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Differing Cultural Perceptions Regarding the Appropriate Use of Workplace Computer Technologies

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ABSTRACT

This study examined differences in perceptions of U.S. and international college students regarding appropriate use of computers. Ten common inappropriate computer-use behaviors were presented to students. Only two of the ten behaviors were identified by the students as being unacceptable. When compared by geographic region, the U.S. students rated four of the actions as being less acceptable than did the international students. Work experience had minimal influence on the students' perceptions. The results indicate that regardless of nationality or previous work experience, students lack understanding of the appropriate use of workplace computer technologies. The results reinforce the need for corporations to establish written computer-use policies and to provide computer-use training for all employees. The corporate policy statements and training should include specific examples of what constitutes acceptable and unacceptable actions.

INTRODUCTION

As organizations' workforces become more international, the effort to establish a core set of corporate values and practices becomes increasingly important. Cultural perceptions and business practices differ between countries and a means for reconciling the diverse viewpoints needs to be found (Bynum, 1998). One of those differences is appropriate use of technology in the workplace. Technology provides the integrated systems necessary to sustain international trade and to support an international workforce's communication and information sharing needs (Vogl, 2001). Although computers have become a common workplace tool, a universally accepted set of appropriate-use guidelines do not exist. Managers have a responsibility to provide guidance to personnel on ethical decision making when using technology and to monitor appropriate use compliance (Von der Embse and Desai, 2004).

The purpose of this study was to examine differences in perceptions regarding appropriate use of workplace computer technology from an international perspective. The findings will assist managers in setting technology use policies and designing training sessions that recognize the diverse views that may be held by an international workforce. It also will provide information regarding the differences in training that may be needed for new hires based on their degree of prior work experience.

LITERATURE REVIEW

Misusing corporate computer systems is a common practice. Over 75% of the organizations participating in a 2003 security survey co-sponsored by the FBI indicated they had detected employee abuse relating to Internet privileges (Gaudin, 2003). The online behaviors most often being reprimanded were spending company time on shopping, auctions, message boards, social organizations, and sports-related sites (Olsen & Bowman, 2003). A study sponsored by the Society of Financial Service Professionals (2001) found that the four most common workplace computer abuses were using company technology to play computer games, search for a new job, shop online, and send personal email.

Misuse of corporate technology resources is a worldwide issue. Over sixty percent of IT managers in the United Kingdom participating in a 2004 survey felt that computer users within their organizations knowingly misused technology (Computer users, 2004). Employees utilize technology both in and outside the workplace. In some cases the outside technology use overflows into the office. During 2005 an estimated 100 million people were sharing files worldwide through Peer to Peer (P2P) technology (Murphy & Zwieback, n.d.). Many P2P users utilized

their employers' networks because home systems often do not have the required hard drive space, bandwidth, or the CD burner needed for sharing and saving large files such as movies. Using the corporate network for personal file sharing reduces the corporate bandwidth available for legitimate, business purposes. In 2003, P2P activity was found within 77% of the 560 Canadian corporations participating in a software inventory study. (AssetMetrix, 2003).

When personal files are being downloaded and shared, the organization is exposed to unnecessary legal and security risks. Employees sharing pornography, for example, open the company to a potential sexual harassment charge. If copyrighted material and/or unlicensed software is used or stored on company computers, legal action can be brought against the company as well against the individual(s) involved (Is unlicensed software illegal, n.d.). Computer worms and viruses gain access to corporate systems through P2P networks. A 2004 study found 45% of the executable files being downloaded through a popular P2P application contained malicious code (Peer-to-peer, 2003).

In addition to compromising network bandwidth and exposing the company to unnecessary risk, using company resources for personal reasons adversely impacts productivity. British workers admitted to wasting at least 40 minutes a day on non-business related email. The emails include gossiping with coworkers, visiting with non-work friends, organizing social activities, and forwarding jokes (Aponovich, 2001). A 2002 study found that 7.9 million people visited dating sites during work hours. The average time spent on the site was 51 minutes (A discreet affair, 2003).

