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**An Investigation Into Electronic Filing with EDGAR
(Electronic Data Gathering, Analysis, and Retrieval)
and its Effect on Printing and Publishing**

by

Kathleen A. Bloden

A written research report submitted in partial fulfillment of the
requirements for the degree Master of Science in the
School of Printing Management and Sciences in the College
of Imaging Arts and Sciences of the
Rochester Institute of Technology

May 1994

Thesis Advisor: Professor Frank Romano

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Certificate of Approval

Master's Thesis

This is to certify that the Master's Thesis of

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With a major in Graphic Arts Publishing
has been approved by the Thesis Committee as satisfactory
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and its Effect on Printing and Publishing**

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—*KAB*

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Abstract

The Securities and Exchange Commission (SEC) needs to reduce the vast amounts of paper streaming through the organization, to improve internal productivity, and to enhance market efficiency. They opted to install a “paperless” filing, storage, and retrieval system. The electronic data gathering, analysis, and retrieval system (EDGAR) ran as a pilot beginning in May 1984. The Pilot EDGAR’s success led to the April 1993 mandate, that all publicly traded companies file electronically. Publicly traded companies had no alternative but to enter the digital world, and the technological transformation associated with the mandate will impact the printing and publishing industries as well.

The study investigated the effects electronic filing with EDGAR has had on the printing and publishing industries. Probable effects included: market opportunities, timesavings, financial implications, staffing modifications, and staff education.

Information about EDGAR is obscure. The primary sources for investigation were magazines, newspapers, government reports, and telephone interviews with EDGAR pilot participants who are also financial printers and publishers. Information gained through the interviews was analyzed using the Delphic technique.

The stock market crash in 1987 put many financial printers and publishers out of business. Some printers and publishers blamed the advent of EDGAR. Those who remained in business were skeptical whether EDGAR would succeed and what it would accomplish. Many saw EDGAR as a wasteful government activity.

EDGAR has been a positive experience for the bulk of the interview respondents. Many were companies who saw through the discouraging days in the financial printing and publishing industry. The findings validated the expectations. EDGAR has secured some new markets for most financial printers. Although the financial printers are not actively pursuing new business as a result of EDGAR, they are getting some. Most respondents view EDGAR as a way to forge new relationships or to improve existing ones.

Although all but a few respondents reported EDGAR saves time, additional time is required to prepare filings. The typeset file must be stripped of typeset codes and converted to ASCII in a process called “edgarizing.”

Some financial printers interviewed said costs have risen as a result of electronic filing, mainly because the companies spent resources developing proprietary software intended to reduce file conversion time.

Most financial printers and publishers set up EDGAR work groups within their organizations. Respondents reported having between one and eight persons within the work group who keep up with technological and

procedural changes, depending on the size of the firm. They drew the manpower primarily from current ranks.

The persons working with EDGAR possess higher skill levels. The staff must also understand the nuances of finance. No longer can a copy clerk process filings without proper training.

A need exists to pursue topics like EDGAR. The impacts were compiled here to assist printers and publishers in gaining knowledge that will help them adapt to the rapid changes caused by the technological transformation.

Chapter 1

Introduction

Background

Development of the EDGAR Pilot system (Electronic Data Gathering, Analysis, and Retrieval), originated because the Securities and Exchange Commission (SEC) was drowning in an ocean of paper consisting of financial disclosures and reports that had to be reviewed to meet SEC statutory requirements. The SEC processed approximately 5.4 million pages in 1982.¹ The number of processed pages has continued to climb at a rate of one million pages per year.² Former SEC Chairperson, John Shad, created a task force in February 1983 to study ways that the SEC could improve internal productivity. The task force's strategy for improving their information management capabilities led to the investigation of a "paperless" filing, storage, and retrieval system. The EDGAR Pilot, created in 1984 to develop and test an electronic filing system, resulted. According to the SEC, the objective of EDGAR is to "increase the efficiency and fairness of the securities markets for the benefit of investors, securities issuers, and the economy. Under EDGAR, information will be filed electronically for acceptance and review by the Commission staff. Once accepted, the public information will also be rapidly available to investors, media, and others on computers via public reference rooms or subscription services."³ After eight years in the

pilot phase, the Operational EDGAR system is being phased-in currently. EDGAR Transitional Filers and selected volunteer filers began mandatory electronic filing in April 1993. New users were added incrementally in July, October, and December 1993. Congress mandated that this “significant test group” file successfully for six months before adoption of the final rules concerning electronic filing can occur. Experience gained during the transition phase will be considered by the SEC when they establish the final rules for electronic filing. Registrants will be installed in groups of about 1,500 filers each quarter, with the exception of the first calendar quarter each year. Any new registrant or those absent from the phase-in schedule will be placed in the last group of filers.⁴ The SEC expects full compliance of all registrants by summer 1996.

Purpose and Audience

The study investigates the impact that the digital information technologies will have on the printing and publishing industries. Specifically, it addresses the effect of the EDGAR mandate (a part of the SEC Authorization Act of 1987) on the financial printing and publishing industries. Probable effects include: market opportunities, timesavings, financial implications, staffing modifications, and staff education. The study benefits interested printers and publishers to assist them in gaining knowledge that can help them adapt to the rapid changes caused by the technological transformation.

Description of EDGAR

Prior to EDGAR, if an investor, an analyst, or a brokerage firm wanted to obtain information about a filing, they would have to go to one of the public reference rooms in Washington, Chicago, or New York. There, they would make a request for the desired file. The file may be available, it may be checked out, else it may be unavailable because the SEC Commissioner or one of the staff is studying the registrant. Microfiche of the information is generally available 30 days after filing. Fiche readers are available at the public reference rooms.⁵

Today, under EDGAR, registrants prepare required financial disclosures and reports. Registrants transfer the information in proper filing format with word processors and computers onto computer diskettes or magnetic tapes, else prepare it for direct transmission via phone lines or satellites. The SEC receives the diskettes and tapes sent by mail or by messenger. The information they contain is converted and input to the external mainframe computer. Data transmitted by phone lines or by satellites goes directly into the external mainframe computer. The external computer system's purpose is for the receipt and the dissemination of information to the public.

The SEC staff uses a separate internal system for file acceptance processing and review. They retrieve desired information transmitted to EDGAR using an encrypted link. Once accepted, the information is transferred back to the external system, where it is retrievable from EDGAR workstations in any of the SEC's public reference rooms. The information is also available digitally

and on microfiche to individuals, companies, state securities administrators, and subscribers. (See Figure 1).

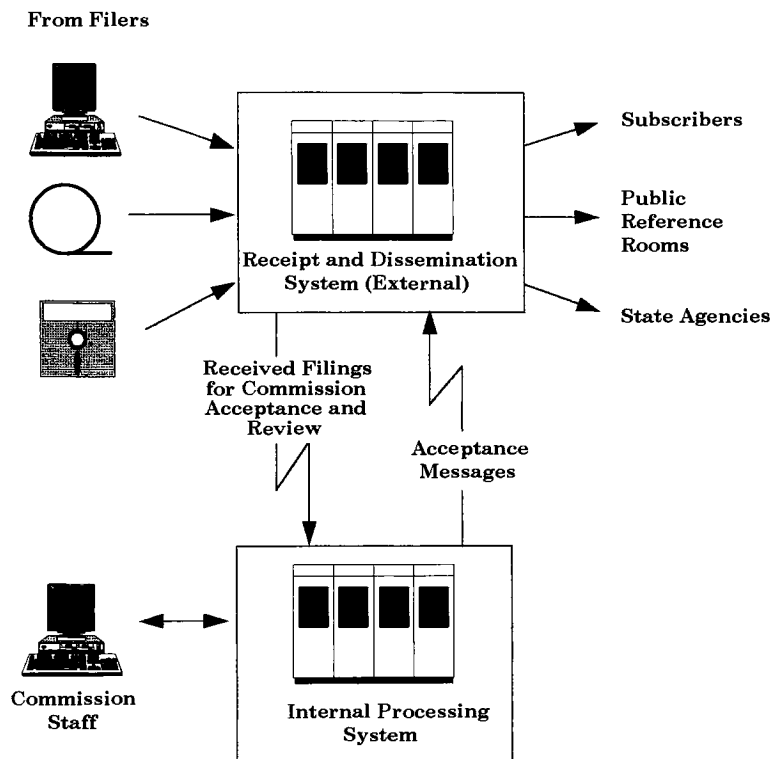


Figure 1
Operational EDGAR System

Mead Data Central, Inc., a private contractor, receives the data from EDGAR in digital form and sells it on a wholesale basis at regulated rates to information disseminators. The contractor offers three different subscription options: 1) daily tapes of all SEC activity; 2) on-line access to specific filings; and, 3) tapes of selected subsets of SEC activity.

