
ENGINES OF PROGRESS: DESIGNING AND RUNNING ENTREPRENEURIAL VEHICLES IN ESTABLISHED COMPANIES; THE NEW VENTURE PROCESS AT EASTMAN KODAK, 1983–1989

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INTRODUCTION

The literature on innovation and new ventures has focused on the success or failure of the venture itself, even in the corporate setting. Characteristics of the organization surrounding the venture have been viewed largely as a backdrop or context for the venture, influencing its ability to succeed and the likelihood of adoption of its output by the established organization. This research takes a different perspective, that of the established corporation that is seeking to develop new business streams (“newstreams”—Kanter, 1989) while still continuing “mainstream” operations. Whether the particular venture or newstream project succeeds or fails at meeting its own goals for developing a successful project is only one measure of success; the other is whether the venture process represents an effective deployment of organizational resources (financial and human) in light of alternative uses and in light of the ways that the very existence of newstream projects impact on mainstream organizational efforts and activities.

Thus, between 1986 and 1987, a Harvard Business School Research Team studied eight corporate venturing programs in depth, covering companies in a large range of industries and with strikingly different kinds of entrepreneurial vehicles. The focus was on the entre-

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preneurial vehicles themselves—how companies organize to find, nurture, and use newstream activities. The eight sites were selected to maximize differences in strategic intent, and these initial differences in goals and strategy were then reflected in operational differences—such as the linkages between newstream and mainstream organizations—as well as in the payoff to the companies involved.

The issue of strategic intent is central, since companies establish entrepreneurial vehicles—mechanisms for newstream development—for highly varied reasons, sometimes unrelated to corporate business strategy (e.g., to hold potential entrepreneurs, to serve as role models for corporate culture change). In the case of technology-based companies like Eastman Kodak, the entrepreneurial vehicle may be stimulated by the push of new technology possibilities as much as the pull of business development strategy—that is, as a way to capture and exploit new ideas.

New venture units represent one attempt to bridge the technology strategy/business strategy gap. Established companies may lag in innovation because their technology development and business strategies are unconnected. Until recently, as Horwitch and Sakakibara (1986) point out, the fields of technology and strategy have been studied and managed as separate areas. Furthermore, the transfer of technology from researchers to commercializers has often been a slow process; Pake (1986) was proud of the fact that Xerox managed to move from research inception to product appearance in an average of 6.9 years—hardly speedy—with more time passing before the product became profitable.

If entrepreneurial vehicles represent a way to capture new ideas and turn them into business possibilities, then it is important to examine the connection between the newstream projects and the mainstream business organization. This is not generally done in the entrepreneurship literature (with a few exceptions, e.g., Burgelman and Sayles 1986). Instead, the perspective is generally that of the *venture*—what helps the *venture* do its work—and not that of the corporate parent—what use of resources best helps the company to get the right balance between innovation and mainstream success. The corporate parent is often seen as a necessary nuisance, more likely to hinder than help. While acknowledging that the established organization can provide a new venture with assets such as capital, people, brand names, market position, or distribution, many scholars of entrepreneurship still see more negative than positive influences coming from the mainstream to the newstream. For example, this view is typical:

For the manager of entrepreneurial processes in the established firm, the challenge is often less in terms of defining or structuring the task than in making sure slack or potential space exists within which the task can emerge and define itself. In many cases the would-be entrepreneur in the established environment must literally wrest control of the new enterprise from the organization. Another stratagem involves hiding out—going underground until the idea is too firmly planted to be in danger of being uprooted by hostile or competitive organizational forces. The terminology used to describe the internal entrepreneurial process bears testimony to its countercultural flavor: skunkworks, bootlegging, garage (Kao 1989, p. 399).

The evolution of the innovation and new venture development process at Eastman Kodak provides an opportunity to examine a classic new venture department struggling with issues of connection to or distance from the mainstream organization.

THE NEW VENTURE PROCESS AT EASTMAN KODAK, 1983–1989

Since its founding in the 1880s, the Eastman Kodak Company has been a dominant figure in the photographic supplies and photofinishing industry. But in the early 1980s Kodak

suffered financial setbacks, and by 1984 the giant appeared to be in a vulnerable position in the very markets that it had dominated for over 100 years. Kodak's leadership recognized the fact that it had to offset stagnant revenues and sagging earnings by recapturing a solid market position in its traditional photo business, as well as making progress in new, faster-growing lines of business. Kodak could no longer afford its ultra-conservative, 15-year product evaluation and development cycle.

New leadership in 1983 brought a renewed concern for product innovation and responsiveness to market demands. Their approach was to streamline, diversify, optimize internal and external synergies, and promote employee entrepreneurship. They overhauled internal operations as well as launched a broad corporate development program that eventually contributed to improved financial performance for Kodak through the period of the study, although the acquisition of Sterling Drugs was hard to digest and progress slowed in 1989.

Chairman and CEO Colby Chandler and President Kay R. Whitmore made changing Kodak's culture a top priority. Promoting employee involvement within the company had been facilitated by a series of restructurings. With shortened communication lines, managers were already more accountable for business unit operations. The new structure discouraged the "check with" mentality that promoted delaying action to consult with superiors.

The decision to delegate authority sent a clear signal throughout the organization that it was acceptable for "the buck" to stop at lower and middle managerial positions. The fact that small decisions no longer percolated to the top—the vice chairman no longer took responsibility for minor entertainment decisions—encouraged more initiative and decision-making below the top management ranks. For example, within the bio-products division, employees and management worked out directions for future growth and improvement at monthly pizza lunches.

Top management hoped employees would seek ways to improve the product on which they worked or the operational process with which they worked. In 1987, Whitmore asked every employee to make an effort to improve quality; one customer service operator vowed to answer her telephone on the first ring—last heard, she was up to 37,000 calls in a row that were picked up on the first ring. The success rate for making a perfect five-mile-long roll of photographic paper jumped from 66% in 1985 to 99% in 1987. Top management strengthened support for the quality drive by investing in state-of-the-art machinery.

The top executive team wanted to make Kodak "venture operative" and championed the establishment of a program that would help release an entrepreneurial spirit throughout the company and would contribute to the development of new and improved products. In order to nurture ideas that did not fall within traditional lines of business, Chandler, Whitmore, and Samper allotted approximately 1% of the total investment in R&D and capital for "new ventures," which included the innovation venture process, acquisitions, equity investments, and a new business development process. Thus, a budget earmarked for entrepreneurship fueled the growth of new venture activity within the company, demonstrating top management commitment through a stable allocation of funds (e.g., Alterowitz 1988).

