INTRAPRENEURING

Why You Don’t Have to Leave the Corporation to Become an Entrepreneur

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CHAPTER 9

The Freedom Factors: Can Intrapreneuring Happen in Your Company?

In any bureaucracy, there are a lot of freedoms—only they don’t tell you about that, you have to find them for yourself.

—Hulki Aldikacti, the Fiero intrapreneur

Before making the commitment to becoming an intrapreneur, you owe it to yourself to take a good look at your organization’s environment for intrapreneuring. There are companies and divisions of companies where the outcome is almost certainly heartbreak and disillusionment, regardless of what you do. In others, it will be possible by hook or by crook to get the freedom you need to try your intraprise with a fair chance of success.

Whatever your circumstances, the freedom factors this book discusses are designed to be used in the following ways:

1. To audit your company’s environment for innovation—to see how supportive it is.

2. To identify the “hills to die on”—the freedoms so necessary that you should stand up for your rights in those areas even if it means risking your ability to continue the intraprise.

3. To give top management guidelines for improving the environment for innovation.
4. To give managers a framework for thinking about their own needs and the tools they can use to create a micro environment for innovation.

5. To give you the tools to argue for these specific freedoms against the powerful rationale of the current systems of overanalysis, overcontrol, and risk avoidance.

In the children's game called "paper, scissors, and stone," two children simultaneously thrust forth a hand in a manner representing either paper (flat hand), scissors (two fingers), or stone (a fist). Stone dulls scissors (i.e., a fist wins over two fingers), paper covers stone, and scissors cut paper.

Long ago, common sense in business was covered by the paper of controls and analytic techniques. The business schools gave powerful justifications to the new apostles of abstraction. Many of today's business tools are used because they sound convincing, not because anyone has proved that they work. They sound convincing because a powerful body of theory has developed to support them. But too often, the theories are half-truths, based on assumptions that squeeze out the imperfections of real life. Unless they are seen in this perspective, many analytical business tools do more harm than good.

The freedom factors of intrapreneuring can serve as scissors that cut away excessive paperwork controls. They are a counterforce to the flawed rationale for eliminating the freedom of intrapreneurs who understand a better way but lack the tools to make management see. The freedom factors are a way of managing, based on looking at the problem from the bottom up, not from the top down. They are derived from considering what the people who actually do the work need in order to get on with their jobs. They are particularly relevant for the people who do the work of innovation and responding to customers. Intrapreneural management will
not replace the now-fashionable analytic method. Rather it should be seen as another piece of the evolving puzzle of how to work together productively and with satisfaction.

The presence or absence of these freedom factors determines how effective intrapreneurs can be in your corporate culture. Sufficient dedication (and a good sponsor) can build a micro climate more supportive of your intrapreneurial career.

Book III is aimed primarily at management, with only occasional asides addressed to the intrapreneur. I have addressed it to management, not only because intrapreneurs need help convincing their managers to support the freedoms they need, but because most managers already know we must find a way to regain the entrepreneurial spirit in large organizations, but may not yet know how to realize that objective.
THE FREEDOM FACTORS

1. Self-selection. Intrapreneurs appoint themselves to their role and receive the corporation's blessing for their self-appointed task. Despite this, some corporations foolishly try to appoint people to carry out an innovation.

   Does your company encourage the self-appointed intrapreneur?

2. No handoffs. When the innovation process involves switching the people working on an idea—that is "handing off" a developing business or product from a committed intrapreneur to whomever is next in line—often someone not as committed as the originator of a project.

   Does your company provide ways for intrapreneurs to stay with their intraprisms?

3. The doer decides. Some organizations push decisions up through a multilevel approval process so the doers and the deciders never even meet.

   Are people in your company permitted to do the job in their own way, or are they constantly stopping to explain their actions and ask for permission?

4. Corporate "slack." Intrapreneurs need discretionary resources to explore and develop new ideas. Some companies give employees the freedom to use a percentage of their time on projects of their own choosing, and set aside funds to explore new ideas when they occur. Others control resources so tightly that nothing is available for the new and unexpected. The result is nothing new.

   Has your company evolved quick and informal ways to access the resources to try new ideas?

5. Ending the home-run philosophy. Today's corporate cultures favor a few well-studied, well-planned attempts to hit a home run. In fact, nobody bats 1000, and it is better to try more times with less careful and expensive preparation for each.

   Has your company developed ways to manage many small and experimental products and businesses?
6. Tolerance of risk, failure, and mistakes. Innovation cannot be achieved without risk and mistakes. Even successful innovation generally begins with blunders and false starts.
   Is your system set up to encourage risk taking and to tolerate mistakes?

7. Patient money. Innovation takes time, even decades, but the rhythm of corporations is annual planning.
   Can your company decide to try something and stick with the experiment long enough to see if it will work, even when that may take years and several false starts?

8. Freedom from turfiness. Because new ideas almost always cross the boundaries of existing patterns of organizations, a jealous tendency to turfiness blocks innovation.
   Are people in your company more concerned with new ideas or with defending their turf?

9. Cross-functional teams. Small teams with full responsibility for developing an intraprise solve many of the basic problems of innovation. But some companies resist their formation.
   How easy is it to form functionally complete, autonomous teams in your corporate environment?

10. Multiple options. Entrepreneurs live in a multioption universe. If one venture capitalist or supplier can't or won't meet their needs, there are many more to choose from. Intrapreneurs, however, often face single-option situations that may be called internal monopolies. They must have their product made by a certain factory or sold by a specific sales force. Too often these groups lack motivation or are simply wrong for the job and a good idea dies an unnecessary death.
    Do intrapreneurs in your company face internal monopolies or are they free to use the resources of other divisions and outside vendors if they choose?
1. SELF-SELECTION

Some companies paternalistically plan job assignments as if it were a religious act. But intrapreneurs don’t fit this mold. They passionately appoint themselves executors of their visions and then find ways to get the corporation to give them the tools to do so.

Self-selection is the first great divide between treating people as mere employees and treating them as intrapreneurs. As more and more people work with their minds, getting them to fully engage that magnificent instrument on behalf of the corporation is the central challenge. The extra commitment of the self-motivated doesn’t make just a 10 or 20 percent productivity difference; someone who is fully engaged in his or her chosen work can do in months what routine attendance to a task might not accomplish in years.

The self-appointment process generally begins with bootlegging. Only by working nights and weekends or on time borrowed from approved projects can intrapreneurs build the case for official sanction of their self-appointed tasks. Sometimes, they even pass through periods of outlaw bootlegging—self-determined pursuit of an explicitly forbidden goal.

When Dick Drew, 3M intrapreneur, was selling sandpaper, he noted the difficulty his automotive customers were having painting two-tone cars. They masked off areas with newspaper and library paste. The system was awkward, slow to dry, and potentially dangerous to freshly painted surfaces. After listening to a painter curse when the paint pulled away with the paper, Drew rashly promised to make a tape that would solve his problem. No one appointed him to that improbable task, but his boss let him work on it, since it was for a customer. Neither 3M nor Dick had ever worked on tape before; he was strictly in the sandpaper business. His early attempts all failed and 3M’s president, William Mc Knight, became concerned that 3M’s reputation in the automobile industry would be damaged by Drew’s frequent failures as he tested them with
auto industry customers. McKnight told Drew's boss to take him off tape and put him back on sandpaper.

One of Drew's next assignments was to look at a flexible crepe-paper backing for sandpaper. Drew, still obsessed with solving the problem of painting two-tone cars, saw crepe paper as a potential tape backing for his painters. He took it down to the lab and was in the process of coating it with adhesives when the president happened by and asked what he was up to. What happened next did more than allow Drew to create masking tape: it shaped the culture of 3M.

Drew explained that he was trying to make masking tape. McKnight asked if he knew he had been ordered to stop working on tape and to go back to sandpaper. Drew admitted that he did. McKnight asked him if he knew how to do what he was told. It looked like a black day for innovation at 3M, but Drew explained why he believed the stretch in crepe paper would make the tape peel away, leaving the paint on the car, and how important it was to 3M's customers. McKnight saw the fires of conviction and was wise enough to let him continue.

It turned out that, after the hundreds of failures, the crepe-paper backing worked. Soon, auto companies were ordering masking tape by the carload. 3M had entered the tape business. Once again, self-selection of a task and meritorious disobedience proved essential to innovation. Dick Drew, as we have seen, went on to invent Scotch Brand transparent tape five years later. More importantly, McKnight never forgot the wisdom of allowing dedicated business pioneers to work on the things they believe in.

No one would have faulted Drew if he had given up trying to make masking tape, but he was committed to filling that need, however many false starts it took. That is how innovation happens.

The moral of the story: Management cannot appoint someone an intrapreneur, tell him to become passionately committed to an idea, and then expect success. Managers will do far better if they simply keep a sharp eye out for intrapre-
neurs who believe passionately in something and then empower some of them to follow their intuitions. In fact, the best candidates have probably already begun without permission.

Even when a senior manager very much wants a specific new business built but cannot lead the charge personally, he had better not rush to appoint someone. He should instead expose potential intrapreneurs to the idea and see who begins building on it and making it his or her own.

It is hard to know why one idea takes root in an intrapreneur’s soul and another equally good one does not. Fortunately, we don’t have to understand the sources of commitment to use it. Management need only develop the ability to notice and support it.

As an intrapreneur, if you are working on something that doesn’t reach down and grab you, you may be better off not selecting yourself. If you are cut from intrapreneurial cloth, in time an intraprise will become a larger force in your life, motivating your every fiber and pushing aside many of the self-doubts all humans are prey to.

2. NO HANDOFFS

Innovation is not like a relay race in which an idea can be handed off from runner to runner. Successful innovation looks more like a growing entrepreneurial business. New members join as it grows but most of the core team remains.

Unfortunately, in many large organizations new ideas are handed from group to group during the course of development. It is a natural mistake, when creating organization charts, to break apart the stages of innovation and assign each of them to a separate group. Organizational theorists may imagine, for example, that an idea is formed from the dreams of researchers and is passed on to the more practical people in advanced development, who come up with a prototype that is passed on for design to hard-nosed engineering people, who send drawings to the practical folks in manufacturing, who make it
and give it to marketing to sell. Systems of this kind almost never work for two reasons: one, a fact of human nature; the other, a consequence of information theory.

**The NIH (Not-Invented-Here) Syndrome**

It is human nature to want to work on ideas of one's own choosing. This fact can have positive results: Intrapreneurs become dedicated to an idea, and that commitment is the primary force behind successful innovation. But at each handoff, the committed intrapreneur is left behind and the idea must attract a new champion. The chance that people assigned to work on someone else's idea will learn to love it as their own is very small. The loss of commitment at each handoff produces a high probability that the transplanted idea will be rejected. But this loss of enthusiasm is only part of the problem with handoffs.

**Information Loss and the Handoff**

Unfortunately, it is impossible for one human being to transfer everything he or she knows about something to another. When an idea is handed off to someone else, most of the information the first intrapreneur has gathered is lost.

