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DESIGNING EFFECTIVE SELF-MANAGING WORK TEAMS

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July, 1993

Prepared for the Theory Symposium on Self-Managed Work Teams on June 4-5, 1993 in Denton, TX. This paper will appear as a chapter in M. Beyerlein (Ed.), *Advances in interdisciplinary studies of work teams., Vol. 1, Series of self-managed work teams.* Greeenwich, Connecticut: JAI Press.

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Abstract

This paper proposes a model of self-managing work team (SMWT) effectiveness derived from several theories of organizational behavior and empirical work. Four classes of predictor variables are included: (a) an organizational context that supports employee involvement, (b) encouraging supervisory behaviors, (c) group task design, and (d) group characteristics. Three dimensions of effectiveness are considered: team performance, employee attitudes, and withdrawal behaviors. The paper argues that the determinants of team performance are likely to be different from the determinants of employee satisfaction or absenteeism, and that more fine-grained models are needed that specify the relationships between specific design features and outcomes. Several hypotheses are proposed about the relationship of design features to outcomes.

THE DESIGN OF EFFECTIVE SELF-MANAGING TEAMS

Susan G. Cohen

More and more organizations use self-managing work teams (SMWTs) as a way of responding to competitive challenges. In 1990, 47% of Fortune 1000 companies reported that they used SMWTs with at least some of their employees, and 60% planned to increase their use in the next two years. This was nearly double the percentage of companies that reported the use of SMWTs in 1987. Companies reported they utilized employee involvement practices such as SMWTs to improve productivity, quality, and employee morale (Lawler, Mohrman, & Ledford, 1992). In short, companies implement SMWTs to improve business performance.

Self-managing work teams are groups of interdependent individuals that can self-regulate their behavior on relatively whole tasks (Cummings & Griggs, 1977; Goodman, Devadas, & Hughson, 1988). Key components of SMWTs are: (a) employees with interrelated tasks who are responsible for making a product or providing a service; (b) employee discretion over decisions such as task assignments, methods for carrying out the work and scheduling of activities; (c) face to face interaction (Goodman et al., 1988). Generally, the members of SMWTs have a variety of skills relevant to the task and the team receives feedback on its performance (Wall et al., 1986). SMWTs may or may not have direct supervisors.

Typically SMWTs are used in manufacturing plants. Increasingly they are being used in service industries such as financial services or insurance companies. They also can be used to perform knowledge or staff work, such as developing new products or providing professional services. The domain does not matter provided that this type of team design fits the work to be done and an organization's business strategy.

Self-managing work teams are an idea whose time has come. Consultants and managers fervidly tout their benefits. Organizations are increasingly implementing SMWTs in the hope of dramatically improving performance. The popularity of SMWTs makes it imperative that existing knowledge is enhanced about key design factors for SMWT effectiveness.

This chapter proposes a model of SMWT effectiveness and corresponding hypotheses derived from several theories of organizational behavior and empirical work. The proposed model integrates several theories of organizational behavior and suggests a direction for both research and practice. What do our organizational theories teach us about how SMWTs should be designed? The description of our model begins with defining dimensions of effectiveness for SMWTs.

Dimensions of Self-Managing Work Team Effectiveness

What does it mean to say that a self-managing team is effective? Is it the number of products produced or services delivered? Is it the quality of these products or services? Is it speed? Innovation? Safety? Quality of employee work life? If a SMWT meets its performance specifications, but team members experience low morale, is the team effective? Is a SMWT effective, if team members come late to work or have unexcused absences? There are multiple criteria that can be used to evaluate the effectiveness of SMWTs and choices need to be made about what constitutes effectiveness.

Our model of SMWT effectiveness has three major dimensions of effectiveness as depicted by Table1. One deals with the performance of the team. The second describes attitudes of team members about their quality of work life. The third is behavioral and focuses on withdrawal behaviors. Each dimension contains multiple variables.

INSERT TABLE 1 ABOUT HERE

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(1) Dimension one is the performance of a team and has three facets: controlling costs, increasing productivity, and increasing the quality of products or services. These facets are the basic indicators of effectiveness for most work teams. Although other attributes may be

important for effectiveness in some settings (e.g. innovation, speed, safety) controlling costs, improving productivity, and increasing quality are fundamental and are criteria that can be applied across work settings. These facets can be assessed either by objective measurement and/or by evaluations by those who are knowledgeable about the work that is done by the team, namely managers, customers, and team members. In many cases, no good objective measures of team performance exist. If good objective measures exist, they may not be comparable across teams and across organizations. Thus, the best measurements that can be obtained often are the subjective evaluations of those that receive and review a team's work, its managers or customers, and those that participate in doing the work, team members. Indeed, it can be argued that the success of a team in a given organizational context depends more upon how key stakeholders assess its performance than how it objectively performs (Hackman, 1987). It is insufficient to rely solely on team member ratings of team performance, because of member bias. However, evaluations of team performance from both insiders and outsiders may provide the most comprehensive judgments within a given social context. Different constituencies will view performance from different perspectives, and obtaining multiple ratings helps to reduce bias and may provide information on critical trade-offs. SMWTs are implemented to improve performance and minimally should have a positive impact on some facets of performance.

(2) Dimension two is team members' attitudes about their quality of work life including their satisfaction with their job, team, social relationships, and opportunities for growth. Other attitudinal indicators of quality of work life are trust in management and commitment to the organization. Research on organizational commitment has found that people's experience at work, in particular, understanding about how their tasks relate to others and the opportunity for interaction, increases organizational commitment (Steers, 1977). Thus, it is reasonable to expect that participation in SMWTs will have a positive impact on both team members' satisfaction and their beliefs and feelings about their organization.

(3) Dimension three is the withdrawal behaviors of team members from the firm. This includes short and long term absenteeism and turnover. Although other behaviors may be important in specific settings (e.g. following safety procedures), they may not be important across all settings. Absenteeism and turnover are important across work settings. Participation in SMWTs may have an impact on member absenteeism and voluntary turnover.

Theoretical Foundations for the Dimensions of Effectiveness

This definition of SMWT effectiveness is multi-dimensional and includes performance, attitudinal, and behavioral indicators. It considers the viewpoints of multiple constituencies and views team performance as occurring in a social context. Thus, it argues for multiple evaluations of team performance by key stakeholders. It is derived from group effectiveness and sociotechnical theory and is supported by empirical work on the quality of work life and SMWT effectiveness.

Most group effectiveness researchers think about effectiveness as a multidimensional construct, but do not agree as to the criteria of work group effectiveness (Goodman, Ravlin, & Schink, 1987). For example, Hackman (1987) defines group effectiveness using three criteria:

(1) The quality and quantity of the group's output meets or exceeds the standards of those who receive or review the group's work;

(2) The needs of group members are more satisfied than frustrated by their participation in the group;

(3) The capability of group members to work together in the future is maintained or strengthened.

Gladstein (1984) uses two dimensions, group performance consisting of actual sales revenues and self-reported performance, and member satisfaction. Sundstrom, DeMeuse, & Futrell (1990) use two dimensions, performance meaning acceptability of output to customers or

managers, and team viability, member's willingness to keep working together. What is immediately obvious from these few examples is their overlap. Most include criteria that pertain to the team's performance output and to the satisfaction of their members.

The definition offered in this chapter extends the work of group effectiveness theorists in two ways. First, most group effectiveness theorists do not consider withdrawal behaviors as a criterion of effectiveness. They look at team viability but do not examine the behavioral manifestation of a lack of viability, for example, team members not showing up for work. The associations between dissatisfaction and absenteeism (Ilgen & Hollenback, 1977; Mirvis & Lawler, 1977) and dissatisfaction and voluntary turnover (Arnold & Feldman, 1982; Dunnette, Arvey, & Banas, 1973) are well established in the organizational literature. Withdrawal behaviors are important from a financial perspective, because absenteeism and turnover are very costly to firms. Thus, this dimension is an important criterion of effectiveness for SMWTs.

Second, team member evaluations are considered to be a valid indicator of team performance not because they are convenient to collect, but because team members are likely to be knowledgeable about the work that is done. This should be particularly true of SMWTs where members are collectively responsible for producing a product or providing a service. Therefore, SMWT members are likely to be more knowledgeable about their team's performance than members of other work groups are likely to be. When combined with the viewpoints of managers and customers, a more complete understanding of team effectiveness is obtained.

