KODAK

IDIS 619.1

Business Policy in High Technology Firms

Fall Quarter 2002

Dr. Palmer

Charles Mondave

Catherine Popovici

Hugo Silverberg-Rajna

Todd Thompson

Carol Wong

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

1 Executive Summary

The advent of digital technology threatens the traditional photography industry. Kodak's current strategy broadens its specialized scope on photography to include the "infoimaging" industry in response to a dramatically changing industry environment. Infoimaging, which is more fully described later in this report, represents the convergence of imaging and information technologies beyond their traditional boundaries. Redefining Kodak's industry as infoimaging poses both opportunities and challenges for Kodak that did not exist in the traditional photography industry.

Dan Carp, Kodak's Chairman, Chief Executive Officer, President, and Chief Operating Officer, defines Kodak's four growth strategies as:

1) Expand the benefits of film;
2) Drive output in all forms;
3) Make digital easy; and
4) Expand presence in new businesses and new markets.[i]

Kodak's success depends on its ability to manage the traditional photography to infoimaging transition. This report focuses primarily on Kodak's photography business unit, since it provides Kodak with over 70% of its revenues.

Our analysis identified the following issues critical to Kodak's future:

?? Kodak has been reducing its investment in research and development; this will result in a lack of innovative competitiveness in the long-term.

?? The Kodak brand is singularly linked to film. We see this as recipe for disaster, as was the case with Polaroid and instant cameras.

?? Kodak's revenues are not diversified – the company is heavily dependent on film.

?? Kodak is still film-centered, has already missed the opportunity to take the lead on the digital camera, and appears satisfied as a number three or four player in this business at present.

Our short-term recommendations are that Kodak:

?? Continue its harvest strategy in the maturing photography industry by leveraging film benefits and capturing emerging markets;

?? Continue to partner with industry leaders to gain experience and credibility in the digital space;

?? Continue to promote the Kodak brand with single use cameras, especially in markets where the multi use camera affordability is prohibitive; and

?? Reduce layers and eliminate costs within its organization, increasing shareholder value by at least $1.4 billion.

Our long-term recommendations for Kodak are:

?? Break the Kodak business units into separate companies. Our valuation work demonstrates that another $0.9 billion of shareholder value can be generated via a divestiture strategy;

?? If full divestiture does not appeal to management, Kodak should stop development spending in the film business, reduce its dividend, and divert earnings to development spending in units where the industry is growing - health imaging and digital technologies; and

?? Pursue the current infoimaging strategy but with increased focus on innovative products and extensive marketing designed to reposition the Kodak brand.

Internationally, Kodak should:

?? Continue to pursue emerging markets with film products;

?? Aggressively promote single use cameras in emerging markets; and

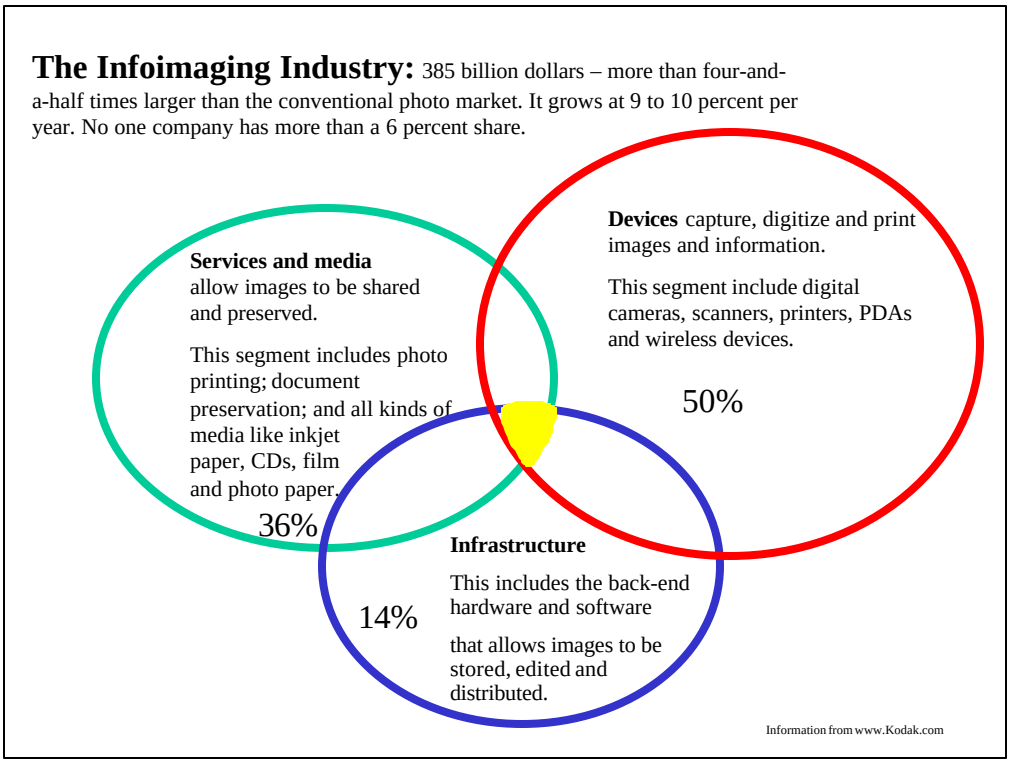
?? Continue to locate more manufacturing overseas to reduce costs.

2 External Analysis

George Eastman founded the Eastman Kodak Company in 1888 based on his patented dry plate formula and a machine for preparing large numbers of photographic plates. His passion, to simplify the complicated process of photography into an "every day affair", inspired his innovations. George Eastman's goal, to provide convenience and quality to customers so everyone could experience photography and "capture and re-live their more cherished moments," remains intact at the Eastman Kodak Company of today.[ii]

2.1 Industry Definition and Structure

Figure 1. Infoimaging Industry Diagram



2.2 Definition

Kodak competes in the "infoimaging" industry. "Infoimaging" is a new term that describes the convergence of image science (also known as, conventional photography) and information technology. Infoimaging is a $385 billion-plus per year industry[iii]. Kodak was one of the top two players in the conventional photography industry, which peaked in 2001. The

conventional photography industry is undergoing a major transition (and possible cannibalization) from analog technology to digital technology. The infoimaging industry, in contrast, is now growing at 9% to 10% per year and is wide open – no company has more than a 6% market share. Kodak's own industry definition is important to understand when evaluating Kodak's current strategy.

Kodak has four Strategic Business Units (SBUs) to address the infoimaging industry market: Photography, Commercial, Health, and Other. Kodak's SBUs address the following market subsegments:[iv]

Photography	**Health**	**Commercial**	**Other**
Consumer Film	Digital	Graphics	OLED (Organic Light Emitting Diode)
Consumer Camera	Conventional	Document Imaging	Sensors/Optics
Consumer Paper		Commercial and Government Services	Miscellaneous
Processing/Retail		Wide Format Inkjet	
Kiosks/Labs/Other			
ProPhoto			
Entertainment			
Digital and Applied Imaging			

This analysis focuses primarily on Kodak's Photography SBU, which currently comprises 70% (approximately $9 billion) of Kodak revenues. Declines in revenue and growth over the past two years in the Photography SBU represent the greatest immediate threat to the long-term health of Kodak.

2.3 Structure

The worldwide photography market is an $86.4 billion market. The following figures depict the market breakdown and the photography product subsegment overview.

Figure 2. Worldwide Photography Market - 2001

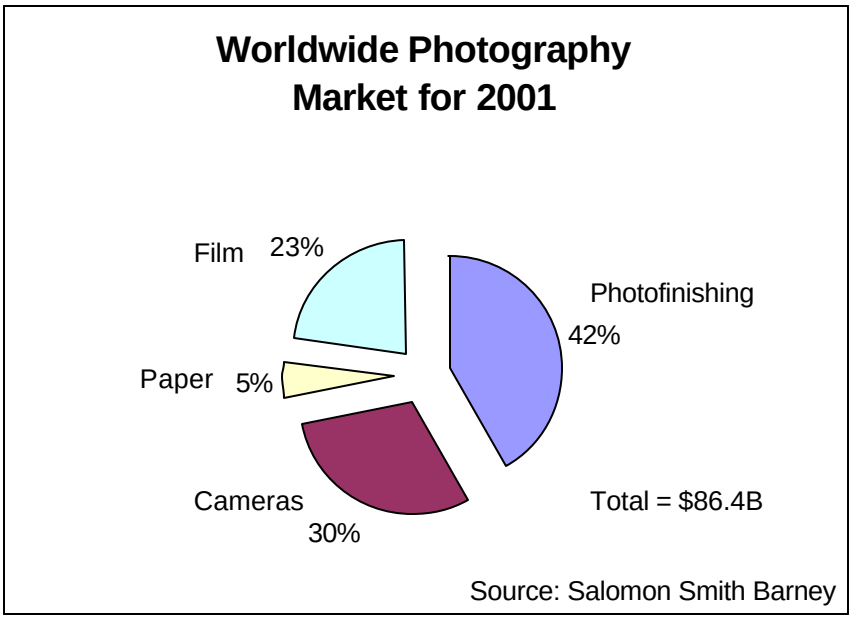
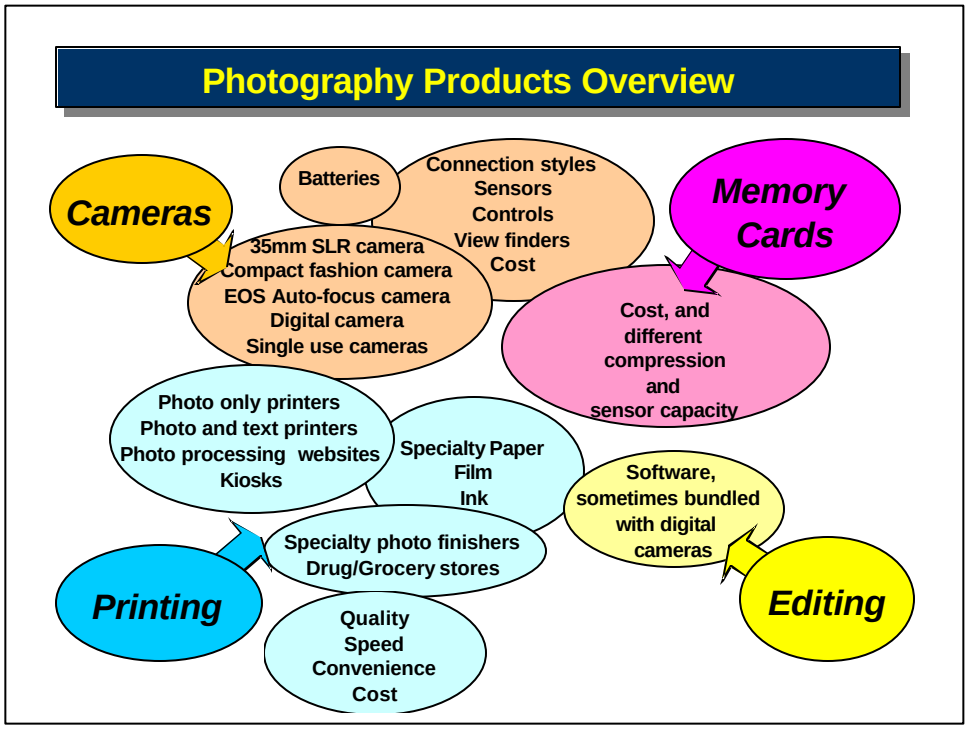


Figure 3. Photography Industry Product Overview



2.3.1 Level I Structural Analysis

This section summarizes results from four level industry structural analyses of each of the four key photography market subsegments: film, paper products, cameras, and photo-processing. Each level 1 factor has an assigned value. A value of "1" indicates that factor is unfavorable, while a value of "5" indicates that the factor is very favorable to the industry, specifically Kodak. Appendix A tables contain analysis details and quantitative rankings of each Level 1 factor. We combined the paper and photo-processing segments during analysis for reasons to be discussed later. The following three diagrams summarize the first and second level industry structural analysis for the key market segments.

Figure 4. Quantitative Analysis of the Film Industry

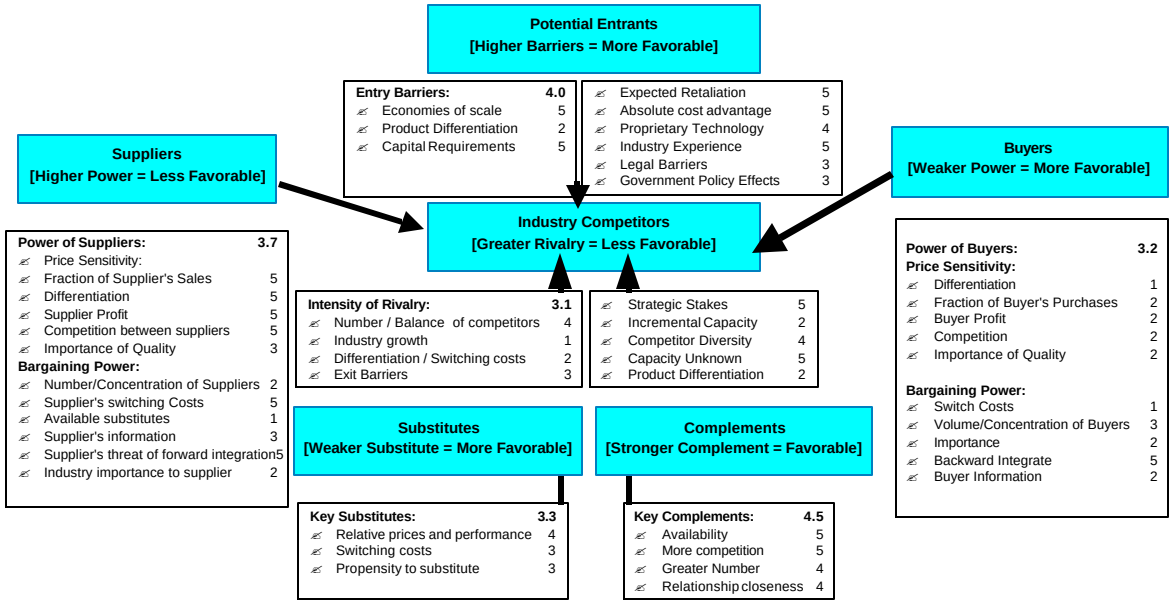


Figure 5. Quantitative Analysis of the Camera Industry

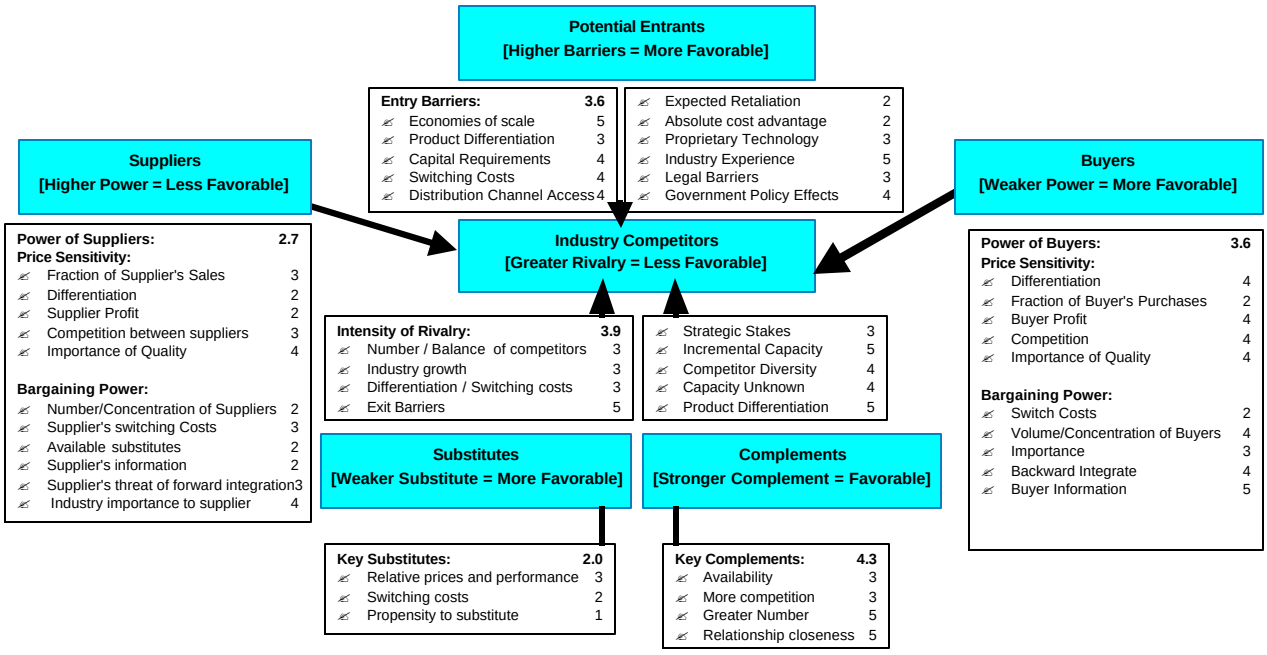
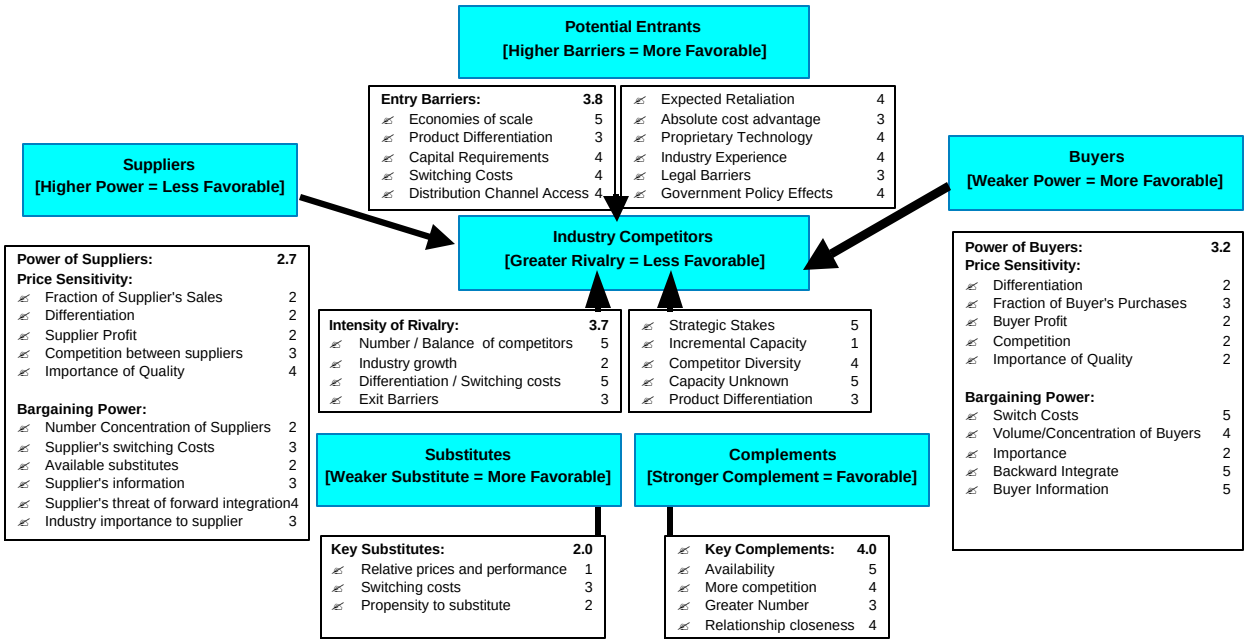


Figure 6. Quantitative Analysis of the Photo Finishing and Photo Paper Industry



FILM PRODUCTS

Appendix A contains discussion of the film segment structural forces. Figure 4 graphically displays the values assigned to each factor.

ANALOG AND DIGITAL CAMERAS

Appendix A contains discussion of the structural forces for the digital and analog cameras segment. Figure 5 graphically displays the values assigned to each factor.

PAPER AND PHOTO PROCESSING

Photographic paper and photo-processing go hand in hand. Retailers and photo-processing centers are the buyers, while film manufactures are the suppliers. Typically, amateur photographers purchase small amounts each photo paper type including those for digital output. Therefore, these two Kodak photographic division segments are analyzed under one umbrella during the structural analysis.

Photo finishing includes several technologies: photo finishing, online photography, digital kiosks, and minilabs. Photo finishing is projected to grow by 1.4% per year over the next 5 years.[v] The paper segment includes retail and commercial outlet print paper as well paper sold for home use, such as inkjet printer photo paper. Paper usage is expected to decline by 0.3% per year over then per from 2001 to 2005.[vi]

Appendix A contains discussion of the structural forces for the paper and photo-processing segment. Figure 6 graphically displays the value assigned to each factor.

2.3.2 Level II Structural Analysis

Reconciliation of the six-force factor values gives an overall rating for each force. The reconciled ratings represent a simple average of all force components. The following tables display the assigned factor values with the associated force.

Table 1. Film Products Level II Structural Analysis

Competitive Force	Competitive Force Assessment	Reconciled Rating
Rivalry	Film industry rivalry is characterized as an oligopoly that competes on price. The rating for industry rivalry is neutral due to the slow growth and limited product differentiation.	3.1
Buyer Power	Film is not a commodity, yet it has some of the characteristics of one. Buyers are very price conscious with switching costs very low. The only saving factor is that buyers will not backward integrate. This force is rated mildly favorable.	2.2
Barrier to Entry for Entrants	Many barriers make this force semi-favorable. The incumbents have achieved economies of scale and learning through years of producing high output. In addition, channel access and the expectation of retaliation make the industry undesirable.	4.0
Supplier Power	This force is semi-favorable due to commodity nature of the raw materials used to produce film. The raw materials represent a small amount of the overall volume supplied by vendors while there is limited threat of forward integration by vendors.	3.7
Threat of Substitutes	Digital camera substitution cuts into film demand growth. The substitute prices and performance are on par with analog cameras/film. Substitution likelihood due to moderate switching costs makes this force neutral.	3.3
Effect of Complements	This force is considered semi-favorable because significant inertia exists in the film use to capture pictures. Kodak and others have developed single-use cameras and scanners to extend the film life cycle. These will drive film sales far into the future.	4.5

Table 2. Analog and Digital Camera Level II Structural Analysis

Competitive Force	Competitive Force Assessment	Reconciled Rating
Rivalry	Industry rivalry is semi-favorable due to the high product differentiation, incremental capacity, and low exit barriers. The stakes are high for film producers and moderate for non-film based competitors. A few highly competitive players dominate the industry.	3.9
Buyer Power	This force is semi-favorable with camera switching costs and the small fraction of the buyers' purchases being the weakest factors. The strong factors include high level of buyer information, differentiated products, and low chance of backward integration.	3.6
Barrier to Entry for Entrants	Product differentiation and intellectual property are rated as moderate. The top five incumbents control over 80% of the market due to the economies of scale and the significant camera production expertise required. This force has a moderate rating as a result.	3.6
Supplier Power	Camera component suppliers have some power, which creates a moderately favorable rating. Semiconductor and optics suppliers provide highly differentiated devices. However, the importance of product quality and the industry make the factor neutral.	2.7
Threat of Substitutes	A video camera can substitute a still camera but cost and difficulty in transferring a captured image makes this a poor stand-in for a still camera. Therefore, this factor is rated a semi-unfavorable.	2.0
Effect of Complements	PDAs and cell phones are current digital camera complements. Camera numbers will increase as multifunctional devices become more popular due to the synergy created by providing images with voice or text, making this factor semi-favorable.	4.3

Table 3. Paper and Photo Processing Level II Structural Analysis

Competitive Force	Competitive Force Assessment	Reconciled Rating
Rivalry	The photo-processing industry is an oligopoly with two major vendors carving up the world regions. Stakes are high for both Kodak and Fuji as their film sales are highly dependant on the success of photo processing.	3.7
Buyer Power	There is little threat of back integration, since switching costs are high and buyer information is limited. However the importance of the industry is minor, differentiation is minimal, and competition is high. This force, therefore, is rated as neutral.	3.2
Barrier to Entry for Entrants	There are significant economies of scale and learning for traditional film processing. However, the advent of digital cameras enables processing to be performed at a kiosk in a mall. This reduces the barrier to accessing the distribution channel. The force is given a moderately favorable rating because of capital requirements, intellectual property requirements, and the previously listed reasons.	3.8
Supplier Power	Some film processing materials are commodities while others are specialized products. The most important factor is product quality because the equipment carries the vendor's name. Industry importance to the supplier is moderate and forward integration is unlikely. Supplier power is neutral.	2.7
Threat of Substitutes	Digital camera use and the Internet reduced photo-processing demand. Substitution is occurring among the techno-savvy but switching costs are moderate due to the required infrastructure. This force is semi-unfavorable.	2.0
Effect of Complements	Continued analog cameras use drives most photo-processing demand. Single-use cameras availability makes them an excellent choice for special events. However, the high cost of photo processing may lead to the purchase of lower cost digital cameras. This force is semi-favorable.	4.0

2.3.3 Level III Structural Analysis

Table 4. Film Products Level 3 Analysis Summary

Competitive Force	Effect on Industry	Ranking
Rivalry	Neutral	1st
Barrier to Entry for Entrants	Moderately Favorable	2nd
Threat of Substitutes	Neutral	3rd
Buyer Power	Moderately Unfavorable	4th
Effect of Complements	Highly Favorable	5th
Supplier Power	Moderately Favorable	6th
Overall:	Neutral	

The film industry rates neutral based on a six forces weighting. Industry rivalry is the most critical force. Four competitors control over 90% of the film market. Entry barriers are high due to limited vendor product differentiation, vendor price focus, and economies of learning and scale. Threat of substitutes is another critical factor. Digital cameras are on par with analog cameras leading to analog camera sales cannibalization. This effect reduces film demand, a trend that will accelerate as more digital cameras represent a better value than analog cameras. Product complements improve film demand and supplier power is limited, but these forces are of secondary influence. Unfortunately, the positive effects of complements do not outweigh the effects of digital substitution.

Table 5. Analog and Digital Cameras Level 3 Analysis Summary

Competitive Force	Effect on Industry	Ranking
Rivalry	Moderately Favorable	1st
Effect of Complements	Moderately Favorable	2nd
Threat of Substitutes	Moderately Unfavorable	3rd
Buyer Power	Moderately Favorable	4th
Barrier to Entry for Entrants	Moderately Favorable	5th
Supplier Power	Neutral	6th
Overall:	Moderately Favorable	

The camera industry is moderately favorable, based on the weighting of the six forces. Industry rivalry is the most critical force. Five competitors control over 80% of the world camera market. This influences the effect of complements and threat of substitutes. Camera vendors offer differentiated products with connectivity to complementary products such as computers, printers, and the Internet. However, video cameras, a strong substitute, can take still photos that are on par with the low-end digital cameras. Buyer power contributes a positive affect to the rating because vendors have differentiated their products with a variety of features. In addition, buyers and suppliers are unlikely to backward and forward integrate respectively due to the high-level of industry knowledge and intellectual property required.

Table 6. Paper and Photo Finishing Level 3 Analysis Summary

Competitive Force	Effect on Industry	Ranking
Rivalry	Moderately Favorable	1st
Threat of Substitutes	Moderately Unfavorable	2nd
Barrier to Entry for Entrants	Moderately Favorable	3rd
Effect of Complements	Moderately Favorable	4th
Buyer Power	Neutral	5th
Supplier Power	Neutral	6th
Overall:	Moderately Favorable	

The paper and photo finishing industry is moderately favorable, based on the weighting of the six forces. Industry rivalry is the most critical force. Two players with the highest stakes control the industry: Kodak and Fuji. Competitors want to displace these leaders from their dominant positions as much as possible. Kiosk, inkjet printer development, and deployment give new entrants an opportunity to compete on a level playing field with Kodak and Fuji. Likewise, consumers are able to substitute a digital camera and computer for film processing and printing. Kodak and Fuji hope to maintain their leading market positions by offering innovative products such as single use cameras, so consumers will continue to use photo-processing and printing services. Supplier and buyer power represent secondary concerns due the lack of incentive to integrate into the photo finishing market and the lack of importance represented by the industry.

2.3.4 Level IV Structural Analysis

FILM PRODUCTS

The top four film firms' strategic stakes are very high. Kodak has a 120-year-old prestigious reputation at risk if it cannot grow film sales at least as fast as nominal GDP. Film represents over 70% of Kodak sales, as previously stated. Photography digitization is the main threat to Kodak, as well as to the other three market leaders. Kodak's strengths are not in developing innovative consumer electronic products. It is the leader in producing quality photographic products. The challenge for all players is to develop strategies to postpone the decline in film revenues until they are able to diversify into other markets with higher growth prospects.

ANALOG AND DIGITAL CAMERAS

Kodak participates with four other firms to control 80% of the camera market. Kodak has only a 10% share of worldwide camera sales and is playing catch-up with the other firms. All of the other firms are based in Japan, the technological camera breeding ground. Japanese consumers are demanding and well informed electronics product consumers. The trend towards digitization has resulted in declining analog camera demand and has led to better digital camera and video camcorder value. Kodak may find itself a niche player of digital and analog cameras if it does not quickly lead with innovative products and substantial marketing. Kodak's strategy of focusing on infoimaging may be the key to developing complementary products so that it is not pushed into a market niche.

