

Improving Performance and Quality of Working Life: A Model for Organizational Health Assessment in Emerging Enterprises

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ABSTRACT

The organization of work has been addressed through numerous perspectives by a diverse set of disciplines. While job stress research has focused on the promotion of worker well-being, contemporary business-improvement initiatives (e.g., lean manufacturing, six sigma) have sought to optimize effectiveness through work processes. However, these two aims, although traditionally viewed as contradictory, are actually interdependent variables in the determination of long-term profitability. The concept of organizational health blends the pursuit of individual wellness with organizational effectiveness to yield a strategy for economic resilience. This article introduces a novel model for organizational health assessment using a systemic approach that addresses work factors at the individual, job, process, and organizational levels. © 2004 Wiley Periodicals, Inc.

1. INTRODUCTION

Corporate financial success and a healthful organizational environment have been long viewed as juxtaposed concepts. The conventional paradigm dictates that if resources are devoted to worker well-being, fewer resources will be available to contribute to corporate profit. At the managerial level, work and health are often interpreted as a choice between productive work practices and those practices which are safe and healthy (Cox & Cox, 1993). However, statistics reveal the cost burden that the lack of worker health imposes on the United States economy. Evanoff & Rosenstock (1994) reported that estimates of

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the annual direct and indirect medical costs associated with occupational stress in the United States have ranged from \$80 billion to \$150 billion. These estimates do not include the additional costs incurred from lost productivity.

Furthermore, research in recent years has begun to recognize the significant role of employee health in the performance of the organization as a whole (e.g., Lindstrom, Schrey, Ahonen, & Kaleva, 2000; Sauter, Lim, & Murphy, 1996; Sauter, 2002; Zink, 2002). Sauter et al. (1996) acknowledged that organizational performance and worker well-being are mutually reinforcing and introduced a model developed by the National Institute of Occupational Safety and Health (NIOSH) for use in their investigation of "healthy" work organizations. Zink (2002) asserted that human resources are the most relevant enabler of success of a company. Rapid changes in the organization of work due to the indoctrination of work improvement efforts in corporate cultures (e.g., lean manufacturing, six sigma), together with the new demographics of the American work population (e.g., increasing numbers of women, minorities, and aging workers) have far outpaced the knowledge regarding the implications of these changes on the quality of working life (Sauter, 2002). As such, this area has been established as one of the 21 priority research items under the National Occupational Research Agenda (NORA).

While the physical and mental demands form the job content of the overall work-system model, the organizational environment together with the physical environment form the context in which work tasks are executed (Shoaf, Genaidy, & Shell, 1998). However, an organizational environment model which aims to optimize work outcomes (i.e., productivity, quality) while seeking to optimize the quality of life of the work-system participants has received little attention in the scientific research arena (Genaidy, Karwowski, & Christensen, 1999; Karwowski et al., 1994). Furthermore, the set of parameters, which constitute the organizational environment as well as the concepts underlying a model's development, have been the subject of vigorous debate and terminological confusion.

The objective of this article was to develop a model for organizational health assessment to address the subsystems of factors, which interact to form the culture (the shared meanings and values) and climate (the work practices) within the totality of the work environment. Preliminary evidence suggests both positive and negative effects of changing organizational practices on the safety and health of workers (Berg, 1999; Jackson & Mullarkey, 2000; Smith, 1997). As a result of these conflicting findings, NIOSH suggests that an important focus of research should be the clarification of circumstances (for whom and under what conditions) in which these practices protect or increase the risk of harm to workers (Sauter, 2002).

To address this need, a model of the organizational work system, these factors and their interrelationships must be developed. Although several recent efforts have documented correlations between various work factors and individual/organizational well-being measures (e.g., Lim & Murphy, 1999; Lindstrom et al., 2000; Sauter et al., 1996), a comprehensive organizational-systems model from which to empirically define pathways to promote health is required. This article aims to fill this need. However, prior to describing the Organizational Health Model, the evolution of the organizational health concept will be reviewed.

