

THE UNIVERSITY OF KANSAS

MASTER'S PROGRAM IN SPECIAL STUDIES

PROJECT REPORT

MAY 5, 1994

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The Making of The University Daily Kansan Interactive (UDKi) Newspaper

Conception, Development, Execution and Management of an Electronic Medium

This document will:

- 1) Specify goals of the electronic newspaper model.
- 2) Describe the importance of developing an electronic newspaper.
- 3) Document the construction of the model.
- 4) Explain how it works and offer explicit instructions for duplication of the model.
- 5) Analyze the importance of a background in information design and suggest future areas of research
- 6) Offer a list of books and periodicals relevant to the topic of information design and new media.
- 7) Include materials for marketing and distribution of the product as well as a working version of the model on disk.

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Keywords:

- Information Design
- Electronic Media
- Information systems and services
- Information networks
- Interactive multimedia

Metaphors have become popular when describing the Internet and its myriad possibilities. At the risk of reckless misuse of a literary tool, I have succumbed to the temptation to describe my vision for the Kansan and, in fact, the University's information system using a blend of metaphors, analogies and symbols that are part of an entertaining, albeit cliché, electronic vocabulary.

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That damned Superhighway

The first car you pass on the interstate is driven by an angry, crazy-eyed man who flips you the bird. A few minutes later, another car pulls alongside, and the driver shakes his fist at you. You stop in a small town to ask directions, and instead of a downhome "howdy partner," the locals charge out into the street and begin jeering at you and throwing beer bottles. When you finally arrive, shaken but intact, at your resort destination, the owner charges out on the porch with a shotgun.

Imagine this going on for a month and you'll understand what March was like for the intrepid citizens of the America Online service who ventured out onto the Internet (the global network-of-all-networks) for the first time. The net natives didn't exactly roll out the welcome wagon for their on-line brethren; they brought out the battlewagon.

The San Jose Mercury News
April 5, 1994
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If what they say about the Internet is true — that cyberspace, like the great frontier of the 1800s, is to be explored and conquered, that intellectual communities are springing up in certain domains like towns along railroads and that the rush of private and commercial entrepreneurs resembles the great rush to settle land after the Homestead Act — then the construction of an information structure in the midst of the small settlement called the University of Kansas is merely a fulfillment of my own Manifest Destiny.

Compared to some of the thriving communities on the shores of cyberspace (e.g. U. of Illinois and U. of California-Berkeley), the University of Kansas is merely a commune that happens to include some pioneers of the Internet. Only now is it beginning to feel some growing pains. During the spring (1994) semester, accounts were issued at a record rate, mirroring the growth of the Internet.

While growth seems inevitable, little has been done to provide a structure — an identity — to the community for commoners and wanderers. Like that of a city, growth needs to be anticipated and managed. Rapid, unguided development can lead to rapid decline usually because of reactive or impulsive development. However, if we don't move swiftly we will be left behind as Universities and commercial developers, who are better prepared, zip down the superhighway building superexits for their supercommunities.

Bill Skeet

Born: 6/20/65

B.S. Journalism,
Univ. of Kansas,
1988
M.S. Special
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Kansas, 1994

Designer,

Knight-Ridder
Information
Design Labora-
tory, starting
June, 1994

Technology

Coordinator,
University Daily
Kansan, 1991-
1994

Graphics Editor,
Burlington (Vt.)
Free Press,
1989-1991

Speaker: graph-
ics at small news-
papers at Society
of Newspaper
Design (SND),
Intl. Fiej Publish-
ers Assoc. (IFRA)
and other associ-
ations.

Redesigned

*Burlington Free
Press, The Uni-
versity Daily
Kansan and The
Kansas City Busi-
ness Journal.*

All of the resources necessary for KU to become a great information community are present: great minds, sufficient interest and experience. But, without careful planning, intangibles can eventually determine whether a community grows into a city or declines into a ghost town. Historically, newspapers have played an important role building successful cities by facilitating a strong sense of community and by maintaining lines of communication among the policy makers and the residents. Of course, history will also show that newspapers have been an extremely lucrative business. So, while it seems philosophically important to build an on-line newspaper for cybercommunity stability, billion-dollar joint ventures indicate that on-line news services could be financially rewarding. Meanwhile, as four separate industries struggle to dominate this new medium, it is becoming clear that journalists and journalism students will need to be prepared for the changes. Journalism schools, already struggling to keep abreast of the rapidly changing professional world, are threatened with a media evolution that may render present curriculums obsolete.

These financial, philosophical and educational implications have led me to build a working model of an electronic newspaper for my master's project at the University of Kansas.

If an interactive paper cannot succeed at a university, it does not bode well for the industry. Success of this project, like any product, depends on the acceptance of society, and the university population provides distinct advantages for an interactive newspaper model. First of all, the audience is young and more apt to have experience with or even own computers than the general public. College students are more likely to be intelligent, affluent and motivated. They also have free access to the Internet via university computers or through phone connections from home. The software is free and computer assistance is

Reasons for building the UDKi

Arguments for constructing an experimental on-line newspaper can be made for philosophical, financial and education reasons.

Philosophical

Can provide direction, identity and stability to a growing virtual community.

Financial

Potential to earn a percentage of market share in a trillion-dollar industry.

Educational

Prepare schools and train future journalists so that first amendment rights governing traditional newspapers may be extended to their electronic equivalents.

readily available. Plus, the university newspaper is distributed free, more than 90 percent supported by commercial advertising and the rest by an allocation of student fees. All of these give a university newspaper an edge over commercial counterparts. In short, our audience is the audience of tomorrow. For this reason alone, the newspaper industry should have a vested interest in our experiment.

Only time will tell whether the KU Home page and the University Daily Kansan Interactive will become cornerstones of a business district or a ghost town. If a careful course is plotted, I believe the University of Kansas could become a mecca for infonauts along the information superhighway and the University Daily Kansan could support and define that community.

This document attempts to provide that thoughtful pathway for newspapers to follow into the electronic medium of the future. It describes the process used to create the working model of the University Daily Kansan Interactive (UDKi). If it is a successful model, it is assumed that others may be interested in our procedure for development. The documentation should aid others who embark on similar endeavors as well as provide a valuable record of any brilliant insights as well as flawed logic, shortsightedness and ignorant misjudgments that time so mortally reveals.

— *Bill Skeet*
April 25, 1994

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ONE

Definition of the Project

A climate for evolution

The newspaper industry is changing. Economic and social shifts are forcing newspapers to literally “redefine themselves.” The identity crisis has many of the nation’s major dailies wondering about the services they provide, their roles in their communities and their niches in the rapidly changing information industry.

Harbingers of an information revolution

■ Five years ago, SND produced a newspaper entirely on Macintosh computers at its annual workshop in Austin, Texas. It was heralded as a desktop publishing milestone. This year, an electronic edition of the *Chronicles* is planned for the workshop in Kansas City.

■ Since 1992 when the *San Jose Mercury News* introduced *Mercury Center* on America Online, nearly a dozen other major metropolitan newspapers have joined forces with on-line computer services to distribute news electronically.

■ The Associated Press has converted all of its member newspapers to a photo and graphics all-digital transmission system via satellite.

■ Nearly one third of all major newspapers are offering “audiotext;” news, sports, stock market, and weather “hot lines” as well as other specialized topics such as soap opera updates and classified and personal advertising to users who guide themselves to relevant information via phone.

“We are at the beginning of a time when the newspaper as it is historically viewed will take on a broader role,” says Cathleen Black (1993), the president of the Newspaper Association of America.

Industry-wide introspection has already begun. In order to accommodate readers with less time, more responsibilities and more diverse interests, some newspapers are finding that they must diversify to produce more than just a paper product. In fact, newspapers, with their access to news services, strong community ties and teams of information gatherers (reporters), are positioned uniquely well to segue into a role as an electronic information service.

While the threat of extinction forces print media into unconventional collaborations with the computer, telecommunication, and broadcast industries, it creates a pathway to the future through a first generation of products. Currently, the most promising examples are a result of blending new media concepts with existing technology, or new technologies with traditional information services.

These harbingers of an information revolution are the progenitors of what could become a new medium—information networks.

Markets are rapidly converging while competitive universes are broadening. Distinctions between various media are blurring and alternative modes of distribution are making old market definitions meaningless. There is no longer a newspaper industry. Those are merely competing products in the same market—the \$1.5 trillion-a-year communication and information market.

McNamara,
NewsInc. Sept.
1992.

Interactive newspapers: A brief history

During the past year, electronic newspapers have become vogue. Since 1992 when the *San Jose Mercury News* introduced *Mercury Center* on America Online, several major metropolitan newspapers have joined forces with on-line computer services to distribute news electronically.

The concept of electronic newspapers is not new. An API conference in 1988 invited 22 newspaper designers to design a newspaper front page for the 21st century. More than half of the prototypes were electronically delivered. Eleven featured an interactive database and six eliminated the pressroom.

Some universities have managed to make their student newspapers available on the Internet using gopher servers. Still, users generally agree that the convenience and speed that ought to be possible with such networks has not yet been realized. Mosaic, an information browser for the Internet, is increasing in popularity because it integrates hyperlinked text, graphics, audio and full-motion video in an easy-to-use interface.

Some newspapers have decided to forge partnerships with commercial on-line companies and introduce electronic products while the on-line industry is in its infancy. Obviously, there is great risk with such an approach. While these newspapers may become the leaders in the gigantic information industry of the 21st century, they may also be the first casualties mainly because they are ill-prepared.

The concept of using research to plan and produce a product is an important part of electronic delivery for the newspaper industry. While most publishers realize the importance of demographics, interface and information processing issues are becoming more important than ever.

Signs of the times

SAN FRANCISCO — The *San Francisco Examiner* and *San Francisco Chronicle* are working on a joint online service, code-named *the Gate*, which it could launch as early as June 1994, according to NewsInc.

Though pricing and timetables remain imprecise, the newsletter said the subscription-based service would provide full Internet access, bulletin boards hosted by notables, real-time conferencing, as well as a premium-priced personal clipping service and access to the newspapers' archives.

Media Express
April 27, 1994

ATLANTA — *Access Atlanta*, the upcoming electronic edition of The *Atlanta Journal-Constitution*, may become Atlanta's "on ramp to the information super-highway," said publisher Dennis Berry, The N.Y. Times News Service reports.

But it won't be the off ramp for the printed newspaper, he said. Speaking at the public unveiling of the new service yesterday, Berry said *Access Atlanta* would instead be a "powerful supplement" to the paper. Starting Sunday, *Access Atlanta* will be delivered over Prodigy, an on-line network of home computers. While it has been dubbed an electronic newspaper, *Access Atlanta's* success may hinge on the ways it will differ from the printed paper.

Media Express
March 11, 1994

NCSA Mosaic is a computer program designed for servers that are part of the World Wide Web (WWW), but can also link into Gopher servers and FTP sites. Mosaic allows users to navigate to other text documents or activate photos, sounds and full-motion video by clicking on the appropriate hyperlinked text or icon.

Information design and electronic newspapers

READ ALL ABOUT IT: Electronic age hits *Daily Gazette*

Excited talk about information superhighways has recently increased in America's \$40 billion newspaper business, The N.Y. Times News Service reports.

Scared of missing out in the electronic era, many press barons have rushed into deals with computer and telephone companies to insure themselves against a possible digital future. No big-city title is now complete without its new-media unit. It is harder to say what these units are supposed to do. Fear of the unknown rather than the lure of immediate profits is the driving force.

The electronic-publishing market is still tiny, with few firms ready to invest as much as \$1 million and even fewer willing to reveal their revenues so far.

Media Express
March 8, 1994

As newspapers expand into the electronic media market, they will need the aid of professionals trained in a combination of disciplines to plot and guide the transition from traditional newspaper to interactive media. The study of information design combines psychology, design and journalism in anticipation of a new medium that is immediate, interactive and intuitive.

Mass communication will be more massive than ever.

Unfortunately, the message will have more opportunity than ever to be misinterpreted. Electronic newspapers' immediate, non-linear information delivery will require changes in planning, preparation and packaging of the news.

In order to capitalize on interactive access to information, publishers, editors and designers will need to understand human information processing abilities and limitations. Because people read differently on screen, reader behavior may become an influential consideration for news selection and presentation, allowing editors to monitor what stories are read, when, and by how many people.

Finally, the reader's quest for knowledge should be facilitated by an intuitive interface that allows colossal information databases to be browsed effortlessly and appropriate information located and acquired quickly. The "deep" information structure and "surface" information presentation should reinforce each other and lead to information delivered in the most salient format possible.

I believe information designers with a background in journalism, psychology and design will be well-prepared to refine information into compelling, coherent units or packages and aid newspapers through the evolutionary transformation to electronic delivery.

TWO

Building the UDK*i*

**Browsing the planet
via Mosaic**

Click.
You are at the University of Arizona, scanning pictures of the far side of the moon snapped by the lunar orbital probe Clementine.

Click.
Now you're in the files of the Securities and Exchange Commission browsing through recently submitted financial documents from dozens of public companies.

Click once more.
Welcome to a break room at Cambridge University in England, where you are looking at the status of the computer science department's coffee pot.

With each click of a computer mouse, you're somewhere else on the planet, being alternately informed, educated or entertained. Your vehicle is NCSA Mosaic, a free piece of software developed with U.S. tax dollars, that renders the notoriously labyrinthine collection of computers called the Internet infinitely more navigable.