The information is available electronically to anyone with a computer and dial up access to an electronic database from the information disseminators. Because the data is not protected by copyright, the information disseminators may enhance the data by adding analyses, graphics, or other features they feel are necessary. Typical users of the data, namely stockbrokers, analysts, and institutional and private investors, get access to the data at the SEC for free or from the disseminator for a fee.

Data Sources

The primary data sources for the research report included a literature search of selected journals, newspapers, and books. Reports of the General Accounting Office (GAO) and the SEC and the Federal Register were examined. The primary research culminated with interviews of financial printers and publishers.

Scope

EDGAR has impacted all of the SEC's customers from filers to information users. They have experienced problems as a result of the conversion (such as image processing limitations, security infiltrations by hackers, and politics). However, this study focused on how the change from ink on paper to digital technologies affects the financial printers and publishers in terms of market opportunities, timesavings, financial implications, staffing modifications, and staff education.

The Reasons for Interest in the Study

The author has been involved with data processing for 16 years. This year she will receive her M. S. in graphic arts publishing (electronic publishing option). The author is familiar with financial processes and has had first-hand experience as a computer analyst/programmer of manufacturing division financial systems for the Xerox Corporation. Her past experiences and current education created the opportunity for an in-depth impact study.

Notes for Chapter 1

¹Report of the United States General Accounting Office to the Chairman, Subcommittee on Oversight and Investigations, Committee on Energy and Commerce, House of Representatives, by Warren G. Reed, Director (Washington, D. C.: Government Printing Office, 1986), 8.

²"S. E. C. Picks Computer Bid," *The New York Times*, late ed., 4 January 1989, 6 (D).

³52nd Annual Report of the United States Securities and Exchange Commission to the President of the United States and the Speaker of the House by John Shad, Chairman (Washington, D. C.: Government Printing Office, 1987), 19.

⁴United States Securities and Exchange Commission, "Interim Rules," 17 CFR Parts 200, 201, 202, 210, 228, 229, 230, 232, 239, 240, 249, 260, and 269 *Federal Register* (18 March 1993) vol. 58, no. 51, p. 14633.

⁵Hobbs Scheibla, Shirley, "Egads, EDGAR! What Has the SEC Wrought?" *Barron's*, 26 August 1985, 25.

Chapter 2

Theoretical Bases of the Study

The idea of researching how digital information technologies were affecting printers and publishers, grew out of an article describing R. R. Donnelley's new business strategy. Bruce Caldwell explains, that the best example of how a company repositioned itself to adapt to the changing technology is to look at EDGAR.

The SEC devised EDGAR as a means of eliminating printed financial disclosures. Donnelley's reaction, since five percent of their earnings result from financial printing, was to work with the SEC to provide EDGAR services to their clients.¹ There are a limited number of filing agents, authorized by the SEC, available to assist clients with document formatting and filing. Lewis Koflowitz feels that small and mid-size companies with limited systems expertise might decide to take advantage of the services offered by filing agents; larger companies may follow suit.²

Bowne and Company, the country's leading financial printer, who together with Donnelley produces the majority of the commercially produced SEC filings, also saw the need to change to remain competitive. In a related article, H. S. Byrne states how Bowne views the role of filing agent as a

profitable enterprise and as a path to gain new business.³ Despite EDGAR's benefits in terms of creating digital documents, Bowne contends it will never make for a paperless environment, according to Janet Matthew.⁴ Donnelley maintains that the new digital technologies do not mean an end to print. The new technology just gets data to the customer faster.¹

Karen Berney interviews EDGAR Pilot users who see the system revolutionizing both dissemination and creation of corporate information. Instead of relying on couriers and plane schedules, companies can transmit files electronically permitting dynamic public access to SEC regulatory news similar to on-line data services like CompuServe. She finds users projecting cost savings and efficiency and productivity savings, as well.

James P. O'Neil, vice president of finance at Bowne, stresses that the electronic document is now the *official* filing. Therefore, he sees the need for a more skilled workforce for proofing, because the document controls applied to the paper versions must be applied to the electronic versions. The risk of error increases, because they must maintain both a paper copy and a digital copy of the original.

The articles bring to light the reality that the business of printing and publishing is changing. The authors make certain predictions in specific areas. Collectively, they allude that EDGAR will:

- Increase financial printer's business
- Save time

- Save money
- Require a negligible increase in staffing
- Require more highly skilled employees.

The study was undertaken to validate the authors' predictions. Further, the lack of information about digital information technology as related to printing and publishing, specifically, led to a more thorough pursuit of the topic.

Notes for Chapter 2

¹Caldwell, Bruce, "The Writing's on the Wall," *Information Week*, 17 May 1992, 24.

²Koflowitz, Lewis, "SEC's Electronic Filing Moves Toward Mandatory Phase In," *Corporate Cashflow*, December 1992, 34.

³Byrne, H. S., "Financial Printer Diversifies to Maintain Growth," *Barron's*, 22 February 1993, 38.

⁴Matthew, Janet, "EDGAR Pilot Is Set for Takeoff at the SEC," *Wall Street Computer Review*, February 1989, 48.

⁵Berney, Karen, "Let EDGAR Do It," *Nation's Business*, December 1985, 86.

⁶O'Neil, James P., "At Long Last, Meet EDGAR!" *Financial Executive*, January/February 1993, 47.

Chapter 3

A Review of Literature in the Field

Early Findings

“The Writing’s On the Wall,” by Bruce Caldwell, explains how R. R. Donnelley transformed their corporate thinking to compete in today’s market. Caldwell illustrates the challenges Donnelley faced by discussing decreased revenues at the peak of the recession of 1991, and Sears’ subsequent decision to discontinue its catalog, which Donnelley had printed for 80 years. In addition, the birth of EDGAR, created to eliminate printed financial disclosures, caused them to take a hard look at their future plans. EDGAR will result in timesavings for both the SEC and for corporations. Donnelley realized that they had to change from marketing print to electronic information, because the new media has twice the potential for growth as print.

Similarly, Bowne was suffering from the effects of the 1987 market crash and the ensuing downfall of the initial public offerings (IPO) market. They, too, saw a need to expand their horizons to remain competitive. H. S. Byrne, in *“Financial Printer Diversifies to Maintain Growth”* discusses Bowne’s success at gaining market share and decreasing its dependency on the new securities offerings. Bowne is involved with other interests, but they are in the forefront

of EDGAR, because they view providing filing services as an opportunity for profit. Bowne envisions EDGAR as a mean to achieving new business.

EDGAR Findings

As the scope for the research report was defined, the literature search focused on EDGAR and related articles. Reports were obtained from the SEC and the Federal Depository Library to learn more about EDGAR history and status.

The GAO report *“SEC Needs to Resolve Key Issues Before Proceeding With Its EDGAR System”* explains an investigation done by the House Sub-committee on Oversight and Investigation, because Congress was concerned whether or not the EDGAR Pilot would meet its original goals. Initially, the SEC proposed that the wholesale contractor would be responsible for funding the external computer to run the system. The contractors felt they should not have to pay for the Commission to become more efficient. The GAO also debated the accuracy of a cost/benefit study done by the SEC, saying their financing approach was inconsistent and limited Congressional oversight of the project. Congressmen Dingell of Michigan and Markey of Massachusetts led the investigation; the problems were eventually resolved prior to Operational EDGAR coming on-line.

