

CASE STUDY II-2

AMERITECH PUBLISHING, INC.

Ameritech Publishing, Inc., a subsidiary of Ameritech Corporation, publishes *Ameritech PagesPlus* telephone directories for the Ameritech Bell telephone companies in Indiana, Michigan, Ohio, and Wisconsin. Ameritech Publishing also has subsidiaries that produce 14 Ameritech Industrial Yellow Pages books covering 33 states and publish about 70 directories in 10 states outside the Ameritech area, English language directories for Tokyo and Osaka, and German, Austrian, and Swiss industrial directories. Publishing and distributing approximately 40 million copies of 484 different directories in 1990, Ameritech Publishing had \$866.4 million in revenues and provided about one-fourth of Ameritech's profits in 1990.

Ameritech Publishing's primary business is publishing yellow pages telephone directories. Yellow pages advertising does not generate demand, but a person who has decided to buy something often looks in the yellow pages to decide where to buy it. Because almost everyone has access to the yellow pages, and the average person uses them about 100 times each year to decide where to obtain something he or she already wants, it can be a very productive form of advertising.

As shown in Exhibit 1, there are two different types of yellow pages advertising. The entries in the column in the upper left of Exhibit 1 are in-column ads, which vary in size and form, as described in Exhibit 2. The large ads in Exhibit 1 are display ads, and (although it is not apparent in this black-and-white reproduction) they may be black on yellow or contain several colors. For example, the elaborate border of the "Fields of Flowers" ad is green, and the name Fields of Flowers and the telephone number are bright red. Display ads are more completely described in Exhibit 3. The yearly cost of a full-page dis-

play ad is about \$11,000 in a city the size of Bloomington, Indiana, but can range up to almost \$30,000 in Detroit or Cleveland.

Ameritech Publishing is in a very competitive business, with other companies publishing similar directories in every one of its markets. Moreover, Ameritech Publishing must compete with newspapers, radio, television, cable TV, and direct mail for a portion of each customer's advertising budget. It has a sales force of about 700 people who are paid on a commission basis.

History of Ameritech Publishing

Ameritech Corporation was formed in 1984 as one of seven regional holding companies created from the divestiture of AT&T. Prior to divestiture, each of the Bell companies was responsible for its own telephone directories and yellow pages, but Ameritech quickly decided that there was great potential for growth in yellow pages revenues and that this potential could best be exploited by separating the directory operations from the local telephone company's responsibilities and centralizing them in a wholly owned subsidiary. Therefore, in 1984 Ameritech Publishing was formed by combining the directory publishing organizations from Indiana Bell, Michigan Bell, Ohio Bell, and Wisconsin Bell. Illinois Bell (which is part of Ameritech) was excluded because Ameritech decided to handle directory operations in Illinois through a joint venture with R. H. Donnelley. Although the telephone directory part of the Ameritech business was centralized, the five state telephone companies continued to operate as stand-alone entities.

Leo Egan, a general manager from Michigan Bell, was the first president of Ameritech Publishing. His mission was to build an organization while at the same time improving the profitability of the ongoing directory operations. To mold an organization out of the pieces of four previous groups, Egan organized the company functionally, with most of the field personnel reporting to publishing and sales vice presidents. He also established staff positions in the finance, information services, human resources, and legal areas.

This case was prepared by Professor E. W. Martin as the basis for class discussion rather than to illustrate either effective or ineffective handling of an administrative situation. Its development was supported by the Institute for Research on the Management of Information Systems (IRMIS), Kelley School of Business, Indiana University. Copyright © 1992 by E. W. Martin. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form or by any means without the permission of the author.