PAPER and PHOTO FINISHING

The photo finishing and paper consumption market situation is only slightly better than that of film consumption. This market is influenced by long-term contracts negotiated mainly on price. Maintaining these contracts with customers is crucial for Kodak and Fuji. However, photo finishing kiosks and home photo finishing tools make the two leaders compete in areas where the end consumer bases purchase decisions on value, quality, and price instead of on long-term price contracts. Kodak and Fuji need to develop products to meet this demand. In addition, they need to continue to make analog camera use attractive to consumers so that processing and paper consumption revenues will continue to grow at least as quickly as nominal GDP. Rapid camera and photo finishing technological changes mean that Kodak's intellectual property collection has little value if a disruptive technology or a network externality causes consumers to shift away from photo-processing altogether.

2.4 Environmental Analysis

2.4.1 Global

The trend towards globalization requires business functions to become virtual processes so that where they occur is immaterial.[vii] Infoimaging product demand will grow as the real-time nature of global business transactions becomes increasingly important. For example, a digital photo of a fabric in Japan e-mailed to a designer in Italy provides the instant visual information necessary to make a purchase decision in the short business cycle fashion industry. Or, a semiconductor equipment manufacturer corporate office views a digital photo of a broken part at an overseas customer site and knows immediately the necessary design changes required for its products currently in production. The ability to simultaneously view and evaluate health images by medical experts on different continents and to share archived information in hospital computer networks improves the level of health care.[viii] These examples only touch the surface of the numerous ways that digital images improve the way people communicate and conduct commerce globally.

Emerging markets such as China, Latin America, and Eastern Europe provide new global opportunities for photography product companies. Companies, whose core business is based on traditional products, compete to establish dominance in new markets where they can expand the remaining film benefits. World Trade Organization negotiations strengthen these potential

opportunities. Last year China joined the World Trade Organization, integrating it fully into the global economy, adding over one billion additional consumers.[ix] However, developing markets inherently pose challenges due to factors such as political and financial volatility, potential for conflicts with other nations, and lack of established credit and account collection systems.[x] U.S. currency devaluation is another variable that could adversely affect a corporation attempting to do business within an emerging market.

The 9-11 aftermath impacts the infoimaging industry photography subsegment in many ways. War and terrorism threats increase the need for commercial and governmental systems photography products such as large format aerial films.[xi] In contrast, the 9-11 aftermath negatively impacts the following industries that the infoimaging photography segment depends on: travel, entertainment, advertising, lodging, and theme parks.[xii] Irrational price swings in airline fares, the security hassle factor, and the poor economy continue to keep travel numbers down.[xiii] In 2001, for international arrivals to the U.S. alone, there was a decline by 10.9 percent for a total of 45.7 million arrivals.[xiv] Although this number includes business travel, it demonstrates the magnitude of 9-11's influence on travel.

The photographic sector is vulnerable to severe weather that influences picture taking and processing activities. A Salmon Smith Barney analyst reports that 40% of picture taking is done in the summer. The higher than normal precipitation in Europe during the summer of 2002 reduced tourism by 20%, which led to lower film sales.[xv]

2.4.2 Social

Early adopters strongly influence the social acceptance of digital photography. They recommend digital cameras to others and purchase cameras as gifts for others. Research by Future Image, Inc. finds that the top eight digital camera vendors believe that the mass consumer market is ready for digital cameras. Early adopter sales were previously based on increasing resolution. Now that digital camera resolution is approaching that of traditional cameras, the overall experience and ease of use have become the most important factors to mass consumer market adoption.[xvi]

Professional photography includes fields such as advertising and wedding photography. Many professional photographers embrace the benefits that digital imaging provides, which positively affects the industry. A recent trend is digital wedding photography. A wedding

professional photographer using a digital camera may take as many as 2000 images during a wedding. No cost is incurred until an image is manipulated or processed in some way. In contrast, analog film photographers typically take 200 to 300 images. Film and processing expenses translate to a per-image cost of over $1. Digital photography prevents image loss due to camera loading or film damage. Digital photography also reduces the anxious wait time for film processing and the uncertainty of whether or not a once-in-a-lifetime moment was adequately recorded. Photographers who convert to digital say that although the initial investment is expensive; the increase in efficiency and creativity, and the reduced film and development costs more than offset the initial investment.[xvii] Photojournalistic wedding photography trends benefit from digital technology. A photographer focuses on capturing candid moments rather than limiting himself to planned photo opportunities due to numerical film roll constraints.

Digital imaging is quickly replacing traditional photography in the advertising field. According to Vertis Advertising Production Services, the change to digital photography dramatically improves advertising workflow because images are already in digital format and are available for immediate examination and use.[xviii]

Introducing products into emerging markets requires in-depth knowledge of how these markets work. For example, Chinese look to Japan for trends. Japanese products are seen as "hot," thus fueling Kodak's competition with Japanese infoimaging companies. E-commerce is not a popular distribution channel in China, due to the lack of computer infrastructure, but Chinese supermarkets offer shoppers a wide selection of electronic products. Fortunately, for Kodak, 27% of those surveyed in a 1999 AC Nielsen China Millennium Report stated that the Chinese often use or own Kodak products.[xix]

Artists differ on whether or not digital imaging is photography. The Photographic Society of America, Inc. defines a photograph as "an image produced on a light-sensitive surface by the action of light."[xx] If image components are assembled in a computer and no light is used to form the new picture, some artists argue that the resulting picture is graphic art instead of a photograph. Artists who participate in photography contests and exhibitions are concerned about the blurring boundary between photographic and graphic art. The concern is based on the ability to manipulate images that digital has created.

2.4.3 Technological

New technologies continue to redefine the photography subsegment of the infoimaging industry. Photography players need flexibility and technological expertise to adapt as cell phone, personal digital assistant (PDA), digital camera, lap top computer, and fax capabilities converge.

Electronic signature technology and electronic locks are necessary to ensure that digital photos have the same security and credibility as traditional photos. However, the technology needs to be more user friendly to appeal to those that are digitally challenged.

The digital photography focus is now on making images easier to take, print, and share. The International Imaging Industry Association (I3A) joins companies with the purpose of creating a Common Picture Exchange Environment (CPXe). A CPXe enables consumers to use any digital camera and photo finisher combination to retrieve their prints.[xxi] Thus, industry competitors must sometimes work together in order to capitalize on infoimaging opportunities.

Kodak and Fuji are driving the expansion of film with single use cameras (SUCs). These products target low income and young consumers that could not otherwise afford an analog or digital camera. Low cost and reusable materials enable Kodak and others to produce a camera with a roll of film installed at a very affordable price.

Film manufacturers are expanding film usage to collect health-imaging information for distribution among health professionals. Information collected on film will be picked up by light sensitive electronic components, and then stored in computer memory.

2.4.4 Governmental/Political

The infoimaging industry has a symbiotic relationship with the Internet. The ease of sharing images via the Internet promotes the transition to the use of digital materials. The growth of Internet sales has resulted in U.S. Congress debates on Internet sales taxation. Internet taxation within the U.S. border is the sole responsibility of the Advisory Commission on Electronic Commerce. For now, the Commission has postponed the tax issue and proposed: "a 5-year extension of the federal moratorium on special taxes on Internet sales; the repeal of a 3-percent federal telecommunications excise tax; and prohibition of taxes on any digitized goods, including downloadable software or music."[xxii] Taxation on Internet transactions could hinder two desirable selling points of digital photography – the convenience of sharing information and cost savings.

2.4.5 Ethical

Digital image manipulation and ease of modification add an ethical element of concern for the infoimaging industry. For example, CBS was accused of "digital deception," using digital technology to mislead (January 2000). CBS had replaced the NBC logo with a CBS eye in Dan Rather's reports from Times Square in the millennium coverage.[xxiii] The new technology poses issues of image authenticity and image integrity. The Digital Custom Group, Inc. drafted "Model Guidelines to Protect the Integrity of Journalistic Photographs in Digital Editing," in February 2002. These guidelines provide "internal policies for technical, objective application of digital image editing procedures to journalistic photographs."[xxiv] The ease of alteration also changes the credibility of photography as evidence in the court of law. Advances in verification technology play a key role in digital imagery use in court.[xxv]

Manufacturing in targeted emerging markets, such as China, provides photography corporations advantages such as lower transportation costs, more operational control over marketing, sales, and distribution, and a foreign exchange hedge.[xxvi] However, there is political and ethical pressure for linking "Most Favored Nation Trading Status" (MFN) to human rights improvements in China and Tibet. In opposition, corporations such as Kodak lobbied on behalf of the Chinese government to keep trade and human rights issues separate.[xxvii] Currently, China still has MFN trading status with U.S. In early 1995, the Clinton Administration encouraged companies to respect a voluntary code of ethics, "Model Business Principles", issued for U.S. corporations doing business overseas. Companies that publicly supported these principles include Boeing, Honeywell Inc, General Electric, Eastman Kodak, the Rockwell International Corp., and Loral.[xxviii] These companies say they support the ethical treatment of workers overseas; however, by desiring the separation of trade and human right issues, they dilute the U.S.' power to improve conditions for Chinese people.

2.4.6 Economic (Macroeconomic Trends)

The global economy is in constant flux with the potential for war looming. The price of oil rose to just under $30 per barrel with the talk of war. Oil prices may increase, and a prolonged war could prolong the worldwide recession.[xxix] Recessions adversely affect numerous industries, including the photography industry, as shown in the following examples.

Darryl Jenkins, in a presentation at the 2002 FAA Commercial Aviation Forecast Conference, stated, "business travelers' income elasticity is 1.35 when annual GDP growth is between 2 and 3.5, and 2.0 when GDP growth is above 3.5". His research indicated that "income elasticity of demand for leisure travel is always higher than that for business", and demonstrates how business travel provides insight on the effects of leisure travel on GDP.[xxx] A negative economic situation affects both vacation photo numbers and new product sales when consumers are concerned about money. Businesses such as eBay heavily rely on digital images to assist transactions. AOL, which has collaborated with Kodak, provides a forum to share digital pictures called "You've got pictures." The Photo Marketing Research Association found that "sending photos by e-mail was the number one reason for using digital cameras in 2001."[xxxi]

2.4.7 Demographic trends

Currently, the aging baby boom generation, born between 1946 and 1964, dominates the U.S. population as a group of 83 million individuals.[xxxii] The baby-boomer aggregate income is $4.1 trillion.[xxxiii] This large demographic segment provides important infoimaging industry opportunities. Baby boomers are typically physically fit and financially successful, enabling them to have an active lifestyle that increases opportunities for photos.

On the horizon, an increase in the population of ages 20-34 is likely.[xxxiv] Inexpensive products such as the disposable cameras or stylish digital cameras target this younger segment. In 2001, the share of households that used single use cameras (SUCs) approached 9%.[xxxv] This market continues to grow, with disposable cameras making up 18% of the one-year processing volume ending in June 2002. SUC customers are more likely to purchase higher cost fast processing. In 2001, 39% chose fast processing of one-time-use cameras versus 33% for 35 mm rolls. Below-average income households and those headed by <25-years-old persons are more likely to use one-time-use cameras.[xxxvi] Capturing a relationship with this population improves chances of increasing customer lifetime values.

Photo Marketing Association (PMA) research shows digital imaging gaining popularity with female consumers. Women were initially slower adopters due to their interest in maintaining traditional photo albums. However, research shows that women are purchasing and using digital cameras in greater numbers and they are spending more on photo finishing. The following table contains PMA research data.[xxxvii]

Table 7. Digital Camera Use by Male and Female Consumers

Respondents who owned a digital camera 3+ years	70% male	30% female
Respondents who owned a digital camera <1 year	57% male	43% female
Primary users of the cameras owned <1 year	43% male	57% female

Female digital camera users print more images at retail locations than men do. Women print 27% of their digital images versus 23% for men.[xxxviii] Therefore, women are becoming one of the most profitable consumer groups.

2.5 Competitor Analysis

The photography market consists of four distinct segments: film, photo paper, photo-processing, and digital cameras. SUCs are part of the film segment. Kodak is not a major analog camera market player with the exception of SUCs. The following sections analyze Kodak's major competitors in context of its market segments. The Film Segment, Photo Paper Segment, Photo Processing Segment, and Digital Camera Segment sections each contain illustrative tables of the industry segment breakdown, firm's strategies, strengths, and weaknesses in each segment.

2.5.1 Competitors

2.5.1.1 Fuji Photo Film Co. ("Fuji")

Fuji is a major photography market player with a market capitalization of $14.5 billion. Its FY 2002 revenues were $19 billion, resulting in net income of $651 million.[xxxix] Fuji's Imaging Solutions photography business unit provided 32.7% of its total Fiscal 2002 revenue and 29% of operating income. Japanese sales accounted for 56% of FY2002 revenue and 83% of operating income. Fuji has three business units: Imaging Solutions, Information Systems, and Document Solutions. Imaging Solutions produces all photography market inputs. Information Systems consists of Fuji's medical imaging products, graphic arts system products, industrial materials, and recording media. Document Solutions is a new business unit, added in 2002, that sells copiers and printers produced by Fuji Xerox, a joint venture of which Fuji owns 75%. Fuji Xerox was a 50-50 joint venture prior to 2002. The revenues were not consolidated, so Fuji Xerox revenue was not separately specified. Fuji Xerox earns 80% of its revenue selling office products in Japan. Fuji recognizes that the shift to digital is occurring. The company is attempting to align itself so that it can continue to compete in the photography market. Fuji's 2002 annual report describes its top level corporate strategy: "Fujifilm is creating products and services that enhance image communication in the broadband age by fusing our traditional strengths in silver-halide technologies with digital high-quality image processing and networking technologies."

Film

Fuji holds the number two position in the film market with approximately a 30% worldwide film industry market share. Fuji is the dominant Japanese market player with over 70% market share. Fuji holds between 25% and 30% market share in each of the other geographical regions, which include the U.S., Europe, Asia/Pacific, and the ROW (rest of the world). Fuji's generic strategy has been cost leadership within the film industry. This is evidenced by the fact that although Fuji holds a 30% market share of the worldwide film volume, its revenues account for only 18% of total worldwide film revenues, with Kodak capturing approximately 76% of worldwide film revenue. In 1999, Fuji's discount to Kodak's average selling price (ASP) was 25%, down from 29% in 1997. Fuji's film segment business strategy is to focus on high value added films and single use cameras. This strategy is based on the awareness of the film market maturity.

Digital Cameras

Fuji holds the number three worldwide digital camera market position in terms of units shipped as of 2001. Fuji holds this position everywhere except in the U.S. market, where it holds the number five position with a 9% market share. Sony, Olympus, and Fuji dominate the Japanese digital camera market, holding 25%, 22% and 21% of the market respectively. Fuji has undertaken a number of business strategies designed to improve its overall position in this highly competitive growth market. Fuji expanded its digital camera offerings to include cameras from entry level to high-end models, and it developed compact cameras with Internet compatibility. Fuji is clearly focused on building its digital camera market share.

Paper Segment

Fuji solidly holds the number two worldwide photo paper market position with 31% market share in 1999. Fuji owns a 53% Japanese market share. Fuji promotes output through its digital minilab photo finishing equipment and paper products, as it focuses on the digital transition.

Photo finishing

Fuji participates in the worldwide photo finishing market with the majority of its market share in Japan. As of 1995 Kodak held more than 75% of the U.S. market for photo finishing with its Qualex subsidiary.[xl] Year 2000 data shows that Kodak holds more than 40% of the total photo-processing market, which includes equipment, paper and chemicals, photo finishing and

reprints.[xli] Fuji developed several photo-processing systems designed to capture digital output in order to combat Kodak's market dominance. Fuji found success with its all-digital minilab systems and is trying to drive digital output to its systems. Wolf camera is a current user of Fuji's digital systems here in the U.S.

2.5.1.2 Agfa-Gevaert

Agfa is a Belgian company with a market capitalization of $2.5 billion based on shares outstanding as of December 31st 2001. Its FY 2001 revenue was $4.4 billion, and it had a $495 million net loss. Restructuring costs of approximately $403 million and major write off contributed to the loss. The consumer-imaging segment accounted for only 24% of sales in 2001 and was down 20% from 2000. Agfa has embarked on a strategy it calls "Horizon" in an effort to increase profitability and release funds for future growth. Horizon's goal is to "diminish the cost structure by 550 million Euros per year from 2004. Also, it aims to reduce working capital by 500 million Euros in order to free up resources to finance future growth."[xlii] Agfa's strategy is based on that fact that it sees over-capacity and price erosion in its analog imaging business. With this in mind, Agfa's strategy is to maximize analog production efficiencies, participate actively in the analog industry consolidation, and use the cash generated to invest heavily in digital imaging.[xliii]

Film

Agfa holds the number three position in film with a 10% world market share. Agfa's film sales are concentrated in Europe where it holds about 27% of the market. Agfa is a regional player with strong sales in its European home market. Agfa's current film strategy is focused on production efficiencies in what it views as a mature and declining industry.

Digital Cameras

Agfa discontinued selling digital cameras and scanners in 2001. Management realized that the company was late to the game and decided to focus resources on digital solutions for the Technical Imaging and Graphics Systems market segments. These segments showed strong growth during 2001. Agfa's new digital solutions accounted for 28% of total revenue in 2001, up from 22% in 2000 and 12% in 1998.

Paper Segment

Agfa holds the number three worldwide photo paper market position with 13% of its market share concentrated in Europe, where it has 26% of that market. In the U.S. market, Agfa is a distant 3rd with 6% of the market.

Photo finishing

Agfa is an established player in the digital minilab market. Agfa launched its all-digital minilab offerings in 2001 and reported that it was met with great success. A second offering later in 2001, the Agfa d-lab.2 is the only digital minilab on the world market that prints poster formats. While still a small player, Agfa has an early lead with the latest generation of digital minilabs.

2.5.1.3 Konica

Konica earned net income of $88 million on $4.3 billion in sales from March 31, 2001 to March 31, 2002 (FY 2002). Net income increased 71% to $88 million, while total sales were down from $4.9 billion in fiscal year 2001. Konica is a strong participant in the imaging business. Konica sees itself as an imaging solutions provider and participates in four major business sectors. The consumer-imaging sector, which includes the sales of film, paper, and cameras, accounted for 35.5% of total sales in 2002. "Based on the watchwords “Speed,” “Alliance,” and “Network,” the basic objectives of SAN Plan 2005 are to reallocate company wide resources and promote a shift toward growth businesses." This is a clear indication of the Konica's corporate strategy in light of market declines and price erosion in its film business.

Film

Konica holds about 10% of the world film market. Its market share is the strongest in Japan where it hold the number two position behind FujiFilm and ahead of Kodak. Konica is shifting its focus to growth businesses, which means that it will not be putting much R&D focus on film going forward.

Digital Cameras

Konica is a minority digital camera market player, although it has optics and electronic materials businesses that could benefit from digital camera sales through supply agreements with others. Konica is shifting resources and dividing the company into four separate companies. Digital cameras are a part of the Consumer Imaging Company and are one of the few areas of the

company that could currently be considered a growth business. Konica stated that it would focus resources on growing businesses.

Paper Segment

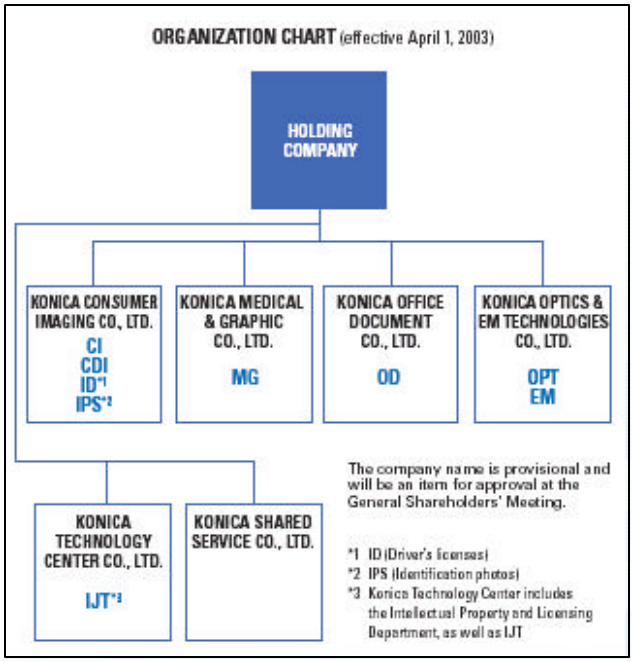
Konica holds the number four position with 8% of the worldwide photographic paper market. Konica holds its strongest position in Japan with 20% of the market. Heavy competition, in the mature Japanese, European, and U.S. markets, caused Konica to focus in certain growth markets. Konica's annual report stated, "in such growth markets as Asia, Russia, and Central and South America, where the advance of digitization has lagged, we recorded firm growth in sales, supported by the high quality of the Konica Photo Express minilab shops and our strong network and brand power."[xliv]

Photo finishing

Konica has developed minilabs to help with emerging market processing. Konica's worldwide market share is small and concentrated in Japan. In September of 2002, Konica introduced its R1 Super Digital Minilab System for photo finishing. This system is an upgrade to its existing minilab systems, so it is unknown whether this will increase Konica's market share in this area.

Strategy

Economic environment changes and increasing digital solution revenues prompted Konica to make a dramatic organizational structure change on April 1, 2003. Konica will spin off its individual business units into separate companies with Konica as the holding company. The chart on this page shows the new organizational. Konica feels that spinning off its businesses will increase the competitiveness of each by giving them more flexible decision making abilities and stronger determination.[xlv]



2.5.1.4 Sony

Sony is a worldwide powerhouse in the consumer electronics industry. Its reputation as an innovator and a quality manufacturer are unparalleled. It is no surprise that Sony captured the number one digital camera market position with a 22% 2001 worldwide market share. Sony's electronics business had sales of $40 billion accounting for 68% of 2001 sales and 85% of 2001 operating income.[xlvi] Sony increased digital still camera shipments by 86% from 2000 to 2001 for a total of 2.6 million cameras shipped. Digital video camcorders and digital still cameras earned the largest profits of any of its products in the electronics business in 2001.


Sony's 2001 Annual Report

Sony is the most horizontally integrated digital camera manufacturer with its Memory Stick™ storage solution holding 18% of the world flash memory market. Most of Sony's digital cameras are designed with the Memory Stick™ as the storage media (digital film). Sony's digital camera removable memory market share was 60% in Q2 2002.[xlvii] Sony offers complementary products to further enhance its digital imaging products' attractiveness. Sony recently shipped televisions with built-in memory stick adapters. This feature enables Sony television and Sony digital camera purchasers to directly display pictures on the television screen from a Memory Stick™.

Sony established itself as a handheld computer market leader with its Clié line of Palm OS personal digital assistants (PDAs). These products incorporate the Memory Stick as their storage media and allow digital images to display on their screens. Finally, Sony has built Memory Stick adapters into its popular line of Vaio computers, which increases its digital camera complement value. Sony is strongly focused on many consumer electronics market areas. Sony has proven its ability to compete in almost any area with innovative design and quality products. In addition, Sony has repeatedly charged a premium for its products due to its brand strength. Sony's product offering breadth and its command of numerous technologies position Sony to benefit from externalities that result from the prevalence of digital imaging and users' desire to share their images. Sony has recently released a camera and phone combination that allows the user to take and immediately email pictures. Sony is likely to continue to be the dominant digital camera company with its reach firmly planted in all areas of consumer electronics, especially mobile devices.

2.5.1.5 Olympus Optical Co. Ltd.

Olympus is the number two worldwide digital camera market player. Olympus holds a strong position in the analog camera market as well. Since 1919, Olympus has led the industry developing optically based technology products. Total 2001 sales were $3.9 billion with net income of $98 million. Olympus' Imaging Systems products include compact cameras, digital cameras, and recorders. This market focused business unit saw growth of 11.5% from 2000 to 2001. "Driving this growth in revenues was opto-digital technologies, our strategic product group that combines our fundamental optical and precision technologies with the latest in digital technologies. Digital cameras are the best representative of this group: with overall sales expanding from U.S. $670 million to U.S.$916 million, digital cameras have risen to become a core product that accounts for nearly one fourth of the Company's overall sales".[xlviii] The group recorded a loss $2 million for 2001, despite growth of 35% in the digital camera portion of this group. The loss resulted from compact camera and recorder sale declines along with substantial price competition. Olympus is clearly focused on the growing digital camera market. Specifically, it targets "growth businesses in the opto-technology field." Olympus has been successful in growing the sales of these products but it has fallen victim to price competition.

2.5.1.6 Canon

Canon recorded net sales of $22 billion in 2001, an increase of 7.8% over 2000. Net income grew 25% to $1.3 billion in 2001. Canon holds the number four position in the digital camera market in most of the world. The exception is in the U.S. where it holds the number six position. Canon is the world leader in the digital multifunction device (MFD) market and holds a significant share of the entire business machine market. Canon is number one in laser beam printers and copy machines with substantial market share in scanners and bubble jet printers. Canon leads in the imaging market with film and digital cameras, as well as binoculars, projectors, and video cameras. Canon is positioned, with its business vertically integrated in both photo and printing, to be a force in the imaging market as the shift to digital occurs. In 2001, the Camera segment of Canons business grew 19.8% despite a decline in the sales of conventional film cameras. The introduction of eight new products helped to nearly double the sales of digital cameras. Canon is also a leader in the digital video cameras production market, which is an important digital image market segment and complements its digital camera offerings.

Canon's goal is to attain the number one position in all of its businesses with special emphasis on the digital camera market. Canon has undertaken dramatic organizational changes designed to build its strength. Since 1996, the company has been focused on cash management and developing a lean, efficient company. These efforts resulted in an increase in stockholders equity from 35.1% to 51.3% and a decrease in the loan dependency ratio from 33.6% to 10.4 % over the 5-year period. Phase II of its "Excellent Global Corporation" began in 2001. Phase II is focused on business expansion based on the foundation created with Phase 1 of the plan with the goal of achieving the number one market share in all of its businesses. Canon has made substantial progress in establishing its brand in the digital camera market. A look at numerous web sites shows that Canon digital cameras have the strongest reviews and customer satisfactions of any cameras on the market. A look at www.Dpreview.com (Digital Photography Review), a digital camera review and discussion site, shows that Canon cameras currently hold the top four positions in terms of most searched camera models, and the Canon brand is capturing 1/4 of the "click-throughs" as defined by the site. We anticipate that Canon will gain additional market share based on current customer reactions.

2.5.1.7 Hewlett Packard

The Compaq and Hewlett Packard merger made HP/Compaq the world's largest computer manufacturer, pushing the previous leader, Dell, to the number two position. HP is a powerful competitor in all of its business areas. Its revenues were $45.2 billion in 2001. The 2001 revenue figures do not include the merger, which was not finalized until 2002. The imaging and printing business segment contributed $19.45 billion to 2001 revenue. Net annual imaging and printing earnings were $1.98 billion, a 25% drop from 2000. In addition, segment net earnings dropped from 13% of revenue in 2000 to 10% of revenue in 2001. The HP imaging and printing segment includes printers (laser and inkjet), scanners, digital cameras, software, computing infrastructure, and printing supplies (paper and ink). HP has a long history in the printer and scanner business that complemented its personal computer products from the very beginning. HP is fairly new to the digital camera market. Its market share, while substantial in the U.S. market, is limited in the worldwide market. HP currently holds the number three U.S. market position with 15% while Kodak is in the number four market position with 14%. HP holds the distant number seven position with a7% share in the worldwide market. HP printers are complements to HP's U.S. market digital camera offerings; however, its lack of brand name recognition in photography makes it difficult for it to establish a dominant digital camera position. HP's digital camera offerings have been poorly reviewed. Reviews on www.CNET.com and www.Dpreview.com (Digital Photography Review) show a lack of interest in HP cameras. CNET reviews were below average or mediocre, with the exception of one "good" review. HP has the technological muscle to make a quality camera, however its challenge is to gain the reputation as a digital camera company.

HP and Kodak Joint Venture

HP and Kodak, through a joint venture, are developing Phogenix, an inkjet based digital minilab with a small footprint and low equipment cost. Phogenix was launched in the U.S. on February 4, 2002.[xlix] "In a research study conducted by Phogenix Imaging, 98% of customers surveyed felt that the quality of DFX prints was comparable or better than what they are used to getting at retail today".[l] Since this product was just released, it is too early to assess its impact on the revenues of each company. Both Kodak and HP expect to see revenue from this product in 2002.

2.5.2 Film Segment

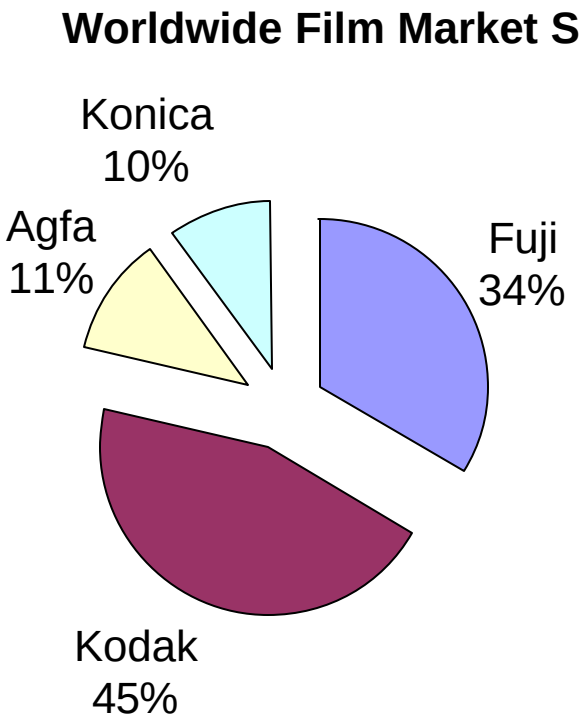


Figure 7. Worldwide Film Market Share

Four major players dominate the film segment. Kodak leads with 65% of the U.S. film market and 45% of the worldwide film market. Kodak commands a 20% price premium and has the most recognized film brand in the world. In Japan, Kodak is the number three player behind Fuji (#1) and Konica (#2). Agfa is strongest in Europe where it holds the number three position behind Kodak and Fuji.