2. EVOLUTION OF THE ORGANIZATIONAL HEALTH CONSTRUCT

In the many years American businesses enjoyed in the absence of global competition, a healthy corporation was simply a by-product of an environment with a lack of obvious

physical or chemical hazards. The Occupational Health and Safety Act, effective in 1971, was enacted to ensure safe and healthful working conditions. As a result, the Occupational Safety and Health Administration (OSHA) establishes and monitors compliance to safety and health standards. In the occupational-health perspective at this time, a healthful organization constituted one that did not violate the enacted standards.

The roots of the organizational health concept in the United States began in the 1960s, presented through the humanistic researchers' concerns regarding how employees were treated in the work organization (Argyris, 1958, 1964; Herzberg, Mausner, & Snyderman, 1959; Maslow, 1965; McGregor, 1960; Porter & Lawler, 1967; Vroom, 1964). Their work linked job content to individual well-being in the context of the effective organization. Argyris (1958, 1964) questioned the ability of an organization to meet the needs of its employees while remaining competitive. McGregor's (1960) descriptions of Theory X (authoritarian management) and Theory Y (democratic management) asserted that the role of the organizational environment is critical in determining effectiveness as well as utilizing worker potential. Herzberg et al. (1959), Maslow (1965), Porter and Lawler (1968), and Vroom (1964) explored the interactions between individual motivation and performance. These theories formed the basis for numerous intervention efforts aimed at improving various aspects of organizational health.

What is organizational health? In the aftermath of several popular corporate improvement programs such as the total quality management (TQM) and downsizing, the term "organizational health" has emerged in both the occupational health and mainstream business literature (Cox & Howarth, 1990; Jaffe, 1995; Rosen, 1991; Sauter et al., 1996; Williams, 1994), heralding a blending of the traditionally paradoxical values of productivity versus health and safety. Effectiveness, a universal organizational goal, can be regarded as a composite of the following factors: product quality, customer service, flexibility, initiative taken by employees, and capacity to meet deadlines (Gardell, 1987). Jaffe (1995) characterized organizational health as implying an expanded notion of organizational effectiveness. He offered a contextual definition of organizational health stating that a company can be healthy for (a) its own livelihood by growing and being efficient, adaptable, and coherent; (b) stockholders by increasing the value of stock; (c) employees, offering a healthy work environment as well as meeting their highest growth needs for meaning and participation; (d) suppliers and customers by offering good products and services; and (e) the community by assuming concern for its viability as well as for the environment. Jaffe added that the needs of all the benefactors of organizational health must be balanced to ensure success. Rosen (1991) described a healthy company as one that holds a core set of humanistic values: commitment to self-knowledge and development, firm belief in decency, respect for individual differences, spirit of partnership, high priority for health and well-being, appreciation for flexibility and resilience, and passion for products and process.

Although these descriptions provide an ideology for and list of benefactors of organizational health, they fail to define the components of an organization that interact to create its level of well-being. Williams (1994) cited the four elements of organizational health as environmental factors, physical health, mental (psychological) health, and social health; the details of interventions describe a holistic approach to employee health. Yet, he myopically equated the health of the employee to the health of the organization. To effectively assess organizational conditions for healthy work, other aspects of the work system—physical job demands, mental job demands, and physical environment demands as well as individual characteristics—must be considered simultaneously.

However, little research has been devoted directly to the concept of organizational health, especially in the United States. In the strictest sense, most work-improvement efforts are only tangentially related to the organizational health construct in that the majority of these approaches are aimed primarily at optimizing performance (improving effectiveness) rather than the quality of work life for all participants. Conversely, job-stress research has considered individual and job characteristics as they relate to individual measures of health (e.g., physical symptoms) (Sauter, 2002).

Overall, previous efforts to address human effectiveness in conjunction with consideration for worker well-being can be classified into three categories according to the variable identified for intervention: the individual, the job, and the organizational framework. Notably absent from this classification is the process-based orientation. Numerous contemporary work-improvement efforts, such as statistical process control, lean manufacturing, reengineering, and six sigma, regard the optimization of the process as paramount. However, these methods, focused on the pursuit of effectiveness, have failed to consider the effects of process improvements on the quality of working life for work participants.

