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AUTHOR Davenport, Lucinda D.
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ABSTRACT

To discover if editors' perceptions of audience opinions had changed and to determine the accuracy of editors' predictions regarding readers' reactions to using videotex, a 1987 study repeated a 1976 survey of Associated Press managing editors, and compared the responses with the original survey results. Surveys were sent to 302 Associated Press managing editors of daily newspapers (with a 48% response rate), and included an explanation about and a photograph of videotex. Editors responded to statements about readers' problems in accessing, reading, and finding satisfaction in electronic news delivery. In addition, the survey was uploaded into 117 different areas of CompuServe Information Services, the largest videotex service in the United States. Videotex reader respondents were videotex users in a non-experimental, non-laboratory situation with a variety of interests and reasons for using videotex services. Results suggested that editors have become more negative about audience members' ability to use videotex for news. More editors in 1987 than in 1976 saw videotex as a problem for readers to use, and all of the items were perceived as problems by more editors than readers. Results showed that editors in 1976 were more accurate than current editors at perceiving audience reactions to videotex. In general, videotex was not a problem for readers. (Two tables of data are included, and 31 references are appended.) (MM)

AN UPDATE: 1976 AND 1987 EDITORS' PREDICTIONS OF AUDIENCE REACTIONS TO VIDEOTEX

AND A COMPARISON: 1987 AUDIENCE REACTIONS AND 1976 AND 1987 EDITORS PREDICTIONS

by
Lucinda D. Davenport
Michigan State University

ABSTRACT

Results suggest that editors have become more negative about audience members' ability to use videotex for news. More editors in 1987, than those in 1976, saw videotex as a problem for readers to use, and they did not agree as to which were the greatest and least problems. Generally, videotex is not a problem for readers. Even if the number of readers who indicated a problem was doubled, it still would be less (in all but two items) than what editors' predicted.

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ABSTRACT

One of the first academic studies about news on videotex ("electronic newspapers") was done in a 1978 dissertation by John Ahlhauser, who included a 1976 survey to Associated Press Managing Editors about their perceptions of "problems encountered by readers in accessing, reading, and finding satisfaction in electronic delivery of the news." Editors agreed that survey items about newspapers reflected "big problems" for readers.

Contrary to the predictions of editors in the 1976 survey, current, but small studies have shown that people use videotex either in addition to or in place of the traditional newspaper.

The purposes of this study were to update the objectives of Ahlhauser's 1976 survey and find out: 1) if editors' perception of reader reactions had changed over the past decade now that the videotex industry has grown, and 2) how well editors at that time predicted current readers reactions to using videotex. It also looked at 1987 editors' predictions and 1987 readers' opinions.

Interestingly, more editors in 1987, than those in 1976, saw videotex as a problem for readers to use. And, within eleven years, editors had changed their perceptions about readers' reactions to different aspect of videotex. Editors in 1976 and 1987 did not agree on which factors were the most or least problematic for readers.

All items were perceived as problems for people by more editors than readers. If the number of readers who indicated a problem was doubled, it still would be less (in all but two items) than what editors' predicted.

Not only did more 1976 editors, than those in 1987, accurately perceive which aspects were the greatest and least problems for audience members, but the number indicating a problem for each items was closer to that of readers, too. Thus editors eleven years ago were better than current editors at perceiving audience reactions to using videotex for news.

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by

Lucinda D. Davenport
Assistant Professor
School of Journalism
Michigan State University
East Lansing, MI 48824

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INTRODUCTION

Each of the major media, beginning with the penny press, has been a topic of controversy and study. As each new communication technology was developing, the demise of the newspaper was predicted. For example, radio's speed and live coverage were certain to make printed news stale before it reached the newstand; television would lure people away from the printed word with its live moving pictures; and facsimile was to be in everyone's home so they could receive their news quickly through a wire (McManus 1986; Kneale 1987).

Recent controversies now center on the traditional newspaper and videotex, a competitive communication system which transmits vast amounts of custom-tailored news and information --an "electronic newspaper" -- on reader demand.