Sociotechnical theory's emphasis on the joint optimization of both technical and social subsystems (Emery, 1959) has influenced this choice of outcome variables. Sociotechnical theory views organizations as consisting of the interrelationships between people and technology, and intervention should result in both improved performance and enhanced quality of work life (Pasmore, Francis, Haldeman, & Shani, 1982). Those involved in the quality of work life movement typically have measured the impact of work place changes on a variety of employee

attitudes such as job satisfaction, satisfaction with growth opportunities, satisfaction with social relationships, et cetera (Lawler, 1980). In addition, some of the initial impetus for the quality of work life movement came from the reports of employee alienation manifesting itself in absenteeism, turnover, and other withdrawal behaviors (Taylor, 1979). Thus, both sociotechnical theory and the quality of work life movement have influenced the choice of outcome variables.

One implication of a multidimensional construct of effectiveness is the possibility, indeed likelihood, that SMWTs will be at different levels of effectiveness depending upon the dimension assessed. For example, a team that produces high quality outputs may not produce a sufficient quantity. In addition, just because team members are satisfied with their quality of work life does not mean that their team produces a sufficient quantity of a high quality output. A team may deliver a product that exceeds the standards of their manager, but members may be dissatisfied with their relationships with one another. Indeed, decades of research on employee satisfaction and performance show that no reliable relationship exists (Brayfield & Crockett, 1955; Schwab & Cummings, 1970; Vroom, 1964). Although Locke & Latham (1990) demonstrate using empirical evidence that satisfaction with task accomplishment is a reliable outcome from performance, this does not necessarily generalize to other satisfactions such as satisfaction with one's team or growth opportunities. In addition, even though job dissatisfaction is related to withdrawal, dissatisfaction may not result in team members actually leaving the organization (Mobley, 1977; Pinder, 1984). Complex trade-offs may exist between different indicators of effectiveness.

Both the popular literature and theoretical discussions about SMWT effectiveness advertise pervasive positive impacts of SMWTs, although the empirical research has found impacts to vary depending upon the outcome assessed. For example, a *Business Week* (1989) article on the pay-off from teamwork declares that companies that implement SMWTs gain

employee knowledge, commitment, and motivation, as well as produce productivity improvements that exceed 30% in many cases. Sociotechnical theory posits that SMWTs will contribute to improved team and organizational effectiveness. Thus, it hypothesizes positive effects across all dimensions of effectiveness: performance, attitudes, and behaviors (Pasmore et al., 1982). Similarly, job characteristics theory (Hackman & Oldham, 1980) has argued that SMWTs should improve motivation, satisfaction, and performance. However, the rigorous empirical studies of SMWT effectiveness typically find different levels of effectiveness depending upon the outcome that is assessed. Let us take a brief look at a few of these studies.

Evidence for the Effectiveness of Self-Managing Teams

A few quasi-experiments on SMWT effectiveness have been done. They have research designs in which comparisons are made with appropriate comparison groups, thereby enabling causal inferences to be drawn. In general, the results of these rigorous studies of SMWT effectiveness tend to be positive, but not on all dimensions of effectiveness.

Wall , Kemp, Jackson, and Clegg (1986) in a quasi-experimental long-term study of SMWTs in a confectionery plant did not find productivity differences comparing SMWTs to traditionally-managed groups, although cost savings resulted from the need for fewer supervisors. The results for attitudinal differences were mixed, with participation in SMWTs leading to a lasting improvement in employees' intrinsic job satisfaction, a temporary effect on extrinsic satisfaction, but no effect on internal work motivation, organizational commitment, or mental health. Contrary to predictions, labor turnover increased in the SMWTs, due to both higher levels of dismissals and greater job opportunities in the surrounding community. In the SMWTs, the absence of direct supervisors to address minor infractions meant that only major infractions came to management's attention, and managers tended to take a harder line with employees in SMWTs.

In a longitudinal study of SMWTs at a new and established mineral processing plant, Corderey, Mueller, & Smith (1991) found that employees who participated in SMWTs reported more favorable work attitudes (intrinsic job satisfaction, extrinsic satisfaction, organization commitment), but not higher trust in management. Similar to the Wall et al. (1986) study, they found higher absenteeism and turnover among members of the SMWTs.

Cohen & Ledford (in press) in a quasi-experimental study of SMWTs in a telephone company found that self-managing craft and administrative support teams were more effective than traditionally-managed groups performing the same type of work, as assessed by team members and upper level managers. First-line supervisors of SMWTs did not rate them any higher than did supervisors of traditional work groups. SMWTs were higher in employee quality of work life than comparable traditionally-managed teams. Employees in SMWTs did not differ from other employees in their degree of organizational commitment. SMWTs of customer service representatives in small business offices were no more effective than traditionally-managed sections of customer service representatives. In addition, SMWTs did not differ from traditionally-managed groups in their rates of short or long term absenteeism.

A few meta-analyses of SMWT effectiveness have been performed. Meta-analysis is a statistical technique that permits findings to be integrated across studies and calculates an effect size which is an estimate of the impact of an intervention on a dependent variable (Glass, McGaw, & Smith, 1981; Hunter, Schmidt, & Jackson, 1982). As described below, one meta-analysis found the impact of SMWTs to be positive on multiple dimensions of effectiveness, but others found results to vary depending upon the outcome assessed.

Guzzo, Jette, and Katzell (1985) in their meta-analysis of 11 intervention strategies focused at improving productivity found that large scale socio-technical interventions had a moderate impact on productivity but little impact on withdrawal behaviors. Although this meta-

analysis did not look specifically at SMWT interventions, the most common sociotechnical intervention is the implementation of SMWTs.

Beekun (1989) in a meta-analysis of 17 studies of sociotechnical interventions found that SMWTs resulted in modest productivity improvements and decreased absenteeism and turnover.

Macy, Bliese, & Norton (1991) in a meta-analysis of 131 change projects found that SMWTs resulted in positive financial impacts, but no changes in behavioral or attitudinal indicators. The finding that there was no change in employee attitudes is surprising given the other studies reported here, and difficult to explain.

The findings from these meta-analyses are not consistent with one another nor with the quasi-experiments reported above. With the exception of Beekun's (1989) meta-analysis, the findings are different for productivity, withdrawal, and attitudinal indicators. Table 2 summarizes the empirical findings cited here from both the quasi-experiments and meta-analyses.

INSERT TABLE 2 ABOUT HERE

In a review of the empirical literature on SMWTs, Goodman, Devadas, and Hughson (1988) concluded that SMWTs have a modest impact on performance and the attitudes of team members, but changes are limited to direct targets of the intervention. Thus, job satisfaction is likely to improve, but not organizational commitment or trust in management. With the exception of the Macy et al. (1991) meta-analysis that did not find any attitudinal impacts, this conclusion fits the studies reported here. Goodman et al. (1988) also concluded that study findings were inconsistent for absenteeism or turnover. With the exception of Beekun's meta-

analysis, the studies we report found that SMWTs had no impact or a negative impact on withdrawal behaviors. From this brief review it is clear that SMWTs can have differential impacts on different dimensions of performance, behavioral, and attitudinal outcomes.

The critical point from both a theoretical and practical perspective is that specific design features may have a positive impact on some dimensions of effectiveness but a negative or no impact on other dimensions. For example, the design features that contribute to improving quality may not contribute to improving productivity. There is no rationale for believing that the determinants of SMWT performance should be the same as the determinants of employee satisfaction or commitment to the organization. Yet, at this point of theory development, no models describe different determinants of specific outcomes. From a practical perspective, the design or implementation of a SMWT may need to vary if the intended outcome is improved quality as compared to productivity or employee satisfaction. If the intended outcome is all these components, then complex trade-offs may need to be considered.

In general, this discussion points to the need to understand more about the mechanisms by which SMWTs work. Under what conditions are SMWTs likely to be effective? How should SMWTs be designed in order to positively impact performance, behavioral, and attitudinal outcomes? Are some design features more important than others? Are there different predictors for different outcomes? More finely grained theoretical models are needed that specify the relationship between key design features and specific outcomes. This argument also is made by Goodman et al. (1986) in their review of the group effectiveness literature.

We turn now to the predictor variables in our model of SMWT effectiveness. First, key determinants of SMWT effectiveness are identified and discussed in terms of their theoretical rationales. Second, hypotheses are proposed about the likely impact of each determinant on performance, attitudinal, and behavioral indicators of effectiveness. Finally, after all the design features have been presented, hypotheses concerning the relative importance

of these design features are suggested. For example, given limited resources, time or money, what aspects of design should an organization focus on?

