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Caroline S. Bell

University of Western Ontario, cbell@ivey.ca

Deborah Compeau

University of Western Ontario, dcompeau@ivey.uwo.ca

Fernando Olivera

University of Western Ontario, folivera@ivey.ca

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Developing a Model of Perceptions of Technological Multitasking

Caroline S. Bell

Richard Ivey School of Business,
University of Western Ontario
cbell@ivey.ca

Deborah R. Compeau

Richard Ivey School of Business,
University of Western Ontario
dcompeau@ivey.ca

Fernando Olivera

Richard Ivey School of Business,
University of Western Ontario
folivera@ivey.ca

ABSTRACT

Multitasking is held to be essential to corporate survival (Manhart, 2005), but little attention has been paid to the social meaning of technological multitasking. We focus on technological multitasking as rapid task switching involving information technologies and, in particular, where one or more activities involve interpersonal interaction. Understanding how technological multitasking behavior is perceived by others has significant implications for individuals, managers, organizations, and educational institutions alike. To this end, a conceptual model has been developed and tested using a scenario-based approach to gain insights into the attributions of those engaged in this behavior.

Keywords

Multitasking, social meaning, perceptions, polychronicity, task relevance, interdependence

INTRODUCTION

People today claim the world moves faster than before, and much of this 'harried pace' is attributed to the increased presence of technology (Kluth, 2004). One aspect of this unrelenting technological evolution has been the facilitation of multitasking, resulting in what is perceived to be more efficient use of time (Manhart, 2005). Thus, individuals use laptop computers during meetings, and wireless technologies like RIM's BlackBerry (which incorporates e-mail and scheduling capabilities) enable organizations to contact employees anytime (Schick, 2003).

However, research suggests individuals have difficulty multitasking. Studies demonstrate that juggling jobs rather than completing them sequentially takes longer and leaves multitaskers with a reduced ability to perform each task (Rubinstein, Meyer and Evans, 2001). The social appropriateness of multitasking is also unclear. Consider, for example, checking email during meetings. While many users argue BlackBerries make them more efficient, some writers argue the devices offer new distractions that annoy others (NPR, 2005).

Given these mixed messages around the value of multitasking behavior, our research considers the social appropriateness of technological multitasking. By technological multitasking we refer to rapid task switching activities utilizing information technologies (Rubinstein et al., 2001). We focus in particular on situations where one or more of the activities involve interpersonal interaction.

Perceptions of technological multitasking can be of importance to both individuals and managers. Since it is difficult to objectively measure many aspects of work performance, evaluations rely partly on perceptions (Ilgen and Feldman, 1983). Knowing how multitasking is perceived might therefore have important implications for how individuals manage perceptions about their performance.

THEORETICAL BACKGROUND

Three bodies of literature inform our research. The literature on groups and group performance provides a broad perspective of factors that influence group functioning and outcomes. Over the past 20 years, interest in factors that influence team

effectiveness has increased (St. Clair and Tschirhart, 2002). Studies have explored the effects of group composition, communication, task characteristics, conflict, and distribution of information on team performance (Levine and Moreland, 1998). Models of team effectiveness emphasize the importance of integrating members' efforts to produce group outcomes (Hackman, 1987). Researchers have observed that process losses (factors that interfere with members' abilities to contribute to group tasks) often hinder group performance (Kerr and Tindale, 2004). For example, members may interrupt each other, resulting in communication breakdowns. Also, individuals may withhold their efforts, reducing potentially available group resources.

Multitasking behaviors may enhance the functioning of work groups by allowing members to simultaneously contribute to the group task. However, multitasking may also interfere with group performance by disrupting communication. Multitasking individuals may be distracted and fall behind group discussion, leading to misunderstandings, conflict and work duplication. Our interest in this paper is to assess whether group members perceive individual members who multitask as contributing to versus interfering with the group's goals.

The performance evaluation literature's perspective on how people form judgments of others states people have an egocentric bias and think favorably of others' performances if the individuals are similar to the evaluator on other dimensions (Ilgen and Feldman, 1983). Because our work is concerned with how individuals evaluate the technological multitasking behavior of others (as one aspect of its social meaning), this research forms the basis for understanding the attributions made about these behaviors.

