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USING DECISION ANALISYS WHEN SOLVING MANAGEMENT PROBLEMS

Abstract

The importance of using decision analysis, styles and types to resolve management problems. The process follows sequences of problem identification, alternative solution generation, conseqence analyses, solutions and implementation, evaluation, and feedback. The researcher's job is to actively investigate problems before they appear and anticipate their importance. Managers must discover corporative resources to resolve problems before they take on greater meaning.

Key words: management, business, issues management, decision-making process.

JEL Classifications: M11, M12, M54

КОРИШЋЕЊЕ АНАЛИЗЕ ОДЛУЧИВАЊА У РЕШАВАЊУ ПРОБЛЕМА УПРАВЉАЊА

Апстракт

Рад има за циљ да апострофира значај коришћења анализе одлучивања, стилова и типова да би се решили проблеми управљања.Процес следи секвенце идентификација проблема, алтернативне солуције генерације, консеквентне анализе, решења и имплементацију, евалуацију и повратну спрегу. Посао истразивача је да активно истражују проблеме пре него се они појаве и антиципирају њихову важност. Менаџери са ентузијазмом морају идентификовати корпоративне ресурсе како би ефикасно решили управљачке проблеме пре него што они значајно оптерете пословање.

Кључне речи: *менаџмент, бизнис, проблеми управљања, одлучивање, процес.*

Intoduction

Managerial function reveals that virtually every manager, no matter what his or her offical title, makes decisions during the course of business. This points to decision-making as the common function of manageres, and some writers have used the term "decision-maker" in place of manager. The decision-making proces is the sequence of events taken by management to solve business problems, a systematic proces that follows a sequence of problem identification, alternative solution generation, consequence analyses, solution selection and implementation, evaluation, and feedback. We have briefly

examined this managerial decision-making proces by describing the social actionphase of social responsibility and examining the proces in greater detail. First, however, we must clarify the ways in which the management thinks about decisions, the general types of decision, preferred styles of decision-making, the organizational levels at which the various kinds of business decisions are made, and the condition that influence managerial decision-making.

Thinking about business decision-making

Contemporary business has become more complex, there has been a growing consensus that effective decision-making must take the complex nature of business into account. The simplest approach, however, to the solution of business problems exemplifies *liner thinking*. This assumes that each problem has a single solution, the solution will only affect the problem area, not the rest of organization, and, once implemented, a solution will remain valid and should be evaluated only for how well it solves the problem. Problems are conceived as *discrete,* singular and unique. The way in which most fast-food restaurants deal with hiring and retention of counter or table personnel shows evidence of linear thinking. In the past, most fast-food restaurants hired teengers and experienced 150-300 percernt turnover - the average duration of employment was just under 4 months.(1) A liner thinking approach to personnel has suggested in the past to managers that the solution to the turnover problem is "hire more teenagers". The abundance of teenagers made this *look* like an effective solution. But, when the demographic picture changed and there were fewer available teenagers, it became apparent that this simplistic solution no longer worked. Now management must consider many potential solutions - higher pay, making jobs more interesting, hiring retirees, hiring the physically challenged, offering better benefits, and others. These solutions will impact and interact with other aspects of the organization: benefits and compensation, the need for different managers and supervisory structures, employee training, and so on. As long as the problem was seen in a simplistic and linear manner, neither the range of solutions nor the impact of these solutions upon the whole organization was considered.

Although there is allure for managers in the very simplicity of a linear thinking solution, it often does not prove an effective way of dealing with organizational problems. In the rapidly changing environment of modern business, there are least three major difficultes with this approach to problem-solving.(3)

- Since the solution affects not only the problem area but also the rest of the organization, the results of the solution may not be anticipated. Parts of the organization not considered in the original problem-solving efforts may be affected by the solution and react in unanticipated ways. A manager may get more than was originally bargained for.
- Even if the results of a solution are only desired and intended, the focus on a single problem area ignores the interrealtionships among organizational elements and may lead to a simplistic solution that does not solve the larger problem.
- Linear thinking assumes that problems, once defined, and solutions, once implemented, are always valid and ignores the rapidly changing nature of a business environments .

Such difficulties have led many business thinkers and practicioners to take a different aproach to business decision-making. This new approach is called .

