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**Abstract:** In order to help managers promote innovation within established high technology companies, this project set about to develop a list of recommendations for managers who are about to lead an entrepreneurial organization. The goal is to determine how established , high technology companies measure the success of entrepreneurial organizations; which are the most important factors for success of such organizations. Based on literature summary, view of what factors lea to the success of entrepreneurial organizations, and a survey of high technology managers, a list of recommendations is made.

**Fostering Intrapreneurship Within  
Established High Technology  
Companies**

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**Fostering Intrapreneurship within  
Established High Technology  
Companies**

**Critical Factors Leading to Success**

**by**

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## 1. Executive Summary

In order to help managers promote innovation within established high technology companies, our team set about to develop a list of recommendations for managers who are about to lead an intrapreneurial organization. An intrapreneurial organization is defined as a start-up organization within an existing company.

The goal of the research was to determine:

- How established, high technology companies measure the success of intrapreneurial organizations
- What are the most important factors for success of such organizations.

The output of the research is a list of recommendations based on the synthesis of three kinds of information:

- A summary of recent literature
- Our team's view of what factors lead to the success of intrapreneurial organizations
- A survey of high technology managers who have intrapreneurial experience

The review of the literature revealed that there is no consensus as to how to measure the success of intrapreneurial organizations, and that there are numerous factors that contribute to the success of such organizations. The literature did not contain a summary for managers as to which of the myriad of success factors are the most important.

The survey results supported the literature in that high technology companies use a broad range of success criteria. The results indicated that the most useful criteria were those that are easiest to measure. *Time to Market* was the most often used success criteria and financial results (*Revenue Target* and *Return on Investment*) were the most useful.

The survey results in regard to success factors also supported the literature in that respondents rated factors related to flexibility and autonomy high. These factors are related to the success criteria of *Time to Market* because intrapreneurial organizations will need flexibility and autonomy to achieve their time-to-market goal.

The summary of recommendations for intrapreneurial leaders is:

- An intrapreneurial venture will not be successful unless the parent company encourages innovation
- The team must view their organization as a market venture, not a technology venture
- Use success criteria and figure out up front how you are going to measure them
- The leader must be able to articulate a vision that inspires the team
- The team has to be able to "break the rules" which usually requires the that team be separated from the mainstream company
- The intrapreneur needs total decision making authority
- The team must have complete product responsibility, from concept to market.

## 2. Introduction

Entrepreneurs take risk for granted. In starting up a company the risk of failure is always present and serves to keep employees focused on keeping costs low and innovation high. As a company becomes larger and more stable, this focus is often blurred. This, coupled with an increase in bureaucracy and a decrease in risk-taking, can suppress the innovation that high technology companies need to continue to develop new products and markets. To offset this tendency, many high technology companies are attempting to create an environment that stimulates internal entrepreneurship[20]. Intrapreneurial organizations, like entrepreneurial organizations have a high failure rate. Sathé found that companies known for success at intrapreneuring experience rates of 60%[20]. These internal start-ups have been called intrapreneurial organizations. The term intrapreneur was coined by Gifford Pinochet III in his book *Intrapreneuring* [16].

Because of the increase in intrapreneurial organizations over the last 20 years or so, there is a wealth of literature about how to create, run, and measure the performance of intrapreneurial organizations. The objective of our research about intrapreneurship was to review the literature and gather first-hand data from high technology managers to determine two things:

- How established, high technology companies measure the success of their intrapreneurial organizations (called *success criteria* in this paper)
- The critical factors leading to success (called *success factors*).

The output of this research is a list of recommendations for a high technology manager who is responsible for starting and leading an intrapreneurial organization.

In this paper, “established” high technology companies are defined as those that have been in business longer than 10 years and have an annual revenue greater than \$100M. These companies are likely to be experimenting with intrapreneurial organizations to create new product areas and revenue opportunities.

### 2.1 Success Criteria

One of the difficulties in starting an intrapreneurial organization is determining how to measure its success. Hauschildt looked at 30 empirical investigations about innovation to determine how they measured success and determined that, “we are far from having consensus about the standards of measurement.” (p. 605) This is because there are differences in:

- When a success is measured. If an economical measure is used, success must be measured after the product is on the market, but this could be at any time over a number of years.

