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# PROBLEMATIC TECHNOLOGY USE: THE IMPACT OF CAPITAL ENHANCING ACTIVITY

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## ABSTRACT

This research-in-progress paper gives a brief overview of the technology addiction literature, as well as an introduction to the capital enhancing activity construct from the sociology literature. Previous information systems literature has shown a variety of information technology (IT) artifacts that possibly lead to technology addiction. Hence, this research attempts to demonstrate that today's ubiquitous technology allows actors to navigate a multitude of artifacts and that addiction stems from many artifacts. Furthermore, the notion of capital enhancing activity is presented to understand how actors use of technology, which they believe is essential to their social status, can, in fact, become problematic. A research model is offered, along with propositions and a proposed study, to determine how certain types of capital enhancing activities can explain variances in problematic technology use.

## Keywords

Problematic technology use, habit, motivating factors, capital enhancing activity

## INTRODUCTION

Growing reliance on technology in all aspects of modern life has created opportunities for greater productivity as well as connectedness. Yet, the impact of ubiquitous technology and its use has led to undesired outcomes. As the nature of IT artifacts evolves, the unintended consequences remain identifiable through overuse and a reduction in positive technology engagement. Furthermore, there is less involvement with other pursuits. Overuse ranges from the gamer to the serial poster or the omnipresent lurker on social media. As problematic technology use (PTU) becomes more prevalent, the American Academy of Pediatrics has adjusted its entertainment screen time policy, which previously focused on television, to now encompass all forms of technology. Even the Silicon Valley purveyors of those technologies most likely to elicit behavioral tendencies toward overuse are beginning to be the voice of moderation (Richtel 2012). The need to understand how actors engage with technology in a manner that leads to PTU should be of interest to researchers. This paper seeks to investigate additional antecedents to PTU and is organized as follows. The second section provides a literature review. The third section presents the research model and propositions, while the final section suggests a path forward to testing the research model as well as the possible impact of expected outcomes.

## LITERATURE REVIEW

Problematic technology use is an emerging area of literature. Problematic use can be as varied as increased stress (Maier 2013; Ragu-Nathan 2008), loss of impulse control (Jia 2007), excessive microblogging (Li 2012) or cyberloafing (Zwanenburg 2013). Previous literature has primarily targeted a specific artifact as a source of problematic use. The sources of the problem have been email usage (e.g., Blackberry) (Turel 2008), gaming (Charlton 2007; Sepehr 2012; Xu 2012), social media (e.g., Facebook, Myspace) (Thadani 2011) or smartphones (Zhang 2014). Soule et al. (2003) suggest that those most prone to unhealthy Internet use do not fit stereotypes such as the young, white, male video game player or the middle-aged, female Internet shopper. However, D'Arcy (2012) and colleagues begin to synthesize the literature by suggesting an overall theme for problematic use that is in effect the "dark side" or negative side of living with ubiquitous technology that leads to stress, interruptions, misuse or, quite possibly, addiction.

Much of the previous research has pointed to addiction as the end result of technology usage that appears to negatively or sub-optimally impact behavior. Both the psychology and information systems literature serve as a

basis for inquiry. From a psychological perspective, the literature began labeling negative behavior as an addiction beginning with Young (1998). Young suggests that actors susceptible to addiction to the Internet exhibit greater usage often associated with personal problems that are related to family and/or work conflict. With regard to technology addiction across artifacts, psychological research has investigated game addiction (Grosser 2007), the ability to identify problematic Internet use prior to employment (Davis 2002), general Internet addiction (Lin 2004; Whang 2003) and the identification of predictors of usage on social networking websites (Wilson 2010). From a communications perspective, LaRose (2003) examines problematic use through the lens of media consumption patterns suggesting self-regulation is impaired for those users that exhibit addictive tendencies to the Internet.

From an information systems perspective, the literature primarily studies the antecedents to addiction through a variety of artifacts. Most notably, Turel et al. (2011b) in their study of eBay use find that online auction addiction is preceded by technology acceptance as well as perceived enjoyment (Davis 1992). Furthermore, Turel et al. (2011b) provide a definition of technology addiction as “a psychological state of maladaptive dependency on the use of a technology to such a degree that the following typical behavioral addiction symptoms arise – salience, withdrawal, conflict, relapse & reinstatement, tolerance as well as mood modification.” Others such as Thadani and Cheung (2011) define technology addiction in the context of social networking “as a deficiency in self-regulation with which an individual is unable to effectively regulate one’s dependency on the social networking sites.” Another precursor to addiction includes the formation of habit (Limayem 2003; Limayem 2007). Xu et al. (2012) find that using online gaming as an artifact to fit a functional need for the actor, such as relationships with others and escapism, drives tendencies toward addiction.

