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# Technology acceptance model (TAM) and social media usage: an empirical study on Facebook

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## Abstract

**Purpose** – Given the widespread popularity of social media, such as Twitter, Facebook, Google +, and LinkedIn, theorizing and understanding the user attitude and usage behavior of social media site is fundamental in developing future understandings and deployment of these new technologies. One approach to such studies on drivers of social media usage behavior would be to revisit the technology acceptance model (TAM). The purpose of this paper is to discuss these issues.

**Design/methodology/approach** – Decades of extensive research have focussed on validating the TAM, proposed by Davis (1986), for various types of information systems and communication technologies. TAM forecasts individual adoption and voluntary use of technology. This study examines individual adoption behavior of the most popular social networking site Facebook. The influences on the intention of using social networking based on individual's perceived ease of use (EU), the user's critical mass (CM), social networking site capability (CP), perceived playfulness (PP), trustworthiness (TW), and perceived usefulness (PU) is empirically examined with a primary data set of 398 users of Facebook gathered from a web-based questionnaire survey.

**Findings** – The results demonstrate that the revised social media TAM model proposed in this study supports all the hypotheses of social media usage behavior. The results of this study provide evidence for the importance of additional key variables to TAM in considering user engagement on social media sites and other social-media-related business strategies.

**Originality/value** – Based on our review of existing scientific literature on social media, few empirical studies have been conducted to scientifically evaluate and explain the usage behavior of social media using Facebook. A validated instrument of usage behavior of social media can provide usability experts and practitioners with a validated tool to assess social media acceptance and usage behavior. This can help us gain a better understanding of "who is and who is not using these sites, why and for what purposes" (Boyd and Ellison, 2007).

**Keywords** Social media, Facebook, TAM

**Paper type** Research paper

## Introduction

When asked why he robbed banks, Willie Sutton who had robbed over 100 banks, remarked "because that's where the money is." Fast forwarding to the current business world, marketers, and businesses are rushing to online social media sites because that is where customers, suppliers, prospective employees, and other stakeholders are to be

found. Social media, such as Twitter, Facebook, Google + , and LinkedIn, have been defined as a group of internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of user generated (Kaplan and Haenlein, 2010). According to the Webster online dictionary, social media is defined as the forms of electronic communication (as web sites for social networking and microblogging) through which users create online communities to share information, ideas, personal messages, and other s (e.g. videos). In particular, channels (e.g. e-mail) and platforms (e.g. intranets) are two categories of social media widely used within an organization (McAfee, 2006). Based on a social presence/media richness and self-presentation/self-disclosure, Kaplan and Haenlein (2010) classified social media into blogs (e.g. Open Diary, Technirati, and LiveJournal, etc.), social networking sites (e.g. Facebook, MySpace, Google + ), virtual social worlds (e.g. Second Life), collaborative projects (e.g. Wikipedia), communities (e.g. YouTube, Flicker), and virtual game worlds (e.g. World of Warcraft).

Hubspot, an inbound marketing firm reported several interesting and latest trends in social media. For example, 90 percent of internet users visited a social networking site each month in 2010; 33 percent of time online was spent on Facebook resulting in 53.5 billions minutes spent on Facebook by its over 800 millions users; 90 millions tweets were generated every day on Twitter; in the USA, internet users spent three times longer on blogs and social networking than on e-mail. Fueled by connectivity and speed of the internet, social media is transforming how businesses and users communicate with one another. The interactivity of social media has enabled the passive audience of the pre-social media era to become an active and engaging community. According to a Nielsen report, individual users are spending a quarter of their online time using social media applications. This new internet-enabled "voice of mass" is creating a shift in the communication paradigm that affects every aspect of our society. One such recent example has been the widespread usage of Facebook and YouTube during the political uprising in Tunisia and Egypt. In Tunisia graffiti was written on buildings which thanked Facebook for spreading information in real time and helping to overthrow the dictator Zine El Ebidine Ben Ali. In Egypt Facebook was used as a communication tool to facilitate the toppling of the 30-year ruling president Hosni Mubarak. It is therefore not surprising that social media has been able to attract hundreds of millions of users worldwide who clearly see the benefit of this new technology.

The presence of millions of users on social media sites is exciting for businesses as it opens new channels for interacting with consumers, and other important stakeholders such as suppliers and employees. It is not surprising that all different kinds of organization across the world are trying to integrate social media with the various aspects of business processes and operations (Fogel, 2010; Diffley et al., 2011; For-mukwai, 2010; Crowe, 2011; Pfeiffer and Zinnbauer, 2010; etc.). As an effective marketing tool, social networking sites have been widely used for consumers to participate in marketing activities (Fogel, 2010; Diffley et al., 2011). For professionals in crisis management, the challenge of a lack of behavioral changes such as personal preparedness and prompt response faced by the government can be overcome by the utilization of social media including Facebook, Twitter, YouTube, etc. (For-mukwai, 2010; Crowe, 2011). In a comparison of advertising through online channels and traditional communication, it was observed that word of mouth on social networks had a significant effect on driving traffic to the web site (Pfeiffer and Zinnbauer, 2010). The new transformative power of social media on business continues to reflect in aspects of businesses such as marketing, operations, and management.

Social media is about online communication among the mass through user generated. According to a web-based joint survey by the Pew Internet and American Life Project and Princeton Survey Research Associates International, 52 percent respondents of the survey agreed that "by 2020, the free flow of information will completely blur current national boundaries as they are replaced by city-states, corporation-based cultural groupings, and/or other geographically diverse and reconfigured human organizations tied together by global networks." What is causing such widespread usage of social media by the billions of users is fundamental to understanding and advancing any future theories in the area of social media. Technology enabled social interaction processes, such as everyday interaction, sharing photo, presentation of self, etc., on social media sites warrants new research initiatives that focus on both the internet-enabled media and platforms, and online socialization processes and activities. The widespread popularity of these social media sites suggests that these online technologies are successful because of the acceptance and usage in the personal, social, and professional life of individual users. If the usage behavior of social media by the individual users is primarily voluntary, then the causes of these behaviors have to be rooted in the personal intentions and motives. According to Fishbein and Ajzen (1975) and Doll and Torkzadeh (1988), such affective attitude and intentions lead to actual usage of the system. One widely accepted theory on the actual usage behavior of a new technology has been the technology acceptance model (TAM) proposed by Davis (1986, 1989).

The overall purpose of this study is twofold. First, it aims to test the TAM (Davis, 1986) that has been evaluated in various types of context such as, information systems (Hu *et al.*, 1999), software applications (Szajna, 1996; Gao, 2005), and e-commerce (Morris and Dillon, 1997; Koufaris, 2002). In order to benefit professionals in developing best practices and researchers who are interested in developing theories related to social media, we revisit and extend TAM (Davis, 1986) to explain individual social media usage behavior. TAM has become very popular (Lee *et al.*, 2003; Hoof *et al.*, 2005) because it fulfills the theoretical characteristics of being simple (parsimony), supported by data (verifiability), and being applicable to predict acceptance and usage of new technologies in various fields (generalizibility). Studies and research progresses made need to be re-evaluated to give a proper context and understanding of the widespread popularity of social media among its users. The issue of users' "buy in" of social media technologies is based on the internalization of usage behavior that is embedded in individual users' attitudes. A review of scholarly research on information system acceptance and usage suggests that TAM has emerged as one of the most influential models in this stream of research (Venktatesh and Davis, 2000). To fulfill the first objective, we retain the essential characteristics of the TAM (Davis, 1986) in our current study on social media.