One can almost measure this information loss financially. Developing a new product or service costs money and time. So does launching it in the market. During that period the corporation is presumably investing, but few new assets appear on the balance sheet. If the corporation invests half a million dollars in a new product, and has not wasted the money, more than half a million dollars of value exists somewhere in the corporation mostly as some kind of intangible asset.

The implicit assumption made by those who support a handoff product-development process is that the value is resident in the documented progress of the project—that there are drawings, market research reports, and so forth worth close to half a million dollars.

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This is not so. Most of the half million dollar asset is in the minds of the people who did the work. The corporation has paid to make them better informed about that specific project in ways that are almost impossible to communicate to others, but that nonetheless form a background for better intuitive decision making. If these people are transferred from the project, that value is lost.

Inventors and Handoffs

One of the major objections to using a single intrapreneurial team to take an idea from development to commercialization and beyond is that many companies have had bad experiences with inventors and researchers as business managers. The inventor need not be the intrapreneur—in fact, these are quite different roles, although a number of famous intrapreneurs are also accomplished inventors. The inventor often seeks satisfaction from the admiration of technical peers, while the intrapreneur measures his or her accomplishments in terms of commercial success and social contribution—ultimately, how much the customer liked or wanted the product.

Frequently the inventor becomes a member of the intrapreneurial team as a technical leader. In other cases, the intrapreneur builds a team that leaves the inventor primarily in the lab, but coming out from time to time to act as a consultant. Sometimes the inventor becomes an intrapreneur. All three systems work, but the leader of an intrapreneurial team must be business-oriented, not dedicated to any functional specialty. Thus the inventor may or may not hand off his or her idea to another intrapreneur, but once an intrapreneur is found, that person and most of the team should ride the new intraprise into the market and through its initial rapid growth. The damage done to innovation by handoffs can be very simply stated: Intrapreneurs cannot exist if their passionate commitment is ignored and their visions given to people who don't understand them. Without intrapreneurs, innovation flounders.
When Should Handoffs Occur?

At 3M, the venture team often goes on to form a new division with the team as its management. That is part of the basic reward for intrapreneuring, and it is the purest extension of intrapreneuring. MIT's Ed Roberts explains that 3M supports its teams by saying to them in effect:

We are committed to you as a group. You will move forward with your product into the marketplace and benefit from its growth. But we cannot promise to keep you together forever as a new venture team. We will do our best to keep the team going so long as you meet our standard financial measures of performance throughout the life cycle of the product. If you fail, we will give you a backup commitment of job security at the level of job you left to join the venture. We cannot promise any specific job. But if you try hard and work diligently and simply fail, then we will at least guarantee you a backup job.*

Not every intrapreneur wants to remain with his or her business once it is a proven success. Nor does every innovation justify creating a new business. Many new products must sooner or later be reintegrated into an existing business unit. The Fiero, for example, did not become a new division, but only a new product inside the Pontiac division. Chuck House's electronic lens monitor was built into many other Hewlett-Packard products.

Frequently, the reintegration of the new product into the existing structure is done too soon. Once the IBM P.C. group developed the personal computer business in the isolation of an autonomous group in Boca Raton, IBM pulled it back into the main line IBM organization by combining it with other

small computers in the new Entry Systems Division. Some observers say that the shock of reentry into the bureaucracy of IBM might slow down personal computer innovation.

It is generally important to keep the team together past market introduction. "The first generation of any new technology rarely produces substantial profits," says Chuck House, director of engineering at Hewlett-Packard. "As soon as your initial product demonstrates the potential, competitors go to work producing a better 'second generation' product. In order to stay ahead, you have to start your second generation well before the first hits the market and start the third before you really know how successful the first product will be." To work that fast you have to keep the team together. Chuck stayed with his monitor team for the first three product generations. Only then did his interests shift.

The Intrapreneurial Slot Machines

The need for continuity of champions doesn't just apply to the intrapreneurial team and its leader. Continuity of sponsors is equally important. One successful intrapreneur explained it like this:

To win at the slots you have to line up three of a kind; two seven's and a bell isn't good enough. Innovation likewise occurs when there is a fortuitous combination of an idea, an intrapreneur and a sponsor, all of whom match.

You have to keep this combination together long enough for it to pay off. Too often the corporation comes in and moves either intrapreneur or sponsor before the intraprise can bear fruit, in effect jerking the lever on a winning combination before the payoff.
3. THE DOER DECIDES

Intrapreneurs don't like the idea of bosses. They like to believe they are in control of their own destinies, and in a well-run organization, they often are.

Ames Smithers, a Wall Street Journal reporter calling in the late 1950s to write an article about the 3M company, interviewed President Buetow. The newsman mentioned at one point that his understanding of 3M would be enhanced considerably if he could see an organization chart.
Buetow changed the subject, almost as though he had not heard. The visitor repeated his request several times. Still no direct response from Buetow.

Finally, in growing exasperation, the reporter interjected, “From your reluctance to talk about or show me an organization chart, may I assume you don’t even have one?”

“Oh, we have one all right,” Buetow replied, reaching sheepishly into his desk drawer. “But we don’t like to wave it around. There are some great people here who might get upset if they found out who their bosses are.”

The intrapreneur’s job is to create a vision of a new business reality and to make it happen. The primary problem in big organizations, as we have seen, is not blocking the vision but, rather, blocking the action. The solution lies in letting the intrapreneur act.

Probably nothing is more annoying to intrapreneurs than control systems that weren’t designed with them in mind. In some cases, control systems are more than annoying; they can keep intrapreneurs from the timely execution of acts that are important to the survival of the intraprise.

At one time when Bernie Loomis, the intrapreneur behind Hot Wheels, Star Wars toys, Strawberry Shortcake dolls and more, was in charge of Kenner Toys Division of General Mills, an important customer, Toys’R’Us, was on the ropes. Suppliers, sensing impending trouble, were starting to put a hold on their credit. Toys’R’Us needed some good news to offset the growing panic. At a meeting of the toy industry credit managers, Bernie announced the much needed good news—General Mills was extending a $5 million line of credit to Toys’R’Us. Although General Mills was aware of Bernie’s proposal to extend Toys’R’Us the line of credit, Bernie does not recall receiving an official “OK” to do what he did. What he did have was the confidence and support of his sponsors: Don Swanson, his boss; and Bob Kinney, the CEO; and a track

* Our Story So Far: Notes from the First 75 Years of 3M Company, Minnesota Mining and Manufacturing Company, St. Paul, Mn., 1977, p. 126.
record with General Mills that allowed him to express his typical intrapreneurial independence. To its great credit, General Mills backed Bernie up and Toys’R’Us survived and flourished.

Bernie recommends this general rule for breaking the rules: "Announce what you are going to do, but don’t wait for permission." There probably is no way to be an intrapreneur without having courage.

Multilevel Approvals

Nothing slows innovation more decisively than sitting around and waiting for permission. Many large organizations, hoping to improve fiscal responsibility and control, have placed the authority to approve significant innovative acts many levels above the people who innovate.

As a young consultant, I found that often my job was to help clients prepare a series of presentations, each at a higher level, asking for permission to proceed with an intrapreneurial project. Months would pass between presentations while exalted managers found time in their busy schedules to listen to the plea for funds. But when the presentation was successful, all that happened was that, after the obligatory modification, the request was approved not for action but for presentation at a yet higher level.

The further from direct contact with the hands-on intrapreneur a decision is made, the less understanding will go into it. The ultimate foolishness is a system in which people more than a level apart are not supposed to talk to one another. So the intrapreneur tells his boss who tells his boss’s boss and so on until the ultimate decision maker is reached. The result is much like the childhood game of "telephone" wherein the message, after passing from person to person down the line, emerges as nonsense. Not only is all the detailed vision of the concept lost in the multilevel approval process, but the ultimate decision maker has no way to judge the commitment and quality of the intrapreneurial team,
which is the most important predictor of success or failure of an enterprise. The solution is whenever possible to avoid multilevel approvals. Let the doer decide.

For those few things that do require higher level approval, what is needed is a direct relationship between doer and approver. If innovation is to proceed rapidly, intrapreneurs must be able to get face-to-face with decision makers. They need rapid access and adequate time to explain the somewhat intuitive rationale that often lies behind high potential ideas.

Approving the routine takes little time, but understanding something really new is very time consuming. It’s not just a matter of projecting and adjusting the past. To judge a potential innovation one must grasp a chain of logic so ephemeral that it has eluded the competitors. Most innovations are only obvious afterwards. Practically speaking, top managers don’t have the time to hear out all their intrapreneurs—there aren’t that many hours in a day. If these decisions are pushed to the top of the organization, presentations will be brief and decision makers will rightly feel they don’t know enough to decide. They will call for more study and, hence, more delay. Numerous innovations will only occur if more people, especially at lower levels, are empowered to give the go-ahead.

Freeing the Power of Intuition

A new business is buffeted by surprises. Often there is neither enough time nor enough information to make a rational decision. Thus, the person to make the best decision is the intrapreneur, who has the most information and the most direct experience of the realities of the business. If the corporation doesn’t trust the intrapreneur to run the business, it should get a new one, not bypass the judgment of the one they already have.

It will be argued that, though close to the facts, intrapreneurs are not objective. Good intrapreneurs are surprisingly open to feedback and perfectly willing to make changes when something isn’t working. That they care deeply about the
venture's success is a virtue. Rather than seeing each setback as evidence of a failure, dedicated intrapreneurs begin trying another way. This experimental persistence is how businesses get built.

Ponderous planning systems may be unable to effect changes until next year's budget, but the entrepreneurial competition just does it—now. No matter how strategically wise or strong a boxer is, if he has to call New York to clear each punch during his fight in Las Vegas, he is doomed. Silly though this sounds, many new businesses in large firms face control systems nearly as unworkable. To make intrapreneuring work, intrapreneurs need the power to make decisions and take action.

One intrapreneural group puts it quite simply as a policy: "If it's my ass and my commitment, I control it." That philosophy has gotten them billions of dollars of new products.

4. CORPORATE "SLACK"

When all corporate resources are committed to what is planned, nothing is left for trying the unplannable. Yet innovation is inherently unplannable. Companies that successfully innovate empower their employees to use corporate resources in ways that cannot always be predicted or justified.

Discretionary Time

The most basic form of corporate slack is the freedom to use a portion of one's time exploring new ideas without knowing where they will lead. Many organizations, including IBM, Tektronix, Ore-Ida, 3M, and Du Pont, permit people to spend 5–15 percent of their time exploring ideas that interest them. When I asked Stephanie Kwolek (then a bench chemist at Du Pont) who approved the research that led to the discovery of the superstrong fiber Kevlar, she said she had. She worked on it without telling her boss—even after she made her first
fibers—until she was certain she could make them repeatedly. When asked why she did so she said, "It was my job to spend some of my time exploring new ideas on my own. I didn’t need anyone’s permission."