Houston Chronicle
April 6, 1994

Prologue

My experience with the Internet began in November, 1993, when a psychology classmate and I attempted to obtain stimuli for a visual search experiment for a class project. We needed the stimuli from Irving Biederman's Recognition-By-Component experiments in a matter of days and we needed it in a format we could edit. Scans and photocopies would not work. Within a day, we had tracked down Biederman's assistant at Stanford on the Internet and messaged him for the stimuli. He responded in a day or two and, after negotiating a price, sent 60 files of stimuli attached to a message, via e-mail. My classmate happened to be a consultant at the computer center and was more than fluent on the Internet — he was an artist. He loaded two disks with public domain software, spent a couple of hours setting up my Mac at home, taught me the basics, and helped me get accounts set up on the KU system. The first days experimenting with the 'net captured my imagination. I was intrigued by the power of instantaneous information and data delivery. I know using the Internet had a powerful effect on our grade. Today, file transfer is a mundane task only noticed when formats or compression don't work. Less than six months after my first experience in this "new frontier" I have become immersed in the electronic community, fluent with "netiquette" and even acquired the title of "Internet surfer" among my professional colleagues in the Society of Newspaper Design.

The point is, fluency on the Internet does not take as long as normal language acquisition, despite what non-users may think. By the time I began a winter internship at Knight-Ridder's Information Design Laboratory (IDL) in Boulder, I had three accounts on servers at the University of Kansas computer center and had begun to explore an information browser called Mosaic developed by NCSA at

The Internet, which connects over 20 million users, is growing exponentially and has captured the hearts and minds of the romantic and capitalistic alike since being anointed the "information superhighway."

HTML (Hypertext Meta-language) Documents to be viewed in Mosaic are written in a simple text editor using a language called HTML.

This simple scripting language allows links to be established between the viewed document and documents on the server, or on a remote server elsewhere on the Internet.

the University of Illinois for Macintosh, Windows and Unix platforms. Mosaic looked like it could support the requirements of an on-line newspaper that would intrigue typical readers. It allowed the designer to structure and organize information and, to a limited degree, develop a consistent look to the product while allowing the user freedom to tailor the look to his or her liking. It was also free.



The House Metaphor

This chapter emphasizes the parallels between building an information structure and building a home by titling sections in construction terminology:

- 1. Partnerships and Planning
- 2. Blueprints and Foundation
- 3. The Walls Go Up!
- 4. Wired
- 5. Details, Details, Details
- 6. Testing and Analysis

Introduction

From January 3 to 7, I designed screen interfaces for a proposed electronic newspaper at IDL. The first two days were spent listing all of the components and discussing the information structure. A flow chart was developed to illustrate each component’s position relative to others. The chart revealed how a user would navigate from one part of the paper to another. The structure retained the flavor of a traditional paper (front page, sections and stories.) Grids were developed in Aldus Freehand and prototype screens were begun. As each screen was developed, shortcomings in our blueprint became apparent, so the design process included a continuous tweaking of the information architecture. By Friday, I had completed 14 prototype pages including a front page, a section front, a complete story with all of its links and “inside pages” with advertising.

Working with IDL director Roger Fidler on the designs was inspirational and I gained confidence. One day, during a break, I made some sketches of screens for an on-line *Kansan* crudely based on what I was learning. I realized it wouldn’t be hard to create a model of the student newspaper, *The University Daily Kansan*, for on-line delivery based on the principles I learned at the IDL. Moreover, I received an invitation to return to the IDL permanently upon completion of my degree. Motivated to finish my project by May, I met with my advisory committee for my master’s project and laid out plans to produce an electronic edition of the *University Daily Kansan*.

My first impressions of the Internet:

- 1) It seemed to be a natural place for a college newspaper because it is free to university students and, if the WWW grew in popularity as expected, Mosaic would become the ubiquitous browser for surfers like me.
- 2) It had an enormous viewing audience with a potentially endless source or demand for information.
- 3) It could become a vast information wasteland if people couldn’t find what they were looking for quickly. People would need help navigating through the infinite information.

Early sketches for electronic Kansan



TOP: stories in columnar format is a descension from the IDL prototypes. **BOTTOM:** bold hyperlinks and full-motion video; multiple layers of information.

Part 1: Partnerships and Planning

Some college newspapers on the Internet:

On Mosaic

The Tech,
M.I.T
<http://the-tech.mit.edu/>

Nadine Magazine
Yale
http://www.cis.yale.edu/~donham/nadine/home_page.html

The Oak Leaf
Santa Rosa Junior College
<http://quercas.santarosa.edu/>

On Gopher (partial list)

Minnesota Daily Newspaper
University of Minnesota
gopher://gopher.tc.umn.edu/11/News/Minnesota%20Daily

Daily Illini Newspaper
University of Illinois
gopher://harpoon.cso.uiuc.edu/11/UI/DI

The Bucknellian
Bucknell University
gopher://gopher.bucknell.edu/11/departments/Bucknellian

Wisconsin Week
University of Wisc., Madison
gopher://gopher.adp.wisc.edu/11/.news/.week

Daily Texan - University of Texas
[gopher://bongo.cc.utexas.edu/11/ut-info/texan](http://bongo.cc.utexas.edu/11/ut-info/texan)

Other Newspapers on Mosaic

Palo Alto (Calif.) Weekly
<http://www.service.com/PAW/home.html>

Industrial Design student Matt Zellmer appeared at my office door at the start of the spring semester. We shared a common advisor, Professor Richard Branhams, who told him of my plans to develop an electronic newspaper. He had proposed an almost identical project for his degree. We discussed the goals of the project and concluded that we had similar visions of the product and that the task easily justified two people. For the next month, we met at least once a week and attempted to define the problem, draw up a timetable, and plot a course for completion of the project. We agreed that to really understand the implications of an electronic newspaper we would need to build a working model first. In order to do that, we would need some help from the computer center.

I met with Charles Rezac at the computer center during the first week of classes and explained my plan. As a founder of *KU Facts*, the on-line Campus-Wide Information Service (CWIS), he had experience in information services on the Internet and expressed some enthusiasm for the project. After our discussion, he said the *Kansan* could probably be on-line by spring break. He also suggested I become familiar with other college newspapers on the Internet. Almost all were based on Gopher servers, a hyper-text system devoid of any control over presentation. Most were sporadic in publication, probably because of the difficulty of inputting newspaper stories into a properly coded format.

I wanted to use Mosaic and not gopher because Mosaic was easier to use and allowed images, video and sound to be integrated into hyperlinked text. Rezac said that Mosaic was a good choice because it used a simple, universal document scripting language called HTML that could be read by Mosaic as well as other text-based browsers such as Telnet.

Zellmer bio

Born: 12/14/68

B.F.A. Industrial Design, Univ. of Kansas, 1994

Student member:

Industrial Design Society of America, 1991-present

Background:

Liberal arts, Architecture, photography and design.

Interests:

Information design, human factors, research and testing.

Although it was easy to program for Mosaic, the challenge would be the development of conversion scripts to convert Kansan stories from Quark XPress into HTML documents. I delivered a full issue of the Kansan on disk to him a few days later and some prototype pages I had created in Free-hand so he could see how I wanted the product to look. We discussed aesthetics and structure of information with respect to the limitations of Mosaic software. A number of limitations were brought to my knowledge.

For instance, one of the most important features of Mosaic is also a tremendous constraint for designers — user-defined typography. Users can customize Mosaic’s look by choosing typefaces and type sizes. The designer can still assign portions of text to different levels (i.e. headers) to achieve hierarchy. So, normal text may be “normal,” a headline may be “header2” and a deck may be “header3,” which indicates that the headline should be slightly larger than the deck which should be larger than the normal type. However, there is no guarantee that the user will set the HTML style tags the way the designer expects. It is possible for a user to set all type to the same face and same size so headlines and body type all look alike.

Mosaic’s limitations also affect the grid structure of the display. Columns of text are impossible and designers have only crude control of juxtaposition of text and graphics. Our early prototypes were based on multi-columnar grids because they seemed more akin to traditional newspapers, it seemed to make the text more legible, and allowed more flexibility in positioning of elements.

Also, images can take a long time to download when they are large. For that reason, I made certain that inset images were never larger than 50K (kilobytes). At that size, images would download in about 15 seconds using a 14,400 baud modem. Sounds take even longer and full-motion video is excruciatingly time-consuming to download (6 minutes for 30 seconds.) For this reason, sound and video are rarely

A grand mistake

In February, Zellmer and I thought that we would create the interactive model of the newspaper using MacroMedia Authorware. The program, which retailed for more than \$6,000 was discounted for students and we each purchased a copy for \$1,000. Authorware was touted as an easy-to-use, super-powerful information architecture program.

While it may have been easy to use, I started working in HTML for Mosaic and found it easier. And the advantage was clear: Many people were using mosaic (free) on the Internet already; few people were using Authorware (not free) and it was just a modeling program. At best, it would have only simulated an interactive newspaper.

Mosaic setup

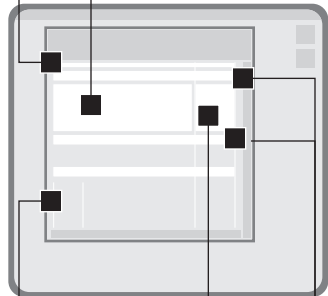
“Out of the box,” Mosaic defaults to Helvetica and Times for displaying text which yeilds hard-to-read, boring screens. Users may redefine the typefaces.

The UDKi grid on Mosaic

Screens, like pages in a real newspaper, must adhere to a grid for consistency. The UDKi screens feature the following features in approximately the same locations.

UDKi plate
This signature folio appears at the top of every UDKi document.

Flag
Each service and section has a flag that may be linked (as in pg 1).



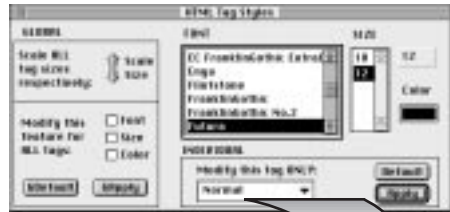
Advertising
Space for sponsors' "window" to the right of the flag on service and section fronts.

Service- and Sectionbar
Horizontal bar of icons that provide a link to services and sections by clicking on the icon.


Photographs
Every photograph is one inch wide to insure consistent physical and file size.

Suggested style selections for Mosaic

The user has the power to make text display in Mosaic exciting and legible, or bland and illegible. Of course, it can be bland and legible too... but why? The captured screen images displayed in this document are from my computer with Mosaic customized for good legibility and contrast. The decisions were not governed by research — only my personal tastes.



The fonts, colors and sizes for text display are selected from this window in Mosaic.



level	font	size
normal	futura	12
block quote	chicago	10
code	monaco	10
header1	city medium	24
header2	impressum	18
header3	futura	12
header4	impressum	10
header5	futura	10
header6	futura	10
keyboard	Orator	18
list	futura	12
preformatted	monaco	9
sample	monaco	9
typewriter	monaco	9

Of all of these possible levels, only a few are commonly used. They are normal, header1, header2, list and maybe typewriter.

Header1: usually reserved for introductory text on service pages (see KU Home.)

Header2: headlines

Normal: Body type

Typewriter: used at the end of files for technical information including intellectual ownership.



used and, when they are, they are edited tightly. They will be incorporated into the UDKi with more frequency as faster modems become affordable.

Through discussions about these issues, the newspaper took shape and I got a better idea of how the Kansan could fit into the university information structure. Rezac and I walked down the hall and prepared the Kansan account for experimentation.

Zellmer and I met with Rezac about once a week for the first five weeks of the semester. We were interested in his progress because we knew we needed a working model before we could test user performance on the interface and structure. We were both under the impression that Rezac was going to do the programming and create the model according to my prototypes. And so we waited and diddled with the prototypes, making adjustments and refinements which were really just alterations in the look and arrangement of items.

Our plan, which was documented in discussions and post-it notes but never thoroughly defined, went something like this: 1) build a model of the newspaper, 2) test user performance and refine, 3) document the development process and develop a strategy for producing the product daily and marketing and promoting the service to students and alumni.

First prototypes



The first mock up of the Kansan online created in Freehand;



First revisions moved away from columns of text to more of a list because of Mosaic's limits.

Part 2: Blueprints and Foundation

First generation



1) prototype in Mosaic shell.



2) flag refined; includes ads.



3) Section front : brief of story, links to related information.



4) Story: embedded photos, links.

In early February, my schedule tightened. Meetings were often interrupted or canceled because of problems at the *Kansan* such as February 2 when the *Kansan*’s biggest file server experienced “melt-down.” The crash was cataclysmic, destroying 600mb of data and required round-the-clock resuscitation for several days to keep the paper publishing. Rezac still had not created any Mosaic documents and we were getting concerned. I wanted to give him more time and decided to provide more accurate interface prototypes.

Using the Macintosh’s built-in screen capture feature, I captured a screen while Mosaic was running, stripped out the original contents in Adobe Photoshop and replaced it with the text and graphics in Aldus Freehand. Within two days, I produced a front page, a sports page, a story screen, and a graphic. In addition, these designs removed features not possible in Mosaic such as columns of text. I delivered the new prototypes to Rezac and tried to make sure he had everything he needed. At the same time I was getting more familiar with Mosaic and some of the services available on the Internet. Zellmer and I explored probably more than one hundred different WWW sites in February and I saved interesting ones in my hotlist.

