

“I’m Lovin’ IT”: Toward a Technophilia Model of User Adaptation to ICT

Emergent Research Forum Paper

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Abstract

This article expands the conceptual space of *technophilia* to encompass a broader range of positive emotions toward information and communications technology (ICT). Then, to accentuate the crucial role of technophilia in helping people proactively engage with dynamic ICT environments, we draw upon the broaden-and-build theory to illustrate how technophilia promotes momentary thought-action repertoires, development and accumulation of enduring resources, and the enhancement of one’s adaptive behaviors in a healthy, fruitful fashion. In future exploratory analyses, we hope to obtain adequate empirical results to support our nomological network of technophilia.

Keywords

Technophilia, positive emotions, broaden-and-build model, user adaptive behaviors.

Introduction

While research on information and communications technology (ICT) use has flourished in previous information systems literature (e.g., Davis 1989; Venkatesh et al. 2003), the human dimensions of end users are only marginally acknowledged (Beaudry and Pinsonneault 2010). Based on the assumption of instrumental ICT artifacts and rationalized actors, cognitive models misrepresent the complex and multifaceted ICT usage (Beaudry and Pinsonneault 2010). In order to complement cognitive-based approaches, Beaudry and Pinsonneault (2010) proposed a conceptual framework that classifies emotions depending on two appraisal dimensions: threat or opportunity, controllable or not.

Following Beaudry and Pinsonneault’s (2005) *coping model of user adaptation* (CMUA), the present paper delineates how users’ positive emotions toward ICT determine their adaptive behaviors, more important, in a healthy and fruitful way. Even when some technology acceptance models contain fragmented and unintegrated constructs of the positive emotions, such as enjoyment, happiness, joy, (e.g., Cenfetelli 2004; Venkatesh 1999, 2000), there is a dearth of a systematic recognition of positive emotions toward ICT. In psychology, similarly, positive emotions have been neglected relative to negative emotions. Fredrickson (2004) argued that one reason is the traditional focus on psychological problems alongside remedies for these problems. Since negative emotions are usually associated with problems and dangers, they have received more empirical attention than their counterparts. Likewise, negative emotions are extensively investigated in information systems scholarship due to problems and dangers, such as resistance, computer misuse, and noncompliance. Additionally, Frederickson suggested that theorists tend to construct general emotion models in which negative emotions dominate, with positive emotions squeezed in later. Simply put, negative emotions relate to more specific action tendencies than positive emotions (Frijda et al. 1989; Lazarus 1991). For example, frustrated users are likely to resist a new information system; angry users tend to sabotage information assets. Yet, it is relatively difficult to describe the form and the function of positive emotions, because they lead to almost the same behavioral intention.

However, experimental research indicates positive emotions can particularly contribute to people’s downstream life outcomes (Waugh and Fredrickson 2006). Specifically, the evolved adaptive significance of positive emotions has been illuminated in Frederickson’s broaden-and-build theory (1998, 2001). The positive emotions (1) broaden the scope of people’s attention, cognition, and action; (2) build enduring physical, intellectual, and social resources, and (3) enhance people’s health, survival, and fulfillment.

Furthermore, Fredrickson and Cohn (2008) underscored that positive emotions can disrupt a downward spiral proposed in depression literature (Peterson and Seligman 1984) while initiating an upward spiral of positive emotions.

Unfortunately, there is limited attention given to identifying positive emotions and examining the significant influence of positive emotions on user adaptive behaviors. In addition, we find an equivocality of the relationship between positive emotions and ICT use and adaptation that may due to a simply reliance on the first-order construct of a positive emotion, such as happiness, pleasure, and enjoyment (e.g. Beaudry and Pinsonneault 2010; Chin and Gopal 1995; Davis et al. 1992). To fill this gap, the primary goal of this paper is to explore a multi-dimensional construct of *technophilia* on the job. In using the term *technophilia*, we intend to imply a broader concept than "*enthusiasm for technology and the latest technological devices*" (Collins 2014). Despite *technophilia* instilled and cultivated before the deployment of the new ICT (anticipation period), we argue that *technophilia* can be preserved, accumulated, and transferred as users integrate the IT into their work practices and standardize its usage (impact period) (Beaudry and Pinsonneault 2010, Tyre and Orlikowski 1994). Among the first attempts to examine the impact *technophilia* on user adaptation to ICT, we employ the broaden-and-build theory to elucidate how *technophilia* brings about favorable outcomes from before to after the ICT deployment (periods categorized by Beaudry and Pinsonneault 2010).

