

JISC infoNet Case Study: City University Implementation of an academic enterprise system

Of interest to:

Heads of E-Learning, Senior management in HE/FE institutions, educational developers

Purpose:

This case study describes the model developed to implement an institution-wide online learning environment at City University, London.

It outlines the decision making process and describes the various impact that this had on other parts of the University.

Key issues of institutional e-readiness and the 'can't not do it' approach are considered as important drivers affecting the successful outcomes of such a project.

Forward:

When we embarked on our implementation of an academic enterprise system at City University we were one of the first Universities in the UK to implement this particular product. Throughout the first year of the project I frequently found myself being asked to make on-the-spot decisions and creating policy without really knowing what the implications of these actions would be further down the line. Such a process whilst in many respects exhilarating and challenging was also immensely tiring and scary at many points. The support of other members of the project team was extremely helpful but I kept asking myself how other institutions tackled this process and whether they experienced the same problems and challenges as we faced. Many of our issues were unique to our institution and product, but others were, I was sure, universal to the implementation of such complex and wide-reaching systems. The implementation project covered not just the technical logistics of implementation and integration but also the academic and pedagogic benefits of introducing online learning across the University, administrative and other student support processes and staff development activities. Such a wide and diverse remit was quite unusual in some respects, as I found out later when discussing our project with other institutions, but many of the elements had themes and issues in common.

Over one year later I now try to assist other institutions by discussing our implementation with them and this is the rationale behind writing this case study. I know that I would have found such an overview immensely helpful when I was embarking on this project over eighteen months ago and I hope that you too find it useful, even if it is just at the level of supporting your own experiences.

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Overview:

This case study considers the impact of introducing an 'enterprise system' for the development and promotion of e-learning at City University. The benefits and challenges of pursuing this approach are assessed, for all sectors of the institution, as well as the contribution of this implementation to an overall process of institutional change. City University undertook a large scale leap forward in its e-learning and systems integration through implementing this enterprise system – following a 'big bang' approach to implementation. What this case study intends to illustrate is that a project of this scale can be achieved in a relatively short time scale through focusing on a number of key areas.

Introduction:

The significance of online learning environments has developed dramatically in the last five years or so. Once seen as the preserve of the 'lone ranger' academic or the domain of distance learning and on the peripheral of mainstream learning and teaching activities, now online learning environments are regarded as central to the majority of educational and information technology strategies at UK HEIs. The recent UCISA study charted this development remarking that 'the overall picture is one of evolutionary consolidation' (Browne and Jenkins, 2003) where now institutions are investing heavily in implementing and supporting e-learning via managed or virtual learning environments. But just as the perspective on the use of online learning environments has changed so have the technologies themselves. In the late 1990s most proprietary learning environment software could be downloaded for free and run off a single computer. As more institutions took to invest in the technology, the developers moved into creating 'enterprise' solutions, the one-stop-shop to learning and teaching online, a single portal which linked all other systems in the University together to supposedly enhance the learner experience with the added benefit of increased efficiency for the University. The notion of a virtual learning environment (VLE), defined by JISC as 'the "online" interactions of various kinds which take place between learners and tutors', has been subsumed into a move towards managed learning environments (MLE); 'the whole range of information systems and processes of a college (including its VLE if it has one) that contribute directly, or indirectly, to learning and the management of that learning'. And now as a further complication, just as institutions struggle to come to terms with formulating their own ideas of an MLE, the term 'enterprise system' comes into common currency – but what does this really mean and should all institutions have one?

What is an 'enterprise system'?

Term 'enterprise' is used in connection with online learning technologies to represent the scope and range of these ventures. Academic enterprise systems are intended to support the processes and 'workflow' of an organisation, using terminology from the business world inherent in the notion of an enterprise system – a process management solution which integrates diverse systems into a coherent whole. One could argue that there is actually little difference between this and an MLE, although an MLE is broader than just the academic enterprise system and represents not only the processes that need to be integrated but a vision of institutional organisation in terms of information and data flow, business processes and user touchpoints or interaction. For the purposes of this case study, an academic enterprise system will be regarded as a technological solution which encompasses a VLE or online learning and environment and has the

potential to form a sizeable constituent of a managed learning environment. This stress on 'potential' is important in terms of institutional readiness – it may sound obvious but enterprise systems will not automatically encourage integration, rather they depend on it in order to function successfully.

Why chose an enterprise system?

The benefits of adopting such a system are multifarious. Firstly, at a practical level, implementing a system that can easily interface with other on campus systems, such as student records, information and library systems and so on, is a must for the efficient management of data flow within an organisation. Secondly, such large scale systems enable consistency of process across the institution and should ensure more accurate data. Thirdly, adopting an institutional approach to the implementation of e-learning encourages greater uptake across academic institutions and economies of scale in terms of development and support. Fourthly, introducing such systems promotes the development of longer term initiatives such as the construction of a portal and design of an MLE for the institution, if these are not already in place. Finally, good practice in terms of educational design and content creation of online materials can be more easily shared across the institution to enhance the student experience.

The figure below outlines the range of benefits that were considered to flow from the decision to implement an academic enterprise system.