Table 8. Film Segment Competitors				
Film	Kodak	FujiFilm	Agfa-Gevaert	Konica
Rank **World, U.S., Japan, Europe**	1 : 1 : 3 : 1	2 : 2 : 1 : 2	3 : 3 : 4 : 3	4 : 4 : 2 : 4
World Market Share	40%	30%	10%	~ 9%
Generic Strategy	**Differentiation** Brand name allows premium pricing everywhere but in Japan.	**Cost Leadership** Fuji's ASP is 75% of Kodak's ASP.	**Cost Leadership** Agfa's influence is limited to its home geography.	**Cost Leadership** Konica's influence is limited to its home geography.
Competitive Strengths	Kodak has 65% share in U.S. (largest market). It has a strong leadership position in all markets but Japan. Kodak is vertically integrated in all areas of imaging.	FujiFilm has a strong materials background and is innovative in film products and processes.	Agfa-Gevaert is a digital minilab market leader.	Konica has a Strong brand name in Asian markets.
Weaknesses	Kodak has been and continues to be the innovation leader in the film segment. One weakness for Kodak as a company is its overwhelming dependence on film revenues for a major portion of company revenue	FujiFilm competes on price in most of world. Its digital strategy is undefined. It seems more focused on minilabs and output.	Agfa discontinued digital cameras and scanners sales in 2001. Agra is undergoing a large and costly reorganization. It is not clear what its digital strategy will be.	Konica experienced film revenue erosion caused by price competition. This forced a shift in focus to emerging markets to escape some of the pricing pressure.

2.5.3 Photo Paper Segment

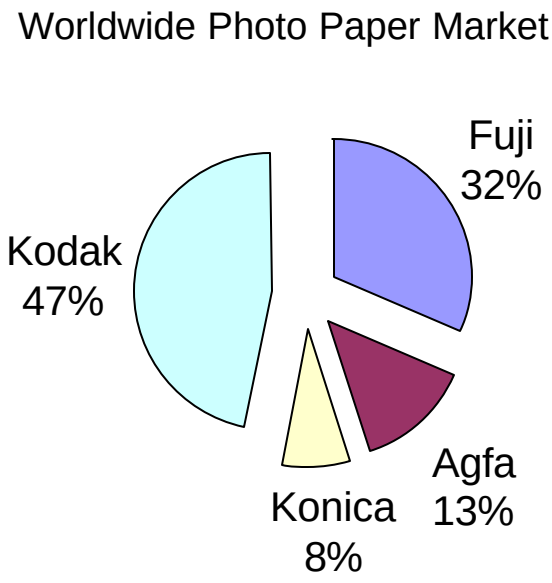


Figure 8. Worldwide Photo Paper Market Share

Four major players dominate the photo paper segment. This segment virtually mirrors the film segment competitor market share and market concentration. This segment is a part of the analog film product family in that a developed analog photo includes printing an image on photo paper. Kodak and Fuji offered complete film developing and image delivery services in order to sell the film and cameras in the early industry days. The photo paper segment is a direct result of the establishment of the photography market. The future challenge for all of these competitors is to drive digital output and to ensure that their paper is the paper of choice in commercial as well as home environments.

Table 9. Photo Paper Segment Competitors				
Photo Paper	Kodak	FujiFilm	Agfa-Gevaert	Konica
Rank World, U.S., Japan, Europe	1 : 1 : 3 : 1	2 : 2 : 1 : 3	3 : 3 : 5 : 2	4 : 4 : 2 : 4
World Market Share	46%	31%	13%	8%
Generic Strategy	Differentiation	Low Cost Leader	Low Cost Leader	Low Cost Leader
Competitive Strengths	**-# 1 BRAND-** Kodak paper is synonymous with quality reproductions	FujiFilm has strong brand loyalty in Japan. It is the low cost leader.	Agfa-Gevaert only has opportunities in the minilab and OEM markets.	Konica is building a strong presence in emerging markets.
Weaknesses	Kodak is slow to enter into the home printing market.	FujiFilm does not have a presence in home image printing market.	Agfa-Gevaert is a small player outside of Europe	Small player outside of Japan

2.5.4 Photo Processing Segment

Kodak and FujiFilm dominate the Photo Processing segment. Film processing is closely related to film design and manufacturing, so it follows that the designers would have the most knowledge regarding the processing. Kodak is the overwhelming market leader in this segment both in the U.S. and European markets. In addition, Kodak has developed a strong presence in the emerging markets, specifically China.

Photo Processing Segment Competitors					
Photo Processing	**Kodak**	**FujiFilm**	**Agfa-Gevaert**	**Sony**	**Olympus**
World Rank	1	2	3 estimate	5 estimate	4 estimate
Generic Strategy	**Differentiation**	**Differentiation**	**Cost leadership**	**Cost leadership**	**Cost leadership**
Competitive Strengths	Brand Developed the technology and therefore has an enormous installed base. Long term contracts with all large discounters.	Technologically powerful, second only to Kodak. Strong in Japan and U.S. market. Fuji dominates the digital minilab market.	A leader in the digital minilab market. New all-digital machines have sold well.	Understands consumer electronics. Has been involved with small printers for years. Entering market in Kiosk business	Technologically strong in Opto-electronics. Understands imaging
Weaknesses	Not known for strength in digital	Similar to Kodak, has not shown ability to compete in U.S. market	Small worldwide presence, brand ID limited to European	Limited history in consumer image reproduction	Limited U.S. presence in this market, known more for electronics.

			market.		

2.5.5 Digital Camera Segment

The digital camera segment is characterized by a completely different set of competitors. Companies with extraordinary experience in the development and manufacturing of optics and consumer electronic devices dominate this segment. Kodak has lost significant market share since 1998, as depicted in the Digital Camera Market Share charts. Unless Kodak is able to reverse this trend, it will cease to be a major participant in the digital camera market in less than 5 years.

Table 10. Digital Camera Segment Competitors						
Cameras	**Sony**	**Olympus**	**FujiFilm**	**Canon**	**Kodak**	**HP**
Rank World, U.S., Japan, Europe	**1 : 1 : 1 : 2**	**2 : 2 : 2 : 1**	**3 : 5 : 3 : 3**	**4 : 6 : 4 : 4**	**5 : 4 : 6 : 5**	**7 : 3 : ? : 7**
World Market Share	**22%**	**18%**	**15%**	**12%**	**10%**	**8%**
Generic Strategy	**Differentiation** Renowned for consumer electronic design	**Differentiation** Reputation for excellence in optics design and MFG	**Cost Leadership** Influence is limited sharply to Japan, known for chemicals and materials	**Differentiation** Proven strength in the film SLR market with EOS brand. ELPH brand of compacts in both APS and Digital are very popular.	**Differentiation** Focused strategy on workflow and ease of picture transfer, Knowledge of image science	**Differentiation** Brand strength in us, likely to appeal to beginners with simple solutions
Competitive Strengths	High vertical integration, Manufactures many complements.	Optics and Electronics	Substantial experience in image industry with film background. Vertically integrated.	Technology-intensive corporation. 2001 was the tenth consecutive year Canon was in the top three organizations receiving U.S. patents.	Substantial experience in image industry with film background, Vertically integrated with the exception of Memory.	Strong consumer electronics reputation with computers. Vertically integrated with printers, cameras, computers and software.
Weaknesses	Limited to capital purchase part of value chain, Although Sony has proven its ability to extract handsome profits from consumer electronics	Limited to capital purchase part of value chain, Olympus has been successful with cameras but profits suffered from price competition in 2001	Not well recognized in US market. Has the same issue as Kodak in that it is known as an analog film company.	Small player in output market, trying to get into higher resolution ink jet home market.	Camera experience and reputation limited to inexpensive and disposables cameras	Imaging strength not evident although HP has a long history in the printer business

2.6 Intra-Industry Analysis

Firms competing in the mature and consolidated photo industry face numerous threats and opportunities. The top four or five players control at least 80% of the photography industry market share.[li] Tight competition drives margins down and only those able to compete in the fast paced market survive. Key success factors include differentiation with low cost operation and the speed and flexibility to respond to the rapid technological changes.

Digital substitution threatens film dependent corporations such as Kodak and Fuji. The only alternative for these corporations to offset the erosion of their film revenues is to redefine their industry and product offerings as infoimaging. Consumer electronic experts, Sony, Canon and HP, view photography digitalization as an opportunity to gain market share in the photography industry.

Kodak's competitive position, prior to its strategic move into the infoimaging industry, was based on its expertise in the traditional film segment. Before 1997, Kodak controlled 80-90% of the film industry.[lii] The advent of disruptive digital technology forced Kodak to expand its capabilities into infoimaging.

The photography infoimaging subsegment has elements of a network externality; since the product value to individual customers depends on how the different products are compatible with one another.[liii] Setting the standard is a basis of competitive advantage.[liv] Kodak actively participates in the International Imaging Industry Association (I3A). Kodak, because it is vertically integrated, gains significantly from influencing the industry's standards.

2.7 Failure Analysis

The most significant failure in the photography industry is Polaroid Corporation. Polaroid failed because it could not successfully implement any of the three competitive strategies used by the industry leaders that are identified in the Competitor Analysis section above: product differentiation, cost leadership, or branding. Eventually Polaroid's sales declined, and its growing debt commitments outweighed its cash inflows: the firm filed for bankruptcy protection in 2001. Its assets were sold off in the following year.

2.7.1 Background

Edwin Land formed Polaroid in 1937 to develop synthetic polarizer technology products. Polaroid enjoyed growth from a diversified product base that included glasses, goggles, non-glare lamps, and motion picture viewers for many years.[lv] The company reached annual sales of $2.3 billion in 1994.[lvi] However, Polaroid's primary product focus by the 1990s was the product family for which its brand name is now synonymous - instant cameras. The majority of Polaroid's profits came from the instant film sales, with the company selling over one billion packages of film by 1991. Polaroid recognized and reacted too late to the industry shift from analog to digital. "They've simply not moved quickly enough to embrace digital photography or digital photo finishing."[lvii] In 1999, Polaroid sold 9.7 million instant cameras, but only 400,000 digital cameras.[lviii] Polaroid's strategy at that time was to "capture a greater portion of the market by…rejuvenating the core business in developed markets; growing commercial imaging in areas such as identification systems, breaking into emerging markets throughout the world; and expanding its new imaging business including pre-press graphics and sunglasses…".[lix] Polaroid planned to rejuvenate the core business "by introducing a number of new products or product line extensions"[lx] primarily associated with the instant imaging business. We now know that Polaroid demonstrated that there is little to gain in rejuvenating a market in decline – a company must accept shifts in the marketplace or lose the market altogether. Polaroid's sales declined throughout the 1990s, and the company took on large amounts of debt in order to finance operations. Despite several restructurings and asset sales in the 1990s, the company was unable to meet its bond obligations and filed for bankruptcy in October 2001. Most of the company assets were sold in 2002 to Bank One for $255 million.[lxi]

2.7.2 Analysis

Polaroid differentiated itself from competitor products by focusing on the instant camera market. However, this market was wholly displaced by digital technology, which also produces an instant image. Moreover, digital technology allows you to erase the image if you do not like it and to redo the shot at no additional cost. Polaroid tried to compensate for this by focusing on commercial imaging for identification systems, rationalizing that identification systems require an instant image that is output. Digital images can now be quickly output onto paper or an identification card with the advent of low cost computers and printers. In addition, the image can

be stored in a computer and electronically transmitted to different locations. Polaroid's technology was unable to compete with these superior features. Thus, Polaroid's differentiation strategy was useless. Polaroid also could not compete on cost as the cost of digital and computer components decreased dramatically in the late 1990s. Finally, Polaroid's brand recognition further undermined the company's transition to digital technology. While the Kodak brand is associated with *quality film*, the Polaroid brand is associated with *instant cameras*. Polaroid was trapped by its own brand recognition because the brand failed to sufficiently encompass a broader product vision.

2.7.3 Lessons Learned from Polaroid

Polaroid did not foresee its demise because it held the view that "much of the company's imaging knowledge base is also transferable to the digital arena."[lxii] However, transferability of knowledge base does not translate into product differentiation between old and new technologies – such differentiation needs to be explained to the consumer. Strong market place perceptions of corporate brand can actually trap a company into an association with an antiquated technology. The lessons learned from Polaroid include: 1) react quickly when faced with an industry transition, 2) ensure that the knowledge base is transferable, 3) examine the product base and market perceptions of the brand, and 4) develop an action plan to modify current perceptions to encompass the new technology.

2.8 Threats and Opportunities Analysis

We identified the following additional threats that are not discussed above. A continued economic downturn will pressure Kodak and others to cut prices or differentiate more to compete. This is not to Kodak's advantage. Kodak has not been the low cost leader. However, in a crunch the company has been able to reduce operating expenses to improve results. A continued downturn will most likely aid Fuji or one of the other competitors described in the film segment.

Disruptive technology development can put Kodak at a disadvantage if the company focuses solely on growing film and photo-processing product sales. Kodak currently shows no outward concern for such as possibility. However, we suspect digital substitution will continue in the form of other products (i.e., multi-purpose telephones) in addition to digital cameras.

Another concern is the entry of competitive innovators in the camera segment. Sony has only recently developed digital still and video cameras. Sony has surpassed Kodak's sales of digital cameras in just a few years. Given Sony's prowess in the consumer electronic industry, Sony may out-innovate and undercut all other players.

There are still opportunities for Kodak to grow sales even when given the above threats. China's population and demographic trends suggest a great opportunity for nimble competitors to establish market share over other players. As mentioned earlier, Kodak has already established significant market share in China. Kodak, given its success with SUCs and its available cash, should invest in dominating the Chinese market as soon as possible.

Kodak has some of the pieces to develop a network externality for infoimaging: the CPXe standard, its Ofoto subsidiary, and its Phogenix minilabs. However, there is no unifying force or significant advantage that keeps consumers within the Kodak network the same way that branding its film and photo processing did. Kodak could regain a significant competitive advantage if it leverages these aspects into a proprietary framework.

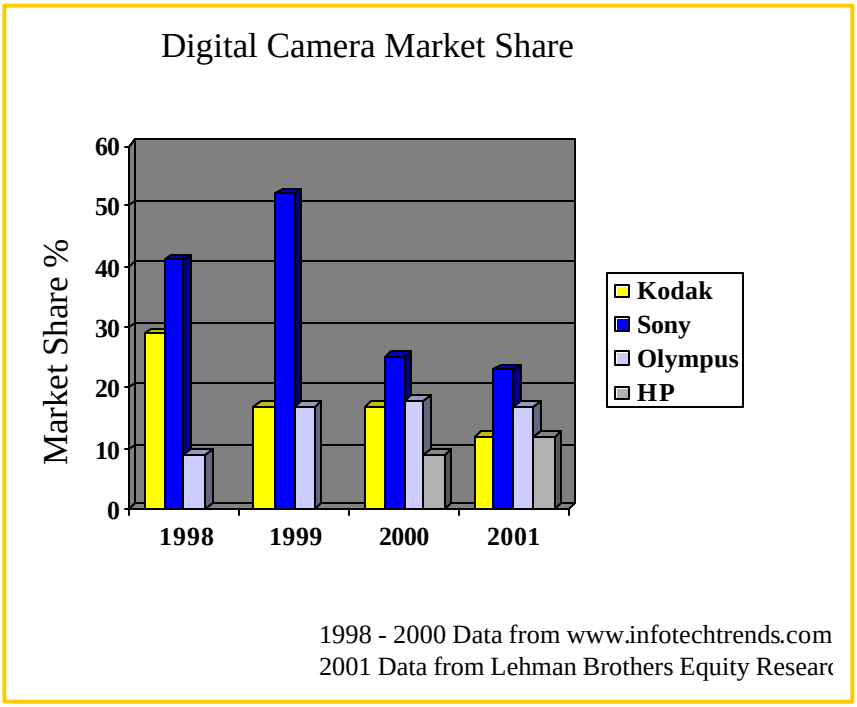
Kodak's main competitors are Fuji, Sony, Olympus, and Canon – all Japanese companies. The Japanese government subsidizes all major Japanese owned industries, putting Kodak at a major disadvantage in raising capital. Kodak must borrow at market rates within the U.S., which are significantly higher than market rates in Japan. Also, Kodak currently pays a dividend yet competes with these subsidized Japanese companies. Kodak should redirect the dividend payments into development so that it can become more competitive globally. Kodak must show shareholders that reinvesting earnings back into the company improves shareholder value long-term by a greater amount than paying a dividend.

2.9 Summary of External Analysis

Kodak is in a mature industry. There are currently only four major competitors in the film segment and six in the camera segment. The company is trying to redefine itself by redefining its industry as infoimaging instead of photography. Kodak knows that the future for film is limited because of digital substitution. The worldwide industry comprises only a few major players. Film, paper and processing, which make up 70% of the photography market revenues, are commodity products. End customers select manufacturers based primarily on price.

The most critical elements of the external industry factors are technological change and photography digitization. In the past, film was the key to revenue and earnings growth for firms such as Fuji and Kodak. However, film is no longer at the center of the revenue equation. Digital cameras come equipped with sufficient memory to store hundreds of high quality pictures that can be stored or printed at the user's whim.

Competitors have taken market share away from Kodak in the film and digital camera segments. Just five years ago, Kodak had 70% market share of the film segment in the U.S. It is now down to 40%. In the camera segment, Kodak is a distant fifth behind very strong, innovative and well-financed competitors. Digital technology growth will be substantial in the future, but will Kodak be able to keep pace with competitors?



The key disruptive technology is the digital camera. Digital substitution is in its infancy, yet many analysts believe that the market for film peaked in 2001. Kodak's intellectual property in film development and processing technology may quickly become obsolete because new advances in saving, viewing, printing and sending pictures rely very little on film or photo chemicals.

We find that there are too many similarities between Polaroid and Kodak. Polaroid failed because it let others take over its market when the disruptive digital technology arrived. Kodak has embraced digital technology, but it accepts that it is not the market share leader in any digital category. Kodak has definitely differentiated itself as the quality leader in film, paper and processing, but these are mature segments that are predicted to decline as future digital substitution and price erosion occurs.

3 Internal Analysis

3.1 Business Definition/Mission

Kodak's mission is:

"We plan to grow more rapidly than our competitors by providing customers with solutions they need to capture, store, process, output, and communicate images- anywhere, anytime. We will derive our competitive advantage by delivering differentiated, cost-effective solutions-including consumables, hardware, software, systems and services-quickly and with flawless quality".[lxiii]

Kodak's goals and objectives flow smartly and logically from the mission statement. Ann Oates of Kodak's Investor Relations Group summed up the long term and short-term goals:[lxiv]

?? Expand use of film.

?? Drive output in ALL forms.

?? Making digital easier to use.

?? Make new businesses in new markets.

In class, Dr. Palmer quoted his former professor, Peter F. Drucker, as insisting that those who visit him state what business they were in before he would move to the next step in advising them. For example, couch makers in the business of selling comfortable seating, not in the couch business or furniture business.

Kodak is *not* in the business of selling film, cameras, movie film, health imaging, and developing (and all that goes with it: chemicals, kiosks, paper, and so on). Kodak *is* in the business of selling memories and/or records. Kodak is selling memories and/or records of people, events, movies, symptoms of diseases, or memories of places. We interviewed Ann Oates of investor relations at Kodak, and she agreed with our assessment, and added that Kodak is in the "infoimaging" business.[lxv]

3.2 Management Style Defined

We interviewed two Kodak employees. One was from the corporate office in Rochester New York and the other was a manufacturing engineer who joined Kodak via an acquisition in Fremont, California. The engineer summed up Kodak's management style as "cut throat and

high pressure."[lxvi] The corporate officer explained, "With a corporation as large as Kodak, there are many different management styles depending on where you go within the company". She explained that the company cares about its employees and that Kodak has many excellent benefit programs.

3.3 Organizational Structure, Controls and Values

3.3.1 Organizational Structure.

The high level organizational chart for Kodak is depicted below[lxvii]:

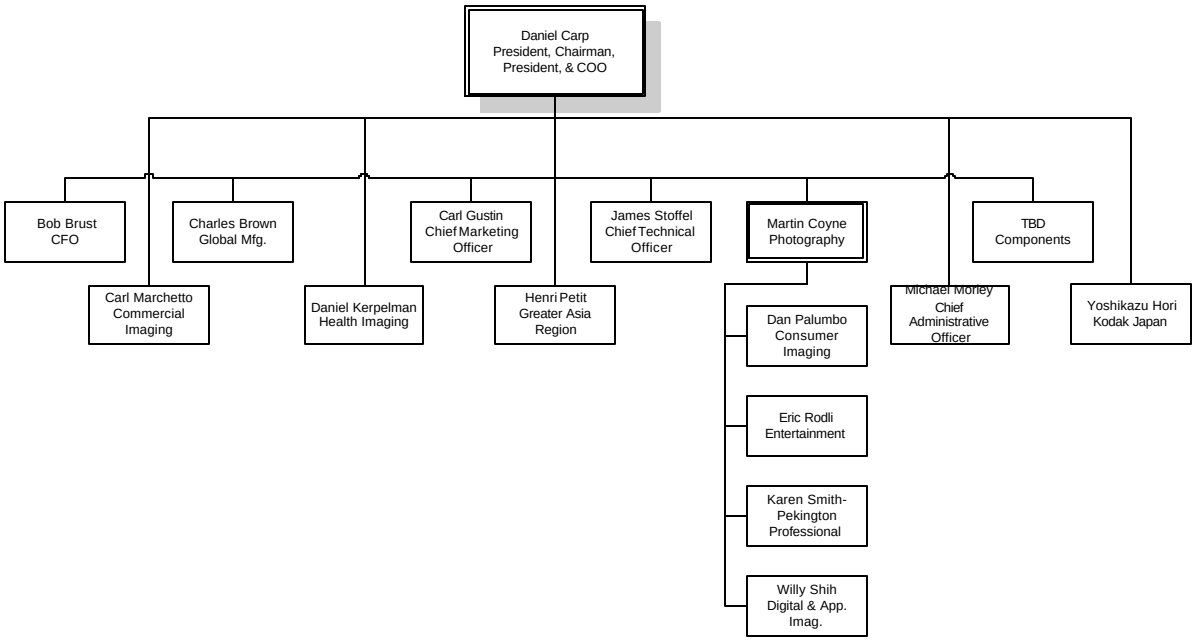


Figure 9. Kodak Organizational Chart

The organizational structure for Kodak is divided into business segments. Four business segments exist as of today: Photography, Health Imaging, Commercial, and Other. [lxviii]

These segments contain the following sub-groupings.

Business Segment Sub-Groupings	
Photography	Consumer Film
	Consumer Paper
	Consumer Cameras
	Processing/Retail
	Kiosks/Labs/Other
	Pro Photo
	Entertainment
	D&AI (Digital & Applied Imaging)
Health Imaging	Digital
	Conventional
Commercial	Graphics
	Document Imaging
	CG&S
	Wide Format Inkjet
Other	OLED
	Sensors/Optics
	Miscellaneous

Kodak is very decentralized and each division is responsible for its own P&L.

3.3.2 Monitoring /Appraising Employee Behavior and Performance

Kodak uses physical and written devices to control employees. The physical controls manifest themselves in the form of badge readers and security cameras. The cameras are used to protect employees from harm and to protect the intellectual property from uninvited eyes. In addition, the cameras are used to observe employees, but "only if there is a concern".[lxix] Badge readers act as a two-fold security device: 1. Badges act as a key and 2. badges track who is entering a building. The problem with badge reading technology or anything where more than one person can fit through the door at one time is that people "tailgate." Tailgating is where a person fails to use his/her badge because he/she is entering the facility while someone else has the building door open and therefore, his/her entry time information is not captured.

The other device that Kodak uses for monitoring/appraising employee behavior and performance is the annual performance review. The overview of the procedure that describes the performance evaluation process in detail is shown in appendix B.

3.3.3 Kodak's values

Kodak's stated values are[lxx]:

Respect:	"We show respect for the dignity of the individual."
Integrity:	"We uphold uncompromising integrity."
Trust:	"We give and receive unquestionable trust."
Credibility:	"We prove and maintain constant credibility."
Continual improvement:	"We support continual improvement and personal renewal."
Recognize Achievement:	"We recognize and celebrate achievement."

3.3.4 Kodak's Stated Values versus Kodak's Actual Behavior

Kodak's values are generally aligned with its actual behavior. Kodak rates its employees on job performance in their annual reviews. Employees are rated on how well they carry out the company values in addition to job performance. Salary increases can be dependent on how "credible" or how much "integrity" an employee has or is perceived to have by the manager.

Kodak has unstated values as well. Kodak, beginning with George Eastman, donated large amounts of money to the immediate community, mainly Rochester, to many universities, and to its employees.[lxxi] That spirit of giving continues with the corporation and with the employees. After the attacks on the World Trade Center and the Pentagon on 9-11, Kodak donated $1 million to the relief fund and set up a chat and picture room on its public web site.[lxxii] Kodak employees also participate in Habitat for Humanity Projects.[lxxiii]

The one inconsistency that we found was with the stated value of "trust." Kodak states that they, "Give and Receive Unquestionable Trust" yet the engineer that we interviewed did not describe such a trusting environment. The employee explained that in the past year, cameras and computer software had been installed to monitor employee movement throughout the building and on the computer desktop.[lxxiv] It could be that the employee that we interviewed misinterpreted these new security measures, but if this is how he feels, then this is his reality. In addition, other employees may feel this way as well.

"Continual improvement" and "personal renewal" is taken quite seriously. These items are included in employee annual reviews. Employees have an Employee Development Plan (EDP), for self-improvement. Employees are required to take courses to meet the requirements of the EDP.[lxxv]

3.4 Strategy/Competitive Position Defined

3.4.1 Corporate Level Strategy

The 2001 Kodak Annual Report clearly states the corporate strategy. The strategy is described as a growth strategy. Daniel Carp, Chairman, CEO, President, & COO states, "We will leverage our unparalleled reputation to ALL infoimaging processes and products, a category with a $225 billion total market potential. Kodak's imaging technologies, products and services position us well for success in this growing category. In 2002, we are aligning the entire Kodak organization to focus on four related growth paths to the future."[lxxvi]

Corporate Strategy[lxxvii]	
Expand the benefits of film	?? Transition to digital ?? Leverage and extend the benefits of our film-related businesses far into future ?? Apply digital technology in wholesale and retail photo finishing ?? Expand presence in emerging film markets
Drive image output in all forms	?? 35,000 Kodak picture maker kiosks is an example ?? Introduction of the Kodak I.Lab System. High-quality, digitally enhanced output
Facilitate ease of use in digital imaging	?? EasyShare camera line demonstrates we are making digital one-button simple ?? Look for even better things from this product line
Develop new businesses in new markets	?? Explore and develop new business opportunities that may be higher risk, but will position Kodak to capture broader share of the infoimaging category

The reader may notice that the corporate strategy main elements described above are the same as the goals and objectives as relayed to us by Kodak's investor relations department.

Usually, as we know, strategy and goals and objectives are not the same. Either confusion exists within Kodak about these concepts or they are not at liberty to share the specific goals and objectives, so we were given the strategic goals instead.

Grant states, "*corporate strategy* defines the scope of the firm in terms of the industries and markets in which it competes."[lxxviii] Grant goes on to say that, "corporate strategy decisions include investment in diversification, vertical integration, acquisitions, and new ventures…"[lxxix] Carp has done exactly that with the Kodak four prong strategy. He labels the strategy as a growth strategy and then shows how in each main area of operation the company plans to achieve the desired growth. Carp keeps the strategy at an appropriate level of abstraction in order to keep it interesting to Kodak Annual Report readers. Many acquisitions and partnerships are taking place at Kodak to facilitate the growth strategy.

Kodak states that "growth" means growth in all its areas of business, not simply increased market share in one. Kodak does not accept that the world is going digital overnight but it is investing heavily in digital technology along with continued investment in traditional technology. We will describe the different moves being made to advance the overall strategic goals in each of the business segments.

The new Health SBU president, Dan Kerpelman, is widely expected to begin pursuing acquisitions to expand the reach of the Health SBU.[lxxx] The Photography SBU acquired processing locations in Europe and will digitally outfit them.[lxxxi] This move is seen to "expand the benefits of film" (refer to Kodak's stated strategy). Kodak partnered with AOL in 1999 to form "You've Got Pictures" to "drive output in all forms" (Kodak's stated strategy), and in 2001, Kodak acquired Ofoto on-line digital development services.[lxxxii] Both the AOL and Ofoto moves are anticipated to bolster Kodak's position in the digital space and to "facilitate ease of use of digital imaging" (Kodak's stated strategy).

Phogenix is a partnership formed with HP to create an inkjet-based minilab. This minilab has a small footprint and a low cost, which is ideal for emerging markets.[lxxxiii] NexPress is a joint venture that emerged from the Commercial SBU. It was formed with Heidelberg in 1997 to create a high-end production printer to compete with Xerox.

