Assessing and managing employees for embracing change: A multiple-item scale to measure employee readiness for e-business

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ABSTRACT

It is imperative for businesses to use network and distributed information technology to integrate resources among organizations, vendors, employees, and suppliers to maximize value-added. Organizations are thus implementing electronic business (e-business) at an accelerating pace, fueling speculation about employee readiness to embrace this new type of firm. Unfortunately, scholarly research on this issue is lacking. Drawing on insights from extant literature and interviews with practitioners, this article first proposes the construct of employee readiness for e-business (EREB) and its conceptualization. Then it describes a program of research undertaken to develop an EREB instrument by defining, operationalizing, and refining the construct to create a multiple-item measurement scale, and assessing the scale's psychometric properties. By strictly iterative processes, a well-validated EREB instrument is constructed. The instrument and its comprehensive model proposed in this paper will be of use to researchers and practitioners interested in designing, implementing, and managing e-business.

1. Introduction

For most firms, becoming an e-business is an evolutionary journey from initial to final stages (Earl, 2000; Hackbarth and Kettinger, 2000). This kind of transformation may involve adopting new technologies, redesigning business processes, and restructuring management (Craig and Jutla, 2001; Earl, 2000; Hackbarth and Kettinger, 2000; Laudon and Laudon, 2004). To reduce the turbulence caused by change and enable firms to transform themselves into e-businesses, change must be supported by a critical mass of stakeholders, including customers, partners, and especially, employees (Benjamin and Levinson, 1993; Craig and Jutla, 2001). Managers should carefully assess employee readiness to embrace e-business since the changes involved in e-business implementation will often trigger significant resistance to change and perhaps lead to the failure of the e-business. This can occur (1) when employees are comfortable with the status quo; (2) when they do not understand why change is desirable; and (3) when they doubt about the company's ability

to achieve the desired change (Beckhard and Harris, 1987). Thus, employee levels of efficacy, motivation, and psychological maturity in facing change will affect the success of e-business implementation. This makes testing for employee readiness for change as important as analyzing technological feasibility when implementing e-business.

Readiness is a developmental and motional concept. Psychologists and educators are convinced that children can learn only after attaining specified level of "readiness," by which they mean the physical maturity and neurological development sufficient to negotiate an unfamiliar situation or learn a new task (Dennis, 1972; Gesell, 1928). Furthermore, Beller (1972) identified the leverage that human motivation, interpersonal relationships, and cognitive style have on readiness and argued that apprehension, a common reaction to new and strange situations, produces an inhibiting effect upon readiness. According to prior studies (Beller, 1972; Dennis, 1972; Gesell, 1928), readiness is not only physical maturity, but also a combination of emotional and cognitive forces that mediate learning environments and result in the mastery of new operation. Readiness for change appears to be a crucial maturity or energy indicator when implementing e-business. An e-business organization can be viewed as a social system wherein the employee, an important element of organization, is highly related to the beginning (human input) and ending (human output) in this system (Beer, 1980). Knowing how to help employees (members of organizations) achieve high levels of

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motives, needs, capabilities, and expectations will increase organizational effectiveness. Hence, in facing the different kinds of change (technology, task, and structure) triggered by implementation of e-business, understanding how to raise employee readiness for e-business will facilitate employee willingness to embrace change.

The concept of readiness for change is an important managerial issue that has received attention from scholars in organizational management research (Cunningham et al., 2002; Jones et al., 2005), health care (Prochaska et al., 1992; Walker, 2004), marketing (Parasuraman, 2000), and information management (Abu-Musa, 2004; Bajaj and Leonard, 2004; Dubelaar et al., 2005; Glantz, 1999; Lin and Lin, 2008; Taylor and Wright, 2004). As mentioned earlier, employee readiness for e-business is one of the two major indicators of how ready employees are to embrace e-business, the other being an organizational energy for implementing e-business. However, research in this area is still in its infancy. Though a few studies have explored issues regarding readiness of e-business and attempted to provide new insights for management (Craig and Jutla, 2001; Lai et al., 2006; Sapp, 2000; Sullivan, 2000), they either lack solid theoretical frameworks or mostly focus on technology adoption from the organizational perspective (Lai et al., 2006; Sullivan, 2000) or country viewpoint (Moodley, 2003), rather than from the viewpoint of individual employee readiness for e-business (EREB). Transforming the concept of EREB into a concrete index or measure will help managers understand their employees and raise their readiness.