EXHIBIT 1

Ameritech Yellow Pages In-Column and Display Ads

- Florists-Retail (Cont'd)**
- FLOWER BOWL THE**
We Honor Major Credit Cards
756 S. Walnut 332-9343
(See Ad This Classification)
- FLOWER STUDIO THE**
619 E. Audubon Dr 333-7394
- FLOWERS BY JANA RENEE**
Redbud Terrace 988-8900
- FLOWERS & INTERIORS INC**
Crossdown Shopping Center 333-6433
(See Ad This Classification)
- HAMMOND'S FLORIST**
173 N. Fletcher Av 829-3537
- JUDY'S FLOWERS & GIFTS**
All Major Credit Cards
4015 W 3rd 339-7673
(See Ad This Classification)
- MARY M'S FLOWERS & PLANTS**
406 W 2 336-3222
(See Ad This Classification)
- MELICK FLORIST**
COMPLETE FLORAL SERV
- FRESH FLOWERS FOR ALL OCCASIONS
 - BALLOONS •••••
 - SILK AND DRIED ARRANGEMENTS
 - GREEN & POTTED PLANTS
 - WEDDINGS • FRUIT BASKETS
- FTD
Mon - Fri 8:30 AM-5PM
Sat - 8:30 AM-Noon
201 W Morgan 829-6503
- MICHAEL'S FLOWERS**
Jefferson Nashv 988-7758
Continued Next Page
- Yellow Pages ads get action

Fields of FLOWERS

FLOWERS FOR ALL OCCASIONS

- WEDDINGS • BIRTHDAYS • ANNIVERSARIES
- FUNERAL • BALLOONS • FRESH, DRIED, SILK

CITY WIDE DELIVERY

afs REDBOOK
Florist Services

WORLDWIDE WIRE SERVICES
HOURS
8:30AM TO 6:00PM

331-0161

421 E 3RD SUITE 6 IN COLSTONE SQUARE

THE DOWNTOWN FLORIST

Buds & Branches

"FLOWERS FOR ALL OCCASIONS"

STUDENT DISCOUNTS

- CUSTOM MADE FLORAL DESIGNS
- WIDE VARIETY OF FRESH FLOWERS
- DRIED & SILK ARRANGEMENTS
- PLANTS & PLANTERS

Free Delivery To Area Funeral Homes & Hospitals
Worldwide Wire Service

MasterCard VISA
ALL MAJOR CREDIT CARDS ACCEPTED

112 FOUNTAIN SQ
BLOOMINGTON IN 47401

332-BUDS
332-2837
1-800-326-1132

YOUR FULL SERVICE ALL OCCASION FLORIST

The Little Shop With The Big Heart

CEMETARY • OFFICE • ANNIVERSARY
PERSONAL • WEDDINGS • HOLIDAYS
PARTIES • CHURCH

SILK & FRESH FLOWERS
PLANTS • MYLAR BALLOONS
(Walkers • Latest Fads • Characters)

FREE CITY DELIVERY TO THE HOSPITAL, FUNERAL HOMES, & NURSING HOMES

MON-FRI 9AM-5:30PM
SAT 9AM-2PM

MYLAR & LATEX BALLOONS

afs REDBOOK

The four Bell companies from which the Ameritech Publishing personnel were drawn had been typical telephone companies with typical telephone company attitudes, but each had its own distinct corporate culture. Each of the Bell companies did things its own way, which carried over to the yellow pages as well. The layouts of the pages, the pricing, the contracts with advertisers, and the sales compensation plans were all different from one Bell company to another.

The new publishing vice president, Donald J. Frayer, was convinced of the need to standardize the publication of the directo-

ries. He felt that this required standard computer systems to support the publication and sales functions. Egan agreed on the need for these systems and supported their development, but his main focus was on the profitability of current operations, not on standardizing them. Having accomplished his mission of creating a new company from fragments of four Ameritech telephone companies and getting it off to a profitable start, Egan retired in 1986. He was replaced by Barry Allen, a young, energetic executive from Ameritech with marketing experience and an MBA from the Darden School at the University of Virginia.

EXHIBIT 2

Ameritech Yellow Pages In-Column Ad Descriptions

LISTINGS:

The most basic form of Yellow Pages Identification

Headings in Yellow pages describe the product, service or profession so that users can find a firm by knowing the phrase or word that describes its type of business.

LISTINGS are for IDENTIFICATION under all applicable headings.

One Service Listing is provided with business phone service. Additional listings provide the very minimum in complete Yellow Pages identification.

Bold Telephone Numbers add prominence & convenience to Column Identification.

Extra Lines provide a means of emphasizing descriptive information.

Alternate Call Listing provides an additional telephone number.

Headings Appear in 10 Pt Bold Type

Firm Name in Regular Type
Address000-0000

FIRM NAME IN BOLD CAPITAL LETTERS
Address000-0000

Extra Line Information About Products or Services Up to 5 Words Per Line.

If No Ans. Call.....000-0000

TRADE MARKS:

for Brand Name Identification

Trade Mark Headings "tie-in" with National Advertising & Promotion.

