An analysis of Implementation issues of an e-learning tool in the environment of the Management marketing and communication programme

A case study of e-tools in a learning environment

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Abstract
In the upcoming spring semester the e-learning tool ‘Blackboard’ is replacing campusnet as the current e-learning tool at the business administration and economics programme in the course “Information systems for Business”. There have been several complications with the implementation and use of Blackboard in the “Information system for Business” course in the program Management Marketing and Communication (MMC). This article has identified the possible pitfalls of implementing an e-tool in this specific context, and has found that implementing Blackboard in ISB culture was not successful, due to lack of involving staff in implementation process, communicating the benefits of the tool, and the tool not being compatible with ISB culture.

Introduction
As the economy has become increasingly digitalized; the need of business information systems has grown, and has become a key factor of learning, also in a business perspective, as business and strategy to a greater extent are aligned by information systems processes. And so are the alignment of business and IT becoming more important, which are the key learning of the course Information systems for business.
A big part of the learning environment in the course ISB, are the applied e-learning tool, which is used for sharing content such as lecture slides, curriculum, papers, announcements, debates. A study conducted by the University of Queensland (Teaching and Educational Development Institute, University of Queensland, “Teaching Large Classes Project 2001 - page 15) concludes that one of the single most successful strategy in teaching a large number of students, is the use of web-based course material, online resources, discussion boards, file sharing et cetera. This can pretty much can be summed up in the importance of a well-functioning e-learning tool. For this purpose the institute of Business and social science at Aarhus University has previously applied Campusnet, but due to external factors, this solution is no longer available, which has resulted in a necessary change of e-learning tool to Blackboard.
After having observed several complications with the use of blackboard in the course information systems for business at the program Management Marketing and Communication, it lead to interest in analyzing MMCs implementation environment to identify which factors have had an
impact on the challenge of optimal implementation and use of blackboard in the course information systems for business.

**Contextual background**

The e-learning tool in question in this study, is among others used in the course Information systems for business at the MMC program, and is soon to be implemented in the same course at the 3-year bachelor business administration program at Aarhus university, both consisting of 180 total ECTS points.

The main purpose of the course is to give the students an understanding of information systems as well as of the operating tasks these systems support in a company. The information systems applied, is a basic area for all business economy students, and will be naturally included in the further educational programmes at the School of Business and Social Sciences (http://kursuskatalog.au.dk/coursecatalog/Course/show/43630/).

The course is a 5 ECTS undergraduate level course, involving three main elements:

1) An introduction at a practical level to an ERP system (SAP B1) and thus to the processes in a company.
2) Methods for formal modeling of processes, data and working procedures.
3) An introduction to a company's information systems and the alignment of these to business strategies

The course is based on lectures with a professor, which takes place in a lecture hall and includes up to 200 students or more, and tutorials with a student teaching assistant that take place in a smaller classroom consisting of up to 35 students. In both cases, an e-learning tool is involved.

During the course the students are to write two assignments in groups of four, and make group presentation for each of the 13 session which the TA, which function as the foundation of an oral examination. The first assignment is primarily concerned with the 2nd main element of the course and the second assignment is primarily concerned with the 3rd main element of the course. In
both assignments the importance of a well functional e-learning tool is crucial, for handing in assignment, investigating plagiarism, creating discussion forums etc.
campusnet is a partial open source learning system, which purpose is to connect the institutions data, so they can be accessed via a single log-on. Hereafter the system automatically managed the users roles and right. As an e-learning tool has its main focus on functionality, and ease of use. Campusnet has made its main point to keep the balance between staying a manageable system, meanwhile having the necessary features, and not much more (http://www.arcanic.dk/campusnet.html).
Blackboard brings another perspective of the e-learning tools, that the students and teachers have not been used to. An example, is the social community, where the students can keep in touch with each other, create their own profile, make study groups and so on. Blackboard does also brings an additional set of functionalities compared to campusnet. In Blackboard it is possible to access your grades, and calendar just to name a few.

