

# Lessons from a new ventures program

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In 1970, Exxon Enterprises launched a major new ventures program. I was responsible for initiating that program and for managing it until 1981, when the program's focus shifted to the tasks of consolidation and divestment. At the time I left the program, things had not worked out as I had hoped. In retrospect, I think I have a clear understanding of what went wrong—and of what was needed for success.

Our plan was to make exploratory investments in new ventures operating in emerging markets. We would then accelerate investments that proved to have high potential, spin off the rest, and eventually consolidate ventures with related product lines in promising growth areas. We followed two strategies: the creation of internal ventures and direct investment in venture capital situations.

From 1970 through 1980, we made a total of 37 investments, 19 of which were internal ventures (see *Exhibit 1*). Of the 18 venture-capital-funded companies, Exxon later acquired the 6 most promising.

Financially, the venture capital program was very successful. Total investment in the 12 companies that Exxon Enterprises did not ultimately acquire was \$12 million. By the end of 1982, they had returned—in cash and the value of securities—\$218 million. By contrast, the internal ventures, including those acquired from the venture capital portfolio, though strategically important, did not provide Exxon with a profitable major new business diversification.

My reflections on this experience have taught me some lessons that may be of use to other corporations undertaking an internal ventures program.

Present and projected R&D expenditures for these ventures were quite heavy, and that meant an open-ended drag on future profits. Even where the R&D was successful, we often had to make large additional investments before we could bring products to market. When we sold an optical disk memory venture to Storage Technology Corporation, it was still in the R&D stage. STC then spent more than \$100 million on the program without completing the development work needed for commercialization.

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Of our 19 internal ventures, 13 involved entirely new technologies. Inevitably, then, our search for emerging technologies and early entry opportunities meant facing unproven markets—and greater risk. At best, some ventures would not make sales until four or five years down the road. We had to educate potential customers on how to use the products, and we had to try out applications before we could assess their cost-effectiveness.

Where both technology and market were new, as in computerized speech recognition, the risk was doubled. We made our initial investment in Verbex in 1972 and introduced commercial products several years later. Market development costs exceeded revenues, however, and experience showed us that we needed a lower cost, higher performance technology.

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## Challenges to management

Our internal ventures program was not profitable—in part, because of a heavy R&D orientation and, in part, because of an inability to manage growth.

| Exhibit I<br>37 venture investments |   |    |
|-------------------------------------|---|----|
| 19 internal ventures                | Advanced materials, components, and systems | 7  |
|                                     | Energy conversion and storage systems       | 5  |
|                                     | Information systems and system components   | 7  |
| 18 venture capital investments      | Air pollution control                       | 1  |
|                                     | Health care                                 | 1  |
|                                     | Advanced materials                          | 2  |
|                                     | Energy conversion and storage systems       | 3  |
|                                     | Information systems                         | 11 |

Delphi was a venture we began in 1974 to develop a computer with a parallel processor architecture for use in electronic voice mail. It made ground-breaking technical progress. We killed it, though, because the definable market did not justify the huge added costs we faced to complete development. We were there too soon.

Looking back, I compared the relative financial success of all 37 ventures and found an inverse relationship between venture success and the level of market and technical risk at the time of our investment (see *Exhibit II*). As a statistical analysis indicates, market risk (RM) plus technical risk (RT) account for roughly 45% of the variability in venture success.

The real issue, though, was management. The managers of our internal ventures were usually technical people with limited supervisory experience and little or no marketing or sales experience. Those responsible for venture-capital-funded companies were usually more experienced and knew more about their industries and technologies. For example, the six key managers of Intecom Corporation, our successful digital PBX venture, had all held executive positions in their former companies and averaged 15 years of experience apiece.

As shown in *Exhibit III*, which plots relative financial success against the managerial (XM) and the relevant sales and marketing (XS) experience of venture management, differences in experience affected venture success. Surprisingly, the level of technical experience (XT) showed no meaningful correlation with venture success. The correlation here is higher than in *Exhibit II*: levels of sales and managerial experience account for some 65% of the variability in venture success. Taken together with product risk, differences in experience explain a total of 68% of such variance.

