

# E-LEARNING: PLANNED AND EMERGENT STRATEGIES

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## Abstract

*E-learning is a new strategic arena for higher education, and higher education institutions (HEIs) need to acquire the necessary competencies and capabilities to participate. These may be developed in-house or acquired externally. E-learning involves acquisition and management of new information systems, and deployment of new capabilities. A resource-based view (RBV) suggests a rational stepwise model of how organisations approach entry to a new strategic area. This research uses case analysis in five universities to test this view and identifies two models for implementing e-learning, one confirming the rational model, and one that is emergent. These outcomes permit a richer RBV of strategy, and suggest a diverse range of strategic options for HEIs as they engage in e-learning.*

*Keywords: E-learning, Strategy, Resource-Based View, RBV.*

# 1 INTRODUCTION

E-learning uses digital technologies for education, including the Internet for distributed and distance education (Katz, et al., 2000). The use of e-learning is increasing dramatically (Milliken, et al., 2002) with European higher education (HE) among the world leaders in developing Internet and electronic resources (Timmis, 2003). Understanding e-learning is important as it is a new product, market and strategic area for HE that involves new IT and new competencies. It is also a new information system for higher education institutions (HEIs).

Many IS researchers employ a resource-based view (RBV) to examine strategy (Jarvenpaa, et al., 1998; Montealegre, 2002), but while the strategic management literature encompasses a spectrum of strategy models from rational deliberate to emergent (Whittington, 1997; Galliers, et al., 1999), the RBV literature proposes a rational stepwise model of strategy. This research proposes an RBV model of emergent e-learning strategy, 'ex-post strategizing', to accompany the rational stepwise model, termed here 'ex-ante strategizing'.

There is a choice of approaches for researching e-learning in HE. Entry to new markets is a function of strategic choices about organisational development. The development of new products and entry to new markets is a strategic process (Ansoff, 1965). This research seeks to understand how HEIs enter the e-learning strategic area. Strategic management offers the major perspectives of mainstream strategy research, organisational economics, and industrial organisational analysis. However, according to Mahoney and Pandian (1992) the RBV fits well with all of these, and it also provides a deep understanding of how organisational resources are combined and deployed (Peteraf, 1993).

This research employs RBV as a lens through which to investigate how HEIs go about developing a strategy for e-learning. The RBV sees organisations as stocks of resources bundled into capabilities and competencies. It is appropriate as it fits well with understanding strategic activity, and offers two approaches to understanding entry to e-learning. The RBV proposes that organisations need to acquire capabilities and competencies in order to enter new product/market areas (Duysters, et al., 2000). The dominant view of strategy formulation from the RBV is that of a rational stepwise progression through a series of capability and competency acquisitions and deployments to their embedding in organisational routines (Kogut, et al., 1992; Grant, 1998). HEI adoption of e-learning is an opportunity to test the rational stepwise view of the strategy process depicted in the RBV literature.

This research extends current understanding of strategy. Its findings provide a basis for universities to understand how e-learning is implemented. The paper first examines e-learning and the resource-based view. It then describes the research design and method, followed by the case outcomes. The analysis and conclusions traces data from the research findings to the conclusions.

## 2 CONTEXT AND BACKGROUND

### 2.1 E-learning

While e-learning involves using digital technologies for teaching and learning (Katz, et al., 2000), it is perhaps better viewed as a continuum. At one end are applications like PowerPoint, which have little impact on learning and teaching strategies or the organisation. At the other end are virtual learning environments (VLEs), and managed learning environments (MLEs), which can have significant impact upon learning and teaching strategies, and upon the organisation.

Implementation of e-learning can range from what Bates (1996) calls the 'lone Ranger and Tonto' approach, where an academic and computer-skilled assistant go it alone and create course web-pages, to specialist learning technology teams, involved in anything from working with academics to redesign learning, to directly generating e-learning resources. Both approaches can involve distance learning.

