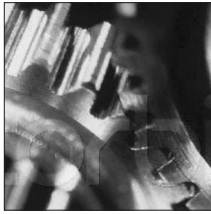


case six

Eastman Kodak: Meeting the Digital Challenge



TEACHING NOTE

SYNOPSIS

In 2004, photographic giant Eastman Kodak is still struggling to come to terms with the new world of digital imaging while simultaneously facing increased pressure in its long-established photographic business. In the traditional film business, Kodak faces aggressive competition from Fuji and is losing market share. In the growing market for digital imaging, Kodak has been making massive investments in technology, new products, and marketing, yet it is just one of many players seeking to build a strong technological and market position in this emerging sector.

The case focuses upon the situation facing Kodak's CEO, Dan Carp, and his top management team in seeking to balance Kodak's aggressive drive to build organizational capabilities and market position in the new digital sector against the shareholder demands for better returns from the faltering giant of photography. The case provides a brief account of Eastman Kodak's development as a photographic company, together with a fuller account of its first moves into electronic imaging under Colby Chandler and Kay Whitmore (1983–93), and its transformation into a "picture company" fully committed to digital imaging under George Fisher (1993–2000) and Dan Carp (CEO since 2000). The case describes Kodak's digital imaging business at the beginning of 2004 and outlines the development of digital imaging technologies and the digital imaging market.

This note was prepared by Robert M. Grant.

The situation facing Eastman Kodak is critical. Having identified Kodak's business as "pictures" and established the slogan "Taking pictures further," Kodak has identified its future as the capture, editing, transmission and printing of pictures, whether by traditional chemical or electronic means. Its commitment to pictures was reinforced by George Fisher's disposal of Kodak's chemical and pharmaceutical businesses in the early 1990s.

At the same time, Kodak faces a huge challenge: can a company that has dominated the world market for chemical-based photography for close to a century build the capabilities needed to be successful in the fast-changing world of digital imaging? Despite two decades of investment in electronic and optical technologies for storing, manipulating, transmitting, and managing digital images, Kodak continues to lose money in its digital activities and in terms of market leadership may yet lose out to companies such as Hewlett-Packard, Canon, Sony, and Fuji, all of which appear to be more at home in the fast-moving world of microelectronics and other digital technologies.

TEACHING OBJECTIVES

The central issue that the case raises is the ability of an established firm to develop new capabilities in order to adapt to radical technological change within its core business. Competing on capabilities involves not only designing strategy in order to exploit to the fullest a firm's distinctive capabilities, but also developing the firm's capability base. However, when a firm such as Kodak has been so dominant in its industry for such a long period, it is very likely that its core capabilities (in chemical-based imaging) become "core rigidities" and inhibit the firm's ability to develop the capabilities needed to adapt its business model to one based upon very different technologies.

The case deals with the questions of:

- Can a mature, successful company develop new capabilities?
- What are the means by which such capabilities can be developed?
- Which types of capability are most difficult to build?

POSITION IN THE COURSE

I use the case in the section of the course that deals with the analysis of resources and capabilities (drawing upon Grant, chapter 5). The case may also be used for exploring strategic issues in technology-based industries (drawing upon Grant, chapter 11).

ASSIGNMENT QUESTIONS

1. What have been the major themes of Kodak's digital imaging strategy under CEOs Fisher and Carp?

2. Is Kodak's digital imaging strategy working?
3. Does Kodak possess the resources and capabilities needed to be successful in the market for digital imaging products? How is Kodak acquiring and building the capabilities it needs?
4. What advice would you offer Dan Carp?

READING

The core reading is: R. M. Grant, *Contemporary Strategy Analysis* (5th edn), Blackwell Publishing, 2005, chapter 5, "Analyzing Resources and Capabilities." In addition, chapter 11, "Technology-based Industries and the Management of Innovation," may be useful for those instructors wishing to pursue issues of technology management and strategies in emerging industries.

As supplementary reading, Dorothy Leonard Barton, "Core capabilities are core rigidities" (*Strategic Management Journal*, Summer 1992) provides valuable insight into the structure of capabilities and how existing capabilities create barriers to the development of new capabilities.

CASE DISCUSSION AND ANALYSIS

My emphasis in this case is more upon encouraging students to recognize the challenges facing Kodak in digital imaging, identify the major aspects of Kodak's digital strategy, and understand its rationale rather than to make recommendations for what Kodak needs to do next. The reason for this emphasis is that the situation in digital imaging is complex. It is difficult for the average MBA student (or average strategy professor) to understand the likely evolution of digital imaging technologies or assess the different strategic positions of different companies within the different product categories or areas of technology. Hence, the most valuable learning from this case is the recognition by students of the difficulties of building new capabilities, and understanding of the way in which Kodak is using its existing resources and capabilities in order to build a bridge into the digital world.