Theoretical Framework and Hypotheses Development

Defining Technophilia

The term *technophilia* is from Greek: τέχνη - *technē*, "art, skill, craft" and φίλος - *philos*, "beloved, dear, friend" (Liddell and Scott 2007). However, *technophilia* in the current study has a broader meaning than a simply enthusiastic attitude toward technology. Zhang (2013) defined emotions as an individual's subjective feeling that exists only when the supporting cognition, perceptions, or other elicitors are active while vanishing immediately as one is no longer in that context. Tallying Zhang's statement, we conceptualize *technophilia* as positive affective states that arise momentarily in response to an individual's ICT context that is appraised to exceed his or her expectations and goals. In this conceptual paper, we temporarily use Fredrickson's (1998) four basic emotions to explain our nomological network of *technophilia*, i.e., joy, interest, contentment, and love. These emotions are selected because they appear to be maximally distinct from another and recognizable, if not equally frequent across cultures (Fredrickson 1998). Since these emotion terms appear to be more anecdotal than empirical, we attempt to conduct an explorative analysis in a future study based on existing emotion literature and perspectives from ICT professionals.

Technophilia Loop

In Fredrickson and Cohen's (2010) work, the *broaden-and-build theory* has been succinctly represented by the loop of positive emotions (Figure 48.1, p.783). Likewise, we construct a *technophilia loop* (Figure 1) to illustrate how *technophilia* promotes ICT adaptation. The *technophilia loop* starts with user assessment of the personal meaning of antecedent events or an aptational encounter (Fredrickson and Cohen 2010; Lazarus 1991). For example, an emotion of joy, interest, contentment, and love may occur when a new ICT has been implemented in one's work environment. Although the positive emotion may disappear fleetingly, experiencing *technophilia* creates an opportunity for broadening a user's momentary thought-action repertoires. A user then tends to concentrate on ICT, learning knowledge and skills pertaining to ICT, and expanding his or her scope of ICT adaptation. Based on ideas and thoughts accrued in the first phase, users build enduring emotional, intellectual, and social resources. For example, if users engage more with ICT environment, they are likely to cultivate a capacity of coping with uncertainty and adversity, thereby improving their positive belief, psychological resiliency and self-efficacy. Also, learning motivated by intrinsic interest is more efficient than learning motivated by extrinsic rewards (Frederick, 1998). That means *technophilia*-motivated users can build more intellectual resources than when they experience neutral emotions.

Moreover, according to social identity theory, people are likely to form a psychological group where a collection of people share the same social identification (Ashforth and Mael 1989). Hence, users who experienced technophilia tend to form a technophile group within an organization, so that they can share (1) joy, interest, contentment, and love towards ICT, (2) social support, and (3) certain knowledge and skills. Consequently, through the broaden-and-build process, technophilia increases the likelihood of reshaping a novice user into a sophisticated one. Meanwhile, since users gain multiple benefits from the broaden-and-build process, they are willing to replicate the process in order to achieve more technophilia. Therefore, this self-initiated technophilia loop can produce more experiences of technophilia, promoting an upward spiral.

