

Managing a virtual workplace

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Executive Overview

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.

The virtual workplace, in which employees operate remotely from each other and from managers, is a reality for many employers now, and all indications are that it will become even more prevalent in the future. Virtual organizations are multi-site, multiorganizational, and dynamic.¹ At a macro level, a virtual organization consists of a grouping of businesses, consultants, and contractors that have joined in an alliance to exploit complementary skills in pursuing common strategic objectives.² The objectives often focus on a specific project.³ In and of itself, this grouping represents a dramatic change in how we work, and it presents two new challenges for managers. The challenges stem from the physical separation of workers and managers wrought by such information-age arrangements as telework and virtual teams. "How can I manage them if I can't see them?" is a question that many managers are now asking. It defines the first managerial challenge of the virtual workplace: making the transition from managing time (activity-based) to managing projects (results-based).

The second managerial challenge of the virtual workplace is to overcome uncertainty about whether managers will still be valued by their companies if they are managing employees who are not physically present. In one case, a first-level manager recalled his boss coming out of his office, looking at the empty cubicles around him, and saying, "What do I need you for?"⁴ As we shall see in this article, the need is not for fewer managers,

but for better supervisory skills among existing managers.

This article identifies the business reasons for, as well as some potential arguments against, virtual workplaces; examines alternative forms of virtual workplaces, along with the advantages and disadvantages of each; and provides tools and information to managers of virtual workplaces, based on advances in research on this topic.

Business Reasons for Virtual Workplaces

Many companies have instituted virtual workplaces, and have reaped the following benefits:

- **Reduced real estate expenses.** IBM saves 40 to 60 percent per site annually by eliminating offices for all employees except those who truly need them.⁵ Northern Telecom estimates the savings gained from not having to house an employee in a typical 64-square-foot space, considering only rent and annual operating costs, at \$2,000 per person per year.⁶ Others estimate the savings at \$2 for every \$1 invested.⁷
- **Increased productivity.** Internal IBM studies show gains of 15 to 40 percent. USWest reported that the productivity of its teleworking employees increased, some by as much as 40 percent.⁸
- **Higher profits.** Hewlett-Packard doubled revenue per salesperson after moving its sales people to virtual workplace arrangements.⁹
- **Improved customer service.** Andersen Consulting found that its consultants spent 25 percent

more time face-to-face with customers when they did not have permanent offices.¹⁰

- **Access to global markets.** John Brown Engineers & Constructors Ltd., a member of the engineering division of Trafalgar House, the world's third largest engineering and construction organization, with 21,000 employees around the globe, was able to access local pharmaceutical engineering talent at a project site in India. Using virtual work arrangements, the firm was able to traverse national boundaries, enabling it to work with and present a local face to its global clients. This enhanced its global competitiveness.¹¹
- **Environmental benefits.** At Georgia Power, 150 people, or 13 percent of the workers at headquarters, are teleworkers. This has reduced annual commuting mileage by 993,000 miles, and automobile emissions by almost 35,000 pounds.¹² A U. S. government study showed that if 20,000 federal workers could telecommute just one day a week, they would save over two million commuting miles, 102,000 gallons of gasoline, and 81,600 pounds of carbon dioxide emissions each week. The emissions savings for one week under this arrangement are equivalent to the amount of carbon dioxide produced by the average car over 9.3 years.¹³

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Potential Disadvantages of Virtual Workplaces

Offsetting these advantages, however, are some potentially serious disadvantages that managers should consider carefully before institutionalizing virtual-work arrangements:

- **Setup and maintenance costs.** For individual employees, the additional cost required to equip a mobile or home office varies from roughly \$3,000 to \$5,000, plus about \$1,000 in upgrades and supplies every year thereafter.¹⁴ In addition, to be viable, virtual offices require online materials that can be downloaded and printed; databases on products and customers that are accessible from remote locations; well-indexed, automated, central files that are accessible from

remote locations; and a way to track the location of mobile workers. Technology is the remote worker's lifeline. In the absence of the administrative and technical support that one might find at the home office, the technology must work flawlessly, and technical support should be available 24 hours a day, seven days a week. (Or at least a help desk should be staffed from 8 a.m. to midnight.) Decision makers need to consider the incremental costs associated with setting up and maintaining virtual workplaces.