Theoretical background & Methodology
A problem oriented approach (Paul R. Lawrence 1992) will be applied for setting the main frame of the article. We decided to select the problem of our study by making observations of the implementation process of BB at MMC, and hereafter consulting relevant theory for developing useful hypotheses and concepts. Then an appropriate research design was chosen, and with that research design, data was collected accordingly. At last the challenges was analyzed by putting them into context of the Leavitt-Ry model, ITPOSMO, and TAM, and presented so the findings are useful for those which job is to solve the implementation issues. Furthermore the findings must be accessible to the academic community, in such a way that it contribute to gain knowledge in the field of e-learning tools and learning in an academic environment.

Thus, the article has both a descriptive and normative purpose, as we wish to describe the current situations and come with suggestions for actions.

Research Design
The article is a case study of the implementation environment of the course ISB at the MMC program. The design of this case study is a holistic intensive, case study design. Thus the purpose
for this study is not to come up with a theory which can be applied in general. Instead the purpose is to get a holistic view of the organization, and account for the implementations issues.

**Empirical Data**

The interviews were semi-structured, as a certain level of flexibility was beneficial, as it allowed for the respondent to provide additional information on the implementation environment, in addition to the current theory. An interview guide had been prepared, but it was possible to deviate from this, depending on the respondents answers. The interview is primarily concerned with the emotional approach where the focus is on finding the interviewee’s opinions and positions towards the implementation. This does make the data very subjective, but it is seen as a necessity to have this emotional approach, since the research design is an intensive case study, and we must have the interviewee’s opinion of the implementation process. Actions have been made towards making the data more objectives by reformulating the questions, so we asked for how the interviewee thought of their colleagues or of others students skills and attitude towards BB.

**Choice of theoretical material**

One of the three main theories of this study the 1965 H.J. Leavitt theory of organizational changes from 1965, later modified, due to industrial changes, to the Leavitt-Ry model. Leavitt was of the opinion that four main variables affected the change in an organization, tasks, technology, actors and structure. Leavitt was of the opinion that one could not only make structural changes. Structural changes have implications for task performance, and require changes for actors, technology and vice versa. Leavitt’s modified his model in the 70’s and now included an important variable, the surroundings, as Leavitt states “no organization is an island on its own”, as an organization is seen in an interaction with its surrounding environment, and changes in the environment will cause changes in the organization, and vice versa. The model was modified again by J. C. Ry Nielsen and Morten Ry, and now named the Leavitt-Ry model, which also includes a perspective on how the four main variables are affected by physical environment, organizational culture, reward systems, vision/values/ goals and history. The Leavitt-Ry model attempts to understand all the different variables involved in an organizational change environment. The general scheme of the Leavitt-Ry model is that change processes are complex and are influenced by many factors, where all factors are seen as dynamic,
and changes in one variable will lead to changes in all other variables.

The Leavitt-Ry model, is good at giving an overview of the organization, and may give an indication of what factors that have not received much focus in the implementation, but it does not explain how or why changes fail. Therefore it is needed to consult other relevant theory.

For the purpose of explaining why there have been implementation issues with BB, the work of Heeks (2006), will be applied. He states seven points for failures, success and improvement in Health Information System implementations. The seven points are as follows:

Information (such as information flows and information stores), technology (considering both software and hardware being as relevant), processes (the different set of activities the different kind of users/stakeholders must change), objectives and values (factors which could be culture and political influence. Considered a key factor by Heeks), staffing and skills (both in quantitative and quality, example, is there a need for an extra education), management systems and structures (the structure of managing decisions), other resources (such as finances and time). Together they are called the ITPOSMO dimensions.

Heeks (2006) states that for a implementation not to fail, there cannot be too much of a GAP between, how the new systems (design) works, and within the seven dimensions (reality). The analysis of this method is to have a qualitative examination of each of the seven points to see how much of a GAP there is between the design and the reality. The model can then be helpful to identify where the implementation has gone wrong, and where the focus should be committed. One should be aware of that the work of Heeks (2006), was originally made for implementation projects within the healthcare area. We found it suitable to apply the ITPOSMO, in our context since the dimensions contains many of the same concerns in the implementation project of BB. After presenting the findings, an evaluation of the tool will be made to ensure its validity.