Futurists in the 1960s and 1970s suggested that by the year 2000, news would be read from a home telecommunications center rather than from a printed newspaper. Called an "electronic newspaper," news was envisioned as a videoform of its print predecessor, with full text of an unlimited number of publications available to anyone with a television or personal computer (Atwater et al. 1985).

That fantasy now has become a technical reality. Knowing that media structure and survival are based on the type and amount of media content desired by the audience (Owen 1975), print organizations for more than a decade have experimented with electronic newspapers that deliver news and information to subscribers in a variety of technological ways called videotex (user interactive) and teletext (one-way information).

One of the first academic studies about electronic newspapers was

done in a 1978 dissertation by John Ahlhauser, who reasoned that the skyrocketing costs of paper and ink, and the distribution problems of getting a newspaper to the right reader at the right place might provide the impetus for a change of delivery form.

Ahlhauser examined the first commercial electronic newspaper system, Prestel (in Great Britain) and surveyed Associated Press Managing Editors in 1976 about their perceptions of "problems encountered (or perceived) by readers in accessing, reading, and finding satisfaction in electronic delivery of the news." (p. 143) Respondents agreed that Ahlhauser's statements about electronic newspapers reflected "big problems" for readers.

Contrary to the predictions of editors in Ahlhauser's survey, current, but small, studies have shown that people use videotex either in addition to or in place of the traditional newspaper (Williams 1981; Smyth 1982; Butler and Kent 1983; Electronic Publishing 1983; Elton and Carey 1983; Paisley 1983; Carey 1984; Ettema 1984; Atwater et al 1985; Brown 1985; Heeter et al 1985).

The purposes of this study were to update the objectives of Ahlhauser's 1976 survey (reported in his 1978 dissertation) and find out 1) if editors' perception of audience opinions had changed over the past decade now that the videotex industry has grown, and 2) how well editors at that time predicted current readers' reactions to using videotex.

BACKGROUND

Growth of Videotex

The U.S. Department of Commerce noted in Industrial Outlook that videotex has "tremendous potential" and that revenues are projected to

increase from $75 million in 1986 to $170 million by 1990. Public access applications will grow into the "tens of thousands" and that corporate videotex, which now is an $80 million market, will increase to $3 billion by 1997 (VIA 1987, p. 6.1.6-7).

In 1982, the vice president and director of media for Ogilvy and Mather in Canada, George B. Murray, predited that videotex in the United States would have a penetration rate of 2-3 percent in 1985, 20 percent by 1990 and 40 percent in 1995, and that the cumulative videotex and teletext penetration in 1995 would be 60 percent (Zabel 1982). So far, Murray's projections have been close because home users alone totalled about 1.1 percent in 1987 (VIA 1987).

A major reason for the growth in information retrieval services is because of the growth in personal computers, the hardware costs of which are expected to drop 30 percent annually over the next four years (VIA 1987). Barriers to computers and telecommunications applications, such as videotex, rapidly are being hurdled as home computers become cheaper, faster, more powerful, smaller and more versatile. Rowan A. Wakefield (1986, 22), a senior editor for "American Family," a national newsletter on family policy and programs, wrote in Futurist that:

> The key ingredient that will make all this happen [home computers linked to telecommunications systems] is the estimated 96.8 million households that will be in the United States in 1990. That's eight times the number of U.S. businesses, and 840 times the number of schools, two of today's largest markets for personal computers. The Census Bureau projects that more than half of these households--52 million--could be earning more than $20,000 by 1990.

Wakefield (p. 21) also noted that linking personal computers--usually with modems--to telecommunication systems now is a major use

of computers. More than 75 percent of U.S. businesses will have modems by 1990; in homes with computers, 30 percent now have modems and 60 percent will have them by 1990. By that time, most computers will have modems built inside the terminal. As more people use terminals to work at home and communicate with co-workers, the demand from bus and train commuters for hard-copy newspapers will diminish significantly (Petroski 1982).

For many, questions about videotex's existence have been replaced with ones about its development. Supporters are trying to find the right combination of content and consumer appeal, convenience and easy-to-use equipment at an acceptable price.

Two distinct kinds of videotex services are those having text information retrieval-only and those offering transactional services (banking, shopping and messaging) as well as text retrieval; the former containing specialized information is used most often by businesses, whereas the latter is generally user-oriented. In the United States, already there are about 530 videotex services containing almost 3,500 different databases of news and information.

