Agribusiness Education and the Impact of the Internet:

The Growing Ripple in the Pond

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Abstract

In this paper trends in both distance education and agribusiness are analysed to reveal a significant positive feedback effect between the two areas. If agribusinesses can incorporate appropriate components of the online distance education, it will offer them significant competitive advantages. To achieve this outcome will require good strategic and operational management. Such management will discern well the firm's positioning and the relationships between its approach to online distance education and overall strategic manoeuvring.

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Introduction

In this paper trends in both distance education and agribusiness are analysed to reveal a significant positive feedback effect between the two areas. If agribusinesses can incorporate appropriate components of the new distance education, it will offer them significant competitive advantages. To achieve this outcome will require good strategic and operational management. Such management will discern well the firm's positioning and the relationships between its approach to distance education and overall strategic manoeuvring. Developments in the Internet and electronic communications are particularly relevant to the rapid changes taking place in both agribusiness and distance education. The Internet has impacted on both the supply side (education providers) and the demand side (agribusiness) of the distance education market.

The next section of the paper considers the distance education market. This is followed by a review of the recent history of distance education. The review reveals that changes in technology, particularly in electronic communications, have transformed distance education and enhanced its importance as a tool for strategic and cultural change in agribusiness firms. The next section commences by highlighting the steps through which leading firms have progressed in making distance education and training a successful component of upgrading the skills of their employees. Then trends in the agribusiness sector and in agribusiness management are outlined. The final section of the paper integrates the observations about agribusinesses with those about distance education. Some important synergies are evident. The final section also summarizes the issues and highlights likely future developments, and hence areas worthy of future attention.

The Market

In 2002 it is expected that there will be 2.2 million distance education students in the U.S. (Dixon, 2001). This is approximately 15 per cent of all higher education students. About 84 per cent of four-year U.S. colleges will offer e-learning programs by 2002 (Frank, 2000). Location is disappearing as the crucial criterion when deciding where to enrol.

The agribusiness distance education market is characterised by two major segments: high cost - low volume - high quality, and low cost - high volume - lower quality (Dixon, 2001). In the first of these a relatively small number of university providers is involved in an oligopolistic market structure. In this segment the product is almost tailor-made to fit the specifications of a particular niche of learners. There are very high costs of entry to this segment for new providers.

In contrast, the second segment is becoming highly competitive with both university and non-university distance education providers. In this segment the product is of extremely variable quality, but demand is high and there are many providers. The costs of entry to this second segment are much lower than the first.

Supply Side Trends: Distance Education and Training

In terms of a simple definition, distance education involves learning in a different location from teaching. It therefore requires the transmission of information, by various means, from one place to another. As we shall see it is the revolution that is taking place in this communication process that creates new opportunities for agribusiness firms using distance education.