Finally it is necessary to explain how some of the failures have raised. For that purpose the use of the Technology Acceptance Model (TAM) by Davis (1989), will be applied. TAM focus on two dimensions, which is the perceived usefulness, and the perceived ease of use. The perceived ease
of use has a direct influence of the actual system behavior, and on the perceived ease of use, whereas the perceived usefulness only has an impact on the actual system use.

**Findings**

Based on conducted interviews, it has become clear that there have been several issues with implementing blackboard both in student culture, as well as a part of daily tasks.

Through interviews, we have established that for all user groups involved in BB, the two most critical functions in an e-learning tool in a University context, is well functioning file sharing, as well as being able to communicate efficiently. Conducted interviews revealed BB was in fact able to deliver in these functions, as BB enables STA’s to perform an individualization of distribution of information which is a big plus in ISBs context, as the course involves much group work. The previously held e-learning tools where only able to communicate to lecture class and not to individuals within a class. Another clever function of BB is the dashboard where you are able to see notifications, messages etc. The old CN, did also have a function similar to this one, but the student thought that the dashboard function in BB is a more innovative approach

“*I think it is a nice way of showing me recent information, as the interface is more familiar for me*”

- ISB student

BB also makes it possible to be more in control from an administrator’s point of view, when downloading exam papers from students, you are able to divide the files into different lecture classes or exam groups, and thereby making the process more efficient. While BB does bring advantages to ISB staff, both students and staff have not fully adopted the system as a part of their culture, which lead us to investigate why that is.

When implementing a new system in an organization, with different actors, with different demands for the systems, it is relevant to look at all aspects that can affect the implementation process, and how the different aspect affects each other.
The organizations history, and experience with implementing new tools can clarify how users have previously handled an implementation of an e-tool, and thereby give an indication of the expectations for the new system. The course ISB, have previously been a part of the implementation of CN as the first e-learning tool that ISB got. ISB secretary remembered that the overall implementation went well, and said that they could really see the purpose of implementing an e-learning tool

“We were all like, this is very smart! We could see that this could really make our job easier” - ISB secretary

This may have affected the ISB personal expectations towards BB. The remembrance of CN enabling her to accomplish much more in less time, may have caused the ISB personal to expect that BB would provide similar experience, as the prior implementation. Given that CN was performing well, the ISB staff and students have been negative about replacing a well functional tool, and that has caused some resistance towards BB.

The surrounding environment of ISB has a big influence on the course. The Danish government is for example planning to start a reform, whereas the universities across Denmark have to do cuts. One way of doing this, were to unite all of the different e-learning tools at AU, which the former ASB (now BSS) had become a part of, to one e-learning tool. That has had a direct influence on the course ISB, and which e-learning tool is going to be applied in the learning environment. As well as the Aarhus University and the Danish government have an influence of the course, the faculty in which the course is being lectured has an impact on how the learning environment is. The MMC faculty consists of students who are taught in business communications, and that has an impact of how the course ISB is taught as well. When interviewing a STA at MMC, she told us that she was encouraging the students to take advantage of the many features that BB offered. One might think that communication students would be the first to take advantages of the social features that BB offers, given their interest in communication. Therefor the surrounding environment of ISB at MMC should be able to cope and adopt with the functionalities that BB offers. Another general observation was that BBs structure did not necessarily fit the MMC culture, even though it is a
very international environment. Students also states that they experienced BB to be very unstructured, and not necessarily aligned with the AU culture

“I find Blackboard to be very Americanized, as it includes functions we would never use at in ISB as well as at AU, referring to the whole social aspect” - ISB student

The physical surroundings also play a big part of the implementations success as this often determines the respected user expectations for how to access the system. BB can be accessed anywhere with internet, making it possible for students to retrieve information everywhere, as well as providing ISB staff with the opportunity to work from optional locations, and thereby making it easier to execute tasks. External surroundings also sets new demand to an e-tool, as the world is becoming more digitized, and thereby sets the expectations of being able to easily and quickly access everything, everywhere. The external surroundings also enables the access of BB, as most people usually has access to the internet - and therefore access to BB. This means that ISB students can get information anywhere needed, and STA and lectures can inform students quick if there is any critical changes, giving both parties room for more flexibility.

