Technology Empowerment as a Determinant of Salesforce Technology Usage

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The purpose of this research was to investigate how salespeople technology empowerment impacts their usage of technology. Although empowerment has been investigated in the area of sales, no research has yet investigated technology empowerment and its impact on salespeople technology usage. The relationship between technology empowerment, a multidimensional construct composed of four underlying dimensions (competence, autonomy, motivation, and impact) and technology usage was tested using a sample of 130 salespeople. Results suggest that the more salespeople feel empowered by technology, the more they use it. The major contribution of this research is to empirically show that salespeople technology empowerment is an important determinant of their technology usage. Thus, sales managers need to consider and potentially improve their salespeople's empowerment perception in order for them to use technology to a greater extent.

Introduction

Salesforce technology usage has been extensively investigated in recent years (Buttle, Ang, and Iriana 2006). Many important determinants of technology usage by salespeople have been proposed. Determinants related to the technology itself (e.g., ease-of-use), to the salesperson (e.g., innovativeness), and to his or her environment (e.g., training) are been highlighted in the literature. Since a better understanding of these determinants should help sales managers understand and potentially increase their salesforce technology usage (and ultimately their performance), identifying elements that make salespeople use technology has important managerial implications. This research contributes to this stream of research by proposing and empirically testing an additional and potentially important determinant of technology usage of salespeople. It investigates how salespeople technology empowerment affects their technology usage.

Empowerment has been suggested to be an important variable in understanding salespeople behaviors (Anderson and Huang 2006). For instance, empowerment has been shown to lead to smarter selling behaviors and greater job satisfaction. To our knowledge, no study has yet investigated the relationship between technology empowerment and technology usage by salespeople. Thus, in this research we introduce a new construct called technology empowerment and empirically show that it is a determinant of salespeople technology usage.

Literature Review and Hypotheses

Determinants of Technology Usage

Investigating the determinants of salesforce technology usage is important for two main reasons: 1) Many reports show that the implementation of a technology does not necessarily mean that the salesforce will use it (e.g., Honeycutt 2004); 2) Several research findings suggest that technology usage by salespeople is positively related to sales performance (Jelinek et al. 2006, Johnson and Bhradwaj

2005; Robinson, Marshall, and Stamps 2005; Ahearne and Schillewaert 2001). Thus, a better understanding of the determinants of salesforce technology usage would help managers increase their salesforce technology usage and in turn, it should increase their sales performance.

The relationship between salesforce technology usage and performance has been extensively investigated in recent years. Although several studies show positive direct or indirect (i.e., mediated) relationship between salespeople technology usage and performance (Jelinek et al. 2006, Johnson and Bhradwaj 2005; Robinson, Marshall, and Stamps 2005; Ahearne and Schillewaert 2001), some studies also show no significant relationship between the salesforce technology usage and their performance (Engle and Barnes 2000; Gohmann *et al.* 2005; Avontlis and Panagopoulos; 2005). These divergent results could be explained by the following elements. First, Hunter and Perreault (2007) suggest that we need to better define salesforce performance when investigating the technology usage – salesforce performance relationship. For instance, they show that technology usage has a positive impact on relationship building performance, but a negative impact on administrative performance (Hunter and Perrreault 2007). Second, a study by Ahearne, Jelinek, and Rapp (2004) suggests that the technology usage – salesforce performance is moderated by training and support. Finally, a study performed by Ahearne, Srivivasan, and Weinstein (2004) suggests that this relationship is not linear, but curvilinear (inverted-U shape). Hence, although several studies found a positive relationship between salesforce technology usage and their performance, care must be taken in terms of construct definitions and their operationalization when investigating this relationship. Since there is some evidence that technology usage influences performance, it becomes quite important for managers to understand what the determinants of their salesforce technology usage are.