The Changing Newspaper

Over the years, innovative media forms have intruded upon the newspaper's traditional sphere of influence; yet, despite these infractions, newspapers have continued to be an important mass medium. Presentation of printed news has been modified (greater attention to details, elimination of "Extras" and creation of "news briefs" sections) with the success of newer media, but while automobiles, airplanes, radio and television were developed, newspaper printing

techniques remained the same.

After continuing unchanged for so long, technical changes such as video display terminals (VDTs) and optical character recognition screens (OCRs) now are seen commonly in newsrooms, and other modifications including newspaper appearance, style, goals, attitudes and personnel have occurred. Many newsrooms no longer have teletype machines nor news wires, but receive information from satellites 22,300 miles above the earth transmitting more than 10,000 words a minute. As the age of electronics develops, newspaper publishers and editors are uncertain about the future of production and distribution (Agee et al. 1985).

In today's newsrooms, a reporter types a story on a video display terminal and sends it to a central computer, while journalists working away from the newsroom write with portable lap computers and transmit stories to the central computer via a telephone hook-up. Then, at the editor's convenience, stories are transmitted from the central computer to the editor's terminal for reviewing and headline writing. Often these stories appear on a split screen--the reporter's original or wire story on one side and the revision on the other--and after approval, the story is sent to a phototypesetting machine which can print it out at a rate of 1,500 lines or more per minute (12 picas wide) on paper strips to be pasted up. Or, some advanced newsrooms have what is called pagination: the entire page is composed on a terminal screen and is sent directly to a printing plate.

News photo services, also affected by the new technologies, use digital processing to quickly send photographs to newspapers by feeding the photos into machinery which transforms the content into

digital signals and stores it in a central computer. Editors can call up the picture onto a screen to modify areas of it to improve its appearance, crop it to a desired size and then send it on to subscriber clients.

Publishers and editors of large newspapers use these technological methods for distributing their product to other locations, or for simplifying communication among employees. The Wall Street Journal, for example, publishes a daily Asian edition in Singapore by creating pages with a computerized phototypesetting machine and transmitting them via satellite to a printing press in Singapore (Agee et al. 1985).

And, an in-house videotex system (internal and interactive) named "Color Connection" helps to solve the problems of coordinating color press runs at the Baltimore Sun. Using an IBM Series/1 as a mainframe and IBM PC-XTs stationed in various departments, such as advertising, editorial and production, information put into the system by one department is available to other departments. According to Baltimore Sun computer services director (even technical-oriented titles are new) James P. McCrystal (1986, 16c), "If editorial has a color run scheduled for a particular day, it enters the information so that production can begin planning the press run and advertising can sell against the schedule." Many employees use the system for sending messages and reference, but only designated persons can change information.

The modern newspaper is made up of different types of content. Some of this content is news, sports, feature, display and classified advertising, entertainment listings and stock reports. Studies of the

uses and rewards users derive from the media, however, characterize the content of a newspaper as 1) surveillance (movie listings), 2) social connection (informed conversation at cocktail parties), 3) opinion formation and 4) escape (entertainment) (Lasswell in Severin and Tankard 1982). Thus, consumers buy newspapers for many purposes. In addition, users have taken these unrelated types of information and formed their own individualized packages. Some readers look only at movies and restaurant listings while others read just the headlines or advertisements. It is a different product for each user. Put into a single package, it attracts different readers for different reasons (Compaine 1982).

Technologies that transformed the internal methods for producing newspapers in the 1970s--computers and display terminals--are beginning to reach out to the world of the consumer. Systems are being installed to create what are called electronic newspapers, videotex, database publishing and electronic publishing. Consumers can receive the contents of a newspaper through an "electronic highway" of telephone lines, cable or broadcast transmission for viewing on their television or personal computer screens. Instead of buying the whole newspaper, parts of it (in online form) can be broken off and sold to different members of society for a profit (Compaine 1982).