However, TAM was developed with an original emphasis on the design of system characteristics and fails to take into account some salient characteristics of social media. TAM originally assumed that information systems are used in organizational settings to improve the efficiency of the workers. TAM excluded the fact that information system could be used outside the organizational settings by individual users, and such usage can also have an "entertainment" component for such users. Further, TAM theory does not address the roles of other users in influencing an individual's attitude toward social media, and consequently the usage behavior. This is problematic since numerous psychological researches proved that individual behavior is influenced by other people's behavior surrounding them. The beneficiaries of positive externalities that a social media site such as Facebook has to offer are the hundreds of millions of its users – with each

user having its own social media network. Also, the psychological concept of social influence is rooted from the assumption that a person's behavior is heavily influenced by the behavior and presence of others. Therefore, the mass of users in social media connected to a user could be a critical component to explain the social media usage behavior. Therefore, a second objective of our study is to revise the TAM model with additional constructs, such as critical mass (CM) of a user that past literature have recognized as important factors influencing usage behavior of a technology.

To empirically investigate the new dimensions of TAM for a social media user proposed in the current study, we use primary data collected from the users of Facebook. Based on our review of existing scientific literature on social media, few empirical studies have been conducted to scientifically evaluate and explain the usage behavior of social media using Facebook. A validated instrument of usage behavior of social media can provide usability experts and practitioners with a validated tool to assess social media acceptance and usage behavior. This can help us gain a better understanding of "who is and who is not using these sites, why and for what purposes" (Boyd and Ellison, 2007). The rest of the paper is organized as follows. First we revisit the TAM model and extend it to incorporate additional constructs from related literature in e-commerce that seem to be crucial determinants of the attitude and usage behavior of social media users. Next, we present the research method and empirical analysis of the proposed model. Finally, we discuss the results from the empirical study before concluding the paper.

## Theory development and research model
TAM was developed by Davis (1986) to theorize the usage behavior of computer technology. The TAM was adopted from another popular theory called theory of reasoned action (TRA; Fishbein and Ajzen, 1975) from field of social psychology which explains a person's behavior through their intentions. Intention in turn is determined by two constructs: individual attitudes toward the behavior and social norms or the belief that specific individuals or a specific group would approve or disprove of the behavior. Both TRA and TAM are shown in Figures 1 and 2, respectively. While TRA was theorized to explain general human behavior, TAM specifically explained the determinants of computer acceptance that are general and capable of explaining user behavior across a broad range of end-user computing technologies and the user population (Davis *et al.*, 1989).

TAM breaks down the TRA's attitude construct into two constructs: perceived usefulness (PU) and perceived ease of use (EU) to explain computer usage behavior. Davis (1989) proposed that behavioral intentions to use a mainframe e-mail system (called "Profs") and a data editing system (called "XEDIT") were the result of two beliefs, "PU" and "perceived EU" of the different systems. PU is defined as "the degree
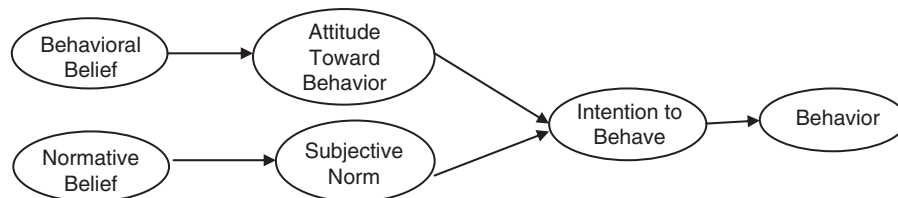


**Source:** Fishbein and Ajzen (1975)

Figure 1.
Theory of reasoned action, TRA

to which a person believes that using a particular system would enhance his or her job performance." In the organizational context, the usefulness may improve individual performance which will directly or indirectly lead to the financial (e.g. sales) and non-financial (e.g. customer loyalty) benefits. Perceived EU has been defined as "the degree to which a person believes that using a particular system would be free of effort" (Venktatesh and Davis, 2000). PU and perceived EU influences the individual's attitudes toward using technology (intention). According to TAM, intentions to use technology will determine whether a person will use the technology or not (behavior).

TAM has been revised in many studies to fit a particular context of technology being investigated. One important and well-received revision of TAM has been the inclusion of social influence processes in predicting the usage behavior of a new technology by its users (Venktatesh and Davis, 2000). In this paper, we build upon previous studies of TAM models to explain the voluntary usage behavior of social media sites by end users.

Since the late 1990s, several different types of social media sites have been launched, some continue to exist and witness an epic proportion of growth in terms of the number of users and the quantity or volume of information exchanged, while others have faltered and closed. Failure of many of these sites can be attributed to its inability to garner acceptance and popularity among the target users. According to the most popular social media site, Facebook, the number of active users in 2011 has crossed 800 millions. Official statistics of Facebook (2011) also reported that more than 50 percent of its active users log into its site each day and interact with more than 900 millions objects (pages, groups, events, community pages, etc.). Such intense and hyper personal communication (Walther, 1996) is indicative of an overall positive attitude users have. Further, the positive attitude toward social media should be a result of an overall favorable social media usage experience. Continual voluntary usage and engagement with social-media-related activities will continue if and only if the perceived benefits from such usage behaviors lead to a positive attitude toward social media.

In the current study we define PU as the extent to which the social media user believes that using a particular social media site helps to meet the related goal-driven needs of the individual. Each social media application offers certain primary services, and accordingly offers various types of tools and applications to add utilitarian value to its audiences. For example, Flicker is for photo sharing and LinkedIn is for building professional networks. PU represents advantageous results derived from attributes of the technology being used. The benefits can be physiological, psychological, sociological or material in nature (Gutman, 1982). The extent to which this utilitarian value of social media is perceived beneficial determines the PU. According to Dhar and Wertenbroch (2000), such utilitarian value drawn from the usage of technology is cognitively
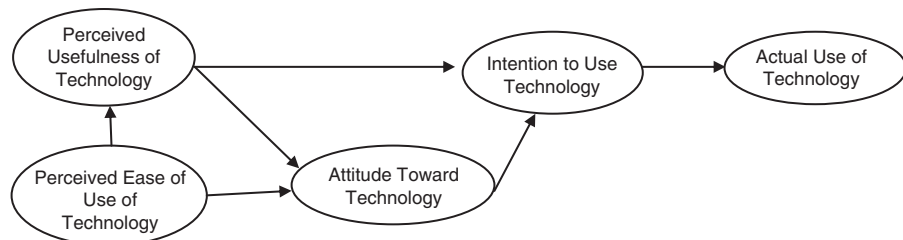


**Figure 2.**
Technology acceptance model, TAM

**Source:** Davis (1986)

driven, instrumental, goal oriented, and accomplishes a functional or practical task of the users.

