

# Factors Influencing the Behavioral Intention of using Enterprise 2.0 Tools as a Knowledge Management Platform

## *An Analysis of the UTAUT Model in an Large Real Estate Company*

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**Abstract:** This study aims at identifying the factors that predict the intention of employees of a large Canadian real estate firm to use an Enterprise 2.0 knowledge management oriented enterprise portal platform. Based on the UTAUT model, the data collected from 122 respondents using a Web questionnaire was analyzed to test five hypotheses that relate to the intention to use the Enterprise 2.0 platform. Results indicate that performance expectancy, effort expectancy and social influence have a significant influence on the behavioral intention to use. Contrary to recent UTAUT studies, facilitating conditions, self-efficacy, anxiety and attitude toward using technology all have a significant influence on the behavioral intention to use.

## 1 INTRODUCTION

Organisations are aware of the importance of managing knowledge detained by their employees. Knowledge management (KM) is a process that aims at capturing the knowledge of the members of an organization and transferring it to the right individuals, which helps the organization innovate and reach its objectives (Argote and Kozlowski, 2011).

Knowledge management systems, specifically developed to support this process, have been developed to improve the know-how of individuals, to increase innovation and improve decision making (Alavi and Leidner, 2001). However, traditional KM systems have rarely reached these objectives, as several failures are documented (Kautz and Mahnke, 2003). Essentially, the literature shows that many systems are not used to their full potential, and that this is mainly due to the lack of user participation (Knaus and Balasubramanian, 2003). In 2005, Davenport revealed that the acquisition, diffusion and exploitation of knowledge were not fully realized and also mentioned the fact that knowledge sharing was not instinctive for individuals in a group.

As experts were debating on the benefits of KM, the Web 2.0 emerged. The Web 2.0 is a cluster of technologies, strategies and social tendencies (Murugesan, 2007), which comprises several types of tools such as Blogs, Wikis or RSS feeds. These tools allow users to participate actively to information sharing and knowledge generation (Yates et al., 2010). The term Enterprise 2.0, which is the use of Web 2.0 tools in organisations, was introduced by McAfee (2006). Although the potential of these tools appear interesting, it is important to question whether they could have success where traditional KM systems have failed. As previously stated, the less optimal results of KM systems are attributable to its low level of use. Why should it be different for Enterprise 2.0 tools? How would these tools change this situation? The implementation of such a system does not guaranty an efficient use. For a number of organizations, understanding the factors that facilitate the acceptance of a system is a key element for success.

This study addresses the following research question: What factors influence the intention to use Web 2.0 tools as a KM platform? To answer this question, a quantitative study was conducted in an organisation that recently decided to pursue a project with the intent of implementing a KM oriented enterprise portal.

## 2 METHODOLOGY

In an attempt to answer the research question, a survey based empirical study was conducted in a large Canadian real estate firm that has the intention of implementing a KM oriented enterprise portal. The organization is one of the top 10 real estate firms in the world. It owns, manages and invests in commercial centres in 24 countries. Its assets are in North America, Europe, Asia and Latin America.

An email explaining the main purpose of the study and the objective of the Web questionnaire was sent to 980 employees that are associated to the potential use of the Enterprise 2.0 tools. 171 respondent of the 980 employees solicited answered the electronic questionnaire, but only 122 respondents had fully and adequately completed the questionnaire. The final response rate is 12.4%. Amongst the respondents, the proportion of men and women is of 43.5% and 56.5% respectively. The average age of the respondents is 40.1 years, and more than half of the respondents (57.3%) have a university degree. Finally, 73% of the respondents have used Web 2.0 tools previously in a work related context.

Table 1: Research hypotheses.

No	Description
1	Performance expectancy will have a significant influence on behavioral intention
2	Effort expectancy will have a significant influence on behavioral intention
3	Social influence will have a significant influence on behavioral intention
4	Facilitating conditions will not have a significant influence on behavioral intention
5a	Self-efficacy will not have a significant influence on behavioral intention
5b	Anxiety will not have a significant influence on behavioral intention
5c	Attitude toward using technology will not have a significant influence on behavioral intention

The UTAUT model, as defined by Venkatesh et al. (2003), was adapted, thus enabling the evaluation of the potential KM platform in the organization. The data collection was realized through a Web questionnaire based on the elements defined by Venkatesh et al. (2003), using a 7 point Likert scale that inquires on the level of agreement for a number of different affirmation. The hypotheses, presented in Table 1, were adapted from Venkatesh et al.'s (2003) UTAUT model. The focus of this study being the intention to use the technology, only the hypothesis related to the behavioral intention of

using were kept and adapted. The constructs of the model are reliable as the majority of the Cronbach alphas are superior to 0.640.

