TEAM-BASED SUPPORT SYSTEMS: GENERATING A TESTABLE SUPPORT SYSTEMS MODEL AND ACCOMPANYING HYPOTHESES

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Scant research exists to illuminate the nature of organizational efforts, or support systems, designed to provide work teams with what is needed to be successful. The sample \((N = 20)\) consists of experienced researchers and practitioners discussing work team implementations and the ongoing support needed for sustainability. The following seventeen team-based support systems were examined: (a) rewards and recognition, (b) team goal setting, (c) performance measurement, (d) performance appraisal, (e) team placement and structure, (f) communication and information systems, (g) culture, (h) training, (i) knowledge management, (j) business strategy, (k) leadership, (l) between teams integration, (m) resource distribution, (n) physical workspace, (o) program evaluation and renewal, (p) personnel selection system, and (q) work process design. This study uses a grounded theory approach to build a support system model and provide hypotheses for future research.
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CHAPTER 1
INTRODUCTION

In the last thirty years, organizations have increasingly employed work teams to achieve greater levels of production and performance. With the advent of work teams in the business landscape, organizations have struggled with the various dynamics associated with the successful implementation and maintenance of work teams. In fact, research indicates that at least half of all work team implementations fail to result in a more effective work environment (Johnson, Beyerlein, Huff, Halfhill, & Ballentine, 2002). The majority of research on work teams has examined the internal processes and functioning of the team. Studies have shown the importance of internal processes such as norms (Feldman, 1984), conflict resolution (Jehn & Mannix, 2001), decision making (Sundstrom, Busby, & Bobrow, 1997), and cohesiveness (Mullen & Cooper, 1994). A second, smaller body of research has begun to examine what teams need from the organization, or support systems, in order to be effective.

This study looks at what team-based support systems are most crucial in enhancing the effectiveness and performance of work teams. This chapter begins with a look at the emergence of teams into organizations, what work teams are and what they do, the internal processes of teams, and the research on team support systems to date.

History of Work Teams

The defining moment in the emergence of work teams was the Hawthorne studies, conducted in the 1920s (Devane, 2004; Sundstrom, DeMeuse, & Futrell, 1990; Sundstrom, McIntyre, Halfhill, & Richards, 2000). The studies were conducted at the Western Electric Company in the Hawthorne Works in Chicago. The research initially intended to study the
impact of physical working conditions, such as lighting, (Sundstrom, et al., 2000) but quickly transformed into a study on how interpersonal relations within the teams led to increases in productivity (Devane, 2004).

The Hawthorne study was the first to show that workers could be influenced as much by the rewards and punishments delivered by the team than the external motivation applied by leadership and the organization. These findings gave light to the fact that work teams operate with a set of group norms that is either implicitly or explicitly communicated within the team (Sundstrom, et al., 2000). These findings were in contrast to the prevailing thought on leadership at the time, that employees were interchangeable components similar to equipment and inventory. The Hawthorne findings also sparked interest for further research in the area of human relations and sowed the seeds for the origins of organizational development.

The next major step in the evolution toward work teams occurred in the 1940s with the t-group research started by Kurt Lewin (French & Bell Jr., 1999). This work looked at the interactions between members of teams. This research was conducted in a workshop format that closely resembled a laboratory setting. Over the course of studying t-groups, the researchers began to examine group processes and what could be done to improve the internal working of the teams. This was a precursor to group interventions that still occur today. These advances in understanding groups helped further knowledge on the topic, but suffered from a lack of generalized results that translated from the laboratory to an applied, organizational setting (French & Bell Jr., 1999).

T-groups led to the theory of socio-technical systems developed by Trist, Banforth, and Emery that added a human consideration to the nature of work (Fox 1995; Sundstrom et al., 2000). Devane (2004) defines socio-technical systems as a methodology that restructures work
so that employees and tasks are optimized jointly. Fox (1995) takes the definition a step further by adding that each component must be considered interdependently so that trade-offs do not negate the optimization. The technical system can include: (a) materials, (b) machinery, (c) physical space, and (d) processes that turn inputs into outputs. The social system centers primarily on the role of the worker and how changes to roles affect overall outcomes. The assumption can be made that a change in one system will have some effect on the other system. Socio-technical systems theory continues to be relevant in the formation of new self-directed or autonomous work teams (Mohrman, Cohen, & Mohrman, Jr., 1995).

Quality circles and total quality management were attempts in the 1980s to include workers in problem solving processes (Sundstrom et al., 2000). One of the major issues with quality circles was that employees were asked by management for possible solutions to organizational issues, but employees were not included in the implementation of the solutions. Ultimately, the quality circle was still a management initiative that believed that employees were not capable of being partners with management in a strategic way.

The use of work teams proliferated in the 1980s with teams being employed in a variety of forms and settings (Sundstrom et al., 1990). Johnson et al. (2002) call 1990 the “watershed” year due to the increased emphasis on understanding work teams. While the emphasis shifted towards understanding work teams, there was still little agreement about the benefit of teams, what teams need to succeed, the true definition of work teams, and even what to call such teams.

Defining Work Teams

At least a portion of the differences in the literature regarding work teams can be attributed to the lack of an operational definition for the construct. Many academicians and
practitioners use different terms to describe the implementation of work teams. Common terms include: work teams (Banker, Field, Schroeder, & Sinha, 1996; Hackman, 2002; Johnson et al., 2002; Sundstrom et al., 1990; Sundstrom, 1999), self-directed work teams (Hitchcock & Willard, 1995), task groups (Gladstein, 1984), team-based organizations (Mohrman et al. 1995), work groups (Feldman, 1984; Mullen & Cooper, 1994; Shea & Guzzo, 1987; Sundstrom, Busby, & Bobrow, 1997; Sundstrom et al., 2000), collaborative work systems (Beyerlein & Harris, 2004), and high-performance organizations (Devane, 2004).

While each term describes a slightly different use of teams that is relevant for practitioners to consider, a legitimate question arises about the ability to generalize findings across the different terms. The term work team is used most frequently to describe the collective work efforts of a small co-located group that stays together for a long time. With numerous terms and labels for work teams in use, there should be little surprise that there are an accompanying amount of definitions for work teams. The following table outlines work team definitions as well as the other labels mentioned above.

Table 1

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<th>Definitions of Work Teams and Synonymous Terms</th>
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<td>Definitions</td>
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<td>1. A work team is “interdependent individuals who share responsibility for specific outcomes for their organization” (Sundstrom, 1999, p.7).</td>
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<td>2. A team is “a small number of people with complementary skills who are committed to a common purpose, set of performance goals, and approach for which they hold themselves mutually accountable” (Katzenbach &amp; Smith, 1993, p.5).</td>
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*(table continues)*
3. Work teams have four basic characteristics: “a team task, clear boundaries, clearly specified authority to manage their own work processes, and membership stability over some reasonable period of time” (Hackman, 2002, p. 41).

4. Work teams are “small groups of interdependent individuals who share responsibility for outcomes for their organizations” (Sundstrom et al., 1990, p. 120).

5. A work group is “made up of individuals who see themselves and who are seen by others as a social entity, who are interdependent because of the tasks they perform as members of a group, who are embedded in one or more larger social systems, and who perform tasks that affect others” (Guzzo & Dickson, 1996, p.308-309).

6. A self-directed work team is “a natural work group of interdependent employees who share most, if not all, the roles of a traditional supervisor” (Hitchcock & Willard, 1995, p. 4).

7. Beyerlein and Harris (2004, p. 17) define collaborative work systems as “organizational units that occur any time that collaboration takes place, whether it is formal or informal or occurs intentionally or unintentionally.”

8. A high performing organization is “a structure composed principally of high performance teams whose members work interdependently to address specific performance challenges” (Devane, 2004, p.22).

*(table continues)*
Table 1 (continued).

**Definitions**

9. Mohrman et al. (1995, p. 39) defines teams, the basic building block of team-based organizations, as “a group of individuals who work together to produce products or deliver services for which they are mutually accountable.”

Table 1 shows a wide range of sophistication in the use of teams, but all definitions are appropriate for this study. This study will examine what teams need in terms of support systems and, unless a team receives certain levels of support from those systems, it is unlikely that the team will reach the most sophisticated level of team structures.

A difference in definitions that can affect organizations is the distinction between teams and groups. Katzenbach and Smith (1993) offer that teams can be groups at times but groups have to grow into being teams. Groups become teams when they share commitment and work synergistically. Sundstrom et al. (2000) use terms work groups and work teams interchangeably due to inconclusive evidence that there is a tangible difference.

**Benefits of Work Teams**

Many organizations have experienced failure in implementing work teams by attempting to participate in a zeitgeist, or the popular business fad of the times, or to capitalize on the success of other organizations. Work teams are a highly effective component of organizational design when used to improve performance and not to appear conformant to a burgeoning trend. Michaelsen, Watson, and Black (1989) found that group performance exceeded the performance
of the average member for project teams. This section outlines benefits from work teams from intangible outcomes to more tangible benefits.

The need for work teams coincides with a major shift from production work to knowledge work in the business environment (Mohrman et al., 1995). Work teams can be employed to automate processes in production settings but are becoming abundant in knowledge work settings. Knowledge work refers to jobs where employees are responsible for solving novel problems and are responsible for carrying the burden of what was once considered production or operations. This shift challenges the traditional approach to organizational design where employees were grouped by function and granted authority by placement on the organizational chart. Work teams in production and knowledge settings require a more flexible design centered on reallocating the resources that were once reserved for upper levels of management.

Some researchers, for example Shea and Guzzo (1987), argue that increased competition, specialization, and the rapid speed of organizational change require work teams in order to increase the level of participative management in organizations. Increased participation in management decision making requires organizations to prepare for the challenges associated with increasing the amount of employees making decisions. While participative management is a benefit of teams, many organizations employ work teams without increasing input from work team employees.

Some researchers, Guzzo and Dickson (1996) for example, have pointed to the intangible benefits of work teams. Work attitudes, such as job satisfaction, can be improved through the use of work teams. While employing happier workers is certainly a desirable outcome, it is not
enough to warrant the allocation of resources needed to implement or sustain work teams successfully.

Organizations that experience success with work teams tend to focus on more tangible outcomes such as improved performance (Banker et al., 1996). Improved performance is still an ambiguous term that can mean anything from increased production to cost savings.

Other researchers have been able to document tangible, positive outcomes for organizations that use work teams. Sundstrom (1999) found that, when properly implemented and supported, work teams produce the following: (a) increased creativity, (b) faster response times, (c) flatter organizational structures, and (d) increased performance.

Beyerlein and Harris (2004) go a step further by outlining and describing both the intangible and tangible benefits of successful work team implementation. The authors detail the following intangible benefits: (a) increased intellectual capital, (b) improved concentration, (c) increased innovation, (d) improved customer and supplier relationships, (e) increased collaborative capital, and (f) increased commitment and ownership by work team participants.

On the converse, the authors outline the possible tangible benefits an organization may experience: (a) increased savings, (b) increased earnings, (c) improved safety, (d) reduced turnover, and (e) reduced absenteeism. Organizations should measure all tangible benefits in order to justify the business case for work teams. Intangible measures may contribute to tangible outcomes and should be monitored for relevant correlations.

While the organization and its employees should expect to see benefits from the implementation and continuation of work teams, the major determinant in employing work teams should be to “get the work done” (Johnson et al., 2002). This goal drives the design of work teams whether the goal is to be more productive, more efficient, or more effective. Beyerlein and
Harris (2004) consider the task, or work, so critical that it is the centerpiece of their collaborative strategic design process. When organizations consider the work to be done before deciding to implement work teams, the design, structure, and support systems can be tailored to best provide an environment for success.

Types of Work Teams

Because the primary function of work teams is to complete tasks, there are different types of work teams to complete different kinds of tasks. Each type of work team shares the basic characteristics outlined in Table 1, but they also possess distinct characteristics that are important for the implementer to understand. This section provides a brief overview of the most commonly employed types of work teams.

Production Teams

Production teams, often seen in manufacturing, are work teams that consist of primarily frontline employees to repeatedly produce a tangible output (Mohrman et al., 1995; Sundstrom, 1999). Katzenbach and Smith (1993) refer to production teams as “teams who make or do things.” The degree of specialization and degree on task repetition is determined by the product being produced and the design of the teams (Smolek, Hoffman, & Moran, 1999). The more repetitive the task, the more likely the membership of the team remains permanent over time (Smolek et al., 1999; Sundstrom, 1999). Membership of production teams can be transitory if turnover is high within the industry or organization. High turnover for production teams can lead to increased hiring and training costs. The degree to which the team has authority over its governance and design can be a function of team maturity, performance, or design. Many
organizations employ numerous production teams which leads to the challenge of managing multiple teams by the management of the organization (Katzenbach & Smith, 1993). For production teams to be successful, interdependency among team members should be established, communicated, and promoted by the team supervisor or lead (Sundstrom, 1999).

Service Teams

Service teams are similar to production teams in using frontline employees to complete repetitive transactions with customers (Smolek et al., 1999; Sundstrom, 1999; Sundstrom et al., 2002). Service teams share many of the same characteristics around specialization, membership, and autonomy as production teams. The major distinction of service teams is contact with the end user or customer. Increased contact with the customer can add customer service training to the needs of service teams (Cohen & Bailey, 1997).

Management Teams

Management teams are composed of executives or managers whose primary function is to coordinate the work of others or to set the strategic direction of the organization (Sundstrom et al., 1999). Management teams are referred to as teams “who run things” by Katzenbach and Smith (1993). Membership of management teams is considered more stable than production or service teams due to the more professional nature of managerial work. Interdependency is important for management teams in order to set the example for work teams. Some executive teams struggle with interdependency across functions leading to the creation of silos within the organization. Management teams often contain a greater degree of specialization due to the technical expertise required to lead production teams (Smolek et al., 1999). The closer to the top
of the organizational chart the team resides, the more autonomy the team usually possesses in determining self-management.

*Project Teams*

The defining characteristic of project teams is that there is a definite end to the team, and that end occurs when the project is completed or abandoned by the organization (Sundstrom, 1999). Project teams can include task forces, committees, product development teams, and even event planning. The degree of specialization and self-management depends on the reason why the team was formed (Smolek et al., 1999). The needs of a product development team are quite different than a team brought together to determine the logistics of a company picnic. Smolek et al. (1999) suggest that project teams need a clear purpose, defined roles, defined expectations, and a team sponsor. These considerations allow for the team to move to task completion expeditiously.

*Quality or Parallel Teams*

Quality, or parallel, teams are problem-solving teams that can include a fixed membership or voluntary participation (Banker et al., 1996). The main purpose of quality circles is to identify ways to improve quality, process, or productivity. Quality circles often benefit from training on holding effective meetings due to the evolving membership of the team (Smolek et al., 1999).
Virtual Teams

Virtual teams provide a new set of challenges by introducing technology and geographically distributed members to the traditional characteristics of work teams (Sundstrom, 1999). Members of virtual teams often work in different cities, sometimes in different countries in order to achieve results. Meetings are held by teleconference, videoconference, and webinars. Virtual teams, as they continue to increase in popularity, will require increased research in order to better understand how to optimize work flow and how to adequately provide support.

Self-Managing Teams

Self-managing teams are usually mature production teams who have control over the production process from input to output, as well as all support activities such as scheduling and quality control (Banker et al., 1996). Different organizations choose to regulate the amount of autonomy work teams are granted, so the term self-managing refers to teams that have control over the entire production process. Teams that only own certain functions will require different support systems than self-managing teams.

Organizations need to understand the differences in the teams that are used to complete tasks. Often, different types of work teams are employed by the same organization and that necessitates a support systems strategy that aligns with the needs of the team.

Much of the early research and literature concerning work teams has centered on understanding and improving the internal functioning of the team. While the internal well-being of the team should be an ongoing concern, the emphasis on internal examination may have occurred at the expense of study on the importance of external factors such as support systems. In fact, some internal processes may be aided by the improvement of support systems for teams.
The following sections provide a detailed examination of the research conducted on individual support systems.

**Reward and Recognition**

Reward and recognition plans are one of the most debated facets of any support system. This is not surprising in light of the fact that findings are inconclusive in determining how reward and recognition plans affect individual, work team, and organizational performance. A spotlight on rewards exists, because the vast majority of people who work receive payment, or rewards, for their work. While rewards and recognition contain more than just pay, pay seems to inspire great debate due to its universal nature of impacting most workers. Reward and recognition is defined by Beyerlein and Harris (2004) as the methods of promoting excellent performance and desired behaviors. This will be the definition used throughout the rest of this study. This section outlines why rewards are important and examples of rewards, what constitutes an effective reward system, types of reward methodologies, and work team reward system characteristics.

*Importance and Examples*

When a shift from individual work settings to work teams occurs, organizations must give thought to the design of the organizational reward and recognition strategy. Building on the definition of reward and recognition, the ultimate goal of any reward and recognition plan is to retain the organization’s most valuable employees (Lowery, Petty, & Thompson, 1995). The purpose of the reward and recognition plan is to show key personnel that it is worthwhile to commit time and effort to the organization and that the return on investment is satisfactory to the
individual or team (Lawler III, 1999). Research indicates that reward and recognition impacts job satisfaction, performance, and pay satisfaction (Lowery et al., 1995). Furthermore, increased pay satisfaction can lead to decreased turnover and decreased absenteeism.

Lawler III (1999) outlined six goals that organizational rewards should address: (a) attracting and retaining talent, (b) motivating performance, (c) motivating skill and knowledge development, (d) shaping corporate culture, (e) defining structure, and (f) determining pay costs. The first three factors are appropriate when applied to an individual unit of analysis, but the last three goals address larger, organizational efforts. The level of investment in rewarding workers helps define the culture by communicating to employees what the organization values. The organizational structure is defined by disparity between levels of the organization. Reward strategies help define status and power differences. Pay costs are an outcome of the organization’s reward and recognition strategy. The biggest expense many organizations incur is the salaries of employees, so reward and recognition contributes to the expenses and affects the bottom line. Because rewards impact all levels of the organization and affect strategy, finance, and departments of the organization other than human resources, thoughtful design of rewards is strongly encouraged.

The pervasive nature of rewards means that the reward and recognition strategy should meet the needs of all stakeholders involved in the process. Naturally, the organization’s leaders must be attuned to addressing strategic, organizational objectives. Leaders should also focus on the impact that rewards have on individuals and work teams. When rewards are misaligned, designed poorly, or perceived as inequitable, it becomes more difficult for the reward system to achieve its main goal, to retain the most valuable employees.
Hitchcock and Willard (1995) suggest that poorly designed reward systems have the following deleterious effects: (a) punishment when expected rewards do not appear, (b) injured interpersonal relationships, (c) short-term efforts which do not prepare the organization from a strategic standpoint, (d) decreased risk taking and innovation that occur when increased performance is rewarded, and (e) decreased intrinsic motivation for task completion turns efforts into “working for a check.”

Perhaps the strongest connotation of rewards is with salary. While salary is a vital component of any reward system, there are many others to consider. The literature divides rewards into financial and nonfinancial rewards.

Ulrich and Smallwood (2003) provide a comprehensive list of financial options that organizations can employ in the implementation of reward systems. Salary increases are on the list and can be applied in the presence of performance increases, skill or knowledge increases, or as a result of promotions which move the employee into different job classifications. Benefit packages are another method of rewards that organizations use that can range from health and dental insurance to tuition reimbursement to flexible work scheduling. Some organizations reward employees using quarterly or yearly bonuses for performance with the bonus taking the form of cash, stock, or increased time away from work. Other organizations tie rewards to longer term strategic performance while using cash or stock options as the primary incentive. Organizations that use teams must consider the use of team-based financial rewards which will be discussed in greater depth later in this section. More advanced forms of rewards include transitioning individuals and teams into reward plans that incent know-how, problem-solving, accountability, and innovation.
The non-financial side of rewards often proves much tougher for organizations to master than financial rewards. This is due to the perceived subjective nature of non-financial rewards, often called recognition, and the lack of skill of managers to apply such rewards.

Ulrich and Smallwood (2003) list non-financial rewards that are often designed to appeal to the intrinsic motivation of employees. Increased autonomy is a non-financial method of rewarding employees that gives employees the right to make decisions, control over the work environment, and increased responsibility. Many organizations give real-time feedback to employees instead of yearly performance reviews. Job rotation and cross-training are two methods of developing the skills and capabilities of employees. Recognition at the work team level can include public praise for accomplishments, team celebrations, and rotating leadership at team functions or meetings (Sundstrom et al., 1990). Social recognition for completion of training and special projects or changing to desired behaviors can be especially powerful in eliciting continued performance (Parker, McAdams, & Zielinski, 2000). Some organizations offer service awards for tenure achievement with an increased emphasis on employee selection of rewards from an approved pool of rewards. This approach to rewarding service is replacing a more traditional approach where employees are given a pin or plaque for service.

Organizations who successfully implement reward and recognition systems carefully design the system to attend to team needs, individual needs, and long-term strategic performance. In implementation, organizations should understand the options that are available and should understand that a mix of financial and non-financial rewards is necessary to have a successful program.
Effective Rewards

The major issue with designing effective reward systems is attaining a level where the large majority of employees perceive the reward system to be effective. This is especially difficult because each individual has expectations and perceptions of the rewards being offered. Amalgamating individual perceptions into an organizational system that works becomes even more difficult when work teams are added as a unit of design. Practitioners should take into account team perceptions as well as the individuals that comprise the teams when designing reward systems. Lawler III (1999) suggests that no universal reward system is effective due to the differing characteristics of teams within the same organization. The biggest challenge of the organization, Lawler posits, is to reach alignment between the rewards being offered and the characteristics of the team.

Because successfully implemented teams increase participation and autonomy, Devane (2004) says that how workers are treated may have more impact than traditional rewards systems. Treatment of workers is not traditionally thought of as a reward system, but Devane approaches this factor as a form of recognition. Devane believes that allowing work teams to participate in the reward design process is a form of recognition that can deeply affect the overall success of the program. This approach also aligns with Lawler III’s (1990) idea that rewards help shape the corporate culture. By allowing participation in the design of reward systems, the organization is communicating to employees that input from the team is important in the success of strategic initiatives.

Nebeker and Tatum (2003) outline three objectives for effective reward systems: (a) employees must value the rewards, (b) performance and behavior must lead to the desired rewards, and (c) employees must believe that the performance and behavior required to receive
rewards is within their capabilities. The last point does not infer that the criteria for achieving rewards should not be challenging, but it does imply that the criteria must be able to achieve the necessary requirements to receive the reward.

Kerr (1999) takes the requirements for an effective reward system a step further by outlining six focus areas: (a) availability, (b) eligibility, (c) visibility, (d) performance contingency, (e) timeliness, and (f) reversibility. In this model, availability is the most important factor to consider. If the organization has no budget to implement financial rewards, it is fruitless to pursue and communicate the availability of such rewards. Therefore, an organization is best served to carefully communicate intentions regarding rewards than to communicate lofty, unavailable rewards. Eligibility requirements occur when different levels of the organization have access to certain rewards. Once an employee perceives that they have no eligibility for rewards, they have no motivation to expend effort toward the reward. Eligibility considerations also require a communication plan that keeps relevant parties engaged in striving for rewards. The third factor is visibility which implies that employees are aware of the rewards available to them. Visibility also refers to making sure that high performers are rewarded, and that other employees see that high performers are rewarded. Performance contingency means that employees receive rewards that can be traced to a tangible accomplishment. Kerr estimates that the reward, if financial, must be at least 12% above base considerations for the desired behavior to be induced. Timeliness is the companion piece to performance contingency in that once the desired behavior occurs; the reward should follow closely to tie the reward to the desired behavior in the mind of the performer. Finally, reversibility is the ability of the organization to change the reward over time to align with new standards. The goal of reversing rewards should
be in preventing entitlements to rewards and not consistently changing reward thresholds to prevent employees from achieving rewards.

Hackman (2002) drills deeper on the contingency aspect of Kerr’s factors for effective reward systems. Hackman says that teams must clearly understand what is expected in order to be rewarded and must understand explicitly what is being offered as a reward. Also, team members must believe that accomplishment of desired behaviors initiates the reward process. This is called the line of sight for rewards, which makes the team lead or supervisor responsible for creating a clear path. For example, if a team contributes a portion to the finished product, the team must see the contribution being made. Hackman believes that the longer the line of sight, the less power rewards will have in shaping behaviors.

Lowery et al. (1995) describes effective reward systems in terms of expectancy and equity theories. Expectancy theory is another way to explain performance contingencies and uses the same methodology as Hackman (2002) and Kerr (1999). Equity theory states that employees judge the fairness of received rewards based on the level of effort required to attain the reward. This level of effort can be applied to individual efforts and is often judged against the efforts of others and the rewards distributed to team members. When employees feel that rewards are inequitable, they adjust their level of effort to reduce feelings of discomfort.

Beyerlein and Harris (2004) provide a list of considerations for designing an effective reward system at the team level. The considerations include: (a) intrinsic and extrinsic rewards, (b) individual, team, and organizational level rewards, (c) informed rewards and recognition, and (d) rewards that focus on shared outcomes. Intrinsic rewards can include skill development, training, or task autonomy and are designed to address personal motivation for being employed. Extrinsic rewards, such as bonuses, address overt outcomes for working. Rewards at all levels of
the organization help employees retain autonomy over performance while communicating that
the overall performance of the organization remains a priority. An informed reward means that
the reward is meaningful to the recipient and not the person distributing the reward. If a manager
makes a set of golf clubs a reward for the team’s performance and no one on the team has an
interest in golf, then the reward has little or no value. Shared outcomes refer to all employees
having a vested interest in the viability and success of the organization. When the majority of
employees have a shared outcome, energy can be focused on achieving desired objectives.

Competition for rewards is a common issue for individuals and teams within many
organizations (Mohrman et al., 1995). Effective reward systems minimize competition by not
ranking employees against one another when distributing rewards. Ranking often occurs when
allocating salaries across team members based on a fixed budget. Companies can circumvent this
competition by creating performance bands that lump employees into performance categories
and applying rewards accordingly. This is not a complete cure for reducing competition, but
highlights the due diligence required in designing effective reward systems at the team level.

Ulrich and Smallwood (2003) state that the ultimate determinant on reward system
success relies on the organization’s ability to effectively measure the desired behaviors. Without
measures, rewards provide a random and inconsistent incentive for behavior. The ability to
objectively measure and report on progress is a critical feature of a reward system. Measurement
communicates that the organization is committed to fulfilling strategic objectives and that
rewards will be consistent and objective.

There is no magic solution in designing an effective reward system. Organizations that
succeed allocate resources in the planning stage and continually measure the effectiveness of the
system while leadership considers the target population and includes them in the planning and
design (Beyerlein & Harris, 2004; Ulrich & Smallwood, 2003).

Types of Reward Methodologies

As financial reward strategies are designed, organizations must decide on the methodology they will use in rewarding employees. The primary methodologies for financially rewarding employees are: (a) pay for job performed, (b) pay for performance, and (c) pay for skill and knowledge acquisition.

The traditional method of determining pay rates consists of paying the employee based on the job to be performed (Lawler III, 1999). This approach, most frequently, entails a thorough job analysis in order to accurately understand what competencies are critical for performance (Lawler III, & Ledford, Jr., 1987). The job analysis allows organizations to determine a pay range for the job based on the worth given to that job by the organization. This determination can come from historical data, projected revenue, or industry benchmarking. The pay for job method makes the assumption that no individual is worth more than the determined pay range for the job. Pay for job systems do help organizations judge salary costs against competitors but are increasingly viewed as antiquated by organizations that predominantly employ work teams.

A second methodology involves paying employees and work teams based on their performance. This is the most popular method of reward system in the United States (Lawler III, 1999). While it seems fairly simple to reward good performance, many organizations find difficulties in communicating the desired performance and determining whether or nor employees have earned rewards. Lawler III (1999) provides three concepts for performance-based pay: (a) bonuses motivate better than raises, (b) objective measures motivate better than subjective measures, and (c) team-based plans work to increase integration and teamwork.
Siegel (1989) says performance-based pay must address the following to be successful: (a) employees must be trained to set performance objectives and (b) the plan must be evaluated periodically with periods of feedback occurring between management and the teams. This article suggests that employees need to be involved in the processes of designing the system and the ongoing maintenance of the system.

Sturman, Trevor, Boudreau, & Gerhart (2003) proposed a utility model for assessing performance-based pay. The model consisted of four parts: (a) organizational characteristics and assumptions, (b) cost calculations, (c) value calculations, and (d) value of pay options. The model was tested as a case study on a fictional company and resulted in a “substantial financial benefit” at the end of a four year period. Utility models have a history of being difficult for organizations to adopt based on the level of assumption required to populate the utility equation properly.

Lowery et al. (1995) studied the effectiveness of performance-based pay at a public utility. They found that 60% of employees reported pay satisfaction, but manager ratings were higher than employee ratings. Managers also reported higher levels of performance with the incentives than employees reported. While a majority of employees reported higher performance, less than half reported greater productivity and higher quality. The authors posit that the discrepancy may have occurred in the communication of the plan and dissatisfaction with the plan resulting in lesser quality and productivity.

Zenger (1992) studied engineers in a high-technology company in regards to what kinds of employees are likely to be retained in a performance-based pay system. The findings suggest that extremely high performers and moderately low performers are the most likely to stay while moderately high performers and extremely low performers were likely to leave. One rationale for
the findings is that the highest performers were being rewarded while moderately high
performers were frustrated by not being in the highest level. Also, the lowest performers may see
the situation as hopeless while moderately low performers are more likely to receive training and
skill development opportunities.

A newer methodology that has gained popularity specifically with work teams is skill-
based pay where employees receive rewards based on the skills, knowledge, competencies
attained, and the number of jobs a person can perform (Lawler III, 1999; Mohrman et al., 1995;
Siegel, 1989). Skill-based pay is not a new concept as research and development teams have
traditionally paid members for skill acquisition (Lawler III, 1991).

The advantages of skill-based pay usually result in indirect benefits making it difficult for
organizations to reap short-term benefits (Lawler III & Ledford, Jr., 1987). The results of skill-
based pay are: (a) increased flexibility in case of turnover or absenteeism, (b) increased problem
solving, and (c) increased organizational awareness of strategic objectives. Conversely, the
disadvantages include: (a) increased salary costs, (b) increased training costs, (c) employees who
have reached the top of their pay range, (d) administrative complexity in tracking skill
acquisition, (e) skill acquisition getting in the way of production, and (e) rapid technology
changes rendering skills sets useless.

Lawler III (1991) provides a comprehensive list on establishing a skill-based pay system:
(a) needed skills identification, (b) optimal skills identification, (c) prices for skills and skill sets,
(d) rules for the sequencing and rate of skill acquisition, (e) objective measures to determine skill
acquisition, and (f) policies that change when technologies and skills become obsolete. These
steps help ensure that employees learn critical skills and prevent employees from having lofty
pay rates for possessing irrelevant or outdated skill sets.
Ledford (1991) questions how skills are priced by organizations. Industry benchmarks are harder to find for skills than jobs or performance. All organizations who entertain the thought of skill-based pay must project costs that will occur as employees progress through the system.

Tosi and Tosi (1986) studied skill-based pay at two manufacturing firms and drew the following conclusions: (a) workers are incented to learn and acquire new skills, (b) the firms employed more job rotation and task flexibility than normal firms, (c) training costs were higher for skill-based plants, (d) workers with higher self-esteem will be more satisfied with skill-based pay than workers with lower self-esteem, and (e) pay is seen as more fair in skill-based pay systems.

Hunter, Macduffie, and Doucet (2002) studied skill-based pay at the Chrysler Corporation along with the implementation of work teams. They found that age, education, and gender had no effect on the perceptions of skill-based pay. Unsurprisingly, workers who had their pay, job level, or both increased reacted more favorably to skill-based pay than workers whose status and pay did not change.

Skill-based pay, if implemented correctly, can lead to a culture of personal growth and development and a highly talented workforce (Lawler III, 1999). This workforce is also able to respond to issues and be flexible based on the fact that the workforce is knowledgeable enough to meet needs quickly. Skill-based pay seems to work best in settings where a more permanent workforce is desired, because organizations struggle when employees attain a certain skill level and then leave with the acquired knowledge.
**Team Rewards**

As organizations shift to work teams from individuals, the way that rewards are applied must change as well. Many organizations continue to reward individuals when work teams are implemented and wonder why no one participates as a team (Parker, McAdams, & Zielinski, 2000). Team rewards must, on some level, take into account the performance of the team when rewarding individuals (Kerrin & Oliver 2002). Otherwise, there is no reason for workers to act interdependently. Some work teams such as quality circles and self-managed work teams decide how to distribute rewards internally.

Team-based rewards bring up the topic of competition among team members which can destroy the very thing that implementing work teams is designed to do. Many reward systems allocate resources for teams in a fixed pool, which means that individual team members compete for the available rewards (Freedman & Leonard, 2002; Hackman, 2002). Teamwork, trust, cooperation, and collaboration become very difficult when team members are competing for the same rewards.

Lawler III (1999) states that team-based pay for performance should include: (a) team performance appraisals, (b) special awards and recognition for outstanding performance, and (c) profit sharing or stock options for high performing teams.

Kerrin and Oliver (2002) studied the role of reward systems on work teams at an automotive plant in the United Kingdom. The findings suggest that when teams are rewarded for ideas to improve processes, they will hold onto ideas until they are eligible for more rewards instead of providing the ideas as they emerge.

In a study by Gladstein (1984), pay and recognition was found to be positively associated with goal clarity, role clarity, and task control. These findings are especially important for team
leads, because it is their job to provide new work teams with clear expectations and sufficient autonomy.

Chenhall and Langfield-Smith (2003) studied profit sharing at a manufacturing plant and found that the rewards did not improve performance at significant levels. The study does not report if the manufacturing plant tried to amend the rewards or change to a different method for rewarding teams.

A seven month study on team bonus plans for salespeople resulted in increased interaction among team members and more interdependence (Shea & Guzzo, 1987). This finding is important because building teams of salespeople has historically been difficult. The tendency of most salespeople is to work independently because of the singular nature of rewards for sales jobs.

Pritchard, Jones, Roth, Stuebing, and Ekeberg (1988) examined the effects of feedback, goal setting, and rewards on team productivity. Team-based rewards increased productivity 76% over baseline, but rewards were introduced after feedback and goal setting systems. The authors admit that the rewards may be a result of the cumulative effect of the three interventions.

Fredenhall and Emery (2003) studied automotive service garages to test the hypothesis that work team increases in productivity would be moderated by the compensation system. The study found that the increases in productivity were not moderated by the compensation system which included a combination of individual and team rewards.

The research indicates that the differences between organizations and work teams within each organization will be a strong guide for what constitutes an acceptable reward system. Organizations must communicate with employees, design rewards carefully, offer desired rewards, reward desired behaviors, and continually monitor the effectiveness of the system.
Goal Setting

This section looks at the literature regarding team-based goal setting and the processes that facilitate goal setting for work teams. There is not much debate that goal setting is an important activity in organizational settings, but the ongoing debate centers on how to set goals that prompt improved performance from work teams.

Managers and supervisors set goals in order to focus direction and increase effort with the hopes of improving performance (Buller & Bell Jr., 1986). Organizations encounter issues with goal setting when the wrong goals are set, when the wrong unit of analysis (individual, teams, organizational) is applied to goals, goals are not communicated, or goals do not follow the widely accepted smart goal methodology (Beyerlein & Harris, 2004; Devane 2004). Smart goals are specific, measurable, achievable, relevant, and time-based.

Specific goals make sure that direction is focused and give no room for alternate explanations by those tasked with accomplishing the goal (Devane 2004). Zaccaro and Marks (1999) believe that specific goals facilitate the planning required to carry out the task and help the team develop performance strategies. Specific goals also give team members a clear expectation of performance expectations and effort requirements (Beyerlein & Harris, 2004).

Measurable goals are paramount for work teams in that the team can understand how they are performing and increase effort and adjust performance strategies accordingly. When goals are measurable, individual team members and the entire team can receive feedback on performance (Zaccaro & Marks, 1999). This requires the organization to build a mechanism that captures metrics and reports them back to the work team. One such mechanism is the balanced scorecard, which measures performance from four key perspectives in the organization: (a)
financial, (b) customer, (c) processes, and (d) learning and growth (Devane 2004). Adoption of
the balanced scorecard often requires the implementation of software that integrates with the
operations of the organization and captures performance data. Measurable goals for teams often
include quality, production cycles, service levels, cost, revenue, or accuracy (Guzzo & Dickson,
1996; Mohrman et al., 1995).

Goals that are achievable contribute to team efficacy by helping the team believe that
they are able to contribute to organizational objectives. Setting achievable goals does not suggest
that the goals should not be aggressive or stretch goals (Devane 2004). Leaders and teams often
struggle in finding the balance between achievable goals and aggressive goals. Devane suggests
that leaders ultimately do damage to individuals and teams’ performance by not encouraging
aggressive goals. Conversely, leaders need to understand the capabilities of the team and the
individuals on the team when setting goals (Zaccaro & Marks, 1999). When goals are outside the
capabilities of the team, morale and effort suffer.

Relevant goals tie the effort expended by the team to the overall organizational strategy.
Goals that are tied to business drivers energize the team by communicating that the team is
making a valuable contribution to the success of the organization. Zacarro and Marks (1999) add
vertical and horizontal integration to the aspect of relevant goals. Vertical integration occurs
when the goals of the team are tied to larger, organizational goals. Horizontal integration means
that team goals do not put one work team in direct competition for resources with other work
teams. The concept of horizontal integration implies that an organization must be cognizant of all
work team goals in order to prevent between-team competition. Devane (2004) argues that top
leadership must set direction for teams so that the work teams can set relevant goals.
Time-based goals help provide the work team with an end state for goal completion (Beyerlein & Harris, 2004). The direction, focus, and effort a team puts forth will wane if the goal has no parameter for completion. The team should set time-based goals that make sense with the business cycle and with the needs of the organization (Devane 2004). Goals should be aligned with supply, demand, and fiscal calendars. Time-based goals offer another case for leadership involvement in setting direction that work teams can follow when setting goals.

While smart goals are widely accepted as being a framework for goal setting, there are additional characteristics of productive goal setting. Because of rapidly changing work environments, goals must be flexible and adaptive to meet the demands of the organization (Beyerlein & Harris, 2004; Zaccaro & Marks 1999). The flexibility of goals allows teams to adjust goals when business conditions change or goals are found to conflict with other teams as discussed earlier. Many new teams must also collect baseline data and reset goals to be realistically achievable. Goals should also generate commitment which means that all members of the team should be able to buy into the goal. Finally, goal setting should take into account the needs of the team’s stakeholders (Mohrman et al., 1995).

One of the reasons that work teams fail is that organizations continue to apply only individual goals in a team environment, which gives the team little reason to work together. Jones and Moffett III (1999) believe that individual goals must align under the purpose of the team to prevent within-team competition. Guzzo and Dickson (1996) hypothesize that a mix of aligned individual goals and team goals are optimal for leading to increased performance.

Setting team goals infers more than just combining the goals of all individuals on the team. Hitchcock and Willard (1995) label team goal setting as an ongoing process of aligning the individuals’ goals to a unified team purpose. The process of setting team goals provides
opportunities for team members to arrive at a shared meaning about what it important to the team and why the team needs to succeed (Beyerlein & Harris, 2004). Mohrman et al. (1995).