The organizational culture indicate how open actors are to change in their environment, and how willing they are to take part in a change process, as implementation of new systems often set new demands to the involved actors behavior. ISB staff is generally used to applying different information systems and e-tools, such as SAP B1 and CN, and has also had experience with changing tool back in the day, when CN was introduced. When asked about why they think users have not taken BB in like CN, a secretary states:

“we just don’t see the need of BB, we don’t see how this could benefit our daily work” - ISB secretary

Making it clear that no one really took the time to inform staff of the reasoning behind implementing BB.
Reward systems are often a big part of change processes, as it is used to motivate users to adopt the system, and make it a part of the culture. During the conducted interviews, there has been no indication of AU offering motivational rewards for taking part in the change process. Even though Nohria et al (2008) says that:

“The drive to acquire a new skill is most easily satisfied by an organization's reward system -- how effectively it discriminates between good and poor performers”

Thereby motivate ISB staff to adopt the new e-tool as a part of their culture. AU have with the implementation of BB tried to give ISB students a social and therefore an extrinsic kind of reward, through a combined platform for checking grades and retrieving teaching content, where these previously should be access at to separate tools. In reality the use of BB as one platform to check your grades, schedules and so on, have not succeeded since it has not been integrated with the other tools, yet. Therefore the users of BB may experience difficulties with identifying the reward by applying BB.

It’s important for the implementation- and change process that the vision and goal behind it is clarified, as this affects the other aspects of the implementation process. The vision behind implementing BB is that AU institutes should have one e-tool, due to external surroundings demand for a cost reduction. Since BB essentially offers the same features as CN, the implementation of BB has not made any significant changes to the vision, values and goals of ISB at MMC. While BB has not contributed to any changes for the goal in the ISB course, it has made it easier for the students to see the goals for the ISB course, since BB allows students to access the goals of the course from the menu provided by BB. By making the goals of the course more visible for the students, it is easier for students to see whether their knowledge of the course is of the standard which is expected from them. While this could be a helpful tool for the course to utilize its full potential, by assuring that all students will have a better exam, it have not yet been implemented in the ISB course.
It is important to identify the overall purpose with the use of BB, for users to adopt the change. The overall task of BB is to provide ISB employees with a sufficient way to communicate information to students, be able to upload teaching material, receive assignments, supervise discussion forums etc. BB enables ISBs staffs to execute one of their tasks more efficiently, as BB brings the advantage of being able to individualize distribution of information, as they are now able to divide students into groups on the e-tool, and thereby, able to communicate more efficiently, as they can now reach a specific group with information, instead of targeting a whole class. After conducting the interviews, it became clear that ISB staffs overall tasks did not change, even though BB offered new opportunities, for e.g. guidance via chat, grading, schedules and so on, resulting in a very low utilization of the tools new offerings. These options are not utilized due to the fact that no awareness have been created about the possible benefits of these functions, and there have been no training available in these functions, there by not motivating either ISB staff or student to utilize this in the execution of their tasks.

The users of the system, is one of the most important aspect of the implementation process, as they make or break the implementation, as they are the ones who have to adopt the system, especially when taking the social features of BB into consideration. Everyone involved with ISB, is also at some point involved with BB, but each user group has different demands for an e-tool, and different perspective on which are critical features, for a well-functioning e-tool. Administration staff states that the most critical functions are being able to upload and download content, as well as communicating with students. While it previously has been established that BB performs well, in the aspect of downloading term papers, and student assignment, there are some issues with communication

“I’m not able to copy text from word into BB, and have to write the whole thing from scratch each time, as I’m communicating the same information, to several different classes, this takes up a lot of my time, also I’m not able to print directly from BB” - ISB course secretary.

The STAs main need is similar to administrational staff, and here it is also stated that BB offers a good solution, for being able to communicate with individual groups, instead of targeting the whole class, as ISB mainly consist of group work, and different groups sometimes needs different
information, BBs group dividing functions, perform well. The main issue is that BBs many functions and notifications often results in information overload from the students, causing them not to receive critical information from their STA.

