commercial printers market with a competitive low cost product may dilute Creo brand equity.

The output device that Creo currently has for this market is the Magnus 400. A new workflow solution Prinergy Evo was just introduced at Drupa 2004. This solution is a modified version of the Prinergy workflow, which has been on the market for several years, is designed to meet the specific requirements of the small commercial printers. Creo provides both positive and negative plates that meet all possible requirements of small commercial printers (Drupa, 2004).

### **2.3.2 Kodak Polychrome Graphics (KPG)**

KPG is a joint venture between Eastman Kodak and Polychrome Graphics. The company is a well-established media vendor with a presence in practically all prepress market segments. KPG maintains direct distribution networks around the globe. Until recently, KPG was exclusively a media vendor. KPG now provides the prepress market with a complete prepress solution.

In May 2004 KPG and Screen USA announced their partnership on a co-branded CTP device and workflow solution. This partnership enabled KPG to sell output devices and workflow solutions along with their in-house developed media. Two products from this joint venture are expected to have great success in the small commercial print market: PlateRite 4100 and 4300. Both products are designed to output jobs printed on 4-up size presses.

### **2.3.3 Fuji**

Fuji is the world's second largest manufacturer of photosensitized material and by revenue among the first 250 companies in the Global Fortune 500 directory. The company's prepress division is only a small portion of its overall business. Similar to KPG, Fuji had a presence in the global prepress market before the introduction of the CTP technology.

Until recently, Fuji provided global CTP market only with digital plates. Fuji's positive and negative plate was among the most successful prepress consumables in the market. Fuji now supplies entire prepress solutions. Its product offering is similar to KPG's. The output devices that Fuji supplies to the market, the Dart series, are also manufactured by DS. For example, Fuji's Luxel T-6000 is the re-branded PlateRite 4100 that KPG supplies.

Unlike KPG, Fuji uses indirect distribution channels to reach its customers. For example, in North American its exclusive distributor is Enovation. Enovation has a total sales force of about 170 people and a well-known name within the North American commercial printers market.

#### **2.3.4 Agfa**

Agfa brings to the small commercial printers market a strong background in manufacturing and distributing media. The company further increased its consumables portfolio in April 2004 by acquiring the Italian plate manufacturer Lastra. Unlike KPG and Fuji, Agfa has also manufactured CTP output devices for many years. Galileo series of output devices come in 4-up sizes. Galileo devices use violet-laser imaging device. Agfa does not have thermal imaging device in 4-up format. Similar to KPG, Agfa uses a direct distribution model. The company has a global presence supported by offices around the world.

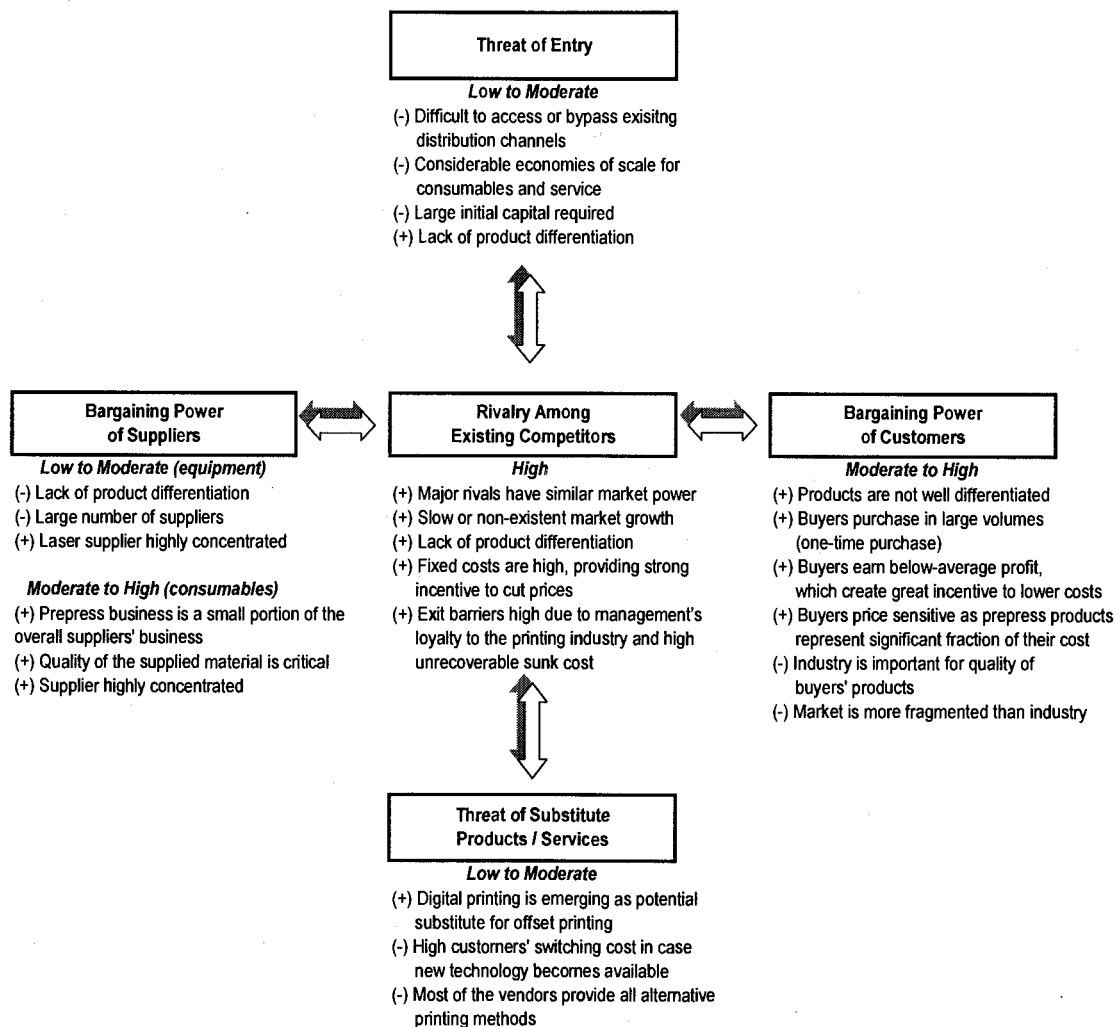
#### **2.3.5 Dainippon Screen (DS)**

DS is one of the most important players in the market, even though not directly involved. As mentioned before, DS is an OEM supplier of the prepress output devices for KPG and Fuji. DS focuses mostly on R&D and manufacturing. It is headquartered in Kyoto, Japan. The company also maintains its subsidiaries around the world. For example, Screen US is in charge of DS's business in North America. Screen US provides complete sales, parts and service support through direct and third-party sales representatives.



## 2.4 Competitive Analysis

There is a direct correlation between the intensity of the competition among vendors and the size of the profit margins. Following are the forces that define the nature of this competition: rivalry among the competitors, bargaining power of suppliers and customers, threat of entry and threat of substitutes (Porter, 1979). Figure 8 represents the competitive forces in the small commercial printers' prepress segment. Overall the industry segment is found to be moderately attractive. The remainder of this chapter describes the individual forces which shape the attractiveness of this industry segment.



**Figure 8 Competitive forces for Small Commercial Printers Market. Source: Adopted from Porter, 1979**

### **2.4.1 Industry Rivalry**

Rivalry among the current competitors in the small commercial printers market is intense. During the last 8 to 10 years the industry went through a consolidation that brought the major competitors close to competitive equilibrium. Within this period, the number of manufacturers of the prepress equipment and consumables went from over 30 during 1995 down to 4 in the last few years. The strongest competitors, like Kodak, Agfa and Fuji share this market with relatively equal market power.

Slow growth of the small commercial printers' prepress market further intensifies the rivalry. Vendors in this market can grow only by taking a portion of the market share from other vendors. In its early days Creo facilitated its growth in the global prepress market by pioneering CTP technology. The other vendors, in contrast, competed for market share by bundling equipment with prepress consumables. Customers were attracted by bundled packages for two reasons. First, the customers got the solution they needed for a lower price. Second, the purchasing a package improved their cash flow predictability.

The lack of new technological solutions offered by the major players in recent years contributes to increasing erosion of differentiation among products offered. The absence of differentiation further induces rivalry, causing vendors to compete solely on price. CTP technology is widely accepted by large commercial printers. However, small printers were not ready to face high costs of switching to the new technology. Existing visible light imaging technology provides acceptable quality for this market at a relatively low price. Recognizing the competitive nature of this market, vendors changed their strategy and moved toward providing prepress consumables. The consumables, such as plates, chemistry and proofing material are even more difficult to differentiate than output devices.

To compensate for the lack of consumable product differentiation, the vendors now focus their strategies on providing entire customer solutions. A few years ago prepress vendors were

typically specialized in providing only selected products. Today they provide their customers with the entire prepress solutions, which include equipment, consumables and workflow management systems. Solutions provide customers with a significant initial cost incentive, but it raises the switching cost.

After industry consolidation, the only vendors that remained in the small commercial printers market are solution providers. Some vendors, such as Creo and Agfa manufacture all their products in-house. Others, like Kodak and Fuji, specialize in manufacturing media, and outsource the producing other products in the solution. Changing the business strategy to provide complete solutions increased vendors' fixed cost. High fixed cost increases operational risk. It also provides a strong incentive to cut costs, particularly during market downturns.