The organization should encourage work teams and those who lead work teams to facilitate goal setting as an iterative and integrating experience. For many work teams, the process of goal setting is new, and leaders must be willing to spend the requisite time needed to set goals that inspire the team and allow for performance that adds value to the organization. Also, when teams are allowed to participate in setting the goals for themselves, team efficacy, commitment, and performance increase (Mohrman et al., 1995). A valuable distinction should be made between top leadership setting direction and setting the team’s goals. For the team to own the goals and the attainment of the goals, the team must participate in setting the goals. This requires a partnership between all levels of the organization in committing to setting goals that are smart, owned by the team, and aligned with the overall strategy of the organization.

The literature is not completely conclusive on the effectiveness of team goal setting, but the research supports setting team goals. The difficulty for many organizations is to determine the right mix of individual goals and team-based goals while aligning the entire goal setting system to the organization’s strategic objectives.

Buller and Bell Jr. (1986) studied goal setting and team building to determine productivity increases and improved strategy development in an underground metal mine. The study used a 2X2 factorial design to look at the impact of each intervention and any cumulative effects. Objective measures of performance included both quantity and quality of output. Initial findings suggest the importance of team goals, but small sample sizes obscured the effects and quantity of output remained unchanged. The researchers were ultimately unable to locate the
specific cause for the small increases in performance and blame field research as the major reason for being unable to locate the source of causation.

In a study of undergraduates, Matsui, Kakuyama, and Onglayco (1987) observed the effects of individual goals versus individual and team goals on a team-based perceptual speed task. The findings show that the individuals who had team and individual goals performed much better on the task than individuals who set only goals for themselves. The participants who were in the team goal setting condition also appeared to have a higher sense of goal acceptance than participants who set only individual goals. In a second study, task feedback was found to be maximized when coupled with information on progress toward individual and team goals instead of information on just one set of goals. This information is important for managers who must lead work teams with members that have individual and team-based goals.

Pritchard et al. (1988) studied team feedback, goal setting, and incentives on productivity and found that team-based goal setting increased participants’ productivity 76% over baseline measures. The dependent variables were introduced in the order of feedback, goal setting, and incentives. Goal setting added a large increase in productivity, but the large increase in output cannot be solely attributed to goal setting. The authors agree that goal setting was significantly related to productivity but add that the cumulative effects of feedback and goal setting make it difficult to ascertain the impact of only goal setting. These findings continue to show that goal setting has some affect on teams but that isolating the impact of just goal setting is difficult.

A study of undergraduates on a team-based tower building exercise studied the outcomes of goal setting in interdependent situations (Mitchell & Silver, 1990). The participants were divided into four conditions: (a) individual goals, (b) team goals, (c) individual and team goals, and (d) no goals. Participants in the individual and team goal condition performed better than the
other three conditions. Surprisingly, the participants who did not set goals performed better than those with individual or group goals. While these findings show support for team-based goal setting, the nature of the task to generalize to work team settings must be questioned. Also, the researchers observed more competition in the participants who set only individual goals. The finding on competition provides support for team-based goals when work teams must operate in a within-team competition free environment.

Weingart and Weldon (1991) examined processes that could mediate the relationship between team goals and team performance. Participants were undergraduates and performance was measured by the quantity of ideas generated in a team brainstorming activity. The study found that team goals: (a) increased performance, (b) increased performance commitment, and (c) were not influenced by prior feedback about performance. These findings suggest that team goals not only impact performance but can also impact the commitment that team members have around completing the task.

Weingart (1992) studied effort, goal difficulty, and planning on performance in a sample of undergraduates. Findings suggest that more difficult team goals serve to increase individual effort and influence overall performance. Also, more difficult tasks increased effort and planning, and the quality of planning impacted performance. The difficulty of goals can impact the effort the team puts into planning and the effort that results in the task completion phase. Goal difficulty was not often measured in the literature making the findings especially important for practitioners.

Crown and Rosse (1995) studied the effect of egocentric group-centric goals on overall team performance. Egocentric goals are individual goals that maximize individual outputs while group-centric goals are individual goals that impact the individual’s contribution on team
outputs. The underlying theory suggests that a mix of egocentric, group-centric, and purely team goals is necessary to fully maximize performance. The study employed a mix of sports teams and corporate work teams to complete a letter/word/sentence game. Results showed that individual goals increased individual performance and team goals increased team performance. Participants who had team and group-centric goals performed 36% better than individuals and teams that had egocentric goals.

Deshon, Kozlowski, Schmidt, Milner, and Weichmann (2004) studied the effects of feedback and goal setting in undergraduates who participated in TEAMSim, a computer-based simulation activity. Teams that had a greater team goal orientation were more committed to team goals and experienced higher team efficacy for achieving the goals. Also, self-set team goals resulted in increased team effort and strategy development for goal attainment. Finally, team effort and strategy development were found to lead to increased team performance. While team goal setting did not account for the increased performance, goal setting contributed to positive team outcomes.

The research on team goal setting shows a positive impact on performance but raises two important questions: (a) how do studies done in a university setting generalize to the field where variable control is more difficult? and (b) does the impact of goal setting rely on other support system components to be most effective?

Further consideration for work team goal setting includes how team goals align with organizational goals. One of the major areas that require alignment is the set of team goals to shared service goals (Mohrman et al., 1995). Shared services are organizational functions that offer support to the team with common shared service departments often including accounting, human resources, and information technology. If the goals of the shared service department and
the work team are not aligned, then the goals of the team may not be achievable. In addition to
the work team not achieving the goal, goal incongruence can increase reluctance for members of
the same organization to work together in the future.

Work teams should mature to a point where goal setting becomes a function of the team
with guidance from management. Evidence is shown in the literature that when teams are
responsible for setting their goals performance can increase, so managers should eventually
transfer goal setting responsibility to the team (Beyerlein & Harris, 2004). During the transition
to the team setting goals, managers should educate teams on how to set smart goals and how to
set goals that stretch existing capabilities.

A universal approach to goal setting is not recommended for work team applications. The
nature of the task and work to be completed should ultimately guide how goals are set for work
teams. Other considerations should include the team maturity, the organizational goal setting
system, organizational culture, and current levels of team performance.

Performance Measurement

Performance measurement refers to the methodology that an organization employs to
identify and measure appropriate performance (Beyerlein & Harris, 2004). The measurement of
performance is an ongoing function that judges how work teams are performing in attaining the
goals set forth for the team. Performance measures are important in incentivizing behavior that
the organization has deemed critical and serve the purpose of keeping work teams focused on
aligned, high performance. Because measures are often the yardstick for employees and teams,
careful consideration should be given to what measures are chosen, who is measured, and how
the measure relates to the strategy of the organization.
Performance measurement allows a team access to data that has been traditionally reserved for upper management (Jones & Moffet, 1999). Historically, organizational leaders have used performance measurement to extract data based on recent activity, making performance measurement a lagging indicator, or a measure of what has already happened (Meyer, 1994). Performance measures are increasingly created and owned by the team and reflect the process elements that impact the team. As a result of this shift, work teams are frequently asked to analyze and correct performance issues. Jones and Moffet argue that the ownership that results from measurement leads to work team excellence. The role of management then becomes one of facilitator and mediator between teams and functional areas, such as accounting or human resources (Meyer, 1994). Top level managers should provide overall direction to work teams about the goals and strategy of the organization. Also, managers should assist teams in speaking a common language between functional areas in order to ensure proper support for measurement.

The move to work teams does not mean that individuals should not be held accountable for individual performance. Work teams, however, require a different set of measures and the appropriate mechanisms to collect and aggregate performance. Ulrich and Smallwood (2003) suggest that a mix of behavior and outcomes should be measured for both individuals and teams. Behavioral measures should be thought of as process measures that indicate how an individual or team is performing. Examples can include timesheets, 360 degree feedback, or agreed upon interpersonal team norms. Outcome measures usually examine elements such as quality, volume, service, profit margin, productivity, or cycle time (Jones & Moffet, 1999). Work teams predominantly use outcome measures more than behavioral measures because of the administration and the perceived objectivity of outcome measures. Typically, more mature work
teams are able to successfully use behavioral measures. Zigon (1998) believes that individual measures must be retained, especially in Western cultures where individualism is highly valued. Zigon also argues that without individual measures, high performers will grow frustrated and leave because their accomplishments are hidden in team measures. Also, individual measurement allows managers and supervisors to develop coaching relationships with employees in order to improve individual performance.

Team-based measurements of performance require, much like team-based goals, the participation of the entire team and guidance and direction provided by top management. Several methods and models exist for measuring team performance, but the literature lacks empirical studies measuring the impact and success of performance measurement for teams. One reason for the lack of investigation lies in the fact that studies regarding performance measures necessitate lengthy involvement with the participating organization. Also, isolating the effects of performance measures is difficult because performance measures relate to many other support systems.

Meyer (1994) offers guiding principles that an organization should follow when implementing team-based performance measurement systems. First, the organization should use measures to give the work team the information needed to monitor performance, not to provide top management the data. This shift, while difficult for most leaders to accept, moves accountability to the team for their performance. To that end, the team must own the function of creating the performance measures. While teams need guidance from managers in this process, like in goal setting, the transition to team-owned measures is important. Teams should also adopt only the most relevant measures because too many measures will lessen the impact of critical
measures and make measurement the primary activity of the team instead of performing the assigned work.

Zigon (1998) believes that a variety of methods should be used in developing a performance measurement system. The first is a team customer diagram that identifies internal and external customers and shows what each group expects from the team. Another method is work process mapping to find critical junctures in the work flow that the team has the most impact in overall success. The final method is the team pyramid which shows how the team contributes to organizational goals to create a line of sight for each work team.

Carney (1999) developed a checklist for performance measurement designed to increase employee buy-in and affect desired behavioral change. First, teams must know what the larger, organizational goals are which requires frequent, clear, and consistent communication from top management. The selected performance measures must be clear and reasonable. If employees do not understand what the measurements mean, they are unlikely to achieve the measures unless they blindly achieve them. Also, the measures must be considered attainable by the team or frustration can lead to substandard performance. Measures should still be challenging, like goals, but should make the work team strive for better performance. A simple mechanism for collecting performance information and reporting team results allows teams to see performance data quickly, often in real time.

Jones and Moffet (1999) provide a performance measurement methodology that includes customer focus, employee buy-in, and alignment with strategy, but also includes feedback as a necessary component. Feedback, discussed later in depth, allows for learning at the team level and continuous improvement to occur.
Performance measurement, to be effective, must be vertically integrated into the organization through a cascaded approach (Mohrman et al., 1995). Each layer of the organization must make sure that performance measures are more granular versions of the layer above them. This helps in ensuring that work team measures, at every level of the organization, are aligned with what the organization believes to be important. Also, more mature teams should assist less mature teams in sharing of mutual experiences around setting performance measures. When this occurs, teams learn about critical components of performance from similar work units that are held responsible for the same kinds of performance expectations.

Many organizations use specific methodologies when designing and collecting performance information. Hitchcock and Willard (1995) developed the team measures worksheet to capture performance measures in one place. The worksheet details the following: (a) the measure, (b) organizational level of collection and reporting, (c) frequency of data collection, (d) the standard unit of measurement, (e) method of collection, and (f) goal or acceptable range. The need for capturing the information provided by the team measures worksheet is unquestioned, but many organizations opt for a computerized solution to performance measurement.

A popular tool, the performance dashboard, allows work teams to see desktop information in relation to the accomplishment of agreed upon measures (Meyer, 1994). Often, these systems are ingrained into the organization via software that collects information. Work teams are then given reports that communicate the performance of the team. The downside of dashboard systems is that managers have a tendency to rely on the dashboard solely, giving less importance to communication and coaching.

One of the more robust performance measurement systems, the balanced scorecard, was developed by two Harvard researchers in the early 1990s. The balanced scorecard strives to shift
traditional focus on financial measures of performance to a more balanced approach (Kaplan & Norton, 1992). The methodology states that measures from different areas of the organization drive financial measures. When using the balanced scorecard, work teams devise measures from the following four perspectives: (a) financial, (b) customer, (c) business processes, and (d) learning and growth. Financial measures should help answer the question, “How do we look to our shareholders?” Customer measures should help answer the question, “How do customers view us?” Business process measures answer the question, “What must we internally excel in?” Learning and growth measures should help answer the question, “What tools and skills do our people need?” Balanced scorecard theory states that when an organization excels at giving employees the needed skills and creates efficient and effective processes, the organization’s customers notice and financial performance is improved.

A method named target was developed to psychometrically address performance measurement (Fowlkes, Lane, Salas, Franz, & Oser, 1994). TARGET is an acronym for targeted acceptable responses to generated events or tasks. A study was conducted with a military aircrew to test the target model. Findings suggested a high inter-observer reliability and internal consistency. While the target model might be useful in situations where tasks are repetitive, it is unlikely that the model would work for novel problem solving or new tasks.

Mendibil and Macbryde (2005) created the team performance measurement system (TPMS) and conducted interviews about interest in the model, but did not actually test the system. The system does not include new methods for measuring performance, but the TPMS provides a thorough step-by-step process for practitioners.

Performance measurement should measure what the organization values, should include the team in the measure creation process, should measure what is important to the team, and
should be used to help the team mature and grow. Organizations who measure extensively must also be mindful of providing feedback, frequent communication, and periodically evaluating the relevance of the system.

Performance Appraisal

Most jobs are accompanied by a review of recent past performance. Performance appraisals, or performance reviews, are the method by which organizations relay performance and behavioral data back to employees and work teams (Beyerlein & Harris, 2004). Many organizations have a formalized process for performance appraisal while some organizations retain an informal approach. Performance appraisals are often the occasion for managers to provide salary increases, promotions, and improvement plans to employees and teams (Montague, 2007). The performance appraisal is also often the event that addresses training needs and communicates how daily tasks affect team and organizational performance. Whatever appraisal approach is selected, organizations must consider the method for appraising team performance and individual performance, communicating performance expectations, and making sure the appraisal is timely enough to capture relevant performance.

All performance appraisals should be conducted with the following materials: (a) job descriptions, (b) stated goals and objectives, and (c) clear standards of performance (Montague 2007). The performance appraisal should not be the first time the employees or team have been exposed to these elements. In fact, the performance appraisal should be the formalized event that continues ongoing communication about the requirements of the job, what is expected, and what the employee and team is striving to achieve.
Traditionally, performance appraisal has been a three-step process between the employee and manager: (a) annual goal setting, (b) monitoring and documenting of performance throughout the year, and (c) annual performance review (Hitchcock & Willard, 1995). This process, though widely used, is built upon faulty assumptions in work team settings. First, this process assumes that the manager is the best person to assess the employee’s performance. Also, this process assumes that managers are the only ones capable of assessing the performance of team members. Both assumptions are not necessarily true in a work team setting. In fact, when team managers become coaches and the team becomes more autonomous, the manager may be the least informed about the daily activities, competence, and performance of the contributions of individual team members. Another issue inherent with traditional performance appraisal is that the review is a way for managers to formally document issues in case the employee needs to be terminated in the future. Finally, the traditional performance review is commonly viewed as a way to rank employees based upon perceived contribution. Ranking employees is counterpoint to the idea of work teams and the interdependence needed for teams to be successful.

Individuals are often still the unit of analysis when examining team-based performance appraisal. What is called into question is who appraises whom and how the appraisal is used. Appraisals can be used for development, evaluation, or a combination of the two. Practitioners should understand what the performance criteria are and how the appraisal process needs to be constructed.

A thorough performance appraisal should include the following elements: (a) an assessment of employee skills, behaviors, and competencies, (b) work output performance, (c) an evaluation of how individual performance fits within a larger context of team performance or organizational performance, (d) an assessment of how performance fits the needs of
stakeholders, and (e) determination of performance versus baseline measures and goal attainment (Mohrman et al., 1995). The overall goal from the organization’s standpoint is to discern the value of performance by determining the direction of performance (good or bad) and the magnitude of performance (strong or weak). Also, individuals and teams should be held accountable for performance that is controllable by the performers. When performers are held accountable for aspects of performance outside of their control, frustration and lack of engagement are often present. These conditions, for team-based appraisals, appear close to the traditional performance review, but differ in that input is often gathered from multiple sources.

Many team-based performance appraisals use information gathered from peers in order to determine how the employee is performing (Mohrman et al., 1995). This is done to provide a more accurate assessment of how the employee performs on a daily basis. Another benefit of peer review is the reduction of social loafing. Social loafing is a conscious or unconscious avoidance of responsibility and effort while continuing to share in team rewards (Scott & Einstein, 2001). When peer input is included in the individual’s performance appraisal, the appraisal can include an accurate holistic view of performance.

Peer review is beneficial in theory, but putting this practice into reality is much more difficult. Often, peers are reluctant to offer good or bad information about peer performance (Morhman et al., 1995). Many employees fear damaging relationships or expect a lack of anonymity. When objective measures are absent, peers can give false information for the following purposes: (a) good reviews in turn for good reviews, (b) bad reviews to make self-performance appear more impressive, and (c) average reviews as a result of central tendency bias. Also, peers need training in giving valid performance information as many peers have never
held supervisory positions. If managers train the team and design an objective system for appraisal peer review can be an effective resource.

Another method for collecting information for performance appraisals is a 360-degree feedback system. In this method, performance information is gathered from the employee and is contrasted with information collected from the employee’s manager, peers, and reports. Maurer, Raju, and Collins (1998) studied the measurement equivalence of peers and reports to see how different groups (peers and reports) affect overall ratings. Participants rated peers and managers on a 7-item teambuilding scale that included: (a) assists others, (b) builds complementary goals, (c) sacrifices personal goals, (d) meet commitments, (e) gives relevant feedback, (f) shows appreciation for team achievement, and (g) contributes ideas. After calibrating scores, the researchers found that peers and reports did not significantly differ and that, when replicated, similar results occurred. The results may be difficult to apply in all settings because of the unique nature of each team and organization.

In a 360-degree feedback system, the employee is asked to provide a self-rating on performance. The validity of self-ratings is questionable as employees often inflate scores to appear competent or deflate scores to leave room for improvement. Also, impression management is called into question as employees may not want to appear too confident or wish for others to rate them higher than the self-rating. Miller and Cardy (2000) conducted a study to assess how employees high in self-monitoring rated themselves versus employees who were low in self-monitoring. Self-monitoring was operationalized as the ability to adapt behavior based on perceived social cues, and each participant was tested using a self-monitoring instrument. The hypothesis that high self-monitors would have higher self-ratings than low self-monitors was only partially supported. They found, however, that greater convergence occurred between self,
peers, and supervisors when the participant was low in self-monitoring. The findings were present because low self-monitors are likely giving the same impression to everyone where high self-monitors are adapting behavior to meet perceived needs. Knowing the personality of the employee is important when accounting for self-ratings in a 360-degree feedback system.

When implementing a 360-degree feedback system into a performance appraisal system, Pollack and Pollack (1996) suggest that managers should go through the process before the team in order to demonstrate managerial support and to demystify the process. Some 360-degree feedback includes customer information, but Pollack and Pollack disagree with the inclusion of customer feedback in the 360. The reasons for excluding customers include: (a) customer ability to judge performance against products and services, (b) lack of insight into how instead of what, (c) the need for separate questionnaires for customers, (d) the perception that evaluation means that the employee is underperforming, and (e) the anonymity of the customer. Considerations such as who is included as raters and who is included as a participant are important when designing the performance appraisal.

Much debate exists about the ability of 360-degree feedback to validly appraise performance, and many believe that 360s should be confined to development purposes only (Johnson, 2004). For 360s to be included in the performance appraisal process, Johnson argues that the following conditions must be met: (a) feedback must be based on explicitly clear criteria, (b) the instrument must be customized to the participant group, (c) qualitative feedback should be included, and (d) the instrument should be used to create a culture of open communication and trust. Goodge (2005) agrees with the concepts presented above and adds that 360s should not be used to rate employees against one another but to develop critical skills.
Scott and Einstein (2001) do not believe that employees should be rated by all members of the team for all types of performance. Also, they believe that each team member should be assessed and then the team should receive a work team assessment. Using this method, ratings are divided between outcomes, behaviors, and competencies. Certain groups are able to provide ratings for team members, and the use of the ratings should be identified between development and appraisal. Individuals are rated for development purposes by the entire system (self, manager, and team) on behaviors and competencies. Outcomes and evaluation are handled solely by the manager. The team assessment differs slightly by adding customers, if applicable, to outcomes measures.

The performance appraisal is a highly personal and emotionally charged experience for many employees. Honest and clear communication, an objective system, and a proper design for capturing performance data are required for appraising performance. The appraisal should be consistent with the goal setting system and the method of measuring performance.

Team Design

When organizations implement or employ work teams, the process of designing the teams must be carefully thought out and planned in order to be successful. Work teams require more than a decree that teams are now the predominant feature of the organizational design. Wageman (2001) outlines eleven design features for teams: (a) working team, (b) clear direction, (c) appropriate size, (d) skill diversity, (e) task interdependence, (f) challenging tasks, (g) strategic norms, (h) reward and recognition, (i) planning information, (j) training, and (k) available resources. Wageman’s list is exhaustive, but many elements of the design features appear elsewhere (i.e. reward, training) in the present model making an abbreviated list of design
features more appropriate. When designing work teams, the organization must decide team structure and autonomy, the desired composition and membership of the team, the skills needed to perform in a team setting, and the assimilation process for current and new team members (Beyerlein & Harris, 2004). The design list presented by Beyerlein and Harris will be applied for the current study.

The shift to work teams presents managers with a set of issues that are likely to be new and different than traditional managerial duties. Traditional managers are responsible for task breakdown and allocation, determining work processes, allocating resources, and synthesizing work into larger outputs (Mohrman et al., 1995). Also, managers have traditionally been responsible for determining and administering punishment while determining performance standards and setting goals. Work team implementation requires a paradigm shift in respect to the role of managers as organizations must consider how capable the teams are in autonomously executing the needs of the team. Managers in the team environment are charged with three major tasks: (a) leadership, (b) coaching, and (c) managing change (Mohrman et al., 1995). Leadership refers to setting the direction for the team while integrating the team into the organization’s strategy. Coaching occurs when managers assist teams in learning to help themselves instead of relying on the manager to solve all problems. Finally, managers need to support teams during changes by providing information and relaying feedback from the team to upper management.

Work teams do not exist as autonomous units overnight, and the transition can be slow and marred with mistakes and learning curves. Therefore, the manager must slowly transition to more of a coaching role as the team becomes capable of acting autonomously (Beyerlein & Harris, 2004). This transition is often hard for managers because of the appearance of working
themselves out of a job. Beyerlein and Harris (2004) outline the steps of leader role transition: (a) leader as director, (b) leader as director of decision making and communication, (c) leader as decision maker with communication occurring within the team, (d) leader becomes a member of the team, and (e) leader becomes coach. Beyerlein and Harris proceed to operationally define the leader role transition by creating the new job responsibilities of managers and supervisors. Managers and supervisors, under a work team setting, continue to manage immature teams while transitioning to the following roles as the team matures: (a) coach, (b) facilitator, (c) sponsor, and (d) starpoint. Many managers and supervisors serve multiple roles from the list above. Coaches, as discussed earlier, provide mentoring and problem solving advice. Wageman (2001) is more proactive about the role of coaching, defining it as direct interactions to shape processes and behaviors for increased performance. Facilitators work to improve interpersonal processes and often lead meetings and resolve conflict. Sponsors are similar to coaches from an advisory capacity except that they retain no formal authority over the team. Finally, starpoints become the team member representative on a specific issue, such as safety. In the case of safety, starpoints would be the member of the organization’s safety team in order to share knowledge, discuss trends, and align all work teams’ efforts on safety. The starpoint role makes the manager the team’s expert on that issue.

Part of the design process is how much autonomy the team is granted. New work teams are unable to handle full autonomy, so the move to self-management should be gradual and incremental. As teams mature and move toward self-management, the organization must decide how much autonomy is desired for each team (Hackman, 2002). Once the decision is made on how much autonomy should be transferred, the team and its manager begin the journey to self-management. The organization must prepare for enabling the work team to own its processes by
providing relevant training and resources. For example, turning a team loose to order supplies without providing the team a copy of the budget or the knowledge of how to work within the budget could prove disastrous.

Wageman (2001) studied the effects of team design and coaching behaviors on the effectiveness of work teams. Team effectiveness was defined as task performance, team interpersonal processes, and individual satisfaction. The study consisted of self-managed teams split between high-performing teams and low-performing teams. Findings of this study suggest that properly designed and well-coached teams are more likely to become self-managed. Organizations should decide upfront how autonomous the team should be and how the manager will be involved in the transition. Managers who have a clear picture of the new responsibilities of their job are more likely to support the teams than managers who fear the loss of power.

The next team design feature is the membership needs of the team, which consists of the size of the team and the diversity of individual members. Hackman (2002) believes that organizations make three common mistakes in regards to team membership: (a) believing that more members is better than fewer, (b) believing that homogeneous membership is desired to help the team get along, and (c) that teams will automatically understand the need for interpersonal relationships. So, teams are often staffed with the technical expertise to achieve the task, but often, the team is designed poorly resulting in the inability to work together.

While researchers commonly argue over the optimal work team size, Hackman (2002) offers that the team should be staffed with enough people to perform well, but not too many that it bogs down decision making, information flow, and process. A common concern of work team size is the inclusion of too many members which leads to overlapping roles, inactivity, and social loafing. Ultimately, due to the exponential amount of relationships to be maintained with
member increases, Hackman thinks that teams should be staffed with no more than six people. Organizations should analyze the work to be accomplished and staff the team accordingly. Campion, Medsker, and Higgs (1993) found that more team members led to increased productivity, satisfaction, and manager perception of performance. These findings are hard to accept in light of the logic that more team members would mean increased performance. If this holds true, organizations would be advised to hire a multitude of workers with the thought that productivity would follow. There are serious costs associated with that recommendation, and the correct number of team members probably exists somewhere at the top of an inverted u-shaped curve. Too few members lead to a lack of productivity and revenue while too many members reduce efficiency and profit.

Once the appropriate number of team members is determined, the organization must decide whether the team or the manager will select new team members. Selection of new team members is often a duty for more experienced teams, with managers handling selection for newer teams. Spotts and Chelte (2005) found that teams who own the selection function are more vested in the team’s processes and outcomes.

An early approach to team staffing was to hire homogeneous sets of people in the hopes that similar people would be more harmonious. On the surface, that is true, but without differing backgrounds, skills, experiences, and personalities, the team often suffers when having to solve novel problems or create new processes (Hackman, 2002). That is not to suggest, however, that completely heterogeneous teams are the best avenue. In reality, selecting team members is more of a trial and error art than a perfected science. Organizations and managers should also address the reality that, as teams spend time together, the mindset of the team will come together over the
shared direction of the team. The goal is to keep a balance between a common vision and the ability of the team to continue to innovate and be creative.

Campion, Medsker, and Higgs (1993) studied the effects of team heterogeneity on team effectiveness and found little to no effect on team outcomes. The authors admit that the ability of heterogeneity to adequately be studied was hindered by the sample composition. The study was comprised completely of females, which limits the generalization of results.

Diversity was studied among functional backgrounds, race, gender, tenure, and age to determine the impact on task conflict and emotional conflict (Pelled, Eisenhardt, and Xin, 1999). Task conflict occurs when parties disagree on how to accomplish a task. Emotional conflict occurs when people disagree due to interpersonal differences. Functional backgrounds (marketing, accounting, or engineering) and tenure were hypothesized to fuel task-related conflict while race, gender, and age were hypothesized to cause more emotional conflict. Different functional backgrounds were found to drive task conflict while tenure did not have an effect. Race and age were found to drive emotional conflict while gender did not have a significant effect.

Diversity findings should inform staffing procedures that draw from an existing pool of talent. Organizations are advised to hire based on job skills based on the legal implications of not hiring an applicant due to a team need based solely on demographics.

As organizations adopt work teams, management should understand that team members will need knowledge, skills, and abilities (KSAs) that are markedly different than traditional work settings require. The human resource department should collaborate with operations in order to identify the new KSAs (Klimoski & Zukin, 1999).
Mohrman et al. (1995) suggest that there are six skill categories that teams must contain to be successful: (a) technical, (b) cross-training, (c) interpersonal and conflict resolution, (d) decision making, (e) learning, and (f) leadership. Many individuals come to the team with the necessary technical competence to do what the job requires. Team settings often call for the other five skills which can be new for many employees. The ability to learn new processes and skills and to cross-train in order to cover staffing holes draws employees out of a singular mindset. Also, as work teams mature and move toward self-management, the need for team members to provide leadership will increase.

Hackman (2002) believes that the shift to teams requires attention to the interpersonal skills needed to be a productive team member. There are some people who do not function well in team settings or lack the ability to work effectively with others. Managers should determine whether training can eliminate this deficiency or if the person is of better service as a solo performer. The latter option can cause problems in that the team may need the talents of the excluded member, or other team members see that if they are disruptive, they can be moved out of the team as well. Teams must be careful in labeling disruptive employees because some differences may be attributed to aspects such as different functional areas (accounting versus marketing). Excluding a functional area in order to reduce conflict may result in a less than ideal solution or product.

Stevens and Campion (1994) devised a model of the KSAs needed for effective teamwork. The model includes the following five components: (a) conflict resolution, (b) collaborative problem solving, (c) communication, (d) goal setting and performance management, and (e) planning and task coordination. The first three areas are considered to be interpersonal KSAs where the final two are considered self-management KSAs. The authors
propose that the teamwork KSAs impact team-based organizations in the areas of: (a) selection, (b) training, (c) performance appraisal, (d) career development, (e) compensation, and (f) job analysis. This model is thorough in dividing interpersonal skills into actionable sections while also focusing on KSAs that lead to team self-management.

Stevens and Campion (1999) tested their KSA model from 1994 by developing a selection test for teams. The test was hypothesized to positively correlate to traditional aptitude tests and individual performance while providing incremental validity to traditional aptitude tests. The study and a replication study provided evidence for the support of the hypotheses. A test of teamwork KSAs for selection purposes would need to be supported by explicit evidence that teamwork is critical to the job in order to make the test legally defensible.

When a work team is formed, many sets of knowledge, skills, and abilities are brought together to perform the stated objectives of the team. Managers who staff teams should understand what the tasks will require in regards to the mix of people selected. Also, the KSAs needed should be updated as the needs of the tasks change over time.

Team design also addresses how members are assimilated into the team through role clarity, team charters, and team norms. Teams use these design tools to further define their structure, keep team members focused on what is important, and how to introduce new team members into the team.

Clarifying the roles of team members is important to ensure efficiency across all parts of the team (Deeter-Schmelz, 1997). When employees have a clear role to perform, energy can be focused on fulfilling the tasks at hand. Also, clarified roles keeps the team, especially newer work teams, from duplicating efforts. When roles are not clarified, communication can impede
the interpersonal skills needed for teamwork. Finally, clear roles allow team members to excel in areas that are natural while also identifying training and development opportunities.

Some organizations employ team charters to help work teams understand their purpose while expressing what will be important to the team. A team charter is a document that outlines the agreements the team has made for how it will be accountable to each other and stakeholders (Beyelein & Harris, 2004). Often, team norms are included in the charter but will be discussed later in this section. The charter should state what the team wants to accomplish, the importance of the accomplishments, and how the team will operate. The charter should also include a section on the authority and responsibilities of the team. The process of developing the charter can be as rewarding for the team members as the finalized document. Many team members will report that the chartering process is the first time anyone has asked them these questions.

Mohrman et al. (1995) call for managers to oversee the chartering process but not to tell the teams how to develop the charter. Mohrman et al. (1995) also provide a sample team charter format that includes the following components: (a) organizational goals, (b) business-unit goals, (c) team mission, (d) team goals, (e) stakeholders, (f) resources, (g) authority, (h) integration with other teams, (i) escalation paths, and (j) review processes. This is an exhaustive list, but teams should choose the elements that make the most sense and that will drive performance. Finally, the team should continually update the charter as business conditions change.

Team norms are the standards of behavior that are expected of all team members (Beyerlein & Harris, 2004). Norms exist for all interpersonal relationships that exist over time, but team norms are developed and recorded by the team in an effort to formalize the behaviors needed to aid performance. Team norms are different for every team and should address the unique needs of the team (Hackman, 2002). As with team chartering, the process of developing
norms leads to discussions that can help teams mature. Team norms help provide boundaries and structure for the team by communicating to all what is important and valued by the team (Deeter-Schmelz, 1997). The norms should be aligned with the purpose of the team so productive behaviors are reinforced. Deeter-Schmelz (1997) outlined three types of norms typical to most work teams: (a) norms of flexibility, (b) norms of information exchange, and (c) norms of solidarity. While these areas are likely to be addressed in some format by the team, it is inadvisable for managers to dictate what the norms should be for the team. Norms should be different for every team, even those who perform similar tasks and duties.

The consideration given to team design should take into account the leader role and team autonomy levels, the team’s membership, the skills needed, and the tools needed for assimilation. Implementing work teams introduces new tasks, responsibilities, and roles into the organization. Top management will need to exhibit patience and provide the necessary resources and training during the design phase.

Communication and Information Systems

When work is divided among team members, the need for communication and access to information becomes a concern for the organization. A distinction should be made between communication systems and information systems. Communication systems are the methods and vehicles employees use to transmit information, while information systems represent the infrastructure required for employees to access information to more effectively perform tasks (Beyerlein & Harris, 2004). Many organizations report the need to communicate more effectively, and many team interventions are aimed at improving communication amongst team members. This section will not address intra-team communication but will examine what the organization can do to support healthy and productive communication. The goal of this section is
Communication Systems

Organizations that use work teams must realize that communication is a vital component of work team success. As tasks are divided across the team, team members work different shifts, or team members work in different cities or countries, the need for effective and efficient communication exists. Brief mention of the needs of virtual or co-located work teams will be made, but the topic of virtual teams will be broached in the Physical Workspace section of this chapter. Organizations should provide resources to aid the team in communicating with one another, but it is also imperative that the organization establish standards, provide resources and guidance, and support constructive communication.

Members of work teams rely on a number of methods of communication with that number increasing with technological advances. Work team members attend face to face meetings and virtual meetings, use e-mail and the Internet, access internal networks, and use phone technologies to name a few (Beyerlein & Harris, 2004). More specifically some team members use video and teleconferencing to link distributed members into one virtual space (Mittleman & Briggs, 1999). Also, many teams employ electronic bulletin boards, shared network servers, and shared calendars to communicate up to date information.

As work teams continue to proliferate, the need for sophisticated communication tools exists. Mittleman and Briggs (1999) outline four benefits that an effective team communication support system provide: (a) effective collection and presentation of materials, (b) proper vehicles for communication, (c) efficient problem-solving and decision making, and (d) process tools via
prioritizing and assigning tasks. These four benefits become more necessary if the long-term goal for the team is to achieve a self-managed level. Communication tools allow teams to better own processes, make decisions, track progress, and maintain relationships.

Just as the nature of the work to be accomplished should drive the team’s design, the task type should lead to tailored communication resources, as different teams may need different tools to communicate effectively. A production team that is located in the same building will probably need automation tools, reporting tools, and problem solving communication resources (Mittleman & Briggs, 1999). The needs of an executive team would look very different and would center on wireless technology, groupware, and maximum connectivity. A corporate communications strategy that provides everyone with the same technology as the executive leadership would likely be seen as a magnanimous gesture by leadership. This strategy could still lead to frustration for the production team if the tools did not help members communicate needed information in a useful format. Therefore, the work setting and task type should be taken into account when designing the communications support system.

Managers and supervisors should consider where the team members are located and how the team should communicate. Fletcher and Major (2006) compared the effectiveness of audio only, face to face, and shared workspace interactions. Shared workspace can include a repository for saving changes to work and passing it to the next person or by working together virtually on the same computer screen. Face to face interaction led to higher levels of reported teamwork behaviors and perceived performance. Shared workspace provided higher self-reports than audio alone and yielded fewer errors than the audio condition. The sample was comprised of undergraduates who were unfamiliar with one another before the study. The lack of familiarity might influence the need for nonverbal communication in order to perform tasks at a high level.
People who do not know each other do not have familiar nonverbal cues to use in discerning meaning. Nonverbal cues, such as gestures or facial expressions, often provide increased detail that is unavailable in the audio only condition. The findings in this study are of importance because many team members who communicate from distance may not know one another and may miss details or perceive miscommunication due to the support system.

When work teams are implemented, a significant change in organizational design occurs. The change in design also affects the daily routine of workers leading to apprehension and resistance. Douglas, Martin, and Krapels (2006) studied the effectiveness of methods used in informing employees about the transition to work teams. Methods of communication were operationalized as hard or soft influence techniques. Hard influence techniques include: (a) pressuring, (b) demanding, (c) ordering, (d) coalition building, and (e) forcing. Soft techniques include: (a) managing impressions, (b) requests, (c) inquiring, (d) consulting, and (e) providing facts and data. When soft techniques were presented by management, the teams reported the transition to be more effective. Also, when teams were included in the communication process ongoing participation increased. The findings apply to the transition to work teams but may also have implications beyond the transition period. A robust communication support system engages the team as an active participant in information sharing.

From a support system perspective, the organization should consider who communicates to the team about organizational updates or critical information. Work team members are more likely to report communication as more effective if it comes from immediate supervisors as opposed to an executive (Grice, Gallois, Jones, Paulsen, & Callan, 2006). A major factor in the perceived effectiveness is that supervisors are more trustworthy due to more access and that supervisors are part of the in-group. The need to understand who is in the in-group is important.
in light of the fact that many employees are on several teams at any given time. Managers and supervisors should have a working knowledge of who comprises the in-group. For instance, if a project team consists of two members from accounting, marketing, and operations, will the two members from the same department communicate more frequently and more effectively than those who work in different departments? Grice et al. (2006) studied this question in a public hospital setting and found that team members reported sending the same amount of communication to everyone on the team. However, the same team members reported receiving less communication from different departments than from members of the same department. The findings from this study show that managing membership in multiple teams surfaces issues that can impede work team performance.

As work teams continue to mature and become more autonomous, the amount of meetings tends to increase, and a common complaint of employees is the number of meetings to attend. The attendance requirement is most likely not to blame for the complaint; the complaint is a product of the ineffectiveness of the meetings attended (Francisco, 2007). Organizations should employ standards that address meeting effectiveness and train work teams that are new to increased meetings on the standards. Francisco (2007) created a three step approach to facilitating effective meetings: (a) preparation, (b) conducting and documenting the meeting, (c) follow up. Preparation includes asking whether the meeting is necessary in the first place. If the meeting is necessary, then the meeting organizer should prepare and distribute an agenda, invite the right people, and ensure a meeting time and place. During the meeting, the facilitator should keep the meeting on track and aligned with the agenda. Also, an attendee should be designated to document important details and action items that occur during the meeting. Follow up is critical to the success of any meeting because it sets the expectation that meetings constitute real work.
The meeting organizer should collect the meetings and action items and continue to tack progress towards stated objectives.

Another emergent barrier to effective communication is the advent of electronic mail, or e-mail. E-mail is an effective medium for quick communication, but it is often impersonal and leaves room for misinterpretation and miscommunication. Johnson (2002) developed a list of reasons why e-mail has a tendency to increase conflict among coworkers. First, the sender sends the whole message without any reaction from the receiver. Also, the content of the e-mail is the only context the receiver can use which discards the ability to use nonverbal communication. Third, recipients have different approaches to the appropriate length of e-mail messages and responses. A short message or non-response may be taken out of context by either party. Finally, as recipients deliberate on the content of a response, they become more resolute on the content of the response. Pankoke-Babatz and Jeffery (2002) suggest that organizations train employees about the impact of e-mail in regards to privacy concerns, passive aggressive possibilities for conflict, and the lack of control after sending the message. The issues listed above highlight the need for organizations to develop company wide standards in regards to communication tools.