- **Loss of cost efficiencies.** When expensive equipment or services are concentrated in one location, multiple users can access them. When the same equipment or services are distributed across locations, cost efficiencies may be lost. For example, in the securities industry, certain real-time information sources are necessary. Most stock quotes are available on the Internet on a 15-minute delay, which is adequate for most people's needs. However, for brokers and traders quoting prices to customers, it is imperative that quotes be up-to-the-second. Companies such as Bloomberg, Bridge Financial System, Reuters Quotron, and ILX Systems provide this real-time service. Each is willing to install its system at the customer's place of choice. Typical costs are about \$1,200 per month for the first installation of such a system, and about \$200 per month to install each additional system in the same location. When a securities firm needs this information for 50 brokers, along with related services (e.g., CDA Spectrum, Multex.com's Market Guide, and First Call/Thomson Financial), it is more cost-effective to have all employees at one location, rather than working at many different locations.¹⁵
- **Cultural issues.** Virtual organizations operating in the global arena often have to transfer their business policies and cultures to work with dispersed business teams across collaborating organizations, geography, and cultures. This can lead to potential clashes of business and national cultures, which, in turn, can undermine the entire alliance.¹⁶ If the members of a virtual organization or a virtual team are not empowered to make decisions, the technology that enables their collaboration will add little value, and the competitive advantage associated with rapid responses to demands in the market place will be lost.
- **Feelings of isolation.** Some level of social interaction with supervisors and coworkers is essential in almost all jobs. Without it, workers feel isolated and out of the loop with respect to cru-

cial communications and contact with decision makers who can make or break their careers.

- **Lack of trust.** A key ingredient to the success of virtual work arrangements is trust that one's coworkers will fulfill their obligations and behave predictably. Lack of trust can undermine every other precaution taken to ensure successful virtual work arrangements, such as careful selection of employees to work in the virtual environment, thorough training of managers and employees, and ongoing performance management.

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When Virtual Work Arrangements are Appropriate

Virtual workplaces are not appropriate for all jobs. In fact, an organization must first understand the parameters of each job it considers for a virtual work environment. To do so, it must determine what function the job serves; if the work is performed over the phone, in person, via computer, or in some combination; how much time the employee spends in direct contact with other employees, customers, and business contacts; if the location of the office is critical to performance; whether the hours have to be 9 to 5; and whether the employee must be reachable immediately.¹⁷

Jobs in sales, marketing, project engineering, and consulting seem to be best suited for virtual workplaces because individuals in these jobs already work with their clients by phone or at the clients' premises. Such jobs are service- and knowledge-oriented, dynamic, and evolve according to customer requirements.¹⁸ Even in these jobs, however, virtual work arrangements are not recommended for new employees or those who are new to a position. Newcomers require a period of socialization during which they learn to adapt to their new company, new environment, and new managers and coworkers. They need time to learn business skills, how and why things are done in the new company or new position, and the dos and taboos of the company's culture.

For employees whose jobs are appropriate for virtual work arrangements, and who are internally

motivated self-starters who know their jobs well and are technically self-sufficient, the key is to work with them well ahead of planned transitions. Firms such as Lotus, IBM, and Hewlett-Packard have written guidelines, training, and networks of peers to facilitate the transition. For example, Hewlett-Packard's guidelines for virtual workplaces address topics such as who can participate, family and household issues, remote office setup, and administrative processes.

Just as not all employees are suited to work away from their primary business locations during scheduled work hours, not all managers are suited to manage employees with virtual-work arrangements. Those who are seem to have the following characteristics:

- An open, positive attitude that focuses on solutions to issues rather than on reasons to discontinue virtual-work arrangements.
- A results-oriented management style. Those who need structure and control are unlikely to be effective managers in virtual-work environments.
- Effective communications skills, both formal and informal, with employees working remotely and at the primary business location.
- An ability to delegate effectively, and to follow up to ensure that work is accomplished.

While these characteristics apply to progressive managers in conventional as well as virtual-work environments, the need is greater in virtual environments that lack the attributes of traditional social contexts, such as physical proximity, verbal and nonverbal cues, norms of behavior, and, in the case of teams, a sense of cohort.

Virtual Teams

In a virtual team, members are dispersed geographically or organizationally. Their primary interaction is through some combination of electronic communication systems. They may never meet in the traditional sense. Further, team membership is often fluid, evolving according to changing task requirements.¹⁹ Such an arrangement provides several advantages:

- It saves time, travel expenses, and provides access to experts.
- Teams can be organized whether or not members are in proximity to one another.
- Firms can use outside consultants without incurring expenses for travel, lodging, and downtime.
- Virtual teams allow firms to expand their potential labor markets, enabling them to hire and

retain the best people regardless of their physical location, or, in the case of workers with disabilities, whether or not they are able to commute to work.

