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Snapshot of a humbled giant

By Andrew Hill

Kodak's headquarters in Rochester, upstate New York

When, one sunny weekend in July 2007, Eastman Kodak demolished Buildings 9 and 23 – disused facilities in "Kodak Park" near the US group's headquarters in Rochester, upstate New York – the local newspaper, the Democrat & Chronicle, covered the story with a mixture of excitement ("Kaboom!" ran one headline) and nostalgia. "You were only steel, concrete and bricks, but you housed a significant part of Eastman Kodak's intellectual property, its engineers, its skilled trades people, Kodak's manufacturing intellect," wrote Kenneth Budinski, a metallurgist who had worked in Building 23 for 38 years, in a letter to the paper.

It was an illustration of the change ripping through the traditional photography market the company had dominated for more than a century. As teary-eyed retired employees talked of their sadness at the end of an era, they took pictures and video of the buildings' demolition – with their digital cameras.

Antonio Pérez, Kodak's chief executive, likes to point out the irony of that scene to those who start lamenting the group's missed opportunities, or even accuse him of accelerating its decline. He has heard a lot of laments and accusations. In his quest to give Kodak a future in more promising markets, he has moved it away from retail consumers, exploited its digital-imaging patents and developed its commercial printing business. But in the first phase of restructuring up to 2007, he also had to axe 13 Kodak factories, 47,000 jobs and about 130 processing labs. In January, overburdened with the legacy costs of its industrial past, Kodak filed for Chapter 11 bankruptcy protection. The reaction of US strategy expert Gary Hamel, who in 1992 praised Kodak for creating "stored energy" for the future, is typical. Asked recently how he explained Kodak's decline, he said: "It was denial. It was just denial."

But current and former Kodak executives and directors interviewed for this article claim such a simplistic interpretation of the group's recent trajectory – that its managers simply did not see digital technology coming and, when they did, turned a blind eye to its importance – is wrong. People in the group predicted the transition of its historical imaging business from analogue to digital, described by one former executive as an "oncoming freight train", and started preparing for it as early as the mid-1970s.

The bigger question is why Kodak was unable, or unwilling, to jump on to the digital train – or at least dodge out of its path.

A history of innovation

George Eastman, Kodak's founder and one of the greatest entrepreneurs and inventors in industrial history, understood the value of intellectual property. He developed the emulsion and coating apparatus that underpinned the company's photographic dominance and did everything he could to protect his inventions with patents.

But in the 1890s, having come up with the affordable combination of roll-film and camera that democratised photography, he realised – as business historian Richard Tedlow has written – that to maintain leadership, he needed to "turn his company into a moving target".

Eastman wrote that he wanted his business to be able to create "a rapid succession of changes and improvements ... If we can get out improved goods every year nobody will be able to follow us and compete with us. The only way to compete with us will be to get out original goods the same as we do."

Kodak innovated successfully on the back of Eastman's original scientific breakthroughs for more than 100 years. But as the potential

Inventors George Eastman (left) and Thomas Edison announcing the first Kodak colour movie film

disruption of electronic and digital technologies became clear in the 1980s and 1990s, Kodak's board, top management and investors maintained their focus on the traditional photography business. That was understandable. Kodak had a technological lead, backed by those patents. The competition, from rivals such as Japan's Fujifilm, the German-Belgian group Agfa-Gevaert and Britain's Ilford Photo, was eating into its dominant position. But as Kodak's official regulatory filings continued to emphasise through the 1990s, the group's products and services "competed with similar products and services of others". Crucially, the gross margins on the traditional photography process – from roll-film sales to photographic paper – remained, in the words of one former executive, "luxurious", estimated at 75 per cent or more, and apparently reliable. It was only as late as 1999 that Kodak's roll-film sales peaked.

They saw what was coming …

The contrast with the market and technology for digital photography, particularly in the consumer area, was stark. Margins there were lower, competitors more numerous, and the pace of change frenetic and harder to forecast. Frank Sklarsky, who joined Kodak from outside the industry in 2006 and served as chief financial officer under Mr Pérez until moving to Tyco International in 2010, says: "Kodak's core competence was in chemistry-based, continuous flow manufacturing; the digital business is very different: product transitions are much quicker."