Both the number and the diversity (age, gender, etc.) of people getting on social media are increasing every day. As Pew research (Madden, 2010) points out, the use of Facebook and LinkedIn by adults aged 50-64 grew by 88 percent between April 2009 and May 2010. Similarly, another report (Carmichael, 2011) suggests that about 40 percent of users of Facebook are 35 years and above. The growing diversity of people signing up with social media suggest that it should be relatively easy to create an account and begin using and enjoying the services. We define perceived EU as the degree to which the social media site is free of effort. The concept of EU relates to Zipf's (1949) principle of least effort that states that each individual will adopt a course of action that will involve the least average work from the person. This principle of least effort can be extended to predict that the social media user will be more appreciative of the minimum effort required to learn features, make use of the applications, and perform social-media-related activities, such as uploading and sharing video or networking with a professional. The importance of perceived EU signifies the degree to which an innovation is perceived not to be difficult to understand, learn, or operate (Rogers, 1962; Zeithmal *et al.*, 2002). In the context of social media, the user may assess the site based on how easy it is to use and how effective it is in helping them accomplish their social-media-related needs.

To support such wide demographics of users on these social media sites, the design of modules, applications, and tools, needs to be user-centric. The site needs a clear and simplistic overview of services, fluent navigation, and smooth user interaction. The social media site should be intuitive for the first time user, and should be efficient in getting tasks done. Past studies (Rauniar *et al.*, 2009; Molla and Licker, 2001; Yoo and Donthu, 2001; Zeithaml, 2000) indicate that an easy to use web site can enhance the user's experience. Most studies about TAM assume also that perceived EU is directly linked to PU (Davis, 1989; Nysveen *et al.*, 2005a, b). Based on TAM, we propose the following hypothesis for social media:

*H1.* Perceived EU of social media site is positively related to PU.

The continued usage of Facebook by its 800 millions users is also indicative of the importance of the existence of networks of friends and family members. Social media usage involves sharing user-generated information with the social network or social community of a user. The value proposition of social media in terms of PU must be tied to other users in the network and the information that is produced and shared among these members. Users belonging to a social media user's network are labeled as "Friends," "Contacts," "Fans," "Followers," etc. We define CM of social media users as the extent of the membership of people that matters most in a user's social media network. Extending the economic theory of positive externalities, the theory of CM states that once a certain number of users (CM) have been attracted (or achieved), use and usage should spread rapidly throughout the community (Cameron and Webster, 2005).

This user's group or the CM is responsible for collectively generating and exchanging information. Lampe *et al.* (2006) found that Facebook users engage in "searching" for people with whom they have an offline connection more than they "browse" for complete strangers to meet indicating the support for the construct of CM. Similarly, Pew research found that 91 percent of US teens who use social networking

sites such as Facebook, do so to connect with friends (Lenhart and Madden, 2007). It is important to make distinctions among the members belonging to a user's network in terms of CM because not all individuals belonging to networks enjoy a strong personal relationship offline with the user. According to Ellison *et al.* (2007), Facebook is used to maintain existing offline relationships, instead of trying to meet new people. A common offline element with the social media user and members of his or her online social networks can enable a richer experience for the user as it becomes easier to relate with each other on the topics of exchanges. Social networking is generally based on an explicit connection with other members. For example, on Facebook, the user has to first send a request to another member to be a Facebook friend and such a request has to be approved by the receiver to get "connected." According to Facebook, the average number of members in a user's network is 130, while an average user is a member of 80 groups, community pages, or events on Facebook.

Several communication theorists have defined the relationship of the number of nodes in a communication network, composed of CM, and its relationships to the value or the power of such networks. For example, Sarnoff's law (Reed, 1999) which was developed in the context of cinema and later in terms of television viewers, states that the value of a network grows in proportion to the number of viewers. Similarly, according to Metcalfe's law (Reed, 1999), the value of the network grows in proportion to the number of nodes on the network. Similarly, Reed's (1999) law says the value of networks, particularly social networks, can scale exponentially with the size of the network. For a summary reading and comparison of these three laws, we recommend Reed (1999).

In summary, theories in social psychology, economics, and diffusion of innovations support the notion that a perceived CM is a key variable for new technology acceptance (Lou *et al.*, 2000). Social media users frequently communicate with those people who are already a part of their extended social networks offline and, thus, are the people in the user's online network that are more closer. Social media-related activities, for example, sharing pictures and news, providing updates, etc., defines the social media usage behavior. These behaviors help to meet the needs of the user, which impact the attitude formed toward the social media site by a user. We therefore propose:

*H2.* CM of a social media user is positively related to PU.

Social media sites provide various tools and applications that can enhance the services to the users as they share and exchange information. On Facebook, for example, people share more than 30 billions pieces of information each month and add about 100 millions new photos every day (Facebook, 2011). Facebook allows users to post messages on walls and on status updates. Users can also post pictures, videos, or hyperlinks. Usefulness of social media and the CM-generated information are further enhanced if the users have the necessary social media applications and tools.

The growing usage of social media sites can also be attributed to the availability and effectiveness of tools and features to meet a user's need for connecting people and helping them share information. We define social media capabilities (CPs) in terms of the site's features, applications, and social media tools to benefit the user's need for social media activities. The CPs of Facebook includes editing walls, postings, and comments, automatic news feeds, customizable modules, event creation and messaging, groups and community page development tools, chat, etc. According to the Facebook web site, more than 70 international languages are available for communication

and more than seven millions applications and web sites are integrated with Facebook. Further, each month more than 500 millions people use an application on Facebook or experience a Facebook platform on another web sites including smart phones and mobile devices (Facebook.com). This is also true for other social media sites such as YouTube or LinkedIn, each providing relevant tools and features that enhance the user's experience and utilitarian value of social-media-related activities.

Exchanges of diverse and rich media and the availability of applications enabling high levels of interactivity at social media sites also provides support to the media richness theory of Daft and Lengel (1986). According to Haythronthwaite *et al.* (1998), those who frequently communicate or engage in important information exchange tend to combine the use of diverse media to meet their communication needs. The social media site's CPs coupled with applications serve its users with a greater social presence therefore benefiting its users. Hence:

*H3.* CP of social media is positively related to the PU.

Literature in consumer behavior and social psychology identify that mixing work and play can improve productivity and performance (Stephenson, 1967). Extending the definition provided by Davis *et al.* (1989), we define perceived playfulness (PP) of social media to be the extent to which the social media-related activities are perceived to be fun and enjoyable apart from any performance consequences that may be anticipated. Davis *et al.* (1989) found that while PU emerged as the major determinant of computer acceptance in the workplace, enjoyment, and fun had a significant effect beyond PU. Several recent studies have also supported the importance of PP on technology usage behavior, such as information technology in the workplace (Igbaria *et al.*, 1996; Hwang, 2005), use of instant messaging (Li *et al.*, 2005), and intention to use (IU) mobile devices (Nysveen *et al.*, 2005a, b).

