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## **Bridging the Gap Between Local Practice and Global Strategy**

*Selecting Virtual Learning Environment at Aalborg University*

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# **Bridging the Gap Between Local Practice and Global Strategy: Selecting Virtual Learning Environment at Aalborg University**

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## *Abstract:*

*This paper aims to describe how a global strategy can link with local ownership by building on knowledge and experience already present in different educational environments at the university. This has been the case at Aalborg University in the process of selecting Virtual Learning Environments. It is concluded that it is possible to prepare for a link between global strategy and local ownership by facilitating a process that involves local experts from different parts of the university.*

## **1. Introduction**

Aalborg University is a Danish university that offers more than 60 educational programmes within three faculties – Faculty of Humanities, Faculty of Social Sciences and Faculty of Engineering and Science. Aalborg University is known for its focus on a pedagogical structure of problem-based projects and problem-based learning.

Aalborg University has established an advisory board for ICT (RIKT) that advises the rector on university wide ICT policy issues. RIKT has established two networks, the ICT-pedagogy network and the ICT-technology network, that initiates, coordinates and carries out ICT projects to support the implementation of the ICT strategy of the university.<sup>1</sup>

The strategy, concerning the area of ICT pedagogy, states that Aalborg University aims at consolidating and developing its position as a front university in ICT-pedagogy. Also, ICT must be an integrated part of the pedagogical model(s) and activities and must be used to support and develop teaching and learning in all educational programmes of the university.<sup>2</sup>

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<sup>1</sup> <http://www.rikt.aau.dk/Om+RIKT> (only in Danish)

<sup>2</sup> <http://www.rikt.aau.dk/GetAsset.action?contentId=566991&assetId=567000> (only in Danish)

One of the strategic measures employed to meet the aim is the implementation of a common e-learning tool kit for all teachers – a tool kit that acknowledges pedagogical diversity and differences in experience and knowledge about the use of ICT in teaching and learning.

The first step towards a common e-learning tool kit has been to decide on a common virtual learning environment (VLE). The VLE is supposed to be a prominent component in the e-learning tool kit.

This paper examines how Aalborg University has produced a base of information on which the rector can decide on a common VLE for the university.

Aalborg University has a decentralised ICT-organisation with ICT units based in faculties, departments or parts of departments. However, there is a central unit running the administrative systems. So far, decisions on a VLE have also been decentralised to a large extent, but as indicated the aim is to implement a common VLE.

The goal has been to offer a VLE that can be implemented in all programmes regardless of ICT knowledge. Another primary goal has been to draw on the VLE experience already present in the university.

The criteria for selecting VLEs for closer investigation were:

- the system is fully implemented in programmes
- the system is implemented within more faculties
- the system is run and supported by an ICT unit
- the system is implemented on a relatively large scale
- documentation of user experience from teachers, students and administrators is available.<sup>3</sup>

The VLE FirstClass has been used for several years in part-time continued education taking place off-campus. Fall 2004, it was by recommendation from RIKT decided that FirstClass should be the common VLE for distance education on Aalborg University. The ordinary programmes on-campus use several different more or less VLE-like systems. One of the most advanced and thorough uses of a VLE is seen in the programme Human Centered Informatics that uses the VLE Lotus QuickPlace<sup>4</sup>. Spring 2005, FirstClass and QuickPlace have been the

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<sup>3</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Afklaring\\_af\\_valg\\_af\\_laeringssystem.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Afklaring_af_valg_af_laeringssystem.pdf) (only in Danish)

<sup>4</sup> IBM has changed the name of the application to Lotus Team Workplace, but I use the old name QuickPlace in this paper.

focus of an investigation uncovering pedagogical, technological and economical aspects, since these systems met the above-mentioned criteria.

## **2. A Value-Based Process**

The ICT-pedagogy network appointed a core group of people with insight into ICT from a pedagogical and/or technological standpoint. The core group represented different departments. The appointment of the core group was based on the following set of values and rationales:

Firstly, it was important to build on knowledge already present in the organisation – a knowledge that differs from department to department. This also contributed to a relatively fast process.

Secondly, this made the different needs and requirements in different parts of the organisation visible.

Thirdly, it was important that a decision on a VLE was grounded locally to prepare local ownership of the VLE. This suggests a democratic process.

Finally, as pedagogy and technology are interrelated areas, it was essential that the core group contained members from the ICT-technology network.

In conclusion the process was divided into two phases. The first phase produced an extensive questionnaire to be used in evaluation of the two VLEs. The first phase also produced an evaluation of the two systems based on the questionnaire. The second phase produced an implementation plan for the VLE(s).

## **3. Developing Recommendation for Selecting VLE**

In the first phase an extensive questionnaire was developed. The replies of the questionnaire were summarized and categorized to obtain an overview of the opportunities and constraints of the VLEs. Furthermore, principles and evaluation criteria for selecting VLE were formulated.

