INTERNAL ENTREPRENEURSHIP
IN THE AEROSPACE INDUSTRY

by

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Today's aerospace industry is operating in an environment where very few large contracts will be issued in any given fiscal year. The number of aerospace companies in the United States makes the probability of receiving more than one of these programs at a given time relatively small. When a large corporation is awarded a small contract, it must find an efficient way of managing that job within an organizational structure established for the management of large highly complex programs. A viable approach for managing these small projects is considered to be that of internal entrepreneurship.

This thesis defines a broad strategy for implementing an entrepreneurial form of management within the existing management structure of an aerospace corporation. The advantages and disadvantages of this management form, with specific emphasis placed on those problems unique to the aerospace industry, are discussed.

The approach taken in this thesis was to interview a selected group of companies to determine the extent of their involvement in the areas of internal and external venture management. The findings from these interviews were used to define guidelines for the establishment of a venture management organization and define potential problem areas.

The most significant problem which will confront an aerospace corporation in attempting to implement an entrepreneurial form of management will be their interface with the government. Further study relative to problems of governmental interface would form the basis for a useful follow-on effort.

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Introduction

The aerospace industry was launched on a foundation of innovativeness, both in its products and in the management techniques that it employed. Today most aerospace companies are geared to high production rates of highly complex weapons systems which require a great deal of tracking, control and data submittals. These requirements led to the establishment of a large management structure compatible with that of the government. This structure which was established for the efficient management of large programs, such as Apollo, does not lend itself to the efficient management of small projects within the same organization.

In today's political and economic environment, government expenditures in the aerospace areas are declining to the point that very few large contracts will be issued in any given fiscal year. The number of aerospace companies in business makes the chances of being awarded one or more of these programs at a given time extremely small. The industry, having an organization designed to manage large complex
programs is faced with the possibility of only being awarded small projects, therefore, they must find a different approach to managing small jobs. Competitive methods for making a profit on these small projects must be developed and implemented within the overall corporate structure, while at the same time creating an environment for their personnel which will make the innovative form of management flourish.

Roberts\(^{(1)}\) defines an approach to management that should be considered as a viable means of meeting and solving the problem of the aerospace industry. He says:

"The internal entrepreneurship approach relies upon recruiting or finding within the corporation champions for new products and services stimulating them toward entrepreneurial behavior, and aiding them in developing business growth. The activities often are separated from the rest of the company's product lines to provide greater independence, freedom from short term pressure, different rewards, improved visibility and access to the top."

The entrepreneurial form of management is not new to the aerospace industry, for this is the way it operated when it was in its infancy and not subjected to the quantity of controls and reporting that the government requires today. Added to these administrative requirements are the size and complexity of the programs resulting in mutual interdependence of the company and the government. All of these
characteristics yield to the requirement for large management structures and make it more difficult to apply an entrepreneurial approach.

One of the primary areas that will differentiate this thesis from previous works is the recognition of the fact that a company practicing an entrepreneurial form of management and engaged in government contracts will have a different set of problems than a commercially oriented company. A major problem will be trying to get the government to accept a management form for use on programs under contract with them. By the very nature of these programs, they may not necessarily meet all the requirements for tracking, control, and data availability that the government establishes as a necessary condition for contracting with them.

Diederich\(^{(2)}\) discusses three forms of ventures or diversifications. The present work will deal primarily with what he calls vertical diversification "...to expand into production and sales components, parts, and materials used in a company's existing product line."

While concentrating on vertical diversification, this work will take an approach that differs from most previous works on the subject, i.e., the application of entrepreneurial techniques to the internal management of an aerospace
company involved primarily in government work. There will be no consideration given to spinning off separate companies or divisions, as many of the other companies involved in venture management are doing as their ultimate goal.

Not only is the requirement for a new form of management recognized by industry and the academic community, but it has also been recognized and addressed by the government in a U. S. Department of Commerce publication\(^3\) in which they made specific recommendations and proposals aimed at improving the environment for invention and innovativeness. Those recommendations which are applicable to this work are included in Appendix 1.
CHAPTER 2

OBJECTIVE AND APPROACH

Objective

This work will attempt to define a broad strategy for implementing an entrepreneurial form of management that would function within the existing management structure of an aerospace corporation. The advantages and disadvantages of the entrepreneurial form of management, with specific emphasis placed on those problems unique to the aerospace industry are discussed.

The aerospace industry must meet all the necessary requisites for doing work under government contracts. This requirement gives rise to certain restrictions on the establishment of the internal ventures concept that are not present in companies engaged only in commercial ventures.

Some of the steps necessary to implement this organization will be discussed in order to give anyone considering this form of organization an indication of the commitments, both in resources and people, required and some of the "road blocks" that must be overcome.
Approach

The approach taken in this work was to determine what a selected group of companies are doing in the area of venture management, both internally and externally, and to apply some of the techniques and procedures that they have learned to an aerospace organization. These companies were selected to give a cross-section of the various types of industries using venture management techniques.

The involvement in government contracts varied from approximately 0% to 90% of sales. The companies were questioned relative to whether or not any attempt was made to apply entrepreneurial techniques to that portion of work involving government contracts and, if so, what measures of success were realized and what problems were encountered.

