

The Missing Opportunity in Organizational Research: Some Implications for a Theory of Work Performance¹

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Existing theory fails to provide strong and consistent prediction of individual job performance. This paper argues that the failure stems from a neglect of an important dimension of performance—the opportunity to perform—and the interaction of opportunity with known correlates of performance. A three dimensional interactive model of work performance is proposed; suggestions for future research and for managerial practice are offered.

Enormous effort has been expended over the past five decades in attempts to unravel the possible relationships between job performance and its hypothesized antecedents. Unfortunately, however, much of the empirical research consists of searching for a simple relationship between job performance and one or two selected variables. Although such studies certainly number in the thousands, they have failed to provide strong and consistent predictors of job performance. In addition, there has been little attempt to synthesize the research or to investigate the relationships among these diverse variables.

In this paper, a different approach to the understanding of job performance is suggested. Rather than simply making the customary plea for more elaborate micro theories of behavior or improved research designs, it is contended that greater progress could be made by examining and organizing what is already known about performance and its antecedents. To facilitate this, three basic dimensions of performance are defined, and the probable form of their interaction is explored.

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Some Antecedents of Work Performance

Among the most studied antecedents of job performance have been job satisfaction, job attitudes, personality, motivation, leadership, and, to a lesser extent, group processes and organization design.

Job Satisfaction

One viewpoint, usually associated with the human relations movement, is that a happy worker is a productive worker, that is, satisfaction leads to performance. A more recent formulation that has gained widespread attention is that performance causes satisfaction, although the relationship is circular and intervening variables are involved (Porter & Lawler, 1968; Schwab & Cummings, 1970). Unfortunately, although empirical support for the second model is stronger than for the first, it is not convincing, and researchers are continuing the search for other codeterminants of work performance (Greene & Craft, 1979).

Job Attitudes

At the same time the satisfaction-performance debate has been raging among organizational be-

havioralists, a similar debate with many conceptual parallels has been occurring in social psychology. In what has become known as the "attitude-behavior controversy," attitude theory repeatedly has been subjected to serious charges of weakness and inadequacy in its ability to predict overt behavior (Perry, Gillespie, & Lotz, 1976). Here, too, the search seems to have focused on an "other variables" explanation for the inconsistent results (Wicker, 1971).

Personality

Simultaneously, a third group of theorists has been at work attempting to predict behavior from measures of an individual's personality. Despite the considerable attention personality variables have received, and the almost universal assumption by personnel managers that personality has a marked effect on the performance of employees, research has failed to show a strong and consistent relationship between personality and behavior (McGrath & Altman, 1966).

Motivation

In still another area of concern, both practitioners and academicians are attempting to show that motivation causes performance. Within this group resides the almost universal assumption that if only some way could be found to motivate workers, most productivity problems could be solved. Motivational techniques such as job enrichment, flexitime, management by objectives, gainsharing plans, and, more recently, work redesign have proliferated. Theories, too, have grown and multiplied. Although certain of these theories, particularly goal setting, expectancy, equity, and achievement motivation, can predict performance, an examination of the evidence leads to the conclusion that these models are not very powerful, are "severely restricted by the domain of the theory, and apply to certain individuals under certain circumstances" (Miner, 1980, p. 405).

Leadership

Since the mid-1940s a great deal of attention has been paid to the leadership-performance connection. The basic premise of this stream of research is that all one needs to do is practice "good leadership" and employee effectiveness inevitably will improve. The focus here has been on the identification

of traits, behavioral patterns, skills, functions, or situations that characterize leaders and good leadership. Unfortunately, even the most promising of the leadership models—the situational theories of Fiedler (1967) and Vroom and Yetton (1973)—suffer from serious methodological and conceptual flaws (Landy & Trumbo, 1980). Although Fiedler's model provides a useful criterion for matching leaders to a particular situation, it does not provide an explanation of the relationships among leader behavior, situational factors, and group effectiveness. The Vroom and Yetton model deals with so narrow a range of leader behavior that its usefulness as a general theory of leadership is limited.

Other Variables

Since the Hawthorne studies, researchers have examined the effect on performance of formal and informal groupings, peer pressure, roles, norms, cohesiveness, goals, rewards, feedback, task characteristics, and other variables. The evidence indicates clearly that group structure and processes affect individual task performance, but that group variables alone are insufficient explanations for performance variations among individuals (Davis, 1969).