With the foregoing in mind, this paper develops an instrument for measuring employee readiness for e-business. The EREB instrument and comprehensive model proposed in this study may be of value to researchers and practitioners interested in designing, implementing, and managing e-business. The remainder of this paper is organized as follows. The next section reviews prior research related to readiness, change theory, and organizational development. Subsequent sections describe the measurement and the steps involved in scale development. The final section discusses new findings, implications, and applications of the proposed scale.

2. Theoretical underpinnings of employee readiness for e-business

2.1. Employee readiness is crucial for the success of e-business

Organizational change in the context of information technology (IT) has been the subject of many studies since 1958, when Leavitt and Whisler (1958), who first used the label "information technology", predicted dramatic organizational changes as a result of IT. e-Business, an enterprise with the capability to exchange values (goods, services, money, and knowledge) digitally via computer network (Hackbarth and Kettinger, 2000; Jones et al., 2000), uses distributed information technology, knowledge management, and trust mechanisms to transform key business processes and relationships with customers, suppliers, employees, business partners, regulatory parties, and communities (Craig and Jutla, 2001). e-Businesses are rapidly rebuilding some of their core business processes based on internet technology and making this technology a key component of their IS/IT infrastructure. If these changes are guided, one result will be simpler business processes, fewer employees, and a much flatter organization structure than in the past (Laudon and Laudon, 2004).

Readiness for change is a concept with precedent in the literature of cognitive science, educational psychology, human development (Beller, 1972; Dennis, 1972), and commercial marketing. It has also appeared in recent studies of the health industry (Prochaska et al., 1992; Walker, 2004), sales and marketing (Parasuraman, 2000; Rangarajan et al., 2004), organizational management for change (Cunningham et al., 2002; Jones et al., 2005), emerging technologies as electronic commerce (Tigre, 2003), knowledge management (Taylor and Todd, 1995), online learning (Smith et al., 2003), and e-business (Craig and Jutla, 2001; Zhu et al., 2004). These previous studies put forward many models of change as frameworks for their practice and research. Of these, perhaps the most promising is change theory, first proposed by Lewin (1951), which describes change processes comprising of three stages: unfreezing, changing, and refreezing. This model enables managers to understand what should be watched for in each of the three stages when implementing e-business. (1) In the unfreezing stage, managers may create an innovative culture to embrace change, communicate, and explain to employees what needs to be changed, and to make them understand that the status quo is not desirable so as to decrease resistance and anxiety, provide a prosperous vision of the future, and guarantee employment security after change (Benjamin and Levinson, 1993; Craig and Jutla, 2001; Galliers, 1998; McKersie and Walton, 1991); (2) in the change stage, there are critical issues of user involvement (Bajaj and Leonard, 2004; McKersie and Walton, 1991) and participation, champion, or change agent (Markus and Benjamin, 1997; McKersie and Walton, 1991), and society–technology interactions (Galliers, 1998; Laudon and Laudon, 2004); (3) refreezing is the attempt to stabilize change by balancing driving and restraining forces. Managers may train and retrain employees to make them skilled in the new jobs after change, use a reward system to encourage employees to change, and monitor employees' performances in order to institutionalize change (Craig and Jutla, 2001; McKersie and Walton, 1991; Rockart et al., 1996).

Employees, as the frontline staff in executing business processes, must confront a cascade of changes triggered by the implementation of e-business. Preparing the employee for change is similar to what we have labeled readiness and other researchers have called as unfreezing (Lewin, 1951). It is crucially important for the success of e-business since poorly managed technology implementation may result in only minimal benefits being realized (Scott Morton, 1991). Hence, immediate attention to additional intrinsic motivating factors is required to better understand employee readiness for e-business.

2.2. Dimensions of employee readiness for e-business

Leavitt's (1965) classification of the organization portrays it as a diamond in which task, technology, people, and structure are interrelated and mutually adjusting. When an organization must introduce new internet technology to transform itself into an e-business, other components often simultaneously adjust to damp out the impact of the innovation. Research on implementation has stressed the homeostatic behavior of organizations (Chen and Ching, 2002; Keen, 1981; Laudon and Laudon, 2004; Lucas Jr. and Baroudi, 1994; O'Hara et al., 1999; Scott Morton, 1991). One way to better understand the complex interaction between technology and people within an e-business is to consider it as a socio-technical system (STS) in which the e-business can be viewed as the interaction of four highly interrelated variables: task, people, structure, and technology (O'Hara et al., 1999). This STS model is based on general systems theory (Schoderbek and Schoderbek, 1990) and claims that there are two primary systems in organization, the social system and the technical system. These two systems are interdependent.

Based on the STS model of O'Hara et al. (1999), with an added focus on employee readiness for e-business, we now introduce a pyramid model consisting of three types of employee