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NEWS ON VIDEOTEX:
VIEWTRON, KEYFAX AND GATEWAY
EXAMINED AND COMPARED TO NEWSPAPERS

presented by
NATALIE A. BROWN

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of the requirements for

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NEWS ON VIDEOTEX:
VIEWTRON, KEYFAX AND GATEWAY
EXAMINED AND COMPARED TO NEWSPAPERS

By

Natalie A. Brown

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ABSTRACT

NEWS ON VIDEOTEX: VIEWTRON, KEYFAX AND GATEWAY EXAMINED AND COMPARED TO NEWSPAPERS

By

Natalie A. Brown

This study examined videotex news content on Viewtron, Keyfax and Gateway for three one-week samples. The diversity, immediacy and selectivity of the new medium was explored by examining sources, story times, topics, length and index positions of over 3000 videotex news stories for the sample period. The stories on each of the systems were compared with coverage by the newspapers of the same geographic areas as the videotex services. The Miami Herald, the Chicago Tribune and the Los Angeles Times were used for the comparison.

Viewtron had over 2000 stories available during the sample week, Gateway over 600 and Keyfax over 200. None of the videotex systems provided original stories; most were from wire services. From 21 to 33 percent of the videotex stories were also found in the corresponding newspaper. The newspaper, however, was nearly a day and a half behind the videotex systems in breaking the stories. Few cues were used by the videotex systems to convey prominence, however, those used corresponded to prominence measures employed by the newspapers when compared story to story.

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INTRODUCTION

The Purpose

The capacity of a computerized database is almost unlimited, allowing a variety of in-depth news items to be available. Users can access information at their on-line terminals immediately after it is entered in the central computer database. Items are subdivided into topic areas and offered in menus or indexes. Diversity, immediacy and selectivity are areas often identified as advantages of retrieving news and information from videotex rather than from the newspaper. This study will examine these tenets of the new medium by systematically measuring the news content of the three major consumer videotex systems presently available in the United States.

Background and Literature

Electronic text originated in the early 1970s in Great Britain where both teletext and videotex services have been available to consumers for over a decade. (Teletext is a one-way form of textual and graphic information which, when broadcast, uses the verticle blanking interval of a television signal for transmission, or a cable television channel when offered through a cable system. Videotex is an interactive form of electronic text with color and graphics that uses telephone lines or two-way cable for transmission.) Experimental teletext and videotex trials did not begin in the United States until the late 1970s, and unlike the European and Canadian services, the U.S. svstems have been

operated by private enterprise and are not government sponsored.

Videotex was known as an "electronic newspaper" when it first emerged in the United States. Videotex news was envisioned as a video form of newspapers providing full text of an unlimited number of publications.¹ As commercial systems were begun, it was apparent that videotex news did not look like news in newspapers since only a portion of the text for a story, perhaps two or three paragraphs, can be displayed on the screen at a time. Yet, at the same time, considerable attention and money have been devoted to the medium believed by many to hold great promise for news. While newspaper publishers and editors realize that videotex is not likely to replace traditional newspapers as they feared when videotex began to emerge in the United States, they still are not ignoring the potential of this new medium. Many newspapers, such as the Advertiser-Tribune in Tiffin, Ohio, and the Courier Journal and Louisville Times, offer various electronic text services. It has been reported that a billion dollars have "gone down the drain in failed videotex and teletext ventures," yet many of the systems and trials continue.² The director of planning for the Durham (N.C.) Herald and Sun, David Haughey, expressed what many newspaper people have already begun when he wrote, "The growing power of videotex makes it probable that, before the end of the century, most news operations that publish the newspaper will also be meeting the information needs of the public through electronic information systems."³

Yet videotex news has not been clearly defined. While some studies have reported on videotex news trials and services, few

have systematically examined the news content of electronic text services. In a comprehensive look in 1981 at teletext and viewdata systems in the United Kingdom and the Netherlands, David Weaver analyzed and described "videotex journalism" in terms of the journalists, the flow of news and information and its relationship to other media.⁴ (His findings will be discussed in more detail as they relate specifically to the research questions explored in this study.)

In an early study, John Ahlhauser assessed the advantage of teletext as a new means of news dissemination, especially in light of the rising costs of print and distribution.⁵ Several reports have been published of the 1982 Associated Press and CompuServe⁶ experiment involving 11 newspapers and lasting for two years. News from the participating newspapers was made available on CompuServe, an on-line, text-only news and information service accessible through personal computers. Sarah Stone argued that the newspapers had been unimaginative and unsuccessful in their attempt at creating a new product.⁷

David Dozier examined videotex news and information retrieval services in terms of newspaper newsreading theories. He argued that the retrieval methods necessary for most electronic text systems are inconsistent with the type of casual, unstructured newsreading that is characteristic of much print news use.⁸

Other studies have focused on who the most likely users of electronic text news systems will be. Tillinghast and Visvanathan identified "computer oriented" individuals as being the most likely users of "electronic newspapers."⁹ Becker also identified

individuals with positive attitudes toward computers as the most interested in receiving electronic text services and found that interest was also higher for those people who presently did not use newspapers or television to obtain news.

In an electronic text news study conducted at the Michigan State University Communication Technology Laboratory, electronic text news was evaluated positively by subjects who used Viewtron news as their only news source for a week. Videotex news appealed to both light and heavy users of traditional news media and was strongly preferred to newspapers for content and process functions (scanning headlines, finding specific stories and getting

details).¹¹ In another study of videotex, also conducted by researchers at the MSU Communication Technology Laboratory, news was the second most used topic on the videotex service during "first exposures" to the system by 96 individuals. (Shopping was first.)¹²

In the second CTL electronic publishing study news was again second in popularity, this time to games, by subjects using videotex over a four-week period.¹³

Most of the other studies that are available tend to focus on the marketability of systems and on the most desired services. The proprietary nature of most videotex research limits the availability of findings about consumer services. Carey's synopsis of the findings of commercial electronic text ventures may be summarized as follows: (1) consumers like electronic text services, but they do not want to pay a lot of money for them; (2) consumers' most desired information services include news, weather, sports, business information, entertainment/games and TV

guides; (3) electronic messaging, where offered, is popular; (4) users have been predominantly upper income, heavy users of other media and information generally; and (5) most users are somewhat younger than the general population.

Diversity

The number of entertainment and information choices for consumers continues to increase as the media environment grows. Cable television, now in nearly 43 percent of U.S. households, offers a 24-hour news network that nearly 30 million households receive. Households with personal computers, about 14 percent of U.S. homes in early 1985, can access news and information from a variety of on-line sources. And, of course, there still is newspaper, television and radio news.

Videotex offers news in a different form, most certainly, but what is new and different about the content of this "hybrid" is less certain. The sources of news stories available on each of the three videotex systems are examined to begin to explore how news stories on videotex are different from those sources cited in newspapers.

Q1: What are the sources of news stories
on Gateway, Viewtron and Keyfax?

To further explore the tenet that videotex offers more diversity than traditional media, the variety of stories on each system will be categorized according to story topics derived from a previous study of videotex news.

Q2: What topics do news stories on each
videotex system most frequently include?

In addition, the various countries reported on videotex will be examined.

Q3: What countries do news stories on each videotex system most frequently involve?

Videotex has the potential to overcome the criticism that newspapers do not give enough time or space to international events unless they involve countries in turmoil or crisis. This question (Q3) explores how well videotex is fulfilling this potential by examining the variety of countries reported on each service.