The *SEC Status Reports* from 1986 to 1993 contain a wealth of background material. The June 1993 report stated that Congress was interested in

providing alternative electronic formats to the public. Therefore, the SEC was exploring the feasibility and cost of dissemination of CD-ROM's and diskettes containing EDGAR data.

The *Federal Register* is an excellent source for current information on the rulemaking for the EDGAR system, the background of the pilot and the operational system, and recent rules and regulations.

"Egads, EDGAR! What Has the SEC Wrought?" sums up what the majority of users felt at the beginning of the EDGAR Pilot in 1985. Shirley Hobbs Scheibla interviews a user with a real-world, worst-case scenario of a courier stranded at the Detroit airport en route to post a bond issue. The market opportunity was lost because of bad weather. She provides excellent background on old commission procedures and contrasts them with EDGAR. The author discusses filer wariness to give up the old for the new. She suggests that the SEC could make it more expensive for users to file on paper rather than electronically, or that the SEC could simply mandate it—[but, she says] that would be highly unlikely. She discusses the financial problems along with other drawbacks such as security, software limitations, and politics. Hobbs Scheibla concludes that EDGAR is inevitable.

Similarly, *"Let EDGAR Do It"* reiterates the same story from the previous article about the courier stranded at the Detroit airport. Karen Berney contrasts the scene with EDGAR saying EDGAR will significantly change the creation, analysis, and dissemination of corporate information. Berney

describes the old system versus the new. (A sidebar explains how EDGAR works.) Interviewed filers comment that EDGAR will save them time and money. The author discusses the artificial intelligence enhancements to EDGAR and gives a synopsis of the budget and political problems. She concludes that the Internal Revenue Service is interested in future developments.

User comments are not as upbeat in *"Haste Makes Waste."* Authors G. S. Slutsker and Janet Novak report that 10 K's "...are hard to reproduce, you can't read them, and most of the time you can't fax them." They discuss the growing market for data, once data is in electronic form; but, the authors do not appear convinced it will happen. The authors discuss problems with EDGAR. They point out market efficiency and agency efficiency as advantages. The disadvantages are that image processing is too expensive, and that the artificial intelligence enhancements are not deemed cost effective. They discuss formatting structure for documents.

Janet Matthew discusses EDGAR history and the ensuing Congressional battle in *"EDGAR Project Is Set For Takeoff at the SEC."* One user suggests that the SEC will not please everyone, but if he can file with a short turnaround time, that will be fine for him. Matthew describes the three methods for filing—tape, disk, and transmission. A year-long cost/benefit study, conducted at the request of Congress, was performed according to the author. The study determined what users saw as benefits of the system, and whether those benefits justified the costs of using EDGAR. The majority were

satisfied with the pilot and did not want to give up their EDGAR systems. Matthew quotes the Director of EDGAR Management at the SEC explaining how one must use the system to appreciate its value. She continues discussing plans for Operational EDGAR including mandatory electronic filing, subscription levels, image processing limitations, and plans to drop the artificial intelligence capabilities. (A sidebar describes the positive aspects of EDGAR from a user's viewpoint). User interviews reveal:

- Copies are distributed in days rather than weeks
- The magnetic tape option saves a firm from having to pay for hundreds of separate transmissions
- EDGAR saves time and money in physical preparation of a filing package
- EDGAR saves messenger costs and uncertainties of flight schedules
- The author mentions preserving the integrity of the document and not relying on person-oriented conversion
- EDGAR will not do away with paper
- The U. S. needs to stay competitive in this globalized market; we need EDGAR.

An overview of EDGAR and a detailed description of the subscription levels is provided in "*SEC's 'Equal Access' EDGAR*" by Diane Sherwood. Quoted subscribers are satisfied with the system. They discuss the Congressional hearing for the 13th time the Request for Proposals (RFP) was amended to get equal access for all for a price.

Margaret W. Nicol and Christine M. Darnowski provide an excellent overview of what was done prior to EDGAR in *“Online Access to Filings.”* The authors describe collecting bundles of filings and transferring them to machine-readable code, so they can store the information in their databases. Advantages of using on-line databases are given. Advantages include: immediate access, the power of searching, and value added. The authors provide an overview of what is available in which database.

In *“The SEC’s Intelligent Search for Truth in Financial Statements,”* Jessica Keyes discusses the artificial intelligence capabilities of EDGAR including the Financial Statement Analyzer (FSA) and the English Language-oriented Indexing System (ELOISE). The components were never added because of cost factors.

Graham Button provides an update on what EDGAR was initially and reports that the operational system is coming in *“Make Way for EDGAR.”* He mentions vendors can repackage the data, because it is not protected by copyright. Button lists subscription rates and says that users will eventually be able to search documents on the basis of keywords or financial data. He challenges readers to figure out what to do with the information.

More EDGAR user tips are provided by Lewis Koflowitz in *“SEC’s Electronic Filing Moves Toward Mandatory Phase-In.”* He says electronic filing will be a benefit to issuers and potential investors because it provides quick access to corporate financial and competitive information. He discusses EDGAR

history and recommends test filing. Koflowitz lists two EDGAR seminars as an alternative to test filing. He passes on user comments that EDGAR is an extremely cost-effective method of transmitting the data and extremely user-friendly. One user appreciated the timeliness of the review process attributable to electronic filing as opposed to previous paper filings.

(Electronic filings are available to examiners almost instantaneously.)

Another user stresses fast and efficient approval of registration statements, and the fact that the examiners can call the record up on the screen rather than waiting for paper to be sent through. The user can find out the date an offering becomes effective. The same user claimed they underestimated the document preparation time. Koflowitz lists pointers such as: gear up early, appoint transition teams, and have one individual keep current on EDGAR changes.

Tom Ehrenfeld mentions Operational EDGAR coming on-line over budget in *"On Line, At Last."* He also mentions the GAO investigation of EDGAR. In the article, SEC CIO John Lane defends the commission saying the GAO was attacking the length of time it took the SEC to get going—not the functionality of EDGAR. He also noted that the SEC now has user and steering committees in place in response to the charges. Ehrenfeld states that users say the system is effective, yet there are problems. One user reported spending 20 minutes transmitting a file, and she does not have confidence down the line that the system will be able to handle a large number of users. Another user mentions problems with record-keeping gaps involving filing

fees. The same person, however, feels the system is successful as it is, judging by the volume it is handling currently.

“At Long Last, Meet EDGAR!” was published slightly before the Operational EDGAR went into effect. It promises tips for the neophyte EDGAR user, beginning with the warning that EDGAR will not make life easier at first—the learning curve is steep, and it will not reduce filing costs. O’Neil provides some factors for deciding to file in-house rather than with a filing agent—depending on the complexity of the filing, time pressure, staff availability, competing priorities, and system readiness. Included are some pointers for getting started, and the differences between paper and electronic filing. The differences are: storing the document under both formats, the extra time needed to check the electronic version, data tags, financial data schedules, and lock box filing fee payments. O’Neil describes his company’s experience as interesting, and says that EDGAR is a cost of doing business to ensure that the regulatory agencies can manage their oversight role, control their paper flow, and maintain an orderly securities market.

In *“Electronic S. E. C. Filings Mandatory for 500 Companies,”* Theresa Riordan discusses EDGAR coming on-line. She discusses budget overruns, and the subsequent GAO investigation. The article explains the need for EDGAR to bring about paper elimination and for electronic retrieval. Riordan brings up some system problems—erroneous warning messages, the systems inability to handle graphics, and some user problems. One user thinks the tables are unsightly, and they will do anything to avoid EDGAR.

"In Billionaire Buffett Ups His Salomon Holdings" Associated Press raises a security issue whereby a test filing made its way into the EDGAR system. The Buffett Berkshire Hathaway CFO did not know how the error occurred, and he did not care to speculate about it.

"S. E. C. Picks Computer Bid" says BDM Corporation was awarded the EDGAR contract. The article mentions other players namely: Mead Data Central, Inc., Sorg, Inc., and Bechtel Information Systems, and what the contract involves.

