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Marshfield video network

Edward Korlesky

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MARSHFIELD VIDEO NETWORK

by

Edward Korlesky

An Applied Management


Decision Report

submitted in partial fulfillment
of the requirements for the degree of
Master of Business Administration
Cardinal Stritch College

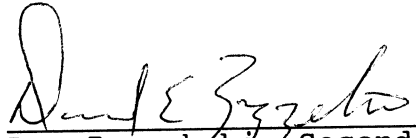
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APPROVAL PAGE


This committee has approved the Applied Management Decision
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Introduction

The Marshfield Clinic is a privately owned, multi-specialty tertiary level medical center. In addition to a commitment to providing the finest health care possible, the clinic has made a strong commitment to education and research. The clinic realized that many rural areas are served by a limited number of health care providers and it is often difficult for them to attend educational seminars. In an attempt to meet the needs of these health care providers, the clinic began an outreach video network. The goal of the video network was to provide continuing education credits via video tape programming to physicians in remote locations.

The outreach network grew rapidly from 1979 through 1984 with little promotion. In 1985 and 1986 a plateau was reached and since that time a constant reduction has been apparent.

The problem of this AMDR was to determine, how should or how can the video network be structured to meet the needs of the rural physicians, and the Marshfield Clinic into the 90's.

Several factors were examined. These including changes in the customer profile and customer base of the video network. Factors in the external environment were examined including competition from non-video sources such as national conferences, changes in the technology of video distribution, and new entrants in the marketplace. Changes that have taken

place at the Marshfield Clinic were also analyzed for their effect on the video network.

Four alternative solutions were proposed. These include doing nothing, locating a video distributor to market the programs produced at Marshfield, restructure the present video network, and discontinue the video network.

The third alternative, to restructure the video network was recommended. This alternative emphasizes two key points. The first is the need for increased physician input in topic selection, both at Marshfield Clinic and from the end user. The second, recommendation is for a strong emphasis on marketing the video network.

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SECTION 1

INTRODUCTION

In today's world it is essential that health care professionals keep abreast of the latest advances in the science of medicine. The Marshfield Clinic realizes that if it is to be a leader in health care, it must also be a leader in the training and continuing professional development of the health care work force. The Marshfield Clinic operates several continuing educational programs, one of which is the video network. The video network was established in 1978 and prospered for several years but recently has been operating at a deficit.

The American Medical Association (AMA), first became interested in continuing medical education in the early 1960s. In 1968, the AMA formalized their requirements for issuing CME credit and established the Physician Recognition Award (PRA) Program. The PRA is a voluntary program where each participating physician is required to complete 150 hours of CME credit in a three year period. This credit requirement is further broken down into six categories. For the purpose of this investigation, I will examine only the minimum 60 hour requirement for category I credit, because this can only be issued by accredited medical institutions.

The AMA's Council on Medical Education recognizes that efforts must be made to assure the quality of CME programs. Programs must be sufficiently comprehensive, yet allow

flexibility to meet local needs. The Council assigned this responsibility to the institutions that the AMA has approved to sponsor CME programs.

Only medical facilities which meet a seven point criteria as established by the AMA, are eligible to issue credit. This credit is limited to workshops, seminars, scientific meetings, mini-residencies, clinical preceptorships, and audio/visual materials. In summary, these criteria limit the eligible facilities to medical schools and major teaching hospitals and clinics. (AMA publication QB:0135:78-00131). Appendix A lists the criteria needed to be approved to issue CME credit.

In the mid 1970's many state legislatures, including Wisconsin, felt the need to protect the citizenry from incompetent medical providers. To accomplish this, physicians were required to attain a certain level of CME credit to renew their medical licensure. Unfortunately, the geography of central and northern Wisconsin can make it very difficult for health care professionals to enroll in these required programs.

During this time, the Marshfield Clinic was in a unique position to pursue an outreach CME program. The Marshfield Clinic is the fifth largest privately owned, multi-specialty medical facility in the country. This tertiary level referral center employs over 315 physicians and nearly 2000 support staff. The clinic is physically attached to a 500 bed teaching hospital and

works closely with the Marshfield Medical Research Foundation, a basic science research facility. The clinic's mission, "is to provide the highest quality medical care to all who seek it by being THE Medical Center in Wisconsin and the Upper Peninsula of Michigan" (Wenzel 1989).

The clinic realizes that if it is to be a leader in health care, there must be a strong commitment to education and research. The clinic has developed strong teaching programs because of its size, and the makeup of the medical staff, with specialists and subspecialists in all fields of medicine. These teaching programs include: resident physicians in surgery, pediatric and internal medicine; internships for laboratory personnel, respiratory therapy, and physician assistants; and a complete nursing program, among others. The clinic has also recognized the need for professionals to maintain their skills. In an attempt to achieve this, the clinic offers numerous workshops and seminars. The Marshfield Clinic then easily meets all of the requirements of the AMA to offer category I continuing medical education (CME) credit.

The Marshfield Clinic, because it is a referral center, realizes it must keep up a good rapport with physicians in outlying areas. The clinic depends on these outlying physicians to channel patients to the Marshfield Clinic. The introduction of new services available at Marshfield is also important to the clinic's success.

Because the medical community has traditionally tabooed advertising, many of the educational programs sponsored by the Marshfield Clinic are designed not only to meet the educational needs of area health providers, but to raise the image of the clinic and offer a mechanism to introduce new services.

The clinic administration realized that traveling to conferences often placed an enormous strain on the rural health care delivery system. Several communities in Northern Wisconsin and Upper Michigan are served by only one physician (Ottemeyer 1975). Not only were these physicians extremely busy in their practices, but if they were away, attending an educational conference, entire communities could be left without medical coverage in the event of an emergency. In an attempt to supplement the needs of these health care providers, the clinic began an outreach video network in 1978. The mission of the video network was an outgrowth of the overall clinic mission statement: "to provide the highest quality category I continuing medical education credits while promoting Marshfield Clinic services" (Sautter, Intress 1980). To accomplish this mission video tape programs presented by Marshfield Clinic physicians and visiting medical professors were to be produced and distributed.

A grant was submitted to the Department of Health, Education and Welfare (H.E.W.), to provide capital equipment and the first year's operating budget for this

project. At the end of the grant period, the program was evaluated and because of its success, the clinic elected to continue the project.

Thus, changes in the Wisconsin requirement for physician licensure in 1977 provided a need for category I CME credit. The limited number of facilities approved to issue this credit, the limited number of physicians in parts of Wisconsin, and the distances and travel time required to participate in these programs resulted in the development of the Marshfield Video Network. These needs seem to indicate that there will be a continuing need for this video tape service into the future.

SECTION 2

Development of the Current Situation

The audio visual (AV) section was formed in 1978 as a division of the department of Physician Education. One employee with audio-visual training was hired and a secretary in the department of physician education was assigned to the AV department while still maintaining her existing duties. Freelance production assistants were hired from the local high school and junior college.

During the course of the H.E.W. grant, video tapes were distributed on a weekly basis to ten pilot sites. Users were given no choice as to which tapes they received, because tapes were sent out as fast as they could be produced. After the termination of the grant, in the fall of 1979, these original sites were offered the option of continuing to receive tapes, and distribution was opened to other rural physicians. (Sautter, Intress 1979)

A yearly membership contract was developed. This contract essentially covered only duplicating, mailing, and a small administrative fee for processing the CME credit. Contracts were written on a subscription basis for an annual fee with clinics, hospitals or individual physicians agreeing to receive a certain number of tapes over the course of a year. The yearly subscription plan was established to minimize overhead costs by reducing paperwork. It operated much like a book club in that weekly tapes were distributed to members, with the only

difference being that if a user was not interested in a certain topic, no substitute or credit was given.

One element of the subscription plan was that users had no input into the topic matter that was distributed. It soon became apparent that the physicians receiving the tapes with no input into the topic selection felt they were not getting their money's worth. This was most evident when physicians received a tape they were not interested in viewing. In addition, as new physicians were added to the network, they had an interest in accessing previous tape programs. In response to this, the yearly subscription plan was altered to give the users input into the titles they received, and tapes were rented on an individual basis.

During the first few years of operation, 1979 through 1981 very limited direct financial resources from either the department of Medical Education or the audio visual section were devoted to the video network. Little marketing of the service was done, and new users heard about the service mainly by word of mouth. The video network did well in areas where the Marshfield Clinic name was strong but had little impact outside of the clinic's referral area. Since the video network was showing some annual growth, it was left alone to seek its own course. Appendix B shows budget items for the video network from its inception through fiscal year 1989. The highlights of this Appendix show that the video network lost money the

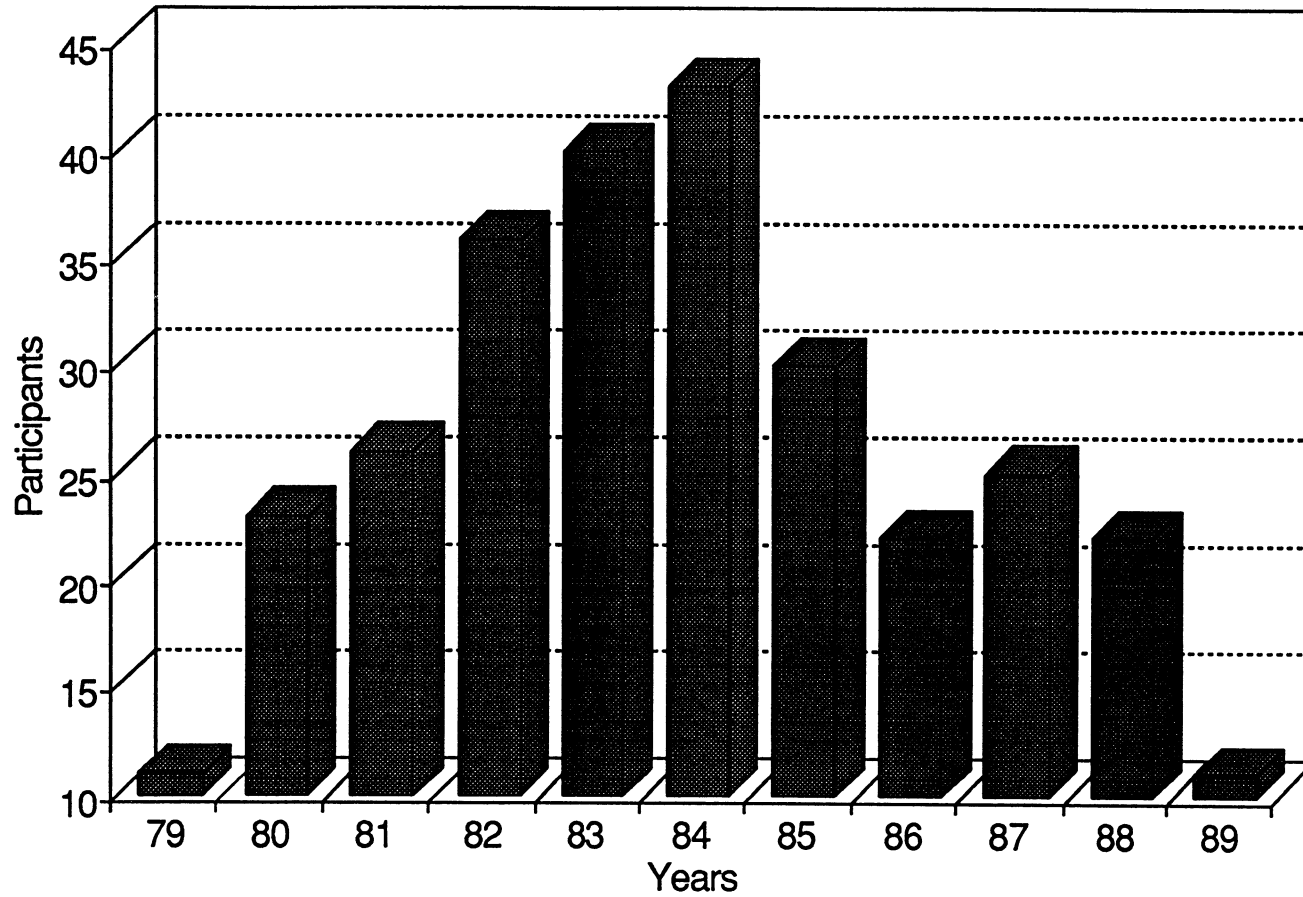
first three years of operation. By 1983, income was nearly triple that of 1980, the first year of operations after the expiration of the federal funding. From 1985 through 1987, the video network broke even. During the years 1988 and 1989 the video network operated at a loss. The rise and fall in memberships illustrated in figure 1 closely parallels this financial data. Memberships increased through 1984, dropped 25% in 1985, and then held fairly stable until a substantial drop in 1989.