The Evolution of the New Venture Process

The venture process grew out of Kodak's long-standing Research Proposal System (RPS), a program designed to encourage new product development among scientists and engineers. Employees submitted a formal RPS proposal that was immediately reviewed by top management. Under this system, some viable ideas were rejected too quickly because top management received proposals that had not been well refined. But one manager had a better track record, and his process was examined with interest. The RPS system was better at

TABLE 1 Number of Ideas Submitted to OIs, 1979–1988

Year	No. of ideas
1979	30
1980	66
1981	79
1982	126
1983	183
1984	375
1985	599
1986	938
1987	781
1988	720

soliciting usable ideas because it relied upon “innovation facilitators” to assist aspiring entrepreneurs. The innovation facilitators, forming an Office of Innovation, acted as internal consultants who offered candid advice for improvement and helped people with ideas to get connected to the resources they needed.

Since its inception in 1979, the Office of Innovation (OI) model spread throughout Kodak and top management backed the expansion of the OI network. By September 1985, six OIs existed in the United States, Europe and Australia. By May 1987, 20 Kodak OIs dotted the globe. In January 1989, 17 were still in operation. All offices were linked by a computer network and an electronic mail system that facilitated communication and coordinated innovation planning. Each OI office was staffed by a dedicated facilitator and an assistant. The offices were open to employees from all areas of the company.

The number of ideas generated since the inception of the OIs increased exponentially (see Table 1). Among the ideas submitted through this process were several that represented major new revenue streams for Kodak. Trim Print film was a product that would have been “deadpanned,” to use the Kodak term, had the OI system not existed. Resembling a peelable instant film that Kodak had unsuccessfully marketed in the past, the innovative Trim Print idea was rejected by the corporate new ideas process. The inventor, resolute in his conviction that the product would appeal to consumers, continued to push his idea and eventually ended up in an OI. Believing that people who were unfamiliar with the past product might look at the proposal differently, the OI director circulated the employee proposal to Kodak employees outside of the R&D laboratory. He soon learned that someone in marketing really liked the idea. The interested marketing person assumed the role of innovation facilitator and made suggestions for improvement, started to champion the idea, and sent a letter to the laboratory requesting a prototype. Kodak soon launched Trim Print, which became a symbol of the value of the OI network.

But mainstream Kodak business could not incorporate all good ideas suggested to OIs. Thus, in 1983, Dr. Robert Tuite, then an assistant to the director of research, developed a structure that would complement the OIs—the office of New Opportunity Development (NOD). NOD officially became part of the Kodak venture program in 1983 and represented the second level of support for innovative business proposals. As NOD director, Tuite made sure that all ideas emerging from the OIs, ideas that could not find support within existing line businesses, were formulated into strong business proposals and supported by a strong

venture team as well as an interested party in an existing line business, designing the program to take into account many of the success factors identified by researchers (e.g., Burgelman and Sayles 1986; Kanter 1983; Burgelman 1988). Tuite's NOD system gave support to innovators who were trying to turn their ideas into entrepreneurial endeavors outside of a mainstream business. Then, in 1985, Eastman Technologies Inc. (ETI) became a third level in the Kodak venture process, providing incubator support for new internal start-ups that grew out of NOD proposals. Converted to an official operating division in 1985, ETI had formerly been a wholly owned subsidiary that housed Kodak's acquisitions. The venture process evolved in stages then, and was continually changing.

The New Venture Process at Its Height: Fall 1988

The infrastructure that moved opportunistic innovation and new ventures through Eastman Kodak included the OI network, with 33 staff including 17 innovation facilitators; a NOD organization of six New Business Development staff; and the operating unit ETI, with a management staff of nine, which was part of the Diversified Technologies core business group. These three organizations comprised a set of successive tiers that facilitated the development of a vague idea for an innovation into a conceptually sound proposal for a new business. Each tier represented an important step in the evolution of new ventures.

OI Network

The OI network was the bottom-most rung, reaching out aggressively to solicit and nurture new ideas. The OIs told employees that if they had a good idea, they should bring it to the OI and then be prepared to follow through with it. Critical to the mission of the OI network was that an individual *could not* present an idea to the OI and then walk away from it. In order for the innovation process to begin, the person with the idea had to be prepared to commit time and effort to that idea. The OIs differentiated between “ideators”—those people who spin out countless ideas but don't care to execute them—and “originators”—those who formulate an idea and are committed to making that idea work (see “Appendix,” Exhibit 2). Innovation facilitators helped originators to improve their ideas and help access ad hoc support from potential sponsors.

While still performing their regular jobs, originators searched for supporters, conducted feasibility studies, and worked with a facilitator to ensure that manufacturing, marketing, and finance contributed input to help strengthen the project. After this bootlegging phase, originators compiled an Idea Memorandum, a one- or two-page written summary of the proposed project. Idea Memorandums were circulated to individuals within Kodak whom the facilitator hoped might want to sponsor the idea through their operating division. The ideal result of the “bootlegging” process would be that an idea would be adopted by an operating division.

Facilitators played a particularly important role at this stage, since they provided the feedback that originators used as the basis for their decisions about whether to press onward or give up. Facilitators were sought who were extroverted, had good interpersonal skills, and could be counted on to defer judgment. Throughout this stage, the ultimate decision of whether to persist with the project was up to the originator. Originators who submitted a project were guaranteed anonymity—some were afraid their managers would resent their efforts, and they appreciated the opportunity to get feedback on an idea before committing much time to it. Kodak OI supporters claimed that motivated employees were able to manage

their regular job, carry on a special, secret project, and still get excellent performance evaluations. Usually projects did not involve too much extra time or work at their inception—perhaps just one more test for an engineer to do in a series, not setting up a whole new experiment.

Once an originator had garnered the ad hoc resources necessary to support the proposal, the idea turned into a project, and a search for a corporate sponsor officially began. Since the OI goal was to find homes for projects in existing Kodak business units, 80 to 90% of the surviving ideas found champions within the organization. The remaining 10 to 20% of the ideas either did not fit, were not currently attractive to existing business units, or spanned the interests of several existing business units. The role of the OI at this point was to help the current advocate—who may or may not have been the original proponent—determine whether he/she was capable of making the transition from being an idea developer to the builder and manager of a new venture that received seed financing from NOD.

Reactions to the OI process were mixed. One venture manager, who succeeded in going from idea to proposal to authorized venture, remarked that he liked the Kodak process because he was in control—no one could veto his idea except him. Despite negative feedback from an Innovation Facilitator, many originators opted to persist.