Because of an editing error, the *New York Times* published an incorrect story about computer disruptions at the SEC. The *"Corrections"* stated that the terminals in the public reference room were down, not the main EDGAR systems computers.

The *Securities Regulation Law Journal* published two articles concerning EDGAR. The *"SEC Proposes EDGAR Rules"* describes beginning and ending dates for phasing filers into the system. Submission rules and times are discussed. The second article, *"SEC Adopts EDGAR Rules,"* pertains to rules for Operational EDGAR and explains a new regulation S-T that contains rules for electronic submissions. The article discusses hours of operation, signature requirements, safe harbors against liability, and two adopted hardship exemptions.

The *Ohio CPA Journal* ran a piece about “*The Effects of EDGAR on Auditing Practices*.” Author David Yang, assistant professor of accountancy at the University of Hawaii, discusses the evolution of electronic data processing (EDP) into auditing. He says EDGAR deserves attention as well, and that “the new paperless information era has begun.” While he believes EDGAR’s impact will be significant, he restricts his discussion to three major implications. They are: continuous auditing, database auditing, and reference for auditors.

In “*Effortless EDGAR Isn’t*,” John P. Mello, Jr., provides the reader with insight into a number of issues rising from electronic filing. They include: new equipment, training costs, less formality, security, and time consumption.

Peter Blackman discusses the effects of EDGAR on the securities lawyers in “*EDGARIZING’ the bar*.” Among the effects are rethinking the logistics. Coordination of filing documents must be done earlier in the process to ensure that they get “edgarized.” Blackman senses a general uneasiness with computer technology. He says there is more desktop publishing use by law firms, more so than ten years ago. Another effect is the rigid document format requirements of the SEC. Law firms spend more time proofreading for typesetting and EDGAR. They need to create submission headers as opposed to title pages in SEC forms. He mentions that decreased courier services and messenger expenses offset the “edgarizing” time.

Data Encryption and Compression

After reading the journal articles and reports, it was concluded that EDGAR utilizes a number of digital information technologies. Standard Generalized Markup Language (SGML) is the data tagging software used in EDGARLink. SGML was used for government compliance reasons, so the Commission could store massive amounts of data and transmit it easily. This is setting the stage for use of CD-ROM technology in the future. (The June 1993 status report from the Commission indicated they were looking into the possibility.)

EDGAR uses an encrypted link feature for data security to prevent unauthorized access to sensitive information. Three books were consulted to help the author to understand encryption methods. They were: *Data Compression Techniques and Applications, Hardware and Software Considerations*, *Data Compression Techniques and Applications*, and the *Data Compression Book*.

Data Compression Techniques and Applications, Hardware and Software Considerations, was useful for providing rationale for and uses of compression. Gilbert Held explained ten different compression techniques—null suppression, bit mapping, run length, half-byte packing, diatomic encoding, pattern substitution, relative encoding, forms mode operation, statistical encoding and adaptive compression. He further discusses system considerations, software linkage devices, and compression performing devices.

Data Compression Techniques and Applications was another good source with many suggested further readings listed at the ends of the chapters. Thomas Lynch discusses how the techniques are being applied today in the commercial sector: for compressing newspaper page masters for transmission; in the military for video compression for remotely piloted vehicles; and in many other government agencies, such as the National Aeronautics and Space Administration (NASA), for image compression from spacecraft. He discusses theory and classification techniques to a deeper degree than Held, but he discusses them in a more understandable way. Lynch wraps up with a discussion of data compression applications.

Mark Nelson's *Data Compression Book* proved to be an excellent source. Rather than trying to cover all types of data compression, he limits his coverage to the type used on personal and mid-size computers. He gives a brief history beginning about 1950 and progresses to the present.

"Instant Gigabytes?" was a skeptical review of a new utility that compresses files greater than 64K to 1/16th their original size by Russ Schnapp. The review contains a decent explanation of compression.

How This Research Differs

This research will make a contribution to the existing field of knowledge. Very little has been written with a slant toward the effects of EDGAR on printers and publishers. The range of existing literature will be extended, because the study probes deeper into the effects on the industries most at risk by EDGAR. As evidenced by this review, others have written about EDGAR, but from a functional user point of view. There is limited timely information relating EDGAR to the changes it is causing in the printing and publishing industries.

Chapter 4

The Hypotheses

The primary investigation resulted in a detailed accumulation of evidence from the various sources.

Current research indicates on a theoretical basis that:

1. EDGAR will increase financial printer's business.

“...EDGAR could well add \$100 million in new business for financial printers to an \$800 million market now based largely on the printing needs of the larger of the 15,000 United States public companies that file complex documents with the SEC to register securities and comply with federal financial regulations.”¹

2. EDGAR will save time.

“Electronic filings are available to the SEC examiners almost instantaneously”² and “in volatile capital markets where timing is the key, that makes all the difference in the world.”³

3. EDGAR will save money.

“...Besides the obvious time advantages.” One pilot user expects

“...industry savings on printing and postage alone to exceed \$30 million.”³

4. EDGAR will require a negligible increase in staffing.

“In making analysis quicker and easier, EDGAR promises coverage of more companies without the costs of hiring additional resources.”³

5. EDGAR will require more highly skilled employees.

“...the people doing conversion must be thoroughly trained and apply the same document controls to the electronic version that [they] traditionally [applied] to the paper version.”⁴

Interview responses validated the reality of the hypotheses to draw definite conclusions and to make specific recommendations to printers and publishers.

Notes for Chapter 4

¹Caldwell, Bruce, "The Writing's on the Wall," *Information Week*, 17 May 1992, 24.

²Koflowitz, Lewis, "SEC's Electronic Filing Moves Toward Mandatory Phase In," *Corporate Cashflow*, December 1992, 34.

³Berney, Karen, "Let EDGAR Do It," *Nation's Business*, December 1985, 86.

⁴O'Neil, James P., "At Long Last Meet EDGAR!" *Financial Executive*, January/February 1993, 47.

Chapter 5

The Methods

Design

The plan served to help the author to perceive EDGAR. The following steps led to familiarity with the system.

Analysis of reports and information gained from primary sources

After reading and analyzing reports obtained from the GAO, the SEC, and the Federal Register along with other perspectives obtained from books, newspapers, and magazines, the author determined what brought EDGAR about, what EDGAR is, the implementation schedule, the previous process and the future process, and EDGAR's significance to the printing and publishing industries.

Analysis of answers gained by interviewing involved printers and publishers

Isolating financial printing and publishing views from the total in the source materials was difficult. Financial printers and publishers involved with EDGAR to date were interviewed to provide additional perspectives. Although financial printers and publishers are similar to other printers,

(they perform the same tasks), they are also unique, because they understand financial schedules, the importance of timeliness and accuracy, peak periods, legal implications of filing, etc.

Technique

The Delphic technique was used to analyze the responses. The technique involves gathering the experiences of experts in a particular field to reach a consensus of the course of evolution in the field.

Telephone interviews were chosen over mail-in questionnaires as the method of data collection to improve control of the data collection, to obtain immediate responses, to increase the response rate, to increase the quality of the data (to avoid misunderstanding), and to capture a larger amount of data in a shorter period of time.

Procedure

Interviews were conducted by telephone. A pre-tested questionnaire was used for the interviews (See Appendix A). The contents included questions about EDGAR and questions pertaining to costs, efficiencies, and problems. The target was to conduct between 10 and 20 interviews. In-depth interviews were conducted with personnel representing 12 companies. (See Appendix B).

Interview candidates were chosen to represent companies of different size, geographic locations, and experience levels to obtain a good cross-section of the financial printing and publishing industries. (See Figure 2).

Profile of Respondents

Location	Number of Respondents
MA	2
MN	1
NC	1
NY	6
PA	2

Revenue Range	Number of Respondents
Less than \$10M	3
\$10M to \$100M	3
\$100M to \$500M	2
\$500M or more	1
N/A*	3

*Not available

Figure 2
Profile of Respondents

The information collected in the interviews was used to supplement the published data. The respondent's identity was protected, because interview results were not published by name.