According to former employees, however, Kodak had not been shirking its duty to look into the future. In 1975, for instance, Kodak employee Steven Sasson invented a crude, "toaster-sized" digital camera – producing 0.01 megapixel images. In 1979, the company put together a graphic timeline laying out roughly when Kodak's customers would make the transition to digital imaging, starting with government clients, moving through graphic businesses and ending, in about 2010, with retail consumers. In 1991, the group drew up a digital strategy which led it three years later to develop a digital camera – though it kept its brand off the device – with Apple, the company whose mould-breaking products would help accelerate the analogue decline a decade later.

Meanwhile, Kodak also launched "hybrid" products such as the photo CD and the standalone Picture Maker retail photo-printing kiosk. Even the potential threat from camera-enabled mobile phones was "war-gamed" by Kodak executives in the early 2000s.

But while these efforts yielded many of the patents Mr Pérez believes could yet be

Kodak's salvation, they sucked in investment for little return. Until the early 2000s, Kodak's leaders judged that digital initiatives would probably continue to complement the hugely cash-generative roll-film business rather than disrupt the whole image-making process.

Bob LaPerle, who led teams assessing the impact of digital technologies in the early 1990s, says the board missed an opportunity when it replaced chief executive Colby Chandler in 1990 with Kay Whitmore, a relatively conservative 33-year veteran of the group. "From the time [the digital strategy] was published, we really had a hard time getting it approved by Kay Whitmore," he says.

The blind spot was not his downfall – indeed, another person close to the company at the time recalls discussing the electronic future with the board under Whitmore. Kodak had suffered a series of restructuring charges, its early diversification into healthcare had faltered, and even the core photographic business appeared to be stagnating. So when the directors decided to oust Whitmore (who died in 2004), they belatedly took the opportunity to appoint a technology expert – George Fisher, who had earned plaudits as chief executive of Motorola, then riding high as one of the most innovative US electronics companies.

... but not the pace of change

Rick Braddock, a Kodak director since 1987, whose career spans Wall Street, online retailing and private equity, recalls that "the mindset of the company was ready for the challenge: it was 'Batten down the hatches'. We sold the healthcare business and we started the process of developing a digital response. But the way the market shifted was dramatically faster than we had anticipated or than I'd ever seen".

Willy Shih was president of Kodak's consumer digital unit from 1997 to 2005 and is now a management professor at Harvard Business School. He says that when he joined the company, "people like George Fisher [then chief executive] and Dan Carp [who succeeded Mr Fisher in 1999] absolutely knew that this was coming. They completely had their heads around a lot of the issues that went with that, including the lower gross margin, the different competitive environment, the very high barriers to entry in film, whereas there are no barriers to entry in digital. These guys weren't stupid; they understood that, they understood it very well."

But the image the company presented in its regular filings to the financial regulator and shareholders from the early 1990s changed only gradually. Apple's QuickTake 100 digital camera – the one developed with Kodak – was no secret, but the first time the company mentioned explicitly in its official filings that it had "developed [consumer] digital camera systems which do not use silver halide film technology" was in the 1997 report –

three years after the QuickTake. The company only embarked on a radical rewriting of what it did in its 2000 annual report, when it put itself at the centre of "infoimaging"– a $225bn industry that included digital hardware, software and online services.

Defenders say the official coyness up to this point reflected two realities of the market in the 1990s. First, Kodak did not want to reveal its hand to competitors. Second, it did not want to bet too publicly against its traditional consumer film business, until it could point to stronger profits from its longer-term investment in digital.

Burdened by its legacy

Mr Fisher and his successors declined to comment for this series. But one former executive who joined Kodak in the 1990s claims Mr Fisher believed digital products would merely substitute for their analogue counterparts, rather than disrupt the whole image-making process.

