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THE CHEMISTRY OF EFFECTIVE MANAGEMENT

by

Pradip N. Khandwala

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ABSTRACT (within 250 words)

The chemistry of management as a science or philosophy... might be... management philosophy may be considered... considered... participating... The... chemistry... effective... others... philosophy...

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THE CHEMISTRY OF EFFECTIVE MANAGEMENT

Pradip N. Khandwalla*

Managerial Philosophy

Much ink has been spilled on management philosophy. The subject is obviously important. Management philosophy affects decisions that get made in organizations. It affects the way resources are allocated, the strategy of the organization for growth and survival, and the structure of the organization. By management philosophy I mean the values and beliefs of the top management about what is "good" management.

Management writers have discussed numerous aspects of management philosophy. The votaries of humane management have distinguished between two sharply differing management philosophies. On the one side the presumption is that employees are greedy, lazy, and passive, and respond only to force and material incentives. Tight control, close supervision, productivity based remuneration are the natural corollaries of this view. The management of men is by carrots and sticks. On the other side, the presumption is that man is creative and capable of self-regulation. The presumption also is that man has a powerful social conscience, that is, normally he is strongly influenced by the group or groups in which he is a member and likes to work for the good of the group(s). Participative decision making, supportive relationships, enriched and stimulating jobs, decentralization of authority are the natural corollaries of this view of man. Management is through the sharing of power. Some control over decision making is sacrificed by management. But greater commitment is secured to whatever decisions are collectively taken.¹

Other writers have described a process of managerial decision making that is comprehensive, based on thorough research, and full investigation of all the available alternatives and their consequences. Environmental conditions are forecast far into the future. Organizational moves are planned far in advance. Much technically trained staff is employed to facilitate all these. Management is viewed as a professional and scientific activity. These writers have contrasted this type of management with one that is seat-of-the-pants. In the latter, the organization responds to contingencies as they arise and little attempt is made to anticipate and prepare for them. Judgment, experience, and rules of thumb are pressed into service in meeting contingencies rather than the opinion of academically trained experts. Management is viewed as an art rather than as a science, and like all arts, black and white, it, too, is judged as mysterious.²

Another group of writers have described entrepreneurial values. These are characterized by bold, risky, even revolutionary decision making. The entrepreneur is driven by the vision of rapid growth and empire building. His spirit of independence makes him a maverick. He prefers beating down his rivals to co-operation or collusion with them. And he is attuned to innovation and change rather than to resting on past laurels.³ These

* Visiting Professor of Organizational Design, Indian Institute of Management Ahmedabad and Associate Professor, McGill University