Without discretionary time, new ideas remain just that: ideas. And ideas without action die. In their early stages, most new ideas appear unworkable. The creative individual needs time to prove them true or false without showing them to others and being forced to raise expectations that are likely to be dashed.

In addition to his load of official projects, Art Fry keeps four or five very part-time unofficial explorations going at all times. Most of these bootleg ventures go nowhere, but when he finishes a major project something new has always developed to fill the void.

It is easy to publish a policy that allows people some discretionary time to work on their own projects. It is harder to implement that policy if managers are under duress to move the official projects along faster. The concept of planned woolgathering and random exploration time is common for technologists. But every job needs innovation, and innovators need time to think and try new things.

**Discretionary Funds**

When the products of discretionary time prove interesting, the next step in developing them usually costs real money, not just fiddling around with time and a few inexpensive parts or travel vouchers. This means discretionary funds must be available to continue the increasingly promising exploration. Unfortunately, in an effort to save money, many controllers seek to find and eliminate discretionary funds. The result is not economy; rather it is enormous waste of human energy and cash alike.

Minds that are denied the ability to explore and test are being wasted. At today’s salaries that is itself quite expensive. Worse, individuals not trusted to handle money become indif-
ferent to it and, in fact, may even enjoy waste. They pack their budgets full of waste to hide money that can be diverted to useful purposes if the need arises, but which must be spent in any case to preserve the budget line for the next year. They select the safe and expensive way, rather than try something inexpensive and risk failure without backup funds to try again. The resulting brute force solutions not only cost more to develop, but later cost more to produce.

When discretionary funds are scarce, people give up innovating and become resigned or bitter. Rather than beg for funds, the idea makers take their creativity home and become deadwood at work.

It is better to have a few less people, each empowered to act, than to have too many, all of whom sit on their hands waiting for permission to do something. The actions needed are clear:

1. Increase the proportion of unplanned discretionary funds in every budget. Earmark a portion of them for exploring new ideas.

2. Push discretionary spending authority down toward and to the people who do the work. Even a few hundred dollars of annual discretionary budget conveys dignity and the right to try things. It will prime the pump for more significant innovations.

3. Create multiple pots of discretionary monies for intrapreneurs to draw from.

The Ore-Ida fellows program is a good example of how to make multiple-pots discretionary funding work. Every two years Ore-Ida names five fellows, each of whom is given a $50,000 annual budget to fund other employees in the exploration of new ideas. The results have been impressive:

- A new computerized scale system funded by a $15,000 fellows grant has already saved more than $2 million.
- A $10,000 fellows grant supported engineers in developing
a novel heat-recovery system that has already save $170,000 in one year.

- A researcher had a gut feeling that frozen potato ski would sell but his superiors were unwilling to back him. He got funding from a fellow to move the concept along until it could be approved through other channels.

Bartley N. Wankier was the vegetable-products research who believed in frozen potato skins. His superiors had got points to counter his enthusiasm. Ore-Ida had no way of producing the frozen skins in quantity, nor was there proof that a market existed. But those kind of reasons just form the starting blocks for the intrapreneur.

Fortunately for Bart and Ore-Ida, one fellow agreed to put up $2,000 to explore ways to get the skin off the potato. With $2,000 and determination he made enough progress to attract conventional product-development funding for a full time engineer.

Bart’s solution went against the Ore-Ida grain, so needed something special to get it moving. Everyone was used to blanching potatoes with water to remove the skin, but Bart did it the same way you and I do—baking the potatoes first and scooping the potato out of the skin. The only difference is he built a machine to do it fast. With the biggest production hurdle out of the way and success in market tests, Ore-Ida now expects frozen potato skins to be one of the “biggest selling items ever.” Without discretionary seed money the idea would have died.

At Texas Instruments, managers have three distinct funding options for new R&D projects. If their proposal is rejected by the centralized Strategic Planning System because it is not expected to yield acceptable economic gains, intrapreneurs can seek a “wild hare” grant. The wild hare program was instituted by Patrick Haggerty, while he was TI’s chairman.

to ensure that good ideas with long-term potential were not systematically turned down. Alternatively, if the project is outside the mainstream of Strategic Planning, managers or engineers can contact one of dozens of individuals who hold "IDEA" grant purse strings and can authorize up to $25,000 for prototype development. The briefness of the one-page application form expresses both a commitment not to become bureaucratically slow and a high level of trust in the people they have hired. It was an IDEA grant that resulted in TI's highly successful Speak-n-Spell® learning aid.*

Gene Frantz was the intrapreneur for the idea he was widely credited for inventing, a low-cost speech synthesizer built on one tiny new chip with a voice quality equal to that of the telephone system. Gene, who stayed with the Speak-n-Spell product for six years before moving on to a new intraprise, credits his boss on the project, Paul Breedlove, as the source of the idea and two others with key technology. When they failed to get funding in the normal Strategic Planning channels, they applied for a "wild hare" grant and were turned down, Gene says, "because we were too wild!" "We never ran out of alternatives for funding," Gene continues; they applied for an IDEA grant and got it. Before they had spent $10,000 of the possible $25,000, Gene and a group of about thirty-five part-time volunteers got to the "proof of concept" phase and could go on normal Texas Instruments development funding. Gene says his role, in addition to designing the printed circuit, was "mother" of the project—he had to go back to the "corporate fathers" every quarter to make a presentation of progress and request the next block of funding.

A company that provides a variety of funding channels encourages the pursuit of alternative approaches, particularly during the early stages of a new idea's development. In fact,

no activity should be without discretionary funds.

At Matsushita, the “GE” of Japan, all divisions are allowed to keep 40 percent of their profit for “self-renewal.” No portfolio analysis judges a division incapable of innovation. *

Total Budget Versus Budget Breakdown

Venture capitalists are tight about total budgets but loosen about changes in plan that substitute one expense for another. This same flexibility is necessary for the success of an intrapreneurial venture, and it has been employed in some large corporations with excellent results. For example, when IBM decided to get into the personal computer line, it asked Don Estridge how long it would take and how much it would cost to get into the personal computer market. He reputedly said “One year and 20 million if you do it my way.”

His way included the discretion to create a separate organization well outside the context of IBM’s traditional way of doing business. The intraprise was located in Boca Raton, Florida, where IBM’s small systems are developed. This gave Estridge the skill base and expertise he needed for his project. The group had simple, straightforward objectives. It had to produce a product that would measure up to IBM’s rigorous demands for quality, would be easy to use, and would maintain the company’s usual high level of customer satisfaction.

Estridge had almost total discretion about how to spend his project’s funding. He had a complete functional team whose members reported to him but who were responsible for their own organizations, such as marketing and manufacturing. He used marketing methods considered “unorthodox” for IBM, selling through retail dealers and third-party retailers as well as through IBM’s own marketing organization and Product Centers. In a move unprecedented in IBM, Estridge convinced Armonk to set aside a 70-year-old tradition and let

retailers service a product under IBM warranty. He contracted out much of the hardware development and nearly all the software and brought the personal computer to market in nine months and under budget.

Within a year and a half he had 12 percent of the market share* and was rapidly becoming the dominant vendor of personal computers. The Entry Systems Division Business Unit became a full-fledged IBM division, with Estridge as its president, in August 1983. Its success helped pave the way for IBM's continuing intrapreneurism.

Head Count

Many intrapreneurs find it easier to get money than the people they need. Their current bosses refuse to release people who want to join an intraprise, not only because they are needed now but to keep them in case they are needed later. These problems get worse as companies control expenses by limiting the number of people each division can have instead of just the funds—the most common are the so-called "head count" controls.

Economists know that rationing rarely produces good allocation, and head count restrictions are no exception. They are a powerful force for the status quo because when head counts are frozen, existing activities generally keep their people and new or growing ones do without. If innovation is to happen where head count is tightly controlled, there must be a discretionary head count system to rapidly feed human resources to deserving intrapreneurs.

Informality and Bootlegging

We now know that most corporate innovation begins in an underground economy beneath the scrutiny of the ponderous official systems. The size of this underground economy can be

* The Yankee Group, Boston, Mass.
stupendous. "In the old days we had seventy people working on one hidden project," says an intrapreneur. Another intrapreneur bootlegged $10 million of time and expense monies, developing a new weapons system. He tested the prototype using army personnel and equipment. The first news their top management heard of their $10 million investment came when he showed them the test reports. Several billion dollars in sales later, they may have forgiven him.

Management can try to make the official systems of the company as easy to use as the underground, thus obviating the need for sub rosa intrapreneuring. But unless the who company is built around intrapreneurial teams, like Gore Associates, the official system is unlikely to be sufficient. Intrapreneurs are better off in companies that pump discretionary time, money, and head counts into the system and tell managers to tolerate some underground activity. Enough slack to permit the early informal stages of intrapreneuring is an important element in building an environment for innovation.

5. ENDING THE HOME-RUN PHILOSOPHY

Many large organizations approach innovation with huge success as their only goal. Their leaders reason that if a new idea cannot be projected to reach from $50 to $500 million in sales within ten years, it cannot have a significant effect on growth or earnings per share. They forget that several medium successes can equal one large one. Thus, they pursue innovation with criteria like these:

1. The new business must have a projected volume of several hundred million dollars ten years from today.
2. The business must not be risky. It must be based on proven technology and well-understood markets.
3. There must be no significant potential competition in the market (meaning "nobody else has seen this obvious and huge opportunity").
There are very few accurately projectable hundred-million-dollar businesses based on existing technology that no one else has thought of. However, that is not a reason to despair. There is a strategy even for huge corporations that provides a high probability of creating businesses that will have a significant effect on earnings per share.

The highest return will come from starting many initially small intrapreneurial thrusts, each of which has some short-term promise and a variety of future possibilities. Some of these will provide great opportunities for informed, high ROI second- and third-stage investments of major proportions—the very home runs the corporation would love to hit. Others will evolve into smaller but highly profitable businesses, which can be either left alone or sold at a handsome profit. Some will fail, but since little was invested, little will be lost.

The overall returns based upon this strategy will be higher than those from big investments on the first round. A corporation only wants to make big investments in proven concepts where a proprietary position has proven its value in the marketplace. In addition, they will be investing in seasoned intrapreneurial teams who understand those businesses intimately.

**Why Big Beginnings Aren’t Always Wise**

In the early stages of innovation one makes mistakes. The “billion or bust” philosophy tends to generate billion-dollar mistakes. Demand for high volume right away pushes intrapreneurs prematurely into mass markets where profit margins are slim, and margins for error are even slimmer. To complicate this precarious situation, huge adventures put senior management at risk and thus lead to meddling and concern that slow response time and endanger the intrapreneur’s ability to run the business. Rather than lowering risk, this excess top management concern increases both the cost and the probability of failure. Worst of all, premature attempts to be big require large capital expenditures that then freeze the venture in its
original plans. This prevents the successful pattern of innovation—blundering through to success on a wave of correct mistakes while small, and then expanding rapidly once pattern for success is proven.