Figure 1 depicts the relationship between the individual, job, and organizational orientations that guide the pursuit of organizational health. Work improvement strategies can be classified according to these three orientations. Although no organizational health interventions can be classified as process-based, this category is included in the model for completeness. In this model, strategy boundaries are diffuse due to the likely overlap between classifications. The large circle (organization) circumscribes the smaller circles (individual, job, and process), as the intervention in the larger circle is broader in scope and therefore affects the intervention in the smaller circle. For example, organizational interventions such as restructuring a manufacturing area into an autonomous work group can alter both the scope of a job as well as the individual's role. Table 1 provides a review of the classification of orientations.

The orientation of the United States' research on workplace health has been overwhelmingly individual-focused, not surprisingly congruent to its cultural ideology. This orientation implicitly assumes that the aggregation of individual physically and psychologically healthy workers equals a healthy company. The majority of empirical research advancing the development of organizational health concepts in the United States has primarily resulted as an outgrowth of job stress studies. Overall, these studies have focused on individual health as affected by workplace demands. Historically, in the occupational stress research tradition, wellness strategies were exclusively aimed at the individual's physical

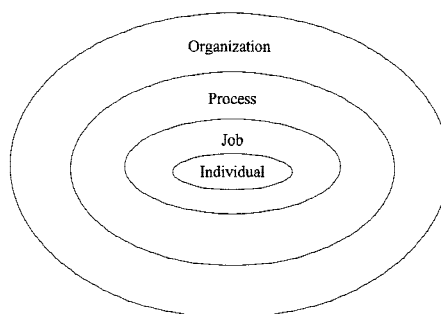


Figure 1 Orientations of organizational health.

TABLE 1. Review of Approaches to Organizational Health

Variable	Form of Intervention	Reference
Individual	Health promotion	Matteson & Ivancevich (1988) Murphy (1988)
	Significance of leader	Schein (1985) Covey (1990) Bennis & Townsend (1995)
Job	Job redesign (including enrichment, enlargement, rotation)	Herzberg et al. (1959) Maslow (1965) Porter & Lawler (1968) Hackman & Lawler (1971) Hackman & Oldham (1975) Griffin (1982)
Organization	Autonomous groups	Trist & Bamforth (1951) Gardell (1981) Gardell (1982) Sandberg (1982)

and mental health. Consequently, the most common interventions recommend development of individual coping strategies such as stress-management training and employee-assistance programs (Murphy, 1988). Common elements of workplace health promotion include smoking cessation, hypertension screening and control, stress management, nutrition and weight control, exercise and fitness, and drug and alcohol programs (Matteson & Ivancevich, 1988). However, wellness promoting strategies also must refer to the improvement of intrinsic job factors and therefore serve a dual purpose of attempting to better work life on both the individual as well as organizational planes.

Wellness-promotion strategies seek to bolster individual and organizational resilience by increasing inherent capability. On the individual level, capability may be developed through the practice of conflict-resolution skills or support networks. On the organizational level, work may be designed such that self-determination, social interaction, and professional responsibility are central concepts (Gardell, 1987). Lindstrom (1994) cited job characteristic criteria as well as strategies for good work organization, such as mastery of work, management of change processes, support of employees by occupational health services, and emphasis on career stage and future perspectives. Inclusion of wellness-promoting strategies must emphasize the prerequisite for active job content and work-setting design in creating a robust organization. In this manner, the traditional paradigm of healthy work as that in which stress and harm are absent is expanded.

Another individual-based orientation emphasizes the leader's importance in the formation of a healthy company (Bennis & Townsend, 1995; Covey, 1990; Schein, 1985). This perspective largely attributes the creation and existence of an organization to its founders or leaders. Thus, the leader's personal characteristics and management style are viewed as the primary catalysts for organizational well-being. Gardell (1987) cautioned against focusing preventative strategies primarily on the individual as this emphasis translates a larger organizational problem into a private one.