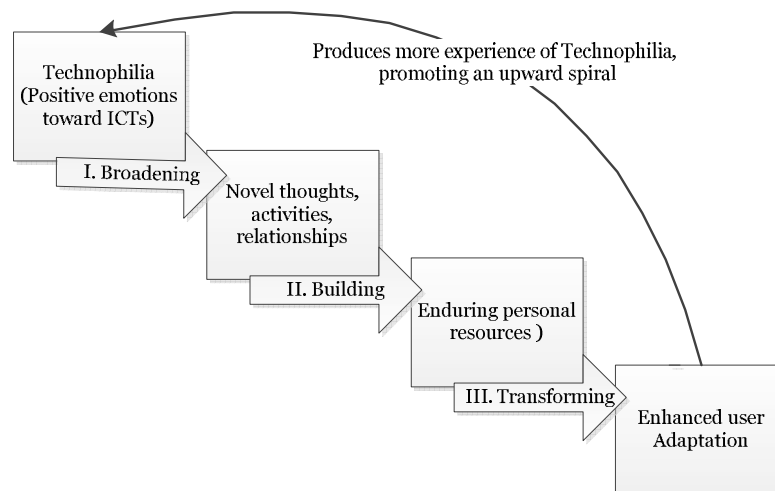


Figure 1. Technophilia Loop

Technophilia Fuels User Adaptation to ICTs

User adaptation refers to the degree to which users proactively adapt to ICT by either changing existing work routines or by adding activities to their jobs, thereby achieving higher levels of productivity (Beaudry and Pinsonneault 2010; Orlikowski, 1996; Tyre and Orlikowski 1994). Beaudry and Pinsonneault (2005) proposed a typology of adaptive behaviors describing how users exert their cognitive and behavioral efforts to manage specific consequences associated with ICT. They described two categories of adaptive behaviors: problem-focused and emotion-focused.

Beaudry and Pinsonneault (2005) defined problem-focused adaptation as managing the issues associated with the IT event directly by self-, work-, and system-adaptations. Incorporating Frederickson's broaden-and-build theory, we posit that in the anticipation period, users will be instilled and inspired with a positive view by an organizational campaign introducing instrumental and intriguing features of the new ICT (Broadening). Then, technophilia-motivated users are likely to engage in ICT adaptations, such as adjusting their personal work habits from document-oriented to ICT-enabled, learning new ICT knowledge and skills, forming technophile groups that address ICT problems efficiently (Building). Consequently, the resources accumulated in the prior phase can be leveraged to adapt more sophisticated ICTs (Transforming). As an upward spiral, technophilia-driven users are willing to engage in more ICT-related tasks and achieving more technophilia. Thus, we propose that:

P1a: Technophilia will relate positively to problem-focused adaptive behaviors.

According to Beaudry and Pinsonneault (2005), emotion-focused adaptation is directed toward oneself and aims at changing one's perception of ICT events, often accompanied by negative emotions. In Frederickson's undo hypothesis (1998, 2000), she proposed that positive emotions function as efficient antidotes for undoing lingering negative emotions. In similar vein, we speculate that technophilia promotes users engaging in emotion-focused adaptive behaviors, while attenuating negative emotions

that arise with ICT use, such as technostress (e.g. Ayyagari et al. 2011; Ragu-Nathan et al. 2008). Hence, we propose that:

P1b: Technophilia will relate positively to emotion-focused adaptive behaviors.

Discussion

Incorporating one crucial concept from positive psychology and positive organizational scholarship, i.e., broaden-and-build theory, we extend the coping model of user adaptation (Beaudry and Pinsonneault 2005) in a positive and proactive fashion. Relative to negative emotions concerning ICT use, technophilia (positive emotions toward ICTs) research appear too few and too diffuse. To accentuate its significant role of technophilia in encouraging users coping with the ICT context, we draw upon Frederickson's broaden-and-build theory to illuminate how technophilia-motivated users through momentary thought-action repertoires build and accumulate enduring resources, thereby enhancing their adaptive behaviors proactively. Also, the broaden-and-build model of technophilia described in the current study embodies the commitment of the process approach that addresses the complex user-ICT environment relationship (Orlikowski 1996; Tyre and Orlikowski 1994, 1996).