In their review of SFA research, Buttle, Ang, and Iriana (2006) mention that so far research suggests that the determinants of salespeople's intention to use technology or technology usage are: technology ease-of-use, technology usefulness, accurate expectations about the technology, involvement in the implementation, training and technical support availability, innovativeness, and attitude toward technology. For instance, one study suggested that salespeople would increase their technology usage if greater support in terms of technical support and on-demand training were provided by their employer (Buehrer, Senecal, and Pullins 2005).

Although many important determinants of salespeople technology usage have been identified so far, to our knowledge, no study has yet investigated technology empowerment as a potential determinant of salespeople technology usage. Empowerment has emerged as a significant factor in impacting a variety of work behaviors and motivation. Since our concern is increasing the use of technology, a behavior that must be motivated, we believe empowerment might be an important potential determinant to examine.

Empowerment

Empowerment has been a main interest for many management researchers and practitioners for several decades. However, researchers have different views of empowerment. Empowerment is viewed as a means of delegating decision to the lower level of hierarchy (Malone, 1997), a process of enhancing self-efficacy (Conger & Kanungo 1988), and an increased task motivation (Thomas & Velthouse, 1990).

The delegation view of empowerment suggests that empowerment is a management practice that delegates the decision making to the lower level of organizational hierarchy (Malone, 1997). The rationale for empowering the employees is that making decisions closer to the point at which they are actually carried out has advantages and provides economic motivations for decentralizing decision making.

The process view of empowerment suggests that empowerment is a process of enhancing feelings of self-efficacy among organizational members through identification of conditions that foster powerlessness (Conger and Kanungo, 1988). These conditions can be removed by both formal organizational practices and informal techniques that provide efficiency information. In this definition, individuals feel empowered when their self-efficacy is enhanced.

One important characteristic of effective salespersons is a sense of self-efficacy (Krishnan, Netemeyer, & Boles, 2002). Bandura (1977) identified four sources of efficacy information: performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal. In the organization setting, individuals build their self-efficacy through their job experiences. The successful job experiences make one feel more capable and therefore empowered. The individuals' empowered feeling can also come from the vicarious experiences by observing co-workers successfully perform similar jobs. Words of encouragement, verbal feedback, and other forms of social persuasion from one's supervisor and co-workers will reduce self-doubts and therefore enhance one's self-efficacy. An individual's self-efficacy is also affected by their emotional arousal states that result from stress, fear, anxiety, and depression. Formal or informal support systems will assist the empowering process by reducing the negative effects of the adverse arousal state and enhance the belief of self-efficacy.

