

An Unified Behaviour Model to Predict Web 2.0 Adoption as a Tool for Software-Knowledge Sharing

Manuel Fernández-Utrilla, Pilar Fernández-Utrilla and Gonzalo Mariscal

Centre of Excellence of Research, Universidad Europea, Spain

Abstract. The most powerful tool for software developers to connect with each others is social networking. These applications are normally free of charge. The professional use of these applications exceeds beyond the fun. An unified behaviour model to predict web 2.0 adoption as a tool for Software-Knowledge sharing based on two solid and tested theories, theory of planned behaviour and self-determination theory, will be reached by this study. A single model, which will join these theories, will accurately predict a use of these communication tools to set connections among professional groups: software developers in particular. These models determine the factors that mainly affect the intention to use described in order to improve these tools with a high probability of success. These professionals could share knowledge, keys and bugs in order to find the best solution. A representative number of software developers have participated in this study in order to research what the reason is because these professionals do not use these tools with that aim.

Keywords. Knowledge sharing, Social Applications, Theory of planned behaviour, Self-determination theory, Prediction Model.

1 Introduction

The resolution of bugs or the clarification of specifications, should have found a great ally in social applications when no solutions is reached. Web 2.0 technologies (wikis, blogs, social applications, etc.) are playing an ever more important role in the transfer of information and the reality which is the fact that sharing experiences helps to improve results. According to the report of the “*Observatorio Nacional de las Telecomunicaciones y los Sistemas de Información [ONTSI]*”, “*Servicios Utilizados por los Usuarios de Internet*”[1], 52.4% of the users of the network of networks use social networking technology as Forums, Facebook or Linked-In, a fact which warns that a large number of professionals will make use of them. There are also reference studies which show that social applications provide new ways for people to collaborate, interact, communicate, co-create, and share ideas and knowledge [2]. Authors like Conole and McAndrew [3], confirmed through his published research based computer tools 2.0 technologies that provide the perfect environment for learning from communication and the act of sharing real cases every day. Another important reference of how the exchange of information and experience can help to find solutions is to Orehovacki, Bubas, and Konecki [4].

On the other hand and regardless of the fact that the current generation of software developers available to a high level in the use of social applications, the professional use is the common denominator of all labor collectives. There are some, such as university professors, who despite having knowledge are unwilling to use technology in their classes 2.0 [5]. Through the study, it will be showed what the intention to use is [6] of certain applications called social networks by software developers in their daily professional activities.

The software developers' community has its own professional development culture [39] with its own problems of cooperation. This study will describe what factors are necessary to work on in order to reduce the impact of those problems through a behaviour model. The relationship among main stakeholders is essential for a successful software development. Cooperation through any mean of communication is the key to improve the results. It is common that these professionals publish algorithms and piece of code to share knowledge with other developers, but several problems such guarantees or supports go with them as well. Hence software developers' cooperation follows one sense in most of cases, a developer shares his consolidate knowledge.

Thorough this research work, factors which help to develop the cooperation on the other sense, will be develop. The main goal will be to achieve those software developers can use social applications to share knowledge and ask for solutions in order to improve the efficacy of developments. Results will explain how to fight against these barriers which appear around sharing knowledge through social applications.

These Internet applications already have a strong position after many years of operation. Their study began following the theory of six degrees of separation, whereby it is possible to contact anyone on the planet through six contacts related among them. The Hungarian writer Frigyes Karinthy proposed this theory in 1929. The concept is based on the exponential growth of the number of known that each individual has. Several studies and experiments have been done since this moment to prove the so-called "six degrees of separation". The best known: Ithiel de Sola Pool (MIT) and Manfred Kochen (IBM) in 50s and Stanley Milgram in the next decade. After all, social contacts were uniquely defined as the largest network of existing information.

The first social networking application set in the mid-90s with the site www.classmates.com. Randy Conrads created it in 1995. He contacted former classmates through this site. Subsequently and after the ".COM" crisis began to appear other websites that they contacted people and creating communities such as MySpace, created by Microsoft in 2003, or created by Lars Hinrichs Xing in 2003. These applications are more closely known today as social networks, whether for leisure or professional use. Currently these tools connect millions of people. A clear example of these is Facebook, which has over 900 million users worldwide according to its last report in 2012.