Using the company computer system for non-business reasons is a personal decision that may be influenced by factors such as the local legal environment, personal religious belief, and country of origin. Goodwin and Goodwin (1999) stressed that it is important for international organizations to consider how cultural differences might influence how employees perceive and follow corporate regulations. Individuals from some countries were found to be more tolerant of certain behaviors and to perceive issues to be of less consequence than did individuals from other countries (Nyaw and Ng, 1994). Whipple & Swords (1992) also noted that while company policies may influence worker behavior, cultural and conventional norms can have an equally strong influence on workers' decisions.

Tolerance levels for computer use actions differed depending on nationality (Whitman, Townsend, and Hendrickson, 1999; Marchewka, Liu, and Petersen, 2003). Individuals, regardless of nationality, agreed on the definition of acceptable use but differed on their perceptions of the degree of tolerance for specific actions. Pierce and Henry (2000) noted that part of the problem is that computer technology changes very quickly making it difficult to have a comprehensive set of guidelines that address every situation. Without a specific rule to apply, workers develop their own set of computer-use guidelines based on their personal experiences and perceived organizational norms.

RESEARCH QUESTIONS

The goal of the study was to determine student perceptions regarding the appropriate use of workplace technologies and to determine if differences in perceptions were based on nationality and work experience. To address the issues, three research questions were developed. The first question concerned student perceptions regarding acceptability of ten workplace computer technology behaviors. The ten behaviors were selected based on a review of literature. The behaviors included using the company computer system to send email messages to friends and family, download files from the web, help family members do school work, maintain home and personal files, surf the web or visit recreational sites, play games, search or apply for another job, do personal shopping on the Internet, run a personal business, and visit pornographic sites. The first research question was designed to provide a global overview of student perceptions, regardless of country of origin or work experience. If students perceived any of the actions as appropriate use of corporate computing resources or were unsure of the appropriateness of any of the actions, the need for specific corporate policies and employee training may be indicated.

Where technology use is concerned, a diverse, international workforce may bring additional complexity to the workplace environment. Thus a second research question was developed to address this issue. The second research question concerned whether student perceptions regarding acceptability of the ten workplace computer technology behaviors differed by nationality, i.e. U.S. vs. international. If students perceptions differed by nationality, corporate policies and training may need to reflect cultural differences.

Further if students have prior work experience, their perceptions of the appropriate use of technology in the workplace may be affected. Previous employers may have provided training as to technology use behaviors that are considered unacceptable in the corporate environment. Thus, research question three was developed to assess and compare the extent to which previous work experience affected the perceptions of both U.S. and international students.

METHODOLOGY

The study included international and domestic students with and without prior work experience attending a university in the Midwestern region of the United States. The students were surveyed to determine their perceptions regarding the acceptability of several actions relating to using workplace computer technologies for personal reasons or convenience. Participants in the study included students from all academic colleges. The university's student services administrative office provided the students' names and local addresses. The students were sent a letter explaining that the survey was part of a research project and that individual student identities would not be released. No incentives for completing the survey were offered. A self-addressed, stamped envelope was included for ease in returning completed surveys.

The researchers created realistic workplace scenarios depicting co-workers using workplace technologies for personal reasons. The behaviors portrayed in the scenarios were based on a review of the literature relating to workplace technology use. A panel of experts with expertise in survey design reviewed the instrument and provided input on the scenario content and presentation. The instrument was field tested with students who were not involved in the study and the results were reviewed by a statistician. Questionnaire internal validity was determined using Cronbach's alpha. An overall alpha score of .77 indicated high internal validity of the questionnaire. Item alpha scores of greater than .70 indicated that all 10 technology use scenarios should be retained.

The directions accompanying the survey explained that the respondents were to assume that they were working within an organization located in their home country and that they had knowledge of their co-workers performing the actions depicted in the scenarios. On a seven-point Likert scale format (1 = very acceptable; 7 = very unacceptable), students rated the acceptability of the behaviors. Mean scores were computed to determine overall acceptability perceptions. Analysis of variance was used to compare international and domestic student mean responses and to determine if prior work experience influenced acceptability ratings.