A relatively new set of communication standards is called netiquette (Pankoke-Babatz & Jeffery, 2002). Netiquette refers to documented behavioral norms and conventions found when using the Internet. Organizations should address what is appropriate and develop standards for Internet usage.

Information Systems

As an organization implements work teams and decides how the individual teams should communicate inside the team and across teams, top leadership will need to understand the
technological infrastructure necessary for teams. This understanding is due to the fact that the information technology (IT) department is likely to be affected by any software or hardware implementation. The development of strong relationships with the IT department can increase efficiency, reduce down times, and make IT a partner of the work team.

Bikson, Cohen, and Mankin (1999) believe that information is integral in work team success because information is the key input that teams use to make decisions, increase knowledge, and provide solutions. The authors also believe that autonomous teams share the characteristics of knowledge workers regardless of the type of work being performed. The technology and systems that allow access to information then becomes vital to the long term success of work teams in the organization.

Beyerlein and Harris (2004) define information systems as the methods employees use to access and gain task related information. Bikson et al. (1999) refer to information systems as methods that allow for communication and access to the following: (a) internal stakeholders or team members, (b) external stakeholders such as other teams, customers, or suppliers, (c) applications for analytics and task information, and (d) performance tracking. When teams have access to relevant information, the team becomes capable of becoming owners of processes and outcomes. Access to company policy, strategy information, or historical data can add to the rationale for a robust information system (Hackman, 2002).

A challenge of designing an information system for an organization that implements work teams is that team-based work demands a shift to information sharing (Mohrman et al., 1995). This information sharing requires access to information on a two-way basis with information available vertically for teams. This means that work teams may have access to information traditionally reserved for upper management. Therefore, upper management must
make a commitment to willingly share information that the team needs. Managers and supervisors then become the conduit for information to flow from upper management to the front line and vice versa.

The need to share previously secret information is just one challenge to redesigning an information system that supports team-based work. Hackman (2002) outlined the challenges associated with team-based information systems: (a) determining what information should still be off limits, (b) ensuring that everyone with access uses the same language, and (c) determining what information is necessary. The final component is especially common as users are often excited to gain access to as much data as possible. Hackman suggests that too much information can be as detrimental as too little information because too much information can disguise critical trends. As with other support systems, the information system should be designed around the work to be accomplished and the needs of the different teams.

The rapid advance of technology has led to increased flexibility and added capabilities for organizations to offer work teams. One such advance that improves the ability for work teams to collaborate is groupware (Bikson et al., 1999). While groupware consists of technologies previously discussed, such as e-mail, it also consists of shared applications that allow for incremental work to be completed on a project (Chester, 2005). Tullar, Kaiser, and Balthazard (1998) defined the technological needs of team members based on the work being done. Team members doing individual work may need a software package with access to word processing, databases, presentations, and spreadsheets. As teams begin to coordinate work among team members the need for e-mail, scheduling, project management, and workflow tools emerge. Finally, some technologies such as teleconferencing, electronic brainstorming, and electronic bulletin boards assist the team in creating a dynamic to efficiently communicate.
Chester (2005) developed a list of characteristics that users should consider when developing collaborative information systems. The list includes the following considerations: (a) timeliness, (b) physical location of team members, (c) private or team access, (d) read-only versus read-write, and (e) single versus multiple technologies. Time considerations refer to whether employees are working at the same time or if users will access information as different points of the task. Location means that the team members are in one building, different locations, or even different countries. Some information should be classified as sensitive and be reserved for appropriate users. Information systems should also address whether users can add to the information provided or if the access should be restricted to read-only status. Finally, many technologies are capable of being integrated to speak to one another and give the user multiple perspectives when analyzing data. The design should take into account not only the team’s information needs, but also the needs of the organization.

For work teams to move towards autonomy, they will need support on communicating effectively and be provided with an information system that allows access to critical information. The organization must create a strategy that provides each team with the tools to succeed while building an infrastructure that is aligned and integrated for overall success.

Culture

Organizational culture is one of the most written about, yet misunderstood, aspects of organizational life. Perhaps some of the confusion centers on the multiple definitions used by researchers to operationalize the construct. Glisson and James (2002) define organizational culture as the normative beliefs and shared behavioral expectations in an organization. Further, culture is the way work is approached, the ways for assimilating new employees, and the way
things are done in the organization. Beyerlein and Harris (2004) offer a similar definition by describing culture as the shared organizational values, assumptions, and norms that guide how work is performed. As an example, one would not expect to find a luxurious employee lounge in the middle of a Wal-Mart because the culture of Wal-Mart is centered on passing on savings to customers. Therefore, the activities, or how the work is done, is focused on cost savings. Culture is often derived from the leader or founder of the organization and drives the strategy creation process.

One of the major challenges of implementing work teams is the cultural change required to support a different approach to completing work. The cultural change to supporting work teams is difficult because the basic assumption of the organization, how work is completed, is being altered (Mohrman et al., 1995). Work team implementation requires changes to many of the organization’s processes, structures, and systems which can be lengthy and impact the entire organization. The entire organization is involved even if the work teams are located on the frontline because human resources, accounting, marketing, and especially managers and leaders have to change aspects of their work.

The transition to work teams is often a major challenge to leaders and managers who have to change basic assumptions about the traditional roles associated with supervision. Managers and leaders must shift from a command and control style to a facilitative, coaching style (McHugh & Bennett, 1999). The subject of leadership as a support function will be addressed later in this chapter.

Work teams, depending on the work to be done, can thrive under different cultures. Sundstrom et al. (1990) offer the example that product development teams look to organizational values and culture more than ongoing production teams because previous experience and
repetition do not necessarily work for product development teams. Just as teams look for guidance, the culture also has an impact on the attitudes, perceptions and behaviors of employees (Glisson & James, 2002). The organizational culture of work teams should be created by leadership and further shaped by the frontline employees.

Examining each of the types of cultures available to organizations is beyond the scope of this study, but it is useful to examine two prominent cultures: (a) learning cultures and (b) collaborative cultures. A learning culture is useful in the transition to autonomous work teams, but learning cultures are also invaluable when innovation is needed. While traditional organizations relied on leaders to supply learning opportunities, work teams require tailored learning opportunities (Mohrman, 2002). The learning culture is based on the fact that leaders can identify learning opportunities, but employees must be motivated to pursue learning. One of the factors in creating a learning culture is the idea that learning must be valued by all levels of the organization. If a manager tells a work team that learning is important, but the organization does not reward or recognize learning, then the culture does not support learning.

Another component of building a learning culture resides in creating a safe environment for learning (Edmondson, Bohmer, & Pisano, 2001). Learning is often a trial and error process that comes with a learning curve. Cultures that have historically punished slowed production or mistakes will have a hard time supporting learning. Learning new processes, ideas, or concepts is vital to the notion of innovation. When leadership continues to push for the status quo to meet old production numbers, the culture is shaped in the opposition of learning and innovation. For a true culture of learning to develop, individuals must be able to learn in a way that increases capabilities and capacities while building the knowledge that the organization will need in the future.
One of the aims of a work team implementation is to build a collaborative culture. A collaborative culture supports the behaviors that are needed to make teams successful. This point is where organizations often miss the mark in making work teams a success. Building a collaborative culture requires a deep commitment to supporting teams and not an environment where leadership does one thing and employees are expected to do another.

Gratton and Erickson (2007) developed a list of factors that build a collaborative culture and support work teams: (a) signature relationship practices, (b) modeling of desired behaviors, (c) a gift culture, (d) sense of community, (e) team leads that are task and relationship oriented, and (f) heritage relationships. Signature relationship practices refer to investments that demonstrate a commitment to collaboration. Desired behaviors should be modeled by everyone in the organization without exception. Mentoring and coaching are at the heart of a gift culture, where leaders give the gift of their time and expertise to employees. A sense of community springs from alignment around common goals and strategies while being comfortable working with one another. When team leads are focused on accomplishing required tasks and building and maintaining relationships, the team sees that the work and working together are valued and important. Heritage relationships occur when employees who already familiar with one another are placed in the same work team. With change already abundant, many teams find it helpful to have some familiarity as a jumping off point.

Beyerlein and Harris (2004) contrast a collaborative culture with traditional cultures and developed a checklist of how an organization knows when a collaborative culture is in place. In a collaborative culture, time and energy is spent looking for potential partners. Problem solving is ongoing and spontaneous with a group of the appropriate individuals included. Collaboration and cooperation is efficient and habitual with a deep commitment made to pull together to achieve
something of significance. For the organization to consider themselves to have a collaborative culture, the outcomes listed above should be in place.

Building a culture that supports work teams requires a full understanding that many cultures exist under the umbrella of the larger organizational culture (Beyerlein & Harris, 2004). Each work team, department, division, or business unit develops a culture that resides within the organizational culture. Also, age groups, genders, races, or skill sets may also develop subcultures in the organization. In order to provide an organizational culture that supports work teams, leaders in the organization must be aware of the subcultures that exist. Once awareness exists, the leadership must align different cultures to reduce potential sources of conflict. Leadership should explore subcultures to take advantages of hidden opportunities that exist for new processes, business ideas, or innovations.

Culture is present in every organization and difficult to change or amend. A long-term commitment is required from the organization to change cultures to support work teams. The same commitment is needed to maintain the culture needed for work teams to succeed. Leaders must work with everyone in the organization to create and shape the desired culture.

Training

Virtually every organization engages in some form of training. What differentiates organizations in regards to training is the presence of a systematic approach. A training system, as opposed to sporadic and unfocused training, is the method for identifying and obtaining the skills needed to perform at a higher level (Beyerlein & Harris, 2004). As work teams grow in popularity, organizations have a tendency to treat team training as an aggregate of individual training or as poorly designed teambuilding to help the team work together more effectively
Training for work teams must support shoring up skill deficiencies that affect the team dynamic or work outputs (Hackman, 2002).

One of the misconceptions of work team implementation is that skilled workers can be placed on a team and have positive outcomes occur naturally (Mohrman et al., 1995). Many times, skilled workers arrive on the team with preconceived notions of how work should be performed, no experience at working together for results, or no skill or interest at working in a team setting. In fact, skilled workers may resist team implementation simply due to the introduction of a new idea or concept.

When designing a training system that addresses team needs, one of the first places to start is with managerial training (Mohrman et al., 1995). Managing work teams is different than managing individuals, and supervisors will need training on how to manage the difference. Also, managers will be asked to be coaches and facilitators instead of commanders and controllers. This shift to a coaching role means that managers will need training on the requirements of their new roles as managers often resist the implementation of work teams for a fear of loss of power. Training for managers should address the big picture of the initiative and give managers a look at the strategic picture surrounding work teams. Many organizations use external coaches to assist managers in the transition to a more facilitative role. Organizations should not underestimate the challenge of changing the prevailing management style and should address the challenge through a systematic training program.

The training system developed for teams should follow the same structure as a properly designed training system in any organization. Training systems should be comprised of the following three steps with the third step feeding back into the first for a continual loop: (a) needs assessment, (b) design and delivery, and (c) evaluation (Stevens & Yarish, 1999).
Training Needs Assessment

A needs assessment for training is the process of finding out if the needs, objectives, and issues of the organization can be addressed by training (Arthur Jr., Bennett Jr., Edens, & Bell, 2003). A needs assessment should be conducted before any in-depth training programs are implemented. The process of conducting a needs assessment contains the following three steps: (a) organizational analysis, (b) task analysis, and (c) individual or team analysis (Stevens & Yarish, 1999; Arthur Jr. et al., 2003).

The organizational analysis serves to ask what objectives will be addressed through training and whether the organization has the capability to deliver the training, whether the training exists, and if the training will need to be procured from outside the organization. Often, organizations use climate surveys or focus groups to help understand the needs and the barriers to effective training. Leaders should also assess how the training system will fit into the strategic objectives of the organization.

A task analysis addresses what the employee will need in order to be successful on the job as well as what the training will cover. For many work teams, this analysis uncovers that a need exists for cross training or job rotation, but these types of training are costly and time consuming (Stevens & Yarish, 1999). The organization should address whether the return will exceed the investment in these training offerings. Task analyses should also address whether the team will need training on teamwork related skills in order to succeed.

The individual or team analysis investigates who or what team needs what specific training. Intact teams will require ongoing skill development, so the evaluation phase of training may inform how future training is determined. The needs assessment should be incorporated into the individual’s and teams’ performance appraisal and feedback to provide ample opportunities
for skill development. Some organizations use behavioral simulations or pencil and paper assessments to determine the needs of the workforce (Stevens & Yarish, 1999).

A comprehensive training needs assessment should provide information that is used in designing, delivering, and evaluating the subsequent training. The needs assessment should be conducted on an ongoing basis but should be conducted before any significant investment is made in the training system.

*Training Design and Delivery*

The design and delivery considerations of the training system should be made based upon the findings of the needs assessment. Training design refers to what is offered to team members for skill acquisition or development and how the training is configured to meet the needs of the trainees.

While course offerings may differ across organizations and teams, the majority of team training is designed to use experiential methods (Freedman & Leonard, 2002). Experiential methods include case studies, simulations, and exercises that actively include participants in the training. Learning occurs when participants learn new tools, share experiences with other participants, and see a connection back to the workplace. Experiential training is often in direct contrast to traditional classroom learning by eschewing lecturing and focusing on interactivity.

Kosaryzcki, Salas, Wilson, and DeRouin (2002) outlined three methods of training design: (a) information based, (b) demonstration based, and (c) practice based. Information-based training presents knowledge or facts in a presentation format. In demonstration based training, participants observe the correct method of performance and share learning on the best way to perform. Practice based training, which commonly includes role plays and simulations,
allows participants to receive experience in the performance as well as to receive feedback from the instructor and peers.

Arthur Jr. et al. (2003) offer a different classification of training options for work teams: (a) cognitive, (b) interpersonal, and (c) psychomotor. Cognitive training addresses the knowledge aspects of the job through problem solving, reflection, and idea generation. Interpersonal training is targeted to improve the interactions within the work team. Finally, psychomotor training is physical or manual activities that relate to movement and coordination.

For training to be successful, the organization must consider what skills and tools should be offered to employees and work teams. Stevens and Yarish (1999) provide a thorough list of possible training topics for work teams. Commonly offered topics include: (a) conflict management, (b) communication, (c) collaborative problem solving, (d) effective meetings, (e) goal setting, (f) performance measurement, (g) feedback, (h) team development, (i) workload equalization, and (j) leveraging individual differences. While this list is exhaustive, training offerings should be determined by each organization using the steps outlined in the training needs assessment section.

Once the curriculum has been designed based on the needs of the workforce, the organization must consider the vehicle for training delivery as well as who will be delivering the training (Stevens & Yarish, 1999). Stevens and Yarish (1999) suggest that six common vehicles are available to the organization: (a) videotape, (b) lecture, (c) on the job training, (d) role plays and activities, (e) self-assessments, and (f) computer aided instruction. The trend is toward more activities, assessments, and computer aided instruction. Every organization should tailor training delivery to the needs assessment, organizational strategy, and resource considerations.
A major decision in training delivery is whether or not to use in-house trainers or external vendors. There are five major factors that influence the decision: (a) availability of expertise, (b) costs, (c) time for development, (d) use of proprietary information, and (e) third party objectivity versus supervisor led training (Stevens & Yarish, 1999). The increase of training vendors in the marketplace should lead organizations to make sure that the vendor, if chosen, provides the resources, expertise, and materials advertised. Therefore, organizational leadership should carefully examine the issue of who delivers the training in order to ensure proper delivery.

Training Evaluation

The organization should conduct training evaluations as training occurs and when participants return back to work. The training evaluation consists of the collection of descriptive and judgmental information that is used to guide future decisions about training (Stevens & Yarish, 1999). Organizations often overlook, or minimize, the effort needed to sufficiently conduct, training evaluation. Training evaluation should be considered an ongoing component of the overall training system.

While many researchers disagree on the best method for evaluating training, Arthur Jr. et al. (2003) conducted a meta-analysis on the appropriate criteria for assessing the effectiveness of training. The meta-analysis examined four methods for evaluating training: (a) reactions, (b) learning, (c) behavioral, and (d) results. Reactions are collected by self-report measures to gauge participants’ attitudinal beliefs in the training. Information gathered in training may have some impact on employees’ thoughts toward training; reaction collection provides little information on the other three evaluation methods. Learning evaluation occurs after the training to measure the learning outcomes of the training but should not be confused with behavioral change. Behavioral
methods of evaluation examine on the job performance and are assessed by supervisor ratings or objective performance measures. Learning and behavioral methods of evaluation are different because learning may result in a more intelligent workforce while behavioral changes result in on the job changes. Finally, results methods of evaluation are the macro effects of training efforts shown through profits, productivity, or other organizational measures. The measurement of results commonly uses a utility analysis to determine the effect of training on organizational outcomes. While behavioral methods may seem the most appropriate, the evaluation should align the training objectives set out through the needs assessment.

Organizations often evaluate the training that comes from their corporate university, if one exists. Corporate universities are entities inside an organization that are responsible for developing, designing, and delivering training (Bober & Bartlett, 2004). Bober & Bartlett (2004) identified uses of evaluation data in corporate universities, but the uses are not exclusive to the corporate university setting and apply to the majority of training situations. The list of evaluation uses includes: (a) curriculum modifications, (b) instructor development or replacement, (c) identify barriers, (d) continue with vendors, (e) identify future training, (f) justify training programs, and (g) market training throughout the organization. However the organization chooses to evaluate their training, evaluators should carefully conduct the assessment based on predetermined objectives and use the information to continue the training needs assessment process.

Because training is seen more and more as a non-negotiable part of organizational life, training should be designed based on a solid needs assessment, delivered in the most appropriate method possible, and consistently evaluated to ensure quality. Training should be tailored to each
audience or work team and should be focused on improving a critical component of the team’s performance.

Knowledge Management

One of the major reasons for work team implementation is to create a learning organization that shares knowledge to create a competitive advantage (Mohrman et al., 1995). Knowledge management refers to the methods an organization uses to acquire, share, and use knowledge (Beyerlein & Harris, 2004). When team members share knowledge within the team and across teams, best practice information can be systematically used to provide the organization with significant process improvement and methods for optimizing performance.

Work teams allow organizations to share knowledge in multiple directions. For the true leveraging of knowledge to occur, work teams must engage in dialogue, collaboration, and a formalized way to capture, use, and retain new information (Mohrman et al., 1995). When knowledge is transferred effortlessly and efficiently, teams are able to respond to changing conditions, make informed decisions, and build a system for future productivity.

While the notion of knowledge management sounds beneficial, many organizations struggle with the implementation of a fully functioning knowledge management system. One reason is that new learning and knowledge creation is often created by trials and errors (Mohrman et al., 1995). Then, organizations must record the process and make improvements while retaining all team members’ unique experience that contributed to the new knowledge. This process, coupled with time needed for reflection, requires a cultural shift for many organizations. Organizations must truly value knowledge, and not just give lip service to knowledge, to truly capitalize on sharing the information held by teams and the individuals that
make up the teams. Management often expects work teams to implement cost savings or to reduce cycle time as a matter of course and not by trying new ways to achieve these outcomes (Bikson, Cohen, & Mankin, 1999). Organizations that manage knowledge most effectively reward not only the outcomes of knowledge but the process of achieving the desired outcomes.

The cultural shift to effectively managing knowledge requires assistance from many of the other support systems of the organization. Successful knowledge managers use information systems, training opportunities, engaged leaders, reward and recognition, performance criteria, and team design to help build a knowledge management infrastructure (Ulrich & Smallwood, 2003).

Organizations must realize what knowledge is currently employed, what knowledge is desired, and what the methods should be for closing that gap. When an organization can articulate what knowledge is desired, leaders can begin to tailor the system to meet the needs of the workers who will benefit from the knowledge.

Ulrich and Smallwood (2003) outlined four ways that organizations learn and manage knowledge to receive the most impact: (a) experimentation, (b) competency acquisition, (c) benchmarking, and (d) continuous improvement. Organizations do not have to choose just one strategy, but whatever strategies are adopted should be communicated to work teams. Experimentation is useful for organizations who deliver innovative products and services. When companies employ this strategy, knowledge is managed through trial and error and a premium is placed on trying new ideas. Many organizations use competency acquisition as a strategy to encourage employees and teams to acquire the competencies needed. Benchmarking uses industry and competitor information to inform internal processes, knowledge, and practices. Continuous improvement learning occurs when teams are encouraged to revisit recently
completed projects to understand what went well and what could be improved. Each strategy necessitates that leaders and team members are committed to the process and are able to put in the time needed to maintain the knowledge system. The strategy is only fully utilized if the acquired knowledge results in some improvement in the future (Ulrich & Smallwood, 2003).

When organizations begin to formally manage knowledge, leaders must recognize the value of networks, internal team knowledge sharing, external knowledge sharing, and what the role of leaders are in supporting knowledge management.

One of the challenges of work team implementation is that experience should be distributed across different teams. Experience includes both tenure with the current organization and previous incidents in previous organizations. Thomas-Hunt, Odgen, and Neale (2003) found that perceived experts within the team were more likely than other team members to emphasize shared knowledge. One reason for this finding could be that expert workers have a desire to mentor fellow workers in order to create similar others and a more productive work place. The willingness of knowledgeable workers to participate in knowledge sharing raises the question of how to engage other workers in wishing to receive learning. Structured and formalized programs such as mentoring, coaching, and information sessions often pair team members in an effort to strengthen social networks within the team and the organization.

Social networks are the subsets of informal relations that exist within teams and throughout the organization (Hansen, Mors, & Lovas, 2005). The strength of a team’s social network results in where a team goes to find information and knowledge. The authors suggest that a work team engages in certain behaviors before employing a social network for information. Teams decide if they must search for knowledge, determine the cost of the search,
and decide how knowledge will be transferred. Once a team begins the search, the test of the organization’s ability to provide relevant knowledge begins.

Cegarra-Navarro and Rodrigo-Moya (2005) discussed the organizational factors that impact a team’s ability to learn. Their findings suggest that management support, organizational culture, and commitment and motivation from individuals and teams all impact the team’s ability to turn group knowledge into intellectual capital. Intellectual capital is the sum of an organization’s knowledge, skills, customers, and relationships. The authors believe that employees’ learning is a critical factor in developing intellectual capital, or the currency of the knowledge economy.

A feature of work teams is increased contact with the environment, or customers. Some work teams are able to interact with customers and use the information gained to create a knowledge base that improves products and services. Cummings (2004) says that a team’s contact with customers that provides feedback, know-how, and preferences is an invaluable asset to organizations. Cummings found, in a study of telecommunications firms, that the more structurally diverse a team is, the more valuable external knowledge sharing becomes. Structurally diverse teams include geographic dispersion, functional assignments, different reporting managers, and business units. The study implies that a team’s performance is a product of intra-team and external knowledge sharing with diversity only affecting external factors.

Some organizations use a knowledge sharing mechanism called communities of practice, which are groups informally bound by shared expertise and a passion for a joint enterprise (Wenger & Snyder, 2000). Communities of practice can span team boundaries, business units, or even organizational boundaries. An example might include accounting professionals on cross functional teams in an organization coming together to share knowledge and experiences.
Communities of practice are distinguished by the following characteristics: (a) self appointed leadership, (b) self selected membership, (c) agendas set by the group, and (d) no timetable for continued existence (Wenger & Snyder, 2000). Even when the community resides solely within an organization, the community is responsible for selecting leaders or deciding if there is a need for leaders. Members of communities of practice decide, using their desire, interests, and passion, whether they want to join or continue membership. Also, the members of the community, and not the organization, decide the agendas, meeting content, and meeting frequency. Finally, because the community is held together by the interest of the members to continue, the community exists as long as the members desire continuation. The key characteristic of communities of practice is that they are designed to operate independently of, and without interference from, the organization. Communities of practice do, however, require the support of the organization to flourish. The presence of communities of practice often occurs in organizations where a premium is already placed on learning and knowledge transfer. Many communities of practice extrapolate the knowledge shared in the community into new processes, systems, and products back in the roles of their jobs.

Seemingly counterintuitive to normal operations, communities of practice provide the benefits of: (a) driving strategy, (b) creating new business units, (c) improving problem solving, (d) transferring best practices, (e) developing skills, and (f) improving retention and recruiting (Wenger & Snyder, 2000). Relevant to work teams, communities of practice improve problem solving capabilities because community members know where, and whom, to go to for answers. Community members also discuss past experiences which leads to the transfer of best practices across the community. Lastly, when members have a committed interest to the community, there are more learning opportunities available within that community.
Even though communities of practice reside outside of organizational power, managers can actively support the creation and sustainability of communities. By providing resources such as time, meeting space, materials, managers foster a supportive environment for communities of practice to emerge. Managers can also impact the process by identifying emergent communities or the possible need for a community (Smith & McKeen, 2004). Once identified, the manager can begin to provide the needed support to the community.

Beyerlein and Harris (2004) provide a thorough list of suggestions for organizations that wish to create a knowledge management system for work teams. Best practices are a cornerstone for knowledge transfer and must be identified, captured, and shared. Knowledge management is also more sharing of information than a database that includes factual information. Managers should remove barriers to sharing information, promote a learning culture, and encourage their team to share with other teams in the organization.

The knowledge worker is only as effective as what they know which makes the organization only as effective as what is shared and used to improve performance. In order for knowledge to become a source of competitive advantage, organizations must create a platform that encourages employees to work together and share experiences and knowledge.

Strategy

For work teams to be a successful organizational design, all teams must be supported by the overarching strategy created by top leadership. Strategy is a long-term organizational plan that is intended to provide a roadmap for accomplishing short-term objectives (Harrison & St. John, 2004). The strategic components used in organizations are the same regardless of the strategy chosen, but should be tailored to support teams if teams are a prominent feature of the
organization’s design. When well constructed and communicated, the strategy of the organization should focus efforts, create energy, and align heterogeneous teams and employees.

For work teams to thrive, they require direction that provides the context for increased decision making and autonomy (Mohrman et al., 1995). As work teams begin the transition to autonomy, there is still a need for organizational leaders to provide a strategic direction.

When strategy is communicated to work teams, members of the work teams can understand how to expend resources in tactical activities (Mohrman et al., 1995). Misaligned strategy can lead to wasted efforts and resources. This makes proper and frequent communication of business strategy necessary for alignment at all horizontal and vertical levels of the organization. Strategy also provides a framework for measuring performance against long-term goals (Nebeker & Tatum, 2003). The framework helps managers and autonomous work teams understand and achieve what is important to the viability and success of the organization.

Strategy is often developed by the top management team and is then cascaded down to the rest of the organization. Once a high level strategy is chosen, the employees begin to work toward achieving the ideals laid forth in the strategy. Organizations often form their identity through the use of strategy. Ulrich and Smallwood (2003) outline the common strategic foci chosen by organizations that include: (a) product innovation, (b) operational efficiency, (c) customer focus, or (d) technology. Organizations can adopt multiple features from the list above, but they have to focus efforts on something to give employees direction. Once the overall strategy is developed, work teams can begin to define how they operate to achieve larger organizational goals.

As stated earlier, strategy is common to many organizations, but for work teams to be successful the strategy must be defined in a way that supports the efforts of collaboration and
teamwork. Table 2 lists the components of strategy and their definitions with the idea that the organization must tailor each strategic component to the way the work will be accomplished (Harrison & St. John, 2004).

Table 2

*Components of Organizational Strategy*

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<th>Components/Definitions</th>
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<tr>
<td>1. Mission – The mission is the reason why the organization exists. The mission is the starting point for all strategy creation.</td>
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<td>2. Vision – An organization’s vision states where the organization is trying to go and what it wishes to be in the future. The vision should provide inspiration around upholding the mission.</td>
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<td>3. Values – The values of an organization are the things that the organization places a premium upon, and for which there is no acceptable reason for violation.</td>
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<td>4. Customer Value Proposition – The customer value proposition outlines who the customers are and what they desire from the organization and its products and services.</td>
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<tr>
<td>5. SWOT Analysis – A SWOT analysis is an examination of the internal strengths and weaknesses and the external opportunities and threats a company faces. A SWOT analysis should be conducted to keep the organization aware of internal operations and the effects of the environment.</td>
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<td>6. Strategic Themes – Themes support the mission by dissecting the reason why the organization exists into specific actionable areas.</td>
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Table 2 *(continued).*

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7. Measures – Quantitative data on how the tactical operations are supporting the strategy.

8. Initiatives – The specific projects that improve processes and systems designed to achieve the strategy.

Different organizations may use different terms or portions of Table 2, but regardless of the components, the strategy set forth must support how work teams operate. For instance, a value might be collaboration, or an objective might be increase the effectiveness of systems that enable work teams to communicate. Whatever the specific strategy entails, it must reflect the importance of the work of teams and support that work.

Strategy gives the direction for the rest of the organization to employ in day to day activities. After the strategy is determined, the top managers in the organization must continue to support work teams (Zuidera & Kleiner, 1994). The usage of work teams requires the focus of strategy and the ongoing support of top managers to maintain energy for accomplishing work through the use of work teams.

When top management sets the strategy, there is often a tendency to include more than an organization can realistically perform. When too much is emphasized, work teams tend to struggle with what exactly is expected of them. For work teams to fully reach their potential, a clear mandate for their existence as well as a compelling, clear direction must be communicated (Mealiea & Baltazar, 2005). The communication of the organization’s vision allows work teams to correctly define their purpose and identify the elements of their charter correctly and
effectively (Hickman & Creighton-Zollar, 1998). Bergmann and DeMeuse (1996) studied the
effects on work teams when strategy and vision are not properly communicated. Work team
members reported being frustrated with the realities of implementing teams without a clear
vision even though they reported positive attitudes toward work teams in general.

As work teams mature and begin to assume more autonomy, there is an increased need
for the team to make viable connections to the external environment. Often, this contact with the
external environment reaches beyond the bounds of the organization to include increased contact
with suppliers and customers. This increased contact requires that the team aligns their
interactions with customers and suppliers to the overall organizational strategy (Hitt, Tyler,
Hardee, & Park, 1995). The relationships with suppliers and customers must also take into
account the strategies of the organization’s competitors in order to better understand what need
the team serves.

When strategy is created at the top of an organization, as in most organizations, it must
still reflect the needs of the people that will ultimately be asked to achieve the strategy. As
people are organized in to teams and asked to assume increased responsibilities, the
consideration of the strategy and frequent communication are required to keep the team aligned
to the strategy.

Leadership

When organizations implement work teams, the roles of everyone in the organization
change to some degree. Often, managers and leaders are affected as much as the people asked to
make up the teams. Managers and leaders are asked to accept new roles that are quite different
than traditional leader roles. Making the shift to a team, or collaborative, leader requires time,
patience, and new skill development. This section outlines the nature of the transition to a team leader and the roles and behaviors needed to be successful in the team environment.

The Leader Transition

One of the benefits of work teams is increased autonomy and responsibility held by more of the workforce. The shift to self-managed work teams poses the question of what happens to the managers who used to lead the teams. Many work team implementations have failed because they have sabotaged by middle managers who feared being phased out of the organization (Hitchcock & Willard, 1995).

Not all work team implementations are the same and not all organizations wish for work teams to ever be completely autonomous. The degree of autonomy is often determined through trial and error which requires the manager transition from a commanding style to a collaborative style. Mohrman et al. (1995) lists the following factors that impact how much of a transition that leaders and managers will have to make: (a) amount of interdependence needed, (b) size of the team, (c) functional diversity, (d) the change involved, and (e) the technical experience and skills needed. When a high level of interdependence is required for team members, managers serve as coordinators to ensure that the team is working together successfully. For a larger team, the manager often serves as a repository for information and allows team members to know exactly where to go for answers. Teams who have a great level of functional diversity often need a facilitator or someone who can synthesize different viewpoints into a singular organizational viewpoint. When the implementation of work teams involves a radical shift to the design of the organization, managers often have to be the conduit of communication, information, and
reassurance. For work teams that perform highly specialized or technical tasks, managers are often asked to serve as subject matter experts to assist team members with issues.

The transition to work teams has a tendency to initially make middle managers very nervous about their future role in the organization. Manz, Keating, and Donnellon (1990) listed the dominant themes that emerge in the managerial transition to work teams: (a) suspicion, uncertainty, and resistance, (b) realization of positive possibilities, (c) struggle with new roles, and (d) learning a new language. Suspicion, uncertainty, and resistance is a normal reaction to large scale change initiatives, but any resistance must be addressed in order to keep the manager from sabotaging the effort. As managers begin to see early wins, the realization of what is possible through work teams emerges. The struggle of new roles concerns the shift from director to facilitator along with a new language that accompanies the new role of facilitation. While this list provides a high level look at the leader transition, it does not provide a guide to how to make the transition occur or how the organization will be structured after the transition.

Beyerlein and Harris (2004) offer a more comprehensive view of the leader transition in the following five stages: (a) leader is the director, (b) all decisions and communication go through the leader, (c) leader makes decisions while communication occurs among the team, (d) leader becomes a member of the group, and (e) the leader is transitioned to a coaching role. This transition takes different amounts of time for each team based on the capabilities of the team and the leader to adjust and excel in new roles. Team leaders end up as collaborative employees that work as coaches and facilitators for the teams they used to direct.

Hitchcock and Willard (1995) call this transition the parent to partner with the shift of leadership moving from compliance to collaboration. The basic underlying assumptions that drive the paradigm shift for managers are that employees are capable, motivated by pride and
accomplishment, and have valuable knowledge. Traditional managers worked on the assumptions that employees need to be told what to do, that employees will do as little as possible, and that employees are motivated by money and fear. The assumptions that drive this theory are counterpoint to having managers truly support work teams. If managers continue to work on the old philosophy, the implementation of work teams will never fully realize its potential due to the beliefs of management.

Manz and Sims Jr. (1987) offer a bridge between the Beyerlein and Harris transition and the Hitchcock and Willard transition. They list the traditional leader behaviors contrasted with the new collaborative, facilitative behaviors. Historically the actions of a leader include: (a) emphasizing goals, (b) coordinating efforts, (c) providing information, (d) proposing solutions, (e) specifying problems, and (f) exercising influence. The other end of the transition spectrum asks leaders to encourage: (a) self-reinforcement, (b) self-observation and evaluation, (c) self-expectation, (d) self-goal setting, (e) rehearsal, and (f) self-criticism. While the actual lists may not reflect all of the behavioral components needed to complete the leader transition, Manz and Sims Jr. do a good job of showing that the collaborative leader prompts team members to be a part of solutions.

Asking managers to completely change their style and approach to leading employees can cause discomfort for those being asked to change. The top level managers should provide ample training opportunities and support for managers making the shift to a collaborative style. The more capable managers are at collaborating, the more they will be able to help team members make the shift to work teams.
Leader Roles and Behaviors

This section focuses on the behaviors and roles of leaders after they make the transition to a collaborative leader and what they need to do to support the teams they manage. Mohrman et al. (1995) provide a list of roles that managers and leaders of teams can assume after the transition to work teams. The list is: (a) team leaders, (b) team managers, and (c) functional managers. Team leaders are still members of the team that take on the responsibility for task and boundary management, technical leadership, and some part of task completion contribution. The team leader, in this model, does not have hierarchical authority, so the need may arise to rotate team leadership to get everyone to respect the demands of the position. Team managers differ in that they sit above the team in a hierarchical structure which gives them formalized authority. Because most work teams take on more responsibility than in traditional organizational designs, team managers are often asked to manage multiple teams, oversee efforts, and provide guidance. Team managers are also tasked with conflict resolution, communication of strategy, and task allotment. Functional managers oversee the efforts of a functional area such as accounting, marketing, or information technology. The authority of the functional manager is determined by the overall structure of the organization. In some cases, functional managers oversee all employees within their department, but those employees also are members of other teams. This situation often creates confusion due to multiple reporting relationships for employees.

One of the ongoing debates surrounding leadership is whose job is it to be a leader. Freedman and Leonard (2002) believe that while everyone, regardless of position, should assume leadership roles, there are also formalized leadership roles on teams. These roles include: (a) task leader, (b) emotional leader, or (c) limits/assumption testing leader. The task leader knows more about how to complete assigned tasks than anyone else on the team. The emotional leader is...
often the most well-liked member of the team and ensures that everyone is participating and collaborating. The assumption testing leader questions the status quo which is a role that is seen as subversive in immature teams and invaluable in mature teams. These roles can be held, and usually are held, by the formal manager at the onset of the team but rotate away from the formal manager as the team matures.

Zaccaro, Rittman, and Marks (2001) provide a list of team leader roles that include: (a) information searching, (b) information use in problem solving, (c) managing personnel, and (d) managing materials. The degree of involvement that the leader has in each area depends on the organizational mandate, the abilities of the team, and the willingness of the manager to cede control.

Some models of team leadership focus on the skills that leaders need to effectively lead work teams. Hackman (2002) lists the following skills of effective team leaders: (a) envisioning, (b) inventing, (c) negotiating, (d) decision making, (e) teaching, (f) interpersonal, and (g) implementing. Envisioning entails seeing and understanding desired end states and articulating them to the team. Inventing skills refer to devising new ways to do things. Negotiating is the skill of ensuring the necessary resources for the team. Decision making is choosing the right path from a list of alternatives. Teaching skills involve providing experiential learning opportunities for work team members. Interpersonal skills refer to being able to communicate effectively with the team. Finally, implementing skills refer to getting things done on time and under budget.

Another approach to leadership for teams is for managers and leaders to take on the role of a coach (Beyerlein & Harris, 2004). Beyerlein and Harris outline the characteristics of coaches in a collaborative environment: (a) develop organizational context, (b) develop the team, (c) develop individuals, (d) set direction, (e) model teamwork, (f) provide resources, and (g)
interface with the environment. A couple of characteristics on this list warrant mentioning because they are unique to this list. Setting the example by modeling the desired behaviors can be a particularly effective method for team development. Also, as team members take over duties and tasks that managers used to complete, managers are encouraged to interface with the environment by visiting suppliers, customers, and researching the competition. By interfacing with the environment, managers are now more capable of participating in strategy development.

In a qualitative study, Druskat and Wheeler (2003) examined the necessary behaviors for leaders to be successful in a work team design. The behavioral categories include: (a) relating, (b) scouting, (c) persuading, and (d) empowering. Relating includes social awareness, political awareness, building trust, and caring about the team. Scouting refers to finding relevant information and investigating problems systematically. Persuading is influencing team members, getting necessary resources, and championing the team’s efforts to the rest of the organization. Finally, empowering the team is delegating authority, coaching others, and being flexible about how decisions are made.

The roles and behaviors of team leaders and managers should be set by the needs of the organization, the needs of the team, and the ability level of the manager to make a successful transition to a collaborative leader. The main areas of focus for leaders in a work team environment are to provide resources, develop the team, and remove barriers (Hackman & Wageman, 2005). Leaders in the organization need to stay flexible, especially if they manage multiple teams, in order to provide each work team with what they need to be successful and productive.
Between Teams Integration

Work teams do not operate in a vacuum, and most organizations must balance the wants and needs of each team while getting multiple teams to provide results. Integrating work teams includes aligning work teams horizontally and vertically while creating methods for teams to collaborate instead of compete (Beyerlein & Harris, 2004; Johnson et al., 2002). Sundstrom et al. (1990) characterizes between teams integration as the coordination and synchronization of work teams into a larger system. The ability to keep work teams from competing from a fixed pool of resources requires skill. Hackman (2002) believes that helping teams communicate and collaborate with other teams is one of the more advanced skills of a team manager or leader. Hackman also suggests that providing channels and systems for collaboration is much easier than repairing relationships once competition has affected teams.