One of the great difficulties Exxon faced with its off systems business was that it invested too much too soon. Spending on the early stages was so lavish that intrapreneurs thought they were already a success. They forgot to think small in order to grow big. Eventually they had invested much that they could only project high ROI by shooting-the-moon and promising to beat IBM on its home turf. The decision turned out, was not a low-risk strategy.

Companies that demand projection of the huge bets on entering a market rarely get in on the ground floor of new industries, and even if they do they rarely find the high-profit segments.

As the business scholar James Utterback explains, new million dollar industries often began by serving very small markets:

The initial users of major product innovations tend to be in small, often vacant, market niches in which the superiority of the new product, in one or two ways, allows it to command a temporary monopoly, high prices, and high profit margins per unit. For example, ice was first manufactured for refrigeration in the inland South where harvested ice was prohibitively expensive. Mechanical refrigeration was first used on ships for exporting meat and later in food processing plants. Rayon was first produced and used as a uniform filament for incandescent lamps, and only later as a high performance tire cord. Radio telegraphy was first used for ship-to-shore communications and later for broad- rakhat. The jet engine and many other innovations were first used for military purposes. A major product innovation does not initially compete directly with the technology by augmenting it in important ways. A major product innovation may initially be crude, expensive, fragile, and unreliable, and so diffusion starts very slowly while it is constrained by these various problems. For example, ice was costly to
manufacture and early plants were dangerous to run, but it later became an economic replacement for harvested ice even in the North. Rayon was difficult to dye but was uniform and could be produced with high tensile strength. Research and experience with early applications led to ways to dye and weave it into fabrics. Early transistors were expensive and had poor temperature stability and frequency response, but they were light, rugged, and had low power requirements. Thus, they were ideal for missile guidance and for hearing aids. As such problems are overcome, diffusion of an innovation becomes more rapid.  

A classic example of creating a new industry using small first steps is the development of 3M's nonwoven business. During World War II, Al Boese and a few other researchers, working on a shoestring budget, were exploring the prospects of making a paper-like product out of the new synthetic fibers that were just then becoming available. They called this new material "nonwovens" for nonwoven cloth.

Their first idea for an application of the new material was in response to a war shortage. A noncorrosive backing was needed for electrical tape, because cloth was hard to get during the war and most paper contained residual sulfuric acid which corrodes electrical wires. They tried to back the tape with the new fiber, but failed to make it work. In the process, however, Boese began to notice some interesting properties of the new synthetic cloth. He found they made good lens wipers. Ordinary cloth tends to leave lint on the lens, but because nonwovens were made with long synthetic fibers, they were lint-free. Having found a use, Al and his friends in the lab made some sample lens wipers and went out to sell them to the Navy and a lens manufacturer. They took a few orders and made the products right in their lab on a little paper-making machine. After they shipped their orders,

it was time to send the bills, and then they were stumped. They were finally beyond the capabilities of their lab. So the walked over to the commercial tape division and persuaded few friends there to do their billings.

For four years they ran their little business out of the lab, with total sales of under $15,000. There just wasn’t much need for a better, lint-free lens wiper, and nothing else the tried was very successful.

But Al Boese could not afford to be deterred. As he explained it,

I am not a college man. A trained technical person always has another place to go, but I wouldn’t have had a career at all if I hadn’t somehow succeeded. Out of sheer fright I had to get something out in the market.

So with a little more time and money from the company Al’s group continued to explore new uses for their material determined to make it a commercial success. Finally they began to hit on some products. They had a modest success with nonwoven ribbon that has since evolved into the nov familiar shiny package ties. Through Al’s perseverance more uses for nonwoven materials were found, until a major new industry for 3M began to grow up. Nonwoven bra cups that didn’t succeed became dust masks that did. Combined with abrasives, nonwovens became scouring pads and polishing wheels. Today, nonwovens are used in the untearable envelope lopes the courier services use and mats to wipe your feet. And finally, forty years after that first effort, we have nonwoven backings for electrical tape.

Looking back, it would have been impossible to foresee all the products based on nonwoven technology that eventually made new businesses and new divisions for 3M. You could imagine many potential applications for the new material, but no single opportunity loomed on the horizon. 3M responded to this ambiguous situation by giving a few flexible and determined people a meager budget and the freedom to pursue the technology through several product failures. The
result was a new industry for 3M at very little cost. Starting small does not mean that something cannot evolve into a wide diversity of products and businesses. And if all else fails, it is possible to switch to another small something and begin again.

Small-Scale Intrapreneuring: The MBA of the Future

The broadest business training you could get would be that of an intrapreneur. There you would face the rotating crises of every aspect of business. A new business is small enough for you to see the direct connection between an engineering or service concept decision and a marketing problem, and things happen fast.

By analogy, consider the fact that the best America’s Cup skippers were dinghy racing champions before they became cup racers. You can learn far more about sailing by skippering a one-man dinghy than by cranking winches on a fine yacht.

Smaller boats respond faster so you can try more experiments per hour. Since you are in charge, your learning can be guided by your curiosity instead of by someone else’s commands. Since your craft is small, it’s OK to make mistakes. Hitting the dock with a dinghy is funny, but not with a big, expensive yacht. All of these advantages apply to intrapreneuring. You can learn far more by staving with an intrapreneurial intraprise for five years than by taking several lower level jobs in different functions, each for eighteen months. In the intraprise, regardless of your position, you learn to see the effect of decisions on a whole business and to see the connection of cause and effect.

Even the Japanese, whose products are polished and complete when they reach the United States, are constantly experimenting for an innovation-hungry public at home. A quick walk down the Akihabara Boulevard shows shop windows filled with such a bewildering variety of new products that one begins to doubt the sanity of Japanese manufacturers. Given their success, it is time we became prolific experimenters ourselves.

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The Fine-Grain Corporation

Metals can be made stronger and less brittle by reducing the size of the grain structure; the smaller-grained metals resist stress better. So it is with organizations.

Many companies used to a few very large businesses that had to adapt to what futurist Alvin Toffler calls the demass society. Gone will be the preponderance of huge volt undifferentiated commodity products; in their place will smaller volume specialties aimed at specific needs.

In this environment many large firms will learn to autonomous intrapreneurial managers not only to start businesses, but also to maintain numerous profitable, small, businesses that don’t warrant top-management attention.

Intrapreneuring gives companies a way to manage many businesses without tying up top management in supervising them. By dividing themselves into small autonomous units, large corporations can become more intelligent and responsive. They can match the caring thoughtfulness about customers that is common in small firms. They can give more employees the thrill of calling shots and controlling their own destinies. But all this is possible only if they learn to be comfortable with a company made up of many small business units instead of a few giant ones.

6. TOLERANCE OF RISK, FAILURE, AND MISTAKES

You can’t innovate if you don’t take risks. In most companies, risk taking is given lip service but hardly honored in practice. I once saw a group of engineers joking about their chairman’s latest exhortation encouraging them to take risks. “Do you know what would happen to us if we followed his advice?” said one who laughed so hard he ended up on the floor.

The risk-adverse nature of American business is no laughing matter. Despite our adventurous nature as a people, we
companies have become tied up in analytical systems that choke out the risk takers.

Surprisingly, our corporations are often more capable of taking big risks than small ones. They dare to acquire companies for tens and hundreds of millions, but can’t risk tens and hundreds of thousands on internal innovation. Partly, this is a result of the way corporations are evaluated by the investment community—they feel free to invest capital but are leery of anything that has to be expensed. More fundamentally, it comes from top managements who trust themselves to manage risk but are reluctant to let anyone else take risks that may come back to them if the risk taker fails.

If a large firm is to be innovative, it must have a way to take many smaller risks, to make many mistakes, and to have many failures. No system of innovation yet designed produces 100 percent success.

Ore-Ida goes out of its way to create an environment in which experimentation is acceptable. “People were getting the idea as we grew that if they failed, they would be criticized,” says Ralf Glover, general manager for R&D. “With the fellows program we are saying to people that they don’t have to be afraid to fail, that they can just learn things.” In fact, Ore-Ida gives all idea champions a certificate, regardless of the outcome of their efforts.* With the certificate Ore-Ida says in effect: “We value your courage and what we have all learned.”

**Things Don’t Turn Out as Planned**

Most really good things begin with the unexpected. The truly innovative seek out the surprises not to stamp them out but to understand them. Teflon was discovered when a Du Pont researcher noticed that the pressure in a reaction vessel dropped to zero unexpectedly. Unable to get the resulting

* Business Week, op. cit.
solid product out of the reaction vessel, he sawed it open, destroying an expensive piece of equipment. But inside, something worth far more, the substance that became Teflon.

When silver prices began to rise, Du Pont set out to make a photographic film without the normal light sensitive silver emulsion. They began experimenting with light sensitive plastics. After almost a decade they have yet to sell any silver photographic film, but other businesses emerged. Their non-light sensitive plastics are used in printing plates and to make printed circuit boards, two unexpected but profitable businesses.

Failure as a Learning Experience

Intrapreneurs and their managers must remember that even big failures are learning experiences. Most venture capitalists prefer to invest in an entrepreneur who has tried and failed than in someone without experience in venturing. "At HP is understood that when you try something you will sometime fail," says Bob Hugate, general manager of the Hewlett Packard Medical Services Division.

Lew Lehr speaks for 3M:

As befits a company that was founded on a mistake, we have continued to accept mistakes as a normal part of running a business. . . . Every single one of my colleagues in senior management has backed a few losers along the way. It's important to add, however, that we expect our mistakes to have originality. We can afford almost any mistake once. *

Marketplace Experimentation

We are somewhat accustomed to experimentation in the laboratory. It is understood that science is a process of trial and error discovery, and that a certain percentage of sal

* Speech at Wharton Entrepreneurial Center, University of Pennsylvania, Philadelphia, April 26, 1979.
devoted to R&D looks good in the annual report, but the basic ideas of science are not extended to business experimentation. Nonetheless, the market, like nature itself, contains many unknowns that can be uncovered only by trial and error. What is needed is an experimental attitude toward exploring business opportunity.

Even in businesses in which major scale-up is needed, such as in the development of a new polymer, getting the product out in a small way may be the best path to take. "Get the new product out in the market however you can," says a Du Pont intrapreneur. "It doesn’t matter if it’s uneconomically made in a pilot plant or if someone else makes it for you for more than you sell it for. The key is to get the product into the hands of the customers. They will end up telling you what it’s good for."

Market research in itself is not enough to fill this need. Market research is notorious for producing false, negative results and rejecting new products that later succeed. Post-it Notes, Chuck House’s monitors, and power steering for automobiles were all rejected by customers in the initial market research. Only experimentation will show the right way to present the product to customers or reveal how to turn an innovation into a marketplace success. What is needed, therefore, is not dispassionate market researchers seeking an objective yes or no, but passionate intrapreneurs willing to take risks to find and develop customers for their ideas.

