

**A Study of Production Workflows, Technology and Hybrid Printing Models in
Small Newspaper Companies**

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Abstract

During the past five to ten years, the evolution of different media, and especially Internet-related services, has had a direct impact on the printed newspaper. Companies that have remained stable for several years are today exploring and employing new mechanisms to increase efficiency while maintaining their audiences. Although web offset has been for long the basic production process for printing newspapers, the latest developments implemented in equipment and software for newspaper production have achieved a high degree of automation in prepress, press, and post-press. At the same time, the demand of younger audiences for increasingly diverse and personalized products—as well as the emergence of new services, such as the production of commercial printing jobs—has transformed the newspaper production model (Christensen, 2006).

Small newspapers, as well as medium and large, are challenged to compete in this new environment. They have to plan for the future in accordance with their opportunities and limitations. The main purpose of this research was to define a descriptive profile and to represent a graphical workflow model for small newspaper production. Information on the degree of automation, equipment employed, and the extent to which production has adopted the hybrid model (semi-commercial production) are also included in this descriptive profile.

The study consisted of seven newspapers with an average daily circulation between 12,000 and 50,000 copies. Six of the participants are located in the U.S., and one is located in Latin America. The main source of information was a survey consisting of demographic, circulation, audience, and production workflow questions. Additionally, the researcher conducted personal interviews and field tours at three of these newspapers.

The key findings were:

- For the majority of the respondents, the newspaper is between 21% and 38% of the total production (measured in total number of copies printed, including TMCs and commercial jobs).
- Six of the seven participants have experienced a reduction in circulation during the past few years. In addition to this trend, the age of the core audience has increased, with the average between 50 to 64 years of age for most newspapers.
- All of the respondents currently use coldset web offset as the production process. Two companies have plans to expand their facilities by acquiring equipment with heatset dryers and automatic functions.
- In general, the respondents do not use a wide variety of finishing processes. The only post-press process used by all newspapers is inserting. In three cases, this is the only post-press process used.
- The degree of automation found in the participants' workflows is relatively low compared to the capabilities offered by printing equipment manufacturers. The stage of production that shows the highest level of automation is prepress.

- The process that is most frequently a bottleneck is finishing. None of the respondents consider plate production or the press run to be bottlenecks in the workflow.
- The majority of the participants responded that they have not implemented a process to ensure quality. It was also found that little information is collected within the respondents' production processes.
- The physical changes considered by the participants are mostly related to contraction of the core product.
- All of the surveyed newspapers produce at least one kind of commercial job. The production of other newspapers and inserts are the two most common commercial jobs produced. The majority of the respondents only offer limited types of commercial jobs.
- Although the two preferred strategies among the respondents are separating printing from publishing and consolidating printing facilities, there is no clear trend towards any specific strategy. Three of the newspapers stated that they have no specific business strategy for the near future.

Chapter 1

Introduction

Statement of the Problem

Numerous developments have occurred with regard to newspaper technologies since the 1990s. Those developments have dramatically changed the way the industry operates today, from content creation to delivery (Werfel, 2007). Although the core business is still the traditional printed newspaper, this is quickly transforming into a cross-media platform with unlimited access to many different kinds of content. This cross-media platform includes the Internet, mobile and wireless devices, broadcasts, podcasts, and a variety of printing products presented in different formats and styles (Christensen, 2006).

Although there are diverse opinions about how long the traditional printed newspaper will exist as we know it today, the industry is not likely to eliminate the printing side of the business. Both printing companies and companies who specialize in newspaper publications periodically report preproduction, production, and postproduction equipment investments. Small newspapers, which may have less capabilities and resources than larger newspapers and news conglomerates, have to adjust to this new environment.

Information about printing in books, magazines, and web pages focuses mainly on new technology capabilities and benefits. This provides an idea about where the industry is going, but it is also necessary to know the current situation. In order to fulfill customers' changing needs and demands, it is important to understand how this process works today, as well as its strengths and weaknesses. It is also worthwhile to analyze how the trend of hybrid production has evolved in the newspaper market segment.