Given the existing literature, the psychology community has yet to formally acknowledge there is a separate type of technology dependence that individual’s should be diagnosed with in the *Diagnostic and Statistical Manual of Mental Disorders* (i.e., DSM-V). Turel and Serenko (2011a) suggest that poor habits, such as substance abuse, and abnormal behavior are similar to poor habits that are signs of Internet addiction.

## RESEARCH MODEL

The research stream has identified habit and motivating factors as antecedent to problematic technology use. Furthermore, the vast majority of literature has identified a single artifact as an object of inquiry in technology addiction studies. The reality, however, is that most users of technology today use multiple IT artifacts in a variety of contexts on a daily basis. The literature is silent with regard to the impact of using technology as a means of positively impacting personal welfare or social status. However, borrowed from the sociology literature, increases in personal welfare or social status serve as “capital enhancing activities” (Howard 2001). Hargittai and Hinnant (2008) substantiate the different types of capital enhancing activity, finding that those with higher levels of education and socio-economic status tend to use the Internet for personal welfare activities. Individuals with less education and socio-economic status tend to use the Internet for activities geared toward enjoyment or increasing social status. Given the sociological perspective, actors tend to view certain types of Internet use as capital enhancing to advance their status. These activities can be purely hedonistic or social (e.g., Facebook or Instagram posts to help maintain or increase the user’s social networks). Other types of technology use help increase one’s personal welfare. These types of activities include researching possible employers, taking free online courses for self-enrichment or researching the best mortgage rate. The focus of this research will be to examine the overarching context of ubiquitous technology along with capital enhancing activities and their impact upon PTU. The following research question is offered:

*How do capital enhancing activities impact problematic technology use?*

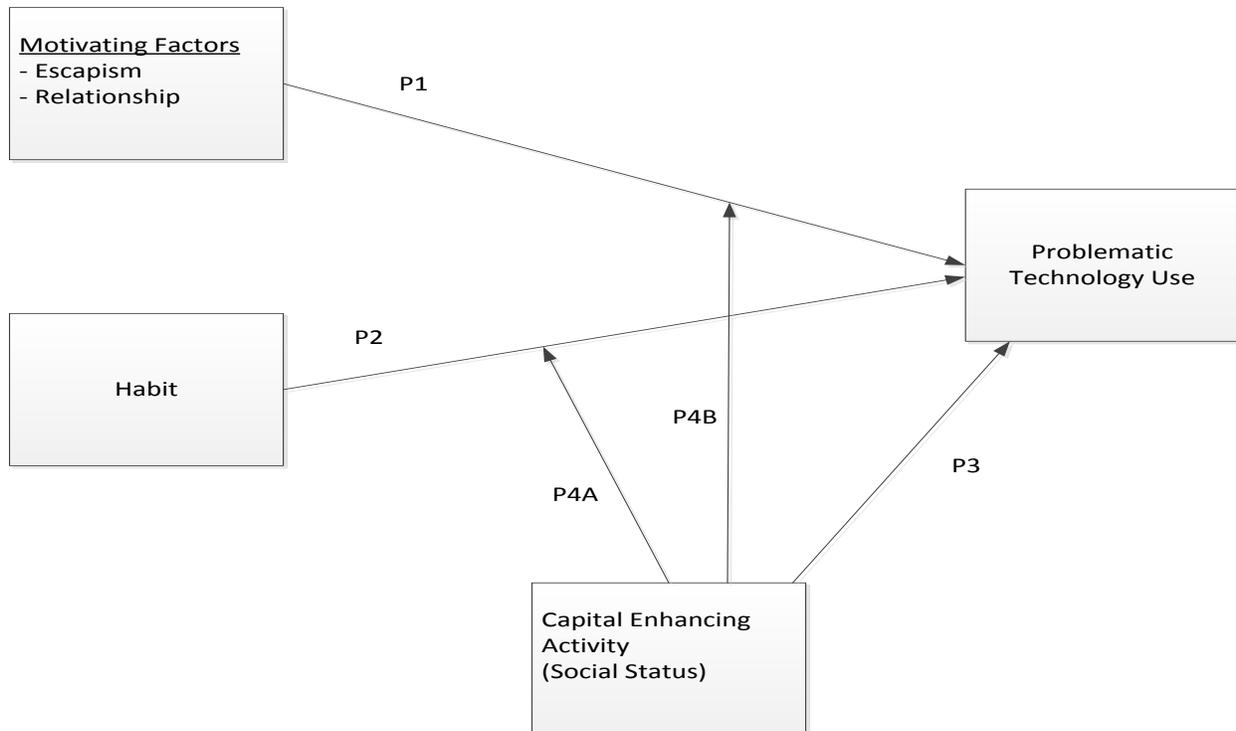


Figure 1. Research Model

Figure 1 depicts the research model that will be used to investigate the impact of motivating factors, habit and capital enhancing activities on problematic technology use. The following will give an overview of each proposition.