Course web-pages can easily be made available to off-campus students, and learning technology teams can be the result of convergence of distance learning teams and learning technology units (Bartolic-Zlomislic, et al., 2001). However, e-learning can be much more than just a web-site, and needs to be embedded in the institutional learning context (Laurillard, 1993). Unfortunately, much learning technology focuses on development rather than implementation, and many learning teams are project-based, working with initiatives and short-term agenda (Laurillard, 1993; Timmis, 2003).

E-learning brings about a need for new skills in the use of digital media for teaching and learning (Laurillard, 1993; Salmon, 2000), and blurring of old roles, such as academic and librarian, along with new specialist roles for staff (Timmis, 2003). It also brings about new configurations of teaching and learning institutions, and an unbundling of services as the boundaries between HEIs and other e-learning service providers becomes blurred (Ferguson, 2000; Katz, et al., 2000).

## 2.2 Strategic approaches

The strategic information systems literature has a rich view of strategy, with four different approaches identified: classical, processual, evolutionary and systemic (Galliers, et al., 1999). These four can be viewed as schools of thought and placed on a continuum representing differing processes, with deliberate at one end and emergent at the other (Whittington, 1997). Classical strategy and organisational theory proposes that organisations go through the change process by a rational route. Vision and strategy are formulated first, then organisational structure is changed to support the strategy. Last, resources, including skills and technology, are put in place to support the new structure. The classical approach is a simplistic approach, based on rationalistic planning. The evolutionary approach seeks to ensure survival in the marketplace, and attempts to optimise the fit between the firm and the environment (Galliers, et al., 1999), it views strategy as emerging from individual actions. The classical and evolutionary approaches view profit maximisation as the intended outcome. For the processual school strategy is pluralistic in terms of outcomes, and emergent. The systemic school is also pluralistic in terms of outcomes, recognises the influence of culture, but is rational and deliberate in approach (Whittington, 1997; Galliers, et al., 1999).

## 2.3 Resource-based view

During entry into new strategic areas and the adoption of new technology, organisations seek to gain and sustain competitive advantage (Penrose, 1959). Sources of competitive advantage can reside within the organisation, or externally up or down the value chain (Quinn, 1999; Insigna, 2000). The prevailing paradigm for understanding how organisations develop and sustain competitive advantage is the RBV (Schendel, 1994).

The RBV is attractive to strategy researchers as it encourages dialogue between a number of disciplines (Mahoney, et al., 1992). Peteraf (1993) asserts that the concept of the heterogeneity of firms originating in the individual nature of their resources and competencies is at the heart of strategic management. Andrews (1980) maintains that the classic approach to strategy begins with an analysis of resources and capabilities. Strategy can be seen as a pursuit of rent from resources, over and above their opportunity cost (Ansoff, 1965). The pursuit of competitive advantage can be viewed as the pursuit of superior rents from those capabilities and competencies that are unique to an organisation, hard to imitate by competitors, and offer entry to new markets (Hamel, et al., 1994). It is not possible to ever understand all possible services available from a resource (Penrose, 1959), but making better use of resources can be seen as a competence. As HEIs implement e-learning they will need to employ unused services from existing resources as well as acquiring new ones.

The prevailing view of strategy from the RBV is that the resources and capabilities of an organisation are central to the formulation of strategy (Grant, 1998). The prevailing model for formulation and implementation of strategy, from the RBV, is a rational stepwise progression through perception of opportunity, evaluation of existing resources and capabilities, then expansion of the stock of resources

so as to build those capabilities and competencies needed to enable entry to a new market (Hamel, et al., 1994; Grant, 1998). The challenge facing managers is to develop the strategic competencies that arise from the firm's resources (Segal-Horn, 1998). A firm must understand its resources and capabilities, and the resources and capabilities needed, in order to develop strategy. The stock of resources is then evaluated, and expanded to fill the resource gaps. An organisation must understand the resources and capabilities required, and its core competencies, in order to decide which resources are to be kept in-house and what is to be outsourced, what resources to acquire and how to acquire them, and what resources to dispose of. In this way organisations formulate and implement strategy.