Job redesign also has been used as a means for improving health. Job characteristics that support healthful work conditions are defined, and then the job is modified to possess

these characteristics. Generally, the job is considered as an independent entity, in isolation from the organizational context. In this perspective, the job is used as the medium through which to affect individual motivation. For example, Hackman and Lawler (1971) defined five job characteristics for meaningful work: skill variety, task identity, task significance, autonomy, and feedback. The Job Diagnostic Survey (JDS; Hackman & Oldham, 1975) was developed to assess jobs based on the five aforementioned job characteristics.

The job characteristics defined by Hackman and Lawler (1971) provided a set of variables that could be manipulated to increase job meaning and therefore worker motivation. Job enrichment adds complexity often by allowing greater worker autonomy. Techniques such as job enlargement (expanding the scope of the job by adding more task variety) and job rotation (alternating task assignments) are additional examples of job-based interventions (Griffin, 1982). Job-based approaches use task redesign as the means to affect individual worker satisfaction (see Figure 1). Critics of this orientation argue that these efforts may not succeed as psychological differences between individuals are not addressed (Hulin, 1971).

Efforts focused primarily on the improvement of work life through organizational variables began in Scandinavia around the mid-1960s, and soon thereafter social science research and health research united in the investigation to improve quality of work life (Lindstrom, 1994). The orientation in Scandinavian countries as well as Finland has tended to focus more on the resources and structure of the work environment itself rather than the individual worker or job process. In the organizational orientation, interventions such as the establishment of autonomous production groups are used to incorporate considerations of job demands, individuals' self-determination, resources (technical, organizational, social, personal), and autonomy. Collective control allows groups to create their own distinctive adaptive strategies. The importance of these efforts to improve quality of work life has been further emphasized in the Swedish Work Environment Act, effective since 1977, which states that "jobs shall be designed so that the employees themselves can influence their work situation" and "working conditions shall be adapted to the mental and physical capacity of human beings."

Organization-based interventions (Gardell, 1981, 1982; Sandberg, 1982) redesign the "job" by changing its overall structure within the context of the work organization. In their terminology, "job redesign" has been enlarged to "work reform." Conceptually, this approach emerged from sociotechnical design theory (Trist & Bamforth, 1951), which advocates that work should be organized in groups that have control over decision making and are responsible for a complete work cycle. To encourage autonomy and social support, interdependent autonomous work groups were implemented, therefore magnifying the individual's role within the context of the work environment. Several advantages of autonomous work groups are cited in Gardell (1981):

- Within a group setting, the individual can expand his or her possibilities for attaining some amount of freedom and competence at work;
- the possibilities for learning, variation, and all-around use of human resources will be improved;
- the individual and the group will be able to achieve wider control over the work system and work methods; and
- human contact and solidarity between people will be more likely.

Karasek and Theorell (1990) later formulated a model using three factors to characterize work: job demands, job control, and social support. They concluded that high-demand–low-control jobs resulted in higher incidence of health problems than jobs that are high demand–high control, thus validating Gardell's (1982) previous experiments on workplace autonomy and participation on which his interventions were based. Critics of the sociotechnical approach argue that this orientation does not go far enough to affect organizational change in that it does not address the employees' beliefs regarding organizational goals, priorities, and behaviors, except in regard to job content and social relationships (Schneider, Brief, & Guzzo, 1996).

Recent efforts to describe the environment for organizational health suggest debate among research communities over the emphasis of worker or process, and individual level factors versus structural, organizational level factors. Lindstrom (1994), of the Finnish Institute of Occupational Health, cites job characteristics such as optimal quantitative and qualitative workload, opportunities for control at work, clarified work balanced by other roles, and supportive social interactions as the psychosocial criteria for good work organization, and also cites organizational strategies to support these criteria. Sauter et al. (1996), of NIOSH, presented a model which wholly ignores job-level factors (e.g., workload, autonomy, role stress) and shifted all emphasis to "macro-organizational" characteristics (e.g., climate, values).

