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Managing Your Technology-Based Company

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Congratulations! You have put together a good business plan; you have convinced someone that your idea for a new product or service has merit and you have obtained your venture capital; you have acquired your production facilities, hired staff and even have some purchase orders in your pocket. Now, with all the hard work behind you, you might believe that the hardest tasks are behind you. But this is not the case.

You are now entering the transition area between entrepreneur and manager, and as a manager you will face challenges equal to the ones you faced when you put your company together.

The first pitfall you face is that some of the work habits and attitudes that have been drummed into you by your professional training and subsequent technical activities will not quite fit your new situation. Your ability and, in many cases, your preference to work on your own, your analytical approach to problems, your tendency to put greater faith in numbers than in intuition, and your lack of training in applied social sciences can have a deleterious effect on your ability to be a good manager.

Mediocre managers are all too common. A large company can afford the luxury of a few poor managers and still survive as long as these poor managers are not in key positions. A small company cannot afford this

luxury; when the poor manager is the owner the results are predictable and painful for all concerned. It has been estimated in both Canada and the U.S. that a majority of business failures occur because of poor management.

The quality of the management of your company is as important to your company's survival as the quality of your product or service.

This chapter will provide only a brief overview of some of the critical areas in managing a company. It will make you more aware of the management environment in your company and provide you with a sensitivity that will make it easier for you to detect problems before they become critical and costly.

Fundamentals of Management

There are many definitions of management. One states that "management is a decision-making process leading to the accomplishment of one or more objectives." Another states that "management is a dynamic process; a continuing, an evolving system with feedbacks and linking of the various elements of a functioning organization." Whatever the definition, it is clear that the quality of management and the skills of the manager determine the efficiency and effectiveness of any organization in reaching its goals.

Management of a technology-based company involves the following basic activities:

- 1. PLANNING—the formulation and statement of the purposes and objectives of the company and its management; the determination of the methods of approach, the development and selection of projects and programs, and the plans for carrying them out
- 2. ORGANIZING RESOURCES—the total co-ordination of the group effort, which involves description of the tasks and functions to be performed by individuals, and obtaining and allocating funds, personnel, equipment and facilities to perform the needed tasks
- 3. IMPLEMENTATION—putting the plan into operation to meet the previously determined objectives; directing the work of others toward assigned goals
- 4. CONTROL—the determination of whether or not the objectives or goals of the program are being accomplished; an ongoing monitoring of the degree to which performance is meeting expectations
- 5. INTEGRATION—the co-ordination of the acitivities, goals and output of each group with the organization's overall activities, goals and expectations.

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As an owner/manager, you must determine the company's objectives and operating policies, explore alternatives in achieving the objectives, identify potential problems and their prospective solutions, evaluate resources, select an avenue of action, and then implement your decisions relying on pre-selected controls to monitor progress, all within the framework and boundaries of the company.

Role of the Manager

What is your role as the owner/manager or chief executive officer? Before answering these questions, the term *role* must be defined.

Role is that collection of actions or behaviours which are expected of you because of the position you hold in a group or in an organization.

The role of the chief executive officer (CEO) is determined by the type of organization that has been created, by your employees or partners, and by your own perception of what actions the position calls for in any given situation.

Because everyone plays many roles at virtually the same time (e.g., supporter-critic, boss-subordinate to board of directors or venture creditors), conflict between roles can easily develop. Role conflict can occur when your actions fit the expectations of one group (e.g., buyers' expectations of reasonable credit terms) but go against the expectations of another (your creditors' expectation of quick payment). This is called interrole conflict.

Another form of role conflict is person-role conflict. This role conflict occurs when your personal values and behaviour do not fit the demands of your job. For example, person-role conflict would occur if, as chief executive officer, you were unable to accept the advice of others in fields outside your own and had to rework a problem for yourself. In a small company larger than two to three people, as the chief executive officer, you must make use of advice from people in marketing, accounting and production in order for your company to grow and prosper. Thus, your innate characteristics influence your effectiveness on the job. Role conflict can result in anxiety, tension, and lack of job satisfaction, not to mention numerous medical disorders, such as ulcers.

The following are some of the specific activities which make up the role of the owner/manager or CEO of a technology-based business:

1. GOAL SETTER—you must determine and define the objectives of the organization *and* put them into terms which can be understood and acted upon by the employees.

- 2. PERFORMANCE STIMULATOR—you must stimulate and encourage ideas and proposals from your employees and create a work environment supportive of innovation.
- 3. SALESMAN—you must present a positive image of your company and its products or services to potential buyers in order to inspire confidence in the company.
- 4. MONITOR—you are in a key position to see all aspects of the companies' operations and to note when objectives are not being met and to provide corrective actions.
- 5. COMMUNICATIONS FACILITATOR—you must maintain a healthy flow of clear communications up, down, laterally and diagonally in the company and encourage the exchange of ideas among employees.
- 6. CAREER COACH—you must encourage employees to grow professionally in line with both organizational and personal needs in order to avoid obsolescence and stagnation.