The technology of communication offers a multitude of possibilities through these social networks. Its main focus is on transfer data from one subject to a community associated with it [7]. For this is made available to the user several tools are available for the users in order to develop utilities such as sending private or public messages, pictures, data, etc. Through all these utilities you can share, discuss, claim and even create streams of thought. There are different groups in this area that

could use information to improve their performances in relation to the resolution of critical issues.

However the most powerful tool at present for the transfer of information between people is not used in the professional field rather than a small percentage of subjects according to the Observatory of Social Networks in Spain in 2012. It is difficult to make a scientific explanation. This investigation will determine a scientific model to predict the use of social networks as a communication tool between software developers in order to share information and experiences, improving their results.

2 State of the Art

Social psychology is presented as an option that offers the possibility to intervene in the conduct of the professional group on which the research is developing: software developers.

2.1 Theory of Planned Behaviour [TPB]

Theory of Planned Behaviour (TPB) is one of the most proven and accepted theories in the scientific world. This theory was initially proposed by Professor Icek Ajzen in 1991 and has been subsequently modified and updated in 2006.

The main reason for the use of this theory is the rigorous analysis of all the factors that make up the execution of the behaviour performed. Each analyzed behaviour can be evaluated from different angles and therefore be caused by different sources, but there is a common factor to all of them which is the frequency with which they occur. The main target of this kind of theory is to discover what the possibilities of increasing the frequency are by changing its historical causes.

Following the mentioned theory, it should be noted that human behaviour occurs according to:

- **Attitude:** software developers can positively or negatively evaluate the use of social media in their job. The degree in which they are involved, will determine whether they do have attitude to do or not. They may consider such use helps them improve their service through shared knowledge or bugs thrown the collective.

- **Subjective Norm:** is determined by the perceived social pressure on an individual to perform certain behaviour. In this study, the focus is on the use of social networking as an effective tool for software developers. The different players around the subject can influence described pressure: superior, colleagues, family and the media even.

- **Perceived Control:** this parameter is directly related to the perception that software developers have about the possibility of using these social applications in their daily work, which is running the conduct mentioned. Being specific, these professionals have Internet access and a multitude of such tools through it. In addition to their availability, they have the required knowledge to exploit them, permits and authorizations and the most important: the desire to do it.

These three factors will influence the decision-making intention of professionals

when using social media to improve their daily activity. Therefore, the intention to use is influenced by attitude, the subjective norm and the perceived control described above it. The importance of each factor will be different for each worker, as they present their personal characteristics and potentially different environment.

The intention to perform an activity, action or behaviour, is the precedent immediately prior to its execution. It can be said since what it has exposed previously that the particular behaviour can be explained as measurable response that results from a particular situation in order to achieve a target.

It will need to take a sample large enough to accumulate sufficient number of observations that allow us to evaluate the behaviour at different times and contexts. This will generate a greater measurement and more accurate conclusions. In this investigation, the software developer motivation to use collaborative tools exposed, will only drive to use them when perceived control is strong enough. That is, perceived control over the activity in question moderates the effect of intention to use.

Theory of Planned Behaviour states that behaviour is a variable whose magnitude will be determined by the combination of intentions and intuition that subjects have about their control. Professionals who are under this study used social applications, if and only if, their motivation is right and if they understand how to use.

2.2 Self-Determination Theory [SDT]

Self-Determination Theory is a theory of human motivation that has been widely used in the health domain. It has been proven in various fields such as sports or endocrinology [17].

This theory defines two types of behavioural regulation. Firstly, intrinsic motivation refers to engaging in behaviour of interest, enjoyment or satisfaction inherent in this behaviour. Secondly and equally important, extrinsic motivation describes the participation in behaviour for reasons unrelated to their own behaviour such as social approval.

Making a further development, intrinsic motivation represents the prototype of autonomous or self-determined motivation according to studies presented by Ryan & Deci [10]. This motivation is associated with the quality and the persistence of behaviour. On the opposite side, extrinsic forms of regulation are associated with a lack of sustained performance over time (and Decision Ryan, 10). In addition, Self-Determination Theory (SDT) also identifies four types of extrinsic motivation, placed at various intermediate points along a continuum from intrinsic to extrinsic motivation. The constant is known as the perceived locus of causality (PLOC).