Determinants of Self-Managing Team Effectiveness

This model includes four classes of design variables. They have been identified by various theorists from different intellectual traditions as critical predictors of SMWT effectiveness. They include group task design, other group characteristics, encouraging supervisory behaviors, and an organizational context that supports employee involvement. This model only describes key predictor variables and does not delineate intervening or moderator variables, for reasons of parsimony and ease in testing.

The focus on group task design is based on job characteristics (Hackman & Oldham, 1976; Hackman & Oldham, 1980) and sociotechnical theory (Pasmore, 1980). The attention to group characteristics is derived from group effectiveness theory (Hackman, 1987; Goodman et al., 1987; Goodman, Ravlin & Argote, 1986) and work on efficacy and group potency (Bandura, 1982; Guzzo, Yost, Campbell, & Shea, in press). The focus on supervisory behaviors is based on Manz and Sims (1987) theory of self-leadership, which is an application of social learning theory. The attention to an organizational context that supports employee involvement is based on Lawler's (1986; 1992) work, which is one application of theories of participation (McGregor, 1960; Locke & Schweiger, 1979). In addition, several models of group effectiveness point to the criticality of a supportive organizational context (Hackman, 1987; Gladstein, 1984; Goodman, Ravlin, & Schminke, 1987). Although the intellectual roots are different, these theories overlap in their recommendations of critical design variables for SMWTs.

Group Task Design

Both job characteristics (Hackman & Lawler, 1971; Hackman & Oldham, 1976; Hackman & Oldham, 1980; Turner & Lawrence, 1965) and sociotechnical theory (Cummings,

1978; Pasmore, 1988) point to group task design as critical for employee motivation, satisfaction and performance. As discussed below, both theories advocate similar group task designs, but their primary causal explanations are different for why these group task designs contribute to SMWT effectiveness. Different hypotheses are generated from a job characteristics and a sociotechnical perspective, regarding the impact of group task attributes on performance, attitudinal, and behavioral outcomes.

This model of SMWT effectiveness extrapolates directly from job characteristics theory to the design of the work group's task. The model views Hackman and Oldham's (1976) five core task attributes at the group level as key design factors for SMWTs. Although Hackman & Oldham (1976) view these core task attributes as influencing effectiveness through their impact on critical psychological states, and they include moderating variables in their model, our model of SMWT effectiveness only includes the key predictor variables. The five group task attributes are:

(1) The task requires group members to use a variety of skills in carrying out their work. For example, SMWTs that cross-train their members build task variety.

(2) It is a whole and identifiable piece of work, that is group members are involved with the task from beginning to end and see the outcome of their efforts. For example, a SMWT with the responsibility to provide full insurance services to regional customers has an identifiable group task.

(3) It has a significant impact on the lives of other people, whether inside or outside the organization. For example, a hospital operating team is likely to experience their work as higher in significance than a floor tile manufacturing team.

(4) Group members have considerable autonomy, discretion, and independence in determining how the work will be performed. Thus, SMWTs that determine work procedures and schedules have considerable autonomy.

(5) Finally, work on the group task generates regular, accurate feedback about how the group is performing. This feedback occurs in the process of doing the work. An example of high task feedback is a yogurt packing team that receives information about how much yogurt they have produced as each box is packed by looking at an electronic sign above their workstation.

These are the group task design variables that are hypothesized to be critical determinants of SMWT effectiveness, as depicted in Figure 1.

INSERT FIGURE 1 ABOUT HERE

Sociotechnical systems theory (STS) also has emphasized the design of work for groups as way of optimizing both the technical and social subsystems in an organization Pearce & Ravlin, 1987) . STS argues that work groups should be designed with the control over their boundaries, the autonomy, and feedback to control variances from goal attainment. This self-regulating capacity is hypothesized to lead to greater performance and employee satisfaction (Cummings, 1978).

Sociotechnical systems theory argues for the same work group task attributes as job characteristics theory. Thus, as far back as 1951 (Pearce & Ravlin, 1987) , the researchers at the Tavistock Institute stated that:

(1) Work groups should be collectively responsible for a substantial and identifiable part of the business.

(2) The arrangement of work should foster cooperative interactions.

(3) Employees should have the opportunity to learn all the jobs within the group.

(4) The group should have the authority and material resources required to do their job.

(5) The group should receive performance feedback that lets them know how well they are doing.

Four out of the five work design attributes derived from sociotechnical theory are the same as those derived from job characteristics theory. The only difference is that job characteristics theory includes task significance as one of its key task attributes. This overlap between sociotechnical and job characteristics theory in their implications for work design has led to several theorists arguing for their integration (Cummings, 1978; Denison, 1982, Rousseau, 1977; Wall et al., 1986).

Hypotheses Based on Contrasting Theoretical Rationales

Although job characteristics and sociotechnical theory overlap, they differ in their primary rationale for effectiveness. Job characteristics theory makes a psychological and motivational argument. When there is group task identity, variety, and significance, people will experience their work as meaningful. When there is autonomy, team members will feel responsible for the outcomes of their efforts. When there is feedback about the team results, group members are aware of how well the team has performed. Doing meaningful work, having decision-making authority, and being knowledgeable about performance results is motivating (Hackman, 1987; Hackman & Oldham, 1980). When work is motivating, people will feel more satisfied with their work. As a consequence of higher motivation and satisfaction, certain aspects of performance may improve and absenteeism and other withdrawal behaviors may decrease.

Although sociotechnical theory acknowledges the motivational benefits of group work design, it emphasizes the self-regulatory capacity that is generated. By giving teams the capacity to make "on-line" decisions in the process of doing their work, they can respond appropriately and efficiently to the changes in their work. When people are multi-skilled, they can substitute

for one another. Teams can self-monitor their performance and make improvements if performance feedback is provided. The work design used for SMWTs permit them to replace external forms of control (i.e., hierarchical supervision) with self-control. Thus, SMWTs are able to allocate resources efficiently to respond to the total variance in work conditions (Susman, 1976).

The two theoretical rationales have implications for the formulation of hypotheses concerning the relationship between group task design and specific effectiveness outcomes. From a job characteristics perspective, group task characteristics directly influence people's motivation and satisfaction with relevant aspects of their work and their team. When work has been redesigned for SMWTs, what has been changed is the task and relationships among group members. Thus, members of SMWTs with well-designed team tasks are likely to feel satisfied with their job, opportunities for growth, their social relationships, and their team. However, it is unlikely that other attitudinal attitudes such as commitment to the organization, trust in management, pay satisfaction, satisfaction with job security, etc., will be affected. In addition, if there is any impact on performance, it will be indirect, and likely to influence work quality more than quantity, because people care more about doing a task well than producing high quantity (Hackman & Oldham, 1980; Lawler, 1992). Finally, if there is any impact on turnover or absenteeism, it will be indirect and relatively weak, as a function of employee satisfaction and other organizational conditions.

The bodies of empirical research on the relationship between task characteristics and performance, behavioral, and attitudinal outcomes generally support these predictions. There has been fairly consistent support for the relationship between task attributes and relevant attitudes (Griffin, 1982). The results of studies linking task attributes to performance outcomes have been inconsistent and inconclusive (Griffin, Welsh, and Moorhead, 1981). Results for the impact of job redesign on withdrawal behaviors also have been inconsistent. Most of these studies have

been at the individual level. Studies done at the group level, that is, the studies of SMWTs reported earlier, have found similar patterns of results.

Thus, the job characteristics approach suggests the following hypotheses:

Hypothesis 1: Group task design will directly result in higher motivation and higher employee satisfaction with their work and team.

Hypothesis 2: Group task design will have no direct effect on performance outcomes.

Hypothesis 2A. Group task design will indirectly improve performance outcomes, particularly quality, through its impact on employee motivation.

Hypothesis 3: Group task design will have no direct effect on absenteeism or other withdrawal behaviors.

Hypothesis 3A. Group task design will indirectly reduce absenteeism or other withdrawal behaviors through its impact on employee satisfaction.