Because of the potential of videotex as a competing news medium, articles in newspaper trade publications have followed the progress of evolving electronic text services and have recently begun to explore the new role of videotex journalists. Most of the complaints voiced by electronic text journalists about their assignments focus on lack of original reporting responsibilities. The dissatisfied journalists say they are merely carrying out a secretarial or typists' role performing "mechanical" work that does not require many journalistic skills. Videotex journalists primarily edit copy from wire services and other syndicated news sources -- a form of "electronic cut-and-paste"-- and do no original reporting. Weaver reported the same finding when he wrote that electronic text systems generally "do not provide 'new' information not available from other media, but serve more of a information 'distribution' function than a news 'gathering' function."

Despite the fact that videotex news content is not original or distinct from that available in newspapers, competition with

other media offering news, primarily newspapers, concerned those people involved in the newspaper industry when videotex first appeared in the United States. In fact, some early commercial studies reported that newspapers had much to fear from videotex.²² Although most newspaper people are less worried than during the early days of videotex, many news people warn that the new medium should not be ignored and that newspapers should take part in electronic text ventures before others with less news expertise do so.²³ And, perhaps more important, is the promise that the costs of electronic components, component failure rates and magnetic storage will continue to rapidly decrease and circuit density greatly increase. This means that the electronic newspaper will eventually become cheaper for publishers to produce and disseminate.²⁴ And, since videotex could offer more--"an unlimited database"--people would prefer it to newspapers and television for news. Weaver, however, found in his European study that the teletext and videotex systems were more limited in their offerings when compared to the "full-sized newspapers."²⁵ The next research question examined this issue as it applies to U. S. videotex systems by directly comparing the number of videotex and newspaper news stories to determine which medium actually offers more news. (The newspaper with the largest circulation in each geographic area where the videotex service is based was used for this comparison.)

Q4: How does videotex compare to newspapers
in amount of news offered?

To further compare news on videotex and in newspapers,

individual stories available on each medium each day were compared to determine if the same stories were available in both media.

Q5: Are the same stories available on videotex and in the corresponding newspaper?

This area of testing will be of interest to newspaper owners and operators as their print product faces yet another form of competition for readers. Although newspapers still reach about the same number of people as they did nearly two decades ago, the frequency with which those people are reached has declined.²⁶ The Washington Journalism Review reported that a Gallop Poll indicated a trend in the 1980s toward increasingly more people in certain segments of the population not using a newspaper at all. The survey found that less than half of the group of people between the ages of 18 and 29 read any newspaper and watches less television news than any other group.²⁷

Thus, when videotex trials and experiments became more numerous in the United States, many debated how this new medium would fit into the news scene -- especially whether it would "complement" or "supplement" newspapers, which are losing credibility as well as readers.²⁸ Most of the recent literature (since the "blue-sky" predictions have subsided somewhat) indicates that the new medium will complement rather than supplement newspapers. This reason stems from the realization that the screen has limitations not as strongly felt by print. Aumente described this in The Quill:

It is a technology of promise and contradiction, of limitless horizons and claustrophobic spaces. Journalists have an ocean of news and information in giant computers that they can instantly update and transmit nationwide. Yet they must deliver it

a cupful at a time -- screen by screen. The screen can hold sixteen to twenty-four lines of copy, forty characters across; which means anywhere from fifty to seventy words per screen.(29)

Thus, print media still hold at least one advantage over electronic text, making it doubtful that newspapers will ever be replaced by videotex and teletext. Instead, electronic text services will probably complement traditional media. Whether these services will be attractive to those showing little interest in news remains to be seen.

Immediacy

A second major advantage of videotex news is the ability of the medium to offer constantly fresh, up-to-date news. Aumente described videotex's speed over other media:

The readers are no longer bound by the fixed-time tyranny of radio and television news broadcasts with lockstep sequence. With all its speed, broadcasting still cannot be updated as quickly as teletext or videotex, the two electronic publishing formats. Newspapers, with last night's news delivered this morning, are even further behind.(30)

Whether newspapers are behind videotex in breaking stories and if so, how much, was tested directly by comparing the time a story was entered on the videotex system with the date and time the same story appeared in the newspaper.

Q6: Do most news stories appear on videotex before they are available in the newspaper serving the same geographic region?

Given the fact that most newspapers' deadlines are several hours before the papers reach the newsstands, it is expected that most videotex stories will be available on the system before they appear in print.

Selectivity

To use videotex to read the news, a menu system is utilized, where the user is presented with indexes and subindexes of news categories. A number corresponding to a desired category is entered by the user, then an index of stories in that category appears. The first news index might include choices of international, national and local news. If the user selects local news, for example, the next frame may provide yet another subindex of areas from which to choose, perhaps by county, eventually leading to story headlines.

Because more of a selection process is involved -- the user has to make a choice and push a button to be able to receive anything -- it has often been said that with videotex, unlike with other mass media, gatekeeping is in the hands of the audience. News consumers make their own choices when they please and are no longer confined to the limited number of stories editors choose for the newspaper newshole or to those stories covered in a 30-minute evening broadcast. Fielding and Porter described these changes brought about by videotex:

Finally, editors will find themselves playing new roles as they work electronic information delivery. Traditionally they have been the gatekeepers, deciding what goes into the limited newshole. The newshole of an electronic newspaper is limited only by the storage capacity of the computer system. Information of interest to a small segment of the audience can now be stored and delivered only to those people in it.³¹

The extent to which audience members are truly the gatekeepers is explored by examining the salience cues videotex news editors use to draw attention to news items. The agenda-

setting approach maintains that audience members are aware of the techniques and cues used by the media to "play" news items, such as large headlines, placement and use of visuals, to convey

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importance. Since videotex is a hybrid of other media, it is likely that videotex will use similar techniques found in print to direct attention. One such similar cue may be in the ordering of stories within indexes, with the story in the first position being the the most important story of the day. This is explored by examining the time which each story was entered into the database and made available to subscribers.

Q7: Are videotex news stories on each service ordered according to importance?

Ordering is only one technique that could be used to convey importance. Other possibilities include larger treatment in indexes, longer treatment than given most other stories, multiple listing across indexes or listing sidebars or several stories of the same topic together.

Q8: Do editors play some stories differently than others through ordering, multiple listing across indexes, longer treatment, or other types of special treatment?

To further explore the editorial treatment of videotex news, the prominence of those stories found on the videotex system and in the corresponding newspaper was compared. The prominence factors used for the newspaper stories are ones traditionally considered in newspaper research, but are borrowed largely from a study of local newspaper coverage of Mexican Americans. The measures include page placement, headline size, photographic or graphic accompaniment and space devoted to the story (measured in

33

square inches). Videotex stories with degrees of prominence similar to the newspaper version would suggest that videotex editors are telling readers which stories are most important.

Q9: Are similar editorial decisions made for videotex stories and newspaper stories?

And finally, the news offerings of the the three videotex systems used in this study -- Gateway, Keyfax and Viewtron -- are compared.

Q10: How do the news offerings of Gateway, Keyfax and Viewtron compare?

METHODOLOGY

The Systems

The systems used for this study are the three major general consumer videotex systems with full color and graphics available in the United States: Keyfax, based in Chicago; Gateway, based in Los Angeles; and Viewtron, based in Miami.

Keyfax began in Chicago in April 1981 as a broadcast teletext magazine on station WFLD-TV. The service, owned by Field Electronic Publishing, a Field Enterprises subsidiary, was touted as the first commercial teletext experiment in the United States.³⁴ The teletext magazine was also broadcast at night when the station previously signed off. "Nite Owl" was similar to scrolling cabletext.³⁵ In spring 1982 Field announced its teletext service would be available nationally over the vertical blanking interval of super station WTBS, making it a "National Teletext Magazine."