The video network can be compared to a small entrepreneurial business. Although it operates within a large corporation, the video network was not within the main stream of the corporation's activities. Because of this it was left to seek its own course with little scrutinizing by higher management. The only advantages the video network received from the Marshfield Clinic was name recognition and modest financial backing.

The video network was run by a manager with a strong background in television, but with no business background. Thus no strategic plan or sales objective were established for the video network. A needs analysis of the physicians in the outlying regions was only assessed during the time frame of the grant. Satisfaction of the end users, likewise, was only assessed for the final grant report. For the most part, the video network prospered because of the name of the Marshfield Clinic. The AV supervisor also received little guidance in topic selection or program

Figure 1

Full Time Video Network Membership



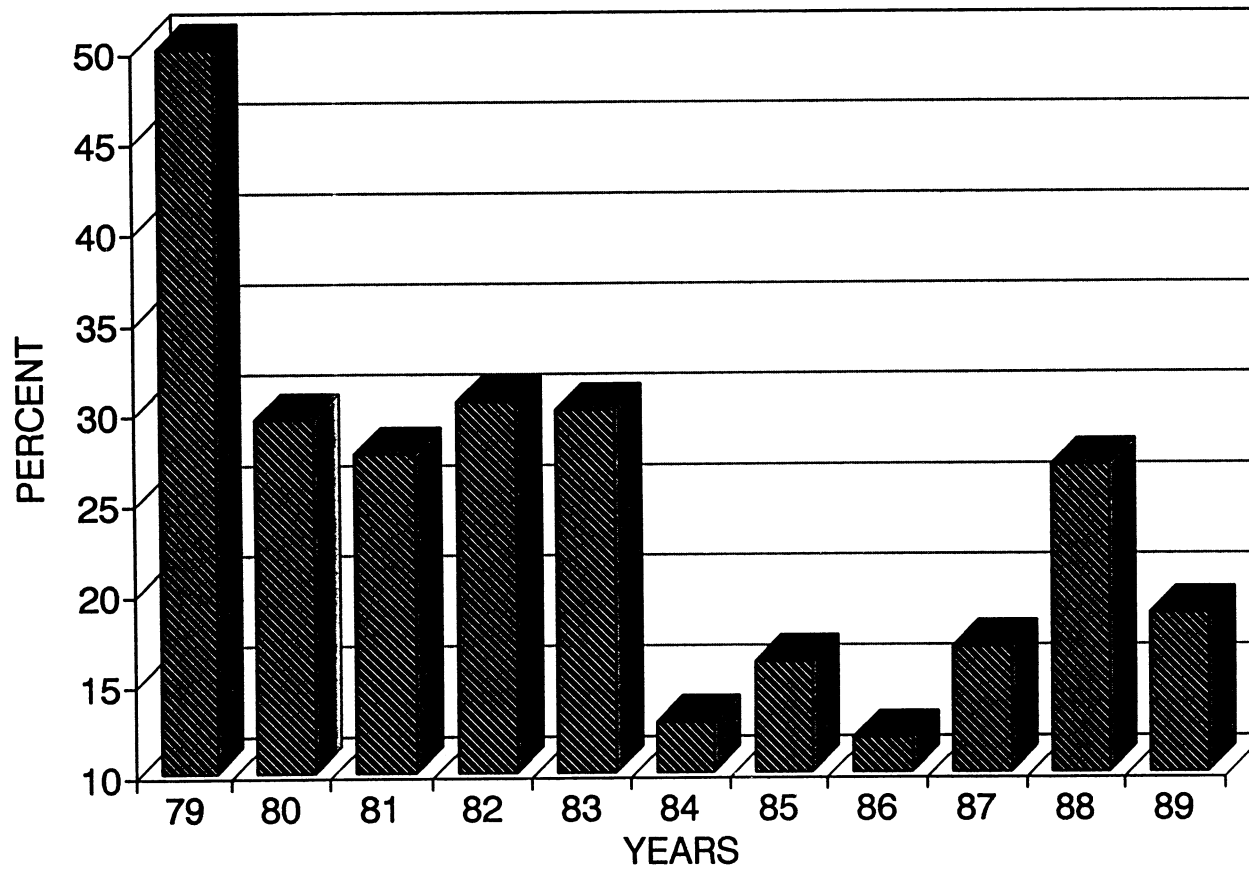
SOURCE: Sautter, Intress, 1979-1984; Sautter, et al. 1985-1989

offerings. Topics selected began to center around physicians who were interested in being on TV, and with whom the AV department supervisor felt comfortable working. No customer input was sought on programming titles, and the only evaluation was the number of credits offered each year or the number of membership renewals. The only marketing of the video network was done through the publishing of a catalogue each January.

By 1982, thirty six institutions had enrolled in the video network's membership plan. In addition, since the end of the grant funding, only one institution had dropped the service. In 1982, an on-going major capital improvement plan for the AV section was submitted and approved by clinic administration. The first year of this plan saw the upgrading of the television cameras to broadcast quality. Along with this commitment of capital dollars, the AV section became more fully integrated as a service department for the entire clinic. This greatly increased the demand for a variety of audio visual services throughout the clinic. (Sautter, Intress 1982). As could be predicted less and less time was devoted to the video network in succeeding years. (Sautter, Intress 1984). Figure 2 shows the percentage of production time devoted to the Video Network from 1979 through 1989. Production time from 1980 through 1983 was about 30% of department effort. From 1984 until 1987 production for the video network dipped to an average of less than 15% of department output.

Figure 2

PERCENT OF STUDIO TIME DEVOTED TO VIDEO NETWORK



SOURCE: Sautter, Intrness, 1979-1984; Sautter, et al. 1985-1989

The time devoted to the video network rebounded in 1988 to 25%, but fell substantially again in 1989. The low level of effort devoted to the video network because of internal production demands is quite apparent.

Fiscal 1982 also brought a change in the Marshfield Clinic's federal tax status. Prior to 1982 the clinic was a for profit corporation and as such any losses suffered by nonrevenue producing departments could be written off for tax purposes. With the change to a 501-C4 tax status (not for profit) the clinic no longer paid federal income taxes. Clinic administration then began to urge all departments including the Medical Education Dept. and the AV section to attempt to cover operating expenses. The clinic defined operating expenses as salary, fringe benefits, supplies, small equipment (under \$300), outside purchases service and depreciation. Building occupancy and administrative overhead are not considered part of operating expenses and nonmedical departments are not required to cover these costs.

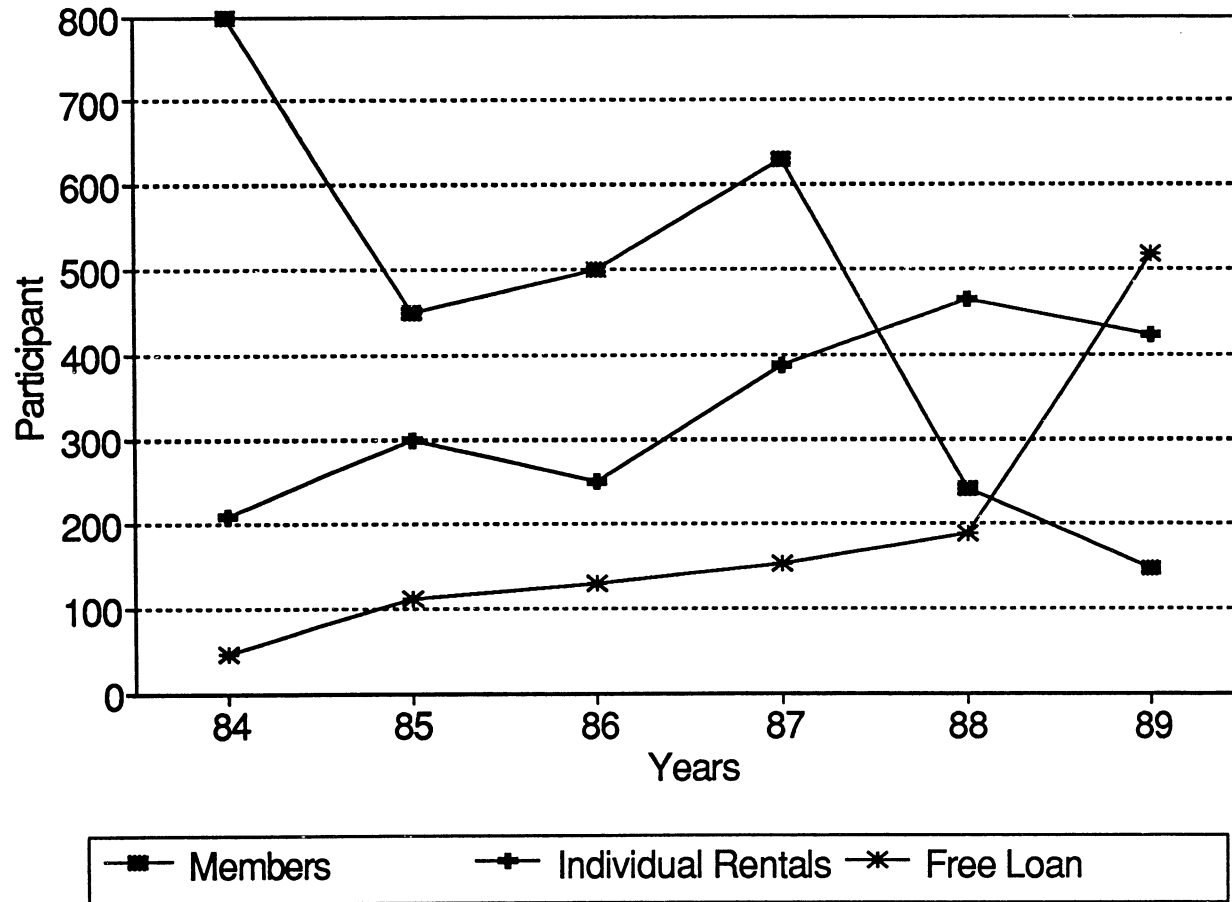
In the spring of 1984 a second full time producer director was added to the staff. In the fall of the same year the department moved into a new facility and a full-time, permanent AV assistant was added reducing the need for freelancers and thus improving continuity of operations within the department. Again, little attention was given to the video network. Although memberships reached an all time high of 42, revenue was down 25 percent. That year