But this also resulted in some ideas being kept alive long after there was evidence of their low viability, crowding out better ideas that had to wait their turn in the proposal review process. A former venture manager believed that Kodak's corporate culture of "not wanting to hurt people's feelings," of not having a fine enough screen in place early on in the venture process, weakened the program. He claimed that venture decisions could be made more quickly and with less investment, and believed that it should be all right to make decisions based on intuition and not expend valuable resources getting all the facts down. Such differing views of the OI process were not surprising. The ideas themselves originated in the highly spontaneous manner characteristic of creativity generated unexpectedly by individuals seizing opportunities (Kanter 1983; Peters and Waterman 1982; Pinchot 1985) but were then channeled into a very formal, elaborate, and, some said, bureaucratic proposal and review process.

NOD

Strong ideas without an obvious sponsor proceeded as a last resort to the second tier of the new venture process, NOD. These project proposals had three elements in common:

- They appeared to be attractive business opportunities that had a high degree of technical feasibility but lacked a logical fit with existing business units.
- They were advocated by an originator who was also an entrepreneur with the business acumen to start a new business and was willing to risk job security to do so.
- They had some degree of support from a "strategic sponsor." (Although the strategic sponsor provided no financial backing, the individual agreed to sit on the start-up's board and influences the project as it moved along. If the project succeeded, the strategic sponsor's organization had first dibs at buying back the new venture.)

The strategic sponsor concept was implemented in 1987 as a control tool. NOD hoped to avoid the predicament of funding a project for a few years and then finding out that internal sponsorship no longer existed—that the project had become a white elephant. Since new ventures often suffer when their champions change jobs (Kanter 1989), this was considered a means of ensuring longer-term official support.

At this stage, originators became “venturers.” Ventures never officially joined NOD; rather, they remained in their parent organization, were initially allotted up to 20% of their work day to devote to their venture, and received an initial seed grant of up to \$25,000 to test their project. During this phase, the originator’s mainstream supervisor was not supposed to exercise any judgment over whether or not the time was well spent. Throughout this 80% mainstream/20% newstream stage, normal work rules, reporting relationships, and job expectations applied.

If the project continued to look viable, it could receive additional support for further development. Surviving ventures received further seed funding of up to \$75,000, and the entrepreneur worked with NOD to devise a comprehensive business plan and assemble a formal management team. After this stage, newstream ventures dropped all mainstream reporting relationships and let feedback from NOD, champions, sponsors, and the Venture Board (VB) and an informal Venture Advisory Panel (VAP) guide their progress.

When NOD picked up a budding venture, it helped those who were formulating the idea to establish firmly that an opportunity existed for the now conceptually sound idea. The six-member NOD staff put a major emphasis on market research—understanding industry dynamics and competitive market conditions—and brought the product proposal into alignment with the targeted consumer market. A Venture Advisory Panel (VAP) reviewed the proposals that come out of NOD and offered advice to the aspiring entrepreneurs. The VAP consisted of people throughout the organization, from managers in manufacturing to scientists in R&D. The VAP “inner core,” about a dozen upper-middle managers, met monthly to discuss the due diligence obligations that the venture owed Kodak for its financial support. The 15-member VAP “outer core” served primarily to help guide the venture proposers in the right direction, building bridges within the organization that helped “fight off the corporate immune system”—according to one member. VAP members were selected and served an indeterminate term. Officially the VAP had three major functions:

- To give credibility to the projects and innovation process within the larger Kodak community
- To use members’ contacts to find support and ad hoc resources for the projects
- To provide a panel of functional experts that could supplement the process of establishing “due diligence”

NOD also assisted in the development of a venture management team. Often, the idea originator did not have the skills to manage the project to maturity and NOD helped to fill the vacant general manager position. NOD also fleshed out a venture team as it helped find individuals to fill other strategic positions. Tuite explained that ideas never left NOD the same way they came in. As the ideas got exposed to new sources of information, including feedback from potential customers, the venture team might have changed them completely. Sometimes the original advocate even left the process, leaving the venture team to follow through with the idea.

The venture team worked hard to develop a solid business plan that outlined strategies and operation plans for development, manufacturing and marketing, just as the experts advised (e.g., Freedman 1988; Alterowitz 1988). When a team believed their business plan to be complete, they applied to the VB, a group of eight senior-level Eastman Kodak executives who set policy, guidelines, and criteria. The VB reviewed the business plan as if it were a team of outside venture capitalists. If the VB believed the project to be ready for further development, it would approve an additional post-seed financing of up to \$250,000, which funds prototyping, beta-test marketing, additional business planning, and salaries for

up to four full-time employees. While the VB did not have "veto power," NOD closely followed the board's advice.

VB review served as a final signal to Kodak's existing businesses that the venture project was on the road to becoming a start-up. Managers in existing business units were expected to support the venture and not try to hinder the start-up's progress by introducing competing projects. By this point, the elaborate series of proposal steps and screening reviews, plus the large numbers of mainstream managers that had been involved, made the NOD staff feel confident that they had established appropriate newstream to mainstream links, avoiding the common problem of entrepreneurship detached from business strategy or mainstream support. The VB provided seed monies only to ventures that showed promise for technical and market viability and distinguished themselves from existing corporate operations. Ventures that survived the post-seed stage were funded as independent entities and placed in the third organization, ETI, the Kodak incubator.

ETI

By the time a project came under the jurisdiction of ETI, it was formally a stand-alone company in the ETI portfolio. While in ETI, the venture assembled the personnel and organizational support needed to start up on its own and set up its own headquarters either in rented Kodak office space or in a non-Kodak facility. Once ventures received VB funding, they were essentially "out the door." The mainstream–newstream links that had been essential during the NOD review stage were now *severed*. Ventures had to adhere to the following conditions to ensure that they succeeded or failed on their own:

- Start-ups may not depend on Kodak for manufacturing, sales, marketing, or any other sort of support; they must have alternatives.
- Start-ups may not depend on Kodak for their success, nor can any Kodak unit depend on the start-up for its own success; i.e., start-up failure must not affect the performance of any operating division.
- Kodak will not hold open jobs in the parent company for start-up team members, so that those who leave the mainstream organization to work on a newstream project have to take a financial and career risk.

The president of ETI worked with two portfolio managers to oversee start-up venture operations. The venture portfolio managers worked with the venture presidents to help provide guidance and support and serve as a buffer between the ventures and the parent company in matters of finance, human resources, regulatory, legal and tax, etc. ETI also had its own Director of Financial Planning and Director of Personnel Relations to oversee the portfolio companies. A senior corporate strategist for ventures to be economically successful, they had to be run as harshly as possible, as if they were in a capital market and being run by a cold-blooded venture capitalist.