High exit barriers further contribute to the industry rivalry among vendors. Exit barriers are high due to management's loyalty to the prepress industry. In order to successfully compete in this market, one needs a team of experienced managers, knowledge about the industry and an excellent relationship with customers. The time, skills and resources it takes to build these capabilities requires a long-term commitment and therefore an easy exit is not feasible. Another reason for high exit barrier is large endogenous sunk cost, usually in large specialized manufacturing facilities.

#### **2.4.2 Threat of Substitutes**

The threat of substitutes in the small commercial prepress industry is currently low to moderate. After the industry consolidation, major industry rivals supply equipment that can easily be substituted with equipment from a rival vendor. Substitute technologies, like computer-to-film, computer-to-plate and digital-offset-press are in product portfolios of all big players in the industry.

An emerging technology that will play a more important role in the future of the small commercial printers market is the digital printing technology. This technology eliminates need for digital plates. Digital files are printed directly on paper, similar to desk top printers. This technology, also called computer-to-paper, is particularly attractive for small commercial printers because of its suitability for short-run printing jobs. Digital printing is slowly emerging but it will consume a significant portion of this market in the foreseeable future.

The biggest hurdle for small commercial printers adopting digital printing is the large switching cost imposed by CTP. It is expected that the new entrants to printing industry will be more prone to purchasing digital printing equipment than the existing players. Most of the current industry rivals already have experience with digital printing technology. Agfa was one of its pioneers with the Agfa Chromapress printer introduced in 1994. Creo's experience with this the digital printing technology comes from the OEM venture with Xerox where Creo supplies inkjet printer product line.

### **2.4.3 Threat of New Entry**

The threat of new entrants in the prepress industry is moderate to low. There are a few reasons for this situation. First, existing vendors carefully maintain strong relationships with their customers. Customers, on the other hand, look for vendors who understand and satisfy their needs. They usually purchase entire prepress solutions from single vendors. Changing vendors creates expenses that cost-sensitive printers prefer to avoid.

Industry vendors further support the quality of relationships with their customers by effective brand management. A strong brand lowers customer's searching cost and increases perceived value of products. New entrants in this industry will need to compete with some of the world's strongest brands, such as Kodak, Agfa and Fuji. Current rivals are not only protected

with their brand equity, they also enjoy significant economies of scale in the consumables business. For example, it is difficult to make a printer change its media vendor.

The first reason is the switching cost involved in changing equipment. The second reason is the lack of differentiation among available media offerings in the market. Consequently, it would take years for new entrants to win a significant market share and enjoy lower cost per product unit. There are two operational factors that pose significant entry barriers. First, a large initial capital outlay is required to build a competitive prepress solution. Second, knowledge and experience play crucial roles in meeting market quality requirements. Outsourcing is a way to partially bypass this barrier. For example, Kodak and Fuji outsource their equipment R&D and manufacturing activities. At the same time, Agfa and Creo build entire prepress solutions in-house. Technology has always played an important role in this market. This is particularly the case after the introduction of CTP and laser imaging. There is a learning curve associated with introduction of a new technology. This learning curve discourages potential new entrants. Lack of perceived differentiation among prepress solutions offered in this market lowers the barrier for a potential entrant. In theory, using the experience of major players minimizes capital investment required to enter the market and potentially provides some initial competitive advantage.

#### **2.4.4 Bargaining Power of Suppliers**

Bargaining power of prepress industry suppliers varies from low to high. In general, the bargaining power balance differs among the elements of a prepress solution. For the prepress equipment, suppliers bargaining power is moderate to low. Most of the electronic sub-components are standardized and undifferentiated. Also, a large number of suppliers exist for most required components. Competition among suppliers in this case is mostly based on price.

A few sub-components are supplied by companies with considerable bargaining power. For example, a limited number of highly concentrated suppliers supply high-precision imaging

drums. Suppliers of the laser diodes used for thermal imaging are also highly concentrated. Further, there is a considerable risk in dealing with suppliers who do not face strong competitive forces. Prepress vendors mitigate this risk by ordering large quantities, typically maintaining a one-year supply in inventory.

Suppliers of digital plates and other consumables have a different source of bargaining power. For them the prepress industry represents a minor portion of their total business. This is particularly true for suppliers of materials such as aluminium and polymer. High quality can differentiate products and provide suppliers with additional bargaining power.

Finally, vendors who cannot provide an entire prepress solution might have to deal with suppliers with high bargaining power. This is particularly the case for suppliers of prepress consumables. Vendors who have to outsource consumables in order to provide a complete solution may have to give up a portion of their margins on other supplied components. This is because printing customers today are increasingly interested in purchasing complete solutions and one-stop-shopping rather than combining products from different vendors. At the same time, the major prepress industry rivals are also the main suppliers of prepress consumables (Kodak, Agfa and Fuji).

#### **2.4.5 Bargaining Power of Customers**

Bargaining power of customers in the prepress market for small commercial printers is moderate to high. There are three major factors that contribute to this power. First, the products that the industry supplies to the market increasingly lack differentiation. Current technology is not a source of competitive advantage in this industry. Industry rivals can quickly match features like speed and image quality provided by other vendors. The lack of product differentiation provides customers with an incentive to look for the lowest cost solution.

Second, given current industry trends, customers in the small commercial printers market prefer to purchase a whole solution at once. This means that printers today want to purchase their equipment, workflow and total annual consumption of media from single vendors. Purchasing the entire solution lowers the number of transactions and allows customers to put more effort on searching for the best option.

The third reason for customers' high bargaining power is customer price sensitivity. In the last ten years printers around the world have earned below-average profit. This creates a great incentive for the customers to look for the lowest cost provider. One factor that diminishes customers' bargaining power is the fact that the market is more fragmented than the industry. There are hundreds of small printers in the market, while there are only a handful of vendors.

## **2.5 Overall Industry Attractiveness**

Attractiveness of the small commercial printers market and its prepress segments is moderate to low. First, this market has not recorded any significant growth in recent years. Market players, printers and vendors can achieve growth only by taking a portion of the market share from their competitors. Two strategies have proved to be successful in this sense: introducing a new technology and bundling products with prepress consumables.

Second, the few powerful players who dominate this market have a significant portion of their businesses outside the prepress industry. Companies like Kodak, Fuji and Agfa are financially stronger than other vendors. Their strategy in the future might be to drive prices so low that they eliminate the competition. Some signs of this strategy are already visible in the bundling business, where vendors supply equipment at prices under their variable cost.

At the same time, this market provides enough opportunity for a limited number of vendors. This opportunity is in printers' interest in purchasing the whole prepress solutions, including an annual supply of prepress consumables from single vendors. The opportunity

largely depends on vendors' relationships with buyers, built-in mutual trust and vendors' readiness to meet all printers' needs.

## **2.6 Key Success Factors**

Several key success factors play a role in the small commercial printing prepress industry. The most important factors are product performance, operations efficiency, customer relationships and strong product distribution system.

### **2.6.1 System Performance**

For the prepress industry in general, the most important key success factor is performance. Performance encompasses image quality and the equipment throughput. Image quality is what sells the printed product in the first place. Peak throughput is what helps printers meet their deadlines. System reliability also plays an important role in buyers' decision-making processes. Buyers look for minimum down time and maximum performance consistency. Again, this applies to all sub components of the prepress solution.

### **2.6.2 Operations Efficiency**

Operations efficiency refers to vendors' ability to provide products at a minimal cost. Sources of this cost are placed along the vendor's entire value chain. Inadequate efficiency in any element within the value chain can lower vendors' ability to deliver products at the market price.

### **2.6.3 Customer Relationship**

Products delivered to the prepress industry worldwide are not distinctively differentiated. Establishing a good and reliable relationship with individual customers remains the source of the sustainable competitive advantage. Also, the greater the difficulty to operate the product, the more important this relationship is. Finally, implementing a complete solution package imposes



significant switching cost on customers. Such customers particularly value reliable, knowledgeable and responsive vendors.

#### **2.6.4 Product Distribution**

Buyers in the small commercial printers market are far less concentrated than the industry. Buyers are numerous and their typical purchases are small compared to purchases in other prepress market segments. Therefore, business in this market needs to be facilitated through a well-organized distribution channel. Both direct and indirect distribution channels currently exist in the small commercial printers market. Agfa and Creo use direct sales strategies, while Fuji and Kodak approach buyers through their third-party distributors.

### **2.7 Future of the Prepress Industry**

The prepress industry will continue developing towards greater process automation. The printers who survive will be those whose business processes are the most efficient. Current high labour costs will be lowered in the future by

- Complete elimination of film and analogue plate lines
- Conversion from analogue proofing to digital proofing
- Consolidation of order management on the industry level

A long-term development in the graphic art industry will be towards complete automation of the printing process from idea to delivery. The global graphic art industry network will enable a printing process to take place around the globe. For example, an image will be created in one place, printed somewhere else, while the final product will be distributed in many different locations. The ultimate goal of this development is a leaner process, higher efficiency and lower production cost.

The small commercial printers market will follow the overall printing market trends. In addition, this market will remain price sensitive and will continue looking for the lowest cost solution. Technology for this market must be capable of allowing shorter make-ready times and profitable short printing runs.