All partnerships and acquisitions are tied to the four-pronged corporate strategy we described earlier. The strategy is preserving and expanding the investment in conventional film,

making digital products easier to use, increasing Kodak's presence in digital photography, developing new businesses, and increasing image output in all forms.

Acquisition/Partnership	Strategy Targeted	Fit Strategic Plan?
AOL	Ease of use in digital imaging	Yes
Ofoto	Ease of use in digital imaging	Yes
Phogenix	Expand the benefits of film(in emerging markets)	Yes
NexPress	New business in new markets	Yes
Bell+Howell	New business in new markets	Yes
SK Display Corp.(OLED)	New business in new markets	Yes

3.4.2 Business Level Strategy

Salomon Smith Barney (SSB) conducted an analysis of Kodak and its industry. In its commentary on Kodak's strategy, SSB said the following: "Kodak's businesses share four key strategies, which appear to be film centric. These are: 1) boosting the quality of its premium film; 2) driving output for both conventional and digital photography; 3) further inducing the consumer to output from digital; and 4) expanding the company's presence in the emerging markets."[lxxxiv]

Interestingly, the business strategies are essentially the same as the corporate strategy, however; as Grant states, "Business strategy is concerned with how the firm competes within a particular industry or market."[lxxxv] Each of the business units has taken steps to move the corporate strategy forward. Kodak has tightly linked their actions to the corporate strategy. The Health Imaging SBU, headed by Dan Kerpelman, changed the way the sales force is compensated in order to motivate them to compete more fiercely against the competition. In addition, Kerpelman has reduced inventories and has offered professional services to customers.

The Photography SBU's goal is to increase film usage, and employs many tactics to get users to increase film consumption. It leads with its flagship films: Max HQ and Max Versatility. Targeted advertising campaigns are also being used to increase the sales of SUCs which have become common on guest tables at weddings and special events. Single-use

waterproof cameras are being marketed as a convenience for divers and swimmers when traveling.

"Picture CD" product sales doubled in 2001 and are expected to increase as and the product is expanded globally. Emerging markets are a primary target for expansion and for the additional consumption of film and digital products. India, China, and Latin America are the main targets. There are already thousands of Express Stores in China and India.[lxxxvi] More kiosks are planned for these areas and Picture Maker Kiosks are targeted for Latin America.

3.4.3 Functional Level Strategy

3.4.3.1 Resources and Capabilities Analysis

"Few market leaders have been successful in riding the wave of technological change when their core market has been transformed. A company currently facing this challenge is Eastman Kodak."[lxxxvii] Kodak has invested over a billion dollars developing digital technologies and digital imaging products despite this fact.[lxxxviii]

One of Kodak's key resources for competing in the digital realm is its brand. The Kodak brand is one of the most recognized brands in America. People know Kodak, they trust and are comfortable with Kodak. Kodak has been around for more than 100 years and is considered a part of Americana. This is a strength and resource for Kodak.

Kodak has a massive infrastructure of photo developing and processing stores and kiosks in place. Every supermarket and drug store in the United States and many abroad allow a customer to request developing with Kodak processing or at least with Kodak Paper. If Kodak can capitalize on this infrastructure, and make it valuable to the digital camera customer, then the infrastructure is an asset. If Kodak cannot capitalize on this asset, then this great infrastructure will slowly erode, as digital overtakes traditional film processing, and become a liability.

One way to get competitor products to function synergistically with your own (i.e. to develop complements) is to make available an open standard. Kodak announced in late October of this year that is making available its Kodak Image Access Standard for digital printing.[lxxxix] America Online Inc., Phogenix Imaging, FotoWire Inc., Graphx, Inc., Open Graphics, Inc. and Lifepics Inc., are all expected to take advantage of the standard. This standard will allow the Kodak Digital Development Kiosks to be more valuable than they already are.

Kodak has the capability to partner and acquire when needed. As mentioned in the "Corporate Strategy Section", Kodak has partnered with AOL, HP, Xerox, and NexPress. Kodak has the capability to create channels for their development products. As mentioned earlier, it has been able to gain a presence in practically every supermarket and drugstore in America and thousands outside of the United States. Costco, Sam's Club, Walgreen's, and Safeway are just a few of the places where one can get either Kodak film developed or get digital pictures printed in 35,000 kiosks now available. Kiosks are now available in unlikely places such as shopping malls.

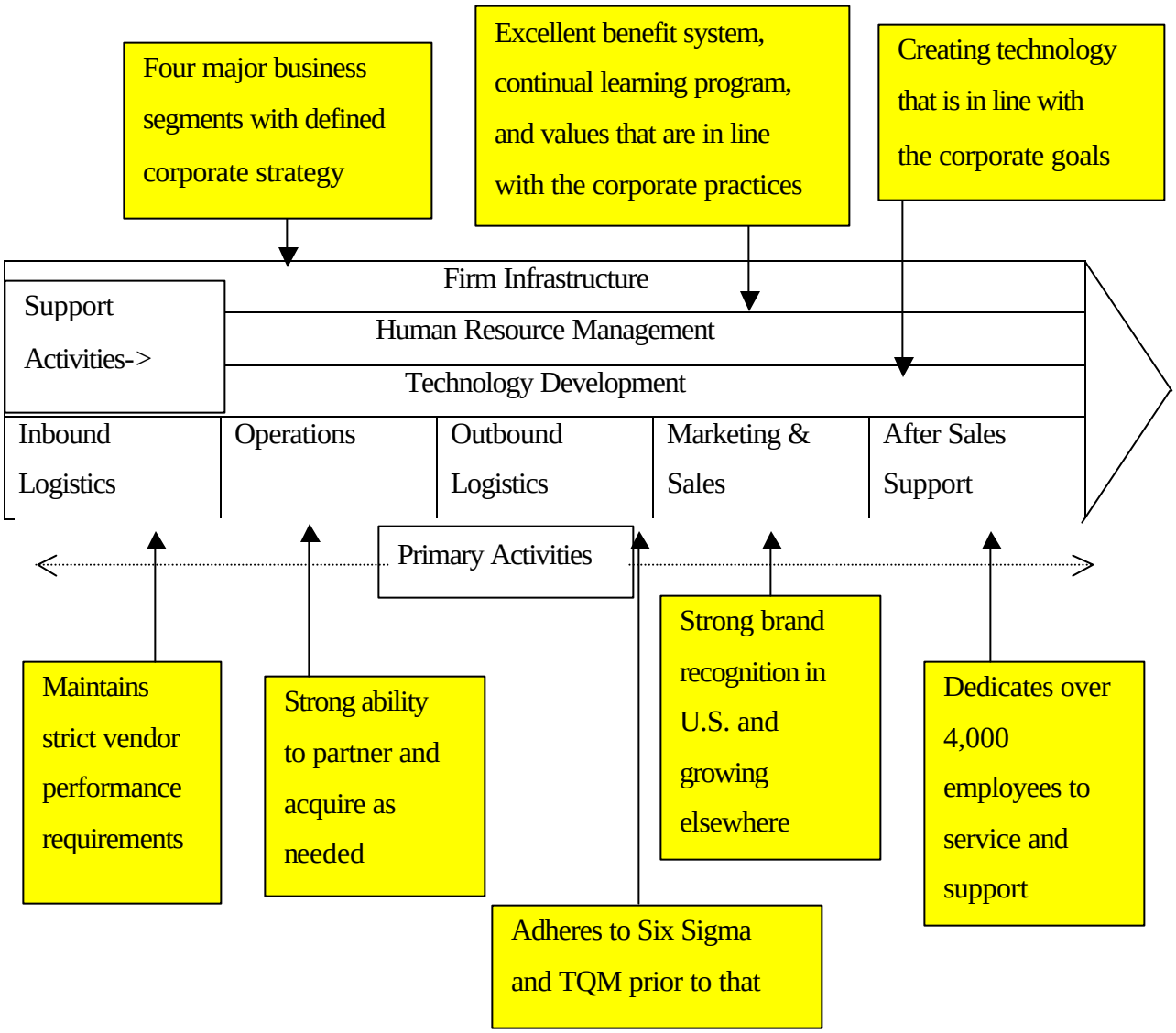
Kodak has embraced the global market. Kodak has a presence in Europe, India, China, and Latin America. Kodak wants to further extend its presence in India, China, and Latin America, and intends to introduce Digital Kiosks in Latin America. We can see that Kodak is not a U.S.-centric corporation.

Kodak has the resources to acquire companies when it sees ripe opportunities such as Ofoto and Bell+Howell. Kodak has resources to invest in technology development to make digital easier to use and the capability to make other technologies better such as OLED.

Based on the above, Kodak clearly has enormous resources to cope with the transition to digital. But is it capable of making the transition? Jack Welch said of leadership, "…the best way to play your hand is to face reality - see the world the way it is - and act accordingly."[xc] Only one prong of Kodak's the four-pronged corporate strategy directly addresses the coming onslaught of digital photography – "make digital easy". The other three strategy prongs are simply the continuation of the company's traditional strategy (although their application to a digital world is mentioned). We do not believe that the current management is addressing the industry transition to digital adequately or quickly enough, and as a result, the company is in danger of going the way of Polaroid. Our financial analysis in Section 3.5 shows that digital photography revenue is not being generated fast enough to offset the decrease in Kodak's traditional film revenues. Kodak is not taking dramatic enough steps to address this serious situation. This is Kodak's weakness.

3.4.3.2 Value Chain Analysis

Figure 10. Value Chain



Below are the discussions of the firm's strengths and weaknesses in its value chain and across its individual infrastructure components. This includes information gathered from interviews with Kodak employees and other research.

3.4.3.2.1 Firm Infrastructure

As mentioned earlier, Kodak divided the corporation into four distinct "strategic product groups." This was done in November of 2001 –"enabling a sharper focus on the customers and markets we serve."[xci]

3.4.3.2.2 Human Resource Management

Each employee is required to devote 40 hours a year to training and development.[xcii] George Eastman started a culture of giving back to the community and respect for the basic intelligence of the employees. Eastman believed in paying employees not just what he could but what they where worth to the organization. Over the past 100 years, Kodak has done well in preserving the culture set fourth by Eastman.

3.4.3.2.3 Technology Development

Kodak's current technology is in line with its corporate and business strategies. Digital technology development or enhancement is part of each one of the "four prongs" of the corporate growth strategy. Kodak has discipline within its organization with regards to keeping the products in-line with the goals and strategy. Only one prong addresses digital directly by making digital products easier to use, which led Kodak to create the EasyShare line of cameras to achieve that goal.

3.4.3.2.4 Inbound Logistics

Kodak requires its vendors to meet global industry requirements with regards to packaging, ISO, delivery, and other aspects related to logistics, which is critical for a global organization such as Kodak. It is not possible to conduct business in certain countries if global logistics requirements are not met because some countries require all sub-assembly manufacturers to adhere to the same standards as the main system manufacturer.

3.4.3.2.5 Operations

Kodak has a strong ability to partner and to acquire companies as needed. We saw that Kodak was able to convert the strategies into partnerships and acquisitions in order to move towards marketable products. For example, Kodak purchased Ofoto in order to offer on-line digital photo development.

3.4.3.2.6 Outbound Logistics

Kodak adheres to the Motorola inspired program of "Six Sigma."

3.4.3.2.7 Marketing & Sales

Kodak has outstanding brand recognition in the U.S. and it is growing elsewhere. Kodak has a presence in almost every U.S. supermarket, drugstore, and food club in America. Kodak dedicates 4,000 employees to service and after sales support; such employees include field engineers dedicated to repairing, installing, and upgrading the higher-end systems and telephone assistance for customers.

3.4.4 Technology Strategy

Kodak is a branding and technology company. We have already discussed Kodak's various technologies and how they fit into the Corporate and Business Strategies. Ofoto, EasyShare, OLED, and Digital Kiosks are examples of a few technologies being incorporated into either the Corporate or Business strategy –depending on the level of abstraction at which they are examined.

3.5 Financial Analysis

Sales and Gross Margin

Kodak has not been able to grow its revenues over the past several years. Overall, Photography SBU revenues are shrinking and Kodak has not been able to grow its other SBUs to offset the loss of activity in the photography segment. As a result, gross margins have suffered.

Table 11. Select Kodak Financial Data

Dollars in millions	2002 proj	2001	2000	1999	1998	1997
Photography SBU sales	$8,801	$9,403	$10,231	$10,265	$10,063	$10,620
% change from prior year		-6.4%	-8.1%	-0.3%	2.0%	-5.2%
Total sales	$12,533	$13,234	$13,994	$14,089	$13,406	$14,538
% change from prior year		-5.3%	-5.4%	-0.7%	5.1%	-7.8%
Gross margin	36.2%	34.5%	40.2%	42.6%	45.6%	45.1%

Photography SBU sales as a percentage of total Kodak sales peaked in 1998 at 75.1% and declined to 70.2% since that time. Absolute Photography SBU sales dollars have declined as well, impacting overall Kodak sales dollars. Kodak has seen total sales decline each year (with the exception of 1998) despite U.S. and world economy growth during 1997 to early 2000. Sales are declining in both the U.S. and emerging markets. In addition, the decreased sales in the Photography SBU are the result of decreased sales in all of the SBU subsegments: consumer, entertainment, and professional film products, paper products, photo finishing services and camera products. The downward sales trend reflects the confluence of several conditions. First, the macroeconomic weakness in both the U.S. and worldwide markets is growing. Second, 9-11, a major non-recurring shock, reduced sales by delaying or postponing motion picture and television releases and resulted in a significant drop in worldwide tourism. Third, there is an ongoing industry shift as digital substitution replaces traditional products. While Kodak's traditional film business is still growing in emerging markets, digital substitution is occurring in developed markets – more quickly in Japan and slowly in the U.S., Europe and Canada. Kodak has seen lower gross margins over the past five years, in addition to the downward sales trend, due to several factors. Increased sales of lower margin products, such as single use

cameras and digital cameras, contributed to reduced gross margins. Emerging market sales for traditional film products have lower average selling prices than developed market sales. Also, price pressures in certain markets where Kodak competes head-on with competitors that differentiate based on cost, such as Japan, negatively impact gross margins.

Kodak stated in its 2001 Annual Report that it expects 2002 to be another difficult year. A review of Kodak's September 30, 2002 results, projected to the end of the year, shows that Kodak is realizing these expectations. Kodak does not expect any upturn until 2003 and then Kodak expects consumer spending to increase only gradually.

Operating Costs

Negative sales and gross margin trends foretell the impact of the industry's transition from analog to digital and bode ill for the company. Kodak management has reacted by controlling operating expenses. At the present time, Kodak has succeeded in maintaining key cost structure ratios despite the overall sales decline.

Table 12. Kodak Performance/Cost Ratios

	2002 proj	2001	2000	1999	1998	1997
R&D as % of sales	6.0%	5.9%	5.6%	5.8%	6.6%	7.2%
SG&A as % of sales	19.5%	19.9%	18.0%	19.2%	24.6%	26.9%
Operating margin	10.7%	2.6%	15.8%	14.1%	14.1%	0.9%
Net income margin	7.0%	0.6%	10.1%	9.9%	10.4%	0.0%

R&D as a percent of sales has stayed flat at approximately 6% of sales, despite sale declines over the past five years. The flat rate translates into an approximate $300 million real dollar decrease in R&D since 1997. SG&A (excluding restructuring and other special charges such as goodwill) declined from approximately 26% in 1997/1998 to under 20% in the past four years. This reduction translates into a $1.5 billion real dollar decrease since 1997. Kodak has implemented SAP to streamline and automate its G&A functions and has embarked on restructuring activities in 1999 and 2001 that focused on reducing operating costs and shoring up the balance sheet.

In Europe, Kodak transitioned from a country model, where purchasing, billing, payables, and other operational activities were performed within each country of operation to a regional

hub-model where all European activities are now performed in Switzerland. Thus, management has tried to reap maximum benefit from Europe's conversion to a single currency, the Euro, while eliminating redundant pieces of infrastructure. Kodak has seen other operational performance improvements from its divesting of real estate holdings, stopping the repurchase of stock in favor of debt reduction, and reducing headcount. Kodak's net income margin, as a result, revived back to 7% in 2002 after dipping to 0.6% in 2001.

Cash Flows

Kodak's goal is to maintain a strong cash flow position, and the company stated in its 2001 Annual Report that Kodak expects to generate $6 billion in cash flow after dividends over the next six years. Kodak's cash goals now focus on maintaining dividends, decreasing debt and making strategic acquisitions that enhance profitability.

Economic Value Added

A key financial performance measure is Economic Value Added, or EVA. Please see Appendix D for a detailed description of how this measure is calculated. Kodak's EVA for 2001 is –508 (million dollars). Although Kodak posted net operating income and positive net earnings in 2001, when the operating income is adjusted for the cost of capital and the return that Kodak earns on its assets, a negative EVA results. This is a red flag for management. When the EVA calculations are looked at closely, several issues come to light:

?? Kodak has a lot of debt. Its debt equity ratio at the end of 2001 was 3.6, as compared to the industry average of 2.2.

?? Kodak has a higher cost of debt than its competitors. This is because Kodak's primary competitors are in Japan, where due to the Japanese recession and Japanese government subsidies, the cost of debt is now quite low.

?? Kodak's net working capital (current assets less current liabilities) is negative.

?? Kodak's spending on R&D is decreasing over time. Kodak is not investing in the future; rather, it is decreasing R&D as sales decrease to maintain a steady "R&D as a percentage of revenue" metric.

?? Kodak's net profit margin is approximately zero.

Kodak continues to pay out dividends despite the above issues. Our analysis tells us that management has decided to use the Photography SBU as a "cash cow" to continue to attract investors. Management has publicly indicated that there will be sufficient cash flow generated over the next five to six years to ensure that dividends continue. We are concerned that in the long-term, Kodak will exhaust its assets and stop being able to generate new cash flows. The lack of substantial R&D growth and the negative EVA cause our concern.

Kodak's Financial Performance Compared to Industry Average

Kodak's current financial performance compares reasonably well against its competition and the industry average. Although gross margins are below average, operating margins are just above the average and key balance sheet ratios reveal that Kodak is managing its receivables and its inventory better than its competitors. While this information makes Kodak look attractive in the short-term, its negative EVA is a leading indicator of long-term problems.

Table 13. Key 2001 Performance and Operating Ratios

	Industry	Kodak	Fuji	Konica	Agfa
Gross margin	**38.8%**	**34.5%**	41.6%	42.6%	36.5%
Operating margin	**2.4%**	**2.6%**	7.0%	5.5%	-5.4%
Net profit margin (A)	**0.0%**	**0.6%**	3.4%	2.0%	-5.9%
Days Sales Outstanding	**79.1**	**64.5**	80.6	87.5	83.6
Days in Inventory	**96.3**	**47.9**	93.4	120.6	123.5
Quick ratio	**1.6**	**0.9**	1.9	1.2	2.4
Debt to Equity Ratio	**2.2**	**3.6**	0.7	2.1	2.6
Asset turnover (B)	**97.8%**	**99.0%**	81.5%	102.3%	108.5%
Financial leverage (C)	**3.2**	**4.6**	1.7	3.1	3.6
Return on net worth (AxBxC)	**-2.2%**	**2.6%**	4.8%	6.4%	-22.7%

Key Income Statement Ratios

Kodak's gross margins are lower than the industry average and are lower than its competitors. In prior years, Kodak was the quality brand and did not compete on price. However, as average selling prices have fallen and Kodak's traditional film product base has

eroded, margins have suffered. It is important to note that Kodak's prior year gross margin was 40.2% and thus more in line with the industry average. The fall in 2001 was a result of many factors discussed in the Sales and Gross Margin section above.

Key Balance Sheet Ratios and Return on Net Worth

Kodak's balance sheet ratios, day's sales outstanding, days in inventory, and the quick ratio, all compare favorably to industry averages. Kodak's day's sales outstanding and days in inventory are lower than those of its competitors. This achievement is evidence of Kodak's management focus on improving the balance sheet. However, a deeper look reveals some concerns. Kodak's has the highest debt to equity ratio in the industry. Its return on net worth is significantly lower than that of Fuji. This indicates that while the simple "street ratios" appear to be managed well, Kodak is not really getting the maximum return on assets and equity invested.

EVA

One interesting exercise is to look at Kodak's net income, operating income, and EVA, which is operating income adjusted for the cost of capital on assets deployed, as compared to its competitors.

Table 14. EVA (in millions of dollars)

Firm	*Net income*	*Operating income*	*EVA*
Kodak	$76	$291	$-508
Fuji	$650	$1,722	$371
Konica	$88	$173	$61
Agfa	$-496	$-287	$-541

Kodak's negative EVA is due to the factors discussed previously: a high debt load, negative working capital, and declining R&D expenditure. Fuji's high operating income is due to adding back its high tax provision and low interest expense. Were Fuji not paying such high taxes in Japan, its net income would be much higher. The main reason that Fuji's EVA is positive is because it has increased its R&D spending substantially – a 64% increase since 2000. Konica's

positive EVA is largely due to its positive net income and positive operating income. Agfa's EVA is negative despite positive working capital and flat R&D spending because the company had a net loss in 2001. Because working capital is positive, it appears that if Agfa is able to turn around its net loss it will also have a positive EVA.

The main concern for Kodak comes when the net income and operating income are positive, but the EVA is negative. This tells us that Kodak is not successful at generating sufficient income from its assets to offset the cost of capital used. Kodak is not creating wealth at the present time – rather it is consuming resources to generate net income.

3.6 Product/Service Portfolio/ Business Position Analysis

3.6.1 Lifecycle Analysis

Kodak's Photography SBU's number one product is film. Kodak has a number of consumer film sizes available today, however the number has been reduced significantly over the years. Kodak has been a relentless innovator in the imaging business and its focus has been on making the process easy. Currently, three major film types exist. The first is 35mm film, which is the most used film size in the world. The 35mm film cartridges that we use today were introduced in their first form in 1934. This film size is available in slide format as well. While packaging and film have changed over the years, focus has always been on improving image quality while simultaneously making picture taking easier. Kodak claims its Max products improve 25% of the pictures over the same pictures taken with 100 or 200 speed standard 35mm film. These and other incremental improvements have been beneficial in sustaining market share for Kodak, but they would not qualify as new products. For this reason, Kodak's 35mm-film life span has reached 68 years and is unlikely to be replaced with another film size. Kodak introduced the Advanced Photo System (Advantix) in 1996. The product contains a 24mm film and is the first film from Kodak to incorporate traditional silver halide technology and a transparent magnetic recording medium (IX - Information eXchange) allowing information to be recorded and exchanged with the photofinisher. Advantix's advantages are numerous but the most important for the consumer market is the ease of loading. The film "tail" is no longer present. The cartridge is sealed and simply snapped into place in the camera. The film records information about the pictures taken, and in some cameras it allows film removal in the middle of the roll. The film can be replaced later and its memory communicates the last position to the camera, which winds the film into place. This new format is now six years old and is growing in popularity.

In general, Kodak's film lifecycle at this point is more likely to be determined by the speed of the transition to digital photography than by another analog replacement. The film industry lifecycle peaked in 2001. Analysts believe that the film market is likely to remain flat or slightly decreasing at a rate of about 3% per year as digital substitution occurs. Kodak's management believes that digital substitution will occur slowly and is likely to fall in the 0% to –3% decline through 2006.

Historically, Kodak's camera lifecycles are fairly short. For example, its disc cameras, introduced from 1982 through 1990, had a model life cycle of about three years.[xciii] Kodak's Advantix™ cameras have shown more longevity with a life span exceeding six years. Little information is available regarding Kodak's digital cameras life cycle, but the market is changing rapidly. On the Digital Photography Review website, 15 current Kodak models are listed, as are 21 discontinued models. Kodak's first digital camera the DC20 was released in 1996 and that model is not even on the list. This suggests that in just six years Kodak has released at least 40 digital cameras. This number includes four cameras listed in Kodak's camera history but not listed on the Digital Photography Review site. Kodak released seven new models in 2001. Two of its cameras released in 2000 have already been discontinued. Digital camera life cycles are in the one to three year ranges with the current speed of technological change.

3.6.2 Marketing Mix

3.6.2.1 Product

Kodak offers a variety of products from the photography division:

- Film
- Cameras
- Photo processing
- Photo paper
- Minilabs and kiosks

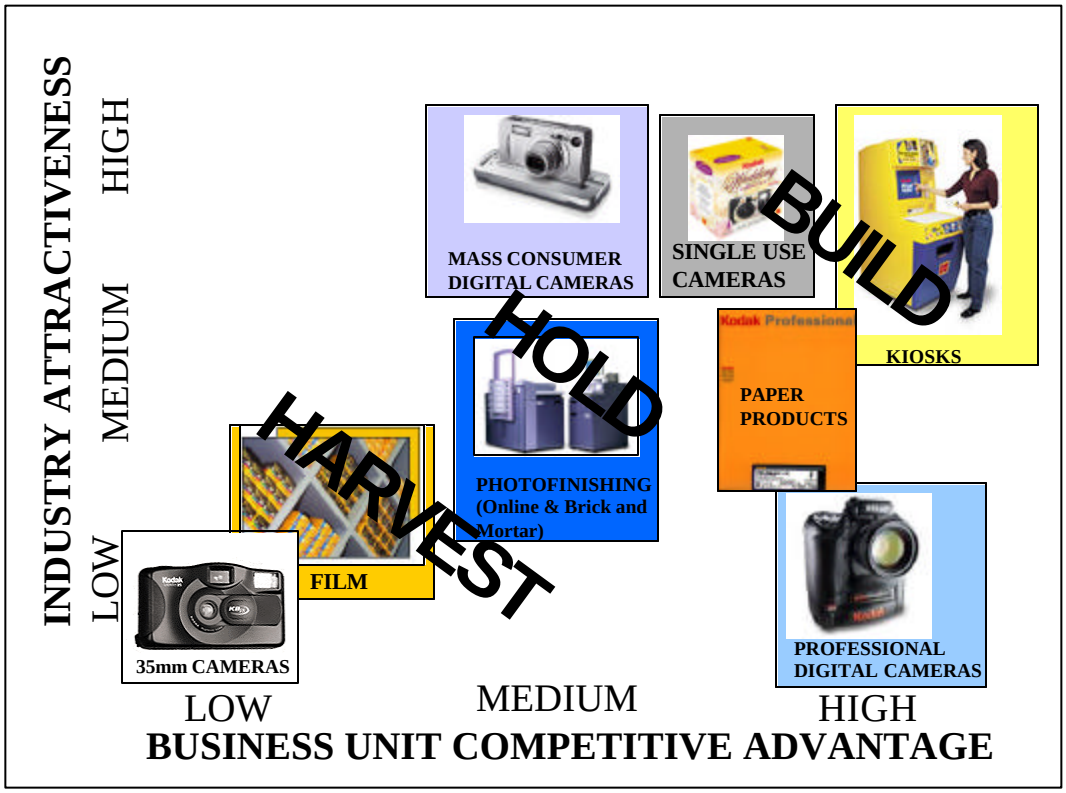
The table below shows the revenue breakout by product type. The proportion of sales from each product type is consistent with the proportion of sales by product type for the entire industry as discussed in the Industry Structure section.

Table 15. 2001 Estimated Revenues for Photography Division[xciv]

Product	*Revenue*	*Percent of Total*
Film	$3B	32
Cameras	$2.6B	28
Paper	$750M	8
Processing/Kiosks/Minilabs	$3B	32
Total	$9.4B	100

The Product Portfolio Matrix figure below depicts Kodak's photography products as they relate to business unit competitiveness and industry attractiveness. Film and analog cameras, on the lower end of the diagram, represent Kodak's history. They do not provide a competitive advantage and are unattractive due to declining revenues and profit margins. Photo finishing is more promising because it includes revenues from both analog and digital camera processing. Kodak professional digital cameras are the best on market. They have the most advanced features and resolution and are the preferred choice of professional photographers.[xcv] The downside is that Kodak has selected a niche market that represents less than 5% of all cameras sold.[xcvi] Kodak digital consumer cameras are positioned in a high growth market. However, given Kodak's tendency to follow the innovators, their competitive position is average.

Figure 11. Product Portfolio Matrix



The best products in Kodak's arsenal include paper products, single use cameras, digital minilabs, and kiosks. Paper generates high margins for Kodak due to the excellent branding it represents and the small purchase price it represents for consumers. Product growth will slow somewhat as consumers transition from analog to digital cameras, but Kodak can expand paper use with more kiosk placement. Kiosks and digital minilabs represent a high growth area for Kodak. Kodak's well-known brand and global reach allows it be one of the first movers in key

target markets to place kiosks in high traffic areas. Kodak leverages single use cameras to extend the film industry's life. Single use analog cameras are quickly replacing expensive analog cameras sales. There is high potential growth with the expansion into foreign markets up until the time digital cameras become more cost competitive. In our opinion, this gives Kodak a five to ten year period to extend the benefits of film.