From this view of strategy, HEIs engaging in e-learning need to identify the competencies and capabilities needed to implement e-learning, what stock of competencies and capabilities they have, and perform a gap analysis to determine the competencies and capabilities to be acquired. If the stock of capabilities is to be expanded, the decision about how to expand that stock must be made. There are a number of options available, new knowledge about existing stocks may provide new capabilities, or new resources may be acquired, either by building them within the organisation, or buying them from external sources: the build/buy decision.

The build/buy decision is a component of the decision to expand the stock of resources. New capabilities can be generated internally through re-deploying existing resources in new ways (Grant, 1998), organisational learning in the form of training, R&D, and the development of new routines (Prahalad, et al., 1990), or through entrepreneurial activity (Hamel, et al., 1994). They can be bought through purchaser/vender transaction, or through mergers and acquisitions (Hagedoorn, et al., 2002). Essential capabilities and competencies may reside outside the organisation (Lynskey, 1999). The services provided by resources can be acquired through outsourcing, but while capabilities may be outsourced, core competencies are not, since core competencies are those that not only provide competitive advantage, but are competitively unique. Resources and capabilities can be shared or transferred through alliances with other organisations (Duysters, et al., 2000). The rational stepwise progression of ex-ante strategy formulation can be completed to include the build/buy decision (Figure 1). This ex-ante strategy model here represents the current view of strategy formulation from the RBV.

It is often difficult to acquire resources externally because they are a social construct peculiar to an organisation and therefore difficult to imitate or learn. According to Kogut & Zander (1992), where knowledge is coded it is easier to acquire, and easier to transfer across an organisation for implementation. This poses something of a paradox, ease of transfer allows more rapid utilisation, enhancing competitive advantage, but if knowledge is coded it makes imitation easier, eroding competitive advantage (Kogut, et al., 1992). If knowledge is embedded in organisational structures it can be acquired through mergers and acquisition, absorbed through close association with alliance partners, or shared with alliance partners.

Once acquired, new resources and capabilities must be embedded in the organisation so that they become a part of organisational routines and knowledge (Grant, 1998). The knowledge of the organisation is socially constructed, residing in the organising of relationships within the organisation, the coding of knowledge, and by the higher-order principles governing organising (Kogut, et al., 1992). New knowledge is built into existing resources and developed by combining existing resources in new ways (Schumpeter, 1934), it is therefore important that new knowledge and capabilities are related to existing capabilities, deterring imitation, preserving competitive advantage (Kogut, et al., 1992). It is the heterogeneity of resources and the nature of organising which gives each organisation its unique character, and makes loss through imitation or unintended transfer difficult (Penrose, 1959; Kogut, et al., 1992).