- What is the success of the innovation compared with? With earlier successes at other companies? The only rational way to measure success is against a predefined goal, if such goals really exist, and if there was consent about them, and if their definition and interpretation did not change during the course of the innovation.
- Who measures the success? There are considerable differences between insiders' and outsiders' views. The only reasonable way is to have a group evaluate the success against a firm set of directions on how to measure success.

Pinochet [16] suggests that companies have both long-term and short-term goals for intrapreneurial organizations, such as:

- Working prototype by a certain date
- Customers respond well to market test by certain date
- Revenue over a specified time period
- Delivery to a schedule
- Manufacturing cost per unit.

## 2.2 Success Factors

Another difficulty in starting an intrapreneurial organization is determining what to focus on in order to achieve success. A manager who reads the literature on intrapreneurial organizations will find long lists of factors that should be considered when starting or leading such organizations. The literature does not summarize how to create and lead intrapreneurial organizations, and which of the many factors are the most important for success.

There are many success factors of intrapreneurial organizations to evaluate. We could have researched how companies foster an intrapreneurial environment, how they determine which projects to fund, or how intrapreneurs should approach getting a project proposal accepted. We could have investigated how to foster intrapreneurship in a multi-firm network of companies which is becoming increasingly important in the 1990s [18]. We decided to evaluate success factors of projects which had already been approved and funded, and the factors that the intrapreneurial leader could influence. We evaluated these success factors by reviewing the literature both on intrapreneurial organizations, and entrepreneurial organizations, assuming that they are similar in many respects, although they have some fundamental differences.

Assuming that entrepreneurial and intrapreneurial organizations are similar, we reviewed literature about successful entrepreneurs and entrepreneurial organizations (start-ups). Brokaw's research [2] found that the eight characteristics of highly effective start-up companies are:

- Reliance on teamwork
- Leadership which is experienced in the field



- Leadership which is experienced in starting businesses
- Male leadership
- High technology manufacturing
- Slightly better financing
- Leadership which shares the equity
- Markets which are larger than the local area.

Although this research helps the intrapreneur, it does not all apply, nor does it cover all the areas of concern within the corporate organization.

If intrapreneurial ventures are similar to start-ups, then success factors could be those determined by Beam and Carey [1] who state that the leader must:

- Truly love their product
- Be willing to be personally involved in the business and commit themselves totally to making it a success
- Be willing to stick with it through thick and thin
- Have a clearly defined way to market the product or service
- Be a person who would buy the product or service if they were a customer.

Pinochet, who researched success factors for intrapreneurial organizations, states that companies can foster intrapreneurship primarily by rewarding intrapreneurs with something directly related to their needs: not salary and bonuses, but the empowerment to innovate. To understand how to do this, companies must understand what motivates intrapreneurs so that they can set up an environment and reward system where these people can succeed. Intrapreneurs can benefit from large-company resources, and large companies need people who are passionately dedicated to innovation.

Kuratko, Montagno, and Hornsby [8] list many factors important in creating a corporate intrapreneurial environment. They list:

- Top management support
- Available resources
- Experimentation
- Multi-disciplined teamwork
- Structural freedom and support
- Flexible policies and procedures.

In addition, they state that an effective reward system “must consider goals, feedback, emphasis on individual responsibility, and rewards based on results” (p. 52).

In a survey of 37 technology companies, Shlaes found that most companies encouraged autonomous idea teams, but that 75% of the respondents said

companies preferred short-term or “sure” projects. Only 14% of companies would stick with ideas long enough to see if it would work [23].

Sathe created a list of recommendations for the top executives in companies that want to foster intrapreneurship [18], this list is:

- Consider knowledge of products, markets, and technologies, when moving managers around
- Hire managers from outside who know a product, market, or technology of interest
- Promote the company's own success stories and champions
- Don't penalize for failure
- Heighten visibility of results and keep top management well informed
- Bet on people who know their territory, rather than on formal analysis or your own judgment of the attractiveness of the opportunity
- Use supportive challenge to test the intrapreneurial leaders conviction and to help uncover his or her blind spots
- Use betting rules to contain entrepreneurial risk
- Ask for additional contributions and budget cuts without calling the shots on specific ventures.