3.6.2.2 Price

Kodak film garners a price premium over competitors for its film and paper products due to the investment it has made in branding its products as the highest quality paper and film available. Film sells at a 10% premium to the industry average and 35% premium to Fuji's film due to trust in the Kodak brand.[xcvii] Kodak has used this advantage to price the Picture-Makers kiosks at about twice the price of Sony's smaller, more feature-limited Picture Station kiosk, which sells for about $10,000.[xcviii]

Entry-level digital cameras (2 Mega pixels) are currently priced at between $200 and $300 in the U.S., which is a 30% price decline from 2000.[xcix] A current price spot check indicates Kodak's EasyShare, 2.0 Mega pixel, camera sells at $150, while Sony's competitive offering sells for $200.[c] Kodak is believed to be attaining negative margins on this product due to market competitiveness.[ci] SUCs, which are priced from $10 to $20 based on a sampling of local stores, appear to be generating profits for Kodak due to the bundling approach and associated processing and paper usage after camera usage. Professional cameras from Kodak's competitors have been announced and will be priced at around $2000.[cii] Kodak's professional digital single lens reflex (SLR) camera sells for $5000.[ciii]

Kodak currently sells Phogenix, a digital minilab developed with HP, at $40,000 to $50,000 in the U.S. It is priced at a steep discount to Fuji's Frontier minilab that sells at $139,000. The reason for this divergence is not clear.[civ] Pricing of film development chemicals and paper is readily available due to the nature of processing industry, which relies on long term contracts to lock in prices. Kodak's affiliate, Qualex, controls most of the market in the U.S. for these products, so it is likely Kodak only faces competitive pricing pressures at contract renegotiation time. Kodak photo paper is priced at a premium. Specific prices vary depending on the timing of associated promotions.

Film and paper represent the highest margin products for Kodak.[cv] All other products are extremely sensitive to obsolescence from innovation, price cutting from competitors and market entry by new firms. This appears to explain Kodak's decreasing gross margins over the past five years.

3.6.2.3 Distribution

Kodak uses its affiliate, Qualex, to off film processing and output. Major retail outlets, discount stores, photo-processing centers, and specialty stores distribute film and digital photo paper. Kiosks and digital minilabs use digital photo paper. Kodak's subsidiary Ofoto manages online photo finishing. Ofoto ships printed photos to customers after their on-line order has been placed. Best Buy, OfficeMax, Staples, and many other retail and discount specialty stores offer digital and analog cameras. Online shopping is popular due to ease of feature comparison. SUCs are sold primarily as a convenience and device for special events. Kodak's digital minilabs are sold to the same outlets that offer film processing. Similarly, kiosks are usually located in mass-merchant retailers, photo-specialty outlets and drugstores.

3.6.2.4 Promotions

Promotions are not used to sell film processing chemicals and paper products. These are sold based on negotiated contracts that last for several years. Changes to pricing are reflected during renegotiations. Digital photo paper is not promoted to retailers but does get discounted when purchased in volume. Ofoto, Kodak's online initiative, offers its services through CVS, Walgreen's and Wal-Mart, among others.[cvi] Film promotions vary from steep price discounts when buying in volume to film bundling with SUCs and analog cameras. Camera promotions tend to be price oriented or involve bundling with software, film or additional accessories. However, Kodak does not offer promotions with their professional digital cameras, as the buyers are very brand sensitive. Kodak promotes its digital minilabs and kiosks by price discounting and offering volume discounts as needed.

3.6.3 Implications for Strategy

Although Kodak is the market leader in film and photo paper, these markets are nearing the end of their life cycle. Film has enjoyed a life of over 100 years while the perfect complement, paper, is no longer a necessity with digital technology. Kodak has built a strong

brand that is recognized worldwide as number one in photography. However, it is in danger of losing its number one position as the end of film draws near. Our concern is that Kodak is still too reliant on film for its revenues and profits. The company holds a number five position worldwide in camera sales and is quite satisfied with attaining a 3rd or 4th position.[cvii]

Kodak has chosen to broaden the definition of its market to infoimaging. It is disconcerting however, that the segments where they are number one will be harvested due to digital substitution. Kodak's worldwide share of digital camera sales is now 10%. With this segment in the early adoption stage there is likely to be significant innovation and price competition to come. Eventually, the maturing of digital photo technology will lead to just a few remaining competitors. We believe Kodak is not poised to remain as a contender in this segment due to it's lack of innovation, cost disadvantages and contentment with being an also ran.

4 Critical Issues

The industry leaders identified several issues critical to Kodak's strategy implementation:

?? Improvement of digital camera quality and ease of use. A survey of more than seventy leading, world renowned trade journalists and industry analysts indicated that 76% believe current image management/transfer, image quality enhancement, and archiving software are too difficult to use.[cviii]

?? Adaptation Kodak's well-established retail film and photo finishing distribution strategy to digital photography.

?? Providing services superior to what computer printer companies can provide and ensuring that commercial photo processors will not be obsolete for consumers. [cix]

?? Establishing the necessary alliances to gain market share in the market defined by the convergence of imaging with telecommunications.[cx]

The additional critical issues we identified are discussed in the following sections.

4.1 Other Opportunities and Threats Facing Kodak

Kodak has an opportunity to leverage its presence with its kiosks. It now has 35,000 digital kiosks as we have mentioned, but this is only a small amount of what is possible. Kodak has a massive number of drop-off points for standard analog film developing. One can get film developed at almost any supermarket, drugstore, or discount food center in any place in the United States. Kodak must leverage this presence.

Digital photography, as we know, is eroding the analog (standard film developing) revenue stream, and Kodak must find replacements for this lost revenue. One viable replacement is Digital Kiosk Development Services. Kodak can and does receive revenue from the paper sold at these kiosks. Kodak needs to aggressively partner with the channels to ensure that wherever there is a legacy analog drop-off point that there is also a digital kiosk. Kodak must also continue to place kiosks in new venues such as in coffee shops, malls, and other tactical places. The digital developing kiosk will eventually supplant the analog drop-off point entirely when analog disappears in the future. This is an opportunity that cannot be missed to ensure the survival of the company. This opportunity is not restricted to the U.S. Latin American, Europe, parts of Asia Pacific, and certain areas of the Middle East are also candidates for this approach.

SUCs are an outstanding opportunity for Kodak, especially in emerging markets such as China. Customers are essentially renting cameras. Kodak announced, in the 2001 Annual Report, that is has just recycled its 500 millionth SUC. This is just an indicator of the potential of this channel to deliver the true products: film and developing, not cameras.[cxi] SUCs are low cost, relative to standard cameras, and they are in reach of many people who could not afford a standard camera. We feel these aspects of SUCs make them ideal for emerging markets. Kodak would make up in volume for what would be lost in margins as lower price points would need to be set in lower income geographies. This presents a high volume business opportunity.

An exciting breakthrough innovation for SUCs would be a digital single use camera (DSUC). These would be sold through the traditional SUC channels: supermarkets, drug stores, discount retailers. They would be sold at the digital kiosks as well. DSUCs would allow the consumer to print out the pictures, e-mail them somewhere, or burn a CD at the Kodak kiosk only. Kodak would charge a fee, of course, for any of the services and cameras would be viable for only a certain number of photos or images. Kodak is, again, renting the camera at a relatively low price and offering services that many people in the U.S. and abroad, mainly Europe, cannot do for themselves. DSUCs, of course, would have the Kodak brand name attached, which is known the world over. The Kodak brand is expected to help sell the camera.

Threats abound for Kodak. The analogy is this: Kodak is worrying about eight track, cassettes, reel-to-reel, and vinyl records while the world is moving onto CDs. It does not even matter what technology is better; the world is moving on. Kodak's cash cow is film and film developing, but every year more people are buying digital cameras. This is a problem because

consumers are not printing out most of their digital photos. Digital photos are often stored, e-mailed, or deleted. Only great shots are printed out, and then it is likely that most people use the plain white printer paper already in their printer rather than going out to buy special paper. The threat to Kodak, and the film developing industry, is that future sales of "output" (film grade paper) products will not be at levels needed to maintain historical revenues.

Kodak needs to make film grade paper more easily available to customers. Kodak can and does sell photo paper through digital kiosks and through the current channels such as supermarkets and drugstores, but it needs to find ways to drive usage. Digital cameras make it easier for people to take pictures because there is no "commitment." One is not committed to paying for a shot once the button is pushed. People are taking more pictures due to this lack of commitment, yet they are not printing them out.

4.2 Critical Strengths and Weaknesses.

Kodak is one of the most recognized brands in photography[cxii]. People have faith in Kodak quality as a result of this brand strength, and thus the brand allows Kodak to command a price premium for its film.

Kodak, however, has been a complacent leader. CEO Daniel Carp has put in place a strategy that accepts that digital is making "some" inroads into Kodak's main business - photography. He is not sounding the alarm as he should be. A very serious situation faces Kodak: within six or seven years digital technology will *destroy* Kodak and its main income sources - photography and photo finishing. Carp is not moving Kodak fast enough, his strategy is not sound, and he is not moving in the right directions in other areas. We feel that he is complacent and accepts the status quo. He claims that the current strategy is a growth strategy, but it is not growing revenues for the company. Too much of Kodak's revenues are derived from traditional photography, which is a major weakness as this segment is steadily shrinking and being cannibalized by digital photography.

Kodak's own structure holds itself back. Each year Kodak pays a $500+ million tax - not to the government but to its shareholders in the form of dividends. The $500+ million could be better spent, at this time, by Kodak in expanding its kiosks, R&D for digital technologies or by paying down its debt. Shareholders have come to expect this yearly tribute so getting the board

of directors to authorize a cut back will be a challenge. A cut back is needed in order to achieve the goals for the future.

The Kodak brand is closely tied to traditional photography. If Kodak doesn't make some dramatic and effective changes, such as the expansion of the kiosks, SUC expansion globally, and other digital innovations, the failure of the Photography SBU could cause all other SBUs to fail if they are not positioned strongly on their own. Polaroid had many products and interests besides cameras and film, yet Polaroid's failure to broaden itself effectively led to its downfall.

4.3 Impact of Kodak's Current Strategy

Kodak's traditional industry is shrinking. Kodak's sales are projected to decrease by more than $1 billion over the next five years: from $13.2 billion in 2001 to $12.1 billion in 2006. Both declines in units sold and in average selling prices, due to increased consumer purchasing power and lower prices wrought from emerging markets, are causing sales shrinkage. In addition, gross margins are projected to decline. Kodak's current strategy, to rein in operating expenses to keep pace with the expected sales decline, will keep the company above water in the short-term. However, we project losses by 2006. Kodak needs to make significant changes in its cost structure in order to maintain long-term profitability. We think that current management is trying to maintain the dividend level to attract investors over its expected tenure – the next few years. Management, a captive to the dividend, does not appear to be willing to make significant and difficult decisions necessary for it to outlast the transition to digital.

Current Strategy Results in Net Losses by 2006 *(in millions of US dollars)*

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Kodak total sales	$ 13,994	$ 13,234	$ 12,692	$ 12,808	$ 12,641	$ 12,325	$ 12,128
% change in sales year to year		*-5%*	*-4%*	*1%*	*-1%*	*-3%*	*-2%*
Gross profit	$ 5,619	$ 4,564	$ 4,315	$ 4,099	$ 3,729	$ 3,328	$ 2,971
Gross margin	*40%*	*34%*	*34%*	*32%*	*30%*	*27%*	*25%*
R&D and SG&A	$ 3,298	$ 3,406	$ 3,199	$ 3,228	$ 3,186	$ 3,107	$ 3,057
R&D and SG&A and a % of sales	*24%*	*26%*	*25%*	*25%*	*25%*	*25%*	*25%*
Earnings before taxes	$ 2,170	$ 1,215	$ 1,116	$ 870	$ 543	$ 221	$ (85)
Earnings as a % of sales	*16%*	*9%*	*9%*	*7%*	*4%*	*2%*	*-1%*

4.4 Effectiveness of Current Strategy or "Good is the Enemy of Great"

"Our discussions with Kodak management suggest the company is satisfied with a top-three or top-four share position worldwide."[cxiii] Kodak's current strategy is ineffective - a Doom Loop. Revenues have shrunk every year for the past five years. Daniel Carp explains that the strategy is a *growth* strategy, yet growth is not, in fact, being achieved. "The strategic aim of a business is to earn a return on capital…"[cxiv] said Alfred P. Sloan Jr. about business, and we see that Kodak is not achieving its strategic aim.

The firm's conduct does not address the photography industry conditions. Kodak is the film market share leader yet there have been no recent major developments in film. The current strategy portion that addresses digital transformation is nothing new. Other companies are pursuing similar strategies and also addressing the challenge of making digital photography easier to use.

Kodak has resources today to implement the current strategy. Kodak also has the resources to implement a bold, new aggressive strategy. It would be very difficult to get the new strategy approved within Kodak's current corporate culture. Kodak is a conservative, old world company that offers items such as a pension to its employees and an almost guaranteed dividend to its shareholders. Dividends could be used to paying down Kodak's debts, support R&D, or increase digital expansion. It is hard to imagine that the Kodak board of directors and executive staff would take the needed risks today in order to achieve the longevity of the corporation.

Nothing in the current strategy creates a unique advantage. It appears at first that the only exception to this might be the digital kiosks, but kiosks have limited room for differentiation since they are simply printers. Kodak's only hope is to obtain a "first mover advantage" with the kiosks and lockup market share as early as possible.

5 Recommendations

5.1 Short Term

We recommend that Kodak execute the following strategies immediately:

1) **Continue its harvest strategy in the maturing film subsegment of the photography business unit by leveraging the benefits of film and capturing market share in emerging markets.** This recommendation reinforces Kodak's world market leadership position in the traditional analog photography business and maintains brand value internationally. The analog and digital industry structures do not change with this action. The film industry, which provides Kodak with 70% of its total revenues, has characteristics of decline: excess capacity, lack of technological change, few competitors, high average age of resources, and aggressive price competition.[cxv] We believe that Kodak's harvesting strategy, to expand the benefits of film, is a conventional strategy for addressing this declining industry. As defined by Grant, "A harvesting strategy seeks to boost margins wherever possible through raising prices and cutting costs, the number of models, number of channels, and the number of customers." Kodak's R&D and SG&A spending have dropped in the past four years (see Financial Analysis section), while attempting to sell film to emerging markets. The company has sufficient income to pay approximately 5-6 years of sustainable dividends; however, their long-term financial future does not appear to be strong. In the short-term, it makes sense for Kodak to reap profits from the remaining demand in film.
2) **Continue to partner with industry leaders to gain experience and credibility in the digital space.** Kodak's transition from a mature to a quickly declining industry is the result of digital substitution. Kodak needs to quickly learn the new technology to survive in a new industry. Kodak, leveraging its brand and imaging expertise, should continue to partner with infoimaging/digital leaders to gain credibility and expertise in the new industry. Some examples include: the Phogenix product, NexPress, the Picture exchange PCXe, and the AOL "You've got pictures" program. The company should continue to partner with Nikon to use the F5 body for professional cameras. This recommendation increases Kodak's brand strength in the emerging digital market and diversifies its product portfolio and revenue stream, thus supporting its competitive position. The industry structure will change if Kodak becomes a stronger player in the digital space from this recommendation. The intent is to

reestablish Kodak as a player in the digital space. In addition, Kodak needs to position itself at least in the top three digital image capture market in order to replace lost film revenue.

3) **Continue to promote Kodak brand with single use cameras, especially in emerging markets where the affordability of multiuse cameras is prohibitive.** Kodak's competitive position strengthens if Kodak's brand recognition is established with the younger and low-income population. Kodak would secure future revenues from these customers as their income levels increase and they upgrade to more sophisticated products. In addition, added SUC processing could replace the losses in traditional film processing. This recommendation allows Kodak to maintain its number one position in the industry structure of emerging markets and prolong the life of traditional film.

4) **Review organization structure and look for ways to reduce layers and eliminate costs. Reduce structural layers that have accumulated over the years with acquisitions and work in new product areas.** Kodak's corporate directory lists over 50 senior executives within the corporate and business unit management. Companies often restructure their organizations in order to create an innovative environment and streamline operating costs. In his article about the evolution of corporations as they grow, Larry Greiner suggests that companies must go through organizational changes as they grow in order to move to the next development phase. Companies reach phases at different times and can transition to and from various phases many times during the life of the organization. Larry describes the process as one of evolution and revolution. Evolutionary phases are those in which the company goes through a prolonged growth period. He also describes this time as a quiet time between economic shocks. The revolutionary period is one of turbulence within the organization. This turbulence can be caused by many things and is often caused by the organization growing beyond its current organizational structure. Greiner describes various phases that are indicative of companies at certain organizational growth stages. Young companies tend to go through phases like Creativity and move into the Direction phase. Each phase becomes necessary, as the organizational challenges require different approaches. We would suggest that Kodak is stuck in the Coordination phase that Greiner characterizes as built around formal systems for achieving greater coordination in which top-level executives take responsibility for the initiation and administration of the new systems. Kodak has reached what Greiner describes as a *red-tape crisis*. In general, the organization has become

too large and complex to be managed through formal programs and rigid systems. In addition, Kodak is experiencing an economic shock. First, the 9-11 tragedy and the subsequent economic downturn have had a negative effect on the tourism and entertainment industries. Second, Kodak's bread and butter, film, is and the declining phases of its life. Both of these circumstances suggest that Kodak needs to take dramatic steps if it intends to survive this current crisis. This is when a revolution occurs and the next phase of growth, Collaboration becomes crucial. Greiner describes the Collaboration phase as one where:

a) The focus is on solving problems quickly through team action.

b) Teams are combined across functions to handle specific tasks

c) Staff experts at headquarters are reduced in number, reassigned, and combined into interdisciplinary teams that consult with, not direct field units.

d) Economic rewards are geared more to team performance than to individual achievement.

e) *Experimenting with new practices is encouraged throughout the organization.*[cxvi]

These characteristics are the most relevant to Kodak's current situations. In his book on organizational theory and design, Richard Daft describes what he calls *Symptoms of Structural Deficiency*. [cxvii] When the organizational structure is out of alignment with the organizational needs, one or more of the following symptoms appear: the organization does not respond innovatively to a changing environment, decision making is delayed or lacking in quality or too much conflict is evident.

We believe that these symptoms in part describe Kodak's current situation. Therefore we believe that Kodak must make some dramatic changes if it is to survive. In addition to structural changes, Kodak could improve its competitive position by relocating more of its manufacturing plants to low cost areas, increasing focus on the efficiency of all levels of the organization and identifying new areas for investment and divestment. There would be no immediate effect on industry structure, but it could position Kodak as a leader in the digital future. While these recommendations are severe in some respects, we believe they are aligned with Kodak's currently stated strategy.

5.2 Long Term

Kodak parallels Polaroid not only in how its foundation is based on a declining film industry, but in that it holds the same view that "much of the company's imaging knowledge base is also transferable to the digital arena."[cxviii] It is not apparent whether Kodak is able to "confront the brutal facts."[cxix] Kodak's publicly stated strategy has a positive flavor. However, we do not feel that the stated strategy will prevent Kodak from failure. Kodak is still too dependent on film revenues.

We recommend that Kodak implement the following long-term strategy to avoid Polaroid's fate:

Break apart the Kodak business units into separate companies. This recommendation enables each separate unit to focus on its core business and eliminate diseconomies of scale, thus strengthening Kodak's competitive position. Diversification is often responsible for the destruction of shareholder wealth (per Grant) and very few companies have been successful in multiple, diverse markets simultaneously.[cxx] Each separate business would become responsible for its own success. The businesses would benefit from the sharing of Kodak's knowledge base while allowing each other to remain solely focused on its own market. Each business could then market itself with new brand identities, making it attractive to partners, to new talent, or to acquisitions. This strategy would have a dramatic effect on the industry structure in that each business becomes a much smaller player in separate markets.

While this strategy appears extreme at the outset, we projected the cash flows for each business unit on its own and compared this to Kodak as a whole using different discount rates. Even assuming that the exact same discount rate is applied in all situations, we determined that the sum of the individual Kodak companies were worth more than the diversified single company. Our detailed analysis in Appendix E, is summarized below:

Kodak Strategy Summary: Net Discounted Cash Flows *(in millions of US dollars)*

Case 1: Kodak continues its current strategy	$	5,224
Case 2: Kodak takes short-term recommendation (remove layers and restructure infrastructure)	$	6,632
Case 3: Kodak takes short-term recommendation and long-term recommendation (divest and reorganize)	$	7,568
Case 3 Detail: Valuation of Kodak SBUs, divested		
Photography	$	4,324
Health Imaging	$	2,089
Commercial Imaging	$	955
Components	$	264
Total Sum of Broken Up Parts	$	7,568

Case 1 is the valuation of Kodak if it follows its current strategy. Case 2 is the valuation of Kodak if it implements our key short-term recommendation of removing layers and restructuring. Over $1.4 billion of shareholder value is created between these two cases.

Case 3 is the valuation of Kodak if it implements both the short-term strategy of removing layers AND our key long-term strategy of breaking up the SBUs into smaller, more focused companies. We estimate that another $0.9 billion of shareholder value is created by breaking up the SBUs. This is primarily because the Health Imaging unit is freed from the onus of dividend participation and corporate downsizing and can invest heavily in a growing and lucrative market. In addition, we feel that Kodak has certain diseconomies associated with being a large diversified, older company. We have already noted that several layers of management exist and we feel that due to legacy considerations, Kodak has not cut deeply enough into its R&D area to fully eliminate projects which do not embrace digital technology. The divestiture strategy will present management with an excellent opportunity to re-think the Photography SBU's research activities as well as to build new infrastructure.

We used the existing SBU structure as the basis to perform our valuations. However, we recognize that there are advantages and disadvantages to how these SBUs are currently structured. Therefore we have proposed a new strategic alignment based on divestiture, as noted in the Table below.

Table 16. Proposed Restructuring Advantages and Disadvantages

Division	Markets	Advantages	Disadvantages
Film	Film, Film Processing, Paper	✍ Continue to pay dividend	✍ Company may be gone in 10 years
Electronics	Professional and consumer elec. products, Kiosks, Labs	✍ Can be more innovative and invest more in R&D ✍ Can out source many functional areas	✍ Won't have the scale to be a volume player in electronics initially
Health	Health imaging systems	✍ Same as Electronics	✍ Same as Electronics
Components	OLEDs, Sensors, Optics	✍ Same as Electronics	✍ Same as Electronics

Management should re-think and realign subsegments within the SBUs to see if more synergy across the various types of technologies can be created. For example, greater synergy can be achieved by combining product categories as shown in Table 17 below. We recognize that management may not have the courage to implement this long-term recommendation; therefore we propose two alternatives.

Table 17. Proposed Restructuring Based on Product Synergies

Distinct Kodak Businesses			
Kodak Electronics	**Kodak Film and Paper**	**Kodak Medical**	**Kodak Components**
Digital Cameras Analog Cameras SUCs Digital Minilabs Kiosks Scanners Printers	Film Film Processing Paper Microfiche/film	Specialized imaging equipment	OLED (displays) Imaging Sensors Optics

Alternatives to Long-Term Recommendation #1:

1) Harvest film business (stop spending R&D in this area). Reduce dividend and divert earnings to R&D in emerging product areas such as health imaging and digital technologies.
   a) Competitive Position

      Strengthens the emerging product divisions and focuses earnings on profitable growth businesses. Since film is in decline, Kodak's competitive position in film is no longer relevant. Despite its current strong competitive position, due to the maturation of the film industry, film will contribute less and less to Kodak as a company over time.

   b) Industry Structure

      The inevitable shift from analog to digital continues to occur and Kodak is investing at a higher level in the future than it is today. Kodak will see and must accept erosion in its core market space and harvest R&D dollars from its cash cow before the cow dries up.

2) Aggressively pursue the current infoimaging strategy but with increased focus on innovative product and extensive marketing designed to refocus consumer impression of its brand.
   a) Competitive Position

This recommendation will improve Kodak's competitive position if it successfully innovates and markets in the digital realm.

   b) Industry Structure

This recommendation does not change the current industry structure.

5.3 International Recommendations:

- ?? Focus harvesting strategy in emerging markets overseas.
- ?? Aggressively promote single use cameras to emerging markets.
- ?? Continue to locate manufacturing overseas to save costs.

5.4 Strategy Implementation

The short-term harvest strategy implementation may include the following ideas:

- Become hyper-focused on film market share to preserve brand name and relationship to imaging in all forms.
- Restructure and delayer the organization to increase shareholder value by $1 billion.
- Develop incentives that increase Ofoto's value and motivate users to place digital photos online to allow purchase by friends and relatives. For example, provide a free archive CD after the purchase of a specific number of prints. This would motivate customers to put their photos on the site and make them available to relatives and friends, increasing the network value of digital photography. It could also be a method of converting digital images to output. Customers, by posting digital pictures to the site, entice friends and relatives to purchase picture prints.
- Build association of the Kodak brand with high quality digital cameras & imaging. This could increase Kodak's market share positions. Kodak is only 1% market share point behind HP and it has a more established brand in the photography market. Success of professional products could help to build the brand recommendation.

The long-term divestiture strategy implementation involves the following activities:

- Each current SBUs should become a separate legal entity. We recommend that Kodak spin off the Health Imaging, Commercial Imaging, and Components business units from the largest entity, the Photography business unit, using our product focused divestment strategy outlined in Table 16 and Table 17.
- The Photography business unit will continue to function as the current public company, retain the Kodak name and brand, pay out dividends, and make minimal investments in R&D. It would offer the products listed in the Kodak Film and Paper company shown in table 13. We see this business unit ultimately perishing, as Polaroid did. However the other businesses should grow at their respective market rates.
- The Health Imaging business unit is in a growing industry where margins are still quite healthy in the low to mid 40% range. Kodak's Health Imaging has not been getting the focus or the R&D investment needed to fully reach its potential. Even though revenues

are currently 20% of the Photography business unit, our discounted cash flows analysis reveals that it is worth approximately 50% of the Photography business unit. We recommend that this unit raise new funds to invest in R&D through an initial public offering and grow to be a major player in the health imaging market. This business would offer the health imaging products listed under Kodak Medical in Table 17.

- The Commercial Imaging business unit participates in a sluggish industry. However, margins remain consistent at 30% to 35% because there is less competition and due to Kodak's reputation for high quality. We recommend that this business unit invest in R&D in the next few years to develop its digital technology for consumer electronics. This business would offer the electronics products listed under Kodak Electronics in table 17. The new investment will be funded from existing operations.
- The Components business unit will be a pure intellectual property company, licensing its technology to the Kodak companies as well as other companies and collecting royalties from these license agreements. This business unit's high margins and the growing importance of intellectual property in this new century may cause this business unit to be attractive to outside investors and an initial public offering should be considered. This business would offer the sensors and optics products listed under Kodak Components in Table 17.

6 Conclusions

Kodak's current strategy will only be effective for a few more years. Our financial analysis shows that the company will experience recurring losses by 2006. We estimate that each year Kodak's cash cow is trimmed by about 2% in terms of revenues as digital photography popularity steadily increases.

Digital photography is robbing Kodak of film and processing revenues, its main source of profit. Kodak has developed a four pronged strategy to combat this steady erosion of its most important market, but it is has not worked so far and it does not address core issues. Kodak has existed for over 100 years, but that does not guarantee that it will be around for another 100, let alone another 20 years. It is time for Kodak to take some bold aggressive moves to ensure the continued success of the corporation well into the future. Our recommendations will be difficult for Kodak's conservative culture to adopt and implement. Shareholders are used to receiving dividends, and film has always been and still is profitable. However, Kodak will not have the resources to risk a move that will position it as a digital photography market leader if a move is not made now.

Our proposal calls for Kodak to harvest, hold, and build their products based upon the product portfolio matrix discussed earlier. Kodak should harvest the current film and analog camera business, hold onto the photo-processing and professional digital camera business, and build the digital camera, kiosk and minilab businesses dramatically. We proposed breaking the company into four new businesses: electronics, film/paper/materials, health and components. Implementation of this recommendation ensures a maximum amount of focus is applied to growth areas. This is more of an operations based approach than a market based approach. The shared resources and narrower market focus within each new company will force each to be more innovative in order to survive.

Digital technology will be Kodak's link to the future, and Kodak will take customers to a digital future. Kodak should consider developing a single-use digital camera in addition to the restructuring we have proposed. Customers would be able to choose the format of the pictures they receive: e-mail, CD, or prints. In any case, Kodak obtains both camera and processing revenues when the camera is used and returned. This may lead some consumers to permanently

shift their purchase dollars from a reusable digital camera to a digital SUC from which Kodak will receive "rental" fees and processing fees.

Kiosks, which are part of its current strategy, need to be placed into service much more quickly than the current rate and promoted through traditional media. As of 2002, Kodak has placed into service 35,000 kiosks. This seems like a large number but none of the members of our group was even aware these kiosks exist. They need to be ubiquitous just like standard film processing outlets or ATM machines. Many people are comfortable with e-mailing and storing digital pictures, but as digital technology reaches the early majority, there will be significant demand to print digital photos quickly and easily without purchasing an inkjet printer. In addition, not everyone household can afford a high-end printer and glossy paper. Kodak may realize this, but technology may pass it by before it has a chance to establish a leadership presence with digital technology.

Finally, our analysis indicates that Kodak is currently not a good investment. The company is struggling to meet its commitment of paying a consistent dividend yet they have cut operating expenses dramatically leaving only minor room for improvement in a market that is in decline. Significant improvements in the performance of the company, in our opinion, will only come with some of the drastic changes we have outlined included delayering in the levels of management and divestiture of the company into four separate legal entities.

7 Bibliography

8 Things You Didn't Know About Chinese Consumers, 28 Apr. 2000, Asiaweek.com. Asiaweek.com:COVER: 8 Things You didn't Know About Chinese Consumers. 14 Oct. 2002 http://affiliate.timeincmags.com/asiaweek/magazine/2000/0428/cover1.html.

