

CHALLENGES AND INTERVENTIONS IN MONITORING AND EVALUATING VIRTUAL TEAM PERFORMANCE

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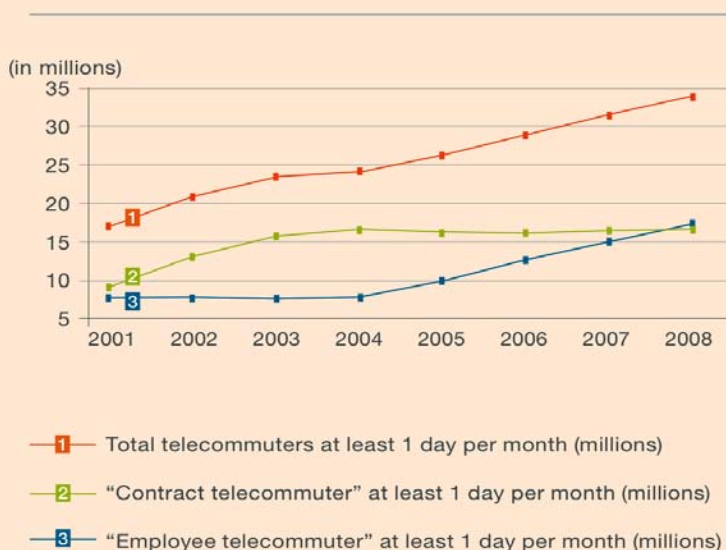
With the increasingly global nature of our economy, heightened complexity of jobs, emphasis on enterprise agility, and an increase of American telecommuters (approximately 17.2 million in 2008 compared to 12.4 million in 2006* (“Telework Trendlines,” 2009), many companies have adopted distributed, or “virtual”, teams into their organizational structures to successfully operate in changing business conditions.

Research suggests that the implementation of virtual teams can provide organizations with many potential benefits—remote working options to greater attract and retain employees (Cascio, 2000), enhanced project decision quality stemming from the firm’s ability to place the best individuals together on a team regardless of geographical location (Lipnack & Stamps, 1999), closer contact to customers worldwide (Solomon, 2001), along with a host of others. However, the benefits afforded by virtual teams are also coupled with many challenges—such as effectively monitoring and evaluating virtual team performance.

This paper aims to provide insight into what current research has identified as the major roadblocks in monitoring and evaluating virtual team performance, along with research-derived recommendations regarding how to improve upon these challenges.

FIGURE 1: Telecommuter Trendline

“Employee telecommuter” is a full- or part-time employee who works remotely at least one day per month. A “contract telecommuter” is a self-employed individual who works remotely at least one day per month. Data for 2007 are estimates only; the survey was not conducted in 2007.



*Source: “Telework Trendlines 2009”, WorldatWork

Virtual Team Monitoring and Evaluation Challenges

When considering the many potential challenges of having and supporting a virtual team, only a handful can compare with the difficulty that comes with monitoring and evaluating performance. University of Colorado, Boulder business professor Wayne Cascio (1998) suggests that performance management is by far the biggest challenge of virtual teams.

Considering the additional obstacles faced by managers of virtual teams compared to managers of traditional teams, it becomes clear why Cascio (1998) put forth that statement.

Physical Observation Limitations

One of the largest and most obvious challenges in monitoring virtual team performance is the inability of managers to physically observe their employees' performance and efforts, and how to implement effective methods for going about measuring productivity, building trust, and managing teams given their particular constraints (Kirkman, Rosen, Gibson, Tesluk, & McPherson, 2002). If managers are unable to observe their subordinates in action, they are less likely to be able to determine where their employees are struggling and where they excel, rendering the manager unable to provide constructive performance feedback and harness the full potential of their team. As a result, monitoring and measuring performance remain problematic and sources of concern (Kurkland & Bailey, 1999).

Employee Equity and Organizational Justice Issues

Virtual team members may feel organizational injustice when compared to those who are present in the actual workplace. Research by Wright and Oldford (1993) finds that a large number of employees' primary reluctance about virtual work and telecommuting rests on concerns of isolation. Professionally, employees fear that being "out of sight" infers being "out of mind" for advancement and other organizational rewards. This becomes a significant challenge when evaluating members of virtual teams against those at the physical office (Kurkland & Egan, 1999). Further, it is often perceived that when the outcomes employees receive are not aligned with their respective inputs, they tend to scale back their effort to a level in accordance to the outputs received, or even consider leaving the organization altogether (Dittrich & Carrell, 1979).