Printers in the small commercial market will continue to appreciate one-stop-shopping experience. This suggests that only whole-solution providers will remain in this market. Other providers will either leave the market or enter some kind of joint venture agreement with third-party suppliers. An example of such an agreement is the current joint venture between Kodak and Dainippon Screen.

Finally, the competitive analysis suggests that the industry lacks product differentiation. Small commercial printers currently do not see significant difference in the quality or performance of products that different vendors offer. This situation favours low-cost providers such as KPG and Fuji.

At the same time Creo competes based on a differentiation strategy, providing the market with a premium quality products and services. The viability of this strategy in the small commercial printers market will be discussed later in the paper. The goal of this paper is to clarify Creo's current position in this market. The goal is also to identify a strategy that would provide a best fit for Creo, based on its organizational structure and the market forces presented in this chapter. The next chapter will present an internal analysis of Creo. The analysis will include a strategic fit analysis followed by a presentation of the Creo value chain.

## **CHAPTER 3 INTERNAL ANALYSIS**

This chapter presents an internal analysis of Creo. The chapter begins with an overview of the corporate culture. This is followed by an analysis of Creo's strategic position within the printing industry. The strategic analysis includes an analysis of the fit between corporate strategy and corporate capabilities. The strategic fit analysis examines nine different corporate strategy variables. The analysis of Creo's strategic position is presented with respect to the small commercial printers market and Creo's current position within this market.

The second part of the internal analysis presents the firm-level value chain analysis. Following Porter's model of the value chain, the analysis presents the firm's primary activities, such as product development, logistics, production, marketing, sales and customer service. The firm's supporting activities, which include Human Resources, Information Systems and the firm's infrastructure, are presented next.

### **3.1 Creo Corporate Culture and Business Philosophy**

Creo's unique corporate strategy is imbedded in all aspects of the company's business. The culture was initially conceptualized by Ken Spencer, one of Creo's founders. Despite the fact that Spencer left Creo almost ten years ago, the culture is still alive and represents a major corporate strength. For example, Creo is consistently among the top 25 best companies in British Columbia to work for (BC Business, 2003).

Creo culture is based on five principles. First, Creo employees strive to be the best in the world in all that they do. This principle is the root of Creo's differentiation strategy. This principle also suggests that Creo will outsource all activities that the company believes it cannot do better than the competition.

The second principle is that people who work at Creo care about each other, customers, suppliers and shareholders. This principle encompasses all stakeholders of Creo's business. Its goal is to raise awareness of including all stakeholders in the decision-making process.

The next principle sets the expectation that everybody at Creo does their absolute best to honour their commitments. The fifth principle expresses the belief that people are most effective when self-managed. For example, any Creo employee can spend up to \$50,000 a year on projects without seeking project approval. The only condition is that the projects must satisfy company's projects approval conditions. These conditions are set as required pay-back period, ROI and the project IRR value.

The last principle of Creo culture emphasizes importance of acting with integrity and fairness. Corporate management proactively communicates the principles of the corporate culture. It should be noted here that general awareness of Creo principles among employees was much greater before the merger with Scitex. Communicating of principles and the importance of Creo culture is now a much more demanding task due to a larger and more dispersed target audience.

Creo has core initiatives that support the principles of Creo culture, including Economic Thinking and delivering Fabled Service. The purpose of Economic Thinking is to improve employees' understanding of how to create and capture value. The content of this initiative is delivered to the employees in a form of a two-day course presented by the company's CEO (Michelson, 2003).

Delivering Fabled Service is an initiative that focuses on providing a level of service that goes beyond customers' expectations (Sanders, 1995). Creo recognizes that excellent service quality is not easy to copy and could successfully differentiate the company. The components of Fabled Service initiative, such as site ownership, professional service, responsiveness and accountability are embedded in the principles of the Creo culture.

Finally, Creo's compensation is based on contribution to the company. Contribution is determined by an annual 360° peer review. In principle, once a year every employee reviews a selected group of co-workers. The review covers three categories:

- Level I: Employee's team work and relationship with others.
- Level II: Employee's performance and results.
- Level III: Employee's personal characteristics such as customer focus, decision-making, communication, innovation and leadership.

However, the effectiveness of the 360° peer review is unclear. First, typically it takes over a week to complete the comprehensive reviews of their immediate peers. Second, constructive criticism sometimes has a negative effect on the relationships among employees, particularly among those who work in smaller groups.

### **3.2 Strategic Position**

The global prepress market perceives Creo as a trendsetter and leader of industry transformation. Creo supports this position through its mission statement: "Creo's mission is to provide and implement highly valuable and innovative solutions to customers using our unique imaging technology, software capabilities, people and culture..." The company bases its differentiation strategy on providing technology and service that creates unique value for its customers. Examples of product differentiators include SquareSpot® thermal imaging technology and Staccato® screening, which provide superior print quality. SquareSpot® technology enables the creation of an imaged spot without exposure intensity variation. The result is halftone dots that are consistent in size and shape. Staccato® screening enables artifact-free images without rosettes, screening moiré and abrupt jumps in color tone. Staccato also improves color and halftone stability on press.

Creo's brand promise supports its unique strategic position. The goal of the brand promise is to not only make customers choose Creo over the competition, but to make its customers see Creo as the only solution. Creo brand promise provides the industry with a message about the company: "Creo produces innovations that help business thrive, forges true partnerships with customers; challenges conventional thinking; transforms industries... Creo people are successful only if our customers are; are passionate about doing the right things right; do whatever it takes to do the job done."

### **3.3 Strategic Initiatives**

Currently Creo has four different official strategic actions: Value in Print, Networked Graphic Production™, Certified Color and Digital Media.

#### **3.3.1 Value in Print**

Value in Print is a solution that aims to enhance printers' competitiveness by optimizing their printing with Creo's CTP systems. Features like SquareSpot® and Staccato® screening helps printers produce higher quality products and thus increase their business. Benefits of Value in Print initiatives include photographic quality results and ink saving. For example, Staccato® screening enables extremely fine tone reproduction using very small micro-dots as small as 10 microns. Finally, Creo Value in Print consulting services ensures the best product fit for individual customers' needs.

#### **3.3.2 Networked Graphic Production™**

Networked Graphic Production™ (NGP) promotes a fully integrated global digital printing environment. NGP provided a global link between creative production systems, managements information systems, content management, Internet solutions and more. NGP

reduces duplicated efforts, improves communication among people involved in the printing processes and optimizes the printing processes on the global level.

### **3.3.3 Certified Color**

Certified Color is an initiative that guarantees customers meet their color requirements. Creo provides solutions designed to communicate, control and confirm color. In addition, Creo provides a professional color service to coach customers how to maximize their value from purchased solutions. Delivered professional service supports certified processes, calibration tracking and color output measurements.

### **3.3.4 Digital Media**

The Digital Media initiative attempts to offer customers a competitive complete prepress solution that includes both equipment and consumables. It is also a response to a similar initiatives introduced previously by some of Creo's major competitors, such as Fuji, Agfa and Kodak. For the global CTP market, Creo now offers a competitive positive and negative plates (for positive plates, the imaging device exposes the background, while on negative plates the device exposes the imaged area). Creo obtained the facilities to manufacture these plates through a couple of recent acquisitions.

First, in September of 2003 Creo acquired First Graphics Ltd. in South Africa. This plant produces Creo's positive working plate Creo PTP. The technology for this plate was developed at Creo prior to the First Graphics acquisition.

In February 2004 Creo acquired the assets of the US plate manufacturer Spectratech based in Middleway, West Virginia. At the acquired facilities, Creo produces Mirus and Fortis negative working plates.

The discussion below will present further analysis of Creo's strategy. The purpose of this analysis is to provide a better understanding of the alignment between Creo's corporate strategy and its ability to successfully compete in the small commercial printers market.

### **3.4 Strategic Fit Analysis**

Strategic fit analysis measures the fit between the corporate competitive strategy and its organizational capabilities, core competencies and market requirements. Strategic fit in this context will be measured through nine variables of the corporate strategy: product strategy, R&D expenses, structure, decision-making, manufacturing, labour, marketing, risk profile and capital structure.

#### **3.4.1 Product Strategy**

As mentioned previously, Creo has positioned itself as an innovative leader that is transforming the graphic art industry. Creo enforces this position through its mission statement and the Creo Brand Promise. Over 20% of Creo employees work in research and development, which indicates Creo's commitment to innovation.

This also gives Creo the capacity to develop a wide range of products and technologies in parallel. For example, Creo files for a new patent about once a week. Solutions provided to customers through the company's four strategic initiatives are further proof of Creo's determination to keep producing and delivering leading edge technologies to the printing market.

#### **3.4.2 R&D Expenses**

Among the key suppliers of CTP technology for the small commercial printers' market, Creo is the leading investor in R&D. In 2003, its gross investment in R&D was about 18% of its annual revenue of US \$578 M in the year 2003.



Over 20% of company's labour, or about 900 people, are employed in R&D, which is significantly above the industry average of below 10%. However, the company's goal is to increase efficiency of its R&D department and consequently lower its investment in R&D. Creo's target investment level for R&D is between 10% and 12 % of annual company revenue.

### **3.4.3 Corporate Structure**

Creo corporate structure can be represented as a two- or three-dimensional matrix. Its strategic business units are based on market segments such as packaging, newspaper and commercial printers. Each market segment has unique characteristics and requires a specific set of activities such as marketing, sales and service. At the same time, each product group in Creo is in charge of its own activities such as R&D, engineering, manufacturing, and operations.