Optional Line Captions distinguish between manufacturer-dealer-distributor, etc.

Dealer Name & Telephone Number in Bold is optional.

Trade Name Listings identify brands, but do not provide space for Trade Marks or text matter.

Trade Extra Lines, Alternate Call Listings, and Trade Directional Extra Lines are available under the Dealers name, subject to rules of regular & directional extra lines.

BRAND NAME IN BOLD TYPE

DESCRIPTIVE TEXT or APPROPRIATE SALES MESSAGE

"WHERE TO BUY IT" Dealer

Dealer Name in Regular or **BOLD TYPE**
Address000-0000

BRAND NAME IN BOLD TYPE
DEALER NAME IN REGULAR CAPITAL LETTERS
Address000-0000

In-Column Space Ads

Identification with added Promotional Value

- They add prestige to a column listing
- They are surrounded by a border
- They permit emphasis in text matter
- They add impact and interest
- Layouts may use many variations
- Location emphasis is available

• Type sizes up to 12 point are available

1HS

FIRM NAME IN BOLD CAPITAL LETTERS

This 1/2" Size Ad Provides for 3 Lines of 6 Point Type
Maximum 8 Point Type
Address000-0000

3HS

FIRM NAME IN BOLD CAPITAL LETTERS

This 1 1/2" Size Ad Provides for up to 15 Lines of 6 Point Type or a Maximum of 2 Lines of

12 POINT TYPE for emphasis

Address000-0000

4HS

FIRM NAME IN BOLD CAPITAL LETTERS

This 2" Size Ad Provides up to 17 Lines of 6 Point Type or a Maximum of

3 LINES OF 12 POINT TYPE for added impact

Address000-0000

Space ads are available up to 3 inches in most books with your emblem available in 4CHS-5CHS & 6CHS sizes.

Allen took over a young company that was going well in terms of profitability, but not much effort had been put into defining its long-range role and goals. He felt that Ameritech Publishing's culture was still essentially that of the old bureaucratic, monopolistic telephone companies from whence it came. Allen's vision for the company was that of a lean and mean, customer-focused, competitive tiger. Allen's first priority was to get the company focused on the cus-

tomers and customer responsiveness. Thus, he wanted to move decision-making down so that it was very close to the customer. His second priority was to get the bureaucratic fat out of the organization. He believed that one of the best ways to remove this fat was to break down the business into many smaller pieces and to assign each piece to a manager empowered to manage that piece as if it were his own business.

EXHIBIT 3

Ameritech Yellow Pages Display Ad Descriptions

When you want to get
ATTENTION
 this Half-Page ad size will get your business
NOTICED!

Be sure to describe all of your products, services, or special feature information for your potential customers.

Also use an attractive illustration to catch the eye! Remember that the more you tell, the more you sell.

(8QCH)

DISPLAY ADS:
 The Ultimate in
 Yellow Pages

Advantages of Display Ads

- Complete flexibility in layout
- Pictures-speaking a universal language
- Great variety of type styles
- White space to assure interest
- Benday panels
- Selection of border styles

ANCHOR LISTING provided with each display ad. Special phrase follows address line, designed to lead column user to a more complete message in the display ad.

Firm Name in **BOLD** or Regular Type
 Address000-0000 or 000-0000
*See Advertisement This Classification

DISPLAY ADS ARE AVAILABLE IN OTHER STANDARD SIZES IF YOU WISH TO BE CONTACTED FOR COMPLETE INFORMATION CALL (317)685-7800, INPLS. IN. OR CALL 1-800-382-1929

One Large or Several Small Illustrations May Be Used In This Size Ad

This is a Triple Half Column Display Ad

The shape and size of this ad offers designers the greater flexibility. It holds more information. Several illustrations may be used. Greater white space encourages readership. In past studies, Yellow Pages users have said that they consider the size of ad to be an indication of the size and reliability of the firm.