Soon after the Keyfax teletext service began operation, Field Enterprises, Honeywell Inc. and Centel Corp. formed KEYCOM Electronic Publishing as a joint videotex venture, with Centel the majority owner. In January 1984, News America Publishing Inc. acquired Field Enterprises' share of Keycom as part of its purchase of the Chicago Sun-Times and other Field Enterprises properties.³⁶ The videotex system, named Keyfax Interactive Information Service, was launched in 1984. News America pulled out of the venture in October 1984 and later, in May 1985,

Honeywell did the same, making Centel exclusive owner of Keycom.

Keyfax is available on a specially designed North American Presentation Level Protocol Syntax terminal, the Commandex, which sells for about \$350. The service is also available through personal computers.

Keyfax information and services are divided into six categories: Inform, Mail, Reserve, Bank, Shop and Special. News falls within the Inform section of the service. Figure 1 presents the Keyfax news menu. This study is concerned with the stories within the Summaries, World, Nation and Metro/Midwest indexes, which are starred.

Figure 1

KEYFAX INDEX STRUCTURE

1 News	2 Business News
*1 Summaries	1 Executive Digest
*2 World	2 World/Nation
*3 Nation	3 Midwest
*4 Metro/Midwest	4 Your Business
5 Metro Q & A	5 Manager's Edge
6 Capitol Q & A	6 Stocks
7 Congressional Vote Tallies	7 Commodities
8 Speak Out	8 Currency / Metals
9 Keyfax Poll	
10 People flash	

Gateway began in 1982 by Times Mirror Videotex Services (owned by Times Mirror) as a field test in the Orange County, California, area. The test included nine months of in-home use by 350 consumers, focus groups and personal interviews. Times Mirror reported that a large percentage of participants in the home trial

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elected to become paid subscribers after the free-trial period.

The full commercial system began in fall 1984. The price to subscribers is \$29.95 per month, which includes rental of an AT&T Sceptre terminal and access to the service. 39 Subscribers are also required to pay telephone charges according to use of the system. Software to receive Gateway through personal computers is 40 projected to be available in summer 1985.

Gateway topic categories include: Banking and Investing, At Home, Games, The Mart, News, On The Go, and Electronic Mail. The news menu structure is presented in Figure 2, with those topics that this study examines indicated with a *.

Figure 2

GATEWAY INDEX STRUCTURE

"Page 1"

*1 Top Stories
*2 Summaries
*3 News Topics
4 Features
*5,6,7 Story Headlines

2 Summaries

*1 Latest News 1 People
2 Weather
3 Business
4 Sports
5 Orange County
6 Features

4 Features

2 Miscellaneous
3 Under 21
4 Summaries
5,6,7 Story Headlines

3 News Topics

1 Weather
2 Business
3 Sports
4 Features
5 World
6 Nation
7 California
8 Orange County
9 Government
10 Opinion

8 Orange County Page 1

1 News
2 Features
3 Calendar
4 Business
5 Column
6 Summaries
7, 8 Story Headlines
9 Campus News
10 Crime & Fire Reports
11 Traffic Trouble Spots

10 Opinion

1 News
2 Sports

9 Government

1 Washington
2 State/Local

Viewtron was developed by Knight-Ridder Newspapers, Inc. in association with American Telephone & Telegraph Consumer Products and is operated by Viewdata Corp. of America, a wholly-owned subsidiary of Knight-Ridder News. After a 14-month field test in 204 Coral Gables, Florida, homes in 1980-81, Viewtron was launched commercially in October 1983 in the Miami area as the first full-scale consumer videotex system with graphics in the

United States. A special telephone network, a local area data transport (LADT), was developed by AT&T for the Viewtron system and is operated locally by Southern Bell. Cost to subscribers is about \$30 a month, which includes subscription fee, rental of the Sceptre terminal and 10 hours of free usage, after which phone line charges are about \$1 an hour. The system utilizes the NAPLPS format. A software package has recently been marketed making the Viewtron service available through some personal computers.

Viewtron divides its content into eight "Categories of Interest." They include Fun Seeker, Investor, Learner, Life Styler, News Hound, Shopper, Sports Fan and Traveler. The News Hound menu is shown in Figure 3. The Top Stories, Local, Nation and World indexes made up the Viewtron news sample for this study.

Figure 3

VIEWTRON INDEX STRUCTURE

- | | |
|---------------------------|--------------------------|
| *1 Top Stories | *4 Nation |
| stories | *1 Nation Top Stories |
| More Highligts | *2 Across the U.S. |
| *1 Area Highlights | *3 East |
| 2 Business | *4 Midwest |
| *3 Nation | *5 South |
| 4 People | *6 Washington |
| 5 Sports | *7 West |
| 6 Sports scores | |
| 7 Weather | 5 People |
| *8 World | stories |
| | |
| 2 Business News | 6 Weather |
| 1 Top Stories | 1 Radar Summary |
| 2 Career Watch | 2 Nation / ski |
| 3 Dick Davis Digest | 3 World reports |
| 4 Dow Jones Index | 4 Florida Map |
| 5 International | 5 Dade/Broward |
| 6 Local | 6 Palm Beach |
| 7 Markets & Quotes | 7 Florida |
| | 8 Boating |
| | 9 Travellers |
| | |
| *3 Local | *7 World |
| *1 Area Top stories | *1 World Top Stories |
| 2 Ask Metro | *2 Africa |
| *3 Florida | *3 Asia & Pacific |
| *4 Ft. Lauderdale/Broward | *4 Canada |
| *5 Miami/Dade | *5 Europe & Soviet Union |
| *6 Palm Beach | *6 Latin America |
| 7 Schools | *7 Mideast |
-

The Sample

A week of news on each system was chosen as the sample. The selection of the three weeks was made in relation to when the services were available as well as to facilitate additional research still in progress. Keyfax was examined from February 17 through 24, 1985; Viewtron from February 25 through March 3, 1985;

and Gateway from April 23 through 29, 1985. In addition, those stories still available on the systems entered days previous to the sample week were analyzed.

Within the news sections on each system, those categories corresponding to "top stories," news summaries, world, nation, state and local news were chosen for analysis. These types of stories were selected for the purpose of limiting the analysis to primarily hard news content. Thus, categories of weather, business, people/feature news, opinions, columns, campus and community reports and sports were not examined. Items included as indexes choices with headlines and textual content were considered stories. This sample yielded 223 stories on Keyfax for the week, 627 stories on Gateway and 2,144 stories available on Viewtron.

Each day's sample was videotaped so that the analysis could be completed later while not incurring great long distance phone charges. Each session was approached in the same manner. The sample indexes and stories were accessed in order just as a user could access them, but was done systematically to insure that all desired content was displayed and recorded. The taping began in the early evening, since most of the new stories for the day had been added by that time. The start time for recording the Gateway was extended to allow for the time zone difference and thus began around 5 a.m. for the news of the previous day.

All the news stories within the news categories mentioned above were accessed. For Viewtron, however, since the number of stories within each news index--Top Stories, World, Nation and Local--was so large, a selective sample of stories was used. This

procedure involved accessing every page of every index each day and all the stories in the "top" categories (Top World, Area Top, etc.) each day of the sample. In addition, the day's stories in three subindexes were accessed each day so that by the end of the week stories in every subindex had been accessed once. (See Figure 3.)