In a still broader sense, macro contingency theory has focused on the "fit" between the organization's design and its task environment and the effect this degree of fit has on organizational performance. Lorsch and Morse (1974) suggest that organizations that fit their environmental requirements are likely to be effective and that members of those organizations will feel a "sense of competence" toward their jobs. The linkage between one's sense of competence and actual competence at performing the job has not yet been demonstrated, however.

What conclusions can be drawn from this brief overview? The most obvious is that the variables known to influence individual task performance are numerous and varied. Unfortunately, the focus has been on a few trees, and there has been little or no attempt to show how these trees form the inter-related patterns that are the forest. Certainly it is easy to agree with Miner that "there is no such thing as a general theory of performance at present, and there is little reason to believe one will emerge in the near future" (1980, p. 405). An important step towards developing such a theory is the

organization of what is already known about job performance.

Impetus for the Model

The impetus for this paper and the basis for the suggestions contained therein were motivated by data collected as part of an action-research project designed by Trist and his colleagues (Blumberg, 1978, 1980; Trist, Susman & Brown, 1977) to improve safety and increase job satisfaction while raising the level of performance in an American underground coal mine.

One of the spinoffs of this research was the identification of a broad spectrum of variables posited to be related to work performance. These variables, gleaned from the literature (Aldag & Brief, 1979; Allport, 1924; Blumberg, 1978; Coch & French, 1948; Ghiselli, 1966; Hackman & Oldham, 1976; Lorsch & Morse, 1974; Porter & Lawler, 1968; Sutermeister, 1976; Vroom, 1964) and from 13 months of field observations inside the coal mine, are organized into three general dimensions as shown in Table 1.

Dimensions of Work Performance

Traditionally, personnel psychologists have assumed that performance, in large part, is a function of selection, placement, and training. On the other hand, social psychologists have emphasized the motivational aspects of performance. After reviewing the evidence, Vroom (1964) followed Maier (1955) and others in adopting an interactive relationship of the following form, which took both positions into account:

$$\text{Performance} = f(\text{ability} \times \text{motivation})$$

Although this formulation has been widely adopted in its original form and with minor modifications, its capability to "account for additional variance in performance...has been singularly unsuccessful" (Campbell & Pritchard, 1976, p. 91).

The serious shortcomings of the formulation become obvious when an attempt is made to use it to organize what is known about work performance. If the formulation is correct and complete, then each of the many variables that affect work performance should be capable of being subsumed under either the dimension of ability or that of motivation. In fact, however, a number of relevant variables fall under neither of these categories.

For example, on one occasion, one of the authors went into the coal mine and was surprised to learn that there was no coal production for that day. A major cave-in had occurred, and even the most able and motivated miners could not produce any coal until it was cleared. One might argue that the cave-in affected the miners' ability to mine coal, but to define ability so broadly as to include everything except motivational influences is contrary to general usage and renders the concept incapable of predicting and explaining performance.

One also might be tempted to argue that, seeing the cave-in, the miners had very low expectations of mining coal and therefore were not motivated to exert effort in that direction. However, having said this, little more is known than before. In essence, this is saying that the miners can't produce coal because they are not motivated, and they are not motivated because they can't produce coal. Furthermore, this argument implies a degree of environmentally induced volatility in individual motivation that has not been observed and, if it were, would lead one to conclude that it is not necessary to talk of motivated workers, only of motivating environments.

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Table 1
Dimensions of Work Performance

<i>Dimensions</i>	<i>Variables</i>
Capacity to perform	Ability, age, health, knowledge, skills, intelligence, level of education, endurance, stamina, energy level, motor skills
Willingness to perform	Motivation, job satisfaction, job status, anxiety, legitimacy of participation, attitude, perceived task characteristics, job involvement, ego involvement, self-image, personality, norms, values, perceived role expectations, feelings of equity
Opportunity to perform	Tools, equipment, materials, and supplies; working conditions; actions of coworkers; leader behavior; mentorism; organizational policies, rules, and procedures; information; time; pay

mance. For example, in the preface to *Work and Motivation*, Vroom (1964) acknowledges that the completion of his book was facilitated by a Ford Foundation faculty fellowship, a General Electric Foundation grant, critiques by his students and colleagues, permission to quote from various publications, assistance in the preparation of the bibliography, and help from his wife. All of these clearly are elements of the external environment which cannot be adequately predicted or explained by the ability \times motivation formulation.