The literature indicates many factors that can lead to success. Pinochet has summarized the themes with his statement:

“The intrapreneur's vision is not just a vague idea of a goal, nor is it just a clear picture of the product or service. It is a working model of all aspects of the business being created and the steps needed to make them happen. Intrapreneurs spend a lot of time building and testing their mental models. They see the marketing and production, the finance, the design, and the people as an integrated system. Their vision of each of these areas may not be as good as that of a professional marketer, manufacturer, or financier, yet the intrapreneur is of irreplaceable value in a wider role—the ability to see how a business as a whole could work and then to act with courage and decisiveness to make it happen”. (p. 40)

These articles give the corporate intrapreneur useful information, however, due to the differences between intrapreneurial and entrepreneurial organizations, and lack of consensus contained in the articles, the intrapreneur may still not know which factors leading to success are the most important.

### **3. Methodology**

The research was aimed at determining two things:

- How do high technology companies measure the success of intrapreneurial organizations?
- What are the critical factors leading to success?

In order to determine these items, we first performed a literature search, and then wrote and distributed a survey to managers who had been in intrapreneurial organizations within high technology companies. We tabulated the survey responses, but did not perform statistical analysis due to the sample size.

#### **3.1 Literature Search**

We searched primarily business and engineering journals and books looking for articles on intrapreneurship, entrepreneurship, and internal venturing. The search was limited to fairly recent literature (1985 and beyond) based on the assumption that recent business conditions would impact success criteria and success factors. We searched these articles for recommended success criteria and success factors and tagged all the references that we found. The articles and books contained numerous recommended success criteria and success factors.

#### **3.2 Instrument**

From the items found in the literature, we created a survey to determine whether high technology companies used the success criteria cited in the literature, and if so, whether they were useful. The survey also contained questions to determine which of the success factors cited in the literature high technology managers thought were most important. In the literature, success factors fell into three categories: leader, team, and company factors. Therefore, we structured our survey into these categories (see Appendix A). The criteria and success factors were alphabetized to make them as random as possible, so as not to influence the respondents.

The literature indicated that it would be difficult to get managers to admit that their intrapreneurial organization had failed, or to talk about the nature of the failure. Therefore, we structured the survey such that the respondent could indicate what would cause success in an intrapreneurial organization, but we did not ask them to recount their failures.

Because our respondents were busy high technology managers, the survey is short (2 pages) and quick to fill out. We attached a cover letter explaining the purpose of our research, and explaining the terms used in the survey. We expected that survey responses might contain sensitive information (especially in the case of failed ventures), so we told the respondents that their responses would be kept anonymous in the final paper and presentation.

### **3.3 Hypothesis**

After completing the literature search and writing the survey, our team developed a hypothesis as to which success criteria are used and are useful to high technology companies, and which success factors are most important. We did this by having each team member fill out a survey, and then tabulated a group response.

### **3.4 Sample**

Because the target audience for the survey was limited, we personally contacted them and asked for their participation. The respondents were from: Intel Corporation, Mentor Graphics Corporation, Data General, and Sequent Computer Systems, Inc. The results met our expectations; we got 10 responses, which was a 100% return rate. Due to the size of the target audience, we did not perform statistical analysis on the data. Instead we simply tabulated the results.

Surprisingly, many of the respondents gave additional written comments when they returned the survey. The topic seemed to be emotionally charged for many of them, and they wanted to either talk about, or write about their intrapreneurial experience.

## 4. Hypothesis

The following are the results of the team's response to the survey.

### **Success Criteria**

The team thought that the most useful success criteria would be:

- Time to market
- Market share
- Technology improvements.

### **Success Factors**

The **leader** of the intrapreneurial organization should:

- Have in-depth market knowledge
- Have in-depth technical knowledge in the selected product area
- Have lead previous intrapreneurial activities.

The **team** should:

- Take customer input into the design
- Have a business plan
- Recruit team members instead of having them appointed
- Be responsible for the product from concept to market.

The **company** should:

- Encourage innovation
- Encourage risk
- Provide resources (time and/or money) for people to try out new ideas
- Stick with the new product venture long enough to see if it would work.

## 5. Results

The following is a summary of the survey results. (The complete results are included in Appendix B.) We received 10 responses to 10 surveys distributed (100% return rate). The respondents selected based on the criteria described earlier. (Items that are shaded match the team hypothesis.)