Mohrman et al. (1995) outlined three methods for integrating work teams: (a) liaison roles, (b) overlapping membership, and (c) cross-team integrating teams. Liaison roles occur when a team member from one team is designated as the liaison to another team to keep both teams updated and informed. Overlapping membership is when employees are members of multiple teams and inform each team about the other team’s work. Team members who are members of multiple teams are often referred to as boundary workers. A cross-team integrating team is designed specifically to help different teams coordinate, collaborate, and communicate. These teams consists of members from different teams that come together to share progress and updates. Beyerlein and Harris (2004) call cross-team integration teams simply integration teams and they add that integration teams are often responsible for identifying common problems, prioritizing tasks, and determining how changes in one team affect the others.
Beyerlein and Harris (2004) use starpoints as an additional integration mechanism. Starpoints are team members who are the lead on particular issues and report back to the team responsible for the issue at the organizational level. Safety, quality, and training are three examples of possible starpoint topics. Starpoints are expected to report to the organization knowledge concerning their area and are expected to take back knowledge to their team. Starpoints are a method for integrating work teams horizontally and vertically.

Mohrman et al. (1995) suggest that improvement teams are another method for integrating the work of multiple teams. Because improvement teams have a mandate to improve processes, there is often ample opportunity for team members from different teams to communicate with one another.

As organizations provide integration mechanisms for work teams, the managers responsible for inter-team collaboration should recognize when integration is needed (Gratton, 2005). Work teams require integration when the tasks and the knowledge needed to perform the task, cross the boundaries of teams. This scenario is often present when work teams pass work to other teams in a sequential phase resulting in a need for information transfer. Managers support integration between teams in the following four ways: (a) managing who meets whom, (b) providing time for interaction, (c) creating motivation for sharing, and (d) building a culture of trust (Gratton, 2005). In this model, the organization must be very active in creating and supporting the environment for integration.

For fully integrated work teams, the teams should understand the rationale for collaborating (Haskins, Liedtka, & Rosenblum, 1998). The authors define two kinds of collaboration: (a) relational and (b) transactional. While transactional collaboration centers on intra-team processes, relational collaboration speaks more to how teams build relationships and
how they connect with other teams. For relational collaboration to flourish, the authors suggest that the organization must overtly communicate the commitment to learning and collaborating.

Peters and Fletcher (2004) studied a model of team integration and found that the following variables contribute to work teams increasing profitability: (a) cohesion, (b) openness, (c) coordination, (d) quality, and (e) productivity. Coordination was the measure used to capture the effect of integration. Coordination was found to significantly correlate with quality and productivity. This study provides, perhaps, the greatest empirical evidence for the need to integrate teams. Coordination only works in this model when preceded by cohesion, which makes a further case for managers to support intra-team processes.

Marks, DeChurch, Mathieu, Panzer, and Alonso (2005) found that the integration across teams predicted performance better than within team processes alone. Part of this study included the distinction between pooled and sequential tasks. Pooled tasks occur when teams are working on similar tasks simultaneously, and sequential tasks require teams to work more interdependently to finish the work output. Therefore, the findings also suggest that sequential tasks provide more opportunities for work teams to collaborate. When teams work interdependently, integration between teams is focused on finishing work in a timely manner and building organizational knowledge for other teams to access.

Sosa, Eppinger, and Rowles (2007) devised a team alignment matrix to map the information and resource needs of different engineering teams. The matrix highlights the interdependencies that exist between teams. Managers can align the teams, encourage effective communication, and shift resources appropriately using the output of the matrix.

Kellogg, Orlikowski, and Yates (2006) proposed a model that contains three ways that work teams integrate: (a) display practices, (b) representation practices, and (c) assembly
practices. Display practices occur when workers make their work available to others in the organization so that other teams can schedule tasks based on other teams’ completion of tasks. Display practices often leverage the technology of the organization through the use of project management software, e-mail, calendar sharing, and networked work stations. Representation practices are the methods team members use to make their work legible to everyone else in the organization. Representation practices are similar to the team norms discussed earlier, but representation practices pertain only to integration and apply at an organizational level. Assembly practices allow team members to access other teams’ work in order to reuse, revise, and align future work. Assembly practices require digital space for different teams to work in a collage style of task accomplishment. The use of assembly practices is especially effective for virtual teams and product development teams.

The transition to work teams requires some level of between teams integration. The degree of integration depends on the interdependence of the different teams, the proximity of the teams to one another, and the present culture. Work teams might not be able to integrate without a systematic platform provided by the organization. Organizations should understand that every team has different needs and that the prevailing culture will dictate how teams naturally collaborate.

Resource Allocation

All employees require resources in order to complete tasks, but the transition to work teams asks organizations to make different decisions about resource allocation. Many organizations implement work teams with the idea that, at some point, the teams will assume some level of autonomy, empowerment, or self-management. This section outlines resource
allocation for teams and what team empowerment means for managers and leaders who are responsible for providing teams what is needed to be successful.

Beyerlein and Harris (2004) define a resource allocation support system as the processes that ensure a team gets what they need to do the work. This definition, while broad, means that the organization must provide resources to teams in differing amounts and kinds. Differing amounts and kinds of resources are required because work teams will display competencies at differing times.

The most typical resources a team needs are people, money, time, tools and equipment, materials, space, and training (Mohrman et al., 1995; Smolek, Hoffman, & Moran, 1999). When teams do not have the resources they need to sufficiently perform tasks, there is a tendency for the team to become increasingly frustrated and angry. Teams should not receive resources for appeasement purposes, but there should be ongoing dialogue between those who allocate resources and those who consume the resources. This communication allows managers to provide the team with the business case for why resources were allotted as well as the rationale if a team did not receive certain resources (Mohrman et al., 1995). Increased communication about resource allocation helps prevent competition by giving the teams a current and accurate picture of the entire business landscape instead of just the realities that affect the team.

The shift to work teams changes the resource allocation process significantly by allowing capable teams the ability to decide what resources are needed within agreed upon parameters. The traditional approach to resource allocation included a managerial budgeting session which provided teams, departments, and divisions with resource estimates. Empowered work teams are capable of contributing to the budgeting and planning sessions due to their: (a) proximity to the
work, (b) knowledge of process, and (c) increased understanding of how the team fits into the larger context of the organization (Mohrman et al., 1995).

Shea and Guzzo (1987) posit that resource allocation is a fairly basic concept that drives a team’s belief that they can do the job. The difficulty associated to resource allocation occurs when the team is asked to participate in the process. The team must be capable of making resource decisions and must be given the authority to decide what resources it needs (Beyerlein & Harris, 2004).

The recent literature on resource allocation for work teams suggests that the level of empowerment dictates the resources needed and the level of support a team requires in determining resource levels. Beyerlein and Harris (2004) define empowerment as: (a) giving work teams responsibility and accountability for actions, (b) increasing team authority levels, (c) making results a priority, and (d) providing opportunities for employees to develop new skills. This definition puts the onus on the team and the manager to determine the appropriate level of empowerment for each team. When teams are empowered, they assume the responsibility for daily tasks that used to be reserved for management. One of these tasks consists of planning and budgeting resources. Consistent with Beyerlein and Harris’ definition, empowerment should be earned by the team, so resource allocation is not automatically granted to the team. The team must prove the ability to determine what resources are needed, have the authority to determine the resources, and ultimately be held accountable for the outcome of the decisions. The transition to empowerment is not linear due to the trial and error process the team encounters by determining resource levels and assuming the accompanying responsibility for their decisions. Managers must train, guide, and support teams throughout the empowerment process. Depending on the nature of the work, management may decide to limit the kinds or amounts of resources the
team can decide. For example, the team may be able to add personnel, order materials, and procure training, but it may be decided by the organization that the team will never be able to make capital expenditures such as large equipment. Therefore, no matter how empowered a team is in this setting, they will never be able to purchase large equipment. Decisions that limit the authority of the team should be clearly communicated by management to prevent confusion and frustration.

Tata and Prasad (2004) found that a decentralized organizational structure tended to allow teams to have more autonomy over day to day resource decisions. In contrast, organizations that are decentralized often struggle with empowering employees because of the desire to maintain control over operations that are geographically dispersed. Geographic dispersion, however, may appear as the perfect situation for true empowerment to occur. The researchers call for organizations to consider the organizational structure before committing to an empowerment strategy.

Mathieu, Gilson, and Ruddy (2006) tested a model that found that for empowerment to improve team processes, such as decision making for resource allocation, the organization must provide support and training. Organizational support was largely defined by the manager’s involvement in the empowerment process as well as effective, ongoing communication. These types of support should be consistent with the needs of the team in assuming the responsibility for determining resource levels. The training component helps teams correctly leverage the new freedom that comes with empowerment without taking advantage and losing the freedom to act and make decisions. Empowerment does not mean that the team does not need the organization in allocating resources. In fact, the team will most likely require more support from the
organization in the earlier stages of empowerment. Mathieu, Gilson, and Ruddy suggest that empowerment should be viewed as an investment.

Kirkman and Rosen (1999) found that empowered teams were more productive and proactive than less empowered teams. They also found that the following were antecedents to empowerment: (a) actions of leaders, (b) production/service responsibilities, (c) team-based human resource policies, and (d) the social structure of the team. The first two antecedents impact a team’s ability to determine what resources are necessary to do the job. Production and service responsibilities refer to the team owning scheduling, purchasing, and output levels.

When a team begins the empowerment process, one of the latter stage responsibilities is to allocate resources for the team. While there are some resources that the team will never be able to affect, teams should understand what they will have authority over and have a plan for acquiring the necessary skills to be responsible for their decisions. Work teams who have a say in resource allocation still depend on upper management to set parameters. The team also depends on the team manager to slowly transfer the authority to the team while still providing resources that the team needs.

Physical Workspace

Every employee who works for an organization completes tasks in a location of some kind. That location may exist in the organization’s headquarters, in satellite offices, in the homes of workers, or in a virtual workspace. Therefore, physical workspace is the area in which employees perform the job (Beyerlein & Harris, 2004). This section reviews the literature on supporting workers that are housed in a single building and the workers that comprise the growing field of virtual teams.
Organizations who use work teams find increasing options available for the way that workers are grouped and organized. Even without the presence of virtual teams, the grouping of workers can present problems. Organizations that use cross-functional teams must decide whether to group employees by function or by business unit (Gladstein, 1984). Also, the grouping of teams in a physical location requires managers to question how much face-to-face communication and interaction is needed (Sundstrom, DeMeuse, & Futrell, 1990). How workers are grouped can send unintentional messages to the team. For example, if the accounting team is housed in a new building with new equipment and the marketing team is located in the back of an old building, then the teams are likely to draw inferences about what the organization values. Also, the location of the team within the building should be conducive to efficient and effective performance.

Physical workspace design is also important in ensuring that workers do not have to work around the design (Wineman & Serrato, 1999). The extra effort expended during working around a workspace design flaw can lead to errors, drags on the work flow cycle, and decreased performance.

One of the ways that an organization can support a work team through physical workspace design is to fulfill the most basic needs of the team to do the work (Wineman & Serrato, 1999). Comfort and satisfaction are two important variables to consider when providing space to work teams. These variables are affected by the following things: (a) furnishings, (b) the environment such as heating, cooling and noise, (c) lighting, and (d) technological support. Wineman and Serrato (1999) suggest that not attending to these components can lead to decreased health and well-being and reduced performance.
Work teams often require a common area to work on projects. Management can influence work team processes by providing conference rooms, meeting areas, or break areas (Wineman & Serrato, 1999). Project teams present similar challenges for management in the allocation of space. Since project teams have a defined life span, the organization can estimate the length of time that space will be used. The project team should have an area designated for materials and work that is specific to the project team which can lead to meeting areas being created to specifically house the work of project teams.

Organizations are beginning to recognize the value of common areas designed to promote informal collaboration (Beyerlein & Harris, 2004). The use of seating areas, coffee bars, and cafeterias are used to encourage workers to meet and share information and build relationships within the organization. Many organizations augment the meeting areas with collaborative tools such as whiteboards or chalkboards (Wineman & Serrato, 1999). Another possibility for informal collaboration is the posting of work outputs and accomplishments in commonly traveled areas within the building. There is an increasing belief that the knowledge exists in house to solve many problems, and the organization should create a platform for employees to come together to solve those problems. The building of personal networks within the organization provides employees and teams with in-house expertise when a particular form of expertise is not held within the team.

The increase in globalization and technology has lead many organizations to use virtual, or distributed teams, to take advantage of time zones, cheaper labor, and decentralized organizational structures. Virtual teams are teams whose members are dispersed geographically, which increases the dependence on electronic communication while minimizing face-to-face interactions (Malhotra, Majchrzak, & Rosen, 2007). Virtual teams are usually comprised of cross
functional members who share a high degree of interdependence. The high degree of interdependence is one reason why organizations are investing in virtual teams as a way to cross time zones for task completion.

Townshend, DeMarie, and Hendrickson (1998) listed the following reasons for the recent proliferation of virtual teams besides the increased use of technology: (a) flatter organizational structures, (b) changes in worker expectation on participation, (c) shifts from production to knowledge work, and (d) increased globalization. Flatter organizational structures drive authority down to the team level which allows workers more freedom in choosing how they contribute. Also, younger workers are generally more comfortable with computers and technology which changes expectations for how work is completed and where it is completed. Knowledge work is characteristically less rigid in process than traditional production work. The added flexibility associated with knowledge work allows teams to participate from different physical locations. Trade agreements and emerging global markets have increased the opportunity for global commerce. As members of teams are scattered globally in an effort to be responsive to the marketplace, the need for virtual teams is becoming more prevalent.

The addition of virtual teams to an organization presents some challenges that are the same as those for other work teams as well as some challenges that are primarily unique to virtual teams. Rosen, Furst, and Blackburn (2006) highlight the challenges associated with the implementation of virtual teams: (a) coordinating work across time and space, (b) establishing effective relationships between team members that do not meet face-to-face, and (c) applying the correct technologies for task completion. The list above seems correct, if not short on all of the challenges present for virtual teams. Fiore, Salas, Cuevas, and Bowers (2003) add the term team opacity to the potential difficulties of virtual teams. Team opacity refers to the increased
ambiguity that occurs in the absence of visual and auditory cues available in face-to-face interactions. This shift to opacity requires the individual team members to apply more cognitive resources in order to ensure meaning and task completion.

For organizations to support the needs of virtual teams, top management must attend to providing favorable conditions for team success. Fiore, Salas, Cuevas, and Bowers (2003) identified a list of attitudes that should be present for virtual teams: (a) team trust, (b) team cohesion, (c) collective efficacy, and (d) collective orientation. Virtual teams usually have a high degree of interdependency which implies that trust and cohesion are necessary to succeed. Collective efficacy refers to the fact that the team believes that they can accomplish the task. Perhaps, the most important facet is the collective orientation, or the amount the team values teamwork.

Connell (2002) listed characteristics that individual virtual team members should possess. The list includes: (a) enthusiasm, (b) tenure, (c) performance, (d) trust, (e) personality, (f) communication proficiency, and (g) technical savvy. Enthusiasm is the degree to which the individual is interested in virtual work. Tenure asks whether the worker has been at the company long enough to understand the culture and if the person is experienced enough to work virtually. The trust component refers to the organization’s trust in the worker as well as the trust between the team and the worker. Personality traits can influence the individual’s performance in virtual settings. Communication needs are different in virtual teams, and the team members need to be adept at communicating through various methods. Finally, technical savvy is the proficiency of using the tools, such as new technologies, needed to succeed.

When virtual teams are implemented, the organization’s policies and culture often need to be adjusted to adequately support the new work arrangement (Connell, 2002). Policies
regarding who is able to work virtually and liabilities that occur when working virtually are two common policies that are visited by top management. When changing policies to accommodate virtual work, the appropriate departments should be included as policy change often affects human resources, legal, information technology, and other departments. Many organizations struggle with retaining their culture when workers are distributed, but the organization must tangibly understand the culture before they are able to retain it. One method of preserving culture is to increase e-mail frequency of critical information to employees not housed in the physical confines of the organization. Another method is to bring all employees to a central location quarterly or annually. In order to justify the costs of bringing all employees together, some organizations use the time to achieve multiple objectives such as planning, teambuilding, or performance evaluations.

The shift to virtual teams requires a change in management style by the team lead. While the primary objective of accomplishing work is still the same, the methods of accomplishing the tasks are often quite different. Managers must attend to the following: (a) setting expectations, (b) communicating and monitoring status, (c) sharing information, (d) maintaining trust among the team, and (e) avoiding information overload (Connell, 2002). The roles of the manager to coordinate work flow, communicate needed information, and maintain a team environment are among the biggest challenges for managers of virtual teams.

Grosse (2002) believes that managing communication is the biggest challenge for virtual team managers. She outlined the following three roles for managers: (a) managing technology, (b) managing communication channels, and (c) communicating across cultures. For managers to manage the technology, they must understand the advantages and limitations of each technology. Therefore, managers must be knowledgeable about the technologies and be able to communicate
the advantages of each to the team. Managers should also understand when certain channels of communication should be used. For instance, a teleconference may be appropriate to align expectations before a deadline while e-mail may suffice for normal operations. Diversity is common with virtual teams, as workers of different nationalities, generations, and expertise are often brought together. In order to leverage this diversity, managers must believe that varying backgrounds strengthen the final outputs and relationships. Managers should also be savvy in helping the team overcome the communication barriers that exist across time zones, across functions, and across languages.

Malhotra, Majchrzak, and Rosen (2007) use the three manager roles discussed in the last paragraph with the following additions: (a) manage work cycle and meetings, (b) enhance external visibility, and (c) ensure the benefits of participating on a virtual team. Meeting facilitation can be trickier in a virtual setting due to team members checking out during the meeting. Managers must ensure that the entire team participates and is engaged in meetings. Also, the manager should report successes to the rest of the organization since the virtual team members may go unnoticed. Finally, the rewards and recognition must be tailored to address virtual work accomplishments.

When managers begin to lead virtual teams, they must employ many of the facets of leadership discussed earlier in this chapter, but they must also be ready to address the unique needs of virtual teams (Hackman, 2004). Managers must consider ways to provide inclusion and direction in order to retain the advantages of work teams. Spotts and Chelte (2005) warn managers that virtual teams display a tendency to rate team performance higher than physical work teams. One reason could be that accountability is increased when team members do not
interact on a face-to-face manner and wish to maintain good relations. Whatever the reason, the manager should be able to communicate realistic performance evaluations to virtual teams.

Townshend, DeMarie, and Hendrickson (1998) suggest that managers must create administrative and reporting standards for the team to follow. These standards serve to help managers coordinate resources, set appropriate deadlines, and guide the work flow.

Carte, Chidambaram, and Becker (2006) devised a typology of the following leadership behaviors for virtual teams: (a) innovator, (b) broker, (c) producer, (d) director, (e) coordinator, (f) monitor, (g) facilitator, and (h) mentor. The authors found that high performing virtual teams are more likely to exhibit the leadership behaviors of producer and monitor than low performing teams. Producer behaviors seek to bring closure and completion to tasks. Monitor behaviors collects and distributes information, checks on performance, and provides stability. This study provides a strong framework for how managers of virtual teams should spend their managerial time.

Staples and Zhao (2006) studied the effect of cultural diversity on team effectiveness in face-to-face and virtual settings. They found that heterogeneous teams did not perform better than homogeneous teams, but heterogeneous virtual teams performed at a higher level than face-to-face heterogeneous teams. These findings suggest that virtual meetings and work may ameliorate the effects of varying cultures.

Hertel, Konradt, and Voss (2006) developed and validated a virtual team competency inventory designed to help organizations select and place virtual team members. Eleven predictors were found to exist and include: (a) conscientiousness, (b) integrity, (c) loyalty, (d) cooperativeness, (e) communication, (f) persistence, (g) willingness to learn, (h) creativity,
independence, and (j) interpersonal trust. Intercultural skills was hypothesized as a predictor as well but was eliminated during the validation process.

Whether the team members are located in one physical location or if they are located in different continents, managers must provide the workspace necessary to efficiently accomplish tasks. The workspace may include a conference room or a platform on a networked server, but the premise is still the same. Through ongoing communication and dialogue, managers of work teams can assess and help provide workspaces that help, not hinder, the work process.

Renewal System

Most work teams, excluding some project teams, have a planned lifespan long enough to warrant an evaluation of how the team is performing in order to make needed adjustments. There is a large deficit in the literature surrounding the renewal, maintenance, and ongoing reevaluation of work teams. There is agreement, from practitioners, that organizations should support work teams through the use of ongoing mechanisms of evaluation. What does not exist is empirical evidence that a renewal system helps work teams be more productive. A renewal system can be considered anything structured to assist teams in monitoring, maintaining, or evaluating how the team is performing.

Hackman (2002) believes that much of the strategic support work that occurs at the point of implementation is mistimed. His theory is that asking a team to set strategy as the team is just working out learning one another and deciding how they will work is premature. Therefore, the team must work for some time before they have an informed opinion on how to improve processes. The view that the team must revisit strategy and process means that some systematic method of renewing the team is needed. After experience is gained, teams are often at a midpoint
that may necessitate a revisiting of strategy, focus, and many intra-team processes such as communication, decision making, and conflict resolution. Not only does the renewal system need to be in place, but the organization should also provide reflection time for team members to place performance into the proper context. Reflection should be a focused activity aimed at understanding what has worked well in the past and what should change to prevent similar mistakes in the future. Also, Hackman suggests that the midpoint renewal should focus heavily on strategy renewal and not interpersonal interventions. The rationale is that strategy renewal focuses team members on the aligned, shared tasks which will aid in interpersonal renewal efforts.

Many work team implementations falter because the organization sees early success and never assesses the ongoing effectiveness of the use of teams (Kanaga & Browning, 2003). Part of the renewal system is to ensure that the team’s mission is the same as when the team was chartered. Many teams fail because expectations of performance change and no one communicates the changes to the team. Periodic renewal also allows teams to address smaller issues before they become larger problems. Issues such as unclear roles and responsibilities, lack of training, and limited authority can be addressed through an ongoing analysis of the team’s performance coupled with the appropriate intervention.

Ulrich and Smallwood (2003) call for teams to assess performance through the use of a team audit. The team audit addresses team performance in four processes: (a) purpose, (b) decision making, (c) relationships, and (d) learning. Purpose refers to the clarity of goals, clear identities, and whether the team understands what needs to be accomplished. Decision making asks the team to move past how decisions are made and focus on the quality of the decisions that are made. Relationships are the intra-team processes that help explain how well the team works.
together interpersonally. Learning allows reflection time for the team to discern what has worked well in the past and has not worked well. The team audit process helps the team reevaluate performance, learn from one another, and help management align the team to organizational goals.

Beyerlein and Harris (2004) provide a similar framework to the team audit process by calling for all supporting structures and systems to be revisited periodically. Team goals, norms, charters, empowerment initiatives, the business case for teams, and the organizational structure should be monitored to ensure proper fit and alignment. Monitoring the team implementation allows the organization to prepare an intervention for poorly functioning teams, to improve planning processes, to assess performance, and to reinforce teams that are performing at an exceptional level.

The lack of empirical study on the topic of work team renewal should not minimize the importance of the activity. In contrast, the paucity of research on renewing teams should call into the light the need for future research on the topic.

Selection System

Whether an organization is implementing work teams or replacing members of an existing team, the selection system must be equipped to adequately staff teams with the right employees. The transition to work teams changes the knowledge, skills, abilities, and personality requirements to successfully perform in the new environment. For most organizations, this shift necessitates an examination of the instruments used to select team members and who is involved in the selection process. This section outlines the research on the selection system as a support function for optimal team performance.
The foundation of most selection systems is the job analysis which seeks to identify the knowledge, skills, and abilities need to successfully perform the given job (Klimoski & Zukin, 1999). When work teams are the primary focus of the organizational design, existing job analyses for individuals do not provide a valid assessment of what will required in a team environment. A team-based job analysis is needed to collect the competencies that are unique to the team setting while retaining some level of individual analysis.

The team job analysis should be performed by the human resource department or an external source and should include incumbents and best practice information for team-based environments. Job analyses can be a lengthy and involved process, so the organization should properly plan to make resources available to correctly conduct the analysis (Klimoski & Zukin, 1999).

An alternative to the team-based job analysis is the worker-based analysis which lets role definitions and task classifications drive the selection process (Nelson, 1997). In the “boundaryless” organization which employs work teams and more permeable boundaries, jobs can be collapsed into desired skill sets. The worker-based job analysis is a useful tool for teams that use job rotation or cross-training so that the skill set of the team is represented by the selection process. The skill set for work teams often includes more than technical aptitudes in order to achieve stated goals. Many team-based selection systems include identified team-based competencies such as facilitation skill, networking ability, skill of motivating with influence instead of power, and the ability to share knowledge with others.

Werbel and Johnson (2004) advanced Nelson’s worker-based job analysis by proposing the importance of person-group fit. Earlier selection methods have championed person-organization fit and person-job fit. Person-group fit attempts to take into account the addition of
interpersonal competencies needed to be a successful contributor on a team. Some of these competencies include sharing the same values, beliefs, and qualities which is labeled supplementary fit. Alternatively, complementary fit occurs when members have differing qualities and characteristics that support the rest of the team. Complementary fit helps work teams look for members that round out deficient skill areas. Person-group fit that happens informally during selection usually addresses supplementary fit while more advanced and formalized processes address supplementary and complementary fit. The usage of more types of fit helps ensure the right coverage of skills and the cohesiveness need for high levels of performance.

Since traditional competencies are combined with team-based skills and abilities, aptitude and cognitive tests are often supplemented with personality assessments. Kichuk and Wiesner (1998) reason that personality assessments assist traditional selection tools in the following ways: (a) adding incremental validity to task assessments, (b) identifying people who are more likely to succeed in work team settings, and (c) helping assemble the appropriate combination of people to staff the team. Personality profiles can be recorded and maintained by human resources in the event that team members need to be transferred to different teams. Personality assessments are rarely used as the sole selection tool, but are added to existing selection instruments. Personality assessments can raise the following issues during administration: (a) faking, (b) fairness, (c) employee reactions, and (d) legal considerations. Personality tests are subject to participants faking the perceived correct answers in an effort to appear as a correct fit for the job. Fairness is less of an issue with personality tests than other selection options. Employee reactions to team-based selection tools are more favorable than individual assessments due to personality test measuring some of the unique skills necessary to succeed in a team environment.
As reviewed in the team design section, of this chapter, Stevens and Campion (1999) devised a teamwork KSA assessment for potential team members. The fourteen item assessment sought to predict how team members would perform in self-management and interpersonal skills and abilities. While, the assessment has shown support for improving perceived performance, no tangible correlation to increased performance was shown. Numerous replications of Stevens and Campion’s have been conducted in the time since the original study.

McClough and Rogleberg (2003) tested Stevens and Campion’s teamwork KSA assessment in undergraduate project teams. They found that the teamwork KSA assessment predicted team member behavior by external raters and by peers. The findings from this study suggest that the assessment could be useful in predicting individual effectiveness in the team setting. McClough and Rogelberg also studied the effects of the teamwork KSA assessment on both leader performance and self-efficacy for teamwork with no significant relationship found for either.

Morgeson, Reider, and Campion (2005) used the teamwork KSA assessment in a three part study to examine the incremental validity of using a structured interview, a personality test, and the teamwork KSA assessment together. Using contextual performance in addition to task performance was expected to assist in the selection process. The three selection techniques used in concert, were hypothesized to measure social adaptability, personality, and the applicant’s proclivity for succeeding in team-based settings. The study’s findings showed incremental validity for the three techniques when the personality variables used were conscientiousness and extroversion and not the other three personality variables originally included. The findings provide a workable template for practitioners by constructing a realistic selection scenario. Most hiring situations require more than one selection technique, which requires a process that
includes techniques that add validity incrementally. Hiring managers also perceive increased validity when there is more to the selection process than just an assessment or just an interview.

The use of multiple measures in a selection system is paramount in ultimately choosing the right applicant for the team (Kichuk & Wiesner, 1998). This means that researchers who tout a specific methodology in singularity are missing valuable input as well as exposing the process to perceived unfairness and possible litigation. In order to keep the selection system current and valid, the human resources department should maintain a record of team successes as well as periodically evaluating the knowledge, skills, and abilities needed for the job and the team environment.

Klimoski and Zukin (1999) outlined a comprehensive selection process aimed at staffing work teams. The steps in the process include: (a) contextual and teamwork analysis, (b) member requirements, (c) recruitment, (d) screening and assessment, and (e) selection decisions. The contextual analysis allows the organization to understand if the team is a start-up or if the hire is a replacement for an existing work team. Also, the contextual and teamwork analyses provide a picture of the team’s function, how labor is divided amongst the team, and what the individual position does. Understanding member requirements is synonymous with establishing the knowledge, skills, and abilities needed to be successful. The member requirement phase seeks to answer what the stated tasks are, the management responsibilities, the work process, and the team’s boundaries. This phase should also address what cultural orientation should take place to assimilate new team members to the organization’s and the team’s culture. Recruiting is typically a human resources function but can also include the members of the team in some situations. The recruiters must decide whether to look for applicants internally or externally and must have a network to draw from regardless of the focus of the search. The screening and assessment phase
must be seen as being fair, be valid for the job, and be a feasible option for the organization to carry out repeatedly. The screening and assessment phase should cover the knowledge, skills, and abilities needed to perform the job. Organizations commonly use multiple measurement points such as interviews, assessments, and reference checks to adequately screen applicants. The selection decision is made by the following options: (a) human resources, (b) the team lead, (c) the team, or (d) any permutation of the first three options. The more standardized and quantifiable the process is, the more likely the team is to be included in the hiring decision. This process is a standard selection process but takes into account how making the team the unit of analysis changes the selection system. This change is one that the organization must prepare its systems to reflect.

Work teams require a different approach to selecting prospective employees. This transition in selection necessitates organizations to change how they support the selection process as well as training team members on how to participate in the process. Employees are often present in the interviewing and selecting phases which require training so that the phases are completed correctly. Finally, the human resources department must fundamentally understand how work teams changes the system in order to provide the correct analyses, assessments, and support.

**Work Process Design**

When work teams are implemented, the organization must examine the manner in which work is completed. The interdependency of tasks requires a reevaluation of the processes and work flow that allow the organization to achieve its purpose. Part of the redesign of work consists of looking for ways to maximize the power of collaboration while maintaining
efficiencies. The redesign of work processes calls for management to work with the teams to determine the best way to accomplish the work. If the organization is implementing work teams for the first time, the redesign may be a trial and error effort in order to finalize the most effective way to meet deadlines and goals.

As work tasks are redesigned to suit the team, often the unit of analysis is at the process level. Work processes represent tasks that are broken into sequential steps and refer to the manner in which the work is completed (Beyerlein & Harris, 2004; Smolek, Hoffman, & Moran, 1999). Dervitsiotis (1999) distinguished the difference between basic work processes and support work processes. Basic processes directly add to the delivery of a finished product to external customers while support processes deliver materials or information to internal customers. Understanding how each process contributes to the overall outcome of the finished product allows management to focus on where teamwork and collaboration will contribute the most value.

The most common processes that affect work teams are decision making, meetings, communication, feedback, and core work processes (Smolek, Hoffman, & Moran, 1999). Since most of the list above is covered in earlier sections of this chapter, core work processes will be covered in this section. Core work processes include all tasks and activities that contribute to the finished product or service and are either linear or nonlinear. Linear work processes follow a routine sequence of events and are found primarily in the manufacturing sectors where standardization is essential in achieving efficiencies. Nonlinear processes follow no programmed approach and do not determine the next step until the previous step has been completed. Nonlinear work is also commonly referred to as knowledge work and is commonly undertaken by executives, many project teams, and product development teams. Due to the lack of an
established routing of tasks, nonlinear processes should include criteria for decision making and accountability for maximum distribution of authority.

When processes are examined, there is sometimes a need for changing how tasks are accomplished culminating in a work redesign. Work redesign tailored to work teams is the alteration of tasks and the accompanying work environment (Rosenbach & Zawacki, 1989). The critical distinction is the inclusion of the work environment in addition to task completion.

Hitchcock and Willard (1994) provide a framework for work redesign that is aimed at work teams. The first step is to communicate the need for the analysis to the people who will be affected by the change. Next, a technical analysis of the work should address processes, site analyses, and technological options for task completion. The technical analysis should be accompanied with a social analysis that takes into account roles, norms, communication, networks, and any other relevant components that involve human interaction through the work flow. The next step should incorporate the technical aspects and the social aspects of the processes into a draft. After the work flow is identified, the design team should investigate how support systems such as purchasing, payroll, or human resources will be affecting by the changes. Finally, the plan should be implemented with adequate training, information, and communication to support the work team.

A popular technique for examining how work is accomplished is work process mapping (Beyerlein & Harris, 2004). Work process mapping is a way to visually represent how processes relate to one another. Work process mapping can be conducted at a high level, which is most useful for a socio-technical analysis, or at a more detailed level which is useful for engineering-based quality improvement initiatives. Work process mapping for team-based work categorizes tasks into families such as manufacturing, engineering, quality, shipping, or marketing. By
categorizing tasks, the design team can locate handoffs from one team or one function to another. The process map should also incorporate points where support systems need to play a part in the work process. Finally, the suppliers and customers of the team should be identified for inclusion into the work process. The addition of suppliers and customers can help team members understand the larger context of the work as well as providing opportunities to meet these constituents to reach a shared understanding on expectations. The finalized map should be communicated and shared with the key stakeholders of the team.

A technique that builds upon mapping is the following three step approach: (a) a process analysis, (b) a deliberations analysis, and (c) a task interdependency analysis (Mohrman et al., 1995). A process analysis addresses what activities add value to the customer and how the differing functions must integrate to deliver value for the end user. Deliberation analyses seek to understand why issues occur throughout the process. Similar to root cause analysis, the deliberations should be ongoing and allow relevant participants the ability to contribute to the process. The task interdependency analysis asks designers where the team can and should work together as well as where multiple teams should work together. This technique is similar to the one outlined by Beyerlein and Harris (2004).

Another issue for the design of team-based work is to coordinate the processes of one team to integrate with the processes of other work teams, especially in production environments. Considerations often include how many production lines exist, the hours of operations, the involvement of the team leader, and the inventory systems (Thompson & Wallace, 1996). In singularity, these issues are relatively easy to address, but in unison, and with the interpersonal dynamics associated with teamwork, the design of work processes has a profound effect on the team’s ability to be successful.
Hackman (2002) believes that the design team for work processes should build in enough room to allow for creativity and innovation. A criticism of quality and standardization initiatives is that they disallow team members multiple ways of completing assigned tasks. One method for properly redesigning work processes is for the design, or steering, team to include the team members in the design process for input and validation of the new model (Beyerlein & Harris, 2004).

Organizations should expect to group people together into work teams and expect the team to continue the work under the old conditions. The interdependency of teams necessitates the reevaluation of the processes that dictate how work is accomplished. If the work processes are not aligned to support the work of the team, then the effectiveness of the teams may be compromised. This alignment requires that managers include key personnel in the design and evaluation process.

Support Systems

The majority of this chapter has reviewed the research on individual support system components. This section is a review of whole support systems models and theories that address the comprehensive set of variables that an organization must give attention in order to provide work teams what is needed for success. Empirical evidence for comprehensive support systems models and theories is scant calling for the need for further research. The majority of the literature on support systems is a result of best practice information gathered over years of experience and not measureable outcomes at this time.

Support systems are the infrastructure that is created by the organization to support the work and the people performing the work (Beyerlein & Harris, 2004; Mohrman et al., 1995).
Johnson et al. (2002) offer a similarly useful definition for support systems as a sustained set of interdependent processes that enhance the ability for teams to work collaboratively and effectively. One reason for a lack of definitions for support systems in the literature may result in the differing names used to label the construct. Gladstein (1984) offered one of the earliest explanations that “contextual variables” have an effect on processes, structures, and the overall effectiveness of work teams. Shea and Guzzo’s (1987) perspective on support systems was labeled outcome interdependence and included reward and recognition and organizational controls. Outcome interdependence is somewhat of a misnomer because of the implied emphasis on work teams needing one another and not a set of resources provided by the organization. The next term to be used was organizational context (Sundstrom, DeMeuse, & Futrell, 1990; Sundstrom, McIntyre, Halfhill, & Richards, 2000). The term organizational context shifted the emphasis to the organization by including culture, task design, performance feedback, training, and the physical environment. Organizational context moved researchers to include a more robust list of variables, but the definition failed to contain some of the components that appear in later support systems work. The term support systems places the emphasis on what the organization must do for the teams, but all of the above terms should be considered synonyms for one another.

The need for support systems has been written about extensively but very little empirical evidence of this need has been recorded. Shea and Guzzo (1987) described the need for outcome interdependence as the platform for true task interdependence and effective performance. Sundstrom, DeMuse, and Futrell (1990) provide a common argument for support systems in that many team-based interventions are incorrectly aimed at internal processes instead of a focus on external factors as well. Mohrman et al. (1995) suggest that support systems are essential in a
dynamic, lateral organizational design that employs work teams. Guzzo and Dickson (1996) documented that the variance in work team effectiveness is often predicated by organizational context variables such as rewards and information systems. Hackman (2002) described organizational context as the support needed to reinforce any design around work team implementation. Hackman uses the metaphor that the organizational context is the soil that nurtures the work team, or seedling.

Support systems exist to some extent in all organizations, but the support systems required for work teams differ slightly from other organizational designs. The following is a summary of the difference between individually focused support systems versus team-based support systems: (a) manager focus versus team focus, (b) hierarchical versus lateral (c) control versus ownership, (d) uniformity versus flexibility, and (e) functional scope versus cross functional scope (Mohrman et al., 1995). Beyerlein and Harris (2004) furthered this concept by adding that individual support systems often promote competition which is antithetical to the goals of work teams. Therefore, the support systems for teams should be designed specifically for the people and the unit design who does the work.

There is little agreement about a comprehensive set of support system variables available to organizations that employ work teams. The lack of a comprehensive set of variables means that empirical testing of support systems models do not exist. Table 3 reviews the literature on support systems and lists the variables covered from each source.
Table 3
Review of Support System Variable Models

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The results of Table 3 offer insight into the lack of a comprehensive approach toward team-based support systems. One variable, communication and information systems, was mentioned in all five sources, and one variable, renewal systems, was not mentioned in any of the sources. Reward and recognition, goal setting, training, and leadership were mentioned in all sources but one which may speak to the traditional focus given to these variables. Also, the Johnson et al. (2002) list of support systems was published to be consistent with the list from Sundstrom (1999).

Johnson et al. (2002) provides the only empirical study of team-based support systems on a large scale. The study was conducted using a support systems survey (SSS) and sought to collect the extent of support system variable usage and the importance of support systems. The data from the SSS were used in accordance with a perception of team performance (PTP) survey. The importance section of the SSS showed a weak correlation with the PTP, but the support
The presence of the support systems provided much stronger positive correlations with the PTP data. The presence findings are ranked in the following order: (a) team design, (b) defining performance, (c) information systems, (d) leadership, (e) training, and (f) rewards. The authors posit that the presence findings are more useful than the importance ratings because of the actual development of support systems instead of a perceived importance about systems that may not exist within the organization. Also, the authors expressed surprise at the relatively low correlation between performance and rewards. One reason given for the low correlation could be the immaturity of the teams surveyed. More than half of the teams had been in existence for less than three years making the findings consistent with the prevailing belief that rewards are more effective for more mature work teams.