Ventures were pushed so far out Kodak's door that they could not use the Kodak brand name (the first venture, Ultra Technologies, in the battery business, was an exception). Tuite wanted ventures to be able to survive without the Kodak name. With venture activity so separate from mainstream operations, there were no safety nets for them, and the only way for start-ups to succeed was to be able to turn an almost immediate profit. Thus, there were short-term financial pressures, though experts warned against them (see Burgelman and Sayles 1986).

Additional funding from the parent company was staged over a four- to seven-year period and followed specific risk-reducing milestones. Total funding requests have ranged from a few hundred thousand dollars to as much as \$2 million. Monies came from the internal venture capital pool that Chandler, Whitmore, and Samper created out of 1% set aside of the corporate investments—R&D plus capital. This pool supplied seed funds and paid salaries of Kodak management involved exclusively with managing the venture process. The VB made it clear to venture managers that new venture activity relies on a 25% return on investment for the portfolio in order to evolve into a self-funded branch of the organization. Although aware of the risks of leaving the parent organization, most venture managers embraced the incentive plan that was part of the venture capital model for managing new-stream projects. Between 1984 and 1988, Kodak launched 14 new ventures, brought back two of these, abandoned three others, and kept the remaining nine within the portfolio. Ultra Technologies lithium battery project (initiated in 1984), the Edicon computerized photo imaging system (1985), and the Sayett Technologies LCD overhead projector products (1986), leveraged Kodak's expertise in the production and marketing of photographic chemicals and materials. The Edicon example illustrates the diversity of origins of Kodak ventures.

Edicon Photoimage System was founded by Elena Prokupets and her husband Ruvin, political refugees from the Soviet Union. Elena, Ruvin, and Ted Perkins, an engineer who was a co-worker of Elena's at her first job in a small computer company, developed an idea for a method of shoring high-quality photographs on computer screens. After two years of work, they came up with a good working prototype and a business plan. As they began to search for investors, Elena Prokupets realized that most venture capitalists weren't willing to let the inventors run the company. She couldn't reconcile having developed a product and a strong business plan independent with not being allowed to manage the company in the manner she chose.

Her husband Ruvin was a senior development engineer at Kodak. Ruvin investigated the process at Kodak for internal inventions, and found it to be much less onerous than the traditional venture capital route. Once the proposal had passed through a set of approval cycles, the inventors received seed funding and were encouraged to start their company. The process was much faster and less bureaucratic than they had expected; they approached Kodak in April 1985, gained approval in August, formal support in October and then moved into a building and hired two workers. Elena was the general manager; Ruvin, vice president for R&D; and Perkins, vice president for operations.

Prokupets and her partners oversaw production of the Edicon Photoimage System, a computerized database that allows information and pictures to be quickly recorded, updated, and transmitted from geographically disparate locations. Pictures of faces, fingerprints, or signatures are among the many images that can be stored in the system, images helpful to security agents, police, and bank tellers.

Edicon was an official start-up company in January of 1986, and shipped their first product within a year. By December 1987, they had over \$1 million in sales and in mid-1988 had \$4 million in contracts, and \$2.5 million in revenues. Elena Prokupets believed that Kodak start-ups had the best of both worlds—they could share in the resources of a large corporation while having the freedom and flexibility of a small company.

Sayett Technologies, producer of devices to project computer images on a large screen, was another fast-track venture. Kodak was pleased enough with Sayett's performance that it bought Sayett back in 1987, only two years after the venture had been launched. The idea had started with Bob Jewett, a former Kodak Park engineer who was inspired by a seminar in 1984 where he saw a high-tech presenter using poor overhead slides. He set to work on

an electronic device to project computer images. Soon after Jewett entered the innovation process, Kodak marketing expert Steve Sayles became interested, and within six months the two formed a partnership to pursue Jewett's idea. They shared decision making on everything from engineering to marketing; the name "Say-ett" symbolizes the 50/50 partnership that Sayles and Jewett embarked upon. In late 1984 and early 1985, the two developed a prototype and explored marketing possibilities. By December 1985, they wrote a business plan. In January 1986 they sent a proposal to NOD. By April 1986, NOD had granted them seed funding. After three appearances before the VAP, they won over some supporters and went to the VB where they received funding as Kodak's tenth venture. Sayett was then a legal entity separate from Kodak, setting up headquarters away from the downtown Rochester Kodak complex.

Between January 1986 when Sayett Technology received VB funding, and August 1986 when they started shipping products to customers, the company soared. By the end of 1986, Sayett produced monthly revenues that challenged the combined performance of all the ventures in Kodak's portfolio: in five quarters, Sayett was valued at 11 times the investment required to get it to cash self-sufficiency. Sayett's electronic presentation system that linked the overhead projector to the personal computer was the first company to market such a product, but met stiff competition from seven other companies within a year. Sayett's stellar performance could thus be traced to its timely market entry, an objective Kodak had for all of its new ventures.

In May 1987, Sayett entered a strategic partnership with Kodak's Motion Picture and Audiovisual Production Division (MP & AVPD). Upon seeing Sayett's performance at various trade shows, MP & AVPD hoped to combine its marketing strength with Sayett's technical prowess. Within a year however, marketing channel overlaps developed. It was evident that a cleaner approach was needed to unify their efforts. Consequently, MP & AVPD agreed to acquire Sayett for its equity value and, in mid-1987, Sayett became a separate entity within that division. Jewett and Sayles, the two partners, left Sayett when it was reintegrated with Kodak, and were later recruited to help run another venture, establishing a new career path for entrepreneurial managers.

There were other "successes" among the 14 ventures, but more failures. By 1988, the venture portfolio had been reduced by the attrition of several ventures that had either been terminated or bought out by their founders due to weakening Kodak support. There was also turnover among the ETI and NOD staff, and tightening of controls.

Corporate Objectives for the Innovation and New Venture Process

Kodak's venture process had soft as well as hard objectives, and it is through those soft objectives that Kodak has tried to leverage its venture process investment throughout the company. Dr. Leo J. Thomas, director of the Life Sciences Division and "grandfather" of the new venture process, commented that the venture process was an important catalyst in promoting change and institutionalizing innovation at Kodak.

Tuite and Thomas summarized the soft objectives as follows:

Influence Company Climate

We take away the cozy nest syndrome that characterizes the climate of a big company [secure salaries and attractive bonuses] and convert it into one where we have innovation and entrepreneurs and people who are willing to go out on a limb, take some risks, and really do something.

