



The implementation and use of e-learning in the corporate university

E-learning in the corporate university

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Abstract

Purpose – The use of e-learning in corporate universities enables access and broadens the curriculum. This paper assesses the use and implementation of e-learning through case material, and explores some of the challenges and emerging concerns.

Design/methodology/approach – The paper reviews the corporate university concept and considers how an e-learning pedagogy might contribute to its success. Three case reviews of e-learning adoption within corporate universities in the UK are included.

Findings – The paper argues that if corporate universities do not incorporate both the pedagogical and learner preferences perspectives into their use of e-learning, this will seriously devalue the training experience. It concludes that the advantages of an online pedagogy are not fully exploited due to limitations in technology and other strategic priorities. In addition, a number of lessons have been learned by the pioneers of corporate e-learning, including the evolutionary nature of the programmes and the need to create “organisational readiness”.

Research limitations/implications – Further research into the views of learners in this debate is necessary.

Originality/value – Provides evidence of the potential of e-learning as a key learning and development strategy within corporate universities.

Keywords Computer based learning, Learning organizations, Workplace learning, Learning methods
Paper type Case study

Introduction

General Electric's Management Development Institute was established at Crotonville in New York in 1956. In the last decade, the phenomenon of the corporate university has significantly gathered pace. Dealtry (2001) considers corporate universities to be one of the most significant business interventions in organisational development in the last two decades. These institutions now exist in a variety of formats, with a number of different aims, and cover a broad spread of corporate and public organisations throughout the world. Over 2,400 are said to exist today (Nixon and Helms, 2002). This figure is expected to increase further in future years, with around 37,000 predicted to exist by 2010. Such is the growing influence and respect of these institutions that the UK Government is considering granting award-bearing powers to those that can demonstrate high standards in education (Prince, 2003). This shift to corporate universities is clearly not a passing phenomenon in employee development. These institutions are likely to have a significant impact on the nature and direction of the education of the current and future workforce. It is important, therefore, to examine the purpose of these organisations, the learning paradigms that they incorporate and the educational opportunities that they offer.



The development of corporate universities is also an attempt to re-engineer business processes for best value and represent not only a renewed corporate appreciation for education but also “a desire to centralize resources to reduce expenses” (Arnone, 1998, p. 200). Consequently, one of the key objectives of the process is cost-effectiveness. In order to maximise training investment, it is essential that the trainees realise that formal training environments are expensive and are not the only opportunity for learning. It is more cost-effective to provide trainees with the tools and technology to continue the learning process in their work and social environments. However, while e-learning may be a route to achieve this, the potentials of technological systems are mediated by the way they are shaped in use as well as by the capabilities and characteristics of the technology (Dawson *et al.*, 2003). Thus, the impact of e-learning will be dependent on how the technology is adopted and used within organisational contexts, and how well the technology supports the objectives, strategies and values of learning within the corporate university framework. This paper reviews the corporate university concept and considers how an e-learning pedagogy might contribute to its success. The paper incorporates lessons learned from three case reviews of e-learning adoption within corporate universities in the UK.

Corporate university models

McDonald's corporate university was one of the earliest, established in 1961. Its aim is to provide a foundation on which to ensure that McDonald's can operate their business at a consistent level to deliver consistent restaurants across the world (Dalton, 1999). The values being taught in “management” are therefore not primarily focused at the strategic management level, but they accord with the culture of the organisation, focus on standardisation, and seek to perpetuate the current business strategy. Motorola, on the other hand, focused their corporate university on the need to be an agent of change. Indeed, not only were the management training programmes regarded as providing personnel with the skills and knowledge necessary to welcome, seek and implement change, and thus afford the organisation a competitive advantage, but there was a culture change required of senior management to accept education not as a cost, but as an investment (Fulmer and Gibbs, 1998). Alternatively, Finn (1999) notes that several other organisations, and in the UK BAE Systems in particular, have established links with formal educational institutions to underwrite their career development programmes. BAE Systems offers management and technical training in partnership with a number of universities, as well as providing a number of courses through their “virtual university”, open to all employees (BAE Systems, 2004). Indeed, through this programme, BAE Systems' stated objective is to provide leadership training for its future directors, and it is therefore looking to use the corporate university learning process to drive and shape the future organisational goals and structures.

