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A New View On Social Networks And Perceived Usefulness In Online Learning Platform Acceptance.

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A NEW VIEW ON SOCIAL NETWORKS AND PERCEIVED USEFULNESS IN ONLINE LEARNING PLATFORM ACCEPTANCE

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Abstract:

The research project that is reported in this paper investigates antecedents of the students' intent to watch educational movies on an online learning platform. The project extends the UTAUT in three dimensions. First, besides the classic system usefulness as a determinant of system acceptance, 'perceived content usefulness' is introduced as an antecedent of the intent to watch online movies. Secondly, perceived e-learning enjoyment is included in the model. Thirdly, social network aspects are included by surveying the actual social network between students, leading to the concepts of latent social influence and perceived social influence. This research-in-progress paper includes results of tests of the model using data of a Management of Information Systems class at a French Business School. The results show the significance of new constructs.

I. INTRODUCTION

This research-in-progress paper investigates student's intent to use a feature of an Online Learning Platform (OLP). In the last fifteen years, Educational Institutions (EIs) have invested significant resources in the trial and use of technologies for supporting education [Daim et al., 2011; Chiu and Wang, 2008] and in particular OLPs. OLPs have some drawbacks, for instance lack of human contact, lack of control, and the time that faculty has to invest in creating and maintaining online content. As for many other technological innovations the promises of technology are heavily influenced by practice. In this unclear situation faculty members are hesitant to make a large use of online learning platforms [Power & Morven-Gold, 2011]. On the student side, OLPs require students to be proactive, to be self-disciplined, and to be responsible since the learning process happens outside the control of the classroom. It becomes then imperative to answer questions of how students live the experience, what use they make of the system and what are the elements that drive their attitudes and behaviors when using online learning tools. One promising avenue of research to answer these questions has been various extensions and modifications of the Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT) to the online learning domain. While this avenue has been very prolific (e.g. [Means et al. 2009]), it also presents some shortcomings. The objective of this paper is to deal with three shortcomings. First, the perceived usefulness construct is usually measured in terms of the usefulness of the system, neglecting the usefulness

of the class. Still, in line with classic literature on student's satisfaction with (traditional offline) classes, we may expect the use of the online system to depend upon the student's perceived usefulness of the class for his/her future career. Secondly, and also in line with classic literature on student's satisfaction with traditional classes, the enjoyment of working with the system may be expected to play a role. A third shortcoming of extant research concerns the fact that the UTAUT contains a construct that refers to the influence of a social network and many papers try to look for social influences (e.g. [Pontiggia and Virili, 2010]), but so far this has happened without investigating the social network that really exists between students. That is, students are asked direct questions such as 'people who are important to me think that I should use the system' [Venkatesh et al., 2003], but studies did not yet investigate whether students that are linked in a social network actually behave alike. Given the importance of content over functions in learning and the importance of social life and fun for students, in this research-in-progress paper, we begin to analyze the influence of these factors on OLP usage. We do this by including three new constructs in the UTAUT model: perceived content usefulness (rather than perceived system usefulness), e-learning enjoyment and actual social influence (rather than 'perceived social influence').

The research study is based on a case where a French Business School introduced a new OLP in the academic year 2010-2011. The business school is organized traditionally with a five year program including 3 years of bachelor and 2 years of master. The OLP was implemented as part of a larger strategy of the EI to help students get deeper insight into theories. This paper focuses on the use of the OLP in the Management of Information Systems class in 3rd Bachelor. To free up contact hours, the theory is now presented in online movies on the OLP while instructors focus on discussions and exercises in class. The research focuses on the use of the movie feature of the OLP.

In the next section we only present a short literature review (because of the word count limitation) and we introduce the research model and the hypotheses. Subsequently the research setting and the research design are explained. The penultimate section discusses the results and we finish the paper with conclusions. We note this paper concerns research-in-progress.