SPECIFIC INFORMATION TO ENCOURAGE YOUR CUSTOMERS VISIT - HOURS - MAPS

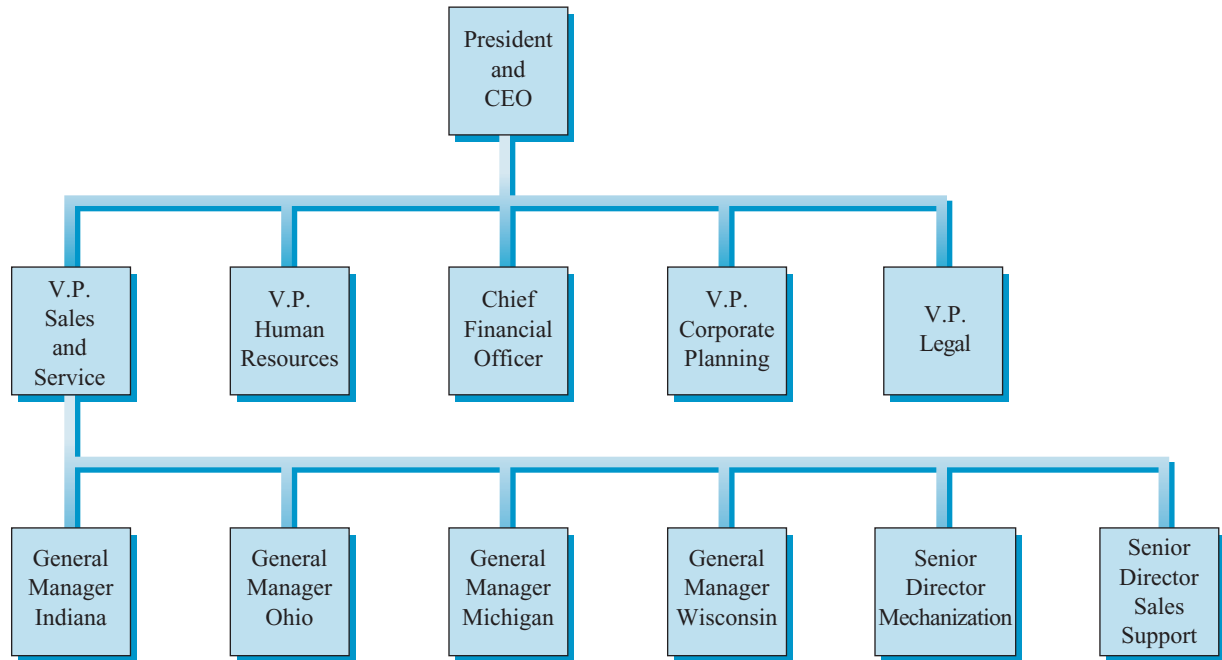
BOLD FIRM NAME & HEADINGS

(6QCH)

Soon after he took over, Allen reorganized the company from a functional to a profit center organization (as shown in Exhibit 4). As before, there were staff positions concerned with human resources, finance, corporate planning, information services, and legal affairs. The line organization was no longer functional, but rather had a general manager for each state who was responsible for the bottom line profitability in his state. Each state manager had his or her own publishing and sales responsibilities, and bottom-line responsibility was also pushed down to the district and even the office. In mid-1989,

when Allen was transferred to become head of Wisconsin Bell, Ameritech Publishing had become more efficient and was even more profitable than before.

Ameritech Publishing's new president and CEO was Gary G. Drook, a dynamic executive in his mid-forties who was vice president of marketing at Ameritech. Prior to this job, Drook had been with Indiana Bell, where he had served in several assistant vice president positions in information systems and marketing. Drook found that the organization had not made as much progress toward becoming customer-focused as he

EXHIBIT 4***Ameritech Publishing 1987 Reorganization.***

desired, and that there had been little progress in replacing the individual state cultures with a unified company vision. Also, the development of the new computer systems to support the sales and publications functions had bogged down.

Drook's Vision for Ameritech Publishing

In late 1991 Drook's primary goals for Ameritech Publishing were growth and quality. He wanted continual growth in terms of market share, revenues, and profits. "Being quick and flexible is what is going to help us grow the business," Drook says. "We must be able to quickly introduce new products, new enhancements, new pricing strategies. And we must become more customer-oriented and easier to do business with."

Drook also wanted better and better quality as perceived by his customers. According to Drook, "Quality involves better and more effective products and services, but it also means a mistake-free yellow pages book where each advertisement looks exactly like the customer intended it to look."

Drook's Concerns

Even after eight years, the heritage of being a part of the old Bell System telephone companies still persisted. According to Drook:

Before divestiture the telephone companies had a tremendous internal focus—on processes, procedures, and profitability. Customers were something that they just tolerated. They sold the yellow pages more on fear and intimidation than on value and service. We still have too many traces of these old attitudes.