This clear diversity of models and purposes of corporate universities has led Fresina (1997) to categorise them into three types:

- (1) as reinforcing and perpetuating current cultures and competitiveness;
- (2) as agents to manage and implement change; and
- (3) as a force to drive and shape the future strategy of the organisation.

However, Fresina does acknowledge that a particular corporate university is unlikely to fall distinctly into one category, but rather will draw parts from each. This is evident in the multi-layered strategy adopted by BAE Systems, noted above. Barley (1997) argues that this variety is positive and that the corporate university is “a flexible and adaptable vehicle” (p. 1), providing the opportunity to assess the needs of the organisation and model learning accordingly. Whatever the model of corporate university adopted, it could be said that they support the view that learning is fundamental to ensuring the continued effectiveness of the organisation’s human resources, and therefore the organisation itself.

Technology and a new generation of corporate universities

When considering the nature of the CU concept, while Fresina’s (1997) taxonomy is useful in understanding the various strategic roles which they may fulfil, initiatives also vary considerably in terms of the method of content delivery. An alternative schema for classifying corporate universities is suggested by Walton (1999), incorporating first-, second- and third-generation corporate universities and focusing on both purpose and learning strategy adopted. He uses the Disney University as a typical example of a first-generation type, with a narrow focus on the adoption of organisational culture and values and mainly classroom-based activities. A second-generation university typically offers a wider range of activities, to a range of levels within the organisation, perhaps organised into curriculum areas which address functional skills, cultural issues and remedial learning, and is often characterised by partnerships with other employers, educational institutions and the wider community. Walton gives Motorola as an example of a second-generation corporate university with a wide range of activities delivered by varied means, including the use of technology, but which retains the recognition that its activities must remain relevant to the organisation, albeit with a longer-term perspective.

One of the most significant developments in the history of the phenomenon seems to be the emergence of what Walton (1999) terms “third generation” CUs, which move beyond the confines of the “campus”, to become portable, or more significantly, possess a virtual element (Prince and Beaver, 2001). Third-generation corporate universities, Walton argues, are those which seek to make the best use of new technology for learning, and are characterised by process rather than place, adopting the structure of a virtual organisation. Phillips (1999) notes that this is often a feature of corporate universities within the UK: developing rather later than their American counterparts, they are better placed to take advantage of these developments in technology. For many companies, it seems that developments in internet technology had opened up new opportunities for corporate university activity, allowing a move away from a fully pre-scheduled curriculum to provide on demand and open access (El-Tannir, 2002). In a society where knowledge has become a key competitive criterion, e-learning technology has evolved to provide users with the specific tools and information needed at the point of activity, and allows the possibility of investigating a number of solutions in a short time (Lenderman and Sandelands, 2002).

Walton (1999) sees the third-generation corporate university is seen as the intellectual engine of the organisation, developing the human capital of *all* employees, with a focus on developing creativity and innovation and driving strategic change. Third-generation corporate universities represent a philosophy and mission that is

significantly closer to that of higher education, but differentiated by the maximisation of the use of technology to deliver both the learning and the ethos of the corporate university. This typology has much in common with those presented in the previous section, but the major difference is the extent and purposes for which new technology is seen as not just a means of efficient and cheap delivery, but also as a way of defining the corporate university itself. If the third generation of corporate universities is to rely heavily on the use of technology for its curriculum, it is important to consider both how technology could contribute to the learning environment and to the strategic and cultural goals of the corporate university, and what the barriers might be to effective incorporation.