Self-Determination Theory (SDT) has a significant practical value, in fact, this theory has been shown to increase behavioural persistence in different studies [12]. However, the SDT predicts that individuals, showing an extrinsic motivation or controlled, are less willing to show a behavioural persistence.

Recent publications have suggested that autonomous and controlled motivations or reasons for engaging in behaviour should be different of a person pursue goals [14]. Other models such as the self-concordance [15] predict that individuals can pursue goals that are self-consistent or independent, or self and non-self-discordant. Sheldon and Elliot showed that individuals experience greater progress toward self or

consistent as far as behavioural goals are concerned, as it exerts more effort in your search. Thus increasing the intention to use specific behaviour should be accompanied by a fomentation of behavioural persistence.

3 Research Framework

3.1 Integration of Both Theories

In this study, we used behavioural regulation to support her persistence and predicting the intention of use described in the Theory of Planned Behaviour. The combination of both theories provides a more accurate prediction of the intention of performing the behaviour. This improvement will show in the results section where separating numbers of each theory support this statement.

Theory of Planned Behaviour (TPB) identifies the factors that address the behaviour but does not explain why individuals create the attitudes, subjective norms or intentions of use. By contrast, the Self-Determination Theory (SDT) helps explain these general grounds and contextualizes the social cognitive constructs of the TPB [16]. A more accurate model for the prediction of intention of execution of behaviour with the integration of both theories is obtained. There is recent meta-analysis on studies that integrate both theories providing complementary value between them [18].

The research framework is defined uniquely by its components: software developers and tools with an insufficiently exploited commercial potential: social applications. The aim of the process is the prediction of intention to use social applications as a software-knowledge sharing tool in a professional setting. This will be used by software developers to share knowledge and bugs in order to improve their professional productivity performed daily.

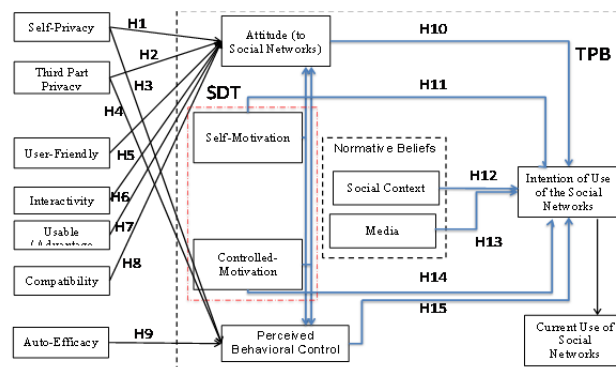


Fig. 1. Contribution – Developed Behaviour Model to Predict.

The developed research framework in this study, our contribution, can be seen on Figure 1. Through this model, the objective described above can be evaluated. This intention to use is the result of elements such as attitude, perceived behavioural control and subjective norm as shown in Ajzen model comprising the Theory of

Planned Behaviour focused on the perception feeling. But this research has expanded the research framework of the study in order to increase the accuracy of prediction including another feeling: motivation. In particular two types of motivation, autonomous and controlled derived from the Self-Determination Theory whose development began with the studies of Deci in 1970. Note that all constructs selected for study were chosen, validated and published in high impact research.

This framework works on the following assumptions:

- **H1-H2:** The self-managed privacy of the professional concerned is a factor that negatively affects the intention to use since seeing their exposure on a social network as a potential violation of privacy of the software developments. They can also see that this potential invasion of privacy of the software developments affects their effective use of social applications for the purpose.
- **H3-H4:** The development privacy, to which these professionals help, is also a factor that negatively affects the intention to use since seeing this exhibition in a social application as a potential violation of the privacy of the software developments. They may also perceive that this potential intrusion into the privacy of their organizations will affect current use of social applications for the purpose.
- **H5:** Ease of use of applications that allow managing social applications, positively influence the software developers' attitude towards the use of social networks.
- **H6:** Interactivity that may exist among colleagues through these systems, results in a considerable improvement in the attitude they have software developers towards the use of social applications.
- **H7:** The usefulness of these telematics programs have to improve the outcomes of their developments. It will be positively assessed by software developers towards the use of social applications.
- **H8:** The compatibility with the infrastructure that developers must use to work. It will be positively assessed by professional software developers towards the use of social applications.
- **H9:** Perceived self-efficacy, related to the choice to improve their daily work, will be highly valued in perceived behavioural control they undergo this professional sector. That is why a positive degree of autonomy is presented as essential to have the expected results.
- **H10-H15:** It will be based on the assumption that elements such as attitude, both autonomous and controlled motivation, normative beliefs and perceived behavioural control will have a positive effect on the intention to use social applications from this professional group.