Institutionalize Innovation

We have institutionalized what used to be a random process. The battery venture generated an enthusiasm throughout the organization and was a signal that Kodak was prepared to deal with new ideas. It caused decision-makers in all units to take ideas more seriously and to keep an ear out for innovative proposals. They recognized that if a project worked out, they would live with its success. Existing units set up mechanisms within their own structure that encouraged the creation of new ideas. If these ideas did not fit with their programs, they have encouraged them to use the venture program as an alternative process.

Provide Attractive Career Alternatives to Current Employees

Think of what it is going to mean from a career development point of view when we offer a person an opportunity to become part of the excitement of a start-up as opposed to being the staid old company man who comes to work at eight and leaves at five every day. You will learn a lot of things that you will not learn in your regular job because you are going to have to be broader and do many things.

Attract Good People to Kodak

We bring people in from outside to work with our teams. The team comes in with a great idea and we look and think these are great guys from an R&D and an operational point of view, but what we really need is a business man and marketing guy. So, we go out looking. We look inside but quite often what we are really looking for is an industry guru. So, we go outside and line up somebody as a consultant to help the team. If that guy is really good, what we would like to do is bring him in and put him on a contract, have him work with us for a while, and if all goes well, make him part of the management team. One of the soft objectives is to try to find entrepreneurs, bring them in, track them, and give them career opportunities so we can retain them.

A top Kodak executive believed that new ventures played a role in enhancing Kodak's ability to compete in a changing marketplace. One of the most attractive virtues of the venture program among venture employees was the opportunity for personal development. Venture managers were not confined to narrow, specialized roles, and they experienced heightened job satisfaction as they got the chance to supervise a myriad of functions and oversee business development from the stages of a precarious infancy to a mature adulthood. Some managers at Kodak hoped that the risk-taking venture managers would become role models for other mainstream employees.

Mainstream-Newstream Tensions

Both mainstream and newstream managers called venturing a dynamic process, admitting that there was always some part of the system that needed further refinement. By 1988, the difficult issues Kodak struggled with included venture manager autonomy, venture manager turnover, venture cash management, evaluation of venture success, reintegration of successful ventures into the mainstream organization, and post-venture career opportunities for successful venture managers.

Several changes challenged venture autonomy—always a difficult question because of the empirical association of greater autonomy with venture success (Siegel et al. 1987). In 1986, NOD required that all ventures have a board of directors that it had approved, a move

that upset many venture managers who had begun under earlier ground rules. Preferring to make decisions autonomously and not to have to report to outside parties, some venture managers began to feel trapped within the evolving venture structure. In 1987, the ETI director appointed two portfolio managers to serve on the ETI staff and monitor start-up venture progress, a move that also frustrated some venture managers who relished their independence.

Since venture managers yearned for autonomy from the sponsoring parent, some suggested that Kodak place a *team* of managers in charge of a venture to monitor and support each other. Elena Prokupets believed that Edicon fared well because the venture started out with a top team of managers that provided support for each other and divided operating tasks, thus reducing pressure on the president. With Ruvin Prokupets overseeing R&D and Perkins managing operations, Elena Prokupets had time to devote to the unforeseen crises that could cripple any venture that lacked a strong support structure. But Kodak was lukewarm to that idea, and eventually the Prokupets left the company.

Evaluation of venture success was another sore point with the corporate entrepreneurs. Mainstream evaluation procedures applied to newstream ventures, even if they did not accurately judge venture performance. This was a particular problem for ventures reintegrated into the mainstream.

The reintegration issue had come under close scrutiny during the end of 1988. Ventures felt a "need for speed" that the traditional line businesses did not, seeking faster approval and looser controls. But the mainstream organization, for its part, wanted predictable growth and profitability difficult for a fledgling business to achieve. In Sayett's first year of operation as part of the Kodak mainstream, revenues exceeded \$25 million and the unit was profitable. But as competition hit, and the MP & AVPD sought to broaden the product line and develop a stronger technology base, it became increasingly difficult to achieve profitable growth. By early 1989, MP & AVPD announced that it would divest Sayett. Corporate officers claimed that it was possible to acquire a venture, replace top management, and make the formerly entrepreneurial business work for them. Venture managers were less confident in their assessments, especially after the Sayett experience.

Reintegration of successful venture managers into the mainstream structure was another issue with which Kodak had to grapple. The consensus among new venture entrepreneurs was that their career prospects were uncertain once they had been managers of successful start-ups. The organization had to figure out how to reintegrate people who presided over their own businesses into the ranks of middle management.

Such tensions joined with mounting financial pressures at Kodak, including difficulties with the integration of, and payback from the major Sterling Drugs acquisition, to lead to a rethinking of the new venture program. By 1990, the originators of the program had left the company to set up consulting practices, a new CEO was appointed who was not the primary sponsor of the program, and the new venture incubator tier was broken up and put under the mainstream divisions.

KODAK'S INNOVATION VENTURE ORGANIZATION AS AN ENTREPRENEURIAL VEHICLE: ISSUES IN PERSPECTIVE

Kodak's venture process represented a modest way to grow the mainstream business through new ventures that could contribute to corporate diversification. But the program was very small in comparison with the size of Kodak, and even the successful lines of business were not able to contribute much. Kodak's management played a dominant role in defining the

newstream strategy, in choosing newstream projects, and in setting the uncertain newstream ventures apart from the stable mainstream lines of business. This isolation ultimately hurt the prospects for entrepreneurship at Kodak. While the OI Network actively promoted employee initiatives and involvement, the newstream venture organization was isolated from established line operations. Thus, cultural impacts were also modest or even negative. The venture process affected the mainstream only modestly, through the OI process.

In terms of idea *generation*, the Kodak program functioned as one of the more dynamic types of vehicles because of how actively it searched for and encouraged new ideas, most of which were immediately applied to improving the mainstream business. With over half of the annual venture staff budget devoted to the OI network, Kodak's venture program invested substantial effort in actively recruiting ideas. The main goal of the OIs was to lower the gate for the originator so that the threshold of personal risk was no greater than it had to be.

The entry process, with supportive Innovation Facilitators and entrepreneur discretion, was generally cited by Kodak employees on both the administrative and entrepreneurial fronts as the strongest part of the new venture program. At the early stage of project development, Kodak's venture screen was very coarse. Because individuals pursued projects on their own time, the innovator decided how much effort to put into an idea and how far to go before giving up. However, the screen narrowed as soon as employees appealed for permission to devote 20% of their workday to the innovative proposal. Of all the ideas that enter the OI network, approximately 10% reached the seed sponsorship stage (which means that the originator was allowed to devote some company time to the project); of that 10%, 10% of those made it through NOD and got seed money; 4% of the total submission reached commercialization (this is roughly equivalent to comparable experience in other companies).