E-learning – possibilities and limitations

Much of the content of the available literature concentrates on the advantages of e-learning. Moreover, it tends to be presented with little discussion of possible disadvantages or problems, and under the banner of urging trainers and organisations to join the bandwagon, or be left behind (Rana, 2001; Sloman, 2001; Wilson, 1999). These are based around two main themes:

- (1) the cost advantages; and
- (2) flexibility in delivery.

Sora (2001) actually refers to e-learning (distance learning) as a force for “profit and efficiency”. Although he uses this term in the context of the traditional university, it is perhaps even more appropriate in the context of the corporate university. The cost advantages centre on reduced training time, the costs saved in travel and time away from the job, and the ability of e-learning to serve large numbers at one time, or over time, with relatively little additional cost (Schriver and Giles, 1999; Warner, 1999; Koprowski, 2000). In addition, the relationship of e-learning and knowledge management is increasingly seen as contributing to the competitive edge of the organisation (Swanson, 2001). This raises expectations in organisations that introduce e-learning in terms of both the extent of the return on investment (ROI), and the period over which the payback will take place. A study of US businesses by Swanson (2001) indicates that 46 per cent of those surveyed are already seeing a return on their investment, whilst 94 per cent are expecting to see returns or further returns within two years. Hammond (2001) also notes that 80 per cent of *Fortune* 500 companies are using, or intending to use, e-learning, and expect a significant ROI.

Discussions on flexibility tend to focus on two main issues:

- (1) flexibility in delivery; and
- (2) flexibility in the pace and distribution of learning.

The flexibility of delivery offers organisations the ability to deliver consistent learning experiences, independent of time and place. This offers great advantages to a geographically dispersed workforce, those working non-standard hours, and those employees who work from a home base. It also enables learning to be offered easily to those beyond the formal boundaries of the organisation at relatively low cost: this would include customers, suppliers and contractors (Galagan, 2000). Flexibility in the pace of learning is represented largely as an advantage to the learner, in that they can learn at a time and pace to suit their own capability and life circumstances, and enable

their continued marketability through lifelong learning (Sandelands and Wills, 1996; Caudron, 1999). However, it is notable that the issues of flexibility and learner-centeredness fail to address issues of learner styles identified by Honey and Mumford (1992), although it is questionable that any training delivery method could provide the flexibility to address this issue. Nevertheless, it does raise questions about the suitability of e-learning, with its reliance on self-instruction and self motivation, for a broad organisational constituency.

The dearth of academic literature available on this subject means that a reasoned debate is lacking, particularly in the areas of quality of content, problems with the technology, learner support and evaluation. There are, however, some authors who do sound a note of caution. Emurian (2001) questions what might be effectively delivered via e-learning, and Angel (2000) suggests that while e-learning is good for communicating facts, areas of complexity and feedback might be better left to human trainers. Dobbs (2000) maintains that much of the “off the shelf material available is poor and lacking in creativity”, whilst Warner (1999) emphasises the importance of tailor-made materials and online help, but acknowledges their cost. This is a significant point that needs to be addressed in the payback debate, and the balance of quality versus the true cost of materials and their support is one that would benefit from further research. It is, however, an area of great complexity as the range of options and capabilities available does not lend itself easily to definition, and this complexity is only likely to increase as technology advances (Barron, 1999). McLennon (2000) provides a clear exposition of the technological complexity of e-learning and the areas in which problems can occur.

With regard to the learning experience, Dringus (2000) warns that e-learners may be unable to sustain their momentum unless they have the skills for self-directed learning and technology management, unless they are self motivated, and unless they are prepared for isolation. Indeed, Horwath (1999) recorded anxiety in novice users when the technology failed to respond within 15 seconds. This theme is addressed by Newmann and Smith (1999), who use Lave and Wenger’s (1991) concept, “communities of practice”, to note the significance of a supportive and interactive context of learning, highlighting the danger of the learners’ needs being ignored in the enthusiasm for technology. This point surfaces again in respect to evaluation, and much of the evaluation of e-learning that does take place concentrates on uptake, rather than the comparative effectiveness of online and traditional courses (Horwath, 1999). The exceptions to this include Furnell *et al.* (1999) and Leins and Orton (2000), who reiterate all of the above concerns and take a stakeholder perspective, and Athanasou (1999) who urges the need for evaluation, and who offers a six-step framework, which includes a range of qualitative issues as well as cost. Hartley (2000) concentrates on the impact of e-learning on the role and skills of the trainer. Moreover, a recent study by Masie (2001) further reinforces this message, highlighting that “learner acceptance” is not guaranteed and will require firms to address issues of marketing (to encourage participation), support (to aid retention), incentives (to provide validation of the training completed), and technology (to support collaboration and provide blended solutions).