According to the Newspaper Association of America (NAA), in 2006 85.7% of the newspapers in the U.S. had a daily circulation of 50,000 copies or less, 7.1% had between 50,001-100,000, 4.7% had between 100,001-250,000, and 2.5% had over 250,000 (Newspaper Association of America, 2006). The study presented in this document analyzes workflows in relatively small newspapers.

This study will focus on four main objectives:

- Define a descriptive profile for small newspapers.
- Represent graphically the current general workflow and possible variations for the production area within small newspapers.
- Estimate the degree of automation employed in plate production, press run, and post-press operations.
- Determine if small newspapers have developed the hybrid production model.

Background and Significance

Newspaper production was distinguished for many years by two main characteristics. The first was a high level of integration; the entire process, from news-

gathering to delivering the paper to the end user, was developed in-house (Zepeda, 2007). The second characteristic was the uniformity of the process. A unique product was created every day using the same process (*Ifra Special Report*, 2002).

Today, those characteristics have changed. On the one hand, to lower costs and gain efficiency, many activities such as design, composition, photograph retouching, and even the complete printing operation are being outsourced (“Extension of the ‘service’”, 2007). On the other hand, a much wider range of products are being created and delivered in many diverse ways. Delivery methods now include the Internet, syndication services, and mobile devices, while the product range has expanded to include different versions of papers specifically targeted to certain audiences.

Newspaper production achieved high levels of productivity relatively long ago. Web offset presses work at very high speeds with fairly good quality, and the associated prepress and post-press equipment is able to maintain this pace. The dilemma today is determining how to best take advantage of this capacity in order to make the business sustainable while delimiting how flexible the operation can be to face the new trend of more products with smaller circulations to reach targeted audiences (Zepeda, 2007).

The trend toward hybrid production has gained great importance during recent years. Newspapers use their excess capacity to print commercial jobs, although they have slightly lower quality than commercial printers using other production methods. However, their costs are less, which helps them to gain jobs. These jobs require more flexibility in the formats and kind of papers used, as well as more finishing capabilities. These requirements are addressed in the new developments in technology to maintain a

balance between traditional newspaper printing and commercial printing (“Hybrid Model”, 2007).

Interest in the Study

As a future production manager of a local newspaper in Latin America, the researcher wants to know how to best organize the production department and improve the company’s workflow. This includes understanding the best utilization of existing technology, as well as the options when acquiring more recent equipment. These changes are necessary because the company is working to increase circulation and diversify the product portfolio offered.

The researcher is interested in gaining an in-depth understanding of what small newspaper operations look like and how those companies can best compete in today’s changing environment. A very important part of the entire operation is the production process. The pressroom represents a great investment in capital and resources. Therefore, it is extremely important to study and comprehend the current printing production workflow within the newspaper industry.

Chapter 2

Review of the Literature

Introduction

Newspapers, magazines, and books have produced and distributed information for over two hundred years with tremendous economic, social, political, cultural, and religious influences (Cortada, 2006). These are the main products of the publishing industry. However, publishing as an industry today involves not only printing, but also visual arts, audio, and video transmitted over other media such as the Internet, broadcast television, mobile telephones, and a variety of wireless devices (Donald & Peters, 2007).

The main sources of newspapers' income are advertising and circulation revenues. There is fierce competition for both revenue streams from newspapers with national and regional circulations, magazines, radio, television, the Internet, and other new media. The Internet and new media have had a great impact on publishing since the mid-1990s because they have produced several radical changes in consumer habits and patterns. Newspapers have been forced to develop not only a high quality product, but a portfolio of cross-media products that must be continuously recreated (Donald & Peters, 2006).

The literature review begins with an overview of the evolution of the newspaper production process until the 1990s. Next, it discusses how the industry has changed from that point in time until the present, including changes in editorial and publishing content, new media, and the printed edition. Finally, current trends, the supporting technologies, and future challenges are presented.