Mass Media expert Ben Compaine (p. 80) noted that the newspaper can be described with many of the same terms used for videotex systems. The daily newspaper of today is an information product that:

- contains as many as 30 million bits of information;
- handles both text and graphics;
- is randomly accessible;
- is online 24 hours a day;

- is updated at least once a day;
- weighs less than three pounds and is completely portable;
- usually costs 25 cents or less per hour of use; and
- is easy to use, i.e., "user friendly."

With videotex, newspaper publishers now can consider providing consumers with the content already stored in their computer via electronic means. There is the opportunity to reduce the emphasis on the "paper" part of the label without changing the essential nature of the information function (p. 28).

Some publishers have begun to see themselves as brokers of information that can be distributed through a variety of channels. Packaging, storing and transmitting news and information is a part of their business that can help them in taking advantage of electronic services, an industry that has its greatest impact on newspapers (Smyth 1982; Zerbinos 1983; Agee et al. 1985).

Publishers have become involved with videotex not in hopes of immediate monetary returns, but for added exposure, publicity and whatever advantages that come with being the pioneers, while others have jumped into it because they felt threatened by videotex and are worried about their survival, especially in the areas of news gathering and advertising (DeFleur and Ball-Rokeach 1982; Sigel 1983; Davenport 1984; McManus 1986; Arlen 1987).

Several large newspaper organizations, such as McClatchy Newspapers, Chronicle Publishing, Lee Enterprises, Knight-Ridder and Times Mirror, have failed at being owners and operators of videotex systems similar to those of CompuServe and The Source.

Mead Data Central has a particularly successful personal computer-based information transaction service called StarText is supported by

the Fort Worth Star-Telegram and has more than 2,550 Dallas-Ft. Worth subscribers, including 80 public schools. And, althought Knight-Ridder did not do well with Viewtron, its VU/TEXT has grown into a videotex system offering about 35 newspapers, 2,000 business publications and 10,000 publically-owned company profiles suscribed by businesses, universities and government agencies (VU/TEXT 1986).

Being a videotex system operator is a whole new ballgame for newspaper organizations. It takes considerable effort and financial support to gather transmission lines, decide on a standard technology and types of terminals, influence information providers to supply news and information, provide transactional services such as banking and shopping, publicize the system, and fence with legal and ethical situations not usually met by a newspaper organization.

However, providing information--the usual business of newspapers--for someone else's videotex system is easier. A glance at the recent indexes of Directory of Periodicals Online under the "newspaper" entry and in Directory of Online Databases (Chung 1985) under "news" shows far more newspapers acting as information providers than system operators. The most recent Directory of Periodicals Online lists 242 newspapers that supplied electronic news and information in 1985, and since the number of databases grew from 2,453 in 1985 to 3,369 in 1987, then it is safe to assume that the number of newspapers as information providers also increased. In addition, many of these newspapers supply news to more than one system, and those providing news to cable subscribers (on cabletext) are not included in the directory.

JUSTIFICATION

It is difficult to predict the amount of use of an innovation, but even more difficult is to predict the nature of its use (Winsbury 1981). New technologies succeed not only on the merit of their technical structure, but people must be convinced that using the innovation is worth their time and money. Ahlhauser noted that facsimile did not go over well in 1933-35 (p. 5), and that a 1973 test of AP main news on a nationwide computer network at Stanford never got beyond the experiment stage (p. 9). But, facsimile did not go over well in 1933 apparently because of people's habits, and currently AP's 50 state wires and its national service have been available on videotex for several years. Lifestyles and attitudes have changed considerably also within the past 11 years as people become more accustomed to newer technologies.

Ahlhauser surveyed Associated Press Managing Editors (APME), who responded that all but one of the statements about readers reactions were considered a "big problem."

At the time of Ahlhauser's survey in 1976, many editors didn't know about videotex. It was only in 1979 that the first major videotex system (Great Britain's Prestel) was publically introduced to consumers. Since then, many experimental and successful videotex systems have emerged in the United States.

Studies in the early 1980s showed that news often is among the most desired services for consumers of electronic services and that readers like using videotex -- findings contrary to editors' opinions in Ahlhauser's study (Williams 1981; Smyth 1982; Butler and Kent 1983; Electronic Publishing 1983; Elton and Carey 1983; Paisley 1983; Carey

1984; Ettema 1984; Atwater et al 1985; Brown 1985; Heeter et al 1985).