Sociotechnical theory suggests that the primary mechanism by which group task design influences outcomes is through team self-regulation. If this is true, then group task design characteristics influence performance through group member's capacity to develop appropriate performance strategies to deal with technical and environmental changes. Figuring directly how to cope with uncertainty and improve performance will have direct performance effects. Therefore, SMWTs with well-designed group tasks should directly benefit performance. Quality should be enhanced, because team members will view the quality of their product or service as being primarily under their control and subject to self-regulation. They will be able to use performance feedback about quality as a way to monitor and engage in the problem-solving required to determine improvements. Productivity is likely to be increased, because team members can use feedback about the team's performance to monitor and self-correct their efforts.

Thus, more will be produced by working smarter and not necessarily by working harder. Employee satisfaction with various aspects of their work would not be a direct effect of self-

regulation. Instead, it is likely to be a result of improved performance. Although it can be argued that self-regulation may be intrinsically satisfying, given the problematic nature of much of group interaction and the unpleasant conflicts that do occur, it cannot be assumed that participation in SMWTs directly results in increased employee satisfaction.

Thus, the sociotechnical perspective on group job design suggests the following alternative hypotheses:

Hypothesis 4: Group task design will have a direct effect on improving performance outcomes.

Hypothesis 4A. Group task design will have the strongest effect on improving those aspects of performance for which performance feedback is received.

Hypothesis 5: Group task design will not have a direct effect on improving employee satisfactions.

Hypothesis 5A. Group task design will indirectly improve employee satisfactions directly related to the task (job satisfaction and growth satisfaction) through its impact on performance outcomes.

Hypothesis 6. Group task design will have no direct effect on absenteeism or other withdrawal behaviors.

Hypothesis 6A. Group task design will indirectly reduce absenteeism or other withdrawal behaviors through its impact on employee satisfaction.

As can be seen in Figure 2, hypotheses about the relationship of group task design and effective outcomes generated from a sociotechnical perspective contrast with those generated by a job characteristics approach. The limited empirical work that has been done provides more support for the hypotheses generated from a job characteristics approach. However, more empirical work needs to be done to test these competing hypotheses.

INSERT FIGURE 2 ABOUT HERE

Group Characteristics

The second category of design variables in our model of SMWT effectiveness is group characteristics. These include: (a) group composition (b) group beliefs, and (c) group processes, depicted in Figure 3. They are derived from group effectiveness theory. I will describe the components, discuss their theoretical rationales, provide empirical evidence, and suggest hypotheses relating them to outcomes.

INSERT FIGURE 3 ABOUT HERE

Group composition. The effectiveness of a SMWT depends upon the collective knowledge and skills of its members. Do members have the appropriate technical skills? Do they have the interpersonal skills required to work together? The technical and interpersonal skills of members are critical for performance success.

In addition, the size of the group should be the smallest number needed to do the task well. Additional people result in higher coordination costs and process losses (Steiner, 1972).

Finally, the stability of team membership is a critical factor. The greater the turnover of team members, the more time will be spent to orient new members to technical requirements and to the way the team works together. If team members turn over constantly, performance will suffer. The team will not be able to develop the performance norms it requires to succeed. Of course, some turnover of members may revitalize a stagnant group and foster creativity (Ziller, 1965).

Almost all models of group effectiveness contain variables related to group composition. For example, Hackman's (1987) model includes group size, members' technical and interpersonal skills, and a balance between homogeneity and heterogeneity in the mix of members. Gladstein's (1984) model measures group composition in terms of adequate skills, heterogeneity, organizational tenure, and job tenure. Kolodny and Kiggundu (1980) include task skills in their group effectiveness model influenced by sociotechnical theory. These models share an emphasis on composing teams with members who have the appropriate expertise.

Our model adds stability of team membership as an important criterion Team membership in organizations changes, and sometimes, they change frequently. SMWTs tend to be relatively permanent groups in which the loss or gain of key members will require considerable adjustment, learning, and socialization. If turnover happens frequently, then these activities will diminish performance.

Few theorists have dealt explicitly with the relationship of group composition to SMWT effectiveness, despite its obvious importance. Hackman (1986) and Cummings (1981) do apply their general models of group effectiveness and include group composition in their discussions of SMWT effectiveness. Clearly, people in SMWTs who have the authority to collectively make decisions about how they do their tasks need the knowledge and skills to make good decisions. They need the interpersonal skills to effectively work together, and are likely to be more satisfied with their interpersonal relationships and the team. In addition, people need a variety of skills to perform different tasks if task variety is high. Without members with the appropriate technical skills, a self-managing team will not perform well. The size of the group should be the fewest number that is required, so that the costs of coordination are minimized. If there are too many people in the team for the work that needs to be done, then members are likely to be less committed to the team and spend their time doing other activities. They may be more likely to

miss days of work. Finally, team membership should be relatively stable to permit performance-directed operating norms to develop, which should translate into higher performance.

The amount of empirical evidence about the influence of group composition on the performance of real work teams in organizations is limited. Tziner and Eden's (1985) study of military tank crews found that those composed of soldiers with uniformly high abilities performed far better than what would be expected from the individual ability levels. Similarly, those composed of soldiers with uniformly low abilities performed much worse than would be expected from the individual ability levels. Thus, the "whole" was greater than the "sum of its parts" indicating a group synergy effect. Gladstein (1984) found that organizational experience was related to sales revenues for telecommunications sales teams. She also found that smaller sized teams evaluated themselves as being more effective. Dyer (1984) described a study of bomber crews in the Korean war in which personnel changes were negatively related to crew performance. None of these examples are from groups that were designed to be SMWTs. However, tank crews, bomber crews, and sales teams need to make on-line decisions as they adjust to changing circumstances. Thus, they have some attributes of SMWTs.

The following hypotheses about group composition and performance, attitudinal, and behavioral outcomes are suggested by this discussion:

Hypothesis 7. The higher the technical expertise of team members, the better the team performance.

Hypothesis 8. The degree of technical expertise will have no effect on absenteeism or other withdrawal behaviors.

Hypothesis 9. The higher the interpersonal expertise of team members, the greater the employee satisfaction with the team and social relationships.

Hypothesis 10. The degree of interpersonal expertise will have no direct effects on absenteeism or other withdrawal behaviors, but will indirectly reduce withdrawal behaviors through its impact on employee satisfaction.

Hypothesis 11. The more that the size of the team is perceived to be adequate and no larger than required for the task, the greater the team performance.

Hypothesis 12. The more that the size of a team is perceived to be too large for what is required for the task, the lower the commitment of members to the team and its task, which is likely to increase absenteeism.

Hypothesis 13. The more that team composition is stable, the higher the team performance.

Group beliefs. They are shared beliefs by team members about the group. Two categories of beliefs will be considered: (a) Norms and (b) Group self-efficacy or potency.

Several theorists have defined norms, and reasonable consensus exists across different definitions. For example, Steers (1981) defines norms as standards that are shared by group members which regulate group member behavior. McGrath (1984) defines norms as sets of expectations about what someone "ought" to do under a given set of conditions, with violation negatively sanctioned. Jackson (1965) identifies five specific characteristics of norms in his Return Potential Model, one of which is important for our purposes. According to Jackson (1965), a norm is well crystallized when there is a high degree of consensus among group members about the amount of approval or disapproval associated with a particular behavior. The greater the crystallization of norms, the more that a group can control member behaviors. Crystallization does not indicate what the content is of any particular norm. Thus, norms to restrict output can be as well crystallized as norms for continuous improvement. However, unless a team has some clarity about what is acceptable behavior and what is not, it will not be able to regulate and direct member behavior. Thus, having well-crystallized norms may be a necessary but not sufficient condition for team effectiveness.

Very few studies exist about the relationship of norms to effectiveness for real work groups. A few early studies reported on norms to limit production such as in the bank wiring room in the Western Electric studies (Homans, 1950). Goodman (1979) traced the development of group norms in his study of self-managing crews in coal mining. He found that a number of norms did appear, but they focused on indirect production activities and were not directly related to performance. Foushee (1984) described some success in changing flight crew norms through the use of videotaped flight simulations and feedback about interpersonal styles. More work needs to be done to trace the connection between types of norms and effectiveness outcomes.

Group self-efficacy or potency is the shared belief among group members that a group can be effective (Bandura, 1982; Guzzo, Yost, Campbell & Shea, in press). This concept is the group-level analog to Bandura's concept of self-efficacy. Bandura (1977, p. 193) defines an efficacy expectation as the "conviction that one can successfully execute the behaviors required to produce the outcomes" and argues that efficacy expectations are specific to tasks. Guzzo et al. (in press) argue that group potency is a generalized belief about group capability that is applicable to the variety of tasks that a group performs. Shea and Guzzo (1987) include group potency in their model of group effectiveness and argue that group potency influences performance and is influenced by it.