The problem is that in most companies unpredictable marketplace results are seen as a sign of poor management. Unexpected negative results are seen as failure, not as part of a series of experimental actions leading to understanding a new opportunity.

In fact, the experimental approach deserves the name "scientific management" because science is a method for exploring, by hypothesis and trial, new areas as yet uncharted. Instead, the term "scientific management" has come to be associated with techniques that seek to project a riskfree future based on extrapolation of the past. Such a conservative
strategy is *unsafe* in turbulent times. It prevents intrapreneurs from finding and testing viable futures and instead focuses on optimizing ideas whose time has passed.

**The Failure-Adverse Corporation**

Corporations that cannot tolerate failure don’t always avoid it. Often they just make bigger failures and learn less from them. Of course, making failure anathema will reduce risk taking and park innovators on the sidelines where they can do no harm. But no matter how hard corporations try to avoid it, things will, on occasion, go wrong. If one can’t admit even a small failure, the natural thing to do is to deny that anything is wrong and to try harder to make the old way work. Poker players call this throwing good money after bad and learn to avoid it.

Failure-adverse businesses under attack from new ideas and technologies become ever more brittle in their defense of outdated ways until in the end they exit the business with a colossal blunder. None of the major manufacturers of mechanical calculators, such as Friedan or Monroe, took early advantage of the new electronic technology, and none of them became a major producer of the electronic calculators that replaced their product. Integrated circuits were first developed by industry outsiders like Texas Instruments and Fairchild. For years, conservative IBM refused to build a minicomputer as upstart DEC grew and grew. Everyone in the reproduction business passed over Chester Carlson’s invention of Zerography, until the outsider Haloid Corporation took on his process and became Xerox.

As an intrapreneur, you must precondition those around you to failure and mistakes as an everyday part of your job. This means not apologizing at all for your minor mistakes but taking pride in having learned at moderate cost. Never let them think that smooth progress is expected. Go in and say, “Well, boss, I’ve exceeded my quota this week. I promised you we’d get one good mistake closer to understanding this
business, but I've already made three."

In companies that succeed with innovation and retain innovators, tolerance for mistakes and failure is built deeply into the everyday activities of the corporation.

7. PATIENT MONEY

Sophisticated investors in innovation have the courage and patience to let their investments prove themselves or go bust. They have great contempt for inexperienced investors who rack up losses by nervously giving and then withdrawing support from new businesses.

One excellent and proven intrapreneur bringing a revolutionary and highly practical technology to market confided that despite the fact that his corporation had made major public statements of commitment to his new venture, he got approvals only on a month to month basis. He lives in fear that the political winds will shift and the venture will be cancelled. This is not paranoia; he has watched other large projects grow and begin to fly only to be closed down. Five months later they start up again, run for a year, again fall out of favor, and are closed down, again. Nervous money makes innovation unbearably expensive and inefficient. It dooms the intraprise to such poor performance that it eventually dies.

One great barrier to innovation is not giving it time to reach maturity. In some industries, success takes a long time to achieve. Du Pont began a wave of corporate venture activity in the early 1960s. Using cross-functional teams much like the autonomous intrapreneural teams of today, Du Pont built large numbers of new businesses. Every department was expected to shelter ventures of their own in addition to those created under the aegis of the corporate development department headed by Edwin Gee (who went on to become chairman of International Paper). By the end of the decade Du Pont's new venture activity was generally deemed a failure. Collectively, the intrapreneurial businesses started in the sixties
were not yet large or promising enough by 1970 to justify the investments that had been made. The adventurousness of Du Pont declined drastically as managers and family members were blamed for spectacular fiascos like the artificial leather Corfam®.

As it turned out, some of the 1960s businesses did survive, like the highly profitable Automatic Clinical Analyzer (probably $300 million in sales) and Riston®, Du Pont's system for making printed circuit boards photographically. The rewards just took longer than expected.

By 1982, the magnitude of success sounded a far more positive note. An internal study, described to me by several retired insiders, traced the history of about seventy of the sixties ventures. Together, by 1982, they accounted for half of Du Pont's profits and half of its cash flow. Du Pont had done a very good job of innovating. Nor were these new, highly profitable businesses capital-intensive; they used less than one-third of Du Pont's total assets to produce over half the profit. The result was so startling that the studies were repeated in greater detail for two of the nine departments with similar findings. Innovation works, but you have to give it time.

The pace of innovation in the chemical industry is slow. Another internal study was conducted of forty successful new product lines, each of which had produced at least 1 percent of Du Pont's bottom line. The study showed that from the moment of lab bench demonstration it took an average of nine years to reach full-scale commercial application, twelve years to break even, and seventeen years until the new product line first contributed its 1 percent. Few companies have this kind of patience.

Du Pont has had patience in the past because the family controlling it made decisions for the long run. They thought not only of their own lifetimes but of what Du Pont would be for their children. Not many professional managers can afford such a perspective.

Fortunately, creating new businesses doesn't have to take
as long as it did at Du Pont. The principles of intrapreneuring are the principles of more rapid innovation. Few industries have as many barriers to moving rapidly as the chemical industry. For example, in the electronics industry significant new products such as Shugart’s three-and-a-half-inch disk are often created in a year. New services can be launched even faster. The Bank of California’s consumer certificates of deposit and corporate cash flow training were each launched within a few months of their inception. Nevertheless, most innovations take more time and patience than most corporations are willing to grant them.

Slowing Down the Corporate Dance

As we learn more about intrapreneuring we can greatly speed up the pace of innovation. But the rhythm of corporate life still clashes with the rhythm of innovation. The dance up the corporate ladder requires frequent lateral movements to gain experience and promotions to maintain the pace. Fast-track managers don’t stay in one job long enough to make and observe fundamental changes. They find themselves forced to assume the posture of appearing good rather than accumulating the wisdom necessary for the company’s long-term interests. The problems they create are left for others to handle.

Clearly this system of frequent job changes works against most kinds of innovation. Too often, the manager who encourages intrapreneurs leaves before their work comes to fruition. He bears the cost, but others, if they carry through, reap the benefit. The result is that in most companies innovation is not rewarded, and the fast-track manager learns to invest in solutions that can make him a hero faster than backing fundamental innovation.

Slowing down the job-transfer dance is one of the most direct ways to improve innovation in large firms. As we eliminate layers of middle management, people will need fewer steps to reach the top so there will be more time to
spend in each of them. Fewer but bigger promotions will be the rule.

In addition, there are other steps corporations can take to create a better time frame:

1. Reward people for taking the steps that lead to innovation, not just for the final results.
2. Make a manager's rewards dependent on what happens in an area well after he or she has moved on.

The Time-After Reward

The CEO who encourages innovation generally does more to increase earnings under his successor than during his own term. If we want to encourage innovation it makes more sense to pay him a bonus for the time after he is CEO than for earnings per share during his tenure. A CEO looking forward to substantial extra retirement earnings will continue to look ahead right up to and past his last day on the job.

The time-after reward principle can be more generally applied to all managers to encourage innovation. Kollmorgen uses a version of time-after rewards to encourage growth. Because a Kollmorgen division, by policy, must divide in half when it reaches 200 employees, it was feared that managers might slow growth, preferring to be the manager of a 200-person division, rather than the manager of one of the 101-person sections left after division. Now, for five years after the split, general managers receive bonuses not only for their half, but also for the performance of the part that split away, as if they were still managers of the whole.

Who Should Consider the Long Run

Conventional wisdom states that planners and senior managers should consider the long run. But as one moves down the hierarchy, the focus of employees should be on shorter and shorter time frames until we reach hourly workers who think
hourly thoughts. This idea makes almost no sense in the Information Age, wherein nearly everyone is called upon to think and decide. If we want responsible employees at all levels we want all of them thinking of the good of the company in the long run. For example, the practical advantages of quality appear only in the long run when customers make their next buying decisions. If we want employees to be involved and to make good decisions, even about acts as trivial as properly tightening a nut, we need to have them thinking of the consequences of today’s acts well into the future. In an effective organization it turns out that everyone thinks about both long- and short-run consequences.

One key to spreading long-term thinking throughout a company is the intrapreneurial team. All the members of a team can buy into the team’s objectives and future because the group, if left intact, has continuity and will face the consequences, good and bad, of its actions.

Ownership

As we saw, owners tend to weigh the long run more strongly than do professional managers. Part of this is due to the security of ownership and capital. Capital may be seen as a quantitative measure of the ability to invest value now in hope of future return. People with adequate capital can afford to play for long-run returns because they have the capital to last until the long run comes. Few professional managers have that security. Instead, if the cost of innovation makes numbers falter in the short run, managers fear losing their commands and someone else getting the credit for their farsighted investment.

What is needed to give employees something like the farsightedness of owners is something akin to ownership and capital. A tiny share of the company based on the percentage of contribution is not enough because their role in shaping the company as a whole may be too small. What is needed is the ability to earn a more localized form of ownership and
something akin to capital that funds freedom, security, and long-term perspective. Intracapital, as discussed in Chapter 11, will help employees to think more like owners. As employees earn substantial amounts of intracapital, the company will become better able to act in its own long-range interests.

Sponsors and Time Frame

Currently the most available form of patient money in most corporations is a strong and committed sponsor. This situation is like that of an innovation in the period before capitalism was in full swing. What an innovator needed was a friend in high places, a patron. So it is in most corporations, but this system is limited. Sponsors can retire or be transferred, so the empowerment doesn’t last. In addition to intracapital we need to dignify the sponsor-intrapreneur relationship so events like reorganizations and transfers don’t separate sponsor and intrapreneur. The relationship needs more formal recognition and should be maintained by the sponsor even if he or she is transferred, and perhaps on a consulting basis even if he or she retires. This policy, of having sponsors continue on after retirement, would have several positive effects. It would produce a wave of innovation as senior executives sought to get something good going that would give them a role and extra income during their retirement. If after retirement they still had a network of influence inside the corporation, it would give the intrapreneurs continuity of sponsorship and the sponsors something worthwhile and rewarding to do.

Intrapreneuring can work only if something is done to align the rhythm of the corporation and the time needed for innovation. Intrapreneuring can greatly speed up innovation, but even intrapreneurs require more patient support than they generally receive.
8. FREEDOM FROM TURFINESS

Instead of addressing the challenges posed by the competition, many executives see their greatest challenge in beating their peers in the race to the top. This leads to an obsession with turf. Nothing suffers more in a turf-obsessed corporation than innovation. When the titans struggle for position, even today’s results take second place and the future becomes irrelevant. An effective organization must therefore focus the competition on performance and contribution, not on politics.

New ways of doing things more often than not cross the existing boundaries of the way things are done. And in organizations with ongoing turf battles, intrapreneurs must negotiate three types of turf boundaries: (1) boundaries between different business units such as the Plastics Division and the Medical Products Division; (2) boundaries between functions such as marketing, manufacturing, and R&D; and (3) boundaries between levels in the hierarchy, such as corporate staff and divisional management, or headquarters and field. Whenever there are organizational boundaries—which are inevitable—the potential for turfiness exists. But it doesn’t have to manifest itself if the people involved value innovation more than politics.