II. LITERATURE REVIEW AND HYPOTHESES DEVELOPMENT

Distance learning comes in different forms. Sometimes it is the only form of teaching [Chiu and Wang, 2008; Lee et al., 2003] and sometimes it is used as support to traditional teaching included in varying degrees of blended teaching [Means et al., 2003]. Purely offline and purely online teaching are therefore the extremes of a continuum that includes many possible configurations of blended teaching. Along this continuum TAM – and its variations – have been used to address questions of system acceptance and system use. Results have been quite uniform with regards to system acceptance. For example Raaij & Schepers [2008], show that perceived usefulness has a direct effect on the use of a virtual learning environment. While prior technology acceptance research often included variables related to subjective norm [Raaij & Schepers, 2008], normative beliefs [Vijayasarathy, 2004], social influence [Karahanna & Straub , 1999] or social norms [Hsu & Lu, 2004], studies on online learning seem not to find a significant impact of such variables. Davis et al. [1989] excluded these constructs from the TAM. Still, Venkatesh and Davis [2000] assert that these constructs play a role in mandatory situations. This seems to be the case for distance learning with OLP since students that want to perform well will perceive the use of the system as (more or less) mandatory. Still, students can also pass the class without using the system in case the system is only mean to 'support' the class.

The perceived usefulness, in this context, gets a broader meaning since it is not only the usefulness of the OLP system that needs to be assessed, but also the usefulness of the class. Furthermore, we also have to bring the problem of usage from the individual level to the social level as a class' success is strongly correlated to its social composition [Giangreco et al., 2009, 2010]. Along these lines few studies are emerging that focus on the social dimension of online learning systems use [e.g. Lee et al., 2003; Mazman, 2009]. The latest studies on training evaluation point at gender mix in the class and age as important variables (independent and moderating). Finally, because of the context, voluntariness also can play a role as independent

and moderating variable. Based on these inputs, in the following part we are going to present the hypotheses and the research model.

Hypotheses based on the UTAUT

Performance expectancy (PE) was defined as 'the degree to which an individual believes that using the system will help him or her to attain gains in job performance' [Venkatesh et al., 2003]. In the case of an OLP these concern gains in learning performance. Performance expectancy was shown to be the strongest predictor of behavioral intention (BI) [Venkatesh et al., 2003]. Men tend to be more task-oriented than women [Minton & Schneider, 1980] so that the relationship between performance expectancy and intention would be moderated by gender. In line with the UTAUT, we then hypothesize:

H.1   *Performance expectancy will have a direct positive effect on behavioral intention. Specifically, the more students think that the online movie system will be beneficial for their learning, the more they will intend to use it.*

H.2   *Gender will moderate the relationship between performance expectancy and behavioral intention so that the positive relationship between PE and BI will be stronger for male students.*

Age, both tenure in the educational systems and anagraphic, could also play a role in influencing PE but this research in progress paper so far only investigates the use of the OLP in one year (3rd Bachelor). Therefore, no hypotheses concerning the role of age are put forward here. Our future research will, however, investigate the role of age by studying the system usage in different years.

Effort expectancy (EE) was defined as 'the degree of ease associated with the use of the system' [Venkatesh et al., 2003]. Effort expectancy was shown to be a significant antecedent of behavioral intention in early stages of system usage [Davis et al., 1989]. Effort expectancy is supposed to be more salient for women than for men [Venkatesh and Morris, 2000]. The UTAUT hypothesized that the relationship between EE and BI would be moderated by gender (and age and experience).

H.3   *Effort expectancy will have a direct positive effect on behavioral intention. Specifically, the more students perceive the online movie system as easy to use, the more they will intend to use it.*

H.4   *Gender will moderate the relationship between EE and BI so that the positive relationship between EE and BI will be stronger for female students.*

Social influence (SI) was defined as 'the degree to which an individual perceives that important others believe he or she should use the system' [Venkatesh et al., 2003]. Given the fact that this definition concerns the perception of the social influence, we will refer to this with the term 'perceived social influence' (PSI). PSI constructs were found not to be significant in voluntary contexts, but were significant when system usage was mandatory [Venkatesh et al., 2003]. Reliance on others' opinions is particularly significant in the early stages of experience, when an individual's opinions are relatively ill-informed [Agarwal & Prasad, 1997; Karahanna et al., 1999; Venkatesh and Davis, 2000]. Given that the system we consider here was used for the first time this year, the experience with the system was inexistent. Furthermore, theory suggests that women tend to be more sensitive to others' opinions [Miller 1976]. We thus hypothesize:

H.5   *Perceived social influence will have a direct positive effect on behavioral intention. Specifically, the more students think that they received social pressure to use the online movie system, the more they will intend to use it.*

H.6   *Voluntariness will moderate the relationship between perceived social influence and behavioral intention so that the positive relationship between PSI and BI will be stronger for mandatory systems.*

H.7   Gender will moderate the relationship between perceived social influence and behavioral intention so that the positive relationship between PSI and BI will be stronger for female students.