In sum, not only is the ability \times motivation model unable to account for environmental variables not under the control of the individual, but there also seems to be no direct way to fit known correlates of performance such as leadership, attitudes, and satisfaction into it.

Willingness and Capacity: Broader Dimensions

A partial solution to the problems raised so far is to replace motivation and ability with concepts that are roughly analogous but broader in scope. Mace (1935) and Viteles (1953) provided for this by distinguishing between the "capacity to work" and the "will to work" as determinants of behavior. Thus, it is possible to suggest that a person will tend to perform a certain behavior to the extent that he or she has both the *capacity* and the *willingness* to engage in such behavior.

Capacity refers to the physiological and cognitive capabilities that enable an individual to perform a task effectively. In addition to ability, capacity represents the effects of the individual's knowledge, skills, intelligence, age, state of health, level of education, endurance, stamina, energy level, motor skills, and similar variables.

The psychological and emotional characteristics that influence the degree to which an individual is inclined to perform a task comprise the willingness dimension. In addition to motivation (and its concomitants, expectancy and valence), willingness represents the effect on behavior of job satisfaction, personality, attitudes, norms, values, status, anxiety, task characteristics, job involvement, perceived role expectations, self-image, need states, and closely related concepts.

Even though an individual may be willing, and have the capacity to engage in a given behavioral

act, whether or not this act can be consummated depends on the presence and arrangement of facts in the person's objective environment. The most important of these facts affecting level of performance appear to be elements of the technical system, physical conditions, actions of co-workers, actions of supervisors, and organizational policies and procedures.

Opportunity: The Missing Dimension

Consider the case of two doctoral students who are equally intelligent, inquisitive, and, by virtue of their training, equally capable of conducting quality research. Assume further that each desires to contribute to knowledge by conducting empirical research. Student A, on receiving her degree, accepts a job offer at a first-rate university, due to the intercession of her well-known dissertation director. Student B, whose equally well-known dissertation director is absorbed in his own research and lends only perfunctory assistance to B during his job search, ends up at a second-rate institution.

Both budding assistant professors begin their first year of academic employment with equal levels of capacity and willingness to conduct research. Two years later, A has produced 10 published articles to B's 3. This difference in performance cannot be adequately explained without reference to elements in each person's environment.

Professor A was given the assistance of highly qualified graduate research assistants, an excellent library, access to a behavioral laboratory, the finest computer facilities, and release time from teaching. Her well-published colleagues critiqued and cited her research, invited her to participate in sessions of national conferences, referee papers for academic journals and, on occasion, join in certain projects that resulted in publications. Professor B, on the other hand, was given little research assistance, was forced to use interlibrary loan facilities, had to conduct experiments in overcrowded classrooms, and found that the university computer had no SPSS facility. Although both had capacity and willingness, the former had an attractive, facilitative environment in which to perform, but the latter did not—and this difference made all the difference.

Many authors recognize the importance of environmental variables for work performance but then dismiss this effect in a sentence or two and pro-

ceed to concentrate primarily on the effects of ability and motivation. Porter and Lawler, for instance, state:

There are, obviously, many environmental factors that also intervene to influence the relationship of effort to performance. For example, equipment features often place limits on the amount of output that will result from effort by a production line worker, or particular sales territories may give certain salesmen advantages that result in extra output unrelated to extra effort. In any case, our model does not take into account such external environmental factors because they represent "spurious" factors in understanding the psychological and human determinants of performance. Clearly, however, they affect performance per se (1968, pp. 32-33).

Cummings and Schwab (1973), in discussing the difference in performance of two bricklayers, argue that, in addition to ability and motivation, environmental variables such as the performance of hod carriers, the job superintendent, the quality of the mortar, the wage rate, or the annual Christmas bonus can influence performance. Unfortunately, they dilute the importance of their suggestion by asserting:

Since performance is ultimately an individual phenomenon, environmental variables influence performance primarily through their effect on the individual determinants of performance—ability and/or motivation (1973, pp. 1-2).

Frank Gilbreth (Gilbreth, 1909; Taylor, 1947), however, did improve the performance of bricklayers on the order of several hundred bricks a day by redesigning their environment—not by affecting their abilities or their motivation. The dramatic performance improvement resulted from assigning a laborer to keep the mortar tempered to exactly the proper consistency, allowing bricks to be bedded with a downward pressure of the hand, and inventing an adjustable scaffold to keep the bricks stacked within easy reach with the best face showing. Thus, a bricklayer no longer had to lower his 200-pound frame almost to the floor to pick up a 4-pound brick which he then had to toss several times to locate its best face before tapping it into place in the mortar.