“Several of my students have stated that they often don’t get the information I send them via BB, because they have given up on checking their notifications, because they get so many, and many often containing insignificant information” - ISB STA

Overall blackboard meets some of the needs for ISB user group, especially being able to divide students into group, has made communication more efficient for STA’s, besides that, BB unstructured visual appearance, and non-intuitive messaging and content provide system is not popular with ISB interests. While there has been no significant change in the tasks performed by ISB staff, BB have not change the way tasks are executed, actually it have given extra work for ISB administrational staff, making some procedures more difficult to perform.

“I find, that I execute the same tasks as previously, only now it takes longer for me to perform, as BB demands you to go through several steps, and review several options, before you are able to carry out a task” - ISB Course secretary

The administrational staff, are not the only ones who have had a negatively implication of the implementation of BB. From a student perspective, there have also been some implications, making some tasks less intuitive and more time consuming. As an example, a student mentioned the following:

“I find it difficult to upload homework assignments to BB, as I have to create new folders inside the TAs folder, before being able to upload, also there is certain folders we can’t get access to” - ISB Student

A big part of a social platform, which BB aims to be, is its users - and it takes users to get users. Meaning, that there is no motivation for non-users to join the social functions, if there are no one
else to be social with, this is a major problem for BB, as the advantages of joining its social sides have not been communicated to the respected users, resulting in very low commitment to BBs social side, and making it hard to have a positive development from a bad starting point.

As an overview of MMCs environment in the context of ISB has now been established, there is a good indication of where in the organization the implementation have had it focus. Due to the low utilization of the social features, and mediocre training regarding BB, it is fair to say that the implementation of BB have had its main focus on the technical implementation, and not necessarily the cultural implementation.

Sharing and communicating information is a big part of how BB is used in ISB. BBs design enables teachers to provide specific users with specific information. The systems is designed with the purpose of enabling more efficient communication, between student and teacher, and students in between. The reality is that while BB makes it possible to send specific information to specific users, it also notifies you every time new content is uploaded, or there is a change in your schedule, or other less significant information.

“this results in a massive information overload, resulting in student not even checking their notifications, and there by not even getting the necessary information” - ISB STA

Students also state that it is difficult to upload information in BB, and they use other communication platforms for communicating inside the group. For Staff who uses the messaging system daily, BB also has some major disadvantage.

“I am not able to copy text from word into BB messaging system, i have to write it from scratch, as I have to communicate the same information to different classes, this takes up a lot of my time!” - ISB course secretary.
This has resulted in a large gap between the system design and the current reality of BBs ability to share information.

When it comes to defining the technology aspect of the implementation had an influence on the successful implementation of BB, since the technical implementation of the new system does not demand any significant changes in AU technology - as there are no new demands to AU IT-infrastructure, there is no gap.

The staffing and skills aspects provide perspective on whether the tool is a match for the organization in its current form. BB is designed so it can easily be applied by anyone, no matter previous experience in e-tools and it skills, as it claims to have a user-friendly design, and easy to navigate in http://uki.blackboard.com/sites/international/globalmaster/Platforms/Blackboard-Learn.html.

The reality seems to be quite different

“i don’t find BB very intuitive, especially structure wise” - ISB student

Even though it is established that all users groups have good basic IT skills, they find it hard to adapt to BBs design and structure. Another important part of implementing an e-tool in a specific culture is to make sure the users get appropriate training. There have been offered many introductory courses to blackboard, online as well as formal classroom training, none of the training were mandatory for administration staff, and only one general course was mandatory for TAs. Common for all groups, was that they did not find the training in BB appropriate for the actual task, and very general, this resulted in a lot of time spent looking up manuals, for simple functions such as file sharing and messaging, which is usually very intuitive. Many of the startup problems were also related more too cultural employee implementation, than the technical aspects. Another important factor was the planning of these training courses. Many found that the training they have participated was placed too early in the process, before the system went live and therefore they forgot a lot of the training they had received.
“I had the training program relative soon, so I forgot most of the training I received when I was in situations where it could be helpful” - ISB Secretary

In the end, the inadequate training suffered the consequences of ISB exam information being uploaded too late. The general perception was that the training was align with the functions of BB, but not with the actual user groups tasks.