## 3 RESULTS AND ANALYSIS

This study aimed at identifying the factors that predict the intention of employees of a large real estate firm to use an Enterprise 2.0 platform using the UTAUT model (Venkatesh et al., 2003). Figure 1 presents the results.

The first hypothesis (presented in table 1) concerns the performance expectancy. Our results show that hypothesis 1 is supported: *performance expectancy* ( $\beta=0,560^{****}$ ) has a significant influence on *behavioral intention*. Performance expectancy explains 30.7% (coefficient of determination or adjusted  $R^2$ ) of the variance of the behavioral intention to use the technology.

The results for the second hypothesis indicate that *effort expectancy* ( $\beta=0,663^{****}$ ) has a significant influence on behavioral intention with an adjusted  $R^2$  of 43.4%.

The third hypothesis is also confirmed. *Social influence* ( $\beta=0,437^{****}$ ) has a significant influence on *behavioral intention* as it explains 18.4% of the variance of the behavioral intention to use.

According to the recent literature on UTAUT, Facilitating conditions should not influence the user's behavioral intention. However, in our study, this hypothesis is not supported as the *facilitating conditions* ( $\beta=0,688^{****}$ ) have a significant influence on behavioral intention it explains 46.8% (adjusted  $R^2$ ) of the variance of behavioral intention.

Finally, the fifth and final hypothesis is also not supported as *self-efficacy* ( $\beta=0,215^{**}$ ), *anxiety* ( $\beta=-0,286^{****}$ ) and *attitude toward using technology* ( $\beta=0,406^{****}$ ) have a significant influence on the behavioral intention to use. The results shown in Table 2 also demonstrate that these three variables explain 51.6% of the variance of the behavioral intention to use the Enterprise 2.0 platform.

Table 2: Results of hypothesis no.5.

Dependent variable : Behavioral intention				
	Beta	t	p	Ajusted R <sup>2</sup>
(Constant)		5,098	****	
Self-efficacy	0,215	2,728	**	
Anxiety	-0,286	-3,914	****	
Attitude	0,406	5,336	****	0,516

\*Note:  $p<0,0001$  \*\*\*\*,  $p<0,001$  \*\*\*,  $p<0,01$  \*\*,  $p<0,1$  \*

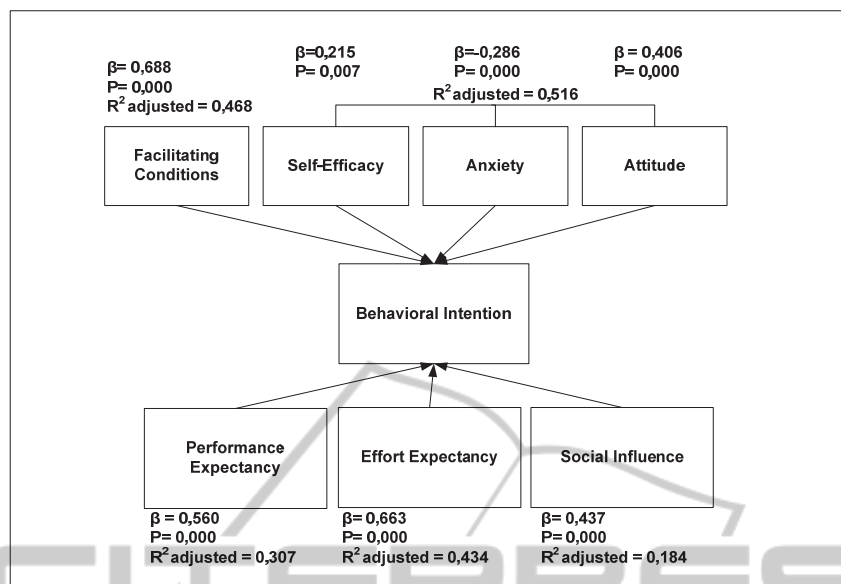


Figure 1: Results.