Prof Shih points out, however, that Mr Fisher, Mr Carp and their senior executives believed they had a duty to "maximise how much you could earn out of the traditional business". In addition – a point easily forgotten in a world of eight-megapixel cameraphones and 100Mb download speeds – Kodak could not exploit the full potential for consumer digital photography until high-speed internet access was rolled out more widely round the turn of the century.

Wall Street applied another brake to Kodak's digital evolution. Mary Benner, associate professor at the University of Minnesota's Carlson School of Management, has studied equity analysts' reactions to the strategies of companies facing radical technological change in the newspaper, telecoms and photographic sectors. She concluded they were "more attentive and positive" towards those companies that tried to extend and preserve the old technology. One analyst in 1994 referred to Kodak "squandering" investors' money on "digital nonsense".

Even five years later, when they were more positive about digital strategies, analysts continued to warn about the potential cannibalisation of the film business. "[Kodak] was stuck on film and Wall Street was doing nothing to discourage it," says Prof Benner.

Far from being the "moving target" George Eastman had hoped to create, Kodak was in danger of becoming a sitting duck.

PART TWO *On Thursday, Andrew Hill examines what Kodak could have done differently, the group's future and lessons for other companies*

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A victim of its own success

By Andrew Hill

A different image: days before filing for bankruptcy, the group put on a brave face at the Consumer Electronics Show

Most businesses have a breeze running through them," says one person closely involved with Eastman Kodak for the past quarter-century, "but here, it was a monster hurricane."

Nobody doubts the magnitude of the change that the photographic group has faced. The speed with which Kodak's core market for traditional silver halide roll-film has collapsed over the past 10 years is blistering.

However, one compelling theory is it was not the speedy pace of the transition that undermined Kodak, which filed for Chapter 11 bankruptcy protection in January, but the fact that it was drawn out over decades. In other words, Kodak first pioneered digital technologies in the 1970s and 1980s but, until relatively recently, the urgency of the challenge was never quite sharp enough to persuade its employees, investors and executives that it had to overhaul – or even sacrifice – time-honoured ways of doing business.

Obstacles to change

In 2000, with Wall Street sceptical about the promise of digital photography, Kodak was still searching for a way to bridge the gulf between its dominance of the highly profitable roll-film business and a lower-margin, highly competitive digital future. Successive chief executives talked up the opportunities, but each failed to break down the structural, cultural and strategic obstacles to change.

For instance, even as online photo-sharing took off around the turn of the century, Kodak found its ambitions hobbled by the need to preserve established customer relationships. In 2001, Kodak bought Ofoto.com, one of the upstart image-sharing sites, which later became the basis for its Kodak Gallery online service. But Bob LaPerle, who worked on the Kodak.com site from 2000 to 2005, claims clients such as US pharmacy chains threatened to drop Kodak products in favour of archrival Fujifilm, if the group marketed its online gallery aggressively. “They were quite specific,” he claims. “If [we] put the Kodak brand on [our] consumer website and it competed directly with [their] film and photofinishing business . . . they would shift to Fuji. They made that very clear.” Ofoto was fully rebranded as Kodak only in 2005.

External dependence on customers for Kodak’s “consumables” was matched by internal divisions between analogue and digital teams. One former Kodak executive, hired in the 1990s to help bring the company into the digital era, says: “I couldn’t get anywhere without running into the consumer product or professional division selling film or paper – and every time I wanted to make a move, they would argue that I was destroying margin and destroying value.”

This structure was buttressed by what Willy Shih, a former head of Kodak’s consumer digital division, calls an “entitlement culture” among some long-serving employees, who had become used to the benevolent legacy of pension, health and other benefits instituted by Kodak founder George Eastman.

The company’s dominance of the sector and confidence in its brand and marketing also led it to rest on its strategic laurels. Fujifilm of Japan had successfully dented Kodak’s roll-film dominance in the 1980s. In the 1990s, Fuji was forced to diversify simply in order to achieve the scale to compete with Kodak. It used its film expertise to create components for flat-panel LCD screens, for instance, and when the consumer film market finally dropped off the cliff-edge, these other businesses cushioned Fuji’s fall.

