Initiating e-learning by stealth, participation and consultation in a late majority institution

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Abstract
The extent to which opportunities afforded by e-learning are embraced by an institution can depend in large measure on whether it is perceived as enabling and transformative or as a major and disruptive distraction. Most case studies focus on the former. This paper describes how e-learning was introduced into the latter environment. The sensitivity of competing pressures in a research intensive university substantially influenced the manner in which e-learning was promoted. This paper tells that story, from initial stealth to eventual university acknowledgement of the relevance of e-learning specifically to its own context.

Keywords: change management, ecology of resources, e-learning, participative design, socio-cultural grounding, technology adoption lifecycle, user centered design

1.0   Introduction

This narrative recounts the process of initiating a strategy to support e-learning at an institutional level in a traditional UK university whose senior management was far from convinced that it was relevant to the mission of the institution. Recounting this experience should benefit a wider audience because the existing literature tends to focus upon change programmes within more enthusiastic institutions, thus failing to address the barriers within many traditional universities (see Browne *et al* 2006). To set the context for our narrative, in this Section 1 of the paper we first describe the UK higher education environment and then describe how various types of UK University have characteristically reacted to the challenges regarding how learning is undertaken in the context of new enabling technologies. We then present and contextualize Moore's model of the technology adoption lifecycle (Moore 1991). Finally, we set the scene regarding how this model has been applied to a late majority institution, as a means of understanding the attitudes of an organization and its staff towards e-learning and then to design an appropriate change plan.

1.1   The Contemporary UK Higher Educational Environment and E-learning

In the UK, Higher Education institutions can be divided into the new and the traditional universities. The new universities are mainly ex-polytechnics, which were transformed

into universities by an act of parliament in 1992, plus a number of higher education colleges which have made similar transformations. The traditional universities include those that are pre-19th century, the red bricks of the early 20th century and the plate glass of the 1960s. The core competences of the new universities and traditional universities are, respectively, teaching and research (Hindmarsh 2007).

In the past decade e-learning has heralded both sustaining change for many of the new universities and disruptive change for many of the traditional universities. Many new universities rightly perceived e-learning as a sustaining technology that would facilitate flexible and mass learning. Accordingly many of them have responded to technological and social pressures with healthy appetites for risk and disruption to their traditional business processes and organizational structures. This is evidenced by widespread provision of virtual learning environments (VLEs) as institution-wide services with mandates for, in some institutions, compulsory usage (Browne *et al* 2006; Shurville 2007). Meanwhile the traditional universities were pre-occupied with their own core competence of research. They constructively procrastinated about e-learning until its benefits and risks were defined, the risks were ameliorated and external pressure was exerted by stake holders such as fee payers. This is evidenced by their less enthusiastic uptake of VLEs at an institutional level, sporadic uptake of competing VLEs at a departmental level, and their investment preferences more for institutional managed learning environments (MLEs) to support administrative processes (Browne et al 2006; Social Informatics Research Unit 2003; Shurville and Williams 2005). There are, of course, exceptions as evidenced by Stiles and Yorke (this volume). Nevertheless, as a consequence of globalization, there is mounting pressure upon traditional universities worldwide to adopt flexible learning and hence e-learning as a path to competitive and high quality mass education (c.f Evaline 2004; Rossiter this volume).

1.2 The Technology Adoption Lifecycle of E-learning in UK HE
We have applied a familiar model from the literature of technology adoption to help staff in traditional universities to understand the political realities of their organizations and of their colleagues as a precursor to incepting change. While we are mindful that there are no surefire recipes for change we believe that theories of innovation management are essential ingredients of effective change (see Stiles and York this volume).