The new venture vehicle itself—NOD and ETI—had adopted elements of Kodak's highly organized bureaucracy and evolved them into what was intended to be a flexible support system for potential innovators. From the OI stage with the Idea Memorandums, to NOD with the VAP and VB approval, to ETI with the set criteria for financing, the innovation venture process operated under a system of checks and balances that protected the mainstream from undue newstream risk and made it clear to those in the mainstream exactly what happened upon entering the newstream. Thus, the well-established, formal infrastructure served as a risk-reducing buffer to the parent company and as clear and concise publicity for the innovation venture process.

Kodak's newstream-supporting infrastructure was originally far more fluid than the larger Kodak organizational structure. Since Tuite tried to keep venturing a dynamic process, the structure had changed in recent years and more controls had been added, from imposing a board of directors on every venture to establishing the portfolio manager positions. A trend towards centralizing control had begun and the NOD stage had become even more similar to Kodak's mainstream bureaucracy.

Overall, newstream and mainstream activities were highly integrated in the early venture stages of entry and screening since newstream projects were not particularly visible to management, did not appear on budgets, and were not part of a formal performance appraisal. However, once granted seed financing, after strong mainstream input, newstream projects were separated dramatically from the mainstream. When a venture left NOD for ETI, newstream and mainstream activity were highly segmented as venture teams were cut off from all Kodak resources and benefits and were forced to move out of Kodak facilities unless they paid rent.

Segmentation of newstream activity was designed to cushion the mainstream organi-

TABLE 2 Problems with Venturing and Solutions that Segmentation Provides

Problems	Solutions
Liability to Kodak's image • "Venturing exposes a less than refined side of the company when inexperienced management teams put the corporate reputation at stake as well as risking liabilities."	Don't let ventures take Kodak name
Liability to customer base • "You can't just walk away from something once you've got customers."	Offer strong support through the NOD infrastructure so that ventures that make it to the ETI start-up stage are strong
Liability to company because of upset ex-employee action	Make it clear that employees sever all ties with the mainstream when they pursue newstream ventures
Liability because some employees may resent "fast-tracking" of successful ventures	Make it clear that venturers risk the financial security Kodak offers once on the "fast track"
Liability because ventures divert management attention from the mainstream	Establish set point at which ventures are officially "out the door"
Liability because ventures siphon off talented people	Bring strong venture performers back into positions where the company can really benefit from their added experience and self-confidence
Liability to Kodak's bottom line • "It is hard to 'know when to hold them—know when to fold them.' "	Scrutinize progress and evaluate potential each time a venture returns for another round of financing

zation from the "Achille's Heels" of internal venturing as found in other companies. Tuite and Thomas mentioned these problems as Achille's Heels of venturing (see Table 2).

ANALYSIS AND CONCLUSIONS

Kodak's program had to deal with a central paradox in corporate entrepreneurship, that of "coordinating independence" (Kao 1989; Kanter 1989). Ultimately, the later tiers of the new venture program (the NOD and ETI tiers) were disbanded, their champions left the company, and newstream efforts were returned to the control of the mainstream operating divisions. The major problem at Kodak was not whether the venture portfolio showed an appropriate set of successes (the track record was rather good by normal standards) but whether the venture process itself was appropriately aligned with Kodak strategy and the Kodak organization. The decision to separate the newstream ventures *completely* (after an idea generation and review process with many close newstream-mainstream ties) proved to be the core problem.

The issue of how much organizational distance would exist between newstream and mainstream has plagued the literature on organizational entrepreneurship. On the one hand, an innovation team is often intentionally isolated from the rest of the organization in order to enhance solidarity and teamwork, minimize distractions, and allow the venture to take its own course unfettered by the shackles of tradition or bureaucracy. IBM's independent

business units were an attempt to provide a local culture for new or emerging products. This isolation was applauded in the 1980s; remote "reservations" or "skunkworks" were considered essential to allow entrepreneurship and innovation to flourish in the established company (Galbraith 1982; Peters and Waterman 1982; Kidder 1981), though some dissented from this prevailing viewpoint (Kanter 1983). But at the same time, innovation *use* required linkage between the new idea and the ongoing system (Schroeder et al. 1989). As the Minnesota Innovation Research Group found:

Group cohesiveness can either foster or thwart organizational effectiveness, depending on how well-integrated the goals of the group are with those of the larger corporation. Indeed, resolving the potential clashes between commitments to the subunit and commitments to the organization constitutes one of the classic dilemmas facing management (Angle 1989; p. 159).

In short, there are many tensions between mainstream and newstream; what is best for the development of new ventures may not be best for the ongoing organization. Creation of an entrepreneurial fast track may subvert a tenure and seniority system, with negative implications for the organization (Kao 1989). Offering greater potential financial rewards to leaders of ventures providing only a trivial contribution to corporate returns can anger and demotivate those in mainstream businesses, as was hinted at in the Kodak case. Therefore, an established corporation must inevitably view a venture process with ambivalence and must also make decisions about overall corporate health that can undermine the success of individual ventures. Furthermore, the fact that innovations unfold unpredictably, with inevitable setbacks and surprises as well as proliferation of additional ideas or problems to be solved (Quinn 1985; Kanter 1983; Schroeder et al 1989) means that peripheral or tangential projects can easily lose support. It is simply not important enough to senior management to authorize all of the other adjustments that would have to be made to keep a peripheral, albeit promising, venture alive.

Thus, corporate entrepreneurship must be viewed from the *corporate* as well as the *entrepreneurship* side in order to assess its viability.