Timetable

Below is the schedule for completion of the analysis. The project took 20 weeks or less.

Tasks	Months				
	Jan.	Feb.	Mar.	Apr.	May
Project Analysis	○-----△				
Research	○-----△				
Audience Analysis	○-----△				
Write Purpose Statement		○-----△			
Prepare Graphics		○-----△			
Outline		○-----△			
Write Draft			○-----△		
First Review by Advisor			○-----△		
Edit and Revise				○-----△	
Prepare & Proofread Final Copy				○-----△	
Approval by Advisor				○-----△	
Thesis Defense & Submission of Final Copies					○-△

Chapter 6

The Results

The purpose of the study was to investigate the effects of electronic filing with EDGAR on the printing and publishing industries. Probable effects included: market opportunities, timesavings, financial implications, staffing modifications, and staff education. The study was intended to benefit printers and publishers who were interested in gaining additional knowledge which will help them to adapt to the rapid changes caused by the technological transformation. In relation to the purpose, success was achieved in accumulating evidence with which conclusions were drawn and recommendations were made to the audience. The interviews with financial printers validated the reality of the hypotheses.

Market Opportunities

EDGAR has been a springboard to securing new markets for the majority of the printers and publishers interviewed. Most felt that the government mandated electronic filing has helped their business. Many believe that EDGAR provides an opportunity to market new services. Before EDGAR, customers did their filing in-house or through a typesetter. Today, however, not all small shops are up to speed on EDGAR. Customers want to try filing

themselves for various reasons, but then find themselves unable to do so. The filing agents see EDGAR filing as an additional service they can provide. Since EDGAR is government mandated, printers and publishers really have no choice but to offer the document conversion service. If they do not offer the service, the business will be lost to another firm.

Detail results of the survey relating to market opportunities are contained in Figures 3A and 3B.

Summary of Survey Responses

Markets

Question: *Has EDGAR enabled you to secure new markets?*

Summary: 76% indicated that EDGAR has resulted in new business. The remaining 24% indicated it is too soon to tell, and they are still evaluating the impact.

Comments:

- We're thankful for the extra business.
- We preserved our current customer base. We project that increased mutual funds will create more business to be done, and there are a limited number of filing agents.
- A couple new clients have been added. The mandate helped.
- Some customers want to file themselves, it's an entrée into new opportunities and a reason to make contact for marketing.
- Half-dozen customers were added plus our old base. The mandate is responsible for three new customers.
- They never gave EDGAR much credence, saw it as a government boondoggle. Now they know it's serious, they get nervous and call for help.
- Mostly been old customers getting new service.
- We aren't aggressively marketing, because it's only a small part of our business.
- The mandate opened some markets.
- There is some interest with potential selling edge. We aren't pursuing it.
- Not an overwhelming amount, but people will go elsewhere if we don't offer the service.
- Many clients don't want to deal with EDGAR, and we anticipate more.
- Yes, particularly the 10Q market.

Figure 3A
Summary of Survey Responses on Markets

Summary of Survey Responses

Markets

Question: *Has EDGAR provided you openings to sell printing services to newly acquired electronic filing customers?*

Summary: The respondents were split evenly (50% to 50%) on whether EDGAR has provided additional opportunities. Most of them indicated that the potential exists.

Comments:

- It helped bind relationships with customers.
- We have our same customer base and are providing the service to them.
- Our ability to handle it [EDGAR] has led to new business.
- EDGAR customers come for typesetting, it opens the door.
- EDGAR will lead to other business that printers didn't think about.
- The ones we have [customers] use us for EDGAR and printing.
- Small type shops aren't up to speed on EDGAR, and customers don't do it in-house, so they sought us out.
- We are poised to do it, but not actively pursuing it.
- We have some additional work. Advertising didn't yield many responses.
- More companies are looking for someone to do it. It's a service we can provide.
- What we did previously on a copy machine, we're doing by telecommunications.
- With production services, training is a relationship builder.

Figure 3B
Summary of Survey Responses on Markets

Timesavings

EDGAR has increased the makework time for printers and publishers. Filers spend additional time preparing EDGAR filings. The typeset file must be stripped of typeset codes and converted to ASCII in a process called “edgarizing.” This may be done using the SEC’s EDGARLink software. Some printers and publishers have elected to create their own enhanced conversion software in an attempt to reduce file conversion time. However, the majority of respondents said that EDGAR decreased the review and acceptance time. As more filers come on-line, respondents agreed EDGAR will be able to handle the volume. The capability is in place. Filers noted that they can work much closer to the filing deadlines as well. The review takes less time, but the apparent bottleneck is CompuServe. Some respondents reported up to a four-hour delay in receiving acceptance messages. Filing agents can call SEC examiners and get a verbal acceptance for their clients. Other persons suggested during peak periods, one should plan accordingly.

Detail results of the survey relating to timesavings are contained in Figures 4A, 4B, 4C, and 4D.

Summary of Survey Responses

Time

Question: *Do you feel that EDGAR will be able to handle the volume as more and more users come on-line?*

Summary: The respondents were unanimous in believing that increased volume will not be a problem.

Comments:

- Transmission time is minimal.
- The SEC isn't user savvy—they have plenty of lines, but they're not open yet.
- I've never gotten a busy signal nor been cut off.
- The SEC has 40 working phone lines; they're operating at half capacity. They have 400.

Figure 4A **Summary of Survey Responses on Time**

Summary of Survey Responses

Time

Question: What has been the time effect for reviewing the electronic filing versus the paper filing? What has been the effect on the length of time spent actually readying the documents for transmission?

Summary: The respondents experiences were varied with 60% indicating an increase in time, 30% indicating a decrease in time, and 10% indicating no change.

Comments:

- No change, files are copied for typesetting.
- Filers must sign off on EDGAR proof, so it's a little longer processing twice.
- Filer OKs electronic filing before transmission.
- Depends on the document.
- Very long.
- Takes time, but depends on whether client marks up copy a lot and sometimes requires a proofer to check the output.
- Conversion time—some packages are easier than others.
- They have their own laser printers in clients offices, so output is direct to the client's office.

Figure 4B **Summary of Survey Responses on Time**

Summary of Survey Responses

Time

Question: *Has EDGAR increased your efficiency and productivity? Do you serve your customers faster with EDGAR?*

Summary: 55% of the respondents indicated they have realized improvements.

Comments:

- The document is together when we receive it, we only edgarize it.
- A few filings have missed timewise. The customer reviews the file before he transmits it.
- It's faster than the pilot, but it takes time to do.
- It's an additional step increasing time. The paper filing is time consuming, so this is additional.
- Time is shortened, including courier service.
- Additional people and equipment lead to minimal time, no delays.
- Customers proof both the typeset and EDGAR copies, so it's double steps. Takes longer to convert. No delays if edgarized the day before due date.

Figure 4C
Summary of Survey Responses on Time

Summary of Survey Responses

Time

Question: *Comment on the timeliness of the review process by the SEC.*

Summary: The respondents experiences were varied with 50% indicating fast response while others identified some problems that impact the SEC's timeliness.

Comments:

- CompuServe is very slow. We call for acceptance.
- CompuServe sometimes backs up for three hours.
- CompuServe has backed up for four hours, especially Mar. 30 when all the 10K's were due.
- Horrible—CompuServe is as klugey as they come.
- CompuServe send messages back in about 15 minutes.
- Generally, CompuServe send messages back in 20 minutes to a half hour.
- In peak periods, plan accordingly.

Figure 4D
Summary of Survey Responses on Time

Financial Implications

Costs have increased as a result of electronic filing for some respondents. EDGAR has saved paper and storage costs for others. The majority agreed they saved on shipping and messenger services. The customer is charged about the same for file processing. Charges vary from job to job depending on the size and requirements. Because Congress required the SEC obtain a backup paper copy of a filing six days after transmission, the customer is charged for double processing; however, respondents noted the “edgarization” business is not a profitable enterprise by itself.