Moore (1991), in his model of the technology adoption lifecycle (see Figure 1) coined the terms 'early majority' and 'late majority' which map well onto the new and the traditional universities. In Moore's model, *innovators* are technology champions who actively sponsor and adopt emerging technologies; *early adopters* are not technology champions per se, yet they will pragmatically adopt emerging technologies to gain competitive advantage; the *early majority* is risk averse, yet understands the advantages of adopting tested technologies; the *late majority* dislikes discontinuous innovations and believes in tradition rather than progress; finally *traditionalists* rarely adopt new technologies. In this paper we apply the technology adoption lifecycle to characterize both the two main types of British University and the types of academics found within them.

The traditional barrier in technology adoption is a 'chasm' between early adopters and the early majority. The problem is that early adopters do not make compelling reference customers for potential members of the early majority. Those who are interested in spreading a technology to the early majority need to invest heavily in supporting reference customers within that group directly. Once these customers are satisfied, it is possible to spread the message towards the late majority.

In line with Moore's model, the early majority / new universities' successes with e-learning is unlikely to influence the late majority / traditional universities[1]. The pressure for transformation has to come from local drivers more appropriate to the traditional universities' perceived 'superior' status as research-intensive universities. Moreover, in the latter institutions, any diffusion effect from early-adopter individuals is unlikely to influence its early and late majority colleagues, not least because to do so would require creating costly support structures.
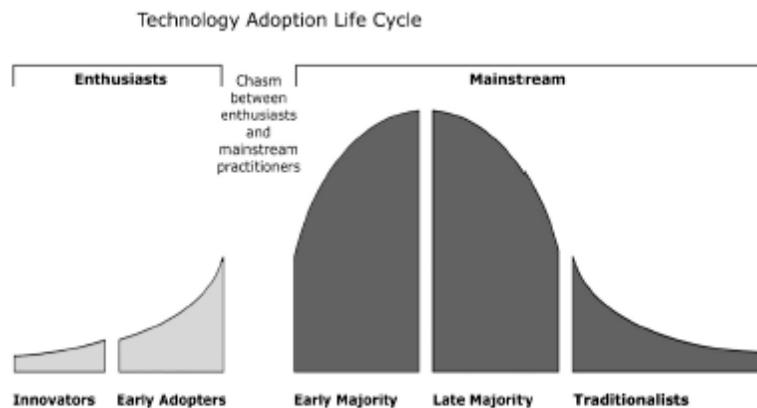
Figure 1: Moore's Technology Adoption Life Cycle (after Moore 1991)

1.3 Outline of an application of Moore's model with respect to e-learning

In the remainder of this paper we apply Moore's model of the technology adoption lifecycle (Moore 1991) to describe a two-part initiative to embed e-learning within a late majority university via a sequence of stealth, participation and consultation. The consultative phase applied Vygotsky's socio-cultural grounding (1978, 1986). The initiative was incepted 'bottom up' by Tom Browne and Simon Shurville and then managed 'top down' by Rose Luckin. The approach should interest sociologists of academia because it involved an alliance between 'hidden' workers and leaders from what Evaline (2004) calls the 'ivory basement' as well as more visible academics and leaders from the more familiar 'ivory tower'. The outcome was an e-learning strategy which had the express purpose of resourcing an institutional e-learning service. Vygotsky's socio-cultural grounding is also a novel methodology within the wider change management literature and one which we believe is ripe for widespread adoption.

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[1] Our colleague Kevin Turner of the University of Brighton has observed that one reason for this may be the low levels of staff migration from new universities to traditional universities.

Moreover, while we have reached the end of the beginning of the battle to embed e-learning in HE this battle is likely to be repeated with a second generation of technologies including, learning content management systems and web 2.0. So the case study provides material for a new generation of change agents.