3.2 Research Methodology

Data collection method used was to send questionnaires and receive the corresponding data from their responses. The research consisted of four main phases: research framework development, construction and validation of the questionnaire, data collection and finally, data analysis.

3.2.1 Construction and Validation of Questionnaire

The first part of the questionnaire will obtain demographic information about gender,

age, social application usage, specific application used, etc... The rest of the questions that take part in the developed tool have been selected from studies with validated and adapted questionnaires to the context of the current study. In addition, the questionnaire was piloted to confirm its validity and reliability. All survey questions were scored on a scale "Likert" of 5 points ranging from the "1" that expresses complete disagreement, to the "5" represents the entire agreement. In the questionnaire are uniquely intermediate points in order to avoid mistakes.

Moreover, despite having built the questionnaire with questions from validated questionnaires [19], there has been a pilot from 102 users to contrast reaching valid correlation values necessary to be eligible for the study.

Related to selected questions, these are chosen from a study written in a different language than the language in which this research has been developed. It has made use of the normalized inverse translation process as it is one of the most suitable for problems associated with poor translations or adaptations, and thus, to evaluate the quality of translation [20, 21].

3.2.2 Data Collection

We have developed a questionnaire on a online tool in order to make easy the full filling of questionnaires by software developers. This can be distributed easily, quickly and economically among the largest number of software developers who have been contacted by the software factories to which we made contact with. The number of responses was 328 of which have had to remove 26 by various errors. The table 1 shows the profile of the people who responded to the survey sent:

Table 1. Demographics.

Age	
18 < years <= 25	18,20%
26 < years <= 35	38,74%
36 < years <= 45	27,45%
Years > 45	15,61%
Gender	
Female	15,31%
Male	84,69%
Education	
Degree	75,57%
Master	19,15%
Doctorate	5,28%
Social Network Use	
Forum	92,56%
Facebook	21,20%
Linked-In	9,21%

3.2.3 Data Analysis

We used structured equation modeling (SEM) to examine the relationships among constructs selected. Several methods could be used but its flexibility and generality are its strong points. SEM has rapid developments and expansion. It has been chosen the least squares regression method for their ability to work with small sample sizes. This is the reason because most of behaviour model studies in which it is difficult to get large samples, use SEM in order to show more accurate results. SEM takes a confirmatory (hypothesis testing) approach to the multivariate analysis of a structural theory, one that stipulates causal relations among multiple variables [41].

SmartPLS 2.0.M3 [22] was used for measurements on research hypotheses described above. Chin [23] shows in their studies to obtain meaningful interpretations, the relational coefficient values must be above 0.2. This method provides two components of a causal model: measurement and structured model. Furthermore, it is particularly suitable for research with significant variances.

3.2.4 Reliability and Validity

Firstly, separated results of each theory related to the parameter R² will show the improvement that the research has undergone [38]. The same goal, the intention to use of a particular behaviour, through two different psychological factors: perception (TPB) and motivation (SDT). The last three columns show the results through the research model.

The following table shows how the research model improves the results exposed in this paper. This fact can be inferred since the coefficient of determination (R²) of the different models. This statistical element is used in trend analysis. It is computed as a value between 0 (0 percent) and 1 (100 percent). The higher the value, the better the fit. TPB and SDT theories offer a R² factor below the same element in the research model. Following the mean of this statistic parameter, the research model is more solid than the other theories applied by separated.

In addition, load factors, the average composite reliability and the obtained mean have been showed in order to expose the full research statistics. Load factors must be at least 0.6 and preferably greater than 0.7 [23]. Almost all factor loadings exceeding these thresholds. The “t” statistic, obtained by bootstrapping (200 resamples) showed that all factor loadings are significant at the 0.001 level. Observed reliability of constructs (compound reliability) for each construct (see Table 2) is greater than 0.8 (Fornell and Lacker 1981). All loadings were significant constructs above the recommended value of “p” of 0.05 (Gefen and Straub 2005) and have generally exceeded the recommended threshold value of 0.707 (Barclay et al. 1995). The average variance extracted (AVE or Average Variance Extracted) was above the minimum of 50 percent of the variance for each construct and the square root of the AVE for each construct was much higher than the correlation of the construct with each other construct (Barclay et al 1995. Gefen and Straub 2005).