Based on Gladstein’s (1984) model of group effectiveness, Johnson et al. (2002) developed a support system model based on inputs, processes, and outputs (IPO). In the IPO model, support systems are viewed as inputs that feed work processes that lead to outcomes. In a linear model such as the IPO, the problem with placing support systems in just the inputs section become apparent and is pointed out by the authors. The support systems do occur mostly in the inputs section, but as teams mature, the presence of support systems throughout the model begins. The team renewal system summarized earlier in this chapter helps explain how support systems matriculate through the IPO model. The IPO model is more comprehensive than other studies and models such as Cohen and Bailey’s (1997) study on rewards and supervision only.

Sundstrom (1999) hypothesized, from his experiences, what support systems were needed for different types of teams. The types of teams were: (a) production, (b) service, (c) management, and (d) project. Performance management and information systems were the only
support systems to be selected for all four teams. Production and management teams required the same basic support systems with service teams requiring a differing set of support systems. Service teams, based on Sundstrom, do not require training, rewards, or physical workspace as support systems. This list is useful for delineating between support systems for differing types of teams which allows for customization based on the type of team.

Morhman et al. (1995) and Beyerlein and Harris (2004) present the issues of implementing team-based support systems and how to align the support systems to the external environment of the team. Morhman et al. (1995) provide the following issues that can arise when implementing team-based support systems: (a) bureaucratization, (b) administrative burdens, (c) managing how versus what, (d) local versus global needs, and e) the currency of support systems in a dynamic environment. The bureaucratization of support systems occurs when large organizations implement support systems as a static procedure or process without the flexibility to meet the needs of different teams in the system. When organizations commit to a comprehensive support system, there is usually staff responsible for administration of the services which can burden existing staff and resources. Work teams often reduce the controls placed on how the team completes the work. The shift to outcomes can lead managers to try to manage the how of the support systems instead of the overall makeup of the system. Many organizations take a one size fits all approach to support system implementation which can alienate remote locations or offer support that is not needed. Finally, work teams often operate in a rapidly changing environment which makes it difficult for team members to place a tangible worth on the support systems being provided. Morhman et al. (1995) point out that up front communication is a common thread of these issues.
Beyerlein and Harris (2004) argue that aligning support systems to the team’s environment can alleviate some of the issues stated in the earlier paragraph. When work teams have access to best practice information and latest trends, the team can make more informed choices about the support system variables they desire. Also, the support systems should be linked to the overall strategic goals of the organization to ensure long-term viability. The support systems should be designed to be flexible enough to change as the realities of the environment dictate. Finally, the authors suggest a committee that handles the implementation of each support system and is comprised of key stakeholders from all levels of the organization. This committee helps create momentum, makes recommendations to top management, handles change management functions, and integrate systems where possible.

While academia has addressed aspects of support systems implementation, scant empirical evidence exists regarding the validity of choosing from the comprehensive set of support system variables. In fact, there does not seem to be clear consensus on a workable set of support system variables which leads to confusion around furthering the research on support systems.

Review

The increasing presence of work teams requires organizations to actively participate in the effectiveness of the teams they employ. Many team interventions are focused at improving or correcting intra-team processes, such as communication, conflict resolution, or teambuilding efforts. These efforts at inter-team improvement can yield results, but the organization must also contribute to the teams’ success. The predominant method for this contribution is by designing, implementing, and refining support systems for work teams. Support systems are the
infrastructure provided and built to assist the people who perform the work (Beyerlein & Harris, 2004).

This chapter outlines the research conducted on support system models as well as the following seventeen support systems variables: (a) rewards and recognition, (b) goal setting, (c) performance measurement, (d) performance appraisal, (e) team design, (f) communication and information systems, (g) culture, (h) training, (i) knowledge management, (j) strategy, (k) leadership, (l) between teams integration, (m) resource allocation, (n) physical workspace, (o) renewal system, (p) selection system, and (q) work process design.

For most organizations, the task of implementing all seventeen support system variables at once is not realistic or beneficial. Top management must understand the specific needs of all of the work teams within the organization and tailor the support systems to meet current and future needs.

Some support system variables have received more attention (rewards, leadership, goal setting, and training) than others (renewal systems, work process design, and knowledge management). The variables that have been studied more do not necessarily reflect a more significant impact on team effectiveness as much as they represent variables that may be easier to measure, present in traditional work settings, regarded as more valuable by top management. Likewise, the variables with lesser attention may be more difficult to quantify, newer concepts for many organizations, or unfamiliar to top management.

There is a strong case to be argued that all of the support systems variables presented in this chapter can make a contribution to an organization’s infrastructure as well as support the team’s processes and outcomes. Practitioners and researchers should be cautioned that very few empirical studies exist to provide a comprehensive approach to support system implementation.
Also, the majority of the work on comprehensive support systems has been conducted by a small group of researchers. This focused work on support systems has produced fruitful frameworks for future studies and implementation guidelines, yet leaves much room for the current study.

Current Study

The purpose of this study is to examine the nature of the seventeen support systems variables that exist as design options for organizations but that have not been tested in a comprehensive manner to date. The variables examined have the potential to contribute not only to the existing body of literature, but they also have the ability to guide the efforts of practitioners working to implement work teams in organizations. The literature is in dire need of testable team-based support systems theories and models that will allow researchers to make significant contributions to the field of team-based support systems.

Most work team implementations initiatives involve everyone in the organization from top management to the frontlines where work teams are expected to make productive contributions. The ultimate success of work team implementations relies on the ability of the organization to provide the needed infrastructure to support the work of teams (Beyerlein & Harris, 2004; Mohrman et al., 1995). This infrastructure is commonly referred to as support systems and is a crucial component in the development and ongoing success of work teams. Traditionally, the majority of research has centered on intra-team processes and support system variables in singularity or in pairs. The lack of research on support systems at a system-wide level highlights the need for this study. The following support system variables were studied: (a) rewards and recognition, (b) goal setting, (c) performance measurement, (d) performance appraisal, (e) team design, (f) communication and information systems, (g) culture, (h) training,
(i) knowledge management, (j) strategy, (k) leadership, (l) between teams integration, (m) resource allocation, (n) physical workspace, (o) renewal system, (p) selection system, and (q) work process design.

Using a grounded theory approach, I studied interview data outlining the experiences of practitioners and academicians in an effort to answer the following research questions:

Research Question 1: What degree of involvement exists for work teams in regards to the seventeen identified support system variables?

Research Question 2: What are the relationships between the seventeen identified support system variables?

Research Question 3: What are the most critical support system variables in work team settings?

Research Question 4: What representation, or model, can be drawn from the data?

Research Question 5: What hypotheses can be drawn from the data?

The research questions were answered using the principles of grounded theory research which seeks to construct theory directly from the analyses of data (Charmaz, 2006). Through the use of coding and memo-writing in the analysis of the data, merging trends and categories will be analyzed further to answer the research questions. The data was analyzed using Nvivo 8, a qualitative data analysis tool, and SPSS for quantitative analysis.

Analyses of the data look to build upon previous research (Beyerlein & Harris, 2004; Mohrman et al., 1995; Sundstrom, 1999) while attempting to take into account emergent trends in the data. This study looked to build testable theories, models, and hypotheses for future researchers in the area of team-based support systems.
The lack of a common language and a holistic approach to providing support systems for work teams necessitates a thorough examination leading to future research. Even though a more quantitative approach may initially seem desirable, this study serves a unique need by moving work team research closer to a greater understanding of support systems variables. This study will attempt to advance the field of research on this topic by providing a clearer direction than presently exists and by giving practitioners clearer guidelines on supporting work teams in their organizations.
CHAPTER 2

METHOD

Participants

The current study uses archival data obtained from an unpublished study on team-based organizations conducted by the Center for Creative Leadership (Harris, 2001). This study seeks to examine data on team-based support systems that were not examined in the earlier study. In an effort to obtain a representative sample of people who have extensive experience in the implementation of team-based initiatives, participants were solicited from academia, the external consulting profession, and internal practitioners. The main criteria for participation were previous experience in team-based implementations of at least five years and expertise in team-based organizational issues, research, and trends. Participants were selected from two sources: (a) attendees from the 2000 Association for the Management of Organizational Design Conference with team-based initiatives experience, and (b) a targeted e-mail campaign aimed at authors and consultants in the field of team-based implementations. A total of twenty respondents were selected to participate resulting in a sample size of \( n = 20 \). Interviews were conducted between March 20, 2001 and July 13, 2001 with transcription occurring in September, 2001.

Two participants from the same organization were counted as one participant because of the difficulty in separating voices during the transcription phase. The two participants were treated as one participant for demographic purposes.

The sample has a majority of females (55%) compared to males (45%). Participants were queried about the highest level of education attained as well as the area that the degree was
earned. The following shows the list of the highest level degrees completed by the sample: (a) doctorate in organizational management, (b) graduate degree in organizational management, (c) graduate degree in communications/organizational development, (d) three doctorates in organizational behavior, (e) doctorate in social systems science, (f) master of science in statistics, (g) master of arts in theology, (h) three masters of business administration, (i) master of science in finance, (j) master of science in management, (k) bachelor of arts in theater arts, (l) master of science in organizational communication, (m) doctorate in industrial/organizational psychology, (n) doctorate in philosophy, and (o) doctorate in organizational development. Two participants did not reveal their educational level during the course of the interview. The degrees of the participants are shown to depict (a) the wide range of backgrounds that contribute to the field of team-based work and (b) the above average education level of the participants.

Also, participants were asked to report the job title they held at the time of the interview. The following list shows the job titles present in the sample: (a) senior staff specialist – organizational development, (b) co-director/associate professor, (c) principal consultant, (d) research fellow, (e) two practitioners, (f) three presidents, (g) human resource development consultant, (h) founder, (i) independent consultant, (j) organization development specialist, (k) practice leader, (l) two directors of human resources, (m) managing associate, (n) senior practice partner, (o) owner, and (p) author and partner. The job titles are shown to display the wide range of titles represented as well as the decision making authority of the positions held by the participants.

Participants were asked to report on demographics related to the primary focus of the type of work performed. People responding to their job role yielded the following: consulting (45%), industry/internal human resources (35%), academia (15%), and a hybrid of academia and
consulting (5%). Building on these numbers, participants were also asked to further report on their job role by disclosing where they spent the majority of their energy on the topic of work teams in the organization. Participants responded with the following: implementers (65%), researchers (10%), and both (25%) meaning that the sample shows a preference for people who were working in the field at the time of data collection but with grounding in the predominant academic trends of the time.

Participants were also asked to report demographic information about their primary area of focus within organizations when working with team-based initiatives. The breakdown of the area of focus is as follows: organization (65%), organization and teams (20%), team (10%), and organization, teams, and individuals (5%). The predominance of responses at the organizational level highlights the need for research on support systems as team-based initiatives and implementations are often more successful when approached from a holistic, organization-wide perspective. All participants in the sample reported the need to include the organization as a whole when implementing team-based initiatives.

In Chapter 1, 1990 was labeled a “watershed year” for the advent of work teams (Johnson et al., 2002). In the interview, participants were asked how many years they had been involved with team-based initiatives and issues in the workplace. The participants’ mean years of experience was \( M = 14.20 \) with the most experienced participant reporting thirty-one years of team-based experience and the least experienced participant reporting five and a half years of work with teams. The median number of years of experience \( Mdn = 13.50 \) helps demonstrate that the sample is comprised of individuals with extensive exposure to the aspects of work team implementation and maintenance. The sample was collected in 2001, so when compared to the watershed work teams’ year of 1990, more than half of the sample was engaged in team-based
work before work teams gained widespread popularity showing the high level of experience of
the sample.

Furthermore, participants were asked to report the percentage of work conducted at the
time of the interview with teams or organizations that were using work teams as a predominant
feature of organizational design. The mean percentage of team-based work \((M = 48.09\%)\)
conducted is comparable to the median percentage of team-based work \((Mdn = 45.00\%)\) and
shows that almost half of the samples’ time was spent on team-based practices, research, and
emerging trends. Seventeen of the twenty participants answered the question on the percentage
of time spent on team-based issues.

Finally, participants were asked to what degree, on a scale of one to ten, they were seeing
clients move a complete team-based organization. Nineteen of the twenty participants answered
the question of degree of movement to team-based methods of organizing. The sample mean \((M
= 5.05)\) and the median \((Mdn = 5.00)\) provide evidence of a sample that exhibits different
experience levels, yet is unified about the emergent nature of team-based structures in
organizations.

Instrument

The sample was collected using a semi-standardized interview created to explore relevant
topics for team-based organizations and initiatives (Harris, 2001). Semi-standardized interviews
provide the following features: (a) question reordering, (b) added or deleted probing, (c)
language adjustments depending on interviews (Berg, 2007). The interview questions were
created through a collaborative process by the Center for Creative Leadership research team led
by Cheryl Harris. The interview questions were designed to assist research in (a) providing
consistency around team-based terminology, (b) learning more about the nature and components of team-based work, and (c) learning more about the nature of support systems for work teams.

Participants were provided an informed consent page via e-mail before the interview and were asked for confirmation of receipt and understanding. The informed consent information is included in Appendix B. Participants were also read a confidentiality statement and reminded that participation was voluntary. Finally, participants were asked to give permission to record the interview contents.

The following question areas were asked as a standard part of the interview: (a) background information, (b) use of the term team-based organization, (c) definitions of team-based organizations, (d) criterion for team-based organizing, (e) how team-based organization differ from traditional organizations, (f) the degree in which organizations are moving to work teams, (g) examples from a specific team-based implementation, (h) what support systems were important to the change and to what degree, (i) specific organizations that have been successful with work teams, and (j) what follows work teams as a form of organizational design. Each question contained subsequent follow-up questions as well as flexibility for the interviewer to probe in order to solicit information or to follow particular paths initiated by the participants. The complete interview document can be found in Appendix A.

Procedure

The data collected from this sample were obtained during telephone interviews and e-mail follow-ups when time expired during the phone interview period. Interview sessions were initially scheduled to last two hours, and the majority of interviews lasted approximately the two scheduled hours. The longest interview lasted four and a half hours, and the shortest interview
lasted one hour. Participants that could not finish the phone interview in its entirety were offered the opportunity to complete the interview questions via e-mail.

All phone interviews were recorded with participants giving permission to have the contents of the interview recorded and to be used for research purposes. The audio tapes of the interviews were initially transcribed into Microsoft Word documents for further entry into qualitative data research software. The participants were given the option to be contacted with the results of the first study conducted with the interview data. Finally, the previous study conducted with this data passed review by the University of North Texas’ Committee for the Protection of Human Subjects.

Analysis

This study attempts to provide context, information, and answers to the research questions located at the end of Chapter 1. The research questions were studied using a qualitative, grounded theory approach. Each question was analyzed using the grounded theory process with the findings from successive coding iterations being used to answer successive research questions.

A qualitative approach to the study was deemed preferable due to the small sample size, lack of available between-group comparisons, and limited available statistical analyses (Galassi & Gersh, 1993). The current study employs a single-case design by collecting a large amount of data on a small amount of participants (Lundervold & Belwood, 2000). The single-case design is especially useful for “finding out what is possible rather than what is common.” (p. 376) (Hilliard, 1993). The single-case design is appropriate given the conditions listed above in addition to the lack of similar work encompassing a similar scope.
In an effort to provide consensual validity to the research, two volunteers were added to the research team (Loftus & Monahan, 1980). The use of volunteers sought to provide independent judges to ensure that different researchers examining the same phenomenon would reach the same conclusions regarding the data. Each volunteer satisfied the following criteria for inclusion: (a) doctorate level research experience, (b) experience working with work teams, and (c) a PhD in psychology. Each volunteer was randomly assigned five support systems variables in which to code using an agreed upon framework. Volunteer 1 was assigned the following variables to code: (a) reward and recognition, (b) communication and information systems, (c) knowledge management, (d) strategy, and (e) physical workspace. Volunteer 2 was assigned the following variables to code: (a) goal setting, (b) performance measurement, (c) team design, (d) culture, and (e) work process design.

The research team decided to have all three members code one support system variable, performance appraisal, separately, and then determine the appropriate course of action in the second meeting. Baseline coding for performance appraisal yielded six major possible themes, or nodes: (a) degree of importance to the effort, (b) degree of understanding of the variable, (c) relationships to other variables, (d) outside influences, (e) level that the team is involved, and (f) specific types used. Outside influences were considered to be things that impact the support systems and the teams that cannot be altered. Specific types used outlines the major initiatives implemented to achieve the benefits of the support system variable. The themes, or nodes, were believed to exist for each of the seventeen support systems variables and were thought to be sufficient after an initial review of the data and given the research questions. The research team agreed to meet regularly throughout the analysis phase in order to maintain intra-analyst
reliability and to discuss whether the nodes were appropriate throughout the process (Loxley, 2001). The node structure remained intact throughout the analysis.

Each volunteer coded to the six agreed upon sub-nodes for the five support system variables they were chosen to code. Table 4 outlines the coding agreement between volunteers and the primary researcher.

Table 4

*Volunteer Coding Agreement*

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Percentage Agreement</th>
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<tr>
<td>Reward &amp; Recognition (Volunteer 1)</td>
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<tr>
<td>Degree of Importance to the Effort</td>
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<tr>
<td>Degree of Understanding of the Variable</td>
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<tr>
<td>Relationships to Other Variables</td>
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<td>Strategy (Volunteer 1)</td>
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<tr>
<td>Degree of Understanding of the Variable</td>
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<tr>
<td>Outside Influences</td>
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<td>Specific Types Used</td>
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Table 4 (*continued*).

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<th>Node Name</th>
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<td><strong>Knowledge Management (Volunteer 1)</strong></td>
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<tr>
<td>Degree of Understanding of the Variable</td>
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<td>Relationships to Other Variables</td>
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Table 4 (*continued*).

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<th>Node Name</th>
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<td><strong>Physical Workspace (Volunteer 1) (cont.)</strong></td>
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<td><strong>Goal Setting (Volunteer 2)</strong></td>
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<td>Outside Influences</td>
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<tr>
<td>Specific Types Used</td>
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<td><strong>Performance Measurement (Volunteer 2)</strong></td>
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Table 4 \textit{(continued)}.

<table>
<thead>
<tr>
<th>Node Name</th>
<th>Percentage Agreement</th>
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</thead>
<tbody>
<tr>
<td><strong>Culture (Volunteer 2)</strong></td>
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<tr>
<td>Degree of Importance to the Effort</td>
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</tr>
<tr>
<td>Degree of Understanding of the Variable</td>
<td>97.66</td>
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<td>Relationships to Other Variables</td>
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<td>Outside Influences</td>
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<td>Specific Types Used</td>
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<td>Degree of Importance to the Effort</td>
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<tr>
<td>Degree of Understanding of the Variable</td>
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<tr>
<td>Relationships to Other Variables</td>
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<td>Outside Influences</td>
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<td>Specific Types Used</td>
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Table 4 (continued).

<table>
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<th>Node Name</th>
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<tr>
<td>Work Process Design (Volunteer 2)</td>
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<tr>
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<tr>
<td>Degree of Understanding of the Variable</td>
<td>94.30</td>
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<tr>
<td>Relationships to Other Variables</td>
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<tr>
<td>Outside Influences</td>
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<td>Level that the Team is Involved</td>
<td>94.76</td>
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<tr>
<td>Specific Types Used</td>
<td>81.37</td>
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</tbody>
</table>

Percentage agreement is the number of units of agreement divided by the total units of measure within the node as defined by Nvivo 8, the software developer. Overall, Table 4 shows that agreement numbers were consistently high, and each volunteer reported feeling aligned with the primary researcher and with the node structure after completing the coding process.

The volunteer coding only used the answers to question 8 from the interview, which asked participants to discuss each variable in depth. Both volunteers reported slight difficulty in coding selected portions of the interview without the complete context. The primary researcher used the entire interview to code passages into the node structure.

The first step in the analysis was to examine the concepts, categories, and properties of the data which was done through the use of open coding (Houldin, 2007). Each line, sentence,
and paragraph was examined to answer the question, “What is occurring at this point in time?” (Charmaz, 2006). Open coding, as with all other steps in the grounded theory process, was performed using a qualitative data analysis software program named Nvivo 8. Because the nodes were predetermined by the research team, axial coding occurred in unison with open coding in some cases.

The goal of the next step, axial coding, was to develop connections between categories and any sub-categories that emerged. Another goal of axial coding was to integrate all of the categories into a theoretical framework. Axial coding led to the creation of tree nodes that further categorized existing codes into more granular categories. The node tree began with the seventeen support system variables acting as parents in the structure. The six themes listed above acted as the next layer in the hierarchy or child nodes. From there, the next layer of nodes produced from the coding was a more detailed categorization. Degree of importance to the effort was coded into three nodes: (a) timing in the model, (b) specific comments, and (c) top or bottom 3. Timing in the model was used when a participant discussed when the support system variable should occur. Specific comments was used when explicit comments were made about the importance of the variable. Top or bottom 3 was used when the variable was included in the question about the three most or least important support system variables. Level that the team is involved was broken down into the coding’s exact comments. Specific types used was employed to group initiatives that occurred within each support system variable.

The node structure creation and coding process highlighted the need to slightly alter the original research questions. Research Question 1 was changed from, “What effect does work team implementation have on existing support systems?” to “What degree of involvement exists for work teams in regards to the seventeen identified support system variables?” This change
reflected the need to include the team in the process of being an active participant in the support process. Original Research Question 3, “What is being employed in organizations that can add to the existing literature on the seventeen support system variables?” was included in Research Question 4 regarding a support systems model. Original Research Question 4, “What support system variables are complementary and what support system variables are in contradiction with one another?” was deemed to be the same question as the new Research Question 2 about relationships between variables. As a result, the original Research Question 4 was eliminated.

**Methodology**

This study relied on qualitative analyses and methodology. Quantitative analyses were conducted after any qualitative analysis occurred and were viewed as confirmatory rather than exploratory. When determining the level of involvement, relationships between variables, and the importance, attention was given to the perceived strength of the commentary over quantitative analysis.

Three levels of involvement were chosen based on the level the team participated in either owning the variable or being an active contributor. A high level of involvement meant that the team helped make decisions about the support system or completely made the decision. A mid-level of involvement occurred when the team understood their role in the support system but did not make decisions based on the team’s ability or a lack of history as a team. A low level of involvement occurred when the support system decision was dictated to the team.

Relationships between variables were determined by specific comments made by participants. Comments that confused variables with one another and comments that highlighted
a variable that was linked to other variables are two examples of criteria for establishing an initial relationship.

The level of importance was determined by the use of qualitative coding of the data. Three levels of involvement were chosen based on the level the variable was described as being a necessary component. Comments such as, “This is essential.” or, “Absolutely critical to get right.” guided the process, but the final judgment was made based on the perception of importance being conveyed.

Quantitative analysis was used to supplement the grounded theory approach by analyzing the descriptive properties of the support system variables. A pearson correlation matrix was used to further support findings made during the qualitative analysis. All models, hypotheses, relationships, and theories were generated with the purpose of unifying the terminology surrounding support systems, providing testable ideas for future researchers, and providing an initial guide for implementing practitioners.
CHAPTER 3

RESULTS

Open coding was conducted based on the initial node structure and subsequent axial coding was conducted to support emerging nodes. While some interviews yielded more codes, or information, than others, each interview contributed to the findings. As with any qualitative analysis, the data offers context to the findings. In order to streamline this section, longer quotes and passages can be found in Appendix C. Table 5 shows the number of codes per participant.

Table 5

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<th>Participant</th>
<th>Number of Codes</th>
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<td>2</td>
<td>103</td>
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<td>3</td>
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<td>4</td>
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<td>5</td>
<td>120</td>
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*(table continues)*
Table 5 (continued).

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<th>Participant</th>
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Table 5 shows the range of codes and possible participation levels of the sample. The interviews of participants 15, 16, and 20 produced far fewer codes than the other interviews. The descriptive data for number of codes per participant ($M = 119.95, SD = 47.50$) highlights the contributions of the participants.

Each support system variable, as the parent node, contained children nodes that held the codes that answered specific research questions. Table 6 shows the node structure created during the coding process as well as the number of codes per node.
Table 6

*Number of Codes by Node*

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Resource allocation had the lowest number of codes (67) while leadership had the most codes (243). The descriptive data for number of codes per support system variable ($M = 136.59$, $SD = 50.59$) show the characteristics of the coding amounts. Table 6 shows the node structure, the coding frequency of each node, and the breadth of responses across the sample. The information from Table 6 highlights trends across nodes as well as providing assurance that codes did not emanate from a single source.
Degree of Understanding of the Variable

Some participants expressed uncertainty about the labels used to describe the chosen support system variables. During the interview process, any uncertainty of the meaning of the variable was resolved before continuing. A lack of clear understanding of some variables highlights the need for ensuring that variables are named correctly in order to make sure that resulting models and hypotheses are plainly understood and accepted by future researchers and practitioners.

Two participants commented that reward and recognition should possibly be separated into two distinct categories. For the purposes of this study, reward and recognition remained together in one variable, because recognition can be a subset of a reward system or recognition can be a companion piece to a reward system.

Participant 18 remarked that goal setting could mean goals for the individual or goals for the team. This suggestion led to a change in renaming goal setting to team goal setting.

Performance measurement was confused with performance appraisal on several occasions. Participant 20 provides a common concern, “What difference do you have in mind when you say performance measurement and performance appraisal?” A similar comment from Participant 11, “Well, I guess I was combining the two together.” The two variables are distinct enough to warrant remaining separate, but were grouped together along with team goal setting and reward and recognition to create a larger category named performance management.

The term team design created confusion as eight participants asked for further clarification before answering questions pertaining to the variable. As a result, the term team design was replaced with team placement and structure to accurately describe where work teams exist in the organization and who makes up the teams.
Four participants asked for a clarification for the term knowledge management. The variable retained the same name in light of the emergence of the term in business vernacular from the time the interviews were conducted to present time.

Like knowledge management, four participants asked for a definition of strategy. Strategy was renamed business strategy to reflect the direction of the entire company as an entity rather than just a team level strategy.

Six participants asked for further clarification about the resource allocation variable. The variable was renamed resource distribution in light of the number of participants not understanding the meaning of the original term.

The renewal system variable was unclear for four participants. One participant, number 3, asked, “The ability to replace people, is that what you are talking about?” The nature of this question as well as the lack of a common understanding of the variable led to the renewal system being renamed program evaluation and renewal.

Selection system was questioned by four participants, but the questions centered on confirming a held belief instead of needing a definition. Example questions include, “Is this for inducting new hires into the system?”, “Does that means the team being able to bring people in they want?”, and “By this I assume you mean personnel selection?” The term personnel selection was chosen to replace the original term of selection system.

All variables not discussed in this section were commonly understood and agreed upon by the sample. Variables that changed names are referred to by the new name in the rest of this study.
Outside Influences

Another node in the coding structure referred to the outside influences that impact the team’s ability to take ownership of the variable or of the organization to fully support the team. Two major outside influences emerged during the coding process: (a) union presence and (b) corporate or existing systems.

Union Presence

In many cases, union agreements impact the shift to work teams. These agreements, along with the nature of the union-management relationship, can impact the organization’s ability to support work teams. While the strength of the union differs from case to case, the influence of the union is felt throughout the support process. The following interview excerpts detail the influence that unions can have in support work systems.

The union contract is very tightly controlled in terms of pay. (Participant 17)

What I’ve found in lots of union context…default is “we do work we are told to do.” (Participant 2)

That didn’t change at all. They were under a union contract. (Participant 14)

I think one of the hardest places to do this is union environment. (Participant 2)

And the leadership includes union leadership because if you’ve got a union, obviously they have to be a party to the whole thing. (Participant 12)

Union had control, no changes. The union was a huge factor. (Participant 14)

While the strength of the union differs from case to case, the influence of the union is felt throughout the support process. The discussion of unions from multiple participants and multiple support system variables place union presence as a ubiquitous entity in the support of work
teams. Further research on and work with support systems for work teams should include unions when they exist because of the union’s ability to hinder or sustain support efforts.

Corporate or Existing Systems

Many work team initiatives occur at satellite sites in a larger corporate system. When this happens, there is a tendency for these corporate support structures to be rigid and unchangeable. Existing, or legacy, systems can include corporate structure, or they can refer to infrastructure that is too expensive or burdensome to change. The following comments highlight the pervasive nature of such systems.

The parent system actually drives the reward and recognition system. To the extent the hub, even as an enterprise system can change the reward and recognition system to the extent that the parent organization does. (Participant 3)

In fact, one of the issues at the management level was that the salary system had to conform to the corporate salary system. (Participant 1)

Since they were part of a bigger corporation, the performance appraisal system was dictated to them in terms of how they had to do it. (Participant 12)

They used existing technology to do this. (Participant 1)

They are so tied to the parent organization. It’s very difficult. It’s not as rigorous a training system because their training system is corporately tied. All of their training is really provided by corporate. (Participant 3)

Corporate and legacy structures have the ability to greatly impact each of the seventeen support system variables. The extent to which the impact exists is largely dependent upon corporate involvement, maturity of the system, and the cost required to replace the existing infrastructure.

Research Question 1 (Level of Involvement)
Research Question 1 asked what level of involvement exists for the team members in regards to each of the seventeen support system variables. The analysis sought to extract generalized possibilities rather than dwell on the specific circumstances of each participant. Examples from the interviews were located in the node tree structure in the following path: support system variables, level that the team is involved, and exact actions.

**Reward and Recognition**

The shift to work teams changes the reward and recognition system to match the collective nature of the work. Two major trends emerged from the data: (a) recognition and small rewards are often shifted to the team while larger, monetary rewards do not shift to the team and (b) for recognition to be effective, the team must be able to observe and mete recognition to one another at a peer level.

Participant 15 describes the initial shift:

...reward systems in the organization that may, in the past, have been individually-based and are now going to be, at least some degree, team-based. That’s an absolutely critical component.

Participant 8 discusses the role of recognition:

We introduced bonus bonds where any member of staff can give a small reward to any other member of staff and the company picks up the bill for this. But, the point is they can do it for anything that they value.

Participants 6 and 9 cite examples of the team being more responsible for recognition:

...changed other special recognition programs where team member can nominate each other for special contributions, can nominate players outside the department. (Participant 6)

...but it is a peer recognition program. So, rather than...our former recognition system was entirely manager driven. The manager chose who to recognize and how. Now, it’s really for employees to identify who is making contributions at a
team or individual level and to do peer recognition. So, that’s a pretty dramatic
shift there. (Participant 9)

Opportunities exist for teams to be involved in at least the recognition portion of this
variable. For rewards and recognition to truly achieve their intended aim, the organization should
still provide support for this variable. The mix of team involvement and organizational support is
most likely dictated by the culture, leadership, and the level of involvement of other performance
management variables.

Team Goal Setting

Team goal setting provides an opportunity for team involvement that is equal to or
greater than all other support system variables. The level of team involvement in team goal
setting lies on a continuum from the organization dictating the goals to the team setting their own
goals. The majority of the sample employed work teams that were positioned in the middle of the
above continuum. One seemingly effective method for including the team in the process is to
have the team contribute in setting intermediate goals while managers approve the final set of
intermediate goals and set long-term goals. The following examples confirm this belief:

..and their system, is that the goals that have to negotiated with the branch
director, obviously. (Participant 10)

Goal setting in terms of today’s or this week’s production or quality targets shift
to the team, but in the projects I have done, the larger issue of forecast demand
remains outside the group’s responsibility. (Participant 2)

...people at all levels taking on responsibility for goals and objectives of the team.
(Participant 6)

The level of team involvement in team goal setting seems to be related to the team’s
ability to have an understanding of their work in context of the overall business picture.

Therefore, the team should be expected to be a participant in the goal setting process. The level
of participation should be determined on a case by case scenario with the organization providing leadership and training as needed to support the goal setting process.

Performance Measurement

There were differing opinions on whether the team could be involved in the performance measurement function. What most likely occurs is that teams who participate in the goal setting process are also more likely to participate in the performance measurement piece based on the willingness of management to include the team in the process. The following comments demonstrate the range of involvement available:

They say, how are we going to measure ourselves as a team and then post those results so everybody sees them? (Participant 10)

The locus of responsibility changes. You still measure yield, quality, cost, waste, etc., but now the team gets that data and manages to it. (Participant 2)

Performance measurement is a variable that can involve the team to differing degrees resulting in a medium level of involvement. No matter the level of participation by the team, the organization will need to support the team by, at the least, approving the appropriate measures set by the team. On the other end of the spectrum, the more involved nature of support may include setting the measures for the team.

Performance Appraisal

The performance appraisal process appears, in many cases, to change to include components that require an assessment of performance of team-based competencies. The nature of this shift calls into action the need for the team to be involved in some form of peer appraisal. Participants reflect this through the following:
Standard supervisory appraisal becomes less appropriate as team members know more and are more affected by teammate performance. Some form of peer appraisal or a hybrid of peer and manager appraisal evolves. (Participant 2)

We are formalizing that so that there is peer feedback as part of the appraisal process.... to help them facilitate and teach them skills in that process so that people feel comfortable through that until they learn those skills for themselves. (Participant 9)

Performance appraisal is a mid-level variable in terms of team involvement. The organization will, however, need to support any team participation, because many non-managerial employees will be appraising performance for the first time.

**Team Placement and Structure**

Findings from the data suggest that teams, for the most part, do not take ownership of deciding where work teams are placed in the organization. In two cases, the team was able to participate in the design piece, and determine the reporting structure. Participant 11 discussed general participation in this phase, “...that the more people in the organization affected by change, the more that they participate, the better the ideas, the better the design, the more sense of ownership, and the more support the people give the design.” Participant 8 spoke of teams that were able to decide the structure of the team, “... right through to deciding within their unit what kind of structure they’d have, whether they would go for a hierarchy or matrix and why.” While some involvement from the team occurs, team placement and structure largely remains a variable of support from the organization.

**Communication and Information Systems**

The main source of involvement in communication and information systems is focused on an increased amount of team meetings with participation from all members. A second piece to
increased participation is the additional communication between management and front line employees. Two-way communication places the responsibility for the ongoing flow of communication within and outside the team on team members. The following comments from participants show the high level of participation needed by the team:

... we can’t have limited downward communication through the hierarchy. You’ve got to open up the information channels so people have more access to the information, and they can begin to become not a victim of the system of information because they can’t do their job. (Participant 14)

Workers who got information only through chain of command now need to get it and use it directly. (Participant 2)

Work teams must be involved in the communication and information needed to be successful in a collaborative environment. Regardless of the efforts of the organization, each team must be ready to assume responsibility for requesting the needed information and communicating needs effectively. The organization must make the commitment to supporting a workplace where increased communication across the organization structure is promoted and encouraged.

Culture

The culture needed to sustain work teams is participative in nature. While leadership often instills the culture, each team alters the culture in the way they accomplish their work. The culture is then owned by everyone in the organization, including work teams. The anecdotes below highlight this relationship:

So a lot of the status differences and dept barriers began to disappear. So they became a much more collegial culture, less status, less formal, much more participative. (Participant 12)

... a not me but we culture… think more broadly than just your function or department, think in terms of larger organization. I think you also seek out
different points of view as a result And that is an amazing thing. In organizations where it really works, people do learn to change their point of view. (Participant 4)

These comments discuss a culture where the team assumes responsibility and treats their area like their business. The added responsibility builds a culture that allows work teams the flexibility to innovate, be creative, and do what is necessary to succeed within agreed-upon parameters. Ultimately, insufficient evidence existed to label culture as a high involvement variable, leaving it at mid-level.

Training

A great amount of involvement exists for work teams when it comes to training. The team often decides what training is needed, when the training is administered, what part they play in designing the training, and even delivering the training. Participants echoed this below:

The team determined the training and when they needed it. The accountability for training now resides in the team. If you have a new member, there is someone who would be on point to assimilate that new member and do that kind of training. There is someone who would be thinking about the training needs of the team and helping to access...I mean, there are still the formal groups that develop the training and run those kinds of things. But the accessing of that and the planning for it and helping facilitate that is now team based rather than just manager. It’s making it more available across the organization. (Participant 9)

... shifting accountability of training from leader to employees. (Participant 6)

Different work teams own their training at different levels meaning that some just schedule while others design the training. A high level of participation exists for the team due to the fact that participants must be active in the training process for successful transfer of knowledge.
Knowledge Management

The degree of involvement at the team level for knowledge management tends to depend on the level of commitment the organization makes toward learning and knowledge. Some teams are considered to be the unit of knowledge while others are merely supplied with a technological infrastructure. Knowledge management, more than some other variables, is dependent on support from the organization. Below are the comments that confirm this belief:

The institution of the formal accountability for every individual to build their knowledge and to share their knowledge is a pretty dramatic change, particularly the sharing piece. (Participant 9)

The star system became a vehicle for people to learn more about the business through rotating through those stations. The net result is they’re a much more knowledgeable workforce. (Participant 12)

Work teams are largely dependent on organizational support to maintain a formalized knowledge management system. The transition to work teams does, however, inherently require team members to share knowledge and to take an active role in acquiring necessary knowledge. Knowledge management was judged to be a mid-level involvement variable.

Business Strategy

The original business strategy decision to move toward work teams traditionally provides little to no involvement for the team. Leaders in the organization often choose and direct the business strategy that is then cascaded to the rest of the company. Participant 12 reflected this thought, “I don’t know that there was a lot of employee involvement in strategy, but there was certainly a lot of communication of strategy and working to get people to buy into the strategy.”
Ownership opportunities emerge when, at some point in the future, the work of the teams influence the next generation of business strategy. This point is reflected by Participant 6, “One characteristic we adopted was that all team member had to be involved in just about everything associated with what happened on the team.”

**Leadership**

For organizations who adopt work teams as an organization design piece, leadership roles can provide more opportunities for participation at the team level than any other support system variable. One of the tenets of work teams is that decision making and authority is distributed to most appropriate level of the organization instead of power being held in the traditional areas of the organization. The following responses show the wide array of participation possibilities available:

- The decision making was distributed quite a bit. They forced everyone to be a leader based on what their content knowledge was. (Participant 10)

- So, there are more people involved in taking leadership responsibilities than there were in the past, although fewer people are formal leaders. (Participant 12)

The tailored method for the team to take on leadership roles may change across different organizations, but some distribution of leadership is essential to the success of the new design. Because of this, leadership is a high involvement support system. Each organization must decide what levels of leadership the teams are able to handle, and the old leaders must be trained on how to cede power and take on new leadership roles.
Between Teams Integration

Unsuccessful work team initiatives are often highlighted by competition between teams in the same company. As part of the transition to a more inclusive leadership approach, individual work teams are given more access to information that helps them integrate with other teams. Work teams, as the following commentary suggests, are responsible for actively participating in the integration of multiple teams.

...sitting in on someone else’s team meeting and bring information back to your team, or inviting someone from another team into your team, etc. (Participant 17)

We’ve actually formalized agreements about how that will happen, at a general level, and then individual teams can use that to say, let’s talk about how we are going to do this handoff. (Participant 9)

Increased ownership in integration between teams can improve organizational communication and increase dialogue. While individual teams must participate in the integration process, the organization must continue to support this process which led to a mid-level designation. The organization’s role is often to provide information and context of the larger system that the team may not understand.