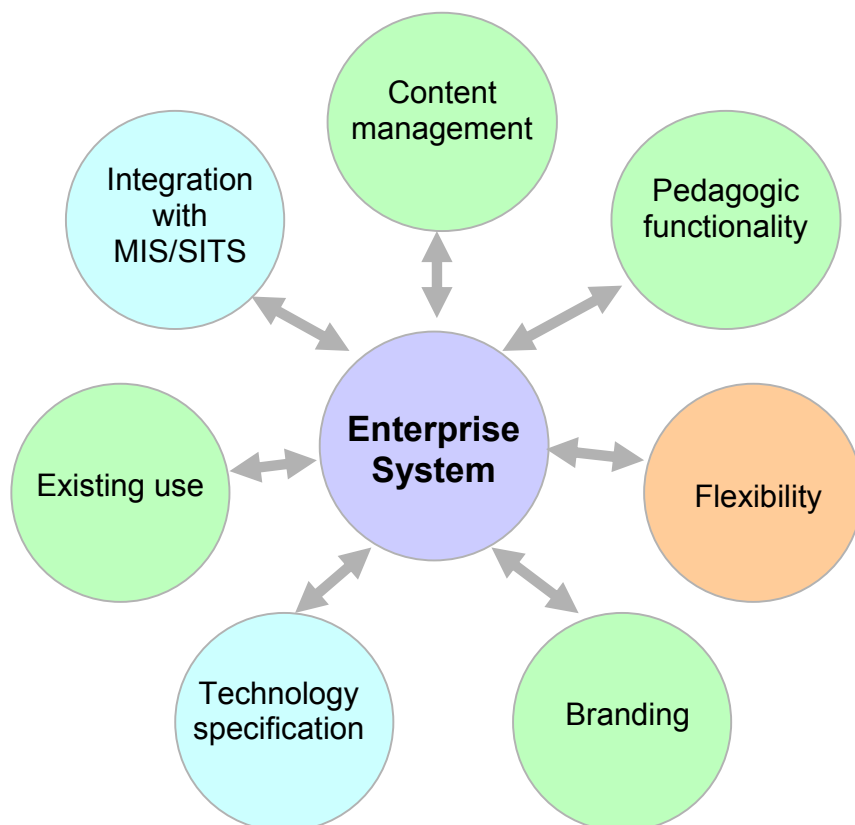


Figure 1: Motivating factors driving the choice of an academic enterprise system

These considerations, and some others around the specific flexibility and tools available within the enterprise product we chose, were significant in the decision making process at City. Before we consider this in more detail it is worth outlining some of the barriers to change we experienced at City before outlining the institutional context of the University in more detail.

Challenges to implementation

Although we were fortunate at City to have support from senior management, particularly the Pro Vice Chancellor for Teaching and Learning, the Chief Information Officer, Directors of Computing, Library Services and Business Systems and including our Vice Chancellor who has actually taught online, we did still experience many of the usual challenges associated with institutional change. These are considered in more detail below and will be familiar to other institutions who have attempted to implement wide scale change:

Barriers and obstacles to change

These can be identified as falling into four interrelated areas:

- Generic e-learning issues – strategy, perceptions, e-readiness

The decision whether to have a specific e-learning strategy has been a continual issue at City. Our learning and teaching strategy, mentioned below, refers to the development and promotion of e-learning. Although it was agreed not to create a separate strategy for e-learning, which is to all intents and purposes another mode of delivery, it has become apparent that a clearer e-learning vision is necessary for the institution. The 'big bang' approach that was adopted provided the initial impetus and rationale for promoting and developing online learning, but one year on there is a need for a more defined sense of purpose. Not being constrained by a specific strategy in the early stages did have the advantage of enabling priorities for future planning to emerge during the first year. However, the lack of a strategy could have affected the perception of e-learning as integral to the University's business activities.

As is common in other institutions, countering negative perceptions of what online learning actually means has been a key challenge. Much of this hinges around the fact that there are a variety of definitions of 'e-learning' and understandings of what it means in practice. Staff often fear that the introduction of new technologies into the curriculum will lead to redundancies and merely production focused or automated teaching techniques. However, those staff who are more familiar with e-learning methodologies realise all too well the amount of time and effort to implement e-learning successfully.

Institutional e-readiness is a substantial barrier to implementing an academic enterprise system. 'e-readiness' can encompass a variety of aspects from the technological infrastructure to staff and student perceptions. There is no easy way of ascertaining the e-readiness of an institution or when is the optimum time to implement an institutional e-learning solution. However, the success or impact of the project can be severely affected by readiness or lack of it of the institution. Before embarking on such a project it is worth seriously investigating current resources and perceptions relating to e-learning. Trying to consider this from a holistic perspective is necessary – it is not just about the technology or pedagogy but about administrative systems, support structures, data flow processes, staff and student expectations and resources, funding and educational development programmes amongst other issues. At City we endeavoured to

evaluate the e-readiness of the institution prior to implementation, however, during the course of the implementation many new issues came to light.

- Human resources - academic staff, students, support staff

The human resources of an institution can be the best or worst promoters of e-learning projects. Paradoxically, a staff member that is enthusiastic about online learning and has developed considerable online resources can act as negative influence on staff who fear that they will never be able to emulate such enthusiasm or aptitude. Working with staff on an individual basis and tailoring development programmes to meet their fears and expectations is crucial in ensuring that staff are able to utilise online technologies to suit their needs. In order to gain maximum benefit from such a large scale system significant resource needs to be invested into the development and support off staff.