We note that the latter hypotheses are especially supposed to prove true in the group of 1st Bachelor students, who have few experience in studying at university overall, while students in later years already have much experience in studying. This research-in-progress report, however, mainly uses the data from 3rd Bachelor's Management of Information Systems class.

Additional hypotheses

Previous research shows that the entertainment of the class plays a central role in the overall satisfaction of students with training [Rabey, 2007; Long et al., 2008]. In traditional lectures, this perception is measured mainly through the capability of the teacher to involve students and to make them perceive that the class was fun [Giangreco et al., 2009, 2010]. Additionally, some organizational aspects such as a good planning and a balanced pace of the course influence students' perceptions of training [Sargent et al., 2009]. Based on this body of literature, perceived e-learning enjoyment is measured through the extent to which students enjoy the use of the movies, the appreciation of the flexibility in terms of timing, the extent to which the movies are regarded as dynamic and convincing, the movies' capability to make students feel involved and the perceived motivation to do their best. We then hypothesize:

H.8   Perceived e-learning enjoyment will have a direct positive effect on behavioral intention. Specifically, the more students perceive the online movie system as enjoyable, the more they will intend to use it.

H.9   Gender will moderate the relationship between perceived e-learning enjoyment and behavioral intention so that the positive relationship between PEE and BI will be stronger for female students.

The concept of Perceived Usefulness in IS literature is generally considered to refer to the performance gains that can be achieved by using the system compared to not using the system. This interpretation of the construct is part of our model by using the 'performance expectancy' construct mentioned above. Here we intend to focus on another aspect of the usefulness of the system. More specifically, research on student's satisfaction with training shows that the usefulness of the class, in terms of the skills and knowledge that are acquired, are an antecedent of student's overall satisfaction with the class [Velada and Caetano, 2007; Chih, Liu and Lee, 2008]. Along this direction, we define 'perceived content usefulness' as the extent to which students perceive that the contents of the online movies were interesting, coherent and valorized in the whole curricula and useful for their future career. We then hypothesize:

H.10   Perceived content usefulness will have a direct positive effect on behavioral intention. Specifically, the more students perceive the contents of the online movies as useful, the more they will intend to watch them.

H.11   Gender will moderate the relationship between perceived content usefulness and behavioral intention so that the positive relationship between PCU and BI will be stronger for male students.

Prior technology acceptance research investigated the role of *perceived* social influence. Here we want to introduce a new concept to this domain: 'latent social influence'. With 'latent social influence' (LSI) we refer to the degree to which an individual is influenced by the use behavior of others without being aware that those others influenced him or her. In line with the perceived social influence mentioned above, we hypothesize the following:

H.12   Latent social influence will have a direct positive effect on behavioral intention. Specifically, the more a student's friends use the online movie system, the more the student will intend to use it.

H.13   Gender will moderate the relationship between latent social influence and behavioral intention so that the positive relationship between LSI and BI will be stronger for female students.

H.14   Voluntariness will moderate the relationship between latent social influence and behavioral intention so that the positive relationship between LSI and BI will be stronger for mandatory systems.

Gender has been shown to play a role in technology acceptance [Gefen & Straub, 1997] and should thus be included as a control variable. Females are more driven than males by a normative approach so that they are usually keener to follow guidelines and duties [Giangreco et al., 2010]. We put forth the following hypothesis:

H.15   Female students will engage in the positive use of the online movie system more than male students, showing therefore a direct positive effect on behavioral intention.

Finally, we embed in our study the belief shared by many teachers and practitioners that students tend to undervalue the role and importance of online movies. This may be more relevant above all when online movies are complemented by traditional lectures. Students, then, may perceive that the assignments linked to online activities are kind of optional. The key point therefore becomes the perception of the mandatory character of these activities. The perceived mandatory character of the movies should be included as a control variable. We put forward the following hypothesis:

H.16   Voluntariness will have a direct effect on behavioral intention. Specifically, the more students think that the use of the online movie system is mandatory, the more they will intend to use it.