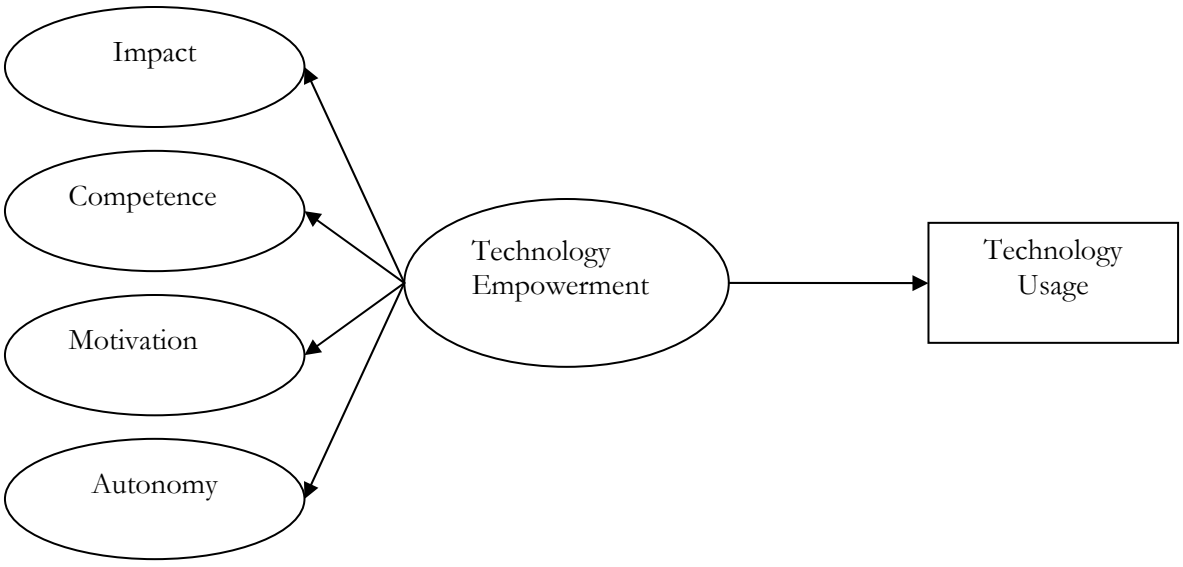
The researchers with the motivation view of empowerment see the empowerment as increased intrinsic task motivation (Thomas and Velthouse, 1990). Intrinsic task motivation involves positively valued experiences that individuals derive directly from a task. In the cognitive model of empowerment proposed by Thomas and Velthouse (1990), task assessments consist of four cognitive components: impact, competence, meaningfulness, and choices. *Competence* refers to the degree to which a person believes he or she can perform task activities skillfully when he or she tries. *Impact* refers to the degree to which a task or behavior is seen as "making a difference" in term of accomplishing the purpose. *Choice* involves causal responsibilities for a person's actions. *Meaningfulness* concerns the value of the task goal or purpose, judged in relation to the individual's own ideals or standards.

Recently, empowerment has become apparent in salesforce literature. In their review, Anderson and Huang (2006) suggest that salespeople empowerment should lead to increased job satisfaction, which in turn should lead to customer satisfaction and loyalty, which in turn should lead to organizational growth and profit. Others suggest that salespeople empowerment is positively related to adaptive-selling and customer-oriented selling behaviors (Ahearne, Mathieu, and Rapp 2005; Martin and Bush 2006; Rapp et al. 2006). Although empowerment has been suggested as an important variable in understanding salespeople behaviors, no study has yet investigated the relationship between empowerment and technology usage by salespeople.

Similarly to the empowerment model proposed by Thomas and Velthouse (1990), we propose that salespeople's technology empowerment encompasses four task assessments: Impact, Competence, Autonomy, and Motivation. In sales, impact is clearly the salesperson's belief that technology is beneficial for his/her work. Competence is a general self-confidence in one's own ability to use technology. Autonomy is the extent to which salespeople feel more freedom and control due to technology. When salespeople feel that technology enables them to have more autonomy, they feel they are empowered to make better decisions for their work. We believe that when a salesperson is willing to learn new technology and adapt the new applications, he/she is also more motivated to use technology to improve the efficiency of their work. Thus motivation is also one dimension of technology empowerment.

We suggest that all four dimensions of the technology empowerment (impact, competence, autonomy, and motivation) are related to technology usage. A research model is displayed to depict four dimensions of technology empowerment and technology usage (Figure1). Based on our research model, we proposed the following hypothesis:

Figure 1: Conceptual Framework



H1: Salespeople's technology empowerment is positively related to their technology usage.

Furthermore, as suggested by Thomas and Velthouse (1990) we conceptualize empowerment as a second-order construct composed of four underlying first-order constructs: impact, competence, motivation, and autonomy. Therefore, we propose four additional hypotheses to formally test if the four proposed first-order constructs are underlying dimensions of technology empowerment.

H2: Salespersons who feel empowered by technology will believe that technology has a high degree of impact on their work.

H3: Salespersons who feel empowered by technology will believe that they are competent regarding technology in their work.

H4: Salespersons who feel empowered by technology will be highly motivated to learn how to use technology.

H5: Salespersons who feel empowered by technology will believe that technology provides high degree of autonomy for their work.