Lack of attention to all four variables (individual, job, process, and organization) in intervention strategies can result in a failure to improve the level of work performance as well as quality of work life. Cox and Cox (1993) explained that health problems may arise because jobs, technology, and work environments have not been systematically designed with workers in mind due to management practices, organizational culture, or failure to develop workers' knowledge skills and attitudes. For example, extended work hours due to staff reductions may increase the risk of physical injury. Frankenhauser (1991) recommended that individual-oriented programs need to be supplemented by organization-wide changes that may involve altering the conditions under which people work, the tasks they perform, and the rewards they obtain. Gardell (1987) concluded that "preventative psychosocial work" must proceed on both the individual as well as the organizational planes. This strategy, calling for the collaboration of orientations, marks the starting point for the organizational model's development.

3. ORGANIZATIONAL HEALTH MODEL DEVELOPMENT

With the recent emergence of the concept of organizational health, researchers have acknowledged the significance of the role of worker well-being in the establishment of a healthy as well as effective workplace. Several areas of study have fed the idea's germination, notably the humanistic organizational research and the job-stress research traditions. However, the concept suffers from the lack of a holistic approach on two levels. First, current descriptions of organizational health must be enlarged to include all components of the work system (e.g., physical, mental, organizational, environmental) as well as their interactions. Second, although some researchers (Elo, 1986; Cox & Cox, 1993; Lindstrom, 1994) identified criteria for good work organization, this work has not yet been integrated within a systemic framework that lends itself to practical industrial application. Analogous to biological health, the determination of healthy work is based on a system of interrelated components functioning together, seeking balance. To assess organizational health, the resulting work-system equilibrium must be quantified.

Figure 2 depicts the Human–Organizational Health Model, which describes the relationships between elements of the organizational environment. The company’s values and organizational goals drive the establishment of work practices and policies. Processes dictate the job content, that is, the mental, physical, and environmental demands on the worker. Resources act to encourage worker well-being (e.g., meaningful job characteristics, mentoring, training, advancement opportunities) act to offset the negative effects of the demands on workers (e.g., fatigue, boredom) and consequently, simultaneously encourage successful achievement of organizational goals. A methodology for achieving balance among the key elements of the work system is detailed in Genaidy, Karwowski, and Shoaf (2002). The interrelationships between work-system components ultimately determine the state of the organization’s health. Culture is the premise upon which the climate, the everyday operations, is based. These daily practices (climate), in turn, affect the culture. The model is predicated upon the occurrence of two outcomes: effectiveness in achieving the desired goal and the wellness as described by the quality of work life of the members. Therefore, the definition of organizational health blends the historically paradoxical objectives of optimizing performance and overall well-being. This section details the model’s components and explains their interrelationships.

3.1. Culture

References to organizational culture abound in both scholarly and mainstream literature. Culture can be casually defined as “how things are done around here” (Martin, 1982). Organizational culture is a relatively new area of study that has experienced recent popularity through business self-help books (Collins & Porras, 1994; Deal & Kennedy, 1982; Peters & Waterman, 1982), which target work culture as a variable for manipulation in the pursuit of effectiveness. Much academic work has been devoted to the definition and description of the concept; however, little effort has focused on the empirical study of culture in the contemporary work organization. Although comprehensive book-length explications of the concept have been accomplished (Schein, 1985, 1992; Trice & Beyer, 1993), there has been little research on methodology for practical application or reported experience substantiating the theoretical views in industry. The concept of organizational culture has suffered from the lack of a focus, causing theoretical efforts to remain inaccessible to the industrial work environment.

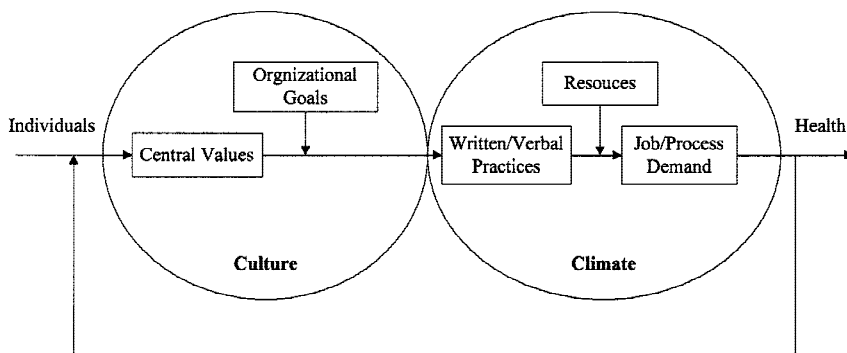


Figure 2 Organizational health work system model.