Boundary Crossing with Ease

3M’s profab lab never seemed to behave the way a lab should. They manufactured and sold small quantities of products in order to establish new markets. Then they transferred the business to operating divisions and created a number of new basic “technology genes,” each of which spawned multiple divisions.

John Pearson, one of the first three profab employees, retired as Vice President of Development in 1982. As a young man working with Dick Drew (the inventor of Scotch tape), he faced a problem he couldn’t solve. At the time, 3M had a
unique system to minimize the effect of boundaries between technical people in different divisions. Every Saturday, after writing up their patent logs for the week, they took turns visiting each others’ labs to see what was going on.

The Saturday after discovering he had a problem he couldn’t solve, John rushed over to Howard Brinker’s lab. Unfortunately Howard was facing a crisis of his own so he said, “I’ll give you some starting ideas, but I don’t have the time to do it for you. What I can do is help you set up apparatus in my lab, look over your shoulder, and steer you.” For weeks John came in nights and weekends and worked in Brinker’s resin lab until the problem was solved.

“We had territorial boundaries in terms of actual floor space,” John said. “I can remember saying, ‘Hey, your files have shifted over onto my side of the line,’ but there were no intellectual boundaries.”

3M was a community of friends, John explained, because management never played one group against another. The emphasis was on results, but when the results came in it was “We did it,” not “I did it.” Everyone knew who was responsible but the emphasis was on the group.

Ending Internal Comparisons

One of the surest ways to prevent free and easy boundary crossing is to compare people in the performance review process. One has only to say to a general manager of adhesives, “Why can’t you be more like the guy running sandpaper?” to remind the adhesives manager of all the times he helped sandpaper without worrying about who got credit. Once the invidious comparison is made, the invidious game begins. The solution is to compare people with their counterparts outside the company, not with others inside it. This places the focus on the real competition of the corporation.
Win/Win vs. Win/Lose

The need for internal comparisons comes from the conceptual framework of a fixed pie to be divided—the idea that there are only so many positions and so much money, so some must win and some must lose. In fact there is no limit to the number of good jobs or money available. All one needs is the time and the intrapreneurs to create new businesses to run and new profits to divide. This is the self-reliant philosophy of abundance—if everyone is productive, everyone can win. Too often, the rituals of companies, such as the salary review, lean on the old win/lose fixed-pie philosophy to explain decisions. Better to lengthen people’s time horizon and urge them to demonstrate their resourcefulness.

Functional Turf

As organizations grow large, functions such as marketing research and manufacturing become territories whose denizens develop loyalty to the function rather than to the purposes of the corporation as a whole. Perhaps this happens because the corporation becomes too large and abstract to focus people’s tribal impulse. Perhaps it is the result of people’s need for status, as when scientists belittle those who don’t understand their technical language or when marketers bolster one another’s egos with talk about the narrowness of “technicians.”

Whatever the reasons, functional snobbery and struggles between functions exist in most corporations. The existence of turf battles poses great dangers and difficulties for the intrapreneur whose job is to span and integrate all disciplines in order to do something new. When there are turf struggles, each functional empire rejects the ideas of the others and offers instead its own. Each has the NIH syndrome: if it was “not invented here,” it’s not a good idea.

If ideas must be worked on and approved by several different functional areas, this causes problems because the
intrapreneur cannot be from all of them at once and perforce is an outsider in most of the places where he or she must seek approval. The struggles that ensue often reduce innovation to a crawl.

Intrapreneurial Continuity vs. Lateral Job Hopping

One strategy many companies use to break down turf boundaries is to transfer people across the boundaries, giving them a feel for what it is like on the other side. Thus engineers, managers take turns in marketing and so forth. The system works poorly because it involves too little continuity and the produces only superficial understanding.

A far better idea is to allow people to travel with the ideas across all the functions. Take for example researchers who travel with their ideas through the strange lands of engineering, design, manufacturing, and marketing. Even if they are untutored in marketing, the researchers have the most intimate knowledge of the products to which the marketing wisdom of others is being applied. They can contribute their vision of the products' virtues, and they can observe the consequences of their earlier decisions and so gain wisdom from their stint in marketing.

Intrapreneuring and building small cross-functional teams which travel with the new idea from development to product are perhaps the most powerful ways of breaking down barriers between functions. When the group that has responsibility for all aspects of a new idea is small, loyalties form around making the new idea work, not around functional turf.

Intrapreneurs should fight boundary barriers by networking with others who have more interest in problem solving than in politics. And managements wishing to encourage boundary crossing should begin by rewarding it. But each cooperation of the kind needed for innovation comes on with security.
The Secure Turf Principle

Paradoxically, to prevent turf battles one doesn't have to prevent turf building; one has to allow people to build solid ownership of, at least, a small kingdom, and then encourage them to move out from that secure base in a spirit of generosity and cooperation. In times of insecurity, which can be caused by a management that judges harshly or reorganizes and moves people around frequently, people cling to whatever insecure ground they have. People who have no doubt that their base will be there when they return are more likely to be adventurous.

The secure-turf principle works best when the secure turfs consist of tangible territories. Make the plant manager secure that he controls and will control his plant without preventing people in other plants from making similar products. Make a marketing group secure in controlling a distribution channel or a brand name without preventing others from bringing similar products to market through other channels, or other brands. Giving groups broad charters and the right to keep others out will lead to endless unproductive political battles. Let secure turfs be places from which people can say yes to their own visions, rather than sources of the power to say no to others who pass nearby.

9. CROSS-FUNCTIONAL TEAMS

Why will corporations come to rely increasingly on intrapreneurial teams? Because small, functionally complete teams solve the problems of bigness in innovation. Since whenever a new idea begins, it encounters resistance from other functional areas, each idea needs the support of all functions before it can be a success. It does no good to design a product that manufacturing will not make, or make one that marketing is reluctant to sell.
When all the skills needed to launch a new product are brought together in one small, functionally complete intrapreneurial team, three things happen:

1. **The intrapreneurial team forms its identity around the new business rather than around a single functional discipline.**
   
   As a result, ideas easily cross the boundaries between specialists. Since marketing is in reality just Harry and engineering is just Joe, and since they see each other as friends in the same boat, it is easy for them to pull together to keep their intraprise moving.

2. **The intrapreneurial team maintains consistent focus on the needs of the intraprise.**
   
   When a large functional organization like marketing, engineering, or finance has many responsibilities, new ideas often take second place to crises in the existing business. As a result, new businesses get inconsistent support from a number of people who have other, more important responsibilities. Intrapreneurial teams, on the other hand, focus the responsibility for creating a new intraprise on a few full-time people, thereby guaranteeing that on every day someone is thinking about it from the point of view of each functional discipline. The result of this is more consistent efforts and better continuity of thought.

3. **The cross-functional team solves problems holistically.**
   
   Developing a new business requires adaptability. When a problem arises, this often means considering hundreds of possible solutions, each of which has ramifications in every functional area. Practically speaking, all the possibilities can be considered only when all the people involved are together in location and spirit.
Speed

One of the most consistent observations about intrapreneuring is the superior speed of autonomous, functionally complete venture teams in creating new businesses.

Shugart, Xerox's disk manufacturing unit, was being beaten to market by smaller, more entrepreneurial companies. Its employees were leaving to join those faster moving firms. President Bayer responded by devoting a complete intrapreneurial team to each new product.

By providing each team with its own engineering, marketing, manufacturing and financial resources, Bayer aimed to cut at least a year out of the normal product-development cycle, and to stem the flow of employees to outside start-ups. "It all gets down to how quickly you can get decisions made and effected," explains Thomas R. Farrell, marketing manager for the 22 man Shugart team that developed the 3½ inch "micro floppy" disk drive.

His team succeeded in cutting the development time from more than a year to four months. It also had prototypes of its new products in customers' hands for evaluation in just nine months—the fastest new product introduction that Shugart has accomplished since 1976.*

A major cause of 3M's record of maintaining innovation year after year comes from its use of intrapreneurial teams, which it calls business development units. Ed Roberts, MIT's new ventures expert, describes 3M teams: "At the early stage of developing a product, 3M tries to recruit individuals from marketing, the technical area, finance, and manufacturing to come together as a team, each member of which is committed to the further development and movement of this particular product into the market."†


Du Pont was an early pioneer in using small cross functional teams to develop new products and businesses. The company drifted away from this concept, but as development times grew unacceptably long, Du Pont has once again begun experimenting with the team system it helped pioneer. In one case, Du Pont had worked for five years to develop a new test for its clinical analyzers without success. As an experiment, the recalcitrant test was turned over to a functionally complete venture team. Marketing worked closely with the technical people to simplify the task. The new test will be on the market less than a year after the team's formation.

The Characteristics of an Intrapreneurial Team

An intrapreneural team is not the same as a project team or task force. There are specific characteristics that make it an intrapreneurial team:

- Functional completeness
- Continuity of personnel
- Reporting through a single leader
- Freedom to do it their way
- Recruited, not appointed

Functional Completeness

Intrapreneuring means taking responsibility for seeing that all the things needed to make a business reality out of an idea happen. In practice, this generally means the team is built of people from a variety of functional disciplines so that the team has expertise in every aspect of its task.

The fact that the intrapreneurial team is functionally complete, however, does not necessarily mean that it has people who have extensive backgrounds in each area. In many cases, the members of a specialized team may learn to perform functions for which they lack training; frequently, engineers learn to do market research, or marketers learn to do financial
controls, in order to accomplish all aspects of the innovation task. Addressing all problems, not the breadth of training, is what makes a functionally complete team.

To make matters even more complex, there are intrapreneurial teams that don't themselves do every task necessary to create a new product or a new business. Just as an entrepreneurial start-up often subcontracts manufacturing to a job shop and uses manufacturers' representatives or distributors to sell the product, intrapreneurial teams may farm out pieces of their intraprise to existing manufacturing facilities or sales forces. The key to functional completeness is that they take responsibility for all aspects of making it happen, even when others perform those tasks.

Continuity of Personnel

Handoffs are the bane of intrapreneurial teams. (See "No Handoffs," page 202.) Growing with the business is typically the most effective reward available for intrapreneurial teams.

Reporting Through a Single Leader

The team can be autonomous only if it reports through a single leader. Otherwise, it must serve the needs not only of the intraprise but also of the other organizations to which team members report.

"Matrix teams," made up on an ad hoc basis from members from the different functional organizations, have some of the advantages of a functionally complete team, but they are still not as effective as an autonomous intrapreneurial team. They are appropriate for some activities but frequently lack the commitment and the focused dedication needed in today's competitive environment.

The problem with matrix teams concerns mixed loyalties. Employees tend to be loyal to the people who write their reviews and decide their salaries. When each functional organization sends a representative to the new business project,
that person tends to come as an ambassador, representing the concerns of his functional area, rather than as a member of the team. Meetings resemble the UN's efforts to achieve world peace more closely than a tightly knit team moving rapidly toward a common goal.