These issues seem obvious on reflection, but as Dobbs (2000) and O’Reilly (2000) point out, many trainers responsible for developing and implementing e-learning strategies are struggling within a new field. They possess some of the skills required,

but lack experience and the “know how” of others, particularly the technical skills. Here again the literature proves less useful than it could in terms of providing guidance across the broad spectrum of issues. Indeed, what is largely ignored in the literature is that e-learning sits within a broader context or agenda of employee development that may be guilty of providing innovative fads at the expense of pedagogically sound training (Beech *et al.*, 2000), where managers retain faith with “traditional” training methods (Sadler-Smith *et al.*, 2000), where there are struggles to balance competing individual and organisational priorities (Antonacopoulou, 2000), and where the language of the democratisation of learning, through employee-led development schemes, is argued to increase motivation (Hamblett and Holden, 2000). These issues will clearly inform the discourse on e-learning and, given that the majority of the literature tends to support a cost-driven and flexibility agenda, the wider context of employee development may also create tensions between employee development practice, the involvement of the line manager, and the needs of the individual. Consequently, new entrants to the field have to piece together the key issues from a range of sources and resolve the tensions that exist within their own organisational context. Moreover, the focus on cost and flexibility may undermine the technical possibilities to create stimulating learning environments – and does not address the issue of providing a *unique* pedagogy of learning. Indeed, Govindasamy (2001) argues that pedagogy is the most neglected aspect of attempts to implement e-learning. Given these concerns, it is important to consider how e-learning can contribute to the strategic objectives of the third generation of corporate universities, outlined above.

Case reviews of e-learning in corporate universities

To explore and illustrate the use of e-learning in corporate universities, this research undertook to review the implementation of e-learning in three large organisations in different sectors. Company A is one of the big five high-street banks in the UK; company B is an international engineering and manufacturing concern in the aerospace industry; and company C is a major provider of telecommunications architecture. By investigating the experiences of larger organisations that are implementing e-learning, our aim is to consider the contexts affecting e-learning structures and “success”, to inform the debate on e-learning, and to identify emerging issues that warrant further research. This final point is considered to be particularly important. If e-learning does continue to grow, and become a predominant source of organisational learning, its effective use will have a major impact on employee capability and thus economic performance on an international scale. Consequently, the experiences and problems of those companies leading the implementation of e-learning within corporate universities are likely to be profoundly important for those that follow.

Review material was collected through interviews with senior corporate university and e-learning development staff, through seminars involving academics and practitioners within the corporate university, and through practical reviews of the e-learning material available. This triangulation does not establish “the truth”, but allows a variety of perspectives to be considered by the researchers in the construction of their interpretation. Researching with qualitative methodologies creates particular challenges in establishing the “truth” and in the analysis of data (Lincoln and Guba, 2003). Knowledge production clearly relies heavily on the researcher’s lens to make

sense of the data. Consequently, the validation process should also involve recognition that outcomes are ultimately interpretations and as such are fallible and revisable, and that an alternative interpretation or construction may be possible (Alvesson and Skoldberg, 2000; Schwandt, 2003). Nevertheless, this approach is particularly useful for developing emerging issues that may warrant further, and more focused, research. Consequently, the research data was analysed in terms of e-learning's use and contribution to strategic objectives within the corporate university, its pedagogical structure, and issues highlighted in e-learning adoption in the corporate university.

