ence resulted in reduced sales for the local firm, leading to higher costs per unit of production and reduced levels of efficiency. However, when positive spillover occurred, it appeared to be due to the transfer of tacit knowledge that could best be absorbed by local firms with strong R&D capabilities.

Data from the local firms in those 13 industries indicated that the presence of foreign firms in the industry did not necessarily lead to spillover in the form of increased productivity.

Kathuria further examined the potential spillover effect in those domestic firms that did show improvements in productivity. For those firms, spillover effects were linked to the level of a firm's export activities. Interesting results emerged when this sample of domestic firms was split between those in scientific industries, such as pharmaceuticals, electronics, and chemicals, and those in nonscientific industries such as nonelectrical machinery or metal products. The data for those two groups of firms suggested that the positive spillover was occurring primarily among firms within the scientific industries. Moreover, spillover appeared to be strongly related to the extent that firms engaged in R&D activities.

Kathuria concluded that indirect gains or spillovers should not be assumed to be an automatic consequence of foreign firms' presence in developing economies. Instead, spillover is more likely an outcome of the efforts of local firms to invest in learning or R&D activities. Kathuria's pioneering work may set the stage for further research into the question of whether developing economies can facilitate the productivity spillover by encouraging R&D and learning among domestic firms.

Source: Kathuria, V. 2000. Productivity spillovers from technology transfer to Indian manufacturing firms. *Journal of International Development*, 12: 343–369.

Matching Management Practices to National Culture in India, Mexico, Poland, and the U.S.

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Should multinational corporations opt for consistent management practices across national borders, or should they employ culturally specific management techniques? If a management approach works well in the United States, is it safe to assume it will work in other countries?

In a study of management practices in India, Mexico, Poland, and the United States, researchers Christopher Robert, of the University of Missouri at Columbia; Tahira Probst, of Washington State University at Vancouver; and Joseph Martocchio, Fritz Drasgow, and John Lawler, of the University of Illinois at Urbana-Champaign, examined important aspects of the relationship between culture and management practices. Their underlying question was whether management practices should be considered in the context of a particular cultural environment, an approach they refer to as practice-culture fit.

The researchers believe that two management practices, empowerment and continuous improvement, may be particularly sensitive to practice-culture fit. Empowerment is the process by which employees are given significant amounts of autonomy regarding their work. Empowered employees have discretion in how they handle work assignments. They also have considerable authority to make decisions concerning their jobs.

Since empowerment implies the sharing of authority, the researchers expected that this management practice would be better received in cultures that embrace equality between individuals. Power distance, or the degree to which people accept and expect differences in authority, is a distinct cultural dimension. In high-power-distance cultures, inequalities in authority are common and well accepted. In contrast, low-power-distance cultures are defined by a belief that power should be shared or at least attainable by all. In low-power-distance cultures, anyone who works hard, works well, and has the right experiences should be able to increase his or her power. Thus the researchers expected to find the fit between empowerment and power distance to be best in low-power-distance cultures.

Robert and his colleagues also examined practice-culture fit between continuous improvement and the cultural dimension of individualism/collectivism. In organizations that practice continuous improvement, employees are regularly engaged in training and development activities to increase their work competencies. Continuous improvement practices encourage employees to take the initiative to improve their skills.

Since continuous improvement is centered on employees' improving themselves, it was expected that this management practice would be a better fit in individualistic, rather than collectivist, cultures. In individualistic cultures, people value individual accomplishments. Personal goals are typically placed ahead of group goals. In contrast, in collectivist cultures, people's identities tend to be

based on social-group membership rather than personal achievements. The group's goals have higher priority than individual goals.

To examine the influence of practice-culture fit, outcomes associated with management practices were included in the study. Those outcomes included satisfaction with coworkers, supervisors, and the work itself, commitment to the organization, work withdrawal (e.g., being late often, taking long lunches, taking frequent breaks), and intention to leave the company.

The data for the study were collected from employees of a U.S.-based multinational company specializing in light manufacturing. Of the company's 40 plants worldwide, four comparable plants were chosen: one in the midwestern U.S., one in central Mexico, one in west-central India, and one in southern Poland. Prior research has generally established that the U.S. is highly individualistic and scores low in power distance. India, a hierarchical society, is considered to be high in power distance and collectivism. Mexico also is considered to be a collectivist, high-power-distance country, and Poland is considered to be moderately individualistic and somewhat higher in power distance.

In terms of overall findings, the management practices of empowerment and continuous improvement were shown to have numerous desirable consequences for organizations. Empowerment was positively related to employees' satisfaction with their supervisors. Supervisors who gave employees freedom to do their work were viewed very favorably. Continuous improvement showed strong positive associations to satisfaction with coworkers as well as satisfaction with the work itself. In general, allowing employees opportunities for self-improvement was often related to positive opinions of both their work and coworkers.

The outcomes associated with empowerment were quite different across the countries. Employees in the U.S., Mexico, and Poland had favorable views of their supervisors when empowerment was high, whereas Indian employees rated their supervisors low when empowerment was high. Satisfaction with coworkers was positively related to empowerment practices in Poland, but in India, empowerment was shown to have a negative impact on coworker satisfaction. In the U.S. and Mexico, empowerment was unrelated to coworker satisfaction.