For the newspaper/videotex matching analysis, the metro edition of the Los Angeles Times was used to match stories on the Gateway service. The metro edition of the Chicago Tribune was used to match with Keyfax stories. And, the metro edition of The Miami Herald was used to compare newspaper content with Viewtron. The newspapers for the days corresponding to the videotex sample days were obtained for analysis. These newspapers were chosen since they each have the greatest circulation of the local newspapers in the area where the services originate -- and, in fact, among the largest in the country. In each case, sections 1 and 2 were used to match to the videotex stories, since they contained world, national and local news. Business, sports, entertainment, lifestyles and people sections were excluded.

The Coding Scheme

The content analysis examined the following variables which were presented with each story: the date and time a story was entered into the system database, the source listed for each news story, types of special treatment given to each story the number of frames or screens associated with each story and the number of days each story was left on the system. Multiple listings of stories in various indexes and subindexes were examined. In

addition, the topic categories of stories and the countries reported in stories were analyzed with up to three topics and three countries possible for each story. The primary topic was determined largely by headline and lead paragraph content. The countries were coded according to the order in which they appeared in the story.

A "match" between a videotex story and the newspaper version was determined by headline content, primarily, as well as lead content. Matches were coded according to whether the stories were from the same source or from different sources. The size of the newspaper stories were measured in square inches, with the photograph or graphic included in this measure. Headline size, photograph or graphic accompaniment and placement within the paper and on the page were examined.

Percentage data and descriptive statistics were used to describe the study data generated from the above analyses.

Reliability

Intercoder reliability on the date, time, source and length of stories was 98 percent or higher for each service. Identification of topics of stories yielded 88 percent or higher agreement, while country identification yielded 95 percent or higher agreement among three coders. The other variables coded by up to three coders yielded 90 percent or higher agreement.

RESULTS

Keyfax

Q1: What are the sources of news stories on Keyfax?

Keyfax news stories came primarily from two sources: the Associated Press wire service (54 percent) and the United Press International wire service (31 percent). (See Table 1 below.) The two other sources also cited were the Chicago Sun-Times, 4 percent, and the Chicago Tribune, cited once. For the remaining 11 percent of the stories, the source was not given, and in nearly every case, the dateline was Chicago. An inquiry was made to the Keyfax news editors, via Keyfax electronic mail, asking if these stories were reported by Keyfax reporters or from some other news service. A response from Geri McCall, the sports editor, was received on the electronic mail service. McCall wrote, "The stories with a Chicago dateline without attribution come from a local news service that has requested anonymity."⁴⁴

Table 1

SOURCES OF KEYFAX NEWS STORIES

<u>News Service</u>	<u>% of Week's Stories</u>
Associated Press	54 %
United Press Intl.	31
Chicago Sun-Times	4
Chicago Tribune	1
Not Given	11

Q2: What are the topics of Keyfax stories?

Table 2 presents the percentage of Keyfax stories involving each of the topic categories used to code the content of videotex stories. Stories were coded as having to do with up to three⁴⁵ topics. These variables were combined in this table to measure the topic coverage overall. Seventy-five of the stories were coded for two topic categories and six stories involved three categories. The total percentage data, therefore, may exceed 100 percent. (Some additional topics were created from the "other" category due to the nature of the news for the week.)

Violent crime was the subject of 17.1 percent of Keyfax stories for the week. The next most frequent topic, international relations, involved 10.4 percent of Keyfax stories. The least covered topics include women's rights, substance abuse and energy.

Table 2

KEYFAX NEWS TOPICS

<u>Topic</u>	<u>% Stories Involving Topic</u>
Violent Crime	17.1%
International Relations	10.4
Federal Government	8.6
Accidents/Disasters	7.7
Legal/Court Action	7.2
Warfare/Internal Violence	7.2
People	6.8
Jobs	5.4
Science/Technology	5.0
Non-violent Crime	5.0
Westmoreland/CBS Case	3.6
Local Government	3.6
Minority Rights	3.2
Health/Fitness	3.2
National Defense	3.2
Chicago Mayorial Dispute	2.7
State Government	2.7
Environment	2.3
Education	1.8
Nuclear War	1.8
Protests/Demonstrations	1.4
Entertainment	1.4
Agriculture	1.4
World Hunger	.9
Child Abuse	.9
Economy	.9
Business	.5
Energy	.5
Obituaries	.5
Sports	.5
Substance Abuse	.5
Vietnam Anniversary	.5
Women's Rights	.5
Other	10.8

(N=222)

Q3: What are the countries reported in Keyfax stories?

The countries covered by the highest percentage of stories for the sample week were the USSR, Israel, Lebanon, the United Kingdom and South Africa. Thirty-six other countries were covered

in stories, but as Table 3 indicates, the percentage of each was low.

Table 3

COUNTRIES REPORTED IN KEYFAX STORIES

<u>Country</u>	<u>% Stories Including Country</u>
USSR	12.7%
Israel	11.3
Lebanon	11.3
United Kingdom	9.9
South Africa	7.0
Vatican City	5.6
India	4.2
Japan	4.2
Ireland	4.2
Thailand	2.8
Vietnam	2.8
Iran	2.8
Iraq	2.8
France	2.8
West Germany	2.8
Greece	2.8
Poland	2.8
Spain	2.8
Kenya	1.4
Libya	1.4
Mali	1.4
Chile	1.4
Colombia	1.4
El Salvador	1.4
Mexico	1.4
Nicaragua	1.4
Peoples Republic of China	1.4
Cambodia	1.4
Pakistan	1.4
New Zealand	1.4
Philippines	1.4
Afghanistan	1.4
Jordan	1.4
Kuwait	1.4
Saudi Arabia	1.4
Yemen Arab Republic	1.4
East Germany	1.4
Norway	1.4
Africa	1.4
Middle East	1.4
Palestinians	1.4

(N=71)

Q4: How does the number of stories available in Keyfax compare with the number in the newspaper? .

Table 4 below presents a comparison of the number of stories available on Keyfax with the number available in the Chicago Tribune by day and for the entire week. Keyfax had an average of 29.4 stories per day while the newspaper had an average of 49.4 per day. The Chicago Tribune had 68 percent more stories than Keyfax for the sample week.

Table 4

NUMBER OF NEWS STORIES ON KEYFAX AND IN THE CHICAGO TRIBUNE

	<u>Day1</u>	<u>Day2</u>	<u>Day3</u>	<u>Day4</u>	<u>Day5</u>	<u>Day6</u>	<u>Day7</u>	<u>Week</u> <u>Total</u>	<u>Avg./</u> <u>Day</u>
KEYFAX	29	34	29	29	29	28	28	206	29.4
TRIBUNE	48	57	56	49	56	35	45	346	49.4

Q5: Are the same stories available on Keyfax and in the newspaper?

Of the 223 stories on Keyfax during the sample week, 59, or 26.5 percent, of the same stories were also available in the Chicago Tribune, although only five were from the same news service. Fifty stories were from different sources. For the remaining four stories, the source match could not be determined because the source was not provided on one or both media.

Q6: Which is first--Keyfax or the newspaper?

To measure which medium reported the same story first, a calculation was made using the videotex story day and hour, the day the story appeared in the newspaper and the newsstand availability time from which a measure, "lead time," was derived.

(The Tribune newsstand time, 5 a.m., was considered as the newspaper availability time.)

Of the stories found in both Keyfax and the newspaper, Keyfax stories preceded the newspaper version in every case. Keyfax stories were available an average of 33.9 hours before the newspaper story, with most stories grouped at 37.9 hours ahead of the newspaper. T-tests were used to determine the leadtime for those stories on the front page of the newspaper. The lead time for front page stories was greater than the lead time for non-front page stories by nearly 3 hours. ($p=.679$)

Q7: How are Keyfax stories ordered within indexes?