also saw several longstanding members not renew their membership. Dropped subscriptions reached 17 between 1983 and 1984. On the positive, side sales and rentals of individual tapes to nonsubscribers increased considerably. The individual tape rentals resulted in a substantially higher amount of administrative expense than the subscription plan had. No effort was devoted to upselling the occasional network user to a membership plan. (Sautter, Intress 1984). Figure 3 shows the number of tapes distributed to members, as individual sales and rentals, and as free loans. This distribution data corresponds with the previous data on memberships. Tape distribution to members is falling each year from a high of 800 programs to the current level of 150. Likewise individual sales have doubled between 1984 and 1987 and free loan tapes have shown a 5 fold increase since 1989. Figure 4 illustrated the percentage of revenues spent on promotions, by the video network, ranging from \$1200 to \$4300 per year or averaging about 12% of revenues.

In 1986, the secretary that was being shared with another department resigned. This resulted in a three month period of no clerical support for the department and a lapse of regular contact with most members. Fortunately, the secretary that was hired had an associate degree in business and had an interest in marketing. However, the secretarial duties consumed a large amount of her time and little was left for marketing. The marketing that was done

Figure 3

Video Tape Distribution

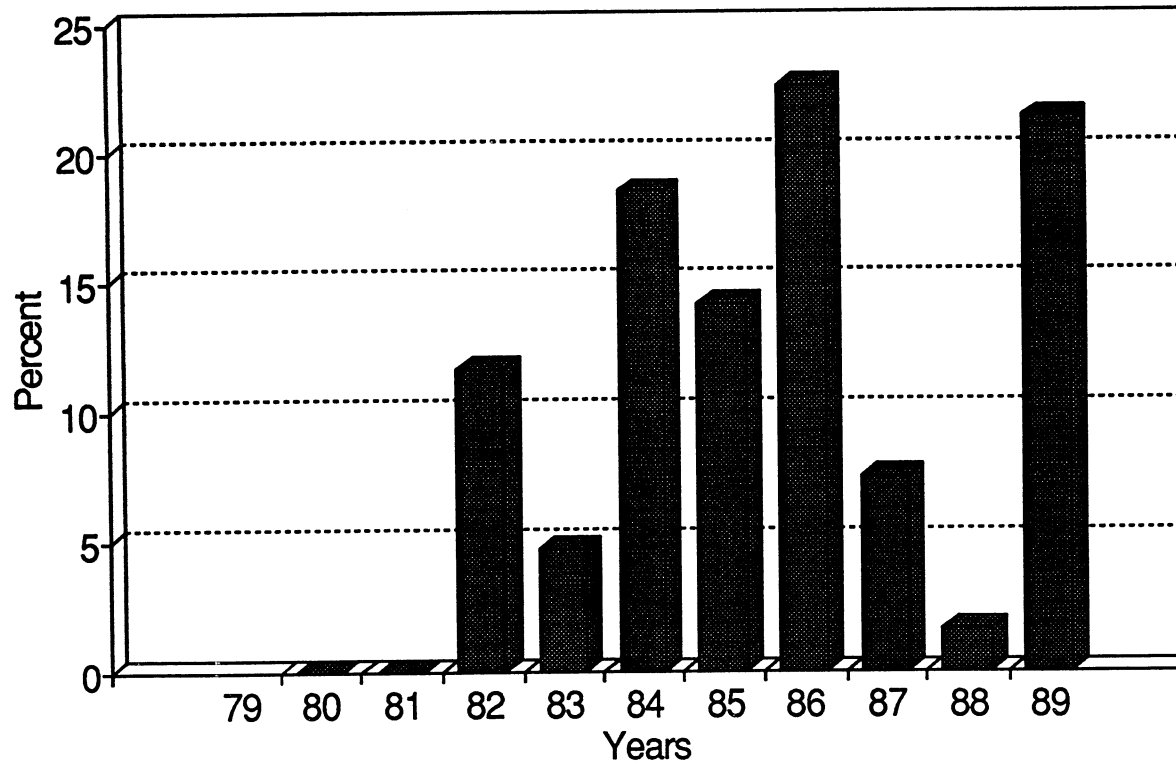


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SOURCE: Sautter, Intress, 1979-1984; Sautter, et al. 1985-1989

Figure 4

Video Network Promotions as a Percent of Total Revenues



SOURCE: Sautter, Intress, 1979-1984; Sautter, et al. 1985-1989

resulted in the video network gaining exposure in several national publications.

The marketing effort of exposures in national publications, started in 1986 began to show results in 1987. Individual tape sales and rental were up 350% from 1985. This represented a considerable increase in clerical duties and their related costs of order processing and billings. Thus margins on individual sales and rentals dropped considerably. Unfortunately memberships were down to 24 institutions. (Sautter, Intress, McCarty 1987). In addition, many of the members of the video network after 1985 stayed with the service for a few years and then discontinued. The video network was either not meeting their needs or not producing enough new titles to generate member loyalty.

Little analysis was done to determine reasons that members dropped the service. During this time period, 1985 through 1987, the video network continues to generate good revenues but operating expenses increased with the shift in the customer base. (Appendix B and Figure 3).

In 1988, in an attempt to revive sagging video network memberships a considerably greater percentage of production time was devoted to the video network. Production was increased to 26.9% of total operations but marketing activities decreased to there lowest point since 1982. These changes did not reverse the declining membership rate. Although no new marketing approaches were explored in

1989 additional dollars where spent in this area. The resulting 50 percent drop in memberships in 1989 was unexpected and went unexplained.

Throughout this time period, from 1982 to 1987, the video network often took a back seat to the pressing demands of the clinic's internal projects, (see figure 2). The AV supervisor saw little benefit in diverting resources from internal clinic projects to spur the growth of the video network. The department supervisor felt the need to meet clinic administration and internal physician demands for AV services, was a higher priority than the video network. This enabled the AV supervisor to build a broad base of support for the AV department. Since the video network was showing a slow but constant growth and clinic administration showed little interest in aggressively pursuing the video network it was left on its own. Financial resources were not available to pursue both internal demands and aggressive expansion of the video network. In summary, the video network is operating on a shoe string budget, with no strategic plan and no person committed to seeing it reach its potential.

SECTION 3

Identification of the Problem

As stated previously, the video network was established "to provide the highest quality category I continuing medical education credits via video tape programming to physicians in remote locations." To accomplish this mission video tape programs presented by Marshfield Clinic physicians and visiting medical professors were to be produced and distributed. Financially, the video network was expected to break even.

The video network grew modestly through 1984 with little promotion. In 1985 and 1986, a plateau in distribution of physician education programs was reached, and since that time a constant reduction has been apparent. During this same time, the sales and rental of video tapes in the areas of patient education have seen a sharp rise. Each year, a smaller and smaller amount of production time is spent on producing CME programs. The reasons are three-fold. First, there is little internal demand for CME video tapes as the programs are available live at the clinic. Secondly, internal demand is driven by the need for patient education and staff training videos. Third, with no internal champion for the video network, and limited resources, the external demand for CME video tapes can be easily ignored.

As more and more demands are placed on the limited resources of the audio visual department, the viability of

the physician education element of the video network, as it presently is constructed, needs to be examined. Several areas need to be examined. These include the impact of changes in the external environment, an analysis of who the users of the video network are and what their needs are, and what competition does the video network face.

The problem of this AMDR was to determine, how should or how can the video network be structured to meet the needs of the rural physicians, and the Marshfield Clinic into the 90's.

SECTION 4

ANALYSIS OF THE PROBLEM

The Customer

The video network has always considered the rural family practice physicians to be the main customer. The video network has traditionally reached the end user via the hospital setting. The video network has always assumed that it knew what the physician was interested in or needed in the terms of education. When the video network began, the majority of the users were located within the referral area of Marshfield Clinic. Over time the percentage of sales in the immediate referral area has decreased.

A survey of video network users in 1987 indicated a need for more nursing programs and primary care programs. In this survey, cost and topic selection were the most important considerations in selecting an educational video tape. The strong request for nursing topics is no doubt a reflection of the higher level of responses from hospital educators than from physicians. (Kaiser, 1987).

Another survey of physicians done by the Dept. of Medical Education revealed similar results. Physicians selected seminars to attend based on first, topic matter; second, credentials and or notoriety of the speakers; third, the institution sponsoring the event, and finally cost. (McCarty 1989).

Appendix C summarizes the survey results of present video network users and a random group of nonusers. The

video network users where surveyed by telephone during April and May of 1990. A random group of family practice and internal medicine physicians where survey by mail during this same period. The survey showed that video is not a well utilized source of CME programming by either group. This data also supported the two previous studies, that physicians consider topic and quality of presentation as the two most important categories in selecting a CME program. The researcher was surprised by the low response to the social function as a primary factor in selecting a CME program. If this is an accurate response, the lack of peer interaction when viewing video programs by ones self, should be a minimal deterrent in selecting a CME program via video.

Many physicians are interested in professional education not because of the legal requirement but because they understand the importance of continuing education. While other physicians do the bare minimum required to keep their license. A review of the CME credits earned by Marshfield Clinic regional center physicians in 1988 and 1989 shows that the average physician earned 22 credits per year, (12 are required) with only 25% of the physicians doing the minimum. (Sautter, Intress, McCarty 1989).