The means of the loaded items in each respective construct gives a value of at least 0.1 greater than the load in other constructs (Barclay et al, 1995; Gefen and Straub 2005) and all the items loaded is greater than the expected construct any other construct. Therefore, it can be concluded that measured constructs were consistent and showed a substantial degree of convergence and discriminating validity.

Table 2. Improvement through the research model.

Theory	Construct	R²
Theory of Planned Behaviour (TPB)	Attitude	0,291
	Perceived Control Behaviour	0,254
	Normative Beliefs	0,243
	Intention to Use	0,296
	S. Network Use	0,312
Theory	Construct	R²
Self-Determination Theory (SDT)	Self-Motivation	0,218
	Controlled Motivation	0,263
	Intention to Use	0,278
	S. Network Use	0,292
Theory	Construct	R²
Research Model	Attitude	0,469
	Perceived Control Behaviour	0,401
	Normative Beliefs	0,381
	Self-Motivation	0,343
	Controlled Motivation	0,397
	Intention to Use	0,398
	S. Network Use	0,453

Table 3. Reliability and Validity of the Research Framework.

Factor	Item	Load	Statistical t	AVE	Cronbach	Composite reliability	R ²
Self Privacy	PRIVP1	0.764	14.287	0.732	0.783	0.814	-
	PRIVP2	0.783	22.342				
	PRIVP3	0.812	13.223				
	PRIVPC1	0.804	19.332				
Third Part Protection	PRIVU1	0.877	14.112	0.711	0.732	0.811	-
	PRIVU2	0.721	27.332				
	PRIVU3	0.833	11.575				
	PRIVUC1	0.725	21.221				
Usability	USA1	0.809	13.115	0.719	0.717	0.842	-
	USA2	0.912	33.556				
Interactivity	INTERACT1	0.908	11.998	1.000	1.000	1.000	-
Utility	UT1	0.808	12.118	0.764	0.789	0.855	-
	UT2	0.811	23.429				
	UT3	0.789	11.398				
	UT4	0.743	22.344				
Compatibility	COMP1	0.834	55.332	0.722	0.798	0.811	-
	COMP2	0.853	39.223				
	COMP3	0.812	51.332				
	COMP4	0.765	50.332				
	COMP5	0.811	39.338				
Self-efficacy	AUT1	0.811	2.221	0.789	0.721	0.899	-
	AUT2	0.901	3.119				
Attitude	ACT1	0.723	15.992	0.743	0.789	0.712	0.469
	ACT2	0.790	24.323				
	ACT3	0.784	33.221				
	ACT4	0.811	29.332				
	ACT5	0.734	25.122				
Social context	CNCS1	0.832	5.223	0.721	0.799	0.798	0.381
	CNCS2	0.822	7.011				
	CNCS3	0.789	7.232				
Media	CNMED1	0.897	18.213	0.845	0.823	0.854	0.332
	CNMED2	0.899	26.887				
Perceived control conditions	CCP1	0.709	9.012	0.801	0.775	0.732	0.413
	CCP2	0.787	10.998				
Self Motivation	MOTA1	0.810	78.998	0.801	0.865	0.891	0.343
	MOTA2	0.843	79.011				
Controlled motivation	MOTC1	0.710	81.011	0.71	0.707	0.832	0.397
	MOTC2	0.878	80.110				
Intended use	IU1	1	6.982	0.781	0.711	0.810	0.398
Use of social applications	USARED1	1	7.891	0.801	0.809	0.819	0.453

Table 4. Social Applications Knowledge Level.