Geographic location adds a third dimension to this matrix. Naturally, not all activities are duplicated in multiple locations. R&D, engineering and manufacturing departments are centralized. However, the marketing department is very much location-specific.

### **3.4.4 Decision Making**

Creo promotes decision-making autonomy and self-managed employees. This decision-making model is deeply ingrained in Creo corporate culture. It is corporate policy to openly communicate everything that improves employees' ability to make the right business decisions.

At Creo, it is believed that people work most effectively when they are self-managed. Company's policy encourages decision-making based on rational economic thinking. For example, Creo's simple guidelines for an individual investment decision are as follows:

- Net present value calculated at the current discount rate must be greater than zero (specific benefit-to-cost ratios apply for different investments)
- Payback must occur in less than a year

- The same benefit must continue for at least 3 years
- Spend money as if it is your own

A high percentage of outstanding corporate shares, about 25%, belong to Creo employees. This effectively adds meaning to the guidelines above. In addition, Creo allows each employee to spend up to US \$50,000 every year on individual projects. Employees will get automatic approval for their projects as long as they meet these guidelines.

In a nutshell, the decision-making model promoted through Creo corporate culture represents a truly communitarian organization. At the same time, the model focuses on economic factors.

### **3.4.5 Manufacturing**

The manufacturing of output devices at Creo does not offer much opportunity for economies of scale. Quantities of different products manufactured and sold annually are not sufficient enough to bring production costs close to the minimum efficiency scale. Manufacturing facilities at Creo do not have separate assembly lines for each product. Instead, assembly lines can be efficiently adapted to build any product.

In early 2000<sup>th</sup> Creo recognized that the assembly process did not have required flexibility. The old system was replaced by a flow line, which is based on Demand Flow Technology (DFT) manufacturing principles. DFT reduces manufacturing lead-time, decreases inventory and increases productivity and product flexibility. The resulting flow line allows high flexibility and prompt response to changing customer demands. Along with flexibility, DFT also provides significant economies of scope.

On the other hand, manufacturing thermal consumables, such as digital plates, offer large opportunities for economies of scale. Creo currently runs two plate- manufacturing facilities, one in South Africa and the other in West Virginia, US.

### **3.4.6 Labour**

Creo maintains a rigorous procedure for hiring people in all departments. The company believes that people at Creo represent a very important part of corporate assets. The policy to hire the best people is defined in the Creo Brand Promise: “Our people are the key to our success... At Creo, we hire only the best and the brightest...”.

The company provides continued education for its employees through programs opened by the Product Training Group (PTG) department. Creo also finances courses and programs offered outside Creo. Finally, for activities that require simpler skill sets Creo often finds outsourcing a better business approach than hiring people to do such activities in-house.

### **3.4.7 Marketing**

Arguably the most important strategic decision Creo made in its early years in printing industry was to creation its own sales force, rather that utilize existing distribution channels. Unlike Gerber and Optronics who used third-party distributors, Creo recognized the advantage of having a highly skilled sales force motivated to successfully penetrate the market quickly.

Direct sales, coupled with trade promotion activities to create consumer demand, proved to be a successful strategy. After 10 years of CTP, Creo still has well over 50% of share in the most of the markets that the company currently supplies.

However, Creo recently entered markets where it is more difficult to reach customers with a direct sales force. The small commercial printers market is one of these markets. To address the needs of this market, Creo is currently developing alternative sales channels, such as telemarketing and an e-business portal called eCentral .

### **3.4.8 Risk Profile**

The success of Creo's strategy heavily relies on its ability to innovate. Strategies that involve innovation are inherently risky. That is why it is important to understand Creo's risk profile as part of the overall internal analysis.

Creo manufactures most of the parts for its products in-house. Outsourced parts that have strategic importance, such as lasers for the imaging head, are purchased in large quantities. Creo stocks enough of these parts to meet the manufacturing demand for over one year. This practice lowers the corporate operational risk.

Creo has relatively large manufacturing facilities, which increase company's fixed cost. High fixed cost in R&D investments significantly increases the company's overall risk. Creo's recent entrance into to the consumables business further increases these fixed costs. Creo has improved its risk profile by choosing the right combination of products for its product portfolio.

Even though CTP technology and thermal imaging still represents its core competency, Creo has ventured into the digital printing market. At Drupa 2004, Creo introduced its new hybrid prepress workflow that integrates the Prinergy workflow management system for offset printing with the Xerox DocuColor digital color press (Drupa, 2004)

### **3.4.9 Capital Structure**

Creo's has remarkably conservative corporate policies regarding capital structure. The company finances its assets almost entirely through equity. For example, Creo financed the first eight years in business entirely by bootstrapping. Due to the lack of "cheap" money for financing its operations, Creo's cost of capital (WACC) is about 15%. On the other hand, Creo maintains full control over its business, which provides an additional competitive advantage.

Figure 10 graphically represents Creo's position at each of nine variables that measure strategic fit. The grade scale is 1 to 10, where 1 characterizes absolute cost-based strategy, and 10 characterizes absolute differentiation strategy.

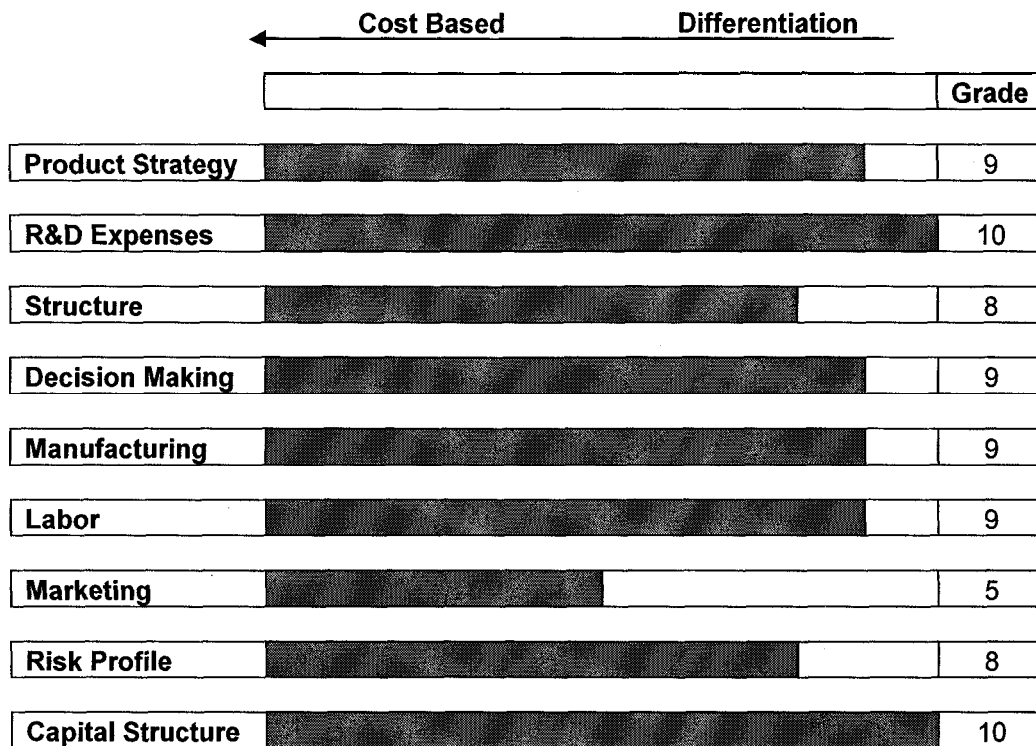


Figure 10 Strategic fit analysis. Source: Adapted from Bukszar, 2004 EMBA Class notes

### 3.5 Strategic Congruence

In order for a strategy to be successful, the variables that determine the strategy must be congruent. Strategic inconsistency regarding organizational structure, systems, people and culture can dramatically affect the implementation of the strategy. Most of the nine strategic variables listed above are in sync with Creo's differentiation strategy.

*Product strategy* is based on in-house developed innovative technology that provides customers with unique printing quality. The fact that Creo followed the competition by adding its own media to its product portfolio does not change the company's differentiation strategy. This is because the media is highly commoditized and does not offer much opportunity for

differentiation. As a result, technology used for products other than media remain the powerful differentiator.

*R&D expenses* continue to be a sign of Creo's commitment to innovation. Creo's plan to lower R&D costs from 18% to 10% could be a risky move. Any strategy that is placed somewhere between being a low-cost provider and a differentiator is usually a losing up one.

*Corporate structure* is very decentralized and flexible. As such, it is fully in sync with the company's overall strategy. It should be recognized though that Creo's current structure is expensive and hard to align. The efficiency of the current structure could be improved.

*Decision-making process* provides employees with a large degree of autonomy. Decision-making policies place a high level of trust in employees' ability to follow some general rules. Creo corporate culture supports this process because it minimizes the need for control. The existing decision-making model tends to be inefficient however if it is not properly communicated and understood.

*Manufacturing* is highly flexible. Creo's assembly lines are highly adaptable. The production department can efficiently switch production from one product to another following customer demand. Typical inefficiencies and the high cost of using such a flexible manufacturing process are moderated with Demand Flow Technology.