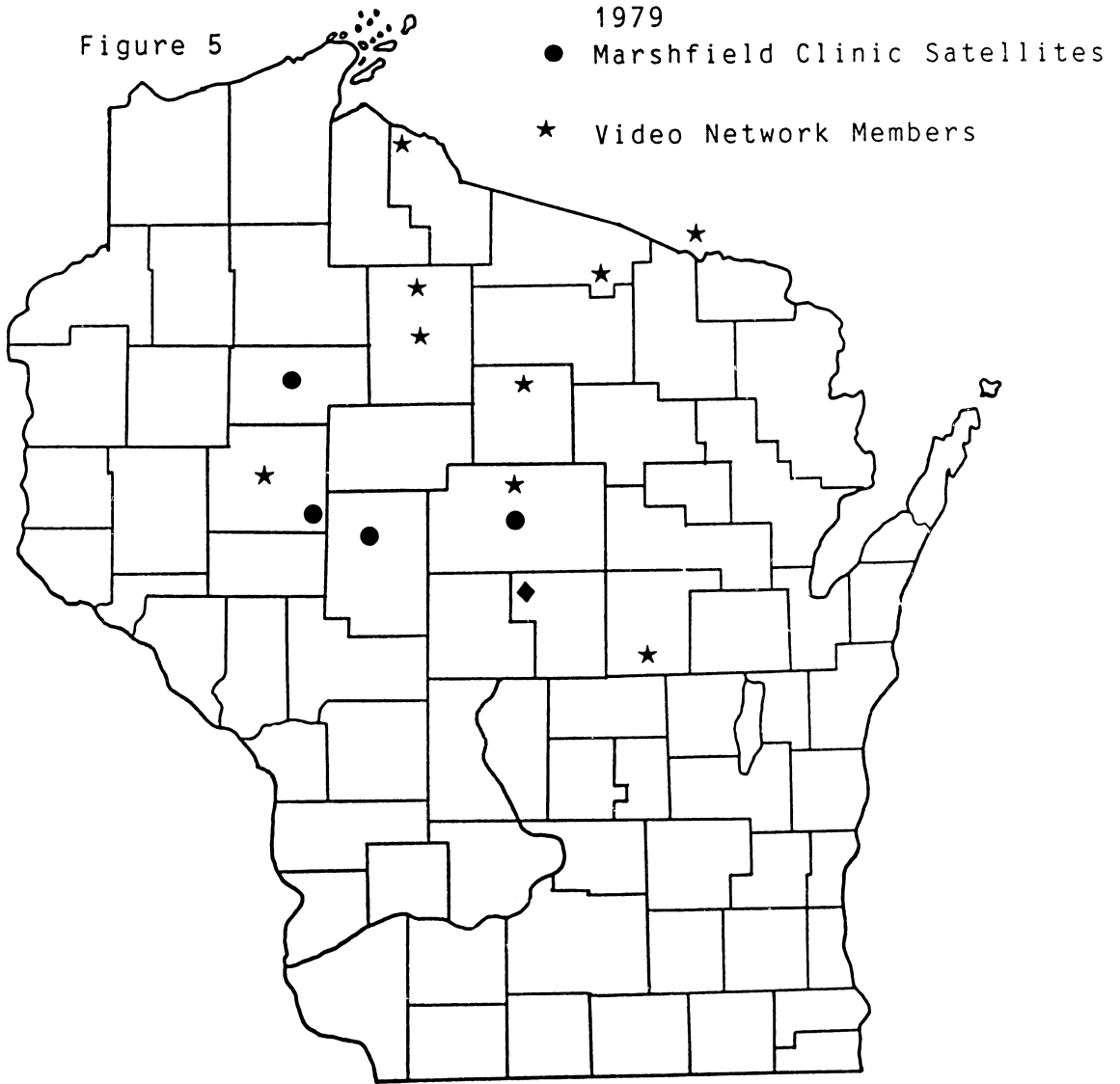
Changes in the External Environment

Physician Saturation

As was stated in section 1 the basic premise for the formation of the Video Network was the difficulty physicians in northern Wisconsin have in leaving their respective communities to attend category I CME conferences. While compiling the justification for the original H.E.W. grant, the demographics of physician distribution were analyzed. When comparing the 1975 data, with the present situation (See Appendix D), the number of physicians per 1000 population has increased. At first thought this would appear to increase the potential market for CME video tapes but the opposite is true. The increased saturation of physicians has made it easier for physicians to attend conferences outside the community. This has had a negative impact on the need for the video network.

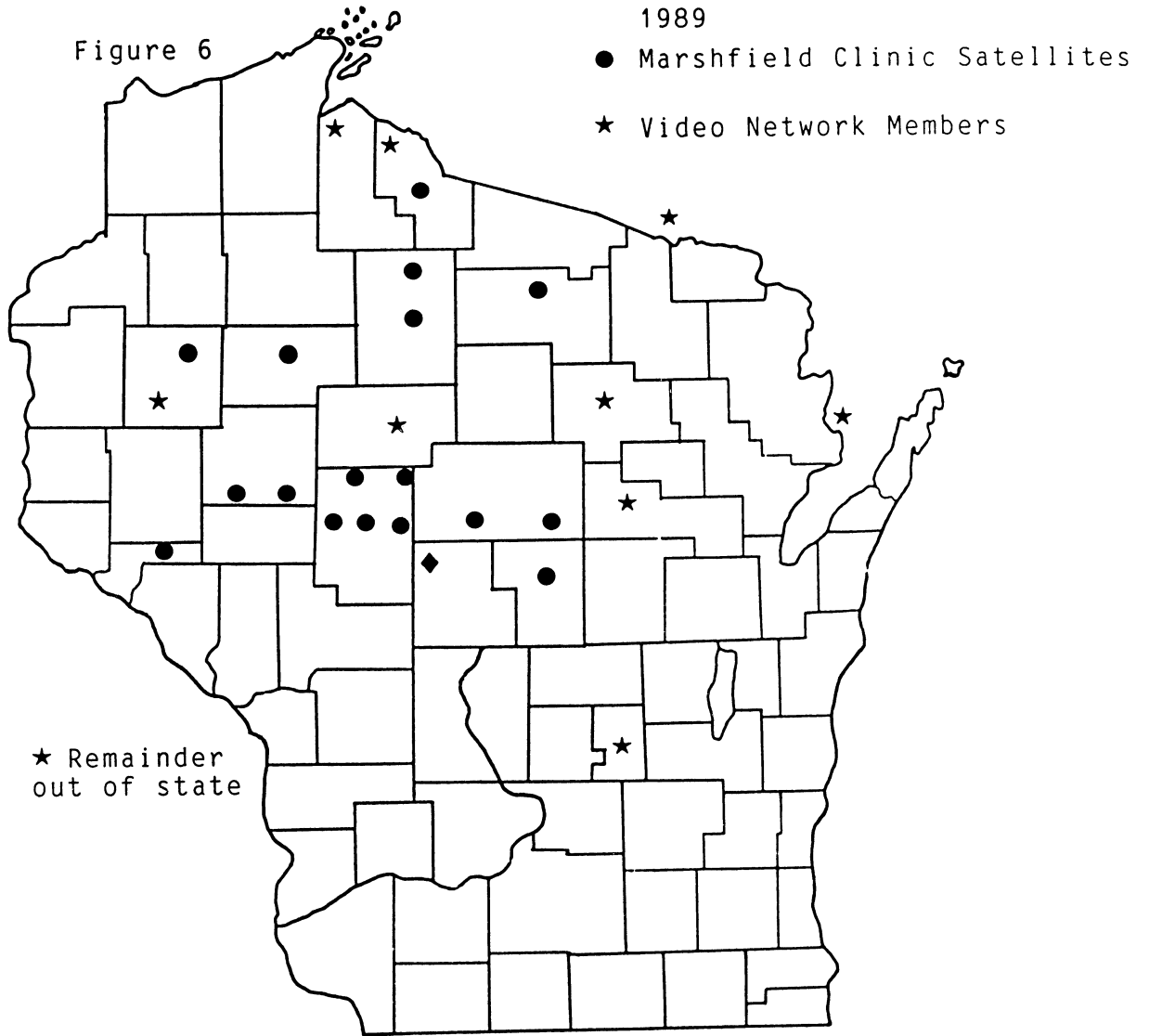
Another significant development is the expansion of the regional center concept by the Marshfield Clinic (Figure 5 and 6). This regional center concept provides for as much care as possible being delivered to the patient as close to home as possible. Between 1977 and 1989 the Marshfield Clinic purchased several small clinics throughout northern Wisconsin. The physicians at these clinics became members of the Marshfield Clinic and thus received access to the video network at no cost. This in

Figure 5



SOURCE: Sautter, Intress, 1979

Figure 6



SOURCE: Sautter, et al. 1989

part explains the large increase in free loan tapes between 1987 and 1989, as shown earlier in figure 3.

Competition From Non-video sources

The competitors of the Video Network can be subdivided into two groups. The first and most important group are the non-video educational opportunities. In the mid 1980's, the deregulation of the air transport industry had a very negative impact on the video network. This deregulation reduced the cost of air travel and made air travel a much more routine means of transportation. Statistics from the Airline industry show airline travel up 33% between 1983 and 1988. (U.S. Department of Commerce 1990). A random sampling of airline ticket prices was done by Preferred Travel, Marshfield Wisconsin. This sampling of tickets issued for flights to various cities in the United States during August 1983 and August 1990 showed an average decrease of \$119 per ticket. No ticket prices had increased. (Pernstein 1990).

The increased physicians saturation, coupled with lower travel costs, contributed to making national conferences and seminars more accessible to the rural physician. As an example of this, the "Physicians' Travel and Meeting Guide" a monthly publication lists CME meetings throughout America. The August 1989 issue listed 500 CME approved meeting for the upcoming months of December/January (Reid 1989). This represents a

considerable increase in the number of seminars offered from a decade ago.

Increased Medicare regulation and tighter travel budgets have somewhat offset these lower costs. Often times the physician in a small group practice needs to pay their own travel expenses, this is especially true of other allied health professionals. Changes made to Medicare and Medicaid reimbursement as part of the United States Omnibus Budget Reconciliation Act of 1990 may further restrict travel budgets. This deficit reduction bill reduced payments made for many medical procedures. Those procedures not reduced where froze at current levels. These changes and the anticipated response from other third party payers will reduce revenues to physicians in the 1990s. (Nystrom 1990). It can be expected that travel and educational budgets will be restricted in the 90s. This offers the Marshfield Video Network an opportunity to promote itself as a cost effective alternative to traveling to conferences.

There are several other types of educational opportunities available to the physician such as sabbaticals, miniresidences and individual teaching rounds. These types of programs do not compete directly with the video network because they represent more of hands on procedural type learning experience. The physician would not purchase a video tape or attend a seminar to learn how

to do a new procedure, instead he would travel to a medical center doing the procedure and learn it first hand.