Strategic drivers

The initial drivers for a move to e-learning were substantially different in each case, but in all cases these initial objectives have evolved over time and with operational experience to present somewhat different aims for the present and future. In company A the most significant factor driving the strategy was cost, both in terms of a reduced headcount within the training function and in the unit cost of delivery. Currently, however, although return on investment is still a major issue, the key drivers are seen as accessibility and flexibility of delivery. In companies B and C the move to e-learning was driven by a strategic review of the training and development function. In company B the aim was to “deliver learning solutions, share best practice and encourage a culture of lifelong learning”. A virtual university was seen as an integral part of this vision. In company C the strategic review focused on performance and the current capability of the training and development function to deliver a consistent standard of face-to-face training, in the quantity and timeframe required, given the rate of technological development in product lines resulting in shorter product lifecycles. E-learning was seen as a means of meeting these requirements for a large audience at an acceptable cost. Company B has developed their ambitious original aim still further, their current aim is to develop an integrated strategy of knowledge management and learning and the virtual university is seen as a key component of this strategy. Company C plans to move further in the direction of e-learning by introducing “a total e-learning solution”. This places both company B and company C within Walton's (1999) definition of a third-generation corporate university, while the aim of company A sits comfortably in Fresina's (1997) category of perpetuating and reinforcing the current culture, Company C is using e-learning as “an agent to manage change”, and company B is using e-learning as a “force to drive the future direction of the company”. Furthermore, all three companies reflect the advantages of e-learning reflected in the literature and consider it to provide significant advantages in terms of cost and flexibility in delivery.

Integration of e-learning

In all three case studies, e-learning was not the sole means of delivering learning and training. Company A still delivers face-to-face training; company B still offers traditional training, placements and a mentoring scheme; and company C still offers face-to-face training and has a college providing technical training to both their own employees and, as an income-generating initiative, to other companies. Delivery of e-learning provided by these institutions varies considerably in terms of both breadth and technical complexity. Company A delivers e-learning through multimedia suites containing stand-alone PCs offering CD-ROMs. These have increased from an initial

450 to 2,100 and they also have an intranet site which is available to 55,000 of the 78,000 employees, with some 25,000 pages of reference material. Their internet system is also used, in the main, for online testing of re-licensing qualifications required for financial regulation. It does, however, include 247 bulletin boards which build up support via online questions and answers and act effectively as FAQ asynchronous support. In 2001, a total of 250,000 hours were delivered via the CD ROMs, and the intranet was receiving 125,000 hits per month with an average of 6.5 pages being requested. The areas covered include:

- training for change initiatives;
- generic IT;
- interpersonal skills; and
- sector-specific skills and qualifications.

The courses are 50 per cent off the shelf, mainly IT and interpersonal skills, and 50 per cent tailor-made at the request of faculty heads and project managers focused on company specific initiatives. Company A employs six web designers to create customised training since they found this to be the most cost-effective means of producing this material. They see the main barrier to the development of web-based e-learning as technological limitations such as bandwidth and the need for an effective and compatible online monitoring system. Their plans for future development include introducing online mentoring and the development of more blended learning. A further barrier is seen as the company culture, which is yet to fully accept e-learning. Resistance tends to increase the more senior the grade of employee, and as it is the senior managers and project managers that act as the commissioners of e-learning, this presents a significant issue. At lower levels a recent attitude survey revealed e-learning as one of the two most popular forms of learning.