REFERENCES

- Ashforth, B.E. and Mael, F. 1989. "Social Identity Theory and the Organization," *Academy of Management Review* (14:1), pp. 20-39.
- Ayyagari, R., Grover, V., and Purvis, R. 2011. "Technostress: Technological Antecedents and Implications," *MIS Quarterly* (35:4), pp. 831-858.
- Beaudry, A. and Pinsonneault, A. 2005. "Understanding User Response to Information Technology: A Coping Model of User Adaptation," *MIS Quarterly* (29:3), pp. 493-524.
- Beaudry, A. and Pinsonneault, A. 2010. "The Other Side of Acceptance: Studying the Direct and Indirect Effects of Emotions on Information Technology Use," *MIS Quarterly* (34:4), pp. 689-710.
- Cenfetell, R.T. 2004. "Getting in Touch with Our Feelings Towards Technology," In *Best Paper Proceedings of the Academy of Management Conference*, New Orleans, August 6-11, pp. F1-F6.
- Chin, W. W., and Gopal, A. 1995. "Adoption Intention in GSS: Relative Importance of Beliefs," *The Data Base for Advances in Information Systems* (26:2/3), pp. 42-64.
- Collins, 2014. *Collins English Dictionary*, 12th edition, HarperCollins, UK.
- Davis, F.D. 1989. "Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology," *MIS Quarterly* (13:3), pp. 319-340.
- Davis, F.D., Bagozzi, R.P., and Warshaw, P.R. 1992. "Extrinsic and Intrinsic Motivation to Use Computer in the Workplace," *Journal of Applied Social Psychology* (22), pp. 1111-1132.
- Frederickson, B. 1998. "What Good are Positive Emotions?" *Review of General Psychology* (2:3), pp. 300-319.
- Frederickson, B. 2004. "The Broaden-and-Build Theory of Positive Emotions," in Huppert, F., Baylis, N., and Keverne, B. (Eds.), *The Science of Well-Being*, pp. 1367-1376. New York, NY: Oxford University Press.
- Frederickson, B. and Cohn, M.A. 2010 "Positive Emotion," in Lewis, M., Haviland-Jones, J.M., and Barrett, L.F. (Eds.), *Handbook of Emotions*, 3rd edition, pp. 777-796. New York, NY: The Guilford Press.
- Frederickson, B. and Levenson, R.W. 1998. "Positive Emotion Speed Recovery from the Cardiovascular Sequelae of Negative Emotions," *Cognition and Emotion* (12), pp. 191-220.
- Frederickson, B., Mancuso, R.A., Branigan, C., and Tugade, M. 2000. "The Undoing Effect of Positive Emotions," *Motivation and Emotion* (24), pp. 237-258.
- Frijda, N.H., Kuipers, P., and Schure, E. 1989. "Relations among Emotion, Appraisal, and Emotion Action Readiness," *Journal of Personality Social Psychology* (57), pp. 212-228.
- Lazarus, R.S. 1991. *Emotion and Adaptation*, New York, NY: Oxford University Press.
- Liddell, H.G. and Scott. R. 2007. *Liddell and Scott's Greek-English Lexicon*, UK: Simon Wallenburg Press.

- Orlikowski, W.J. 1996. "Improvising Organizational Transformation over Time: A Situated Change Perspective," *Information Systems Research* (7:1), pp. 63-92.
- Peterson, C. and Seligman, M.E. 1984. "Causal Explanations as a Risk Factor for Depression: Theory and Evidence," *Psychological Review* (91), pp. 347-374.
- Ragu-Nathan, T.S., Tarafdar, M., and Ragu-Nathan, B.S. 2008. "The Consequence of Technostress for End Users in Organizations: Conceptual Development and Empirical Validation," *Information Systems Research* (19:4), pp. 417-433.
- Scheier, M.F., and Carver, C.S. 1985. "Optimism, Coping, and Health: Assessment and Implications of Generalized Outcome Expectancies," *Health Psychology* (4:3), pp. 219-247.
- Tyre, M.J. and Orlikowski, W.J. 1994. "Windows of Opportunity: Temporal Patterns of Technology Adaptation in Organizations," *Organization Science* (5:1), pp. 98-118.
- Tyre, M.J. and Orlikowski, W. J. 1996 "The Episodic Process of Learning by Using," *International Journal of Technology Management* (11:7/8), pp. 790-798.
- Venkatesh, V. 1999. "Creation of Favorable User Perceptions: Exploring the Role of Intrinsic Motivation," *MIS Quarterly* (23:2), pp. 239-260.
- Venkatesh, V. 2000. "Determinants of Perceived Ease of Use: Integrating Control, Intrinsic Motivation, and Emotion into Technology Acceptance Model," *Information Systems Research* (11:4), pp. 342-365.
- Venkatesh, V., Morris, M.G., Davis, G.B., and Davis, F.D. 2003. "User Acceptance of Information technology: Toward a Unified View," *MIS Quarterly* (27:3): 425-478.
- Waugh, C.E., and Fredrickson, B. L. 2006. "Nice to Know You: Positive Emotions, Self-Other Overlap, and Complex Understanding in the Formation of New Relationships," *Journal of Positive Psychology* (1): 93-106.
- Zhang, P.2013. "The Affective Response Model: A Theoretical Framework of Affective Concepts and Their Relationships in the ICT Context," *MIS Quarterly* (37:1), pp. 247-274.