Changes in the Technology of the Distribution Network

In 1978, when the video network began operations the home VCR industry was in its infancy with less than 1% of American Households owning a VCR. In 1989, 65% of American households own a VCR. (U.S. Department of Commerce 1990). The increased availability of VCRs in the home should have spurred additional sales. Back in 1978 the majority of video network tape sales was to institutions. The high cost of video playback equipment, with a minimum price tag of \$1400.00, forced the centralization of the market for video tapes at hospitals and clinics.

The proliferation of home VCRs in the 1980's, with a present cost of around \$200, opened up an entirely new market for educational video tapes. Many producers took advantage of this new surge in VCR owners to offer CME programs directly to the physicians. Unfortunately, the Marshfield Video Network continued to market only to institutions. The marketing to institutions was far less costly in the early 1980's in return per piece of literature. However as VCRs became more prevalent, the pendulum began to swing toward the new markets. Decreased revenues for hospitals forced administrators to look for ways to cut overhead expenses. The reduced cost of VCRs had diminished the hospital's role as a central site for

education. Thus, by the late 1980's, many hospitals had discontinued purchasing CME video programs for the physicians that served these hospitals. Customer data collect by the video network showed that in 1980 95% of the video tapes distributed were sent to hospitals. (Sautter, Intress 1980). In 1989 only 52% of the tapes distributed went to hospitals, the remained going directly to physicians. (Sautter et al. 1989). The administration of the video network failed to heed this important change in the external environment.

The final change in the external environment was a technological advancement in terrestrial broadcasting. With the advent of the satellite receiving dish, several medical satellite networks emerged. These include Lifeline, Hospital Satellite Network with 3500 member hospitals and the American Satellite Network with 1500 members. (Levine, 1989).

The satellite networks offers an important advantage over traditional video networks. The programming is live. Logically, this should have no bearing on the appeal of the programming. In fact, an edited video tape of a live conference is more time efficient. Edited conferences normally have all the dead time edited out. A viewer can also fast forward through segments that do not pertain to him/her or repeat segments he/she found difficult to comprehend. However, there is a mysticism to the live broadcast as explained by Mark Schubin: "Live

transmissions can sometimes turn even seemingly drab business news into a glamorous media event. The phrase 'Live Via Satellite' still has an aura of attraction." (Schubin 1987 pg. 34). Jerry Hodges work expands on this concept:

There is an interesting psychology that works on people's minds regarding specific schedules for viewing television. This has been implanted in our minds through commercial television that heightens the importance of programs regularly scheduled for broadcast. Field locations are likely to view satellite programming more regularly than videocassettes that are sent through the mail. (Hodges 1989 pg. 34).

Thus changes in the distribution technology through increase availability of home VCRs, and the introduction of satellite technology affected the market for CME video tapes.

Changes in the Competition

With many more physicians now owning VCRs several new video producers entered the market. These consisted of professional organizations such as the American College of Family Practice and the American Heart Association. In addition, the pharmaceutical industry and the medical equipment manufacturers entered the arena of providing educational programs to health care professionals.

Although the medical suppliers are unable to provide credit directly for their programs, they have taken a segment of the market because they offered their programs at no cost. Records kept by the Marshfield Clinic department of Medical Education show the physicians in northern Wisconsin earn an average 10 credits per year more than they are required to. (Sautter et al. 1989).

The various types of professional education available via video tape can be broken down into several groups. Table 1 summarizes these categories. In 1978, few of these choices were available, most programs were lectures, offered credit and charged a fee. The new entrants into the marketplace provided the physician many alternatives. The data collected on physician preference in selecting educational activities, (quality, topic and prestige) are important to keep in mind when examining this categories.

Table 1

Categories of Professional Video Tapes

1. Lecture/discussion orientated
2. Procedure orientated
3. Satellite
4. Specialized/broad based
5. credit/non credit
6. Free/rental fee

The first two categories are the most important in distinguishing between video programming. The Marshfield Video Network is primarily a lecture network. Many seminars and guest lectures that are held at the Marshfield Clinic are video taped and condensed into convenient

segments for distribution. This offers several advantages and disadvantages from a television production standpoint. First, these types of programs are extremely simple and inexpensive to produce. Second, a substantial number of new titles can be released each year.

The disadvantage of this type of television programming is that the true value of the television medium can not be utilized. The ability of television to take you into the operating room or the exam room to witness procedures being performed first hand is lost. Secondly, the video producer is not allowed to control the message in the sense of using the medium of television. The success or failure of individual programs is very much in the hands of the individual giving the presentation. Often times visual aids such as 35mm slides, charts etc. are not constructed taking into mind the limitations of the television medium. The Marshfield Video Network uses television as a distribution medium to transmit an event, but the event is not being staged to maximize the potential of the medium. This places the Marshfield Video Network at a disadvantage in the interest level of the lecture format.

The production of a demonstration program are much more conducive to the power of the television medium. Because of the considerable scripting, editing and staging that goes into such types of programs production costs are typically 10 to 20 times that of the lecture type programs. With the increased costs of time and effort a considerably

lower number of new titles can be produced by the same size production staff.

The third category, satellite transmission, (see table 1), is a technological outgrowth of the lecture type video program. The use of satellite technology to broadcast live seminars and symposiums to remote locations. This technological advance in satellite communications has coined a new term, "Business Television." Although the technology of distribution is new, the basic concepts of television production are the same as the lecture programs, discussed earlier, with three very important difference. The first of these is the perception of the importance of the event because it is live, the second is the ability to have some level of audience interaction with phone in questions and the third is that business television uses a new technology of satellite communications. Marshall McLuhan stated it in the 1960's in his book The Global Village, long before satellite communications, that 'the medium is the message.' With the wealth of educational opportunities available, the glitz of satellite communications is more appealing than the commonplace video cassette.

The final two categories, (see table 1), credit/non-credit and free vs. charged are related. The true professional physician who is interested in education can indulge in a multitude of free no credit video produced by pharmaceutical companies and medical suppliers. These

companies do not offer CME credit but they do produce some of the technically best programs to promote their products. These programs produced by the pharmaceutical companies have been accused of lacking objectivity. (Corporate Video Decisions 1990).

The final area of programming (see Table 1) is the Specialized vs. general topics. Many professional organizations are beginning to produce highly specialized programs aimed at their membership. These programs often have a very limited audience appeal and are usually procedure orientated.

Thus the physician has a much larger selection of programming styles, methods of distribution, and sources of programming than where available when the video network began operations. These changes have helped launch several new competitors into the medical video marketplace.

The largest video competitor to the Marshfield Video network has become the Lifeline cable network. Lifeline Cable network is available in over 5000 community cable systems and is also available to any physician or hospital free of charge, if they own a satellite receive dish (cost of \$4000). Lifeline boasts that 51 percent of primary care physicians watch the programs at least once per month. Every Sunday, Lifeline offers three hours of physician education programming consisting of Obstetrics/ Gynecology Update, Cardiology Update, Orthopedic Update, Family Practice Update and Internal Medicine Update. (Lifeline

Medical Television 1989). Lifeline does not offer credit. This service is financed by the sale of advertising time primarily at the rate of \$10,000 per minute. In comparing the video networks operating budget in Appendix B it is quite apparent that the video network with yearly budgets of less than \$30,000 must compete on a totally different playing ground than Lifeline, who's advertising income is \$150,000 per week.

Other large competitors include Hospital Satellite Network (HSN) and Health Science Consortium. HSN is the largest and oldest satellite network, reaching approximately 3000 hospitals. HSN charges anywhere from \$5000 to \$30,000 per year, based on hospital size. (Levine 1989). The service is funded by subscriptions, and advertising at the rate of \$5300.00 per half hour. (Kleyman 1989). Health Science Consortium, although not offering CME credit, is a large clearing house for all levels of medical education both media and print. The Consortium does not produce any of its own programs but rather contracts to sell selected programs.

Appendix E summarizes data collected through phone surveys of other CME program distributors, their rates, and other services. The researcher found that 55% of the producers contacted are subsidized by advertising revenue or professional dues. Other important observations include: 25% do not offer CME credit, 70% use a demonstration style of programming, and prices range from free to a high of

\$300 per program. The list of CME program distributors was compiled from listings in the Physicians Video Guide and catalogues received by the Medical Education Department. In addition to the sources listed in Appendix E most drug and medical supply firms, supply noncredit, free videos to enhance there products.

Thus in the past ten years several factors have affected the external environment of the video network. These include the addition of several major producers with much larger financial backing. Advances in technology, both in the availability and price of home VCRs and satellite communications have changed the distribution network. The increased numbers of health care providers and the increased availability of non video educational opportunities has offered the physician more alternatives. Finally the increase in the Marshfield Clinic's system of regional centers eliminated a large portion of the customer base in the video network's primary market.

Changes in the Internal Environment

Topic selection

The first portion of this report stated that in addition to providing convenient CME credit the Marshfield Clinic also attempted to promote new services and physician subspecialties via the video network. When the Video network began operations in 1978, the assistant director of medical education, who had a strong medical

background, was actively involved in the network's operations. This individual was able to give excellent advice in the types of topics that would be of most value to physicians in outlining areas. Over the course of time, his influence began to diminish and topics selected for production fell ever more to the supervisor of the AV department. In addition, over the past ten years, the Marshfield Clinic has become much more of a specialty clinic. Marshfield Clinic physicians were much more interested in producing programs about unusual or difficult cases they had treated. Often times the average physicians might encounter these problems only once in a career. Thus, the needs of the customer, the rural physician, were no longer being met in topic selection; the video network had lost contact with the customer.

The Marshfield Video Network was also unable to meet the requests of many hospitals for programs targeted at other hospital employees. Some attempts were made to develop programs for hospital staff but the clinic lacked expertise in many hospital issues and St. Joseph's Hospital, the primary hospital serving Marshfield Clinic was not interested in participating in these activities.

Financial Considerations

There are several important financial considerations that are relevant to the video network. Just like the development of computer software, the major cost in video

tape production is in the development of the original tape. As many copies as are needed can then be produced from the master tape. The production of this master tape is cost intensive in terms of personal hours and production equipment. Equipment costs have been reduced substantially in the past ten years. This cost reduction has made much of the special effects equipment and animation equipment affordable to institutions like Marshfield Clinic. This is a double edged sword as the capital costs have bought the clinic more equipment for the dollar, this has lowered barriers to entry for competitors. Appendix F shows the costs associated with producing two different styles of video program.

In analyzing the cost associated with capital equipment, two areas need be examined, these being production equipment and distribution equipment. The audio visual department expends about 20% of the department's production effort to the video network. As no special production equipment is needed to support the video network, no financial savings in capital would be derived from discontinuing the video network.