This goes for both academic staff and support staff. All too often e-learning developments are implemented with little regard to the impact on support and administrative staff, when it is often these posts that play a crucial role in the success of the project. By ensuring that academics work in teams with support staff to define an e-learning solution that works for all, some of the potential efficiencies of e-learning can be more effectively realised.

Student preparation is also crucial. Often there is a presumption that students are all technically literate and well prepared to undertake learning and teaching activities online. This is so frequently not the case. Students can feel cheated if enrolled for a face-to-face course and then told that they will be required to work online. Many mature and adult learners are not confident with technology and fear that their educational opportunities have been compromised with the introduction of technology. Working with staff to meet and shape the expectations of students is an important aspect in the rollout and implementation of large e-learning programmes.

- Contextual – infrastructure, organisational structures, current provision

The context of the specific institution will always shape the direction and success of an e-learning project. This is related to the first category above in terms of e-readiness and perceptions. But in addition there are specific issues around the structuring of the institution which impact on an e-learning project. Many universities are used to operating in silos where one department or service has little interest or understanding of another. E-learning cuts across departments and services, insisting that technologists work alongside management, academics, educational developers and support staff. Whilst this can be a great way of breaking down institutional barriers, there needs to be a clear direction from above to ensure that there is a willingness to work together and foster mutual respect and understanding to achieve a common goal. This is not always an easy process and relies on personalities. Related to this is where the responsibility for e-learning lies within the institution for the e-learning initiative. At City it is within Library Information Services, but at other institutions it can be variously located within Computing Services, Educational Development, Business Systems or independently. The political implications surrounding the decision of where to locate the ownership of this service can impact on the future success of the implementation and also the perception of what the e-learning initiative is all about in terms of priorities. Finally, current provision can impact on the choice of software and its uptake. Current provision may

influence the decision to purchase one product over another, but then persuading users of other products to buy into the institutional solution can be difficult. Furthermore, existing users who have been working at School or Department level independently may have a specific set of expectations around their usage of online learning and resist attempts to co-ordinate processes into a centralised model.

- Resources – time, cost, technology

Anyone who has worked on an online learning programme, whether in an academic or support role, will understand the huge amount of effort that it takes to develop and sustain this form of learning. Whilst there may be long term efficiencies, the short term development costs of creating fully online learning programmes are great and should not be underestimated. However, the beauty of e-learning is that there are many models that can be promoted and assisting staff with the recognition that there is not a 'one-size-fits-all' solution can be key to assuaging concerns about resources. Adequately supporting both staff and students during the rollout and embedding of e-learning into day-to-day learning and teaching activities is often not regarded as a priority during the project planning process and again can take large amounts of time. Problems with the technology, particularly during the early phases of implementation can not only increase resource costs but also alienate both staff and students from utilising e-learning methods.

All these barriers were encountered during the implementation at City, a later section describes in more detail how by focusing on six key areas of activity we attempted to meet and overcome these challenges.

Institutional context

City University is a predominantly postgraduate institution with approximately 11, 500 students, around fifty percent of these are postgraduate. In addition, the University has a high proportion of international students and receives the least amount of funding from HEFCE of any UK university. The University's strap line is 'the University for business and the professions' and this reflects the institution's focus on vocational and professionally orientated subjects. City has grown by incorporating other institutions in specialist areas, for example Law and Nursing. Organisationally the University is separated into two Institutes (Law and Health Sciences which incorporates the School of Nursing and Midwifery) and five Schools (Arts, Business, Engineering and Mathematical Sciences, Informatics, Social Sciences). The University is spread over a number of sites, with certain sites devoted to one School, for example Inns of Court School of Law, Cass Business School and St Bartholomew's School of Nursing and Midwifery. Add to this the devolved budgeting system at the institution means that each School has a particular ethos and culture and a certain sense of financial autonomy from the centre.

Central services, including the Information Services portfolio which encompasses Computing Services, Business Systems and Library Information Services, is located at the main site, but other sites have their own affiliated local services. Many degree programmes at City are accredited by professional bodies thereby requiring Schools to balance the requirements of the institution with those of the validating body. This, coupled with the independence of the Schools makes for interesting challenges when attempting to introduce an institution wide service, such as that of an enterprise system.

Rationale

The decision making process around implementing e-learning, via the means of an academic enterprise system, was partly centred on a realisation that the institution could not afford 'not to do it', based on the Collis and Moonen (2000) maxim and an acknowledgement that e-learning well supported key institutional objectives, as outlined below. There were also administrative, political and pedagogical needs which were realised through this implementation.

- To meet the changing educational needs of individuals, employers and society. The flexible nature of online learning and potentials for developing new and more innovative modes of delivery were regarded as particularly important for a University which targets professional and time-poor students. In addition, City's involvement with widening participation and lifelong learning were also regarded as well met by the introduction of a wide-scale e-learning initiative.

- To improve further our excellence in education, especially professional education, and to extend the range.