Some respondents mentioned large up front expenditures for programming. Higher costs were incurred by those who chose to write their own proprietary software instead of using EDGARLink. Some firms enhanced their own systems capability. EDGAR was written to run on the PC platform.

Detail results of the survey relating to financial implications are contained in Figures 5A, 5B, and 5C.

Summary of Survey Responses

Costs

Question: *How much additional work and expense is incurred by creating a paper copy in addition to the electronic filing?*

Summary: 36% of the respondents indicated that the work and expense is higher.
64% indicated there was not a significant increase.

Comments:

- If we weren't already doing typesetting for certain customers, we wouldn't have done EDGAR work.
- The customer reviews typeset copy before transmission.
- We typeset and edgarize, the filer does his own paper copies.
- Once done, the printout of the filing is acceptable.
- The customer files, we tag and send laser printouts to the SEC.
- We created a database for client information, so we don't have to recreate headers each time.
- We don't like clogging the work flow.
- The typeset document is stripped of codes, which means extra time and needless effort.
- The file is already there, just processed twice. One day we anticipate it being all digital.
- We used to typeset, print, and file; now, we typeset, convert to ASCII, edgarize, and file.
- Eliminated extra paper copies.

Figure 5A
Summary of Survey Responses on Costs

Summary of Survey Responses

Costs

Question: *Have you realized savings as a result of EDGAR (in areas such as printing and postage)?*

Summary: 30% of the respondents indicated that they have realized savings. 70% have not achieved savings.

Comments:

- No budget analysis has been done yet, we had a huge up front expense.
- It's not a major profit center in itself, but the price won't drive customers away.
- Paper saving cost.
- We charge for it, but it's not profitable.
- It's more expeditious for us as storage is cheaper than for film & paper.
- On a job by job basis.
- Customers don't understand why ASCII conversion costs so much.
- They already had the equipment and she was trained previously.
- Messenger costs have decreased, and at the same time conversion and transmission has increased expenses.

Figure 5B
Summary of Survey Responses on Costs

Summary of Survey Responses

Costs

Question: *Do you see EDGAR as simply a “cost of doing business?”*

Summary: 67% of the respondents agree that EDGAR is a “cost of doing business.”

- Comments:*
- More keeping up with the times and advancing the industry.
 - A profit center.
 - It'll be a way of doing business in a couple of years; something we have to do.
 - They've got to control the paper dump in Washington.
 - It's part of a package—another service we can offer.
 - It's an enhanced suite of services we can offer—we even have an 800 number.
 - Printers have no choice but to have the ability to adapt documents.
 - Both as a way of doing business and as a service.
 - Serious financial printers must handle EDGAR. People will go elsewhere. Some commercial printers will have to go to EDGAR for annual reports because some parts feed 10 K's.
 - We have to do it, it's a necessary process. It's not a money maker.
 - It's an entrée to new relationships.
-

Figure 5C
Summary of Survey Responses on Costs

Staffing Modifications

The majority of the respondents have an EDGAR task force/work group within their organizations. They found that as the workload increased, the staff had to as well. Some added word-processing specialists. Others felt strongly about the need to hire employees who understood the financial world. Many drew primarily from within the existing ranks.

Detail results of the survey relating to staffing modifications are contained in Figures 6A and 6B.

Summary of Survey Responses

Manpower

Question: *Did you find it necessary to establish an EDGAR work group/task force within your organization? Did it require additional personnel?*

Summary: 72% of the respondents added personnel to support EDGAR. The numbers of additional personnel ranged from one to eight with the majority in the range from one to three.

Comments:

- The staff must understand finance.
- As the workload increased, we required additional people.
- We added word-processing specialists to our staff.
- EDGAR is an example of government taking taxpayer dollars and not thinking EDGAR through resulting in backwards technology. They should be making it easier for the purpose of information technology. The concept is good, however.

Figure 6A
Summary of Survey Responses on Manpower

Summary of Survey Responses

Manpower

Question: *How do you keep up with the technological and procedural changes to EDGAR—one individual?*

Summary: The approach varied between having one individual or a small group responsible for keeping current with EDGAR changes.

Comments:

- One individual trained the others.
- EDGAR is in a constant state of evolution.
- It's ill-conceived antiquated (6-7 year old) technology.
- I seriously question the openness of BDM.
- Individuals in corporate offices plus one lead per site.

Figure 6B
Summary of Survey Responses on Manpower

Staff Education

EDGAR required additional personnel who had higher skill levels. Because EDGAR is in constant evolution, respondents felt someone on the staff had to keep up with the technological and procedural changes. The number of people trained in each company ranged from one individual to eight employees in a work group. In some cases, one individual trained the others in the group. The number of employees dedicated to EDGAR was proportional to the size of the department.

All but one respondent felt the learning curve for EDGAR was steep. The one who disagreed was a systems analyst. Persons inexperienced in SGML face the additional responsibility of understanding that first, before tackling EDGAR. SGML was restricted to two levels for simplicity. Disseminators have added a third level.

Some respondents utilized training sessions offered by the contractor, BDM, while others found them to be repetitious over time. Others settled for self-instruction using the *EDGAR Filers Manual*, the EDGARLink software, and test filing.

All agreed there was an adjustment period required when migrating from the Pilot EDGAR to the Operational EDGAR. Some saw the system as needlessly difficult, requiring an on staff lawyer or paralegal to interpret some of the rules. In contrast, others felt that typesetters are a versatile lot who can

adapt to many different software packages. EDGAR is just one more.

Detail results of the survey relating to staff education are contained in Figure 7.

Summary of Survey Responses

Education

Question: *Some users have indicated that the EDGAR learning curve can be a bit steep. What was your experience in terms of education/training?*

Summary: 78% of the respondents indicated that the education and training requirements were significant. More had difficulty with the rules than with the technology.

Comments:

- It's a big headache—the SEC has to make it simpler.
- EDGAR is pretty straightforward—the rules are more complex, it takes practice.
- Changes in rules/formatting have lessened over the last five years.
- Typesetters are versatile.
- Training was long—it was spent mainly on rules.
- Familiarity with SGML made learning EDGAR a cinch.
- Depends on knowledge of PC's and macros and proprietary software.
- It's not as cut and dry as they make it out.

Suggestions:

- Take classes to familiarize yourself with software and practice.
- Use on-the-job training for staff because training was a rehash of previous sessions.
- SEC instructions were verbose.
- Need an on staff lawyer or a paralegal to interpret some of the rules.
- Use courses to keep updated. Download latest versions of the *EDGAR Filers Manual* from CompuServe periodically.
- BDM training in Washington.
- Manual is clear and understandable, but not as good as it could be. Clients panic and come to them for training.

Figure 7
Summary of Survey Responses on Education

Detail results of the survey relating to EDGAR in General are contained in Figures 8A, 8B, and 8C.

Summary of Survey Responses

EDGAR in General

Question: *What do you see as the advantages to electronic filing? Disadvantages?*

Summary: The respondents open-ended comments touched on all areas of EDGAR processing.

Comments:

- It's monumental for the SEC in terms of getting rid of paper and film.
- Good for those wanting to view records.
- Timesavings because it's easier to file and retrieve information.
- The customer has more leeway with time, they can work closer to deadlines.
- Disseminators advantage which will increase as the database grows.
- For filers, there's no advantage. For reviewers/analysts, it's a big plus.
- Disadvantage are CompuServe glitches. The client wants to see acceptance.
- Survey revealed document conversion was biggest problem for filers.
- It's a new step the filer didn't have to worry about; more complications with filing electronically than with paper.
- Extra steps in the process—now SOP.

Figure 8A
Summary of Survey Responses on EDGAR in
General

Summary of Survey Responses

EDGAR in General

Question: Overall, has EDGAR been a positive experience for you?

Summary: The majority of the respondents indicated that EDGAR has been a positive experience.