#### Proposition 1

Regardless of an actors' place, whether physical or virtual, fulfillment of basic human needs are desired. Needs for relationships with others cause actors to seek engagement on a fundamental level. When given actors are in work or school situations that are formal or restricting, they sometimes need to feel more relaxed in their "down time," which leads to a certain type of informality that may be viewed as leisurely or escapist behavior. Fortunately, needs for leisurely pursuits can be met in a physical or virtual setting in a healthy way. However, overuse of technology can be an unhealthy behavior with regard to both relationships and escapism. Findings from Xu et al. (2012) suggest that high levels of need for relationships and escapism lead to online game playing and addiction. Thus, the following proposition is put forth:

*P1. Higher levels of motivating factors (relationships and escapism) will lead to higher levels of problematic technology use.*

#### Proposition 2

Habit is a necessary, but not sufficient, antecedent present in forming an addiction. Researchers such as Limayem et al. (2007) initially introduce habit to the Information Systems IS literature to support the notion that continuance of intention and usage is impacted by habit. With regard to PTU, Turel and Serenko (2011a) find that habits, and specifically bad IS habits, lead to addiction to a social networking website. Given these findings, the argument can be made that habit can lead to PTU. Thus, the following proposition is put forth:

*P2. Higher levels of habit will lead to higher levels of problematic technology use.*

#### Proposition 3

Capital enhancing activities that are categorized as hedonistic (e.g., achieving status in online games or binge watching the latest Netflix program) or improving ones social connectedness (e.g., posting to Facebook or Instagram) are proposed to have an impact on problematic technology use. Actors with such ambitions will have the

need to maintain a regular presence online that will necessitate daily or more frequent posting activity. Thus, the following proposition is put forth:

*P3. Higher needs for engagement in capital enhancing activities for social purposes will lead to problematic technology use.*

#### Proposition 4

Ubiquitous technology allows actors to easily switch among IT artifacts regardless of location or time of day. In this way, routines are formed that incorporate technology into daily life. In the presence of habitual technology use, poor habits may be formed leading to the possibility of PTU. Basic behavioral needs may be present including the need to escape from the stressors of everyday life or attempts at building more appealing relationships via technology. As such, certain types of use may facilitate a higher sensitivity toward PTU. For instance, when an actor views his activity as always being necessary to advance his social centrality, this type of capital enhancing activity may exacerbate the behavior toward technology from merely habit to problematic. Therefore, the following propositions are put forth:

*P4A. Capital enhancing activities positively moderate the relationship between habit and problematic technology use.*

*P4B. Capital enhancing activities positively moderate the relationship between motivating factors and problematic technology use.*

Although not specifically included as propositions, capital enhancing activities viewed as increasing personal welfare will not have a significant impact upon problematic technology use. Also, control variables will be incorporated to determine if there is any impact on PTU by demographic.

## RESEARCH STUDY

The research study will be a cross sectional survey design used to collect the constructs modeled to predict PTU. The initial target sample population will be millennials because of their younger age and the likelihood that they are more prone to addiction (Turel 2011a). A follow up study will be conducted with older technology users of various age groups (e.g., 30 to 40, 40 and up) to determine if older technology users are different from millennials in that they are less prone to PTU.

## DISCUSSION/CONCLUSION

The study will be limited by the employment of a cross sectional survey. It will be subject to ambiguity in causal direction as well as common methods bias. The results will be tested for the presence of common methods bias using the technique presented by Podsakoff and Organ (1986). These results should add to the literature stream on PTU by demonstrating that capital enhancing activity in terms of social status is another significant antecedent that potentially contributes to technology addiction. The expected findings should again confirm the impact of habit on PTU, as well as the motivating factors of need for relationships and escape from the stressors of daily life. Finally, capital enhancing activity should be viewed as an additional construct to be used in the IS literature representing actors' beliefs that certain types of technology use are necessary to maintain ones social status.

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