Enhancing the quality of degree programmes on offer, not just in terms of flexibility but through developing more innovative modes of assessment were key to the rationale behind adopting an institutional online learning environment. As referred to above, by reconceptualising the structure of degree programmes with online learning a more responsive portfolio of learning opportunities could be offered.

- To increase high-quality research activity that influences strategy, policy and practice.

With a large postgraduate population, the research agenda is obviously significant to any institution-wide initiative at City. Ensuring that the implementation project was led by academics and staff who had an interest in the pedagogic implications of e-learning prevented the project being seen as merely a technological solution with little relevance to the University's core business of learning, teaching and research.

- To enhance our reputation and effectiveness.

By implementing an enterprise system for e-learning it was envisaged that business processes across the University could be enhanced. This technology would act as a cornerstone in the University's development of an MLE and capitalise on those projects that had already begun to change the organisational infrastructure of the institution. The enterprise system could make real for staff and students many of the 'behind the scenes' developments that had already been occurring in the University's business systems.

Whilst this project was regarded as significant step in supporting and furthering the institution's key strategic objectives, the institutional context meant that the rollout and implementation would have to be handled in a particular manner. This precluded setting targets initially that required all Schools to offer a minimum number of degree programmes or modules online. Rather, a more flexible approach to rollout was adopted, based on a combination of a 'bottom-up' and 'top down' approach, which gathered in momentum as outlined in the following section.

Process of implementation

There has been much debate in e-learning literature about how to manage the inevitable change process that large scale implementation projects engender. For example, whether one should follow a top-down versus a bottom-up approach; whether a pilot year should be initiated to assess the impact on the institution and key stake holders; or whether such change should be evolutionary or revolutionary.

Change management literature, in particular, focuses on addressing the three developmental stages of institutional change – these being 'evolution', 'transitional' and 'revolution' (TALENT, 1999). Each stage can be characterised by a particular set of objectives and targets making such a model attractive in terms of project management. Conceptualising change as a continuum is also useful as it enables a clear vision to be defined and then the stages in the process of achieving this to be defined and realised.

Mapping this model onto the City implementation process the institution occupied the evolutionary phase for some time, with some institutional initiatives mainly encouraged after considerable, but small scale and unconnected work in individual Schools. It then undertook a 'big bang' approach to the implementation process with the purchase and rapid deployment of an enterprise system – moving into the revolutionary phase. One year on, the institution is now going back and embedding this initiative more fully – part revolution, part transition. It is important to describe this process in more detail.

Early stages

In 2000, the School of Informatics purchased a license for a virtual learning environment in order to support two specific degree programmes – an online (and face-to-face) Masters degree in Geographic Information in the Department of Information Science and an undergraduate degree programme in the Department of Computing entitled the Professional Pathway which runs on a work-based learning model and requires additional support for those students not in the University for four days of the week. About the same time other Departments were beginning to work with online learning, including Continuing Education with online language courses and the Cass Business School using online learning to support and enhance face-to-face activities in a more innovative manner. In response to these diverse developments and in order to bring practitioners working on new modes of learning together an ad hoc group entitled the Open and Distance Learning Group was formed to act as a forum to discuss and disseminate good practice. This included inviting speakers from external institutions to come and talk about their experiences. Membership was voluntary and included the Pro Vice Chancellor for Teaching and Learning, the Chief Information Officer as well as academic and support staff across the University. Learning and teaching activities were also brought into focus this year with the establishment of an Educational Development Centre to enhance and support professional pedagogical practice.

Growing interest

By 2001, there was greater interest in e-learning from across the University, although this was still at the level of certain Departments or individual academics pioneering e-learning developments. Senior management began to appreciate that other institutions were making significant headway in this area and whilst City wished to continue to

capitalise on its central London location in student recruitment, there was also an appreciation that the e-support of learning should be encouraged. These current initiatives were ad hoc, sporadic and un-coordinated which meant that the dissemination of good practice or the impact on the major business processes of the University was limited. To this end a series of six working groups were established to look at the impact of e-learning on the following areas: administration, technology, academic practice, quality, legal requirements and professional development. Membership of these groups was selected via interest and expertise to reflect the diverse range of experiences currently occurring across the institution. These groups met over a three month timescale and their work formed the basis of a major report suggesting strategies for the future development of e-learning which was discussed at the University Learning and Teaching Committee. The report concluded that there needed to be central support for the development and promotion of e-learning. This involved significant change management and restructuring of certain University processes. Schools would share the financial burden with central resources, but a co-ordinated approach to implementation was promoted.

Simultaneously to these developments, increased adoption of the online environment used in Informatics was occurring. In the Department of Information Science all modules had an online space from the autumn of 2001 and other Schools begun to share the Informatics server. There as a concern that whilst these developments should be supported, the ad hoc nature of uptake could prejudice more widescale implementation at institutional level. In addition, the University's Learning and Teaching strategy was published in 2001 which included a significant amount of references to e-readiness and preparing the institution from an educational development perspective to more coherent usage of e-learning.