Some evidence can be found for a relationship between group self-efficacy or potency and group effectiveness. Cohen, Ledford, and Chang (1992) found that group efficacy was significantly correlated with team effectiveness in a study of 100 teams in a telephone company, and that self-managed teams reported higher efficacy. Cohen and Denison (1990) in a case study of two self-managing flight attendant teams found that the team that believed it could perform well, did, and the team that was not as confident, did not perform as well. Early experiences shaped the beliefs of both teams, and once institutionalized, these beliefs acted as self-fulfilling prophecies. Saavedra, Cohen, and Denison (1990) found in their studies of

customer service teams that teams labeled themselves as "good" or "bad" and management also labeled the teams. These labels were reinforced by the opportunities that teams received. Once a label was in place, it functioned as a self-fulfilling prophecy, creating a cycle of success or failure. Shea and Guzzo (1987) found that group potency was correlated with self-report and supervisory measures of customer service ($r = .31$, $p < .01$) for teams in a department store. However, group potency did not correlate with the gain in actual dollar sales. Larson and Lafasto (1989) studied 27 management and project teams and found that confidence among team members about the likelihood of success was associated with team effectiveness.

This discussion of group beliefs suggests the following hypotheses:

Hypothesis 14. The higher a SMWT's self-efficacy or potency, the greater its performance.

Hypothesis 14A. The greater a SMWT's performance, the higher its self-efficacy or potency.

Hypothesis 15. The higher a SMWT's self-efficacy or potency, the greater the satisfaction of members with their growth opportunities, jobs, team, and social relationships.

Hypothesis 16. Self-efficacy or potency will indirectly influence withdrawal behaviors through its impact on satisfaction.

No predictive hypotheses are included for norms because exploratory work needs to be done to define the specific types of norms associated with performance or attitudinal outcomes in SMWTs. Having well crystallized norms implies that the group can self-regulate member behaviors, but it does not suggest what the focus and directionality of the norms will be. For example, if a SMWT had well-crystallized norms regarding not missing work, then it would be likely that absenteeism would be low. On the other hand, if the norm was to use all one's sick days, then absenteeism would be high.

Group process. Our model contains three variables pertaining to group process: (a) Coordination and caring, (b) Sharing of expertise, (c) Implementation of innovations. Coordination and caring involve working together without duplicating or wasting efforts and doing so with energy and team spirit. Sharing of expertise means that team members share and listen to each others' knowledge and expertise. Implementation of innovations describes a team's ability to invent and implement new and better ways of doing their tasks. These three process variables are derived directly from Hackman's (1987) model of group effectiveness, although similar process variables can be found in other models of group effectiveness (Cummings, 1981; Gladstein, 1984; Sundstrom, De Meuse, & Futrell, 1990).

These process variables are particularly applicable to SMWT functioning. Clearly, self-management depends upon effective coordination, and team spirit can be contagious and foster a "can do" attitude (group self-efficacy) that can translate eventually into higher performance. The sharing of expertise is critical to support effective cross-training and decision-making, which will add to a team's knowledge base. A team's ability to implement innovations means that it can adjust to changing performance situations and can also make improvements in how it goes about its work. These processes may not be directly related to performance outcomes, but are likely to influence the design features that do relate to performance. In addition, SMWTs with effective group processes are likely to have more satisfied members.

Typically, group process is viewed as part of an input-process-output model. An early McGrath (1965) model exemplified this approach and has been used by Hackman and Morris (1975), Gladstein (1984), and others. Hackman (1987) questioned the placement of group process as the intermediary step in a causal chain. His (1987) group effectiveness model from which these measures are derived, describes the synergy that results from effective processes as fine-tuning or amplifying the effects of the group and organizational design. Thus, he views

process as a consequence of input factors, a contributor to performance, and reciprocally influenced by performance.

Our model of SMWT effectiveness views group interaction processes as input variables along with other group characteristics. Although it can be argued, for instance, that the composition of a group will influence its process, the reciprocal argument also can be made that the more team members share their knowledge with one another, the greater their collective knowledge. Thus, the process used influences group design. For this reason, we have included group process along with our other input variables. In general, we have simplified the overall model by not indicating expected feedback loops among the input variables and between the effectiveness measures and input variables.

Team-building and other process-focused interventions such as conflict-resolution or communication skills have been used for over twenty-five years to improve team performance. However, there is a "conspicuous absence of evidence" (Kaplan, 1979) that process interventions improve performance. Several reviews have suggested that interventions that are focused on the quality of team relationships do change member attitudes, sometimes change group behavior, and are inconsistent in their effects on group performance (Friedlander & Brown, 1974; Kaplan, 1979; and Woodman & Sherwood, 1980). Most process interventions have focused on interpersonal relationships and have not focused directly on the work to be done.

This discussion of group processes suggests the following hypothesis:

Hypothesis 17. The better the group process, the greater the satisfaction of SMWT members with their social relationships, their group, tasks, trust, and commitment to the organization.

Hypothesis 18. Group process may indirectly influence withdrawal behaviors through its impact on employee satisfaction.

Encouraging Supervisory Behaviors

Manz and Sims (1986) introduce the notion of leadership in SMWTs as a paradox. How does one lead teams of employees who are supposed to lead themselves? In working through this paradox, they identify six behaviors that a leader of a SMWT should perform in order to help the team to lead itself (Manz and Sims, 1987). Our model of SMWT effectiveness extrapolates directly from their theory.

The six leadership behaviors are:

1. Encourage self-observation/self-evaluation so that the team can gather the information required to monitor and evaluate its performance.
2. Encourage self-goal setting so that the team sets performance goals.
3. Encourage self-reinforcement so that the team recognizes and reinforces good team performance.
4. Encourage self-criticism so that the team is self-critical and discourages poor team performance.
5. Encourage self-expectation so that the team has high expectations for group performance.
6. Encourage rehearsal so that the work group thinks through and practices an activity before actually performing the activity.

These leadership behaviors are graphically shown in Figure 5.

INSERT FIGURE 5 ABOUT HERE

The intellectual foundation of Manz and Sims' work is Bandura's social learning theory (Manz, 1986). The core of social learning theory is its integration of cognitive evaluations with

environmental contingencies as the determinants of human behavior (Bandura, 1977). Behavior is caused and sustained not only by external rewards and punishments, but by internal cognitive systems that evaluate personal behavior. Employees generate their own performance standards, conduct self-evaluations, and self-regulate their behavior at work. In the view of social learning theory, employee behavior is determined by internal control systems, and organizational control systems work only to the degree that they influence the employees' self-regulating systems. From this perspective, employee self-control or self-regulation is called self-management (Manz, 1986; Mills, 1983). A leader's role in a self-management system is to facilitate the development of employee self-controls, so that they can lead themselves. Self-leadership will have a direct impact on performance outcomes, because team members will learn to perform behaviors most conducive to improving performance.

This theoretical rationale is similar to the rationale found in sociotechnical theory. Both theories emphasize self-regulation as the key mechanism underlying self-management. Sociotechnical theory identifies the key group task design attributes that contribute to team self-regulation. Social learning theory identifies the key cognitive and behavioral mechanisms by which self-regulation occurs. Sociotechnical theory focuses on the dynamics of work groups and examines self-regulation as a collective process. The focal unit for social learning theory is the individual. The strategies that are known to be effective in increasing self-control and ultimately performance at the individual level, are applied to the group level. For instance, one strategy advocated by Manz and Sims (1987) is for the leader of a SMWT to encourage the team to practice or rehearse activities before doing them in the performance context. This comes from work with individuals where it has been shown if they have the opportunity to first practice a new behavior, they will perform better (Bandura, 1982). Manz and Sims (1987) extrapolate from the individual to the work team, with the assumption that if rehearsal helps individuals to

perform better, it will help teams to perform better. This extrapolation from the individual to the team applies to the six leadership strategies.