Digital Imaging and the Exit from Chemicals and Pharmaceuticals

I typically begin with the issue of company scope. Shortly after his arrival at Kodak, former CEO George Fisher committed Kodak to imaging in general and digital imaging in particular through his decision to divest Eastman Chemical and Kodak's pharmaceutical business. Why did Fisher do this? Kodak had the option of developing in two broad strategic directions:

- Developing Kodak's chemical-based capabilities in silver-halide imaging and their extensions into fine chemicals, plastics, pharmaceuticals, and health diagnostics (but as imaging shifted from chemical to digital technologies, this strategy would have implied an eventual decline in Kodak's imaging business);
- Maintaining Kodak's focus on imaging products and developing the electronic and software capabilities needed for the transition from chemical to digital imaging.

But why couldn't Kodak do both? The answer lies with the resource demands of Kodak's different businesses. Digital imaging, specialty chemicals, and pharmaceuticals are all technology-intensive businesses where the trend has been for rapid consolidation to exploit economies of scale and global spread. Kodak was already a small player in chemicals and pharmaceuticals and probably lacked both the financial and the managerial resources needed to simultaneously develop its imaging, chemicals, and pharmaceutical businesses. Sure, some companies can manage a broad portfolio of business (General Electric and 3M, for example), but typically these companies have particular corporate management capabilities. Kodak doesn't have any background in operating a diversified, multidivisional corporation in which top corporate management undertakes financial and strategic management, leaving the businesses to be run by divisional managers. It is possible too that there was symbolic value in signaling Kodak's commitment to a future in imaging.

Identifying and Exploring the Rationale for Kodak's Digital Imaging Strategy

It is useful to gain some historical perspective on the evolution of Kodak's digital strategy. I typically ask the class: "When did Kodak begin in electronic imaging?" It is worth noting that Kodak's imaging interests began developing beyond chemical imaging during the early 1980s. Kodak has been involved in plain-paper copiers (electrostatic imaging), in optical and magnetic storage of images, in image sensing, in document and image management systems, and in a number of color-printing technologies. However, up until 1993, Kodak's digital imaging initiatives were diffuse and poorly coordinated. Under Fisher and Carp (1993–2003), Kodak's digital strategy became much more focused and coherent. In particular:

- George Fisher established Kodak's strategic focus as "pictures" – Kodak was in business to provide images and should not be tied to any specific imaging technology.
- The number of projects and products that Kodak is engaged in was substantially reduced. Under Fisher's predecessor, Whitmore, Kodak spread its R&D across many disparate projects but with limited market impact.
- Separate strategies were developed for the professional/commercial and consumer segments. The professional segment was the technological leader where

Kodak introduced leading-edge products (e.g., its advanced digital cameras) at high prices. In the consumer segment Kodak aimed to provide consumers with a low-risk “pathway to digitization,” adding digital features and services to enhance Kodak’s traditional film products and photographic services. These included Kodak’s “Advantix” film and cameras that combined digital information features with conventional film, plus Kodak’s digital image editing and printing services available in retail photo shops, and Internet image transmission (“You’ve Got Pictures”). When introducing fully digital products (e.g. Kodak’s most recent digital camera for the consumer market), its emphasis is on ease of use. It is useful to ask students about the rationale for this dual strategy. Clearly, the professional market is where Kodak is pioneering its new technologies and using the price insensitivity of this market to recoup some of the development costs. In the consumer market, Kodak’s commitment to a hybrid approach – offering selective digitization of particular functions – reflects its desire to utilize its existing strengths in the retail market, notably its brand and its retail distribution. Kodak’s ability to build a major presence in the consumer market depends upon a gradual transition from traditional to digital photography. If the transition is rapid, Kodak has limited opportunity – in a fully digitized world, consumers download their digital cameras to their computers and Kodak has a very limited presence. But, if most image capture remains on traditional film, then Kodak’s retail presence becomes critical in offering digitization, editing, printing, and image transfer and offering consumers a pathway from traditional to digital photography. Kodak’s reluctance to be a technological leader in the consumer sector and to emphasize ease of use is firmly within its mass-market tradition: “You press the button, we do the rest” was its earliest slogan.