Securing funding

Unfortunately after the ground swell of interests and developments during 2000 and early 2001, the situation developed little towards end of 2001 and into 2002. Due to certain funding restrictions any plans to develop e-learning across the institution stalled and other projects took priority. Staff in particular Departments continued to develop e-learning programmes but rather than maintaining the status of innovators at a national level, the University was starting to fall behind. Feedback from students was positive in the sense that they enjoyed the flexibility and independence of online learning, but from a staff level there were few resources to further support and generate new e-learning programmes. There was a danger that staff involved in the e-learning development groups in 2001 were becoming disillusioned at the lack of momentum centrally to implement a more co-ordinated solution. Furthermore, Schools with greater financial resources began to consider implementing / purchasing their own e-learning platform.

As the situation started to reach a critical point, the go-ahead was finally achieved to purchase an institution-wide online learning environment with accompanying support. In order to facilitate the initial funding decision a purchasing group was established to look at various software providers from a pedagogic and technical perspective. Matrices of requirements were drawn up to assess the functionality of each product and priorities were set in line with the institutional context and current usage. A license agreement was signed in December 2002.

The Big Bang

After a hiatus of activity in 2002, 2003 saw the University take a rapid leap forward in terms of its e-learning developments. Once the software agreement had been signed, the task of filling the support posts and establishing the e-learning unit (ELU) became paramount. It was agreed to locate the ELU under the umbrella of Library Information Services, within the Information Services portfolio. This would enable good relations with other support services to be developed and represent the academic and support role of the unit. Five support staff were appointed to implement the rollout of the online learning environment and promote e-learning across the institution. This team consisted of a project manager and academic head of e-learning; two instructional designers; one office manager/systems administrator and one media development officer. In addition one School appointed an e-learning support officer. All staff were in post by the beginning of August 2003 with the projected 'go live' date for the software of 15th September 2003. The period from June to September was extremely hectic, not only were the ELU staff attempting to establish a new unit to support e-learning but also learn to use the new enterprise system software, train and develop users and work out how to transfer data into the new system in ways that had not been done before.

Originally a target of 20 modules to go live on the new system was set for September 2003. However, as soon as it was announced that the University had an institutional, that groundswell of support for the e-learning initiative that had existed in previous years was revitalised and requests to set up new online modules exceeded expectations. By September 2003 over 70 modules were live on the system, approximately 150 staff had undertaken support sessions on using the software and over 2000 students were regularly logging in. A basic interface had been built with the student record system and computing services database to enable common and secure log in and semi-automatic creation of user accounts. The demand for e-learning had been realised and the luxury of holding a pilot year was not possible. Over the next year the amount of online modules continued to grow on a variety of models – from staff using the system to support face-to-face learning by uploading content to fully distance learning courses delivered solely online. By the end of the academic year 2003-2004, all Schools had some modules online and over 250 staff had been shown how to use the system, with more than 2,500 students accessing on a regular basis.

City's model

The model developed at City to support the implementation of the enterprise system consisted of moving from a distributed model of support to a co-ordinated one. As the implementation description illustrates between 2000-2002 there was significant interest in online learning supported by some high level champions. This is represented in figure 2 below:

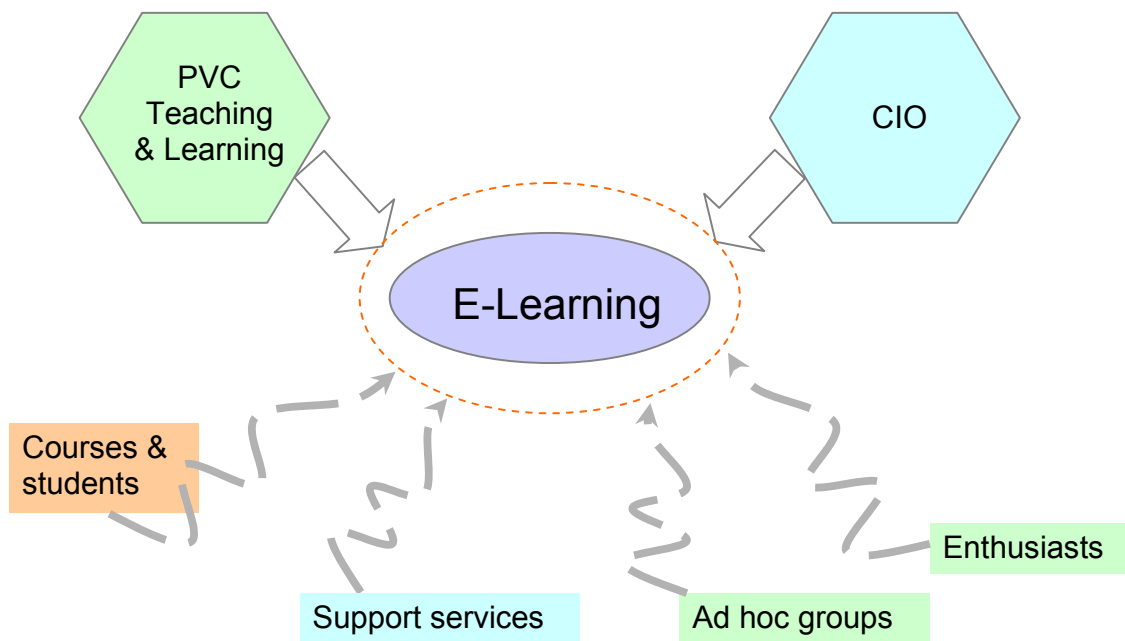


Figure 2: Initial, distributed model of e-learning support.