Comments:

- Compared to the dark days in the printing industry. Market break in '87 put a lot of businesses out. Companies were dubious EDGAR would fly and what it would do.
- It took awhile to adjust from Pilot to Operational EDGAR because the SEC changed some things.
- It's been smoothly running.
- Training has been a relationship builder.

Figure 8B **Summary of Survey Responses on EDGAR in** **General**

Summary of Survey Responses

EDGAR in General

Question: *Do you have any recommendations for new filing agents?*

Summary: The respondents recommendations primarily addressed the necessity for adequate preparation.

Suggestions:

- Don't wait till last minute to familiarize yourself and practice.
- Six months prior, get rules, manual, etc., get access codes early, get questions answered early.
- The key is to do the translation as automatically as possible to preserve the integrity of the document.
- Understand what you're getting into. It can be overwhelming especially during peaks.
- Look at your word processing system first. Understand the formatting.

Figure 8C
Summary of Survey Responses on EDGAR in
General

Detail results of the survey relating to problems are contained in Figures 9A, and 9B.

Summary of Survey Responses

Problems

Question: *Has EDGAR's inability to read graphics posed a problem for you? [The SEC said the necessary information processing software was too expensive].*

Summary: 81% of the respondents indicated no problem with EDGAR's lack of graphics capabilities. The remaining 19% have experienced problems.

Comments:

- We just use verbal descriptions.
- It inhibits true dissemination of the document.
- SEC is only interested in numbers.
- The SEC is addressing the problem of image processing.
- Not a true rendition of the document.
- It's a problem for filers to describe.
- It's a matter of narrative with performance charts (in paper) going to the SEC.

Figure 9A **Summary of Survey Responses on Problems**

Summary of Survey Responses

Problems

Question: *Have you experienced any problems with record keeping gaps involving filing fees?*

Summary: Only one of the respondents indicated any problems and that related to confusion on the part of the filer as to where to transfer funds.

Comments:

- There is confusion on the part of the filers where to transfer funds.
- Only a problem when account numbers are missing or wrong CIK or CCC codes are input.

Figure 9B **Summary of Survey Responses on Problems**

Chapter 7

Summary and Conclusions

Summary

Drawing on the results, it was concluded: EDGAR affords new markets for printers and publishers; EDGAR increased time spent for file preparation, but gives printers' and publishers' clients the ability to work closer to deadlines; EDGAR increased some costs for printers and publishers initially, but decreased others overall; companies should establish EDGAR work groups within their organization; and, EDGAR requires additional personnel with high skill levels, such as the ability to do file manipulation and merging.

Market Opportunities

EDGAR will enable financial printers and publishers to capture new markets, if they actively pursue those markets. Right now, many are taking a wait-and-see attitude. Some are providing the service to their existing customer base. Others see mutual funds as an untapped market. The SEC expects full compliance with the mandate by summer 1996. Though it is still early, printers and publishers should be poised and prepared to file for their clients new or old. Presently, the system is new, and some are reevaluating their markets. However, as their filing dates approach, many firms panic and

seek out a filing agent. Electronic filing is another service printers and publishers can deliver. EDGAR will lead to other printing relationships.

Detail results of the survey relating to the first hypothesis are contained below in Figure 10A.

Summary of Survey Responses Relative to the Hypotheses

Markets

<i>Hypothesis 1:</i>	<i>EDGAR will increase financial printer's business.</i>
----------------------	--

- | | |
|----------|--|
| Summary: | <ul style="list-style-type: none">• 76% indicated that EDGAR has resulted in new business. The remaining 24% indicated that it's too soon to tell, and they are still evaluating the impact.• The respondents were split 50% to 50% on whether EDGAR has provided additional opportunities. Most of them indicated that the potential exists. |
|----------|--|
-

Figure 10A
Summary of Survey Responses on Hypothesis 1

Timesavings

Timesavings is a large issue. Comparing electronic filing with paper filing, depends on a number of factors such as how much the client marked up the copy, which word processing package was used to create the file, which document is being created, etc. Many of the respondents noted much time was spent hand-holding and test filing for their clients.

Those who have developed their own proprietary software systems noted timesavings. Those lacking systems to increase their efficiency and productivity felt EDGAR clogged the work flow.

One of the biggest problems users noted was conversion. EDGAR was not written with typesetters in mind. The typeset file from which printing is done is not compatible with EDGAR without conversion. ASCII was chosen as the acceptable format, because it is the only standard format available.

Respondents spend much time proofreading documents, because the typeset files must be stripped of the typeset codes. Many word processing programs leave some control codes imbedded in the ASCII conversion. These must be manually removed, unless the filer has access to a software program to remove them. Certain control codes will not be accepted by EDGAR. The list is published in the *EDGAR Filers Manual*. Updated versions of the manual can be downloaded from CompuServe. One respondent resolved the problem by simply telling her client certain characters are unacceptable.

Detail results of the survey relating to the second hypothesis are contained below in Figure 10B.

Summary of Survey Responses Relative to the Hypotheses

Time

Hypothesis 2:

EDGAR will save time.

Summary:

- 55% of the respondents indicated they have realized improvements in their efficiency and productivity.
 - The respondents were unanimous in believing that increased volume will not be a problem.
 - The respondents experiences with the time effect for reviewing/readying electronic filings versus paper filings varied with 60% indicating an increase in time, 30% indicating a decrease in time, and 10% indicating no change.
 - 50% of the respondents indicated fast response while others identified some problems that affect the timeliness of the review process by the SEC.
-

Figure 10B

Summary of Survey Responses on Hypothesis 2

Financial Implications

EDGAR will save money in areas such as courier services and postage.

Respondents agreed transmitting an electronic file is easier than mailing packages. Paper savings will also result. File processing is not cheaper. The filing agent creates the digital file, and if the customer wants a paper copy, the same file is used to laser print the copy for them. The request amounts to processing the file twice. Similar rates are charged for both ranging from \$15 to \$35 per page depending on the complexity of the filing. Again, EDGAR provides printers and publishers with but another service they can offer their clientele. If printers and publishers do not wish to do EDGAR business, customers will seek out another filing agent. EDGAR helps to cement the client-printer relationship. EDGAR is advancing the industry. The SEC must do something about managing its paper flow. Perhaps by 1996, EDGAR will prove to be a profit center. For now, it is too early to tell.

Detail results of the survey relating to the third hypothesis are contained below in Figure 10C.

Summary of Survey Responses Relative to the Hypotheses

Costs

Hypothesis 3:

EDGAR will save money.

Summary:

- 64% indicated that there was not a significant increase in work nor expense incurred by creating a paper copy in addition to the electronic filing. 36% indicated that the work and expense is higher.
 - 30% of the respondents indicated savings in areas such as printing and postage. 70% have not achieved savings in ongoing costs.
 - 67% of the respondents agree EDGAR is a “cost of doing business.”
-

Figure 10C

Summary of Survey Responses on Hypothesis 3

Staffing Modifications

EDGAR will enable the SEC to cover more companies without requiring additional resources. The SEC has realized the goal of managing the work flow better. Digital is more expeditious than handling a million pages of paper a day. Most respondents have EDGAR task forces in place. For some,

the group is very small. They may have one individual whose task is to keep current with EDGAR. For larger concerns, the staff is greater because of a greater workload. The larger firms have more than one individual keeping current with EDGAR. In some instances, those individuals educate the group.

Detail results of the survey relating to the fourth hypothesis are contained below in Figure 10D.

Summary of Survey Responses Relative to the Hypotheses

Manpower

<i>Hypothesis 4:</i>	<i>EDGAR will require a negligible increase in staffing.</i>
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Summary:	<ul style="list-style-type: none">• 72% added personnel to support EDGAR.• The numbers of additional personnel ranged from one to eight with the majority being in the one to three range.• The approach on how to keep up with the technological and procedural changes to EDGAR varied from one individual to a small group being responsible.
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Figure 10D
Summary of Survey Responses on Hypothesis 4

Staff Education

People doing the conversion must be knowledgeable of EDGAR and finance matters. Respondents dealt with EDGAR education in a variety of ways. Some chose self instruction using the *EDGAR Filers Manual*, EDGARLink, and test filing. Others attended training courses offered by BDM. Some ran seminars in-house. Most agreed that inexperienced personnel need training. Some found on-the-job training to be most effective. For typesetters who are used to various programs, the task was not as formidable. Granted, there is SGML tagging in EDGAR. The SEC kept it to a minimal level for the uninitiated. Training is very important for this task, particularly because of the legal ramifications of improper filing.