System thinking

As we say, system thinking is a more contemporary and encompassing aproach to problem- solving that assumes that problems are complex and related to the situation, so that the situation does not solve the problem but has impact on the rest of organization and should be evaluated on how well they solve the problem (intended results) and affect the total organization (unintended results), and further, that neither problems nor solutions remain constant - situations change, problems evolve and new solutions are constantly necessary.(2)

This approach does not view problems as discrete but sees them as related to all aspects of an organization. Organizations are composed of interrelated systems and processes, and any chage in one organizational aspect affects all others. A *system thinker* would therefore consider the interrelatioinships among the systems and processes of the organization *before* implementing a solution. That solution will be evaluated on the basis of *all* results produced, as cited earlier. Further, there is the recognition that not only do circumstances change, requiring new solutions, but solutions themselves also function to change circumstances. It is therefore necessary, after implementing any solution, to evaluate the effect of that solution and provide feedback to the organization as it begins anew the problem-solving process. Problem-solving is therefore a dynamic proces as new solutions create new realities and those new circumstances require new solutions.

Managerial decisions

Whether a manager takes a linear thinking or approach to business problems, there are two major kinds of problems confronted, and the nature of the problems will influence the methods applied to reach satisfactory solutions. These are programmed and nonprogrammed decisions.

Chracter of the programmed decisions

This is the point, that programmed decisions are characterized by those problems that are well understood, highly structured, routine, and repetitive and that lend themselves to systematic procedures and rules. Each time one of these decisions is made is similar to every other time. The checking out of a book from a library or the processing of a hospital insurance claim are examples of programmed decisions because they are repetitive and routine. Much effort may have gone into the solving of these problems the first time they were encountered in the enterprise. As they were solved for the first time, there was probably much thought given to how the solutions could be routinized. When a processs is produced that will give an acceptable results each time, management has created an *algoritm*, a mathematical concept applied to management. An algorithm is "respective calcualtion", in this instance a repetitive proces by which an acceptable solution will always be found. Once implemented, such solution-generating processes become SOP-standard operating procedures.(4)

Programmed decisions, since they are well structured and understood, may lend themselves to linear thinking, but this will only be so if the programmed decisions are simple problems. A programmed decision, however routine and well understood, may be quite complex and requires a true systems approach when first encountered. This implies that a systems aproach will be *necessary the first time the problem is solved*, but the result of this

problem-solving approach will be an algorithmic solution that can then be applied every time the same problem recurs. The computer is particularly well suited to algorithmic processing since it processes the ability to make error-free complex calculations each time.

After understanding how an individual approaches a well-understood problem, artificial inteligence (AI) seeks to duplicate human reasoning and action. The good of Al is to improve decision-making by enhancing consistency by applying decision-making rules as an   employee woluld do. Thus, by defining decision-making rules based on mathematical modeling of expert decision-making, that expetise is preserved (even when the expert no longer has the job) and passed to others. An example of such an AI *expert system* would be a customer service computer-generated voice rotary consisting of a series of "if....then" alternatives. Each positive answer leads to a specific alternative, the "then", and the consumer eventually arrives at a satisfactory resolution of the problem initially presented. These systems may be either rule-based and operate by reference to a series of expert rules or case-based, where, having been presented with a problem, a computer searches through a data-based of past cases for the case that most closely resembles the current situation.

Decisions which are not programmed

Non programmed decisions are those problems that are not well understood, not highly structured, tend to be unique, and do not lend themselves to routine or systematic procedures. The key to understanding this decisions is to remember that it happens infrequently, and because they happen so rarely, there is little precedent for decision-making. A merger is an example of the kind of event that requires management decision-making and happens so rarely that neither standardized nor routine decisions are available.

Nonprogrammed decisions rely heavily on the decision-making abilities of mana-gers since there is no routine solution available. Management will make use of data from past problems and performance, examining historical analogy-how others in the past have solved similar problems. Managers look for principles and solutions that *may* apply in the current situation but must be ever mindful that past solutions and problem-solving methodologies *may not apply* now.(5) There may well be something in the past problem that was unique or special to that problem that makes deriving a solution for the current problem impossible. Additionaly, managers may review how similarly situated companies are currently solving similar problems to discern ways of dealing with the difficultes currently facing their organization.