2.0   Initiating e-learning by stealth and participation

The first part of our change narrative covers the 'stealthy' period between 2001 and 2003 when the authors were employed at the University of Sussex, which is a member of the 1994 Group. This consists of 17 internationally recognized British universities placed between the teaching focus of the new universities and the emotively identified 'premiership' of the Russell Group, an association of 20 major research-intensive universities of the UK. The strategies of the university were strongly influenced by the perceived new challenges posed by the next national Research Assessment Exercise (RAE). Nevertheless, although the university's main preoccupation was research, it contained a great number of excellent teachers and several isolated pockets of internationally renowned expertise in research and practice in e-learning. During the period covered by the change narrative the university was transforming its structure to amalgamate departments and schools into new 'super schools' accompanied by a major adjustment to its interdisciplinary structures. Hence there was a high background radiation of change leading to cynicism of new initiatives. For these reasons the university was highly representative of a late majority institution.

The change agents during this stage were Tom Browne and Simon Shurville. Browne was employed at the university as an academic-related manager within the Information Technology Service (ITS). He had worked there for over twenty years, both in this academic support role and also in a part time academic role, developing and delivering several undergraduate and postgraduate degree-based courses in geographical information systems, using e-learning. In 2002 Shurville was recruited from industry to direct implementation of an institutional MLE whose project mandate mentioned e-learning as a footnote (Shurville and Williams 2005). He also co-directed a range of external undergraduate and postgraduate courses for City and Essex Universities (Shurville et al 2005), which were delivered via e-learning. Browne and Shurville can be categorized as full-time academic-related managers who maintained academic credibility via part time positions. They also participated actively and organizationally with the primary higher educational and learning-technology organizations within the UK. The fact that as change agents they maintained academic profiles, underpinned by such national engagement afforded credibility that would have been difficult to cultivate from exclusively academic-related roles.

Browne and Shurville's experience convinced them that e-learning was now sufficiently mature that the university could afford to embrace it at an institutional level. Moreover, they predicted that external pressures such as global competition and expectations by fee paying undergraduates would change institutional priorities in favor of e-learning and flexible learning in the medium term. So, although they were characteristic enthusiasts, they had performed the requisite due diligence, including PEST and SWOT analyses, to

derive a business case for an e-learning initiative which they felt was appropriate for Sussex.

They identified that the major obstacle to e-learning was disinterest bordering on hostility from some of the senior management team. This resistance could be attributed to the traditional factors of divergent assessment of the need for change and low tolerance for change (Kotter and Schlessinger 1979) and was consistent with their interpretation of the resource implications of their mission to be a leading research intensive university. When senior management is a main source of such a divergent perspective, change agents need to operate in 'stealth mode' until sufficient managerial support can be generated and a senior champion can be appointed. Such an approach presents change agents with a different set of challenges compared to those that exist when joining an officially sanctioned change programme and can expose them to substantial risk. So, to protect themselves, all stealth activities must be ethically transparent (c.f. Revans 1980; Coghlan and Brannick 2004; Watson 2005). As professionals, Browne and Shurville felt it was their responsibility to go out on an organisational limb, though self-preservation was far from discounted and they therefore ensured that they did so within an ethical safety net!

In July 2001, Browne co-organised a national workshop for the University Colleges and Information Systems Association (UCISA 2001) with the express purpose of identifying a shared institutional perspective on e-learning amongst a diverse support community of IT specialists, educational technologists, librarians, and administrators. This workshop acknowledged that such staff were often the human drivers, leading e-learning initiatives within institutions, and were primarily responsible for providing and developing coherent support environments. The workshop prepared the ground for a project, led by Browne within ITS at the university. The terms of reference were to evaluate the pedagogic, organisational and technical implications of developing an institutional service for a VLE. Following a brief product evaluation, a limited license was obtained for a commercial VLE called WebCT. The objective was to evaluate the usefulness of a VLE without becoming bogged down in the sterile debates that can rage around the merits of a particular product, in which the vehicle often becomes the message. Stress was placed upon 'appropriate' use of a VLE and its complementary role alongside more traditional modes of learning and teaching, exploiting its 'anywhere, anytime', and 'one-stop-shop' characteristics. A local survey was also conducted to gauge the level of participatory interest.