At present the equipment used for duplicating video tapes is used 50% by the video network. Purchase cost was about \$18,000 spread over the past five years. At present, under ideal conditions, 6885 duplicate tapes can be produced annually in the VHS format. It would be possible to increase this number somewhat by adding an evening

employee this however, would not be cost effective for the long term. To reach 6885 cassette duplications without additional employee costs, the duplicating facility would have to operate at 100% efficiency for the entire year, which is very unlikely. The researcher's professional opinion is that a realistic yearly duplication output, (considering down time for equipment repair and unmanageable peaks and valleys in demand) would be approximately 75% of maximum. Given these limitations, a yearly output of 5100 duplicate cassettes is feasible. During 1989 duplication was approximately 3000 cassettes, for the video network and internal uses. There is then, considerable room for expanding duplication with the present capital investment.

The average video program rents for \$35 and sells for \$45. The variable costs of duplication are shown in table 2. As can be seen, the contributing margin of each rental is high in comparison to duplication costs.

Table 2

Variable costs of duplication

equipment repair/depreciation	\$3.00
label	.10
postage	.85
package	.59
labor to duplicate	.27
labor to track orders/record CME	<u>3.50</u>
	8.31
blank tape stock if tape sold	<u>3.65</u>
	11.96

These costs compare very favorably with other production companies throughout Wisconsin.

Marketing Initiatives

In 1979, the marketing of the video network consisted of word of mouth. Primarily, the physicians using the service told other physicians what was available at Marshfield. In 1979, the medium was the message, video networks were novel idea and this was all the marketing that was needed. In 1981, the first video network catalogue was printed. This was simply several typed sheets listing each title offered, name of speaker, length, and a brief description. The assistant director of medical education and the supervisor of the AV department took this meager catalogue along with a listing of other educational programs offered by Marshfield Clinic and went on a hospital-by-hospital tour of the northwestern third of Wisconsin. This direct contact with directors of education spurred the growth of the video network in Wisconsin. This tour also was one of the few times a needs assessment was done to determine the true needs of the physicians in rural practice. The results of this needs assessment indicated a need for family practice topics and of materials for hospital support staff, nurses, dietary etc. (Sautter, Intress 1981).

In 1983, spurred by the growth of the past year and the strong urging of the Clinic's Public Relations Manager,

the video network catalogue was type set and offset printed rather than typed and xeroxed. Unfortunately, rather than continuing the effective face to face marketing and needs assessment of previous years, catalogues were bulk mailed to hospitals in a five state region: Wisconsin, Michigan, Minnesota, Iowa and Illinois, except the Chicago area. Few new marketing initiatives have been tried. Catalogues are still bulk mailed to hospitals in February of each year and an updated listing mailed each July. The only change being an increased geographic base.

The video network quickly adopted a shotgun approach to both production and marketing. If even the slightest interest in a topic was shown at the Marshfield Clinic, the program was scheduled for production. The approach of keeping everyone at Marshfield happy outweighed the salability of any production. In the same manner, marketing strategies followed the easiest route, with no real strategic plan or objective. Although mailing of catalogues was the primary marketing tool, ads in medical journals and direct mail brochures were used occasionally.

Pricing was determined with no apparent analysis of costs or profit maximization. Numbers were picked out of a hat and increased periodically because of inflation. Packaging and tape labeling also received little attention.

Of all the program distributors surveyed, direct mail is the preferred method of advertising, with only a few of the largest distributors using phone solicitation and ads

in medical journals. Experience shows that the most important element of the mix is the topic matter of the program. Several cases support this hypothesis.

The most successful program produced to date by the Marshfield Clinic is a program on Lyme disease. The AV department staff was reluctant to undertake this project because so little was known about the disease. Shortly after the program was completed the public press and commercial television, began running numerous stories on the health problems associated with Lyme Disease. The video network did no special promotion of this video tape yet orders for this program quickly made it one of the most popular programs available. (Sautter et al. 1987) The researcher believes the promotion of the topic by public media heightened the interest in this topic by the medical community.

Similarly a program in 1983 on the effects of Hepatitis B vaccine for health care workers was a very popular program. This program was released shortly after a controversial vaccine for Hepatitis became available and was being heavily reported on by the public media. Again, no special promotion was done by the video network yet this program quickly became the most popular program produced up until that time. (Sautter, Intress 1984). The recent AIDS epidemic is another example of the public media promoting a health issue.

The opposite is also true. A 1988 two part series on controlling cancer pain was a disappointing failure. The video program was technical well done. Pre and post test on a sample patient population proved the effectiveness of the video to motivate and instruct patients on the proper method of control cancer pain. The traditional methods of direct mail brochures were used. In addition, articles were written for professional journals and presentation made to professional oncology groups. Unfortunately, sales where disappointing and even a price reduction failed to stimulate the expected sales volume. The only conclusion that can be drawn is that the topic matter, controlling cancer pain was not an appealing topic.

A program produced in 1985 on AFP screening for birth defects met a similar fate. Again, the program was marketed in the usual manner; in addition, ads were purchased in professional journals and presentations where made to professional groups. The program had very limited success until legislation several years later in surrounding states required that the test be made available to all pregnant women. At that point, the program finally reached its potential sales. These examples, from a positive standpoint, the Lyme Disease and Hepatitis B Vaccine Programs, and from a negative standpoint the programs on Caner Pain and AFP screening, illustrate that topic selection is the key element in the success of any video title marketed.

Figure 4 illustrated the percentage of revenues spent on promotions, by the video network, ranging from \$1200 to \$4300 per year or averaging about 12% of revenues. This compares to the national average for the record and video industry of 22.5% of total sales. (Kotlar, 1988). Executive Communications spends between \$50,000 and \$60,000 promoting each of the 25 health shows produced each year. (Levine 1989). In 1986, HSN hired Ted Koppel as their spokesperson and spent a quarter of a million dollars to promote their first teleconference. (Amato, 1987).

The Marshfield Clinic has always taken a low key approach to marketing. The video network did well using the Marshfield Clinic's name recognition in the early 80s. The low profile of the clinic and also the video network has made it difficult to penetrate the market place outside of areas where the Marshfield Clinic name is strong.

Value of Video Network to Marshfield Clinic

It is difficult to qualify the value of the video network as a marketing tool for the Marshfield Clinic. Over the past ten years, four attempts to show a correlation have been reported. In 1980, a study revealed that the top 15 physicians in terms of hours of credit issued through the video network increased their referrals to Marshfield Clinic by 27 percent while referrals from this same geographic area declined 5.5 percent. The value of these referrals to the revenues of the Marshfield Clinic

justify any operating loss the video network may suffer. (Sautter, Intress 1980). In 1986, the Pediatrics Department Eating Disorders program was having trouble recruiting patients. Over the course of four months, 60 complimentary video tapes were sent out to physicians explaining Marshfield's approach to eating disorders. The complimentary tapes were discontinued, because the Pediatric department could not handle the number of referral patients. Between 1985 and 1990, several tapes were used by outreach lab sales representatives to introduce test procedures to prospective accounts. Although it cannot be determined that the video tapes were the determining factor in increased volume or in securing new accounts, comments made to the researcher by these sales reps indicated a very favorable response to the programs. Finally, in September of 1990, a cardiologist took the initiative to mail out six copies of a program explaining a new monitoring techniques for patients with a hard to diagnosis chronic heart condition. Within one month, he received eight referral patients, each generating over \$2000 in charges. Although these are isolated examples and were not designed to test the value of the video network as a marketing tool, they do point to the potential benefit the video network offers.

Other companies, most notably the pharmaceutical industry have long realized the power of television to educate physicians. Martin Hirsch director of

communications for Hoffmann-LaRoche said, "the relative advantages of a new drug are vitally important to communicate, video is one of the most effective ways this can be done." George DiDomonizo director of development for Merck, Sharp & Dohme states, "Video allows us to present our side of marketing arguments in a most persuasive way. Mastery of video is one of the greatest competitive edges we have." (Hoff 1989 pg 37, 38). These companies annually spend hundreds of thousands of dollars on television production and recognize the value of video as a marketing tool.

The value of the video network can also be evaluated in terms of increased clinic physicians productivity. The average clinic physician bills \$680 per half day of direct charges plus an additional \$300 of ancillary charges (Nystrom 1990). If that physician is speaking at a rural clinic, part of their daily production is often lost to travel time. The cost of producing one video tape can be recovered in reducing physician's travel time. Appendix F examines production costs vs travel costs.

Concerns and Opportunities with the Current Arrangement

The first problem with the current arrangement is staff shortage. The video network is but one of many responsibilities of a four person audio visual department. Since the conception of the video network until 1988, the amount of production time devoted to the network has

decreased (see Figure 2). No one individual is responsible for the video network. Because of the under staffing of the AV department in relationship to demands of the clinic, the video network often takes a back seat. The video network has no champion within the department or the organization. Thus, internal clinic needs for the AV department staff take priority over the video network needs. Only enough is being done to keep the network afloat.

The second problem is lack of physician input in topic selection. A review of tape sales and rentals in 1988 showed that 17% of the topics generated 45% of the rental volume. (Sautter, Intress, McCarty 1988.) Too much production time is being spent on low rental volume topics. The AV manager can direct the resources and do the needs assessments but he cannot determine the specific topics of this highly specialized audience group. For example, with the video networks' main audience being primary care physicians, a program entitled "Myocardial Infarction Treatment the first 12 hours" had a very acceptable reception rate. A supposedly very similar program "Selection of Patients For Coronary Artery Surgery, Post MI" had a very disappointing response rate. This is because Family Practitioners are not routinely involved with the care of a myocardial infarct patient after the acute episode; instead, the patient is transferred to the care of a cardiologist at a secondary or tertiary medical

complex. The non-medical manager of the AV department cannot be expected to completely understand the practice of medicine. He/she needs the input of the medical staff. Ideally this input should come from the clinic's family practitioners, practicing at the regional centers.

The third problem is a lack of a marketing plan. Marketing techniques used in the early 80s are not appropriate today. Pricing, promotions and packaging all need to be improved.

The fourth problem is that no control or measurement standards have been established. No mechanism is in place to track the effectiveness of marketing initiatives.

The final problem is that the Marshfield Clinic is a very risk adverse organization. The short term reward for the aggressive non-medical manager are outweighed by the risks. It is much more politically astute to sail the course, keeping the clinic physician owners satisfied. The size or profitability of the video network \pm 20% will have little effect on the department managers performance review or the department budget for the upcoming year. Income generated through tape sales and rentals are not retained by the AV department but instead are returned to the clinic. Increased growth, unless it represents a major increase of 50% or more will just mean additional work for the department with the same resources.

Section Five

Possible solutions

As is the case with any complex problem there are a multitude of possible solutions. The video network is no exception.