Barriers to Team Performance Knowledge and Awareness

Another roadblock when monitoring virtual team performance is the manager's lack of knowledge to create an environment that fosters high levels of performance, and possible ignorance of how to return the virtual team to that high-performance atmosphere when issues cause it to derail. Research by Potter, Balthazard, and Cooke (2000) suggests that individuals who exhibit constructive—as opposed to passive or aggressive—behaviors with other virtual team members produce solutions that are superior in quality to those produced by passive groups and superior in acceptance to those produced by either passive or aggressive groups. They go on to propose that those passive and aggressive interaction styles are intensified in virtual teams (Potter et al., 2000). Other research has also found that teams with high-performance levels establish trust quickly at the beginning of a project, and maintain that high level throughout, compared to virtual teams with lower average performance (Kanawattanachai & Yoo, 2002). A manager who does not understand such nuances and root causes that differentiate low- and high-performing teams face a clear challenge in effectively monitoring and evaluating virtual team performance.

Overemphasis on Output Evaluation

Evaluating virtual team performance might prove problematic when managers narrowly focus on outcomes rather than process—especially when those results prove difficult to measure and

monitor. As in traditional job settings, certain jobs lend themselves to easier outcome evaluation and monitoring in virtual team settings compared to others. However, when objective, outcome-based measures of performance are unavailable, the ability of virtual team managers to accurately ascertain performance becomes increasingly difficult considering their reduced capability to observe and measure the process. According to one manager surveyed by Kurkland and Bailey (1999), appropriate measures to evaluate performance were not readily available, causing a source of frustration in regards to virtual teams.

Virtual Team Monitoring and Evaluation Interventions

From the previous section it becomes apparent that monitoring and evaluation of virtual teams come with their own unique challenges. Nevertheless, numerous interventions and strategies to improve upon these challenges, in addition to increasing virtual team performance generally, have been identified through empirical and experimental research.

The “Balanced Scorecard”

One successful strategy identified by this research that organizations can consider when evaluating virtual team performance is to create a comprehensive assessment process, or balanced scorecard, based on business priorities. Kirkman et al.’s (2002) research of Sabre Inc. provides a sample model by which to create this scorecard. Consisting of that company’s values in the fields of growth, profitability, process improvement, and customer satisfaction, Sabre is able to monitor each team’s customer satisfaction via annual customer service goals. By doing this, virtual team managers have an external (albeit subjective) basis for evaluating and rewarding virtual team performance within this particular organization (Kirkman et al., 2002). Creating objective performance appraisals against an organization’s various scorecard dimensions enables managers to have a far more transparent understanding of the effectiveness of their virtual team and create more standardized methods of evaluating future virtual team performance. Consequently, Kurkland and Egan’s (1999) aforementioned equity and justice issues are also being addressed, as both virtual teams and teams in a physical office are being compared against the same set of criteria.

Increasing Information Flow

As mentioned previously, fostering an atmosphere that enhances virtual team performance is crucial to effectively monitoring and evaluating it. According to Kerber and Buono (2004), performance management in virtual teams is facilitated when team leaders maximize information flow. A study conducted by Rafaeli and Ravid (2003) found a relationship between information sharing and team profit (this particular study’s codification of performance)—those teams that shared more information (in their case, email communication) experienced levels of increased performance compared to those who shared less information. Davis and Khazanachi (2007) support this concept even further by indicating that the facilitation of shared, or mutual, knowledge among virtual team members increases overall performance. According to that study, mutual knowledge has the potential to positively affect virtual team inputs, socio-emotional processes, task processes, and outputs. Virtual team project managers can establish mutual knowledge among team members

through initial introduction and team building activities as well as giving members access to descriptive project documentation, which lists acronyms and other project specifics important for team members to understand (Davis & Khazanchi, 2007). It is also important to mention that the enormous challenges involved in managing and monitoring a virtual project make it even more important that virtual team communications are “noise-free” (Davis & Khazanchi, 2007; Jackson, Klobas & Gharavi, 2006).