Ahlhauser's study of editors' opinions about readers' reaction to the medium set the stage for other professionals and researchers in mass communication, and although the study is over ten years old, its results still are cited in recent research. It is time to update information and known attitudes about this fast-moving communication technology.

METHOD

Editors

One of the purposes of this study was to upate the objectives of Ahlhauser's 1976 survev to find out if editors' perceptions of readers' reactions to videotex had changed over the past decade now that the videotex industry has grown.

An area of concern in Ahlhauser's study was "problems encountered (or perceived) by readers in accessing, reading, and finding satisfaction in electronic delivery of the news." (p. 143) There were ten statements about "readers' problems which the editors were asked to rate as to degree of problem." Respondents were instructed to rate the following statements as problems for readers on a scale of one to five, from "big problem" to "no problem" (p. 144).

1. Readers must position themselves at a TV set instead of wherever they want to read.
2. Readers may want to hold the "paper" in their hands.
3. Readers can't keep clippings of stories.
4. Readers can't see several stories together on a full page.
5. Viewers may have difficulty seeing and reading type on the screen.
6. A viewer may want more information on the TV screen than it can hold.

7. Several successive TV screen pages may not sustain reader interest.

8. [Videotex] presently provides no photographs.

9. Readers may find that [videotex] requires too much button-pushing.

10. Readers may think that [videotex] articles are harder to find than articles in a newspaper.

Just as replicating research should, this one followed the original study's main objectives, survey design and population sample. In an effort to alleviate some negative wording, the current study asked editors to respond to almost identical statements using a Likert scale of Strongly Agree, Agree, Disagree and Strongly Disagree. "No Opinion" responses were excluded in an attempt to force editors to answer with what they felt was true "most of the time."

Statements appeared in random order on the survey, were updated and formatted so editors would think in first person. For example: "I believe that readers want more information on the screen than it can hold." Or, "It is more important to readers to hold the "paper" in their hands, rather than to read the news on a videotex screen." (See Ahlhauser's items 6 and 2.)

As Ahlhauser did eleven years ago, questions were mailed to members of Associated Press Managing Editors of daily newspapers. The questionnaire package included, as Ahlhauser's did, an explanation about and photograph of videotex. Questions were pretested and follow-up surveys were sent to encourage responses.

Readers

Ahlhauser (pp. 142 and 200) asked editors for their opinions of "reactions to be expected in readers . . . if this kind of news

delivery should be used." Therefore, the second object of this study was to compare 1976 editors' predictions to 1986 readers' reactions.

Readers' survey items were the same as 1987 editors' items, which were identical to the objectives of 1976 editors' items. (Terminology, however, was updated.) The only difference between 1987 readers' and editors' statements was that editors were asked their opinions about readers, and readers were asked for their own opinions. For example, an editor's item was phrased, "I think it is a problem for readers that videotex does not provide photographs with news," whereas the same item for readers was expressed as, "It is a problem for me that videotex does not provide photographs with news."

This research needed people who were somewhat familiar with the medium and had formed opinions about it. This does not mean that they liked using the medium nor that they used it for news purposes.

Previous videotex research subjects have been students in laboratory environments, looking at only news (or whatever the object of the study) for a controlled amount of time, or were experimental videotex users whose activities on a service were monitored or recorded by the system operator.

The current study, however, looked at a non-experimental, non-laboratory situation with real videotex users who may be neophites or experts with the technology and service; who may not enjoy using the service or like the way information is presented, but find other advantages for using it; and who do or do not look at news on videotex. These are the people who were not studied in previous research.

It looked at people who use CompuServe Information Services, the largest videotex service in the United States and the second largest in the world after France's Telematique services. As Paul Lawrence Sauer noted in his 1985 dissertation, future research should include a broader cross-section of the population using a service like CompuServe. Sauer added that the use of a videotex system such as this would expand the focus of research to a wider cross section of the population, and also extend the generalizability of the results by moving the laboratory setting from a classroom environment to a home setting where most videotex usage for information would likely occur (p. 200).