Agfa, *2001 Annual Report*.

Associated Press: *Polaroid on the brink*. 2 Nov. 2002, http://www.dpreview.com/news/0107/01071101polaroid.asp.

Atherton, Peter. Professional wedding photographer. Telephone interview. 30 October 2002.

Bing, Laura L., John W. Bierema, and Terry J. Carter. *The global pendulum: in which direction is your globalization pendulum swinging? The Future Search Conference has some answers*. Gale Group, Inc., May 2002. LexisNexis™ Academic – Document. 12 Oct. 2002 <http://www.lexis-nexis.com/>.

Blalock, Cecelia. *Solving Internet taxation issue fairly requires grass-roots effort*, 15 May, 2000 Hotel & Motel Management. Hotel & Motel Management. 14 Oct. 2002 http://www.findarticles.com/cf_dls/m3072/9_215/62266895/pl/article.jhtml?term=%2BIn....

Cameras to Go: The Rising Role of One-time Use Cameras in Consumer Picture-Taking Behavior, Photo Marketing Association International PDF file article, Sept. – Oct. 2002. Photo Marketing Association: Marketing Research. 23 Nov. 2002 http://www.pmai.org/new_pma/marketing_research.htm.

CBS Denies Digital Deception, 17 Jan. 2000, Television Digest with Consumer Electronics. 14 Oct. 2002 http://www.findarticles.com/cf_dls/m3169/3_40/59184768/pl/article.jhtml?term=ethics.

Collins, Jim. *Good to Great*, New York, NY:HarperCollins Publishers Inc., 2001.

Corporate Trends Effecting Human Rights in Tibet and China: 1993-1997 A Case Study, 26 Jun. 1997, World Tibet Network News. 23 Nov. 2002 http://www.tibet.ca/wtnarchive/1997/6/26_2.html.

Critical Factors for Growth of Imaging Industry Include Ease-of-Use and Driving Digital Prints According to Leading Influencers, Business Wire, 23 Sept. 2002. LexisNexis™Academic-Document. 12 Oct. 2002 http://www.lexis-nexis.com.

Daft, Richard. *Organizational Theory and Design*. St. Paul, MN: West Publishing, 1995

Davallou, Perry. Manufacturing Engineer, Kodak. Telephone interview. 30 October 2002.

Digital Custom Issues Final 'Model Ethics Guitdlines' to Protect the Integrity of Journalistic Digital Editing, 24 Feb. 2002, PR Newswire. 14 Oct. 2002 http://www.findarticles.com/cf_dls/m4PRN/2002_Feb_24/83223867/pl/article.jhtml?term.

Digital Imaging Magazine: Q&A with Kodak Chief Marketing Officer Carl Gustin, 13 Nov. 2002. Kodak: Infoimaging: Outlook on Infoimaging. 23 Nov. 2002 http://www.kodak.com/country/US/en/corp/infoImaging/outlook.shtml.

Discount Store News: *Polaroid*, 24 Aug. 1998. 11 Nov. 2002, http://www.findarticles.com/cf_0/M3092?n16_v37/21076810/print.jhtml.
DLSR Guide and Tips for New Buyers. 24 Nov. 2002, http://www.a-digital-eye.com/DSLRGuide.html.

Ellis, Craig A. and Stephanie Crane. *EK: Analyst Day Offers Few Surprises; Growth Contingent on the Economy*. SalomonSmithBarney. September 19, 2002.

Ellis, Craig A. and Stephanie Crane, *Imaging & Visual Media*, SalomonSmithBarney, September 17, 2002.

EVA, a registered trademark of Stern Stewart & Co. Information about this computation and its uses came from http://www.sternstewart.com/evaabout/whatis.shtml and http://www.evanomics.com/evastudy/evastudy.shtml.

Francese, Peter. *Trend Spotting*, August 2002, Media Central Inc. LexisNexis™ Academic Document. 12 Oct. 2002 http://www.lexis-nexis.com.sculib.scu.edu/universe/document?_m=4a7a188766a282gc55...

FujiFilm, *2002 Annual Report*.

FujiFilm Worldwide – WTO Film Case – Hidden Facts, *U.S. Wholesale Photo finishing Market Shares by Supplier*, 2 Nov. 2002 http://home.fujifilm.com/info/wto/ustr5.html.

Gale Group, Inc. May 2002. LexisNexis™ Academic – Document. 12 Oct. 2002 http://www.lexis-nexis.com/.

Grant, Robert M., *Contemporary Strategy Analysis, 4th Edition*, Great Britain: Blackwell Publishers, 1999.

Greiner, Larry E. *Evolution and Revolution as Organizations Grow*, Harvard Business Review, 1998.

Goodman, Sherri C. *Not Wedded to film; Digital photography is taking steps down the aisle; Wedding Photography Going More to Digital*, The Sale Lake Tribune, 22 Jul. 2002. LexisNexis™ Academic Document. 12 Oct. 2002 http://www.lexis-nexis.com.sculib.scu.edu/universe/document?_m=0fc2dcdc1f5165f9ea4....

Heller, Laura. *Digital Imaging Popularity Clicking with Female Users*, 24 Jun. 2002, DSN Retailing Today. LexisNexis™ Academic – Document. 12 Oct. 2002, <www.lexis-nexis.com.>

Human rights are everybody's business, Business & human rights – an AI information pack. 25 Nov. 2002, <http://web.amnesty.org/802568F7005C4453/0/16FAC03B66C9E1EB80256C4E003C0AC6?Open>.

Jenkins, Darryl, *Since 9-11*, PowerPoint Presentation given at The George Washington University. 25 Oct. 2002, <http://apo.faa.gov/Conference/Conference2002commercial/Jenkins/Jenkins.PPT>.

Kissa, Erik. *Diffuser – Digital Imaging Versus Photography*, April, 2002, PSA Journal. PSA Journal: Diffuser – Digital Imaging Versus Photography. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m1306/4_68/84971148/pl/article.jhtml?term=photography...>.

Kodak, *2001 Annual Report*.

Kodak: Business Units. 25 Nov. 2002, http://www.kodak.com/US.en.corp.aboutKodak/bu.shtml.

Kodak CEO Daniel A. Carp says companies must work collectively to succeed in the infoimaging industry, 2 Oct. 2002, M2 PRESSWIRE. LexisNexis™ Academic Document. 12 Oct. 2002, < http://0-web.lexis-nexis.com/sculib.edu/universe/document?_m=8151898e7f65e62f9f..>

Kodak: Digital Lab Systems: News, *Kodak Moves to Open Architecture for Digital Photo finishing Systems*, 31 Oct. 2002. 17 Nov. 200, < http://www.kodak.es/cluster/global/en/consumer/dls/news/openArch.jhtml>.

Kodak: History of Kodak Cameras: Tech Pub AA-13. 29 Nov. 2002, <http://www.kodak.com/global/en/consumer/products/techInfo/aa13/aa13.shtml>.

Kodak: History of Kodak: Introduction. 21 Nov. 2002, <http://www.kodak.com/US/en/corp/aboutKodak/kodakHistory/kodakHistory.shtml>.

Kodak: Investor's Center: Conference Call Transcript. 21 Nov. 2002 <http://www.kodak.com/country/US/en/corp/investorCenter/discTrans/commentary1.shtml>.

Kodak Well-Poised to Achieve Profitable Growth in China, 27 Sep. 1999, Business Wire. Kodak Well-Poised to Achieve Profitable Growth in China. 21 Oct. 2002, <www.businesswire.com>.

Konica, *2002 Annual Report*.

Lewis, Mark. *China's Rise is Inevitable – So Deal with It*, Forbes.com, 28 Jun. 2002. Forbes.com: China's rise Is Inefitable –So Deal With It. 15 Oct. 2002, <http://www.forbes.com/2002/06/28/0628china.html>.

Look at the 2001 Digital Camera Market, A. Lehman Brothers, 13 Feb. 2002.

Maidment, Paul. *Traditional Photography Needs Flash*. Forbes.com, 30 Sept. 2002. Forbes.com – Magazine Article. 15 Oct. 2002, <www.forbes.com>.

Marketing to Mom: Profile of the New Digital Camera User, Photo Marketing Association International PDF file article, 28 Jun. 2002. Photo Marketing Association: Marketing Research. 23 Nov. 2002, <http://www.pmai.org/new_pma/marketing_research.htm>.
Martin, Richard. *Can Kodak find its focus?* The Industry Standard, 16 Jul. 2001. 24 Nov. 2002, <http://www.thestandard.com/article/0%2C1902%2C27513%2C00.html>.

McCarvel. Roderick T. *You Won't Believe Your Eyes: Digital Photography as Legal Evidence*, 15 Apr. 1995. Digital Photography as Legal Evidence. 21 Nov. 2002, <http://www.seanet.com/~rod/digiphot.html#partIV>.

Oates, Ann. Investor Relations, Kodak. Telephone interview. 28 October 2002.

Oates, Ann. Investor Relations, Kodak. Telephone interview. 1 November 2002.

Olympus, *2001 Annual Report.*

PC Connection: Sony Corp. – Digital Imaging, CyberShot DSC-P31 Digital Camera. 24 Nov. 2002, <http://www.pcconnection.com/scripts/browseproducts.asp?category=Hardware&browse=Digital+Cameras>.

Phogenix Imaging: *How will the DFX change customer expectations for photo finishing?* 21 Nov. 2002, < http://www.phogenix.com/product_faqs_answers.html#1>.

Phogenix Imaging Press Release*: Phogenix Imaging Announces DFX, the First Affordable Digital Inkjet Minilab*, 4 Feb. 2002. 21 Nov. 2002, <http://www.phogenix.com/pr_020402.html>

Polaroid: Company Information: 2002 Press Releases, *Court Approve One Equity Partners' Bid to Purchase Polaroid Business*, 28 June 2002. 11 Nov. 2002, <http://www.polaroid.com/polinfo/press_releases/june02/062802a.html>.

Polaroid: Company Information: Letter to Customers, *Company Info: Company History*. 11 Nov. 2002, <http://www.polaroid.com/polinfo/history/30s.html>.

Polaroid: Company Information: Letter to Customers, *Company Info: Company History*. 11 Nov. 2002, <http://www.polaroid.com/polio/nfhistory/90s.html>.

Polaroid Corporation, *Form 10-K for the year ended December 31, 1999*.

Polaroid Corporation, *Form 10-K for the year ended December 31, 2000*.

Profile of U.S. Older People in the Future, A. Amerstat, Nov. 2001. Population Reference Bureau: A Profile of Older People in the Future. 14 Oct. 2002, <http://www.pbr.org/AmeristatTemplate.cfm?Section=MarriageandFamily&template=/>.

Read Reviews and Compare Prices on Kodak Digital Camera at DealTime.com. 24 Nov. 2002, <http://www.dealtime.com/dt-app/SE/CN-Electronics/FN-Digital_Cameras/MN-Kodak/KW-cameras/PG-1/MNP-1000/MXP-12640/S-1521/AT-RF/MD-64/Product.html>.

Sony, *2001 Annual Report*.

Stanger, Peter. *Strategy and the Internet: Trends and Predictions*, The Boston Consulting Group. 2 Nov. 2002, <http://www.realestateforums.com/present/bcg.ppt>.

Study of Emerging Consumer Digital Camera Market Forecasts Changing Competitive Dynamics, 3 Jun. 2002, Business Wire. LexisNexis™ Academic Document. 12 Oct. 2002, <http://0-web.lexis-nexis.com.sculib.scu.edu/universe/document?_m=6477a0e6737122b9b....>

TIA – IVIS, *International Travel to the U.S. 1990 – 2000.* 29 Nov. 2002, <http://www.tia.org/ivis/intltourism.asp>.

Tichy, Noel and Ram Charan. *Life After Jack: Speed, simplicity, and self-confidence: an interview with Jack Welch*, Harvard Business Review, September/October 1989.

U.S. Baby Boomer Market, The, 1 Nov. 2002, MarketResearch.com. The U.S. Baby Boomer Market – by: Packaged Facts. 16 Oct. 2002, <http://www.newsletters.com/map/prod/764604.html>.

Vertis, Federated Department Stores Sign Digital Photography Agreement; Shift From Traditional Photography Expected To Save Money, Simplify Advertising Workflow, 16 Apr. 2001, Business Wire. Business Wire: Vertis, Federated Department Stores Sign Digital Photography Agreement. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m0EIN2001_april_16/73238153/pl/article.jhtml?terr..>.

Why Join Kodak? – Employee Development. 19 Oct. 2002, <www.kodak.co.kr/US/en/corp/careers/why/employdevelopment>.

Why Join Kodak? – Values and Mission, *Upholding the Kodak Mission*. 29 Nov. 2002, <http://www.kodak.co.kr/US/en/corp/careers/why/valuesmission>.

Woodyard, Chris. *Travel Pro: Hassles Deter Fliers*, USATODAY.com, 16 Jul 2002. USATODAY.com – Travel – News – Travel pro:Hassles deter fliers. 16 Oct. 2002, <http://www.usatoday.com/travel/news/2002/2002-07-16-q-a.htm>.

Yew, Lee Kuan, *Uncertainties Ahead*, 14 Oct. 2002. Forbes.com. 15 Oct. 2000, <www.forbes.com>.

8 Appendix A: Industry Analysis Tables

8.1 Industry Analysis Tables - FILM

Table 18. Film Industry Competitor Analysis – Rivalry Intensity

Kodak was the first company to manufacture and mass distribute film. Other competitors entered the market over the years. Four competitors currently serve over 90% of the market.		
Factor:	Condition:	Value: (1 to 5)
Number / Balance of competitors	A few, big competitors control the film segment. The list is limited to Kodak, Fuji, Konica and Agfa. However, Kodak is the leader with over 40% market share.[cxxi]	4
Industry growth	Growth of the film segment peaked in 2001 although there is potential for growth in areas such as China.[cxxii]	1
Differentiation / Switching costs	There is little differentiation between vendors. Kodak tends to focus more on quality and professional products. Fuji driven by price.	2
Exit Barriers	Exit barriers are moderate. Although the equipment used to produce film is specialized there has not been over investment in capital. Most likely, as demand drops the players will respond by investing less in new equipment.	3
Strategic Stakes	The stakes for all four major vendors are very high. Branding is important to each player. While Kodak is the marker share leader, the others have strengths in specific geographic regions that allow them to be successful.	5
Incremental Capacity	Incremental capacity is not a major concern. There is no expectation for higher overall demand with the industry in the late stages of maturity. Film manufacturing equipment can be added or removed incrementally.	2
Competitor Diversity	The four major competitors in this space focus on producing products for sharing images. All appear to have slightly different mindsets in terms of their objectives and target markets.	4
Capacity Unknown	Annual film demand and competitor capacity are relatively easy to determine due to the industry maturity. There is sufficient historical data that can be used to anticipate the relative demand during boom and bust periods.	5
Product Differentiation	All competitors in this space are focused on the average retail consumer, who is mainly driven by price. Although Kodak has been successful in focusing more on quality, all players have reduced prices consistent with the overall reduction in industry average.	2

Table 19. Film Buyer Power

Industry buyers are retail, wholesale, discount outlet, and specialty stores. The end consumer buys film from all channels listed above.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Differentiation	Products sold through retail, discount and warehouse outlets are undifferentiated. End buyers are more willing to switch between suppliers based on price. In contrast, professional photographers are more brand loyal.	1
Fraction of Buyer's Purchases	The percentage of retail shelf space for film is small. Typical U.S. film consumers spend less than one hundred dollars on film per year. Overall, this represents a small purchase relative to the buyer's annual budget.	2
Buyer Profit	Retail stores and other outlets tend to get a fixed profit based on film sales but profits are small due to the commodity nature of the product.	2
Competition	Some buyers can negotiate better prices from suppliers if they agree to large enough purchases. There are only a few buyers that can dictate these terms, one being Wal-Mart.	2
Importance of Quality	Quality concerns end users more than retailers. Quality varies among suppliers, however most consumers cannot distinguish between pictures taken with film by one manufacturer versus another.	2
Bargaining Power:		
Switch Costs	Film switching costs are very low. Each roll is a separate sale, since once the film has been exposed it is easy to use a roll from another vendor for the next set of shots.	1
Buyer Information	Buyer information is very abundant. Most buyers are aware that quality varies and that film has improved over time but improvements have not been dramatic from the consumer perspective. Also, film manufacturer financial reports give an indication of product costs.	2
Volume/Concentration of Buyers	Retail and discount outlets have the strongest buying power. They pass price advantages on to consumers to drive sales. Buyers may have limited influence in controlling price since there are many more outlets that sell film than there are film manufacturers.	3
Importance	Film has limited importance to resellers. Every camera shop carries only a limited supply of film since most people purchase film at retail and discount stores.	2
Backward Integrate	Backward integration by resellers is not likely given the fixed costs associated with film manufacturing.	5

Table 20. Power of Film Suppliers

Suppliers in the film industry include chemical manufacturers and equipment suppliers. Chemicals, plastic and metal used in film manufacturing are commodities than can be purchased from a number of suppliers. Equipment used to produce unexposed film is more specialized.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Fraction of Supplier's Sales	Chemicals and resins used to make film are supplied by a variety of manufacturers. These inputs tend to be commodities and are supplied by large, diversified chemical and raw material companies.	5
Differentiation	The film manufacturing process requires specific commodity products that must meet certain specifications. It is unlikely that a film manufacturer could easily switch raw materials but they could switch material vendors.	5
Supplier Profit	Supplier profit is limited to the prevailing market conditions due to the commodity nature of the chemicals.	5
Competition between suppliers	As mentioned above, the commodity nature of the products means that competitors compete mainly on price.	5
Importance of Quality	Quality is of importance, but it is not as critical as other factors such as price.	3
Bargaining Power:		
Number/Concentration of Suppliers	The suppliers compete based on economies of scale due to the nature of the chemical and metals industries. Therefore, Kodak's suppliers are large but few.	2
Supplier's switching costs	Switching costs are high for the suppliers. There are only four major customers in the film industry for the products they offer.	5
Available substitutes	There are no substitutes for the raw materials used to produce film. Changes to the manufacturing process, which would utilize new materials, take months or years to complete.	1
Supplier's information	Supplier information about film manufacturing is probably moderate considering the limited important it has to suppliers and the fact that film manufacturing has evolved slowly.	3
Threat of forward integration	Forward integration is not likely due to the small amount of sales and profit from the production of raw materials for film.	5
Industry importance to supplier	Raw material providers are diversified in providing many types of chemicals and raw goods. Petrochemicals used to make film are also used to make many other consumer plastics.	2

Table 21. Potential Film Industry Entrants – Entry Barriers

It is difficult to imagine a company entering the film market at this time. With the volume of film usage expected to decline, potential entrants would have to have sufficient resources. The market is in decline and the opportunities for profit are limited.		
Factor:	Condition:	Value (1 to 5)
Economies of scale	Economies of scale are very important in film manufacturing. R&D, process development, capital equipment, and branding present high barriers for entry.	5
Product Differentiation	Low level of differentiation among existing players, this is not much of an issue for new entrants.	2
Capital Requirements	Plant and equipment required to manufacture film can cost millions of dollars due to the significant number of steps necessary produce film and insert it into canisters.	5
Switching Costs	Switching costs would be low if a new entrant entered the film market. Most amateur photographers have low brand loyalty due to the commodity nature of film.	2
Distribution Channel Access	New entrants would have a difficult time entering the distribution channel given Kodak's large market share and the total market consisting of four top players.	5
Expected Retaliation	There would be a high degree of retaliation if new entrants tried to complete against Kodak or Fuji in their base markets. Due to the focus on price, incumbents would drop prices to compete fiercely wherever new entrants appeared.	5
Absolute cost advantage	There are significant economies of learning with developing film. Kodak and Fuji have invested millions of dollars in innovation and in the improvement of their films.	5
Proprietary Technology	Although film manufacturing is not patented, each manufacturer owns patents relating to its method of production or process.	4
Industry Experience	Industry experience is key in developing film. All top manufacturers understand photography and cameras very well. It is not likely that a chemical company would decide to manufacture film given the type of industry knowledge that is required.	5
Legal Barriers	There are no legal barriers to developing a film manufacturing business, however each of the top vendors has a number of patents protecting their development and manufacturing process.	3
Government Policy Effects	Government control over film manufacturing is limited to pollution control and safety standards for manufacturing.	3

Table 22. Threat from Film Substitutes

Semiconductor memories are the substitute for film. Camera digitization makes analog cameras and film less desirable.		
Factor:	Condition:	Value (1 to 5)
Relative prices and performance	Digital cameras reached the point of price parity with analog cameras and yield output indistinguishable from that of film to the untrained eye.	4
Switching costs	The money required to switch from analog to digital is significant relative to the cost of a roll of film plus processing. Those who take several rolls of film per year may be better served by buying a digital camera.	3
Propensity to substitute	Digital cameras have started to displace analog ones leading to a recent, slow decline in film usage. In some cases, photographers are using both digital and analog cameras for their needs.	3

Table 23. Effect of Film Complements

Complements include single-use cameras, film scanners and traditional cameras.		
Factor:	Condition:	Value (1 to 5)
Availability	Single-use cameras (SUC) have grown in popularity among the low-income households. They represent a method of capturing memories at medium quality for a very low fee.	5
More competition	These complements will not increase competition. Increased competition will result from other factors.	5
Greater Number	Film uses will likely increase even though the overall demand for film will drop, due to low- cost consumer device ubiquity.	4
Relationship closeness	Traditional and single-use cameras represent drivers for film while film scanners extend analog camera life due to the ability to convert and store images easily.	4

8.2 Industry Analysis Tables - CAMERAS

Table 24. Camera Industry Competitor Analysis– Rivalry Intensity

Kodak has traditionally focused on the amateur camera-manufacturing segment. Sony and others stronger in manufacturing and innovation have taken digital market share away from Kodak. This left Kodak to focus on digital output production ease and the professional digital camera segment. The digital camera market is highly consolidated with the top five vendors comprising 80% of market share.[cxxiii] A few players dominate the analog camera market: Nikon, Olympus, Minolta and Canon.		
Factor:	Condition:	Value (1 to 5)
Number / Balance of competitors	A few big competitors control the camera segment. Kodak has only 10% worldwide digital camera market share and an even lesser amount of analog cameras.[cxxiv]	3
Industry growth	Analog camera sales are declining while digital camera sales are projected to grow by 17% through 2006. The future is somewhat uncertain given the extent to which cell phones, PDAs, and cameras will functionally overlap.	3
Differentiation / Switching costs	Digital cameras typically do not have features that increase switching costs, however Kodak has created EasyShare system that can only be used with Kodak cameras. Historically, analog cameras have required vendor specific lenses, which increased switching costs.	3
Exit Barriers	Exit barriers are low. Most products are assembled by electronic contract manufacturers (ECMs) using marginal capacity. Product designs have built in obsolescence to avoid lock-in to a particular standard.	5
Strategic Stakes	Major vendor stakes are moderate. Branding is important to each player. Kodak has the most at stake due to its reliance on the analog segment.	3
Incremental Capacity	Incremental capacity is not a concern. Digital cameras are typically manufactured in Asia due to plentiful low cost labor and incremental capacity.	5
Competitor Diversity	Sony is the only top competitor focused on producing various consumer-related products. The others rely on camera sales as revenue drivers. In addition, the top four companies are Japanese, so it is a very demanding marketplace.	4
Capacity Unknown	It is fairly easy to determine the capacity level among the top five firms from the historical levels of demand for analog and digital cameras.	4
Product Differentiation	There is significant room for differentiation and price ranges given the various possible digital camera capabilities. For example, it is possible for a digital video camera to take still photos.	5

Table 25. Camera Buyer Power

The buyers in this industry are retail, wholesale and discount outlets, and specialty and on-line stores. The end consumer buys cameras from the channels listed above.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Differentiation	Products sold through retail, discount, and warehouse outlets are highly differentiated and cover several price ranges. Therefore, the end buyers focus on functionality, quality, and cost when selecting a product. Professional photographers are more brand loyal.	4
Fraction of Buyer's Purchases	Typical U.S. consumers spend a few hundred dollars on an entry-level digital or analog camera. Single-use cameras can be purchased for about $20. Overall, this represents a small purchase relative to the buyer's annual budget.	2
Buyer Profit	Retail stores and other outlets get a profit consistent with other consumer electronics products.	4
Competition	Some retail buyers can negotiate better prices if they agree to a large enough purchase. Only a few buyers can command this attention, one being Wal-Mart.	4
Importance of Quality	Quality is of some concern. Consumer expectations are that cameras will last a few years with few or no defects, so it is important that the manufacturers meet these expectations.	4
Bargaining Power:		
Switching Costs	Switching costs are low to moderate between camera models and manufacturers. When it is time to purchase a new model, the consumer typically looks at all vendors regardless of what brand he currently has. Professionals are more brand loyal.	2
Buyer Information	Most buyers, even first time buyers, will research all choices available before selecting a camera. Vendors tend to help the consumer by advertising to target markets. The financial reports of the camera manufacturers give an indication of product costs.	5
Volume/ Concentration of Buyers	Retail and discount outlets have the strongest buying power in the supply chain. Price advantages gained are passed to end consumers in order to drive sales. Buyers have limited influence in controlling price considering there are many more outlets that sell cameras than there are camera suppliers.	4
Importance	Cameras are of moderate importance to discount stores but are extremely important to camera shops. End consumers tend to treat cameras as toys. Most photos are shot on special occasions or holidays. Cameras are critical for professionals.	3
Backward Integrate	Backward integration by resellers is not likely given the costs associated in developing quality cameras. This is why only five firms control over 80% of the world market.	4

Table 26. Camera Supplier Power

Subcontractors make cameras for camera companies. Process material inputs include plastics, metals, fine glass, and semiconductors. Camera manufacturing process plastics and metals are commodities. Lenses and semiconductors are specialized.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Fraction of Supplier's Sales	Camera components come from a variety of vendors. Lens and semiconductors are the most expensive components and are available from a limited supplier set. However, these suppliers have diversified sales.	3
Differentiation	Semiconductors, lenses, and software are the most costly camera components. Another supplier cannot easily replace them these components because cameras are designed around them.	2
Supplier Profit	Supplier profit is limited by prevailing market conditions, due to the commodity nature of metals and plastics. However, a semiconductor or software vendor can lock in great profits by winning the business from the buyer.	2
Competition between suppliers	Competition is strongest among metal and plastic suppliers, while lens and semiconductor vendors have less competition because of value added in manufacturing.	3
Importance of Quality	Quality is of importance because components and finished products carry the vendor's name and reputation. Price is usually a secondary concern.	4
Bargaining Power:		
Number/Concentration of Suppliers	Suppliers are price competitive based on economies of scale due to nature of the plastics, metals, lens and semiconductor industries. Kodak's suppliers are large but few in numbers.	2
Supplier's switching costs	Suppliers switching costs are low. They have a diversified customer base of consumer electronics vendors. The five major manufacturers represent 80% of the digital camera market.	3
Available substitutes	There are limited substitutes. Manufacturing process changes that utilize new components take months and years to complete.	2
Supplier's information	Supplier camera manufacturing information is semi strong because of the suppliers' involvement with many consumer electronic products.	2
Threat of forward integration	Forward integration is possible, if for instance, semiconductor manufactures become dominant the same way Intel dominates PC architecture.	3
Industry importance to supplier	Camera component providers are diversified, providing many component types for various electronic consumer products. Consumer electronic success is crucial for them.	4

Table 27. Potential Camera Industry Entrants – Entry Barriers

A new camera market entrant would have to overcome the 80% market share held by the top five vendors. In addition, it would require a significant branding effort since the top five brands are very well known in the camera and consumer electronics markets.		
Factor:	Condition:	Value (1 to 5)
Economies of scale	Economies of scale are very important in camera manufacturing. R&D, process development, capital equipment, and branding present high barriers for entry.	5
Product Differentiation	Product differentiation is moderate among vendors causing some degree of brand recognition and brand loyalty. A new entrant might have a better chance in entering with a disposable camera due to lack of differentiation.	3
Capital Requirements	Camera manufacturing plants and equipment can cost millions of dollars. However, the burden of these costs is usually born by the ECM company. A new entrant would have to negotiate terms with the ECM company for production. This may put it at a cost disadvantage.	4
Switching Costs	Switching costs are high, making it difficult for a new entrant. There are higher capital costs, investments in R&D, and cost of branding and economies of scale associated with being a new entrant.	4
Distribution Channel Access	The top five players control 80% of the digital market. In addition, Sony has significant strength in the channel given its broad range of consumer products. A new entrant might have a better chance in entering with a disposable camera since they tend to be sold over the counter.	4
Expected Retaliation	There would be a high degree of retaliation if new entrants tried to complete against Sony or one of the other majors, especially in their base markets. Instead of competing on price, incumbents may add new features to differentiate themselves even more.	2
Absolute cost advantage	There are some economies of learning with manufacturing cameras. However, the transient nature of technology makes it difficult to rule out a new entrant in the market.	2
Proprietary Technology	The top five manufactures patent their products, but these patents just provide an incentive for a new entrant to be more innovative.	3
Industry Experience	Industry experience does play an important role in whether a company is successful. Of the top five digital camera makers, four also make analog cameras. Sony is the world's top innovator in digital consumer electronics.	5
Legal Barriers	There are no legal barriers to producing cameras; however, each top vendor has a number of patents protecting their development and manufacturing process.	3
Government Policy Effects	The government control over camera production is mainly limited to safety standards for manufacturing.	4