A cross tabulation of index position by time showed some slight variance in the ordering of stories. That is, stories were ordered in indexes in somewhat of a chronological order, but some stories did appear out of sequence. By observation, however, it is apparent that the most recent stories are in the top few positions of the indexes with perhaps one or two out of order. Since the variance was so low, it is difficult to determine to what degree it is attributable to editorial judgment.

Q8: What types of special treatment do stories receive on Keyfax?

Keyfax news stories received little special treatment. One method occurred for six stories for the entire week. These stories were highlighted in the opening news index in a rectangular box in which a lead sentence or a "what do you think?" question appeared relating to the story. The only other different treatment used for some stories was the use of the summary section

in which five or six stories were cross-indexed each day. (See Figure 1 for Keyfax index structure.) No other multiple listings, different color treatment or extended sidebar treatments were used on Keyfax.

Q9: How do prominence measures compare for stories found in both Keyfax and the newspaper?

To compare prominence measures as described in the Introduction, Pearson coefficient correlations were calculated for the (1) Keyfax prominence variables, Table 5, (2) the newspaper prominence variables, Table 6, and (3) a comparison between the two sets of variables, Table 7. Each of the tables presents the degree of shared variance between variables and the level of significance. The variables in Table 5 relating to Keyfax include indexes, a sum of all the news indexes; highlight, the special treatment measure discussed in the previous paragraph; number of pages (or frames) long a story was (mean=7.1 pages); the hour during the sample week in which each story was entered into the system database; and day, which refers to one of the seven days of the sample week.

Strong positive correlations are evident between highlighted stories and number of pages and between highlighted stories and indexes, as shown in Table 5. Strong negative variance is shown between number of pages and hour and between number of pages and day.

 Table 5
 KEYFAX PROMINENCE VARIABLES
 Pearson Correlations

	Indexes	Highlight	#Pages	Hour	Day
Index		.18**	.08	.04	.04
Highlight			.21**	-.03	-.03
# Pages				-.17**	-.17**
Hour					.99**
Day					

*p $\leq$.05

**p $\leq$.01

(N varies from 204 to 226)

In Table 6, the newspaper prominence measures for those stories matched with Keyfax news stories are compared. "NPday" refers to the day the story that matched a Keyfax story appeared in the newspaper. "NPhour" refers to the earliest availability of that story according to day and newsstand time. "Daydiff" (mean=-.7) refers to the number of days the newspaper story was behind the videotex story, while leadtime, discussed previously, is a more exact measure of that difference, calculated to the hour. "Headsize" refers to the headline size of each newspaper story, measured in points, with the mean falling between 30 and 36 points. The average length of the newspaper stories (sq. inches) was 40 square inches. Photo accompaniment, above the fold and front page were variables coded as occurring or not occurring. Thirty-two percent of the matched stories were accompanied by

Table 6

NEWSPAPER VARIABLES CORRELATIONS (Chicago Tribune)

	InPaper	Section	Frontpg.	Abovfold	Photo	Headsize	Sqinches	NPday	NPhour	Daydiff	Lead
InPaper		.28*	-.26*	.01	-.18	.33**	.14	.29*	.29*	.04	.04
Section			-.10	-.04	-.21	-.15	.24**	.12	.12	.18	.18
Frontpg.				.07	.89**	.59**	.66**	-.11	-.11	-.03	-.07
Abovfold					.10	.33**	.11	.07	-.07	.04	.06
Photo						.45**	.72*	-.36**	-.36**	-.19	-.20
Headsize							.54**	-.29*	-.29*	.08	.09
Sqinches								-.11	-.11	-.34**	-.36**
NPday									1.00**	-.18	-.22*
NPhour										-.18	-.22*
Daydiff.											.99**
Leadtime											

*p ≤ .05

**p ≤ .01

(N varies from 58 to 60)

photographs or graphics, 70 percent were above the fold and 63 percent of those matched were on the front page of the newspaper. These high percentages, along with the pearson test that showed correlation and significance in Table 7, suggest that similar editorial decisions are made by the editors of Keyfax and the Tribune as to story play.

Table 7

KEYFAX / NEWSPAPER PROMINENCE VARIABLES

	Indexes	Highlight	#Pages	Hour	Day
In Paper	.22**	.09	.05	.01	.01
Section	-.24*	-.12	-.29*	.19	.19
Front pg.	-.16	.13	.17	-.14	-.12
Abov. fold	-.00	.14	-.01	-.04	-.05
Photo	-.13	.30**	.35**	-.44**	-.43**
Head size	.18	.27**	.26*	-.25*	-.25*
Sq. inches	.02	.34**	.41**	-.26*	-.25*
NP Day	-.05	-.17	-.26*	.91**	.92**
NP Hour	-.05	-.17	-.26*	.91**	.92**
Day diff.	-.10	.12	-.21	.23*	.22*
Lead time	-.08	.11	-.21	.20	.19

*p $\leq$.05

**p $\leq$.01

(N varies from 57 to 226)

Gateway

Q1: What are the sources of Gateway news stories?

Gateway news stories came primarily from two sources: the AP (54 percent) and the Los Angeles Times wire service (41 percent). (It should be noted that the AP service Gateway uses primarily is one designed especially for videotex.) Two percent of the stories came from UPI; another 2 percent from an assortment of other sources; and 1 percent from the Washington Post newspaper. (See Table 8 below.) As with Keyfax, no stories on Gateway were written by Gateway news staff writers.

Table 8

SOURCES OF NEWS STORIES ON GATEWAY

<u>News Service</u>	<u>% of Week's Stories</u>
Associated Press	54 %
Los Angeles Times	41
United Press Intnl.	2
Other sources	2
Washington Post	1

Q2: What are the topics of Gateway stories?

Table 9 presents the topics covered in Gateway news stories. International relations, 14.6 percent of the stories for the week; accidents/disasters, 10.4 percent; and violent crime, 9.4 percent, were the top three subjects on Gateway. Stories involving energy, agriculture and women's rights, all at .2 percent, were the topics

found the least in Gateway stories.

 Table 9
 GATEWAY NEWS TOPICS

Topic	% Stories Involving Topic
International Relations	14.6%
Accidents/Disasters	10.4
Violent Crime	9.4
Legal/Court Action	8.5
Federal Government	8.0
Warfare/Internal Violence	6.7
Science/Technology	5.6
People	5.0
Local Government	4.4
Non-violent Crime	4.2
Health/Fitness	3.9
Protests/Demonstrations	3.1
Minority Rights	2.9
Business	2.7
Environment	2.7
Vietnam Anniversary	2.7
State Government	2.5
Obituaries	2.1
Education	1.9
National Defense	1.9
Jobs	1.7
Nuclear War	1.5
Economy	1.3
Entertainment	1.0
Sports	.8
World Hunger	.6
Child Abuse	.6
Substance Abuse	.6
Energy	.2
Agriculture	.2
Women's Rights	.2
Other	8.9

(N=389)

 Q3: What countries are reported in Gateway stories?

Fifty countries were covered in Gateway news stories during the sample week. Over half of these were covered two or fewer times. The top four countries covered were the USSR, West

Germany, Nicaragua and Lebanon. (It should be noted that the sample week corresponded to the week that President Reagan visited Bitburg, which drew much public attention.) Table 10 below presents the variety of countries covered.