Even when initially successful, however, ventures often succumb to the "second-product syndrome." Its primary symptoms are a poor coordination of marketing and R&D and a belief that the first success proves the wisdom of management and ensures success the next time around.

The first product is usually created by a small, closely knit team that communicates well, has a single goal, faces none of the distractions of maintaining an ongoing business, and does not have to worry about making a prior product obsolete or a new product compatible. By the time of the second product, the original team members are usually managing functional departments and spending most of their time supervising others or solving problems on the existing product line. Communications about the new product grow cumbersome, and committees inevitably spring up.

Moreover, the greater the first product's success, the more convinced managers are of their ability to introduce another winner. Often forgetting why that product did so well, they set out to conquer new markets without doing adequate analysis or getting the required capabilities in place. The corollary, of course, is that they fail to build on the success of their initial product by enhancing it or lowering its cost. Apple Computer, with its follow-on products to the Apple II, is a good example here, as is the IBM entry systems division with its PC Jr.

Two of Exxon's most successful initial products were the Vydec word processor and the Zilog Z-80 microprocessor. Vydec led its industry by designing the first CRT text editor with floppy disk memory and daisy wheel printer—features that are still industry standards. Later upgrades did offer more features, but the next major new product introductions aimed at new market niches and fell many months behind the promised dates.

The base product, which had a broad market, was slow to apply new microprocessor technology that would have significantly reduced costs. Competitors entered the market and pushed Vydec out of its leadership position. Indeed, Vydec fell so far behind in the product development race that it had to resort to the purchase of a third-party design to try to catch up.

The Zilog Z-80, still the leading 8-bit microprocessor, was compatible with its competitive forerunner, the Intel 8080, but more powerful. Thus it enjoyed a ready-made market base, without having to make the investment normally required to support a new processor with software and peripheral chips. Riding this success, Zilog tackled the RAM market and then the design of a 16-bit microprocessor (the Z-8000) to compete with the Intel 8086.

Chip yields on the RAMs were too low to provide acceptable margins. The ensuing management turmoil, combined with efforts to achieve profit-

ability, was partly responsible for inadequate allocation of resources to the development and marketing of the 16-bit microprocessor. Consequently, the Z-8000 never reached a significant commercial market share. Meanwhile, the market potential for an upwardly compatible extension of the Z-80 line went unrecognized. When at last development of the Z-800 began, it received inadequate support and so lost the large market opportunity now partly filled by the Intel 8088, which is used in the IBM PC.

## Changes in the environment

As our ventures grew and required new levels of investment, corporate involvement expanded. Exxon's management procedures and strategic objectives conflicted with the independent start-up environment of the ventures and pushed them toward a more structured, controls-oriented mode of operation. This was perhaps inevitable, but the way it happened hurt the motivation of key people, slowed decision making, and added to venture managers' work loads.

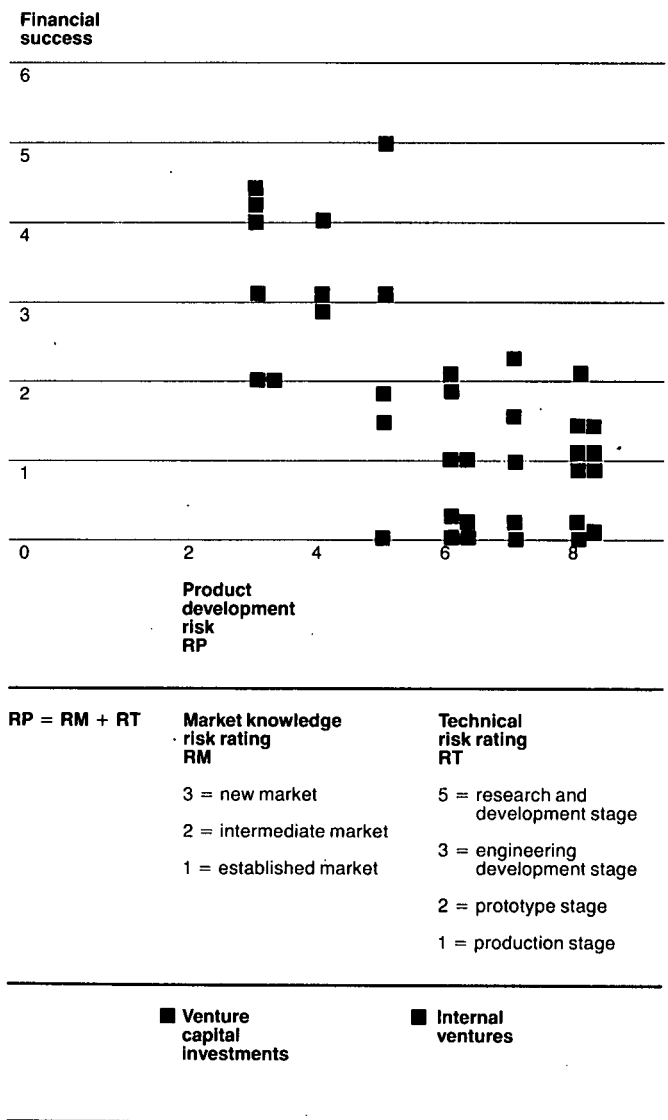
To Exxon's management, multiple ventures with overlapping sales, manufacturing, and engineering organizations appeared inefficient. To the venture managers, especially in the office systems area, requests to coordinate their product design and sales strategies proved unwelcome and easy to resist. The entrepreneurial factors that had originally made the ventures successful began to hinder their operation as an integrated multiproduct organization. In 1981, we joined six of the ventures to form Exxon Office Systems.