The role of the owner/manager is multifaceted. You must be careful not to concentrate attention in areas which appeal technically and reflect previous training. All facets of management are equally important in achieving company objectives.

Management Style

How effectively you manage your organization will show up on your profit and loss statement. Management style is one of the critical variables in motivating personnel to meet organizational objectives. The way in which management style affects the performance of others is complex.

Management styles can be classified by the degree to which the manager involves employees in the decision making process. The three major styles are:

- 1. AUTOCRATIC—if you adopt the style of the directive or authoritarian manager, you retain all power to make decisions. There is little or no meaningful delegation of power. You believe employees require close supervision since they are unable to react properly to situations without guidance.
- 2. PARTICIPATIVE—if you adopt this democratic style of management, you decentralize managerial authority. Your decisions are not unilateral, as with the autocrat, because they arise from consultation with your employees or partners. The group is advised of

problems, especially those which affect the group. Employees are given all information about issues affecting their jobs, and this encourages their ideas and suggestions. It should be noted, however, that this is *not* group decision making; you still make the decision, but use the ideas of your employees in arriving at them.

3. LAISSEZ-FAIRE—if you adopt the laissez-faire style of management, you avoid using power and depend on your employees to establish their own goals and work out their problems. In an extreme situation, this style is an abdication of managerial responsibility and would in short order result in the demise of a small company.

Early research into managerial styles concentrated on determining which of the above three styles was the most effective in motivating employees. In general, the participative style of management resulted in both higher productivity and more satisfied employees. Enough exceptions to this finding were identified, however, to force researchers to ask themselves whether other factors also played a part in determining the effectiveness of a particular managerial style.

It is now believed that managerial style must be tailored to fit the particular circumstances confronting the manager. In other words, the most effective managerial style is one that takes into account the personality of the manager, the abilities and skills of the employees, and the task or job to be performed. This is not an argument for inconsistent management but for flexible management. If you have selected good partners with complementary abilities and well trained employees, then your normal mode of management style should be participative with only *temporary* use of the directive or laissez-faire styles as a situation demands.

Unfortunately, because of their background, technical entrepreneurs share certain characteristics, such as the habit of making all the decisions regarding company formation themselves, intense drive and motivation to succeed, and fear of losing control of the company—which tends to lead them to adopt the autocratic style of management. This can result in technically trained CEOs making critical decisions in areas of marketing or finance and not asking for, or ignoring, the expert advice of their employees who are knowledgeable in these areas.

Autocratic CEOs will also feel that they must personally make all decisions, even minor ones, and they thus become a bottleneck in the decision-making process of the company. This bottleneck occurs when CEOs take on the jobs of their subordinates instead of delegating to them the authority and responsibility to make decisions and take appropriate action. As a result, the employees can do their work only up to a certain

point and then they must wait for a decision. In effect, autocratic CEOs try to do some of their employees' work. A more insidious result of this lack of delegation is that the employees will fail to develop decision-making abilities and will always be dependent on the CEO for advice. In addition, competent employees will quickly become frustrated with this situation and quit, leaving behind the less able.

Another time-robber which plagues autocratic CEOs is the deep belief in the statment "If you want it done right, you have to do it yourself." When problems arise, the autocratic CEOs take over the problems as their own to solve instead of guiding the employees towards solving the problems themselves. This is especially true if the problems are technical and in the area of technical expertise of the CEOs. Technically trained CEOs have a tremendous urge to solve the problems and provide the employees with the answers. This difficulty in re-orienting one's perspectives from that of a technical problem-solver to that of a CEO is not confined to autocratic managers.

All too often, technically-trained managers have difficulty in leaving behind, or reducing, the time spent on technical problem solving. They simply cannot let others do the work they have been trained to do as engineers or scientists, and cannot make the transition to the primarily managerial role. Such CEOs do not manage their time as they should. (See Chapter 11.) They have not learned that in spite of the joys of such technical work, there are greater and more exhilarating rewards to be had by being an effective manager.

If you know it will be impossible for you to divorce yourself from the detailed technical problem-solving of the business, then you must either take on a partner to run the business side without interference, or hire an experienced CEO with the authority to manage the company while you retain control through your Board of Directors. In addition, you can hold the position of head of the companies' research and development department. To start a company and only pay lipservice to the managerial side invites certain disaster.

Motivation of Employees

As much as you may wish it, you can't do all the work even in a small owner-managed company yourself. You must hire others to do those jobs which you either do not have the time to do or are not competent to do. Thus, one of your major activities is to get your employees to do what the company expects of them.

One of the major tools that you can employ to obtain the co-operation of the employees is the psychological needs of the employees. You must

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identify the needs of each employee, and make job performance a path to satisfying these needs. If this can be done successfully, the probability that employee effort will be committed to organization objectives will be increased. One note of caution. You must not assume that what motivates you will also motivate others. Psychological needs are personal and are not the same for everybody.