Table 10
COUNTRIES REPORTED IN GATEWAY STORIES

<u>Country</u>	<u>% Stories Including Country</u>
USSR	17.2%
West Germany	12.6
Nicaragua	10.1
Lebanon	9.0
Israel	7.6
United Kingdom	7.0
South Africa	4.5
Argentina	3.0
India	3.0
Middle East	2.5
Japan	2.5
Peoples Republic of China	2.5
Sudan	2.0
Vietnam	2.0
Syria	2.0
Egypt	2.0
Iraq	2.0
France	2.0
Vatican City	1.5
Canada	1.5
Ireland	1.5
Iran	1.5
Palestinians	1.5
Honduras	1.5
Cuba	1.0
Bolivia	1.0
Nigeria	1.0
Sweden	1.0
Poland	1.0
Chile	1.0
Mexico	1.0
East Germany	1.0
Taiwan	1.0
Cambodia	1.0
Indonesia	1.0

(Table 10 con't.)

Ethiopia	1.0
Pakistan	.5
Greece	.5
Philippines	.5
Afghanistan	.5
Spain	.5
Jordan	.5
South Korea	.5
Bangladesh	.5
Peru	.5
Africa	.5
Europe	.5
Haiti	.5
Libya	.5
Algeria	.5

(N=198)

Q4: How does the number of stories on Gateway compare with the number in the newspaper?

Table 11 presents the number of news stories available on Gateway and in the Los Angeles Times for the sample week. Gateway had an average of 89.6 stories available daily, while the Los Angeles Times carried an average of 69 stories each day. For the entire sample week, Gateway had 627 news stories, or 23 percent more than the 483 stories that appeared in the Times for the week.

Table 11

NUMBER OF NEWS STORIES ON GATEWAY AND IN THE LOS ANGELES TIMES

	Day1	Day2	Day3	Day4	Day5	Day6	Day7	Week Total	Avg./ Day
GATEWAY	86	79	109	109	85	82	77	627	89.6
LA TIMES	68	79	68	72	65	70	61	483	69.0

Q5: Are the same stories available on Gateway and in the newspaper?

Of the 627 news stories available on Gateway for the week, 208 of the same stories, or 33.2 percent, were also available in the Los Angeles Times during the week. Of these "matched" stories, 21 percent were from the same source and 6 percent from different sources. Six percent of the source matches could not be determined because the source was not provided with one or both stories.

Q6: Which medium is first--Gateway or the newspaper?

In every case where the same news story was found on Gateway and in the Los Angeles Times, the Gateway story was available before the newspaper story. This average lead time for Gateway was 35.3 hours, with most stories available 33 to 34 hours before the newspaper availability. (Five o'clock in the morning was used as the newsstand time to calculate the Times' earliest availability.) T-tests indicated that the lead time for those stories on the front page of the newspaper was slightly less, at 31.5 hours compared with 35.9 hours for those stories not on the front page. ($p=.001$)

Q7: How are stories ordered within news indexes?

The cross tabulation of story position within indexes by hour showed that Gateway stories are listed in strict chronological order, with only one or two exceptions. These exceptions are more likely due to coder error or to chance than to editorial ordering as explored in this research question.

Q8: What types of special treatment do stories receive on Gateway?

Two forms of special treatment of stories were used in the Gateway news indexes. The most prominent, highlighting story headlines in news topics indexes, occurred for five stories each day of the sample week. Multiple indexing of stories was also used, usually involving all the stories in the Top Stories index and/or Summaries indexes each day along with another topic index, such as World or State.

Q9: How do prominence measures between stories on both media compare?

As described in the Keyfax section reporting the findings of prominence comparisons, three tables were created for Gateway measures (Table 12), the corresponding newspaper's prominence variables (Table 13) and a comparison between the two. Once again, the newspaper analysis refers to those stories matched with Gateway stories.

Table 12
GATEWAY PROMINENCE VARIABLES

	Indexes	Subtops	Highlight	#Pages	Hour	Day
Indexes		.00	-.16**	-.10*	.03	.03
Subtops			-.01	.00	-.04	-.04
Highlight				.29**	.03	.01
# Pages					.08*	.05
Hour						.99**
Day						

*p≤.05

**p≤.01

(N varies from 518 to 635)

Table 13

NEWSPAPER PROMINENCE VARIABLES CORRELATIONS (Los Angeles Times)

	InPaper	Section	Frontpg.	Abovfold	Photo	Headsize	Squinches	NPday	NPhour	Daydiff	Lead
InPaper		-.20**	-.29**	-.19**	-.21**	.68**	-.43	-.01	-.01	.06	.06
Section			.28**	-.05	.06	-.16*	.06	.04	.04	1.01	.13*
Frontpg.				-.20**	.25**	-.17**	.54**	-.04	-.04	.05	.20**
Abovfold					.21**	-.17**	-.04	.04	.04	-.08	-.10
Photo						-.13*	.61**	-.05	-.05	.08	.14*
Headsize							-.22**	.07	.07	.02	-.00
Squinches								.01	.01	.06	.21**
NPDay									1.00**	-.25**	-.29**
NPhour										-.25**	-.29**
Daydiff.											.89**
Leadtime											

*p<.05

**p<.01

(N varies from 209 to 211.)

The average number of pages for Gateway stories was 8.8. Of the 208 stories matched in the newspaper, less than 20 percent were on the front page, 71 percent were above the fold and 24 percent had related pictures. The average headline size ranged between 30 and 36 points and the average story was 43 square inches.

Table 14 shows strong positive correlations between several prominence measures: front page and number of videotex frames; photographic accompaniment and number of videotex pages; and between square inches and number of pages. Other correlations are shown between front page and highlighted videotex stories and between above the fold and highlighted stories.

These measures strongly suggest that very similar editorial decisions are being made by Los Angeles Times editors and Gateway news editors.

Table 14

GATEWAY / NEWSPAPER PROMINENCE VARIABLES

	Indexes	Highlight	#Pages	Hour	Day
In Paper	.02	-.00	.01	-.03	.01
Section	.02	.00	.01	.07	.04
Front pg.	-.13*	.12*	.40**	.00	-.03
Abov. fold	-.09	.15*	.01	.02	.02
Photo	.05	-.03	.35**	-.02	-.03
Head size	.05	-.10	.08	.07	.07
Sq. inches	-.03	.07	.76**	.05	.02
NP Day	.07	.02	.08	.97**	.97**
NP Hour	.07	.02	.08	.97**	.97**
Day diff.	-.15*	-.05	-.03	-.03	-.00
Lead time	-.15*	.04	.13*	-.05	-.08

*p $\leq$.05

**p $\leq$.01

(N varies from 209 to 211)

Viewtron

Q1: What are the sources of news stories on Viewtron?

Viewtron news stories came primarily from two sources, the AP wire (69 percent) and the Miami Herald and Knight-Ridder News service (26 percent). Unlike Gateway, Viewtron uses the traditional AP news wire and uses the AP videotex service occasionally. Other sources were cited infrequently. Table 15 below presents the complete list of sources found for Viewtron stories. No stories were found attributed to Viewtron writers.

Table 15

SOURCES OF NEWS STORIES ON VIEWTRON

<u>News Service</u>	<u>% of Week's Stories</u>
Associated Press	69 %
Miami Herald/KRN	26
Washington Post	1
Chicago Tribune	1
Other	2
Not Given	1

Viewtron staff members did some local reporting when the system began, but discontinued the "micronews" in fall 1984. The managing news editor, Bill Whiting, said Viewtron stopped offering the neighborhood coverage since The Miami Herald covers community news well and the additional coverage by Viewtron did not have an impact on subscriber retention rates.

Q2: What are the topics of Viewtron news stories?