- Kodak recognizes that it must be selective in the products and activities where it allocates its investment. Many stages of the digital imaging value chain are already dominated by powerful incumbents (e.g., Microsoft in operating systems, H-P in inkjet printers, AOL in Internet service, Adobe in page formatting). Fisher and Carp recognized that Kodak could not hope to be a leader across the digital imaging value chain from image capture through to image transmission and printing. Hence, Kodak focused upon those parts of the value chain where its resources and capabilities gave it relative strength, and forged alliances with companies engaged in complementary activities, products, and technologies. These alliances have included many of the most important and powerful suppliers of technology, software, and infrastructure for digital imaging, including AOL, Intel, Canon, Microsoft, AT&T, and Hewlett-Packard. In other areas, Kodak has made acquisitions of smaller firms, either to gain access to specific technologies or products, or to consolidate its position in specific markets (e.g., Internet-based print services).
- Although it has focused on positioning itself within certain parts of the value chain, it has retained its desire to be a full-service provider. This has involved it in increasingly adopting the role of a “systems integrator” in digital imaging. Thus, Kodak uses its brand and its distribution presence (both retail

and online) as an umbrella for supplying compatible digital imaging systems. For example, Kodak's digital cameras come equipped with a docking station and can be complemented with a Kodak inkjet printer for photographic images. This forms a standalone system that doesn't require a PC.

Does Kodak Possess the Resources and Capabilities Needed to Compete in the Market for Digital Imaging Products?

A cursory review of Kodak's strengths in resources and capabilities points to some key strengths:

- Of central importance is Kodak's brand name and its global distribution system, involving close links with retail stores, photo finishers, and professional photographers. The issue of Kodak's brand strength in digital imaging is worthy of some discussion. Kodak's name is closely associated with its little yellow cartons of film. How strong is Kodak's brand in relation to digital products, and how does it stack up against HP and Sony? On the distribution side, the key worry for Kodak is the likelihood that, if digital photography moves to PC-based systems involving individuals editing, transmitting, and printing their own pictures, this may completely bypass Kodak's channels of distribution. If Kodak is to gain vital leverage from its brand and distribution presence, it is important that the mass-market transition to digital imaging is gradual – allowing Kodak to exploit its market presence while buying time to develop its digital imaging capabilities. By allying with Microsoft and AOL and investing heavily in its own web site and online services, Kodak has endeavored to build a significant online presence.
- In technology, too, Kodak has been a player for a long time and has strong capabilities in linking chemical and digital aspects of color management, thermal printing, image storage and transfer technologies, color sensors required for image capture and scanning, and the integration of different technologies into complete systems. At the same time, Kodak faces rivals with awesome technological strengths: Hewlett-Packard, Canon, and Sony, to mention but a few. A crucial issue for Kodak is to identify its key selective strengths and build a powerful position in terms of technology and standard setting, while relinquishing other areas of technology to more powerful and established rivals.
- The company has a reputation and relationships with industrial, commercial, and public sector customers. Some of Kodak's strongest customer relationships and customer service capabilities are in relation to large industrial, commercial, and government customers. These include the cinematographic industry, the magazine publishing industry, and state and federal governments and their agencies.
- A critical worry is whether Kodak has the capabilities for fast-cycle product development. For all Kodak's technological strengths, its market dominance

has allowed it to dictate the pace of technological change. It is moving into a sector where product life cycles and product development cycles are much shorter. Kodak's system of product development has been molded over the decades by three key contexts: chemical technologies, Kodak's worldwide near-monopoly in film, and Kodak's location in Rochester, New York. Digital imaging is developing in a quite different context: information technology, hypercompetition, and Silicon Valley. (Any parallels with Xerox here?)

Can Kodak Develop the Capabilities It Needs to be a Leader in Digital Imaging?

Under George Fisher and Dan Carp, Kodak appears to have developed a viable strategy for building its presence in digital imaging. By focusing its technologically advanced products on the professional sector, it has the potential to use an ambitious program of product development to push its acquisition of digital technologies, while producing revenue from these high-priced products. In the consumer segment, its strategy of gradual evolution has the potential to combine the best aspects of chemical and digital imaging (e.g., chemical imaging in film-based image capture, digital imaging for image editing and manipulation and image transfer). The challenge is whether it can develop digital capabilities as fast as its rivals and whether it can own technical standards in key stages of the value chain. The biggest problems concern Kodak's ability to adapt its new product development and new product marketing processes from the time-scale of the East Coast chemical industry to that of Silicon Valley. Fast-cycle product development requires Kodak to develop an entrepreneurial, collaborative, risk-seeking culture – a difficult task for a 100-year-old company in Rochester, New York.