We are perceived as being hard to do business with. One problem is that our products are different from one state to another. Consider South Bend, Indiana, and Niles, Michigan. These two towns are almost one town, but the state line runs down a street between them. Ads cost one thing on one side of this street and something else on the other side. Ads are vertical on one side and horizontal on the other side. It is very hard for me to explain to customers in the Niles–South Bend market why we cannot be more customer-focused.

Although the yellow pages are considered to be a local medium, we do about 12 percent of our business with national advertisers like General Motors, Ford, Chrysler, Roto Rooter, GE, and Westinghouse. The marketing department for General Motors, for example, defines and lays out all the yellow pages ads for General Motors dealers nationwide. Someone has estimated that for General Motors to place ads in our 400 directories, they need about 57 different pieces of artwork. This is partly because they have different size ads in different books, but the primary cause is that each of our states does things differently—for example, three-quarter page ads that are horizontal in Michigan are vertical in Ohio.

As a result, General Motors finds it very difficult to do business with us. They cannot just consider the market and decide which size ad they should have. Instead we have to get into long discussions about how we do our book in Detroit, and then another discussion about how we do it in Cleveland, etc. Kmart, for example, spends \$300 million on advertising, but they do not advertise in the yellow pages. They, and a number of other large advertisers, have told us that we are tough to do business with, that we are expensive, that we have a lot of funny rules, that they cannot make a national buy that makes cohesive sense to them.

In order to increase business, Drook wants to be able to quickly develop, test, and introduce new products. New products may be new pricing plans, but they also include significant changes, such as the availability of colors. It is very difficult for Ameritech Publishing to introduce new products when its products are not standard across states, because it may have to have different versions of the new product in each state. Also, because other things differ so much between states, market research and customer attitude surveys on new products are suspect unless they are replicated in each state, which increases costs and slows things down tremendously.

Drook knows that the quality of his product is not what he would like it to be. One measure of quality is the number of claims that they must deal with. A claim is a request by an advertiser for compensation because there was a problem with the advertisement—the wrong phone number, a misspelled name, the wrong color of ink, and so on. “We pay out about \$20 million a year in claims because of mistakes in the books,” Drook notes. Today a lot of these claims go to court. “We make so many mistakes that we have to be very careful about what we give out in compensation for claims or we could bankrupt the business,” Drook laments. “We want to get the claims level down to where it is much more reasonable,” asserts Drook. “Then for the few customers who have a problem we could do almost anything to make them happy.”

One reason there are so many mistakes today is that, because of the time pressure in preparing ads to meet publication deadlines, Ameritech Publishing is often unable to allow customers to proofread their ads before they are published.

Drook’s Strategies for Improving

Drook knows that changing people’s attitudes is not easy and that there is no quick fix. He is continually working to communicate his vision to everyone in the company. He designated 1991 as “The Year of the Customer” and publicized this widely within the company. Drook also has focused the attention of Ameritech Publishing on his goals by announcing and repeatedly emphasizing an “Advertiser’s Bill of Rights,”

which states that every advertiser can expect from Ameritech Publishing:

- a simple contract that permits them to understand what we will do and how much our services and product will cost
- the opportunity to see what their advertising will look like before the advertisement is made public
- an account executive that is knowledgeable about OUR products and THEIR business
- an advertisement “delivered,” designed and produced as we promised
- an accurate bill that is understandable
- immediate, effective, and courteous resolution if a problem should arise
- guaranteed products

Drook has also aligned the company reward system with his customer service vision by basing 20 percent of each salesman’s compensation on service performance as perceived by the salesman’s customers. The company does telephone surveys that measure the customer’s perception of the timeliness and accuracy of the ad, concern and helpfulness, and quality of service. The results produce a service index for each salesman on a scale of one to ten. “At the start,” reports Drook, “the results were all over the map, but they have been moving up and becoming more uniform. We now have sales groups that average a nine. We are very happy with the results.”

Another of Drook’s strategies is to standardize Ameritech Publishing’s products and operations so that they are uniform from state to state. Not only will this make them much less confusing to large customers, but it will enable the company to introduce new products much more quickly and to better control the quality of its products and services.