CompuServe has 400 different services for its 400,000 users. Only one of these 400 services is the presentation of news and information such as that found in newspapers. Not all of these people enjoy or find advantages to using videotex for news.

The survey was uploaded into 117 different areas of CompuServe. Introductions detailed the procedure with which respondents could answer the questions and return them to the researcher either by electronic mail to AEJMC FORUM or by Post Office mail. Questions were pretested and follow-up requests were made.

RESULTS AND DISCUSSION

About 48 percent (114) of the managing editors responded to the 302 surveys sent. Of the respondents, 76 percent indicated that they had seen or used a videotex system, 41 percent said their journalists currently used an information database, 42 percent said their newspapers provided or had considered providing news on a videotex

system and 18 percent were at newspapers that had electronic morgues for storing stories.

Fifty-two percent of the 104 responding audience members indicated that they used videotex regularly for news purposes, but more than 75 percent said that it had not changed their previous habits of obtaining news from radio, television and/or newspapers. Audience members spent from 15 to 20 minutes daily with the newspaper, which was their main source of local and business news and was about equal with television as a source of national and international news.

(Results were rounded to the nearest whole number for discussion purposes, but were rounded to the nearest tenth within the tables.)

1976 and 1987 Editors' Perceptions of Problems

One of the objectives of the study was to update Ahlhauser's 1976 survey of managing editors by comparing their opinions to those of current managing editors. These are not editors' personal opinions about videotex, but their perceptions of problems encountered by readers in accessing, reading and finding satisfaction in electronic delivery of the news.

It is possible to compare percentages, but not response means, because Ahlhauser asked for readers' problems to be rated on a five-point scale as to degree of problem (1 = No Problem and 5 = Big Problem), whereas the current study used a four-point scale asking whether they agreed or disagreed with the statement. General comparisons can be made because Ahlhauser's first two ratings of 1 and 2 are similar to this researcher's first two ratings of 1 and 2, Ahlhauser's rating of 3 (Neutral) is dropped because there is no

neutral in the follow-up study, and his 4 and 5 (the last two) ratings are comparable to the current study's 3 and 4 (the last two) ratings. Ahlhauser (pp. 153-60) also interprets his results by dropping neutral opinions and combining the remaining four groups into two.

Editors were not asked to rank the problems in order of one to ten, from the greatest to the least important problem. Their individual responses, however, showed how editors, as a group, felt about each aspect of videotex. Many of these problems differed by only a few percentages.

Results

Managing editors in 1976 indicated the three most important problems to be encountered by readers using videotex were: 1)no photographs, 2) no clippings and 3) finding articles. Least important ones (but still problems) were: 1) no news "paper," 2) one article per page and 3) button pushing (See table 1).

In 1987, the three most important concerns were: 1) interest after three screens, 2) amount of information on the screen and 3) sitting at a terminal. Least important ones were: 1) printing instead of clipping stories, 2) reading type and 3) finding articles.

Within eleven years, editors changed their perceptions about readers' reaction to different aspects of videotex. Editors in 1976 and 1987 did not agree on any of the statements as being the three most important problems, nor on which ones were the least of problems. In fact, two items seen as important by most editors in 1976 were seen as important by the least number in 1987.

Perhaps more importantly, more editors in 1987 than 1976 were concerned about each aspect of videotex. Editors in 1987 thought all

Table 1

1987 and 1976 Managing Editors
Perceiving Aspects of Videotex as "Problems" for Readers

Item	1976 Editors (%)	1987 Editors (%)
Positioning at terminal	62.4	81.9
No news "paper" to hold	45.4	79.2
Printing, not clipping stories	72.1	61.4
One story per screen	52.7	80.4
Seeing and reading type on screen	67.0	67.8*
Amount of information on screen	68.2	85.3
Interest waning after three screens	69.4	85.7
No photographs	81.8	79.1*
Button-pushing	59.6	68.9
Finding articles	71.3	66.9*

percentages are rounded to the nearest tenth

* Only these three items are not significantly different ($p = < 0.05$).

n = 258 1976 managing editors
n = 144 1987 managing editors

but three items were more of a problem than did 1976 editors.