Resource Distribution

Work teams who get involved with resource distribution tend to do so further in their life cycle than sooner. In many cases, the teams must learn other skills and demonstrate proficiency in the new reality before they are responsibly able to procure and distribute resources. The following participant comments support this finding:

They would do some ordering of their own supplies or coordinating something. It’s certainly through the Starpoint system where they are more involved in the resource allocation system. (Participant 5)
Teams would make these requests to the branch director if they needed resources. Then the branch director, if they had the resources, would give it to them. If not, they would need to negotiate up and down the chain. (Participant 10)

The decision to provide involvement opportunities to the work teams around resource distribution should occur when the team is ready. A negotiated partnership helps the team learn resource distribution while giving the organization a role in supporting the transition. The negotiation led to resource distribution being a mid-level variable.

*Physical Workspace*

No evidence from the sample data exists that suggests work teams participate in changing the physical workspace they occupy to support team-based work. A possible cause for the lack of ownership is that a major change to the workspace is often viewed as a capital expenditure and under the purview of top leadership.

*Program Evaluation and Renewal*

By the time the team and the organization are ready to conduct an evaluation and any subsequent renewal activities, the team should be ready to participate in the process. The level of their ownership most likely resides in their performance level making program evaluation and renewal a mid-level variable. The ongoing nature of access to information should help the team understand their performance and make necessary adjustments. Participant 12 reflects this sentiment, “They use a lot of auditing tools to monitor how they’re doing and make changes.” Many teams are asked to evaluate performance and make adjustments in real time as highlighted by Participant 5, “...these work systems inherently require more nurturing and maintenance and
are confounded by the adjustments that need to be made in a changing business environment, but they can’t be done in management and workers need learn to do that.”

*Personnel Selection*

For work teams to participate in the selection of new team members, they must first understand what team-based skills are and how the skills are applied in the workplace. Once this understanding occurs, personnel selection becomes a role and responsibility of many teams. Participants offered supporting evidence below:

Yeah. Workers are involved. Absolutely. (Participant 5)

Numerous instances where team members took responsibility for selection. People have taken initiative to define expectations. Team interviews. Probably one of the most widely polished and developed. AC, structured interviews, very well-ingrained. (Participant 6)

Personnel selection provides an opportunity for the team to participate in a critical function. The needed input from the team made personnel selection a high level of involvement variable. The organization, however, must continue to provide support to teams. This support often occurs from Human Resources by making sure that selection efforts are legal and compliant while providing the necessary forms and training.

*Work Process Design*

One of the basic premises of work teams is that the work and those who do it drive the strategy, design, and processes. This logic dictates that, at the very minimum, the team is an active participant in any work process design. The following participant comments support this notion:
Workers would have more knowledge and would be participating more in that work process design and more capable in participating. (Participant 5)

Teams are pretty comfortable with doing that. ...been through process owners and process teams. People understand that, so not as mystical. (Participant 6)

The concept of workers being involved in work process design is built on the idea that those who perform the work should know most about how to design the process. Work process design was clearly viewed as a high involvement variable. Organizations should take advantage of this expertise while providing the necessary training, consultation, and resources to support the team’s efforts.

Summary

In most organizations, the level of involvement by teams over these support system variables is determined by a system-wide philosophy, team performance, and the training and skills needed to responsibly participate. The variables: (a) reward and recognition, (b) team goal setting, (c) communication and information system, (d) training, (e) leadership, and (f) personnel selection seem to provide the most opportunities for involvement at the team level. The variables: (a) performance measurement, (b) performance appraisal, (c) culture, (d) knowledge management, (e) between teams integration, (f) resource distribution, (g) program evaluation and renewal, and (h) work process design offer a more moderate level of involvement at the team level. The variables: (a) team placement and structure, (b) business strategy, (c) physical workspace offer the least amount of involvement possibilities at the team level.

The determination of the level of participation is a function of the volume of coding at the node, which was presented in the discussion of each variable. While this delineation is a starting
guideline, the level of involvement for the team should be the product of ongoing discourse between the team and the organization.

Research Question 2 (Relationships Between Variables)

Research Question 2 asked what relationships exist between the seventeen support system variables. The analysis sought to examine what relationships exist so that researchers and practitioners can account for variables that are related. Examples from the interviews were located in the node tree structure in the following path: support system variables and relationships between variables.

Quantitative analysis was conducted after the qualitative analysis and was used to confirm relationships rather than explore possible relationships due to the small sample size. Table 7 shows the correlations between the seventeen support system variables.
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** Correlations are significant at \( p < .01 \)
The results of Table 7 yielded such a contrast from the qualitative analysis that further scrutiny was deemed necessary. The small sample size had a potential to obscure the true nature of the correlation. In order to better determine if the correlations depicted relationships between the variables, the raw data was compared to the variable means (Howell, 2002). This approach was tried after simple scatter plots failed to reveal conclusive evidence.

Participants were asked how important the support system variable was to the overall team implementation. Table 8 shows the descriptive data for the support system variables.

Table 8

*Descriptive Statistics for Support System Variables*

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<tr>
<td>Leadership</td>
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<td>3.77</td>
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*(table continues)*
Table 8 (continued).

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<tr>
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<td></td>
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</table>

Table 8 provides some insight about the perceived importance of the support system variables as well as provided input for the analysis of Table A1. Some participants did not answer later questions on rating the variables due to time constraints. Other participants failed to provide a number to accompany the qualitative data. The averages provided in this table were not used to determine the degree of importance for the variables due to the fact that several participants answered and then asked for further definition or clarification.

Each significant correlation was examined by looking at the raw data versus the variable mean. Table A1 in Appendix D shows the outcomes from the analysis. To better understand the nature of the significant correlations, the raw data was examined against the support system variable means. In order to ensure that significant correlations denote actual relationships, the above mean/above mean cell and the below mean/below mean cell had to be more heavily populated than the above mean/below mean and below mean/above mean cells (Howell, 2002).
Of the sixteen significant correlations flagged in Table 7, ten correlations appear to remain significant after further analysis. The ten correlations from Table A1 are: (a) between teams integration and performance measurement, (b) work process design and performance appraisal, (c) communication and information systems and culture, (d) communication and information systems and business strategy, (e) communication and information systems and leadership, (f) culture and training, (g) culture and leadership, (h) culture and program evaluation and renewal, (i) leadership and training, and (j) leadership and personnel selection. These ten correlations were used to potentially supplement qualitative findings. For any of these ten correlations to be included further, the relationship must have surfaced during the coding process. The rationale for downgrading the quantitative piece is the small sample size which renders the numbers difficult to substantiate.

**Reward and Recognition/Performance Management Variables**

Throughout the coding process, a theme emerged that team goal setting, performance measurement, and performance appraisal were all related to the overall performance of work teams. A second theme emerged that the three variables above were all related to reward and recognition. Therefore, this section reports the outcomes for relationships between reward and recognition and the three performance variables.

Team goal setting was related to reward and recognition as relayed by Participant 14, “The compensation went from piecemeal to incentive based. The team had a goal to produce, and then they had to meet that goal, and above that they got additional compensation.” An even more advanced scenario related reward and recognition to a mix of organizational, team, and individual goals. This viewpoint came from Participant 17, “Their bonus is based on overall
company performance against goals, their team’s performance against its specific goals, and
individual’s performance against individual goals.”

The next set of codes shows the relationship between reward and recognition and the
three performance variables. The following codes highlight the relationship:

That is where the goal setting and the performance measurement become really
important. If you get the goals right then you can reward people for the
achievement of those goals. (Participant 8)

What I might do is talk about goal setting, performance measurements and
performance appraisal all at the same time because I don’t quite know how to
separate them out. (Participant 9)

The codes show the need to relate reward and recognition to the performance-related
criteria. While some participants had trouble distinguishing between the three performance-
related variables, they were considered distinct variables serving different purposes.

Team Goal Setting/Performance Measurement

Team goal setting was found to be related to performance measurement, because once the
goals are set at a team level, the measurement system must reflect the team’s performance
against attaining the goals. The coded comments below discuss the nature of the relationship:

The next would have to be measures, and I’m not sure whether that’s performance
measurement system or goal-setting. Certainly, getting people focused on the
goals and the measures is critical. (Participant 12)

You don't want the team having to perform within a rigid structure of
performance management that isn't appropriate to the team goals. (Participant 18)
Team Goal Setting/Performance Appraisal

One participant, 18, discussed the relationship between team goal setting and performance appraisal, “I see such a close linking between goal setting and performance appraisal. ...linking the appraisal to the goal setting is hugely important.” This relationship is consistent with the related nature of the performance management variables.

Team Goal Setting/Between Teams Integration

Participant 3 discussed the relationship between setting team goals and making sure that the goals do not prompt unhealthy competition between teams. The main points of this discussion are found below:

We have so many competing goals. We want to get the people on the plane and there is a function that has to do that. There is a function that has to get the bags. There is a function that has to get the food. There is a function that has to reconcile all the tickets. But, all of them may have competing goals. (Participant 3)

Performance Appraisal/Performance Measurement

The relationship between performance measurement and performance appraisal centers on the premise that performance appraisal is an aligned function of the performance measurement system. The following codes discuss this relationship:

What difference do you have in mind when you say performance measurement and performance appraisal? (Participant 20)

Performance appraisal system, assuming it is still a traditional one, it's sort of out of sight out of mind. It's a pain in the neck. The people try to do the right thing, and that is linked to your performance measurement systems. (Participant 16)
Team Placement and Structure/Work Process Design

Team placement and structure and work process design are related because where teams are placed in the organizational chart and how they are composed is a function of the work to be accomplished and the processes needed to achieve that work. The nature of the relationship depends on which variable is engaged first. The following comments support this notion:

... because I don't think you can design the appropriate structure until you know what the work process is. (Participant 11)

TBO handed off to lean the responsibility for determining what processes made sense in terms of clustering people to create teams around natural processes. (Participant 19)

Communication and Information Systems/Knowledge Management

Six of the twenty participants mentioned the relationship between communication and information systems and knowledge management. The variables were viewed as related but different. The following codings highlight the relationship:

I think you would have to change it dramatically and it really is tied back into what I said about communication and information systems. It’s hard for me to separate those two from each other. (Participant 7)

How is that different from communication and information? I think the trends I'm talking about these days is communication increasing is actually around knowledge management. It is enabling some members of the team to gain the knowledge that other members have. So I would rate it, what did I rate communication and information.(Participant 18)

Communication and Information Systems/Performance Measurement

The relationship between communication and information systems and performance measurement calls for the organization to provide performance data to the work team when they need it and in a format they can use. The comments below support this relationship:
The only major change there was to try to get production, quality, and cost information displayed at a team level, rather than a higher level, so each team could see what their impacts were. (Participant 12)

We intend to make the data as available as possible to everybody in the organization and then to do the kind of summaries that are most helpful to the managers and executives or whoever might be interested and to make those summaries make sense. (Participant 9)

Culture/All Variables

The coding process revealed that the culture of the organization is related to and affected by everything that the organization does or does not do. Based on this belief, culture was found to be related to all support system variables. The following codes discuss the relationship between culture and the other support system variables:

So, we’ve been trying to integrate it into all of these systems so people see it on a regular basis, here it and get the reinforcement. (All systems, Participant 9)

... much different culture because they have changed. They have aligned all the elements in the system, the organization structure, the training, the compensation, the leadership style. (All systems, Participant 5)

... then you’re sending out a big mixed message in the org about what’s valued. All these systems are the reinforcing methods of the culture. So the question is do we want our systems to reinforce the old culture or the new culture? If we’re moving to TBO culture, all those systems need to reinforce the behaviors we want in that new culture. (All systems, Participant 12)

Business Strategy/Team Placement and Structure

The relationship between business strategy and team placement and structure is driven by the tenet that the placement and structure of work teams is a result of trying to achieve a business strategy. The following comments support the findings:

In putting these teams in place, it was to support a strategy. (Participant 4)
I believe in creating a team based organization is a deliberate organizational strategy to achieve some end. And, so it becomes an organizational paradigm and you do some things deliberately and differently because of that. (Participant 7)

**Business Strategy/Communication and Information Systems**

The business strategy and communication and information systems relationship is the only relationship to be considered from a qualitative standpoint and confirmed by the quantitative results in Table 8, $r(14) = .70$, $p < .01$. Again, the small sample must be considered. The supporting qualitative material comes from Participant 12:

> There was a lot of communication of strategy. I don’t know that there was a lot of employee involvement in strategy. But there was certainly a lot of communication of strategy and working to get people to buy into the strategy—understand it, buy into it, and support it. If you say how well does the organization do in communicating and getting buy-in to the strategy that’s set, I think they do well at that. (Participant 12)

**Leadership/Team Placement and Structure**

Leadership and team placement and structure is related to the changing roles of leaders when moving to work teams and to the need for leaders to help identify where teams are needed and who will be on the teams. The following supporting codes are listed below:

> ...moving around of managers – from functional structure to product structure. (Participant 1)

> The leaders actually changed the structure and they changed the strategy and then the structure. But their bias was to build on the notion of the team mechanisms in the organization. There was a lot of learning about what teams are. (Participant 4)
Leadership/Business Strategy

Leadership and business strategy were found to be related on the premise that, in many organizations, the people who develop the strategy are the leaders. This premise is supported below:

The management team that put that strategy in place, as was expected. (Participant 4)

It’s less around the economics and more around having managers focused on different work than the tactical work of managing teams. It’s sort of saying, let’s have managers focus on the strategic and coordinating activities as opposed to the doing of the day-to-day work. (Participant 9)

Between Teams Integration/Communication and Information Systems

Based on the coding process, the relationship of between teams integration and communication and information systems emerged from a need to have communication and information in place to prevent teams from competing against one another and to help teams learn to communicate across boundaries. The comments below sustain this belief:

...but also cross-shift communication. Sometimes the production star point on first shift will talk to the one on second shift as they’re making the transition, so that information is passed on more effectively. So, teams have had a definite impact on the between-teams integration. (Participant 17)

...to connect the relevant parts of the system to insure that information and knowledge is shared. (Participant 2)

...to help pass information through their networks, under the Starpoint Systems, which comes out of their inter-team coordination. It was a mechanism for gathering information, for sharing information. (Participant 5)
**Between Teams Integration/Knowledge Management**

The relationship of between teams integration and knowledge management can be thought of as an extension, or higher level, of the relationship of between teams integration and communication and information systems. The knowledge management piece goes a step further by inferring that, on top of the necessary communication between teams, the teams must share what they know and what they learn in order for work teams to be successful. The following highlights this relationship:

...to connect the relevant parts of the system to insure that information and knowledge is shared. (Participant 2)

For example, from one functional area to another functional area rather than the knowledge staying resident within the function, once you are on a team you are going to be sharing your functional know-how. That was a real shift for us. It was unique. In fact, that is what happened. I think it is a very positive way to manage knowledge. (Participant 4)

**Program Evaluation and Renewal/Business Strategy**

Program evaluation and renewal and business strategy are linked because once the implementation of work teams is evaluated and adjustments are made, the overall business strategy then changes. The comments below highlight this relationship:

Renewal system, because if you’re really closely liked with your strategy to marketplace, that happens anyway. (Participant 14)

That feedback has caused us to review some of the demand management systems we have in place. There is a danger in becoming too internally focused when you are in the middle of one of these. If you are changing your service organization, don’t forget to carry on serving your customers while you are doing it. (Participant 8)
Program Evaluation and Renewal/Leadership

Program evaluation and renewal and leadership were found to be related because many of the changes uncovered during the evaluation period result in an adjustment to managerial and leadership roles. The codes below support this relationship:

You had managers who may not fit as leaders. You have need on teams who are capable of for multi-skilling in the broad perspective. So, you end up with some teams with a weak leader. You have people who just can’t do the work that needs to be done. So, you have to deal with moving them out and you have to deal with moving better people in. (Participant 4)

There is a little bit more control needed than what we originally had written into the systems. (Participant 8)

Summary

Three variables, training, physical workspace, and personnel selection, were not found to be related to other variables based on the coding process. While training was not found to be explicitly related to other variables, it was found to exist at different points in the system. No clear explanation exists for why training and personnel selection were unrelated to the other variables. Many participants discussed physical workspace as an unchanging system, which may have disassociated it from other variables. Relationships tend to change from organization to organization, but the analysis outlined trends across multiple companies. The relationships established in the coding process are theoretical in nature and are explored in further detail in research questions four and five.

Research Question 3 (Degree of Importance)

Research Question 3 sought to investigate what, if any, support system variables were critical to the success of a work team implementation. All seventeen variables were viewed as
important support systems, so this analysis did not eliminate any variables from the study. The purpose was to better understand the importance of the variable, and participants were asked to rate the importance of the variable to a particular effort on a 5-point scale. The results from Table 8 were not considered due to two factors. An unsuccessful implementation could have skewed the response, and with a small sample, greatly affected the overall mean score. Also, several participants answered the 5-point question and then asked for further clarification, which called the validity of the initial answer into question. Specific qualitative codes depicting the importance of the variable combined with the more relevant question of the top and bottom 3 support system variables in a work team implementation were used in the analysis.

Reward and Recognition

Reward and recognition was viewed as a highly critical support system for work team implementation. Five of the fifteen participants who responded to the top or bottom three variable question described reward and recognition as a top three variable while no participants viewed reward and recognition as a bottom three variable. The following codes support the notion that reward and recognition is a highly important support system for work teams:

Recognition and reward, even if not tied to money, the importance of saying thank you to people when they go out of their way to help you is just really something we undervalue, I think. (Participant 17)

In the past, have been individually-based and are now going to be, at least some degree, team-based. They can also have an individual component, but people are going to behave in the way in which they are rewarded. That’s an absolutely critical component. (Participant 15)

...because unless you modify the appraisal and the reward and all those things, it doesn't work. (Participant 18)
Team Goal Setting

Team goal setting was viewed as a highly critical support system for work team implementation. Four of the fifteen participants who responded to the top or bottom three variable question described team goal setting as a top three variable while two participants viewed team goal setting as a bottom three variable. The following comments highlight that team goal setting is highly important as a support system for work teams:

The teams set goals for themselves. Goal-setting was a very important part. (Participant 12)

I've seen a lot of benefit comes on the changing your goal setting/long range planning to be much more participative. (Participant 16)

That is where the goal setting and the performance measurement become really important. If you get the goals right then you can reward people for the achievement of those goals. (Participant 8)

Performance Measurement

Performance measurement was viewed as a highly critical support system for work team implementation. Four of the fifteen participants who responded to the top or bottom three variable question described performance measurement as a top three variable while one participant viewed performance measurement as a bottom three variable. The following highlights that performance measurement is highly important as a support system for work teams:

In TBO, we as a group are collectively responsible for unit results. (Participant 12)

They literally made more use of measures at every level of the organization than they had in the past. (Participant 12)
Performance Appraisal

Performance appraisal was viewed as mid-level support system for work team implementation in terms of importance. One participant who responded to the top or bottom three variable question described performance appraisal as a top three variable while four participants viewed performance appraisal as a bottom three variable. The following commentary shows performance appraisal as a more important support system than the top/bottom question showed:

We talked about appraisal, and I think that's enormous because unless you modify the appraisal and the reward and all those things, it doesn't work. (Participant 18)

This one is so powerful if you get it right. It can be a real motivator. (Participant 8)

Your performance management system will have to be different to support a team environment as opposed to an individual contributor environment. (Participant 9)

Team Placement and Structure

Team placement and structure was viewed as a highly critical support system for work team implementation. Seven of the fifteen participants who responded to the top or bottom three variable question described team placement and structure as a top three variable while no participants viewed team placement and structure as a bottom three variable. The following coding supports that team placement and structure is highly important as a support system for work teams:

It’s a mindset change, and it challenges peoples assumptions about how work is done and what people can do and how they do it. That is the most fundamental challenge of their assumptions on the workplace. (Participant 14)

We spent a lot of time with the people trying to find out what, career wise, interested them. Then we built team based structures... (Participant 8)
**Communication and Information Systems**

Communication and information systems was viewed as a highly critical support system for work team implementation. Five of the fifteen participants who responded to the top or bottom three variable question described communication and information systems as a top three variable while no participants viewed communication and information systems as a bottom three variable. The following coding supports that communication and information systems is highly important as a support system for work teams:

- We do make a very conscious effort to communicate at all levels all the time. (Participant 17)
- TBO has required a lot of communication. So there’s been a lot of impact there. (Participant 19)
- New forms of communication and lateral integration (across boundaries) become essential. (Participant 2)
- I think, once you put a team based organization in place, one of the things that happens is you have to do a lot more formal communicating. (Participant 4)

**Culture**

Culture was viewed as a highly critical support system for work team implementation. Six of the fifteen participants who responded to the top or bottom three variable question described culture as a top three variable while no participants viewed culture as a bottom three variable. The comments below support that culture is highly important as a support system for work teams:

- The culture changed dramatically, because they changed their client base and products and all of a sudden became a lot more democratic and egalitarian in the way that they approached things. (Participant 10)
Everything really was designed to change the culture. (Participant 17)

Culture is critical. (Participant 18)

Huge issue. The shift is away from the bureaucratic, Tayloristic culture of command and control toward responsibility for the work where it’s being done, locus of decision-making at lower levels, inclusion in information and decision-making, etc. (Participant 2)

Training

Training was viewed as a mid-level important support system for work team implementation. No participants that responded to the top or bottom three variable question described training as a top three variable while one participant viewed training as a bottom three variable. The following commentary shows training as a more important support system than the top/bottom question:

The training is a real anchor for the culture and the TBO. (Participant 17)

Another huge issue. The training system becomes centrally important to the success of the work system, especially if skill-based pay is implemented. (Participant 2)

There is lots of training needed to get people comfortable with that. (Participant 8)

Then have to do training, but training at three levels—supervisor training, team training, and empowerment training for Starpoint people. (Participant 12)

Knowledge Management

Knowledge management was viewed as a lesser support system for work team implementation. One participant that responded to the top or bottom three variable question described knowledge management as a top three variable while six participants viewed knowledge management as a bottom three variable. One potential possibility for the low import is that participants seem to have experienced working in team environments without a formal
knowledge management system. The lack of a system may have lowered the perceived importance. The following commentary shows knowledge management as a support system that is helpful but not absolutely necessary:

The knowledge management system, that's nice to have, but a lot of people go to a lot of trouble to design something nobody else uses. (Participant 16)

For us, here, the knowledge management system has not been a critical factor, but I think that it could be a very critical factor in other places. (Participant 17)

Knowledge management system is lesser (because I’ve worked in TBOs that just don’t have one). (Participant 8)

**Business Strategy**

Business strategy was viewed as a lesser support system for work team implementation. No participant that responded to the top or bottom three variable question described business strategy as a top three variable while three participants viewed business strategy as a bottom three variable. Business strategy was viewed by some as the reason why teams are implemented and by others the outcome of teams. The lack of clarity may have resulted in a lower rating. The following commentary shows business strategy as a more important support system than the top/bottom question:

It’s because TBO is, to some extent, a means to achieving business strategy. (Participant 19)

Strategy led to teaming and so I don’t know that teaming has done anything to help strategy. I’m not sure how to answer this question. Our strategy has not changed as a result of moving to team based. Team based did come out of how do we best deliver on the strategy that was created. It makes sense because you don’t want your strategy to be driven by your team choice. If you are doing it right, your strategy would send you down a team. (Participant 9)

A successful TBO can be established regardless of the strategic choices -- IF all the systems including the TBO choices, align to achieve the strategy. (Participant 9)
Leadership

Leadership was viewed as a highly critical support system for work team implementation. Nine of the fifteen participants who responded to the top or bottom three variable question described leadership as a top three variable while no participants viewed leadership as a bottom three variable. The comments below support that leadership is highly important as a support system for work teams:

There has to be senior management... an announced and demonstrated commitment to the team concept. (Participant 10)

There were significant changes in the middle and first-level management. (Participant 12)

Leadership appears to be such a key. (Participant 19)

A key to successful transition is leadership buy-in. It really has an impact on how leaders lead and how managers manage. So, you need at least the top of the house saying we think this is a strategy, an initiative that we want to put in place, we feel that it will help solve our business needs. Ensuring that leaders (both employees and managers) are well grounded in the new paradigm is critical. (Participant 9)

Between Teams Integration

Between teams integration was viewed as a somewhat important support system for work team implementation. One participant that responded to the top or bottom three variable question described between teams integration as a top three variable while one participant viewed between teams integration as a bottom three variable. The following commentary shows between teams integration as a more important support system than the top/bottom question:

Because of the fact that people now have more responsibility and they have to interact with different teams laterally as well as horizontally, they have to know a lot more about what other groups do. (Participant 10)
TBO’s need to make sure that they have designed in the lateral integration mechanisms to connect the relevant parts of the system to insure that information and knowledge is shared. (Participant 2)

I may have two teams that bump up against each other, and they're going to have to have some system to make sure that that bump up against each other works out, and they'll work those pieces out. (Participant 20)

Resource Distribution

Resource distribution was viewed as a somewhat important support system for work team implementation. One participant that responded to the top or bottom three variable question described resource distribution as a top three variable while one participant viewed resource distribution as a bottom three variable. Participant 17 gives a view of resource distribution, “We no longer assume that if another department is busy, and yours is not, they have nothing to do. Send them over and let them help in the other area. So we have a much more fluid allocation of human resources than before.”

Physical Workspace

Physical workspace was viewed as a lesser support system for work team implementation. No participants that responded to the top or bottom three variable question described physical workspace as a top three variable while eight participants viewed physical workspace as a bottom three variable. Little commentary was provided, but Participant 18 gave this example, “The physical workplace isn’t usually important, but it is symbolic. So you remember my bricking the wall thing, you know, the Berlin Wall, that would make a huge symbolism, which possibly might have more impact than training.”
**Program Evaluation and Renewal**

Program evaluation and renewal was viewed as a lesser support system for work team implementation. One participant that responded to the top or bottom three variable question described program evaluation and renewal as a top three variable while five participants viewed program evaluation and renewal as a bottom three variable. The following commentary shows program evaluation and renewal as a more important support system than the top/bottom question:

The other one, the renewal system is another good one. You need some way of keeping this alive, or you plateau and get stuck. (Participant 16)

Always looking at stuff to make sure it’s still working. (Participant 17)

These work systems inherently require more nurturing and maintenance and are confounded by the adjustments that need to be made in a changing business environment. (Participant 5)

**Personnel Selection**

Personnel selection was viewed as a lesser support system for work team implementation. No participant that responded to the top or bottom three variable question described personnel selection as a top three variable while four participants viewed personnel selection as a bottom three variable. The following commentary shows personnel selection as a slightly more important support system than the top/bottom question:

The selection process...I mean, all of those things need to be different in order for teams to be truly core performing units of the organization. (Participant 9)

The selection system, even though I would like to see that change, I think you can manage without it. (Participant 17)
**Work Process Design**

Work process design was viewed as a highly critical support system for work team implementation. Three of the fifteen participants who responded to the top or bottom three variable question described work process design as a top three variable while no participants viewed work process design as a bottom three variable. The comments below support that work process design is highly important as a support system for work teams:

> My bias is, if TBO is going to be meaningful to business, you have to do this. If you’re going to invite people to be committed to the work they will do, there’s no other way to get at it. Clearly, they understood that, and that is all lean is about, throwing out ways it could be done. (Participant 13)

> Since work systems are socio-technical, you can’t change the work system without a concomitant change in the technical system and vice versa. (Participant 2)

**Summary**

While all of the seventeen support system variables are needed in a work team implementation, the analysis produced three tiers of importance. There were eight highly important support systems: (a) reward and recognition, (b) team goal setting, (c) performance measurement, (d) team placement and structure, (e) communication and information systems, (f) culture, (g) leadership, and (h) work process design. The mid-level of importance included four variables: (a) performance appraisal, (b) training, (c) between teams integration, and (d) resource distribution. Finally, there were five variables on the lower tier: (a) knowledge management, (b) business strategy, (c) physical workspace, (d) program evaluation and renewal, and (e) personnel selection. The importance of the seventeen variables will factor into the outputs of Research Questions 4 and 5.
Research Question 4 (Support Systems Model)

Research Question 4 sought to build a model, or representation, that included all information previously discussed in this chapter. The model was designed to provide a pictorial representation to drive future research and to give practitioners a guide to work team implementations from a support system perspective. The support system model was created using the results from Research Questions 1-3 as well as coding efforts that fell outside the efforts of Research Questions 1-3. The model is presented followed by a discussion of each variable’s place in the model.

Support Systems Model

The Support Systems Model was created using the findings from Research Questions 1-3. Each of the seventeen support system variables is represented in addition to the two identified outside influences of corporate or existing systems and the presence of a union. The level of involvement at the team level for each variable, the relationships between variables, and the degree of importance of each variable is represented in the model. Figure 1 shows the Support Systems Model. A legend is provided at the bottom of the model to better describe each variable. The model is designed to occur in a linear fashion, moving from implementation on the left to maintenance on the right. Further discussion is provided in the variable section after Figure 1.
Figure 1. Support Systems Model
Variables in the model were color coded as to their importance in the following ways: (a) high importance – gray, (b) mid-level importance – blue, and (c) low importance – green. Outside influences such as corporate or existing systems or union presence were colored pink. Relationships between variables were marked with a small arrow. The level of team involvement was marked in the variable box in the following way: (a) high involvement – solid line, (b) mid-level involvement – dashed line, and (c) low involvement – dotted line. Large arrows were used to denote that a variable entered the organization at multiple entry points.

Leadership

Leadership is represented on the far left as a beginning point of a work team implementation. At this point the leadership of an organization is determining whether or not to pursue work teams as a viable strategy. The comments below support leadership as a beginning point:

The first is a change in leadership, which may be in management, or just exploring the basic ideas about whether they need to change, whether this direction is a good idea. What resources does it take and how ready is your organization, and to make the decision either to go/no go on change. (Participant 11)

The decision to do this began at the top. (Participant 7)

So, you need at least the top of the house saying we think this is a strategy, an initiative that we want to put in place, that it will solve our business needs. (Participant 9)

The relationships to leadership were found in research question 2. Leadership is related to business strategy because the leaders of an organization are often the people responsible for setting the strategy. Leadership also was related to team placement and structure in that leaders are often the people responsible for deciding where in the organization work teams will be placed and for deciding who will make up the initial teams.
**Business Strategy**

Business strategy is represented on the left of the model as one of the beginning points of a work team implementation. Leadership must be the ones to choose work teams as the strategy. The comments below support strategy as a beginning point in the model:

- Strategy led to teaming. Again, the overarching intent was to deliver a strategy and then, the choice just being made that we would be team based in that process. (Participant 9)

- If they are implemented, and they are successful in being implemented, they are being driven by a particular strategy. (Participant 4)

- The strategy drove creating a team based organization. (Participant 7)

The relationships to business strategy were found in research question 2. Business strategy is related to team placement and structure because the strategy drives how many teams will be needed and where the teams will be used in the organization. Business strategy was also related to communication and information systems because the strategy must be formally communicated to the rest of the organization.

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**Team Placement and Structure**

Team placement and structure is represented on the left of the model as one of the beginning points of a work team implementation. Team placement and structure comes from the strategy and helps drive work design. No explicit anecdotal evidence was given as to the location of team placement and structure in the model, but team placement must occur before other variables can occur such as the performance management variables.
Work Process Design

Work process design is represented on the left of the model as one of the beginning points of a work team implementation. Work process design and team placement and structure were seen as occurring close to one another. The comments below support work process design as a beginning point in the model:

...because I don't think you can design the appropriate structure until you know what the work process is. I don't think you can design the information system until you know what the work structure is, what it is people are going to be doing and what kind of information they need. (Participant 11)

You can't design the appropriate human resources systems, whether it is selection or training or policies, again, until you know what you're requiring of people, and what it is that they're doing. (Participant 11)

Communication and Information Systems

Communication and information systems is represented on the left of the model as one of the beginning points of a work team implementation. Participant 10 discussed using communication and information systems early in the process, “Right from the start, as we hardwired into the process, the people doing lessons learned analysis at each of the sites and synching up every night, so they learned that process.” Communication was related to between team integration, knowledge management, and performance measurement.

Physical Workspace

Physical workspace is represented on the left of the model as one of the beginning points of a work team implementation. Physical workspace was found to be unrelated to other variables in research question 2. No explicit anecdotal evidence was given as to the location of physical
workspace in the model, but physical workspace must occur before other variables and the actual work can occur.

**Performance Management Variables**

The performance management variables include team goal setting, performance measurement, performance appraisal, and reward and recognition. Reward and recognition was seen as a variable to attend to from early to midway through the implementation.

That was probably about a year to two years into the effort. (Participant 10)

We put together a group to do that in the second year of the innovation, and they went out and benchmarked what organizations were doing in terms of gain sharing and skills-based pay, and things like that. (Participant 12)

I do think that organizations tend to put that off. (Participant 7)

The grouping of performance management variables occur after the six variables above are underway. The close relationship of the four performance management variables placed their occurrence in the middle of the work team implementation.

**Knowledge Management**

Knowledge management is represented on the right side of the model as one of the later points of a work team implementation. Knowledge management was found to be related to communication and information systems and between teams integration. No explicit anecdotal evidence was given as to the location of knowledge management in the model, but the relationship with communication and integration as well as the need to manage knowledge after some of the work has changed placed knowledge management toward the end of the model.
Between Teams Integration

Between teams integration is represented on the right side of the model as one of the later points of a work team implementation. Between teams integration was found to be related to communication and information systems, knowledge management, and team goal setting. No explicit anecdotal evidence was given as to the location of between teams integration in the model, but the relationship with team goal setting drove the decision to place the variable after the performance management group.

Personnel Selection

Personnel selection is represented on the right side of the model as one of the later points of a work team implementation. Participant 19 discussed using personnel selection later in the support process, “I don’t think the teams are yet selecting their own members, but they’re getting close to that.” Personnel selection was not related to other support systems variables in the model.

Resource Distribution

Resource distribution is represented on the right side of the model as one of the later points of a work team implementation. Participant 9 discussed resource distribution as a support system that occurs later in the process, “So, as we get further along that would be more...the actual resource allocation system hasn’t changed yet, because we are still in the early process. I think that concept will be influencing how we do resource allocation.” Resource distribution was not related to other support systems variables in the model.
Program Evaluation and Renewal

Program evaluation and renewal is represented on the right side of the model as one of the later points of a work team implementation. Participant 11 discussed program evaluation and renewal as a support system that occurs at the end of the process, “The final stage is ongoing, and I call it organizational renewal.” This point was reiterated by Participant 12, “The final one is monitoring progress, disseminating best practices, diffusing. The challenge is how to move it to other parts of the organization.” In the model, program evaluation and renewal feeds back into the beginning variables of leadership and business strategy.

Culture

Culture was seen as both a beginning piece of the transition to work teams and an ongoing piece. This led to culture being placed along the top of the model and extending throughout the life of the effort. As a result, culture impacts everything that happens in the transition, and everything in the transition affects the culture. The following commentary supports the ongoing nature of culture:

If you’re doing a transition from a different culture to a team-based culture, I think you’re still looking at something over 5 years for it to be fully integrated. (Participant 17)

...but over time a culture develops, a not me but we culture… think more broadly than just your function or department, think in terms of larger organization. We did this for three years and I think we ended up with a work force that is better skilled and with a better perspective. (Participant 4)

In terms of culture, it’s a much different culture because they have changed. They have aligned all the elements in the system. The organization structure, the training, the compensation, the leadership style, etc. (Participant 5)

You have to really make choices around everything that is part of creating a team culture. And, so you do have to turn everything on its side and since we were going
through this redesign, it was certainly an ideal opportunity to have something different emerge. (Participant 9)

*Ongoing Leadership*

Leadership was placed at the beginning of the model, but it is also place along the top of the model and stretches throughout the life of the implementation. The rationale is that leadership must continue to provide guidance to all of the support systems as an ongoing management function. Participants 9 and 14 highlight this sentiment:

Leadership system because there are going to be tough moments, and if they really are serious about it, when there’s sabotage and there’s resistance, they’ve got to step in and say that’s unacceptable. (Participant 14)

A key to successful transition is leadership buy-in. It really has an impact on how leaders lead and how managers manage. (Participant 9)

*Training*

Training was seen as both a beginning piece of the transition to work teams and an ongoing piece. This led to training being placed along the top of the model and extending throughout the life of the effort. Throughout the coding process, training was repeatedly viewed as a accompaniment to the other support systems. The following commentary supports the ongoing nature of training:

It’s interesting that they did enormous amounts of training, probably in the neighborhood of 100+ hours per person over the first 2 years. (Participant 12)

The training is critical, but it’s ongoing process, not just a one-shot process, skills of developing a team, assessing and diagnosing, participation processes, communication, conflict resolution, teaming skills. (Participant 15)
Outside Influences and Phases

The two outside influences, corporate or existing systems and union presence, are ongoing variables along the bottom of the model. Either influence can occur at any point or multiple points of the implementation. Three phases were added to the model to reflect common groupings of variables. The three phases were: (a) design, (b) performance management, and (c) integration and maintenance. While the three phases are not explicitly found in the interviews, the phases were added with the rationale of dividing large systems into smaller components (Beyerlein & Harris, 2004).

Summary

The Support Systems Model is presented in linear fashion over time from the beginning of the implementation to the “end” of the process. The degree of involvement tends to be low at the beginning, high in the middle stages, and mid-level towards the end of the model. The model was designed to create a holistic view of the necessary support systems for successful work team implementation by showing when support needs to occur, how the support relates to other support systems, and how involved the team needs to be in the process.

Research Question 5

Research Question 5 asks what hypotheses can be drawn from the data. The small size of the sample leads to the need for further investigation of the findings of this study. The findings from Research Questions 1-4 led to the creation of the findings for Research Question 5. The hypotheses result from Research Questions 1-4 and are aimed at fueling future research on support systems for work teams.
Level of Involvement for the Team

Research Question 1 asked what level of involvement exists for the work team for each of the seventeen support system variables. The following hypotheses are drawn from the conclusions of Research Question 1:

Hypothesis 1: High levels of involvement exist for work team members for the following variables:

1. Leadership
2. Communication and information systems
3. Team goal setting
4. Reward and recognition
5. Personnel selection
6. Training

Hypothesis 2: Medium levels of involvement exist for work team members for the following variables:

1. Culture
2. Work process design
3. Performance measurement
4. Performance appraisal
5. Between teams integration
6. Knowledge management
7. Resource distribution
8. Program evaluation and renewal
Hypothesis 3: Low involvement opportunities exist for work team members for the following variables:
   
   1. Business strategy.
   
   2. Team placement and structure
   
   3. Physical workspace

Hypothesis 4: Low involvement opportunities exist for work team members in regards to union presence.

Hypothesis 5: Low involvement opportunities exist for work team members in regards to corporate or existing systems.

Relationships Between Variables

Research Question 2 asked what relationships existed between support system variables. The following hypotheses are drawn directly from the findings of Research Question 2:

Hypothesis 6: Leadership decisions drive business strategy decisions on work team implementations.

Hypothesis 7: Leadership decisions lead to decisions on team placement and structure work team implementations.

Hypothesis 8: Business strategy and team placement and structure are significantly related as support systems.

Hypothesis 9: Business strategy is related to communication and information systems as work team support systems.