In 2002 the senior management group funded a £500,000 project for in-house development of an 'administrative' MLE. Shurville was appointed as the project director and placed in charge of a high performance development team which was independent of ITS. Shurville presented the project board with a methodology for the MLE containing participative design and rapid prototyping within the formal shell of Prince 2. To foster participation, he established special interest groups (SIGs) in academic administration, e-learning, roll-out, security, school administrative management, and user needs. He seeded these with both enthusiastic and more skeptical stakeholders. Members of the SIGs were presented with early prototypes and had power of sign-off for releases prior to final sign-off from the board.
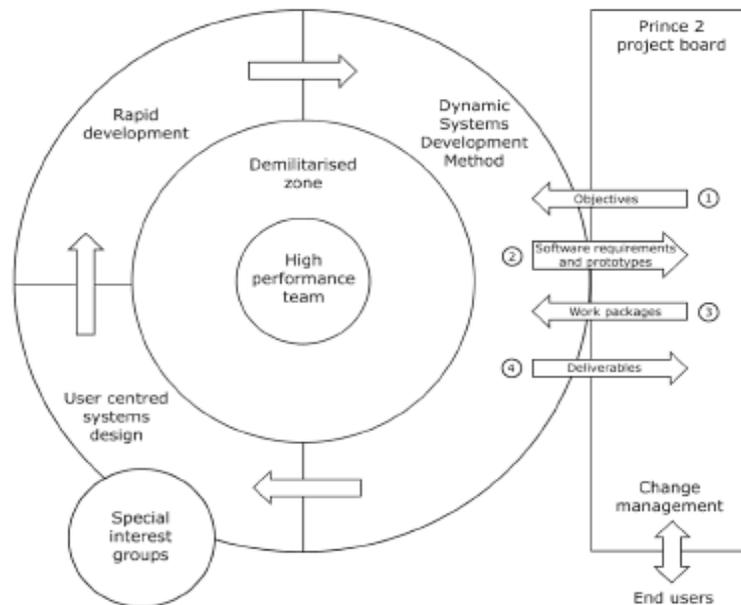
Figure 2: The project management and development methodology for the MLE, VLE and e-learning projects (from Shurville and Williams 2005).

Despite notional reference within Shurville's job description to developing a VLE, the project was not awarded meaningful funding to research or promote an e-learning profile within the MLE. However Shurville felt it was his duty to address e-learning and therefore negotiated a part time secondment for Browne from ITS to the MLE development team. A somewhat surreptitious VLE initiative could now be launched.

Drawing upon the result of Browne's survey, six pilot projects were identified. These were carefully chosen to maximize the amount of information that could be extrapolated across the University. So a range of different subjects, cohorts (e.g. undergraduate and postgraduate), geographical contexts (e.g. campus and distance) and styles of teaching and learning were selected. Browne and Shurville helped the projects to obtain some development funding from the internal Teaching and Learning Development Fund (TLDF), a committee on which they were both members. The funding helped to provide legitimacy and a university wide profile for the projects. At this point the TLDF also funded the appointment of a fixed-term contract for Ley Robinson, a senior educational technologist to support the projects. This greatly assisted in providing cohesion between the projects and meant that standardized approaches to design and quality could be implemented. Moreover, as the educational technologist was co-located in the MLE development team and the Teaching and Learning Development Unit (TLDU), useful synergies were enhanced. The organizational framework to manage the projects was an educational technology SIG, chaired by Browne and set up within the auspices of the MLE project and placed within the protected environment of the demilitarized zone (See Figure 2.

This SIG was primarily driven by senior managers from ITS, the Library, and the TLDU and although it also contained several enthusiastic academics, their research priorities meant that their engagement was patchy. A significant exception was Luckin, who was then a Reader in an academic department and she led the university's Interactive Digital Educational Applications Lab. Her team contracted to perform extensive participative design of the MLE and e-learning projects.