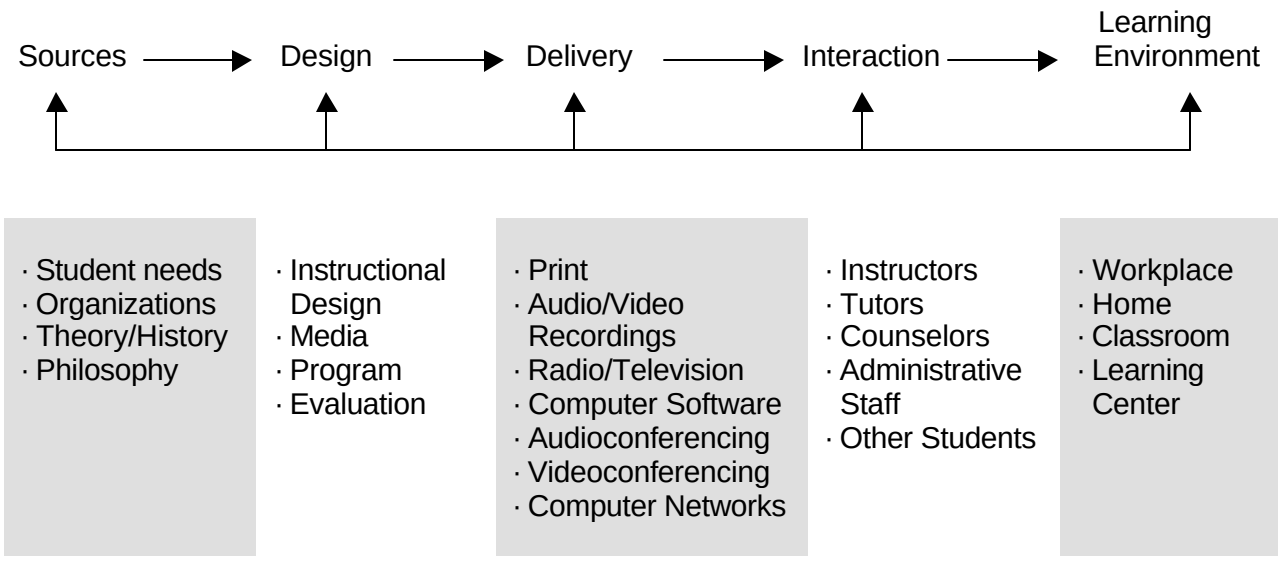
Figure 1 shows the components of distance education. It presents a model for analyzing change. Historically, one can distinguish three phases of distance education. The first, study by correspondence, commenced in the mid-1800s with the introduction of reliable, cheap postal deliveries. This led to the introduction of university distance courses at the end of the nineteenth century.

Phase 2 was heralded by a technology shift to delivery involving radio and television broadcasting, and teleconferencing. This enabled the establishment of the Open University in the UK in the 1970s.

Then a further technical development involving communication via the Internet, has produced, in phase 3, another shift in the method of course delivery.

To think of these changes as merely different methods of delivery – mail, broadcast, Internet – is to miss the point of the change. Those distance education providers who still attempt to use web-based communication to deliver what are essentially phase 1 correspondence courses have overlooked the adjustments that must be made throughout the distance education system to make optimal use of the introduction of online delivery. For example, the philosophy can become much more learner-centred, the learning environment much more flexible, and the role of the instructor can change from teacher to advisor. Indeed to take the greatest advantage of the shift to phase 3, all the components of the system of Figure 1 should be adjusted.

Figure 1. A Systems Model for Distance Education



Source: Moore and Kearsley (1996).

The different perspective on these various components can be gleaned from the following brief description of the Guelph executive MBA in agriculture. Because the philosophy is that effective teaching is where learners are empowered to learn, the design of the program started with the learning environment. Then by a process of backward induction the changes that had to be made in the remainder of the system of Figure 1 were revealed.

So, noting that for most students the learning environment was the workplace and the home, this meant that all aspects of delivery and interaction had to be designed to fit this learning environment. Hence delivery was established through online computer networks. Instructors had to be available to interact with students in a workplace and/or home environment. This could not easily be achieved through synchronous communication so an asynchronous method of communication was adopted. In the event there were considerable unforseen benefits of this asynchronous communication in the form of very focused, high quality messages between instructors and students and student-to-student. In a similar manner all the other components of the system of Figure 1 were adjusted.

In this process of design and in the initial stages of delivery there was considerable learning and adjustment by the providers about the new web-based education system. The objective for them was to supply a product that was a best fit for their clients. Likewise on the demand side, the last few years has been a period of learning by agribusinesses about the characteristics of the new educational products.

Demand Side Trends: Firms and Individual Learners

On the demand side of the distance education market it is necessary to consider trends occurring in firms and the individual learners within firms. Table 1 shows shifts in the general economy related to distance education that are affecting firms. The phrases that describe the current situation are: lifelong learning, teams, ecologically sound growth, etc.

Table 1. Shifts in the Economy

Old Economy	New Economy
Individual skills acquired	Lifelong learning
Labor versus management	Teams
Business versus environment	Encourages ecologically sound growth
Security	Risk taking
Monopolies	Competition
Plant and equipment	Intellectual property
National	Global
Status quo	Speed, change
Top-down	Distributed

Source: Berge (2001, p. 22)

Overall, as many have observed, there is a shift towards a knowledge-based economy. In this context, if distance education and training is to be used effectively in a business context it needs to be linked as part of strategy to the objectives of the organization (Green, 1997).