Utilization of Alternative Sources of Information during Evaluation

In addition to evaluating virtual team performance against objective measures laid out in the balanced scorecard or other index, managers can also assess individual team member performance, both objectively as well as subjectively. Kirkman et al. (2002) provide various individual performance measures like number of items produced, accuracy of financial contracts, development of new business, and customer retention as objective, quantifiable measures of evaluating individual performance on virtual teams. They also pose that virtual teams have an advantage over traditional teams, as they are much less susceptible to favoritism, stereotyping, or other contaminating perceptual biases (Kirkman et al., 2002). Moreover, virtual team managers can track virtual team member behavior (e.g. taking leadership roles during virtual team meetings, coaching new team members off-line, suggesting internal quality improvement strategies) and other intangibles that increase team performance. Research indicates that virtual team managers may have an advantage in regards to tracking such intangible actions compared to those in charge of face-to-face teams, as electronic discussions, team emails, and other team activities are more accurately recorded in virtual team environments. Managers can also supplement their evaluations with modified 360-degree performance evaluations—gathering peer and customer input electronically (Kirkman et al., 2002).

Conclusion

With the nature of the workforce in constant flux, virtual teams are poised to become an increasingly utilized organizational tool to meet changing business conditions and needs. These teams have many benefits when compared to traditional, face-to-face teams, but the primary focus and scope of this paper has been on the tremendous challenge businesses face when attempting to monitor and evaluate virtual teams. The decreased availability of physical performance monitoring, potential lack of managerial understanding and awareness of virtual team processes, employee equity and organizational justice issues, and a likely overemphasis on the output when evaluating virtual teams are just a few of many challenges the research literature puts forth.

Nonetheless, this literature also provides organizations and virtual team managers with the strategies to implement and potential obstacles to watch for that aid in handling the aforementioned challenges. By creating a balanced scorecard with objective measures, increasing the flow of virtual team information, and capitalizing on alternative sources of information when assessing team and individual performance, managers have the means by which to combat the challenges raised in this paper.

Regardless of the nature of the economy or a business' specific environment, firms can utilize virtual teams to efficiently and effectively meet larger organizational goals and objectives. Therefore, it is important for human resource practitioners to have a firm understanding of the challenges and benefits of virtual teams, especially in monitoring and evaluating performance, in order to help the firm realize these greater goals.

References

- Cascio, W.F. (1998). The virtual workplace: a reality now. *Society for Industrial & Organizational Psychology, 35*(4).
- Cascio, W.F. (2000). Managing a virtual workplace. *Academy of management executive, 14*: 81-90.
- Davis, A., & Khazanchi, D. (2007). Does mutual knowledge affect virtual team performance? theoretical analysis and anecdotal evidence. *American Journal of Business, 22*(2), 57-65.
- Dittrich, J.E., & Carrell, M.R. (1979) Organizational equity perceptions, employee job satisfaction, and departmental absence and turnover rates. *Organizational Behavior and Human Performance, 24*: 29-40.
- Jackson, P., Klobas, J., & Gharavi, H. (2006). Technologies of the self: virtual work and the inner panopticon. *Information Technology and People, 19*: 219-243.
- Kanawattanachai, P, & Yoo, Y. (2002). Dynamic nature of trust in virtual teams. *Journal of Strategic Information Systems, 11*: 187-213.
- Kerber, K.W., & Buono, A.F. (2004). Leadership challenges in global virtual teams: lessons from the field. *Advanced Management Journal, 69*(4), 4-10.
- Kirkman, B.L., Rosen, B., Gibson, C.B., Tesluk, P.E., & McPherson, S.O. (2002). Five challenges to virtual team success: lessons from sabre, inc. *Academy of Management Executive, 16*(3), 67-69.
- Kurkland, N.B., & Bailey, D.E. (1999). Telework: The advantages of working here, there anywhere, and anytime. *Organizational Dynamics, 28*(2), 53-68.
- Kurland, N.B., & Egan, T.D. (1999). Telecommuting: justice and control in the virtual organization. *Organization Science, 10*(4), 500-513.
- Lipnack, J, & Stamps, J. (1999). Virtual teams: the new way to work. *Strategy and Leadership, 27*: 14-18
- Potter, R.E., Balthazard, P.A., & Cooke, R.A. (2000). Virtual team interaction: assessment, consequences, and management. *Team Performance Management: an International Journal, 6*(7/8), 131-137.