The problem of defining organizational culture is based on the fact that the concept of the organization is itself ambiguous (Schein, 1992). The many definitions of culture are divergent in scope, overlap with other concepts (notably, climate), and sometimes contradict other definitions; however, most include reference to both beliefs (values) and actions (behavior). However, to evaluate the complex interrelationships of the work system, the interactions that form the context through which individuals interpret their experiences must be evaluated. Culture constitutes a significant variable in the model of organizational life. For the purposes of this study, culture will be defined as the shared values (what is important) and beliefs (the why behind what happens) which guide the behavior of its members.

Values are common to nearly all of the varied definitions in the culture literature (Denson, 1996; Schein, 1992). Values central to an organization's being can be revealed in two ways. First, they may be enacted as ideologies represented in the way business is conducted. Second, central values may be espoused through formal means of communication (i.e., written company literature, speeches). If values are enacted without being stated, they must be deciphered by organization's members. Therefore, espoused values provide a clearer declaration. When well defined and continually expressed, central values serve as the precepts which structure behavior.

Many researchers (Deal & Kennedy, 1982; Peters & Waterman, 1982) have fallen victim to the trap of advocating a prescribed set of values as a recipe for corporate success. Many mainstream business books, although written from the perspective of the corporate environment, tend to offer generic "quick fixes," often proposing that there exists a model culture for effectiveness and suggesting that any organization's current culture is malleable enough to achieve the prescribed ideal. Furthermore, these mainstream writings generally lack scientific credibility in that they are based on anecdotal evidence, use a relatively small sample size, and ignore psychometric issues such as data reliability and validity. However, while convenient to assume, central values, like personal values, cannot be dictated or imposed. Central values result from the genesis of a company's history, emerging from the organization's leaders and members. As the company grows, articulation of the central values is essential for reinforcement in incumbent members and instilling in new members. Collins and Porras (1994) reported that visionary companies usually possess between three and six central values. Some examples of well-known, visionary companies and their central values are: Wal-Mart—customer service, Procter and Gamble—product quality and honest business, and Hewlett-Packard—respect and concern for the individual (Collins & Porras, 1994).

The work culture is further shaped by an organization's goals. Organizational goals are the specific actions the company strives to accomplish. Consequently, they function as the impetus for the company's strategic plans. To be authentic and deserving of full commitment from the organization's members, organizational goals should reinforce the central values held. For example, General Electric's goal of training every employee in six sigma methodology and basing promotional consideration on the completion of training reflects their espoused high regard for quality (Henderson & Evans, 2000). Goals that conflict with an organization's central values are likely to result in dissent among its members, therefore hindering the potential for achievement.

Organizational goals in conjunction with central values constitute the organization's strategic intent. The attainment of the strategic intent, while influenced by many factors (i.e., resources, market, competition), is initially fueled by its clear communication and strength of the bond between the central values and organizational goals. These elements

describe the medium of culture that influences the constitution of the climate. For organizational goals to be realized, effective work processes must be designed and maintained. Processes, in turn, must be enacted by individuals who perform various jobs in support of the process goals. Figure 3 illustrates how the four orientations (i.e., individual, job, process, and organizational) influence organizational health.

3.2. Climate

Organizational climate, colloquially defined as “the way things are done around here” (Schneider & Gunnarson, 1991), is a multidimensional concept which has experienced a long, prolific history in the research literature. Although more advanced a concept than organizational culture in terms of practical application and empirical inquiry, organizational climate also has been subject to controversy regarding its definition and has assumed varying levels of focus in terms of the content it includes. Organizational climate, a concept indigenous to the field of organizational psychology, has functioned as an instrument for quantifying environmental influences on individual motivation, satisfaction, and workplace behavior through the summary of perceptions.