Solution 1

The first and simplest solution is to do nothing. The video network as it is presently constructed will become an internal business network for the Marshfield Clinic, within a few years. The continuation of the video network to serve the needs of the physicians at the regional centers will meet the original mission of the network. Appendix F shows the operating expenses and revenues for 1988 and 1989. This data shows decreasing income with increasing expenses and net losses. (Note these budgets have been arrived at using more detailed cost accounting techniques and excluding occupancy costs and general clinic overhead which the clinic does not consider part of operating expense). The data in Appendix F plus the trends in Figure 1 of decreasing memberships and Figure 3 of decreasing tape volume, (section 2) make it unreasonable to expect the video network to meet the clinic mandate to break even. There is little evidence to expect a change in these trends. A price increase to generate more revenue seems unwise when distribution is decreasing. Thus this alternative will not generate sufficient income from outside sources to cover costs. Other levels of

measurement like cost savings in travel will need to be developed to prove the worth of the video network. The advantages of this option are that it is the easiest course to pursue and will require no additional costs than those already committed. The disadvantages are that the clinic mandate to cover direct costs cannot be realized and this option does not maximize the return on present investment to the clinic.

Solution 2

The second option is to locate a distributor that will distribute Marshfield's video tapes. At present there is no single vendor that is interested in taking on the "Marshfield Line" of video tapes. There is however interest by various specialty groups for certain titles within those available. Thus contracts with several distributors would need to be established.

Distributors would charge between 33% and 40% of gross sales as their commission. Ideally, the clinic would want to negotiate non-exclusive contracts with the distributors that will allow Marshfield Clinic to continue marketing the tapes regionally. Exclusive contracts would be a problem because the clinic would loss control of the distribution network.

Advantages of this solution would be to relieve the AV department of the marketing burden and allow them to concentrate on TV production. The AV department lacks the staff and financial resources to adequately undertake an

ambitious marketing program. In addition larger distributors would bring to the video network their expertise, resources and present customer base. If potential distributors required exclusive contracts there would be several disadvantages. The first disadvantage would be the loss of control over the distribution chain, and with that, the loss of the marketing value the video network provides to clinical services. A distributor would use their own labels and packaging on video tapes and catalogues costing the Marshfield Clinic name recognition on these items. The second disadvantage would be the percentage of revenues the distributor would charge for their services and the costs in the AV department manager's time (approximately 10%, \$4,000 annually) to monitor and negotiate with the distributors. Hopefully the increased volume generated by the larger distribution would offset these costs. Finally, independent distributors could exercise an editorial control over the types of programs that are produced.

Solution 3

The third option is a two phased approach to restructuring the video network. First a medical advisor needs to be appointed. Preferable a family practice physician who works at a regional center. This physician would be responsible for topic selection and program review. Secondly, a strategic marketing plan targeted at

the primary audience should be developed and adequately funded.

The advantages of this solution is that the clinic maintains control of the distribution chain and the prestige and marketing benefits of the video network. The disadvantages is that the video network staff will need to improve their marketing skill and devote more effort to this aspect of the video network. Increased operating budget will be needed to fund this increased marketing effort and a medical advisor will need to be located.

Solution 4

The fourth option would be to discontinue the video network for CME programming and concentrate on other types of video production. The advantage of this alternative is that it would allow the AV section to explore more lucrative types of production. The disadvantages of this option is that the clinic has little expertise in other types of video programming, and no savings or recouping of capital dollars would be realized. This is not the mission of the AV section and the benefits to the Marshfield Clinic of operating the outreach educational network would be lost.

Section 6

Solution

The mission of the video network was to provide high quality CME programming while promoting Marshfield Clinic subspecialists. This is still a viable mission. The need for and the benefits of the Marshfield Video Network require that it be continued in some form. The researcher demonstrated the benefit of the video network as a marketing tool for the Marshfield Clinic. Four examples of increased referrals were documented in Section 4. If the clinic is to maintain itself as a leader in the health care industry, education is an important component. The need for educational programs for the Marshfield Clinic Regional Center physicians and other rural clinics physicians still exists. The researcher demonstrated how the video network is a cost effective means for the Marshfield Clinic of providing a portion of this education by reducing speaker travel costs. Finally the changes in Medicare and Medicaid reimbursement will reduce margins for physicians and this may be reflected in travel budgets. The video network provides a cost effective alternative to attending conferences.

Solution 3 is the logical course to peruse for the video network. To implement this solution much stronger input from the users are needed. Gwenn Kelly, a consultant for a leading business television network stated, "No matter how large and expertise the production staff there

is no substitute for a programming advisory council that meets regularly to review, suggest, evaluate and promote programming." (Kelly 1989).

The Marshfield Clinic's medical education committee needs to become actively involved in program selection and review. A medical advisor needs to be appointed. Ideally this would be a family practitioner from one of the regional centers. This physician in cooperation with specialists and subspecialists at the main clinic need to review the current catalogue for accuracy of all programs. Secondly, the titles that remain should be evaluated for their appropriateness to the family practice physician. Finally the medical advisor should recommend specific topics for future programming.

The Marshfield Video Network cannot expect to compete with such large networks as Lifeline and Hospital Satellite Network. Thus a niche market must be identified and pursued. The clinic can either enter the highly specialized niche which it has the medical expertise to pursue or it can concentrate on the needs of the rural family practice physician. The mission of the Marshfield Clinic and the Video network would suggest concentrating on the rural family practice physician.

The AV department manager should develop a strategic marketing plan. This plan should include several aspects. First, customer research showed the researcher that video is still not a well excepted form of CME education. With

the ever increasing scrutiny on health care dollars, video programming needs to be promoted as a cost effective alternative to attending meetings. Secondly customer research showed the researcher that the prestige of the presenter and/or the organization presenting the program is an important consideration in selecting educational resources. If sales inroads are to be made outside the Marshfield Clinic referral area information about Marshfield Clinic should precede or accompany any attempts to sell the video network. Third, changing demographics require the video network be marketed directly to physicians, the end user. Hospitals are much more interested in broad based services that provide education for the entire hospital staff. Marshfield Clinic lacks the expertise in hospital issues to successfully compete in this area. Fourth, the quality of programs should be increased. Customer research showed that quality program content is the most important element to physicians when selecting CME programs. This concept is reinforced by data collected by David Kerin, senior vice president of Hospital Satellite Network, "For doctors, particularly, it helps to have the most recognized experts on the subjects. If you're taking them away from work, the info had better be well presented--and close to invaluable." (Levine, 1989, pg 21). Every effort should be made to move away from lecture presentations to demonstration and procedure orientated programs. Finally, a person needs to be

identified and given the responsibility, authority and resources to coordinate the marketing activities. This should include working with the present Marshfield Clinic sales force that presently promotes other clinical services.

The marketing budget should be greatly increased from the present level of \$3,000 to \$15,000 annual. This would cover the cost of increased mailings, and sample tapes to prospective physicians. Phone follow-up to ensure user satisfaction and to solicit topic input should become routine. Finally new customers leads should be followed up with phone contact.

Operationally several improvements can be made to current marketing efforts. The yearly catalogue should be updated in November rather than January with mailing in early January rather than March. Quarterly updates should be distributed, which promote new video releases as well as other educational programs offered by the Marshfield Clinic. Special programs should also be announced with individualized brochure mailings. Marketing efforts should be targeted to the intended users of the service rather than Hospital Administrators. The video network needs to make itself more accessible to the customer by improving the phone ordering procedure, and improving the image of the network by upgrading tape labeling.

Pricing must be examined closely. Rental prices should remain at there present levels but sales prices

should be increased. A tiered rental price schedule is not practical and would be difficult to administer, instead larger discounts should be made available to physicians who practice in the Marshfield referral area.

A production effort of 20% of AV department's output should be maintained, however this output needs to be much more directed in topic selection.

At present the AV department's three quarter time secretary is responsible for marketing the video network. Her hours should be increased to full time, with the additional time used to market the video network via phone solicitation.

Finally, as time permits, outside distribution firms that will not require exclusive rights to programs should be contracted with. This will increase the market distribution for select program titles in geographical areas where internal promotions efforts could not reach.

Table 3 is a projected budget for the next two years of operations for the video network. This budget presumes a 20% production level for video network programming, an increase in marketing and the cost of a medical advisor. Costs for year 2 represent a 4% increase for inflation. The income does not reflect an sales made through distributors.

Although this proposal will lose money the first year and will not show positive cash flows until the third year it deserves funding for the following reasons. First, as

shown earlier the video network is an important marketing tool of the Marshfield Clinic. Increased patient referrals have been documented in geographic areas where the video network is utilized and in subspecialty areas that have been promoted through the video network. This alone in this researchers opinion justifies the continuation of the video network. Second, the video network is proven to be a cost efficient alternative to sending physician speakers to remote areas to present CME programs. Third, the video network is important component of the communications network between Marshfield Clinic and the regional centers. By investing in a medical advisor and increased promotions these existing committed resources will be better utilized both by the regional centers and other medical groups. Finally, although final numbers are not yet available, limited marketing of the video network directly to Wisconsin physicians during the later portion of 1990 met with some success and therefore the researcher feels the sales projections outlined in Table 3 are reasonable and obtainable.

Table 3

BUDGET

Production Costs (assuming 20% Dept. Effort)

	YR 1	YR 2*
Equipment 228 hrs x \$35/hr	7980	8300
Personnel	20880	21715
Medical Advisor 5% effort	6705	6975
Dubs 1500 x \$8.31	12465	
2200 x \$8.65		19030
Marketing	15000	15000
Income		
Sales and Rentals 1500 tapes	52500	
Sales and Rentals 2200 tapes		77000
Net Income (loss)	(10530)	5980

*assumes 4% inflation adjustment

Breakdown of Marketing Budget

Catalogue Printing 2000	\$2595
Monthly mailing of 5,000 brochures for 11 months (750 per month)	
Printing/typesetting (.07) 340	
Bulk rate mailing (.082) <u>410</u>	8250
Distribution of 500 free tapes	<u>4155</u>
Total	15000

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APPENDIX A
Institutional Requirements for Issuing CME Credit

1. The sponsor shall have a written statement of its continuing medical education mission, formally approved by its governing body.
2. The sponsor shall have established procedures for identifying and analyzing continuing medical education needs and interests of prospective participants.
3. The sponsor shall have explicit objectives for each CME activity
4. The sponsor shall design and implement educational activities consistent in content and method with the stated objectives.
5. The sponsor shall evaluate the effectiveness of its overall continuing medical education program and component activities and use this information in its CME planning
6. The sponsor shall provide evidence that management procedures and other necessary resources are available and effectively used to fulfill its continuing medical education mission.
7. The sponsor shall accept responsibility that the essentials are met by educational activities which it jointly sponsors.