- Employees can more easily accommodate both personal and professional lives.
- Dynamic team membership allows people to move from one project to another.
- Employees can be assigned to multiple, concurrent teams.
- Team communications and work reports are available online to facilitate swift responses to the demands of a global market. For example, Veriphone uses a so-called relay race to develop software products faster than its competitors. Software engineers at the firm's Dallas headquarters work a full day on a project, then put their work product online on the company's intranet. Veriphone engineers in Honolulu take up the project, then post it for their counterparts in Bombay. As the Bombay software engineers leave work, they transmit their work product electronically back to headquarters in Dallas, where the originators are arriving for the next day's work. Electronic communications media make the relay race possible. Clients benefit from the firm's speedy response to their needs.

Disadvantages of Virtual Teams

The major disadvantages of virtual teams are the lack of physical interaction—with its associated verbal and nonverbal cues—and the synergies that often accompany face-to-face communication. These deficiencies raise issues of trust. Trust is critical in a virtual team because traditional social control based on authority gives way to self-direction and self-control. Members of virtual teams need to be sure that all others will fulfill their obligations and behave in a consistent, predictable manner.

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An empirical analysis of the development of trust in 29 global virtual teams that communicated strictly by e-mail over a six-week period found that teams with the highest levels of trust tended to share three traits. First, they began their interactions with a series of social messages—

introducing themselves and providing some personal background—before focusing on the work at hand. Second, they set clear roles for each team member, thus enabling all team members to identify with one another. Third, all team members demonstrated positive attitudes. Team members consistently displayed eagerness, enthusiasm, and an intense action orientation in all of their messages.²⁰ The lessons from this research are that first impressions are critical, and that especially in virtual-work environments, initial messages need to be handled well. Keep the tone of all messages upbeat and action-oriented. One pessimist in the group has the potential to undermine trust in the entire virtual team, and lack of trust affects overall group productivity. Not surprisingly, low-trust teams were less productive than high-trust ones.

Training Members and Managers of Virtual Teams

Because virtual teams are growing in popularity, it is important to address the issue of how best to train members and managers of virtual teams. A majority of U. S. corporations use some form of team structure in their organizations.²¹ Virtual teams add another layer of complexity to any teamwork situation. They have created a rich training agenda, for example:

- How to use the software to enhance team performance.
- How to manage the anonymous environment, and when to use it.
- How to provide anonymous participation and feedback when ideas or criticism need to be brought out. This is particularly important since the traditional cues of social interaction—body language and hand gestures—may not be available.
- Social protocol for virtual teams.
- Since changes in team membership must occur with seamless continuity, it is important to teach common cultural values.

These issues imply that managers should think carefully about the kinds of behaviors that are most likely to enhance a virtual team's ability to function effectively. Empirical findings with global virtual teams suggest that these behaviors fall into three key areas: virtual-collaborative skills, virtual-socialization skills, and virtual-communication skills.²²

Key virtual-collaboration behaviors include the ability to exchange ideas without criticism, develop a working document in which team mem-

bers' ideas are summarized, exchange it among team members for editing, track member comments in a working document with initials, agree on activities, and meet deadlines.

Key virtual-socialization behaviors include the ability to communicate with other team members immediately, solicit team members' feedback on the process the team is using to accomplish its tasks, disclose appropriate personal information, express appreciation for ideas and completed tasks, apologize for mistakes, volunteer for roles, and acknowledge role assignments.

Key virtual-communication behaviors include the ability to obtain local translator help when language skills are insufficient to be understood, rephrase unclear sentences so that all team members understand what is being said, use e-mail typography to communicate emotion, acknowledge the receipt of messages, and respond within one business day.

There is also much to learn from other research on teams in general, especially with respect to self-limiting behaviors by team members.²³ Team members may limit their involvement for any one of the following reasons: the presence of someone with expertise, the presentation of a compelling argument, lack of confidence in one's ability to contribute, an unimportant or meaningless decision, pressures from others to conform to the team's decision, or a dysfunctional decision-making climate in which members become frustrated, indifferent, unorganized, or unwilling to commit to making an effective decision.