PP of technology has also been conceptualized as the hedonic value of a technology (Van der Heijden, 2004). These pleasure oriented experiences and consumption or the hedonic value of a technology is expected to be motivated by the desire for pleasure, fantasy, and fun by the users (Strahilevitz and Myers, 1998). The perceived utilitarian value of a technology can be further enhanced if the users find such a technology to perceive hedonic value. Empirical and field studies on the perceived value of computer applications, such as video games (Hsu *et al.*, 2005; Chen, 2007) and information systems (Van der Heijden, 2004) have identified a simultaneous presence of varying degrees of utilitarian value and hedonic value in technology usage behavior (Davis, 1989). In their study of e-commerce, Wolfinbarger and Gilly (2001) contended that when hedonists are satisfied, the frequency of visiting a web site increases.

A social media user is likely to find a service more useful if he or she enjoys it. Using Facebook to share a picture or video from a vacation with grandparents and posting a hilarious comment or caption can be useful and fun for a user. Also, it is very common for a Facebook or Twitter user to frequent the site many times per day. Childers *et al.* (2001) argue that the degree of interactivity that a web site offers is a strong factor in support of establishing the relationship between the site visitor and the web site because experiential internet users usually find more enjoyment in interactive environments. One of the greatest benefits of using social media is because of the interactive social activities among the users who use text, image, hyperlinks, and videos while communicating with one another. Such interactivity and features added

with fun and enjoyment can further enhance the tangible benefits of the social media site. Therefore:

*H4.* PP of social media for its user is related positively with the perceived benefit.

TAM assumes that beliefs or attitudes about PU determine IU the technology which, then, leads to actual usage (Davis, 1989; Venktatesh and Davis, 2000). For our current study on social media, we operationalize IU as the continued intention to perform social media-related activities using the social media site (Fishbein and Ajzen, 1975). Further, we define actual use (AU) in terms of the frequency of social media used by the user. The TAM model based the relationship of PU, IU, and AU from the TRA model (Ajzen and Fishbein, 1980). Based on the TRA, we argue that a social media user's behavior to use social media is determined by their intention to perform the behavior and that this intention is, in turn, a function of his/her perceived benefit from the social media. "Intention reflects a decision that the person has made about whether to perform a behavior or not, and as such gets formed through a process of mental deliberation, conflict, and commitment that may span a significant time period" (Davis, 1986). Therefore, intention indicates a more stable mental status of a user regarding usage behavior of social media. Davis (1989) suggested revising the original TAM by removing the "attitude" construct, and the study results supported that the revised TAM model was a powerful model for predicting and explaining user behavior on only three theoretical constructs of EU, PU, and IU. Such simplification of the theoretical framework of the TAM model for behavioral beliefs and behavior intention has become common in researches (Davis *et al.*, 1992; Klobas, 1995; Venktatesh and Davis, 2000; Venkatesh *et al.*, 2002; Thong *et al.*, 2002; Lee *et al.*, 2007; etc.).

IU social media is the voluntary and cognitive representation of the user's readiness to actually use the social media. Therefore, in our framework for TAM, IU social media is considered as the immediate antecedent of social media usage. We propose that the IU social media is determined by the user's perceived benefit from social media. As a general rule, TRA suggests that the more favorable the attitude toward a behavior, the stronger the person's intention to perform the behavior in question.

Each social media site tends to serve certain purposes. For example, LinkedIn, Visible Path, and Xing serve the networking needs of professionals and YouTube is for sharing videos. If social media is about user-generated and shared information, the volume of communication that takes place suggests that the users have a positive attitude about these sites. As a voluntary act, the millions of postings on Facebook that receive comments, the millions of Tweets on Twitter that gets Retweeted, and thousands of videos that gets uploaded and commented on YouTube suggest that users are engaging in these activities because of the positive attitude that had formed with their prior engagement on these sites. We propose that the social media users interpret their experience to develop beliefs about the PU from their activities or behavior on these sites. The positive attitude toward the perceived benefit according to Bandura (1977), Ajzen and Fishbein (1980), Davis (1989), and Ajzen (1991) can then predict the IU social media, and motivate the actual usage of the social media.

There is also extensive empirical evidence accumulated over a decade that has examined the belief-intention-behavior causality in the context of usage of various technologies (Davis *et al.*, 1989; Davis, 1989; Igbaria *et al.*, 1996), including the online environment (Chen *et al.*, 2002; Limayem *et al.*, 2000). We therefore conclude that a user engages in a social-media-related activity, experiences the benefits, and develops a

future IU the activity. The future intention leads to further engagement with the social media site; in a manner that is consistent with the intentions formed from the past experience. This causality helps to explain the heavy usage of social media sites such as Facebook and Twitter. Based on the TAM, we hypothesize:

*H5.* PU of social media is related positively with the IU the social media site.

*H6.* IU the social media site is related positively with the AU of social media.

One of the earliest activities of a user on a social media site is to create a user profile. The user profile typically includes descriptors such as age, location, interests, a profile picture, and an "about me" section. In addition to text, images, and videos created by the member, the social network site also contains a public list of the people that one identifies as Friends within the network. According to the social contract theory, users of social media assume an implied social contract when exchanging information in a transaction (Pan and Zinkhan, 2006). The extent to which a user is confident of these implicit contracts with the social media site and other users should be important in understanding the activities and behavior of the user including the voluntary exchange of information. Therefore, we believe that the issue of trustworthiness (TW) of a social media site is an important construct to the TAM model for social media.

In fact, social media is about gathering information about a user's physical and social context. Trusting the social media site to keep information confidential and not to abuse it is an aspect of TW for its users. Social media sites can employ various levels of security features to reduce a user's privacy concerns, and build trust (Culnan and Armstrong, 1999). However given the end users perspective, such measures may still hold subjective beliefs and concerns regarding how users feel that their information shared on social media site would be handled. Postings and social media related activities of a user demonstrate the online behavior of the user. To fully and freely participate in a social media site with the CM, a user should be free from worries related to privacy or safety concerns.

Popular news media have regularly emphasized potential security and privacy concerns of social media users, especially for younger users (George, 2006; Kornblum and Marklein, 2006). In a study involving 4,000 university students on Facebook, Gross and Acquisti (2005) pointed out that there exists a real threat of privacy in the personal information posted by the users, including the potential ability to reconstruct a Facebook user's social security number based on the address and date of birth found in the user's profile. Similarly, the study of Dwyer *et al.* (2007) revealed that in comparison to the users of MySpace, Facebook users express a greater trust and willingness to share information on site. TW of a social media site reflects the extent to which a social media user feels security of their profile information, shared text and graphics, and other social media site-related activities.

The importance of technology trust in e-commerce adoption has been widely recognized in many studies (Kim *et al.*, 2001; Kini and Choobineh, 1998). Similarly TW of a technology with TAM has been a subject of research in many past studies (e.g. Gefen *et al.*, 2003; Pavlou, 2003, etc.). The social media site should have a mechanism that meets the expectation of its users that the disclosed and posted information is not used by any third-party or for any other purpose without proper knowledge and consent by the user. This can help to build credibility of the social media site and build trustworthy relationships with the users. Facebook, for example,

gives profile access only to people from the same school by default. Establishing trust of a social media site by its users will require a prior use of social media. TW of the site will influence the future IU the social media site. As social media users create and share their information, the users must feel their privacy is intact and trust the social media site with their related activities. In addition to the PU of social media, we suggest that IU social media will also be influenced by the extent to which the user finds such a social media site trustworthy. Therefore:

*H7.* TW of social media is related positively with the IU social media site.