Very little empirical work has been done to test Manz & Sims' (1987) theory of the external leadership of SMWTs. In their original study they collected qualitative data about the behaviors of external coordinators of SMWTs in a manufacturing plant. On the basis of this qualitative data and their theoretical perspective, they identified the six leadership behaviors described above and developed questionnaire measures of these behaviors. They extracted six factors from their self-management leadership questionnaire that corresponded to the six self-management leadership dimensions. These dimensions were significantly correlated with team member and internal team leader evaluations of coordinator effectiveness. Manz and Sims (1987) did not assess the impact of self-managing leadership behaviors of SMWT effectiveness, employee quality of work life, or any behavioral indicators of effectiveness.

Chang, Cohen, and Ledford (1992) validated the self-management leadership questionnaire and assessed the relationship between self-management leadership and work group effectiveness and quality of work life in a study of self-managing and traditionally-managed teams in a telephone company. Results supported Manz and Sims' (1987) six factor pattern at the first-order level, and, in addition, identified a common second-order factor identified as a general leadership orientation toward empowering employees. The hierarchical factor pattern was invariant across employee and supervisor samples drawn from both self-managing and traditionally-managed work teams. The leaders of SMWTs exhibited more of the self-management leadership behaviors than did the leaders of traditionally-managed teams. These leadership behaviors were positively and significantly correlated with team performance. These leadership behaviors were positively associated with employee attitudinal indicators such as satisfaction with the job, the team, growth opportunities, and social relationships. The

behaviors also were associated with organizational commitment. Leaders of both self-managed and traditionally-managed teams effectively used these behaviors.

Not all SMWTs in this telephone company had first-line supervisors. In fact, 32% of the SMWTs did not. Interestingly, the trend in the data was for SMWTs without supervisors to be more effective than the SMWTs with supervisors, although the differences were not significant (Cohen & Ledford, in press). This finding corresponds to Beekun's (1989) finding from his meta-analysis, in which SMWTs without supervisors performed better than those with supervisors.

This trend for SMWTs without supervisors to perform better than those with supervisors can be interpreted in several ways. Perhaps, Manz and Sims (1986) are correct in their description that the role of the leader is helping the team lead itself. Once this occurs, the leader is no longer necessary, and the team without an external leader will have superior performance. On the other hand, perhaps leadership strategies are not a critical design feature for SMWTs. When considered in the absence of other design features, they matter, but when other considerations are taken into account, their effects may be minor. Perhaps, the most mature SMWTs are the ones without supervisors, and their higher performance reflects greater experience and maturity.

This discussion of leadership behaviors suggests the following hypotheses:

Hypothesis 19. The more that a supervisor of a SMWT behaves in a way to support self-leadership, the greater the performance of the SMWT.

Hypothesis 20. A supervisory style of encouraging SMWT self-leadership will indirectly influence employee satisfactions with their jobs, and growth opportunities through its impact on performance.

Hypothesis 21. A supervisory style of encouraging SMWT self-leadership will directly contribute to employee trust in management and organizational commitment.

Hypothesis 22. A supervisory style of encouraging SMWT self-leadership will directly contribute to improved attendance, provided that attendance is a performance goal for the team.

Hypothesis 23. A supervisory style of encouraging SMWT self-leadership will indirectly contribute to improved attendance, through its impact on employee satisfaction.

Hypothesis 24. Mature SMWTs without an immediate supervisor will perform better than mature SMWTs with an immediate supervisor.

An Organizational Context that Supports Employee Involvement

The final category of design variables in our model of SMWT effectiveness is an organizational context that supports employee involvement. It is adapted from Lawler's (1986, 1992) work and asserts that the following five features of an organization should be moved to lower organizational levels to support employee involvement. These design features are:

1. The *power* to take action and make decisions about work and business performance
2. *Information* about processes, quality, customer feedback, business results, competitor performance, and organizational changes.
3. *Rewards* tied to performance results and development of capability and contributions.
4. *Training* that enables employees to develop the knowledge required to contribute to organizational performance.
5. The material *resources* that permit employees to accomplish their work well.

These features of the organizational context are depicted in Figure 5.

INSERT FIGURE 5 ABOUT HERE

Lawler does not include resources as a part of his theory of employee involvement, but we believe that without adequate raw materials, equipment, tools, and space, a SMWT will not be able to perform well. For example, a yogurt processing team will not be able to process strawberry yogurt if a supply of strawberry filling has not arrived. Thus, we have added material resources to our model.

Lawler (1986, 1992) argues that these dimensions must fit together. For example, in order to make good decisions, people need to be adequately trained and have the requisite information. If people are well-informed and well-trained, and they lack the clout to make decisions, they will be frustrated and dissatisfied. If people are given rewards but do not have the power, information, or knowledge to influence performance, then money will be wasted, because they will not be able to influence their rewards. Similarly, if people do not have the resources to do their job well, it will not matter if they have decision-making authority, information, adequate training, and performance-based pay.

Lawler's (1986, 1992) principles of employee involvement are derived from theories of employee participation. Although no agreement exists as to a precise definition of participation, it has been described as a joint process of decision-making between employees and managers (Locke & Schweiger, 1979; Strauss, 1982; Vroom, 1960). Early proponents of participation included Argyris (1957), Likert (1961) and McGregor (1960). For example, McGregor's (1960) Theory Y advocated that employees are responsible and seek opportunities to take initiative. When they are provided with the opportunity and training to make decisions, they will be motivated to do so, and they will be more committed to the decisions they make. If employees are treated as adults and not children, they will behave like adults, committed to the goals of the enterprise (Argyris, 1964).

Researchers have classified participation using several characteristics, including formal-informal, direct-indirect, extent of influence, and content of the decisions involved (Cotton,

Vollrath, Froggatt, Lengnick-Hall, & Jennings, 1988). Formal participation has a system of rules while informal participation spontaneously emerges. Direct participation involves personal involvement of employees, while indirect participation involves employee representation. The extent of influence varies from being informed and providing suggestions to veto power to decision-making authority. The content of decisions varies from those related to the employees' jobs to company policies such as layoffs or profit-sharing.

The use of SMWTs is a formal participation mechanism, which involves direct participation in matters affecting employee work. SMWTs have decision-making authority about how they do the work, and sometimes, about what they do. For example, self-managing teams may set their own goals. They have far more influence than other participation structures, such as quality circles, that permit employees to make suggestions with final decisions made by management.

Several reviews have been done of the empirical studies of participation that examine the impact of participation on employee satisfaction and performance (Cotton et al., 1988; Locke & Schweiger, 1979; Miller & Monge, 1986; Wagner & Gooding, 1987). Although the results have been mixed and subject to debate, certain trends can be identified. Most reviews indicate a positive impact on satisfaction, and they are neutral to slightly positive on productivity. Interestingly, little evidence exists to suggest that participation decreases either productivity or satisfaction. Most do not look at absenteeism or turnover as a dependent variable. The studies that have looked at direct participation in substantive work matters overlap with studies of SMWTs and tend to be slightly more favorable than studies of other participatory mechanisms.

No rigorous empirical work has been done using Lawler's (1986, 1992) dimensions of employee involvement and assessing their impact on performance outcomes, satisfaction, and withdrawal behaviors. However, findings from the study of employee involvement practices in the Fortune 1000 are suggestive (Lawler, Mohrman, & Ledford, 1992). Those companies that

used reward practices most commonly associated with employee involvement programs evaluated them as quite successful. Similarly, those companies that had implemented power sharing practices such as employee participation groups, survey feedback, or SMWTs reported them to be quite successful. From 1987 to 1990, the percentage of companies that evaluated SMWTs as very successful doubled from 8% to 16%. In general, high users of employee involvement practices reported performance impacts on productivity, quality of products and services, but not on absenteeism. These data reflect company beliefs about the success of these practices and consequently are likely to be overly positive.

An additional analysis was conducted using an independent measure of company reputation (Lawler, Mohrman, & Ledford, 1992). Fortune magazine provides a rating of most admired companies based on both financial performance and institutionalized standards of good corporate conduct. Correlations between the survey results and the Fortune "admirability" listing were completed for 118 companies in the sample. The degree of employee involvement, and in particular, the amount of training and power-sharing practices were associated with the firm's reputation. Again, these results suggest that the companies that adopt employee involvement practices are perceived as having positive reputations.

Although the inclusion of variables that indicate a supportive organizational context was based on Lawler's (1986, 1992) theory of employee involvement, group effectiveness theory also suggests their importance. Hackman (1987) discusses the criticality of supportive reward training, information, and resource allocation systems in his model of group effectiveness. Shea and Guzzo (1987) discuss the criticality of designing a reward system to support team performance. Gladstein (1984) includes resources, training and consultation, and rewards in her model. In her later work, she argues strongly for an external perspective on team effectiveness (Ancona & Caldwell, 1992). Thus, the contextual variables derived from a group effectiveness perspective dovetail with those from a participation perspective.