Rafaeli, S. & Ravid, G. (2003). Information sharing as enabler for the virtual team: an experimental approach to assessing the role of electronic mail in disintermediation. *Information Systems Journal*, 13.

Solomon, C.M. (2001). Managing virtual teams. *Workforce*, 80: 60-64.

WorldatWork. (2009). *Telework Trendlines 2009*. Retrieved March 3, 2010, from http://www.workingfromanywhere.org/news/Trendlines_2009.pdf

Wright, P.C., & Oldford, A. (1993). Telecommuting and employee effectiveness: career and managerial issues. *International Journal of Career Management*, 5(1), 4-9.

Annotated Bibliography

Cascio, W.F. (1998). The virtual workplace: a reality now. *Society for Industrial & Organizational Psychology*, 35(4).

Abstract: Consider the new paradigm of work—anytime, anywhere, in real space or in cyberspace. For many employers the virtual workplace, in which employees operate remotely from each other and from managers, is a reality now, and all indications are that it will become even more prevalent in the future. In and of itself, this represents a dramatic change in how we work, and it presents new challenges for our profession. The challenges stem from the physical separation of workers and managers wrought by such information-age arrangements as telecommuting and virtual teams. The article provides background on virtual teams, as well as the challenges managers of these teams might encounter.

Cascio, W.F. (2000). Managing a virtual workplace. *Academy of management executive*, 14: 81-90.

Abstract: Virtual workplaces, in which employees operate remotely from each other and from managers, are a reality, and will become even more common in the future. There are sound business reasons for establishing virtual workplaces, but their advantages may be offset by such factors as setup and maintenance costs, loss of cost efficiencies, cultural clashes, isolation, and lack of trust. Virtual teams and telework are examples of such arrangements, but they are not appropriate for all jobs, all employees, or all managers. To be most effective in these environments, managers need to do two things well: Shift from a focus on time to a focus on results; and recognize that virtual workplaces, instead of needing fewer managers, require better supervisory skills among existing managers. Taking these steps can lead to stunning improvements in productivity, profits, and customer service.

Davis, A., & Khazanchi, D. (2007). Does mutual knowledge affect virtual team performance? theoretical analysis and anecdotal evidence. *American Journal of Business*, 22(2), 57-65.

Abstract: This paper describes the concept of mutual knowledge and its potential impact on virtual team performance. Based on an analysis of extant literature, we argue that there is a gap in our understanding of what is known about mutual knowledge as it impacts team dynamics and virtual team performance. Supporting literature, anecdotes, and case studies are used to discuss the importance of mutual knowledge for virtual team performance and the research issues that need to be addressed in the future.

Dittrich, J.E., & Carrell, M.R. (1979) Organizational equity perceptions, employee job satisfaction, and departmental absence and turnover rates. *Organizational Behavior and Human Performance*, 24: 29-40.

Abstract: Employee job satisfaction and perceptions of equitable treatment have been the topics of a great amount of behavioral research. Several theorists have suggested that one or the other may be related to organizational behaviors of employees such as absence and/or turnover. This longitudinal study examines the association of the two constructs, and, in a field setting, compares them as separate variables relating to absence and turnover. Employee perceptions of equitable treatment were found to be stronger predictors of absence and turnover than were job satisfaction variables.

Jackson, P., Klobas, J., & Gharavi, H. (2006). Technologies of the self: virtual work and the inner panopticon. *Information Technology and People*, 19: 219-243.

Abstract: This paper seeks to develop insights into control, power, consent and commitment with virtual knowledge workers who are removed from the immediate sphere of influence of management and co-workers.

Kanawattanachai, P, & Yoo, Y. (2002). Dynamic nature of trust in virtual teams. *Journal of Strategic Information Systems*, 11: 187-213.