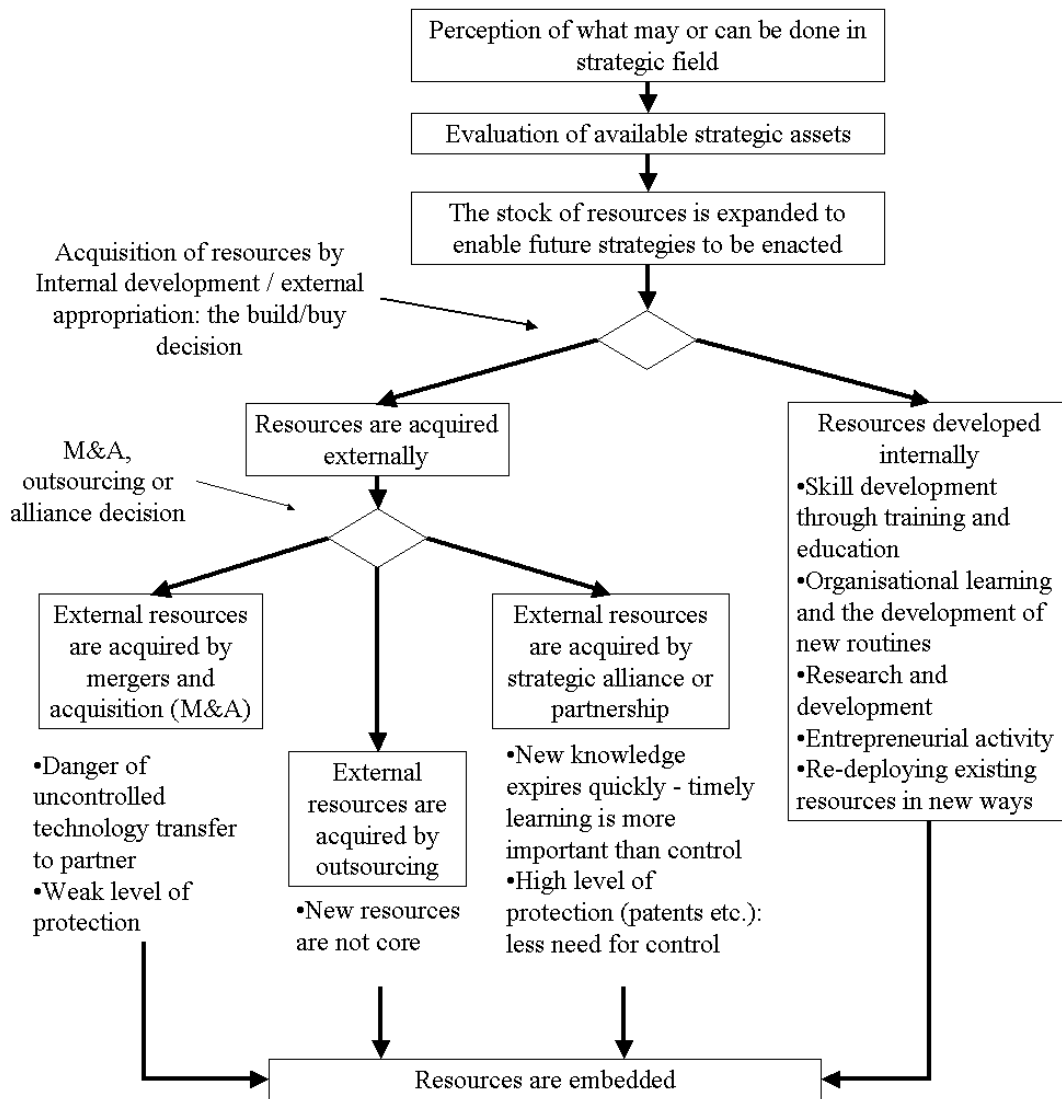


Figure 1. Ex-ante strategy model of entry to new strategic area

### 3 RESEARCH DESIGN AND METHOD

Consistent with the focus of obtaining rich data in a natural setting, a multiple in-depth case study approach is adopted (Yin, 1994). Data was gathered from multiple sources from within each case to provide mutual verification (Glaser, et al., 1967). The contemporary nature of this research, and the availability of the key actors in each case, as well as documentation, meant that case study was a practical option.

Five UK universities were chosen for study, each case is a research and teaching institution with both undergraduate, and taught and research postgraduate, courses. Cases are chosen based on high and low performance in government assessment and media ratings, and extent of e-learning activity (Table 1).

Case	Size	Research	E-learning	Distance / Local	Quality Ratings
1.	Large	Active	Active	Distance not a focus / local e-learning delivery	Upper quartile
2.	Small	Active	Active	Distance not a focus / local e-learning delivery	Upper quartile
3.	Large	Active	Active	Mainstream distance courses plus local e-learning delivery	Middle
4.	Large	Less active	Active	Delivers courses at a distance via partner organisations plus local e-learning delivery	Lower quartile
5.	Large	Active	Active	Solely distance learning	Not rated

Table 1. Selection of cases

Research by Walsh & Linton (2001) and Marino (1996) was used to build an interview framework. Marino offers a process for identifying competencies in the form of a questionnaire. Walsh & Linton separate competencies into production and service competencies, and further divide them into managerial and technical competencies. By synthesising the Marino process and the Walsh & Linton approach a case study protocol and interview questionnaire was developed.