As can be seen from Table 16, the top three topics for most Viewtron stories were international relations, violent crime and federal government. The three least covered topics were health/fitness, energy and child abuse.

Table 16

VIEWTRON NEWS TOPICS

<u>Topic</u>	<u>% Stories Involving Topic</u>
International Relations	14.5 %
Violent Crime	13.7
Federal Government	10.4
Accidents/Disasters	7.3
People	6.2
Business	6.0
State Government	4.7
Non-violent Crime	4.1
Jobs	3.9
Legal/Court Action	3.9
Economy	3.6
Science/Technology	3.6
National Defense	3.1
Sports	2.9
Local Government	2.6
Environment	2.6
Substance Abuse	2.6
Agriculture	2.6
Education	2.6
Warfare/Internal Violence	2.3
Minority Rights	2.3
Obituaries	2.1
Nuclear War	2.1
Entertainment	2.1
World Hunger	1.3
Health/Fitness	1.0
Child Abuse	.5
Energy	.3
Other	11.4

(N=386)

Q3: What countries are reported by Viewtron?

Table 17 presents the countries reported in Viewtron stories during the sample week. Canada, the highest at 9.4 percent, is also a subtopic within the world news index. Following Canada in amount of coverage were the USSR, Israel and Nicaragua. A total of 84 different countries were reported in Viewtron stories for the week.

Table 17

COUNTRIES REPORTED IN VIEWTRON STORIES

<u>Country</u>	<u>% Stories</u> <u>Including Country</u>
Canada	9.4%
USSR	8.0
Israel	6.8
Nicaragua	6.2
United Kingdom	5.2
France	3.8
Poland	3.8
Mexico	3.6
Japan	3.2
Lebanon	3.2
Ireland	3.2
Phillipines	3.2
Peoples Republic of China	2.8
Gambia	2.6
West Germany	2.4
South Africa	2.4
India	2.2
El Salvador	2.0
Italy	2.0
Cuba	1.8
Middle East	1.6
Pakistan	1.4
New Zealand	1.4
Jordan	1.4
Spain	1.4
Europe	1.2
Afghanistan	1.2
Austria	1.0
East Germany	1.0
Thailand	1.0
Iran	1.0
Zimbabwe	1.0
Norway	1.0

Uruguay	1.0
Palestinians	.8
Saudi Arabia	.8
Syria	.8
Morroco	.8
Bangladesh	.8
Brazil	.8
Peru	.6
Australia	.6
Greece	.6
Chile	.6
Iraq	.6
Sri Lanka	.6
Vatican City	.6
Africa	.6
Guatamala	.6
Asia	.6
Libya	.6
Taiwan	.4
Vietnam	.4
Egypt	.4
Kuwait	.4
Kenya	.4
Sweden	.4
Indonesia	.4
South Korea	.4
Laos	.4
Mali	.4
Nigeria	.4
Argentina	.4
Venezuela	.4
Africa	.4
Egypt	.4
Latin America	.4
Grenada	.2
Botswana	.2
Cameroon	.2
North Korea	.2
Hong Kong	.2
Bahamas	.2
Honduras	.2
Jamaica	.2
Surinam	.2
Panama	.2
Yugoslavia	.2
Czechoslovakia	.2
Costa Rica	.2
Switzerland	.2
Hungary	.2
Luxemborg	.2
Romania	.2
Turkey	.2
Sudan	.2

(N=498)

Q4: How does the number of stories on Viewtron compare with the number in the Miami Herald?

Table 18 presents the number of new stories added to the Viewtron database each day of the sample week compared with the number of stories available each day to readers in the Miami Herald. Viewtron had an average of 224.3 new stories each day, while the Miami Herald ran an average of 79.4 stories available daily. While the videotex service had 182.4 percent more available stories than the newspaper each day, this figure increases when the finding that Viewtron keeps stories from previous days on the system is taken into account. The average number of days stories are left in the indexes is 3.6 days.

Table 18

NUMBER OF NEW STORIES ON VIEWTRON AND IN NEWSPAPER BY DAY

	<u>Day1</u>	<u>Day2</u>	<u>Day3</u>	<u>Day4</u>	<u>Day5</u>	<u>Day6</u>	<u>Day7</u>	<u>Week Total</u>	<u>Avg./ Day</u>
VIEWTRON	255	276	264	268	240	151	116	1570	224.3
HERALD	55	79	76	89	88	91	78	556	79.4

Q5: Are the same stories available on Viewtron and in the newspaper?

Of the 1570 stories on Viewtron during the sample week, 336 stories (21.4 percent) were matched with stories in the Miami Herald. Of those, 79 were from the same news service, 49 were from different services and 208 could not be matched because the source was not given with one or both of the stories.

Q6: Which medium is first--Viewtron or the newspaper?

The lead time was calculated for the Viewtron service in the same manner as used for Keyfax and Gateway. Viewtron is ahead of the newspaper with its stories by an average of 34.9 hours. For those stories on the front page of the newspaper, the lead time was 33.6 hours. ($p=.04$)

Q7: How are stories ordered within Viewtron news indexes?

As with Gateway, Viewtron stories are in exact chronological order with the most recent story in the top position, the second most recent behind and so on. When Viewtron adds new stories each day, the ones from previous days still on the system are simply moved down a number.

Q8: What types of special treatment are Viewtron stories given?

Only one type of special treatment emerged for Viewtron stories (aside from multiple listing which was discussed previously.) Some Viewtron stories, when accessed, made the equivalent of a newspaper sidebar in videotex form available. In these instances, the first page of the story provided instructions to press a number on the user keypad for a related story or stories. This occurred 22 times for the entire coding week and was used most often in the Top Stories section. No other special treatments were found.

Q9: How do the prominence measures used for Viewtron compare with the newspaper?

Table 19 presents the correlations of Viewtron prominence measures. "Hassides" and "Isaside" refer to the sidebar-like stories described above. "TipTop" and "Subtops" were created for

the top stories index and the specific top indexes, respectively, as shown in Figure 3. "DaysIn" is a measure of how long each story was left on the system. Table 19 indicates strong, significant correlations for a number of the Viewtron variables, including number of pages with several variables and the type of index--top, subtop and the sum of other indexes--with nearly all the prominence measures used for Viewtron. Thus, the prominence measures used for Viewtron stories systematically occur when used.

For the newspaper prominence variables, the same can be said as with the Viewtron measures. Strong relationships are shown between photographic accompaniment, front page placement and square inches, each a prominence measure commonly used by the Miami Herald as well as by most newspapers.

In Table 21, which presents the comparison of these two sets of prominence variables, strong correlations are indicated between Viewtron variables having to do with placement in various indexes, such as the top or subtop indexes, with several of the newspaper variables, including section of the newspaper, front page placement, photographic accompaniment and space devoted to story (square inches). Thus, similar "play" is given to the same stories in both the videotex system and the newspaper.