Hypothesis 10: Team placement and structure and work process design are related as work team support systems.
Hypothesis 11: Communication and information systems is related to each of the following variables:

1. Performance measurement
2. Knowledge management
3. Between teams integration

Hypothesis 12: Each of the four performance management variables (team goal setting, performance measurement, performance appraisal, and reward and recognition) is related to the other three performance management variables as work team support system variables.

Hypothesis 13: Between teams integration is related to team goal setting and performance measurement as work team support system variables.

Hypothesis 14: Between teams integration is related to knowledge management as work team support system variables.

Hypothesis 15: Program evaluation and renewal is related to leadership and business strategy as work team support system variables.

Hypothesis 16: Culture is related to the other sixteen work team support system variables.

Hypothesis 17: The following variables do not exhibit a relationship with the other work team support system variables:

1. Physical workspace
2. Training
3. Personnel selection
4. Resource distribution
Level of Importance of Variables

Research Question 3 asked what level of importance was attached to each of the seventeen support system variables. The following hypotheses are drawn from the conclusions of Research Question 3:

*Hypothesis 18: A high level of importance is attached to following work team support system variables:*

1. Leadership
2. Team placement and structure
3. Work process design
4. Communication and information systems
5. Team goal setting
6. Performance measurement
7. Reward and recognition
8. Culture

*Hypothesis 19: A medium level of importance is attached to the following work team support system variables:*

1. Training
2. Performance appraisal
3. Between teams integration
4. Resource distribution

*Hypothesis 20: A low level of importance is attached to the following work team support system variables:*

1. Business strategy
Support Systems Model

Research Question 4 asked what model could be drawn from the seventeen support system variables. The following research questions and hypotheses are drawn from the conclusions of Research Question 4:

Research Question 1: Are some support systems variables more likely to be affected by outside influences (corporate or existing systems or union presence) than other support system variables?

Research Question 2: What, if any, changes occur to support system variables after the organization has passed through program evaluation and renewal?

Hypothesis 21: There are three major phases that occur with support systems for work teams.

Hypothesis 21a: The first phase of the Support Systems Model is the design phase that includes: (a) leadership, (b) business strategy, (c) team placement and structure, (d) work process design, (e) physical workspace, and (f) communication and information systems.

Hypothesis 21b: The second phase of the Support Systems Model is the performance management phase that includes: (a) team goal setting, (b)
performance measurement, (c) performance appraisal, and (d) reward and recognition.

Hypothesis 22c: The third phase of the Support Systems Model is the integration and maintenance phase that includes: (a) between teams integration, (b) knowledge management, (c) personnel selection, (d) resource distribution, and (e) program evaluation and renewal.

Hypothesis 23d: The support system variables of training, leadership, and culture can impact support system efforts at any or multiple points in the work team implementation.

Summary

While the findings are primarily qualitative in nature, the outcomes were valid according to qualitative research principles. The research questions were analyzed in an effort to discover and explore support systems for work teams while organizing and summarizing findings for future research efforts. The analysis looked at the degree of involvement for the work team for each support system variable. Also, the analysis explored what relationships exist between the seventeen support system variables. The analysis sought to understand the degree of importance of each of the seventeen support system variables. From there, a model was created to place variables in a logical order that visually displayed the findings from Research Questions 1-3. Finally, hypotheses were created and organized from Research Questions 1-4 in order to provide focus for future research.
CHAPTER 4
DISCUSSION

This study resulted from a need for research in the area of support systems for work teams and a need for a practitioners’ guide in helping work team implementations be successful. While plentiful research has been conducted on within team processes, support systems in non-team scenarios, and for team-based support systems at an individual variable level, little to no research has been conducted on support systems for work teams at a system-wide level. At the present time, there is no holistic guide, or model, for supporting the collaboration desired by work teams. This project was a qualitative study resulting in a model that should prompt quantitative research on the topic of team-based support systems. The current study was an attempt to organize work team support system concepts and provide clarity for future research efforts.

In the business environment, it is common for work teams to be the organizational design unit of choice. The proliferation of work teams has occurred over the past twenty to thirty years with the rationale for using work teams ranging from mimicking competitors to conducting the due diligence necessary to show that work teams is the most viable option of design. No matter the reason for organizing into work teams, many business leaders are often unsatisfied with the results that work teams yield. Unsatisfactory results often perplex leaders as to why the team does not “get along”, “get it”, or “produce like other teams.” The first resorts in many organizations are a teambuilding seminar, conflict resolution training, or communication training. Traditionally, these interventions have a very short half-life and the team returns to its’ previous state.

A more strategic choice has been proposed by asking, “What is the role of the organization in supporting work teams?” While the team should be an active participant in the activities that affect them, the organization must still provide support from a system or enterprise-wide
perspective. A comprehensive list of potential work team support systems was examined in this project, and the list includes: (a) rewards and recognition, (b) team goal setting, (c) performance measurement, (d) performance appraisal, (e) team placement and structure, (f) communication and information systems, (g) culture, (h) training, (i) knowledge management, (j) business strategy, (k) leadership, (l) between teams integration, (m) resource distribution, (n) physical workspace, (o) program evaluation and renewal, (p) personnel selection system, and (q) work process design. Regardless of the team’s ability, performance history, or level of autonomy, the organization must address the systems listed above to ensure the success of work teams.

Research Question 1

Research Question 1 examined the level of involvement or participation that existed for the work team for each of the seventeen support system variables. The level of involvement was determined by the use of qualitative coding of the data. Three levels of involvement were chosen based on the level the team participated in either owning the variable or being an active contributor. A high level of involvement meant that the team helped make decisions about the support system or completely made the decision. A mid-level of involvement occurred when the team understood their role in the support system but did not make decisions based on the team’s ability or a lack of history as a team. A low level of involvement occurred when the support system decision was dictated to the team.

There were six support system variables that exhibited a high level of involvement for the team. The six support system variables that offer high involvement possibilities for work teams were: (a) leadership, (b) communication and information systems, (c) team goal setting, (d) reward and recognition, (e) personnel selection, and (f) training. The six variables with high involvement
provide a guide for practitioners as to where work teams should be prompted to be active participants.

Eight support system variables offered a mid-level of involvement opportunities for work teams. The eight mid-level support system variables were: (a) work process design, (b) performance measurement, (c) performance appraisal, (d) between teams integration, (e) knowledge management, (f) resource distribution, (g) program evaluation and renewal, and (h) culture. The mid-level variables warrant further research and extra attention from practitioners to understand if unique, organizational dynamics have the tendency to heighten or lessen the necessary level of team involvement.

The final three support system variables were considered to be low involvement systems at the team level. The three low involvement support systems were: (a) business strategy, (b) team placement and structure, and (c) physical workspace. At this level of involvement, more research is needed to ensure that the level is correct, and practitioners should take extra precaution in making sure not to exclude the team.

Research Question 2

Research Question 2 examined the potential relationships that exist between the seventeen support system variables. Initially, the data was coded to see what relationships occurred between variables. Comments that confused variables with one another and comments that highlighted a variable that was linked to other variables are two examples of criteria for establishing an initial relationship. Further investigation of the codes in the relationship node produced a final set of relationships established through the use of qualitative analysis. The next step examined correlations between variables. Further analysis of the significant correlations yielded one
correlation that matched the qualitative set, which were business strategy and communication and information systems.

The established relationships were used to tie variables to one another in the support systems model created in Research Question 4. The identified relationships should drive future research and help practitioners understand that most support systems are affected by other support systems.

Research Question 3

Research Question 3 sought to discern what level of importance each of support system variables exhibited. The level of importance was determined by the use of qualitative coding of the data. Three levels of involvement were chosen based on the level the variable was described as being a necessary component.

Eight support system variables were considered to be high importance variables. The eight high importance support system variables were: (a) leadership, (b) team placement and structure, (c) work process design, (d) communication and information systems, (e) team goal setting, (f) performance measurement, (g) performance appraisal, and (h) culture. The high importance variables should draw attention to future research and provide practitioners with a starting point for what support systems to ensure coverage.

There were four support system variables that exhibited the mid-level importance. The four mid-level support system variables were: (a) performance appraisal, (b) between team integration, (c) resource distribution, and (d) training. The four variables with mid-level importance should encourage more research and careful consideration to make sure that the variables are truly mid-level important.
The final five support system variables were considered to be low importance systems. The five low importance support systems were: (a) business strategy, (b) physical workspace, (c) knowledge management, (d) personnel selection and (e) program evaluation and renewal. At this level of importance, more research is needed to ensure that the level is correct, and practitioners should take extra precaution in making sure not to exclude the variable.

Research Question 4

Research Question 4 asked what model could be drawn from the data. The Support Systems Model was drawn from information gleaned from Research Questions 1-3 as well as interview information coded as to the optimal timing of the support system variable. The Support Systems Model was created to give researchers and practitioners a comprehensive picture of the entire gamut available when supporting work teams.

The Support Systems Model took into effect the seventeen support systems variables as well as the identified outside influences of a union presence or corporate or legacy systems. All variables are ongoing events but are represented as discrete events in the model. Three variables, training, leadership, and culture were found to occur in multiple areas at such an ongoing rate that they warranted special consideration as variables that exist throughout the life of the work team. The two outside influences were also found to have the ability to enter the system at any point. A legend is presented at the bottom of the model to classify the findings from research questions 1-3. Finally, the Support Systems Model is presented in a linear fashion from left to right with the far left point of leadership being the decision to implement work teams and the far right being a point in the future where the implementation is evaluated.
Six support system variables comprise phase one which is a design phase that is employed at the early stages of a work team implementation. The six support systems in phase one are: (a) leadership, (b) business strategy, (c) team placement and structure, (d) work process design, (e) communication and information systems, and (f) physical workspace. Leadership makes the decision to implement work teams which leads to the creation of a business strategy that includes work teams. From there, the question arises of where work teams should be placed and who should make up the first set of teams (team placement and structure). With intact teams, the nature of the work flow, or work process design, should be examined to judge the appropriateness of the work flow against the new organizational design. The new work teams and potential processes may dictate a new physical workspace. The new business strategy, organization design, and reworked processes all require the implementation of formalized communication and possibly a new information system. These variables make up the design phase which helps the organization invest the correct amount of preparation to help the implementation start correctly. The design phase is marked by the trend of low involvement for the team, high importance to the overall effort, and communication and information systems being the variable that leads the effort into phase two.

Four support system variables made up phase two which is named performance management and refers to an operational phase that supports everyday activities and tasks. The four performance management variables were: (a) team goal setting, (b) performance measurement, (c) performance appraisal, and (d) reward and recognition. The team has a set of goals which should contain a mix of individual, team, and organizational goals. The goals are then desired outcomes of the performance measurement system. Periodically, performance is appraised using a mix of individual and team-based mechanisms. Throughout the entire phase, reward and recognition should be occurring in order to reinforce desired behaviors and outstanding
performance. The performance management phase is marked by high importance systems and high to mid-level involvement from the team. Phase two should attract significant attention due to the fact that this phase represents directly supporting the ongoing, operational activities of the work teams.

There are five support system variables that encompass phase three which is called integration and maintenance because at this point, team-based concepts should become the new operations. The five support systems in phase three help teams take a further step of responsibility and help the organization assess progress and make necessary changes. The phase three support systems are: (a) between teams integration, (b) knowledge management, (c) personnel selection, (d) resource distribution, and (e) program evaluation and renewal. The work teams need to integrate to align efforts to meet organizational goals instead of competing. One integration mechanism is knowledge management which asks the team to add to the organizational body of knowledge. More advanced teams often take an active role in selecting their new team members and in deciding what resources they need and how to distribute the resources. Finally, the organization must evaluate how the work teams are performing and put renewal efforts into motion. Phase three is characterized by low to mid-level importance and mid-level involvement which may be a result of the high level of effort needed to get work teams implemented. On the other hand, this perceived lack of importance may explain why work team implementations fizzle or never reach the intended results.

Research Question 5

Research Question 5 took the findings from Research Questions 1-3 and the model from research question 4 to develop a set of testable hypotheses for future research. Every finding from
the first three research questions and the model was used to organize hypotheses into one place to spur research on the topic.

Implications

*Reward and Recognition*

Reward and recognition behaved as expected in the model. Reward and recognition, along with leadership, attracts the most attention of the seventeen support systems variables in popular and scientific literature. As a result, it is no surprise that reward and recognition was considered to be a high importance support system. The prevalence of reward and recognition in the nomenclature of organizational topics in addition to the perceived power of reward and recognition supports the high importance label. It is also not surprising that reward and recognition was seen as providing a high level of involvement for the team because the literature discusses team involvement. Reward and recognition was found to be related to the three variables that made the most sense with no obvious relationships not being represented in the model. Reward and recognition cannot occur until some performance has occurred which makes its placement in the model seem correct. In practice, managers should look to involve the team as much as possible and not underestimate the power of using or not using reward and recognition as a team-based support system.

*Team Goal Setting*

Team goal setting was viewed as a highly important support system that also provided an opportunity for heavy involvement from the work team. These findings were as expected because goals are often the mechanism for focusing energy and effort within the organization. With the
addition of work teams, the team goals should impact everyone who is considered a full time member. Also, it makes sense that people are more committed to goals that they had a hand in creating. Team goal setting was related to performance measurement, reward and recognition, and between teams integration. The one relationship not found that was somewhat surprising was the lack of a relationship between goal setting and business strategy. Business strategy might be thought of as the game plan for achieving organizational goals and being the roll-up of all of the work teams’ goals. Team goal setting occupied an appropriate space in the model because goals cannot be set until the design work is accomplished. The team should be engaged in the goal setting process, so less mature teams may need more guidance while seasoned teams may only require final approval on the goals they set.

**Performance Measurement**

Performance measurement was found to be a highly important support system with a mid-level of involvement for the team. The finding of high importance follows logic in that performance measurement is the scorecard for how well the team performed against its goals. The mid-level of involvement also seems correct because support usually comes in the form of some technology that delivers the performance data, but the team should be active participants in interpreting the meaning of the data. Performance measurement was related to the other three performance management variables as well as communication and information systems and between teams integration. The relation to communication and information systems is usually in the form of a technology solution to provide real-time data to the team. The connection to between teams integration comes from the need to analyze the performance of multiple teams and address any issues. The location of performance measurement in the model turned out as expected.
Managers should find a way to involve the team in the measurement process in order to make teams accountable for the goals they set and to teach the team why the measures are important to the business as a whole.

Performance Appraisal

Performance appraisal was viewed as a support system of mid-level importance and mid-level involvement. The mid-level of importance could be a result of the view of performance appraisal as an administrative function for many organizations. The mid-level of involvement could be explained as the mix between strict individual appraisals versus a pure peer appraisal format. Performance appraisal was not found to be related to any support systems outside of the performance management variable set. An argument could be made that performance appraisal could be related to communication and information system based on the form of appraisal used, but no evidence of such a relationship was located in the data. Performance appraisal must occur after a cycle of performance has occurred making its position in the model acceptable. Managers should adopt a philosophy on how to conduct appraisals (traditional versus peer) and provide training and managerial guidance as needed. In cases where peer appraisals are selected as the preferred method, the team members may not have experience in providing any appraisal feedback.

Team Placement and Structure

Team placement and structure began the project as team design, but a number of participants did not understand the term. The new term was used to explain where work teams are placed in the organizational design and who is on what team at the beginning stages of the
implementation. Team placement and structure was found to be a highly important support system with low involvement for the team. These findings appear accurate because managers are usually the people with enough organizational knowledge, at least at the beginning, to know where to locate work teams. Any involvement from the team most likely occurs in helping understand who would fit best on certain teams. Leadership, business strategy, and work process design were related to placement and structure. The potential missing relationship might be communication and information systems because formal communication is a large piece to successful change management of which work team implementation can be counted. Team placement and structure was placed in the design phase of the model which would appear to be the logical location for the variable. One of the places where organizations miss the mark in work team implementation is to impose the structure on the people instead of engaging the people to help set the design.

Communication and Information Systems

Communication and information systems was viewed as a high importance, high level of involvement support system. The prevalence of organizations who claim communication and information systems as a glaring need justify the findings. Communication and information systems was related to business strategy, performance measurement, between teams integration, and knowledge management but was mentioned in conjunction with almost every support system at some point in the data. An argument could be made that communication and information systems could have been place at the top of the model with culture, training, and leadership, but it was placed in the design phase for emphasis because organizations have a tendency to not communicate during this phase. It could also be argued that communication and information systems could be split into two distinct support systems. The data hinted at this split but did not
provide sufficient evidence. Managers should not underestimate the importance of communicating with, and not at teams, and of providing timely information in a usable format.

Culture

Culture was viewed as a highly important, mid-level involvement support system. The importance attached to culture came to no surprise due to the prevalence of literature concerning organizational culture. The assignment of mid-level involvement to culture was very surprising because one of the repeated topics in the data was a participative culture, but the data did not warrant a label of high involvement. Culture was mentioned in conjunction with almost every variable leading to culture’s placement along the top of the model. The rationale for the location of culture is that culture continues to change as the systems and people change, hence the numerous relationships. Also, the culture is changed by the work team implementation, but the culture can act as a constraint as well. Perhaps more than any other finding in this study, managers should question the mid-level involvement of culture. One of the major tenets of a work team implementation is that collaboration is required. For collaboration to flourish, the culture must be supportive at the time of implementation, or the culture must be addressed in the form of culture change. Managers should also note that a full culture change usually takes a minimum of five years to achieve.

Training

Training was found to be a mid-level importance and high involvement work team support system. The mid-level importance was expected but could move up or down based on the training philosophy of the organization. The high level of involvement was also expected due to the
participative culture needed in a work team setting. This shift changes training from a passive activity to an interactive experience with some team members even leading training sessions. Training was positioned along the top of the model with culture. Initially, the thought was to place training in the design phase, but the data showed that training needed to be able to be conducted at any point in the system whenever needed. This positioning means that training, with no formal relationship established in the data, most likely has some link to the other sixteen support systems. Those responsible for a work team implementation should understand that the training discussed here is different than many traditional forms of training. Training for this environment should be experiential, interactive, available, and flexible enough to meet the needs of the people who will receive the training.

**Knowledge Management**

Knowledge management was observed to be a low importance, mid-level involvement support system. The low importance may stem from when the data was collected, 2001, as knowledge management has increased in stature in the last seven years. The mid-level involvement was expected as the teams have to share what they know, but the team may need added support in the beginning due to a lack of understanding of knowledge management. Knowledge management was found to be related to communication and information systems and between teams integration. The information systems often represent the technological platform for sharing and managing knowledge. There was some belief from participants that perhaps knowledge management was a form of between teams integration, but there was enough distinct evidence that kept the systems separate. Knowledge management was placed in the integration and maintenance phase as a method for supporting the ongoing landscape of a team environment. Knowledge management is
an emerging field that warrants attention. Managers should understand that knowledge management is more than a software solution and support is needed to integrate the effort into the daily activities of the team.

**Business Strategy**

Business strategy was originally named strategy but was changed after some confusion from participants in the data. Participants saw business strategy as a low importance, low involvement work team support system. The low involvement finding was expected as the business strategy in many organizations is set by top leadership. While some organizations include a vertical slice when developing strategy, the finding was still expected. The low importance piece was unexpected because the business strategy is designed to drive operations. This finding may explain why work teams are often unsuccessful; the teams are not aligned with the overall strategy. Business strategy was related to leadership, team placement and structure, and communication and information systems which was anticipated. The placement of business strategy was early in the model to denote that the business strategy should drive the rest of the efforts. Once the strategy is set, managers should strive to communicate the strategy to the teams while showing the team how they fit into the larger picture of the organization.

**Leadership**

Leadership is the most written about support system in organizational literature. Participants saw leadership as a high importance, high involvement support system which was expected. The variable was related to business strategy and team placement and structure meaning that leadership sets the strategy and decides where teams should be placed in the organization.
These relationships placed leadership on the far left of the model meaning that leadership decides whether or not to pursue using work teams in the first place. Another leadership variable emerged which is the ongoing managerial support needed to lead the work team effort. This variable was place along the top of model to signal that leadership is an ongoing function. Leadership was not split into two separate variables, but future research may find that top leadership and ongoing leadership are two distinct variables. Managers in the effort should be ready to set the example, model the desired behaviors, and provide constant support and guidance to workers who may be taking on new and different roles.

*Between Teams Integration*

Between teams integration was viewed as a mid-level importance, mid-level involvement support system. The involvement level was anticipated because the team is initially concentrating on the work and not how their work affects other teams, so support is needed. The importance level was a little surprising because competing work teams run counter to what the teams are in place to do. Between teams integration was found to be related to the following four variables: (a) communication and information systems, (b) team goal setting, (c) performance measurement, and (d) knowledge management. Integrating multiple teams is similar to knowledge management in that a cycle of operations must occur to properly integrate. This placed the variable in the model in phase three, integration and maintenance. Managers must integrate multiple teams to fully recognize the benefits of work teams. The goal is to get multiple teams acting in alignment versus multiple teams competing against one another.
Resource Distribution

Resource distribution was changed from resource allocation in an effort to address some confusion in the data. Participants saw resource distribution to be a mid-level importance and mid-level involvement work team support system. These findings were anticipated due to the uncertainty of the meaning of the variable and may be attributed to a central tendency bias in light of the uncertainty of the meaning. Resource distribution was not found to be related to any of the other support systems. Resource distribution is a latter function of a work team, meaning that it was placed in phase three as an integration and maintenance system. Managers must choose how to handle resource distribution by knowing that high performance teams may be more ready to take this on than teams that are struggling. No matter the situation, teams will still require support because resource distribution may be a new skill for the team.

Physical Workspace

Physical workspace was perceived to be a low importance, low involvement support system. Also, physical workspace was not found to be related to any of the other sixteen support system variables. Initially, these findings appear unexpected but can be explained with closer analysis. Physical workspace can include the virtual workspace which would have likely connected the variable with communication and information systems, but the data was collected in 2001. Some virtual work was occurring at the time of data collection, but a major increase in virtual work has occurred since data collection. If the data were collected today, the findings for physical workspace would be expected to differ significantly. In this data, physical workspace was placed in the design phase to highlight the need to attend to any large scale changes that would need to be made to accommodate new methods of task completion. Managers will need to add
virtual work to the consideration given to the physical workspace. Future research should dictate changes that need to occur in the model with respect to the workspace.

**Program Evaluation and Renewal**

At the onset of this project, this variable was called renewal system, but the data suggested clarification and a slight expansion of the concept. Program evaluation and renewal was viewed as a low importance, mid-level involvement work team support system. The findings are as expected because a formal evaluation and renewal activities are not performed by a large majority of companies. If this function occurs, then the team would be an active participant in renewal activities. Program evaluation and renewal was placed at the far right of the model signifying that this represents the linear end of the model. This variable then is related to leadership and business strategy and feeds into the beginning of the model. This occurs because, unless work teams are discontinued, the effort must be renewed and run back through the model. Managers who use evaluation and renewal should be able to evaluate using the most objective and tangible business measures possible while using renewal techniques with the understanding that teams need ongoing support.

**Personnel Selection**

Personnel selection was originally named selection system but was altered to fit the suggestions of the participants. Personnel selection was seen as a low importance, high involvement support system. The high involvement aspect was expected because selection in a team-based environment commonly involves, at the minimum, team input. The importance level was also expected because when work teams are implemented there are usually larger concerns
than selection that will occur at a time much farther in the future. This possible rationale can also help explain personnel selection’s position in the model which was in phase three. Managers who elect to include the team in personnel selection should be ready to provide the necessary support which can include training on how to interview effectively, how to interview legally, and how to make hiring decisions.

Work Process Design

Participants viewed work process design as a high importance, mid-level involvement work team support system. The high importance is a valuable finding because more productive work should be the major cause for a change to work teams. The mid-level involvement is logical because input is needed from the people who do the work and know the work best. Work process design was related to team placement and structure, and surprisingly, not related to physical workspace, as the work process was initially believed to influence physical infrastructures. The work process was placed in the design phase as a way to get the effort organized. Managers should not overlook the fact that there is a very strong possibility that the way work is designed will have to change once work teams become the primary organizational unit. Also managers should make sure to include those who do the work as the work team often has the most knowledge on restructuring the work process.

Limitations

During the course of any project, challenges arise that are less than desirable and that must be overcome to keep the project moving towards completion. This project was no different, as there were some limitations that future researchers should mitigate if possible.
At the onset of the study, the qualitative nature of the data appeared to be a limitation, but as the study progressed, the qualitative approach to the data was deemed to be appropriate. The limitation occurred because there were quantitative questions added in conjunction with the interview questions, but the quantitative results did not provide added support to the qualitative findings. This happened because the sample size was too small to draw inferences to answer the research questions. The sample size proved to be adequate for the overall analysis, but limited the ability to add complete support for the findings.

Even with the adequacy of the sample size for qualitative analysis, some participants did not answer all of the questions. The majority of these occurrences happened because the participants ran out of time, a possibility any time research is conducted in the workplace. Some participants e-mailed responses to the remaining questions, but e-mailed responses limit the ability of the interviewer to probe when necessary. The added responses would have added to the richness of the overall study.

One of the difficulties associated with this study was that the researcher and the interviewer were two different individuals. This approach is usually more effective in quantitative studies, but limits the ability of the researcher to understand context during the coding process. This limitation was overcome by comparing the coding of the researcher with volunteer coders, one of whom also happened to be the interviewer during data collection. Therefore, this analysis of historical data had the advantage of ongoing contact between the researcher and the interviewer.

When certain questions tried to take a quantitative approach, the scales were not always defined making analysis difficult. For instance, participants were asked to rate the importance of each support system variable as part of the discussion. A 5-point Likert scale was used to ask this question, but other than one being low importance and 5 being high importance, there was no other
explanation given to participants. A more developed rating scale could have provided more illumination to the qualitative output.

One of the strengths of qualitative analysis, such as coding, is that the data can grow depending on the trends that emerge. That strength can also become a weakness because once the data is captured, deficiencies may arise that make analysis difficult. While enough information existed for each research question and support system variable, the coding amounts for each support system variable differed. Variables such as leadership, reward and recognition, training, and culture are covered heavily in the organizational psychology literature and, therefore, appeared to be more familiar to participants than other variables that are unique to work teams such as team placement and structure, resource distribution, and program evaluation and renewal.

A major limitation of this study is that the Support Systems Model that was created as a result of Research Question 4 is a direct product of the collected data. The data was collected in 2001 leaving a seven year gap between collection and analysis. In the seven year gap, changes in the business environment have occurred that would affect the model if it were constructed today. The main example of this is the emergence of virtual teams since 2001. Even though virtual teams predate 2001, little to no mention was made of the concept in the data. Virtual teams would have been placed under the physical workspace variable, which was not found to be related to any other variables. If the study was conducted today, physical workspace would have likely been related to communication and information systems at the least.

The final limitation is that the data was collected to reflect strict inclusion in a work team setting. Traditional work teams still exist making the work presented in this study relevant, but the nature of teaming has changed somewhat. Terms such as collaboration denote a work environment
that is more flexible than formalized work teams may provide. The concepts provided here should generalize to collaborative environments.

Future Research

One of the aims of this study was to set the stage for future research. Because scant research has been conducted on work team support systems, this study sought to provide a framework for future research. In an effort to keep this section from being redundant with the results section for Research Questions 4 and 5, this section goes a step further by also discussing specific types for each variable in order to focus future research. The aim is to provoke future research on the seventeen support systems. The participant quotes should give future researchers more options when designing studies on support systems that affect teaming and collaboration.

Reward and Recognition

Future work on reward and recognition should center on the findings of Research Questions 4 and 5. Also, research could incorporate the following four methods for rewarding and recognizing employees: (a) team-based bonuses, (b) pay for skill, (c) mix of individual and team, and (d) recognition initiatives.

Team-level bonuses work to bind the team together to work for common goals. The following comments highlight usage of team-based bonuses:

...overlay some sort of a team bonusing plan related to plant-wide metrics. (Participant 12)

They did look at in fact structuring a gain sharing program for TBO. (Participant 13)

The team had a goal to produce, and then they had to meet that goal, and above that they got additional compensation. (Participant 14)
Their bonus is based on overall company performance against goals. (Participant 17)

...offering performance-based incentive programs. (Participant 2)

They ended up with a performance sharing system. (Participant 5)

But how performance bonuses at the end of the year allocated, we could flex. (Participant 8)

Primarily, in incentive pay being based on team or process level performance. (Participant 9)

Some organizations choose to pay employees for increasing their skill levels. The following is the commentary about paying for skill:

They also started doing pay for skill. ...so it was pay for skill with the promise that no one would go backwards. (Participant 10)

They developed a very, very good pay-for skills system. ...and pay-for-skills system was put in for the very first one. (Participant 11)

...so we got them in contact with someone who was going to design a skill based pay system. (Participant 12)

...went to a more skill based pay system with broader banding of pay scales. (Participant 7)

One method that can yield excellent results is utilizing a mix of individual and team rewards to attain a more comprehensive system. The comments below cite the usage of individual and team rewards:

You can’t totally disregard individual effort, so you have to design in the flexibility so you can reward and recognize people for both their individual levels as well as their team contributions, and reward teams as well. (Participant 12)

...using their team’s performance against its specific goals, and individual’s performance against individual goals. (Participant 17)

They also created incentive plans that had organizational team and individual components to the incentive plan. (Participant 7)
Finally, many managers and leaders report the cost effectiveness, the power, and the ease of using recognition at the team level. Below are the comments made by participants in regards to recognition:

And it could be as simple as a pat on the back, thank you, etc.—not necessarily money. We instituted a system that is like trading stamps. An employee can fill out a thank-you card that says this person did this specific thing for me that helped me with this part of my work. What they do is fill it out, and give it to that person’s boss. If that coach feels it is something they didn’t really have to do, they approve it and the person gets a stamp. When they get a full card, they can redeem for sweatshirts, t-shirts, etc. We put this in starting the first of October last year. One stamp of a time, people filling out cards, we have issued close to 1800 stamps. People wear stamp cards with badges. They don’t turn them in often, because they’re proud of them! Another surprise for us. It’s turned out to be a major cultural shift, and we monitor it so we know that nobody’s abusing it. We told them from the beginning that, if we found out people were abusing it, we would stop doing it. And the people who are getting the rewards, the coaches can say these are my best workers. (Participant 17)

One nice example is when a team finishes phase 1, they go through a ceremony. They get t-shirts, or pizza dinner, things like that, from the steering team.” (Participant 19)

They are doing something in terms of informal recognition that is really focused on the teams. (Participant 3)

We have created a whole new recognition system which is really driven more by results and less by effort that aligns with this new culture, the values, the customer service. It’s a different thing. It has both individual components and team components, but it is a peer recognition program. So there is actually a “trophy”, so it’s more around the tokens and then, having the group staff and the division VP invest time in acknowledging people and their contribution. The financial piece still exists, but this is a lot more about holding up examples of the kind of behaviors that we are looking for...well, results and behaviors, both of those. (Participant 9)

Team Goal Setting

Two major themes emerged in the data around team goal setting. Some organizations use a system of having the team negotiate their goals with management. The other theme centered on some of the types of goals teams often end up setting.
Negotiating goals with managers can help leadership feel as though goals are being responsibly set while team input is critical in goal setting. The following is the commentary about negotiated goals:

...and their system, is that the goals that have to negotiated with the branch director, obviously. You can’t just go off and say, I think we would suddenly like to sell cable TV services...but, for the most part there was not a whole lot of negotiation because the principals, guidelines and constraints were well spelled out. (Participant 10)

So, it has to be resolved at the senior level and up. (Participant 3)

We have what we call performance agreements. (Participant 9)

Many teams struggle in goal setting because the concept is unfamiliar. The commentary below shows the types of goals commonly set by work teams:

...customer satisfaction, quality and cost of the efficiency, productivity, technology. (Participant 11)

They thought about goals for overtime hours, goals for output, etc. (Participant 13)

You still measure yield, quality, cost, waste, etc. (Participant 2)

...particularly quality of work, speed of work. (Participant 4)

Performance Measurement

When teams begin to measure performance at the team level, two things emerge quickly. The manager or team must decide what to measure, and the organization must decide what access to the information to give to the team

The team may struggle with what needs to be measured. The comments below highlight some measures that may be used:

We had lots of measures that were technical and operational. (Participant 11)
Each work unit designed operating measures and metrics to capture the quality, safety, cost, delivery aspects of their work. (Participant 12)

We look at productivity levels, and the things we do much better than our counterpart organizations in terms of quality, cost reduction, elimination of waste, productivity levels, creativity. (Participant 17)

Organizations must decide how much access to cede to the team when the measures are collected. The subsequent observations discuss access:

When we first got there, if you went down and grabbed a person who went out the door at the end of the day and asked whether or not they had a good day, they wouldn’t have the slightest idea. Now they can tell you exactly whether they had a good day or not. (Participant 12)

A team would monitor how it was doing at that point in time. (Participant 4)

It is much more visible. It is much more explicit. Workers understand it much more. (Participant 5)

This really did create a way to tell them on an on-going basis how well they were doing. (Participant 7)

We are currently doing monthly report cards. Some groups even have daily score cards, like in the customer service area. They would be able to host some key matrices, but mostly it’s sort of when at a divisional level we are looking across and saying how are the groups doing and how is the overall performance. (Participant 9)

**Performance Appraisal**

The major form of performance appraisal was a hybrid of peer and individual appraisal.

The following remarks discuss a hybrid performance appraisal system:

I think you, if you are designing a performance appraisal system for one of these places, you can’t totally disregard individual effort, so you have to design in the flexibility, but the only thing they were able to do there was to add a set of criteria to measure a person’s teamwork skills. (Participant 12)

Some form of peer appraisal or a hybrid of peer and manager appraisal evolves. (Participant 2)
They have structurally changed their forms to incorporate TBO concepts. (Participant 3)

The biggest change that we had was that we added a dimension. I would just call it team player. So, in addition to individual...doing the other things that are being measured in terms of performance appraisal, there was also going to be some feedback on their ability to be a team player. (Participant 4)

Team Placement and Structure

Three major types of structures were found in the data: (a) driven by the work, (b) self-managed, and (c) matrix. Below are the remarks made about letting the work dictate the design:

Big functional departments were broken up and people were deployed against process-oriented teams. (Participant 12)

A key part of that is analyzing work process. So TBO handed off to lean the responsibility for determining what processes made sense in terms of clustering people around them to create teams around natural process sets. So lean took responsibility for that, and there was some shifting of who worked where. (Participant 19)

We had cross-functional teams who made those choices. They would design the organization and say, OK, we need an assessment management team...or whatever...and they would say these are the activities or functions or deliverables that group is responsible for and they would size that based on how many transactions or how many activities or so forth. Then, they, tried to, based on activities and competencies, you would look and say, are these...is this a bunch of people with the same role or are there different people that are working together...so, each cross-functional group made those choices based on the work they are doing. That is why we have these three different kinds of teams, because each work process ended up having different requirements for how you would want to cluster that. (Participant 9)

Some organizations install work teams with the idea of transitioning them into being self-managing. The commentary below highlights this move:

Everybody in the bank at the end knew what it took to design a self-managing team and they used those principals and they used them whenever they felt it was necessary. (Participant 10)
We were thinking about making the team in each branch responsible for its profits, like a franchise operation. So, we wouldn’t give them heaps of instructions, head office instructions, about how to do things and standard operating procedures. They could run it as their own profit and loss in their own marketplace, but have the responsibility for achievement at the team level.” (Participant 8)

Organizations may also choose to use a matrix design that helps teams work across traditional silos. The remarks given demonstrate the use of the matrix structure:

I think one of the powerful applications of teams is to integrate highly differentiated functions. (Participant 4)

We created teams that consisted of a geologist, a geophysicist and a land man, or several people in those positions. So, sometimes the team might be as small as three and sometimes they may be six or seven. (Participant 7)

I’d call it an issue of team based organization design. How do you create the matrices that ensure that you have the appropriate levels of technical expertise while at the same time having a fairly flat organization with decision-making responsibilities pushed down fairly low? (Participant 7)

We had cross-functional teams who made those choices. They would design the organization and say, OK, we need an assessment management team...or whatever...and they would say these are the activities or functions or deliverables that group is responsible for and they would size that based on how many transactions or how many activities or so forth. Then, they, tried to, based on activities and competencies, you would look and say, are these...is this a bunch of people with the same role or are there different people that are working together...so, each cross-functional group made those choices based on the work they are doing. That is why we have these three different kinds of teams, because each work process ended up having different requirements for how you would want to cluster that. (Participant 9)

Communication and Information Systems

Communication and information systems change when more people are brought into the system. The following were used to reflect that change: (a) forums, (b) meetings, (c) more manager access, (d) newsletters, and (e) data displays.
Forums, or town hall meetings, are a way to bring the entire system together to communicate and share information. The following quotes discuss the use of forums:

They would also still hold leadership get-togethers, leadership forums, where they would get all the branch directors together and talk about what was working and what wasn’t. (Participant 10)
There is a case where they went back to town meetings. (Participant 13)

We did formal town meetings. (Participant 4)

Increased meeting frequency often occurs for work teams, and this can be a new reality for many team members. The subsequent commentary highlights the prevalence and structure of meetings:

...plus the fact that they had meetings every shift. (Participant 11)

Certainly there are meetings at the team level. There’s an all-plant meeting, communications meetings. (Participant 12)

Team meetings are a good example. When they are new, we make them meet at least once a week, and they work at every possible excuse not to do that because it’s uncomfortable for them. (Participant 17)

We increased the number of meetings that we needed to conduct business. There were team meetings virtually every morning to go over production type issues. There were manager meetings weekly, monthly. I think, once you put a team based organization in place, one of the things that happens is you have to do a lot more formal communicating. (Participant 4)

I would say that most teams meet at least weekly. There are some that meet daily, but I think that all of them have the norm of once a week where they would be together. (Participant 9)

The shift to work teams usually means more communication between managers and the team. The following comments show this increased contact:

...give them more connection with the management. (Participant 11)

...bottom up type of meetings to get this organization in place. So, the high level managers in the organization were very involved. We had meetings all of the other states to get this whole organization in place. (Participant 4)
...in terms of using managers as key resources for understanding key business issues or those kinds of things. Because we have teams in the formative stages, we still are using managers quite a bit for that educational and communication kind of work. (Participant 9)

Newsletters and postings can effectively add to the communication in the organization.