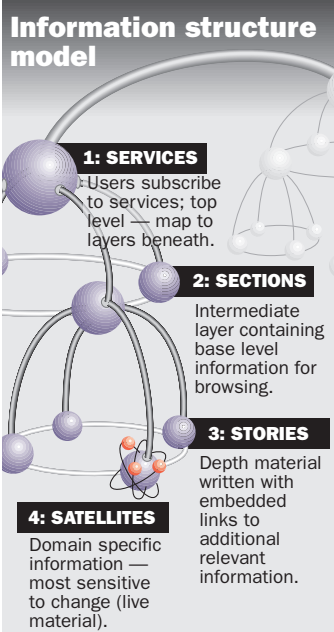
Through the grapevine, I learned the address (URL) where Sun Microsystems had set up an experimental Web server for Winter Olympics results. Everyone I showed was intrigued by this service. I wanted to save the address in a HTML document so I wouldn’t have to type the lengthy address each time I wanted to check results. I snooped around the Mosaic folder and found a file called “my home page” which was a starter HTML document with slots to add more material. I opened the document in teachtext, examined the coding and tried to figure out the syntax. I boldly changed the title to “Bill’s Rockin’ Home Page,”

saved it under a different name and promptly tried it out. It worked. After about an hour of experimentation, I successfully added the address to the Lilihammer Olympics server. After that night, Mosaic never seemed as mysterious. I understood how links worked and the coding behind them. With more practice, I figured I could do it myself.

While I was dissecting HTML files through the wee hours of the morning, Zellmer was getting restless. We weren't making much visible progress. Constant interruptions broke my concentration and I was working in spurts, usually without him, on diagrams of the information structure. They weren't very good. Rezac still hadn't made any progress on the model. It became clear that Zellmer and I needed to have a summit to discuss progress—or, the lack thereof — and possibly redirect the project.

About 5 p.m. February 19, Zellmer and I sneaked off to Watson library where there was no phone and we could spread out everything and work through the problems uninterrupted. We never really addressed the progress problem and, instead, began to discuss my fruitless weeks of uninspired and flawed information structures. Our discussion culminated in an information structure that really worked. The simple three-dimensional, three-layered structure for information was a real breakthrough. The structure is hierarchical, yet allows smooth navigation both vertically (depth) and horizontally (lateral). It resembles proposed diagrams of the human semantic network. In our model, services are the top level, then sections and finally stories. Satellite documents may be attached to stories. This was an evolutionary leap from my previous model which was based on a backbone and appendages. Suddenly, with the new model, I could move forward on the interface design.

During the last week of February, I made yet another revision to the prototypes. I was not satisfied with the look of the flag or the buttons to move from section to section. I



Overview
The model, loosely based on semantic network models, is hierarchically structured, but does not limit access by level. Information must be linked to a document at least one level above. However, users can skip levels as much as the designer allows.

For instance, a satellite may be accessible from the service, section as well as story level. Usually, only the most important stories or satellites are allowed to jump levels.

The start of a new generation



The flag is larger, surrounded by icons to direct the user to services and sections. One ad is fixed at the top of the page.

decided that an icon system might seem more friendly. Mosaic supported a “map” feature which allowed the developer to designate areas of an image to be linked to different locations. The user could click on different parts of an image (service- or sectionbar) and go to different loca-

The next generation



Service: The Kansan front page



Section: Sports page with ad



Story: Access to the story via either section or service (pg 1).



Satellite: supplementary info.



The “sectionbar” of the UDKi.

tions. The new prototypes also included a “sponsor” or advertisement on each of the section fronts and the front page. At the time I included it in the design, I only knew that advertising would be an issue that I should confront. I certainly had not resolved it and left the problem for the model. The new designs also established an identity and a consistent look. A logo for *The University Daily Kansan Interactive* (UDKi) was designed and used at the end of each document. Finally, I refined the use of section dividers, headlines and briefs on section fronts and the links to satellite files.

Part 3: The Walls Go Up!

By the first week of March, I was beginning to get pretty fluent on the Internet. I had been conversing with friends around the country who were also on the ‘net and even getting good at exploring File Transfer Protocol (FTP) sites around the world. What had started in late December as trial and error was now becoming a graceful gavotte through myriad government and educational services. I started downloading interesting Mosaic files from Web servers and dissected them to see how they worked.

Rezac had run into a snag converting Quark XPress files to Microsoft Word the week earlier and still had not made any progress when I met with him. I told him what I had been doing and he directed me to several on-line help files and manuals on HTML and invited me to a two-hour session on “Preparing Info for the CWIS.” I never used the on-line

About FTPs
FTPs are repositories of software on the Internet.

Programs, such as Fetch and Mosaic, make it easy for users to log onto a FTP site and browse through directories for useful utilities, games, fonts, graphics and updates for system software or commercial programs.

manuals. It was not and is not the way I work. I did, however, attend the two-hour session that he taught on Tuesday, March 8 from 10 a.m. to noon and took good notes. I went home that evening and wrote the first HTML documents for the UDKi. I tested them using Mosaic on my local drive and they worked. I was able to open photos by clicking on linked items in Mosaic and even jump from one page to another and back again. It was a simple start. By 2 a.m. I had created about a dozen linked pages, but I could not save Freehand graphics into the GIF format that Mosaic could read. I sent a note to a friend at the IDL asking if he knew of any way to convert graphics to GIF format. The next morning he had the answer for me: a public domain program called GIF Converter.

Later that afternoon, I decided to go home early and keep building on the base that I had started the night before. I added the graphic files and more stories and photos. In ten short hours, I had built links to all of the news stories and photos from the February 3 issue of the *Kansan*. Thursday, I demonstrated the prototype to Zellmer and anyone else who would watch. I told everyone that it was easy to do and bragged that I would have Friday’s entire paper done by Monday. I worked until 4 a.m. Friday night, got up early Saturday, and finished the paper by noon. I showed it off again on Monday and set up a meeting with Rezac for later in the week.

I think Rezac was surprised to see so much done. He set up a directory in the *Kansan* account and uploaded my files to the system where they were available on-line for testing. I tested it from home that night and then sent a message to my friends in Boulder with the address and asked for their comments. They liked it.

Spring break was approaching, and we finally had a working model.

Designing for Mosaic: Limitations of HTML

I was already designing with Mosaic’s limits in mind when I created the Freehand prototypes.

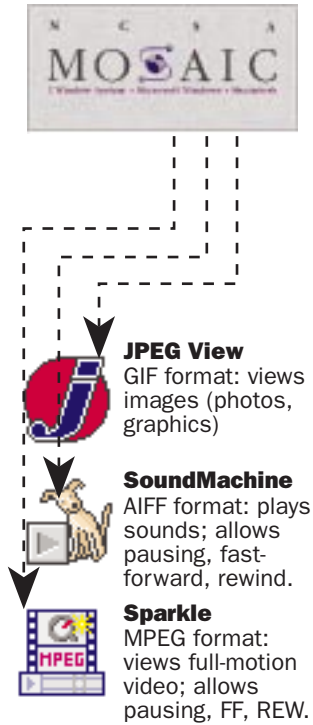
But, when I started coding, I had to work completely within the constraints of HTML, the document scripting language.



Some of the changes: **Photo placement, Columns:** allows only one, **Typography:** allows users to change typeface or size, but designer can design text to be displayed at different levels. **Color:** User controls link color; screen resolution varies from terminal to terminal so 256 colors was the lowest common denominator. **Screen size:** a 13-inch monitor was assumed to be the base, but it appears fine on a power-book screen.

Part 4: Wired.

Mosaic and external viewers
Mosaic works in combination with three other programs to provide a multimedia presentation.



How it works
An HTML document may contain links to images, sounds or full-motion video. When a link is activated to one of these files, another program (external viewer) is automatically launched so the contents of the file may be observed.

Even though the stories, photos and graphics were linked and working, there were still some unresolved issues. The paper was at the alpha stage; the basic features were working but the bells and whistles still eluded me. For instance, no matter how I tried, I could not figure out how to get the map feature working. And I wanted to include sound and video. Eventually I figured out the format for sound, but converting a quicktime movie to MPEG format took longer. However, by the end of April, a new version of Sparkle, a video viewing program that works with Mosaic, allowed Quicktime movies to be saved as MPEG (a cross-platform format) movies.

Zellmer and I escaped to Clinton Lake one sunny afternoon in Mid-March to have a few uninterrupted minutes of thought. We agreed that the map feature that allowed users to click on the icon and be transported to the appropriate page was critical. Testing could not begin until that was resolved. And so I entered spring break believing that I would fix that first and then move on to some smaller issues. Unfortunately, it turned out that the map feature did not work on a local terminal, which was how I was testing it. It has to be on a UNIX server and refer to a special configuration file in order to work. So spring break, which held such promise to be a boom period for the project, became a bust. During the week, I added more pages including a personal page for myself, a home page for the school of journalism and sound files. I also created the Weather Service home page.

Monday, after break, I contacted Rezac and set up a meeting to get the map fixed. He uploaded the new files and, by watching him work, I started to learn how to edit files on the server using Telnet. We talked about the prospect of generating revenue from a product such as this. When the

project started in January, we had discussed the possibilities of classified advertising and on-line menus. But I was beginning to formulate some specific ideas for advertising in the UDKi. For instance, I envisioned users browsing through products in a “virtual store” as they would topics on a page. The user could click on a picture of a product, acquire information about it and order the product by filling out a form on screen. For stores to take advantage of this service, they would need either a computer or a fax machine to receive the order and a procedure for sending merchandise to consumers.

Rezac said it was possible to send a fax to a business directly from Mosaic if a fax server was set up to spool and send. Also, we could ensure that only people on campus saw food advertising to avoid faxes such as pizza deliveries to Purdue or Oxford University. However, businesses like Kief’s Audio/Visual that already have an established mail order business, would like to have a global audience. I met with John Kiefer, owner of Kief’s, because I thought his store would provide a good test for the UDKi. He was extremely enthusiastic and said he was already getting orders from people who had read about Kief’s on lists on the Internet. Although Kief’s customers base is unique, I believe most of the services and features are transferrable to other clients.

I was ready to start fixing bugs and adding features to the UDKi when I discovered my account did not give me permission to write to the folder. On April 1, I met with Rezac again and we had the Kansan account modified so I could upload and edit files. Then we went to work on the map configuration file and by the time we were done that evening, the map was working and I was able to add files without his help. I mentioned that it was a shame that our University didn’t have a home page like many other schools. It seemed like a valuable contribution since home pages provide the first impression of a university for Internet travelers and organize the campus services. Charles told me if I made one, he would give me credit. Sunday night, I built

The University Daily Kansan Interactive

The front page of the *Kansan* as seen in Mosaic online.



Address:

<http://kuhttp.cc.ukans.edu/cwis/UDK/UDKpg1.html>

When users start up Mosaic for the first time, the preference is set to go to this home page which offers easy access to services at KU as well as other Big 8 schools and NCSA/WWW servers.



<http://kuhttp.cc.ukans.edu/cwis/UDK/KUhome/KUHome.html>

What's New With NCSA Mosaic

What's New With NCSA ▼ Search keyword

URL: <http://www.ncsa.uiuc.edu/SDG/Software/Mosaic/Docs/whats-new.html>

Announcements

April 24, 1994

The University of Kansas Home Page now provides easy access to locally produced services. Previously unannounced or recent developments at KU include:

- The Electrical Engineering & Computer Science Telecommunications & Information Sciences Laboratory, at Nichols Hall.
- The University Daily Kansan - An electronic prototype of the award-winning student newspaper. ***Please take a moment and contribute to the questionnaire*** if you check out this impressive experiment. It is a research project at the William Allen White School of Journalism.
- Also provides quick access to other Big 8 universities.

The University of Geneva announces its WWW server. It contains information on Crystallography in Europe, local library services and an interactive map of the University.

Hanover College would like to announce two hypertext pages that have been added to the web: the Department of Psychology and the Career Center. The

the home page for the University of Kansas in about two hours.

I put the KU Home on-line Monday and added more information during the next day or two. Friday, April 8, I sent a message to NCSA asking to be included in the index and “what’s new” list.

I spent the next week refining and adding features such as a live link to the National Weather Service forecast on the weather page. On Monday, April 25, the KU Home Page and *University Daily Kansan Interactive* were announced on the “what’s new” list on Mosaic. Immediately I began to get feedback. I received messages about the UDKi and the University’s home page including praise and suggestions. I even made some changes as a result of these suggestions.

There were an number of loose ends that had not been finished during the regular production of the online product. So, the last week of April, I added documents to the services with orphan links. The classified, archive and ad direc-

tory service pages were designed at the same time and have a common look. Service pages created by others, such as KU Facts, would look a bit different, but I decided that consistency was important among the pages I developed. A new ad was placed on Page One with a link to Kief's home page. A link to our survey was placed at the top of Page One. The "contribute," "tomorrow," and "search" buttons were moved to the bottom of the page and another section bar was added for access to sections without scrolling to the top of the page. I also changed the graphics for the section links to make them more consistent.

Development of the interactive form was delayed as was the fax feature and our forum page for the opinion page. These features are still planned but not available at the time of this writing. The main reason for the delay is that the "forms" feature for Mosaic is only available on the Windows and Unix versions. A new version for the Mac is due around the first of May, 1994, and will include the forms feature which will allow the survey and forum pages to become interactive. The fax feature is more complex and will require a dedicated server running Mac HTTP with a fax/modem connected to the system to allow an order to be filled out on screen and faxed with the click of a button.

Also delayed were scripts to automate the online publication process, which are crucial to implementation of the project. At completion of this preport, Rezac and I were working in AppleScript to create routines that will perform tedious and burdensome tasks such as conversion of stories in XPress or Word into HTML documents. The automation is simple as long as XPress documents conform to strict standards.

One of the main goals of the project was to take the technology out of the way of the journalists and allow them to focus on editorial decisions. Another goal is to take full advantage of the immediate nature of this medium. The scripts should simplify the process so students can easily

First feedback about UDKi

Date: Mon, 25 Apr 1994 17:54:49 - 0400
From: Jeremy Hylton <jeremy@the-tech.mit.edu>
To: KANSAN@ukanaix.cc.ukans.edu
Subject: Nice to see you on-line

I run a college newspaper server at MIT, and just wanted to say hello. It's nice to see another paper on the Web. You've got some very nice graphics.