FINDINGS

Students at a large Midwest university provided input regarding their perceptions of the acceptability of using workplace computer technologies for personal reasons. Usable surveys were obtained from 191 U.S. students and 123 students with nationalities from countries other than the U.S. A majority of the international students (54%) were from Asia. The remaining students were from Europe, Africa, South and Central America, and the Middle East. Both genders were represented (53% male and 47% female) and the age of the majority (70%) of the students was 26 years or younger. Approximately 57% of the respondents indicated that they had experience working within a business organization.

The scenarios presented to the students described behaviors relating to using workplace technology for personal use. The directions asked students to rate the acceptability of each behavior. Additional information provided to students was that they were to assume that a co-worker was performing the action without authorization. Each behavior is listed in Table 1 with its corresponding overall acceptability rating mean. The order of presentation is most acceptable to least acceptable behavior.

**Table 1: Overall acceptability means for behaviors listed from most to least acceptable.
Scale: 1 = very acceptable, 4 = uncertain, 7 = very unacceptable**

Behavior: Use company computer system to	Mean
Send email messages to friends and family	3.01
Download files from the web	3.04
Help family members do school work	4.20
Maintain home and personal files	4.21
Surf the web or visit recreational sites	4.25
Play games	4.50
Search or apply for another job	4.60
Do personal shopping on the Internet	4.75
Run a personal business	5.94
Visit pornographic sites	6.30

As shown in Table 1, the students identified only two of the ten technology behaviors as being unacceptable. The two behaviors perceived as unacceptable were using the company computer system to visit pornographic sites and using the company computer system to run a personal business. Conversely, two of the technology behaviors were perceived as being somewhat acceptable - using the company email for personal messages and downloading files from the web. The students indicated that they were uncertain as to the acceptability of the remaining six technology behaviors.

When compared by geographic region, significant differences in the U.S. and international student means were noted. U.S. students perceived four of the technology behaviors as less acceptable than did the international students. The four behaviors included using the company computer to download files from the web, maintain home and personal files, search or apply for another job, and do personal shopping on the Internet. (See Table 2.)

Table 2: Acceptability ratings compared by region.
Scale: 1 = Very acceptable, 4 = uncertain, 7 = Very Unacceptable; Note: NS=not significant

Behavior: Use company computer system to	U.S. students mean	International students mean	P value
Send email messages to friends and family	3.07	2.90	NS
Download files from the web	3.17	2.84	.0593
Help family members do school work	4.15	4.28	NS
Maintain home and personal files	4.42	3.88	.0043
Surf the web or visit recreational sites	4.34	4.12	NS
Play games	4.49	4.50	NS
Search or apply for another job	4.77	4.34	.0351
Do personal shopping on the Internet	4.95	4.43	.0068
Run a personal business	6.02	5.83	NS
Visit pornographic sites	6.42	6.10	NS

Work experience was identified as a significant factor in the acceptability ratings for two of the ten technology behaviors. The two behaviors were download files from the Internet and search or apply for another job. U.S. students with work experience rated using the company computer system to download files from the Internet as being significantly less acceptable than did the international students with work experience and the U.S. students without work experience. For the behavior, using the company computer system to search or apply for another job, U.S. students with work experience rated the behavior significantly less acceptable than did the U.S. students without work experience and the international students both with and without work experience. The mean acceptability ratings are presented in Table 3.

Table 3: U.S. and international students' acceptability means compared by previous work experience.**Scale: 1 = very acceptable, 4 = uncertain, 7 = very unacceptable****Note: a,b= row means with unlike letters are significantly different; NS=not significant**

Behavior: Use company computer system to	No work experience		Work experience		p value
	U.S	Inter-national	U.S.	Inter-national	
Send email messages to friends and family	3.0	2.9	3.1	2.9	NS
Download files from the web	2.7b	3.0ab	3.3a	2.7b	.0370
Help family members do school work	3.7	4.2	4.4	4.4	NS
Maintain home and personal files	4.0	3.8	4.7	4.0	NS
Surf the web or visit recreational sites	4.1	4.1	4.4	4.1	NS
Play games	4.1	4.4	4.7	4.7	NS
Search or apply for another job	4.3b	4.4b	5.0a	4.3b	.0361
Do personal shopping on the Internet	4.6	4.2	5.2	4.7	NS
Run a personal business	5.7	5.7	6.2	6.0	NS
Visit pornographic sites	6.2	5.9	6.6	6.3	NS