These interviews were designed to give an understanding of:

1. What the entrepreneur is.
2. How the entrepreneur is selected.
3. How he is compensated.
4. How much latitude and autonomy he is given.
5. When this form of management should be applied.
The works of Diederich\(^2\) and Roberts\(^1\) formed the basis for the type of questions that were asked during the interviews. A sample outline of the interviews is given in Appendix 2. The results of the interviews substantiated many of the findings presented in Diederich's work, however, we are taking a different approach to the application of these results in this work, i.e., the aerospace industry rather than industry in general.

**Types of Companies Interviewed**

**Company A** - A capital intensive corporation involved in internal ventures and venture capital, primarily in technically oriented ventures related to their product line.

**Company B** - A large conglomerate involved in commercial ventures and also having an aerospace group accounting for approximately 30\% of sales.

**Company C** - A large technology oriented company involved in internal ventures, but with primary emphasis placed on venture capital.
Company D - A company engaged primarily in the development and manufacturing of consumer products. They place high emphasis on internal venture management.

Company E - A large aerospace company that has successfully used a form of entrepreneurial management on selected government contracts.

Summary of Interviews

All of the companies interviewed had certain points which were applicable to their individual organizations, however, throughout the interviews there were certain characteristics that formed a thread, indicating a common approach to the venture management concept. These are considered the most significant findings of the interviews and will be used in discussing the implementation of the internal entrepreneurial form of management and the problems involved in so doing.

- The effectiveness of the venture is directly proportional to the freedom or autonomy given to the entrepreneur.
- Separate overheads are desirable, but not necessary. However, the new ventures should not be overburdened with the commitments of the parent corporation.
o Backing for an internal entrepreneurial organization must come from the top.

All companies interviewed agreed on this point and stated that it was an absolute necessity. Without this condition being present, an entrepreneurial form of organization would not survive and probably would not even get started. The respondent in the interview with Company D stated that "it was not necessary to have full support for this organization from the intermediate levels of management but it was an absolute necessity that the top management be 100% behind it, even in the face of a certain number of failures."

o The entrepreneur or "product champion" must be totally dedicated to the venture and have no other corporate responsibilities.

The aerospace company interviewed has applied the entrepreneurial management approach to five ventures with good success in all but one. The one that was relatively less successful than the others was attributed to its product champion. It should be pointed out, however, that all five programs exhibited a higher degree of efficiency than other comparable programs conducted in the classical manner.
One of the commercial companies interviewed stated that every internal venture failure could be traced to poor performance on the part of the venture manager. They also felt that a good product champion should be somewhat objective, that is to say, when he begins to see a clear failure in his particular venture he must be able to sit back, do an objective evaluation, and terminate his venture if it is required.

- The question of whether or not the venture management operation should be separated from the rest of the company received mixed reactions depending on the experience of the individual companies. Some felt it was necessary and some did not.

- All companies agreed that the product champion was selected by "gut feel" with some qualifications, i.e., if he had a good track record and if he was a doer, then he probably would make a good venture manager and he would be selected.

One company went so far as to say that the venture manager selects himself, that is, he brings his idea to the committee or group having the responsibility for deciding on the venture. He knows his project and he knows what must be done to make it successful. If he can convince the company...
that there should be such a venture, then he has also con-
vinced them that he should be the product champion as well.

- None of the companies interviewed had separate ways 
established for compensating internal entrepreneurs 
and there was mixed opinion relative to whether or 
not there should be separate compensations.

Company A felt that separate compensations were an 
eventual requirement, however, they don't have it now but are 
working toward a different compensation policy for their ven-
ture managers. Company D felt that not only didn't they have 
separate compensation, but the individual who is managing an 
internal venture should be willing to "pay for the privilege", 
because in this company the successful venture manager has a 
history of rising to the top levels of management within the 
corporation. That is their reward!!! Company A cautioned 
that insisting on a different system of compensation at the 
outset when trying to establish a venture management opera-
tion within a company could very well kill it before it had a 
chance to get started.

- Once a man is selected to run a particular venture, 
he should have no other responsibilities within the 
corporation other than his particular venture.
As long as he can prove his performance and progress against a previously agreed to plan, he is left alone to run the operation in any way that he sees fit.

The above comments are on the major questions discussed during the interviews. Other points and conclusions will be discussed in the appropriate areas of this work.
CHAPTER 3
CHARACTERISTICS OF ENTREPRENEURSHIP

The characteristics of entrepreneurship fall into three major categories, i.e., the entrepreneur himself, his organization and how it interfaces with the rest of the company. The most difficult of these characteristics to define is that of the entrepreneur. It is difficult because it is varied, and it is varied because of the different terms used to describe him. He is called "the entrepreneur", "the product champion", "the venture manager", etc. They are all the same.

Characteristics of the Product Champion/Entrepreneur

Webster defines an entrepreneur as "A person who organizes and manages any enterprise, especially a business, usually with considerable initiative and risk." Charles Dailey (4) devotes a good deal of his writing to defining the entrepreneur in different terms, for example, he says, "In brief, then, the entrepreneur is a well paid person who can dream credibly about making much more money if things work out.."; he also says that "stress is the spike of this manager's life.." He places a great deal of emphasis on the word "risk" as does Webster. Dailey says, "some managers are not risk takers, a risk taker is a manager whose courses of action have profitable or favorable consequences in the outer world."
Schon says, (5) "Essentially, the champion must be a man willing to put himself on the line for an idea of doubtful success. He is willing to fail. But he is capable of using any and every means of informal sales and pressure in order to succeed."