Knowledge Level	Social Application	Forums	Facebook	Linked-In
	Never Used		3,97%	11,26%
Beginner		8,28%	22,52%	40,73%
Competent		67,22%	54,97%	32,12%
Expert		20,53%	11,26%	8,61%

4 Conclusions

Regarding the knowledge level about social applications, this research has been able to get a picture of what different highlighted aspects are. In addition, it is important to know which social application is necessary to work in the study. The obtained results are summarized in the table below (n = 302):

A forum is the social application that achieves a higher knowledge level under study:

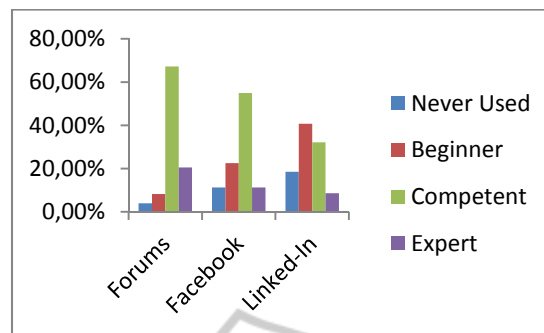


Fig. 2. Individual results about social applications knowledge level.

Main conclusions are divided between variables which have a positive impact in the intention of use and the variables which have a negative impact. Firstly, since test results show that all variables of Theory of Planned Behaviour and Self-Determination Theory: attitude, subjective norm and perceived control, provide an important and significant component of the intention to conduct and perform in herself from certain behaviour. On the one hand the feeling of "perception" is remarkable, being motivation as a clearly secondary sense. Safety is presented as the main element in the aspects that have a negative contribution; in this case the zeal in the personal data is very important balancing equal parts: fear of job loss against potential negligence, and fear the potential violation of private data, themselves or others, arranged in the network.

By contrast, elements such as usability, usefulness or self-efficiency, enhance the use of social applications in order to be a tool for sharing knowledge improving software developments. As important conclusions and issues to work are taken from the following key points of the research on the software developers (in order of appearance on the issues referenced in the survey):

- Forum is the most used social application.
- Social developers have a weak knowledge of safety policies and have been rarely configured. Only 50% people under study report having ever done. This is the first aspect to improve. To mitigate this aspect, it is proposed to set up training programs in order to show possibilities which security levels in these kinds of applications can offer. Myths and misunderstandings will be eliminated in many cases and will definitely help them.
- The self-privacy of software developers is an issue that stops the use of social applications for any professional aspect. A large majority of workers refuses to use them because they do not control what is done with the information that there is in this kind of applications. This, after analyzing the full study, has a negative effect on the attitude towards the use and perceived behavioural control, which also directly impact on the intention to perform the behaviour. The main highlighted factor in the interviews has been the lack of knowledge about these technical issues: configuration and knowledge of data treatment. Two initiatives are proposed to mitigate this issue. The first one is to share between users and service provider. The second one is to start the training way in order to fill knowledge gaps.

- In the service provider case, two main tasks are proposed: firstly clarify the security interfaces with illustrative examples of what can be done and what not from activation or cancellation of each of the security sections. Secondly, it is proposed the creation of default configuration profiles for professional activities that help their activation and use. This would provide a value that can be quantified in confidence created in the link that connects the user to the provider via the application.
- The protection of security linked to the security of user data on which an intervention is developed is critical. Two important aspects are concentrated around this point. On the one hand the potential violation of user data, not software developer personal data, without knowing the use that service provider will be given. Furthermore, the possible negligence that could commit to make public although the purpose of such disclosure is proactive in looking for a solution that help user interests.
- To mitigate both points raises the following proposals. Firstly, users would be informed how to work in order to be aware of and rate the effort required and especially the rise of human resources in the service of the resolution of their case. Secondly, it would create a text to be signed by users seeking help through which the practitioner is exempt from any liability acquired and got eliminating susceptibility by professionals towards this issue.
- The construct related to the "Usability" positive impacts on the attitude to use a social application as a tool. Such systems, in particular forums, have permeated public common knowledge so much that its use has become common knowledge. Therefore a large majority of the population in general, and certainly a majority representative of the group involved in the study, expressed his comfort towards the use of these tools through Internet. The front ends, performed considering some usability rules, have become commonplace. Designs, that are developed based on intuition from the literature, are merely imitations of interfaces that, due to commercial fashions, have spread among the population. Therefore if we stick to technical definitions of usability, are unlikely to be met strictly. Perhaps the correct term to use would be "familiarity".
- As previously mentioned, this factor positively influences the attitude, positively influences the intention to perform the behaviour and implementation of the same by direct action.
- The "Interactivity" factor has no influence on the main elements of the used theories from the results. Its impact on the attitude toward performing the behaviour is minimal. The vast majority of the subjects involved in the study did not consider the interactivity that networks provide is to be decisive in their use.
- To mitigate this effect and ensure that this factor is an incentive to increase the intention to use, we propose show real examples to software developers the benefit of interactivity among professionals. To show habitual patterns and typical cases in which they see themselves in their daily activity helping to verify that this is a valid solution to improve performance. Such interactivity as technological element is something that is passed. The solutions allow a high

degree of interaction among humans in order to share any type of knowledge, while avoiding the need to be in the same location.