*Labour*, the Creoiters, is highly skilled and arguably represents Creo's most important asset. Typically hired after a lengthy process, Creo employees tend to stay with the company longer than the corresponding industry average. This enables Creo to retain knowledge and experience at a smaller cost. The strong corporate culture has the same positive effect on labour costs as it has on the decision-making processes.

*Marketing* is a variable that is also in sync with Creo's strategy. Creo traditionally delivers its products to the market through a direct sales force. As said before, this strategy

turned out to be a winning one. High technical expertise required to understand Creo's products made the third-party distributors less efficient than an in-house sales department.

*High risk* due to reliance on developing and implementing new technologies is consistent with the innovative differentiation strategy. Finally, conservative capital structure allows strategic flexibility and risk taking.

In the last decade Creo has successfully maintained the position of the leading provider of CTP systems in the printing industry. Despite strong competition, Creo still succeeds in maintaining its unique position as the provider of equipment capable of producing the highest quality image. Strategic variables are congruent with Creo's general differentiation strategy.

The future of the prepress industry will bring greater need for product differentiation. Creo needs to find a way to meet this need. By increasing operational efficiency, the company can improve its current competitiveness. However, this cannot be the permanent strategic solution. Creo has to maintain high investments in R&D in order support its strategy. The company has to do everything to avoid a head-on collision with its competitors. This is the only winning strategy.

### **3.6 Financial Analysis**

The financial analysis is based on Creo's Balance Sheets and Income Statements, which are provided in the Appendix 1. The Income Statement shows a moderate growth and somewhat lower operational efficiency. After a short-term fall in revenue, which followed the merger with Scitex, Creo recorded a moderate increase in sales in the last 2 years. In 2003 Creo recorded 7% growth in the sales of products and services. At the same time, Creo consumables are recording an above-average growth rate.

From 6% in 2003, the growth rate of Creo consumables in the second quarter of 2004 jumped to a level above 10%. This is because of the significant increase of sales of Creo plates.

This increase in consumables business followed acquisitions of the plate manufacturing facilities in South Africa and West Virginia.

Creo gross margins shows a steady incline. The company's goal is to keep the gross margin at a level close to 54%. The company also has a goal to keep the overhead and finance expenses at 7% of the annual revenue, which is well below the current 11%. Also, the annual R&D expenditures, averaging 14% in the last 3 years, is also well above the company's target of 10%.

Finally, the Income Statement shows a slow recovery in 2003 after a couple of years of weak performance. The post-merger period was characterized by high COGS and large overhead, resulting in annual financial losses. Steadily increasing earnings in 2003 are still well below the market average and far from Creo's earnings in late 1990s.

	2003	2002	2001
Revenues	100%	100%	100%
COGS	55%	57%	58%
Gross Margin	45%	43%	42%
Sales and Marketing	18%	18%	15%
R&D	14%	14%	12%
Overhead and Finance	11%	12%	13%
PBT	1.7%	-4.6%	-62.8%
Taxes	0.3%	-0.5%	0.4%
PAT	1.0%	-4.5%	-63.2%

**Figure 11 Income statement analysis.**

Creo has a strong Balance Sheet, which provides the company with the financial flexibility. With about US\$0.5 billion in assets, Creo currently carries very low long-term liabilities of about US \$17 million. The low leverage is a historical trend at Creo.

Current assets ratios, which are steady between 1.5 and 2 suggests efficient usage of the working capital. At the same time, the cash conversion cycle keeps increasing mostly due to conversion period.



Creo Inc. (formerly Creo Products Inc.)			
<b>Financial Ratios</b>			
<b>September 30,</b>	2003	2002	2001
<b>Profitability ratios:</b>			
Gross Profit Margin	45%	43%	42%
Net Profit Margin	1%	-5%	-63%
Return on Equity	2%	-9%	-139%
Return on Assets	1%	-5%	-85%
<b>Invested Capital Ratios:</b>			
Trade Capital to Invested Capital	56%	57%	60%
Trade Capital to Sales	37%	39%	34%
Debt to Invested Capital	21%	24%	20%
Return on Invested Capital	3%	-7%	-111%
Invested Capital Turnover	150%	144%	176%
<b>Liquidity ratios:</b>			
Current Ratio	1.9	1.7	1.8
Quick Ratio	1.3	1.3	1.3
<b>Efficiency of Trade Capital Utilization</b>			
Accounts Receivable Turnover	4.6	4.6	4.7
Inventory Turnover	3.3	3.3	3.8
Accounts Payable Turnover	6.6	5.6	6.2
Collection Period (days)	80	80	78
Conversion Period (days)	110	109	96
Deferral Period (days)	55	65	59
Cash Conversion Cycle (days)	135	124	116

**Figure 12 Financial ratios analysis**

Creo's goal is to reach 15% of revenue growth by the end of 2005 and the US\$1 billion in revenue by the end of 2007. This goal will be achieved if Creo meets its commitment to become one of the world's leading suppliers of thermal consumables reaching 20% of the global market share in CTP plates.

The company's goal is also to fully recover in terms of profitability, and to earn profit of 20% of annual sales before tax by the year 2007. In order to achieve these goals, Creo needs to continue the trend of lowering overhead and COGS and increasing overall efficiency. More financial details could be found in the consolidated financial statements for years 2001-2003 in appendix 1.

## **3.7 Value Chain**

Figure 14 in appendix 2 represents Creo's value chain that includes primary and support value-added activities.

### **3.7.1 Primary Activities**

#### **3.7.1.1 Product Development**

Creo's product development facilities of Creo are located in Vancouver, BC (including R&D facilities in Burnaby and Delta) and Hezlia, Israel. About 1,000 Creo employees work permanently in R&D. This is about ¼ of the company's total employment.

The product development process at Creo is separated into six distinctive phases: project opening, pre-beta, beta, early production, full-production and end of life phase. Creo's Global Product Steering Forum makes the decisions to approve projects and move projects between the phases. The forum meets once a week or as needed.

During the project-opening phase, the following issues must have to be addressed before applying for the pre-beta stage: market, technological and internal organizational risks, timeline accuracy, communication and required documentation. The main goal of this phase is to make a decision on further R&D investment. During the pre-beta phase, Creo makes external commitments to the project, such as taking orders for beta units.

Beta units are built during this phase as well. The primary purpose of this phase is to reduce the issues raised during the project-opening phase. In the beta phase, the first products are shipped to the customers. The field customer support division is involved at this point too.

The early production phase is used to refine the order fulfilment process and recognizing future revenues. All risk issues brought up earlier in the project are continually evaluated. The regular order fulfilment process continues during the full production phase. The end of life

process is characterized by three phases: harvesting, service status only (no more production) and end of service status (end of all products-related activities).

Each product development phase requires updates to the Product Contribution Model (PCM). The PCM is a document that contributes current product current success, forecasted trends and future goals.

### **3.7.1.2 Inbound Logistics**

The primary task of inbound logistics is to bring material into the business. Four teams are in charge of inbound logistics at Creo: Planning, Material Handling, Purchasing and Engineering Change Coordination. The role of Planning Team is to coordinate production and shipping schedules to ensure customers' (internal and external) requirements are met.

The Materials Handling Team is responsible for keeping production inventory accurate, storing inventory and preventing to damage inventory. The Purchasing Team manages the supply chain of goods and services. Finally, the Engineering Change Coordination Team coordinates engineering changes with buyers, planners and production. This team also helps the Planning and Purchasing teams to make the right decisions in order to reduce cost and inventory risk.

At Creo, the performance of inbound logistics is measured and recorded in the following reports: Inventory Accuracy Tracking Trend Report, Product Cost Report and Shipment Statistics.

### **3.7.1.3 Production**

Two main Creo production facilities are located in greater Vancouver, BC and Herzlia, Israel. Canadian production is organized into six teams: Output Devices, Thermal Head, Systems Integration, Workflow and Production Engineering teams. Output Devices team is further divided into 4- & 8-page and VLF (Very Large Format) teams. The facilities in Israel are used for manufacturing ex-Scitex devices, such as the Lotem and Dolev.

The output devices teams are in charge of assembling products. The Thermal Head team produces the imaging device, which is part of all output devices. The System Integration team assembles the thermal heads and output devices. It also does final adjustments and makes sure that the devices meet specifications, such as speed and image quality. Finally, the Workflow Production Team facilitates order fulfilment for all hardware and/or software systems.

#### **3.7.1.4 Outbound Logistics**

Following teams directly support outbound logistics activities: Service Logistics, Shipping and Order Fulfilment. Service Logistics provides planned service parts for stocking facilities and distributes them on time to meet customer's needs. Shipping provides shipping services to Creo employees and partners at the greater Vancouver area offices. Creo uses the services of Federal Express, DHL Danzas and UPS are the carriers that Creo uses the most.

Creo also uses service of many smaller carriers, whenever there is an economic justification for doing so. Order fulfilment keeps track of new bookings, sales forecasting, shipment schedules and trends. Order fulfilment also closely interacts with service logistics, material handling and sales teams.

#### **3.7.1.5 Supply of Consumables**

Creo has two internal initiatives in consumables: thermal consumables and inkjet consumables. Creo used to outsource plates, chemistry and processors, which belong to thermal consumables. However, in late 2003 and early 2004 Creo purchased two digital plate-manufacturing facilities and entered the digital media market. In addition, Creo has operated a plate-testing facility in Burnaby, BC, for many years. Creo plates manufactured in the newly acquired facilities use Creo-developed technology.