Keeping in mind the definitions from the research and the interviews conducted, the following is offered as a definition of the entrepreneur in an attempt to differentiate him from the classical program/project manager.

**DEFINITION:** The entrepreneur or product champion is a person who shows a great deal of self-initiative toward his venture at considerable risk to his future with the potential of a substantial payoff if he is successful.

No finite definition is capable of revealing the entrepreneur in his true light. Some further discussion is warranted on his characteristics and his approach to problem solving.

Several of the references point to some success in the area of innovation and entrepreneurship in the government and they cite Rickover's atomic submarine and McClean's sidewinder missile as two government projects, which due to the product champion were able to overcome all of the resistance to change, the red tape and the bureaucracy that normally causes this form of management to die in the government. These men because of their initiative, drive and total belief in their
product caused them to succeed in spite of every stumbling block that was thrown in front of them. The more innovation required on a project and the more radical that it is, the more initiative the product champion must take, and the stronger personality he must be, especially in light of the underground resistance to this type of an organization. He will have to fight that underground.

He must take risks that are outside of the potential returns to him. He must do much more than any other person having a comparable level of responsibility within the organization, especially as far as assuming risks. The innovativeness of the product champion must be inversely proportional to the amount of the resources at his disposal.

Roberts(6) makes reference to the fact that "...the younger the entrepreneur, the more likely he is to be successful. He identifies three characteristics which are possessed by an individual with a high need to achieve. The first of these characteristics, approach to risk may be summarized by recognizing that "...He will seek opportunities to have risk, but only moderate risk. He won't seek high risk situations because in a high risk situation, by definition, there is little likelihood of success.........There is no reward for winning in a low risk situation." "The second dimension of the man who needs to achieve is that he seeks risk where there is a tangible measurement of success...Thirdly...the individual with high need for achievement really doesn't want to be merely a party to success: he wants to be the cause of success."

The product champion concept is sometimes difficult for top management to grasp, or want to support. During one of the interviews with a top executive, he expressed some concern
over giving the product champion too much freedom. He felt that if too many other people saw this free-lance sort of an operation going on, they might get discouraged with their own standing in the company, for we must remember that we are trying to establish this concept within an organization that is basically designed to operate as a bureaucracy, and chaos could result if too many of these entrepreneurs were running around "upsetting the apple cart" of the hierarchy of the company. The subordinates see the entrepreneur running around "beating the system" and being praised for it. Diederich(2) recognized this as a potential problem also "...some companies believe that top management exposure and mode of operation of the venture manager can foster an attitude of "crown-princehood"; thereby furthering the chances for resentment and conflict within the organization." I feel that just the opposite may be true, that is, if people see this "crown-princehood" syndrome developing, it may give them incentive to get involved in the venture management operation and receive the same kind of treatment and exposure to top management. This exposure may be the only additional reward that the entrepreneur is given for the extra risks and efforts associated with his venture. There is a definite risk that the product champion concept could be detrimental to the smooth operation of the rest of the company, therefore, it must be watched closely.
To reiterate, the product champion must know all the company's personalities, politics and procedures and know how to get around them when the need arises. His interests must not be so narrow that he cannot recognize good ideas brought to him by people that are not in his primary areas of interest. Many good ideas are turned down as a result of a lack of appreciation for the idea or a lack of ability of the entrepreneur to recognize their potential.

Characteristics of the Entrepreneurial Organization

The question is often asked "What is so different between the internal entrepreneurial approach to doing a job and the classical program/project management approach?" In both instances a single individual is given the "total responsibility" for the satisfactory performance of a project. The difference reduces to the approach taken to get the job done and the individual doing it.

Diederich\(^2\) defines venture management as "A corporate commitment, spirit, and form of organizational autonomy which provides increased efficiency and effectiveness in initiating and commercializing non-mainstream ideas for internal as well as external growth and diversification."

Interface with the Company

The ideas or products that would come into the venture group of an aerospace company would come primarily from their
independent research and development, functional departments and changing government requirements. All new small business coming into the organization should be cycled through the venture management group to find out whether or not they could do the work more efficiently than the standard matrix organization. It certainly might be worthwhile to hold minicompetitions internally between the venture group and the standard organization to determine which of these could put out a competitive bid more favorable to the company. The winner of this mini-in-house competition would then have the right to represent the company in the final competition for the project.

Venture selection in commercial companies is based on return-on-investment, expected growth etc.; these criteria may not be representative for deciding what ventures an aerospace company should embark on. Due to the nature of the business they would probably end up being less quantitative in their selection parameters than a commercial company.
CHAPTER 4

NECESSITY FOR INTERNAL ENTREPRENEURSHIP

Background and History

Forrester recognized the need for the entrepreneurial form of management in 1966 when he said (7) "But it is time to apply to business organizations the same willingness to innovate that has set the pace of scientific advance." This same need is again brought out by the U. S. Department of Commerce in their 1967 publication "Technological Innovation" (3) when the Panel on Invention and Innovativeness recommended:

"The Department of Commerce should broaden and complement its studies of the innovative and entrepreneurial process by initiating an integrated program, in cooperation with the universities, including the preparation of empirical data and case materials on these processes, studies of the venture capital system, and experimentation with teaching methods to develop innovative and entrepreneurial talents."