Again, we assume that these hypotheses will show up especially in the first Bachelor sample and less in the third Bachelor sample. Our further research will investigate this, as this paper is focused on the third Bachelor sample. The entire research model is shown in the Figure 1.
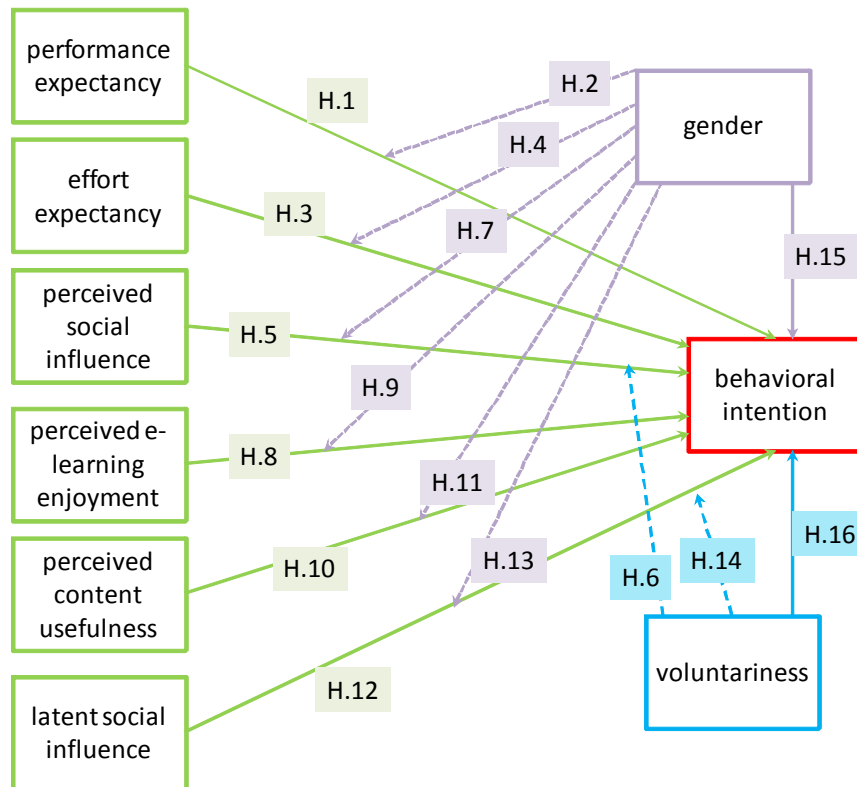
Figure 1. The Research Model

III. RESEARCH SETTING AND DESIGN

Research Setting

This paper investigates the student's acceptance of online movies as a course complement in a European Business School. In the academic year 2010-2011 one class was redesigned in each student year, from 1st Bachelor to 1st Master. The classes were turned 'inside-out' so that theory presentations were put online and that more exercises were made in offline classes. The online theory presentations take the form of a slide show with a voice-over that explains the slides. Such a system gives students more flexibility to study the theory at their own speed, to take a break when needed and to rewind when they lost track. The offline classes then are less 'boring' presentations of theory but are meant for discussion and exercises. This system was developed because the institution recognizes that students have no difficulties to find information anymore and that the role of professors has changed from pure information providers to people that facilitate learning.

Watching the movie before next offline session is voluntary, but students are expected to know all material by the exam. Still, to get most out of the class, it is good if students watch the theory movie before next session so they can get more out of the discussion and the exercises at that moment. For example, one movie details how an Entity-Relationship diagram is created. In the next session exercises are then made on ER diagrams. While there are no marks on watching the movie before next session, students that have watched the movie get more out of the offline class.

The professors noticed that students did not always watch the movies and hence it is important to investigate why this is so. Data was collected in the spring of 2011. This paper investigates the use of the system in one year, 3rd Bachelor. The system was there used (only) in the Management of Information Systems (MIS) class. A survey (on paper) has been conducted in all years, but at this moment the data is only entered in the computer system for 3rd Bachelor. Future research will investigate the acceptance of the system in the different years. This is an important extension to the paper at hand, as the year may have a big impact on the system acceptance.