Finally, Drook is counting on new computer systems that are under development to provide the accuracy and flexibility that are so lacking today in the sales and publishing operations. These systems will accept orders for advertising, assist employees in creating the artwork for the ads, and store the ads in computer files. Once the ads are created and stored, the copy for a telephone book will be created by the computer and sent to the printer with no manual processes required.

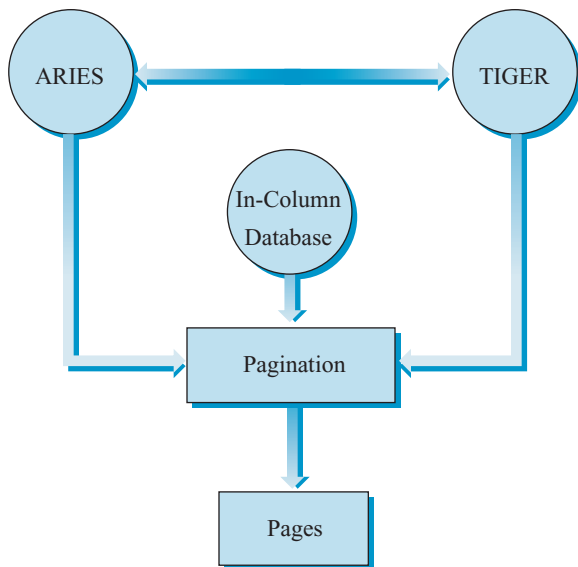
New Computer Systems

The interrelated computer systems being developed to support Ameritech Publishing’s sales and publishing operations are depicted in Exhibit 5.

ARIES (Ameritech Regional Information Exchange System) is a large, complex system that maintains the customer database

EXHIBIT 5

Publication Systems



and provides many services to the sales organization. The database contains information on customers, including their history of advertising buys and their current contract. One of its major functions is to support the salesman when he calls on the customer to sell advertising in next year's book. The system produces a report that shows the customer's past history and the contract terms for this year's products. It accepts orders and updates the database, calculates the salesman's commission, and notifies the TIGER graphics system that the ad must be included in the book. It also keeps track of claims and reflects their impact on the compensation of salesmen. The ARIES database contains the data for producing virtually any sales reports that management might desire.

TIGER (Total Integrated Graphics Entry and Retrieval) is a large graphics and database system that can be used to create and store advertisements that will be printed in the book. The TIGER processing center is located in Troy, Michigan, and contains several rooms full of Sun workstations networked to the large VAX computer that manages the database—about \$10 million worth of hardware (see Exhibit 6).

At a TIGER workstation an artist has access to a catalog of about 50,000 pieces of "clip art" that can be incorporated into any advertisement, a scanner through which images can be transferred into the computer, and a high-quality color printer for producing advertising layouts. As with most desktop publishing systems, the artist can use a mouse to draw, bring in clip art, move or rotate images, change the size of all or part of the ad, determine the color of images, modify previous versions of

the ad, and store the result in the computer's digital graphical database. Thus, the artist can produce a new ad or modify last year's ad, and the result is stored in the database so that it can be used to produce the yellow pages book. The final ad can also be electronically sent to the sales office to show to the customer.

TIGER can enforce standards concerning the size and shape of ads, and it also notifies ARIES that the ad that the customer ordered has been created. If an ad is published with a mistake, this results in a claim that is entered into ARIES. ARIES then notifies the TIGER database to tag the ad for correction before it can be used in next year's book. Thus, there should be no mistakes in the old ads that are used in the new book. Likewise, ads that require revision each year can be tagged to make sure that the required revision has been made before the ad is reused.

The in-column database has traditionally been maintained by the printer, but Ameritech Publishing has decided to bring this function in-house so that this material can be combined with the display ads to electronically produce the yellow pages.

As shown in Exhibit 5, the final component of this system is an automatic pagination system. When it is time to produce one of the telephone books, the pagination system receives the orders from ARIES, the in-column material from that database, and the display ads from the TIGER database. The

EXHIBIT 6

Using a TIGER Workstation



pagination system then applies rules to design and create electronic page images that can be fed to a computer controlling the press to print the pages without manual intervention.