These writings stress the necessity for this form of management, which is contrasted with the fact that there is such a small amount of formalization on entrepreneurial procedures and policies either in companies which are practicing it or in the literature.
The number of people in government and industry that are familiar with the subject of entrepreneurship is minimal. A program designed to educate them is being considered by the government (see recommendations 10 and 17 in Appendix 1).

Schon\(^5\) points out that within the military there is additional recognition of the fact that innovative processes are necessary. Rickover's atomic submarine is again cited as an example of how entrepreneurship can succeed in government. When one considers the thousands of contracts that the government is involved in, it is somewhat discouraging to only be able to find such a small number of programs utilizing a product champion. Of course there may be other examples of entrepreneurship that people are reluctant to bring out in the open for fear of being criticized.

In the government's attempts to establish an organization in which innovativeness can flourish, they are encountering difficulties mainly because of the bureaucracy that is established through which new ideas must pass before they can be implemented. Schon conducted some interviews with military/government employees and the main point that came out of these interviews was that the employees didn't feel that they were expected to be innovative on their own, that there were
very little rewards for self-initiated innovativeness, and that those who really tried to employ an innovative process ran into so much red-tape, formal procedure and organizational hierarchy that the ideas died because of the bureaucracy. The same thing tends to happen in a large corporation, the innovative people in the research and development areas, or free thinkers, have their ideas discouraged by the procedures that they have to go through and they never get to top management. The ideas get bogged down in some evaluation committee, or shifted around by the management hierarchy that exists today. This discourages some of the good innovators and they stop trying to fight the system or leave and go somewhere that encourages the entrepreneurial form of operation.

Projects Requiring Entrepreneurial Application

The necessity for the entrepreneurial form of management begins to come into its own when one is attempting to do something out of the ordinary, such as application of "state-of-the-art" technology or prototype development. Small production programs with compressed schedule requirements also lend themselves to the application of internal entrepreneurship. When an aerospace company receives a contract for a
small job and attempts to do it within the organizational framework established for the large programs, difficulties arise and the small job cannot be managed in a relatively efficient manner when it is burdened with the large tracking requirements, automated drawing and parts systems, etc. These automated systems are fine for the large complex programs, but begin to become a hindrance to the smaller projects. When the established organization becomes a hindrance to the efficient performance of a project and a different approach is required, the entrepreneurial form of management should be applied.

Most aerospace companies have the technological resources to go out and actively seek small projects that could be profitable to them, however, they tend to be reluctant to do this, due to the difficulties involved in fitting a small job into their large complex organizations.

When to Apply Entrepreneurial Management

The entrepreneurial form of management should be applied at the outset of a venture. In fact it should be applied before there is a venture. A group should be actively pursuing new business to be done within this organizational framework, be helping to define the customers
requirements, be a part of the job so that when it does come in, they are not only ready for it, but rather the job is tailored to fit within their organization. The individual companies should work closely with their government counterparts in defining how the job will be run and managed. A close interface with the government at the outset will reduce the problems of complying with the reporting requirements to a minimum.

If early agreement cannot be reached between the company and the government as to how the program will be managed, reported and evaluated, there will be very little chance for internal entrepreneurship to succeed.

**How Projects Should Be Selected**

Each company considering a venture management group will have to tailor the venture selection process to fit its own goals. However, there are certain basic parameters that should be observed. Criteria should be established relative to the types of ventures that will be pursued. Consideration should be given to whether or not the venture group will concentrate primarily on improving existing products and processes or if they will expand into areas not necessarily related to their present product line. The selection
criteria should also give consideration to the initial and ultimate financial commitments, and whether or not the company would be willing to make the necessary funding increases as the venture progresses.

The selection route for a potential product champion and his idea should not be so long and complex that his idea will never have a chance to get off the ground. The more levels that the entrepreneur must pass through for a decision for his venture, the longer it is going to take to obtain that decision. Streamlined channels for these ideas must be established to avoid bureaucratic approval cycles, which historically take too long and have too many people involved.

Before an entrepreneur is allowed to start out on his particular venture he is asked many specific questions which he may not be able to answer because he doesn't yet know the answers. The seed of an idea for a new product or process does not necessarily mean that it is worked out in every detail. He may not know the potential market size, the projected return on investment, or how a particular venture fits into the present product line. He may not have the answers to all of these questions at the outset, therefore, he must be given time to work on his idea to obtain the answers...
before any substantial financial commitments are made on the part of the corporation.

Roberts points out\(^{(1)}\) that adherence to the criteria for a large market to always be readily identifiable and available could be detrimental, for example, Polaroid, Xerox and IBM did not have large markets when they started out. There was no computer market before the first IBM computer was built, there was no market for instant photography before Polaroid introduced it. He also points out that in the beginning as many projects as possible should be given limited funds for further investigation before they are subjected to large committee action and are killed without really having had a chance to prove their value. This same observation was borne out during the interview with Company A where it was stated that they encourage people to work on many ideas with a limited amount of funding; many times it is their own time that is involved to get the idea going. Company D operates on the premise that the smaller the resource commitment, the easier it is to obtain approval. As the ideas begin to develop, a periodic review is conducted to decide whether or not to increase the initial investment. The length of time between reviews would be a function of the
particular venture. At the beginning though, the review is minimal and left up to the entrepreneur himself. The company should support the idea with a small amount of "seed-money". Once the entrepreneur proves that the venture could become a useful addition to the product line or result in some improved process within the corporation, the financial backing should be increased.
CHAPTER 5