From the beginning of the concept’s explication, data collection and empirical analysis have been key components of the majority of studies. The breadth of the organizational climate topic results in a limitless set of elements that constitute the work environment. Thus, organizational climate as a general concept for study can include a myriad of potential dimensions for assessment. As a result, content critical for assessment may be ignored or the list of dimensions may grow so large that assessment is impossible. Schneider (1990) noted that the representation of climate as an abstract construct lacks a strategic focus. Climate without reference to a specific outcome (i.e., safety, quality, creativity)

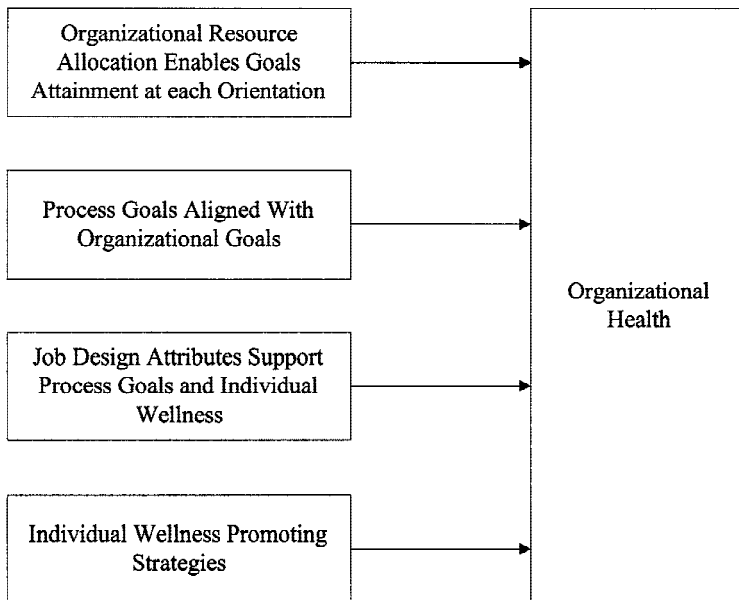


Figure 3 Organizational health across four orientations.

has no content boundaries as well as no definitive purpose for assessment and therefore lacks practical utility. Thus, it is essential to assess climate within the context of organizational, process, individual, and job goals.

In recent years, numerous researchers have directed their efforts toward developing assessments to measure climates for a specific type of environment. Several studies have demonstrated the utility of this focus through industrial application. Zohar (1980) tested an assessment measure of a safety climate. Other measures available for the assessment of a specific climate or work outcome include conflict resolution (Renwick, 1975), motivation (Litwin & Stringer, 1968) and leadership (Fleishman, 1953), job satisfaction (Guion, 1973; Pritchard & Karasick, 1973), and organizational performance (Lawler, Hall, & Oldham, 1974).

As the purpose of this article was to develop a model for the assessment of organizational health, a practical and clear definition is needed which recognizes all variables in the determination of organizational climate. Therefore, the definition presented by Schneider and Gunnarson (1991) stating that organizational climate refers to “the themes that employees believe describe their organization based on the practices, procedures and rewarded behaviors that employees see happening to them as well as around them” will be used in this article.

For the purpose of work-system assessment, climate is more fully characterized by inclusion of job demands and resources. Job demands encompass the physical and mental task requirements as well as environmental conditions the worker may be exposed to (e.g., noise, vibration). Resources are factors in the work climate that act to encourage the worker to achieve job goals and job satisfaction. In the work system, resources may be individual based (e.g., smoking-cessation programs), job based (e.g., expansion of task content), process based (e.g., improved work techniques), or organization based (restructuring of departments).

The relationship between culture and climate has caused much confusion and has been the subject of a multitude of debates in the research literature (Czarniawska-Joerges, 1992; Denison, 1996). While some researchers have described one concept in terms of that it is not the other (Trice & Beyer, 1993), many culture researchers have wholly ignored organizational climate in their work. These two concepts, which obviously interlock in practical application, have been developed academically in parallel.