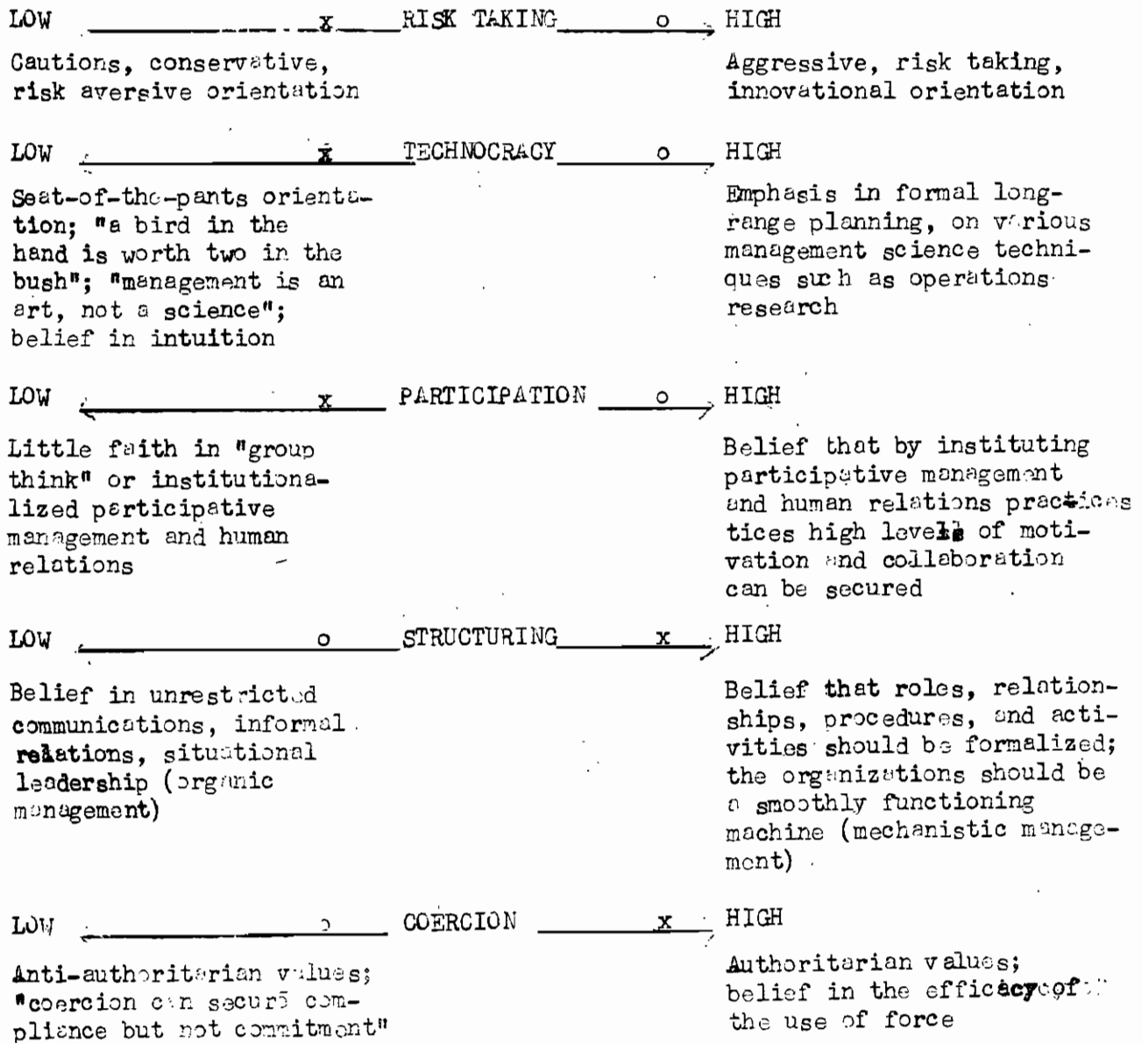
values may be contrasted with conservative values. Conservatism is an ideology of stability and slow evolutionary change in the status quo. Caution is highly prized. So are traditions and true and tried management principles and practices.

Still another group of writers have described a philosophy that extols administrative flexibility, organic, informal relations, and free flow of communications between the various levels and functional areas of an organization. Managers feel quite comfortable with the idea that the most knowledgeable or the ablest in a given problem situation exercises the greatest influence in that situation regardless of his position in the organizational hierarchy. In research laboratories and hospitals in which management subscribes to this philosophy, no one bats an eye if the junior most professional corrects the senior most in technical matters. This contrasts with a philosophy that exalts highly structured, well-defined jobs, reporting relationships, authority, responsibility and channels of communication. This latter is the philosophy of formalization most characteristic of bureaucracies. The values of order, structure, clarity, hierarchy, and the primacy of making and observing regulations are the linch pins of this philosophy.⁴

These various writings on management philosophy, suggest that the principal underlying dimensions of management philosophy are risk-taking, technocracy, participation, structuring of activities, and coercion. That is to say, if we take the opposite poles of these dimensions, management philosophy may be said to be risk-taking or conservative; technocratic or seat-of-the-pants; participative or non-participative; structuring of activities oriented or organic; and coercive or non-coercive.