Research Method

Sample

Two companies agreed to ask their salespeople to complete a web-based survey. The survey was sent to 53 steel and 165 industrial equipment salespeople. One hundred and thirty participants completed the survey, 35 from the steel company and 95 from the industrial equipment company. A 59.6% response rate was achieved. The subjects were 95% male, with about two-thirds of them ranging in age from 31-50. Ninety-six percent had at least some college education, with 72% having college degrees. Fifty percent reported that they were receiving compensation based on a straight salary, 37% received straight commission, with the remaining 13% received a combination of straight salary and commission. Subjects were also asked to report the percentage of their business with small, medium and large customers. Average percentages were approximately equal across the three categories. On average, participants had been working for their current employer for 9 years and had been in sales for 13 years. According to the managers of the companies involved, these demographics were similar to their sales forces.

Method

This study used an online questionnaire as the data collection instrument. The survey with an embedded hyperlink was emailed to each of the salespeople in the sample. The managers of both companies regularly employ email to communicate with their salespeople. The industrial equipment subjects were sent an email from the Director of Branch Sales in their organization requesting they access the website and complete the survey. The steel industry subjects received an email from one of the researchers, indicating management support and requesting that they access the website and complete the survey. One follow up email (via the same sources) was sent to both sales forces. Once the email survey was completed by the salesperson his/her response was sent directly to the researcher to maintain confidentiality. Emails clearly stated that the survey was being conducted by university researchers and that results would only be shared with their management in summary format.

Measurement Scales

The four underlying dimensions of empowerment are impact, competence, motivation, and autonomy. The scale of impact is adapted from the study of Batra and Ahtola (1990). This four-item semantic differential scale was reliable with a Cronbach alpha of 0.851. The scale of autonomy is adapted from the technology readiness index developed by Parasuraman (2000). The three-item Likert-type scale had a satisfactory reliability (Cronbach Alpha = 0.764). The scales of competence and motivation were developed based on the results of on-site interviews of salespeople at three different firms. The four-item semantic differential competence scale and the four-item Likert-type motivation scale were reliable (Cronbach alpha = 0.908 and 0.859, respectively). The empowerment measurement scale is exhibited in the Appendix. Finally, to measure technology usage, salespeople were asked to report their usage on a five point Likert-type scale ranging from no usage to heavy usage of twelve technologies (cell phone, fax, desktop pc, laptop pc, PDA, word processing, email, spreadsheet, presentation software, intranet, customer relationship management software, and Internet). A Technology Usage Index was computed by averaging each salesperson answer for the twelve technologies.

Results

In order to test the posited hypotheses, structural equation modeling was used. Multiple indices were used to test the model goodness-of-fit. The chi-square statistic indicated that there were no significant differences between the actual and predicted matrices ($X2(4) = 6.253$, $p = 0.181$). As suggested, additional goodness-of-fit measures were used to assess the overall fit of the model (Hair et al. 1998). All additional absolute fit measures and incremental fit measures used were above the 0.90 threshold and thus, indicated a satisfactory fit of the models. The goodness-of-fit index (GFI=0.981), the adjusted goodness of fit index (AGFI=0.930), the normed fit index (NFI=0.946), and the comparative fit index (CFI=0.979) were above the threshold. Finally, a parsimonious fit measure was computed. As suggested by Hair et al. (1998), the

Table 1

Paths	**Standardized Estimates**
Measurement Model	
Technology Empowerment → Motivation	0.756
Technology Empowerment → Autonomy	0.531
Technology Empowerment → Competence	0.737
Technology Empowerment → Impact	0.399
Structural Model	
Technology Empowerment → Technology Usage	0.401

normed chi-squares also indicated good model fit with a value between above one and below two (c2/df = 1.56). Overall, the various goodness-of-fit measures indicated good model fit. Measurement and structural models are presented in Table 1. All path coefficients from these models were significant ($p < 0.05$). Finally, the amount of technology usage variance explained by salespersons' technology empowerment was 16.1%.