Company B was concerned to ensure that the “backbone” of the virtual university was effective and then to evolve capability, to allow open access and manage by exception. They started with the intranet and provided support through learning resource centres. The intranet now serves over 80 per cent of a workforce of 130,000 based in over 45 countries worldwide. There are approximately 550 online courses, the majority of which are off the shelf. Bespoke online learning is provided for specific business sectors or projects that identify a particular need. There are ambitious plans to develop and integrate the systems with the knowledge management system and to review the use of the learning resource centres. This perspective is more in line with Maule’s view that “[e]ffective use of the collective media is often as much a function of information policies and organisational cultures as it is of technology” (1997, p. 136). Company B also sees technology as one of the main barriers to the development of the e-learning strategy. These are bandwidth, hardware and processing capability issues. These are seen as limiting the use of the latest packages, and the level of interactivity and impact of the material. In the first year there were 16,000 students and 40,000 courses taken. Current take-up is approximately 18,000 students, or 15 per cent of the workforce. Focus groups were conducted after the first year of operation, in 1998, and then again in 2000. The feedback from the first groups indicated that people were confused by the amount of provision on offer. A number of steps were taken to address this problem, including:

- the provision of a learning and development guide;
- searches for course options in a variety of categories, such as future job roles, competencies, career plans, and technical knowledge; and
- a single point of access in the learning resource centres to the database of options.

Despite this, the feedback from the 2000 focus groups was very similar. Further barriers were seen as the difficulty of integrated tracking across both online and offline learning needs and activities together with the perennial problems of motivation to learn and the development of a learning culture. There is a move to counteract this by embedding learning as a key activity in all processes.

Company C has a very different approach to delivery, outsourcing its non-core learning provision to a third party and developing e-learning as a part of its overall learning strategy, although this is currently seen as only partially formed. It is company C's intention to go for total e-learning solution with an integrated learning management system with both company and individual access. Content ranges from technical to soft skills training, which is, in the main, off the shelf. Where bespoke e-learning is provided, this tends to be the most popular. Future development includes both individual and group-based learning activities with digital and video links utilising learning facilitators. Take-up rates have grown ten-fold in less than two years from 300 in 2000 to 3,000 in 2001. However, this must be set in the context of the withdrawal of face-to-face learning opportunities. As befits a company in a high-technology communications business, the capability of the technology was not seen as a barrier. There were, however, a number of other barriers. Culturally, training had previously been viewed as a "reward" with a few days away from the job, and training was not seen as being linked directly to business needs. Thus, the move first to distance learning and then to e-learning was seen by managers as a "cheap" option and, consequently, lacked their support. Additionally, the company had grown through acquisition and merger and retained a number of different sub-cultures, all with their own attitudes to training and technology. The biggest barrier, however, was seen as getting people to understand how to e-learn. While the intention was to retain face-to-face courses for technological training, product training and development training was to be fully transferred online.

Learning the lessons – where to now?

All three of these companies have clearly put a great deal of thought and investment into e-learning within their corporate university frameworks. Despite this, there are still barriers to be overcome and issues to be resolved. These provide lessons that might inform future practice in developing and implementing e-learning in a corporate university, and poses a number of questions for future research.

Strategic impact and considerations

The ability to invest in the infrastructure for e-learning is closely allied to the concentration on the financial benefits of e-learning, particularly the requirement to demonstrate quick returns on any capital invested. As company A stated, "you need to take a long term view of the investment, e-learning was implemented on a zero budget here [...] we had to make savings to justify the expenditure. This hampered the speed

and the effectiveness of the e-learning solutions". This was echoed by company B, who argued that return on investment was a short-sighted view of e-learning, and more significant was the impact on competitiveness and the development of a learning culture. The evidence from the case studies indicated that, as suggested in the literature (Schriver and Giles 1999, Koprowski, 2000), the key drivers identified were "accessibility and flexibility of delivery" and cost, particularly cheaper delivery through reduced opportunity costs and reduced time away from work.

There is a strong suggestion of a shift in emphasis reflected in e-learning to the individual taking responsibility for his or her own learning. More work is needed here to focus on an analysis of learner needs and learner demands for e-learning, which is currently supply-driven rather than demand-driven. There is underlying concern about variability in the quality of learning products amongst users, which would seem to reflect concerns highlighted in the literature, particularly around the level of interactivity of products. The reality is that a considerable amount of learning material is standardised, and consequently not locally sensitive. It is hard to see how such generic material can make a significant strategic impact required in the third generation of corporate universities.