The success of these pilots led to an additional seven projects in the following year. Significantly, Moore's technology adoption lifecycle model was further employed to ensure that there were many projects led by academics who could be described as 'late majority'. Although these customers often displayed a high dependency on the as yet still fledgling support, Browne and Shurville judged that by such 'seeding' their success would be key to demonstrating that e-learning was extremely relevant within a late majority institution. At the same time, the model of support with the limited resources available highlighted the unscalable nature of this approach. Nevertheless, at least one project existed across the range of the sciences, arts and humanities and the senior management group, noticing the growing activity, invited a small group to prepare an e-learning strategy.

Significantly, this group was formed exclusively of academic-related support staff, drawn from the previously mentioned SIG. An internal document entitled 'The case for a strategy for blended learning at the University of Sussex' was produced in June 2003 explicitly to make the case to university senior management that an e-learning strategy was needed as an 'impetus for change'. The group aimed to press key emotive buttons, noting the burgeoning national context, the need to be competitive, noting increasing expectations from students and mapping it onto the institution's corporate aims. They also ethically appealed to the learning agenda, mapping the potential of e-learning onto all the strategic objectives within the university's existing Learning and Teaching Strategy. Three time horizons were posited. The response was reasonably encouraging, with the (then) Pro VC for Teaching and Learning agreeing to set up a project group with the remit to develop an e-learning strategy. However, before any progress could be made, this senior manager left the institution.

Meanwhile grass roots demand for e-learning support from academics had grown to a point where Browne and Shurville were unable to support further growth via soft funding and personal over commitment. Fortunately, at this point Luckin's promotion to pro Vice-Chancellor for Teaching and Learning meant that they were able to pass the torch to not just a sympathetic senior manager but an extremely knowledgeable one. Luckin immediately built upon the previous initiatives by establishing an official E-learning Advisory Group and yet another consultative exercise. It is enlightening to note that this latest, top-down consultative exercise was given more credence than earlier bottom-up consultations. Nevertheless, it was conducted using a very sound theoretical framework and with much expert underpinning. This group ultimately generated a university-wide e-learning strategy (Luckin 2005; University of Sussex 2006), by which time both Browne and Shurville had left Sussex for more senior positions at Exeter and Cranfield Universities.

3.0   Initiating e-learning by participation and consultation
In addition to her role as Pro-VC for Teaching and Learning Luckin was also Director of the Human Centred Technology research group. This group used participatory design methods and a socio-cultural grounding (Vygotsky 1978, 1986) to develop technological solutions, in particular for use in educational contexts. When developing educational technologies for use in an institutional context e.g. a University it is essential to engage with students, lecturers, tutors and other members of staff who do not necessarily have technical expertise or design knowledge. The process adopted at Sussex and used by the Human Centred Research group to develop and evaluate educational technology has been informed by previous work in participatory design such as that conducted by Scaife et al (1997) and Druin (1999). The use of participatory methods involves the creation of an initial 'system' vision that illustrates a perceived opportunity for new technology to support and improve learning and typically at this stage of the design process, can be represented in written scenarios. The process then identifies potential users and involves them in modifying and validating this vision using a variety of representations, including scenarios, storyboards and prototypes. There are also activities, such as focus groups, workshops and interviews. This cyclic communicative process of vision and revision produces a progressively more grounded appreciation and understanding of users' needs in a range of contexts (see Luckin, et al, in press).

The group conducted such user evaluations for the MLE and had explored innovative e-learning approaches funded through both research council grants and internally from the TLDF. Aspects of this work were featured by the Higher Education Academy (HEA) as an innovations case study (see http://www.heacademy.ac.uk/2487.htm) and by JISC as an example of innovative practice with e-learning (see http://www.jisc.ac.uk/eli_practice.html).

Luckin's approach emphasized learning as interaction within a particular context, and a belief that different contexts result in different social interactions and therefore different learning experiences. The educational context was viewed as an Ecology of Resources (Luckin 2006) that consisted of:
- *What*: the knowledge to be learnt and its organisation
- *How*: the way learners interact with the knowledge through tools and people
- *Where:* the location where learning happens and its administration.