Both the high level champions put pressure on the institution to move towards a more formal and co-ordinated model of development. Their commitment was reinforced by various groups working to put pressure on the senior management from a grassroots level. One of the most persuasive of these groups was the students who pressured staff in departments to extend existing online learning provision. The Open and Distance Learning Group and the work of other enthusiasts, both in academic and support roles such as Educational Development and Information Services, were crucial sounding boards for ideas on how to develop online learning further.

After the 'big bang' in 2003, a more integrated model for the future development of e-learning was possible. Here, as represented simplistically in figure 3, e-learning, as supported by the ELU, is now at the heart of the relationship between a number of key stakeholders.

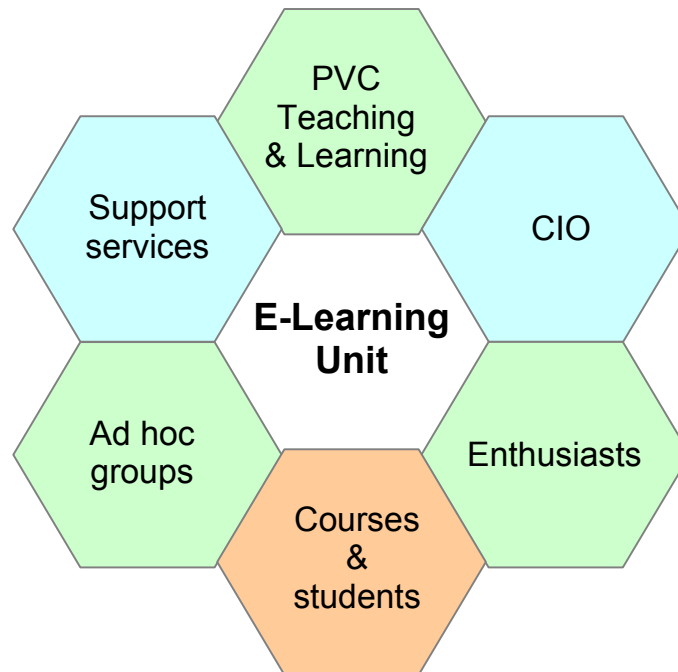


Figure 3: Integrated approach to e-learning

Those groups working at the grassroots level are still closely involved with the work of the ELU and have been used as champions to promote e-learning throughout the institution. In addition, the tied-in support of the high level champions has been key to promoting the system as a mission critical service. This model attempts to represent how e-learning has cut across both academic and support services and that the implementation at City has been successful as it has encompassed both a top-down and a bottom-up approach.

There have been six key areas on which the work of the ELU has focused in order to achieve a successful rollout of the enterprise system. Within these six areas a number of lessons have been learnt concerning institutional change and e-learning implementation.

Lessons learnt – 6 key areas

Institutional philosophy and readiness

City was not untypical of UK HEIs when it embarked on its e-learning implementation project. The disbursed approach to e-learning coupled with a devolved organizational structure is familiar to many other UK universities. However, City had undergone some significant changes in the year prior to the rollout of the e-learning system and this had a positive impact on the project as a culture of change was current within the institution. A new system of degree programme organisation and structure had just been implemented with a new credit framework and assessment regulations. Whilst this had placed a significant burden on academic staff to recast all their degree programmes into the new framework, it had the additional effect of encouraging staff to reconsider their

learning and teaching strategies and assessment policies. Although we were concerned that staff may have been suffering from change fatigue after this process, in fact, the increased awareness of the flexibility of the new system and a renewed interest in course design and structure did help the e-learning initiative. Coupled with these changes was some significant work that had been undertaken on the student record system, whilst this project had been controversial and had not been completed, there was an awareness across the University of the efficiencies of supporting a more robust central service for record keeping and data transfer. This again had an additional, if not completely anticipated, effect on the implementation of the e-learning system. Many staff in Schools appreciated the need to standardise records and ensure that information entered onto the student record system was up-to-date. That said, there is still a long way to go here, but the mindsets were changing with positive consequences.

This culture of change which was prevalent within the organisation could have worked against the e-learning project. However, the enthusiasm of staff to embrace new technologies in their learning and teaching activities had not been reduced by other developments. If anything, after enthusiastic staff had contributed to groups looking at e-learning over the previous few years, they were keen to see a centralised system to support e-learning. From an academic sense and perspective, then, the University could be considered to be relatively 'e-ready', however, as the project developed it was recognised that there were many processes not in place as will be outlined below. However, the ELU managed to capitalise on the initial enthusiasm and interest of staff to ensure that their interests were represented in the development of e-learning. The key lesson learnt here was to capitalise on existing change processes and work to harness enthusiasm in a flexible and inclusive way.

