

MARKETING STRATEGIES FOR THE UTILIZATION OF TELECOMMUNICATIONS IN HIGHER EDUCATION

David M. Andrus, Kansas State University
Wayne Norvell, Kansas State University
Angela West, Kansas State University

ABSTRACT

A marketing research project was conducted to assess telecommunication needs and benefits sought by academicians in higher education. Distance education programs at major state universities in a five state region were examined. A major application that requires telecommunication technology at universities is distance education courses.

INTRODUCTION

A marketing research project was conducted to assess the telecommunication needs and benefits sought by academicians in higher education. The study focused on the higher education market in a five state area in the midwestern U.S. This research project examined distance education programs at these universities as a major marketing opportunity for departments of marketing to conduct distance education courses.

Knowledge dissemination provided by state universities should not be limited to one location. Students demand a greater array of options than attending a university at a distant site to continue their education. This five state region is characterized by single parents with dependent children, dual-income families and large rural populations. Professors and administrators are receiving increased pressure from many sources to provide higher education services to people living in more diverse locations.

Universities expanding their telecommunication capabilities will be able to generate enrollment increases through distance education courses. Universities will increase profits by expanding their tuition revenue base without costly building investments or hiring additional faculty. Students using this telecommunication system can continue to live at their present location and avoid new living or transportation expenses.

Universities will have to either buy or lease terminal equipment and a transmission mode or combination of modes from a vendor. This creates an opportunity for telecommunication companies to manufacture and sell

or lease transmission and reception equipment. Telecommunication companies could also lease dedicated fiber-optic lines to universities as the major transmission mode for distance education courses.

Optical fiber emerged in the 1970's as a transport system for digital information. Fiber-optic lines manage different types of information by simultaneously mixing voice, video, data, and text. University courses via distance education will constitute an early application of fiber-optic technology.

Environmental Forces Creating Opportunities in the Higher Education Market

Several environmental forces have created an opportunity for telecommunication firms to offer flexibility and mobility in the delivery of university courses. The customer base for universities is aging. Older employed students do not wish to move to a university town to continue their education. Older students who live near a university do not want to travel to campus at night after work to take courses. They would rather have the course delivered to their home or some other convenient location.

Many students are single women who work full-time outside the home and have children. Many other college students today come from other types of non-traditional families. These customers need flexibility in the delivery of the learning experience. Potential students in rural areas need access to the courses offered at major universities.

There is a constant need for people in professional occupations to update their skills and stay abreast of current information. This is difficult for many professionals to accomplish because of the information explosion in graduate programs. New technology could help universities solve this problem for practicing professionals. Professors who purchase equipment have a special interest in

telecommunication technology. They are often asked to provide courses for students in rural areas and off-campus locations in major urban areas. Unproductive time is spent traveling to these locations. Political turmoil is created in departments when the chairperson has the unfortunate task of assigning a professor to teach off-campus courses.

Military bases and corporations are also requesting that universities provide courses for their personnel. These demands coincide with an increasing shortage of university professors forecast for the 1990's. Many professors would rather relocate to another university than be burdened with the travel related to distance education courses. Universities are reluctant to anger professors since they are becoming increasingly difficult to replace. Universities often provide professors with expensive salary and conference travel supplements to encourage off-campus teaching assignments.

The social changes creating these problems will persist for at least another 10 years. Problems facing universities in offering mobility and flexibility for their courses are creating opportunities in telecommunication marketing. Fiber-optic technology can save money, improve faculty morale and productivity, decrease turnover and create new market segments for universities to profitably serve. State legislatures and various student segments will be better satisfied with the expanded services offered by these universities through their telecommunication system.

Customer Needs in the Higher Education Market

A major customer need is for distance education courses to be offered via full video, audio, and data capabilities to a variety of locations within a particular state university system. For example, distance education programs could be conducted using telecommunication products for executive development training programs. Courses would be transmitted over fiber-optic links which are superior to other transmission modes for distance education courses.

The buyers of telecommunication equipment and dedicated fiber-optic lines are university professors who comprise a purchasing committee of two to five people. Universities will use the technology to sell distance education courses to target student segments in various locations. Students will pay tuition and registration fees for these university courses. Many universities already provide these services using very expensive delivery

systems. Telecommunication technology could provide universities a more cost effective delivery method.

METHODOLOGY

Sample Design

Eighty-seven academicians from 32 public universities in five midwestern states were surveyed by telephone. A minimum of four state universities in each of the five states was contacted. Data were gathered from telecommunication engineers and administrators in state university systems.

Two pretested questionnaires were used to generate the data. Fifty-nine long questionnaires and 32 short questionnaires were completed. Some of the 87 respondents completed both instruments.

There were only two people on average at each university who were experts and had decision making authority regarding telecommunication systems. Sampled institutions were large state universities. These schools have the funds and power to be telecommunication innovators. State universities are more likely to have adequate financial resources to purchase telecommunication equipment.

The Questionnaires

Current and future telecommunication needs and benefits sought by respondents were assessed. Current needs are those occurring during 1990 while future needs are those expected to arise from 1991 to 1995. Telecommunication firms can use this information to sell extant products to universities and develop new ones for future opportunities.

The short questionnaire contained 18 items and was targeted toward administrators. It assessed distance education demand at the universities. Respondents were asked which college and universities were most involved with these two applications and the current total annual enrollment and projected enrollments for these programs. They were asked about current and future transmission modes and expenses for distance education. The participants were questioned about future demographic trends and pressure from state legislators that would affect

demand for teleconferencing and distance education courses.