For teachers and learners to use these resources effectively to represent, communicate and negotiate their knowledge and understanding they need to know the nature of the available resources, how to access them and how best to use them.

4.O The Sussex Ecology of Resources
The first step in the participatory approach adopted to map the Ecology of Resources at Sussex was the formation of a user group composed of staff and students. Staff from all institutional roles were represented and all were engaged in regular meetings with a key objective being to identify the activities each of them completed to contribute to learning at Sussex. Students were represented initially through the involvement of the Students' Union and they were involved in all the stages of the participatory process. They met on a

regular basis and were catalysts for the involvement of their peers. Their first task was to create a map of the activities they each completed and then match them to potential technologies. An example excerpt from the map is included in Table 1.

SUMMARY OF PARTICIPANTS TEACHING & LEARNING ACTIVITIES					
Activity	**Activity Type**	**Who else?**	**Goals**	**Learner/recipients experience**	**How could technology help?**
give lecture	deliver teaching	students; team colleagues; visitors	information presentation; interaction; Q&A; feedback	contribution; know/understand more; motivation	Word, ppt, video, Interactive whiteboard; voice transcribing; voting/polling software, in lecture blogs, sms from students into a course account
powerpoint presentation	deliver teaching	20 students	share knowledge/ learn about DDA	making notes; asking questions; receiving information	Access to student profile; discussion board to discuss learner needs
running a workshop session	deliver teaching	20 students	applying theory to practice/roles	using case studies; analysing case studies; identifying solutions	Offer core material in advance on-line or USB pendrive, email to prompt planning and subsequent revision Access to student profile; discussion board to discuss learner needs
post *lecture* - session discussion with colleagues	evaluate teaching	*teaching*- team	assess/evaluate how session went; revise plans	know what others think; motivated	moderated discussion for programme team Blogs as a post session reflection
updating reading list; prepare handouts	prepare resources		give students opportunity to find out more about subject	begin to enthuse students	Good access to resources and ability to create resources Search tools; online content archive; picture messaging
thinking	self study	on my own	teaching fellows - how to reward good teaching with money for research		IPod; dance mat, films, ideas/analogy generator, CETL, music, images
planning/strategy development	self study	on my own	10 year plan; thinking about different audiences		Haptics (creativity); interactive whiteboard
learning about dyslexia	self-study		meeting the needs of students with dyslexia	difference between accessibility for visual impairment and those with dyslexia	Search tools; discussion groups
Meeting to discuss project bid	Meeting	ITS & Library senior staff	is there a business case for a bid? Could it be staffed?	disappointment; recognition of limited resources; realism - time economy	Wiki

Table 1 Excerpt from the Activity Map created by the Sussex E-Learning User Group

4.1 Evaluating E-Learning Readiness

The Embedding Learning Technologies Institutionally (ELTI) audit tools developed by JISC were used to assess the e-learning readiness of the organization. Nine focus groups involving 54 members of staff were asked to assess the extent to which a selection of statements about the institution were true. There were three statement categories:

- **Expertise** for example, 'staff development is integrated into the roll-out of all new ICT applications'.
- **Infrastructure** for example, 'Learning Technology software and hardware are effectively supported by computer services (or equivalent)'.
- **Culture** for example, 'teaching staff have access to a wide and appropriate range of Learning Technologies to use with students and Learning and Teaching is central to academic appointments and appraisals'.

Overall staff rated Sussex as 'emerging' into readiness with a score of 2.42 out of 5. For the individual statement categories the scores were as follows: Expertise 2.72 or partly

true, Infrastructure 2.4 or partly true, Culture 1.67 or not true/emergent.

4.2 Consulting with the Wider User Community

What staff and students understood about e-learning and their priorities were explored through a questionnaire. This indicated that teaching staff wanted to have access to a wide range of learning technologies, targeted support for teachers to integrate ICT into their courses for use with students and more effective computing support. Students prioritized on-line access to course materials such as lecture slides, reading lists, journals and books as well as access to an easy to use e-Learning tool.