Below are the remarks made about newsletters:

There was a newsletter for that at the plant level. The company vested in the fight, which gave people optimism. (Participant 11)

We do news bulletins daily, quarterly publications. (Participant 17)

...newsletter articles, bulletin boards” (Participant 19)

Plus newsletter plus leaflet drops plus posters...a lot of thought and trouble went into that during the set up phase.” (Participant 8)

More access to information can lead to data being displayed in a format that the team can use and that are in real time. The following comments discuss this concept:

Certainly, information systems as a supportive infrastructure for the TBO was part of the TBO plan and effort, and if there had not been an ERP effort simultaneously going on, then information systems would have been part of the design process. (Participant 13)

Information systems need to become more “in-process” and real time. (Participant 2)

...is set up a way so that anybody can have access to the data...to use either an on-line data system and some connected, document management stuff so that you could do the drill down...that everybody would have access. (Participant 9)

Culture

The only example of culture given was that the culture needs to be participative. The ensuing comments discuss the point of having a participative culture:

...a much more cooperative culture. (Participant 11)
The part of the culture that got the most impact was on the participation of people, particularly in the whole arena of continuous improvement. There was just an enormous amount of increase in employee involvement. (Participant 12)

There was a huge amount of participation that wasn’t there before. That broke down lots of walls. (Participant 12)

So they became a much more collegial culture, less status, less formal, much more participative. (Participant 12)

*Training*

The major focus of training centered on providing team members the training on what being on a team actually means. The following comments provide illumination:

They also provided facilitation skills and things like that. Meeting management skills. (Participant 10)

For instance, if you are trying to really look at what it took to make a TBO successful, see lots of organizations do lots of training of teams. They’ll look at you and say we trained everybody in teamwork skills for 60 hours. But when you look into that, what they did was they had a course called teamwork training and they filled up the course each month. (Participant 12)

...skills of developing a team, assessing and diagnosing, participation processes, communication, conflict resolution, teaming skills. (Participant 15)

We do a lot of interpersonal training in connection with the teams. (Participant 17)

Some of the training modules dealt with feedback, with the idea that, informally, you give performance feedback to each other, and to improve that process. (Participant 19)

They also provided them with, what I would call “needed team skills,” like conflict resolution and things like that, skills that teams need to have. (Participant 7)

*Knowledge Management*

Two forms of knowledge management that took precedence were disseminating best practices and an intranet. The following comments discuss the usage of best practices:
I think the key things are, like I said, is that the regional people share best practices and actually do co-planning for the branches. (Participant 10)

...from one functional area to another functional area rather than the knowledge staying resident within the function, once you are on a team you are going to be sharing your functional know-how. That was a real shift for us. It was unique. In fact, that is what happened. I think it is a very positive way to manage knowledge. (Participant 4)

I think they do capture “best practices” or improvements to standard operating procedures and maybe that could be captured under knowledge management system. (Participant 5)

The use of intranet allows employees to access and share information. The following commentary discusses the usage of an intranet:

...that initial sharing system and categories and putting it out on the Intranet. (Participant 10)

There is now an active, internet-based knowledge management system. A lot of resources go into that building and maintaining that. Information about the businesses they serve and the pressures on them are up there. It is an actively used site. (Participant 8)

...an enterprise document management system which will enable some more formal, at least codifiable, knowledge. This is critical for some of the operational area or the systems background. So, a lot of investment in what do we know? What needs to be documented? How do we share that? What are the tools to share that or to have access to that? (Participant 9)

Business Strategy

There was not a dominant business strategy that emerged, and that may be a result of the work teams being the business strategy. Business strategy should be focused on providing a strong foundation for driving the operations that the work teams are designed to achieve.
Leadership

A major characteristic of leadership support is that more people in the organization take on leadership roles than just formal titles. The comments below highlight the transitional nature of leadership:

The decision making was distributed quite a bit, but decision making...obviously organizational design decisions were distributed, but they also significantly increased whatever the lending authority was for each of the branches. (Participant 10)

So if I am a manager now delegating day-to-day operational activities to my team, how will I use my time differently now that I am not doing that? (Participant 17)

...it can start anywhere in the organization, but the way they first attempt it is to change the way the leadership looks at getting work done or making decisions. That’s the point of entry, in my experience. It is how do we make decisions in our organization? And that usually leads to what do we need to put in place to make more decisions or to give greater input or greater buy in or get more diverse perspectives. (Participant 3)

So, that forced everyone to be a leader based on what their content knowledge was. (Participant 10)

If I lump supervisors and manager into leadership, there is a shift away from control and command to oversee and develop. There is less emphasis on being the driving force behind the work system to becoming enablers of the work system. (Participant 2)

...and since no one person that has authority over another person, in its truest sense, then the leadership is very much shared, and responsibility is shared. (Participant 20)

Once you want to push a decision down the organization you want to be quicker, more responsive...the last thing that you want do is put a tight management control over where you want the information to flow, problems to surface, problems to resolve. So, you were asking your lowest level manager to operate as a team leader rather than as a manager. It had a big impact on individuals to shift gears. What we did, we ran workshops to equip them to operate as a team leader and we facilitated workshops with their team to help the team leader position. That was a big shift for us. In fact, that was one of those discoveries after the strategy changed. (Participant 4)
Between Teams Integration

The dominant mechanism found in the data to integrate teams was Starpoints. Starpoints allow a member of the team to be the primary contact on quality, so that all the quality people can meet and discuss what is going on and take their findings back to the team. The following comments about Starpoints discuss their usage:

Star points integration system. A good example. This plant makes a lot of products, so it has a very complex daily production schedule. The way the schedule used to be done was there would be a daily meeting where they would plan out a day 2 weeks in advance. So each day, they would be planning a days production, but the day they would be planning would be 2 weeks out in front of the actual day they were in the room. So there was this 2-week frozen schedule that they kept extending each day. In that meeting were the materials management people, the master scheduler, and supervisors from each of the major departments. So there were maybe 15 managers spending an hour of their time every day to do the schedule. Today, there are no managers involved in the scheduling of the plant, and an entire weeks production schedule is done in a 2-hour meeting once a week—with no managers present. What there is a scheduling Starpoint on each team, and the scheduling Starpoint leader is there. The results are incredible. When managers did it, they very rarely did any better than a 60% schedule right. It means they mis-schedule 40% of the time. All that meant was, if a product was supposed to get started to produce today and it got bumped back to tomorrow, that would be a mess. So every missed start time was a miss in schedule, and they were missing about 40% of their start times. Last year, with hourly people doing it, 87% right! The reason is really simple. It’s that the people who were in the room making promises are the people who could actually deliver. Manager would say yes, but wasn’t the person to deliver on promise. So, if they miss, they look at each other and say why? That has been very effective integration mechanism. (Participant 12)

That has to do not only with the star point briefings and the coach’s forum, but also cross-shift communication. Sometimes the production star point on first shift will talk to one on second-shift as they’re making the transition, so that information is passed on more effectively. So teams have had a definite impact on the between-team integration. But everyone still, their heart is in the silo, so we still have to push on that pretty regularly. (Participant 17)

They started with 5 points in the Starpoint system. I think there are now 6. You know, the classic points. Quality, productivity, HR, maintenance...I forget what else. Each team would have someone where one of their primary work duties would be one of those responsibilities as a Starpoint coordinator for their team. The teams had the same type of structure, so if you wanted to talk with another team about quality issues, there was a quality Starpoint to talk to. If the quality manager wanted
to bring in all the quality Starpoints from one department or the plant as a whole, it was easy to do. It was a mechanism for gathering information, for sharing information, for deploying stuff and providing structure to the communication and structure to the empowerment. In terms of that, these were areas that team members did things where as in a traditional plant they would supervise someone doing it. Here, it was the sandbox they could play in. (Participant 5)

**Resource Distribution**

No main method of resource distribution was produced from the data. The two concepts that were discussed briefly were making requests for more resources and treating each area like a business. Resource distribution was one area that received fewer codes and was not as well known as other variables, so future research may need to better define this variable.

**Physical Workspace**

Future research should investigate the emergence of virtual teams and their impact on work teams. Also, the concept of devoting a physical space to teams for meetings materialized in the data and is reflected in the following:

Most of that had to do with the creation of team meeting spaces, team performance boards or displays where metrics and information could be displayed at the team level. And the physical collocation of support people. (Participant 12)

...and they have walls between the staff rooms but a separate washing up and entrance area, and they're planning to knock the walls down, or at least make archways in them. (Participant 18)

They built a training room and a TBO room. They have a training room for technical training, and a TBO room for TBO training. That was a big deal, because space is at a real premium. (Participant 19)

There were team rooms built. In a traditional plant there would not be those meeting rooms. (Participant 5)

We did have to create rooms for them to meet in teams and to spread out their maps and things like that. (Participant 7)
Program Evaluation and Renewal

There was not a major form of evaluation and renewal that surfaced during the interview process. Much like resource distribution, evaluation and renewal was not widely understood, so further study may be useful in better understanding the variable. Of the answers given, the evaluation and renewal should be flexible be scheduled formally so that they occur.

Personnel Selection

The two methods of personnel selection that were discussed were peer approval and assessment centers or simulations. Peer approval means that more than just the hiring manager makes the hiring decision. Team members get input, and in some cases, the ability to approve or veto candidates’ hiring. The following examples discuss peer approval:

They were doing peer assessment for new hires. (Participant 1)

There is a significant shift toward hourly participation in team member, supervisor, and even director-level selection. (Participant 2)

They interview in a team. They also...the union is always on their interviews. They use consensus, decision-making model. They determine what decision making model they will use and they communicate that to all stakeholders. They do team interviews. (Participant 3)

...numerous instances where team members took responsibility for selection. People have taken initiative to define expectations. Team interviews. (Participant 6)

The other selection method is assessment centers or simulations designed to see how candidates perform under actual job conditions. The time and costs associated with this form of selection means that they usually happen later in the selection process when the organization is more serious about the candidate. The comments below discuss the use of these forms of selection:
There is an assessment process that they go through where there’s a simulation. They bring new candidates in groups of 6-8, give them a problem solving simulation. They literally watch each person and how they perform in that assessment and rate them on critical behaviors and critical competencies. (Participant 12)

They used variations of assessment centers to select workers. (Participant 5)

So, structured exercises or things for people to participate in. Sometimes, and particularly because, and this is true inside or outside...sometimes what we are looking for, people have not always had the opportunity to be able to talk about how they have done that before, because they have never been in an environment that has mandated that. We try to create ways for people to demonstrate their capabilities if they don’t have experience to talk from. We have facilitation expectations for certain of our job families, the teams in business development and so we give people facilitation exercises. So, even they have never done it before you can look at their aptitude and capability for that. (Participant 9)

*Work Process Design*

There was not a major form of process design that was discovered in the interview process. Further study on how different forms of work processes such as lean, six sigma, and quality initiatives affect the work team process. Also, studies could be conducted to understand who should be at the table when redesign decisions are made.

*Support Systems Model*

Future research should continue to investigate the relationships, placement, importance, and team involvement that are represented in the Support Systems Model created in Research Question 4. Another area of potential future research could look at the phased approach to building a support systems structure. Research should probe to make sure the correct variables are in the appropriate phases and that the number of phases is correct. The phased approach, if correct, is usually preferred by practitioners due to the fact that phases allow for smaller milestones, quick
wins, and a more palatable solution. Finally, future research should attempt to apply quantitative analyses to the model as a whole, or perhaps more realistically, parts of the model in order to better understand the nature of team-based support systems.

Summary

The current study sought to create a preliminary framework for the support systems needed to help work teams be successful. While most team-based interventions seek to alleviate conflict and improve communication, the onus is rarely placed on the organization to support teams. The use of interview-based, qualitative research was helpful in gathering a maximum amount of data to analyze. A Support Systems Model was created to, not only understand each support system more completely, but to also provide a holistic view of team support systems. The Support System Model should provide practitioners with a reference point for supporting work teams and provide academicians with fertile ground to explore the topic of team-based support systems. Each section of the model was dissected to develop potential hypotheses for future research.
APPENDIX A
TEAM-BASED ORGANIZATIONS INTERVIEW
### Overview Information

**Overall SME interaction process:**
1. Introduce through email
2. For AMOD, identify possible interviewees through Craig McGee and contact them at the conference.
3. Schedule interview
4. Send reminder/informed consent email – include interview questions so they can think ahead
5. Interview
6. Follow-up thank you
7. Interview study report to all participants

**Outcome objectives:**
- Better, fuller definition of TBO
- Better list of components of TBO
- Examples of successful TBO implementation efforts
- Understanding of how TBOs are different from other organizations
- Preliminary understanding of the extent to which organizations are moving to TBO
- New compelling research questions and possible methodologies
- Identification of several possible organizations to include in survey study
- New material and ideas to be included in the survey study

**Sample**
- Consider an expert in the area of TBO (how operationalize that?)
- One-half practitioners, one-half academics – roughly 20 total
Introduction: (summarize bullet points; make sure to ask italicized questions)

- **Informed consent:**
  - Did you read the informed consent information on your confirmation email?
  - Do you have any questions or concerns?
  - *Do you agree to participate?*

- **Confidentiality reminder:**
  - Remember, participation in this interview is voluntary, and you may decline to answer any question.
  - Information collected will be summarized into themes for the study report.
  - Individual and company names will not be attached to results; however, I would like to include your name as one of the participants in the study.
  - *May I include your name?*

- **Permission to record:**
  - I will be using a tape recorder to capture our conversation, to ease the data collection process and allow the interview to flow more smoothly.
  - My research team and I are the only ones who will have access to the tapes and notes. My research team consists of myself, Michael Beyerlein and Bob Francoeur from the University of North Texas, and Judith Steed from the Center for Creative Leadership. In addition, members of my dissertation committee will have limited access to the information.
  - *May I record our conversation?*

- **Time available:**
  - How much time do you have available today?
  - The interview should take between 1-2 hours.

- Okay, let’s get started!

1. Participant background information
   
   a. Please tell me about your current job and your background, including your educational background.

   b. Which of the following best describes your work with team-based organizations?
      - Theory developer/researcher or an implementer?

   c. At which level do you do the majority of your work – individual, team, or organization? (For interview purposes today, we will focus on the organization level. If you work at either the team or individual levels, please consider how the organization would affect those levels.)

2. Do you use the term “team-based organization”?
   
   a. If not, what term do you use? Why are you using that term?
b. How many years of experience have you had with team-based organization (or your term) concepts?

3. What is your definition of team-based organization (or their term for it)?

4. The following are my current criteria for TBO. Let’s go point by point through the criteria to see where we agree and disagree. Any other criteria to add?

   a. Teams of any type (e.g., work teams, management teams, project teams) are the core performing units of the organization

   b. The organization is structured, designed, and systems modified to support teams (supportive context)

   c. Flexibility of systems is key to dealing with various team types and both individual and team tasks

5. How are TBOs different from other organizations?

   a. Why do organizations make the effort to transition to TBO?

   b. How do organizations attempt to make a successful transition to TBO?

6. On a scale from 1-10, with 1 being not at all and 10 being quite a bit, to what degree do you think organizations are moving in the direction of TBO?

   a. How and why?

   b. What proportion of your clients is TBO related?

7. Tell me about one of your efforts working with a TBO (or your term for it).

   a. What specifically happened, and how?

   b. How did you know it was successful/unsuccessful?

   c. On a scale from 1-10, with 1 being least successful and 10 being most successful, how would you rate this effort? Why?

   d. At which level would you say you did the most work – individual, team, or organization?

8. In light of your answer to 7d (individual, team, organization), can you draw conclusions at the organizational level and tell me if the following TBO components were affected in the effort and how. (Only use definitions if the participant asks – these definitions were not sent ahead to the participant)

   a. After going through components, can you think of any additional components that are important?
<table>
<thead>
<tr>
<th>TBO Component</th>
<th>Extent Affected</th>
<th>How?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Reward and recognition systems:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods of rewarding and recognizing performance and other desired behaviors.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Goal setting system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods of establishing aligned goals.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>C. Performance measurement system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods of identifying and measuring appropriate performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>D. Performance appraisal system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods of reviewing and appraising appropriate performance and other desired behaviors associated with performance.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>E. Team design system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods of looking at the organization as a whole and determining appropriate places for teams. At the team level, making sure the team has the inputs it needs to get the work done.</td>
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<td></td>
</tr>
<tr>
<td><strong>F. Communication and information systems:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods for teams to get the information it needs to perform effectively, and methods for communication throughout the organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>G. Culture:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>A pattern of shared organizational values, basic underlying assumptions, and informal norms that guide the way work is accomplished in an organization.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>H. Training system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods for teams and individuals to identify and get the skills needed to perform.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>I. Knowledge management system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Processes for acquiring, organizing, and sharing, and utilizing knowledge.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>J. Strategy:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Methods for creating a well-thought-out “game plan” for the organization affected by the change to TBO.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>K. Leadership system:</strong></td>
<td>Not 1 2 3 4 5 Greatly at all</td>
<td></td>
</tr>
<tr>
<td>Formal and informal processes for creating leadership conducive to teamwork, including shared leadership.</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>L. Between-teams integration</strong></td>
<td>Not 1 2 3 4 5 Greatly</td>
<td></td>
</tr>
</tbody>
</table>
systems:
Methods for ensuring that teams do not become the new silos, and instead are pieces of an integrated whole.

<table>
<thead>
<tr>
<th>M. Resource allocation system:</th>
<th>Not 1 2 3 4 5 Greatly at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes for ensuring that teams get the resources they need to get the work done.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>N. Physical workspace:</th>
<th>Not 1 2 3 4 5 Greatly at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>The actual space in which the team works. If it is a virtual team, then the “space” created by technology.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>O. Renewal system:</th>
<th>Not 1 2 3 4 5 Greatly at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for periodically reevaluating and changing organizational design and systems, when necessary.</td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>P. Selection system:</th>
<th>Not 1 2 3 4 5 Greatly at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Processes for bringing new and transferred employees with the right skills into the right teams.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Q. Work process design:</th>
<th>Not 1 2 3 4 5 Greatly at all</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methods for analyzing and changing, if appropriate, the work process. Often used in conjunction with team design.</td>
<td></td>
</tr>
</tbody>
</table>
8s. Looking at the list of TBO components, changing which three to be team-based are the most crucial for the ultimate success of a TBO?

8t. Again looking at the list of TBO components, which three are the least crucial the ultimate success of the TBO effort?

9. What specific organizations come to mind when you think of successful TBO efforts?
   a. Do you have contact information for someone at each organization who might be willing to participate in a survey study later in the year? This is strictly for purposes of a survey study; individuals and organizations will not be contacted for any other reason. To thank you for recommending organizations for this study, you will receive a copy of the research report.

10. Especially given the level at which you work (individual, team, organization), what would you want to find out from the research study if you were conducting the research?
   a. Any ideas on how to go about answering these questions?

11. What comes after TBO as the next organizational transformation target?

12. What else would you be willing to share with me to help me fully understand your approach to TBOs?
APPENDIX B

EMAIL INTERVIEW CONFIRMATION/INFORMED CONSENT
Dear _______________,

Thank you for scheduling a phone interview for the team-based organizations study being conducted by the Center for Creative Leadership (CCL). Your interview is scheduled for <date> at <time>. I will call you at the following phone number <number>. Please let me know if you need to make any changes.

The interview questions are attached. Please feel free to peruse them as desired before our interview. These questions were sent ahead merely to give you an idea of what we will be discussing, not as a request for you to do “homework” to get ready.

Please read the research consent form below. Participation in the interview indicates your informed consent, so please contact Cheryl Harris (contact information below) if you have questions.

Research Information Form

Title of Study: Team-Based Organizations Interview Study

Principal Investigator: Cheryl Harris, Center for Creative Leadership, 719-329-7864, harrisc@leaders.ccl.org

Research Team: Michael Beyerlein, Center for the Study of Work Teams, University of North Texas 940-565-2653, beyerlei@unt.edu
Bob Francoeur, Center for the Study of Work Teams, University of North Texas 940-565-3096, BFRANC@aol.com
Judith Steed, Center for Creative Leadership, 719-329-7820, steedj@leaders.ccl.org

Before agreeing to participate in this research study, it is important that you read and understand the following explanation of the proposed procedures. It describes the procedures, benefits, risks, and discomforts of the study. You may withdraw from the study at any time. It is important for you to understand that no guarantees or assurances can be made as to the results of the study.

Purpose and description of the study:
The purpose of this exploratory study is to gain a better understanding what subject matter experts think about team-based organizations, including definitions, facets of study, practices, and research questions they utilize. The study will be conducted with business practitioners and theory builders/researchers with expertise in the area of team-based organizations via phone interviews ranging from 1-2 hours in length.

Risks or discomforts:
The only anticipated inconvenience is the time taken to participate (1-2 hours).

**Benefits:**
Participation in the study should provide the participant more thought on the topic of team-based organizations, and the summary of results may provide more ideas and practices that will be useful to the participant. Results will help advance the understanding of team-based organizations.

**Voluntary participation:**
Participation in this study is completely voluntary. In addition, any questions may be skipped, if the participant chooses to do so. Refusal to participate or to withdraw will involve no penalty or loss of rights or benefits or legal recourse to which participant is entitled. The study personnel may choose to stop my participation at any time.

*Participation in the interview indicates your informed consent!*

**Confidentiality:**
Confidentiality will be safeguarded in several ways. First, you will be asked if you will let the researcher audio tape our conversation, as a method for easier information collection. You may decline to be taped, which is perfectly acceptable. Any notes and audiotapes will only be accessible by members of the research team. Second, results will be aggregated in summary form, and will be devoid of any identifying information. Third, you will be asked if you would like to be listed in the appendix of the report as a participant, and will be given the option to decline.

**Results of study:**
The summary results report will be distributed to all participants. Results will also be used to create a survey for a future study, and may become the content for a journal article and/or CCL publication, among other products, in the future.

**Contact information:**
Please feel free to contact Cheryl Harris at 719-329-7864 or harrisc@leaders.ccl.org if you have any comments or questions.

**Review for protection of participants:**
This research study has been reviewed and approved by the UNT Committee for the Protection of Human Subjects (940) 565-3940.
Union Presence

Even for the union associates, they participate at the company performance level. They do get a percentage pay-out based on overall performance of the company. (Participant 17)

And the unions were not invited to support the Steering Committee. Now later on, the plant manager said he felt that was a mistake, what we were doing to the union. We should have brought them in. I had suggested it but they made it quite clear that they didn't want that. (Participant 11)

The union contract meant they also had to have a step person—one person that’s half a step above the workers and that was the group leader. That role also couldn’t change. (Participant 14)

Even had challenges when we asked union employees to take on management roles (Participant 6)

The guidelines about the union contract are in the handbook. For example, our team members are not allowed to make hiring decisions or take disciplinary action. (Participant 17)

They also…the union is always on their interviews. (Participant 3)

For example, we are not having people, because of union issues...we can’t have people multi task, although that would be desirable in a TBO from a skill development level and for expediting the process. But, union contracts are not going to allow us to multitask or cross function. (Participant 3)

Overall, the union has not done enough work on their own to figure out their own agenda and how this work system could help them. Signs of them being left out. (Participant 5)

Corporate or Existing Systems

The hurdle seems to be corporate. (Participant 19)

The parent organization is not designed that way. They could change their reward and recognition system, but how do they stay in line with the global organization. (Participant 3)
Had a system in place – the VP of development had them actually use that system. (Participant 1)

There is a big legacy that we have in performance appraisal where there is...it’s a very bureaucratic system that operates across our company as a whole. So there is lots of paperwork and signatures and counter signatures and so it’s another one where we are trying to figure out how we can flex it enough to make it work in this environment. We are certainly tied to existing stuff that just has to be done. (Participant 8)

I think it did put a lot of pressure on our existing system to...which were legacy type systems, to support the new strategy... (Participant 4)

They are dependent on the parent system for all their resources. It has not been easy, so for that reason. (Participant 3)

Like I said, there is a parent system...the selection system is centralized. (Participant 3)

Research Question 1 (Level of Involvement)

Team Goal Setting

The decisions about overtime, about output goals, were becoming much more team-oriented. (Participant 13)

The team leaders, in many cases, are supporting that happening, instead of doing top-down goal-setting. (Participant 19)

Performance Measurement

So, it wasn’t like the team could set its own measures and its own goals. They don’t do that because they have to be connected with what management’s expectations are. (Participant 4)

The only major change there was to try to get production, quality, and cost information displayed at a team level, rather than a higher level, so each team could see what their impacts were. (Participant 12)

...that they have found ways not to wait for IT to do it, but find ways to do it themselves. (Participant 13)
Communication and Information Systems

... the fact that they had meetings every shift. (Participant 11)

When they are new, we make them meet at least once a week, and they work at every possible excuse not to do that because it’s uncomfortable for them. They redesign their own team meeting process to understand how to have good meetings and the benefits of good meetings. (Participant 17)

Culture

... responsibility for the work where it’s being done, locus of decision-making at lower levels, inclusion in information and decision-making, etc. (Participant 2)

Training

If you had told them the year before that you guys are going to design training, they would have laughed. So when training is delivered, there is enormous credibility. (Participant 13)

... created a cadre of internal people in their organization, who are not by discipline trainers for TBO. They have, because they have been exposed to it, become excellent at it. These are mechanics, ramp service men, customer service agents...these are not the people you would normally go to for innovation. That’s who is leading their training. They would all be considered, front line, middle management people. To that degree, it has been really great! (Participant 3)

Knowledge Management

There is now an active, internet-based knowledge management system. A lot of resources go into that building and maintaining that. (Participant 8)

Leadership

There is an increase in leadership behavior in the team. (Participant 19)
So, managers move away from being in a directive role to more in a coaching, supporting role. Teams take on more of the management activities for themselves and in that process share in the achieving of the business results as a group rather than as distinctly individuals. The Starpoint system is what we are using within the team. That is the model that we are working team towards in terms of shared leadership of those teams. (Participant 9)

**Between Teams Integration**

They have to negotiate with those teams for things that they may need. (Participant 10)

We are trying not to take ownership of it, but push ownership down to the teams themselves. (Participant 17)

**Resource Distribution**

...will help them in terms of having a business case in terms of being able to say we need more, we need less, we need different. So, as we get further along that would be more...the concept is influencing the system. (Participant 9)

The idea of teams knowing and managing their own resources was beginning to be done. (Participant 13)

**Personnel Selection**

I don’t think the teams are yet selecting their own members, but they’re getting close to that. (Participant 19)

There is a significant shift toward hourly participation in team member, supervisor, and even director-level selection. (Participant 2)

In our selections we should involve the people with whom folks are going to work. So, obviously, more of the team based selection process. (Participant 9)

Now the employees were much involved in hiring new employees. (Participant 11)

Consensus decisions about selection... (Participant 1)
Now, Starpoint leaders on each team are trained as assessors. They do the interviewing. There is an assessment process that they go through where there’s a simulation. They bring new candidates in groups of 6-8, give them a problem solving simulation. They literally watch each person and how they perform in that assessment and rate them on critical behaviors and critical competencies. (Participant 12)

**Work Process Design**

We let them design what the main processes and tasks within that unit were. So, they had to go through a thought process to serve these customers, who could be internal customers too, we need to do these processes and tasks. (Participant 8)

**Research Question 2 (Relationships)**

...when I’m talking about the reward and recognition system and what I assume when you are talking about, we are talking about it linked to a larger performance management system. (Participant 3)

Let’s get some goals set and make sure we have measures and let’s figure out a way to build them into a measurable performance. (Participant 4)

I didn’t know how you wanted to distinguish goal setting from the performance measurement because I think...the way that we were measuring the performance of teams was largely on the basis of goals. (Participant 4)

Again, it’s very closely related to goal setting. Once you have the goals you can measure against them. (Participant 8)

So, the setting of goals is certainly related to the whole performance measurement system. (Participant 9)

What I mean by performance management strategies are looking at how work is measured, how that feedback is given to people, which is appraisal. (Participant 18)

The whole measurement system is a component of that. We have, in the last several years, done more engaging of customers and peers in terms of providing performance feedback. (Participant 9)

... clarified who would do requirements gathering (for example, marketing), created a formal process to do this. Role clarification. Tools for executing. (Participant 1)
KM, in my notion, includes information, learning, and communication. (Participant 13)

I’ve presented articles and we have discussions. I have a hard time separating that from communication. (Participant 17)

Right from the start, as we hardwired into the process, the people doing lessons learned analysis at each of the sites and synching up every night, so they learned that process. (Participant 10)

... it’s more how can you influence one-on-one. And making sure that our big-time communications are consistent with valuing...that we are recognizing people who have shared their knowledge. (Participant 9)

They have found ways not to wait for IT to do it, but find ways to do it themselves. Based on people in organizations stepping up to the task of what data to get, how to share, etc. What they were having trouble doing was stripping data by team and individual data from an information systems standpoint. Some of ERP enabled that too… so progress has been determined by the ups and downs of the ERP progress. (Participant13)

We used the incentives to affect the culture. And our philosophy about incentives was we believed that incentives didn’t motive, but they focused. They say that this is important. It is one thing for management to say something is important, but when they put money on it, people decide that they really mean it. I think you could say that was also something that we did to affect the culture. (Reward and Recognition, Participant 7)

...was a pretty participative culture. We just needed the structure to go with it. (Team Placement and Structure, Participant 1)

So a lot of the status differences and dept barriers began to disappear. So they became a much more collegial culture, less status, less formal, much more participative. (Team Placement and Structure, Participant 12)

The team structure drove the culture change. (Team Placement and Structure, Participant 17)

Major changes for them in just having a perspective about what leadership means. They carry those values into new leadership positions. (Leadership, Participant 19)

The shift is away from the bureaucratic, Tayloristic culture of command and control toward responsibility for the work where it’s being done, locus of decision-making at lower levels, inclusion in information and decision-making, etc. (Leadership, Participant 2)
So really, saying, this is the strategy and these are the results that we are trying to achieve and this is how we want to behave...all of that we are given as choices as we make the design. So, the teaming is part of that cultural component. So, we started talking about it at the very beginning. (Business Strategy, Participant 9)

It is turned out to be a major cultural shift, and we monitor it so we know that nobody’s abusing it. And the people who are getting the rewards, the coaches can say these are my best workers. (Reward and Recognition, Participant 17)

Changes in performance appraisal, performance management, etc., those reinforce it, and guide it to some extent. Coaching will impact it [inaudible]. Leaders having to become teachers is a life change event. (Performance Appraisal, Performance Measurement, Leadership, Participant 19)

The whole communication shift and the amount of communication that went on certainly helped to change the culture because people were forced to hear about it. (Communication and Information Systems, Participant 17)

It depends on the level of the redesign. If the redesign is a wholly-contained unit within a larger institution, then strategy doesn’t change. (Participant 2)

...and accomplishment of that and be able to help them structure and design the organization and structure and put in systems and do the development piece. (Participant 20)

The two primary mechanisms of design were steering committee that was a microcosm. They have been the designers with subject matter expert facilitators. They have been the designers, implementers, teachers, etc., and they will continue to be the final, or the evaluators of is it working or not working, the entity accountability for that. Steering team implies that the design is organic, is internally developed. So that is one, design came from within. (Participant 13)

Because the senior management group itself, particularly the General Manager and his direct report have a very good understanding of systems theory. They would probably be the few people on the system that could talk about systems theory and apply it to business. So, that’s an example of them looking at the TBO enterprise system and being able to apply how do teams work on this and what architectural changes and infrastructure changes do we have to make? (Participant 3)

As you go through those top level discussions about what are the big building blocks that you need for the organization. That’s where it ... it tends to come out as people...very few people say that they want a hierarchy anymore. But, sometimes, that is where the discussions take you. Other times, they say things like they want a more flexible organization, a more fluid organization, something where everyone works together. And when you start structure conversations about the characteristics of the organization, it emerges that what they are really looking for is going to be team based. (Participant 8)
For example, meeting with leaders in a finance organization. They are going to do the strategy. (Participant 6)

That is done through negotiation with the senior decision makers who are setting up the new area. It usually comes from a strategic review about what you are trying to achieve. Who is the customer base? And, then decisions on the best way for meeting that. (Participant 8)

I also worked with them quite hard on with them, their boundaries and talking to people who work on their boundaries. Certainly, even if it's just communication and letting other people know who they are and what help they need. (Participant 18)

Put together a formal team to talk about projects among groups – a way to integrate teams. (Participant 1)

...some networks that get established incidentally. As a consequence, you have improvements in lateral integration and coordination. (Participant 19)

...some of the team members have expertise in selling seed. Other team members have expertise in selling chemical. So, they have to collaborate with each other with a particular customer, whether it’s a dealer or a large grower, to design integrated solutions. So, they have a technical set of responsibilities. They also have a team set of responsibilities. (Participant 7)

The knowledge networks where the groups were going out to lead the workshops; that could also be seen as integration as well. (Participant 10)

We learned, again learning from one unit we passed to another. (Participant 11)

The communities of practice are also a between-team integration system. (Participant 9)

Research Question 3 (Level of Importance)

Reward and Recognition

..so you have to design in the flexibility so you can reward and recognize people for both their individual levels as well as their team contributions, and reward teams as well. Those are subtle things, but they carry a lot of weight in terms of how the leaders are perceived in terms of their consistency. Aligning support systems is a very crucial piece of the whole thing. (Participant 12)

...because literally all of their pay things reinforce what people do on the project teams. People have to know that if they're doing more work, contributing more to
the company that in some way they're getting more tangible benefits. That was very effective. (Participant 11)

You have to change your reward and recognition systems. (Participant 3)

I’m guessing it is pretty important and, in fact, you may not find any organizations that would come into the category of being a successful team based organization that hasn’t addressed that. (Participant 7)

Reward and Recognition Systems -- in our experience if these don't align with other team-based choices they have a very powerful effect in de-railing the effort. (Participant 9)

Team Goal Setting

I guess another one, which is fairly dramatic, is that teams set up their own goals. That’s a big one. (Participant 10)

... it changed in a huge way the way they thought about goals for overtime hours, goals for output, etc. (Participant 13)

We talked about goal setting in terms of the team, and that would greatly affect it. (Participant 18)

...which is part of the goal setting process for that organization. That also had to be modified because of teams. (Participant 7)

Performance Measurement

That certainly was affected and certainly what the one team I’ve talked to about that successfully dealt with that. They tried to gather a number of different sources of data to their performance. (Participant 18)

To me that is a significant change. People really understand what it means and how it works. (Participant 5)

The next would have to be measures, and I’m not sure whether that’s performance measurement system or goal-setting. Certainly, getting people focused on the goals and the measures is critical. What are we supposed to do as a team? (Participant 12)
Team Placement and Structure

We’ve certainly spent a lot of time fine-tuning that process. (Participant 17)

I think that there is greater opportunity for creativity and innovation in a team based organization because by nature of this design, it allows for you to capture different perspectives. The nature of this design, it supports the concept of diversity, because...and I’m not just talking about ethnicity, I’m talking about different skill sets and different experiences that you bring to the workplace because that is what you are trying to capture. You are trying to get the best result from a collection of people instead of just a few individuals. (Participant 3)

Communication and Information Systems

Communication/information system, if we are going to be successful with this, we can’t have limited downward communication through the hierarchy. You’ve got to open up the information channels so people have more access to the information, and they can begin to become not a victim of the system of information because they can’t do their job. But they can really be partners. That would allow for, even if there is some blockage with supervisors and managers not supporting them, they could still have an avenue around the system. (Participant 14)

Communication in particular has been a real plus. Communicating about what is important and how … (Participant 6)

Teams, if you start with the premise that the reason that you are creating teams is that you want to improve the quality of decision-making and that the components of decision-making are quality information and quality process, then you better make sure you are enabling them to have quality communication. And, so you need information systems that allow them to have access to the highest quality information and to turn that information into intelligence by crunching it or whatever you have to do it. I think it also affected the communication system because we had to give them a lot more feedback. (Participant 7)

You can never communicate too much. Lots of briefing sessions. Once a team started to come together…each team is holding monthly lunchtime sessions so that, partly, the individuals on the team can get to know each other and partly, so that we could constantly reinforce the messages about what the organization was and what it was there to do. So, having raised the game on communication, you have got to keep doing it. (Participant 8)
Culture

The culture was now explicitly in the throes of, if you think about it from a systems view point, of deciding what it wanted to be, and manifesting what it wanted to be. So whatever the linear decisions were, the system had already begun to change just by confronting the question. (Participant 13)

Culture would be number one. (Participant 20)

In terms of culture, it’s a much different culture because they have changed. They have aligned all the elements in the system. They really did it! And that has changed the culture that changes people’s work experience that changes culture. (Participant 5)

You have to really make choices around everything that is part of creating a team culture. And, so you do have to turn everything on its side and since we were going through this redesign, it was certainly an ideal opportunity to have something different emerge. All the formal systems in the world won't make a TBO if there are deep-seated elements of individualism, retaining personal expertise, etc. This is crucial because it can be so difficult to impact. (Participant 9)

Training

The training is critical, but it’s ongoing process, not just a one-shot process, skills of developing a team, assessing and diagnosing, participation processes, communication, conflict resolution, teaming skills. (Participant 15)

It was a whole new training system, with a whole new emphasis in creating a balance with technical training. Really dealing with the people side of stuff. A huge change. (Participant 19)

Knowledge Management

One is because knowledge management is critical to the success of our organization...the building and diffusing of knowledge. We believe that teams, appropriately constructed, are going to help facilitate that knowledge exchange. So, that was probably the primary reason...if knowledge is going to be one of our strategic advantages how are we going to create groups, bring them together in the hope of building and diffusing knowledge. Clearly, the institution of the formal accountability for every individual to build their knowledge and to share their knowledge is a pretty dramatic change. (Participant 9)
**Business Strategy**

I think that teams do play into strategy, because when we look at business, our consideration is how does that affect population. When you look at the population, you look at how that’s going to affect the teams, so I think there’s a definite connection. (Participant 17)

**Leadership**

I think the management style and management role have to be such that it supports the teams taking on this responsibility. (Participant 11)

Leadership system because there are going to be tough moments, and if they really are serious about it, when there’s sabotage and there’s resistance, they’ve got to step in and say that’s unacceptable. (Participant 14)

The thing I would add to that is that your management development also has to be built around the team concept. So there’s a different type of management development that needs to happen—or something in addition to traditional management development. (Participant 17)

The leadership team changes, the leadership system, you’ve got that. That changes considerably. (Participant 20)

The role of manager as coach, especially in the transition to TBO, can be a dramatic shift (especially in more technical arenas that have often been highly hierarchical). Ensuring that leaders (both employees and managers) are well grounded in the new paradigm is critical. (Participant 9)

**Between Teams Integration**

I think that smart organizations see it as a mechanism for integrating functions or individuals that otherwise would not have that interaction or contact, and they’re [inaudible] it. So that is the other key driver. (Participant 15)

Working across shifts you do need that cooperation. (Participant 18)

I don’t want you to conclude that I think between-teams integration is irrelevant. I think that in some team based organizations it is extremely important. In the two examples we are talking about it probably is not a big deal. (Participant 7)
Program Evaluation and Renewal

Renewal system -- This process is important for any healthy organization, but does not specifically impact the TBO. (Participant 9)

Personnel Selection

In a collaborative organization, the teams hire; the teams fire; the teams discipline; the teams vote. (Participant 20)

You have to change your selection system. You have to look at your selection...you know, include how you interview people. (Participant 3)

Work Process Design

You’ve got work process design, then you have team design. I see those as like together. Maybe it’s just the way we did it. You could certainly do them separately, but if you think of socio-technical design, I think of them as done together. You design the team structure and you design the technical work process. (Participant 17)

Research Question 4 (Support Systems Model)

Leadership

...have to make an attempt to get leaders to understand what a TBO is and how it differs from what they’re currently doing and why they should do it. (Participant 12)

Have to have a strategy discussion with these guys, and create an organizational structure that follows that. (Participant 2)

Business Strategy

Ideally you get in at the beginning, do a full assessment, look at what their values are and where they want to be and look at work and [inaudible] and accomplishment of that and be able to help them structure and design the
organization and structure and put in systems and do the development piece. (Participant 20)

**Culture**

The culture is the start. (Participant 11)

Culture would be number one. If leadership and management systems change, then I'm going to have the authority, I may change all of the work processes and all that to do that work. (Participant 20)

**Training**

We do briefings on what needs to go on in self-managed design, but as far as training people how to talk with each other, how to negotiate, those come out pretty much as they come out down the road. (Participant 10)
APPENDIX D

SIGNIFICANT CORRELATIONS TABLE
Table A1

*Significant Correlations – Raw Data Analysis*

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<thead>
<tr>
<th>Relationship</th>
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