MANAGEMENT BACKING REQUIRED

Level of Backing

A unanimous observation from both the research and the interviews is that backing for the entrepreneurial form of management must come from the top levels of management within the corporation. There must be a willingness on the part of top management to admit that there are shortcomings within their present organization and want to do something to overcome them. They must recognize the need for the product champion and must be willing to support him with money, time and resources. They must be willing to accept failures, to give the operation time to prove itself and not expect it to be a success from the beginning. The product champion must be given the autonomy and freedom that he needs to manage his venture while at the same time relieving him of other short term pressures within the corporation. At the outset of a venture, the entrepreneur and management must agree to a plan relative to his objectives and how his performance against them will be measured.
Resource and Financial Commitments

If the company is reasonably successful and doing well, it would be relatively easy to obtain the necessary backing to experiment with new management techniques. However, if the company is in trouble they may be reluctant to introduce innovative approaches to management.

The need is again stressed that internal entrepreneurship must be sold at the top levels first and then filter down through the various levels within the organization. A surefire way of failing to sell internal entrepreneurship to top management is to begin with "...we can bring in all those bright young guys, pay them all kinds of money and turn them loose in their own separate facility." Management may be reluctant to make a commitment of this magnitude at the beginning. A more conservative approach will have a higher probability of success in most companies. They must be shown that there are people already in the organization that can perform the entrepreneurial function well within existing facilities and with minimum start up costs. The advantage of keeping this venture within the corporation is that it can draw on the assets of the company that would be available to it, and which it would not have, if it were spun off as a separate venture.
A certain amount of resources, dollars and manpower must be allocated to a new venture if it is to have any chance of succeeding. This initial commitment is known as "seed-money". Companies that have not been previously involved in venture management tend to shy away from the term "seed-money" due to its speculative connotations. An account should be established, having previous agreed to milestones or evaluation points with additional funds associated with them. As the entrepreneur proves he has met a milestone, the funding will be increased by the agreed to amount.

Don't give the product champion too much monetary support in the beginning of a venture. Make him "scratch" for it, see how firmly he believes in his ideas. Good ventures have failed because there was not enough commitment on the part of the venture manager. The less money he is responsible for the less "help" he is likely to get from management when he doesn't need it. This point was brought out in the interview with Company D where they stated that the amount of autonomy given to the venture manager is inversely proportional to the amount of funding that they are backing him with. That is to say, the more money and resources he is responsible for or has control over, the more management control he will be subjected to.
Time Horizon

Rohrer states\textsuperscript{(8)} "Venture capital usually means taking big losses early and waiting a long time before you expect to see results." This kind of situation exists not only for venture capital and external ventures, but for internal ventures as well. And it is a fact that must be recognized by top management if they are to establish and back the internal entrepreneurial approach to managing a project.

There were some differences of opinion among the companies interviewed about how long a company should back an operation before it is expected to show a profit or return on investment. These backings varied depending on whether or not they were internal or external ventures, however, the spread was between five and ten years. The company should be willing to stand behind the venture for at least that period of time, both with dollar support and personnel. A company must be aware of the extent of the commitment that they are making when they do decide to embark on the entrepreneurial form of operation. Short term losses based on projected cash flows may have to be accepted to meet long term goals. These losses can be predicted ahead of time, and their magnitude should be a strong input into the final decision of whether
or not to start a particular venture. It is not until the venture has a chance to grow and prove itself based on long term profits that an overall appraisal can be made.

The Department of Commerce is recommending that losses of small technologically based companies be allowed to carry their initial losses forward against profits for the succeeding ten years rather than five years. This recommendation indicates their recognition of a realistic time before a new venture becomes profitable.

An indication of the time for a new venture to break even is given in Figure 1. The break even point can occur as far out as ten years. The company that furnished the curve pointed out that no matter how good a product is or the size of the market, the company can never get away from the short term negative profit under the curve. This negative profit is a function of the type of product, the market, start-up cost and the amount of development required to bring the product to market. These same characteristics are applicable to external or internal ventures. For internal ventures the negative profit area would represent the "seed-money", the commitments in manpower and the supporting facilities made available by the parent company.
FIGURE I

SALES

PROFIT

BREAK EVEN POINT

TIME

NEGATIVE PROFIT
Autonomy and Freedom From Other Pressures

When a venture manager convinces the company to embark on his particular venture, they must, at the outset, agree to the objectives of this venture, and how much support or backing he will be given. From that point on management should step aside and leave the entire running of the venture up to the entrepreneur.

All of the key decisions involved with a particular venture should be the prerogative of the product champion. Once top management has decided to back this form of an organization, it cannot constantly step in and make decisions that are rightfully those of the entrepreneur. If he is not capable of making the decisions required for his venture, top management shouldn’t make them for him, rather they should replace him with someone who can. Some caution must be applied here though, because no one knows the venture as well as the product champion. People that are several levels above the entrepreneur do not know the details of the venture and why he has made some of his decisions. It must be assumed that they were made to keep him within an overall plan and, therefore, any spurious decisions thrown in can have a very detrimental affect on the success of the project.
The autonomy given to the venture manager in one of the companies interviewed was quite complete. For example, if he needed a specific form of technical assistance, he was free, even though the company may have several people familiar with the area, to go out and seek external help. He was not duty bound to exhaust all of his resources in-house before he was allowed to seek aid from outside sources, provided it fit within his overall budget.