Consider how the yellow pages have traditionally been produced. It all started with the canvassing function, when Ameritech Publishing's salesmen contacted customers to sell advertising in the next yellow pages directory. The creation of a new display ad was contracted out to an artist working for a local ad agency. The completed artwork was placed in a brown envelope and filed with the other ads appearing in the new book. About two and a half months before the deadline for distributing the new book, the sales office would stop selling and send these envelopes containing the hand-done artwork to the printer, along with a printout of the advertising orders from the computer. The printer would obtain the in-column information from the local telephone company, and then would lay out the pages by hand and print the book.

This process was slow, expensive, and mistake-prone. Because of the tight deadlines, there was no time to show the new ads to customers before they were sent to the printer, so errors and misunderstandings often appeared in the book. Also, when there were mistakes in the current book, someone might get confused and send the old artwork to the printer instead of the corrected version, which infuriated the advertiser.

With the new system, the display ads will be created by in-house artists using TIGER and stored in the TIGER database. Because the manual layout will be eliminated, Ameritech Publishing expects to save about \$6 million of the \$10 million per year that it pays the printer for these services. It also expects to save around \$5 million a year on printing costs because tests indicate that the automatic pagination system is more efficient in the use of space, thus reducing the number of pages printed.

However, Drook sees the main benefits of the new systems to be speed, flexibility, and accuracy. Because the company will be able to drastically compress the time required to produce a telephone book, it will be able to make sure that every ad is seen and approved by the advertiser before it appears in the book. Since the ads will have been approved by the customer (and corrected if necessary) and stored in the graphics database, there should be very few errors in the book when it is printed. Fewer errors should drastically reduce claims and enable the company to generously compensate customers for the few problems that remain. Thus, Drook is counting on these new computer systems to enable Ameritech Publishing to live up to the ideals expressed in his Advertiser's Bill of Rights.

Unfortunately, these systems, which were started in 1985, are still not completed and installed throughout Ameritech Publishing. While initial versions of components are being used in some states, and it has been demonstrated that the systems

can perform adequately, the date when they will be completely operational throughout Ameritech Publishing keeps receding.

The Development of ARIES and TIGER

When Ameritech Publishing was formed in 1984, it had no information systems organization. Daniel J. Harmon, who had started out at Bell Labs as a systems analyst and worked in both information systems and the directory business at Michigan Bell, was designated to build an information services organization for Ameritech Publishing. Harmon started with a staff of two, which had grown to 160 by 1991.

Each of the Ameritech states had its own customer/contract system that was being run at that state's Bell Telephone data center. Harmon's first task was to bring them into the new Ameritech Publishing data center in Troy, Michigan, which was accomplished by the end of 1984. Ameritech Publishing management quickly decided that the company needed a single customer/contract system to serve all of Ameritech Publishing.

Management first thought that the most efficient way to get to this single system would be to take the best of the existing systems, move the other three states to that system, and then enhance it over time to include all the needed capabilities. After extensive investigation and negotiation, however, management found that each of the four existing state systems was unacceptable to the other three states. Therefore, they decided to develop a new system (ARIES) that would combine the best features of each of the existing systems.

At that time (1985), Ameritech Publishing still had a very small information services organization with little systems development capability. Therefore, the company opted to contract the development of this system to the Indiana Bell information services organization that had developed the Indiana Contract System. Ameritech Publishing planned to complete and install ARIES in the four states by the middle of 1988 at a cost of about \$5 million.

During 1985, Donald J. Frayer, vice president of publishing, was developing a vision of how to run publishing in the future. He envisioned an "integrated publishing environment" that corresponds to the systems depicted in Exhibit 5 and serves the needs of both sales and publishing. Thus, the company began to envision the graphics system for producing and storing display ads that became TIGER.

The Ameritech Publishing IS organization had no experience with or capability for graphics systems, so it began to look for a system to purchase. After some investigation, Ameritech Publishing signed a system integration contract with Janus Systems to produce the TIGER system, including responsibility for both software and hardware. Development and installation of TIGER was projected to take two years and cost less than

\$6 million. According to Harmon, "We had originally intended to build and convert our operations to ARIES, and then schedule the graphics system to come in behind. However, the economics of TIGER were so compelling that we decided to develop the two systems in parallel, with TIGER lagging about six months behind ARIES."