Based on our literature review, we revise the TAM (Davis, 1986) to represent our research model of Figure 3. In the following section we report the empirical study of our proposed model which is proposed to explain the social media acceptance and usage behavior of its end user.

### Research methods
For our empirical study, a total of 900 full-time students from two business schools (one public university and one private university) in the USA were simultaneously requested to participate in an online survey. These students were enrolled as full-time students in either undergraduate or graduate level business programs. Our online survey asked respondents to answer the survey regarding their experiences as regular usage of Facebook. A total of 405 responses were received from the initial announcement. In order to minimize bias, no incentive was provided to the students for their participation. Approximately two weeks after the first announcement, an e-mail
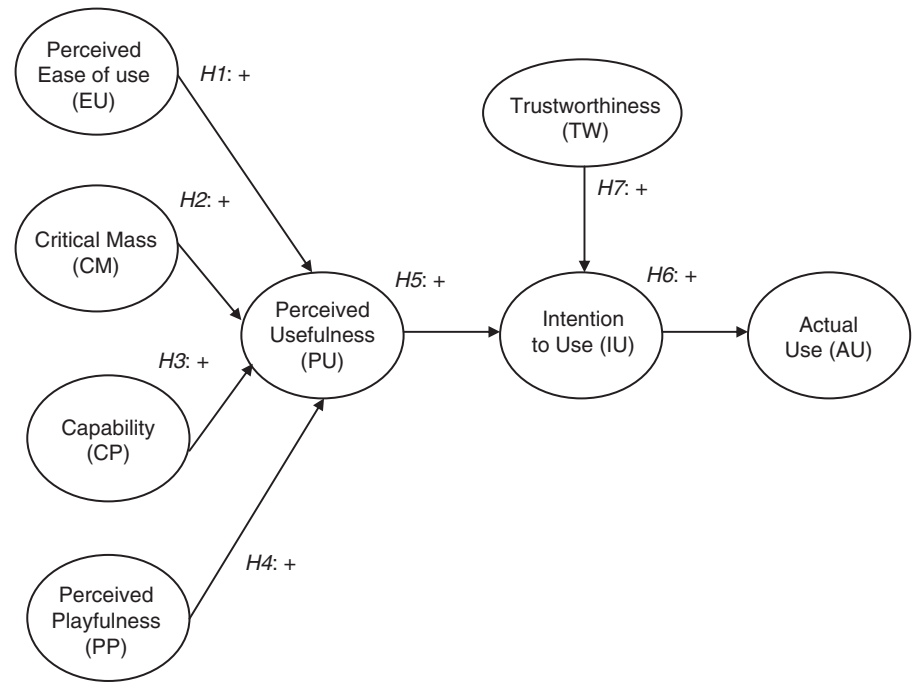


**Figure 3.**
Revised TAM for
social media

reminder was sent which collected 35 additional responses. Out of total 440 responses collected during the two waves of survey request, 51 incomplete responses were dropped. The final sample size was 389 resulting in a response rate of 43.2 percent (389/900). The characteristics of our sample respondents are provided in Table I.

To evaluate early/late respondent bias of the sample, a $\chi^2$-test of differences between the observed and expected (population) frequencies for gender (male and female) was analyzed. The $\chi^2$-test showed that the distribution of our sample fits very well with the distribution of population (calculated $\chi^2 <$ critical $\chi^2$).

The constructs of our proposed research model in Figure 3 were developed based on the following procedures. First, an extensive literature review was performed which included theoretical and empirical literature in the areas of TAM, TRA, and TPB and other related works in the area of e-commerce and end user computer satisfaction (Doll and Torkzadeh, 1988; DeLone and McLean, 2003). Second, structured interviews with one corporate social media manager responsible for the corporate accounts on Facebook, Twitter, and LinkedIn, and three students who use social media sites (Facebook, YouTube, LinkedIn, Flicker, and Twitter), and one university professor teaching e-business related courses in a large Midwest US university helped us define the domain of constructs and facilitated in item generations.

| | |
|---|---|
| *Gender* | |
| Male | 43% |
| Female | 57% |
| *Age* | |
| 20 or under | 51% |
| 21-30 | 10% |
| 31 and above | 39% |
| *Employment* | |
| Not employed | 46% |
| Part-time | 39% |
| Full-time | 15% |
| *Marital status* | |
| Single | 83% |
| Married | 16% |
| Other | 1% |
| *Number of friends on Facebook* | |
| 0-74 | 7% |
| 75-149 | 10% |
| 150-224 | 14% |
| 225-299 | 10% |
| Above 300 | 59% |
| *Member of fan pages or groups* | |
| 0-5 | 47% |
| 6-10 | 20% |
| 11-14 | 10% |
| More than 15 | 23% |
| *Frequency of using Facebook* | |
| Less than 5 hours/week | 3% |
| About 10 hours/week | 13% |
| About 15 hours/week | 29% |
| More than 15 hours/week | 55% |
| **Note:** $n = 389$ | |

Table I.
Sample characteristics

The scales for perceived EU, PU, IU, and AU were adapted from prior studies, many of which have already established their reliability and validity (Davis, 1986, 1989; Mathieson, 1991; Moore and Benbasat, 1991; Taylor and Todd, 1995; Venkatesh and Davis, 1996). We modified the language of these items to reflect the measurement of these constructs for Facebook users. Facebook users were primarily targeted because of the widespread popularity of this social networking site worldwide. According to Facebook (2011) statistics, the site surpasses any other web site in terms of the number of users and the number of daily visits by unique users. As such, it is reasonable to assume that a typical Facebook user would be an informed respondent suitable to answer our survey questionnaires regarding the social media usage behavior.

The instruments for social media CPs were developed primarily from suggestions made by the five informed users (educator, practitioner, and regular end users) during the interview. The three instruments developed for the current study measure information handling, availability of social media applications, and ability to handle images and videos on the social media site. Collectively, these instruments measure broader activities that a user engages in using a social media site. Similarly, the scale for CM was adopted from the study Rouibah and Abbas (2006), who operationlized CM in their investigation of TAM for camera mobile phone adoption. The scales for PU and PP were borrowed from the studies of Venkatesh and Davis (1996), Spangenberg *et al.* (1997), and Voss *et al.* (2003) and modified to fit in the context of our current study on social media. The items used for PU are: functional, informative, and effective. Similarly, the items we used for our study for PP are: delightful, exciting, thrilling, and fun. The three items used to measure TW in our current study were modified instruments from Telzrow *et al.* (2007) and Fogels and Nehmad (2009).

In order to empirically investigate our revised TAM model, a total of 33 items were generated. Next, two doctoral students and one academician with a research interest in marketing and organizational behavior evaluated the items in a formal pre-test. Based upon their recommendations, the initial items were modified, dropped, and/or re-worded for clarity and relevance for this study. Of the finalized 29 items, five items measure perceived EU, five items measure PU, three times measure CM, three items measure social media CP, four items measure PP, four items measure TW of social media site, three items measure IU the social media site, and two items measure AU of social media. The descriptions of finalized items can be found in Table III. A five-point Likert scale was used, where 1 = strongly disagree and 5 = strongly agree, to identify the responses for each item. Also, some demographic items were included in the questionnaire that used different measurement scales.