The long questionnaire contained 48 items and was targeted toward telecommunication engineers and experts who had purchase decision making authority at the universities. Customer needs were examined in terms of telecommunication products and transmission modes desired for distance education courses.

RESULTS

This section profiles the total responses of the participants at all universities across the five states. The responses in this section are summated to describe the overall patterns in the data. The number of cases in each table varies due to certain items being relevant for some participants but not others.

The 1990 and estimated 1995 telecommunication expenses for leased lines were obtained. The average annual 1990 expense for leased telecommunication lines for distance education is \$104,556. The 1990 average total costs for the telecommunication systems for distance education courses at the universities is \$467,340. The estimated average 1995 total cost is at \$1,090,681.

The participants were asked about telecommunication product benefits for distance education they desired the most by 1995. These results are reported in Table 1. The most important product benefits desired are the ability to transmit more video courses over fiber-optic lines and the integration of voice, data, video, and text onto one transmission line. The third and fourth most important product benefits are better quality transmission of distance education courses and full motion interactive video for courses.

Several items were presented to the respondents regarding their telecommunication transmissions and the college most likely to be involved with distance education via a telecommunication system. Colleges of Engineering are the most involved in distance education courses via a telecommunication system (see Table 2). Colleges of Business Administration are most likely to become involved with distance education via a telecommunication system in the future.

Distance education program total enrollments averaged 1,829 students annually (see Table 3). The average number of distance education courses offered was 22 for

the spring 1990 semester. This number is estimated to increase to 51 by 1995.

TABLE 1

TELECOMMUNICATION PRODUCT BENEFITS DESIRED
THE MOST FOR DISTANCE EDUCATION
WITHIN THE NEXT FIVE YEARS

Telecommunication Product Benefit Most Desired	N
1. Ability to transmit more video courses over fiber-optic transmission lines.	13
2. Integration of voice, data, video and text onto one transmission line.	12
3. Better quality transmission.	11
4. Full motion interactive video.	11
5. Lower transmission prices from common carriers.	7
6. Multiplexing capabilities on copper cable system.	2
7. More reliable video transmission.	1
8. Interactive graphics.	1

There are several trends that will affect telecommunication needs and distance education in the future (see Table 4). The majority of respondents believe that more distance education courses will have to be offered because of an aging student population and increasing numbers of single parents who work outside of the home. Universities will get political pressure from state legislatures to offer more distance education courses, especially in rural areas. The demand for video courses for professional groups is estimated to increase. All these trends indicate there is a great deal of opportunity for telecommunications in higher education.

TABLE 2

COLLEGES MOST INVOLVED IN DISTANCE EDUCATION
USING A TELECOMMUNICATION SYSTEM

Questionnaire Item	N
1. The Colleges most involved with distance education via a telecommunication system.	
Engineering	7
Business Administration	5
Medicine	4
Education	3
Arts and Sciences	2
Continuing Education	2
Agriculture	1
Nursing	1
Social Work	1
2. The Colleges not currently involved in distance education using a telecommunication system that are most likely to become involved by 1995.	
Business Administration	6
Nursing	6
Arts and Sciences	5
Engineering	5
Education	2
All Colleges	3
Medicine	1
Social Work	1
Veterinary Medicine	1

TABLE 3

DISTANCE EDUCATION COURSES OFFERED
FOR 1990 AND 1995

Questionnaire Items	Mean	Mode
1. Total annual enrollment in distance education courses via a telecommunication system.	1829	315
2. Number of distance education courses via a telecommunication system for Spring 1990 term.	22	10
3. Number of distance education courses via a telecommunication system estimated for Spring 1995 term.	51	18

TABLE 4

FUTURE TRENDS IN DISTANCE EDUCATION
AFFECTING DEMAND FOR
TELECOMMUNICATION SYSTEMS

Item Responses Questionnaire Items	Agree	Disagree
1. More distance education courses will have to be offered since the average age of the student population is increasing.	25	7
2. More distance education courses will have to be offered because of the increase of single parents working outside of the home.	27	5
3. There will be an increase in demand for video teleconferencing courses to professional groups.	29	2
4. There will be an increase in demand for distance education courses in rural areas.	30	2
5. There will be political pressure from state legislatures to offer more distance education courses.	21	9

CONCLUSIONS

The majority of universities surveyed are not using fiber-optic lines for distance education courses. However, many will be using fiber-optic networks for distance education within the next five years because it is viewed as the superior transmission mode.

The most desired telecommunication product benefit is the ability to transmit voice, video, text and data onto one transmission line. Other desired benefits include the ability to transmit more video courses over fiber-optic lines, better quality transmission and full motion interactive video. The majority of respondents think that Colleges of Business will become involved with distance education courses using a telecommunication system.

Marketing Strategies

There is significant demand in the next five years for telecommunication products and services in the higher education market segment. The results of this research project suggest several marketing strategies that universities could implement to take advantage of opportunities that exist in distance education.

1. Lobby key state education legislators to eliminate existing restrictions on broadcasting video signals over telephone lines.
2. Lobby key legislators to fund fiber-optic special demonstration projects to enhance potential education applications.
3. Establish a fiber-optic faculty research fund at major universities to gain publicity for the role of fiber-optics. Faculty would conduct the research on a particular educational benefit of fiber-optic technology.
4. Lobby professional associations such as the American Marketing Association to offer more professional development courses via distance education for its members.
5. Offer incentives for faculty to develop and deliver new educational programs via a fiber-optic network. The incentives could be in the form of a program development fund administered by telecommunication company research centers at the universities. A larger number of available courses would generate more students and ultimately more demand for fiber-optic transmission equipment.