Group effectiveness theory has changed from emphasizing internal processes to emphasizing the organizational context (Guzzo & Shea, 1992). This reflects the change from studying groups in the experimental laboratory to groups in organizations. It is the organizational context that creates the conditions for groups to be successful or to fail. The group with the best internal processes still may perform badly if it lacks resources or information required to do its task. A self-managing group will not be able to make good decisions without information about the business, without sufficient training so that members have the knowledge and skills to do their work, and without adequate material resources so that inputs can be transformed into high quality products or services. SMWT members will be unlikely to sustain their efforts without recognition and rewards for team performance.

This discussion suggests the following hypotheses:

Hypothesis 25. The more that an organizational context supports employee involvement, the greater the performance of SMWTs.

Hypothesis 26. The more that an organizational context supports employee involvement, the greater the satisfaction of team members with their jobs, team, social relationships, and opportunities for growth., and the more that team members will experience trust in management and commitment to the organization.

Hypothesis 27. A supportive organizational context will indirectly reduce withdrawal behaviors through its impact on employee satisfaction.

Overview and Summary

An overview of the model is presented in Figure 6 that lists the variables included in each of the four design factors: an organizational context that supports employee involvement, encouraging supervisory behaviors, group task design, and group characteristics.

INSERT FIGURE 6 ABOUT HERE

Although specific hypotheses about the relationship of design features to specific effectiveness outcomes have been proposed throughout the paper, they are not indicated here. In addition, Figure 7 does not show expected feedback loops among design variables and between outcomes and design variables. For example, one of the group characteristics, group efficacy, is likely to be reciprocally interrelated with group performance. Higher group efficacy will lead to higher performance and higher performance will lead to higher group efficacy. This reciprocal causation is not shown here. The model has been simplified to expedite ease of use.

Both the hypotheses proposed and those not proposed are worthy of comment. First, almost no design features were predicted to have a direct impact on withdrawal behaviors. Instead, withdrawal behaviors are likely to be influenced indirectly through the impact of SMWTs on employee satisfaction. Encouraging supervisory behaviors could have a direct impact on reducing absenteeism, however, if improving attendance were a goal of the SMWTs. Second, no specific hypothesis was made about the relationship of design features to controlling costs. Cost reductions are likely to result from the need for fewer supervisory personnel or the need for fewer people due to the flexibility gained through cross-training (Lawler, 1992). Third, several hypotheses were made about the impact of design features on improving performance. Improving performance includes all three performance dimensions of controlling costs, improving productivity, and improving quality. The specific outcome achieved depends upon

what is emphasized in a given performance context. Fourth, the hypotheses about group task design derived from a job characteristics model differed from those derived from a sociotechnical model. This calls for empirical tests that compare the impact of group task design on motivation, satisfaction, and ultimately performance, to the impact on self-regulation, performance, and satisfaction. The work that has been done to date emphasizes the overlap and not the differences between job characteristics and sociotechnical theory.

The discussion so far has dealt with each class of design features as separate predictors. The empirical research that was reported described the impact of one class of predictor variables at a time. Yet, this model argues that the design of SMWTs involves changing the context of the organization, the role of the supervisor, the way tasks are defined, and the way groups are designed. It may be the total package of changes that determine whether or not SMWTs are effective in terms of their attitudinal, performance, and behavioral impacts. Another possibility is that some of these design features may be more important than other design features in predicting SMWT effectiveness. It is critical to test a model that considers these predictors together, in order to assess relative importance.

For example, early work in experimental laboratories suggested that group process was important for performance. When process was the only dimension measured, it mattered. However, when group research moved into the field, the effects of group process were diminished by the impact of contextual factors and group design. Similarly, when considered separately, encouraging supervisory behaviors are hypothesized to result in improved performance and quality of work life. However, their impact may be smaller when the nature of the group task and organizational context are considered.

Some final hypotheses will be proposed that considers that relative importance of each of these classes of design variables. These hypotheses are speculative and await the testing of a comprehensive model of SMWT effectiveness:

Hypothesis 28. The design of an organizational context that supports employee involvement (i.e., power, information, training, rewards, and resources) creates the conditions for effective self-management and will be the most powerful predictor of SMWT performance and employee quality of work life.

Hypothesis 29. The design of the group task and group characteristics will predict member attitudes with their quality of work life directly relevant to the group task and the group itself (not the organization or management). These predictors will be significant but not as powerful as the design of the organizational context

Hypothesis 30. A higher quality of work life will predict lower absenteeism of SMWT members.

We look forward to gaining the knowledge that will be ascertained through testing these hypotheses and this model of SMWT effectiveness. With this knowledge, researchers will be able to better explain why SMWTs work. Practitioners will be able to make better decisions about where to invest their time and resources in the design and support of SMWTs.

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Table 1. Dimensions of Self-Managing Team Performance

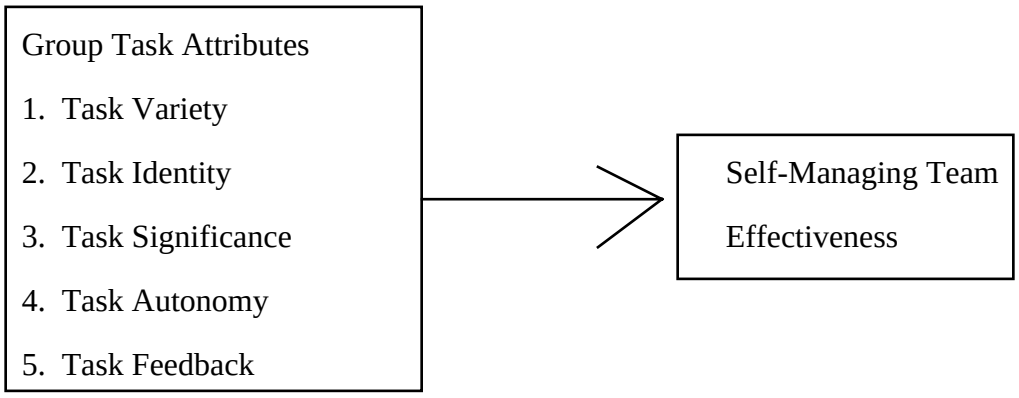
1. Team Performance
   - Controlling Costs
   - Increasing Productivity
   - Increasing Quality
2. Member Attitudes with Quality of Work Life
   - Satisfaction with Job
   - Satisfaction with Team
   - Satisfaction with Social Relationships
   - Satisfaction with Growth Opportunities
   - Trust in Management
   - Organizational Commitment
3. Withdrawal Behaviors
   - Absenteeism
   - Turnover

Table 2. A Partial Review of Self-Managing Team Effectiveness

Quasi-Experiments	Performance	Attitudes	Withdrawal
Wall, Kemp, Jackson, and Clegg (1986)	Productivity (n) Cost savings (+)	Satisfaction (+) Commitment (n) Mental Health (n) Internal Motivation(n)	Labor Turnover (+)
Corderey, Mueller, and Smith (1991)		Satisfaction (+) Commitment (+) Trust (n)	Absenteeism (+) Labor Turnover (+)
Cohen and Ledford (in press)	Manager rating (+) Self report (+) Supervisor (n)	Satisfaction (+) Comitment (n)	Absenteeism (n)
Meta-Analyses			
Guzzo, Jette, and Katzell (1985)	Productivity (+)		Absenteeism (-)
Bekun, (1989)	Productivity (+)		Absenteeism (-) Labor Turnover (-)
Macy, Bliese, and Norton (1991)	Financial (+)	Attitudes(n)	Withdrawal (n)

Key: (+) = Positive Relationship, (-_) = Negative Relationship, and (n) = No relationship.

Figure 1. Group Task Design [a]



[a] Adapted from Hackman and Oldham, 1976; Hackman and Oldham, 1980.