A.H. Maslow (1) in a study of motivation proposed a hierarchy of needs as follows:

- 1. Basic physiological needs e.g., food, shelter, sex, air
- 2. Safety and security needs—protection against danger, threat and deprivation
- 3. Belonging and social activity—need for belonging, for acceptance by one's fellows, for love, for association and for giving and receiving friendship
- 4. Esteem and status—need to feel worthy, self confident, respected, and to feel that others think we are worthy of recognition, appreciation, and respect.
- 5. Self-realization and fulfillment (Self-actualization)—to become all that one is capable of becoming.

The higher order needs generally do not motivate behaviour until the lower order needs are satisfied to some degree.

As the more basic needs are satisfied, a person seeks the higher order needs. If the basic needs are not met, they claim priority, and efforts to satisfy the higher order needs must be postponed. There are, of course, exceptions to this such as the starving artist who is operating at the highest need level without satisfying any in-between needs. Maslow suggests that the various levels are interdependent and overlapping, each higher level need emerging before the lower level need has been completely satisfied.

Man's lower order needs are primarily satisfied through economic behaviour. He earns money as a medium of exchange to purchase satisfactions for physiological needs and security. His higher order needs, on the other hand, are primarily satisfied through symbolic behaviour of psychic and social content. He attaches meaning to his experiences and derives satisfactions from how he feels about them. Managers sometimes have felt that they could meet all need satisfactions by providing wages and letting the employee then use the money to acquire his own satisfactions. This "economic man" concept does not hold up when analysed in terms of Maslow's need hierarchy, since money can only effectively be used to satisfy the first two need levels.

The idea of a need structure does not suggest that a person's needs can be fully satisfied by giving him some of all five level needs. As each need becomes partially satisfied, it increases. Man is a perpetually wanting person, always wanting to beat past performance. The lesson for the manager is that need satisfaction is a continuous problem for all time. It cannot be permanently solved by satisfying a particular need today. Gratified or satisfied needs are, however, not a source of strong motivations.

Herzberg et al. (2), in a study of 200 engineers and accountants, discovered that some job conditions operate primarily to dissatisfy employees when the conditions are absent, but their presence does not motivate employees in a strong way. They are really more potent as dissatisfiers. These potent dissatisfiers are called maintenance factors or hygienic factors.

Another set of job conditions operates primarily to build strong motivation and high job satisfaction, but their absence rarely proves strongly dissatisfying. These conditions are known as motivational factors, motivators, or satisifers.

Herzberg found the following to be motivators or satisfiers:

- 1. Achievement
- 2. Recognition
- 3. Work itself
- 4. Responsibility
- 5. Possiblity of growth (advancement)

It will be noted that these factors relate directly to the job itself, i.e., to job content.

The following factors were found to be dissatisfiers or hygienic factors:

- 1. Company policy and administration
- 2. Interpersonal relations (supervisor)
- 3. Interpersonal relations (peers)
- 4. Supervision (technical)
- 5. Salary
- 6. Working conditions
- 7. Personal life
- 8. Job security
- 9. Interpersonal relations (subordinate)
- 10. Status

These factors relate to job context and are associated with the environment external to the job.

This difference between job content and job context is a significant one. It shows that employees are motivated strongly primarily by what they do for themselves. When they handle responsibility well or gain

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recognition through their own behaviour, they are strongly motivated. Management is primarily providing the environmental surroundings and support for such satisfying accomplishments.

Thus, as a manager, you motivate your staff by creating opportunities for them to satisfy their psychological needs, e.g., opportunity for self-growth and challenge.

Motivation is not merely manipulation, but is rather the use of know-ledge of how best to appeal to employees' needs and desires to stimulate and encourage them towards organizational and personal goals.

Employees can be strongly motivated by the desire to experience competence in their work. A second source of motivation is based upon the desire to receive recognition. Because of this desire, the extrinsic rewards (e.g., pay and promotion) that an organization gives are important motivators. However, they will operate as a motivator of performance only if they are seen to be obtainable through good performance.

In particular, scientists and engineers can derive high levels of need satisfaction from their work if the following conditions are met:

- 1. Individuals must participate in the setting of their own work goals so they will be committed to them.
- 2. They must independently work out the means of attaining those goals; and
- 3. the goals must represent a truly challenging level of aspiration.

The primary motivators for scientists and engineers (achievement, recognition, advancement and responsibility) are associated with the satisfaction of the need for self-actualization.

Organizational policy should encourage the use of various avenues for achieving recognition. Recognition is desired from both within the organization and from outside, from one's peers as well as from one's superiors.

Organizational policies and practices should promote the feeling of achievement by encouraging individual employees in formulating their work goals and objectives.

Organizational policies should also encourage the assignment of primary reponsibility for achieving the established goals and objectives to the individual employees.

Working conditions need not be elaborate, but should not be a source of dissatisfaction.

Conclusion

The management of employees is as great a challenge as the solving of a difficult technical problem. People do not always react the way you think

they should and this makes people problems difficult to solve.

The small technology-based company does not usually have the resources to recover from a bad management mistake. It is therefore important for you, as entrepreneur-turned-manager, to understand the management process and the requirements of good company management.

A company is only as good as its management team and its employees.

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