REFERENCES

- Alterowitz, R. 1988. *New Corporate Ventures: How to Make them Work*. New York: John Wiley & Sons.
- Angle, H.L. 1989. Psychology and organizational innovation. In A.H. Van de Ven, H.L. Angle, and M.S. Poole, eds., *Research on the Management of Innovation: The Minnesota Studies*. New York: Ballinger, pp. 135-170.
- Burgelman, R.A. 1988 Strategy making as a social learning process; The case of internal corporate venturing. *Interfaces*, 18,3(May-June):74-85.
- Burgelman, R.A., and Sayles, R.L. 1986. *Inside Corporate Innovation: Strategy, Structure and Managerial Skills*. New York: Free Press.
- Galbraith, Jay. 1982. Designing the innovating organization. *Organizational Dynamics*. 10(Summer):5-25.
- Horwitch, M., and Sakakibara, K. 1986. The changing strategy-technology relationship in technology-based industries: A comparison of the United States and Japan. In R.S. Rosenbloom, ed., *Research on Technological Innovation, Management and Policy, Volume 3*. Greenwich, CT: JAI Press, pp. 83-135.
- Kanter, R.M. 1983. *The Change Masters: Innovation and Entrepreneurship in the American Corporation*. New York: Simon and Schuster.
- Kanter, R.M. 1988. When a thousand flowers bloom: Structural, social and collective conditions for

- innovation in organizations. In *Research in Organizational Behavior, Volume 10*. Greenwich, CT: JAI Press, pp. 169–211.
- Kanter, R.M. 1989. *When Giants Learn to Dance: Mastering the Challenges of Strategy, Management and Careers in the 1990s*. New York: Simon and Schuster.
- Kidder, T. 1981. *The Soul of a New Machine*. Boston: Atlantic, Little Brown.
- Pake, G.E. 1986. From research to innovation at Xerox: A manager's principles and some examples. In R.S. Rosenbloom, ed., *Research on Technological Innovation, Management and Policy Volume 3*. Greenwich, CT: JAI Press, pp. 1–32.
- Peters, T., and Waterman R. 1982. *In Search of Excellence: Lessons from the Best Run American Companies*. New York: Harper and Row.
- Pinchot, G. 1985. *Intrapreneuring: Why You Don't Have to Leave the Corporation to Become an Entrepreneur*. New York: Harper and Row.
- Schroeder, R.G., Van de Ven, A., Scudder, G.D., and Polley, D. 1989. The development of innovation ideas. In A.H. Van de Ven, H.L. Angle, and M.S. Poole, eds., *Research on the Management of Innovation: The Minnesota Studies*. New York: Ballinger, pp. 107–134.
- Van de Ven, A.H., Angle, H.L., and Poole, M.S., eds., 1989. *Research on the Management of Innovation: The Minnesota Studies*. New York: Ballinger.

APPENDIX

Exhibit 1A: Summary of the Innovation Venture Process

Step 1: BOOTLEG PHASE—Office of Innovation Network

“Originators” (people who had ideas and were willing to translate the idea into a business venture) tried to bring their ideas to fruition and find corporate sponsors. OI facilitators counseled originators as they passively gathered information in order to enhance their idea. Specific issues addressed included:

- Whether the project leveraged off or enhanced Kodak's technical, manufacturing, marketing, or distribution operations
- Whether or not there was a strategic fit between the proposal and some aspect of Kodak's business
- Whether or not the project was sufficiently large to justify expending resources (\$2 million in projected annual revenues was used as a hurdle rate)
- Whether or not the idea was marketable
- How not to stifle employees' creative instincts

If no one decided to champion the idea—meaning it was unrelated to existing business—the originator took the proposed project to NOD.

Step 2: SEED PHASE—NOD

The Seed Phase consisted of four parts.

1. *Pre-Seed*: Originators actively transformed ideas into working possibilities by coming up with a business rationale that illustrated technical possibility and marketing appeal.
2. *Early Seed*: In this stage of opportunity analysis, originators were allotted 20% of their work day to devote to their project and received an initial \$25,000 grant. The VAP advised originators.

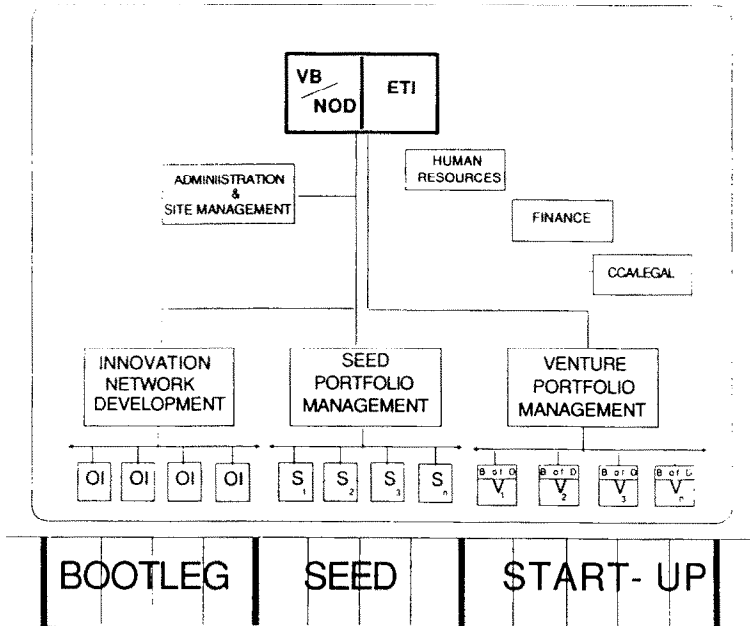
3. *Late Seed*: NOD helped originators design a formal business plan, develop a balanced management team, and allot another \$75,000 grant.
4. *Post Seed*: The management team used a \$250,000 grant to develop a prototype, enter it into a beta-test market, refine the business plan, and select a general manager.

At the end of the Seed Phase, the VB evaluated the project and decided whether or not to award start-up money. If the project was funded, it went into ETI.

Step 3: START-UP PHASE—ETI

Projects were staged as appropriate.

Exhibit 1B: New Venture Organizational Structure



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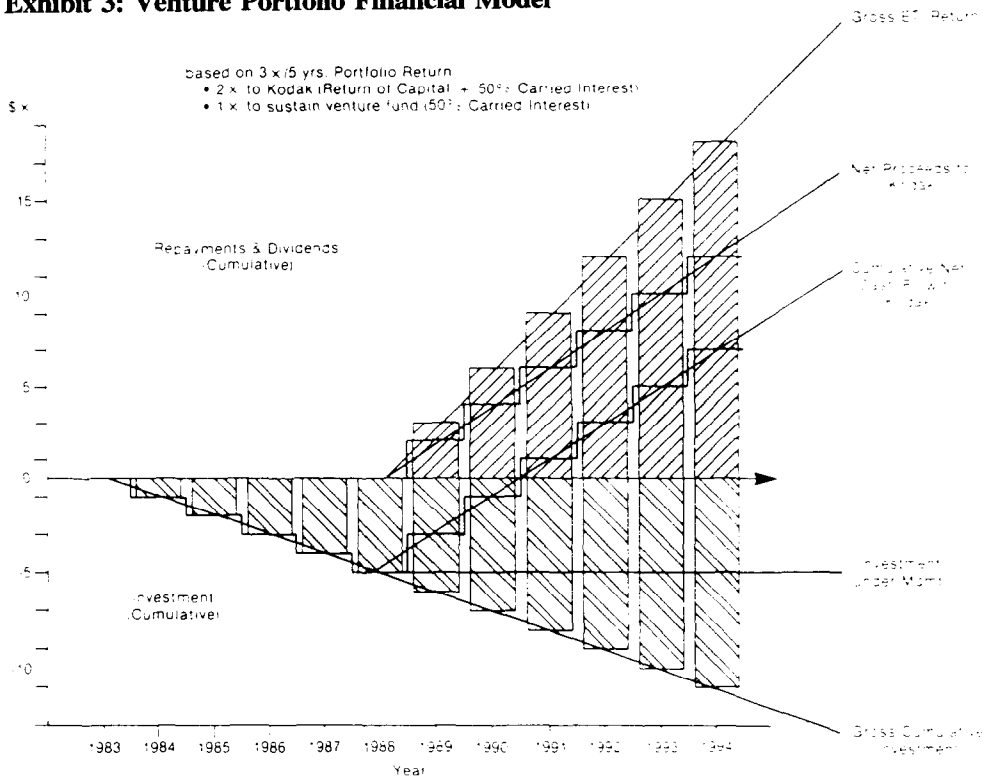
FIGURE 1 New venture organizational structure.