My original venture plan had been to grow successful businesses by allowing only the fittest to survive. This approach would test both venture management capability and the commercial viability of the products. We would then either weed out the weak or merge them into the strongest company, where a single management team that had survived the growth phase would carry out needed integration.

Instead, I bowed to pressures for an early consolidation of the office systems ventures in order to achieve efficiencies in product development, manufacturing, and sales. Since no single venture was strong enough to command the respect of the others, we created a new superstructure to which all six ventures were subordinated.

The new management team members had no history of working together. Commitments to goals set by the previous venture managers were put aside because most of the managers no longer had responsibility for the same activities in the new organi-

Exhibit II **Product development risk and venture success**



zation. A number eventually resigned, as did talented product development people, who left for greener pastures when development budgets were cut and programs consolidated. The result: overhead increased, sales fell off, and losses widened.

Failure to meet expectations about profitability is bad enough. Coupled with a high profile in the media, it can quickly undermine chances for recovery. Negative publicity turned potential customers away and made it harder for us to recruit the managers we needed. Also, R&D-based ventures are sufficiently risky without throwing a spotlight on them too soon, as happened with a number of ours.

Increased corporate involvement led, in turn, to more complex management procedures and to a shift in the way managers were held accountable—as well as rewarded—for the results they had forecast.

Corporate review procedures removed decision-making authority from the ventures' boards and moved it up to Exxon staff and committees. Venture managers had to spend extra time and effort bringing Exxon's management up to speed. Although justified by the inexperience of some venture managers, these additional reviews slowed the response to a rapidly changing business environment and distracted attention from venture operations.

Corporate concerns about publicity, image, ethics, legal liabilities, and personnel policies required frequent reports to, and reviews by, corporate staff. Exxon's high profile opened it to spurious lawsuits and complaints that would not have come up in connection with a small, independent company. Because of Exxon's high ethical and legal standards, considerable staff effort went to educate venture personnel on these issues and to review venture contracts and agreements. Worries that a venture's advertising might be misleading or affect another venture or an Exxon affiliate led corporate staff to approve all venture advertising.