Abstract: The authors empirically examine the dynamic nature of trust and the differences between high- and low-performing virtual teams in the changing patterns in cognition- and affect-based trust over time (early, middle, and late stages of project). Using data from 36, four-person MBA student teams from six universities competing in a web-based business simulation game over an 8-week period, they found that both high- and low-performing teams started with similar levels of trust in both cognitive and affective dimensions. However, high-performing teams were better at developing and maintaining the trust level throughout the project life. Moreover, virtual teams relied more on a cognitive than an affective element of trust. These findings provide a preliminary step toward understanding the dynamic nature and relative importance of cognition- and affect-based trust over time.

Kerber, K.W., & Buono, A.F. (2004). Leadership challenges in global virtual teams: lessons from the field. *Advanced Management Journal*, 69(4), 4-10.

Abstract: A steadily growing number of managers find themselves leading project teams with members located literally around the world. Yet, in many instances, the budget doesn't allow the team to meet on a regular basis—if at all. Many of the managers the authors have spoken with in these situations note that while demands are high, team performance often falls short of expectations and, at times, the team seems to be spinning apart. These managers have numerous concerns from start-up issues to long-term performance: What is my role as a virtual team leader? How can you build high-quality relationships when people seldom, if ever, see each other in

person? How can I enhance the performance of my virtual team? How can virtual relationships be managed more effectively using the company's existing communication technologies? Is it possible to manage performance and ensure accountability at a distance? The paper looks at the challenges and strengths of virtual team implementation.

Kirkman, B.L., Rosen, B., Gibson, C.B., Tesluk, P.E., & McPherson, S.O. (2002). Five challenges to virtual team success: lessons from sabre, inc. *Academy of Management Executive*, 16(3), 67-69.

Abstract: Advances in communications and information technology create new opportunities for organizations to build and manage virtual teams. Such teams are composed of employees with unique skills, located at a distance from each other, who must collaborate to accomplish important organizational tasks. Based on a comprehensive set of interviews with a subset of team members, team leaders, general managers, and executives on 65 virtual teams at Sabre, Inc.—an innovative organization in the travel industry—the authors identify five challenges that organizations can expect to encounter in establishing, maintaining, and supporting virtual teams, e.g., building trust, cohesion, and team identity, and overcoming isolation among virtual team members. Both leaders and members of virtual teams face particular difficulties in selecting team members who have the balance of technical and interpersonal skills and abilities required to work virtually and in evaluating the performance of individuals and teams working in virtual space. Examination of Sabre's strategies for coping with each challenge should be instructive to other organizations using or considering virtual teams.

Kurkland, N.B., & Bailey, D.E. (1999). Telework: The advantages of working here, there anywhere, and anytime. *Organizational Dynamics*, 28(2), 53-68.

Abstract: There are four breaks from the traditional 9-to-5 routine of employees who share a work location and see each other on a daily basis known as telework. (1) Home-based telecommuting refers to employees who work at home on a regular basis and can be said to be telecommuters if the telecommunications link to the office is as simple as a telephone. (2) Satellite offices consist of employees who work both outside the home and away from the conventional work place in a location convenient to the employees and/or customers. (3) A neighborhood work center is the same as a satellite office except that this houses more than one company's employees. (4) Mobile workers are frequently on the road, using communications technology to work from home, from a car, from a plane, or from a hotel—communicating with the office as necessary from each location. Each of these offers challenges for companies and their managers but it also provides them with opportunities, which the paper examines.

Kurland, N.B., & Egan, T.D. (1999). Telecommuting: justice and control in the virtual organization. *Organization Science*, 10(4), 500-513.

Abstract: The adoption of telecommuting raises concerns for both managers and employees: Remote supervision presents monitoring challenges, while physical isolation may impede the

employee's opportunity for, and involvement in, determining valued organizational outcomes (organizational justice). This study of 191 employees examined the relationships among telecommuting, organizational monitoring strategies, and organizational justice perceptions. Results suggest that monitoring strategies were more strongly associated with organizational justice perceptions than with telecommuting, and procedural and interactional justice perceptions related significantly to telecommuting. The authors provide implications, limitations, and ideas for future research.