Creo obtains inkjet consumables, such as inks and media (paper, film, etc) through suppliers that are part of the Iris (an old Scitex proofer) supply chain.

### **3.7.1.6 Marketing**

Some global marketing activities, such as global communication and eBusiness, are centralized. Other activities, such as Demos and Benchmarks, and regional and segment communications are separate for each region. Creo's MarCom team focuses on product communication, media relations, internal communications, sales merchandise management and more.

The eBusiness creates channel for the electronic delivery of information, products and services. The eBusiness also focuses on improving online customer relationships. Segment specific marketing teams are, for example, Newsprint, Packaging and Small Commercial Printers teams. Each geographic region also has its own marketing communication team.

### **3.7.1.7 Sales and Promotions**

The Creo Canada sales force is one of three distinctive economic zones in Creo Americas. Like other zones, Creo Canada is further divided into following market segments: Enterprise, Commercial, Packaging and Newspapers.

There are also two global service teams: Inside Creo Sales and Global Accounts. Inside Sales is designed to improve sales force efficiency by providing support to the Creo field representatives. This team also provides Creo customers with a quick ordering process, simplified method of buying new products and source of product information. Global Accounts focuses on Creo's largest customers.

Creo's sales force earns commissions as shown on the following graph. This means that the higher the discount sales people offer to customers, the lower their commission.



**Figure 13** Creo sales force compensation concept.

### **3.7.1.8 Customer Service**

Customer Service is Creo's biggest division. It employs over 1,200 people worldwide. Like Sales and Marketing, Customer Service is divided by regions. Each region has a call centre that provides remote customer support. Creo customer support department closes over 70% of customer calls without a field escalation.

Field customer support is divided by support regions. For example, North America has four main support regions and many sub-regions. Each region is capable of providing on-site support within 24 hours of the initial call.

### **3.7.2 Support Activities**

Support activities indirectly add customer value. The main support activities within Creo are human resource, information systems and firm infrastructure.

### **3.7.2.1 Human Resources**

This department supports all value-added activities by delivering the best practice in human resource. The mission of this department is to ensure this company is the employer of choice and an excellent place to work.

Human resource division is in charge of employee relations, job postings, recruiting, orientation process, compensation management, HR information system, employee benefit plan management, conflict resolution, 360 review and other HR related activities. Similar to some other departments, Human Resources has its global division as well as the regional HR departments.

### **3.7.2.2 Information Systems**

The recently created Information Systems (IS) group includes IT, eBusiness, Knowledge Management, Customer Data and Channel Infrastructure groups. This group was created to shift focus from technology to the delivery of business systems, improved efficiency of IT resources and leveraging process expertise across the organization.

Customer Data is a function that includes install base, core data, market intelligence data and contract information. The channel infrastructure function consists of providing the necessary system support to ensure a common customer experience across all Creo channels. IT is responsible for all IT applications and operations.

Knowledge management is about capturing and sharing knowledge in order to realize greater operational efficiency and promote greater customer satisfaction. It has an enterprise-wide focus, complete with the necessary people, process and tools. The following teams provide knowledge management activities: Documentation and Training Development Team, Operations Team and Knowledge Products Development Team.

### **3.7.2.3 Firm Infrastructure**

Creo has in-house lawyers in offices in Vancouver, the US, Europe and Israel. Their purpose is to deal with ongoing daily issues such as legal obligations towards customers, shareholders and other subjects. The legal support has to be responsive on a regional basis. There are only a few legal functions that are consolidated company-wide in one location.

For legal disputes and court processes Creo often engages an external legal service. The reason for hiring external lawyers would be patent infringement, breach of contract and similar issues that involve court disputes.

Both corporate and regional offices provide financial and accounting services at Creo. Financing and accounting services are in charge of a long list of activities, such as reporting, analysis, budgeting, accounts management, tax service and so on.

## **3.8 Value Chain Assessment**

Creo supports its differentiation strategy by investing largely in R&D. Current investment in R&D is about 18% of the company's annual revenue. The large R&D department is a source of high fixed cost and tends to burden the company during market downturns. Creo's rivals have certain advantage during market downturns because their outsourced R&D activities represent part of their variable cost. Provided the outcome from R&D activities is proportional to the investment, Creo should have a competitive advantage during market upturns.

Large investments in manufacturing have a similar effect on Creo's cost structure to R&D investments. The recent purchase of plate manufacturing facilities further increases company's operational risk. On the other hand, in-house manufacturing increases production flexibility and provides product faster to the market.

Creo used to outsource most of its marketing activities. In fact, until recent times, all marketing activities except brand management and some general communication activities were



outsourced. Creo recognized the disadvantage of a lack of direct presence in different market and location segments. Today, the marketing department is organized in a matrix structure and has a presence in all regional offices as well as in all prepress segments.

Creo continues to promote its direct sales strategy. In fact, the company has taken one step further in this direction. As part of Creo's business transformation project, the sales force will in the future place greater emphasis on providing complete solutions and consulting than on selling technology.

Creo's customer service department is an industry benchmark and an important differentiator for the company. As such, service is one of Creo's core competencies and is not likely to be outsourced in the future. Due to its size, the service department represents a large fixed cost. It is expected, however that the higher reliability of new generations of Creo products will decrease the size of this department in the future.

## CHAPTER 4 STRATEGIC ISSUES

By entering the small commercial printers market, Creo will face several challenges. First, the market itself has little in common with the markets in which Creo is already a leading supplier. Second, the industry leaders that Creo competes with are already well-positioned to meet the needs of this market. Finally, Creo needs to implement a viable strategy that does not compromise its continued success in other markets segments.

### 4.1 Market-Related Issues

Creo needs to address several characteristics of the small commercial printers market in order to determine its most viable competitive strategy. The first issue is price sensitivity. As mentioned in chapter 2, an average printer in this market earns below-market returns. Printers in this situation prefer to buy low-cost solutions.

Today most of the leading vendors in this market provide output devices at prices well below US\$100,000, which is usually considered the industry benchmark. For example, KPG currently provides 4-page device having basic output configuration at US\$70,000. This price hardly covers KPG's cost of goods sold. The idea behind this strategy is to sign the customer up for a long-term thermal consumables contract. KPG earns considerably higher margins on such deals. Fuji and Agfa have the same loss-leading business strategies.

Providing equipment at a low price is an issue for Creo. The company's main competitive advantage in the global prepress industry is in its proprietary technology implemented in its output devices. At the same time, the strength of Creo's rivals in this is in manufacturing plates and other prepress consumables at low cost.

To meet market requirements, Creo needs to provide solutions to customers at a low initial cost. Customers seem willing to pay higher prices for plates later, as long as the initial lump-sum payment is low. This is where Creo needs to focus its strategy.

Another market-related challenge for Creo is the low concentration of customers in the small commercial printers market. As mentioned before, Creo's sales strategy has historically focused on direct sales. In order to reach all customers in the small commercial printers market, Creo would need to increase its sales force significantly.

In a comparison, Fuji and Agfa have well-developed indirect distribution networks. For example, Enovation, who distributes Fuji solutions, has a presence in practically all regions of North America. Kodak, on the other hand, leverages the sales force that it has developed over the years of the company's successful involvement in the consumables business.

Direct sales proved to be a competitive advantage for Creo during the early days of CTP technology. However, the need for better distribution coverage grew together with the business. This is particularly true in segments with lower concentrations of customers.

There are several reasons why Creo preferred the direct sales option. A direct sales force enables Creo to control the quality of its service. The Fabled Service strategic initiative, discussed in chapter 3, indicates that exceptional service is a high company priority. Also, a direct sales force enables Creo to fully control the customer relationship.

The third market-related issue that Creo needs to account for is the relationships between customers and existing distribution channels. This close relationship is highly valued by customers and plays an important role at the point of sales.

## 4.2 Industry-Related Issues

Arguably, the three biggest industry-related issues that Creo faces by entering the small commercial printers market are the ability to differentiate its products, the ability to access viable distribution channels and the unexplored economies of scale in the thermal consumables business.

Creo needs to differentiate its product offerings in order to successfully compete in this market. The internal analysis presented in chapter 3 clearly suggests that the company cannot compete solely on the basis of a low-cost solution. The remarkable results that Creo achieved in other segments of the global prepress market were accomplished by successful differentiation. At core of this strategy was a deep understanding of customers' needs. Creo developed this level of understanding through constant cooperation with its customers.

Small commercial printers' need for state-of-the-art prepress equipment is somewhat diminished by the limited amount of money that they are willing to invest in this equipment. Small printers often do not compete head-to-head and typically live on long-lasting relationships formed with their buyers. This is particularly the case for printers operating outside urban areas.

Creo needs to find a business model that appeals to this segment, while maintaining its profit margins. The product offering must provide customers with a promising return-on-investment ratio.

The ability to access a viable distribution channel is the second industry-related issue that Creo must address. The other market suppliers already use the most successful distributors. These distributors are often bound by contracts that stipulate exclusivity. Another issue related to distribution is the potential channel conflict. Channels need to be managed on a regional basis.