In a general business context, Schreiber and Berge (1998, p. 12) have shown that firms have to develop "organizational technological capability" in order to use distance education optimally. They describe a four-stage process by which firms move to achieve this capability with respect to distance education and training.

The first is where distance education and training takes place occasionally and sporadically. Often this involves individual employees and there is no attempt to link the process to the organizational objectives, except perhaps in the mind of the individual undertaking the distance learning.

In stage 2, the infrastructure and technology capability of the organization can support distance learning events. These events are facilitated by interdisciplinary teams that attempt to respond to management needs.

By stage 3, a distance learning policy is established. The process of distance education is no longer *ad hoc* and is planned in sequenced manner.

At stage 4, distance learning is truly established as a component of strategic management. Distance education is used as an integral component of achieving business objectives.

Another significant aspect of the demand side of the distance education market is the individual learner. In the knowledge-based economy, there is a move towards students taking responsibility. They have access to much more information now and are actively constructing their own knowledge base. The emphasis is on analytical ability often related to complex tasks rather than just the accumulation of information. There is a demand by students for more problem-based learning, in which the learners (often as a group) search for their own answers to more open-ended questions. While these are trends in both distance and non-distance education, the use of the Internet has permitted more rapid change in distance learners.

Where the learners are also managers of their business organizations, the shifts in the construction of learning accord well with the shifts that are taking place in the work environment. One example is that managers are tending to become more independent, self-organized individuals, even though teamwork is a common feature.

The next question becomes: how far have the trends towards a knowledge-based economy impacted on agribusiness? And then: does agribusiness have the organizational technological capability to use modern distance education effectively? These questions are partly answered by Salins (2000), Kinsey (2000) and Buhr (2000) when examining the use of information systems in various segments of agribusiness. A general picture emerges from a review of this research that shows considerable variation in the capability of agribusiness firms to use new information systems technology and hence to capture the benefits that could flow from distance education on the Internet. Those best placed to integrate this type of education into their strategic operations are the larger, especially global, business organizations and those even small firms in the high technology fields such as biotechnology. Hence while most agribusiness firms have the computing capability to link through the Internet to distance education providers, few have integrated this capacity into their strategic planning processes, as described above in the four-stage transition of Schreiber and Berge (1998). As the profound

effects of the new information technology are occurring at the industry or sector level (Sonka *et al.*, 1999), agribusiness firms will tend to be drawn into the use of electronic communication and information sharing, and hence their capacity to incorporate distance education will be improved.

Summary and Conclusions

With the advent of web-based delivery systems, distance education has travelled far in a short space of time. Even the technologically advanced providers are just becoming aware of the wide range of possibilities that this technical change offers. A significant outcome is that it is possible to offer through distance education more personal, individualized instruction than can be achieved through face-to-face teaching (Barnes, 2000). However this has a cost, and as a consequence two market segments have emerged in online distance education. In the first, high quality executive programs are being offered at high price. The second segment is lower cost, delivers a web-based distance education that is in style not unlike the previous generation of distance education, and does not capture the full benefits of the technology. As time progresses many learners in this second segment may become dissatisfied and this may herald a convergence between the segments.

At present the issue for agribusiness firms is to develop the capacity to fully utilise, in a strategic sense, what online distance education has to offer. Firms that have used distance education optimally have moved through a four-stage transition from trial use to fully integrating online education within their strategic management philosophy. For these firms there seem to be forces in the economy and society that positively assist this process. One is the philosophy of business education as self-organized learning by the student. Another is the vast array of information services available to learners.

Despite such positive influences, the impact of online distance education in agribusiness has been restricted. This seems to be related to the structure of the industry, with many different types of firms in the different segments. High technology firms and larger agribusiness organizations, where the use of information systems and online communication are normal features of business, have made the most progress in the optimal use of online distance education. Industry-level use of information technology that integrates supply chains is likely to draw more firms into a process that results in them having the capacity to use online distance education effectively.

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