The formal reporting structure is not the key issue; rather it is a question of whence the individual draws his or her support. Team members on loan can work out nicely as long as the team leaders determine their performance, rather than having them evaluated by the organization that loaned them. Charismatic leaders can overcome almost any organizational pattern by generating loyalty to a higher purpose.

Freedom to Do It Their Way

In an intrapreneurial team, the planners are the doers. There are no managers whose job it is to tell others what to do—everyone pitches in and gets the job done. If there are people calling the shots from above who don't show up full-time and get their hands dirty, it is a puppet team, not an intrapreneurial team.

Recruited, Not Appointed

One of the keys to a successful intrapreneurial team is a sense of ownership of the enterprise, a sense on the part of the team that they own the problems and the joys of creating the business.

To make their teams more effective, 3M does not assign people to such activities; the team members are recruited, says Ed Roberts,

This makes a very big difference in results. In most companies, a marketing person assigned to evaluate a technical person's idea can get off the hook most easily by saying that the idea is poor and by pointing out all of its deficiencies, its inadequate justification, and its lack of a market. Given
the usual incentive systems, why should the marketing person share the risk? But instead of assigning him or her to evaluate the idea, 3M approaches Marketing and says, "Is anyone here interested in working on this?"

Here is a good instant test of a new product idea. If no one in the organization wants to join the new team, the idea behind it may not be very good. More important, whoever says, "I want in," becomes a partner, not a subordinate. He or she shares both in the risk and in the commitment and enthusiasm that go along with it. Team members are not likely to say, "This cannot be produced. It can never break even. It will never sell." They are involved as a team because they want to be, and they have a lot invested in making the idea work."

The Members of the Intrapreneurial Team

The members of the team are, by definition, intrapreneurs themselves. They, too, take personal risks to turn a vision of something new into a reality. Therefore, reward systems for teams should distribute rewards in a ratio resembling the one used by venture capitalists. There the lead entrepreneur receives the largest share, but all the key team members become significant shareholders in the enterprise. Similarly, when an intraprise fails, the lead intrapreneur is not the only one whose career may be set back. Each team member must accept part of the responsibility proportionally.

How a company treats its intrapreneurial teams provides perhaps the best measure of its receptivity to innovation. A firm that truly believes in the possibilities of new concepts will spread rewards and attribute blame fairly. More importantly, it will not stunt the growth of intrapreneurship by applying too heavy a hand to those who have chosen to stand behind the good idea whose time has not yet come.

* "New Ventures for Corporate Growth," op. cit., p. 141.
10. MULTIPLE OPTIONS

Given the odds against people welcoming new ideas, allowing the intrapreneur to select from all the possible ways to get each job done—from marketing to sales—makes a great deal of sense. An intrapreneur may be better served by an outsider, for instance, than by being required to use an insider design specialist, and he or she should have the flexibility to make that choice. This is exactly what happened with the IBM personal computer and why it proceeded so rapidly and successfully: Within a generous budget, Don Estridge had the freedom to choose from a variety of IBM resources or from outside vendors, depending on who could get the job done best and most quickly.

Multiple-Option Manufacturing

The cooperation that intrapreneurs receive from 3M manufacturing plants is unusual. When Rolf Westgaard was the sales manager for a dry-process microfilm business at 3M, he became excited by the idea of extending the basic technology into a new business—making convenient photographic copies of information on computer screens. He saw a ready market in the then-new medical imaging devices such as ultrasound and CAT scans. While continuing his work as a sales manager, he and others, like David Morgan, the dry silver process inventor, began a bootleg project to develop and market the new product. It is not surprising that he got the full support of the lab that invented the dry-process film for his new idea—after all, inventors love to see their ideas used—but the support he got from manufacturing is more noteworthy.

When I asked him how he talked a plant in another division into making experimental quantities of the new product for customer tests, he looked at me strangely. Finally, I got him to understand that in some companies turf barriers, even within a division, make getting access to manufacturing facil-
ilities for experimental runs very difficult.

3M plants are cooperative not just because the culture supports intrapreneurs but also because of the nature of the control system. Rolf explained how the system worked: "The plants are profit centers and anything they can sell to me absorbs overhead they would otherwise have to allocate to their main products. More importantly, anyone can go to any plant to get his product produced, and there were many 3M plants capable of doing my coating job. All of them wanted the business that would come if it worked out as a significant product line. They knew that the easy time to develop relations with a customer is in the beginning."

In all, 3M's system of plant sharing includes: (1) multiple competing facilities (each a profit center); (2) easy divisional boundary crossing; (3) a simple system for cross-divisional transfer payments; (4) a culture that honors innovation; and (5) intrapreneurial teams that include process design people as well as marketing and product design specialists to complement the manufacturing talent connected with the plant. The fact that 3M intrapreneurs have many options for manufacturing makes the system responsive to new ideas.

Component Options

Many companies end up with divisions that manufacture components used by other divisions. Frequently, these in-house component-manufacturing businesses begin because no one outside will supply exactly what is needed. The facility, once established, is then protected. The rationale becomes this: Better to keep the facility busy by forcing other business units to pay above-market prices for some components than to let them buy cheaper parts outside and then have to charge even higher prices for the remaining output of the components division in order to offset the cost of running the plant far below capacity. Given a monopoly inside, and no opportunity to sell components to other companies, many components divisions become complacent and uncompetitive over time.
A number of companies, noticing this vicious cycle, have decided that, rather than continue to burden the customer divisions with overpriced components, they will make the components producing units either compete or exit the business. Tektronix, for example, has put its components divisions on notice that they will soon be expected to compete for other divisions' business and to show a profit. In return, they will also be allowed to broaden their market by selling outside.

When NCR reorganized itself as a large number of autonomous divisions, many of the units were components manufacturers selling to other parts of NCR. No effort was made to make one unit buy from another if outside sources had better or cheaper products. This has led to some unusual situations. Don Coleman's Data Entry Systems Division is broken into thirteen business units. One components unit shared a building with another unit which happened to be its major customer. Under the old system, the customer had to buy those components from that neighbor. After the reorganization, the internal supplier was beat out by an outside vendor. "They [the members of the business unit] have taken it well," says manager Don Coleman. "Instead of complaining and trying to get me to put pressure on their former customer [to buy from them], they are determined to get the business back on merit alone. That's exactly what we hoped would happen."

In general, the results for NCR of this new, freer multiple-option system have been spectacular: 50 percent of the Data Entry Systems Division sales come from products introduced within the last year, and a wonderful change has come over the component business units. Whereas before their real "customer" was the corporate decision makers who "bought" their arguments for monopoly status, now they understand that their survival depends on serving the businesses that buy their products. They have rapidly become more courteous, cut costs, improved quality, and speeded delivery. Once again, they are an asset to innovation at NCR, not an anchor.
The Vendor/Customer Relationship

The vendor/customer relationship brings out the best in people while hierarchical relationships encourage less competent behavior. Taken from the viewpoint of transactional analysis, the explanation is obvious: vendor/customer relationships are conducted between two adults on an equal footing—each can walk away if he or she doesn’t like the deal. Boss/subordinate relationships have overtones of parent and child, and bring out manipulativeness and dependency, not competition to perform.

Whenever we can move from the politically controlled, monopoly decision making of a hierarchical system to the voluntary relationships of free choice, the chances are good that better decisions will be made.

The plunge into the internal and external free markets is a tonic to many business units, but to some the shock may produce "cardiac arrest." There is a way to approach competitive reality more gradually, namely, to give the components manufacturer something like a small subsidy or to erect a small "tariff" wall against outside vendors. One can then, each year, lower the subsidy or tariff until the components group is standing on its own. By this system, senior management can make it clear exactly how much they prefer internal purchases over external by setting a number such as a 20 percent subsidy. Having established that subsidy, the decision on the cost effectiveness of internal manufacture can be made locally by the people involved.

Multiple Options in Sales

Frequently, intrapreneurial teams fight with management over who should sell the product. Intrapreneurs usually believe no one can sell the product as well as they—the dedicated people
who love it. They often believe the main sales force will ignore the new product in favor of selling more of the line they know well. Frequently, they are right.

One veteran intrapreneur, with over a billion dollars in successful intrapreprises behind him, has observed that 95 percent of the time it is best for the venture team to have its own dedicated sales force, at least in the beginning. “That’s the only way to get the rapid feedback from customers that the intrapreneural team needs.” Never having seen a true intrapreneur succeed without its own sales force, he would abandon an enterprise if he was forced to sell through another force.

The Intel bubble memory project found another, effective solution to this problem. The bubble memory venture was allowed to have its own marketing people. Intel had to use the Intel sales force. Stuart Sando, head of bubble memory marketing, saw that the missionary selling effort needed to get bubble memories going was too much to ask an established sales force. He also knew he couldn’t chan the official responsibility for sales, so he learned to live with it. He filled the bubble memory marketing staff with people who spent most of their time warming up major prospects both with and without people from the official sales force present. For closing a deal, however, an Intel salesperson was usually sympathetic to the new business was brought in and gave credit for the sale. Because the marketing department had done all the missionary work, the sympathetic sales people got an excellent return on their time. They became more and more enthusiastic about bubble memories. The bubble memory marketing people urged them to give speeches at sales meetings about their successes and to teach others how to sell bubble memories. It took patience on the part of Stuart Sando and his team, but bubble memories were sold without ruffling any feathers. In 1983, bubble memory sales reached $50 million.

It isn’t always the right decision to use a dedicated sales force, but a good general policy is to let the intrapreneur
who generally cares primarily about the success of the in-traprise—decide. Ideally, the company will have several sales forces competing to handle new products, so they will be very receptive to intrapreneurs when the initial missionary phase is over.

Performance Shoot-Outs

IBM tolerates competing design projects. They have found that several smaller design teams competing outperform one giant one, both in the cost-effectiveness of the final design and in the time needed to produce it. To settle the issue of which design becomes the next generation computer, they have performance shoot-outs in which each team shows off the performance, manufacturing cost, and adaptability of its designs. The best design, rather than the designer with the best connections, frequently wins.

Unfortunately, this is not always so elsewhere. One intrapreneurial team, whose skunkworks had already designed products worth more than $4 billion in sales, found its latest prototype rejected in favor of an inferior design. "But what if this division were a small company and you owned it, then which machine would you chose?" the frustrated intrapreneur asked the decision maker. "Why yours, of course—no contest. But the reality is that this baby here, for all its flaws, was designed by the mainline engineering group. They have the clout—you and your cost-effectiveness don't." The real winners in situations like this are the Japanese, who, faced with less than the best American intrapreneurs had to offer, are currently trouncing the inferior mainline machine.

Humans are inherently competitive. It is better to focus that competition on performance than on political struggle.
Redundancy and Efficiency

The strongest argument against multiple options is that smaller units cannot be as efficient as large ones. In practice, this is rarely true, because the costs of monopoly generally far outweigh the costs of redundancy, particularly in the area of innovation.