To study the acceptance of the system, the UTAUT was extended with theory on training satisfaction. The extensions are particularly interesting in an MIS class, as management students usually show limited interest in information systems classes. Furthermore as students have a lot of freedom and care a lot about having fun, enjoyment when using the system or rather 'pain' associated with using online IS movies had to be taken into consideration too. Finally, while the 'social influence' is part of the UTAUT, it there merely functions as a 'perceived' social influence construct. Our goal was to find out whether students who are 'friends' really show a similar intent to use the system.

Research Design

The MIS class exists out of 6 offline sessions of 3 hours. There are several weeks in between the different sessions. Students are supposed to watch a movie before session 3, two movies before session 4 and one movie before session 5, for a total of four movies. The movies last respectively 52, 26, 40 and 36 minutes.

The questions that were asked in the survey can be found in the Appendix. Several items were used to measure the constructs (at least four items per construct). The items were based on previously published scales for the various constructs. We adapted the wording of existing items to the specific research setting. Reliability measures were calculated for all constructs and were found to be appropriate (sometimes after dropping one item for a construct). Cronbach's alpha was respectively 0.868 for PE, 0.855 for EE, 0.724 for PSI, 0.834 for PCU, 0.842 for e-learning enjoyment and 0.941 for BI. Concerning the moderating variables: gender was coded as 1 for males and 2 for females; voluntariness was measured on a 7-point Likert scale (from 1 = perceived as voluntary, to 7 = perceived as mandatory). Moderating effects were calculated by taking the mean-centered scores.

Actual Friends Usage was calculated as a weighted average of the system use by friends (weighted by the intensity of their stated relationship with these people). In fact, to construct the social network, several questions were asked. First, students were asked to mention up to seven friends at school and to qualify the intensity of the relationship (we are together most of the day, we meet once a day, we meet a few times a week, we meet once a week). A second social network representation was constructed on the basis of information on what students' learning some student thinks (s)he has an influence in general. A third social network representation concerned the other direction and was specific to the online system under investigation: students were asked to mention the students that influence their usage (or non-usage) of the online system. For the last two networks, each time the intensity of the relation was measured on a 5-point Likert scale (from 'major influence' to 'minor influence'). *Please note that the research results in this paper thus do not really measure the Latent Social Influence construct as mentioned in the hypotheses, but the Actual Friends Usage.* In our further research, we intend to calculate the LSI by combining knowledge about the three networks and taking out the effects that students perceive to be there by omitting the effect of friends mentioned in the third social network ('who influences your usage or non-usage of the online movie system'). Therefore, the research results below are preliminary results when we consider the social network aspect. Still, we note that many students mentioned explicitly that no-one influenced their usage or non-usage of the online movie system, so that the Actual Friends Usage might be reflective of the LSI.

IV. PRELIMINARY RESULTS AND DISCUSSION

Descriptive Statistics

224 students took the MIS class, of which 197 answered the survey. This response rate (87.9%) is above 80% and is therefore usually considered high enough to get a good representation of the entire social network of students. Of the four movies students had to watch, the average student had watched on average only about 18.7% before the following offline session. The percentage for each student for each movie was calculated as the minimum of two parameters

- The amount of time watched. If a student had watched 10 minutes of a movie of 50 minutes, this would give a usage statistic of 20%.
- The number of slides watched. If a student had watched 10 of the 20 slides in the movie, this would give a usage statistic of 50%

It is hard to measure the real usage of the system. Sometimes students start a movie but do not watch it. That is, the site is active in the background while students do something else. Then, the percentage of the time watched is (often more than) 100%. However, as the student then did not click on the button to let the slides proceed, the percentage of slides watched would be very low. The other way around, sometimes students click very fast to have a short look at each slide, but they don't listen to the entire movie. We took the minimum of both parameters to get an estimation of the usage of the system.

Test Results and Discussion

While the final aim of the UTAUT is to explain Use Behavior, this paper focuses on explaining the Behavioral Intention. Still, given the low usage, it is important to have a short look at the Use Behavior.