Table 28. Camera Substitute Threat

Video cameras are a substitute for still cameras. Still and video camera digitization is leading to a convergence of the two products.		
Factor:	Condition:	Value (1 to 5)
Relative prices and performance	Video cameras are significantly more expensive than digital cameras due to the higher level of sophistication required in designing and manufacturing a video camera. However, a still image from a digital video camera is on par with lower end digital still cameras currently on the market.	3
Switching costs	The money required to switch from an analog still camera to a digital video camera is significantly higher than the money required to switch from a digital still camera to a video camera.	2
Propensity to substitute	As the two converge into one product, consumers are more likely to purchase a product that can complete both tasks. Still image quality is currently the only barrier.	1

Table 29. Effect of Camera Complements

In some respects, cell phones and PDAs complement digital cameras and camcorders. Cell phones, digital cameras, and PDAs are starting to converge into one device. Computers and cheap printers make digital cameras very accessible.		
Factor:	Condition:	Value (1 to 5)
Availability	Cell phones with embedded video screens and cameras are being sold in Japan; availability in the U.S. market is just beginning.	3
More competition	Expect lower sales growth of dedicated analog/digital cameras due to the growth of multifunction devices. This will be offset by the growth of home computers.	3
Greater Number	There is no doubt the number of devices with embedded cameras and the number of dedicated cameras will increase over time.	5
Relationship closeness	Cell phones and PDAs with built in cameras are a natural evolutionary step. The camera allows for better communication and richer information transfer.	5

8.3 Industry Analysis Tables - PAPER AND PHOTO FINISHING

Table 30. Paper and Photo Finishing Industry Competitor Analysis

Kodak has almost half of the market share for paper, based on 1999 figures.[cxxv] Kodak, through the Qualex subsidiary, commands the 'vast share'[cxxvi] of traditional film processing in the U.S. and Europe. Fuji controls most of the market in Japan. Their aggressiveness and being first to market have allowed them to fend off competitors quite well.		
Factor:	Condition:	Value (1 to 5)
Number / Balance of competitors	There are only two major competitors in film processing and paper for traditional film: Kodak and Fuji. Kodak commands the U.S. and Europe while Fuji controls Japan	5
Industry growth	The combined sales of paper and photo-processing will grow less than the world GDP rate due to the advancements in creating digital prints from either traditional film or digital files.	2
Differentiation / Switching costs	This segment is marked by limited product differentiation and high switching costs. The vendors sell directly to their customers by negotiating long term, volume contracts to contain costs.	5
Exit Barriers	The exit barriers are moderate. The chemicals, paper and equipment tend to be manufactured based on long-term contracts, which drive capital investment in plants and equipment.	3
Strategic Stakes	Major vendor stakes are extremely high. Branding is important to each player. Kodak has the most to lose since a large portion of its revenues is from these two segments.	5
Incremental Capacity	Incremental capacity is not a concern. Due to the maturity of market, global economic conditions dictate how much capacity is added or retired.	1
Competitor Diversity	There is no diversity. Kodak and Fuji, the market controllers, are both attempting to gain monopoly share. Both rely on film processing and output as the main drivers for their revenues.	4
Capacity Unknown	It is easy to determine the level of capacity provided by Kodak and Fuji from the historical levels of photo-processing and output demand.	5
Product Differentiation	There is some differentiation among the models of minilabs and the types of online services available to consumers. However, there is little or no differentiation for processing chemicals and paper used for amateur photography.	3

Table 31. Paper and Photo Finishing Buyer Power

Buyers in this industry are mainly retail, wholesale and discount outlets, and specialty stores. End consumers buy value-added products from the retailer. Online photo finishing products and services are sold directly to the end consumer.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Differentiation	Paper and photo finishing products are not highly differentiated. Whenever long-term contracts are up, retailers play each vendor against the other to get the best price.	2
Fraction of Buyer's Purchases	Photo finishing equipment can cost several thousand dollars, and it may take several machines to satisfy demand at a typical store. This represents a modest investment for retailers.	3
Buyer Profit	Retail stores and other outlets tend to offer photo finishing as a loss leader to get people into the store.	2
Competition	Demand for the vendor services and products tends to be muted due to the staggered nature of contract renewal with retailers.	2
Importance of Quality	Quality is of a minor concern. The end consumer is mainly concerned with price, which drives the buyer to select equipment, and processes that minimize the end product cost.	2
Bargaining Power:		
Switch Costs	Switching costs are high once a retailer has invested in either the Kodak of Fuji process. Switching occurs only during contract renewal periods.	5
Buyer Information	Buyer information is limited due to the sophisticated process used to process film and produce photos vs. the lack of retailer expertise about photography.	5
Volume/Concentration of Buyers	Retail and discount outlets have weak influence in the supply chain. Any price advantages they gain are passed on to end consumers in order to drive sales. Retailers have only limited influence in controlling price due to their limited purchasing power vs. the two vendors.	4
Importance	Photo finishing services and prints are of moderate importance to the retailers because they represent a loss leader product for the stores. Average end consumers treat photography as a hobby.	2
Backward Integrate	Backward integration by resellers will not happen due to market maturity, high startup costs in developing photo-processing solutions and the strength of the market leaders.	5

Table 32. Paper and Photo Finishing Supplier Power

Photo-processing equipment, chemicals, and paper raw materials include silver halide reactants, paper, metals, electronic components, software and plastics. Subcontractors with flexible manufacturing facilities make minilabs and processing equipment.		
Factor:	Condition:	Value (1 to 5)
Price Sensitivity:		
Fraction of Supplier's Sales	A variety of firms that rely on photography for a small portion of their sales supply photo-processing equipment materials and chemicals.	2
Differentiation	Photo-processing components, chemicals, and paper come from well-diversified subcontractors and raw material suppliers. Vendors providing specialized materials, such as the silver halide reactants, are more dependent on the industry for revenues.	2
Supplier Profit	The commodity nature of the metals, plastics, chemicals and some electronic components limits supplier profit. However, a semiconductor or software vendor with a unique component can command a handsome profit.	2
Competition between suppliers	Competition is strongest among metal and plastic suppliers. Software and semiconductor vendors have less competition because of the intellectual property (IP) they add to inputs.	3
Importance of Quality	Quality is important to buyers because components and finished products carry the vendor's brand.	4
Bargaining Power:		
Number/Concentration of Suppliers	Suppliers compete based on economies of scale due to the nature of the chemical, plastic, semiconductor and metals industries. Kodak's suppliers are large but few in numbers.	2
Supplier's switching costs	Switching costs are low for most suppliers. They have a diversified customer base of consumers for paper, chemical and electronic products. However, the two largest manufacturers represent the majority of the photo-processing market.	3
Available substitutes	Some photo finishing component substitutes exist. Chemical processes have evolved slowly with only minor changes. Photo development process changes with new components take months or years to complete.	2
Supplier's information	Supplier information is moderate because IP is guarded.	3
Threat of forward integration	Forward integration is possible but unlikely since the suppliers are raw material and product oriented rather than system or process oriented.	4
Industry importance to supplier	Component and raw material providers provide several electronic consumer product and chemical process components. This is a moderate influence factor.	3

Table 33. Paper and Photo Finishing Industry Entry Barriers

New entrants would have to overcome the vast market share held by Kodak and Fuji. In addition, a significant branding effort is necessary because these two companies are very well known in the paper and photo-processing markets.		
Factor:	Condition:	Value (1 to 5)
Economies of scale	Economies of scale are very important in the photo-processing market. R&D, process development, intellectual property, and branding present high barriers for entry.	5
Product Differentiation	There is little product differentiation between Fuji and Kodak causing consumers to focus on price at negotiation time. A new entrant would have a better chance in entering with a product that can be purchased by the end user to print photos.	3
Capital Requirements	Plant and equipment required to manufacture minilabs and kiosks can cost millions of dollars. However, burdens of these costs are usually born by the ECS company. A new entrant would have to negotiate terms with the ECS company for production. This may put it at a cost disadvantage.	4
Switching Costs	Switching costs are high, making it difficult for a new entrant. There are higher capital costs, investments in R&D, and costs of branding and economies of scale barriers for new entrants.	4
Distribution Channel Access	Kodak and Fuji control most of the photo finishing market. The channel is very short for the minilabs and related equipment. The channel is longer and more accessible for kiosks and end consumer photo finishing products.	4
Expected Retaliation	There would be a high degree of retaliation if new entrants tried to complete against Kodak or Fuji in their home turf. Instead of competing for film processing, new entrants should focus on ways to make prints from digital devices.	4
Absolute cost advantage	There are significant economies of learning with processing film and making prints. However, the nature of digital technology levels the playing field for the incumbents and new entrants.	3
Proprietary Technology	Kodak and Fuji have refined and patented film development and photo print processes. Kodak has collaborated with industry leaders to create a common digital format called CPXe that will simplify the process of making digital prints.	4
Industry Experience	Industry experience plays an important role in whether a company is successful. Kodak and Fuji control the photo-processing markets on all developed continents. However, Sony has entered with a kiosk to make prints from digital devices.	4
Legal Barriers	There are no legal barriers to producing processing equipment and products; however, each of the top vendors has a vault full of patents protecting their development and manufacturing process.	3
Government Policy Effects	Government control over production is mainly limited to safety standards and chemical disposal for manufacturing.	4

Table 34. Paper and Photo Finishing Substitutes Threat

The advent of the digital camera has made picture taking an immediate gratification activity. The ability to view and delete photos immediately after taking them has reduced the need for photo-processing services. In addition, digital presentation through emails and websites has reduced the need to print photos for presentation.		
Factor:	Condition:	Value (1 to 5)
Relative prices and performance	The use of the internet to email and present photos makes the traditional method of presenting photos obsolete and expensive.	1
Switching costs	Switching costs of presenting digital photos on electronic devices are moderate due to the infrastructure required.	3
Propensity to substitute	Substitution has taken hold with the computer savvy, higher income and professional demographic segments. Cost is still a factor the non-computer user or low-income individual.	2

Table 35. Effect of Paper and Photo Finishing Complements

Analog cameras are the best complements for photo-processing and paper usage. However, with digital cameras becoming a better choice even for the casual user, analog cameras must become more competitive. Kodak has done this with the single-use cameras that sell for under $20.		
Factor:	Condition:	Value (1 to 5)
Availability	Single-use cameras have had great success due to their convenience and low cost. They are a staple at wedding receptions, vacation cruises and holiday parties.	5
More competition	The single-use camera represents a pure complement that does not generate competition. However, at some point it may be more cost effective to make single-use cameras digital.	4
Greater Number	The need for photo-processing and paper will remain even when all cameras become digital. The use of these services is limited more by technology and convenience than cost at this point.	3
Relationship closeness	At some point, single-use cameras may become the volume driver for photo-processing and paper since consumers that use these cameras will not have the ability to electronically store rather than print photos.	4

9 Appendix B: Kodak Employee Review Process

Figure 12. Kodak Employee Review Process

Kodak has an annual employee appraisal process whereby the supervisors write an annual appraisal review of the employee's accomplishments during the past year. This written appraisal includes both individual contributions as well as team contributions. Employees are rated on such things as : Knowledge/Job skills, Planning & Organizing, Analysis, Follow Through, Communications, Decision Making, Resourcefulness/Versatility.

These are generally rated on a 1 -5 system: (1) Results Far Exceeded Objectives - (5)Results Did Not Meet Expectations.

The employee is also rated on the Kodak's values: Trust, Integrity, Respect for the Individual, Credibility, Continuous Improvement and Personal Renewal, Recognition and Celebration.

The rating system here is 1 -3:

1 = Models All Values

2 = Consistently Demonstrates Values

3 = Does Not Consistently Demonstrate Values.

The written appraisal is reviewed by the manager above the supervisor and then reviewed face to face with the employee. T he employee can add additional contributions and/or write comments about the appraisal. After this time, the employee is asked to sign the appraisal only as a means to track that the appraisal has been reviewed with the employee. These appraisals are kep t on file in the employee's folder and with Human Resources for 3 years.

During the year, depending on both employee and the manager/supervisor there can be weekly, biweekly, monthly, and / or quarterly reviews with the employee to track goals which ha ve been assigned, progress on projects, etc. (2) For upper management, there is an Executive Compensation and Development committee made up of 4 independent members of the Board of Directors.

More information on this can be found on our website at:
http://www.kodak.com/US/en/corp/annualReport01/proxy/index.shtml

10 Appendix C: Financial Data and Assumptions

Current financial data was obtained from the most recently available annual reports of Kodak and its competitors to perform the financial analysis required for Section 3.5. This appendix lists the assumptions and modifications made to the original annual report financial data, and it gives a summary of the financial data used to compute the performance and operating ratios, EVA, and other computations for analysis.

Assumptions made:

?? Annual report figures for Fuji and Konica were in Japanese Yen. Annual report figures for Agfa were in Euros. A basic application of Financial Accounting Standards Board No. 52 converted this data into U.S. dollars. The statement of operation figures were converted using the average exchange rate for the year and the balance sheet figures were converted using the actual exchange rate as of the last business day of that year. All exchange rates were supplied by http://www.oanda.com/ using the "FX History" Currency Tool.

?? Fuji and Konica have fiscal years that end on March 31. Analyzing data for the exact same time period was not considered necessary because our comparative analysis was performed with ratios rather than absolute data. The ratios suffice to give an overall indication as to the functionality and performance of the business at about the same approximate period of time. For example, the fiscal years that were compared for 2001, 2000 and 1999 are as follows:

Table 36. Fiscal Years Used

Firm	2001	2000	1999
Kodak	1/1/2001 - 12/31/2001	1/1/2000 - 12/31/2000	1/1/1999- 12/31/1999
Fuji	4/1/2001 – 3/31/2002	4/1/2000 – 3/31/2000	4/1/1999 – 3/31/2000
Agfa	1/1/2001 - 12/31/2001	1/1/2000 - 12/31/2000	1/1/1999- 12/31/1999
Konica	4/1/2001 – 3/31/2002	4/1/2000 – 3/31/2000	4/1/1999 – 3/31/2000

?? The annual report balance sheet figures for Konica did not total accurately (i.e., the sum of all of the assets listed in the balance sheet did not equal the total assets figure). While the differences were not significant, in order to create a financially accurate summary balance sheet for our financial analysis, we added in small amounts to the "other long-term assets" and to the "accumulated other comprehensive income" balance sheet line items in order to

eliminate these small differences. These line items are not used in our ratio analysis or our EVA analysis, and therefore do not impact our overall analysis or the conclusions that we reached. In all cases, the data below is derived from the Annual Reports for each company.

Table 37. 2001 Summary Financial Data

in millions of USD	Kodak	Fuji	Konica	Agfa
Statement of Operations				
Net sales	$ 13,234	$ 19,199	$ 4,314	$ 4,397
Cost of goods sold	8,670	11,204	2,476	2,792
Gross profit	4,564	7,995	1,838	1,605
R&D	779	1,174	-	207
SG&A	2,627	5,472	1,602	1,146
Goodwill	154	-	-	33
Restructuring charges	659	-	-	403
Other expenses	-	-	-	52
Operating expense	4,219	6,646	1,602	1,841
Income from operations	345	1,349	236	(236)
Interest expense	219	93	53	56
Other income (expense)	(18)	96	6	(51)
Other gains (losses)	-	(75)	(69)	-
Income before income taxes	108	1,277	120	(343)
Provision for income taxes	32	567	31	119
Other minority interest, etc.	-	(59)	(1)	(33)
Net income	$ 76	$ 651	$ 88	$ (495)
Balance Sheet				
Cash and equivalents	$ 448	$ 3,002	$ 359	$ 198
Receivables, net	2,337	3,999	976	997
Inventories, net	1,137	2,703	772	935
Deferred income taxes	521	534	98	255
Other current assets	240	235	130	533
Total current assets	4,683	10,473	2,335	2,918
Long-term receivables, investments, etc.	-	3,339	119	43
Property, plant & equipment	5,659	5,480	1,176	691
Goodwill, net	948	1,442	82	358
Other long-term assets	2,072	1,477	264	-
Total assets	$ 13,362	$ 22,211	$ 3,976	$ 4,010
Accounts payable and other current liabilities	$ 3,276	$ 3,780	$ 992	$ 1,033
Short-term borrowings	1,378	1,412	842	149
Long-term debt: current portion	156	-	135	-
Accrued income taxes	544	242	49	27
Total current liabilities	5,354	5,434	2,018	1,209
Long-term debt, net of current portion	1,666	1,036	350	795
Postemployment liabilities	2,728	1,434	264	779
Other long-term liabilities	720	1,507	46	104
Total liabilities	10,468	9,411	2,678	2,887
Common stock	978	304	283	124
Additional paid in capital	849	514	598	95
Retained earnings	7,431	12,200	424	1,135
Accumulated other comprehensive income	(597)	(212)	(6)	(231)
Treasury stock	5,767	6	1	-
Total shareholders' equity	2,894	12,800	1,298	1,123
Total liabilities and shareholders' equity	$ 13,362	$ 22,211	$ 3,976	$ 4,010

Table 38. 2000 Summary Financial Data

in millions of USD	Kodak	Fuji	Konica	Agfa
Statement of Operations				
Net sales	$ 13,994	$ 12,507	$ 4,916	$ 4,848
Cost of goods sold	8,375	7,264	2,885	2,923
Gross profit	5,619	5,243	2,031	1,925
R&D	784	716	-	206
SG&A	2,514	3,174	1,754	1,179
Goodwill	151	-	-	29
Restructuring charges	(44)	-	-	74
Other expenses	-	-	-	67
Operating expense	3,405	3,890	1,754	1,555
Income from operations	2,214	1,353	277	370
Interest expense	178	100	84	75
Other income (expense)	96	74	11	(45)
Other gains (losses)	-	478	(103)	-
Income before income taxes	2,132	1,805	101	250
Provision for income taxes	725	782	42	(88)
Other minority interest, etc.	-	43	-	(6)
Net income	$ 1,407	$ 1,066	$ 59	$ 332
Balance Sheet				
Cash and equivalents	$ 246	$ 3,778	$ 448	$ 215
Receivables, net	2,653	4,004	1,039	1,239
Inventories, net	1,718	2,805	809	1,218
Deferred income taxes	575	444	85	162
Other current assets	299	208	135	540
Total current assets	5,491	11,239	2,516	3,374
Long-term receivables, investments, etc.	-	3,069	171	107
Property, plant & equipment	5,919	5,398	1,123	936
Goodwill, net	947	1,446	70	357
Other long-term assets	1,855	1,252	222	-
Total assets	$ 14,212	$ 22,404	$ 4,102	$ 4,774
Accounts payable and other current liabilities	$ 3,403	$ 3,997	$ 1,063	$ 1,071
Short-term borrowings	2,058	1,990	623	381
Long-term debt: current portion	148	-	365	-
Accrued income taxes	606	407	25	119
Total current liabilities	6,215	6,394	2,076	1,571
Long-term debt, net of current portion	1,166	643	452	913
Postemployment liabilities	2,722	1,037	247	733
Other long-term liabilities	681	1,468	53	73
Total liabilities	10,784	9,542	2,828	3,290
Common stock	978	320	297	132
Additional paid in capital	871	539	628	101
Retained earnings	7,869	12,268	386	1,058
Accumulated other comprehensive income	(482)	(264)	(37)	193
Treasury stock	5,808	1	-	-
Total shareholders' equity	3,428	12,862	1,274	1,484
Total liabilities and shareholders' equity	$ 14,212	$ 22,404	$ 4,102	$ 4,774

11 Appendix D: Economic Value Added Assumptions and Computations

Economic Value Added (EVA™[cxxvii]) is the operating profit of a firm less the cost of capital employed. Stern Stewart & Co developed this model that was presented in the Santa Clara University MBA program Financial Statement Analysis class. EVA is considered to be the preferred method of measuring the financial performance of a firm because:

1. The computation components are familiar (it basically is operating income, adjusted) and easy to compute;
2. EVA considers the cost of capital; and
3. EVA considers what kind of return is being generated on the assets that the firm has available to deploy.

EVA also amortizes research and development dollars and employee development costs, such as training, over their expected life, rather than assuming that the current year's spending benefits only the current year. Stern Stewart & Co.'s EVA includes assumptions that amortize research and development spending over four years and employee development costs over three years.

Certain other assumptions were made in the application of this model to our analysis as follows:

?? Employee development costs, such as training, were assumed to be zero or not significant for all companies. We note that in the current economic environment, due to cost cutting activities and restructurings that the companies that we examine have undertaken, it is most likely that such costs have been heavily trimmed if not cut out altogether. Additionally, we were not able to obtain such figures from the information that was available to the public from these companies.

?? All "other non-current assets" were considered to be intangible assets to simplify the analysis. Therefore the net long-term tangible assets are composed primarily of long-term investments and marketable securities and property, plant and equipment.

?? We computed the cost of equity financing by computing the cost of debt and then adding a 6% Stern Stewart & Co. adjustment. The 6% is a standard assumption amount used by Stern Stewart & Co.

Figure 13. EVA Computations

EVA™ CALCULATIONS

ASSUMPTIONS
1. USE STERN STEWART 6% EQUITY ADJUSTMENT.
2. OTHER NON-CURRENT ASSETS ARE CONSIDERED INTANGIBLE.

	KODAK		FUJI		KONICA		AGFA	
STEP 1-COST OF DEBT FINANCING PERCENT:								
INTEREST EXP.		219		93		53		56
BANK DEBT	1,534		1,412		977		149	
L/T DEBT	1,666	3,200	1,036	2,448	350	1,328	795	944
DEBT FIN. %		6.8%		3.8%		4.0%		6.0%
STEP 2-COST OF EQUITY FINANCING PERCENT:								
DEBT % FROM ABOVE		6.8%		3.8%		4.0%		6.0%
STERN STEWART ADJ.		6.0%		6.0%		6.0%		6.0%
EQUITY FIN. %		12.8%		9.8%		10.0%		12.0%
STEP 3-WEIGHTED AVERAGE FINANCING PERCENT:								
TOTAL DEBT	3,200		2,448		1,328		944	
DEBT PERCENT	6.8%	219	3.8%	93	4.0%	53	6.0%	56
TOTAL EQUITY	2,894		12,800		1,298		1,123	
EQUITY PERCENT	12.8%	372	9.8%	1,255	10.0%	130	12.0%	134
TOTAL COST		591		1,348		183		191
TOTAL BASE		6,094		15,248		2,626		2,067
WEIGHTED AVERAGE		9.7%		8.8%		7.0%		9.2%
STEP 4-COST OF FINANCING DOLLARS:								
NET WORKING CAPITAL (CA-CL)		(671)		5,039		315		1,709
NET LONG-TERM TANGIBLE ASSETS		7,731		8,819		1,295		734
UNAMORTIZED R & D		1,181		1,422		-		310
		8,241		15,280		1,610		2,753
WEIGHTED AVERAGE PERCENT		9.7%		8.8%		7.0%		9.2%
COST OF FINANCING DOLLARS		799		1,351		112		254
STEP 5-ADJUSTED OPERATING INCOME:								
OPERATING INCOME (PRE-TAX INC plus INT EXP)		327		1,369		173		(287)
ADD: R & D EXPENSES		779		1,174		-		207
LESS: R & D AMORTIZATION		(815)		(821)		-		(207)
ADJUSTED OPERATING INCOME		291		1,722		173		(287)
STEP 6-CALCULATED EVA™		(508)		371		61		(541)

12 Appendix E: Valuation of Kodak and Kodak SBUs

This appendix discusses the data sources, assumptions, and methodology of our valuation of Kodak and the individual Kodak SBUs. Valuation tables for each entity follow. The tables use 2002 through 2006 projected financial data to compute the net present value of estimated future cash flows, the basis of our valuation. Also, the tables show 2000 and 2001 actual financial data to serve as reference data points in order to assess the overall reasonableness of the projected figures.

Sales

The source of 2000 and 2001 actual sales data for both Kodak and each SBU is the *Kodak 2001 Annual Report ("Annual Report")*. The 2002 and 2003 projected sales data for both Kodak and each SBU is from Kodak management sources as cited in SalomonSmithBarney's 17 Sep. 2002 Report ("SSB"), *Imaging & Visual Media*. The 2004, 2005, and 2006 projected sales data is derived by multiplying the prior year's sales figure by the year to year projected industry annual growth rate for each individual industry in which Kodak and the SBUs operate. We used the photography industry growth rate for both Kodak and the Photography SBU. Projected industry growth rates were obtained from SSB. Our assumption is that Kodak and each SBU will maintain market share and that their sales will increase or decrease at the same rate as the industry in which each SBU operates.

Gross Profit

The source of the 2000 and 2001 actual gross profit data for both Kodak and each SBU is the *Annual Report*. The source of the 2002 and 2003 projected gross profit data for both Kodak and each SBU is SSB, which cites Kodak management sources. The 2004, 2005 and 2006 gross profit data are our estimates. Our basic beginning assumption is that gross margins will remain relatively flat over time. Beyond that, we examined the reasons for changes in gross margin from 2000 to 2001 in Kodak's Annual Report. Then we assessed whether or not those factors should be considered going forward. In addition, for the Health Imaging, Commercial Imaging, and Component SBUs, we looked at current actual gross margins in companies in the same industry sector in order to validate the reasonableness of the margins that we selected. A brief discussion of our assessment by SBU follows.

Photography SBU

We assume a gradual gross margin decline due to several factors:

?? Decreased traditional film product sales in developed countries due to the digital transition

?? Increased consumer price discrimination in the photo finishing market segment and

?? Lower margin sales in emerging markets due to a negative foreign exchange impact resulting from a strong US dollar in 2002 and 2003.

These factors give a 2% decline in gross margin in 2002 and 2003, with a 1% decline each year after that.

Health Imaging SBU

SSB projects a slight increase in gross margin in 2002 and 2003 and we assume a flat gross margin after that. The flat 43% gross margin appears conservative given the current actual gross margins of these other companies in the medical imaging space as computed from the financial data in the earnings release for the most recent quarter ended for each company:

Health Imaging Company:	GM%
SonoSite, Inc. (SONO)	59%
Fischer Imaging Corp. (FIMG)	41%
PSS World Medical Inc. (PSSI)	47%
Young Innovations Inc. (YDNT)	52%

Commercial Imaging SBU

SSB projects a slight increase in gross margin in 2002 followed by a flat gross margin. We extended the flat 35% to 2006. We see this gross margin as reasonable because, while this industry is sluggish, there is less competition than in Kodak's other industries and Kodak maintains strong market share due to the high quality of its brand and reputation. Current actual gross margins of these other companies in the commercial imaging space as computed from the financial data in the earnings release for the most recent quarter ended for each company:

Commercial Imaging Company:	GM%
Danka Business Systems (DANKY)	36%
Global Imaging Systems, Inc. (GISX)	37%
Imagistics International, Inc. (IGI)	70%

Components SBU

We assume that this is a pure intellectual property company with no real product cost, i.e. sales consist of license fees and royalties only. We continue the 100% gross margin from 2000 and 2001 into 2002 and 2003. We do decrement the margin by 1% to 99% after that, to account for potential negative foreign exchange impact and possible consulting costs related to technology licensing sales.

R&D and SG&A

The source of the 2000 and 2001 actual data for Kodak is the *Annual Report*. The 2000 and 2001 data for each SBU was derived by subtracting the gross profit from earnings before taxes, which came from the *Annual Report*. The 2002 through 2006 projected R&D and SG&A data for each SBU was derived by using the same earnings as a percentage of sales as 2001 and reverse-engineering the numbers for Photography, Health Imaging and Commercial Imaging. In addition, we looked at current R&D plus SG&A as a percentage of sales in companies in the same industry sector AND R&D plus SG&A as a percentage of sales for Kodak's main competitors to validate the reasonableness of the operating expenses as a percentage of sales for each of these SBUs. These percentages are as follows:

Health Imaging Company:	OpExp %
SonoSite, Inc. (SONO)	74%
Fischer Imaging Corp. (FIMG)	67%
PSS World Medical Inc. (PSSI)	42%
Young Innovations Inc. (YDNT)	26%

Commercial Imaging Company:	OpExp %
Danka Business Systems (DANKY)	34%
Global Imaging Systems, Inc. (GISX)	26%
Imagistics International, Inc. (IGI)	50%

Kodak Competitors:	OpExp %
FujiFilm	35%
Konica	37%
Agfa-Gevaert	31%

We engineered operating expenses for the Components SBU such that earnings before taxes are breakeven in 2002 and that earnings before taxes increase from 2003 through 2006 as this business increases.

Earnings before Taxes

Earnings before taxes do not include restructuring costs, credits, asset impairments, special one-time charges, environmental reserves, or any cost of debt (interest expense).

Depreciation and Amortization

Depreciation and amortization is the major non-cash item remaining in earnings before taxes, and is therefore added back in order to get the debt-free cash flows for Kodak and each SBU. Depreciation and amortization was projected for 2002 through 2006 by taking the actual 2001 amount per the *Annual Report* Statement of Cash Flows and projecting that it will change over time at the same rate as the change in overall Kodak sales. The total amount projected was then allocated to each SBU using the percentage of segment operating expense (R&D and SG&A) for each SBU over the total SBU segment operating expenses.