Figure 1 shows the five dimensions graphically. It shows the profiles of the management philosophy of two organizations, of a bakery marked by crosses, and of an electronic firm marked by circles. From Figure 1, it is clear that the bakery's top management is conservative; believes in seat-of-the-pants methods; does not believe in participative management; believes in structuring of activities, etc; and in being coercive in getting its goals accomplished; The electronic firm's top management is just the opposite. It believes strongly in risk taking, technocracy, and participation, and it has low faith in structuring and coercion.

FIGURE 1

DIMENSIONS OF TOP MANAGEMENT PHILOSOPHY

The crosses indicate the top management orientation of a bakery. The circles indicate the orientation of an electronics firm.

Managerial Orientations and Organizational Performance

A sample of 82 Canadian Corporations was utilized to assess the effectiveness of the various dimensions of management philosophy. The data were gathered from their senior executives through a carefully pre-tested questionnaire.⁶ The results are shown in Table 1. The corporations were, for the most part, companies whose shares were listed on Canadian stock exchanges. The average size of these companies was over 100 dollars million in annual sales/revenues. About two-thirds were manufacturing firms and about a third were providers of services, like banks, merchandising companies, trusts, and utilities. The sample was divided into two roughly equal groups: a group of 44 "high performers" (54%) and a group of 38 "low performers" (46%). The group of high performers did much better than the group of low performers on objective criteria of long-term profitability, stability of profits, and the growth rate of sales/revenues. Furthermore, their senior executives judged their performance as generally better than and at least as good as that of their industry rivals on the criteria of profitability, growth rate, liquidity, public image, and internal morale. The low performers not only performed worse than the high performance group on objective criteria, their senior executives judged their (that is, low performers") performance as generally lower than that of their rivals and at most only as good as the average for their industries. For each managerial orientation, the percentage of firms classified as "high performers" was taken as the measure of its effectiveness or success rate.

Some conclusions emerge from Table 1. The risk-taking, non-coercive, participative, and the technocratic are the relatively more effective orientations. The seat-of-the-pants is a relatively ineffective orientation. The conservative, organic, mechanistic, non-participative, and coercive are about average.⁸ The data do confirm some common perceptions. The technocratic, long-range planning orientation is substantially more effective than the seat-of-the-pants orientation. Similarly, the non-coercive, the participative, and the risk-taking are noticeably more effective than the coercive, the non-participative, and the conservative orientations respectively. There is not much of a difference between the mechanistic orientation characteristic of bureaucracies and the organic orientation characteristic of young organizations or organizations having to cope with a great deal of technical or market change.

TABLE 1
TOP MANAGEMENT ORIENTATIONS AND PERCENTAGE OF
HIGH PERFORMERS

<u>Management Orientation</u>	<u>Success Rate</u>
Risk taking, aggressive, innovation oriented	72%
Conservative	55%
Technocratic, long-term planning oriented	64%
Seat-of-the-pants judgments oriented	38%
Participative, humane relations oriented	70%
Non-participative	50%
Oriented to structuring of activities, mechanistic	46%
Organic, informal, flexible	54%
Coercive, authoritarian	48%
Non-coercive	71%

The success rate of each orientation is the percentage of firms using that orientation that is classified as "high performers." Fifty-four per cent of the 82 firms in the sample were classified as high performers. This overall success rate is therefore the benchmark for assessing the effectiveness of each orientation.