The multitasking literature explores the cognitive processes involved in multitasking and, more importantly, the relationship between multitasking behavior and individual characteristics. Experimental psychologists have studied the nature and limitations of multitasking. Early research showed tasks can interfere with one another, particularly those requiring concentration (Manhart, 2005). Additional neuronal resources are required to 'rethink' when one switches from one task to another, resulting in switching costs (Rubinstein et al., 2001).

CONCEPTUAL MODEL AND RESEARCH HYPOTHESES

Our examination of these literatures resulted in the development of our conceptual model (Figure 1).

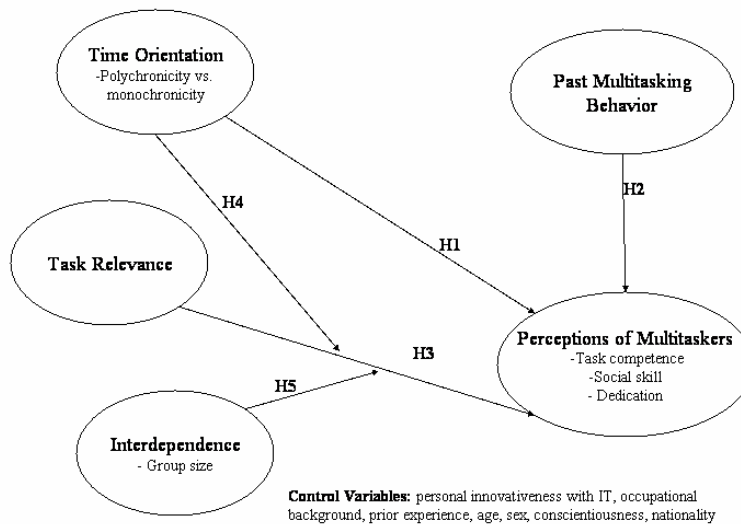


Figure 1. A Model of Perceptions of Technological Multitasking

Our dependent variable, individual's perceptions of others' multitasking behavior, includes three dimensions: task competence, social skill and dedication. Individual differences (time orientation, past multitasking behavior) and situational characteristics (task relevance, interdependence) are posited to influence the formation of attitude, as outlined below.

Time Orientation

Numerous researchers argue individuals have preferences regarding time. One such preference, polychronicity (Hall, 1976), is the extent to which an individual prefers working on several tasks at once rather than one at a time. People who prefer to focus on one task until it is complete and then move to the next are considered monochronic, whereas people who prefer to

work on several tasks simultaneously are considered polychronic. Compared to monochronic individuals (monochronics), polychronic individuals (polychronics) “emphasize relationships rather than tasks and privacy, and build long-term relationships with family, friends, and business partners” (Bluedorn et al., 1992, p. 19). Polychronics organize activities simultaneously, “intending to move back and forth between tasks, and tending to see unscheduled events as part of normal activity rather than as deviations or interruptions” (Hecht, 2002, p. 14).

Cotte and Ratneshwar (1999) found polychronic behavior had positive and negative meanings, depending upon an individual’s own time preference. Monochronic women viewed others’ polychronic behavior as fragmented, frustrating, confusing, stressful, lacking focus, and believed it would result in poor quality work. Polychronic women, however, viewed polychronic behavior as efficient, realistic and motivating, and noted it creates a sense of accomplishment.

Combining this with the performance evaluation literature and the role of ego-referent in forming judgments of others, we expect polychronics to identify with the multitasking behavior of others and thus view them more favorably. Formally stated:

- H1: Individuals higher in polychronicity will view others who are multitasking with technology as more competent, dedicated, and socially attractive than those lower in polychronicity.

Past Multitasking Behavior

Prior multitasking experience is also expected to influence attitudes towards multitasking behaviors. The same ego-referent that results in higher evaluations for multitasking behavior among individuals with a preference for multitasking should result in a higher evaluation of multitasking among individuals who frequently engage in the behavior.

- H2: The more an individual has engaged in technological multitasking, the more they will view others who are multitasking with technology as competent, dedicated, and socially attractive.

Task Relevance

Task relevance refers to the extent to which an individual’s actions contribute to the immediate task at hand. We expect individuals who use technology during group meetings for task-related purposes, such as obtaining relevant information, to be perceived more positively than those multitasking for non-task related activities. Thus:

- H3: Individuals engaging in task-relevant multitasking behavior will be perceived as more competent, dedicated and socially attractive than individuals engaging in non-task relevant multitasking behavior.