Principal actors in each case were identified and interviewed. Interviews were semi-structured, allowing freedom for discussion to develop. Documentation was gathered where available. Interviews were recorded and the tapes transcribed.

#### 4 FINDINGS

The research data is in the form of interview transcripts and notes, along with documents where available. Interviewee statements were sorted into themes that arose from the data. In some instances subjects made clear statements that were used to identify areas of importance, other themes emerged from the data where subjects identified issues, processes and capabilities. Themes were supported by more than one subject, and where possible all were triangulated against several interviewees. An example is where numerous subjects stated that their institution did not have a strategy for e-learning, but there were plans to write one, or they were in the process of writing one, this was taken as evidence that e-learning was not being developed according to a strategic plan. This was then triangulated against statements that identified the development of e-learning as being the result of the actions of individual academics and technologists experimenting with e-learning, which suggests that there is no enacted strategy in place, but that there are moves to develop one as a result of ongoing activity: an emergent strategy.

The software used by cases is listed in Table 2. This is not an exhaustive list, but includes the principle software packages. All of the cases had some bespoke software that was written for them, some written in-house, some outsourced.

Case	E-learning software
1.	Blackboard, and internally developed bespoke
2.	Blackboard, WebCT, Boxmind, and internally developed bespoke
3.	WebCT, and outsourced bespoke
4.	Blackboard, WebCT, and outsourced bespoke
5.	FirstClass, Lyceum, internally developed bespoke

Table 2. Software use

The capabilities required for e-learning (as identified by respondents) are summarised in Table 3. Some of the capabilities are general e-learning capabilities, some specifically for local or distance learning. The order of capability deployment, and the capability mix, differed depending on the approach to strategy development. The cells in Table 3 contain 'Y' to represent presence of a capability, and 'N' to represent absence. This is however a rather crude description and needs to be understood as 'substantial presence' or 'substantial absence'. In some instances apparently mutually

exclusive behaviours contributing to apparently mutually exclusive capabilities existed simultaneously, such as staff buy-in as a result of academic freedom and management of academic activity as a result of lack of academic freedom. However, where such paradoxes exist, the degree of presence of behaviour is hard to determine, but nevertheless effects organisational activity.

A need for strategy is quite clear to the subjects, but surprisingly, for some cases its place is to follow entry to the new area, not to precede it. Subjects in ex-post cases made statements such as ‘no, we don’t have a strategy, but we are starting to write one’, and where there was a strategy ‘no, I don’t think anyone would know what was in it’. There was an assumption in ex-post cases that a strategy would be needed to legitimise what had already taken place. Subjects in ex-ante cases made statements such as ‘there was a definite strategic decision.. you will develop an online [course]’, and ‘certainly there was a strategic directive’, and believed it to be top down decision making.

Table 3 identifies two different approaches to perception of opportunity, one is perception of teaching and learning opportunities, the other is perception of business opportunity. In some cases both forms of perception existed, but in others it was principally just one. Perception of teaching and learning opportunity leads to experimentation in using technology for teaching and learning. Perception of business opportunity leads to the development of business strategy before implementation of e-learning, ex-ante strategising. In those cases where both perceptions were in place experimentation and the development of business strategy occurred.