Because nonprogrammed decisions are so important to business and so common to the managerial position, a managerer's effectiveness and future promise to the busin-ess will often be judged according to the quality of his or her desision-making. Business have created training programs in decision-making to help traning managers because they make so many nonprogrammed decisions. Many managers elect to seek advanced educational degrees in business, and much of this education teaches problem analysis and decision-making.(6) One of the most popular ways of developing analytic abilities and managerial decision-making is the case study. The case study is a written history of a business problem and the manner in which management solved it. A good case study does not pretend to teach a unique solution, although it may be valuable to see how that solution worked in a specific situation. The greatest benefit to be derived from a case study is to learn how a decision was made and a solution selected. The decision-making methodology can then be applied to other problems.

Levels of decision-making in an organization

Just as there are different kind of business decision-making, there are different levels of decision - making within a business. These are the strategic, administrative and operational levels of decision-making in an organization.

Top management has the "big picture" of all the elements of a complex business enterprise, and it must be able to *integrate* all aspects of a business into a coherent whole. The decision made at this level also determine how the business will relate to external environments. Because strategic policies affect the entire business, they can best and must be made at the highest level within an organization. These policies and goals are not very specific because they must be applied to all levels and departments in a company. Strategic decisions are usually nonprogrammed in nature. The *general* decision to produce a breakfast cereal or to entire a new market are examples of strategic decisions.(7)

Administrative decision-making are those made on a lower level than the previously discussed strategic decisions. They are usually made by midlevel management, such as divisional or departmental magares. These decisions concern the development of tactics to accopmplish the strategic goals defined by top management. Although top management's strategic decisions are nonspecific because they are applied to all departments within the organization, administrative decisions express corporate goals in a *specific* departmental manner. Administrative decisions are therefore more specific and concrete than strategic decision and more action oriented. The decision to produce a specific kind of cereal, in this case a fruit-and-fiber breakfast cereal, is an example of this kind of administrateive decision.

Operational desicion-making in managemnt problems

This is made on the lowest or supervisory level within the company and concern the course of daily operations. These decisions determine the manner in which operations are conducted - operations designed to accomplish the tactical decisions made by mid-management. These decisions concern the most effective and efficient way to accomplish the goals stated on the administrative level. Setting a production schedule and determining the appropriate level of row materials inventors are examples of operational decisions. In our continuing example of the breakfast cereal, an operational decision would be to produce each week 10,000 boxes hoilding 12 ounches.

Figure 1. is a graphic representation of the levels of decision-making shows for each part of the organiuzation.

Pt. 1. Levels of decision-making in an organization

The task of the new manager is to determine the most effective decision-making style. This can be done by observing the styles of established executives in the specific company. This manager functions to maintain current conditions, and although this may not be the *stated* goal of managerial decisions and actions, it will be the practical results. When confronted with difficulty, the PA will either reconcile the conflicts in the reported data with a rationale that seeks to "smooth over" any conflict or ignore it completely. This PA is often called a smoother. This manager may not recognize problems in the business environment and will be able to come up with rationales for supposed problems that demonstrate that they are not really problems at all. He or she may appear blind to business difficultes and will be the person who most resists business changes, even when the changes are obviously for the best interest of the company.(8)

These studies will present and justify organizational efforts designed to minimize change. Problem avoiders are good people to keep an organization on a calm and even course, and this *may be* the most effective decision-making style in undustrial environments in which there is litttle need for change. However, if the business is conducted in a dynamic, changing environmenmt, a more active approach will almost be more effective for problem-solving. Such a manager will be known as a problem solver.

How to solve managemnt problems

Most managers expect to be confronted with problems and to solve those problems in the normal course doing business. There is no hesitation to make changes when there is an indication that such changes are good and necessary. There is no prior commitment to make changes, however, until it has been determined by means of research and scientific analysis if the data that changes are necessary. It is recognised that change without necessray is gratuitous, a waste of organizational resources. Such gratuitous changes serve to foster an illusion of progres while merely cofusing everyone. Change is made more acceptable when those affected by the changes undrestand the *reasons* for those changes.(9)

The problem solver accepted that modern business operates under conditions of risk and uncertainty. This means that business is often in a very turbulent environment with the imperative to adopt to changed circumstances. Business that fail to adopt suffer decline, crease to be productive and profitable, and may eventually die. It has been obse-rved that the market-place is unforgiving of a business that fails to change when confr-onted with necessity to do so. The problem solver accepts the risk and makes decisions that help deal with the uncertainty. These managers deal with problems as they arise and do not seek to preserve the status quo unless the current situation is better than any possible change.