Appendix B Operating Budget 1980 - 1989

	1989	1988	1987	1986	1985
Total Studio Hrs	912.50 hr	932.0 hr	1114.75 hr	950.0 hr	1097.25 hr
Video Network Hrs	170.75 hr	114.0 hr	112.25 hr	113.5 hr	177.25 hr
Video Network as a Percent of total	18.7	26.9	16.9	11.9	16.1
Video Net Members	12	22	25	22	30
Production Costs	\$6,642.17	\$8,793.75	\$5963.75	\$3,405.00	\$4,874.37
Promotions	3,443.31	3,302.51	1760.43	4,390.23	3,128.04
Video tape	3,482.00	3,073.05	1757.96	2,953.44	4,224.18
Salary	20,735.68	23,626.27	14,456.26	7,983.44	10,182.60
Total Costs	34,303.16	38,795.64	23,938.40	18,732.61	22,409.19
Revenue	16,060.00	20,468.89	23,262.27	19,424.00	22,104.04
Income (loss)	(18,243.84)	(18,326.75)	(676.13)	691.13	(305.15)

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The cost accounting techniques used prior to 1987 are primitive, but met the needs at that time. Employee salaries including secretarial and administrative overhead were allocated as a percentage of effort rather than being based on actual work performed. Production costs include all supply and maintenance costs were lumped together and then allocated on a percentage of effort basis. Building occupancy costs were included in production costs for grant reimbursement purposes. The Marshfield Clinic does not include these costs in calculating department operating expense, and departments are not required to cover these costs to breakeven. Costs of tape duplication were not kept. The researcher has been unable to locate or break out the costs in a more detailed manner.

Appendix A Continued

	1984	1983	1982	1981	1980
Total Studio Hrs	914.25	665.75	837.50	1122.25	874.25
Video Network Hrs	116.25	199.25	254.75	310.25	257.25
Video Network as a percent of total	12.7	30	30.4	27.6	29.5
Video Net Members	43	40	36	26	23
Production Costs	\$2,900.43	\$4,745.13	\$5,777.73	\$8,066.50	\$7,564.96
Promotions	3,698.64	1,246.12	1,724.54	0	0
Video tape	3,280.54	2,082.93	3,386.39	3,431.63	3,459.00
Salary	7,168.64	15,617.40	13,352.59	8,748.37	8,425.49
Total Costs	17,048.25	23,691.58	24,241.25	20,246.50	19,449.45
Revenue	19,964.73	26,070.76	14,853.28	12,892.99	9,061.28
Income (loss)	2,916.48	2,379.18	(9,387.97)	(7,353.51)	(10,388.17)

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Appendix G examines fiscal year 1987 through 1990 in a more detailed manner.

Source: Sautter, Intress, 1980-1984; Sautter, et al. 1985-1989.

APPENDIX C
Survey Data of User and Nonuser Groups

	Users of Video Network	Non users
1. Where do you get your CME credit?		
In state conference	64%	40%
Out state confer.	13%	35%
Local Medical Soc.	5%	2%
Individual Teaching	<1%	6%
Video tape	12%	1.5%
other	6%	15.5%
2. What is the most important criteria in selecting a CME program? Rate on a 1-5 scale.		
Convenience	3.25	3.66
Cost	3.375	3.46
Topic	4.25	4.00
Location	3.75	3.60
Social function	1.875	2.30
Quality	4.375	3.93
3. What types of programs are most interested in? Multiply responses		
Procedures	40%	33%
Family Practice	50%	40%
Drug studies	40%	26%
Basic research	5%	20%
Specialty care	33%	67%
4. Is it difficult for you to get away to attend day long educational seminars?		
No	29%	39%
Minor Problem	50%	40%
Major Problem	21%	21%
5. Is materials for nursing or other allied health professional a factor in choosing a source for CME?		
Yes	73%	88%
No	27%	12%

The survey of video network users was administered to fifty current users in Wisconsin, by phone during March and April of 1989.

The survey of nonusers was mailed to 200 physicians at random in the midwest during the same time period. A free video tape was offered to anyone who responded.

Appendix D Physician Saturation

County	Population 1975	Phys	Ratio	Population 1987	Phys	Ratio
Wood	68,233	32	1: 2132	78,800	122	1: 646
Clark	31,492	9	1: 3499	32,500	9	1: 3611
Taylor	18,145	6	1: 3024	18,700	8	1: 2337
Marathon	104,190	23	1: 4530	111,500	72	1: 1549
Price	15,013	4	1: 3753	16,500	6	1: 2750
Bayfield	12,324	4	1: 3081	14,100	6	1: 2350
Ashland	16,046	7	1: 2292	16,900	19	1: 889
Iron	6,684	1	1: 6684	6,300	6	1: 1050
Vilas	12,896	6	1: 2149	17,300	14	1: 1236
Onedia	28,302	14	1: 2021	31,900	33	1: 967
Sawyer	10,863	8	1: 1086	14,300	7	1: 2043
Washburn	11,784	6	1: 1964	13,900	11	1: 1264
Barron	36,078	17	1: 2122	41,000	31	1: 1322
Rusk	14,705	5	1: 2941	15,700	7	1: 2243
Lincoln	25,149	9	1: 2794	28,500	18	1: 1583
Langlade	19,394	10	1: 1939	19,800	11	1: 1800
Chippewa	49,691	15	1: 3312	53,500	31	1: 1726
Jackson	15,679	6	1: 2613	16,300	7	1: 2328
Portage	52,272	16	1: 3267	59,000	34	1: 1735

County	Population 1975	Phys	Ratio	Population 1987	Phys	Ratio
Wood	68,233	32	1: 2132	78,800	122	1: 646
Waupaca	39,811	20	1: 1990	45,700	22	1: 2077
Adams	11,159	1	1:11159	13,900	3	1: 4633
Juneau	18,636	7	1: 2662	21,500	10	1: 2150
Florence	3,298	0	-	4,000	1	1: 4000
Forest	7,691	2	1: 3845	9,100	2	1: 4550
Waushara	15,897	8	1: 1987	19,300	15	1: 1287

Source: Ottensmeyer 1975
Schmelzer 1990

Appendix E Sources of Medical Education Programming

Name	Tran	CME	Cost	Funding	Size	Style	Program
Lifetime	Sat	No	Free	Advertise	51% of Physician	Demo/ Discuss	General MD/ Specific
Hospital Satellite Net.	Sat	Yes	3000/yr	Fees/ Advertise	3000 Hospitals	Lecture	General MD & Nurse
AMA by Satellite	Sat	Yes	2538/yr	Fees/ Advertise	800 Phys.	Lecture	General MD
Vanderbilt Medical	Sat	Yes	950/yr	Fees	54 sites	Lecture	General MD/ Specific
Medical College of Virginia	Sat	Yes	Free	Upjohn Pharmac.	125 sites	Lecture	General MD/ Specific
Gulf Publishing Univ. Texas	VT	Yes	100/ prg.	U. Texas/ Sales	48 progs.	Demo	Cardiology Inter. Med.
Health Science Consortium	VT	No	\$300/ prg.	Sales	980 progs.	Demo	Complete Spectrum
National AV Center	VT	No	50-200/ prg.	Sales	1000+ progs.	Demo	Complete Spectrum
Southern Medical Assoc.	VT	Yes*	65/prg.	Sales	112 progs.	Demo	Complete Spectrum
Medcom Productions	VT	Yes	200/ prg.	Sales	75 progs.	Demo	Complete Spectrum
Univ. of Michigan	VT	Yes	35-150/ prg.	Sales- Univ.	325 progs.	Lecture	Complete spectrum
Marshfield Video Network	VT	Yes	45/prg.	Sales	250 progs.	Lecture	Complete Spectrum

Name	Tran	CME	Cost	Funding	Size	Style	Program
NAACOG	VT	No	160/prg.	Sales	45 progs.	Demo	Obstetrics
Gillette Children's Hosp.	VT	Yes	150-250/prg.	Sales	38 progs.	Demo	Orthopedics
American Orthopedic Soc.	VT	Yes	75-250/prg.	Sales/dues	50 progs.	Lecture/demo	Orthopedics
American Soc. Clinical Pathol	VT	Yes	100/prg.	Sales/dues	130 progs.	Lecture	Pathology
Amer. Academy Ophthalmology	VT	Yes	65/prg.	Sales/dues	40 progs.	Demo	Ophthalmolog
AV Digest/ California Medical Assoc.	VT AT	Yes	40-300/prg.	Sales	100 progs.	Demo	Surgery
Amer. Society Gastrointerolog	VT	Yes	40-300/prg.	Sales/dues	38 progs.	Demo	Gastro
Amer. College Cardiology	VT	Yes	75/ prg.	Sales/dues	75 progs.	Demo	Cardiology
Teaching Films	VT	No	300/prg.	Sales	30 progs.	Demo	Dissections
Menninger	VT	No	150/prg.	Sales	28 progs.	Demo	Psychology
Texas Tech Mednet	Sat	Yes	450/mon.	Sales-Fed Grant	20 hosp.	Lecture	General MD & Nursing

Key: Tran Indicates transmission mode either satellite, video tape or audio tape.
 Size Video distributors size indicates the number of selections in catalogue.

* Southern Medical Association offers Category II CME credit.

Source: Phone interviews March and April 1990 and company catalogues.

APPENDIX F

Cost estimates to produce a lecture program vs a Documentary style program in 1989, less medical resource person.

	Lecture	Documentary
Preproduction		
Script preparation	20.00	\$1000.00
Production		
Equipment Camera	\$70.00	\$335.00
Equipment Studio	\$35.00	\$335.00
Personal	<u>\$200.00</u>	<u>\$1360.00</u>
Total	\$325.00	\$2970.00
Supplies	\$25.00	\$25.00
Total Costs	\$350.00	\$2995.00
Rental program	\$35.00	
Distribution costs	<u>- 8.21</u>	
Contribution margin	\$26.79	

Costs to send one physician from Marshfield to Park Falls to speak at an evening CME meeting.

Lost Physician Productivity 2 hrs	\$325.00
Presuming the physician had to leave at 3 PM to arrive by 5:30.	
Lost ancillary services	150.00
Mileage	<u>50.00</u>
Total	525.00

Appendix G
Revised 1987 through 1989 Budgets

	1987	1988	1989
Distribution Expenses			
Promotions	\$1,760.43	\$ 3,302.57	\$ 3,443.31
Personal	7,007.00	8,430.87	7,541.00
Video tape	1,757.96	1,349.00	3,482.00
Cost of Duplicating	<u>4,668.59</u>	<u>3,538.22</u>	<u>1,187.83</u>
Total	15,193.93	16,615.66	15,654.14
Production Expense			
Equipment	2,745.16	5,014.45	2,872.01
Personal	<u>4,220.50</u>	<u>6,281.25</u>	<u>4,610.25</u>
Total	6,965.66	11,295.70	7,482.26
Total Expenses	22,159.59	27,911.36	23,136.40
Income	<u>23,262.27</u>	<u>20,468.99</u>	<u>16,060.00</u>
Income (Loss)	1,102.68	(7,442.37)	(7,076.40)