*Factorial validity, reliability, and discriminant validity*
Initial item purification was done with factor analysis using principal component analysis in SPSS 20. All the items for each construct loaded on their respective factor and no cross-loading of any item was found. Consistent with the recommendations of Dillon and Goldstein (1985) that item loadings should be at least 0.60, all item loadings were found to be above 0.70; except for CP1 (0.645) and TW1 (0.663). The cumulative variance explained by the factor analysis was approximately 76 percent. Next, as per the recommendations of Bollen (1989) and Kamata *et al.* (2003), we assessed reliability of our instruments by calculating composite factor reliability (CFR) scores. All CFR scores of our constructs were found to be above the cutoff value of 0.70 suggesting that the underlying items of our constructs were sufficiently representative of their

respective constructs and were reliable. These CFR values for each construct in our research framework of Figure 3 are presented in the diagonal of Table II.

Table II also reports the correlation among the constructs of our revised TAM for social media and the descriptive statistics of these constructs based on our sample. All the correlations were significant at $p < 0.01$ level. The negative correlation sign in Table II indicates that these constructs were reversed coded in our survey. The mean of our sample data varied from 3.37 to 4.49; and the standard deviation varied from 0.70 to 1.23.

Discriminant validity is demonstrated when a measure does not correlate very highly with another measure from which it should differ (Venkatraman, 1989). We followed the test of discriminant validity of our constructs based on the recommendations made by Segar (1997). To do so, we calculated the average variance extracted (AVE). These values are reported on the diagonal of Table II. The AVE for all variables exceeded the suggested value of 0.50 implying that the variance captured by the construct was significantly greater than that attributable to error. Additionally, AVE measures for all constructs were much larger than the square of the correlation between them providing overall evidence of discriminant validity (Fornell and Larcker, 1981). Finally, to further establish discriminant validity, the difference of $\chi^2$ was compared from the restricted and freely estimated models. All comparisons had a highly significant difference at $p < 0.001$ which suggested that the constructs were distinct and that their underlying scales exhibited the property of discriminant validity.

*Measurement and structural model*
Structural equation model (SEM) was conducted to analyze the measurement and structural models using AMOS 5.0 (Arbuckle, 2003). Although we used the SEM methodology, the study should still be considered as exploratory in nature. Following Gerbing and Anderson's (1988) paradigm of testing SEM models, the measurement model was tested first followed by the complete structural model of Figure 2. Results from the measurement model of all the exogenous and endogenous constructs are presented in Table III.

| Variables | CM | CP | EU | PP | PU | TW | IU | AU |
|---|---|---|---|---|---|---|---|---|
| Critical mass (CM) | $\alpha = 0.83$ $AVE = 0.62$ | | | | | | | |
| Capability (CP) | Correlation $= 0.55$ | *0.8* *0.58* | | | | | | |
| Perceived ease of use (EU) | 0.62 | 0.62 | *0.93* *0.72* | | | | | |
| Perceived playfulness (PP) | −0.21 | −0.48 | −0.28 | *0.89* *0.68* | | | | |
| Perceived usefulness (PU) | 0.55 | 0.61 | 0.54 | −0.39 | *0.9* *0.64* | | | |
| Trustworthiness (TW) | 0.24 | 0.5 | 0.42 | −0.28 | 0.37 | *0.90* *0.70* | | |
| Intention to use (IU) | 0.57 | 0.59 | 0.6 | −0.29 | 0.69 | 0.46 | *0.86* *0.68* | |
| Actual use | 0.37 | 0.34 | 0.41 | −0.37 | 0.48 | 0.27 | 0.54 | *0.73* *0.58* |
| Mean | 4.49 | 3.82 | 4.08 | 2.48 | 3.98 | 3.37 | 4.06 | 3.7 |
| Standard deviation | 0.70 | 0.83 | 0.78 | 0.93 | 0.79 | 0.97 | 0.87 | 1.23 |

Table II.
Composite factor reliability ($\alpha$), average variance extracted (AVE), and correlation

| Variable | | Completely std. coefficient (*t*-value) |
|---|---|---|
| *Perceived ease of use (EU)* | | |
| EU2 | Facebook is flexible to interact with | 0.84 |
| EU3 | I find it easy to get Facebook to do what I want to do | 0.81 (19.47) |
| EU4 | It is easy to become skillful at using Facebook | 0.84 (20.52) |
| EU5 | I find Facebook easy to use | 0.87 (21.62) |
| EU6 | Interaction with Facebook is clear and understandable | 0.87 (21.83) |
| *Perceived usefulness (PU)* | | |
| PU2 | Using Facebook enables me to get re-connected with people that matter to me | 0.74 (14.60) |
| PU3 | I find Facebook useful in my personal life | 0.74 |
| PU4 | Using Facebook enhances my effectiveness to stay in touch with others | 0.85 (16.80) |
| PU5 | Using Facebook makes it easier to stay in touch | 0.83 (16.24) |
| PU6 | Using Facebook makes it easier to stay informed with my friends and family | 0.82 (16.12) |
| *Critical mass (CM)* | | |
| CM1 | Facebook is popular among my friends in the USA | 0.81 |
| CM3 | A good number of my friends are on Facebook | 0.80 (15.58) |
| CM6 | People from my work are on Facebook | 0.74 (14.49) |
| *Capability (CP)* | | |
| CP1 | Facebook provides clear instructions for posting | 0.81 |
| CP2 | Images and videos can be easily downloaded or uploaded on Facebook | 0.61 (11.87) |
| CP3 | Applications and capabilities of Facebook meet my social networking needs | 0.85 (16.85) |
| *Perceived playfulness (PP)* | | |
| | For a social networking web site, Facebook features and applications are | |
| PP1 | Delightful (1-5) | Not delightful | 0.80 |
| PP2 | Exciting | Dull | 0.90 (19.76) |
| PP3 | Thrilling | Not thrilling | 0.80 (17.36) |
| PP4 | Fun | Not fun | 0.79 (17.02) |
| *Trustworthiness (TW)* | | |
| TW1 | I trust Facebook for my information on my profile | 0.64 (14.97) |
| TW2 | Facebook provides security for my postings | 0.93 |
| TW3 | Facebook provides security for my profile | 0.92 (30.08) |
| TW3 | I feel safe in my postings with Facebook | 0.82 (23.33) |
| *Intention to use (IU)* | | |
| IU1 | I intend to use Facebook for communicating with others | 0.84 |
| IU5 | I intend to use Facebook to get reconnected with people that matter to me | 0.79 (17.56) |
| IU6 | I will continue to use Facebook for social networking | 0.84 (18.87) |
| *Actual use (AU)* | | |
| AU2 | How often per week do you visit your Facebook account? (Never, rarely, occasionally, often, frequently) | 0.86 |
| AU3 | How many hours do you used your Facebook account every week? (0-2 hours, 2-4 hours, 4-6 hours, 6-8 hours, more than 8 hours) | 0.64 (8.68) |

**Notes:** Fit indices: $\chi^2$(df) = 730.49 (349); $\chi^2$/df = 2.09; TLI = 0.94; CFI = 0 .95; RMSEA = 0.053

**Table III.**
Overall measurement
model – exogenous and
endogenous variables

For each item, we report the standardized coefficient and $t$-values from the measurement model analysis. We investigated the standardized coefficient weights, the standard error, and the critical ratio or (interpreted as $z$-scores in AMOS) for each of the 29 items. All the coefficient values were found to be significance at the $p < 0.001$ level.