Prior research showed that the Use Behavior is closely linked to the Behavioral Intention. The impact of Facilitating Conditions on Use Behavior was shown to be moderated by the age. As we here only used data from 3rd Bachelor, that moderating effect was omitted. In our model, both the Behavior Intention and the Facilitating Conditions are significant antecedents of Use Behavior (at $p < 0.05$). Still, the R Squared of the model is very low: only 9.3% of the variance is explained. This is in contrast to prior research on the UTAUT where typically an R Squared is achieved of about 40%. The question arises what hampers students with intent to use the system from really using it. We note that, in a separate survey at the end of the semester, students were asked whether they think that 'the use of online theory movies in exchange for offline exercises in class is good'. The average score here was 7.2/10. Consequently we may say that (on average) students seem to find it a good idea. Furthermore, all movies were evaluated as being 'good', with average scores ranging from 7.3 to 7.7/10, so the movie quality should not be the reason for the low use. Preliminary regression results suggest the next offline class attendance is a significant antecedent for watching a movie, but further research has to confirm this.

The test results for the antecedents of Behavioral Intention are shown in Table 1.

Table 1. Results of the linear regression, standardized betas, significant values in grey.

	(A) Original UTAUT		(B) = (A) + Enjoyment and PCU		(C) = (B) + Actual Friends USage		(D) = (C) - PSI construct	
R²	0,564		0,609		0,638		0,621	
R² adjusted	0,542		0,58		0,596		0,586	
	ζ	p-value	b	p-value	b	p-value	b	p-value
Performance Expectancy (PE)	0,344	0,000	0,234	0,002	0,182	0,029	0,205	0,014
Effort Expectancy (EE)	0,258	0,000	0,149	0,032	0,194	0,012	0,172	0,025
Perceived Social Influence (PSI)	0,104	0,051	0,071	0,177	0,07	0,224		
Gender	0,131	0,009	0,126	0,009	0,109	0,04	0,12	0,023
Voluntariness	0,265	0,000	0,184	0,001	0,215	0	0,224	0
MF voluntariness X PSI	-0,104	0,046	-0,116	0,022	-0,112	0,043		
MF gender X PSI	-0,027	0,617	-0,004	0,942	-0,003	0,953		
MF gender X PE	0,084	0,212	0,096	0,201	0,175	0,034	0,167	0,044
MF gender X EE	-0,131	0,045	-0,098	0,149	-0,140	0,061	-0,140	0,063
E-learning enjoyment			0,185	0,032	0,166	0,078	0,153	0,106
Perceived Content Usefulness (PCU)			0,15	0,037	0,168	0,026	0,196	0,009
MF gender X e-learning enjoyment			0,038	0,653	0,006	0,952	-0,011	0,904
MF gender X PCU			-0,126	0,08	-0,122	0,11	-0,107	0,153
Actual Friends Usage					-0,109	0,05	-0,105	0,059
MF gender X Actual Friends usage					-0,006	0,905	-0,007	0,901
MF voluntariness X Actual Friends usage					0,173	0,002	0,185	0,001

Model A tests the hypotheses that were derived directly from the UTAUT. The R-square is 0.564, which is high compared to the test results in Venkatesh et al. [2003]. We also note that Gender and Voluntariness there typically were not significant, while they are significant in our dataset. PE and EE are highly significant, while PSI is borderline insignificant. Interestingly, the more a student perceives the movies as mandatory, the lower the impact of the perceived social influence upon BI. This is in contrast to what was hypothesized based on earlier research. Also in contrast to our hypothesis, the effect of EE on BI is higher for males than for females. The fact that the study was done in France, with a different culture from most studies on technology acceptance, might play a role.