Discussion

Innovation diffusion studies show that when an idea or technology is introduced into society, attitudes and reactions usually are suspicious and negative, but that those negative attitudes become more accepting after the product has been around for a while. In 1976, the only videotex screen most of the responding editors had seen was the picture Ahlhauser sent with his survey. Eleven years later, in 1987, about 76 percent had seen or used a videotex service, 41 percent indicated their journalists used an information database, 42 percent said their newspapers provided or considered providing news on a videotex system and 18 percent worked for a newspaper that had electronic morgues for storing stories. Also, probably more editors and audience members used personal computers and terminal screens because they are more common in newsrooms and cheaper to buy. According to these editors' experiences and the innovation diffusion theory, 1987 editors should have rated all of these statements as being less of a problem than did 1976 editors, instead of vice-versa.

Ahlhauser (p. 182) predicted that with so many people working in information service positions, such as bank tellers, sales persons, reservations clerks and librarians, in which they regularly exchanged information between computers and display terminals, there would be an increased public receptivity to videotex as a medium for news. And, as previous chapters have shown, the use of videotex and online databases has grown tremendously. Yet, more editors in 1987, than those in 1976, perceived readers as having problems with the medium.

Almost anyone in 1976 who heard about "electronic newspapers" and

videotex will remember that talk about the subject was combined with experts' speculation about the demise of traditional print publishing. Perhaps newspaper editors then more readily accepted what the experts said about the replacement of print with electronic. Also in 1976, the public was experiencing shortages and high prices of gasoline and oil, and editors were feeling the financial strain of publishing a newspaper. It is possible that because of this strain, editors were more open to the future of an electronic newspaper that would alleviate high distribution and production costs.

Perhaps in 1976, editors did not realize the potential of videotex to reduce their gatekeeping jobs and the impact it could have as a serious competitor to the traditional print industry. Yet, 1987 editors were more critical of videotex. About 86 percent of the 1987 editors had four years or more of college education and about 90 percent had worked full time ten years or more in newspapers. Thus, it is relatively save to assume that many of them did not relish the idea of having their journalism education and training become obsolete.

The researcher was curious about the unexpected results of the comparison (that more 1987 editors rated all but three items--printing, no photographs and finding articles--as being a more of problem than did 1976 editors), and, therefore, took all of the 1976 neutral ratings and added half of them to the "problem" category. But even the addition of these numbers did not enable 1976 editors to equal or surpass 1987 editors' perceptions of problems except on two items not already noted (reading type and pushing buttons).

1976 Editors' Predictions and 1987 Readers' Reactions

Ahlhauser (pp. 142 and 200) asked 1976 editors for their opinions of "reactions to be expected in readers . . . if this kind of news delivery should be used." Therefore, a second objective of this research was to compare 1976 editors' predictions with 1987 readers' actual reactions.

Results

The three items most 1976 editors saw as the biggest problems readers would encounter were: 1) no photographs, 2) no clippings and 3) finding articles. Least problems were: 1) no news "paper," 2) one article per page and 3) button pushing (See table 2).

More readers responded that their biggest problems were: 1) sitting at a terminal, 2) seeing one story per screen and 3) having no photographs. The three least problematic were: 1) button pushing, 2) reading type and 3) holding no news "paper."

Editors in 1976 correctly perceived that one of the three most important problems for readers with news on videotex was that it did not provide photographs. They also accurately perceived that two of the three least important problems were pushing buttons and holding the news "paper."

Discussion

All of the items were regarded by more editors than readers as being a problem. If the number of readers indicating a problem was doubled, it still would be less than the editors in all but two of the statements (positioning at the terminal and one story per screen), thus showing that many of the readers did not think of these different aspects of videotex as problems.

Table 2

1976 Editors' Predictions and 1987 Readers' Opinions about Aspects of Videotex as "Problems" for Readers

Item	1976 Editors (%)	1987 Readers (%)
Positioning at terminal	62.4	48.2*
No news "paper" to hold	45.4	20.9
Printing, not clipping stories	72.1	27.5
One story per screen	52.7	36.5
Seeing and reading type on screen	67.0	20.3
Amount of information on screen	68.2	33.0
Interest waning after three screens	69.4	24.6
No photographs	81.8	36.4
Button-pushing	59.6	10.1
Finding articles	71.3	23.5

percentages are rounded to the nearest tenth

* Only this item is not significantly different ($p = < 0.05$).

n = 258 1976 managing editors
n = 140 1987 readers

Results of both comparisons show that 1976 editors and 1987 readers were closer in both their identification of the greatest and least problems, and that 1976 and 1987 editors agreed more on the degree of importance of each problem.