I also have a suggestion for your server. I think you should make that date of the material you're looking at clearer. The single line at the top that says March 11 is easy to miss. I assume you're intending to provide the most current issue as the home page, but I'm curious to see what a back issue would look like; I don't see a way to read them now, but I understand that you're just getting started.

regards,
jeremy

create and publish information as it becomes available.

The survey

The following questions were used to survey users.
(See appendix for full survey)

Your age:
Your sex: Male Female
Your major:

- 1. How experienced are you with computers?
- 2. Have you read any other electronic newspapers/publications?
- 3. Was it easy to find information that you wanted in the UDKi?
- 4. Do you think that newspapers should be pursuing this approach to information delivery?
- 5. If the UDKi were available every day, would you read it more or less often than the traditional newspaper?

Please mark the circle between the word pairs that best describes the UDKi.

easy to read	difficult to read
enjoyable	frustrating
clear	confusing
attractive	unattractive
inviting	intimidating
organized	disorganized
valuable	worthless
credible	not credible

What did you like or dislike about the UDKi?

Is there anything you would add or change?

Other comments or suggestions: (Use the back if necessary)

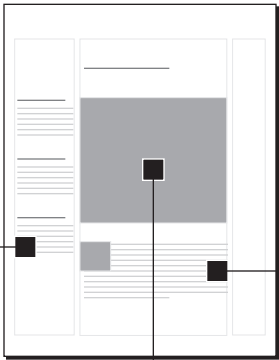
THREE

Implementation

0. Architecture overview

This University Daily Kansan Interactive information structure is loosely based on semantic network and schematic knowledge models.

How the chapter is designed
Each page of the chapter contains one or more example screens from the UDKi.



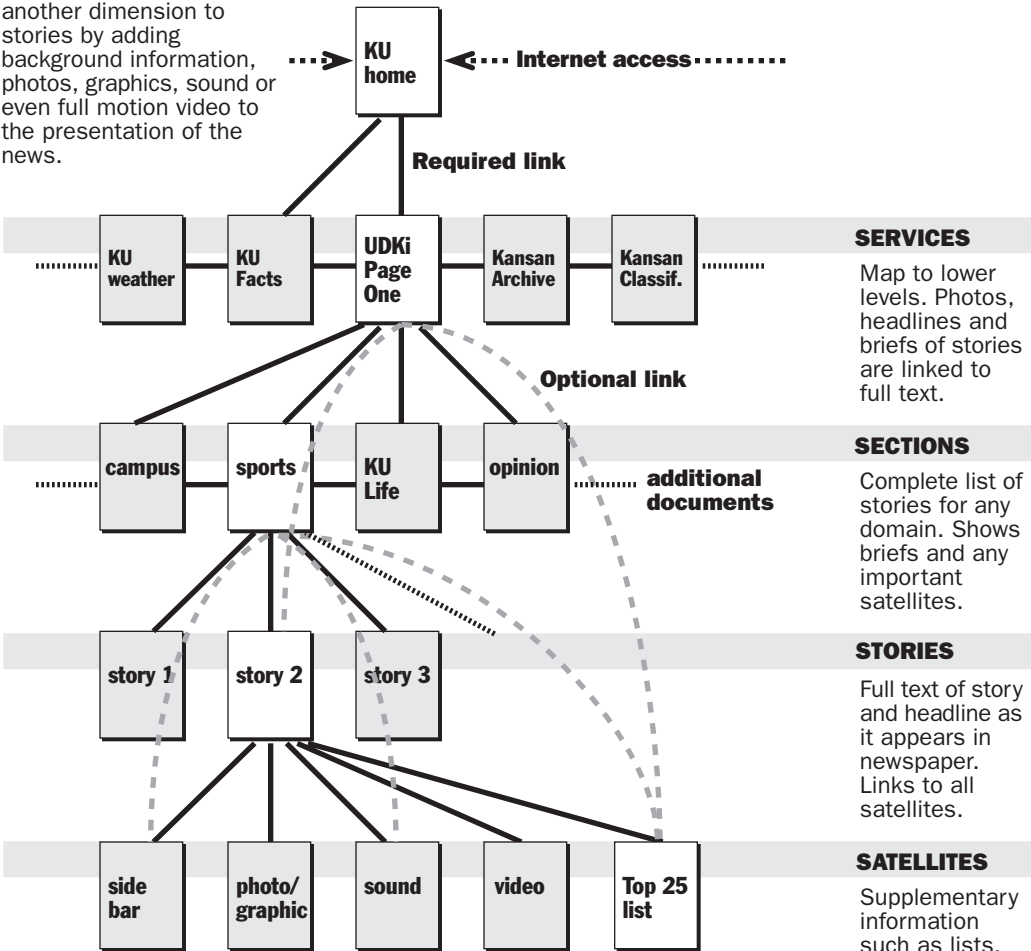
Screen capture
Image of the screen from Mosaic. Snapshot taken on a 17inch, 24-bit color monitor.

Page overview
Short description of the page with regard to the psychology, design and journalism elements.

Features
Highlights of relevant features or noteworthy points for a screen.

How the paper is organized

There are three main levels of information for the newspaper: services, sections, and stories. In addition, there are satellite files that provide another dimension to stories by adding background information, photos, graphics, sound or even full motion video to the presentation of the news.




Access to information

This information architecture is intended to provide a consistent structure to the newspaper for the user. However, access to information remains an editorial option. The designer/editor may allow users to "jump" levels.

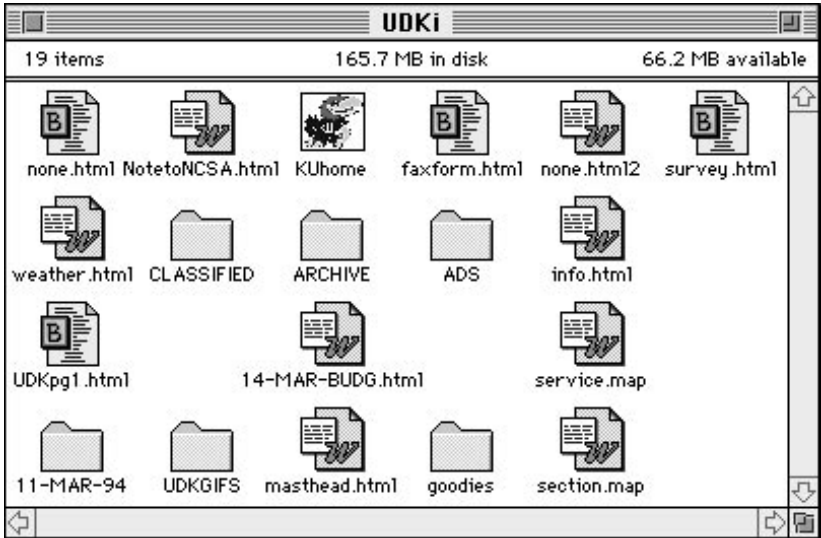
The editor decides what stories are available on Page One. Stories are represented with a one- or two- sentence summary or lead. The editor and designer may include an embedded photo with the brief as well as links to satellites from the brief.

The system architecture allows users to browse general information in a variety of different subject areas as well as quick, in-depth access to specific information when desired. Information is limited to three link-distance. Editors may allow direct access from the top level on important stories.

0a. System file structure

The root directory of the UDKi (Mac)

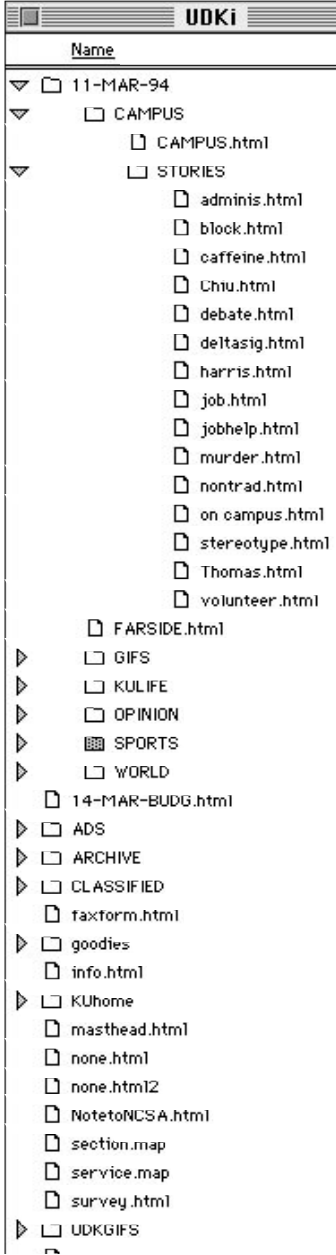
NOTE: Unix looks a lot different, but is structured identically.



Successful replication of this project requires an understanding of the underlying file structure. Directories and files reflect the surface structure to some degree. While there is some room for variation, the file/folder structure (shown at right) was developed so files would be logically organized and to expedite the production and archival processes.

The following sections of this chapter illustrate and describe the most important features of the UDKi. Details specific to the project are documented so that similar interactive information services could be set up and maintained by others. However, the documentation does assume the user already has a certain level of knowledge of computers.

- | | |
|---------------------------|----------------------------|
| Details covered: | Expected knowledge: |
| • specific file structure | • Macintosh GUI and system |
| • features | • HTML language |
| • design techniques | • Internet navigation |



Ob. NCSA Mosaic

NCSA is...
National Center for Supercomputing Applications, University of Illinois at Urbana-Champaign

Some relevant features
GUI, navigation menu bar emulates Macintosh standards

URL — address where current (viewed) document is located.

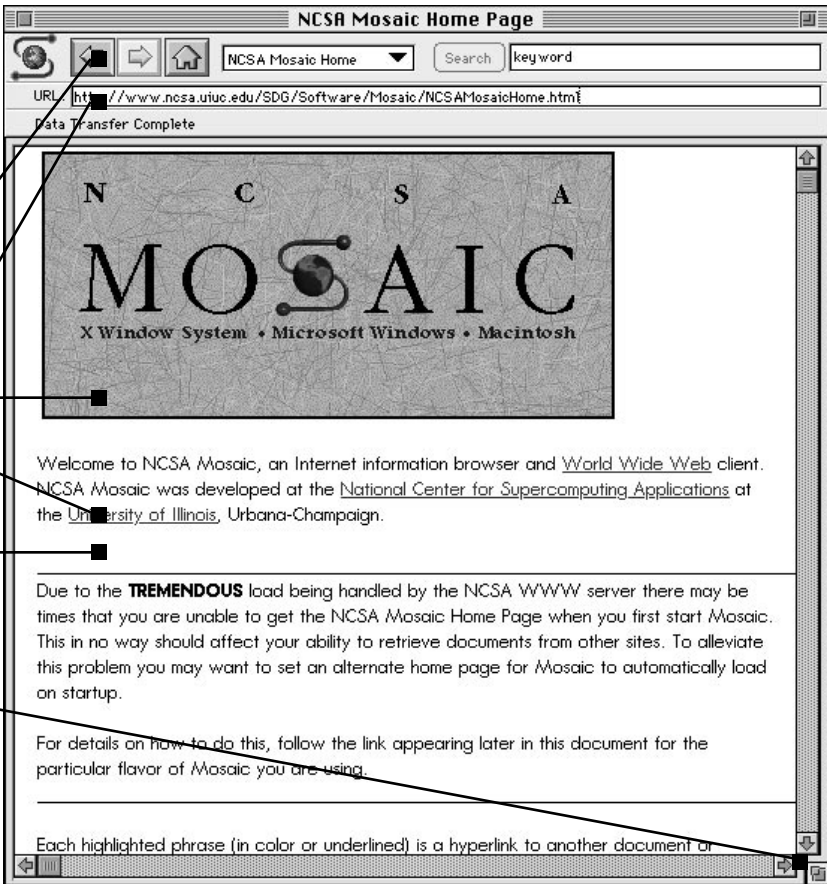
Embedded graphics

Hyperlinks to other documents

Designer controls typographic hierarchy and paragraph breaks (no control for leading or columns).

Text wraps to the size of the window, as adjusted by user.

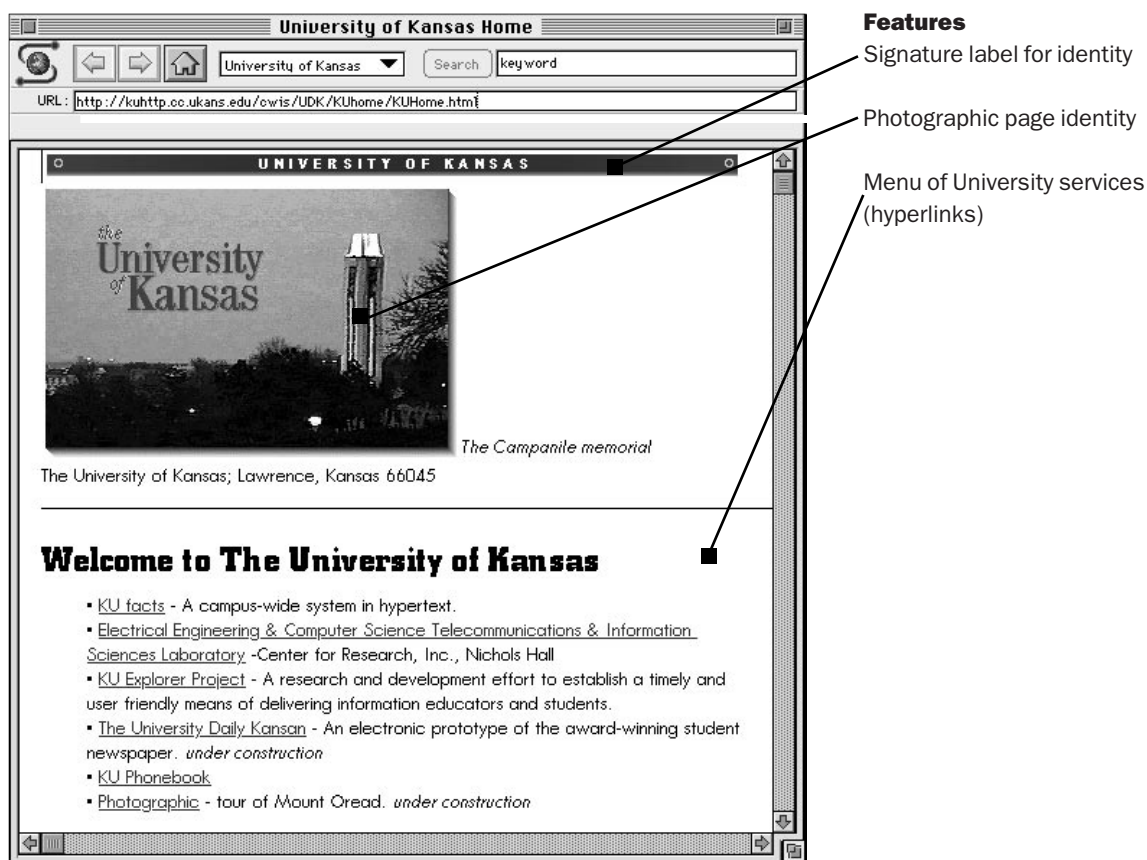
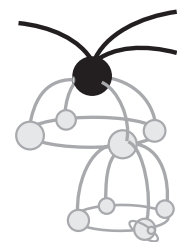
User defines typography (font and point size), color.