The problem seeker, as the name implies, actively seeks out problems and attempts to deal with them before they emerge as major dificultes for a business. This manager is enthusiastically involved with future planning and the creation of contingences.(10) The problem seeker not only recognizes the need for change but also believes that the best way to deal with change is to anticipate it, not merely react to current needs. This kind of managerial decision-maker makes use of data analysis, not merely to understand the present, but also to project the future. The problem seeker is a corporate champion of research and will devote many hours of dedicated work trying to understand the implications of research data for the company's future.

There are two major points in favour of the decision-making style of the problem seeker: (1) It is often eiaser and more efficient to deal with small problems before they

become big ones. It is not enough for a company to change; it must change in the right direction to survive in the rapidly changing contemporary environments of business. (11) The problem seeker is a major corporate resource in planning for the future, but it is obvious that a company must be able to change *both* in response to current problems *and* in response to anticipated future problems.

The problem avoider seeks to mini-maze risk and eliminate uncertainty by promoting the status quo, a totally known condition. The problem solver recognizes the need to risk change and function in an environment of uncertainty in which there are unknown conditions and the possibility of unanticipated results. The problem seeker accepts the greatest amount of risk and uncertainty in actively seeking to deal with problems *before* they have emerged and become known. We now turn a general description of the different levels and types of risk and uncertainty to better understand the conditions under which managerial decisions are made.

Conclusion

This is a systematic process that follows sequence of problem idnetifiaction, alternative solutions generation, consequnce analysis, solution selection and imple-mentation, evaluation, and feedback. Liner thinking is a simplistic approach to problem-solving that assumes that each problem has a single solution; and, once implemented, a solution will remain and should be evaluated only for how well it solves the problem.

This systematic thinking is more contemporary and complex approach to problem-solver that solutions not only solve the problem but also impact on the rest of the organi-zation and should be evaluated on how well they solve the problem (intended results) *and* affect the total organization.

The problem seeker actively seeks out problems before they emerge and will ant-iciapate their significance. This manager will enthusiastically devote corporate resources to solving these problems before they can assume major significance. This manager anti-cipates rather than merely reacts.

References

1. Patric J. Montana and Bruce H. Charnov, (2000), *Management,* 3-rd ed.,
2. Miller, A., (1999), *Strategic Management*, Third Edition, McGraw-Hill, Boston,
3. Thompson, A., Strickland A. J., J. E Gamble, (2007), *Crafting & Executing strategy*, 15-th ed. McGraw-Hill Intenational Ed.
4. Klein, G., Orasanu, J., Calderwood, R., & Zsambok, C. E. (1993). *Decision making in action: Models and methods*. Norwood, N.J.: Ablex
5. Todosijević, R., (2009), *Strategijski menadžment: Teorijske postavke 1*, Ekonomski fakultet, Subotica,
6. Todosijević, R., (2009), *Strategijski menadžment: Metode i tehnike 2*, Ekonomski fakultet, Subotica,
7. Dess, G.D., G.T. Lumpkin, A.B. Eisner, (2007), *Strategijski menadžment*, Data status Beograd, pp. 526.
8. Beach, L. R. (1990)., *Image theory: Decision making in personal and organizational contexts*, Chichester, U.K, John Wiley & Sons.
9. Robinson, P. S., & C. Mary, (2005), *Menadžment,* Data status Beograd, pp.224

10. Thompson, A., A.Jr., Strickland III, A.J., Gamble, J.E., (2008) *Strateški menadžment - U potrazi za konkurentskom prednošću*, Mate Beograd
11. Certo, S. C. & S. T. Certo, (2008), *Moderni menadžment,* Mate, Zagreb
12. Yates, J.F., (2012), *Menadžment odlučivanja*, Mate Zagreb
13. Hammond, J. S., R. L. Keeney, H. Raiffa, (2006), *The Hidden Traps in Decision Making*, Harward Business Review, January,