TABLE 2

EFFECTIVE AND INEFFECTIVE COMBINATIONS OF MANAGERIAL
ORIENTATIONS

Combination	Number of firms using the combination	Success rates of the combining orientations			Success rate of the combination
<u>High Performance Combinations</u>					
Risk Taking and Coercive	6	72%	48%		100%
Risk Taking and Organic	11	72%	54%		82%
Conservative and Participative	11	55%	70%		82%
Non-Participative, Organic, and Risk Taking	5	50%	54%	72%	80%
Conservative and Technocratic	9	55%	64%		78%
Technocratic and Participative	18	64%	70%		78%
Seat-of-the-pants and Risk Taking	4	38%	72%		75%
Mechanistic and Conservative	10	46%	55%		60%
<u>Low Performance Combinations</u>					
Seat-of-the-pants and Coercive	6	38%	48%		0%
Conservative and Coercive	7	55%	48%		0%
Risk Taking and Mechanistic	4	72%	46%		25%
Participative and Seat-of-the pants	4	70%	38%		25%
Conservative and Organic	10	55%	54%		40%
Technocratic and Non-Participative	12	64%	50%		42%
Non-Coercive, Technocratic, and Risk Taking	6	71%	64%	72%	50%

But this is hardly the whole story. Table 2 shows some combinations of these orientations that yield significantly better "success rates" (percentage of high performance firms) than their constituent orientations. It lists some other combinations that yield significantly worse "success rates" than their constituent orientations. The former we can call positive synergy combinations ("2 + 2 is greater than 4"); the latter we can call negative synergy combinations ("2 + 2 is less than 4").

As an example of positive synergy, the success rates of the risk-taking and coercive orientations are respectively 72% and 48% (see Table 1). But the success rate of the combination is 100%! As an example of negative synergy, the success rates of the seat-of-the-pants and the coercive orientations are respectively 38% and 48%. But the success rate of the combination is zero! The same coercive orientation gives vastly different results depending upon its combining partner. The combinations shown in Table 2 are compounds rather than mere mixtures, and like compounds their properties cannot be easily inferred from the properties of their constituents.

As Table 2 shows very clearly, the so-called less effective orientations — seat-of-the-pants, conservative, non-participative, and coercive—can yield very good results when the chemistry is right. Conversely, the so-called more effective orientations—technocracy, risk-taking, participation, and non-coercion—can yield very poor results when the chemistry is wrong.

Let us see why the results in Table 2 are the way they are. We noted earlier that the risk taking and coercive orientations in combination yield a very high success rate. Now, a risk taking philosophy tends to be associated with managements that are operating in highly uncertain, dynamic, turbulent environments.⁹ In such an environment, there are plenty of threats, but also plenty of opportunities (if the management actively looks for them). Because the environment is turbulent, and because the management is prone to go in for innovations and take risky decisions, the organization must continually adapt quickly to changing circumstances and strategies. Should employees resist this pace of adaptation, the use of force by management to secure their compliance makes sense. The circumstances also warrant a great deal of administrative flexibility and good seat-of-the-pants decision making. Decisions are taken in an atmosphere of uncertainty before the full facts are known or can be known. To respond effectively to the evolving situation, the administrative structure must be highly organic or flexible, and management must be capable of taking intuitively right decisions using seat-of-the-pants methods. Thus it is that combinations of risk taking and coercion, risk taking and organic management, and risk taking and seat-of-the-pants decision making are so effective. For the same reasons the combination of risk taking and a bureaucratic, mechanistic orientation is quite ineffective: so also, relatively speaking, the combination of risk taking with a technocratic and a non-coercive orientation.

The conservative response is merited in a relatively stable business environment. When the pace of technical and market change is not furious, there is no compulsion for taking risky decisions for fear of being caught with one's pants down. One can afford to wait and watch and separate the grain from the chaff of possibilities, to wait till the really profitable opportunities unmistakably reveal themselves. The pace of change is slow and so the organization can afford participative management and group decision making. Indeed, participative decision making permits all angles to be taken into account. Besides, there is time to gather accurate and detailed information about future events, and so long-term forecasting, planning, sophisticated market research and the like are feasible. If the environment is not only relatively stable but also quite complex, marked by many constraints and technical details that must be taken into account in decision making, the imperative for technocracy is strengthened. Thus, conservatism combined with participation and technocracy is quite effective. On the other hand, when the pace of change is slow, there is little need for coercion. There is time enough to evolve sound procedures and rules for solving problems and resolving conflicts. The use of force is likely to be viewed as arbitrary and illegitimate and is therefore likely to be resisted. Thus, conservatism and coercion are particularly bad bed-fellows; so to a lesser extent are conservatism and an overly loose, organic management.