Mosaic online documentation
<http://www.ncsa.uiuc.edu/SDG/Software/Mac-Mosaic/Docs/MosaicDocs-mac.html>

Mosaic is an Internet information browser developed to make information retrieval easier and more user-friendly. It is the engine of choice for this project because it allows text to be typographically formatted and images to be incorporated with the text unlike any other browsers. In addition, hyperlinks to documents or files (such as sound or video) on the same server, or on a server halfway around the world, are easy to include in document. For a document to be viewed by Mosaic, it must be written in HTML, a high-level document scripting language. Documents can be written in a simple text editor.

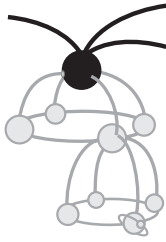
1. KU Home



- Features**
- Signature label for identity
 - Photographic page identity
 - Menu of University services (hyperlinks)

The KU Home page may seem as though it is tacked onto the top of the overall structure because it was created after the newspaper structure was finished. However, it has become one of the most popular and noticed parts of the project. It plays a vital role as an easy and attractive entry point to the University system for Internet visitors.

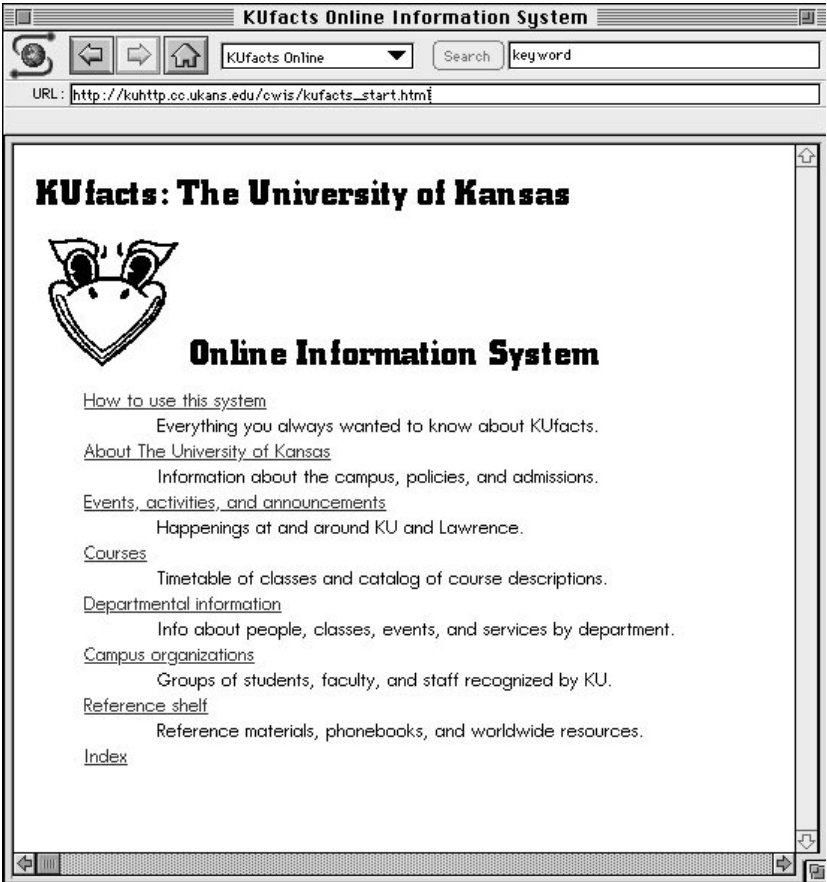
While there are other ways to get to the various services at KU, this page serves as an umbrella conveniently covering all known servers in one place, as well as servers at other Big Eight universities and three peer schools, Iowa University, University of North Carolina —Chapel Hill and University of Oregon.



Features
Simple hierarchy of material

Simple approach

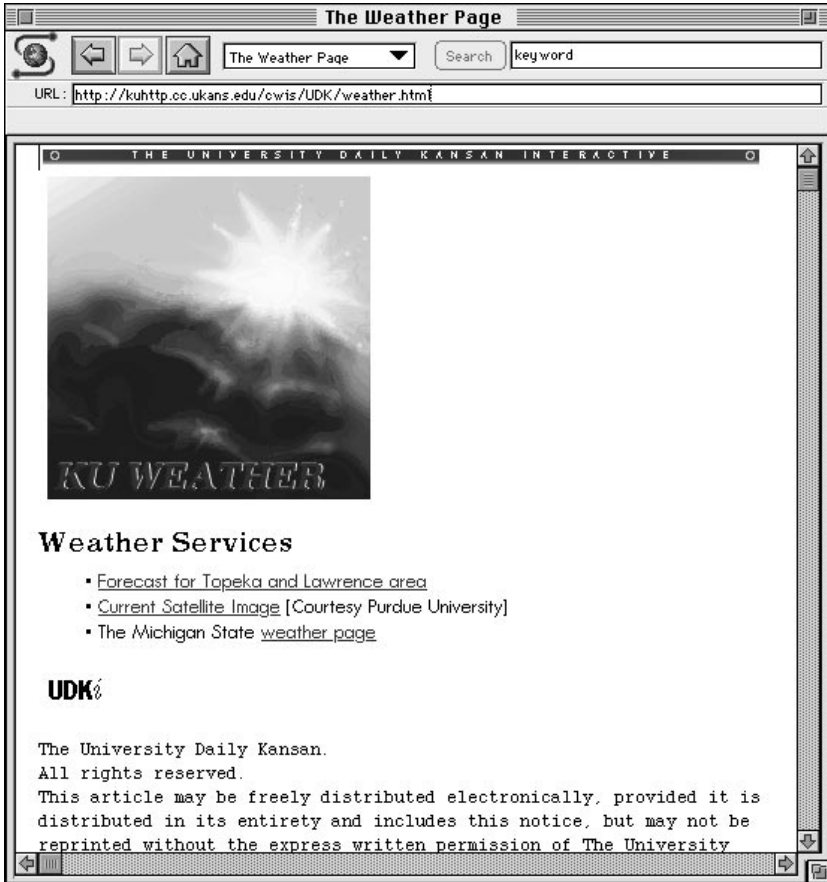
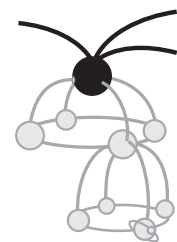
2a. Services — KU Facts



One of the services available from the KU home page as well as the UDKi Page One (page 37) is KU Facts, a campus-wide information system (CWIS) maintained by computing services. The service is particularly flexible because it has been built for Cello and Lynx users but can accommodate Mosaic users as well.

Mosaic is the more advanced program but still has fewer users because it is so new and requires a fairly fast machine (030-Mac and 386-PC preferred). The service is geared at the lowest-common denominator — slow machines with slow connections and no graphics.

2b. Services — KU Weather



Features

- Signature label
- Live link to National Weather Service forecast
- Relevant weather services at other universities may be added.

Editorial notes

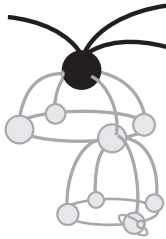
Attractive, consistent design identifies the page as part of the UDKi environment.

Design notes

Immediate information without maintenance — straight from the source.

Many university servers have weather services that allow users to browse the latest reports from the National Weather Service. One the best that I have found resides at Michigan State University and is accessible through the KU Weather Page.

Additional services could be added to the service as interest demanded. Currently, the local forecast and national weather map are available.



2c. Services — Classifieds, Archives, Ad Directory

Kansan Classified Services

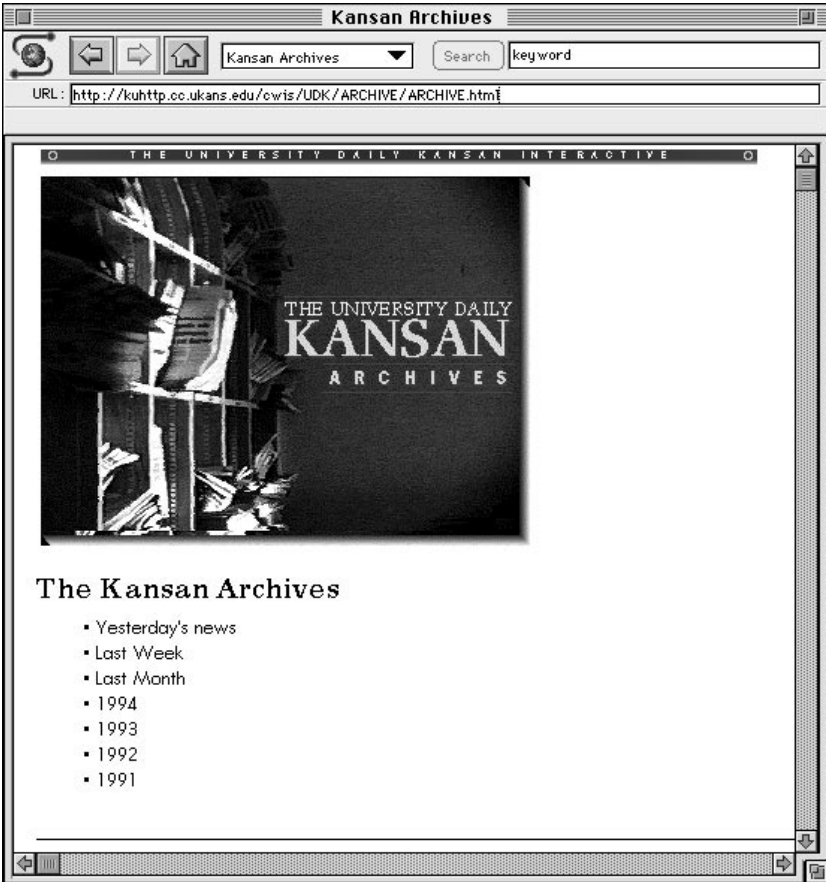


- Allows easy browsing of employment, real estate, merchandise and personals.
- Allows users to begin and terminate classifieds immediately.



Kansan Advertising Directory

- ELECTRONIC YELLOW PAGES: Search on index by advertiser or product.
- VIRTUAL SHOPPING MALL: Browse through retailers for bargains and place orders via fax from terminal.

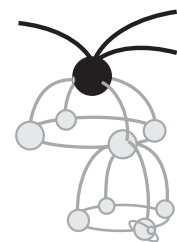


Additional services under construction include the Kansan Archives, Classifieds and Advertising Directory. These services also share visual identity traits such as the signature label and standard introductory “flag.” Each of these services shares a common information structure that minimizes the layers to three or fewer.

Noteworthy features:

- Minimized layering; most recent material is easiest to acquire (fewer links) and older links are all the same (year-month-day)
- Particularly useful for the *Kansan* since there is no archive presently available.

3. The University Daily Kansan Interactive Service



Features

- environment signature
- Service bar (clickable icons)
 - weather
 - KU Facts
 - classified
 - Information (online help)
- Advertising — entry to retailer's virtual store; fax button allows orders to be placed.
- Masthead — maintains identity for sections and stories.
- Sectionbar (like service)
 - campus
 - sports
 - KU Life
 - nation/world
 - opinion
 - Far Side
- Redundant link to campus page — as in verbal or visual communication, some redundancy is useful.
- Story/brief — the headline provides the link to the story. Small versions of photos may also serve as links to story.

Page One of the UDKi is the map to the news of the day. Users can navigate horizontally to other services (servicebar) or vertically by clicking on sections (sectionbar) or stories. Stories are accessed by clicking on the headline or, in some cases, the headline and a small version of a photo. Story descriptions would be written by an Electronic Editor to summarize the story as briefly as possible. This editor would also determine which graphics and other satellites would be directly available through the summary.

Editorial notes
Retains identity of the newspaper as well as structure and look.

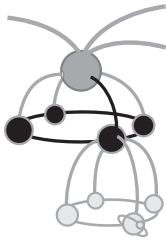
Design notes
Consistent use of color, size and placement of graphics. Headlines given typographic dominance.

Human performance notes
Incorporates redundant access points/cues.

Bottom of Page 1.



Buttons and section bar allow users to continue to other sections or features easily.



Features

- environment signature
- Service bar (same as pg. 1)
- buttons for specific features
 - search (a word)
 - contribute (a tip or story)
 - On Campus
 - On The Record
- Headline and brief taken from story; brief description is same as Page One.