	High performing		Mid performing	Low performing	Not measured
	Local e-learning		Local and distance e-learning		
Capability	Case 1	Case 2	Case 3	Case 4	Case 5
Perception of e-learning technology as teaching and learning opportunities	Y	Y	Y	N	Y
Perception of e-learning as business opportunity	N	N	Y	Y	N
Experimentation	Y	Y	Y	N	Y
Strategising and planning	N	N	Y*	Y*	Y*
Buy-in by academic staff	Y	Y	Y	N	Y
Managing academic activity	N	N	N	Y	Y
Staff training in technology and new pedagogy	Y	Y	Y	Y	Y
Investing in and managing new technology	Y	Y	Y	Y	Y
Re-engineering teaching and learning	Y	Y	Y	Y	Y
Identifying and managing external partners	N	N	Y	Y	Y
Managing systems integration	Y	Y	Y	Y	Y
Managing distance learning – content design/delivery, access, assessment, communications, student support	N	N	Y	Y	Y
Managing business process redesign	N	N	Y	Y	N
Strategising and legitimising	Y**	Y**	Y**	N	Y**
**ex-post strategising	*ex-ante strategising				

Table 3. E-learning capabilities

Experimentation took place in organisations with strong research cultures, where there are skills in experimentation, and where there is little evidence of top-down strategy but freedom for academics to pursue their own interests. Where both experimentation and the development of business strategy occurred, subjects report dispute and tension between the two. In ex-ante strategising organisations academic activity is tightly controlled with less academic freedom, and managing academic activity is important to implement strategy. In experimental organisations there are higher levels of academic freedom, and buy-in by, as opposed to control of, academics is important to develop e-learning. In both models staff training is a vehicle to spread knowledge and skills. Similarly the ability to invest in and manage new technology is important in both, as is the need to re-engineer teaching and learning as

more complex forms of e-learning required different teaching and learning models. The need to integrate systems is common to both models as learning technology offers opportunities for increased efficiency through integration, but was awkward and cumbersome without.

Identifying and managing new partners is only important for organisations with significant partners, and only those organisations implementing distance learning have such strategic partners. Only distance learning organisations need to manage distance learning, although all the case organisations are involved in some form of distance learning, for two of the cases it is not a priority, and e-learning does not play a significant role. Business process redesign is also only important for distance learning organisations. Even where the organisation has a history of distance learning, the use of e-learning created new relationships between institution and student, student and student, and institution and strategic partner, and in some cases a direct relationship between student and strategic partner.

Only the experimental organisations are starting to develop strategy following substantial development of e-learning, the ex-post strategy model. In these cases strategy is seen as important to legitimise activity that had already taken place.

## **5 ANALYSIS**

### **5.1 Strategic paths**

The differing capability mix (Table 3) demonstrates differing capability needs, tying in with different organisational approaches to strategy development. There appears to be two distinct models of e-learning implementation. These can be viewed as idealised models at either end of a strategic approach continuum. One broadly follows the logical stepwise progression through perceived opportunity, ex-ante strategy formulation with decision to enter the new strategic field, evaluation of existing resources and capabilities, followed by resource gap analysis, acquisition of new resources with build/buy decision, and implementation of strategy. This is a top-down approach that largely confirms the model in Figure 1. However, there are important actors at different levels within the organisation who take the part of e-learning 'champions', pushing for implementation. These provide an up-flow that feeds into the top-down approach. The second model is much less organised, less prescriptive and more exploratory. It follows the path of exploration in the shape of experimentation, resource acquisition focusing on skill development, the building of routines, followed by embedding in the form of extending buy in by greater numbers of staff, staff training, and legitimising by ex-post strategising. This second model differs from that portrayed in Figure 1, and is depicted in Figure 2.

### **5.2 Capabilities required for e-learning**

The two models for e-learning implementation make use of different capabilities, and these are deployed at different times. For the ex-ante strategy model, the first phase requires the capability to recognise an opportunity, and this is the first capability deployed, followed by the capability to strategise and plan, and to agree on that strategy and plan. In order to implement the plan a capability to identify external partners is required. A staff development capability is needed so that there are those in the organisation with the knowledge and skills needed to carry the strategy forward. In the second phase, there is increased investment in technology, with choices to be made about what technology to use, this is a capability to manage technology investment. Learning and teaching with a substantial e-learning component has a different design and pedagogy, so the capability to re-engineer learning and teaching is a capability to be deployed. Because external partners are used the capability to engage and manage external partners is deployed. As e-learning changes the relationship between institution and staff, institution and student, and as the supply chain is unbundled as external partners take on a critical role in supplying teaching and learning, so the capability to engage in business

process redesign starts to be deployed, as a consequence of implementing the plan more than as an intention of the plan.