The third industry-related issue affecting Creo is the fact that it must compete with well-established suppliers of thermal consumables. Thermal consumables are highly commoditized products. Success in this business largely depends on a producers' ability to achieve scale

economies. KPG and Fuji, with 35% and 25% of the market share respectively benefit significantly from selling large volumes. Creo plans to penetrate the consumables market and to have 20% market share by the year 2007.

Another factor that further contributes to this issue from Creo's perspective is the financial structure of its rivals. All three of Creo's major rivals are subsidiaries of large conglomerates. The support that they receive from their parent companies enables them to run for a long time and barely cover operations costs. This business mode is dangerous for companies like Creo that have a relatively limited cash supply.

### **4.3 Creo Internal Issues**

It is clear, based on discussion in chapter 3, that Creo is internally structured to support a differentiation strategy. High manufacturing and R&D costs are normally covered by Creo's higher profit margins. Small commercial printers, however, do not allow high profit margins on equipment. Reasonably high margins on thermal consumables are available only to low-cost manufacturers who are achieving large economies of scale.

Getting into price wars with rivals by selling comparable equipment at low prices is dangerous for Creo's business in other market segments. First, it has a potential to cannibalize premium products sold in bordering segments, such as mid- and large-sized commercial printers. Finally, such a strategy could potentially harm Creo's brand equity.

The next chapter will discuss potential options that Creo can explore to address these issues. All of these approaches need to fit strategically into the existing corporate structure. The goal of next chapter is to provide Creo with a recommended strategy for entering the small commercial printers market.

## **CHAPTER 5 RECOMMENDATION**

To be successful in the small commercial printers market, Creo needs to leverage its relative competitive strengths. At the same time, the company needs to address market, industry and internal issues described in chapter 4.

### **5.1 Leveraging Strengths**

#### **5.1.1 Brand**

Creo needs to maintain a strong brand. This brand is generally well known in the segments where Creo already has a large market share. The highest image quality and performance reliability are images typically associated with Creo.

High image quality is important because it enables Creo customers to differentiate their products and obtain higher profit margins. High speed output devices with the Staccato® imaging option are not affordable to all customers. As such, printers who can afford Creo solutions can obtain more sustainable position in the market.

Product performance and service responsiveness is critical in all printing markets. Customer surveys that Creo conducts annually consistently show that customers see Creo as a vendor with higher service responsiveness than the competition (Creo-Survey, 2004). These surveys also indicate that customers perceive Creo output devices to be more durable and reliable than competing products.

A strong brand also minimizes buyers' searching cost. For this reason, the brand message needs to be communicated appropriately. The message must address the issues that

concern customers in the small commercial printers market. As discussed in the chapter 2, these issues are low profit margins and high operational risk.

### **5.1.2 Customer Focus**

Creo also needs to leverage its good customer relationships. Customer relationships have critical importance in the small commercial printers market. Customers in this market rely heavily on relationships when making purchasing decisions.

Often these customers are not completely knowledgeable about prepress technologies and its capabilities. They look to someone they trust for advice on which prepress solution is the best for them. They also need a consultant to discuss and solve ongoing problems. Like other printers, small commercial printers want to avoid non-productive times at all costs.

### **5.1.3 Flexibility**

Finally, Creo needs to leverage its relatively high organizational flexibility. Being an innovator and technology leader, Creo has greater ability to set the new trends than the competition. By doing so, Creo can create new market needs and be well positioned to meet new market expectations. High flexibility is an advantage Creo has over its competitors who are larger and therefore more rigid.

## **5.2 Addressing Strategic Issues**

Creo needs to address strategic issues in such way that its strengths are still fully utilized.

### **5.2.1 Market Price Sensitivity**

Market sensitivity and preference for low-cost providers in the small commercial printers market does not mesh with Creo's differentiation strategy. However, this market is not uniform. In chapter 2 it is suggested that the market can be divided in the smaller sub-categories. Price

sensitivity is not the same across all sub-categories. Thus, Creo should target the segments that are the least focussed on the lowest cost solution.

Understanding customers' financial structure can further help the creation of a viable competitive strategy. Most customers in this market prefer to carry larger variable cost and to minimize initial investment. For example, they would rather pay less for the capital equipment and more for consumables in the longer run because such a schedule provides better cash flow and minimizes operational risk. Cash flow and risk are critical issues for small commercial printers. It is important for Creo to recognize that these printers are more sensitive to such concerns than larger operations.

### **5.2.2 Low Market Density and Customers Expectations**

Creo's direct sales force will not be able to access customers in the small commercial printers market efficiently for three reasons. First, existing labour in the sales force would need to be multiplied several times over to be able to approach the sheer number of customers. Second, order size per customer will be much smaller than those of large commercial printers. Sales commission amounts will be smaller as well. Therefore, is unrealistic to expect the existing sales force to be motivated to approach every small printer in their region. Finally, small commercial printers will expect Creo's full attention, because this is what they currently receive from other market vendors and their distributors. Customers will expect a quick response to service calls and sales requests.

### **5.2.3 Lack of Product Differentiation**

The lack of differentiation in small commercial printers market is described in the chapter 2. This market is not as willing as other markets to put more money into enhanced performance and higher image quality. However, this market does value reliability, quick service response and



an understanding of the customers' needs. Creo should focus on differentiating the service because its service is already well differentiated in other printing market segments.

#### **5.2.4 High Production Cost and Low Scale Economies**

Creo's production costs need to be analyzed relative to other competitors in the small commercial printers market. Continuous efficiency improvements on all levels are required for Creo to stay competitive. New initiatives such as Lean Thinking serve this purpose (Favreau, 2003).

Scale economies, on the other hand, depend on the volume of produced products. The plate production has higher potential for scale economies than other parts of a solution package. It can be expected that the cost per produced plate will drop as Creo sales in all market segments grow. The unit cost of other parts of the solution, such as the output devices, will also be lower as the sales grow, but its significance will not be as high as it is the case with plates.

### **5.3 Recommended Strategic Initiatives**

#### **5.3.1 Focus on Only One Small Commercial Printers Segment**

Figure 6 in chapter 2 indicates that there are three sub-segments within the small commercial printers market. The segment characterized by 20-30 employees and \$2-3 million in revenue is closest to the printing market segments where Creo is currently present. This sub-segment is the least sensitive to price and has the highest expectations with regards to product quality and performance.

Creo should focus on this sub-segment first because its needs are closely aligned with Creo's current abilities. Naturally, other sub-segments cannot be ignored and Creo must take them into account in the strategy. As they grow, customers in other sub-segments may fall into initial focal category.

Creo should continue to provide complete prepress solutions. Bundling the thermal consumables into the package will remain critical for Creo success. Complete solutions should also include special deals for higher volume orders. Complimentary Veris proofers could be included in the package if the decision to do so can be supported by long term profit.

Potential customers want clear understanding how Creo solutions will help them to save money. That is why Creo needs to try to understand customer costs and provide a return on investment along with its recommended solution.

### **5.3.2 Product Offering**

To enter the small commercial printers market, Creo does not need to create new products. Creo's 4-page CTP output devices, equipped with Staccato®, ideally fit to the performance requirements of the small commercial printers. Recently added to the Creo workflow portfolio, Prinergy Evo is designed for the small commercial market too. Finally, Creo PTP positive working plates and Mirus negative working plates complete any possible product offering to the small commercial printers market.

Some of the products, such as output devices and plates, will be sold in more than one market segment. The product prices should be set based on the projected sales in all segments and not just the small commercial printers market. Such a pricing strategy will avoid any negative economic effects of selling the same products in different markets.

### **5.3.3 Financing**

Possibly the most difficult issue for small commercial printers is maintaining positive cash flow each month. Of course, this issue becomes more pronounced when business is slow. For example, summer months are typically slower for printers than the rest of the year. Small commercial printers avoid carrying high fixed costs. Therefore, they prefer to pay more for consumables and spend less on the capital equipment. To appeal to small commercial printers,

Creo should offer an inventive financial package to small commercial printers along with its products. This package must address the specific issues that small commercial printers face.

#### **5.3.4 Consulting**

Unlike Creo's national accounts, printers in the small commercial printers market often do not have a high level of printing expertise. Access to printers' forums and other relevant business information would be valuable for this market. Through marketing activities, Creo emphasizes that it already has an infrastructure that supports knowledge exchange. Forums, such as the Creo User Association is designed to serve this purpose. In addition, Creo must identify an information channel that suits this market best. Finally, around the clock consultation should be offered as part of the customer service contracts. The Creo Response Centre could provide this service.

#### **5.3.5 Indirect Distribution Channel**

To access large numbers of potential customers in this market, Creo needs to use indirect distribution channels. Ideally, Creo should find a single distributor or a small number of distributors covering large regions.

This task will not be easy because some of the most suitable distributors are already taken by other competitors. Creo will need to identify local distributors with smaller territorial coverage. At the same time, the selected distributors must still have attributes that are aligned with Creo's strategy.

The selected distributors should be able to sell Creo's entire solutions for the small commercial printers market, meaning that they would sell output devices, workflow and other software, thermal consumables and services.

Currently Creo uses third-party distributors in Canada and Europe. To sell Creo thermal consumables only, a similar model should be adopted in other regions, starting with the locations where the concentration of the small commercial printers is highest.