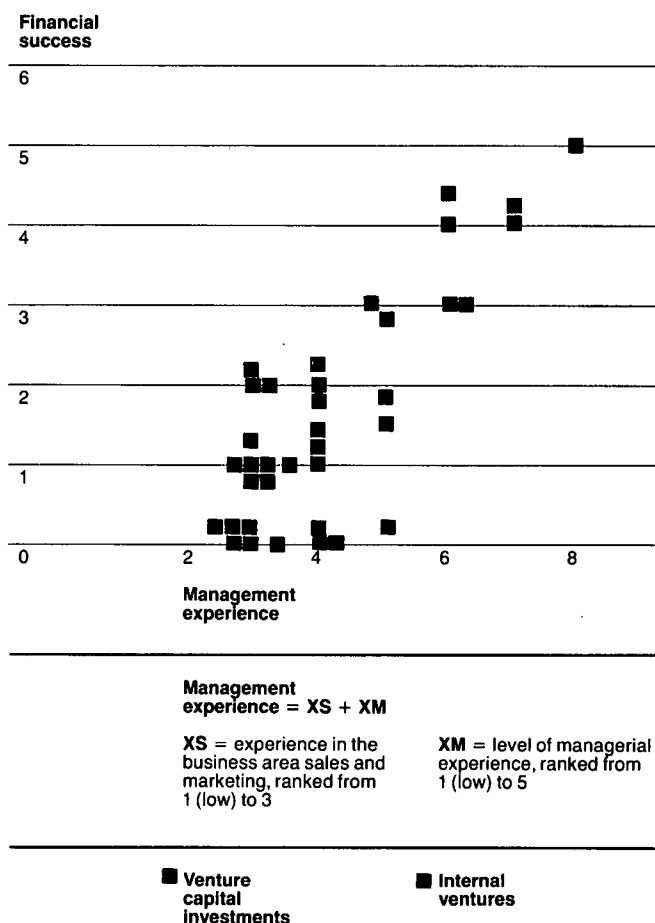
The proliferation of new ventures led as well to a variety of financial reporting formats and MIS systems. In several cases, a venture's sales outgrew its accounting systems and caused serious control problems. To promote overall efficiency and improved control, the ventures were eventually asked to change over to compatible systems and to install additional procedures and personnel. Corporate financial staffs expanded to assist and monitor these activities.

Ensuring and documenting fairness and consistency in rating systems, termination policies, and salary administration proved a time-consuming challenge. Above certain levels, Exxon management approved all starting salaries, salary increases, and performance bonus plans. At the ventures and at headquarters, staffs grew larger.

Considered separately, each of these procedures made good sense. Taken together, however, they imposed on each venture the superstructure of a larger corporation and the burden of frequent reporting to the parent corporation. The whole amounted to less than the sum of its parts. As Don Valentine, a long-time venture capitalist, describes it, this corporate bear hug amounts to "death by a thousand cuts. A little nick here, a little cut there, a little change here—nothing significant. But at the end of a short period of time the people are so driven by controlling and accounting that the environment of nonconventional solutions is lost."

Exxon's ability to fund rapid growth might seem from the outside to be an enviable advantage. In practice, however, it tended to cushion venture managers from concern about profitability, cost control, focused product development, and competitive realities. Although we stressed that a successful venture

### Exhibit III Management experience and venture success



wondered about Exxon's long-term commitment to such small and unfamiliar businesses. Would the company really stay with it?

We could not offer equity participation. Although an equity-like incentive compensation plan did come on stream in 1979 for selected ventures, it was too late and too little. Debate over the valuation of equity when ventures were sold or merged hampered the plan's effectiveness. Any formula that does not rely on a public market to determine value is likely to be controversial.

Further, because we pegged managers' salaries to the size of the activity they ran—and not to future business potential—we could not put experienced senior executives in charge of new internal ventures. If the ventures proved successful, they often outgrew the capabilities of the technical people who started them up.

As the ventures grew, it became apparent that the most important environmental issue was Exxon's inability to provide functional support in the new business areas. For example, the company had no computer-industry-experienced manufacturing or sales executives to fill the holes left when the entrepreneurs departed or proved incapable of managing growth. By contrast, Philip Estridge needed only one month to recruit 150 people from within IBM to staff its new PC small business unit. The first day notices went up about the new unit, 500 IBM employees inquired.

Our Vydec word processor was a pre-emptive product when it came on the market. During the three years it took us to build a nationwide direct marketing organization, Wang, Lanier, IBM, and others moved in with competitive products.

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## Lessons learned

Knowing what I know now, here's what I think I would do differently:

1 Acquire an established company in a new business area. Our original "probe and assess" strategy was sound. We made exploratory investments in new areas to determine their potential and to learn about market opportunities. Once we identified these opportunities, however, we should have acquired an established company. Doing so would have given us profits to offset the losses of our R&D ventures, a source of knowledgeable executives, a more attractive career path for new recruits, and a stronger competitive base from which to launch innovative products. We did not follow this course because we were concerned about antitrust objections.