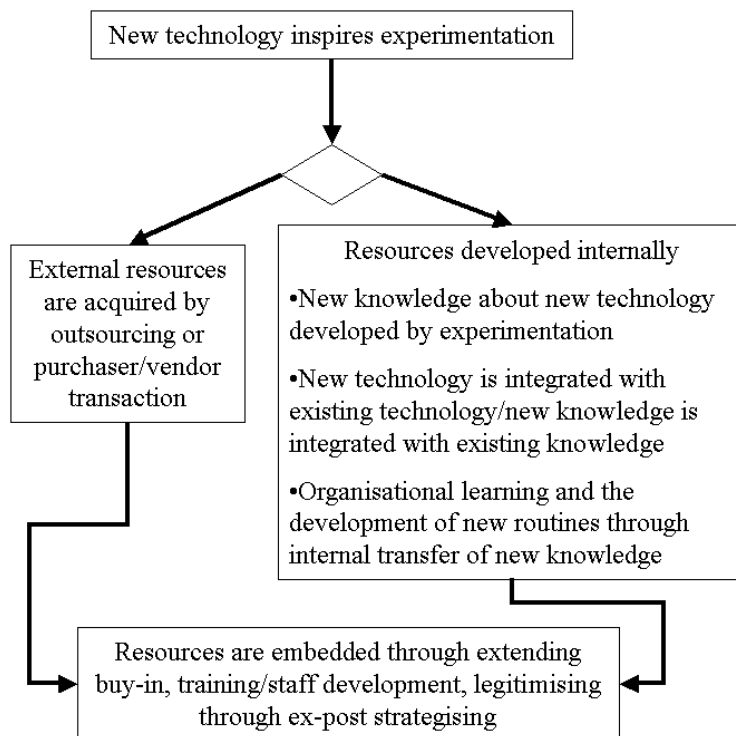


Figure 2. Ex-post strategy model

For the ex-post strategy model the first capability to be deployed is the ability to recognise teaching and learning opportunities from the new technology, and learn to exploit them through experimentation. Experimentation is both a driver, as academic staff seek opportunities to experiment with their teaching and learning as well as with new technology, and a capability requiring skills and knowledge about how to experiment. The capability to learn new skills as staff is trained in the use of the new technology is also deployed in the first phase. As a result of experimentation and the use of new technology, a need to integrate management information systems and student systems with learning systems is discovered, and the capability to manage systems integration is deployed. The second phase is not easily demarcated into a distinct phase, it is entered into gradually as need arises. It involves a widening buy-in by academic staff, which can be described as a capability to absorb new processes and develop new routines. As with the ex-ante strategy model there is an investment in technology, with choices to be made about what technology to use, and a capability to manage technology investment is deployed, as is the capability to re-engineer learning and teaching. This may lead to business process re-design, but that is unclear, and the loose structures in the institutions following the ex-post strategy model may be flexible enough not to require business process re-design.

In the ex-post model, relatively higher levels of academic freedom necessitates the ability to persuade staff to approve of e-learning, or sell it to them, for it to be carried forward. With relatively lower levels of academic freedom in the ex-ante model, management control of academics and academic activity is needed to carry e-learning forward.

The ability to develop staff skills is an existing internally-developed capability, but some staff development content – seminars, workshops etc. – may be external in the form of conferences, guest speakers, or events bought-in for staff training.