However, since Creo is already present in markets that border small commercial printing through its direct sales force, a channel conflict is possible. To address this conflict, an agreement with prospective distributors should be made. The agreement should specify customers that will remain under Creo direct sales. For example, third party distributors should not approach Creo national accounts (R.R. Donnelley, Quebecor, Quad Graphics and similar). Another way to control channel conflict is to limit the range of products sold through the indirect channel. Products offered should be reduced to those that output 4-up size plates. Selected third party distributors must be motivated to sell Creo products. That is why Creo needs to undertake a thorough analysis of potential distributors' current and future opportunity cost. Finally, Creo must maintain its access to the product end users. An agreement with a third party distributor must not block this access.

### **5.3.6 Partner with Channel**

To leverage its strengths, such as positive customer relationships, Creo needs to form strong partnerships with its distributors. Partnerships with distributors are critical for two reasons. First, through these partnerships Creo must maintain good relationship with the end users. Separation from end users can have myriad of negative effects, such as the loss of control of revenue, lack of full knowledge about product performance and so on. Second, without partnerships Creo will become isolated and its strength in customer service will be neutralized.

Though these partnerships, Creo must introduce its customer relationship standards to its distributors. Knowledge sharing via common web portal and training should further improve the

“hand-off” of customer service activities. Finally, Creo needs to find a way to get exclusivity contracts with the distributors it chooses, wherever possible.

### **5.3.7 Strategy Test**

All strategic initiatives should be tested before they are implemented globally. Isolated regions should be identified for the tests. Many businesses try their strategies in Canada before the global strategy implementation. This region should satisfy all of Creo’s needs for testing this strategy.

A small number of prepress distributors provide extensive coverage across Canada. In fact Creo already uses the third-party distributor Cascades Inc. for all media business in Canada. Cascades should be used to distribute complete prepress solutions to the Canadian small commercial printers market. At the end, the test would be followed by global implementation of the strategy. If testing in isolated regions proves successful, the strategy can be implemented globally.

## **5.4 Summary**

To enter the small commercial printers market Creo should focus on the largest printers within this segment first. By doing so, Creo will be able to maintain product offerings that are similar to those that the company is providing to other market segments. This strategy will also help Creo to avoid cannibalizing products provided to other segments.

Instead of providing the products directly to the market, Creo should use third party distributors that are already providing the same market with other products, such as paper and ink. It is desirable that selected distributors cover larger regions and adhere to Creo standards of service and commitment.

Creo needs to focus on differentiating its product offering in two ways. First, it needs to communicate the benefits of its innovative technology, such as Staccato® and SquareSpot® to the end users. Second, it needs to provide customer service that is beyond the customers' expectations, as per Fabled Service initiative (Sanders, 2004).

Creo must partner with the distributors in order to successfully differentiate its products. The partnership should be built by providing product- and other relevant training for the distributors. Appropriate sharing of information through forums, online portals and similar sources is also required to build and maintain the partnership.

To avoid channel conflict, Creo and the selected distributors must carefully identify targeted customers. In practice, this is done by identifying regions covered by the distributors. In addition, the large customers, such as Creo National Accounts, are identified within the region. The identified large customers will remain to be within the direct Creo sales domain.

Product offering should be the same as for other market segments. Naturally, 4-page format will dominate in this market but the product offering should not be limited to this size.

Product pricing should be adopted to minimize the initial capital expenditure. This could be done by including costs of service and some equipment in the plate price. This price arrangement improves the customers' cash flow and minimizes their operational risk. Finally, the strategy should be tested in one region first. Following the test phase and assuming that it is successful, the strategy should be implemented in other regions world wide.

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## APPENDIX 1 CONSOLIDATED FINANCIAL STATEMENTS

Creo Inc. (formerly Creo Products Inc.)			
<b>Consolidated Balance Sheets</b>			
(In thousands of U.S. dollars)			
<b>September 30,</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
<b>Assets</b>			
Current assets:			
Cash and cash equivalents	59,021	70,671	60,241
Accounts receivable	126,506	117,989	140,551
Other receivables	23,634	30,974	27,041
Inventories	96,445	91,799	99,438
Income taxes receivable	6,078	5,073	-
Future income taxes	20,203	16,919	11,034
	<u>331,887</u>	<u>333,425</u>	<u>338,305</u>
Investments	12,912	11,625	-
Capital assets	112,441	109,939	111,768
Goodwill and other intangible assets	11,253	1,791	-
Other assets	19,585	22,341	24,005
Future income taxes	13,314	16,084	13,629
	<u>501,392</u>	<u>495,205</u>	<u>487,707</u>
<b>Liabilities and shareholders' equity</b>			
Current liabilities:			
Short-term debt	-	16,440	19,298
Account payable	48,429	54,505	\$ 60,707
Accrued and other liabilities	67,013	66,725	54,928
Future income taxes	1,937	1,200	1,200
Deferred revenue and credits	57,520	53,441	48,067
	<u>174,899</u>	<u>192,311</u>	<u>186,486</u>
Long-term liabilities	16,950	14,136	-
Future income taxes	5,556	4,812	2,556
	<u>197,405</u>	<u>211,260</u>	<u>189,042</u>
<b>Shareholders' equity</b>			
Share capital	696,837	696,193	691,955
Contributed surplus	6,059	2,060	2,060
Foreign currency transl. adjustemnt	14,315	4,425	(919)
Deficit	(413,224)	(418,733)	(394,431)
	<u>303,987</u>	<u>283,945</u>	<u>298,665</u>
	<u>501,392</u>	<u>495,205</u>	<u>487,707</u>

**Table 1 Consolidated Balance Sheets**



Creo Inc. (formerly Creo Products Inc.)

**Consolidated Statements of Operations and Retained earnings (Deficit)**

(In thousands of U.S. dollars, except per share amounts)

<b>September 30,</b>	<b>2003</b>	<b>2002</b>	<b>2001</b>
<b>Revenue:</b>			
Product	360,618	336,329	447,241
Service	170,104	158,986	161,753
Consumables	47,316	44,537	47,533
	578,038	539,852	656,527
Cost of sales	320,197	306,581	378,176
Gross profit	257,841	233,271	278,351
Research and development	79,007	73,378	79,048
Sales and marketing	106,892	97,893	101,632
General and administration	63,767	67,259	82,134
Other expense (income)	(7,997)	(5,397)	258
Restructuring	2,547	8,376	4,081
Business integration cost	876	764	13,150
Goodwill and other intangible asset	2,659	309	74,314
Write-off investments	—	—	336,170
Royalty arrangements	—	15,530	—
	247,751	258,112	690,787
Earnings (loss) before income taxes	10,090	(24,841)	(412,436)
Income tax (recovery) expense	1,541	(2,680)	2,319
Equity loss	3,040	2,141	—
Net earnings (loss)	5,509	(24,302)	(414,755)
<b>Earnings (loss) per common share</b>			
Basic and diluted	0.11	(0.49)	(8.56)
Retained earnings, beginning of year	(418,733)	(394,431)	20,324
Net earnings (loss)	5,509	(24,302)	(414,755)
Deficit, end of year	(413,224)	(418,733)	(394,431)

**Table 2 Consolidated Income Statements**

# APPENDIX 2 CREO VALUE CHAIN

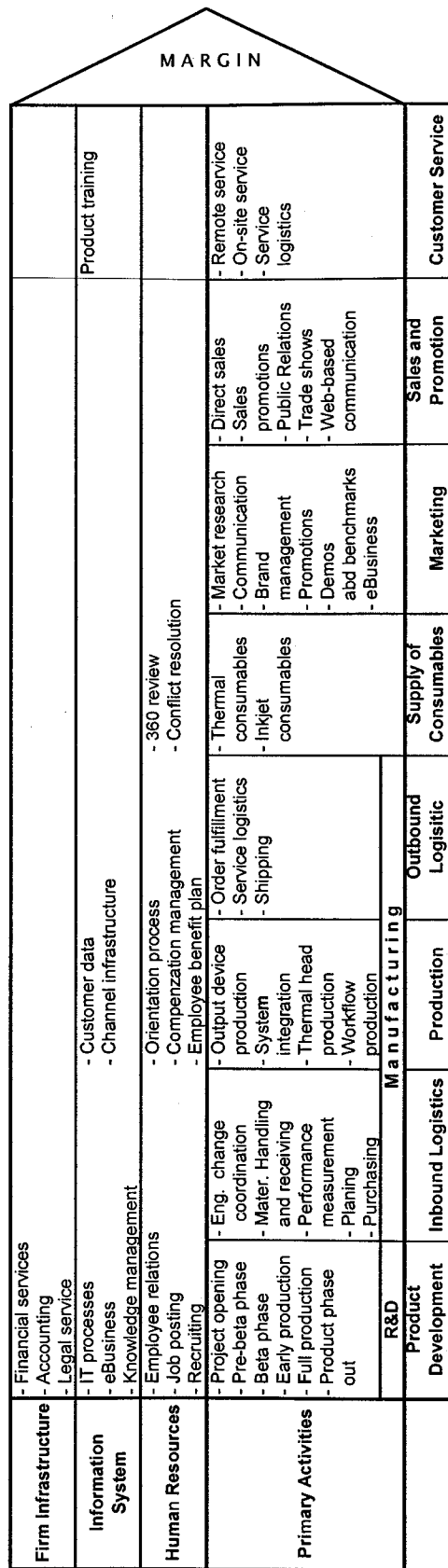


Figure 14 Creo Value Chain Source: Adopted from Aaker, 2001