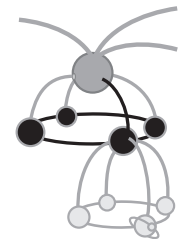
3a. Sections — Campus/Area



Campus and local stories appearing on Page One will reappear on the Campus Page because every campus or local story for the day is available here, listed in order of importance as determined by the editors. The brief description remains the same and users should be able to access the story from either page.

The Campus page represents a typical section document. Note the consistent size of the flag, placement of the standing graphic devices and strong visual identity link to other UDKi documents.

3a. Sections — Sports



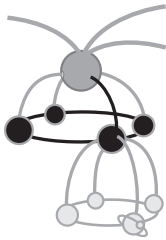
Full page view



Like the Campus Page, every sports story for that day is available from the Sports Page.

The Sports Page tests the flexibility of the three-layer model. Unlike in the traditional newspaper, space is never lacking. However, a document can become so long that it becomes inconvenient to the user. The large number of sports threatens to overtax the Sports Page.

Every sports story for a given day is available as well as schedules, rankings, Big Eight standings, and other periodically changing or stable information. This information as well as box scores and coverage of less popular sports are available in the electronic newspaper because there are no space constraints and student stringers can supply scores to the newspaper through the “contribute” feature.



3a. Sections — *KU Life, World, Opinion, Far Side*

KU LIFE



Entertainment news,calendar of events columns and reviews.

NATION/WORLD



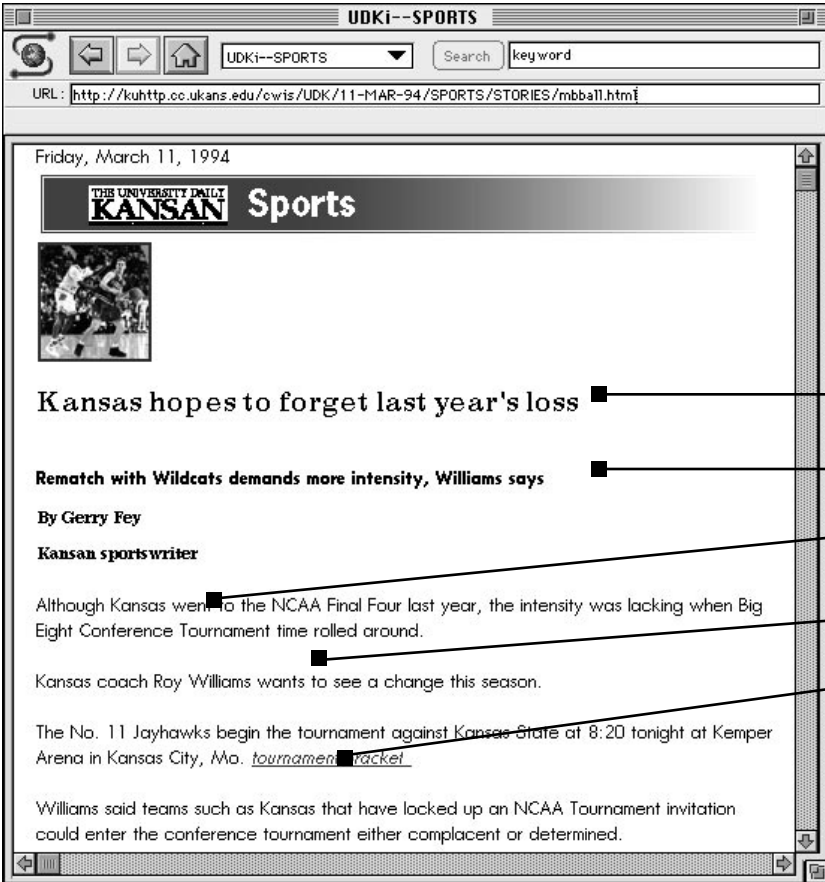
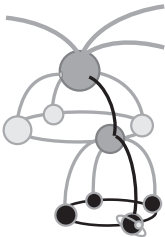
Usually five to 15 stories; occasional graphics and photos.



One of the pages that promises dramatic change is the Opinion Page. The powerful addition of interactivity to this page may revolutionize the way newspapers conduct public opinion polls, forums, chat sessions and even letters to the editor. These features may allow newspapers to reestablish their traditional role as a marketplace of ideas and a progressive instrument for discourse and change.

Every letter to the editor may be published; however, editors may edit and distill the best into a “best of letters” document.

3b. Stories

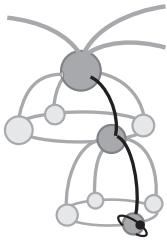


- Features**
- Story/satellite label incorporates flag, style of headers with horizontal fade.
 - Link to photo with outline (could be full-motion video)

- Story typography**
- Header 2 used for headlines
 - Deck is bold, normal style
 - Paragraphs are short, no indents
 - Line space between paragraphs
 - Links to graphics or other satellites.

Stories are the basis of the newspaper. The story documents are created by scripts that convert Quark XPress pages with stories into HTML documents. Editors then insert photos and links to satellite files as necessary. The headline and deck are converted from the page also.

Legibility of the story document could be greatly improved by columns of text. The user can manually adjust the screen size narrower for an optimal line length. However, this is not obvious to the casual user.



3c. Satellites

Types of satellites



Supporting documents (schedules, rankings, etc.)



Image files —can contain photos with cutlines...



... or graphics.

ALSO



• sound files



• full motion video

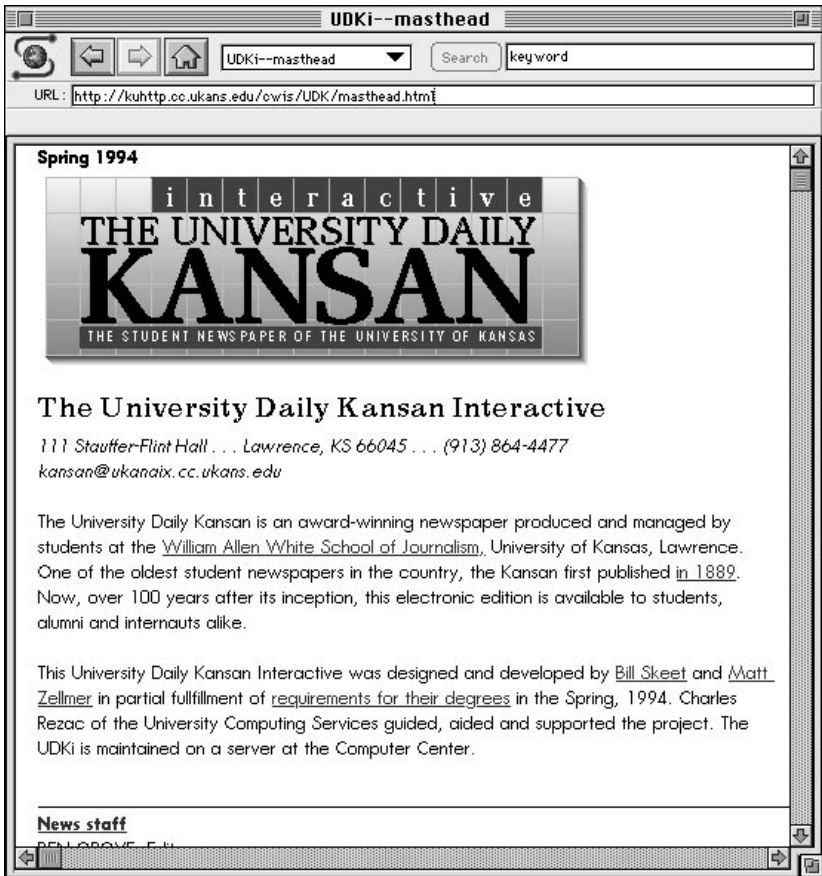
SKREET



Satellite files offer the greatest depth and media diversity in the newspaper. A satellite may be a schedule that is available, unchanged for months, or may be results for a tournament that could be updated every few hours. All satellites are available through a section, story or home page link.

Home pages are pseudo-satellites — somewhere between stories and satellites. They are repositories for a large number of standing items, particularly for topics that do not regularly have stories occurring. Club sports and administration news are good examples of benefactors of the home page. A home page could be maintained by a reporter as a sort of structured, edited beat memo.

3d. Other features — Masthead



As in the traditional newspaper, the masthead contains vital information about the staff, policy and other technical details. In the electronic versions, I have included a short description of the *University Daily Kansan Interactive* and included links to the School of Journalism home page and a personal home pages for Zellmer and myself.

The news and business staffs are listed by position. Information on how to reach us is also available here.

School of Journalism Home



- links to:
- The UDKi
 - William Allen White's essay
 - National award winners

Bill Skeet Home



- links to:
- pictures of my dog,
 - an audio clip of Darth Vader
 - a video clip of Godzilla

4. Advertising / Consumer Information



Online advertising is one of the most discussed and little understood aspects of electronic publishing. Most agree it is important; few agree how to do it. In this model, advertising is available in two places: 1) at the top right of services and sections as a sponsor, 2) presence in the advertising directory, the virtual shopping mall.

This model requires a more sophisticated interpretation of advertising. It is no longer an intrusive sell as in the traditional newspaper. Advertising in this medium is optional for the reader and must be considered valuable information. It should reward the user either with a discount, user-friendly shopping service or entertaining promotional material. The model promotes advertising as a service.

Accessibility



Advertising on Page One or section fronts allows users to navigate to the promotional information or virtual store.



Users can also access consumer information through the Advertising Directory Service.

The ad directory ensures the retailer of accessibility for shoppers and places the store name and related products in the database.

5. Marketing and distribution

Strategic information

Read me file describes how to set up software.

Software on disk is configured to default to KU Home page.

A campaign is launched in the (traditional) *Kansan* to promote the service as easy-to-use, free.

Disk costs \$1.

Mac and PC version available from *Kansan* or Computer Center.

Newspaper will refer to online services whenever practical.



Diskettes with all necessary software will be available at the *Kansan* Business Office or Computer Center for \$1 (covers the cost of disk). The software is free and also available on FTP servers at KU.

Questions about the service could be answered by the editor or manager in charge. Questions about software or hardware setup should be directed to the computer center.

FOUR

Conclusion

Student newspapers on the internet



Wisconsin Weekly on Gopher.



The Oak Leaf (Santa Rosa Junior College) on Mosaic.



The Tech (MIT) on Mosaic.

Conclusion

One of the problems with most of the information services available on the Internet is the developer's failure to recognize the importance of the appearance of the information.

When people come home from work, they aren't looking for an information adventure. They want information that is easy to access from a service they comfortable with. They would much rather watch TV... or read a magazine... or the paper... or even a good book.

We are more of a visual society than ever before. Yet information is often placed online with reckless abandon for aesthetics. For programmers and others who are used to the fixed-character sterility of the UNIX system, endless screens of text are just fine. But, for the majority of people who are bombarded by a multiplicity of media from dawn to dusk, the last thing they want to do is embark on a cyberquest for valuable, entertaining or interesting information through a cryptic, idiosyncratic interface.

Designers organize and structure information. Journalists gather filter and package information. Psychologists study how people consume, process and store information. The principles of each of these disciplines have been considered and applied to the design and development of the *University Daily Kansan Interactive*.

The convergence is most evident in the underlying structure of the information system. The flexible network consists of vertical and horizontal pathways similar to semantic network models. If these models truly represent the way humans store knowledge, then this structure should be appropriate and intuitive. Fluid as it is, the network still retains some integrity. The hierarchical nature that emphasizes three vertical steps to base information, allows designers to guide the user through the system. The sim-

ple structure chunks information in levels that reflect traditional newspaper structure: services, sections and stories. The interdisciplinary approach yeilds an interactive new medium emphasizing identity and consistency.

Media, entertainment, computer and telecommunications industries are vying for control of this fledgling industry, each with unique advantages and disadvantages.

This project began on the assumption that newspapers were uniquely well-suited to deliver an electronic information service based on experience and infrastructure.

Media success was determined to hinge on resolution of several important issues. The project investigated:

- **STRUCTURE:** What is the best information structure for an interactive newspaper?
- **INTERFACE:** What does the optimal interface include?

The project concludes with partial resolution of most of these questions. The model demonstrates possible solutions for information structure and interfaces issues. While subscriptions are not required for a student newspaper, advertising and classified are vital to most publications and are included in the model. Philosophically, the term “community” may take on a broader definition in this medium and news services have an opportunity to champion the communities of the 21st century. In short, the transition from present newspaper to electronic format looks to be relatively smooth, as long as newspapers work efficiently and use their resources wisely.

But none are resolved and, as expected, new questions have arisen. These new issues are present challenges for future researcher and warrant investigation:

- **FORUMS:** What will be the impact of interactive forums on communication? Will these become the virtual town halls of the future? How will tenets of free speech, libel and laws of communication be balanced with ethics?
- **GATEKEEPER:** What happens when online research

**More questions
for future research:**

TRANSITION: How should newspapers prepare to produce an electronic product?

PROFITS: How can newspapers make money in this medium? What happens to subscriptions and advertising?

COMPETITION: Should traditional and electronic products compete or support each other?

COMMUNITY: Will this be the end, or a new beginning for publishers of community or niche publications?

allows us to give the people *exactly* what they want most?

Will market forces change the way we report when we know exactly how people are using our information?

• VISUAL IMPACT: What is the allure of images? Photographs — without motion, black & white and with long access times — are the most popular feature of the UDKi. Is the secret to success as simple as more, better video?