## 6 CONCLUSION

While the strategic management literature identifies a variety of strategic approaches from deliberate to emergent (Whittington, 1997), the RBV literature presents only a rational stepwise approach, much like the deliberate model of the strategy literature. This represents a gap in the understanding of strategy from an RBV, and leaves the RBV with a less rich view of strategy. The principal finding of this study is an RBV model of emergent strategy to accompany the rational stepwise model. The two models of entry to a new strategic area can be viewed as idealized types at either end of a continuum of practice (Figure 3). Three cases fall towards either end of the continuum, while two are situated more centrally, exhibiting aspects of both models. Determining exact positioning between the idealised end models for any particular case requires the development of some form of assessment and measures of strategic approach. The ex-ante and ex-post models fall along the deliberate/emergent axis used by Whittington (1997) to differentiate strategic planning approaches. This study finds the ex-ante model to be top-down decision making, organised and conforming to the rational/deliberate approach, while the ex-post model is experimental and self-organised, conforming to the emergent approach.

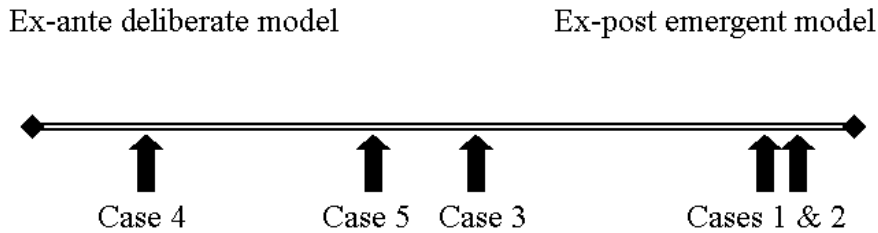


Figure 3 Strategic approach continuum

The capability mix required to implement e-learning differs according to the strategic approach (Table 4). The outcome of the build/buy decision for acquisition of new capabilities also differs according to strategic approach (Table 5). New resources are built into new capabilities; the new resources are sourced internally or externally, capabilities may be internal or external (Table 5). Three capabilities: staff development, management of systems integration, and management of technology investment, are common to both strategy models, while the most critical information systems, VLE and MLE, are sourced externally and thus probably not components of core competencies. The capability to re-engineer learning and teaching is treated differently in the two models, the ex-ante approach treating only curriculum design and control as core while acquiring content development, delivery and software development from partners, the ex-post cases treating curriculum design and control as well as content development and delivery as core, all of which is developed internally, along with some of the e-learning software development.

Capability	Ex-ante	Ex-post
Recognise teaching and learning opportunities		Y
Recognise business opportunities	Y	
Experimentation, requiring skills/knowledge about how to experiment		Y
Strategy/planning capability to agree on strategy and plan	Y	
Buy-in by academic staff		Y
Managing academic activity	Y	
Staff development and capability to learn new skills	Y	Y
identify external partners	Y	
Management of systems integration	Y	Y
Management of technology investment	Y	Y
Absorption of new processes and development of new routines		Y
Management of systems integration	Y	Y
Re-engineering learning and teaching	Y	Y
Strategizing and legitimising		Y
Managing external partners	Y	
Managing distance learning	Y	
Business process redesign	Y	

Table 4. Capabilities required to implement e-learning

Capability	Ex-ante	Ex-post	New resource	Acquisition
Re-engineering learning and teaching	Y		Course design, and curriculum control, but not necessarily content	<b>Internal</b> -Core resources developed in-house
Re-engineering learning and teaching		Y	Course design, curriculum control, content development, delivery, and to an extent e-learning software development, all seen as important to institutional identity	<b>Internal</b> -Core resources developed in-house
Managing external partners	Y		E-learning software development, content development, delivery	<b>External</b> -Some core resources from strategic partners Internal – ability to manage partners developed in house

Table 5. New resource acquisition, and associated capabilities

There are limitations to this research. It represents a snapshot of entering the e-learning strategic area. Although subjects did recount past activities, and speculated about future activities, it is not a longitudinal study. Recounting of past activities is considered helpful, but memories may be biased, and speculation about future activities is more important for interpreting current attitudes than for prediction. There is also evidence that timing of deployment is important, and future research will examine this. There is also evidence that e-learning may act as a change agent, just as in previous waves of computerisation where localised exploitation has lead to transformational change, e-learning may similarly bring about transformation.

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