1. Success criteria definition: 9 out of 10 companies used success criteria.
2. The success criteria that were used, and their degree of usefulness are:

Criteria	Number of companies that used	Degree of usefulness
Time to Market	7	3.75
Revenue Target	6	4.5
Technology Improvements	6	2.6
Improved Image	6	2.2
Product Margin Target	4	4.2
Return on Investment	3	4.5
Market Share	3	3.25
Unit Volume of Sales	3	3.5
Human Resource Development	3	2.3
First to Market	2	2.5

Success criteria: (1=not useful, 5=invaluable)

3. On average, projects came to 68.88% of meeting success criteria. Overall, managers perceived that they had met a good percentage of their success criteria.
4. On a scale of 1 to 5 (1=Failure, 5=outstanding) the success of projects averaged 3.2. Overall, managers viewed their projects as successful. Only two managers viewed their projects as failures.

5. The three most important success factors for a leader are that the leader:

Leader Factors	Number of Respondents (out of 10)
Had complete decision making authority in regards to the product.	5
Set clear product definition.	4
Had in-depth marketing knowledge.	4

There were no leader factors with which a majority of the managers agreed.

6. The five most important team factors are that the team:

Team Factors actors	Number
Was responsible for the product from concept to market.	8
Was separated either physically or organizationally from the rest of the company.	7
Contained all the necessary skill areas required for the product.	5
Had a high level sponsor.	5
Had a business plan.	4

7. The four most important company factors are that the company:

Company Factors	Number
Encouraged risk.	6
Tolerated flexible policies and procedures used by the intrapreneurial organization.	6
Provide resources (time and/or money) for people to try new ideas.	5
Stuck with the new product venture long enough to see if it would work.	5

Note: The survey asked that managers identify the three most important company factors, but there were two items that both received 5 responses, so we have listed the top four company factors.

## 6. Discussion

Given the small sample size the results are not statistically significant, but they are still interesting in that they are all from one industry, and are from people with firsthand intrapreneurial experience (unlike most of the articles we read).

### 6.1 Success Criteria

In general, the survey results in regards to success criteria support the literature. There was no consensus as to which success criteria companies used, and many of the criteria were only marginally useful. All of the success criteria listed were used, and a few that were not listed were mentioned by respondents.

This correlates with Hauschildt's study on success criteria[5]. He found that companies use a wide range of success criteria because different success criteria are useful at different stages in the organization's life. It appears that the choice of success criteria will determine the importance of various success factors. While the choice of success criteria differed, the one thing all respondents had in common was that they felt that using success criteria was essential to organizational success. The one manager whose organization did not use success criteria supplied written comments strongly suggesting that intrapreneurial organizations use success criteria.

There were four success criteria that the respondents rated at 3.5 or above:

- Revenue Target (4.5)
- Return on Investment (ROI) (4.5)
- Product Margin Target (4.2)
- Time to Market (3.75)

It is interesting to note that all of these measurements are those for which a company can get hard measurements. *Time to Market* was used most often and financial results (*Revenue Target* and *ROI*) were rated most useful. Except for *Time to Market* all of these measurements require that the product be in the market place being sold. So these measurements will not help during the development phase of a product. Softer measurements such as *Improved Image* or *Human Resource Development* were not considered to be useful. Neither of the criteria that could be measured during product development (*Technology Improvements* and *Human Resource Development*) were rated useful which suggests that it is difficult to measure these criteria before the product goes to market.

The hypothesis emphasized the hard measurements, but only agreed with *Time to Market*. *Technology Improvements* was used by a majority of the respondents but they considered it of marginal value. The one item that both the respondents, and the team hypothesis agreed on was *Time to Market*. It is used, is considered valuable, can be measured while the project is still in progress, and is perhaps the most easily measured.



Outside of our list of success criteria, three respondents put *Cost Savings* as a measurement that they both used and found extremely useful (overall usefulness was 5). More research would have to be done to understand exactly what was measured (lower product cost, lower development cost, etc.).

The literature indicated that getting people to discuss failures would be difficult. As we were dealing with “inside” connections we hoped that this would not be the case. However, the respondents overall said that they achieved close to a 70% success rate. In fact only two of the respondents gave a success rating below 3. Respondents were willing to talk about what went wrong in their organizations, but were not as willing to rate the overall project as a failure.

## 6.2 Success Factors

While some of the literature, and our survey, break the success factors into three categories (leader, team, and company) we found that the respondents did not always agree with this categorization. We got several respondents marking the choice *Other* and then listing factors included in a different section of the survey. For example, under leader, one respondent indicated that the leader should “have the ability to execute initiatives outside the corporate mainstream”, which was the intent of *Tolerated flexible policies* under the Company Factors.