In AMOS, the relative $\chi^2$ (or the normed $\chi^2$) which is the $\chi^2$ index divided by the degrees of freedom is denoted as CMIN/df or $\chi^2$/df. This index is generally considered to be less sensitive to sample size. The criterion for acceptance of CMIN/df varies across researchers, ranging from $< 2$ (Ullman, 2001) to $< 5$ (Schumacker and Lomax, 2004). Tucker-Lewis Index (TLI) is a relative fit index that compares a $\chi^2$ for the model tested with the one from a so-called null model (or "baseline" model or "independence" model). A TLI value of 0.90 or above is generally considered to represent a good fitting model.

Comparative fit index (CFI) (Bentler, 1992) like most model fit indices compares the model of interest with some alternative, such as the null or independence model. CFI values of 0.90 or above is considered to be acceptable. RMSEA is another commonly reported test of model fit (Quintana and Maxwell, 1999) which is considered to have more descriptive value than $\chi^2$ and is less affected by the sample size. Interpretation of RMSEA is often considered according to the following; $0 =$ perfect fit; $< 0.05 =$ close fit; 0.05-0.08 = fair fit; 0.08-0.10 = mediocre fit; $> 0.10 =$ poor fit (Byrne, 1998). For our measurement model, the $\chi^2$/df, TLI, CFI, and RMSEA indices were found to be 2.09, 0.94, 0.95, and 0.053, respectively. The overall measurement model fit was adequate to proceed to the next phase of analyzing the structural model without any modification to the items underlying the respective constructs. Analyses of the structural model of Figure 3 in SEM tested all seven proposed hypotheses in our revised TAM framework simultaneously. The result of the structural model data analysis are presented in Figure 4.

The results from the structural model in Figure 4 indicate that all seven hypotheses were supported by the data, at $p < 0.001$ significant level. The first hypothesis suggested that there is a positive relationship between the perceived EU and PU of social media. The standardized regression estimate of 0.25 was found to be statistically significant at $p < 0.001$.

The second and third hypotheses suggested that a positive relationship existed between the user's CM on social media and PU of social media, and between the CP of social media and PU of social media. The standardized regression estimate at 0.33 and 0.36, respectively for these two hypotheses were found to be statistically significant at $p < 0.001$. Similarly, the fourth hypothesis suggested a positive relationship between the PP and PU which was found to be significant at $p < 0.001$ with standardized regression weight of 0.18. The fifth and seventh hypotheses, the PU to IU, and IU to AU, are based on the TAM model of Davis (1989). At $p < 0.001$, both of these hypotheses were supported with standardized coefficient values of 0.62 and 0.50, respectively. Similarly, H7, the positive relationship between TW and IU were also significant at $p < 0.001$ with standardized regression weights of 0.26. The model fit indices for the overall model with our data set were found to be $\chi^2$/df $= 3.39$, TLI $= 0.87$, CFI $= 0.88$, and RMSEA $= 0.079$. Overall, these indices suggest a fair model-to-data fit in our current study.

## Discussion

Among all the social media sites, Facebook has become a global phenomenon to support interpersonal interactions, communications, entertainment, and social bonding

**Figure 4.**
Results from the
structural equation
model: standardized
coefficient (*t*-value)
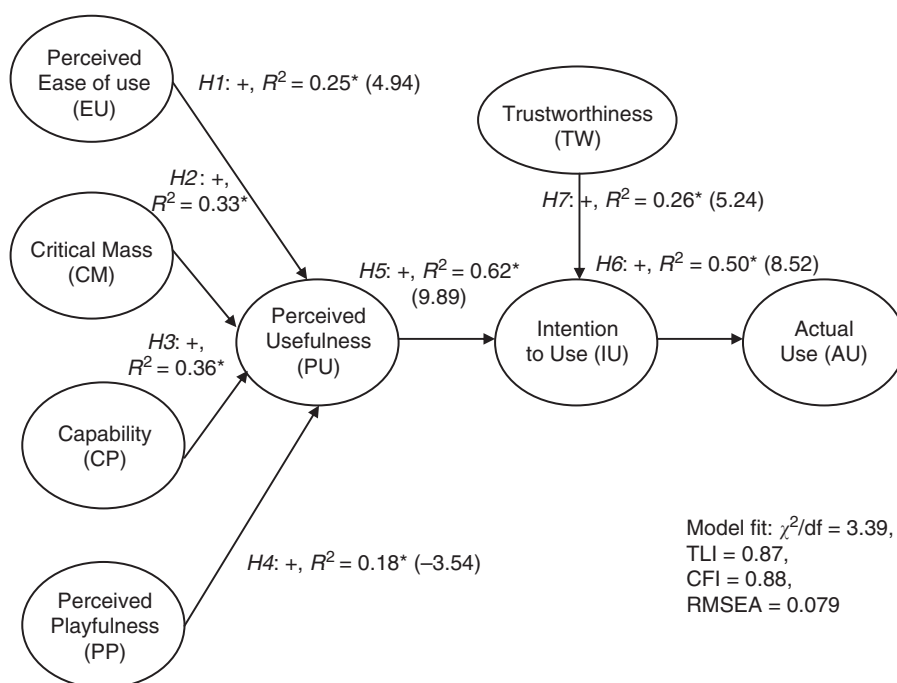
**Note:** *Standardized coefficient significant at *p* < 0.001

among its users. Motivated by the widespread and unprecedented popularity of
Facebook, the current study seeks to understand what leads to acceptance of such social
media usage by diverse and global individual users. Accordingly, the current study has
extended the TAM model to explain key variables of social media acceptance and usage
behavior among the individual users.

Our empirical results provide several theoretical contributions in the area of social
media acceptance and usage. First, researchers have advocated extending and
re-validating past theories and framework in a new context (Berthon *et al.*, 2002).
As such, the current study represents the first comprehensive examination of the user
acceptance and actual usage of social media using scales derived from existing literature.
The composite reliabilities of our constructs (perceived EU, CM, CPs, PP, PP, IU, TW, and
AU) reflects reliable instruments that can be adopted for future studies in the field
of social media. The results from factor analysis and the measurement model helps in
identifying the important dimensions for the revised TAM model for social media.
We believe that this is a significant addition to the social media literature. Results have
implications for practitioners in the service sectors in terms of a social media based
communication and marketing, for the social media educators and trainers in terms of
instructional design and development of social media sites, and finally for the future
researchers to use this instrument as a reference.