Discount Factor

Several discount factors can be used to compute the net present value of cash flows. MBA classes often use the weighted average cost of capital, equity financing, or requisite return on assets. Professional appraisal consultants frequently start with these numbers, and then add much, much higher factors (for example when valuing in-process R&D acquired in acquisitions) because they consider the downside risk of survival for new companies. We note that the interest rates of Kodak's 2001 borrowings range from 1.11% to 9.95% (*Annual Report*). We decided to use the cost of equity financing that was computed in the EVA analysis and includes the Stern-Stewart adjustment (see Appendix C), which is approximately 12.8%.

Sensitivity Analysis

In our report, we performed a sensitivity analysis where we varied the discount rate applied to the Kodak Company as a whole. The assumption behind the sensitivity analysis is that there are diseconomies and inefficiencies associated with operating and managing a diversified company that do not exist if the entities are operated separately. The 13% discount factor was increased by 2%, 5%, and 10%, to account for a range of such diseconomies. Our sensitivity analysis compares Kodak's value computed using discounted cash flows at discount factors of 15%, 18% and 23% with the sum of the values of each SBU discounted at 13%. No other underlying data, actual or projected, was changed to create the sensitivity analysis. We do not include the additional tables behind the sensitivity analysis because of this and space limitations. The valuation tables follow (all dollar amounts are in millions of US dollars)

Table 39. Kodak Valuation: Current Strategy (Case 1)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Kodak total sales	$ 13,994	$ 13,234	$ 12,692	$ 12,808	$ 12,641	$ 12,325	$ 12,128
% change in sales year to year		*-5%*	*-4%*	*1%*	*-1%*	*-3%*	*-2%*
Gross profit	$ 5,619	$ 4,564	$ 4,315	$ 4,099	$ 3,729	$ 3,328	$ 2,971
Gross margin	*40%*	*34%*	*34%*	*32%*	*30%*	*27%*	*25%*
R&D and SG&A	$ 3,298	$ 3,406	$ 3,199	$ 3,228	$ 3,186	$ 3,107	$ 3,057
R&D and SG&A and a % of sales	*24%*	*26%*	*25%*	*25%*	*25%*	*25%*	*25%*
Earnings before taxes	$ 2,170	$ 1,215	$ 1,116	$ 870	$ 543	$ 221	$ (85)
Earnings as a % of sales	*16%*	*9%*	*9%*	*7%*	*4%*	*2%*	*-1%*
Non cash add backs:							
Depreciation and amortization	$ 889	$ 919	$ 881	$ 889	$ 878	$ 856	$ 842
equals Debt-free Cash flows	$ 3,059	$ 2,134	$ 1,998	$ 1,760	$ 1,421	$ 1,077	$ 757
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$5,224				

Table 40. Sensitivity Analysis for Case 1

Discount rate for Case 1:	**12.8%**	**14.8%**	**17.8%**	**22.8%**
Case 1: Kodak continues its current strategy	$ 5,224	$ 5,014	$ 4,726	$ 4,306

Table 41. Kodak Valuation - Short-term recommendation (Case 2)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Kodak total sales	$ 13,994	$ 13,234	$ 12,692	$ 12,808	$ 12,641	$ 12,325	$ 12,128
% change in sales year to year		*-5%*	*-4%*	*1%*	*-1%*	*-3%*	*-2%*
Gross profit	$ 5,619	$ 4,564	$ 4,315	$ 4,355	$ 4,045	$ 3,821	$ 3,638
Gross margin	*40%*	*34%*	*34%*	*34%*	*32%*	*31%*	*30%*
R&D and SG&A	$ 3,298	$ 3,406	$ 3,300	$ 3,330	$ 3,034	$ 2,835	$ 2,668
R&D and SG&A and a % of sales	*24%*	*26%*	*26%*	*26%*	*24%*	*23%*	*22%*
Earnings before taxes	$ 2,170	$ 1,215	$ 1,015	$ 1,025	$ 1,011	$ 986	$ 970
Earnings as a % of sales	*16%*	*9%*	*8%*	*8%*	*8%*	*8%*	*8%*
Non cash add backs:							
Depreciation and amortization	$ 889	$ 919	$ 881	$ 889	$ 878	$ 856	$ 842
equals Debt-free Cash flows	$ 3,059	$ 2,134	$ 1,897	$ 1,914	$ 1,889	$ 1,842	$ 1,812
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$6,632				

Table 42. Kodak's Photography SBU Valuation (Case 3)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Photography sales	$ 10,231	$ 9,403	$ 8,761	$ 8,735	$ 8,621	$ 8,406	$ 8,271
% change in sales yr to yr		*-8%*	*-7%*	*0%*	*-1%*	*-3%*	*-2%*
Gross profit	$ 4,137	$ 3,416	$ 3,000	$ 3,009	$ 2,673	$ 2,522	$ 2,399
Gross margin	*40%*	*36%*	*34%*	*32%*	*31%*	*30%*	*29%*
R&D and SG&A	$ 2,707	$ 2,629	$ 2,299	$ 2,310	$ 1,983	$ 1,849	$ 1,737
R&D and SG&A and a % of sales	*26%*	*28%*	*26%*	*26%*	*23%*	*22%*	*21%*
Earnings before taxes	$ 1,430	$ 787	$ 701	$ 699	$ 690	$ 672	$ 662
Earnings as a % of sales	*14%*	*8%*	*8%*	*8%*	*8%*	*8%*	*8%*
Non cash add backs:							
Depreciation and amortization	$ 667	$ 665	$ 599	$ 587	$ 525	$ 481	$ 438
equals Debt-free Cash flows	$ 2,097	$ 1,452	$ 1,300	$ 1,286	$ 1,215	$ 1,153	$ 1,100
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$4,324				

Table 43. Kodak's Health Imaging SBU Valuation (Case 3)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Health Imaging sales	$ 2,220	$ 2,262	$ 2,279	$ 2,390	$ 2,749	$ 3,161	$ 3,666
% change in sales yr to yr		*2%*	*1%*	*5%*	*15%*	*15%*	*16%*
Gross profit	$ 1,038	$ 871	$ 941	$ 1,016	$ 1,182	$ 1,359	$ 1,577
Gross margin	*47%*	*39%*	*41%*	*43%*	*43%*	*43%*	*43%*
R&D and SG&A	$ 520	$ 548	$ 622	$ 681	$ 797	$ 917	$ 1,063
R&D and SG&A as a % of sales	*23%*	*24%*	*27%*	*29%*	*29%*	*29%*	*29%*
Earnings before taxes	$ 518	$ 323	$ 319	$ 335	$ 385	$ 443	$ 513
Earnings as a % of sales	*23%*	*14%*	*14%*	*14%*	*14%*	*14%*	*14%*
Non cash add backs:							
Depreciation and amortization	$ 128	$ 139	$ 162	$ 173	$ 211	$ 238	$ 268
equals Debt-free Cash flows	$ 646	$ 462	$ 481	$ 508	$ 596	$ 681	$ 781
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$2,089				

Table 44. Kodak's Commercial Imaging SBU Valuation (Case 3)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Commercial Imaging sales	$ 1,417	$ 1,459	$ 1,533	$ 1,561	$ 1,592	$ 1,624	$ 1,657
% change in sales yr to yr		*3%*	*5%*	*2%*	*2%*	*2%*	*2%*
Gross profit	$ 478	$ 451	$ 534	$ 540	$ 557	$ 568	$ 580
Gross margin	*34%*	*31%*	*35%*	*35%*	*35%*	*35%*	*35%*
R&D and SG&A	$ 245	$ 286	$ 350	$ 384	$ 398	$ 390	$ 398
R&D and SG&A as a % of sales	*17%*	*20%*	*23%*	*25%*	*25%*	*24%*	*24%*
Earnings before taxes	$ 233	$ 165	$ 184	$ 156	$ 159	$ 179	$ 182
Earnings as a % of sales	*16%*	*11%*	*12%*	*10%*	*10%*	*11%*	*11%*
Non cash add backs:							
Depreciation and amortization	$ 60	$ 72	$ 91	$ 98	$ 105	$ 101	$ 100
equals Debt-free Cash flows	$ 293	$ 237	$ 275	$ 254	$ 265	$ 280	$ 282
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$955				

Table 45. Kodak's Component SBU Valuation (Case 3)

	Actual 2000	Actual 2001	Projected 2002	Projected 2003	Projected 2004	Projected 2005	Projected 2006
Component sales	$ 126	$ 110	$ 110	$ 138	$ 172	$ 215	$ 269
% change in sales yr to yr		*-13%*	*0%*	*25%*	*25%*	*25%*	*25%*
Gross profit	$ 126	$ 110	$ 110	$ 138	$ 170	$ 213	$ 263
Gross margin	*100%*	*100%*	*100%*	*100%*	*99%*	*99%*	*98%*
R&D and SG&A	$ 137	$ 170	$ 110	$ 124	$ 136	$ 138	$ 142
R&D and SG&A as a % of sales	*109%*	*155%*	*100%*	*90%*	*79%*	*64%*	*53%*
Earnings before taxes	$ (11)	$ (60)	$ -	$ 14	$ 34	$ 75	$ 121
Earnings as a % of sales	*-9%*	*-55%*	*0%*	*10%*	*20%*	*35%*	*45%*
Non cash add backs:							
Depreciation and amortization	$ 34	$ 43	$ 29	$ 31	$ 36	$ 36	$ 36
equals Debt-free Cash flows	$ 23	$ (17)	$ 29	$ 45	$ 70	$ 111	$ 157
Discount factor			12.8%				
Net Present Value of Estimated Cash Flows 2002 to 2006			$264				

Table 46. Depreciation and Amortization for Each Kodak SBU (Case 3)

Total Company Depreciation and Amortization is:	**$ 889**	**$ 919**	**$ 881**	**$ 889**	**$ 878**	**$ 856**	**$ 842**
Segment Operating Expenses are:	**Actual 2000**	**Actual 2001**	**Projected 2002**	**Projected 2003**	**Projected 2004**	**Projected 2005**	**Projected 2006**
Photography	$ 2,707	$ 2,629	$ 2,299	$ 2,310	$ 1,983	$ 1,849	$ 1,737
Health Imaging	$ 520	$ 548	$ 622	$ 681	$ 797	$ 917	$ 1,063
Commercial Imaging	$ 245	$ 286	$ 350	$ 384	$ 398	$ 390	$ 398
All Other	$ 137	$ 170	$ 110	$ 124	$ 136	$ 138	$ 142
Total	$ 3,609	$ 3,633	$ 3,381	$ 3,499	$ 3,314	$ 3,293	$ 3,340
Depreciation and Amortization expense by segment is:	**Actual 2000**	**Actual 2001**	**Projected 2002**	**Projected 2003**	**Projected 2004**	**Projected 2005**	**Projected 2006**
Photography	$ 667	$ 665	$ 599	$ 587	$ 525	$ 481	$ 438
Health Imaging	$ 128	$ 139	$ 162	$ 173	$ 211	$ 238	$ 268
Commercial Imaging	$ 60	$ 72	$ 91	$ 98	$ 105	$ 101	$ 100
All Other	$ 34	$ 43	$ 29	$ 31	$ 36	$ 36	$ 36
Total	$ 889	$ 919	$ 881	$ 889	$ 878	$ 856	$ 842

13 Appendix F: Web Sites Accessed (Separate Binder)

The appendix of the accessed web sites is compiled in a separate binder that was submitted with this report.

14 Endnotes

[i] Kodak: Investor's Center: Conference Call Transcript. 21 Nov. 2002, <http://www.kodak.com/country/US/en/corp/investorCenter/discTrans/commentary1.shtml>.
[ii] Kodak: History of Kodak: Introduction. 21 Nov. 2002 <http://www.kodak.com/US/en/corp/aboutKodak/kodakHistory/kodakHistory.shtml>.
[iii] Ibid., Kodak: Investor's Center: Conference Call Transcript.
[iv] Kodak: Business Units. 25 Nov. 2002 <http://www.kodak.com/US.en.corp.aboutKodak/bu.shtml>
[v] Craig A. Ellis and Stephanie Crane, *Imaging & Visual Media*, SalomonSmithBarney, September 17, 2002, page 29.
[vi] Ibid., *Imaging & Visual Media*, page 33.
[vii] Laura L. Bing, John W. Bierema, and Terry J. Carter. *The global pendulum: in which direction is your globalization pendulum swinging? The Future Search Conference has some answers*. Gale Group, Inc., May 2002. LexisNexis™ Academic – Document. 12 Oct. 2002 <http://www.lexis-nexis.com/>.
[viii] *Digital Imaging Magazine: Q&A with Kodak Chief Marketing Officer Carl Gustin*, 13 Nov. 2002. Kodak: Infoimaging: Outlook on Infoimaging. 23 Nov. 2002 <http://www.kodak.com/country/US/en/corp/infoImaging/outlook.shtml>.
[ix] Mark Lewis. *China's Rise is Inevitable – So Deal with It*, Forbes.com, 28 Jun. 2002. Forbes.com: China's rise Is Inefitable –So Deal With It. 15 Oct. 2002 <http://www.forbes.com/2002/06/28/0628china.html>.
[x] Kodak, *2001 Annual Report*, page 46.
[xi] Craig A. Ellis and Stephanie Crane. *EK: Analyst Day Offers Few Surprises; Growth Contingent on the Economy.* SalomonSmithBarney. September 19, 2002.
[xii] Ibid., *EK: Analyst Day Offers Few Surprises; Growth Contingent on the Economy.*
[xiii] Chris Woodyard. *Travel Pro: Hassles Deter Fliers*, USATODAY.com, 16 Jul 2002. USATODAY.com – Travel – News – Travel Pro: Hassles deter fliers. 16 Oct. 2002 <http://www.usatoday.com/travel/news/2002/2002-07-16-q-a.htm>.
[xiv] TIA – IVIS, *International Travel to the U.S. 1990 – 2000.* 29 Nov. 2002, <http://www.tia.org/ivis/intltourism.asp>.
[xv] Ibid., *EK: Analyst Day Offers Few Surprises; Growth Contingent on the Economy.*
[xvi] *Study of Emerging Consumer Digital Camera Market Forecasts Changing Competitive Dynamics*, 3 Jun. 2002, Business Wire. LexisNexis™ Academic Document. 12 Oct. 2002, <http://0-web.lexis-nexis.com.sculib.scu.edu/universe/document?_m=6477a0e6737122b9b...>.
[xvii] Sherri C. Goodman, *Not Wedded to film; Digital photography is taking steps down the aisle; Wedding Photography Going More to Digital*, The Sale Lake Tribune, 22 Jul. 2002. LexisNexis™ Academic Document. 12 Oct. 2002, <http://www.lexis-nexis.com.sculib.scu.edu/universe/document?_m=0fc2dcdc1f5165f9ea4...>.
[xviii] *Vertis, Federated Department Stores Sign Digital Photography Agreement; Shift From Traditional Photography Expected To Save Money, Simplify Advertising Workflow*, 16 Apr. 2001, Business Wire. Business Wire: Vertis, Federated Department Stores Sign Digital Photography Agreement. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m0EIN2001_april_16/73238153/pl/article.jhtml?terr...>.

[xix] *8 Things You Didn't Know About Chinese Consumers*, 28 Apr. 2000, Asiaweek.com. Asiaweek.com:COVER: 8 Things You didn't Know About Chinese Consumers. 14 Oct. 2002, <http://affiliate.timeincmags.com/asiaweek/magazine/2000/0428/cover1.html>.
[xx] Erik Kissa. *Diffuser – Digital Imaging Versus Photography*, April, 2002, PSA Journal. PSA Journal: Diffuser – Digital Imaging Versus Photography. 14 Oct. 2002, http://www.findarticles.com/cf_dls/m1306/4_68/84971148/pl/article.jhtml?term=photography....
[xxi] *Kodak CEO Daniel A. Carp says companies must work collectively to succeed in the infoimaging industry*, 2 Oct. 2002, M2 PRESSWIRE. LexisNexis™ Academic Document. 12 Oct. 2002, <http://0-web.lexis-nexis.com/sculib.edu/universe/document?_m=8151898e7f65e62f9f..>.
[xxii] Cecelia Blalock, *Solving Internet taxation issue fairly requires grass-roots effort*, 15 May, 2000 Hotel & Motel Management. Hotel & Motel Management. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m3072/9_215/62266895/pl/article.jhtml?term=%2BIn...>.
[xxiii] *CBS Denies Digital Deception*, 17 Jan. 2000, Television Digest with Consumer Electronics. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m3169/3_40/59184768/pl/article.jhtml?term=ethics>.
[xxiv] *Digital Custom Issues Final 'Model Ethics Guitdlines' to Protect the Integrity of Journalistic Digital Editing*, 24 Feb. 2002, PR Newswire. 14 Oct. 2002, <http://www.findarticles.com/cf_dls/m4PRN/2002_Feb_24/83223867/pl/article.jhtml?term>.
[xxv] Roderick T. McCarvel, *You Won't Believe Your Eyes: Digital Photography as Legal Evidence*, 15 Apr. 1995. Digital Photography as Legal Evidence. 21 Nov. 2002 <http://www.seanet.com/~rod/digiphot.html#partIV>.
[xxvi] *Kodak Well-Poised to Achieve Profitable Growth in China*, 27 Sep. 1999, Business Wire. Kodak Well-Poised to Achieve Profitable Growth in China. 21 Oct. 2002, <www.businesswire.com>.
[xxvii] *Corporate Trends Effecting Human Rights in Tibet and China: 1993-1997 A Case Study*, 26 Jun. 1997, World Tibet Network News. 23 Nov. 2002, <http://www.tibet.ca/wtnarchive/1997/6/26_2.html>.
[xxviii] *Human rights are everybody's business*, Business & human rights – an AI information pack. 25 Nov. 2002, <http://web.amnesty.org/802568F7005C4453/0/16FAC03B66C9E1EB80256C4E003C0AC6?Open>.
[xxix] Yew, Lee Kuan, *Uncertainties Ahead*, 14 Oct. 2002. Forbes.com. 15 Oct. 2002, <www.forbes.com>.
[xxx] Jenkins, Darryl, *Since 9-11*, PowerPoint Presentation given at The George Washington University. 25 Oct. 2002, <http://apo.faa.gov/Conference/Conference2002commercial/Jenkins/Jenkins.PPT>.
[xxxi] *Marketing to Mom: Profile of the New Digital Camera User*, Photo Marketing Associational International PDF file article, 28 Jun. 2002. Photo Marketing Association: Marketing Research. Nov. 23, 2002, <http://www.pmai.org/new_pma/marketing_research.htm>.
[xxxii] *A Profile of U.S. Older People in the Future*, Amerstat, Nov. 2001. Population Reference Bureau: A Profile of Older People in the Future. 14 Oct. 2002 <http://www.pbr.org/AmeristatTemplate.cfm?Section=MarriageandFamily&template=/>.

[xxxiii] *The U.S. Baby Boomer Market*, 1 Nov. 2002, MarketResearch.com. The U.S. Baby Boomer Market – by: Packaged Facts. 16 Oct. 2002, <http://www.newsletters.com/map/prod/764604.html>.
[xxxiv] Peter Francese, *Trend Spotting*, August 2002, Media Central Inc. LexisNexis™ Academic Document. 12 Oct. 2002, <http://www.lexis-nexis.com.sculib.scu.edu/universe/document?_m=4a7a188766a282gc55..>.
[xxxv] *Cameras to Go: The Rising Role of One-time Use Cameras in Consumer Picture-Taking Behavior,* Photo Marketing Association International PDF file article, Sept. – Oct. 2002. Photo Marketing Association: Marketing Research. 23 Nov. 2002, <http://www.pmai.org/new_pma/marketing_research.htm>.
[xxxvi] Ibid., *Cameras to Go*.
[xxxvii] Laura Heller, *Digital Imaging Popularity Clicking with Female Users*, 24 Jun. 2002, DSN Retailing Today. LexisNexis™ Academic – Document. 12 Oct. 2002, <www.lexis-nexis.com>.
[xxxviii] Ibid., *Cameras to Go*.
[xxxix] FujiFilm, *2002 Annual Report*.
[xl] FujiFilm Worldwide – WTO Film Case – Hidden Facts, *U.S. Wholesale Photofinishing Market Shares by Supplier*, 2 Nov. 2002, http://home.fujifilm.com/info/wto/ustr5.html.
[xli] Stanger, Peter, *Strategy and the Internet: Trends and Predictions*, The Boston Consulting Group. 2 Nov. 2002, <http://www.realestateforums.com/present/bcg.ppt>.
[xlii] Agfa, *2001 Annual Report*.
[xliii] Ibid., *Agfa 2001 Annual Report.*
[xliv] Konica, *2002 Annual Report*.
[xlv] Ibid., Konica, *2002 Annual Report*.
[xlvi] Sony, *2001 Annual Report*.
[xlvii] Ibid., Sony, *2001 Annual Report.*
[xlviii] Olympus, *2001 Annual Report.*
[xlix] Phogenix Imaging Press Release*: Phogenix Imaging Announces DFX, the First Affordable Digital Inkjet Minilab*, 4 Feb. 2002. 21 Nov. 2002, <http://www.phogenix.com/pr_020402.html>.
[l] Phogenix Imaging: *How will the DFX change customer expectations for photo finishing?* 22 Nov. 2002, <http://www.phogenix.com/product_faqs_answers.html#1>.
[li] Ibid., *Imaging & Visual Media*, page 10.
[lii] <http://www.pace.edu/lubin/centers>, 14 Oct. 2002.
[liii] Robert M. Grant, *Contemporary Strategy Analysis, 4th Edition*, Great Britain: Blackwell Publishers, 1999, page 321.
[liv] Ibid., *Contemporary Strategy Analysis*, page 354.
[lv] Polaroid: Company Information: Letter to Customers, *Company Info: Company History*. 11 Nov. 2002, <http://www.polaroid.com/polinfo/history/30s.html>.
[lvi] Polaroid: Company Information: Letter to Customers, *Company Info: Company History*. 11 Nov. 2002, <http://www.polaroid.com/polinfo/history/90s.html>.
[lvii] Associated Press: *Polaroid on the brink*. 2 Nov. 2002, <http://www.dpreview.com/news/0107/01071101polaroid.asp>.
[lviii] Ibid., Polaroid Web Site: *Company Info: Company History.*
[lix] Discount Store News: *Polaroid*, 24 Aug. 1998. 11 Nov. 2002, <http://www.findarticles.com/cf_0/M3092?n16_v37/21076810/print.jhtml>.

[lx] Polaroid Corporation, *Form 10-K for the year ended December 31, 2000*, page 2.
[lxi] Polaroid: Company Information: 2002 Press Releases, *Court Approve One Equity Partners' Bid to Purchase Polaroid Business*, 28 June 2002. 11 Nov. 2002,
[lxii] Polaroid Corporation, *Form 10-K for the year ended December 31, 1999*, page 1.
[lxiii] Why Join Kodak? – Values and Mission, *Upholding the Kodak Mission*. 29 Nov. 2002, <http://www.kodak.co.kr/US/en/corp/careers/why/valuesmission>.
[lxiv] Interview, Ms.Ann Oates, Investor Relations, Kodak, November 1, 2002.
[lxv] Ibid., Ms.Ann Oates interview.
[lxvi] Interview, Mr.Perry Davallou, Manufacturing Engineer, Kodak, October 30, 2002.
[lxvii] Ibid., *Imaging & Visual Media*, page 42.
[lxviii] Ibid. Ms.Ann Oates interview.
[lxix] Ibid, Ms.Ann Oates interview.
[lxx] Ibid., Why Join Kodak?
[lxxi] Ibid., Why Join Kodak?
[lxxii] Interview, Ms.Ann Oates, Investor Relations, Kodak, October 28, 2002.
[lxxiii] Ibid., Why Join Kodak?
[lxxiv] Ibid., Mr.Perry Davallou interview.
[lxxv] Ibid., Kodak, *2001 Annual Report*.
[lxxvi] Ibid., Kodak, *2001 Annual Report*.
[lxxvii] Ibid., Kodak, *2001 Annual Report*.
[lxxviii] Ibid., *Contemporary Strategy Analysis.*
[lxxix] Ibid., Kodak, *2001 Annual Report*.
[lxxx] Ibid., *Imaging & Visual Media*.
[lxxxi] Ibid., *Imaging & Visual Media*.
[lxxxii] Ibid., *Imaging & Visual Media*.
[lxxxiii] Ibid., *Imaging & Visual Media*.
[lxxxiv] Ibid., *Imaging & Visual Media*.
[lxxxv] Ibid., *Contemporary Strategy Analysis*.
[lxxxvi] Ibid., *Imaging & Visual Media*.
[lxxxvii] Ibid., *Contemporary Strategy Analysis*..
[lxxxviii] Ibid., *Contemporary Strategy Analysis*.
[lxxxix] Kodak: Digital Lab Systems: News, *Kodak Moves to Open Architecture for Digital Photofinishing Systems*, 31 Oct. 2002. 17 Nov. 2002, <http://www.kodak.es/cluster/global/en/consumer/dls/news/openArch.jhtml>.
[xc] Noel Tichy and Ram Charan, *Life After Jack: Speed, simplicity, and self-confidence: an interview with Jack Welch*, Harvard Business Review, September/October 1989.
[xci] Ibid., Kodak, *2001 Annual Report*, page 24.
[xcii] Why Join Kodak? – Employee Development. 19 Oct. 2002, www.kodak.co.kr/US/en/corp/careers/why/employdevelopment.
[xciii] Kodak: History of Kodak Cameras: Tech Pub AA-13. 29 Nov. 2002, <http://www.kodak.com/global/en/consumer/products/techInfo/aa13/aa13.shtml>.
[xciv] Ibid., *Imaging & Visual Media*, pages 3, 15, 21, 29, 33.
[xcv] Interview, Peter Atherton, professional wedding photographer, 10/30/02.
[xcvi] Ibid, *Imaging & Visual Media*, page 11.
[xcvii] Ibid, *Imaging & Visual Media*, page 14.

[xcviii] Ibid, *Imaging & Visual Media*, page 30.
[xcix] *A Look at the 2001 Digital Camera Market*, Lehman Brothers, Feb. 13, 2002, pages 1, 2.
[c] PC Connection: Sony Corp. – Digital Imaging, CyberShot DSC-P31 Digital Camera. 24 Nov. 2002, <http://www.pcconnection.com/scripts/browseproducts.asp?category=Hardware&browse=Digital+Cameras>.
[ci] Ibid, *A Look at the 2001 Digital Camera Market*, page 2.
[cii] DLSR Guide and Tips for New Buyers. 24 Nov. 2002, <http://www.a-digital-eye.com/DSLRGuide.html>.
[ciii]Read Reviews and Compare Prices on Kodak Digital Camera at DealTime.com, 24 Nov. 2002, <http://www.dealtime.com/dt-app/SE/CN-Electronics/FN-Digital_Cameras/MN-Kodak/KW-cameras/PG-1/MNP-1000/MXP-12640/S-1521/AT-RF/MD-64/Product.html>.
[civ] Ibid, *Imaging & Visual Media*, page 51.
[cv] Ibid, *Imaging & Visual Media*, page 3.
[cvi] Ibid, *Imaging & Visual Media*, page 49.
[cvii] Ibid, *Imaging & Visual Media*, page 22.
[cviii] *Critical Factors for Growth of Imaging Industry Include Ease-of-Use and Driving Digital Prints According to Leading Influencers*, Business Wire, 23 Sept. 2002, LexisNexis™Academic-Document. 12 Oct. 2002, <www.lexis-nexis.com>.
[cix] Paul Maidment. *Traditional Photography Needs Flash*. Forbes.com, 30 Sept. 2002. Forbes.com – Magazine Article. 15 Oct. 2002, <www.forbes.com>.
[cx] Ibid., *Critical Factors*.
[cxi] Ibid., Kodak *2001 Annual Report*, page 79.
[cxii] Richard Martin. *Can Kodak find its focus?* The Industry Standard, 16 Jul. 2001. 24 Nov. 2002, <http://www.thestandard.com/article/0%2C1902%2C27513%2C00.html.>
[cxiii] Ibid, *Imaging & Visual Media*, page 22.
[cxiv] Ibid., *Contemporary Strategy Analysis, page 37*.
[cxv] Ibid., *Contemporary Strategy Analysis*, page 380.
[cxvi] Larry E. Greiner, *Evolution and Revolution as Organizations Grow*, Harvard Business Review, 1998.
[cxvii] Daft, Richard. *Organizational Theory and Design*. St. Paul, MN: West Publishing, 2001.
[cxviii] Polaroid Corporation, *Form 10-K for the year ended December 31, 1999*, page 1.
[cxix] Collins, Jim. "Good to Great", HarperCollins Publishers Inc., 2001
[cxx] Ibid., *Contemporary Strategy Analysis*, page 463.
[cxxi] Ibid, *Imaging & Visual Media*, page 13.
[cxxii] Ibid., *Imaging & Visual Media*, page 22.
[cxxiii] Ibid., *Imaging & Visual Media*, page 21.
[cxxiv] Ibid., *Imaging & Visual Media*, page 22.
[cxxv] Ibid., *Imaging & Visual Media*, page 33.
[cxxvi] Ibid., *Imaging & Visual Media*, page 29.
[cxxvii] EVA is a registered trademark of Stern Stewart & Co. Information about this computation and its uses came from <http://www.sternstewart.com/evaabout/whatis.shtml> and <http://www.evanomics.com/evastudy/evastudy.shtml>.