- All these advantages should be shown to the professionals in order to put in relevance the access to delocalized knowledge, in this case, focusing on the experience of other professionals who would be available to other people.
- According to the initial hypothesis, the construct that should have a more important and positive impact on the other elements of the research model, is "Utility" without any doubt. Since results show, the utility is a concept that has been embraced by software developers. More than 66% are aware and agree with social applications as support for improving the results of its operations. Therefore the attitude to use is positive and a first component of our initial hypothesis is confirmed. Professionals see a lot of advantages.
- In this research, the problem presented is how to implement this assistance proposed to them. That is, although they see many advantages and benefits in the use of these applications, when they are proposed to include them in their daily routine tasks, answers are negative or neutral. Therefore, in the full model analysis and taking into account all contributions, we must make a distinction that justifies the neutral contribution to this construct. The sum of these two components, theoretical and practical utility, is neutral, offsetting the resulting weights of responses on both points of view.
- Since the results of the survey, the construct "Compatibility" has not contribution in the attitude to perform the behaviour. The group of software developers do not consider neither positive nor negative. Most of them perceive it from the indifference. This factor has been measured mainly about their daily tasks. Professionals have not considered as a relevant one and that is the reason because the indicators have pointed out that it is not a factor that significantly influences the attitude. Therefore it has not impact in the intention to use.
- As action to mitigate this perception, again training programmes are proposed. The use of nowadays cases and simple examples help them to understand. The cases should show sectors or occupations where the use of such applications could provide significant added value, and due to compatibility reasons with their profession, their implementation is not possible.
- "Auto-Efficiency" shows that software developers perceive that they have the knowledge necessary to use and enjoy the benefits that these tools proposed in their professional duties. His contribution to perceived behavioural control element is positive and this can be seen in the increase of the intention to use.

Finally we present the motivation analysis in the full research model to predict the intention to use. For this professional group, motivations have not a positive impact to the intention to perform behaviour. This fact contradicts the research hypothesis in which software developers are supposed to find the possibility of improving their work as an incentive to use such online tools.

- Firstly self-motivation does not exist. Hence, the lack of impact on the intention to perform the behaviour. To mitigate this element of the model, it should work on motivating staff through professional development in order to improve their professional competences. The skill development is a common strategy used by human resources departments in large companies. Among several competences,

the use of new technologies to improve professional performance should be the goal to mitigate the absence of autonomous motivation in this group.

- Secondly controlled motivation is presented. As previously mentioned, this motivation is based on making demands from the top of the organization. In this aspect, user survey shows that this professional group is against any kind of this motivation. Therefore this factor will have a negative impact. The frequency of performing the behaviour will not rise.

In terms of mitigation of this aspect, an imposition of a superior must be seen as a risk or a threat of being fired. From this start point, the intention to use will be clearly identified positively.

5 Considerations and Future Research

The main considerations to take into account in this research are: firstly, software developers group is an important professional group that has a manifest disregard of the safety aspects of these applications can provide them. Being a technical field far away from his common one, being a new technology related to internet and where they have committed many crimes on the violation of privacies, all this makes the intention of use of social applications by software developers in order to improve their productivity is weak.

Therefore, it is too complicated to share high-level software knowledge among them. In these cases, it is obvious that the first step would be to provide them the right knowledge from a professional trainer to enable them to become confident enough to develop their work with guarantees and also improve their performance through shared knowledge.

Next steps in this research will be to work with other professional groups who share the characteristic of work directly related to groups of people. The teacher staff of one university is the next start point to research and contrast this predict model. In this case we will work on prediction models about behaviours related to the use of social networks to share information and experiences in order to improve the relationship with the student, their evaluations, tests, etc.

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