Second, the results from our structural model re-establishes the relationships
between the original TAM constructs, i.e. perceived EU and PU (*H1*), PU and IU (*H5*),
and the positive relationship between the IU and AU (*H6*). Collectively, these three
hypotheses reflect that successive social media usage is the result of intentions to use

which the user formed from the earlier usage on the site. These three hypotheses that are supported by the Facebook data help to validate the TAM model in the context of social media. Designers and developers of social media sites, applications, and pages should focus on how to create value for the social media users that helps the users to achieve specific social media site-related goals and objectives. Once these benefits are experienced, it translates into a positive attitude and intention to revisit the site in future, thus predicting the future usage of the social media by a user. In order to be effective with external communication, social media managers should ensure that an average user's utility is enhanced during the user's engagement at the social media site. Managers should keep in mind that a useful experience is important for a long term relationship and engagement because of a positive intention formed by the user. Creating PU for a targeted social media audience would mean that the value proposition serves the explicit need of the user. For example, a social media advertisement campaign for a commercial product should ensure that the advertisement is considered valuable enough for the targeted social media user to ensure positive intent to continue coming back in the future, or to create a buzz among the user's CM.

Third, our revised TAM framework in the current study highlights the importance of four variables that seem to contribute to the PU of the social media site for its users. *H1*, which hypothesized the positive relationship between the perceived EU and PU, suggests that simple-to-use and easy-to-interact are important design criteria for a social-media-related application. Such a user-centric approach to design and development of software application is becoming a common practice in industry. An easy to use interface for the end user is considered to be an important determinant of user satisfaction (Doll and Torkzadeh, 1988). The second variable we investigated as the determinant of PU in our revised TAM model for social media is the presence of a CM in a user's network. Attracting users for a social media campaign will therefore be more successful if a user can identify the presence of other users that he/she can relate to in supporting such campaigns. Based on the theories of positive externalities and Reed's law (1999), we found support for *H2* in our current study. A fundamental characteristic of functioning of a social media site such as Facebook is that it is user driven. The phenomena of a video, a picture, or a message going viral on social media sites such as Facebook can also be explained in terms of our conceptualization of CM. CM constitutes a user's network of social media users who share common interests on such topics that go viral. Thus, another important theoretical contribution is the empirical evidence on the relationship between the number of users on a social media network of a user and the PU that is generated for the user by the CM on social media.

*H3* posited a positive relationship between the social media CPs and the user's PU. Social-media-related tools and applications can enhance the user activities and experience on the social media site. If the features are frustratingly lacking, it may negatively impact the user's involvement on these sites. Therefore, social media developers need to always find ways in adding useful tools, modules, or applications in order to influence the continued usage of the site. *H4*, the positive relationship between the PP and PU reminds us that generating a hedonic experience for the user is important in shaping a positive attitude and intention for using the site. Adults are turning to social network sites for entertainment, creative outlets, gaming, gathering "how-to" info, and following celebrities (www.hubspot.com). The importance of PP, which resembles the entertainment-seeking behavior, of social media sites are exemplified by the regular events of quizzes and competitions (along with some reward) on Facebook by various businesses. Participating in these activities on social media site makes the visit and usage

a pleasurable experience for its users, thereby promoting future visits of the user. Managing the social media presence will also require that social media managers pay attention to creating fun and exciting events and activities to boost user participation and engagement on the business's social media page.

In addition to the PU, *H7* suggests that the IU social media is also shaped by TW of the social media site. Reports and news related to privacy and concerns of security of information posted on social media sites, such as MySpace and Facebook, have made frequent headline news. In order to freely participate and engage, users need to trust these sites. A sense of a safe and secure environment is an important pre-requisite for the users involved in any social exchange or transaction on these sites. Our current study validates the support of IU the social media site and trust. Developers should try to create an environment for its users that minimizes the security and privacy concern for its users. Improving TW, as our results demonstrate, seems to enhance acceptance and usage of social media.

According to Forrester research, social media marketing spending by US marketers are projected to increase by 34 percent, from $716 millions to $3.1 billions in the period 2009-2014 (VanBoskirk *et al.*, 2009). Ford Motor Company is one shining example of a corporation that is squeezing results from social media. In 2010, Ford used social media to pre-launch the Ford Fiesta in the US market. During the pre-launch, 100 Fiestas were brought in from Europe and were given to young drivers who were active in different social media networking sites. These drivers used the cars for six months and were encouraged to write their expressions and experience with the product on social media sites, including the requirement to upload one video per month on YouTube. In a six months period, from April to October 2010, the strategy drew more than 4.3 millions video views on YouTube, 3 millions Twitter postings, and half a million photo views on Flicker. The use of these social media sites as a communication channel helped the company to achieve a 60 percent public awareness of the Ford Fiesta before the vehicle went for sale. These results would typically come from a $25 to 30 millions dollar campaign, but Ford accomplished this with only a $5 millions dollar budget. This is the power of social media and user-generated information. Many marketing professionals have already started calling such a strategy of using users and user generated and information for the marketing purpose as inbound marketing.

The Ford example demonstrates several advantages of using social media for businesses. These include enhancing the corporate brand, increasing trust, establishing credibility among customers, and implementing several two-way social engagement opportunities such as consumer feedback, and participation in the new product development process, etc. Never before in the history of corporate communications have we seen so much unfiltered spontaneous information coming directly from the people regarding product, services, and business conducts. Postman (2009) writes that one of social media's holy grails is authenticity as the message and is user driven.

However, to implement a social media strategy, managers need to be aware of not only the immense opportunities created by such an online community, but also the risk of bad publicity going viral on these sites. In order to develop good practices of managing and developing social media related strategies that result in active and vibrant user support, the research findings on the revised TAM model can therefore be referenced by practitioners, researchers, and educators of social media. We are hopeful that our research findings can benefit developers to be more effective by ensuring that the social media strategy contributes to a positive attitude of the social media audience.

## Conclusion

This paper proposes a revised TAM framework for enhancing our understanding of a social media user's attitudes toward usage. The findings suggest that utilitarian orientations of perceived usefulness and TW of a social media site are important determinants of a user's IU the social media, which in turn, is the indicator of the actual usage behavior of social media. Based on the TAM model, our study validates the attitude-intent-behavior relationship in the context of the social media site Facebook. Further, we have also explored and added additional important constructs, CM, social media CPs, and PP, to make the TAM model more meaningful in the context of understanding the acceptance and usage of social media.

However, the current study has a few limitations that need to be recognized. First, since the survey was conducted among a group of students from US-based universities, the results should be interpreted with caution, particularly with respect to the generalization of research findings of social media users as a whole. Next, our total sample population invited to participate ($n = 900$) in our survey still represents a very tiny fraction of the millions of Facebook users. Future research needs to focus on a larger, cross-section of Facebook users and a more diversified random sample to verify the findings of the current study. Facebook is the most popular social media site and accordingly we used the data collected from Facebook users. Future studies can include data analysis from other social media sites, such as Google + , YouTube or Twitter. There are many variables in the behavioral theories that need to be investigated to improve the prediction of social media acceptance and usage behavior suggested by our revised TAM model. Future studies can help in determining other factors and extending our research model. We believe that there are many research questions regarding the user and usage behavior on social media sites and we therefore encourage future researches to contribute in developing a better understanding of social media. Despite these limitations, we remain confident that the current empirical study on the revised TAM model can be helpful for future researchers, practitioners, and educators in the area of social media.

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