### **3.1. The Questionnaire**

The core group developed an extensive questionnaire to investigate pedagogical, technological and economical aspects of FirstClass and QuickPlace. The questionnaire had its point of departure in three scenarios that describe typical pedagogical practice in relation to teaching and student projects.<sup>5</sup>

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<sup>5</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Afklaring\\_af\\_valg\\_af\\_laeringssystem.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Afklaring_af_valg_af_laeringssystem.pdf) (only in Danish)

The aim of the questionnaire was to collect and document existing knowledge about the two VLEs.

The first scenario described the teacher directed learning and focused on a) the relation between teacher and content, b) the relation between student and content, and c) the relation between teacher, student, content and learning goals.

In the relation between teacher and content the following kind of questions were asked:

- Can I publish content like streamed video to my students in the VLE?
- Can I re-use content year after year in the VLE?

The second scenario described the student oriented kind of learning and focused on a) the relation between members of a project group, b) the relation between the project group and content, and c) the relation between project group and advisor.

In the relation between project group and advisor the following kind of questions were asked:

- Can we chat with our advisor in the VLE?
- Can we do a video conference with our advisor in the VLE?

The third scenario described the more general aspects and focused on a) experience regarding operation and support, b) technological aspects, c) development and future aspects, d) economical aspects and e) integration between VLE and administrative systems.

In relation to the more general aspects the following kind of questions were asked:

- How many users does the VLE have?
- For how long has the VLE been used?
- Are there procedures for preparing future users to use the VLE?

The questionnaire was sent to system administrators behind FirstClass and Quickplace.

### **3.2. Principles and Evaluation Criteria**

In order to be able to work with the comprehensive replies to the questionnaire, a set of principles for selecting VLE were formulated:

- the VLE should support teaching and learning activities on-campus
- the VLE should meet the needs of the majority
- the possibility of fast implementation at a manageable price is essential
- adequate possibilities of meaningful data exchange must exist

- the decision taken on the basis of the recommendation from the ICT-pedagogy network should not to be considered everlasting – as systems and needs change.<sup>6</sup>

Also, a suggestion for evaluation criteria was developed that consisted of questions related to specific areas such as:

- needs of the majority – what speaks in favour of or against use of one or both VLEs on all three faculties?
- quick implementation and economy – in comparison, how do the two VLEs seem to meet the need for quick upgrade for large scale use?
- data in and out of the system – in comparison, how do the two VLEs meet the needs for meaningful data exchange between the system and the environment?
- change of decision – if the university experiences need of a third system or wishes to drop one of the VLEs, what would the consequences/costs be?<sup>7</sup>

The above mentioned principles and evaluation criteria were used by the ICT pedagogy network to formulate the recommendation regarding selection of VLE.

#### **4. Recommendation for RIKT Regarding Selection of VLE**

Originally, the work done by the core group and the ICT-pedagogy network was anticipated to lead to the recommendation of one VLE to be used on-campus at Aalborg University. However, in the process of developing the questionnaire, working with the replies from the questionnaire and formulating the principles and evaluation criteria for selecting VLE, it became evident for the ICT-pedagogy network that both VLEs could comply with the ICT pedagogical needs at the university. Both VLEs had well-established organisations with experiences from different learning environments, programmes and faculties. Also, some educational programmes were already taking steps to use FirstClass on-campus in order to be able to co-ordinate off-campus and on-campus activities as well as to benefit from the possibility of applying off-campus experience to on-campus activities.<sup>8</sup>

Therefore, the ICT-pedagogy network recommended both VLEs for on-campus use and it was suggested that programmes should be allowed to select VLE based on their own opinion of what would meet their needs best. The recommendation also included the suggestion that RIKT

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<sup>6</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Forslag\\_til\\_principper\\_for\\_valg\\_af\\_elaeringssystem.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Forslag_til_principper_for_valg_af_elaeringssystem.pdf) (only in Danish)

<sup>7</sup> Ibid.

<sup>8</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling\\_elaeringssystem.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling_elaeringssystem.pdf) (only in Danish)

should ensure collection and share of experiences from the use of VLEs in different parts of the university.<sup>9</sup>

The ICT-pedagogy network and the core group were given the task of formulating a recommendation for implementation of the VLEs. based on this recommendation of two VLEs.

## **5. Developing Recommendation for Implementation Plan**

In the second phase of the tasks of the ICT-pedagogy network and the core group, requirements for the technical part of the e-learning organisation were formulated as well as requirements for e-pedagogical support, design and evaluation. User scenarios and support procedures for typical situations were described for both VLEs. Also the possibilities of user authentication were examined to ensure that the VLEs would be able to meet the requirements for shared user authentication that Aalborg University is in the process of developing.

### **5.1. Requirements for the Technical Part of the E-learning Organisation**

Requirements for the technical part of the e-learning organisation were based on the fact that Aalborg University has a decentralised ICT organisation. The requirements stated that service, support and maintenance, as well as technical product development regarding the two VLEs, should take place in existing, qualified environments at the university. The supporters of the local ICT units should be obligated to have knowledge about the VLEs offered and supported by the university and should diffuse that knowledge. Resources must be allocated to the e-learning organisation to ensure an ongoing development of technical e-learning qualifications.