Letting Intrapreneurs Do Their Own Purchasing

Purchasing is one of the internal corporate services intrapreneurs would often prefer to do without. The reason for this is that the fastest way to develop a new product is with the help of vendors. This requires a very direct and trusting communication system linking customer and vendor. Talking to vendors through a purchasing agent who demands documentation of every change greatly slows down the development problem.

When Brian Ehlers was developing the Apple Graphics Tablet, he needed the close support and help of his vendors. Apple was so young that no purchasing function even tried to come between him and his vendors. Summa Graphics, his major vendor, knocked themselves out to meet Brian’s needs, making over twenty-five free prototypes before they created what Brian wanted. They were willing to do that because Brian and Apple treated them so well. When they came to call, Brian himself would meet them at once, without any waiting room or intermediaries; and their conversation dealt mainly with joint problem solving, not price. In the long run, not only did Summa solve Apple’s problems, but Apple solved Summa’s as well: As a favor, Apple engineers redesigned one of the Summa Graphics circuits, thereby improving the product they sold to all their customers.

The helpful, informal relationship with vendors worked to get a significant product to market in under a year with only one full-time Apple person and several internal helpers.
Later, when more formal systems were in place, Brian found it took as long to make a minor upgrade to the product to meet new FCC specifications as it had taken to create the whole product a few years earlier.

Of course, the friendly and informal relations with vendors that Brian used to get to market fast do have a price. To cover the graphic tablet, Brian had found a clear plastic sheeting that stood up to the stylus writing on the tablet. His "specification" for that material was mainly an agreement with the manufacturers not to change it. When Apple's internal purchasing department took over they wrote up a specification, put it out for bids, and bought from another lower priced manufacturer. Unfortunately, the new material was too soft and scratched in use. Thousands of tablets had to be remanufactured. Fortunately, the flaw was discovered before the tablets were on the market.

The moral of this story is simple. In rapidly moving fields, it is worth putting up with intrapreneurs who use Brian's informal methods of purchasing to get new products to market faster. Later, if the product proves successful enough to make reducing the cost worthwhile, then the work necessary to write an airtight specification can be done.

**Easing the Tyranny of Staff Services**

The original rationale for corporate staff groups was that as corporations divisionalized it was too expensive to replicate specialized services in each business unit. It would be cheaper to locate services like personnel, legal, and accounting at the corporate level.

Originally, staff organizations were supposed to serve line organizations, but many have gone from suggesting to telling. While in major matters divisions have, in many cases, learned to fight back, most staff groups can still dominate intrapreneurs. In over 100 interviews of managers at six multinational companies, Drexel and Lawler of the University of Southern California found the most frequently mentioned barrier to
innovation was the interference of corporate staffs. The worst situation they found was that in some companies innovators not only had to seek approval from many different types of staffs, from legal to planning, but, to make matters worse, each area of staff had a multilevel approval process beginning at the divisional level and ending at the corporate level. *

One company in the instrument business established an industrial design group to allow the company to have high-quality designers that no individual project could afford full-time. Over time, however, the designers came to see themselves not as a service to the teams bringing forward new products but as policemen whose job was to prevent products from going out whose appearance didn’t meet their standards of excellence. As there were no checks and balances on their aesthetic arrogance, they insisted on changes in everything from the type fonts on the panel to screw sizes, switch design, and cabinet-fabrication techniques. These changes introduced major delays in new-product introductions while adding little to customer satisfaction.

Several years ago, Dayton Hudson, a major, highly innovative retailing conglomerate, took a bold step toward eliminating internal monopolies. Dayton Hudson made most of its corporate staff groups into profit centers that had to sell their services to the divisions. In areas like personnel, advertising, site location, and legal, the divisions had the choice of using the corporate staffs, outside vendors, or building their own capability. Suddenly, stripped of their monopoly status, the staffs became highly customer-oriented, and began serving the divisions better than they had before. In some cases, the rationale for centralization was weak. For example, most of the divisions hired corporate personnel staff to create their own personnel departments. One design group left the company en masse and formed an independent design company.

* Edward E. Lawler III and John A. Dreyer, Jr., The Corporate Entrepreneur, Center for Effective Organizations, Graduate School of Business Administration, University of Southern California, Los Angeles, 1980.
that now serves many stores owned by Dayton Hudson. Others, for whom the efficiency of scale argument is true, remain as profitable units in their corporate location.

Allowing intrapreneurial teams and divisions to use outside services or perform staff functions themselves is a radical but effective system for eliminating corporate fat and speeding the innovation process. In the case of legal services, the corporation may wish to retain some assurances that the overall corporate needs for legal security are met. For this reason they may prefer not to let divisions use outside law firms. In a situation like this, the corporation can still end the legal services monopoly by setting up competing internal legal groups, each of which is charged with protecting the corporation but each of which must also compete for the business of divisions and intrapreneurial teams needing legal advice and approvals.

How Kollmorgen Teams Played Their Options

When Kollmorgen, Inc. was divided into small intrapreneurial product teams, each team was given the right to perform all aspects of their business themselves or to buy services from the divisional staff. Many of these little profit and loss centers were so small that they occupied only part of a building. Their territorial boundaries were delineated by lines painted on the floor. It didn’t make sense to distribute the building maintenance responsibility among five separate tenants, CEO Swigget explained:

If a function is not critical to success in serving the customer or meeting the cost bogey, we usually leave it centralized. That’s why maintenance of the buildings is usually a function of the division, not the product line. Frequently, we have a divisional shipping function, because scheduling trucks is rarely a crucial factor and there is just one shipping dock in the building.

How different this philosophy is from most control sys-
tems, which seek to centralize decisions about important matters while unimportant ones are moved to the periphery. Most Kollmorgen product lines let the division worry about payroll and cash management, because these functions don't have to be customized to serve their clients. On the other hand, most product teams want to do their own cost analysis and collect their own receivables. Since they are being judged on return on assets employed, they want the control needed to keep receivables down, so as to keep their working capital employed low.

The lessons learned by making the use of staff service, components manufacturing, or engineering organizations voluntary are quite generalizable. Monopolies breed stagnation and a distant attitude toward customers. The focus of monopolistic systems shifts toward internal political struggles, beside which customers and intrapreneurs alike become secondary considerations. Soon, the system has all the dynamic urge to explore risky new options of the average utility or government bureau.

The solution: Whenever possible, let voluntary and multiple options flourish. Whenever possible, let decisions be made by voluntary vendor/customer relationships, not by a political process. Encourage redundancy and internal competition as long as it is performance-based.
PROFILE

BRIAN EHLERS: A Classic Intrapreneur

If there ever was an archetypal intrapreneur, that person is Brian Ehlers. He has spent his working life pursuing visions others lacked the imagination to see, building two successful businesses as a result, and is now running his own small business while continuing as a marketing manager at Apple Computer.

During his early twenties Brian began his career at Control Data and then switched to Hewlett-Packard, where he was involved in the creation of a graphics tablet—an electronic notebook that reproduces anything drawn on a special tablet directly onto a computer screen. In time, Apple convinced Brian to bring his graphics tablet expertise to the company, then still a small firm with fewer than seventy-five employees. However, when he arrived Brian discovered a great need at Apple for other software, so he was put to work writing programs for a year before he could begin working on a graphics tablet in his spare time.

Brian had no official help, although he managed to borrow expertise when he needed it. He designed the system, wrote programs to make it work, specified the interfaces that would connect the various components, did some preliminary market research, and talked to potential customers. Then he arrived at the point where he needed real help. He found two Apple engineers who were interested enough to spend a bit of their time building prototypes for the project. In the morning Brian would tell them the type of interface he needed. They would have it designed and built by late afternoon, and Brian would spend the evening testing it in order to report his findings the following morning. Had they used formal channels, the work these three produced in a few days might have taken months.

This extraordinary cooperation and generosity was typical of Apple in those days. But with everyone working overtime on projects that had official sanction, experiments like Brian’s could not use very much of anyone else’s time, so Brian went outside the company for assistance. He found various vendors, saw what they had to offer, discussed his project’s needs, and worked with them to develop what he needed. At one time or another, Brian
had about fifteen outside vendors working on the various components of the tablet. As soon as he had something to show, Brian moved into marketing. Less than a year after he began working on the graphics tablet, Brian Ehlers was taking prototypes to electronics shows, preparing brochures, and writing advertising copy. At the age of twenty-seven he had completed a project, put it on the market almost single-handedly, and watched it sell at the rate of $4-$5 million a year. Apple's investment was paid off in the first year.

Brian stayed involved with the tablet peripherally, but he had another project in mind.

As he saw it, businesses could never fully utilize the graphics tablet until they had a way to transfer their picture from the CRT to paper. Apple already had a color printer in mind for their Lisa computer, which was not due on the market for some time. With Lisa on the way, Brian's different printer idea was not entirely welcome at Apple. Those who were counting on Lisa's high-tech scanning printer felt that Brian's plotter was redundant. Because of this opposition, Brian could not get his plotter built by Apple's peripherals division, even though they were ready and willing to take it on. So once again he developed and manufactured it outside. The plotter was a success. Informed sources place sales at somewhere between $10 and $20 million a year—not bad for a product Apple's sales department told Brian would not sell.

Why do intrapreneurs routinely face opposition inside their companies? Brian had struggled with a problem typical of intrapreneurs. He was too much a maverick and was too outspoken. Thus, after two successes of some magnitude, he was still on the outside, not invited to work on the highly graphic Lisa project, even after clearly demonstrating his aptitude in graphics.

Brian is good at getting along with people. Witness his success in dealing with the outside vendors who supplied so many of his components. Despite the fact that much of his work was done outside Apple, the success of the project depended upon Apple's approval. Apple did, after all, pay his salary and it was Apple's name that was going on his finished products. Probably because of this, Brian's project seemed to contradict management's view of priorities. They were trying to run a growing company, which had already achieved amazing success, in an orderly fashion. Brian's main interest was in his own projects. This is what makes him such a good intrapreneur. And this is the source of friction between Brian and his superiors.

An intrapreneur has to be more interested in the success of
his ideas than in making friends and keeping the peace. As such, Brian is not overly sensitive to opposition. But he is not unaware of his troubles. "I don't walk away from a fight," he said. "But sometimes in a corporation you need to. Some time ago I decided I didn't care about getting a management position. Good people need good management. That means spending time with them individually, hand-holding... But I would rather work on the project. I'm not a good delegator. I don't have the patience to delegate: when I see someone doing something I could do faster, I have to get in there and do it myself."

Despite the opposition he finds at Apple, Brian is still there because, although his personality is questioned, his judgment is valued. Out of his intraprise he has started his own small software company, which he runs nights and weekends, distributing programs Apple doesn't want to sell but that still have an audience. He is in marketing, which is not a bad spot for intrapreneurs, who seem to have an intuitive sense of the services, skills, and products that people need.