"Most professional organizations have people who, if given the opportunity, would behave as entrepreneurs."(1) An environment must be established to bring forth these entrepreneurs so that the organization can benefit from their talents. Management must be willing to allow time for this organization to grow. The entrepreneurs must be allowed to sit and think and come up with the ideas without being under other pressures of short term profits or other responsibilities that might require their talents. This will be a very difficult thing for some companies to stand up to. There is a tendency to keep "digging up the seed to see how well the tree is growing". Give it time. The venture management group cannot be held accountable for short term contributions while they are beginning to develop and establish their
"modus-operandi". The experts in this group should not be continually called back to their parent organizations to "fight brush fires" and solve immediate short term problems.

As an example of the autonomy given their entrepreneurs, Company D, when asked how they decide to terminate a particular venture, commented that it was the responsibility of the venture manager. If he were a good manager, he would recognize when his venture was going bad and terminate it. On the other hand, if he were a bad entrepreneur and didn't recognize this impending failure, the venture would die on its own and he would go with it. There are, of course, some exceptions to this; if the venture got to a point where it was obviously dead and the entrepreneur refused to terminate it, the corporation would do it for him. "Policy should allow freedom to innovate and should have the fewest restrictions compatible with the coordination needed to insure overall system strength, stability and growth."(7)

Compensation

A good deal of what has been written on the subject of compensation indicates that the entrepreneur must have a piece of the action if he is to be successful; and yet throughout the series of interviews that have been conducted,
the companies stated that they do not have different forms of compensation for the venture group. One of the companies felt that it was a necessity for the entrepreneur to have a different compensation system, but they hadn't yet been able to establish one; while another company felt that if a person had a strong enough desire to manage a venture, he should be willing to pay for the privilege. Diederich\(^2\) concluded that from the twenty-six companies that they interviewed there were no different forms of compensation for the internal entrepreneur. So there is some difference of opinion within the academic community and industry relative to whether or not a different form of compensation is a necessity for the internal venture manager.

Rohrer's\(^8\) work supports the argument that someone engaged in venture capital, not necessarily internal ventures, must have a piece of the action. That is certainly true and it may be a problem in trying to apply this argument to internal venture managers. This is where some of the difference in opinion originates, relative to compensation. It is necessary for an external venture manager to share in the profits of the company since he no longer has the "security" that the internal entrepreneur has. He is taking more risk
personally relative to his security and, therefore, he must be compensated differently.

Risk and Failure

The price for innovation is not cheap. There will be failures, and management must both recognize and be willing to accept this fact. The risks of venture management were discussed at some length during the interviews. It was pointed out that when one discusses venture management he usually only hears of the successes, because they are more pleasant to talk about. However, failure is as important an item to allow for as success, especially since the number of failures will probably outweigh the successes.

Consideration must be given, not only to rewarding success but negative rewards or punishments for failure must also be taken into account. In the classical organization there are punishments for failure, usually monetary or dismissal. In the entrepreneurial atmosphere where risks and the attendant failures are of a higher frequency, a different form of evaluation or rating must be employed.

The entrepreneur, taking risks, will at times fail and he should not be punished in such a way that this singular failure becomes the reason to stop the entrepreneurial form
of management within the corporation. Nor should a single failure of a high risk venture be reason for not giving the particular individual a chance to find another enterprise or venture within the company. As Forrester said, "In today's "small-business" world, the risk to the budding entrepreneur is greater than it need be. In general he gets but one chance."

Risk vs. reward, both in the military and in large corporations are not necessarily related to one another. When someone tries to practice the innovative form of management, that is, not within the normal scope of doing business, he runs the risk of serious punishments for his failures and very little rewards for his successes. The forms of punishment must be such that they will not deter others from taking similar risks. Management must know how to handle failure, be prepared for them and have a willingness to accept a certain number of them.

The internal entrepreneur is jeopardizing his professional career in two ways. His chances for failure are high and for those years that he is busy trying to promote his venture, he will lose out during the normal promotion cycles. His normal growth within the organization could be stunted
if he invests several years of his career on a venture. He is gambling normal promotions against those of his peers by getting out of the normal organizational hierarchy and into the venture management group. Caution must be exercised to insure that the venture group does not form a professional "dead-end" for those who are willing to take the risk and step out of the security and comfort of a bureaucracy into the high risk prone atmosphere of the entrepreneurial organization.
CHAPTER 6

ORGANIZATIONAL PLAN

In coming up with a plan to implement the internal entrepreneurial form of organization within an aerospace company, consideration must be given to the size of the internal venture group, the autonomy given to the individual entrepreneurs and the group as a whole, the forms of controls that will be employed, and how he will be evaluated and rated compared to people on his level who remain within the formal corporate organizational structure.

Then consideration must be given to the selection of the entrepreneur, the ground rules under which he must operate and how this would differ from the classical organization, and finally how it would be implemented. The way in which any individual company goes about this will be a function of its particular organizational structure.

Organization

Initially the venture management organization should be a small separate department within the overall corporate structure, having a limited number (3-10) of select people, each with their own various areas of expertise. The group may start out with one or two people that are charged with coming up with new ideas, new areas of business or new projects that could be uniquely handled by their organization.
Once these projects are identified, then a search for the proper product champion should be conducted and he would be brought into the organization to aid him in establishing his venture.