Lipnack, J, & Stamps, J. (1999). Virtual teams: the new way to work. *Strategy and Leadership*, 27: 14-18

Abstract: In the Information Age, people no longer must be in the same location to work together. Interactive technologies have created virtual teams as people work across the boundaries of time, space, and organization. The factors that contribute to the success of these new teams are discussed. The basic principles that underlie the success of virtual teams are: 1. purpose, 2. people, and 3. links.

Potter, R.E., Balthazard, P.A., & Cooke, R.A. (2000). Virtual team interaction: assessment, consequences, and management. *Team Performance Management: an International Journal*, 6(7/8), 131-137.

Abstract: Virtual teams are typically made up of geographically dispersed experts, supported by computer-based communication technologies. Though increasingly popular this is still a relatively unstudied organizational form. Virtual team membership is typically based solely on needed expertise; the teams rarely have any history of interaction and their performance potential is unknown. Research shows that teams exhibit constructive, passive, and aggressive interaction styles, which have significant effects on the decisions the teams produce as well as the teams' satisfaction with those decisions. The authors present managerial tools for the assessment of conventional and virtual team interaction styles. They detail how the tools are used, and we also discuss how the styles manifest in each medium, and their effects. They also give suggestions to team managers on how to use the insights the tools provide to manage their virtual teams for optimal performance.

Rafaeli, S. & Ravid, G. (2003). Information sharing as enabler for the virtual team: an experimental approach to assessing the role of electronic mail in disintermediation. *Information Systems Journal*, 13.

Abstract: This paper is an attempt to document empirically the relations between information sharing accomplished via electronic mail and the performance of teams. The authors report on an experimental study of the role of electronic mail in the operation of supply chains. A variation of the well-known 'Beer Game' role-playing simulation game was computerized and implemented in an internet-based environment to study the information-sharing behavior of teams. A total of 76 teams of four players each competed to achieve best net team profit. Results of the simulation

game permit a detailed examination of email use in an organizational context. Findings indicate the expected significant correlation between email use to share information up the supply chain and net team profit. In other words, sharing information in the team has a positive impact on performance. The recorded behavior of managers in the online simulation indicates that team members use electronic mail successfully to attempt disintermediation of the supply chain. When information is shared online, teams perform significantly better.

Solomon, C.M. (2001). Managing virtual teams. *Workforce*, 80: 60-64.

Abstract: Virtual teams offer tremendous opportunities, and tribulations. Electronic communication allows companies to recruit talent without the restraints of location, and to offer more scheduling flexibility such as telecommuting and working at home offices. It also creates the potential for follow-the-sun, 24-hour workdays and the ability to maintain close contact with customers throughout the world. On the other hand, it is difficult to manage people who must work collaboratively and interactively but may not ever actually lay eyes on one another. The complexities and subtleties of dealing with widely different personalities, cultures, and languages make communication far more difficult among virtual team members. These new challenges require diverse management skills, such as the ability to engender trust and productivity among team members even when there is no direct supervision.

WorldatWork. (2009). *Telework Trendlines 2009*. Retrieved March 3, 2010, from http://www.workingfromanywhere.org/news/Trendlines_2009.pdf

Abstract: The proliferation of high-speed connectivity and the explosion of hand-held devices occurred during the early 2000s and have become a mainstream way of working for many employers and employees. Indeed, history may record that the technology required for productive remote working and the urgent need for remote working (due to high fuel prices) converged in 2008, but is there data to support this notion? WorldatWork analyzes longitudinal data by the Dieringer Research Group to assess current telework trends.

Wright, P.C., & Oldford, A. (1993). Telecommuting and employee effectiveness: career and managerial issues. *International Journal of Career Management*, 5(1), 4-9.

Abstract: Telecommuting takes the concept of decentralization to its furthest degree. Managerial careers change, in that facilitation and the ability to service employees become the essential skills. Results, rather than visible inputs and "time-in", become important. Similarly, employees can develop alternate, less stressful, more productive lifestyles, as they are freed from constant interruptions. In order to make the telecommuting process work, however, the organizations must install proper policies and procedures, while providing proper training to managers, telecommuters and non-telecommuters. Also, management must insist that some time is spent in the office and that communication remains open.