The requirements analysis and system design for ARIES were almost completed when Barry Allen took over as president in 1986 and reorganized the company into profit centers. In 1987, when IS was trying to get final sign-offs on the system design so that coding could begin, it found that previously agreed upon decisions were no longer acceptable. IS could not get final agreement on the form of the contract, what the system was to provide to the salesmen, and hundreds of other standardization issues. "Our standardization committees were up against the wall because they could not get the states to agree," reports Harmon. "Each profit center was insisting that we do it their way, and since IS had no power to say no, we ended up trying to satisfy everyone." Needless to say, this resulted in a complex, unwieldy system, and in continual delays.

Indiana was to be the first state for ARIES, and management established the target date of February 1989 to begin installation, almost a year after it had originally planned to have this system operational in all four states. In order to make this deadline, whenever it got bogged down trying to make a standardization decision, the Indiana Bell IS organization had to go on and make a decision, usually based upon what was wanted by Ameritech Publishing's Indiana profit center. IS knew that these decisions would cause problems in the other states, but it had no alternative.

When Gary Drook took over as president in mid-1989, he found that Ameritech Publishing had already spent double its original \$11 million development budget for ARIES and TIGER. The original plan was to install these systems throughout the company in 1988, but the company was just converting Indiana to these systems. It looked as if it would be at least three more years before the new systems would be in company-wide use.

Things were not going well in Indiana. The company had problems cleaning up the existing data and converting to ARIES. The salesmen and clerks who used the systems had to change what they did and how they did it and were not adequately trained. The Indiana profit center also was approaching its most difficult time of the year, when it was to publish its Indianapolis book. Furthermore, the other states were watching Indiana, seeing a system that was not what they wanted and increasingly questioning what the system was going to do for them.

One of Allen's last moves was to replace the user project manager, who was responsible for obtaining agreement on what the system was to do, with Walter E. Smolak, who had worked for Harmon as director of the Ameritech Publishing

data center. Smolak had come from Michigan Bell, where he had run data centers and served as an internal auditing manager, and before divestiture had headed AT&T's Development and Research Center in Orlando, Florida. Given how things were going in Indiana, Smolak was very uncomfortable with the planned conversion schedule for the other states.

After reviewing the history of the ARIES and TIGER projects with Harmon and Smolak, Drook concluded that, in addition to the normal difficulties associated with developing large systems, the major problem was that Ameritech Publishing had not faced the standardization issues inherent in these systems.

"We were trying to build a car with four engines in it, one for each state," Drook recalls. "You do not see many cars with four engines because they do not work very well. Furthermore, they are expensive to build and even more expensive to maintain." Drook coined the phrase "one car, one engine" to express his determination to "standardize our products, standardize our processes, standardize our procedures, and standardize the computer systems that support these standardized processes."

To get the development of ARIES and TIGER back on track, Drook asked Smolak to make a list of the standardization issues that were holding up progress. Smolak came up with a list of 39 issues, and Drook called his state general managers together and divided these issues up among them. For example, he told the Ohio manager: "You are responsible for sales reports. You should get input from your peers, but you are going to define the sales reports that everyone is going to get." He gave another manager the responsibility for defining the standard order form, and so on.

"This was a big help," reports Smolak, "but we always had a flock of new issues coming up, so we continued to be bogged down in resolving them. Moreover, although under pressure the managers would finally agree to standardize, in their heart of hearts they really did not want to do it. They would delay as long as possible before agreeing, and then insist that it would take them two years to make the change." Progress continued to be frustratingly slow.

After finishing the Indiana conversion to ARIES and TIGER, Ameritech Publishing started converting Michigan in September 1990. Because Michigan was organized and managed differently from the other states, Michigan had even more difficulty converting to the system than Indiana.

Present Status

In August 1991, Ameritech Publishing had almost completed the Michigan conversion. The company purchased a pagination system that is very flexible in that it allows the company to insert its own rules on allocating space. Since page layout is still different in each state, however, the company is having difficulty defining these rules and has not yet started pagination in

any state. Ameritech Publishing has invested several times its original \$11 million development budget in these systems, and because most of the anticipated savings lie in automatic page layout, it has yet to obtain any substantial return on this investment. Furthermore, Ohio is scheduled to begin conversion soon, and the Ohio general manager is pressing to postpone it for another year.

Because these systems are essential to achieving his vision for Ameritech Publishing, Drook has been increasingly frustrated that his efforts to promote standardization and get these systems back on track have not been successful. For some time he has been considering his alternatives, and he intends to act soon.