The technocratic mode is particularly suited to a complex environment.¹⁰ When the information that must be gathered to make decisions is technically or otherwise quite complex, an army of experts (statisticians, economists, forecasters, planners, market researchers, and the like) is needed for the purpose. The use of so many experts inevitably gives rise to conflicts between line and staff and indeed between various staff groups — unless the organizational climate is unusually collaborative and people feel that they are being consulted in decisions. Thus, the technocratic orientation combines effectively with a participative orientation and ineffectively with a non-participative mode. The seat-of-the-pants mode is the opposite of the technocratic mode. It makes good sense in a relatively non-complex environment. Since line-staff and staff-staff conflicts are likely to be muted (due to the staff being in a very subordinate position to line), it is enough that management is non-coercive and is not seen as harsh and arbitrary. Participative management, which, to be successful, requires a very large investment in training supervisors and in the development of human resources, is not needed and indeed may slow down needlessly the process of decision making. Thus, seat-of-the-pants and non-coercion form an effective combination; seat-of-the-pants and participation an ineffective one, and so also seat-of-the-pants and coercion.

There are several interesting implications of these results for the design of organizations and for management training. These are worth exploring.

Implications for the Design of Organizations

It is obvious that managerial beliefs are extremely important in the design of effectively performing organizations. This is so because managerial beliefs translate into managerial actions that shape the

structure and functioning of organizations. Our data show that while "progressive" managerial beliefs, exemplified by technocratic and participative orientations are, generally speaking, "good", they are not only **not** universally so, but in wrong combinations can substantially reduce organizational performance. The search for the right combination of managerial values is the strategic essence of organizational planning.

Managements are not plastic blobs that can be molded at will. Their ingrained beliefs are generally strongly resistant to major changes. But if the ineffectiveness of their beliefs is demonstrated, they may be amenable to relatively modest changes. The data suggest that this is eminently possible. Consider, for example, the generally ineffective seat-of-the-pants orientation. This is extremely common, both in the governmental and the private sector. It is difficult, perhaps impossible, to change the seat-of-the-pants orientation relatively quickly to a full-fledged technocratic, long-range planning orientation, for it involves too drastic a re-education of managers. But the performance of seat-of-the-pants types of organizations can be very substantially improved by increasing the risk-taking proclivity of management. Similarly, consider conservatism, another very common orientation. It is very difficult to turn conservative managers who have lived all their life by playing safe to become all of a sudden swash-buckling entrepreneurial types. For them, the redemption lies in incorporating strongly technocratic, participative and mechanistic orientations into the basic conservative orientation.