Model B includes the extension with two constructs from theory on students' satisfaction with classes. The R-squared increases to 0.609. Both enjoyment and perceived content usefulness prove to be significant. As a side note, we note this model was also run on a more complete dataset, using 1st, 2nd and 3rd Bachelor data together and 'year' as a control variable (results not shown in the table). The new constructs, e-learning enjoyment and perceived content usefulness, were very significant in that model (p < 0.001) with both betas around 0.17 and a significant moderating effect of gender with PCU so that PCU has a bigger impact on BI for males than for females. While prior research on system acceptance had investigated to a big extent the usefulness of the system to do a job, the usefulness of the job in itself was neglected in important models such as the TAM and the UTAUT. Our research shows that students have a higher intent to watch movies if they think the contents of the movies will be useful to them for their future career, the contents was interesting and it seemed to fit within the entire school's curriculum. This has consequences for evaluating the success of the movie system. Students tend to perceive some classes as more interesting than others and the students' intention to watch movies that are embedded in such classes is higher. While this finding seems logical (and questions arise why a similar construct was not included in the TAM and UTAUT), students also have to pass

classes that seem less interesting if they want to obtain their degree and students may be assumed to watch all movies. For the evaluation of a new feature of an online learning platform, it is important to take into account whether that feature is used for a class in which students are generally very interested or not. It may be appropriate to test new features first in classes in which students are highly interested, to increase the general adoption rate of the new feature. E-learning enjoyment has a very significant, positive relation with the intent to use the system. Prior research showed that a higher perceived trainer performance, in having a more dynamic and motivating teacher who creates a pleasant atmosphere, shows in a higher satisfaction with the class [Giangreco et al., 2010]. In our OLP the movies take the role of the teacher. Our research shows that the intent to use the system depends upon the perceived e-learning enjoyment associated with the movie. More specifically, students are more motivated to watch movies if the movies are presented in a more dynamic and convincing way, involve the student, motivate the student to learn, etcetera. Hence, the fact that watching the movies is important for students to get most out of the class is not enough to motivate students to watch movies: the movies also have to be perceived as giving enjoyment. This implies that making movies more dynamic and motivating is not optional, but something professors *have to* take into account. We noticed that creating the movies is a big effort for professors and professors are often already happy to 'get the content right'. As stated above (see the discussion on PCU), it is indeed important to pay attention to the perceived usefulness of the content, but we now notice that the beta of e-learning enjoyment is even bigger than that of PCU. When talking to the professors that were involved, it became clear they had not considered enjoyment to be an important element at that point in time: they were too busy finding the right wording, deciding what content to put online and what content to keep in offline classes, and to get to understand the new online system. Professors seem to have focused first and for all on the features that seem useful (how can I show my content?), rather than enjoyable (e.g. adding animations and interactive quizzes) and they don't seem to adopt all features to the same extent either.

Models C and D again only focus on the 3rd Bachelor dataset, but include a new social network construct: the 'actual friends usage'. Given that we were not able to calculate the LSI yet, model D becomes very interesting, as the traditional PSI here is replaced with the actual friends usage. If the UTAUT construct 'social influence' and the related moderating effects are replaced by the weighted usage by the friends network, the R-square improves from 0.609 (model B) to 0.621 (model D). Model B and model D are comparable in terms of the factors that are significant: there is no significant direct impact of the friends network on the behavioral intention, but the moderating effect with voluntariness is significant in both model B and model D. However, the sign of the multiplicatory effect is switched: the effect of actual friends usage is bigger if the movies are considered more mandatory. We also note the direct impact of the friends network becomes almost significant (p=0.059 in model D while it is 0.177 in model B). We hypothesize this friends network will be significant in the 1st Bachelor dataset. The main conclusion here is that it seems valuable to include knowledge about the real social network, rather than asking respondents about what impact they perceive and that the traditionally used social impact construct may need to be considered with care.

If we retain the PSI construct in the model and we add the Actual Friends Usage (see model C), the R-square even increases from 0.609 (model B) to 0.638 (model C). In model C, we thus act as if the Actual Friends Usage is a proxy for the LSI. It should be noted that the direct relation of the friends network on the behavioral intention then becomes borderline significant (0.05). This is promising for our future research when the LSI construct will be available. We expect to have these results by the date of the conference.

V. CONCLUSION

This research-in-progress paper presents preliminary results on antecedents of students' intent to use a feature of an online learning platform. In contrast to most literature in this field, this paper studies the use of a system that is *only in support* of a class and it focuses on only *one (new) feature* of the software rather than the entire platform. The research model adds three new

constructs to the classic UTAUT. Two constructs were derived from literature on satisfaction with traditional (offline) learning: perceived content usefulness and e-learning enjoyment. Both were statistically significant when added to the UTAUT. Furthermore, a new way of measuring social influence was introduced. Prior studies focus on the 'perceived' social influence, whereas this paper tries to investigate the real social influence by using knowledge about the social network of people and the system use by friends. This new way of measuring social influence seems valuable in the first tests, but our future research will have to confirm this.