Resolution of these issues and others will require a background in journalism, psychology and design. As demographic research is revolutionized by online monitoring, methods developed by psychologists will be necessary to analyze audience behavior in interactive media. Particularly robust research will be possible because user activity can be monitored precisely. However, as the medium evolves, concern for user privacy may elicit various regulations. In fact, electronic newspapers will face many challenges as unprecedented fusion transforms the industry from a simple news service into an information / transaction / entertainment / monitoring medium. At risk are more than 200 years of First Amendment protection and a loyal readership that reveres the printed word over all other media. Newspapers must retain their rights, readership and identity through this “mediamorphosis” by designing and developing products based on research and not intuition.

Overall, the medium’s ultimate success depends on society’s acceptance, use and enjoyment of the service. The product must invoke comfort and seem familiar to the user; information must be easy to access and the interface must be intuitive. Inevitably, reaping new information must be natural and rewarding; it must be as familiar as orange juice and casual conversation about an article in the Sunday paper.

FIVE



Bibliography



Explosive New World

In a recent column, Tom Peters wrote that anyone who isn't confused by all the developments in new media technology is simply out of touch. Hardly a day goes by without another announcement of a new application of technology, a merger, or co-marketing agreement which promises to change our lives forever. Cyberspace is being staked out at a pace that makes the Oklahoma land rush look like a slow waltz.

THE REDGATE REPORT ON NEW MEDIA will attempt to keep you posted – and confused! – on the latest developments each week. We'll mention – but spend less space on – the blockbuster news, to make room for more arcane developments which might otherwise escape your attention. We're interested in hearing your comments, so communicate early and often to the phone and e-mail address below.

Ted Leonsis, President & CEO, Redgate Communications Corp. Redgate Report, 4/14/94

The field of information design is exploding with new magazines, newspapers and online newsletters. Anyone who wants to stay in touch with the emerging industry must keep up with dozens of publications as well as keep abreast of the latest research in relevant fields of journalism, psychology and human factors. And never underestimate the value of friends who clip and send articles of interest.

This section is organized into three sections: 1) publications that I believe are important to scan for day-to-day developments in the industry, 2) books and articles that are cornerstones of the field, and 3) research that is relevant to information, subdivided by domain (design, journalism, and psychology).

Regular reading

Personal selections:

Summary/compilation of articles from weekly survey of general and trade press; Knight-Ridder Information Design Laboratory
The Redgate Report on New Media, on Presslink
Media Express, on Presslink
A major daily newspaper (e.g. *The Kansas City Star*)
The Wall Street Journal special sections on technology
Forbes/ASAP, special section on technology

Trade and General interest publications relevant to Information Design

The following list is compiled from several sources

Journal of Object-Oriented Programming, SIGS Publication	Ideas: The Monthly Magazine of the International Newspaper Marketing Association, International Newspaper Marketing Association
Interacting with Computers: The Interdisciplinary Journal of Human-Computer Interaction, British HCI Group, Butterworth-Heinemann	CompuServe Magazine, CompuServe Inc.
Upside: The Business Magazine for the Technology Elite, Upside Publishing Co.	IFRA Newspaper Techniques: The monthly publication of the INCA-FIEJ Research Association
Quill: The Magazine for Journalists, Society of Professional Journalists	The Cost of Technology: Information Prosperity & Information Poverty, A Conference Report, 1987
Design: Society Of Newspaper Design	

<p>Gannett Center for Media Studies, Columbia University, New York</p> <p><i>Note: Now know as The Freedom Forum Media Studies Center</i></p>	<p>Redgate Communications Corp.</p>	
<p>Newspaper Focus: The Award Winning Magazine for the Newspaper Industry, Haymarket Trade and Leisure Publications Ltd.</p>	<p>Metropolis: The Magazine of Architecture and Design; Bellerophon Publications Inc.</p>	
<p>LAN Times: McGraw-Hill's Information Source for Network Computing, McGraw-Hill Inc.</p>	<p>CFO: The Magazine for Senior Financial Executives; CFO Publishing Corp.- The Economist Group</p>	
<p>The Washington Post: National Weekly Edition, The Washington Post</p>	<p>CIO: The Magazine for Information Executives; CIO Publishing Inc. - International Data Group</p>	<p>Companies to watch Compiled from the files of clipped articles at the IDL.</p>
<p>Desktop Video World: An IDG Communications Publication; TechMedia Publishing, Inc.</p>	<p>Signature: The Authority on Publishing Technology; SouthWind Publishing Co. <i>NOTE: formerly Magazine Design and Publication</i></p>	<p>3DO Adobe Advanced Technology Incubator Inc. Apple AT&T Bell Atlantic Bell South Belo Bertelsmann British Telecommunications CableVision Capital Cities / ABC Casio Claris Compaq Compuserve Cowles Media Co. Cray Computers Dialog / Vendor Disney Dow Jones EDS (Electronic Data Systems Corp.) EON/ TV Answer Gannett GeoSystems GeoWorks General Magic GTE Hearst Hewlett-Packard IBM Independent Telecommunications Individual Inc. Insider's Guide Inc. (IGI) Intel Knowledge Adventure Kodak KRI (Knight-Ridder Inc.) Lee Enterprises Liberty Media McClatchy Newspapers Media General Microsoft</p>
<p>PEN: Personal Electronics News; PenWorld Inc.</p>	<p>PC Magazine: The Independent Guide to Personal Computing; Ziff-Davis Publishing Corp.</p>	
<p>Petersen's PHOTOgraphic: Petersen Publishing Co.</p>	<p>On The Line (Japanese)</p>	
<p>Popular Photography: World's Largest Imaging Magazine; Hachette Magazines, Inc.</p>	<p>News Inc.: The Business of Newspapers; Fadner Media Enterprises</p>	
<p>MacWeek: The Newsweekly for Macintosh Managers; Ziff-Davis Publishing Co.</p>	<p>Newsweek</p>	
<p>PCWeek: The National Newspaper of Corporate Computing; Ziff-Davis Publishing Co.</p>	<p>NewMedia: Multimedia Tool Guide; HyperMedia Communications Inc.</p>	
<p>ComputerWorld, The Newspaper of Information Systems Management; CW Publishing Inc.</p>	<p>Mondo 2000: Fun City MegaMedia</p>	
<p>Newspapers & Technology: Helping Newspapers Apply and Integrate Technology; Media Business Corp.</p>	<p>Mediaweek: The Magazine of the Media Marketplace; BPI Communications</p>	
<p>Frames: A Monthly Publication For Sponsors of the Media Laboratory, MIT, Massachusetts Institute of Technology</p>	<p>MacWorld: The Macintosh Magazine; MacWorld Communications - IDG: International Data Group</p>	
<p>The Cole Papers: Technology, Journalism, Publishing; The Cole Group</p>	<p>MacUser; Ziff-Davis Publishing Co.</p>	
<p>The New Yorker; The New Yorker Magazine Inc.</p>	<p>Link: The Magazine of the Yellow Pages Medium; Yellow Pages Publishers Association</p>	
<p>Mobile Office; CurtCo Publishing</p>	<p>PressTime: The Magazine of the Newspaper Association of America</p>	
<p>Multimedia, The World of Macintosh;</p>	<p>Editor & Publisher</p>	
	<p>Forbes (and ASAP, A Technology Supplement to Forbes Magazine)</p>	
	<p>Fortune</p>	
	<p>The Economist</p>	

Motorola
MPR Teltech Ltd.
M-Tel (Mobile Telecommunica-
tions Technologies)
Nasdaq
News Corp.
NEC Technologies Inc
NEXTEL
New York Times Co.
Northern Telecom
NYNEX Corp.
Oracle
Pac-Bell (Pacific Telesis)
Paramount
Prodigy Services Co.
Quantum
Quark
QVC
R.R. Donnelley & Sons
Reuters
Slate
Sharp
Sony
Southwestern Bell
Spectrum
Sprint
TCI (TeleCommunications Inc.)
Times-Mirror
Time Warner
Tribune Media Co.
Tribune/Swab Fox
US West
ViaCom Int'l
WalkSoft (News In Motion)
Warner Bros.
Washington Post Co.
Xerox

Time
U.S. News & World Report

CJR: Columbia Journalism Review;

AJR: American Journalism Review

BusinessWeek (McGraw-Hill)

InfoText: Interactive Telephone Applica-
tions; Advanstar Communications

Datamation: for Corporate Computing
Professionals Worldwide,

Cahners Publishing Co. : Reed Publishing
USA

Corporate Computing: The Magazine of
the Reengineering Age, Ziff-Davis Publish-
ing

Computer Artist: The Magazine for Cre-
ative Professionals; PennWell Publishing
Co.

Communications of the ACM: A Monthly
Publication of the Assoc. for Computing
Machinery; ACM Press

Color Publishing; PennWell Publishing
Co.

Wired; Wired USA Ltd.

CD-ROM World: The Magazine and
Review for CD-ROM Users; Meckler Cor-
poration

CableVision;Diversified Publishing Group,
Capital Cities Media Inc.

Byte: The Worldwide Computing Authori-
ty; McGraw-Hill Publishing

AXIS: Quarterly on Trends in Design
(World Design Journal); (Japanese)

Aldus Magazine, Aldus Corporation

AI Expert: The Magazine of Artificial Intel-
ligence in Practice, Miller Freeman Inc.

PANPA Bulletin: Pacific Area Newspaper
Publishers' Assoc.

Publish: The Art and Technology of Elec-
tronic Publishing; Integrated Media Inc.

**Pre: Applying Prepublishing & Prepress
Technology;** SouthWind Publishing Co.

Scientific American;
Scientific American Inc.

Technology Review: Edited at the Massa-
chusetts Institute of Technology; Associ-
ation of the Alumni and Alumnae of the
MIT

Advertising Age: Crain's International
Newspaper of Marketing; Crain Communi-
cations Inc.

InfoWorld: The Voice of Personal Comput-
ing in the Enterprise; IDG: International
Data Group

Seybold:
Report on Desktop Publishing
Report on Publishing Systems
Digital Media

Lab Report: Notes from Southam Inc.'s
Electronic Information R&D lab

Electronic Services Update (Link
Resources Corp)

**Information & Interactive Services
Report** (BRP Publications)

MediaWatch (Media Research Center)

Multimedia Week: The Executive Report
on Business Opportunities in the Multi-
media Marketplace (Phillips Business
Information Inc.)

Design Tools Monthly: All the News in
Electronic Pre-Press

Electronic Marketplace Report: News
Analysis & Opinion for the Emerging Busi-
ness of Electronic Shopping and Com-
merce (SIMBA/Communications Trends)

Communique: The Freedom Forum Media
Studies Center

The Gilbane Report: on Open Information
& Document Systems; (Publishing Tech-
nology Management Inc.)

Information Today: The Newspaper for
Users and Producers of Electronic Infor-
mation Services; Learned Information Inc.

Cornerstone publications

Books and articles of particular importance to electronic newspaper development and the field of information design.

RECENT ARTICLES:

The I.D. Multimedia Forum, I.D.. March-April 1994; pp 36-43.	Mediamorphosis: The Coming Transformation of Newspapers, PANPA Bulletin, June 1993; pp 58-64.
Telecosm: Digital Darkhorse - Newspapers, George Gilder. Forbes/ASAP, October 25, 1993; pp 138-149.	Look, No Paper, The Economist. July 10, 1993; pp 7-8.
Publishers Design Electronic Newspapers To Keep Control of Information Delivery, Patrick M. Reilly. Wall Street Journal, April 26, 1993; p B1.	First Step to a Multimedia Future, Editor & Publisher, April 10, 1993; pp 18-19.
Plugged In? The Electronic Newspaper May Be Only A Few Years Away, Richard Gehr. Metropolis, June 1993; pp 37-40	Newspapers Redefining Themselves, New York Times, April 26, 1993; pp C1
Enter the E-Paper, Presstime. August 1993; pp 18-19.	Brave New (Media) World, NewsInc. Sept. 1992; pp 34-38.

INFLUENTIAL BOOKS:

Information Anxiety: What to do when information doesn't tell you what you need to know, Richard Saul Wurman. Bantam Books, 1989.	Vision, David Marr. W.H. Freeman and Co., 1982.
Visual Cognition, Steven Pinker, Ed. MIT Press, 1985.	Digital Design Media, William J. Mitchell and Malcolm McCullough. Van Nostrand Reinhold, 1991.
Laws of Media - The New Science. Marshall and Eric McLuhan. Toronto, 1988	Quantitative Display of Visual Information, Edward Tufte. Graphics Press, 1983.
The Media Lab: Inventing the Future at the Media Lab, Stewart Brand. Viking; 1987.	Art and Visual Perception, Rudolf Arnheim. University of California Press, 1954.
Envisioning Information, Edward Tufte. Graphics Press, 1991.	Powershift, Alvin Toffler. Bantam Books, 1990.
Image and Mind, Stephen Kosslyn. Harvard University Press, 1980.	Multimedia Interface Design, Meera M. Blattner and Roger B. Dannenberg eds. ACM Press, 1992.
The Ecological Approach to Visual Perception, James Gibson. Houghton Mifflin Co., 1979.	

Keywords

- Advertising
- Audio/Voice Software
- ATM
- Books
- Cable
- Cable-Phone
- CD-ROM
- Cellular
- Chips
- Classified Ads
- Comics
- Computers
- Computer Monitors
- Computer Networking
- Computers & Science
- Computer Software
- Converter Boxes
- Copyrights
- Criminal Issues
- Databases
- Electronic Bulletin Boards
- Electronic Mail (E-Mail)
- Entertainment
- E-Papers
- Electronic Ticketing
- Fiber Optics
- Flat Panel
- Future Media
- Home Computers
- Hackers
- Handheld Computers
- Hard Drives
- High-Definition TV (HDTV)
- Information Superhighway
- Industry Trends
- Interactive Media
- Internet
- Investors
- Legal Issues (Lawsuits)
- Magazines
- Media Mergers
- Modems
- Multimedia Computers
- Networks
- Newspapers
- Notebook Computers
- On-Line
- PCMCIA

PDA (Personal Digital Assistant)
Phones
Piracy
Press and Politics
Privacy Issues
Programming
Publishing
Radio
Regulatory Issues
Satellite
Security
SGML
Speech Recognition Tech.
Standards
Technology Summit
Telecommunications
Trade
TV
3-D TV
Wire Distribution
Wireless Distribution
Workplace
VideoConferencing
Video
Video Games
Video Phone
Virtual Reality
Zoomer

Relevant resources

The following sources contain valuable information to the field. I have tried to organize these articles, studies, books and reports into each of the three domains: journalism, Design and Psychology. However, many of these integrate the topics and may not fit neatly into any single category.