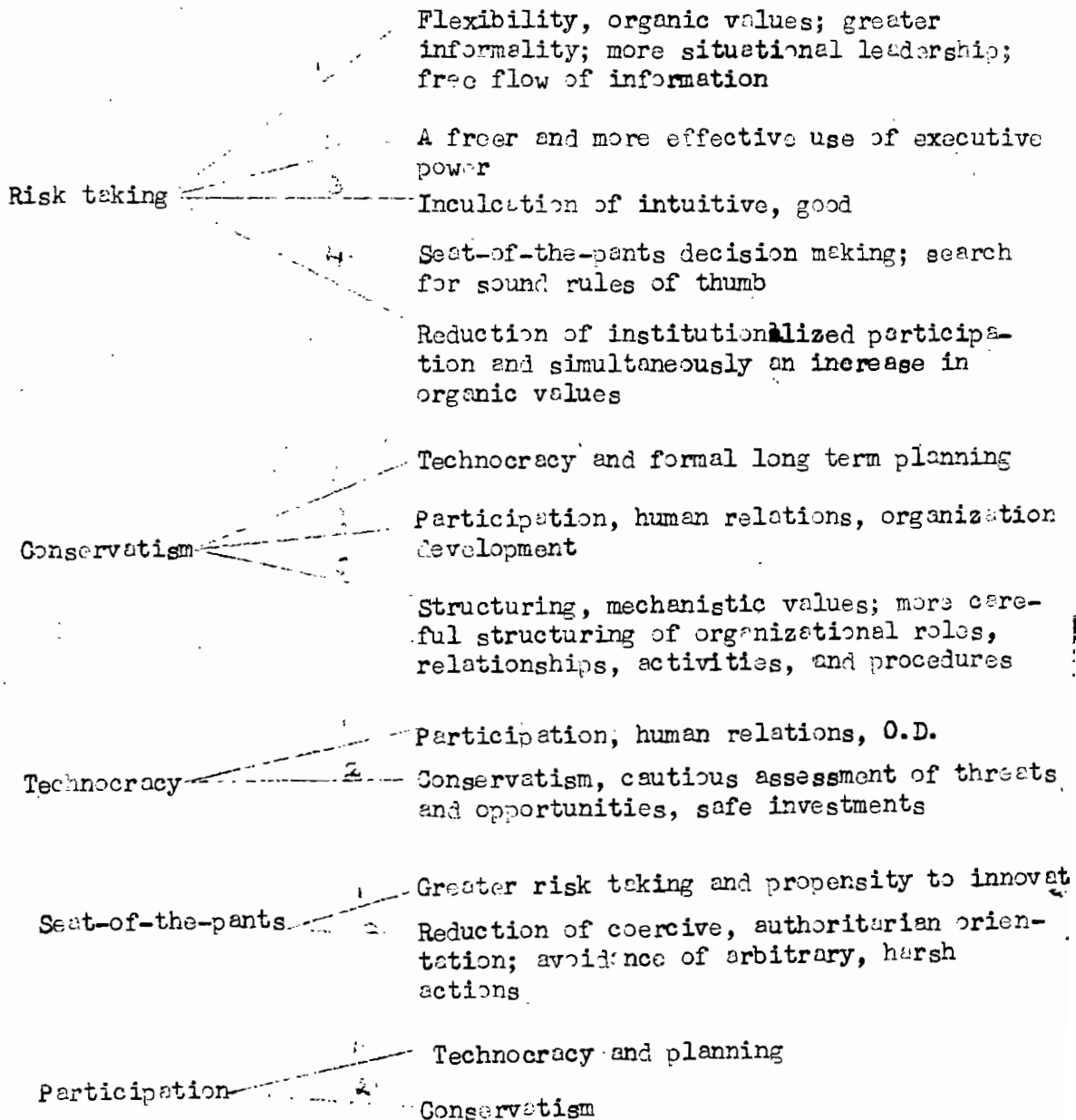
So, the process of organizational design and development becomes one of consolidating and building on the most strongly ingrained current managerial orientation. Figure 2 shows the possible lines of development, starting with the presently most strongly held managerial values. Contrast this with much of contemporary management writing. Writers on planning strongly advocate values supporting technocracy and planning, implicitly or explicitly regarding other managerial orientations as "poor". Writers on human relations similarly exalt participative values, and consider non-participative and coercive orientations as "counter-productive." Writers of the older school see great virtue in structuring of activities, roles, and relationships, and consider designs that emphasize looseness, informality, flexible definition of roles and relationships as "bad". These are the managerial utopians. They have a one dimensional conception of "good" management. Our data show how ill-founded their assumptions are. Instead of saying that only one managerial philosophy works, we are saying that any of several philosophies can be made to work including those considered "poor management" by these utopians, when combined properly with certain other value ingredients and translated effectively into management practice.