Giving Kodak a new focus

By the time Antonio Pérez took over as chief executive in 2005, divisions within the company had started to break down. Frank Sklarsky, chief financial officer from 2006 to 2010, says “over time, people started working together very, very well. We became a more collaborative culture and people reached a deep understanding that the traditional business did have to be a funding source of the digital business”.

By this stage, however, it was more than 10 years since George Fisher, CEO from 1993 to

1999, had set out to change Kodak's mindset. What had been a nagging worry had become a crisis acute enough to force real change.

Mr Pérez continued to reduce the industrial "footprint" of the group, cutting costs in line with the decline in the market. But, as the most profitable business disappeared, so the company took, in the words of one person close to top management, "a double-hit" as margins and sales fell, exacerbated by the 2008 financial crisis and recession. The group spent $3.4bn restructuring itself between 2004 and 2007, but early retirements and the post-crisis low interest rates increased the weight on the company of its generous pension and benefit systems.

How others refocused their future – or not

Corporate successes
- **Intel** Dynamic random access memory (DRAM) to microprocessors
- **IBM** Computer hardware to software and technology services
- **Nokia** Timber and tyres to mobile telecoms (1990s)

Corporate challenges
- **Yahoo** Search and online content to social networking
- **Blockbuster** Video rental stores to delivery and downloads
- **Sony** Standalone devices to digital content and networks
- **Nokia** Cellphones to smartphones (2000s)

Industry struggles
- **Newspapers** Print to online news and advertising
- **Recorded music** Compact discs to downloads
- **Publishing** Hardbacks and paperbacks to e-books

Fans of Mr Pérez say he has a particular talent for identifying the potential in Kodak's patent portfolio, which had previously been used mainly to support the core business. The former Hewlett-Packard executive used patents to seed innovation in the printer market and to generate income in their own right.

Critics hold him responsible for speeding up the decline of the company's roll-film sales and pushing Kodak down a route of intense, possibly futile competition in the printer market.

Either way, the strategy could not avert bankruptcy. Under the shelter of Chapter 11, Kodak says it can lighten its legacy burden, bring in added financing, and clear the way for more sales of intellectual property and non-core businesses.

Even if Mr Pérez succeeds in dragging the group back to prosperity, the "new Kodak" will look quite different from the company that, as recently as 1994, made the top 20 of the Fortune 500. The group itself now aims to "exploit the competitive advantage at the intersection of materials science and digital imaging science".

Larry Matteson, who in 1979 drew up a timeline laying out Kodak's likely digital transition, left the group in 1991. Having watched his forecasts unroll from a position as professor of business administration at Rochester's Simon Graduate School of Business, he says: "I can't think of another major company in the US that has undergone as tough a transformational problem as Kodak. When IBM changed, its core capabilities remained essentially the same; in Kodak, everything changed, right through research labs, to marketing, to sales."

Even so, it is possible to write several alternative histories. Kodak could have hung on to Eastman Chemical, which was spun off in 1994 and is still a thriving chemicals, fibres and plastics manufacturer, and kept an insurance policy against the prospect of wrenching change in photography. It could have built a parallel digital operation. It could have cut costs faster or licensed its intellectual property sooner. It could even have tried to stay off the digital train altogether.

This, however, is hindsight. At the time, all these alternative options would have involved other sacrifices and risks, many unacceptable to the board or the shareholders.

"I don't think we made a wrong directional decision," says the person who identified the "monster hurricane". But he admits: "There may have been points where we didn't pursue the directional decisions with vigour."

Lessons for others

What can today's market leaders learn from the humbling of the empire Eastman created, under executives who saw what was coming next but still could not adapt? Companies such as Apple, Google, Amazon, or Samsung may never groan under the same burden of guaranteed benefits as old Kodak. Most boast, for now, more flexible, flatter hierarchies than their 20th century industrial counterparts. The rapid and constant changes in their technologies should foster an attitude of preparedness.

Still, their directors ought to keep asking themselves this question: what is our Kodak moment, and how can we avoid it?

This article is the second of a two-part series on Kodak. For the first, click here