Students were not obligated to receive any training. In fact, it was up to themselves to seek out the opportunities for training online. When asking a student whether she was interested in taking these online courses in her spare time, the reply was no. The only way to implement all the new social offerings of BB, is to train students in using them, and communicating the benefits of the features, and thereby creating a need for the social functions. The STA can see the potential of using the chat function in the course ISB, as she states

“i see some potential in the chat function on BB, as students could use it for guidance sessions with us, the STAs...I’ve tried to encourage student to use BB for guidance, but it’s clear they prefer to use e-mail and facebook, as this is the only platforms I received questions” - ISB STA

So even though there is potential in the chat function STAs also state, that the potential have not been utilized, because of the many alternatives to BBs social platform.

While BB has its own dedicated support group, which has been able to provide critical problem solving in specific situations, there is some indication of, this function not working as intended, as a respondent states, that she would rather consult a colleague, than contacting the support group. This indicates that the first interaction with the group might not have lived up to expectations.

As it has been established that all user group disagreed with BBs official statement about being user friendly and easy to navigate in, there is a large gap between the system design, and the current reality.
Based on the fact that there has been no change in ISB staffs tasks, and no gap in technology dimension, it is assumed that the difference in the process design and reality itself is minimal. But even though the process did not change, it did have a negative influence on the procedures of with the process was executed, since it became more time consuming for the secretary to do her job, because she had to go through more windows and had to remember to click on many boxes than she was used to. Therefore the fair characterization of this gap would be a medium gap.

In BB you are able to customize the platform to your institution's specific needs, and choose those features and application, best fit to match your need

http://dk.blackboard.com/sites/international/globalmaster/Platforms/Blackboard-Learn.html. In the procurement of BB, Aarhus University selected features not necessarily fitted to AU culture. The main scope of BB, compared to other available tools on the market, is to combine a learning platform with a social platform, but reality is that the social offerings of BB, is not necessarily needed at AU, and the process design did not match well with the objectives and values of ISB staff, as BB is developed for a more American culture.

"I find that BB i fit to an American culture, as BB offers so many features that are neither necessary or wanted at AU" - ISB course secretary.

Therefore it is fair to say that the change BB should have brought to the culture of ISB, have not been manifested. Therefore the gap in this dimension is large. (Heeks, 2006) says that this is a key dimension of the success of the implementation, then this could be a key factor why BB have experienced difficulties.

Often the implementation of a new tool will result in a change of Management systems and structures, but in this specific context, the structure of managing decision has not undertaken any change. When asked, whether the interviewees thought they were performing different tasks, the answer were no. Neither had their status changed after the implementation. Therefor there is no
gap in this dimension.

The final dimension of the ITPOSMO model, is a catch-all dimension “other resources” it was found that the most important aspects, which was not included in previous categories was time, as it was found that a series of actions performed within blackboard has become more complicated than they were before. In fact the secretary wrote us an email after the interview was conducted and highlighted some actions which had become much more time consuming for her to conduct. The student who we interviewed did also complain about the time she had to spend on logging on BB, compared with CN. On the other hand, BB did actually make some improvements when it came to retrieval of student papers for the administrator, making it easier for her to download more a set of papers. Therefore this dimension can best be characterized as a having a medium gap.

Now that we have established how the implications have emerged, which was mainly due to the large gap in the dimensions of system design and current reality in staffing & skills, information, and objectives & values, focus will now be on why the implications have emerged.

Based on the theory of the technology acceptance model which is applied for explaining how the implications have emerged, we have found that communication, training and functionality, constitute the perceived ease of use of BB in MMCs environment, and user perception constitute perceived usefulness. It is found that the reason for the low perceived usefulness among user of BB, is mainly due to the low functionality of critical functions in ISB context, and BBs unstructured visual appearance. It is also found that the lack of mandatory student training in BB has comprehensive effect of the actual system use. Especially these two has an effect on the perceived usefulness, and in the end, the actual system use. In this case it has resulted in an reduction between the intended actual system use, and the realized actual system use, as the interviews has revealed that there have been no significant change in behavior among e-tool users, as they still apply the old system terminology, and have not experienced any significant change in their daily
use of BB, except that it has become more difficult, to execute the tasks and apply the functions they usually use.