However, several researchers have acknowledged that culture and climate are distinct (Reichers & Schneider, 1990; Rousseau, 1988). Some have attempted to describe the relationship between culture and climate by stating that culture includes climate (Burnside, Amabile, & Gyskiewicz, 1988; Ekvall, 1991). However, this explanation fails to establish an area of demarcation between the two concepts. With greater clarity, Schneider (1985, 1987) described culture and climate as complimentary topics, and explained that climate research focuses on the what and how organizational activities and behaviors are rewarded while culture focuses on the underlying reasons why the activities and behaviors happen. In this way, culture “informs” climate by helping individuals define what is important and structure their experiences (Ashforth, 1985). Hence, climate can be viewed as a manifestation of culture.

Organizational climate, although subject to some debate regarding definition and details of operationalization issues, has proved a viable instrument for characterization of the work environment, especially for those work settings with a specific theme. However, the full potential of the climate concept can be realized best through its coupling with the organizational culture concept. While progress has been made in clarifying the relation-

ship between the two, work to integrate the concepts has not progressed beyond theoretical discussions. As these two concepts when paired are capable of wholly describing the context for behavior in the work setting, it is essential that both be considered in the characterization of the organizational environment. This study will utilize the concepts of culture and climate in a model to describe the organizational environment to develop an analysis framework and methodology for the promotion of organizational health in the industrial work environment.

In the Organizational Health Model (Figure 2), culture explicitly drives the climatic conditions. Therefore, the climate represents how the culture is operationalized on a surface level. In this model, the factors selected to describe climate are those relevant to the two outcomes of interest: effectiveness as related to specific performance goals and organizational wellness as related to the quality of working life. Culture, as the essential values upon which an organization is based, provides a deep-rooted structure from which everyday policies, practices, and goals can be grounded. When this progression occurs, the organization's values are enacted, reinforced, and clarified through its practices. In a study at a U.S. manufacturing company, values and organizational climate were found to influence organizational effectiveness while work practices were found to influence worker satisfaction and stress (Lim & Murphy, 1999). Although the distinction between "climate" and "practices" was not clarified in this research, this effort provides evidence of the significance of these work-system components in the determination of organizational health.

Furthermore, numerous researchers have noted the positive effects of the congruence between cultural values, organizational goals, and daily practices. Morgan (1986) argued that a healthy organization requires its culture to be consistent with its structure, policies, and procedures. Schneider et al. (1996) proposed that what people believe is the culture and experience is the climate ultimately determines whether sustained change is accomplished. Collins and Porras (1994), in their study of the distinguishing characteristics of visionary, high-performing companies, found that organizational alignment so that members receive a consistent set of signals to reinforce the desired behavior and achieve desired progress was perhaps the key finding of their 5-year research. In evaluating a proposed practice, Collins and Porras asserted that the key question is not "Is the practice good?" but "Is this appropriate for us—does it fit with our ideology and ambitions?"

4. CONCLUSION

In this article, an overall framework for organizational health assessment is described. Recently, rapid changes in the organization of work precipitated by work process improvement initiatives, coupled with changes in worker demographics, have necessitated the need to assess the impact of these changes on long-term work performance. Contemporary work-improvement strategies such as lean manufacturing and six sigma have focused their efforts to optimize process performance while largely ignoring the effects of these new work practices on workers. However, human performance plays an integral role in the determination of organizational effectiveness. The organizational health assessment model introduced in this article proposes a new paradigm for optimizing work in which the individual's health, safety, and satisfaction is viewed as the precursor of process and organizational effectiveness.

Work system interventions can be crafted only from data-driven evidence of the safety, performance, and health consequences currently faced by workers in the contemporary

work environment. The Organizational Health Model introduced here provides a framework for health surveillance in industries with contemporary organizational practices (e.g., lean manufacturing, six sigma) and changing worker demographics (e.g., increasing numbers of women, ethnic minorities, and aging workers). In the Organizational Health Model, culture—represented by an organization's values and goals—constitutes a company's strategic intent. Climate driven and reaffirmed by the culture establishes the context for behavior (performance) and state of being (wellness) in the work setting. Further development of this model will serve to structure the gathering of empirical data, thus fostering the process of designing both healthy and competitive enterprises.

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