Only four success factors received a majority of responses:

- The team should be responsible for the product from concept to market (8)
- The team should be separated, either physically or organizationally, from the rest of the company (7)
- The company should encourage risk (6)
- The company should tolerate flexible policies and procedures used by the intrapreneurial organization. (6)

The survey results also supported the literature in that respondents rated factors related to flexibility and autonomy as three of the four highest factors. Flexibility and autonomy show up in several in of the comments written on the returned surveys:

- “allow [a] group to define its own ‘culture’”
- “allow them to go their own way”
- “Free [the team] from corporate rules, processes”
- “Are they [the leader] flexible and willing to learn”

This theme correlates to the success criteria of *Time to Market* because flexibility and autonomy are essential for short development cycles. This theme agreed with the literature that intrapreneurial organizations must be freed from bureaucracy because bureaucracy is an impediment to innovation. The highest rated leadership factor, *Complete decision making authority*, is also necessary to reduce bureaucracy.

One success factor that the respondents pointed out that was not in our survey was that of *Vision*. Several of the respondents wrote comments similar to this one, "a leader needed to inspire others with a compelling vision of a successful product".

Our team felt that customer input would be a critical success factor, but only two respondents indicated that it was critical. However, several of the respondents felt that market knowledge was key. In fact one respondent went so far to say that market understanding is more important than product understanding. Perhaps it is viewed that with a good enough understanding of the market explicit user input is not necessary, or perhaps customer input is particularly hard to obtain.

In summary, success criteria should be used, but determining what to use is not so clear. The success factors will be at least partially based on the success criteria. Time will most always be a factor in an intrapreneurial organization and thus a part of its success criteria. As a result, success factors that stress both flexibility and autonomy will be major factors in contributing to the success of an intrapreneurial project.

## 7. Recommendations

The goal of this research project was to create a list of recommendations for managers about to undertake an intrapreneurial activity. While we did not find a clear consensus as to what should be in the list, there are some things that we can recommend. First it should be pointed out that these factors along do not guarantee results. These recommendations are based on a synthesis of literature we reviewed, survey results, the written comments of many of the respondents and our team's view of success factors. You still need to:

- Pick the right product idea
- Have an accurate understanding of your market
- Select a product with a strategic fit with the mission of the company[22].

Assuming you did all these things right, the critical factors below should help a manager complete a successful intrapreneurial project. As with the respondents, the team found that these recommendations do not fall into clear buckets of leader, team, and company.

Critical success factors for successful intrapreneurial organizations are:

- An intrapreneurial venture will not be successful unless it is done in a company that encourages innovation.
- The intrapreneurial team must view the intrapreneurial organization as a market venture, not a technology venture.
- Use success criteria. Figure out up front how you are going to measure them. Understand that the selected criteria will impact which factors are critical for success.
- The intrapreneurial leader must be able to articulate a vision that inspires the team.
- The team has to be able to "break the rules". This usually requires being physically and/or organizationally separated from the mainstream of the company, and, having flexible policies and practises within the project.
- The leader needs to have total authority for decision making and budgeting. This person must be allowed to "break the rules" in order to meet success criteria.
- The team must have complete product responsibility, from concept to market.

## 8. Future Research

In examining the results of the survey and looking at the literature we see many other areas where future research would be appropriate. To further knowledge of this topic we recommend that:

- A similar survey could be sent to large enough audience to do statistical analysis. There is a lot of advice (perhaps too much) that could be passed on to others about what to do in an intrapreneurial undertaking. A more definitive "what to do", "what to watch out for", guide would be valuable.
- A similar survey could focus on what not to do when starting an intrapreneurial organization. Many respondents were willing to share the problems, pitfalls, etc. that they ran into. Avoiding mistakes and pitfalls is as important as knowing what to do.
- A similar survey could be sent to upper management in high technology companies to see if their idea of success and the key factors for success matched those of the managers in the intrapreneurial organizations. This would allow one to correlate the results of a study such as this one with similar results from people who approve, fund, cancel, these intrapreneurial projects.
- The measurement of softer criteria is considered to be important in the literature and were used by a majority of respondents (e.g, *Technology Improvements* and *Improved Image*). The fact that the respondents found this success criteria to not be useful could indicate that there is a lack of how to measure such soft criteria. Future research that could find out how to successfully measure these softer measures appears to be needed.

We focused on starting an intrapreneurial team, but it is also important to give the end of the project consideration. For example, What determines completion of the project? Where will the team go when this project is complete? Research that help in the smooth termination of a project could be helpful.

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