Supporters must be committed to join the e-learning support network, to establish and maintain a technical help-desk and to contribute to the exchange of experience internally at Aalborg University and externally.<sup>10</sup>

### **5.2. Requirements for E-pedagogical Support, Design and Evaluation in the E-learning Organisation**

Taking the pedagogical diversity of the university as point of departure requirements were formulated regarding e-pedagogical support, design and evaluation. The requirements stated, among other things, that e-pedagogical designers should seek out and initiate VLE implementation activities. A pedagogical help-desk must be established and maintained, and examples for inspiration must be available for teachers, educational programme developers etc. Resources must be allocated to the e-learning organisation to ensure an ongoing development of pedagogical e-learning qualifications as well as evaluation and documentation of practice

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<sup>9</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling\\_elaeringssystem.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling_elaeringssystem.pdf) (only in Danish)

<sup>10</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Support\\_drift\\_udvikling\\_bilag\\_A.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Support_drift_udvikling_bilag_A.pdf) (only in Danish)

experience. E-pedagogical designers must be obligated to take part of networks and contribute to the exchange of experience internally at Aalborg University and externally.<sup>11</sup>

### **5.3. User Scenarios and Support Procedures**

Support procedures were described for the two VLEs, based on different user scenarios on educational programmes with different ICT qualifications and ICT pedagogical experience. The descriptions showed differences in the services provided by and the qualifications of the two organisations.

The core group recommended that the services should be similar for both organisations, in order to provide the educational programmes with the best foundation for selecting a system based on the system's possibilities instead of the services delivered by the organisation in question.<sup>12</sup>

### **5.4. User Authentication**

At the moment Aalborg University is in the process of developing a shared system for user authentication. The core group considered it important to examine the VLEs regarding possibilities of shared user authentication to ensure that user data could be re-used. The findings were that both VLEs would be able to work with shared user authentication.<sup>13</sup>

## **6. Recommendation for RIKT Regarding Implementation Plan**

Based on the findings from formulating a plan for implementation the core group and the ICT-pedagogy network recommended the establishment of a common e-learning organisation dedicated to run, support and facilitate implementation of the two VLEs technically, pedagogically and organisationally.

The premises for the recommendation were:

- pedagogy, technology and organisation are closely related
- existing, qualified environments must be taken into consideration, that is, in reality the e-learning organisation will be a union and upgrade of the two existing organisations for FirstClass and QuickPlace
- an e-pedagogical support must be established. This support must focus on existing e-learning activities as well as seek out and initiate new implementation activities

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<sup>11</sup> Ibid.

<sup>12</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Brugerscenarier\\_supportprocedurer\\_bilag\\_B.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Brugerscenarier_supportprocedurer_bilag_B.pdf) (only in Danish)

<sup>13</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Autentifikation\\_bilag\\_C.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Autentifikation_bilag_C.pdf) (only in Danish)

- an e-learning support network must be established. This network must consist of supporters from the local ICT units and the common e-learning organisation and should establish and maintain a technical help-desk
- an e-learning dimension of the pedagogical education programme for assistant professors must be developed.<sup>14</sup>

RIKT formulated a recommendation for the rector, based on the two recommendations from the ICT-pedagogy network and the core group regarding selection and implementation of VLEs.

## 7. Status and Conclusion

The work carried out by the core group, the ICT-pedagogy network and RIKT has led to the principal decision that Aalborg University will run and support FirstClass and QuickPlace in a common e-learning organisation that offers technical and pedagogical support. At the moment, steps are taken to establish this common e-learning organisation so that the university, hopefully in the beginning of 2006, will be able to offer the two VLEs as part of the strategy of implementation of a common e-learning tool kit for all teachers.

The process so far has been successful in the sense, that all members of the core group and the ICT-pedagogy network fully support the recommendations for RIKT. Also, RIKT has acknowledged the usefulness of the recommendations. It still remains to be seen whether the intentions of bridging the gap between local practice and global strategy will result in a successful implementation.

The criteria for selecting VLEs for further investigation were, among other things, that the system should already be implemented at Aalborg University so that pedagogical and technological experiences existed and could be drawn upon. These criteria should also make it possible to implement the VLE fairly quickly. However, the criteria also resulted in constraints on the process of selecting a VLE that could meet the needs of Aalborg University in the best way. Although the recommendation and later on also the decision fell upon both VLEs it is possible that other VLEs which were not investigated in the process would have been just as sufficient or even better for Aalborg University.

It still remains to be decided how Aalborg University will allow for further investigation of so far not-experienced VLEs, since one of the principles for selecting VLE also stated that the decision should not be seen as an everlasting solution. The process of collecting and investigating knowledge and experience to formulate a recommendation has proven to be an extensive task,

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<sup>14</sup> [http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling\\_Forslag\\_til\\_implemtering.pdf](http://www.iktpaed.learning.aau.dk/Dokumenter/Andet/e-laeringssystem/Indstilling_Forslag_til_implemtering.pdf) (Only in Danish)

although knowledge and experience already existed. One way of obtaining knowledge and experience about other VLEs could be to facilitate small scale implementation in different educational programmes. However, this would still require the work of some kind of core group representing different learning environments to ensure that the VLE would meet the needs of the majority. In the present case, the appointment of the core group proved to be an excellent way of making needs of different educational environments visible.

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