To avoid these problems, managers should choose team members carefully and give each member a good reason for being on the team. They should also frame the team's decision task appropriately, emphasizing clear, well-defined goals and the consequences of the team's decision. The first team meeting is crucial and will establish lasting precedents for the team. Managers should set productive team norms, for example, and clarify whether decisions will be made by consensus

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and whether all team members will share responsibility for implementing the final decision. Managers should also monitor the team's process. If this proves difficult, they should include a team-development specialist to serve as a resource to the team, assisting it with technical problems, and facilitating their interaction when necessary.²⁴ Fi-

nally, they should provide honest feedback to group members about their individual behaviors and the final outcome of the team's work. Doing so may uncover unproductive behaviors that will enable group members to work better the next time around.

Teleworking

Telework is work carried out in a location remote from central offices or production facilities, where the worker has no personal contact with coworkers, but is able to communicate with them electronically.²⁵ Teleworking is a popular and rapidly growing alternative to the traditional, office-bound work style. Two of every three *Fortune* 500 companies employ teleworkers. Forty million employees telework on a global basis, and by 2003 more than 137 million workers worldwide are expected to telework at least on a part-time basis.²⁶ Survey results indicate that employees want more opportunities for telework, and that their top priority is to gain the flexibility to control their own time.²⁷ Some companies are actively encouraging the trend. In February, 2000, both Ford Motor Company and Delta Air Lines announced that they are giving employees personal computers for home use.²⁸

Telework may also assume other forms:

- **Hoteling:** Ernst & Young workers in Washington, D. C., use workstations and meeting rooms in nearby hotels. The firm has hoteled eight offices and is converting seven more, and has found that workers focus less on the office and more on the customer.²⁹
- **Hot desking:** About 20,000 IBM employees, primarily those in sales and service, share offices with four other people, on average. Cisco Systems, a technology firm in San Jose, California, has several thousand people sharing a variety of spaces around the world. As noted earlier, however, hoteling and hot desking are not for everyone.³⁰
- **Telework centers:** Corporate office environments in miniature, offering more technology than an employee has at home, may be located in residential neighborhoods. Small groups of employees who live nearby work in these centers, rather than commute. For example, the Ontario Telebusiness Work Center near Los Angeles offers electronically equipped suites to companies.³¹ The suburban location minimizes commuting time, while maximizing productive time.

Telework and the balance between work and family

Although there is little empirical research on the effect of telework on work-family relations, a recent study in three Canadian organizations revealed that teleworkers had significantly lower levels of interference from work to family, significantly lower levels of interference from family to work, and significantly fewer problems managing their family time than they did before teleworking.³² These data support the positive view of telework and suggest that working from home helps employed parents balance work and family demands.³³

Implications of telework research for decision makers

Decision makers should be skeptical of claims about the effects of telework that are not grounded in rigorous empirical research. For example, several studies have suggested that the level of teleworking participation will have a negative impact on visibility, and, therefore on career advancement.³⁴ But empirical research has not addressed this out-of-sight, out-of-mind argument. Before drawing conclusions about telework and framing organizational policy on this issue, decision makers should also consider the extent to which research findings might apply to their own industries and organizational cultures, and to employees at different stages of their careers.

Training managers and employees for telework

In a telework relationship, time is not important. This is one of the harder lessons for managers of teleworkers to learn, and many have to rethink completely how they view supervision. They need to understand that managing employees they can't see differs considerably from walking around offices to see that employees are at their desks. Learning to make the transition from managing time to managing projects is critical and will determine the success of an organization's telework program.³⁵

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Before a telework arrangement is finalized at Merrill Lynch, process consultants study how employees in a given area communicate and do busi-

ness, and identify what the barriers to teleworking will be. This alleviates managers' concerns and focuses attention on areas that need to be addressed. Formalized training for telework is divided into teleworker training, supervisor and manager training, and team training, in which teleworkers and their managers come together to discuss issues that affect their relationship. Some organizations also set aside time to train and educate the entire staff, from the mail room to the board room.³⁶

In teleworking arrangements, cultural, managerial, and interpersonal implications also need to be addressed. Training for workers and managers should begin together so they hear the same message, and understand the business case for implementing telework arrangements. Both groups address such issues as the lack of face-to-face time (which may create resentment among workers who remain in the office), potential losses in creativity from lack of personal interaction with coworkers and managers, and potential losses in productivity from absence from the office. Employees and managers who already have experience with telework arrangements should make presentations. Both groups should be encouraged to begin measuring productivity through assignments and projects, rather than hours spent in the office.³⁷

Project management is especially important in instances where teleworkers or virtual members are not part of the same organization. Each person is hired to accomplish a specific task, and that person often has no vested interest in monitoring the end result. If a manager does not actively monitor the progress of the overall project and the usefulness of the final product, the team's productivity will never result in improved profitability.