A very different picture emerged with continuous improvement, which was related to high levels of satisfaction with coworkers and with the work itself for all four countries. No negative findings were associated with continuous improvement in any of the countries.

Taken as a whole, the results suggest that multinational firms may wish to consider the cultural context of the management practices they employ. The very negative reaction of the Indian employees to empowerment practices underscores the potential for U.S. management practices to cause more harm than good when they are exported to other cultures. Yet the study also suggests that assumptions regarding practice-culture fit may not yield accurate assessments of appropriate management practices. Theoretically, differences in individualism/collectivism should have influenced outcomes associated with continuous improvement. The researchers expected to find low levels of satisfaction with continuous improvement practices in Mexico, India, and Poland, which are collectivist cultures, and high levels of satisfaction in the U.S., a strongly individualistic culture. However, they found no differences at all among the four countries, suggesting that continuous improvement may not be as sensitive to cultural differences as other management practices, such as empowerment.

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Moreover, defining cultures through the use of broad behavioral dimensions may not adequately capture national differences. For instance, Robert and his colleagues point to the inadequacy of the individualism/collectivism dimension to accurately predict employee attitudes toward continuous improvement practices. They suggest that continuous improvement practices may be popular in both individualistic and collectivist cultures, but for quite different reasons. It may be that individuals in collectivist cultures do not identify with their organizations as relevant social groups. Alternatively, in some national contexts, such as India, self-improvement through training or other continuous improvement activities may provide opportunities for individuals to better support their families or social groups.

Therefore, organizations may be better off considering the local organizational culture of each location rather than the larger societal culture when deciding how to manage employees. It is

possible that the organization's staffing process may produce a workforce whose values, beliefs, and expectations differ from those of the surrounding community. In addition, political upheaval in various countries (e.g., Poland, Russia) may make it difficult to get an accurate or stable assessment of a given national culture. A facility-by-facility cultural audit may be the most effective course to determine practice-culture fit.

Source: Robert, C., Probst, T. M., Martocchio, J. J., Drasgow, F., & Lawler, J. J. 2000. Empowerment and continuous improvement in the United States, Mexico, Poland, and India: Predicting fit on the basis of the dimensions of power distance and individualism. *Journal of Applied Psychology*, 85: 643–658.

Keys to Effective Virtual Global Teams

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The globalization of business and the trend toward leaner, flatter organizations, combined with ubiquitous access to information technology, have spawned the growth of a different type of work unit, the virtual team. While a considerable amount of practitioner literature deals with virtual-team management and effectiveness, the empirical research is not so abundant. Clearly, as firms establish teams whose work is done completely or partially in a virtual environment, organizational success may hinge on understanding how to enhance virtual-team effectiveness.

In their study of global virtual teams, Martha Maznevski, of the University of Virginia, and Katherine Chudoba, of Florida State University, have made a significant contribution to that understanding. Virtual teams have been defined in many ways, with the virtual component ranging from occasional to total reliance on technology as the medium for interaction. In focusing on global virtual teams, Maznevski and Chudoba examined teams that were responsible for making and/or implementing decisions important to their organization's global strategy, used technology-supported communication substantially, and whose members worked and lived in different countries.

The authors conducted an intensive 21-month study of three global virtual teams in an eastern United States company and two of its strategic partners. The company, one of the top producers of technological manufacturing equipment in North America, was in the process of becoming a strong global competitor. Structured by product group, with a very flat hierarchy, it was designed to ensure rapid and strong links to customers. Within this environment, three teams were selected for study. Those teams differed on three critical structural characteristics—task, composition, and length of time working together. Of the three teams, two were eventually judged to be effective on decision outcomes, while the third was clearly ineffective and ultimately disbanded. Access to these three teams provided the researchers with an opportunity to compare team effectiveness and the factors that may affect team outcomes.

Maznevski and Chudoba uncovered two pivotal themes relating to global virtual-team processes and performance. First, global virtual-team dynamics consist of a series of interaction incidents. Second, there is a rhythm to these incidents that are sequenced in a repeating pattern over time.

The incidents and the rhythms of both the effective and ineffective teams were examined in terms of the relationship between technology use, primarily choice of medium, and group outcomes. The researchers looked at how structural characteristics such as task, organization culture, and group characteristics, interacted with technology use and led to various decision outcomes, including decision quality, action quality, and team commitment and cohesion.

Within the interaction incident itself, effectiveness appeared to be determined by a fit between the decision process required and the complexity of the message, and the form chosen for the interaction (medium and duration). For example, building commitment requires a high level of involvement in the decision process, and inevitably involves complex messages. An effective interaction would involve a rich medium, such as a face-to-face meeting or a conference call, and would last a fairly long time. Lower levels of complexity and simpler stages of the decision process, such as pure information sharing, could be effectively handled by a medium such as e-mail. The unsuccessful team exhibited inappropriate fit in their interactions; for example, discussion of complex strategic issues was attempted with brief e-mails.

In effective teams, choice of medium and message characteristics was influenced by the nature of the task or group itself. As task interdependence increased, so did interaction frequency; as task complexity increased, so did message complexity. In turn, these factors influenced the choice of media. Similarly, as the number of cultural, professional, company, or country borders spanned within the group increased, richer media were required. The successful virtual global teams focused specifically on building relationships to increase trust and develop shared views across these borders, while the ineffective team did not. These relationship-building activities were typi-