In contrast to Cummings and Schwab's position, Dachler and Mobley (1973) not only recognize the importance of environmental variables, but also incorporate them explicitly into their VIE model of work motivation. They posit that the effort-performance relationship is moderated by the ability of employees and certain situational restraints such as

"machine downtime, lack of materials and other factors not under the control of the individual" (1973, p. 400). Unfortunately, after identifying these restraints on performance, they quickly abandoned any attempt to operationalize and measure them.

In a model with many conceptual parallels to Dachler and Mobley's, Aldag and Brief (1979) posit that the effort-performance relationship is moderated by the aptitudes, skills, ability, and role perceptions of the employee. In addition, they also recognize the importance of such nonmotivational constraints on performance as technology and market demand "which may reduce or enhance the relationship between an employee's effort and subsequent performance level" (1979, p. 25).

Finally, Peters and O'Connor (1980) have recently demonstrated empirically the importance of situational constraints for work outcomes. Although preliminary, their evidence suggests that eight classes of situational variables impact on effective responses. The variables identified are: (1) job-related information, (2) tools and equipment, (3) materials and supplies, (4) budgetary support, (5) required services and help from others, (6) task preparation, (7) time availability, and (8) work environment.

In sum, available evidence indicates that certain environmental factors beyond the employee's control play a far stronger role in influencing his or her job performance than is generally acknowledged in the literature. The more important of these involve the frequently intransigent behavior of nature and significant others. Both of these factors, well known in normative decision theory as states of nature and actions of others (Miller & Starr, 1969), suggest a clear recognition that, in addition to social, psychological, and physiological determinants, behavior also depends on the help or hindrance of uncontrollable events and actors in one's environment. States of nature and actions of others are combined into a general category labeled *opportunity*.

It should be noted that limiting relevant environmental variables to factors within the organization overlooks variables that have important effects on performance. For instance, in an analysis of why some child prodigies fulfill their potential and others do not, Gardner points out the role that culture plays:

More than 50 percent of the chess prodigies in the United States come from three metropolitan areas—New York, San Francisco, and Los Angeles—which together have but 10 percent of the population. Without a locale that cares about chess, offers opportunities for play, and exposes a player to the best minds of the game, the potentially greatest player in the world may become little more than a patzer (1981, p. 76).

For this reason, opportunity must be given a broad definition beyond simply the individual's immediate task environment: *Opportunity consists of the particular configuration of the field of forces surrounding a person and his or her task that enables or constrains that person's task performance and that are beyond the person's direct control.* Opportunity interacts with capacity and willingness to make performance more probable but, like willingness and capacity, opportunity alone cannot ensure performance.

Interaction of the Dimensions

The kind of model that appears to fit best is interactive, as shown below and in Figure 1.

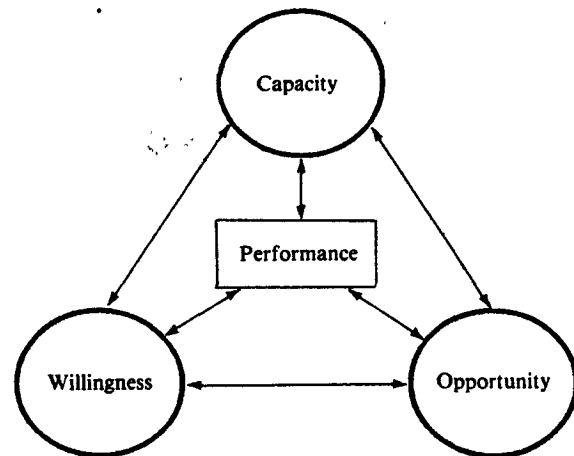
$$P = f(O \times C \times W)$$

This follows from two considerations. First, all three elements—opportunity, capacity, and willingness—must be present in some degree for performance to occur. If it is assumed that values along all three dimensions can vary between zero and some large (but bounded) number, then behavior could not occur in the absence of some value along even one of the dimensions. Moreover, lower values of any one of the dimensions would be expected to result in markedly decreased levels of performance.

A summative model seems more appropriate for the variables that comprise each of the dimensions. For example, in a particular situation, capacity to perform might consist of a weighted algebraic sum of the effects of ability, age, and health. Even if one of the variables, such as age, were not favorably represented, there still would be some capacity remaining for performing because of favorable levels of ability and health.