The time frame for completion can cause problems for some managers who are new at managing teleworkers or virtual teams. Most managers establish completion dates, which are necessary. However, completion of a project may be delayed if managers do not establish milestone activities, critical completion points within the overall duration of a project. Through the use of milestones, a manager can see early in a project's life cycle whether or not the necessary pieces are progressing satisfactorily. This allows corrections and changes during the project that ensure timely completion, or at least forewarn of problems.³⁸ The principles of effective project management are not new, and they do not change in virtual work environments. They simply become more important.

Managers and workers should be wary of naive expectations about what working away from the office is really like. To provide a realistic preview

for prospective teleworkers, Merrill Lynch uses a simulation lab, a large room with work stations where employees work for two weeks without face-to-face contact with their managers. After the two-week trial, some employees decide that telework is not for them.³⁹ While some firms use short, self-scored surveys to help workers identify how likely they are to succeed as teleworkers, there is really no substitute for a job tryout, such as a simulation lab provides.

A final component of telework training is to bring managers into the evaluation process about six months after the implementation of the telework program, using productivity measurements as the basis for a business case analysis. Examining the impact of telework on productivity, cost, and customer satisfaction allows for adjustments or enhancements to the program, or to its cancellation.

Virtual Office Challenges for Managers

It is important at the outset to ensure that all departments that will interact with members of virtual teams or teleworkers accept and support the concept of the virtual-work arrangement. If they do not, it will fail.⁴⁰ As the vice chairman of American Express noted: "It's important to have a multifunction team of senior managers promoting and supporting a virtual-office initiative from the start. We had three departments involved in our effort: HR, technology, and real estate. The individuals must be enthusiastic and not unnecessarily fettered by traditional approaches. And they must be made knowledgeable about all the key issues."⁴¹

Broad support alone is not enough to guarantee the success of virtual workplaces. Managers also must set and enforce ground rules for communication, and institute a comprehensive process of performance management.

Communication

Communication is a major challenge for managers implementing a virtual-work environment. Many managers have to learn new communication skills to prevent team members from feeling isolated and not part of a larger group. It is important not to rely solely on e-mail, which is one-way communication. Managers should learn how to conduct effective audio meetings, and to balance e-mail, voice mail, video conferencing, and face-to-face communications.

Begin with some ground rules so that all team members understand the method of communication and what is expected during those communi-

cation sessions. For example, use e-mail for reports, and the computer-based chat room to discuss project issues. In addition, all team members should be available by phone between certain hours.⁴²

Scheduled virtual meetings are essential and attendance must be enforced strictly to ensure that all team members participate. Face-to-face meetings on a regular basis, if at all possible, allow team members to put faces to e-mail. Forging personal relationships among team members contributes to successful implementation. Since facial expressions and body language cues are not available in the virtual work environment, teleworkers must compensate with other forms of communication in order to understand each other fully. This generally means asking more questions and conversing more frequently. The manager or team leader should communicate with all team members, not just a few, and include all team members on distribution lists. This ensures that all members are accounted for and are equal contributors to the team. Regular updates and status reports are necessary to replace hallway conversations, networking, and the daily stimulation of a traditional office environment.

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When team members do not work at the same time, or in the same location, members themselves must make exceptional efforts to ensure accurate, timely communications. Some virtual teams must contend with different time zones. Others must disseminate detailed information, perhaps on spreadsheets or by using computer-aided design (CAD) software. Managers can provide guidance and coaching on how to improve communications, but team members themselves have to shoulder responsibility for providing accurate, timely information.

Performance management

By far the biggest challenge is performance management, which requires that managers do three things well: define, facilitate, and encourage performance.⁴³ While these principles are important to follow in conventional working environments, they are even more imperative in virtual working environments.

Define performance

On a virtual team, a fundamental requirement is that all team members understand their responsibilities.⁴⁴ A manager trying to define performance might ask the following questions to help clarify these responsibilities:

- What is the team's overall objective?
- Do you expect each team member to fulfill more than one role on the team?
- Which responsibilities will team members share (e.g., selecting new members, rating one another's performance)?
- Will the team elect a leader? What responsibilities will this person have?
- Who is responsible for disciplinary action if the need arises?
- How will the team make decisions (e.g., by consensus, or by majority-rule)?
- Which decisions does the team have the authority to make?