Figure 2. Competing Hypotheses Based on Job Characteristics and Socio-Technical Theories

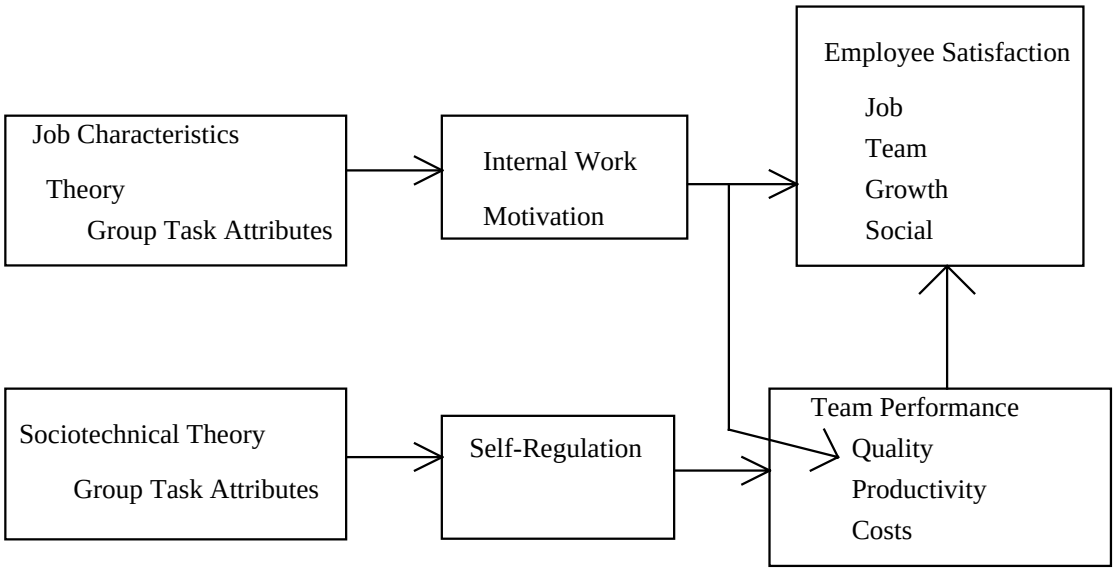


Figure 3. Group Characteristics

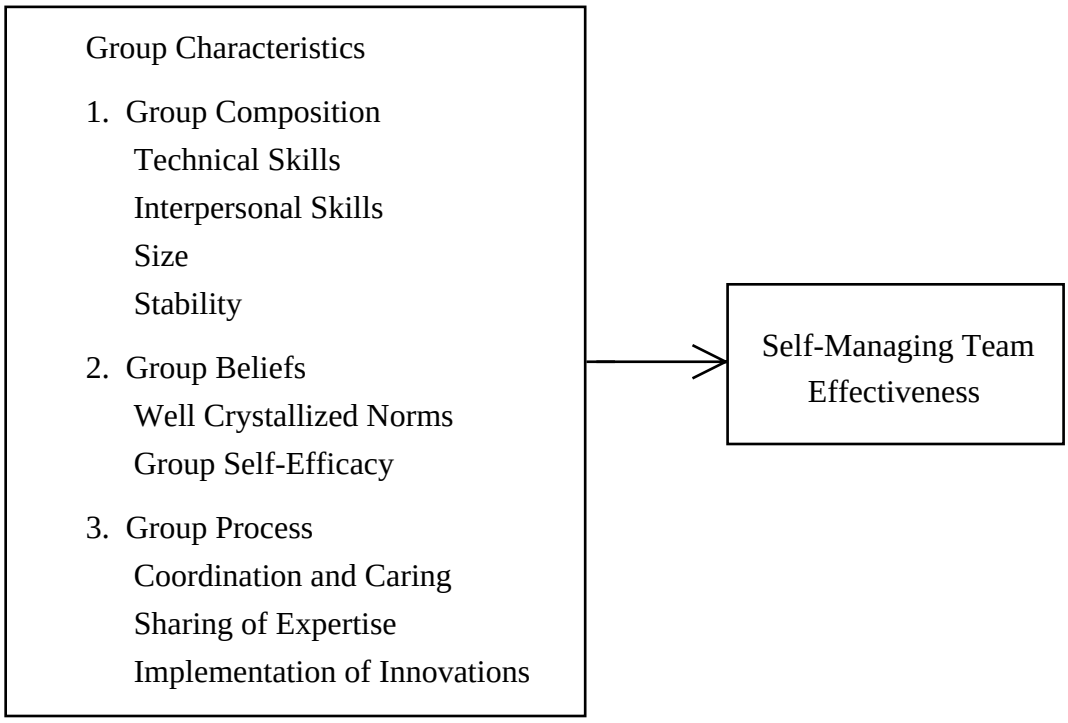
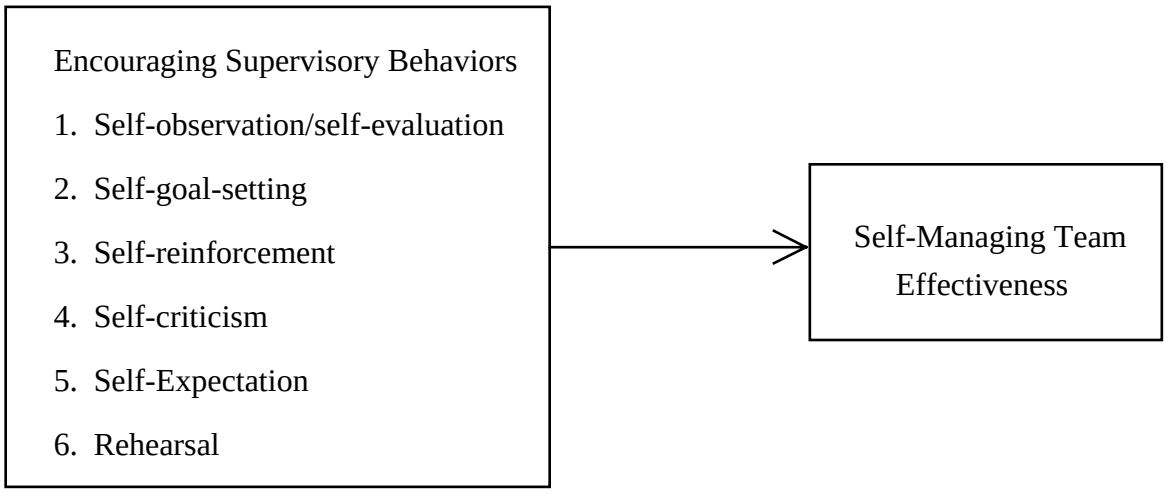
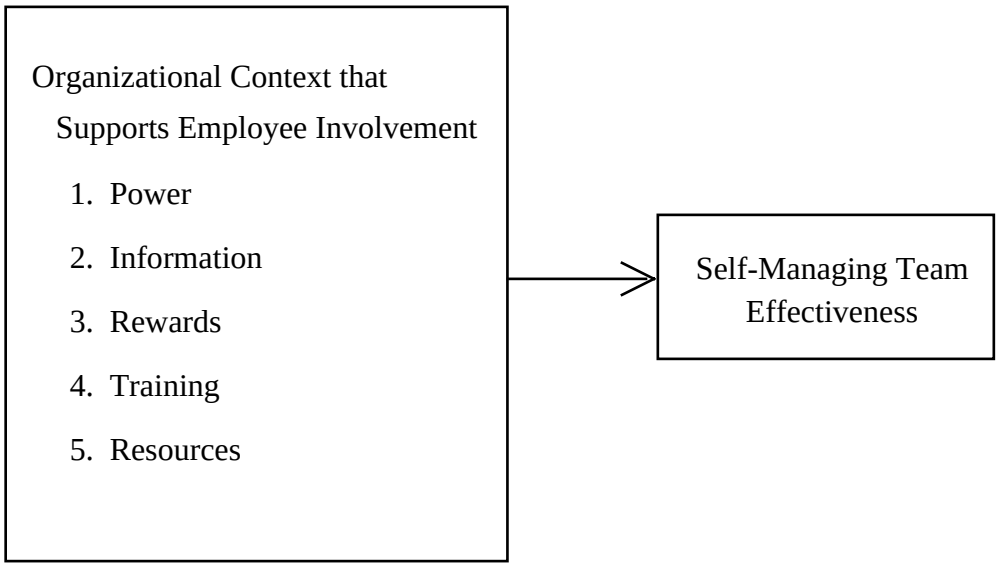


Figure 4. Supervisory Behaviors [b]



[b] Adapted from Manz and Sims (1987).

Figure 5. Employee Involvement Context [c]



[c] Adapted from Lawler (1986 and 1992).

Figure 6 Full Model of Self-Managing Team Effectiveness