Overall Assessment of Kodak's Digital Strategy

The logic and strategic thinking behind the Fisher/Carp approach to developing digital imaging at Kodak are appealing. Kodak's narrowing of its range of projects, its focus upon certain stages of the digital value chain while using alliances to link with leading companies at other stages of the chain, and its differentiated approach to professional and consumer markets make good sense. However, the competition that Kodak faces is daunting. If digital imaging continues to be a major cash drain, and Kodak continues to be battered by Fuji in the market for conventional film, then Kodak could be in for a rough ride. But supposing Kodak is successful in building a leading position in the market for digital products, it could be that the intensity of competition in this market (just look at the number of suppliers of digital cameras) could mean that no company in this market makes a good profit. This might lead to a final reconsideration of Kodak's strategy: if Kodak fails to establish competitive advantage in digital imaging, it fails; if Kodak succeeds in building competitive advantage in digital imaging, it still struggles to earn a return on capital in excess of its cost of capital.

If Kodak continues to struggle against the likes of Canon, H-P, and Sony – or even if it is successful in the market, but fails to generate profits from digital photography – it may wish to consider retrenchment. This suggests the need to assess the attractiveness of the different markets in which Kodak is competing. Kodak is earning much better profits in health and commercial than in its primary photography business:

Average operating earning as a % of total assets, 2002–3

Photography	7.7
Health	20.0
Commercial	12.5

If Kodak is to put profitability as its primary goal, ahead of growth and maintaining its vision as remaining one of the world’s leading imaging companies, then it may wish to exit the cut-throat consumer market for digital imaging equipment in favor of health imaging, commercial imaging, and public sector contracts where it is already very strong. In the meantime it could allow its traditional photography business – film, paper, and chemicals – to be a cash cow.

Issues Arising

I finish up the case by raising a number of more general strategic issues. These include:

1. *The structure of organizational capability.* The firm’s capabilities may be considered as a hierarchy. The more specific component capabilities lie at the base, the more complex “architectural” or “meta-capabilities” that link together multiple component capabilities (e.g., new product development capability) lie close to the apex (see figure 5.7 on p. 149 of the Grant textbook). While component capabilities can be acquired and developed relatively easily, architectural capabilities tend to be deeply embedded within a company’s systems, values, and behaviors and tend to be very difficult to develop from scratch. (Look at the way Wal-Mart integrates its IT system, its purchasing capabilities, its warehousing and distribution capabilities, and its in-store management capabilities into a uniquely efficient and responsive system.)
2. *The role of alliances.* Most modern, technology-based products are complex systems in which no single company can dominate the entire value chain (as did Ford in the auto industry or Kodak in traditional photography). A critical issue for companies is to determine which stages of the value chain they will focus upon, which companies they will ally with at other stages, and how they will manage these alliances. Also, accessing other firms’ resources and capabilities itself requires complex and sophisticated management capabilities. Companies whose whole development has involved strategic alliances (e.g., Corning) have developed these collaborative capabilities to a high degree.

Traditionally integrated companies (such as Kodak) are likely to experience more difficulties.

3. *Developing capabilities.* The evidence from a wide range of companies is that a company's distinctive capabilities (or "core competences") are the result of circumstances at the company's foundation or early years of development. Yet, some companies (3M, Sony, Intel, Canon, IBM, EDS) extend existing capabilities and develop new ones. What are the mechanisms through which this can be achieved?
 - *Human resource development.* At the basis of organizational capabilities are the skills of individual capabilities. "Competency modeling" (developed by the Hay Group in particular) has been used by companies to link their human resource policies with their strategic needs through identifying the individual skills and attributes required for different occupations, using such models to select, train, and reward employees.
 - *Product sequencing.* New product development tends to be the engine driving the acquisition of new capabilities. This requires that new product policies are used as instruments of capability of development. Typically this means looking not just at individual products but at trajectories of new product development in which each product provides a capability foundation for launching the next product. Intel's sequence of micro-processors from the original 8086 through the 486 and subsequent Pentium range is a classic example. 3M may also be viewed as pursuing a sequence of products from sandpaper and adhesive tapes to a range of adhesive products and thin-film technologies. Similarly, Sony pursued its range of video products from the failure of its Betamax VCR system to a range of highly successful camcorders and digital-based video-recording products.
 - *Experimental units.* If core capabilities represent core rigidities, a company may be forced to develop new capabilities within an organizationally separate unit. Thus, IBM's highly successful PC unit was established far away from IBM's New York headquarters, while General Motors established its Saturn unit far away from Detroit in order to create a wholly new approach to developing, manufacturing, and marketing cars. The problem of such units is in reintegrating the new capabilities back within the main body of the firm. GM has had limited success with importing the learning from Saturn into its established auto business; the innovations from Xerox's brilliantly successful Palo Alto Research Center flowed more readily to Apple Computer, H-P, and Microsoft than back to Xerox's East Coast businesses.

CASE UPDATE

To update the information on Eastman Kodak, see the company's web site: www.kodak.com.