1987 Editors' Predictions and 1987 Readers' Reactions

And, 1987 editors' predictions about readers' reactions was compared to readers' opinions about using videotex

Results

A comparison of Tables 1 and 2 shows that 1987 editors' predictions and readers opinions agreed that positioning at a terminal was a great problem and that seeing and reading type was one of the least problems for readers. Thus, 1987 editors and readers' agreement on most important and least important items was better than 1976 and 1987 editors, but not as good as 1976 editors and 1987 readers.

Discussion

Readers did not worry as much as editors thought they did about problems associated with using videotex, perhaps because they found advantages to using it, whereas perhaps editors subconsciously thought it would be a detriment to their newspaper business if readers used it. Also, readers could have used videotex for specialized information or specific reasons, whereas editors were thinking more about casual reading habits. It is possible that another reason readers were not as concerned about problems is because they had become familiar with digital technology in the past eleven years -- but then, so have editors.

It is difficult to speculate on other reasons for the differences

in concerns because many of the background and demographic questions in the 1987 survey were not asked in 1976.

Summary

Interestingly, more editors in 1987, than in 1976, perceived seven of the ten factors as problems for readers using videotex. Within eleven years, editors changed their perceptions about readers' reactions to different aspects of videotex, and more editors became concerned about each aspect of videotex. Editors in 1976 and 1987 did not agree on which factors were the most or least problematic for readers. Two items seen as problems (clipping stories and finding articles) by most of the 1976 editors were considered problems by the least number in 1987. Instead, statements about interest waning after three screens, amount of information displayed on the screen and sitting at a terminal were considered the greatest problems for readers by 1987 editors.

All of the items were perceived as problems for people by more editors than readers. If the number of readers indicating a problem was doubled, it still would be less than the editors in all but two of the statements (sitting at the terminal and one story per screen).

Not only did more 1976 editors, than those in 1987, accurately perceive which aspects were the greatest and least problems for audience members, but the number indicating a problem for each factor was closer to that of readers, too. Thus, editors eleven years ago were better than current editors at perceiving audience reactions to videotex.

CONCLUSIONS

Editors have grown more conservative about the idea of people using videotex. Readers, meanwhile, seem to think it is not a problem to use.

Videotex technology and its content still are in transition, and so is the term "videotex." Because many associate videotex with the unsuccessful services of Knight-Ridder and Times Mirror, using expensive Sceptre terminals and NAPLPS graphics, some videctex companies are calling the technology "online access" or "information retrieval databases" to set themselves apart from the connotation of failure. The important element, however, is that no matter what the name, the technology is still the same type -- information from a mainframe displayed on a personal terminal at the request of the user. (But, if the term "videotex" remains, it would be highly convenient to abbreviate it as "VT" as is done with TV and CD.)

Videotex organizations should communicate more with newspaper editors about the nature of videotex, and show them that although it did not succeed in the directions first predicted, it has succeeded in other manners not in direct competition with newspapers. It has changed, just like most new technologies, and will continue to do so for an indefinite time.

Newspaper organizations should not be concerned that videotex would take away their subscribers because the results show that videotex users: 1) have not changed their previous news acquisition habits, 2) use the newspaper (or television) as their main source of information and 3) have different news purposes for the newspaper and videotex.

Many have ignored or pronounced videotex as dead. However, as Becker (1983) noted, the dangers of over confidence in predicting what people will do in future years is illustrated by the reporter who saw a demonstration of an early television system at the 1939 World's Fair. "The problem with television," he concluded, "is that the people must sit and keep their eyes glued on a screen; the average American family hasn't the time for it. . . . Television will never be a serious competitor of radio" (Newsweek 3 July 1978, 73). Not only is it difficult to predict the amount of use of an innovation, but even more difficult to predict is the nature of its use (Williams 1981).

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