A second argument for an interactive model stems from social learning theory. In this perspective, persons, environments, and behavior are viewed as interlocking determinants of each other. According to Bandura's concept of reciprocal determinism:

Figure 1
Interaction of the Dimensions



Human accomplishments result from reciprocal interaction of external circumstances with a host of personal determinants (1977, p. 207).

Thus, a behavior partly creates the environment, and the environment influences the behavior in a reciprocal fashion. To the oft-repeated dictum, change contingencies and you change behavior, should be added the reciprocal side, change behavior and you change contingencies (1974, p. 866).

For example, at one time, managers commanded exclusive power and were able to pay employees on a piece-rate basis and hire and fire at will. Rather than accepting that environment as a given, employees organized and gained economic coercive strength through collective action and were able to reduce management's unilateral power to determine working conditions and wage payments (Bandura, 1974).

At the individual level, performance is determined by opportunity, willingness, and capacity and, in turn, is a partial determinant of each. The act of performing, for instance, gives one experience on the job, which over time may improve the individual's skills or abilities (elements of capacity). High job performance may increase a worker's job satisfaction and reduce his or her anxiety about performance (elements of willingness). And one individual's superb performance may inspire his or her co-workers (an element of opportunity) to perform better, which in turn may impel the individual to even higher performance (examples of this can be seen most clearly at athletic events).

Implications for Researchers

When viewed from the perspective of this framework, there is little surprise that theorists concerned solely with attitudes, personality, job satisfaction, leadership, or other solitary variables have failed to demonstrate a strong and consistent relationship between these variables and job performance. Researchers working with motivational variables, for example, rarely attempt to control leadership, yet leadership is known to be an important determinant of worker performance. What is surprising is that researchers have been able to link these variables as strongly as they have with job performance considering each is only a subset of one of three major dimensions of job performance determinants.

The relative effects of these interdependent dimensions probably vary from setting to setting. For example, opportunity appears to be a critical determinant of performance in coal mines, but it may have less impact in an insurance company. Even in the insurance company, however, well designed technology, that is, opportunity, would appear to be more critical for operators of automatic machinery than for administrators.

A strict interpretation of the model would imply that the effects of willingness, capacity, and opportunity must be investigated in any study of work performance. However, a total accounting for all of these variables obviously is beyond the practical scope of any single research project. Fortunately, as Sherif and Sherif point out, this may not be necessary:

For all practical purposes we do not have to concentrate *equally* on *all* factors that may affect behavior in order to assess the properties of the psychological pattern and associated behavior. The various factors in the frame of reference at a particular time do not contribute equally. . . . In other words, the characteristics of the psychological pattern are determined more heavily by certain factors than by others (1969, pp. 72-73).

Thus, if researchers are to avoid incomplete—and inaccurate—predictions, they must attempt to control for, at least in a general way, the implications that many of these variables have for job performance, and at the same time deal with the manageable few in which they are interested.

Operationalizing the model, of course, is more difficult than one designed to test the effects of a single independent variable on performance; nevertheless, there are systematic ways in which it can be done.

The approach suggested here is to use a three

dimensional outcome array or performance table in which each cell represents the level of performance associated with a particular configuration of capacity, willingness, and opportunity. For practical purposes, the three dimensional array can be simplified and presented in the two dimension “payoff matrix” format of normative decision theory (Miller & Starr, 1969; Taylor, 1965). This is shown in Figure 2.

In the figure, the rows represent the personal factors of capacity and willingness. The columns represent the environmental factor, opportunity. The cell entry at the intersection of each row and column represents the level of performance associated with each capacity-willingness and opportunity configuration.

Each different configuration of the personal factors can be interpreted as constituting a course of action a person may choose to follow. Thus, a person with both a high willingness and a high capacity would be predicted to choose to perform at a high level. This action choice taken in conjunction with the opportunity that exists will determine the degree to which this level of performance is achieved.

Although opportunity is treated as though it were a unitary variable for ease of discussion, researchers may wish to obtain greater precision by treating the two components of opportunity separately. Thus, natural conditions can be favorable or unfavorable, and acts of others can be helpful or hindering. These can be combined to yield four generalized opportunity states rather than the two shown in the figure.