Pedagogic rationale – back to basics approach

As outlined earlier, the rationale for developing e-learning was based on potential pedagogic benefits. The support of the Pro-Vice Chancellor for Teaching and Learning ensured that this was seen as an activity integral to day-to-day educational activities. In order to cement this further, the Head of e-Learning was an academic post and the ELU itself had a remit to undertake educational research in this area. This assisted with convincing more sceptical academic staff that e-learning was more than just the technology or software. In the staff development programme held during the first year of operation, ELU staff promoted the educational benefits of e-learning before they gave staff access to the software. Staff were expected to attend a one day course on e-learning as an introduction; the first half of which was a hands off exploration of why to use e-learning, followed by an introduction to the system itself. All staff who wanted to use the system had to attend this course. Staff involved in course design then went on to attend a further session which firstly looked at good principles of course design before actually showing people how to do this on the system. The philosophy followed was that there were many models of online learning and it was not necessarily suitable for everything or everyone. However, staff were encouraged to think of problems encountered in their face-to-face teaching and apply e-learning methodologies to solve these. The idea of using e-learning to enhance and support current activities was also promoted. ELU staff also worked closely with the Educational Development Centre (EDC) to jointly run programmes introducing key e-learning concepts and survey staff perceptions.

For support and administrative staff, different models of system usage were developed but still governed by the same principles. A core framework of policies were produced to ensure that all staff received adequate professional development on both e-learning and utilisation of the online environment, but the actual needs of staff were taken into account with the design and delivery of the sessions themselves. We were flexible with staff to ensure that we could meet their needs whilst at the same time upholding fundamental education principles in the rollout of the software.

This was a success for the majority. However, there were still times when ELU staff were described as technicians or that the unit was equated merely with the rollout of the software. This was exacerbated by the ELU running a helpdesk which primarily dealt with technical problems and by our commitment from the outset to do all we could to solve problems even if the problems were not actually the responsibility of the ELU. Such frustrations are inevitable, particularly when, as noted above, everyone seems to have a different definition and understanding of e-learning. By continuing to promote the concept of e-learning in relation to the software and by being research active, ELU staff are continuing to work to promote e-learning itself and to be perceived as more than a technical helpdesk. Over time this situation will be strengthened. The key lesson here was that in order to be taken seriously in a research-led institution, ensuring that all support staff in the central unit have academic credentials is vital for promoting an understanding of e-learning and its function for learning and teaching across the institution.

Technical development

Some of the technical challenges that the ELU encountered were the largest to overcome. Issues with perception, as outlined above, could generally be countered by individual meetings and building relationships. However, the technical complexity of the enterprise system was not fully realised at the outset of the implementation and has only become more apparent over the past year.

Initially there were issues around orientation to the new software from users of the old software. They were the hardest group to encourage usage of the new system as they were continually looking for features of the old product or attempting to use the same workarounds and solutions they had developed in the old system. Users new to e-learning had less expectations and took to the new product more quickly. In addition, there were questions around migration of material from one system to another. After some considerable time spent migration materials, most staff opted to just transfer their content and rebuild their modules in the new system in order to make the most of any new features available. There were also issues with the student users who were faced with a more complex system that demanded plug-ins to be installed and certain configurations to be adopted. The ELU helpdesk became very involved in dealing with these often very technical problems and liaising with a number of Departments around the University to resolve them. This year we have worked much more closely with the central Computing Services helpdesk to train them on common system problems to more effectively support users as the ELU helpdesk is open for reduced hours.

One of the most positive aspects of the implementation process was the establishment of a technical working group, lead by the Head of e-Learning with input from Computing Services and Business Systems. The staff running the servers, both from the Oracle and Linux side were invaluable in helping with the planning and problem solving process. Frequent calls were to be had with the suppliers and there was also the issue of formulating a process of data transfer from the student record system. We were all working in the dark somewhat as this was a new product supported by a number of new staff. In addition, some of the problems we encountered were new to the software providers too and we were trailblazing in many respects. Staff within the institution were remarkably patient at times with the system because it was a new product. Over the past year we have all learnt a significant amount about the management and operation of such a complex system and this has encouraged support services to work more fully together. When problems occur, as they inevitably do, the student only sees one end of the process, they are not concerned as to whose responsibility within the organisation it is to get it fixed, they just want to problem resolved. There is still a tendency at some points to try and explain where the problems lie but as a team our support services have developed a much greater understanding of how their work supports learning and teaching activities. We are much more confident about the workings of the system and completed a successful upgrade this year. However, at times it has been a stressful process understanding how and why problems are occurring when there could be up to four different suppliers involved in the problem solving exercise. The key lesson here is to ensure that technical staff are fully involved in the rollout process and that everyone appreciates the complexity of the enterprise system.

Communication and marketing

The ELU has spent considerable time promoting and communicating the work of the Unit and e-learning developments across the institution. An existing column in the University newsletter on e-learning, was taken over by the ELU to publicise good practice, staff development activities and engage staff in the rollout. In addition, early in 2004 an official launch of the ELU was held where key enthusiasts were invited to showcase their current e-learning work with other members of the University. This was attended by Diane Laurillard from the DfES who gave an address with the Vice Chancellor. Such high level support ensured that staff across the institution were aware of the e-learning initiative and helped to establish the role and remit of the Unit. A briefing document was then distributed with CityNews to further publicise the work not only of the ELU but also of key supporters.

In the early stages of the project the Head of e-Learning and Director of Library Services held briefing events for senior management and heads of departments. These involved summarising the work of the ELU and project progress as well as introducing staff to the system. Attendance at new staff induction and demonstrations of e-learning also assisted with communicating the work of the ELU.