The critical functions low performance, BB’s non-structural appearance, as well as the rather poor training, and involvement of staff in implementation has resulted in user perception being very low. The student preferred a more simplistic design, rather being able to do as much as BB can offer. For an example, all respondents said that they felt that BB could do too much, and features as being able to see your grade, interact with teachers was not something they would use. Even a couple of the respondents said that they felt that BB was Americanized, which strongly indicates that BB was designed for another study environment than the environment at ISB at AU. It was established that users in general had a poor attitude towards changing tool, which is primary due to lack of the communication of why a change was necessary. When users actually gained access to the tool they were meet by so many features and options, which did not have a the structured appearance that they were used too, and did not find BB as intuitive as previous e-tool

Conclusion

Although resistance can be seen as a normal reaction to change (R. Hirschheim and M. Newman, 1988) there have been several factors which have enhanced the negative attitude towards BB.

One of the most critical factors of successful implementation (Nah et. Al, 2001) is to involve the users in the implementation process. Nah et. al (2001) also states how effective communication is critical in implementation, and expectations on all levels should be communicated, through interviews with AU secretary it became clear, that AU definitely made sure to inform their staff of the upcoming implementation of BB, But as Nah et. al also states, it is highly important to include the users perspective throughout the process, from pre-implementation until the system goes live, as this gives the possibility to adjust according to the user’s needs. Individuals often resist change on the grounds that they have been excluded from the decision-making process, associated with the change. ISB course secretary states that since the implementation of BB, adjustment was made accordingly. These adjustments could have been avoided by intensive involvement of staff
in pre-implementation phase, and conducting an investigation of the user’s actual needs for BBs functionality.

R. Hirschheim and M. Newman (1988) suggest that individuals resist change because they have not been convinced of the necessity of the change. In order for people to respond positively to change, they must feel change will bring them benefits, and they may be difficult to convince the users of. This was definitely the case in this implementation process, since the established reward system did work as planned.

Resistance is also more likely to occur in systems which are cumbersome to use, ‘unfriendly’ unreliable, and have a lack of functionality. If users find the technical quality of the system to be low, they are unlikely to welcome it, with the result that they would be disinclined to use, which have been the case with the social features of BB.

The Issue of increasingly organizational invalidity has been invoked, as the cause of user resistance to new systems; invalidity is defined as a mismatch between specific features of system design and characteristics in the existing organization, including elements of organizational structure. The core idea is that resistance arises because the system does not fit the individuals and groups work patterns, or the structure of the organization, as established using the ITPOSMO model where a large gap between system design and system reality was identified.

Training is often mentioned as a reason why systems are not taken full advantage of. If users are not properly trained to use the system, or trained on the facilities available, they may choose to avoid it. Education, or more specifically lack thereof, is also thought to contribute to resistance (R. Hirschheim and M. Newman, 1988) which has been the exact case of ISB students and staff, as established in TAM and the large gap between reality and design in ITPOSMO staffing and skill category.

The large gap in user and organizational perspective in ITPOSMO, also indicates that BB structure, and social ambitions, was made to fit a more Americanized environment, and therefore difficult to
implement in MMCs environment. The dimension of objectives and values found that BBs design was very far from the objectives in the reality that is needed. Overall the extra set of features has only lead to more user resistance towards BB, and the perception that BB is not fit for MMC culture.

**Implications for researchers**

We have found that the TAM brought some relevant perspectives as of describing the actual behavior and how the implications had emerged. Although we found it necessary to modify the ease of use, as it were too broad a term, in this specific context where several factors may influence the ease of use. We identified three relevant factors that defined how users consider the ease of use.