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APPENDIX: QUESTIONS ASKED IN THE SURVEY

1. Please enter your first and last name in capital letters
2. Birthdate: DD/MM/YYYY
3. 1) IESEG student or 2) International – Exchange student
4. What is your gender (M, F)?
5.a. Network 1: List the names of your closest friends (up to seven) in IESEG. Mention their IESEG year and grade the intensity of your relation. A = we are together most of the day; B = we meet once a day for a short talk; C= we meet a few times every week; D = we meet once a week.
5.b. Network 2: List up to seven people of which you think you generally influence their learning at IESEG. Also mention how big you think your impact is. (A= major impact, E=minor impact)
5.c. Network 3: List up to seven people who influence your usage (or non-usage) of the online video system and grade the intensity of this influence (A = major influence -> E = minor influence). This influence can be both 'active' (e.g. by saying you need (not) to watch the videos) and 'passive' (e.g. by saying that they did (not) watch the videos). Write A for active or P for passive. Also mention whether the influence was rather positive (i.e. to watch the movies) or rather negative (i.e. not to watch the movies). Write a + or a - sign.

Grade from 1 to 7. (1=Totally disagree < 2 < 3 < 4=Neutral < 5 < 6 < 7=Totally agree):

6. Items related to Interest in the class:
   Before the Management of Information systems class by F. Goethals, I was interested in the topic of that class.
   Before that class I was interested in using an online video system to watch online classes.
7. Items related to perceived e-learning enjoyment
   Overall, I enjoy the online video system
   I enjoy the flexibility in organizing my time
   The video content is presented in a dynamic and convincing way
   I felt involved

I feel like the duration of an online movie was appropriate

I was motivated (either online or offline) to do my best to learn

8. Items related to performance expectancy

Using the online video system increases my productivity

Using the online video system helps me understand the course content better

I think that using the online video system would help me to succeed the course

I think the online video makes the entire class more efficient

Using the online movie system allows me to learn more quickly

The speed of the presentation was OK for me to understand the material

9. Items related to effort expectancy

Overall, the online video system is easy to use

The way you interact with the online video system is clear and understandable

Learning to operate the online video system is easy for me

It is easy to concentrate while watching to the video

The effort I made to learn something was appropriate

It is easy to get the system to do what I want it to do

10. Items related to social influence

People who influence my behavior think that I should use the online video system

People who are important to me think that I should use the online video system

In general, IESEG has supported the use of the online video system for my studies

People at IESEG who use the system have generally good grades

My teacher explained the reason for using the online system in this class

11. Items related to behavioral intention

I intend to watch online videos in the future if they are included in a class on Management of Information systems

I predict I would watch online videos in the future if they were included in a class on Management of Information systems

I plan to watch online videos in the future if they are included in a class on Management of Information systems

12. Items related to facilitating conditions

The frequency at which I have to watch the videos is appropriate

For practical reasons, the duration of individual videos was too long

The video was well structured

The video system is compatible with the systems I normally use (eg: browsers, mac etc)

I had all resources necessary to watch the video (e.g.: internet connection)

I had the knowledge that is necessary to be able to work with the movie system

13. Items related to perceived usefulness

The contents of the movies were useful for my future career

The contents fitted my prior knowledge of the topic

The topics of the movies were interesting

I understood the importance of this topic in the IESEG curriculum

Together with the offline classes, there is a good balance between theory and practice in this course

14. Item related to voluntariness of use

When online videos are available along the course, do you feel like it is mandatory to watch them?

15. Items related to use behavior

When a new video is supposed to be watched before the next offline class session, I watch the video… (1=not at all, 2=only before the exam, 3=in few cases before next offline session, 4=in most cases before next offline session, 5=at least partly before next offline session, 6=always before next offline session)

How many minutes do you on average spend on watching an individual video ? (Write a number in minutes)

16. When did you take the class on Management of Information systems? (Write 1 if it was during the 1st semester or write 2 if it was during the 2nd semester)

17. Do you have any comments?