Working closely with Schools and Departments has been key to the wide uptake of the system. The two instructional designers have responsibility for certain schools and work with staff on an individual basis or in groups to tailor sessions on e-learning to meet their particular skills and experiences. All students using e-learning receive an induction

to the system run by the ELU and attended by a member of the relevant School or Department. This has helped not only to raise the profile of e-learning but also to ensure student expectations are managed. By working with early adopters, or 'friends', in the first stages, we were able to engage enthusiasts and ensure that some good examples of the potentials of using online learning were available from an early stage.

There is still much to do, whilst the majority of staff have heard of e-learning and the work of the ELU there are always negative or inaccurate perceptions to be addressed. This year the induction programme has been substantially revised and relationships with Schools are being formalised and embedded. The positive aspect has been that more modules are now live on the system at the beginning of 2004 academic year and that Schools are tending to take a more strategic approach to embedding e-learning in the curriculum. A comprehensive communications strategy is vital to an implementation project of this scale. It needs to encompass both formal and informal mechanisms for communication and work to address concerns as well as promoting the service.

Business systems relationships

Building and developing a good understanding of the business processes within the University and how they impact on the implementation of the e-learning system has been a major part of this project. With moves to formalise project management and development within the institution, considerable progress has been made in this area. By locating the ELU within the Information Services portfolio as part of Library Information Services, there is a natural relationship and connection with other business systems.

The philosophy adopted by the project was not to duplicate existing structures or information wherever possible. This was particularly important in terms of the relationship between the enterprise system and student record system. Due to the very short time scale with the initial implementation it was not clear until one week before the go live date whether it would be possible to import student data into the online learning environment. Fortunately, this did occur and a temporary interface between the two systems has been working since then and even been extending to taken module data on students to facilitate semi-automatic enrolment. However, the implementation of the enterprise system has resulted in student data becoming more public. It relies on feeds and comparisons between two separate databases and this uncovered some potential issues with data accuracy. During the first few weeks of term in 2003 considerable time was spent by staff from the ELU, Business Systems and Computing Services attempting to work out where the problems with student accounts lay and how to resolve them. Again this has had the positive impact on influencing developments to the student record system and the flow of data.

Understanding how e-learning impacts on other business systems across the institution is essential to ensure that the full benefit of an enterprise system can be realised. The system at City would not work effectively in isolation, it demanded interface and engagement with other systems in order to work effectively.

Research and development

As outlined above, the pedagogic focus of the e-learning implementation at City was a major factor in its success and this has been further supported by the research role of the ELU. By fostering e-learning research and development, the ELU has been able to more effectively promote e-learning methodologies. Staff work with other academics and support staff engaged in e-learning to write joint papers and evaluate projects collectively. In addition, the core activities of the Unit are considered within a research project framework to facilitate the further development of publications and research outputs. This year a full evaluation programme has been launched and research into the success of induction in 2003 facilitated the redesign of the programme during 2004. The ELU is also engaged with the Scholarship of Teaching and Learning and promotes the work of other e-learning researchers through an ad hoc research network. This also assists with underpinning the quality of e-learning developments.

Developing and sustaining a research remit is a fundamental part of the rollout of the enterprise system at City and has helped to ensure the validity of the project.

Conclusion and the future

Whilst the implementation of an academic enterprise system at City University can be judged as a success the project has not all been plain sailing. Technological problems, both with the software and infrastructure have caused major set backs in terms of reassuring staff and students that this is the future of learning and teaching. That said, a significant amount has been achieved in a short time and the challenge now is not only to maintain that momentum but to look to embedding e-learning more fully into the curriculum.

There are significant risks with any project of this scale and the benefits need to be clearly presented and maintained to ensure long term support from key stakeholders. Students at City now have access to more flexible modes of learning and can be encouraged to be more independent learners. Staff have increased opportunities for professional development and to develop more innovative delivery techniques for their learning and teaching activities. Support services have a better understanding of how systems impact on the educational experience. The connectedness of different systems and processes is now more coherently understood and processes are underway to make these more resilient. There is a greater network of support and communication for all users of e-learning to share experiences and good practice. The ELU has succeeded in acting as a focal point for e-learning at City and the rollout of the enterprise system. There is still much to do, the University is considering options for portal development and more comprehensive system integration. Our student record system needs further integration and some processes need greater streamlining. The MLE project is in its early stages and needs definition and focus. An e-learning vision needs to be formulated and agreed. Despite this, what the e-learning initiative has done is brought questions about the future of many of these developments, processes and systems to the fore and assisted with raising awareness of the importance of a coherent University vision.

It is tempting to consider what we would have done differently. Having more time to investigate the product would have been beneficial but it would not have necessarily prevented many of the problems we faced, although perhaps we would have had a greater understanding of why problems occurred. The short time scale for implementation was a considerable risk but it also meant that in many respects the project could not afford to fail – we had to get everything working as the alternative options were slim. The experiences presented here illustrate that if you have institutional support and the will you can achieve the implementation of an enterprise system in a relatively short period of time, and in many ways this can benefit the rollout. The question is – can you afford not to do it?

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