FIGURE 2

"OPTIMAL" LINES OF MANAGERIAL DEVELOPMENT

Currently Most Strongly
Ingrained Managerial
Orientation

Lines of Development



Anti-participation	Risk taking and organic, flexibility oriented values
Organic	Risk taking, a more innovative orientation Risk taking and avoidance of institutionalized participation
Mechanistic	Conservatism in decision making
Coercive	Risk taking and greater innovation
Non-coercive	Good seat-of-the-pants, intuitive decision making

Implications for Management Education

If we examine the curriculum and emphasis of the world's leading business schools, we are likely to find a rather strong commitment to "modern", "professional," science-based management. The contents heavily emphasize the contributions of the management and the behavioral sciences. Courses on operations research, planning, organizational behavior, managerial economics and the like strongly indoctrinate the student into the belief that technocratic and the participative orientations are "good", and the seat-of-the-pants and coercive orientations are "bad". We have seen, however, that this is only half the truth. Risk taking as well as conservatism, and indeed coercive and also seat-of-the-pants orientations can yield comparable or even better results in proper combinations.

At the very least, students should be exposed to a less-one-sided set of managerial values. There is, of course, an understandable tendency for the Ph.D instructors in management to stress the quantifiable, the measurable, and the "rational" to their charges, and not having for the most part to contend with the rough and tumble of the real life organizational world, to decry the intuitive and the qualitative. A more sensible mix of formal training and real world experience in the faculty is surely called for.

More specifically, it would be desirable to modify a curriculum that only or mainly emphasizes the ideology and techniques of modern professional management to one that equally emphasizes entrepreneurial values. Through training and experimental pedagogy, it should inculcate in the students a more achievement seeking, risk taking, aggressive, competitive orientation. The ability to assess risks and opportunities quickly by using "quick and dirty" methods rather than after detailed analyses by experts should be inculcated. The ability to tolerate ambiguity and take decisions on the basis of incomplete information should be strengthened. In addition, the student should be trained in the effective use of power. The ability to build coalitions to support one's ideas, the ability to play politics, and the ability to decide when to use power and when not to should be crucial elements of this curriculum. In addition, the student should be trained in running an organic rather than a mechanistic organization. It should be stressed that "clear" definitions of the authority and responsibility of managers is not always useful, crossing of hierarchical or departmental boundaries is often necessary, authority in problem situations ought to be wielded not by the formally responsible executives but by those that have the requisite expertise. Finally, the technology of brainstorming, innovation management, and intuitive judgment should be heavily emphasized. The possibilities offered by meditation, biofeedback machines, even drugs, in increasing creativity and intuition should be explored.

This does not mean that our budding entrepreneurs should be denied exposure to marketing techniques, production management, finance, etc. They should get the core of modern business education but without the hidden message that managerial professionalism is the only "right" management. They should be told that it is good to be familiar with these techniques, but that they are not indispensable nor juniversally applicable. The essence of good management is not an indiscriminate use of these techniques no matter what the circumstances but a very discriminating use only when the circumstances so warrant.

I am not suggesting the abandonment of the professional approach. What I am suggesting is that students be given exposure to both the professional and the entrepreneurial approaches. They ought to learn the strengths and limitations of each approach, and more importantly, the circumstances in which each approach makes sense. My research suggests that the professional management approach is appropriate for large organizations, or organizations that operate in either very restrictive or technologically sophisticated but relatively stable environments. The entrepreneurial approach works best in young, small to medium sized organizations, or organizations that operate in dynamic or hostile environments that are, however, not very restrictive or technologically sophisticated.¹¹ So, both have their places. But this implies that the ability to "shift gears" quickly with changes in circumstances under which the organization operates, that is to say, the ability to shift quickly from the entrepreneurial to the professional approach and vice versa, when changing circumstances so warrant, should be made the essential output of business education.