Exhibit 2: Office of Innovation Philosophy

- Ideas are fragile—and so are people
- Ideas are organic and need to be nurtured—and so do people
- All ideas have value and should be given a hearing
- The originator of an idea needs assistance in idea enhancement and in promoting the idea internally
- Only ideas that have been enhanced and have demonstrated potential value will be brought to the attention of management
- Both marketing and technical issues need to be addressed in the development of an idea

- Individuals can benefit from the opportunity to interact with other professionals of different perspectives
- The differences among people constitute a strength, not a weakness
- A mediator is often necessary to facilitate the communication of people from different cultures and who may possess clashing personalities
- The most effective way to proceed is not necessarily the most efficient

Exhibit 3: Venture Portfolio Financial Model



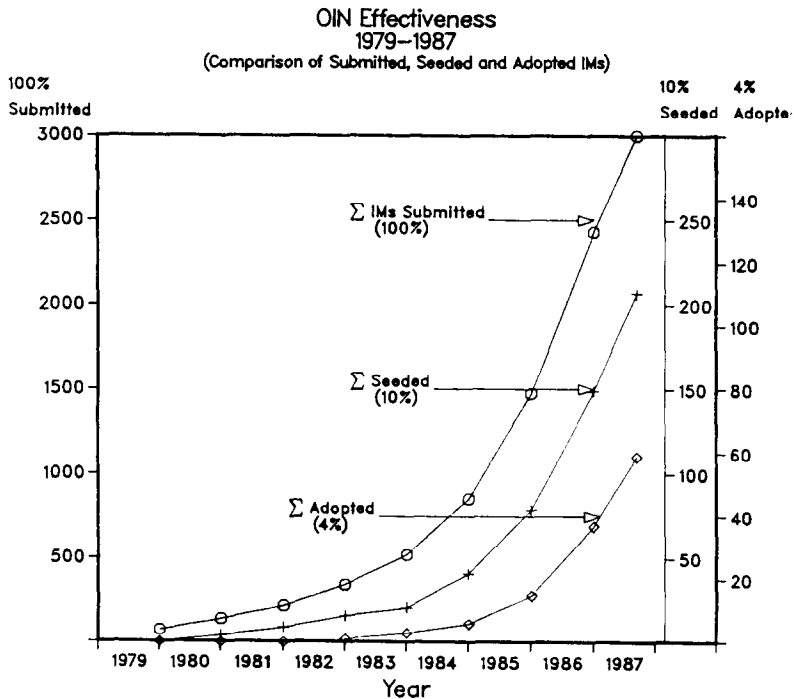
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FIGURE 2 Venture portfolio financial model.

Exhibit 4: Venture Portfolio as of 1987

Year Founded	Company Name	Line of Business	Current Status
1984	Beta Physics	Ultra-thin films	ETI venture
1984	Eastman Communications	Telecommunication software	ETI venture
1984	Ultra Technologies	High-performance batteries	Sold to Kodak in 1986
1984	Videk	Machine vision products	ETI venture
1985	Discus Electronic Training	Electronic training products	ETI venture
1985	Edicon	Computerized photo imaging system	ETI venture
1985	Estek	Integrated circuit wafer cleaning and inspection equipment	ETI venture
1985	Fastek	Membranes and filters	Internal venture
1986	Anastar	Plastic disposable packaging	Abandoned by Kodak in 1987
1986	LVT	Digital color image writer	ETI venture
1986	Sayett Technologies	LCD overhead projector products	Sold to Kodak in 1987
1987	K-Technologies	Process control device	Abandoned by Kodak in 1988
1987	KRS Remote Sensing	Remote sensing	ETI venture
1987	Pattek	Process control devices	ETI venture

Note: As of April 1988, one more venture had been authorized, and the estimated portfolio value was \$150 million.

Exhibit 5: Comparison of Submitted, Seeded, and Adopted Idea Memorandums

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FIGURE 3 Comparison of submitted, seeded, and adopted idea memorandums.

Exhibit 6: Criteria for Using the Venture Route

Normally an idea/proposal will follow a sponsorship and implementation route within an existing organization—either through one of the five operating groups, one of two shared resource groups, or through the R&D organization. However, an alternative venture route is appropriate and desirable at Eastman Kodak when the idea meets the following criteria:

1. The target market or market segment is not currently being served by an existing organization.
2. The business requires functional balance and fast turnaround on decisions—the marketplace is young, amorphous, and dynamic and is characterized by some of the following features:
 - New technology
 - High risk
 - Rapid response time required on pricing, product design, and other decisions
 - The emerging industry has not yet taken clear shape
 - Corporate management is insufficiently knowledgeable or has had inadequate time to attain a reasonable level of comfort with the technology or market
3. The success of the venture is not key to a strategy of any of the operating divisions or any of the divisions of ETI—the damage resulting from failure of the venture will be limited to that venture.
4. The level of commitment required and the nature of the opportunity are such that they lend themselves to a small entrepreneurial start-up, which is characterized by:
 - Limited corporate financial commitment
 - Relatively short-term R&D commitment
 - Minimum incremental start-up capital
 - Early market entry
 - Early positive cash flow
5. The venture must be able to “go it alone” without using the manufacturing or marketing resources of Kodak’s operating divisions and without relying on internal Kodak sales for financial success.
6. The venture is a viable, long-term, stand-alone business characterized by a stream of products launched off a key critical skill or core capability.
7. An entrepreneurial management team must emerge to launch the venture.