The staff questionnaire was conducted during Spring 2005. This encompassed questions about demographic information, their current use of technology, their understanding of e-learning and their priorities for Sussex. A total of 366 responses were received. Findings revealed that the majority (58%) of staff thought that e-learning was *The use of electronic technology and media to teach and assess,* A smaller number (38%) thought that the definition *If someone is learning in a way that uses ICT they are using e-learning (DfES)* was more appropriate and a small minority (2.5%) that *E-learning is what a learner needs to be able to do to learn using technology.* 1.4% gave no response. The majority of staff (72%) felt fairly or very familiar with the term e-learning and the activities they most associated with the term were distance learning and putting course materials on-line. The technologies they most commonly and frequently used and were most confident in using were email and word processing.

The questions that explored staff work patterns illustrated that the majority (66%) work from home. However, 22% stated that they were unable to work from home and 12% stated that they chose not to. Support for access to campus Information Technology through home and personal computing was identified as the support need that was most important. Training was also seen as important with 89% of staff wanting it to be available and 78% saying that they were comfortable with on-line courses.

When it came to priorities for development, staff rated A*ccess to a wide range of learning technologies for use with students* as their highest priority, followed by *Targeted support for teachers to integrate ICT into their courses for use with students* and *More effective computing support*.

The student E-Learning questionnaire was also conducted in Spring of 2005. In all, 375 students completed it. The questionnaire asked about student's current experience of ICT and Learning Technologies (LT)) and indicated that:
- 82% reported not receiving reviews or support for their ICT skills.
- More than 60% said that they were expected to achieve basic skills in ICT.
- Less than 45% made routine use of LT as part of their course.
- More than 60% reported that courses were required to address ICT skills, and just 33% of students reported that they were *not* expected to have off-campus access to the internet.

It is interesting to note the above perceptions in the context that relevant ICT skills are supposed to be assessed and credit-bearing within a programme of study. When it came to priorities for development, students rated on-line access to course materials such as lecture slides, reading lists, journals and books were their first choice.

4.3 Collaborative Drafting of an Institutional E-Strategy
The information gained from the ELTI audit and the questionnaires was combined with the original activity map created by the user group (as discussed in section 4.0 above). The group then used this combined information to draft a learner centred e-learning strategy for the University. The definition that was adopted for Sussex was that *E-Learning at Sussex is the effective use of technologies and methods to enhance and enrich the way learners develop their understanding, acquire new skills and access information.* Five aims were specified in line with the findings from the consultation exercise described above. These were:

1. Supporting flexible student learning strategies
2. Providing tutors with course design tools for curriculum development
3. Developing collaborative subject communities sharing learning resources
4. Supporting institutional infrastructural development through systems integration
5. Supporting staff development

The main body of the strategy focused upon a vision for learning and teaching at Sussex. This vision took the form of narratives, describing some activities people at Sussex undertake and the type of technology that supports them. Through these some of the possible futures for students and staff at Sussex were conveyed. An example taken from the strategy is included in Box 1.

Life at Sussex

The following scenarios describe the ways in which learners and teachers might be able to work using technology once the e-learning strategy has been implemented.

Abi, Sukhvinder, Jim and Chris live together in a shared student house. Abi and Jim are both second-year undergraduates at Sussex; Chris is a visiting Masters student; and Sukhvinder is newly arrived and working on her D.Phil. Rea is a lecturer who has been working at Sussex for 2 years and has now taken on the role of the departmental careers liaison tutor. Alan is the department co-ordinator and Helen is a Pro-Vice-Chancellor. It's Monday morning and …

Abi is about to leave for Uni when she notices that she's received an SMS message on her mobile phone warning her that her lecture has unfortunately had to be rescheduled, and telling her that full details of the revised arrangements are on the course's FAQ site. She logs on, finds out what's happening, and decides to download the audio file of the previous week's session, so that she can listen to it on her ipod on the bus later on: pod-casting lectures has been quite a hit with students.