Naturally, the foregoing implies some fundamental changes in the business school as an organization. It implies a greater weightage given to resourcefulness, creativity, achievement motivation, and flexibility in the selection of students and faculty. Today, the greatest weight tends to be given to academic performance. If the intention is to turn out professional bureaucrats as well as entrepreneurs, the heavy emphasis on marks, grade point averages and the like, is totally misplaced. Research suggests no correlation between creativity and intelligence above normal IQ. levels.¹² Since examinations typically measure memory and I.Q., it is clear that some of the best entrepreneurial potential is shut out of the leading business schools. It may seem far-fetched, but if entrepreneurship is given parity with managerial professionalism, yogis, parapsychologists, and sociologists of innovation may soon rub elbows with econometricians, statisticians, operations researchers, and behavioral scientists in the corridors of business schools.

FOOT NOTES

- 1 Rensis Likert, Douglas McGregor, and Chris Argyris are three individuals who have made the sharpest distinction between authoritarian and humane management ideologies. For a lucid summary of their ideas see Benjamin Rush, Behavioral Science: Concepts and Management Application (New York: National Industrial Conference Board, 1969).
- 2 D. Braybrooke and Charles Lindblom have sharply contrasted the seat-of-the-pants mode and the technocratic, analytical and comprehensive mode of decision making. See A Strategy of Decision (New York: Free Press, 1963).
- 3 Henry Mintzberg has provided a fine description of the entrepreneurial mode of decision making. See his "Strategy making in three modes" California Management Review, Winter Issue, 1973.
- 4 Tom Burns and G.M. Stalker have provided an insightful description of the contrasting organic and mechanistic styles - See their Management of Innovation (London: Tavistock Publications, 1961).
- 5 In reality, management values show a continuum. For example, some managements are very risk taking, some moderately so, and others are quite conservative. To simplify matters, however, we have considered only the polar opposites.
- 6 The original sample consisted of 103 firms but 21 firms were eliminated from consideration because they could not be classified unambiguously as high performing or low performing organizations. The questionnaire was completed at the vice presidential level or above and most commonly two respondents were secured from each firm. The questionnaire was completed anonymously and returned independently but the respondents were selected by the chief executive officer of the firm. The questionnaire was pre-tested several times with groups of executives. See Appendix to the author's The Design of Organizations (New York: Harcourt Brace Jovanovich, 1976) for details about the sample, the method by which data were gathered, and the questionnaire.
- 7 The profitability, stability of profitability, and growth rate were assessed with respect to the most recent 5-year period. The average profitability of the high performers was 21.1% return on net worth (before taxes); that of the low performers was 7.8%. The average ranges of profitability were respectively 11.6% and 15.7%. The average annual growth rates of sales or revenues were respectively 19.4% and 7.0%.

For details as to how the various dimensions of style were measured, see the Appendix to the author's The Design of Organization (Ibid). For the purposes of this article, firms falling in the top third of the distribution of the risk taking dimension were classified as risk taking; those in the bottom third of the distribution were labelled conservative. Similarly, the technocratic firms were those that scored in the top third of the technocratic dimension (called "optimization" dimension in the book), while the seat-of-the-pants firms were those that scored in the bottom third; the participative firms scored in the top third of the scores on participation while the non-participative firms scored in the bottom third; the structuring oriented firms scored in the top third of the distribution of structuring and the organic firms scored in the bottom third; and finally, the coercive firms scored in the top third of the scores of the coercion dimension while the non-coercive firms scored in the bottom third of this dimension. This procedure minimized the chance of mislabelling firms, although it implied inevitably a further sacrifice of data. The Appendix to The Design of Organizations furnishes details about the reliability and validity of these dimensions. Both were satisfactory.

Such a tendency was very marked in the author's study. See Chapter 11 of The Design of Organizations, Ibid.

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See Chapter 11, The Design of Organizations, Ibid.

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See Chapter 9, The Design of Organizations, Ibid.

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See Frank Barron, Creative Person and Creative Process (New York: Holt, Rinehart and Winston, Inc. 1969), Chapter 4, for a fine discussion of creativity and intelligence.