As suggested by our hypotheses, the path coefficients presented in Table 1 showed that there is a positive relationship between technology empowerment and technology usage (H1). Furthermore, in support of H2-H5, Table 1 also shows positive path coefficients between technology impact (H2), competence (H3), motivation (H4), autonomy (H5), and technology empowerment. Thus, results suggest that empowerment is a multi-dimensional construct composed of four dimensions (Impact, Autonomy, Competence, and Motivation) and those salespeople who feel empowered show a higher extent of technology usage.

Discussion

Summary and Limitations

This study introduced a new construct called technology empowerment and tested its influence on salespeople technology usage. Results showed that 16.1% of the salespeople technology usage variance was explained by their technology empowerment. Thus, based on these results it seems that technology empowerment is an important determinant of salespeople technology usage. Furthermore, results suggested that technology empowerment is a multidimensional construct composed of four underlying dimensions (competence, motivation, autonomy, and impact).

This study is exploratory in nature. Our research establishes that technology empowerment and technology usage are positively related. However, since our sample size is limited, one should be cautious about the generalization of the findings. In the future, a follow up research with large sample can be conducted to validate the findings. In addition, the research model can be expanded by adding more factors that may affect the technology empowerment. For example management support could be a plausible factor that affects technology empowerment. The endorsement of management for using SFA technology may empower salespersons to use technology for their work, since the management support provides the legitimacy for the SFA technology use. Technology empowerment may also have effect on the communication and coordination between the salespersons and their supervisors. Future research can enhance the measurement of technology empowerment and add additional factors to improve the current research model.

Managerial Implications

If technology usage is a concern for a sales manager, they should first investigate the perception of their salesforce regarding the various determinants of technology usage related to the salespeople (e.g., innovativeness, empowerment), the technology (e.g., usefulness), and the firm (e.g., support, training) to identify the problematic elements. If technology empowerment is part of the weak elements, further investigation should be performed to pin-

point which dimensions are problematic. Once identified, certain solutions can be envisioned.

Although sales managers cannot directly influence all four dimensions of technology empowerment through their actions, they definitely can put in place formal training programs and promote less formal training programs to increase salespeople technology competence perception. For instance, they can support their salesforce by helping salespeople build a community of practices so that salespeople can support each other and exchange success stories of technology use. Both management support and peer support can increase the competence of the salespeople. Through peer support, sales persons can also learn the different ways of using technology to perform their tasks, thus they feel that they have more control or choice.

Although formal and informal training may affect the others dimensions of empowerment, it is much more challenging for sales managers to directly impact these other dimensions (i.e., motivation, autonomy, and impact). However, by stressing the usefulness of technology in general or the usefulness of a specific technology (e.g., Intranet) for a specific task (e.g., updated sales figures), they may change the way their salesforce feels about the value of technology (impact), how it can provide them more autonomy and this may influence their motivation toward technology. These are elements that are best addressed within the context and attitudes of the sales organization.

In addition to problem diagnosis, these factors may also be useful to the practicing manager trying to develop a positive situation in which to implement a new technology.

Appendix: Empowerment Measurement Scale

Competence (α = 0.908)

I feel _____ with new technology (5 point semantic differential from Uncomfortable/Conformable)

I do _____ new technology (5 point semantic differential from Not understand / Understand)

I am _____ in using new technology (5 point semantic differential from Not confident/ Confident)

Motivation (α = 0.859)

I like to learn about new things.

I am willing to make changes in how I do things at work.

I am motivated to learn about new technologies.

I am comfortable with new technologies.

Autonomy (α = 0.764)

Technology gives you more freedom of mobility.

Technology gives me independence from relying on others for information.

Technology gives me additional control over the job I do.

Impact (α = 0.851)

How would you rate the overall value of technology? (5 point semantic differential from)

Useless/Useful

Not beneficial/Beneficial

Low quality/High quality

Worthless/Valuable

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