Had we followed this course, we still would have had management problems. In the information systems area, for example, we would have had to give acquired management real autonomy. Even then, we might have lost those key people who valued their complete independence or those for whom we could not work out acceptable compensation and incentive plans.

There is a larger issue here. If a parent company does not provide some added value, then the purchase is no more than a portfolio investment. The alternative is to return the cash to shareholders to invest. The current wave of corporate "restructurings" has the same effect—returning underutilized asset value to the shareholder. We would have to have shown a better return on dollars used to make an acquisition than used to buy back stock. Management is more likely to add value if an acquired company is functionally close to the parent's base business.

2 Start fewer R&D-oriented ventures. The high proportion of R&D ventures in our portfolio greatly increased our risk of failure and stretched out the time from start-up to projected sales. Because most corporations go through cycles in their base businesses, unprofitable operations not in the mainstream are especially vulnerable. Exxon was no exception. The steep slump in the consumption of oil products and natural gas from 1979 to 1982 caused concern. Along with the cutback in Exxon's base business operations, we either sold or liquidated most of our smaller ventures.

The corollary, of course, is to choose new ventures with a short time span between initial investment and profitability. This will cut out most research-based ventures and eliminate the chance of developing another Xerox or Polaroid. But those are pretty long odds anyway.

Because the initial focus of many of our ventures was on developing new technology, we did not bring experienced, high-level marketing managers on board soon enough to shed light on our assumptions about product features and pricing. It is, however, hard to justify full-time marketing executives during a long R&D phase.

3 Use venture capital investments as the primary "probe" strategy. Venture-capital-funded companies are truly independent operations that can attract and hold experienced managers. The incentive for such people to leave solid careers is that they can make a lot of money through capital gains. The drawback, of course, is that successful independent companies usually do not want to be acquired, at least not before the founders and early investors have taken them public. Still, a minority position in a leading growth company can benefit an established corporation—if there is a real fit like that between IBM and Intel in microcomputers.

### What are the lessons I have learned?

☐ As Exxon's experience shows, if internal venturing is to work, it must be an important main-stream operation. The corporation should focus new venture activities on those areas where it has (or intends to commit the necessary long-term resources to build) relevant operating capabilities and management experience. The internal venture approach can be a quick and effective way to develop new products and markets. At that point, however, the parent's resources in manufacturing, marketing, and sales are needed to capitalize fully on the venture's promise.

☐ It is impossible to preserve completely an independent entrepreneurial environment within a large, multiproduct corporate setting. The principal problems involve equity compensation, product compatibility and coordination, and corporate liability for what ventures do. Venture personnel should understand from the start that they will eventually have to be integrated back into the larger organization if their venture proves successful.

☐ Politically and strategically, longer term R&D projects are more appropriate to support an established business than to initiate a portfolio of diversified businesses. Unless managers of the base business view the new endeavor as critical to the whole company's future, they are not likely to be tolerant of the high risk of failure and the long period of unprofitability that may precede commercialization.

☐ Successful new ventures usually focus on a single product. Successful mature companies must learn to manage the complexities of multiple products, new product introductions that make older products obsolete, and product compatibility.

☐ Management experience in the relevant industry is a significant factor in determining venture success.

☐ A venture environment that encourages resourcefulness is more important than ample financing. ☐

## Learning from imperfections

History is unique and complex. It cannot be reproduced in a flask. Scientists who study history, particularly an ancient and unobservable history not recorded in human or geological chronicles, must use inferential rather than experimental methods. They must examine *modern results* of historical processes and try to reconstruct the path leading from ancestral to contemporary words, organisms, or landforms. Once the path is traced, we may be able to specify the causes that led history to follow this, rather than another, route. But how can we infer pathways from modern results? In particular, how can we be sure that there was a pathway at all? How do we know that a modern result is the product of alteration through history and not an immutable part of a changeless universe?...

Darwin reasoned, if organisms have a history, then ancestral stages should leave *remnants* behind. Remnants of the past that don't make sense in present terms—the useless, the odd, the peculiar, the incongruous—are the signs of history. They supply proof that the world was not made in its present form. When history perfects, it covers its own tracks.

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