Perceptions about the potential benefits of e-learning suggested a lack of clarity or emphasis on how e-learning might contribute to increases in bottom-line performance. This contrasts sharply with Swanson's (2001) study on US businesses, where it is claimed that real ROI is achieved quickly through e-learning investment. Indeed, the directions being taken by the companies tend to reinforce Newmann and Smith's (1999) concerns that the emphasis of e-learning is directed towards technological solutions and potential economic efficiencies rather than putting issues of pedagogy and learner experience at the forefront of implementation. Evaluation systems count hits and pages read, with the deeper focus groups not really considering how and why take-up is achieved, or the level of contribution to strategic goals. This warrants careful review in terms of the expectations of e-learning to provide support for the strategies and goals of the corporate university. Concerns remain that the level of personal support available, both online and offline, are not sufficient to achieve the quality learning experiences and outcomes necessary to provide a strategic contribution.

Dealtry (2002a, b) considers the corporate university as way of managing performance and potential, and an important part of that process is the release of personal potential. To enable this process some account must surely be taken of individual approaches and preferences in learning, which is at odds with the current menu-driven approach, even if this menu is online and universally accessible. This suggests the need for ongoing research alongside companies to evaluate the impact of e-learning on the various stakeholders, particularly the learner (Roy and Elfner, 2002), to identify key issues of "learner acceptance" (Masie, 2001) and also to consider how and what strategic contribution current e-learning systems provide.

Technology

First, while technology is the enabler of e-learning it is also in many organisations a barrier to the full realisation of its own potential. E-learning solutions can clearly only progress at the rate of the base technology of the organisation, and this can slow down development, reduce the level of sophistication of the materials used, and create

frustration in users and trainers alike. The technological capability of organisations did not seem to support the level of interactivity or integration necessary to make e-learning sufficiently different from other distance learning material and to provide increased levels of satisfaction. Indeed, as noted earlier, studies by Horwath (1999) found that students became distracted and anxious if the computer did not respond quickly.

Thus, the learning experience and technological robustness are clearly linked. Moreover, to achieve the level of virtual interaction that Motiwalla and Tello (2000) highlighted was essential to improved learner satisfaction, technological capability will be fundamental. But, it will be more important to address the pedagogical possibilities in learning programmes design to provide the level of interaction and collaboration that will provide the learner with a stimulating experience (Masie, 2001), and encourage a culture of learning that is so important to drive the organisation forward. This interactivity is crucial to reducing transactional distance and increasing learner autonomy, but was only limited in the development of current programmes, and further strengthens the case for an evaluation of learner experiences within the corporate environment. It is difficult to see how current systems provide the strategic direction desired in the models suggested by both Walton (1999) and Fresina (1997).

Issues of pedagogy

What is most noticeable by its absence is any reference to the quality of the learning and the impact on the learner that takes place. Company B refers to becoming “learner focused”, but in the sense that the learner is a customer for its products rather than in the nature of the learning experience and the quality of the behavioural outcomes. The emphasis on learning as an outcome expressed in terms of behavioural change and the development of performance through the transfer of knowledge and skills is not new: this has evolved through many years and many pedagogical paradigms such as story-telling, writing and the dissemination of printed material. However, electronic dissemination now requires not only the ability to listen, read and write, but the technical competence and network depth to create a learning community in cyberspace (Horwath, 1999). It is important to consider that e-learning may provide the capability to combine these elements of story-telling, reading, writing and even acting, into a unique and flexible dissemination mechanism. Consequently, serious consideration has to be given to the pedagogical structure of e-learning. Thus, the exploitation of this technical dimension will require consideration both of the possibilities of e-learning and of what is technically possible, as well as the possible loss of what is technically not possible (Campbell and Dealtry, 2003).