The venture management group should be a dynamic organization, in the sense of the longevity of the people involved in the group. The entrepreneurs coming into the organization should bring a certain expertise with them which will be applied to ventures. There should be a constant flow of people to and from the venture management group, bringing with them new and innovative ideas. The nucleus of the venture management center should not stay in that position for more than 3-5 years or they will become "stale". Either they should have a venture of their own on which they can be product champion or they should go on to a different area of the company.

Depending on the size and length of the program, the product champions may either operate their venture from within this organization or have their own separate project, relying on the "venture management center" for guidance and assistance only where necessary.

One of the primary objectives of establishing a group such as this is to allow one to work within a large organization without being hampered by the bureaucracy and red-tape.
One must be careful when establishing this organization, so that it doesn't become just another "operating department" and a part of the overall management hierarchy. At the outset, a low profile should be kept in an effort to avoid too much attention or assistance during the early stages of formulating the organization.

The individual venture will be the total responsibility of the product champion. He will have total responsibility for its success, failure and control. The 3M Company considers the product champion one of the most significant aspects of their approach to new ventures and internal ventures. Ford says\(^{(9)}\) "And here you begin to learn something of a key ingredient to 3M's success, the product champion."

Most companies engaged in venture management recognize the necessity for the product champion, however, one must remember some of the cautions that were expressed in Chapter 3 relative to the effects that the product champion concept could have on the rest of the company.

Much of the literature points out that having low overheads, separate geographical locations etc., are necessary requisites to having successful ventures. This may be true in the optimum condition, however, it is not a necessary condition; it is a function of each individual companies accounting procedure.
A venture management center could be designed to operate as a profit center or a cost center since there are some similarities. Once a corporation establishes a profit center it normally is still at the whims of the overall corporate accounting system. In a profit center you may only be controlling direct expenditures whereas the entrepreneur is being evaluated on total profits or return on investment. The overhead rates constitute a large portion of that profit, if he has no control over these then the evaluation of his performance could be misleading. He may only have control of 40-60% of the total expenditures depending on the accounting system, therefore, that is all that his performance should be evaluated on, if separate overheads are not established.

The reward system in a profit center is basically no different than anywhere else within the company, i.e., your reward is your salary. You are not getting a piece of the action, no stock options etc.. You are not being compensated in anyway different from anyone else employed by the company.

I have not shown an organization chart for the venture management center because there shouldn't be one. All that is necessary is to know that this group should not be on such a low level that it is buried in a maze of bureaucracy, which would tend to destroy
the innovative approach that is so necessary for a successful operation. Any company considering this approach should have this group reporting to a member of top management whose title and position may differ in different companies.

Selection of the Entrepreneur and the Ideas/Ventures

The selection of the entrepreneur will be a very simple process in keeping with the procedures noted during the interviews. He will be the man whose idea the project was, the man who sold it and the one who has a proven track record.

The internal entrepreneur should come from within the company. Some of the research suggests people from outside of the company should be used in establishing the venture management group. I disagree with this approach. The best internal venture managers will have to come from within the ranks. It may be true that an external venture could better be run by someone hired for just this purpose, but not for an internal venture. The internal entrepreneur must be completely familiar with all of the politics, personalities and the procedures that a company uses. If he is familiar with them he will then know which ones would help his venture and which ones would hinder it. He will then be able to find ways around those people or procedures which are
in the way and use those that are to his advantage. Ford says, "If you need help, go find it. Anywhere. "This, of course, requires two corolary principles: Know where to look for the information you need, and have it available when you ask." The internal venture manager selected from within a company has greater chance for success, for he knows where to look for what he needs, and depending on the level he is operating from, it will be made available to him.

Before ideas can be implemented they must be brought to the surface. If a company considering the internal venture form of a operation, it must be made known throughout the company, all departments, that they are about to embark on this form of an operation, and that they are actively seeking people to come forth with new and innovative ideas for products and processes that could be further investigated by the venture management center.

The first stage that an idea must go through should be a very simple one. Ideas should not be discouraged in the early stages. Recognition of new ideas, new techniques and new products, and a sound evaluation placed on them, must be taken into consideration before the ideas are cast out. If an idea is turned down once, that should not mean that it is dead forever. It should have a route to follow that would allow it to re-surface if conditions
warrant. If the product champion finds that he now can take a new approach to this idea, the possibility of further evaluation should exist. Failure to accept an idea the first time should not end that particular idea forever.

A company embarking on internal entrepreneurship is faced with a very difficult balance to maintain between freedom for change and resistance to change. If the resistance to change were completely removed, you could have utter chaos within the organization. It would become too easy to make changes. They would be made for changes sake and not necessarily to make improvements either in a product, process or an organizational structure. This is as bad or worse than having no changes at all. A balance between change for purpose and change for changes sake must be established.

Opposed to having total freedom for change would be having complete resistance to change, which causes the company to become stagnated. Resistance to change can take several forms, one is direct resistance. This could be an absolute dictate on the part of management that they will not listen to or discuss any new ideas. This almost never happens. The more insidious resistance to change is that which on the surface, management will profess the concept of trying to establish the innovative process to encourage people to come forth with new ideas
and then put them through such a series of review committees, with so much red-tape that the changes never come into being. This is the toughest resistance to change to overcome. When you try to fight this, management says, "but we are for changes, we are for innovativeness, look at all the committees and procedures that we have established to encourage change!!"
Conclusions

The aerospace industry must lead the way in applying innovative management techniques to government contracts, and not wait for the government to initiate changes in their organization. They must be the product-champion of the entrepreneurial form of management to insure that the military gets the product that it requires at a reasonable cost and does not expend large resources in areas that are not necessary to achieve this end.