Abi really likes the course's FAQ site: it gives her the answers to all the questions she's too embarrassed to ask! This is much easier than having to hassle tutors by e-mail. While she's on-line, the system reminds her that she only has two days left in which to take the on-line diagnostic quiz for the current section of the course. Given that she's now got an unexpectedly free morning, she downloads the previous week's lecture slides; has a quick revision session; takes a deep breath; and accesses the quiz. These aren't for marks, but you do have to do them within the specified time periods. Actually, everyone finds them pretty helpful, as they tell you where you're still going wrong, and direct you to extra materials and on-line resources if there are areas of the course you need to revise more. This time Abi's pleased that she sails through: a real confidence booster.

Abi's pretty much decided to apply for a PGCE when she finishes her degree, as she has decided to go into teaching. Since she made that decision, she has become very interested not only in what she is learning, but also in how she is being taught. She knows what her course feels like from a student's point of view, but wonders what it all looks like from a lecturer's point of view …

Box 1 Scenarios describing ways in which learners and teachers can use technology

The strategy also specified a time frame for the following 5 years indicating when it would be reasonable for such technologies to be widely available at Sussex. A high level implementation plan was included specifying the type of infrastructure necessary to deliver these objectives.

4.4 Evaluating the e-learning strategy
The draft strategy was made available to all staff and students who were invited to make comments using an on-line feedback form. In addition a total of 29 members of faculty from all schools of study and at a range of levels of seniority were interviewed providing a wide range of experience of e-learning and an equally wide range of understanding of its potential uses, benefits and pitfalls.

Three main areas of broad consensus emerged. There was a very strong, positive interest in the potential of e-learning, a clear demand for a simple set of e-learning tools to be made available to faculty and students across campus now; a plea for the institution to recognize that e-learning had had a troubled history at Sussex, and that this has left a difficult legacy and a need for careful management.

A total of 38 students from all schools of study across campus were also interviewed. The three student scenarios from the e-learning strategy were simplified and the key e-learning features were highlighted to help focus the discussion. Students were approached in cafes across campus and presented with one or more scenarios in order to elicit responses. In addition, students were asked about their views on e-learning at Sussex at present, and if there was anything they would welcome in the future within the context of their own learning.

Overall students were very positive about the idea of an e-learning strategy for Sussex. When students were presented with examples of how e-learning could be integrated into their learning, they responded positively. They engaged with all the scenarios and related most readily to the three scenarios when they referred to emails or online materials for their courses. Diagnostic quizzes and revision sessions for immediate feedback were also welcomed by students. Some new ideas, such as the podcast lecture were greeted with enthusiasm, but it was difficult for students to relate to tools they had not encountered at Sussex such as interactive whiteboards, Wikis and Blogs. This undermines in part the often stated axiom that students will enter HE with demanding e-learning expectations drawn from their previous secondary or tertiary educational settings.

5.0   Lessons for other late majority institutions
The results of the e-learning consultation at Sussex led to the creation of yet another project, this time to embed and support a VLE, with the software infrastructure primarily developed around a suite of open source tools.

Overall the iterative approach described in this paper has been successful in bringing about a change of attitude at a senior level. However, at this point, Luckin accepted a professorship at the London Knowledge Lab, although she remains at Sussex as a visiting professor. Nevertheless, the whole, at times messy story of e-learning activity at Sussex demonstrates that a small number of knowledgeable, enthusiastic and enterprising staff, acting at particular key points in the story, and nurturing what may at times have seemed a series of risky false starts, can make a significant amount of progress towards transformation in key roles. This can prepare the way for subsequent development and build staff and student pressure and expectation. However, to bring about changes that will impact upon the availability of e-learning resources, both human and technical, key individuals who control financial and administrative priorities need to believe in the enterprise.

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