While there is no reason why e-learning should deliver a less effective alternative to traditional education or existing distance learning (Hodgson, 2002), issues of instructional design, technology and pedagogy (Welle-Strand and Thune, 2003) create tensions between cost and quality that must be balanced if e-learning is to achieve its potential within organisations and to contribute strategically to the corporate university framework. Currently, there is little evidence that e-learning is providing anything more than open and on-time access to a largely generic curriculum. In that sense, it is broadening access to a wider constituency, but how that is influencing behaviour and strategic contribution is not clear.

The significance of organisational culture

The need to manage and prepare the organisation culture is another key learning point, and echoes the findings of Newton *et al.* (2002). However, this finding has several strands to it. First, there is a need to prepare the organisation for e-learning at all levels. All three companies found that there was more resistance to the introduction, use and development of e-learning solutions from the higher levels of the organisation than the lower levels, with a familiar refrain being that “the more senior the grade of employee, the less likely they are to want to accept e-learning material”. Second, there is the attitude to learning and training in general. E-learning is no more likely to motivate the person who doesn’t want to learn than any other form of learning, and therefore the problem of motivation remains. There is also the importance of building a learning culture within the organisation, which will facilitate and support the transition to e-learning.

Organisational readiness involves a number of aspects, but in particular includes managing the change process and managing technology. The complexity of the change requires managing a number of different interfaces involving, for example, senior managers, suppliers, and potential learners. Thus, implementing e-learning requires a comprehensive and effective approach to change management, as advocated in much of the organisational change literature (e.g. Beer *et al.*, 1990; Kotter, 1995). It must be a strategically led and supported initiative that integrates with the overall business strategy and not just a cost-saving and efficiency measure. Moreover, in managing the development of a “learning culture”, it is hard to see how e-learning has contributed to this. Further research is needed to understand how the learner engages with the e-learning material, and whether this encourages a lifelong learning culture expected through the development of strategically orientated third-generation corporate universities.

Conclusion

Given the investment in e-learning by these case companies, it is clear that it is considered to be a central plank of their learning and development strategy. In terms of the corporate university models reviewed earlier, the investment in technology suggests that these institutions are third-generation corporate universities (Walton, 1999), where technology is used to deliver training and development to a broad organisational constituency. However, while technological support for training and development may provide access for the whole of the workforce, even for suppliers and customers, this review suggest a number of difficulties that must be considered.

First, the drive for efficiency tends to override the adoption and inclusion of the full range of technical possibilities of an e-learning pedagogy, and the technology itself may be a significant barrier. While technological solutions to the management and delivery of e-learning are developing at pace, for the full possibilities of e-learning to be realised requires significant investment in technological capability and in pedagogical design. Currently, however, the companies are largely using e-learning to deliver generic “off the shelf” solutions. There is an inherent tension between technological possibilities of an e-learning pedagogy, and the cost of implementation.

Second, while the implementation of e-learning may deliver ROI in terms of costs and efficiency savings, the lack of assessment of learners’ experience is a concern. It is difficult to see how organisations can claim a strategic and cultural contribution when

the learner's voice is almost silent in the assessment of e-learning. Evaluation must be broadened to include behavioral outcomes and learners' responses to e-learning programmes.

Third, there is sufficient evidence from these case companies to suggest that the culture of the companies may play a significant part in the acceptance, or not, of e-learning. Considerable effort will need to be expended in order to create "organisational readiness" for the change to an e-learning strategy.

That e-learning has the potential to be a key learning and development strategy within the corporate university is not in doubt. However, the method and design of its adoption will limit its contribution to the organisation. If corporate universities that adopt e-learning are to achieve the strategic and cultural contribution expected in the corporate university models suggested by Nevins (1998) and Fresina (1997), then the implementation of e-learning must address more than the efficiency and flexibility agenda emphasised in these organisations. Moreover, and perhaps most importantly, given that the aim of the sophisticated corporate university is to achieve a strategic and cultural contribution to competitiveness, evaluation of the adoption of e-learning needs to be more sophisticated and to attend to the learners' experience and behavioral outcomes.

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