The next step is to develop specific, challenging goals, measures of the extent to which goals have been accomplished, and assessment mechanisms so that workers and managers can stay focused on what really counts. To be useful, the measures should be linked to the strategic direction, business objectives, and customer requirements for the company.⁴⁵ For a cable-television company, a major strategic thrust might be to increase the number of new subscribers, or the number of current subscribers who pay for premium channels. For a firm that provides outsourcing services in information technology, major customer requirements might be timeliness of response to inquiries, and cost savings relative to in-house capability.

In defining performance, regular assessment of progress toward goals focuses the attention and efforts of an employee or team. A manager who identifies measurable goals, but then fails to assess progress towards them, is asking for trouble.

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The overall objective of goals, measures, and assessment is to leave no doubt in the minds of remote workers what is expected of them, how it will be measured, and where they stand at any given point in time. The need for such ground rules is even more pressing in a virtual work environment. There should be no surprises in the performance management process, and regular feed-

back to remote employees helps ensure that there won't be.

Facilitate performance

Managers who are committed to managing remote workers effectively recognize that two of their major responsibilities are to eliminate roadblocks to successful performance and to provide adequate resources to get a job done right and on time.

Obstacles that can inhibit maximum performance include outdated equipment or technology, delays in receiving critical information, and inefficient design of work processes. Employees are well aware of these, and are usually willing to identify them when managers ask for their input. Then it is the manager's job to eliminate these obstacles.

Adequate capital resources, material resources, and human resources are necessary if remote workers or members of virtual teams are to reach the challenging goals they have set. In the words of one observer, "It's immoral not to give people tools to meet tough goals."⁴⁶ Conversely, employees really appreciate their employer's providing everything they need to perform well. Not surprisingly, they usually do perform well under those circumstances.

Encourage performance

To encourage performance, especially repeated good performance, it is important to provide sufficient rewards that employees really value, in a timely and fair manner.

Begin by asking remote workers what's most important to them. For example, is it pay, benefits, free time, technology upgrades, or opportunities for professional development? Then consider tailoring your awards program so that remote workers or teams can choose from a menu of similarly valued options.

Next, provide rewards in a timely manner, soon after major accomplishments. For example, North American Tool & Die, a metal-stamping plant in San Leandro, California, provides monthly cash awards for creativity. This is important, for an excessive delay between effective performance and receipt of the reward may mean the reward loses its potential to motivate subsequent high performance.

Finally, provide rewards in a manner that employees consider fair. Procedures are fair to the extent that they are consistent across persons and over time, free from bias, based on accurate information, correctable, and based on prevailing

moral and ethical standards.⁴⁷ Not surprisingly, employees often behave very responsibly when they are asked in advance for their opinions about what is fair. Indeed, it seems only fair to ask them.

Implications for Managers

New business realities, coupled with demands by workers for more flexibility and empowerment, suggest that virtual workplaces are here to stay. The challenges of managing a virtual workplace will escalate in scope. The use of new technology and tools only enables competitive advantage. Realizing competitive advantage requires effective management coupled with new ways of doing business. Organizations in which virtual-work arrangements thrive will be flatter than they are today. Knowledge workers within these environments will have more autonomy and responsibility than in traditional organizations, yet lines of authority, roles, and responsibilities will still need to be defined clearly. New ways of communicating and interacting among workers in virtual environments will need to be developed and implemented, yet face-to-face communications will remain essential ingredients of successful workplaces. Heavy emphasis will be placed on establishing and maintaining the technical tools that are the lifeblood of workers in virtual environments. Workers as well as managers will need continual training in both new tools and new processes to operate effectively in these environments.

Organizations in which virtual-work arrangements thrive will be flatter than they are today.

Managers who are committed to virtual-work environments will understand that basic principles of management are not different in virtual-work environments, but that the principles need to be followed more closely than ever. They understand that better, not fewer, management skills and managers will be needed.

To be a beneficiary, rather than a victim, of emerging virtual-workplace trends, institute the performance-management systems, information-access capabilities, and training systems to develop skills that will be important in the future. Always look ahead; learn from the past, but don't live in it. By embracing these emerging changes in the world of work, proactive managers can lead change, not just react to it.

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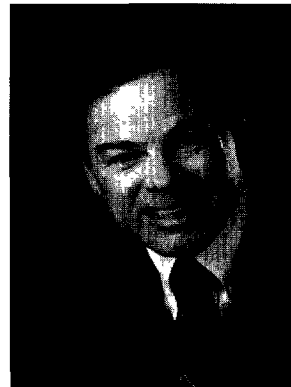
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