Table 19

VIEWTRON PROMINENCE VARIABLES
CORRELATION

Indexes	Tiptop	Subtops.	Hassides	Isaside	Numpages	Daysin	Hour	Day
Indexes	-.19**	-.06**	.07**	.02	-.13**	.13**	-.00	-.01
Tiptop		.37**	.26**	.16**	.37**	-.22**	.02	.15**
Subtops			.24**	.14**	.32**	-.27**	.03	.21**
Hassides				.01	.27**	-.12**	.01	.08**
Isaside					.08	-.03	.01	.08**
Numpages						-.22**	.14**	.13**
Daysin							-.10**	-.62**
Hour								1.00**
Day								

*p<.05

**p<.01

(N varies from 337 to 2144)

Table 20

NEWSPAPER PROMINENCE VARIABLES CORRELATIONS (Miami Herald)

	InPaper	Section	Frontpg.	Abovfold	Photo	Headsize	Squinches	NPday	NPhour	Daydiff	Lead
InPaper		.16**	-.26**	-.12*	-.19**	.07	-.28**	.00	.00	-.01	.01
Section			.17**	-.03	.14**	-.04	.28**	.15**	.15**	.01	.09
Frontpg.				-.15**	.42**	.08	.59**	.04	.04	-.01	.07
Abovfold					.13**	.15**	.07	-.06	-.06	-.08	-.07
Photo						.07	.57**	.09*	.09*	-.04	.02
Headsize							.13**	-.15**	-.15**	.03	-.01
Squinches								.15**	.15**	-.07	.01
NPDay									1.00**	-.27**	-.28**
NPhour										-.27**	-.28**
Daydiff.											.87**
Leadtime											

*p $\leq$.05**p $\leq$.01

(N varies from 336 to 342)

Table 21

VIEWTRON / NEWSPAPER PROMINENCE VARIABLES

	Indexes	Tiptop	Subtops	Husside	Isaside	# Pages	Days In	Hour	Day
In Paper	.05**	.01	.05*	-.01	.01	.19**	-.03	-.03	-.02
Section	.02	-.17**	-.20**	-.01	-.02	.01	.15	.17**	.16**
Front pg.	-.05	.30**	.20**	.15**	-.03	.26**	.03	.05	.03
Abov. fold	.04	.03	.04	.07	.06	.01	.04	-.08	-.08
Photo	-.10*	.16**	.10*	.11*	.04	.39**	-.06	.09*	.08
Head size	.03	.05	.09	.04	-.04	.05	.01	-.16**	-.14**
Sq. inches	-.05	.25**	.21**	.29**	.06	.53**	-.04	.16**	.14**
NP Day	-.05	.11*	.07	.05	.11*	.10	-.48**	.98**	.97**
NP Hour	-.05	.11*	.07	.05	.11*	.10	-.48**	.98**	.97**
Day diff.	-.02	-.05	-.02	-.00	-.11*	-.09	-.06	-.08	-.02
Lead time	.02	-.02	.01	.03	-.11*	.01	.02	-.07	-.07

*p<.05

**p<.01

(N varies from 128 to 342)

Q10: How do the three videotex systems compare?

In terms of amount of news offerings, Viewtron has substantially more stories available than both Keyfax (10 times as many) and Gateway (more than three times as many).

The topics covered in stories on each of the three systems were quite similar: international relations, violent crime, accidents/disasters and federal government were most often covered on each system while energy and women's rights were found infrequently on each. The highest topics seem to deal with events while the topics least covered had to do with issues. Similarities were also found in the top countries reported on each system, although to a lesser degree than with the topics.

When comparing videotex stories with those found in the newspaper, the percentage of similar story selection by the two media in each of their respective cities fell between 21 and 33 percent for the three services.

The lead time for videotex over newspapers was very close among the three systems; Keyfax was ahead 33.9 hours, Gateway, 35.3 hours and Viewtron, 34.9 hours. For those stories on the front page of The Miami Herald and the Los Angeles Times, the videotex lead time was slightly less, 33.6 hours for Viewtron and 31.5 hours for Gateway.

Very few instances of special treatment were found overall, however, both Gateway and Viewtron use "top stories" categories and multiple indexes for some stories each day. Gateway used the most apparent special treatment--highlighting a story headline on an index page--the most regularly, and that was the only special

treatment used for Gateway stories.

For each of the systems, strong correlations were indicated when prominence measures used by the videotex system and the corresponding newspaper were compared.

DISCUSSION

Two of the three videotex systems used in this study offered more news stories during the sample weeks than their corresponding newspapers did, however, the sources of the stories were not different from newspaper story sources. A considerable portion of the same stories on each system was available in the newspaper of the same geographic area. One might expect the degree of overlap found between the two media, from about 21 to 33 percent, was primarily due to the nature of news. If an event is important, chances are that most of the news media of the area will carry the story, perhaps even give it similar play.

A large database of news stories available, however, may not necessarily make for a better news service. Since most people can spend only a limited amount of time on news in a day, an unlimited amount of news may not necessarily cause people to be better informed. Perhaps the Keyfax service with its 30 stories daily is providing an amount of news closer to what consumers can manage. The difference in amount offered on Keyfax as compared with Viewtron and Gateway may also be due to the parent company of the systems: Keyfax is owned by a large telephone company while Viewtron and Gateway are owned by large newspaper companies. This should be further explored with the editors of the three systems.

Videotex appears to be fulfilling its potential to provide stories faster than newspapers. The news stories on each videotex system were available considerably before the newspaper version --

by nearly a day and a half. The value of the immediacy of the new medium should be tested with news consumers.

The final tenet explored in this study was the selectivity of the new medium. Few visual cues are used by the videotex systems in this study. Indexes are simply presented to users in chronological order with stories treated similarly and not standing out in any particular order of importance. Videotex users are left to make their selections without many cues as to what is most important. Perhaps with this new medium, news users are able to play more of a gatekeeping role than they have in the past.

The menu structure of videotex, however, may prevent users from at least being exposed to a variety of stories. If a user goes directly to a news section such as local, for example, that person will not even be exposed to those stories of lesser interest but perhaps of greater importance on a particular day. The "top stories" indexes, which draw from a variety of story types, may provide the best means for exposure to the day's news across a number of areas.

The strength of this study lies in the comprehensiveness of the services used for the exploration of videotex news. At this writing in June 1985, Viewtron, Keyfax and Gateway are the three full consumer videotex services available in the United States. The sample size was large; over 3,000 videotex stories were examined and nearly 1,500 newspaper stories were compared.

A limitation of the study was the purposive selection of sample weeks used. Ideally, the same sample week could be used

for all three systems to allow direct comparisons of individual stories on each. The generalizability of the comparison of the three systems is somewhat limited since the weeks used were three different ones.

The study was limited primarily to hard news content and excluded categories such as features and business, which make up the entire news packages on each system.

This study described videotex news on three systems. Because the systems are quite different in the amount of news offered, it is difficult to determine what videotex news will eventually be like. It is probably safe to expect that some services, like newspapers, will offer comprehensive, in-depth news and others will provide less.

Further research should examine how videotex news content is used. How users make selections from a news system that provides few visual cues as to what stories are most important at any given time should be explored. Selections made by users according to story position, index placement and the other variables identified in this study should be examined to determine how the new medium will fit into the news scene.

ENDNOTES

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David M. Dozier, "Rival Theories of Newsreading in the Electronic Newspaper Arena," a paper presented at the Annual Meeting of the Association for Education in Journalism 65th Annual Convention, Athens, Ohio, July 25-28, 1982.

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See, for example, "Study Shows Videotex Will Hurt Newspapers," Editor & Publisher 115 (August 14, 1982): 13 or "Home TV Centers to Upset Print Media in 1990s," Editor & Publisher 112 (February 24, 1979): 9,40.
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42

The sample week for the Gateway service did not directly follow the Viewtron week because permission to use Gateway for this study was not obtained until late April 1985.

43 It was often the case that on Viewtron, for example, a story would be listed in the Top Stories index, the South subindex and the Nation Top Stories index, as appropriate for each story.

44

Geri McCall to Natalie Brown, letter on Keyfax electronic mail, April 27, 1985.

45

For example, a story about a bill in the state legislature having to do with small business tax benefits would be coded under two areas -- as business and state government.

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