DISCUSSION AND IMPLICATIONS

Nesbitt (2001) reported that business workers spend two to three hours a day using email. However, he did not indicate the proportion of the two to three hours that is spent on personal rather than business email. Time spent on personal emails not only uses corporate time and resources but may potentially expose the corporate computer system to such items as spam and viruses. In the current research study, using the company computer system to send email messages to friends and family was one of the computer-use behaviors that students rated as somewhat acceptable. The findings concur with a study by the Society of Financial Service Professionals (2001) which found that the majority of workers felt using company email for personal messages was acceptable. Further in the current research study, both the U.S. and international students perceived using the company computer for personal emails as somewhat acceptable. Similarly, previous work experience had no affect on the acceptability ratings. The results indicate that the perception that it is appropriate to use company time and resources for personal email is widely held and not dependent on nationality or work experience.

Only two of the technology behaviors were deemed to be unacceptable by students. Those behaviors were run a personal business and visit pornographic sites. Both the U.S. and international students held the same views indicating that the perception is not affected by the nationality of the respondent. Further, although the ratings for the two behaviors for both U.S. and international students with work experience appeared to be higher than for those without work experience, there were no significant differences. Perceiving the behavior to be unacceptable, however, may not mean that the individual will avoid the behavior. According to Wynn and Trudeau (n.d.), one in 25 employees in the United States admits to visiting pornographic web sites during work hours. An organization can block pornographic sites using Web filtering applications. The filters, however, only block access to sites when

employees are using the network. If employees are receiving the pornographic images through an instant messaging application, the filter will not be effective. The company is still at risk for harassment complaints if the images are downloaded and stored on the company system (Websense, 2004).

Overall, students were uncertain as to the acceptability of six of the technology behaviors. Each of the behaviors depicted a co-worker using the company computer resources for actions that have no business application. The behaviors included using the company system to help family members with homework, maintain personal files, surf recreational web sites, apply for another job, and do personal shopping online. Although for three of the six behaviors the degree of uncertainty varied between the U.S. and international students, generally both groups of students felt uncertain as to the acceptability of the six behaviors. However, the effect of work experience on the U.S. and international students' perceptions was not definitive. Nonetheless, the students' ratings of uncertainty seem to agree with the behaviors being observed at work. Workers indicate they realize that they are using resources meant for business purposes when they are online for personal reasons; however, over 70% of workers admit they spent work time doing personal activities including online shopping, banking, and searching for a new job (Wynn & Trudeau, n.d.).

CONCLUSIONS

In this study, U.S. students rated four of the ten technology behaviors as significantly less acceptable than did the students from other countries. The results are consistent with other research that found business decisions are at least partially influenced by nationality or by the degree of tolerance a culture exhibits for computer-related actions (Goodwin & Goodwin, 1999; Whitman et al., 1999). However, generally both U.S. and international students in this study were uncertain about the acceptability of the majority of the technology behaviors.

Prior work experience had little influence on the students' perception of the acceptability of the actions. The finding indicates that employers need to communicate computer-use expectations to all employees regardless of the new employees' nationality or extent of work history. New employees should receive information on acceptable use issues and a copy of the company's computer technology use policy. The policy should have specific examples to illustrate what is acceptable and what is not acceptable behavior.

Additionally, training should be provided to explain how the employee's online actions can result in security and legal risks for the organization. Basic security precautions should be covered during the training session (Changing attitudes, 2005). Gaudin (2003) stressed that periodic messages also need to be sent to employees reminding them of company expectations and the risks associated with misusing resources. Since the technology and risks are changing daily, continuous educational efforts are needed to remind employees of their technology use responsibilities.

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