Detail results of the survey relating to the fifth hypothesis are contained below in Figure 10E.

Summary of Survey Responses Relative to the Hypotheses

Education

<i>Hypothesis 5:</i>	<i>EDGAR will require more highly skilled employees</i>
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Summary:	<ul style="list-style-type: none">• 78% indicated that education and training requirements were significant. More had difficulty with the rules than with the technology.
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Figure 10E
Summary of Survey Responses on Hypothesis 5

Conclusions

The conclusions are important to financial printers and publishers currently in the business, and to those contemplating the business. Little information has been written about printers' EDGAR experiences specifically. Printers from various regions and of various sizes, who have had extensive experience with EDGAR processing, were contacted. The respondents recommendations for new filing agents stressed the necessity for adequate preparation. Training and practice to fully understand the EDGAR rules and filing

process should begin well in advance of initial live production filing. It is advantageous for new filing agents to know the experiences of others.

The endless stream of paperwork and the need to control it forced the SEC to consider the use of computers and digital technology. In the same manner, EDGAR will cause changes in printing and publishing. The SEC mandated that all companies that trade publicly must file electronically by summer 1996. Printers and publishers have been slow to accept digital technology. The SEC has shown great foresight in converting the information from printed format to digital format; nevertheless, that does not mean there is no need for print media. One auditor sees 10 to 15 years down the road “corporate financial statements will be supplanted by a steady flow of computer generated information.”¹ Many people have plans for that data flow. Other agencies in government have gone digital, and so must the financial printing and publishing firms who support them. The phase-in of filers will continue until summer 1996, and printers and publishers can anticipate changes and adjust or develop their strategy accordingly. They must keep up with the changing technology and changing markets by providing new services.

Printers and publishers have to realize that the product they are marketing is data, not ink on paper; otherwise, they will end up like the buggy whip manufacturers. Buggy whip manufacturers never realized that the market they were competing in was transportation and not whips; their failure to accept the inevitable lead to their demise. The successful printers and

publishers will be those who keep up with the technological transformations; those who gather, process, and distribute data most efficiently.

A Suggestion for Further Investigation

The issue of standards not keeping up with technology was raised during one of the interviews. The issue is briefly discussed here for the benefit of others seeking a suggestion for further investigation.

Inadequate Technology

Some dissatisfied respondents found the concept of EDGAR was good, but the result was a faulty and technologically inadequate system. They felt the system has an unnecessarily closed format. EDGAR runs in a PC environment. One respondent said the system was not designed for typesetters, because it requires an American Standard Code for Information Interchange (ASCII) file as opposed to the word processing file the printer prints from. ASCII was chosen because it is universal.

The problem with ASCII for some respondents is the 96 character limitation. EDGAR uses the standard ASCII character set and no control codes, such as those commonly found in word processed files. The EDGAR contractor compromised with the filers by accommodating tables of up to 132 characters.

The EDGAR system was intended to be a convenient one requiring only two levels of SGML that business people could easily understand. The minimal amount of SGML is used primarily to set up the file header (formerly the title page that accompanies a filing). Each filing contains a short header followed by official text.

One respondent, who works in a Macintosh environment, reportedly was told that the SEC will release the code, so someone else can create software for other platforms. Another respondent suggested the use of a portable document format such as Adobe Acrobat. Word Perfect is also working on a new version, which will allow files to be saved in a SGML tagged format. If one turns on the unprintable characters option, the tags will be visible. The underlying theory is that the file could be brought into EDGAR. The incompatibility problem of having to remove the control codes inserted by Word Perfect software still exists. A fax-like input or scanned input was rejected because of the possibility of error or misrepresentation that could lead to legal problems.

The SEC is very careful not to show partiality to a particular vendor, because of the legal battles that could ensue. Possible solutions might include a higher level beyond ASCII, which would allow structural standards.

Chapter 8

Issues Outside the Scope

During the course of the research and interviews, several issues which are outside the scope of this report were identified. The following issues, which are briefly discussed, will directly impact financial printers and publishers.

Security

Although four codes are necessary to access an EDGAR file, security problems still plague the system. There is concern “that something will get filed without a company’s knowledge or the proper authorization,”¹ said Ann McCallion, senior vice president for financial accounting of Countrywide Funding in Pasadena, California, the largest mortgage-banking company in the United States. They change their passwords regularly. As an example, the Associated Press recently reported on a test filing making its way into the EDGAR system. The company’s CFO did not know how the error occurred, and the SEC is looking into it.²

Evolution of the Work Force

The research also uncovered an evolution of the workforce, not limited to printing and publishing. How do we handle the changing skills of the workforce? How does one manage our mature, skilled workers who refuse to change in a world managed by change? One respondent noted a turnover in customer service personnel caused by elder, accomplished workers who were reluctant to learn EDGAR, because they did not want to change. They did not regard EDGAR as a part of their job description. Many companies face this dilemma today. The solution will not come easily.

Notes for Chapter 8

¹Mello, John P., Jr. "Effortless, EDGAR Isn't" *CFO*, April 1994, 10.

²Associated Press, The. "Billionaire Buffett Ups His Salomon Holdings," *The Rochester Democrat and Chronicle*, 6 March 1994.

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Appendixes

Appendix A

Appendix A

Survey of SEC Filing Agents

Filing Agent:_____

Contact:_____

Title:_____

Phone:_____

Education

1. Some users have indicated that the EDGAR learning curve can be a bit steep. What was your experience in terms of education/training?

Manpower

1. Did you find it necessary to establish an EDGAR working group/task force within your organization? Did it require additional personnel?
2. How do you keep up with the technological and procedural changes to EDGAR—one individual?

Markets

1. Has EDGAR enabled you to secure new markets?
2. Has EDGAR provided you openings to sell printing services to newly acquired electronic filing customers?

Costs

1. How much additional work and expense is incurred by filing a paper copy in addition to the electronic filing?
2. Have you realized savings as a result of EDGAR (in areas such as printing and postage)?
3. Do you see EDGAR as simply a “cost of doing business?”

Time

1. Do you feel that EDGAR will be able to handle the volume as more and more users come on-line?
2. What has been the time effect for reviewing the electronic filing versus the paper filing? (What has been the effect on the length of time spent actually readying the documents for transmission?)
3. Has EDGAR increased your efficiency and productivity? Do you serve customers faster with EDGAR?
4. Comment on the timeliness of the review process by the SEC.

EDGAR in General

1. What do you see as the advantages to electronic filing? Disadvantages?
3. Overall, has EDGAR been a positive experience for you?

4. Do you have any recommendations for new filing agents?

Problems

1. Has Edgar's inability to read graphics posed a problem for you? [The SEC said that the necessary information processing software was too expensive.]
2. Have you experienced any problems with record keeping gaps involving filing fees?

Is there anything significant you wish to share?

Appendix B

Appendix B

Survey Respondents

Allen Lane & Scott
(Division of Smith-Edwards-Dunlap Company)
Philadelphia, PA

Bowne & Company
New York, NY

Corporate Printing Company, Inc.
New York, NY

George H. Dean Company
Boston, MA

R. R. Donnelley & Sons Company
New York, NY

Dynagraf, Inc.
South Boston, MA

Merrill Corporation
Minneapolis, MN

Pastore DePamphilis Rampone Computer Typographers
New York, NY

Starkey + Henricks Typographers
New York, NY

Benjamin H. Tyrrel, Inc.
New York, NY

Washburn Financial
(Subsidiary of Cadmus Communications Corp.)
Charlotte, NC

Winchell Company
(Subsidiary of Clondalkin Group, Inc.)
Philadelphia, PA