1. Communication
2. Training
3. Functionalities

The Leavitt-Ry model has a limited use, since the model does not explain how, nor why implications emerge in organizations. In our specific context the scope of Leavitt was to provide an overview of the environment of which the implementation took place, and for that purpose the model performed well, as it accounted for the importance of several factors, as well a dynamic relationship between them. Although it performed well, we found that vision, mission and goals does not undertake any change, when implementing an e-learning system, in the analyzed context.

Finally the ITPOSMO model provided a great insight to why the implications did emerge. ITPOSMO provided the paper with a variety of dimension which could be the reasons of the implications. While we did find evidence for most of the dimension as reason for the implications, Management systems and structures, did not have any significant influence.
Implications for practitioners

It’s fair to assume that the environment at MMC and Bsc(B) is similar, as both educational programs are offered by the same institute - marketing and organization, the teaching methods are identical, and the course description are identical. The only critical aspect of comparing the two environments, is that it is likely that MMC and Bsc(B) student come to AU with different backgrounds and attitudes towards are more complex e-tool, that is BB. However we do feel, that it is fair to assume, that communication students would have a more open approach towards an e-tool incorporating a social platform, and it is therefore possible that problems that have not occurred on MMC could be present with ISB students at Bsc(B).

Limitations and further studies

This article is limited as it only gain knowledge of the learning environment within the study programs of MMC and Bsc(B). To apply this knowledge, one must examine the context and make sure that the context is very similar to the one investigated, to apply this knowledge at other universities. Furthermore, this study may also only be relevant for others which are making analysis within the field of e-learning tools. We cannot say for sure that the same issues we have discovered will occur when implementing other types of information systems.

Furthermore this paper is the first of its kind to examine implementations of e-learning systems in the university context. Further studies should be made to sustain this article before it can be applied as a general rule for implementing e-learning systems.

We also encourage others to examine how the identified problems can be solved within the context of the learning environment. It is highly relevant to find possible solutions to our identified issues in the implementation, and how these solutions fit within the learning environment, since universities is a public instance, you may not have the same tools as in other implementations projects in the private sector.
Bibliography


Appendix

Interview guide

1. What is your general opinion about the need of e-learning tools at universities in general?
2. What is your general perception of blackboard, as an e-learning tool?
3. What do you think about students/co-workers general attitude towards changing e-learning tool?
4. What is your primary use of BB?
5. Do you think that the teaching environment have changed, after implementing blackboard?
5.1 If yes, how?
5.2 If no, why not?
6. How do you find BB compatible with your institute?
7. How would you rate the students abilities to apply their basic IT skills?
8. How would you rate your co-workers ability to apply their basic IT skills?
9. Can you mention some initiatives that have been done to increase the understanding of blackboard?
10. What do you think about the training you received in BB in general?
11. Are you aware of the online-courses in BB?
11.1 Have you taken any?
11.2 If yes, where they beneficial?
11.3 If no, why not?
12. Do you think that there have been enough time for you to learn how to use blackboard before it went live?
13. Have there previously been any implementations of I/S systems at AU? (Secretary only) how did you experience that process?
14. Do you know the social functions of blackboard?
15. What do you think about the social features of BB?
16. How would you rate blackboards social features on a scale of 1-10?
16.1 Why?
17. Do you think AU/students/etc. take full advantage of the options blackboard has to offer?
18. Do you feel closer or more distanced from your lecturer/student TA (communications vise)
17. To what extent do you feel you get the same level of information?
17.1 if not, why do you think that is?
18. Please mention some functions that come to mind, that are essential for blackboard.
19. How would you describe the ease of using BB as a teacher/student/administrator
20. How would you rate blackboards functional features on a scale of 1-10?
20.1 Why?
21. Have BB changed the way you work as an administrator/student/TA
22. Do you execute other tasks within BB, then you used to
23. What do you think about the structure of BB?
24. Do you think BB has made it easier for you to communicate
25. What is your general perception of blackboard, as an e-learning tool?
26. Where do you see challenges with BB
27. What do you think are some benefits of BB?
28. What do you think are the mean differences between campusnet and BB?
29. How would you describe the communication about switching from CN to BB?
30. When using campusnet, did you feel like there was any features missing?
31. Did you notice any start up problems, when blackboard was launched?