As discussed earlier, our results indicate that the behavioral intention to use an Enterprise 2.0 platform is explained by 3 factors: performance expectancy, effort expectancy and social influence. This result is conform to Venkatesh et al.'s (2003) UTAUT model and confirmed by others studies such as Dulle and Minishi-Majanja (2011).

*Effort expectancy*, with a coefficient of determination ( $R^2$ ) of 43.4%, indicates that the employees are aware of the efforts required to use a 2.0 platform. The organisation should implement a convivial and user-friendly solution that will necessitate some training. As for the result for performance expectancy, it is consistent with the results obtained by Venkatesh et al. (2003) and Dulle and Minishi-Majanja (2011). In order to have as many employees use the platform, the organisation will have to clearly reveal the benefits of using such a platform to it employees, and demonstrate how it will improve the performance. Venkatesh et al.'s (2003), Marchewka, Liu and Kostiwa's, (2007) and Dulle and Minishi-Majanja's (2011) results are also in line with our results regarding the role of social influence, but is contrary to Anderson, Swagger and Kerns (2006).

In the literature on the UTAUT model, the facilitating conditions do not influence the behavioral intention to use, but directly the usage (Schaper and Pervan 2007; Garfield, 2005). In our analysis, this hypothesis is not supported as facilitating conditions explain 46.8 % of the variance towards behavioral intention to use. Hence, in order to have employees use the 2.0 platform, the

organisation must ensure that the Web 2.0 tools are compatible with the employee tasks and that they are well supported.

The results of hypotheses 5a, 5b and 5c indicate that self-efficacy, anxiety and attitude toward using technology are responsible for 51.6% of the variance towards behavioral intention. This outcome is contrary to Venkatesh et al.'s (2003) results, as according to these variables should not have a direct impact on the behavioral intention to use a technology, as their effect is captured by effort expectancy. In our study, these three factors have a significative influence on the intention to use. Hence, in the context of our study, the following affirmations are made:

- The more the employees are efficient in using a 2.0 platform, the more they will use it.
- The less the employees are anxious to use a 2.0 platform, the more they will use it.
- The better the attitude of the employees is in regards to a 2.0 platform, the more they will use it.

Our findings do not follow Venkatesh' results, however, other authors have demonstrated the influence of self-efficacy, anxiety and attitude toward using technology on behavioral intention to use a technology (Schaper and Pervan, 2007; Dulle and Minishi-Majanja, 2011). For example, Dulle and Minishi-Majanja (2011), in their study on Open access, position attitude toward using technology as a key factor to determine the behavioral intention of a group of university researchers.

An explanation to why our analysis demonstrates

that self-efficacy, anxiety and attitude toward using technology influence behavioral intention may rest in the unstable organizational context that prevailed when the study was carried out. A merger between two organisations was underway at the time of the study. The solicited respondents were all employees from the same organizational. A merger between two different organisations evidently has an impact on the resource (job lost, task description analysis modifications, etc.). Hence, it is not much of a surprise that new tools such as a 2.0 platform may raise some uncertainties. As this platform is not obligatory for future users, if they feel anxious, or have a negative attitude, or do not perceive the efficiency of the tools, the level of use will be quite low. However, considering the important level of employees with a university degree and that have used 2.0 tools in the past, our results are surprising

#### 4 CONCLUSIONS

Knowledge management systems (KMS) are a key element for organisations (Davenport and Prusak, 1997). The success of KMS rests on the contribution and participation of users, which are on a voluntary basis. However, the literature comprises several cases where KMS are not used to their full potential. The emergence of Web 2.0 and Enterprise 2.0 tools seems to give a second wind to KMS, but the concern on the user adoption still remains.

This study validates to a certain extent the UTAUT model where 2.0 tools are adapted to a KM context. The statistical analysis demonstrates that self-efficacy, anxiety and attitude toward using technology have the most significant influence on behavioral intention. However, facilitating, effort expectancy, performance expectancy and social influence also have an interesting influence on behavioral intention.

The results were presented to the top management responsible for the knowledge management projects in the organization. The following measures are now being implemented:

1. The creation of a personalized training program to improve the efficacy of the new platform.
2. The development of a super-user network to support the users' requirements.
3. The elaboration of an awareness campaign to inform the employees on the potential benefits of using a KMS based on Web 2.0 tools.

In sum, the results of this study enabled the project management team to elaborate and prioritize change

management initiatives in order to improve chances of success in the implementation of Enterprise 2.0 tools.

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