JOURNALISM

Alty, J.L.
Multimedia: What it is and how do we exploit it? People and Computers VI, edited by D Diaper and N. Hammond, (pp 31-44).

Associated Press Managing Editors (APME) Association (1991).
APME Graphics Committee Report. APME.

Bogart, Leo, (1989).
Press and public: Who reads what, when, where, and why in American newspapers. 2d ed. Hillsdale, N.J.: Lawrence Erlbaum Associates.

Bellinger, Robert (1992, May 18).
Newspaper – What paper? Electronic information systems of the next century, Electronic Engineering Times; n693 pC48 (1).

Burgoon, Judee K. and Michael, (1980).
Predictors of newspaper readership, Journalism Quarterly, 57, 595.

Chalfonte, B.L., Fish, R.S. and Kraut, R.E.(April 27-May 2, 1991).
Expressive richness: A comparison of speech and text as media for revision, Proceedings of the Conference on Human Factors in Computing Systems, New Orleans, LA, 21-26

Currie, Phil. (1992, January).
NEWS 2000: A new approach to gain new readers in a new era. In Phil Currie (Ed.), Editorially Speaking (pp. 1-16). Arlington, Va: Gannett.

Driscoll, MaryEllen. (1992, September)
Big Medium on Campus. Presstime; (pp 18-19).

The Freedom Forum Media Studies Center, (1992).
Media at the Millenium. The Freedom Forum.

Gollin, Albert E., (1992, April).
Setting the record straight on trends in newspaper readership. Presstime; (p. 42).

Gordon, Mike, (1990).
The world is changing: And if newspapers don't change, too, readers will vanish. Handout available at the Poynter Institute.

Poindexter, Paula, (1978, January).
Non-readers: Why they don't read, ANPA (American Newspaper Publishers Association) News Research Report, No. 9. (p. 2).

Stevenson, Robert L., (1979, March 9).
Newspaper readership and community ties, ANPA News Research Report, No. 18. (p. 2).

Winter, William L., (1989, December).
American newspapers and challenges of the 1990s. API East-West Newspaper Conference in Singapore report (pp. 35-38).

DESIGN/HUMAN FACTORS

Garcia, Mario R., (1987)
Contemporary Newspaper Design: A Structural Approach. 2nd Ed. Englewood Cliffs, N.J.: Prentice Hall.

Garcia, Mario R. and Stark, Pegie, (1991).
Eyes on the news. St. Petersburg, Fla.: The Poynter Institute for Media Studies.

Howes,-Andrew; Payne,-Stephen-J. (Dec. 1990).
Display-based competence: Towards user models for menu-driven interfaces. Cambridge, England, International-Journal-of-Man-Machine-Studies.

Kobayashi, Koji. (1982).
Humans, Computers and Communications. Handbook of Human Factors, Ed. G. Salvendy; (pp 1790-1809).

Kosslyn, S. M. and Chabris, Cristopher F. (1992, February).
Minding Information Graphics. Folio (pp. 69-77).

Kosslyn, S. M. (1985).
Graphics and human information processing [*Review of five books: Semiology of graphs, Graphical methods for data analysis, Mapping information, Statistical Graphics, and The visual display of quantitative information*]. Journal of the American Statistical Association, 80, 499-512.

Martin, M. (1989).
The semiology of documents. IEEE Transactions on Professional Communication, Vol 32(3) 171-177

Nolan, P.R. (October 16-20, 1989)
Designing screen icons: Ranking and matching studies. Perspectives. Proceedings of the Human Factors Society 33rd Annual Meeting, Denver Colo. The Human Factors Society, Santa Monica, Calif., Vol 1, (380-384).

Sobol, M.G. and Klein, G. (1989).
New graphics as computerized displays for human information processing. IEEE Transactions on Systems, Man and Cybernetics, Vol 19(4) (893-898).

Sondheimer,-Norman-K.; Relles,-Nathan. (Mar-Apr. 1982).
Human factors and user assistance in interactive computing systems: An introduction. IEEE-Transactions-on-Systems,-Man,-and-Cybernetics; Vol 12(2) (pp 102-107).

Thomas,-Peter-J. (Jul-Aug . 1991).
Language, communication, social interaction and the design of human-computer interfaces. Behaviour-and-Information-Technology; Vol 10(4) (pp 311-324).

Travis, D.
When is redundant color/shape coding advantageous? Some empirical findings. Academic Press, London.

Van-Gigch,-John-P.; le-Moigne,-Jean-L.(Apr. 1989).
A paradigmatic approach to the discipline of information systems. Behavioral-Science; Vol 34(2) (pp 128-147).

PSYCHOLOGY

Akama,-Kiyoshi. (1988).
Information processing for creating knowledge base. Special Issue: Problems of repetition in memory. Japanese-Psychological-Review; Vol 31(3) (pp 429-448).

Bergstrom, John C. and Stoll, John R. (1990).
An analysis of Information Overload with Implications for Survey Design Research. Leisure Sciences; Vol 12 (pp 265-280).

Hwang, S.L. and Wang, Y.S.
An experimental study of CRT graphical display in process control systems. Human Aspects in Computing; Vol 1. Design and Use of Interactive Systems and Work with Terminals; (pp 200-204).

Itoh, K. (1987).
Common factors on the extraction of visual features in letter recognition. Japanese Journal of Ergonomics, Vol 23(3) (pp 145-154).

Kleiner, Art (Dec 1991).
Dialing for data. Using on-line information retrieval services. PC Sources Vol. 2(12) (p 465).

Lamb, Marvin R. (Jan. 1991).
Attention in humans and animals: Is there a capacity limitation at the time of encoding? Journal of Experimental Psychology Animal Behavior Processes; Vol 17(1) (p 45-54).

Piekara,-F.-H. (1990).
Effects of using information systems on retention of information. Zeitschrift-fur-Psychologie; Vol 198(4) (pp 443-461).

Reeves, Byron and Anderson, Daniel R.
Media studies and psychology. Communication Research Vol 18(5) (pp 597-600).

Shneiderman,Ben. (1990).
Future directions for human-computer interaction. International-Journal-of-Human-Computer-Interaction.

Williams,-Kevin-J.; Cafferty,-Thomas-P.; DeNisi,-Angelo-S. (Aug. 1990).
The effect of performance appraisal salience on recall and ratings. Organizational-Behavior-and-Human-Decision-Processes; Vol 46(2) 217-239.

SIX



Appendix



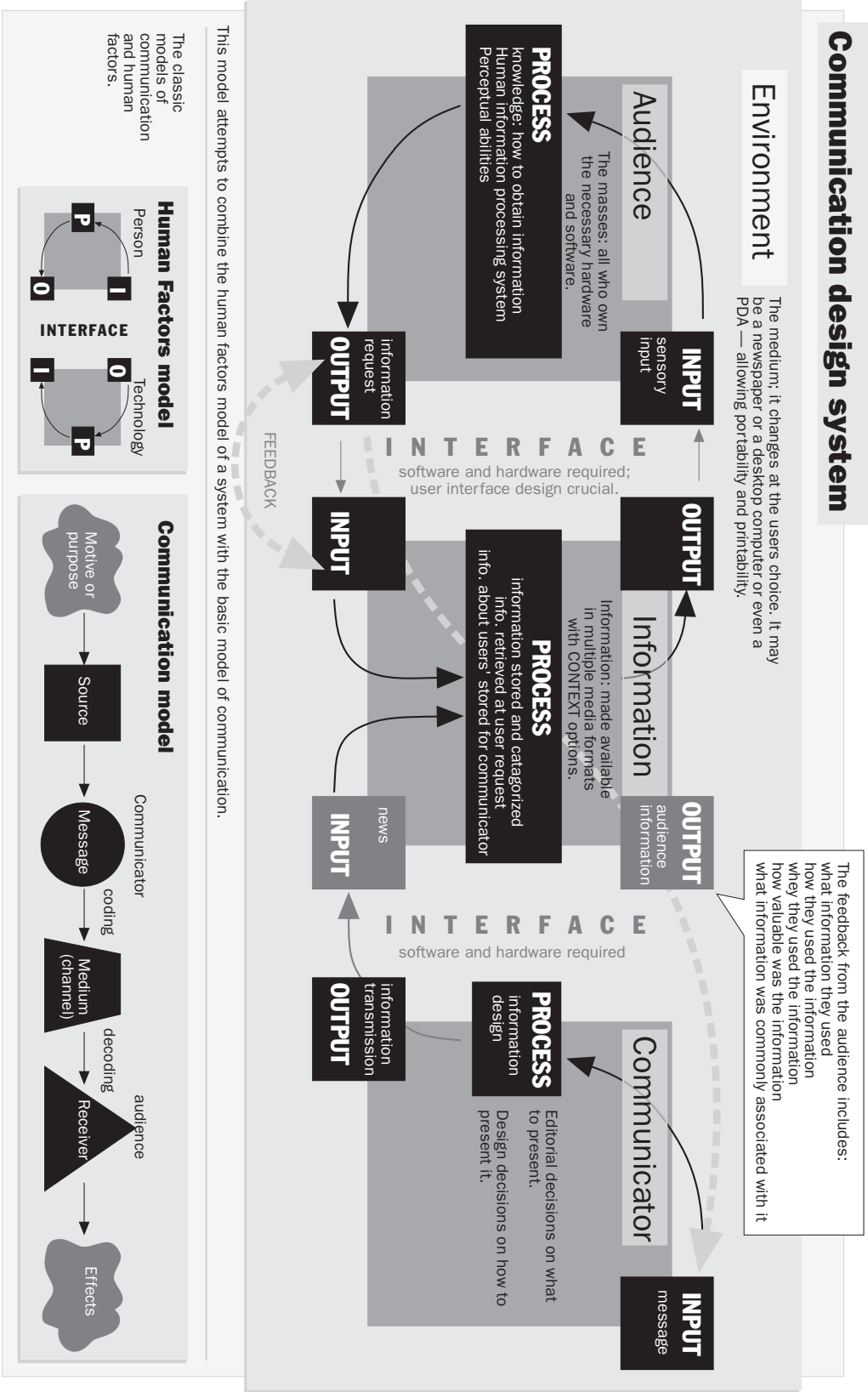
Overview — Communicative Information Design

Information design is design applied to mass media and mass communications. This could be considered *communication design*.

In the future, principles of *communication design* would be used in the preparation of news presentation and transmission to the masses.

News could be delivered directly to the user (possibly in a Personal Digital Assistant (PDA) or PC).

The communication designer of the future will be concerned with preparing and presenting the information in such a way that it may be retrieved quickly and efficiently by masses.



A1. Information design model

A2. The survey



THE FOLLOWING SURVEY IS ANONYMOUS, AND PURELY VOLUNTARY. RESULTS WILL REMAIN ANONYMOUS.

The University Daily Kansas Interactive is an experimental newspaper project developed by Bill Skeet and Matt Zellmer as part of our thesis work. Since this must be documented in a thesis, we need feedback from users to pad—er—reinforce our hypothesis.

Please take a moment tell us what you think about the UDKi. There aren't many questions and your responses go to a good cause: our degrees. Thank you for your time,

Bill and Matt

Your age:

Your sex: Male Female

Your major:

1. How experienced are you with computers?

never used one somewhat familiar very familiar expert

2. Have you read any other electronic newspapers/publications.

Yes No

3. Was it easy to find information that you wanted in the UDKi?

very easy easy neutral difficult very difficult

4. Do you think that newspapers should be pursuing this approach to information delivery?

strongly agree agree neutral disagree strongly disagree

5. If the UDKi were available every day, would you read it more or less often than the traditional newspaper?

much more often more often about the same less often much less often

Please mark the circle between the word pairs that best describes the UDKi.

easy to read	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	difficult to read
enjoyable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	frustrating
clear	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	confusing
attractive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	unattractive
inviting	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	intimidating
organized	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	disorganized
valuable	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	worthless
credible	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	not credible

What did you like or dislike about the UDKi?

Is there anything you would add or change?

Other comments or suggestions: (Use the back if necessary)

A3. ReadMe file (on disk)

May 5, 1994

Read Me Notes
University Daily Kansan Interactive™ Macintosh Version 1.0
=====

For Technical Support please contact computer services.

INSTALLATION

Copy the files onto your hard disk and put the disk in a safe place.

Double-click on the files to extract the contents of the compressed archives.
Follow instructions for each of the archives' contents.

In general, here's where files need to go:
EXTENSIONS - InterSLIP, JPEGView JFIF Preview, any modem extensions.
CONTROL PANELS - AdminTCP, MacTCP, InterSLIP control
SYSTEM FOLDER - MacTCP DNR, MacTCP Prep
All other files can be placed in any folder. Try to keep the external viewers
(JPEGview, SoundMachine and Sparkle located in folders near MacMosaic.

InterSlip Setup is the program used to connect to the terminal server.

***NOTE: in order for Sparkle to work (to view full-motion video), the
Quicktime extension MUST be installed. The latest version of Quicktime is available
at: FTP2.cc.ukans.edu/pub/www/mac or at authorized Apple dealers.

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