Commercial companies have used the entrepreneurial form of management very successfully, both on internal and external ventures. Some of the techniques that they have employed are directly applicable to the aerospace industry and others must be modified to make this a viable form of management.

The most significant problem confronting the aerospace industry that the commercial companies do not have to deal with is the bureaucracy facing them in their contractual relationships with the government. This could be the most difficult hurdle for an aerospace company considering implementing an entrepreneurial form of management.
A definite plan would have to be established showing the benefits that the government would derive from this form of operation, i.e., cost saving, increased efficiency, quicker response to their requirements etc. The special considerations of interfacing with the government could be the basis for follow on work or future thesis in this area.

The following are the major conclusions that were reached as a result of the interviews and the research:

- The most difficult problem for an aerospace company considering an entrepreneurial form of management will be interfacing with the government.
- Backing for an internal entrepreneurial organization must come from the top.
- The effectiveness of a particular venture is directly proportional to the freedom or autonomy given the entrepreneur.
- Each venture must have an entrepreneur or a product-champion who is totally dedicated to his venture and has no other corporate responsibilities.
Separate overheads are a desirable but not a necessary condition. However, new ventures should not be burdened with assuming the commitments of the parent corporation.

Separate forms of compensation are not necessary for internal entrepreneurship.
NOTES


BIBLIOGRAPHY


APPENDIX 1

SELECTED RECOMMENDATIONS

OF THE U. S. DEPARTMENT OF COMMERCE'S

PANEL ON INVENTION AND INNOVATION

Recommendation 9

The Department of Commerce should broaden and complement its studies of the innovative and entrepreneurial processes by initiating an integrated program, in cooperation with the universities, including the preparation of empirical data and case materials on these processes, studies of the venture capital system, and experimentation with teaching methods to develop innovative and entrepreneurial talents.

Recommendation 10

An interdepartmental ad hoc review of current contracting policies and procedures of such agencies as the Department of Defense, the National Aeronautics and Space Administration, the Atomic Energy Commission, and the National Institutes of Health, to ensure that these policies are conducive to the long-range growth of small enterprises.
Recommendation 11

The Department of Commerce should serve as the Federal spokesman representing the interests of new technologically-based enterprises and should develop the necessary competence and organization to deal with problems associated with venture capital availability and the generation of such enterprises.

Recommendation 17

(a) A White House conference on "understanding and improving the environment for technological innovation.

(b) Soon thereafter, a series of regional innovation conferences, composed of governors, mayors, bankers, academicians, scientists, engineers, entrepreneurs, and others - aimed at removing barriers to the development of new technological enterprises, jobs, and community prosperity in the respective regions.
APPENDIX 2

SAMPLE INTERVIEW GUIDE

I. Description of Organization
   A. Name of Organization__________________________
      Division__________________________
   B. Primary Product Line
      1. Total Company__________________________
      2. This Division__________________________
   C. Age of Organization________________________
   D. Length of Time Company Involved in Venture
      Management
      1. External Ventures________________________
      2. Internal Ventures________________________
   E. Percentage of Business With Government_______

II. Operating Policies and Philosophy Toward Entrepreneurship
   A. Why was this approach considered as a management
      tool?________________________________________
         __________________________________________
         __________________________________________
   B. What is their incentive policy for entrepreneurs?
      ____________________________________________
      ____________________________________________
C. How much decision making latitude are they given?

_________________________________________________________________________

_________________________________________________________________________

D. What is the level of corporate sponsorship?

_________________________________________________________________________

_________________________________________________________________________

E. Is their ultimate goal to spin-off the venture?

_________________________________________________________________________

_________________________________________________________________________

F. What is done to keep from loosing entrepreneurs through spin-off, etc.

_________________________________________________________________________

_________________________________________________________________________

G. How does their organization give the entrepreneur increased visibility or access to the top?

_________________________________________________________________________

_________________________________________________________________________
H. What types of accounting procedures are used, overheads, etc.?

III. Selection Process

A. How do you decide on the venture?
   1. Size
   2. Market potential
   3. Return on investment
   4. Technology base

B. How do you select the entrepreneur?
   1. Track record
   2. Personality traits

C. When is this approach applied to a project?
IV. Measurements of Success/Failure

A. How and when is the decision made to terminate a venture?

B. What criteria is used to measure success?

C. How is success rewarded?

D. How is failure punished?

V. Identification of Successful Entrepreneurial Ventures

A. Internal

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C. Government Contracts

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VI. Concept of Entrepreneurial Management

A. Define the entrepreneur

B. Is he allowed to establish his own working conditions, hours, etc.?

C. How much autonomy is he given?

D. What forms of control does the company exercise?

E. How does the company establish an environment which causes ideas to surface?

F. Are the entrepreneurs given freedom from short term pressures, i.e., short term profits or other management duties?

G. Are they separated geographically?

Initially____ Ultimately____ Never____
VII. How much seed money is provided for internal ventures as a per cent of R&D budget

VIII. Trace a typical venture from inception to completion