The general prediction from the figure is for increased levels of performance as one moves from cell 1 to cell 8. However, it also suggests a number of intriguing research questions relating to the assignment and reward of personnel. For example, the model predicts that the highest performance would be obtained by assigning the most capable and willing people to the more favorable environmental conditions. But it also seems reasonable to ask whether better *overall* performance might not be obtained by assigning the more willing, yet less capable people to the more favorable conditions and assigning the top workers to the tougher conditions. These and related questions such as the relative weighting of opportunity, willingness, and capacity will have to be answered by future research.

Figure 2
Predicted Performance Outcomes
for Different Levels of Opportunity,
Capacity, and Willingness

Personal Factors		Environmental Factors	
		Opportunity	
		Less favorable	More favorable
Lower capacity	Lower willingness	1 very low performance	2 low performance
	Higher willingness	3 low to moderate performance	4 moderate performance
Higher capacity	Lower willingness	5 low to moderate performance	6 moderate performance
	Higher willingness	7 high performance	8 very high performance

Implications for Managerial Practice

Practitioner training programs and the academic literature concerned with performance focus primarily on ways in which managers can increase the capacity and willingness of their subordinates. The purpose of training and development, for instance, is to improve the capacity of subordinates to perform, and a wealth of literature on motivation, leadership, task design, and attitudes deals with how willingness might be increased. Virtually overlooked has been the role that opportunity plays in subordinate performance. Although some variables that affect the subordinate's opportunity to perform, such as social influences, cannot be altered by managerial actions; other variables provide considerable potential for the enhancement of subordinate performance.

If managers are to realize this potential, they must be made aware that they are responsible for providing a facilitative environment for their subordinates' work. The starting point is an analysis of the organization's (or subsystem's, depending on the manager's level in the hierarchy) technology. Although state-of-the-art technology often is expensive, and in some fields is subject to rapid

change, many organizations fail to assess the opportunity costs incurred in foregoing the latest technology. Increases in performance through technological change probably are more dramatic than are increases resulting from motivation, leadership, or attitude change programs. For example, see the Weldon Company test of System 4 reported by Marrow, Bowers, and Seashore (1967) and Perrow (1979). Even the particular tools used by employees in their work afford the opportunity for performance improvements. The replacement of typewriters with word processors, for example, should enhance employee productivity.

An analysis of various organizational "systems" also is required. For instance, an efficient planning system for the delivery of raw materials and parts and for the scheduling of workflow provides the opportunity for higher performance than does an inefficient system. Also, the appropriate and timely coordination of activities among functional areas enables subordinates to perform at a higher level.

These variables—technology, tools, planning/scheduling systems, and the coordination of organizational activities—probably are considered "states of nature" by operative employees and first level supervisors. They are perceived as organizational

“givens,” which lower level participants cannot directly affect. Yet, as these variables interact with capacity and willingness, they directly influence the performance of these individuals.

The actions of significant others—aside from traditional leadership and motivation theories—also affect individual performance. For instance, personnel policies that result in the hiring and retention of high performers foster a climate of performance that is likely to affect entrants to the organization’s work force. The behavioral phenomenon of social facilitation (Allport, 1924) suggests that if an individual is in the presence of others who are working industriously, he or she is likely to do the same. Placing an able newcomer into a formal role set of high performers, therefore, should have beneficial effects on that employee’s performance.

Sponsorship of an aspiring manager by a higher level executive in a mentor relationship is another means by which others can affect an individual’s performance. With an experienced mentor, the protégé is provided valuable advice, introduction to influential people, and the opportunity to develop both management skills and a philosophy of management.

Finally, the delegation of challenging and important tasks to individuals with high capacity and will-

ingness to help them realize their full potential is likely to pay dividends in higher performance. As Schein so aptly puts it:

Management has often accepted organizational circumstances as a given and has explained behavioral variations as a function of different motives: The good worker could be assumed to have a high achievement need while the poor worker or alienated worker could be assumed to lack ambition. In some cases, this assumption might have been correct, but in other situations, it would have been more correct to see the good worker as having a boss who provided challenging work while the poor worker had a boss who provided a fragmented and intrinsically meaningless assignment (1980, pp. 98-99).

Delegation, of course, not only provides the opportunity for performance, but also is a means of increasing the subordinate’s capacity.

The foregoing suggestions obviously assume the prior existence of some reasonable level of capacity and willingness. They are not meant to be all-inclusive but only suggestive of ways in which management can increase the opportunity for subordinates to perform. Managers interested in improving subordinate performance must consider the effect of managerial behavior on each of the three variables—opportunity, capacity, and willingness—and the resultant effects of their interaction.

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