We also posit an interaction between an individual’s time orientation and task relevance. According to Bluedorn et al. (1992), polychronics are more concerned with social relations than monochronics. Since relationship maintenance efforts are equally, if not more, important to polychronics as task accomplishment (Bluedorn et al., 1992), individuals high in polychronicity should differentiate between non-task relevant relational and non-relational multitasking activities, and would have less negative perceptions of non-task relevant relational activities than would monochronics. Thus, we propose:

- H4: Polychronics will perceive individuals multitasking with technology in a relational but non-task relevant manner less negatively than monochronics perceiving the same behavior.

Interdependence

Interdependence reflects the extent to which individuals within a group depend on the actions of other group members (Johnson & Johnson, 1989). We expect interdependence to moderate the relationship between task relevance and perceptions of multitasking. In conditions of high interdependence, the group is more likely to expect individuals to focus on the task and to develop negative impressions of those engaging in non-task-related multitasking. We thus propose:

- H5: When interdependence is low, the effect of non-task relevant multitasking on perceptions of task competence, social attractiveness and dedication will be less pronounced than when interdependence is high.

Control Variables

Several demographic variables will be included as controls: cultural identity (time preferences have a cultural component) (Hall, 1976), computer experience (Venkatesh, Morris, Davis and Davis, 2003) innovativeness with IT (Agarwal and Prasad, 1998), conscientiousness (Robie and Ryan, 1999) sex, age, and occupational background (Lefkowitz, 1994).

METHODOLOGY

Our study, set in a university, examines the reactions of MBA students to technological multitasking. This environment has a unique role in the development of these reactions as university is a place where work habits form and become entrenched. While ultimately we seek to extend our research to working professionals, our initial interest is in these multitasking behaviors within the MBA program context.

We have adopted a scenario-based approach because of the biases often associated with retrospective self-reports (Smith, Bolton and Wagner, 1999), and the difficulties involved in isolating the judgments formed by the manipulations. Our second-year MBA subjects have access to wireless technology throughout the school and engage in technological multitasking activities inside and outside of class. MBA students were preferred to undergraduate students as they exhibit greater diversity (both personally and in terms of work history). Thus we expect them to have more variable views of multitasking behaviors than undergraduates. We anticipate a sample of 100 returned surveys (out of a population of 250).

Subjects are presented with four scenarios, varying in task relevance and interdependence. The scenarios were designed as brief statements about a colleague’s behavior with technology (Table 1). Respondents are asked to describe how they view this individual along 19 unipolar scales (likeable, good, competent, ambitious, intelligent, kind, confident, sincere, pleasant, effective communicator, efficient, conscientious, impatient, distracted, helpful, social, impolite, hard working, and disruptive). The first 10 adjectives are drawn from Feldstein, Dohm and Crown (2001), and the remainder emerged from student interviews about laptop usage conducted as part of a larger study on technology in the MBA program.

		Task Relevance	
		Low	High
Interdependence	Low	You are sitting in the classroom while class is underway and you observe a classmate having an Instant Message conversation with another student about a <u>non-class-related</u> topic.	You are sitting in the classroom while class is underway and you observe a classmate having an Instant Message conversation with another student about a <u>class-related</u> topic.
	High	You are meeting with your learning team and you observe a teammate having an Instant Message conversation with another student about an <u>unrelated</u> topic.	You are having a learning team meeting and you observe a teammate having an Instant Message conversation with another student about the topic of your meeting.

Table 1. Scenarios Used

Subjects are also asked to report the extent to which they have engaged in 37 forms of technology-based multitasking over the past two weeks (e.g., checking email during class, surfing the web during a group meeting to find relevant information).

Time orientation is measured using 16 items, ten from Bluedorn et al.’s IPV scale (1999) and six from a revision by Hecht (2002). Interdependence is measured using five items adapted from Tjosvold, Hui, Ding and Hu (2003).

We are currently pilot-testing our instrument and expect to have results from this initial study by the AMCIS conference.

DISCUSSION

Our research-in-progress is a first attempt to understand how multitasking with technology is perceived by others. In a society with pervasive technologies but unclear social norms regarding their appropriate use, gaining insights into how technological multitasking is perceived has never been more essential. The impact on perceptions of an individuals’ performance and on team work may be enormous, and those who understand these ramifications may develop better

strategies for managing the new social reality. Understanding how technological multitasking affects the way groups work, interact and the way people perceive and influence others is critical for researchers and practitioners.

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