Newspaper Production Processes until the 1990s

The first recognized newspaper was published in 1605. It was a weekly publication titled *Periodicity, Publicity, and Topicality*. The first newspapers were printed on letterpresses, which were developed in the late 15th century. Printing processes did not have any newer developments until the beginning of the 19th century. At this time, the invention of lithography made it possible to print multiple pages using parallel presses. In 1814, the need for more pages resulted in the invention of automatic cylinder presses assembled with several sheet feeders. These later evolved into rotary presses with up to 10 feeders. Letterpresses were gradually replaced by these developments, and the invention of the web press in 1859 essentially eradicated their use. Web presses provided a new printing method that was simpler, faster, and required less space (Fuchs, 2005).

From 1900 until 1990, technological advancements in the newspaper industry were developed in order to be more cost efficient and reduce process time. Offset printing and the Linotype composition machine were invented in 1905 and 1906. Through the early to mid 1960s, advanced hardware and software allowed the transition from the Linotype, which required extensive and elaborate work, to computerized

typesetting and composing, which represented a significant change in newspaper production (Carter & Cullen, 1983). The transition from the metal matrices, moulds, casting, and blocks to the use of computers to type, edit, and print images on a flat surface (film negatives) not only considerably reduced the process time, but also changed the skills required to perform new tasks and procedures (Ranabira, 1994).

In the 1970s and 1980s, the emphasis in the newspaper industry was to intensify production and to develop new technology. During the 1970s, increased automation of the printing process was achieved. This included editorial systems using video display terminals for text recording and processing, scanners, the first press presetting systems, the raster image processor (RIP), and laser technology. In the 1980s, electronic full-page production, electronic image processing (EIP), and transmission via facsimile were made possible. In addition, the first steps in computer-to-plate technology and the beginnings of the engagement with new media (electronic newspaper, videotext, local radio, and television) occurred in that decade (Fuchs, 2005).

In the early 1990s, state-of-the-art newspaper printing included specialized computers and software designed to generate and modify text and graphics, modern pagination systems, and high-speed tower presses to supply the need for more color printing and increased pagination. Also, press control systems, information systems, and color management standards (such as UKONS, SNAP and IFRA) were implemented in newspaper production (Fairhead, 1993).

Evolution of Newspapers from the 1990s

Newspapers started to experience a reduction in circulation during the early 1990s and a slowdown in advertising at the end of the same decade. The shift that commenced in the 1990s introduced two new elements to newspaper printing: flexibility and quality. Both began to be considered highly important, moving productivity and cost-lowering concerns to second place. An increasing demand for more color, better and more consistent color reproduction, diversity of formats, and a wider variety of materials are the main drivers of the current technologies (Werfel, 2007).

Among the most important developments introduced in the 1990s were the appearance of online versions of newspapers around 1993 and the introduction of digital cameras in 1995. Improvements made to the web offset press in the late 1990s include shaftless drive mechanisms, the waterless process, new configurations, and digital printing (computer-to-press printing systems) (Fuchs, 2005).

Digitalization has enlarged the daily media usage alternatives from traditional media to a vast array of digital choices such as the Internet, podcasting, blogging, interactive TV, instant messaging, video, digital radio, and more. Many media companies, including newspapers, have launched new products in a variety of traditional and new media channels. Research on media trends indicates that individual consumers demand these new channels in different ways and at different times (Stone, Lin, & Fitzgerald, 2007).

Today, the industry recognizes that a newspaper alone or a newspaper and news website are not sufficient by themselves to maintain the business. It is necessary to design

a variety of complementary products in order to provide a broader range of information to a wider audience, but in a more personalized way. These new products or services can be presented in different ways—print or online, daily or nondaily, paid or free—according to consumer needs and conditions (Christensen, 2006).

Advertising and Editorial

Advertising and editorial departments work in parallel to create the content of the newspaper. Advertising sells page space and receives and produces advertisements corresponding to that space. The editorial department gathers the news information and selects, creates, and edits the information required to assemble the different pages and sections in the paper (*Ifra Special Report*, 2002).

Newspaper production is one of the most complex publishing environments (Lindstrom, 2006). On the advertising side, the trend towards a web-based portfolio of services leads the technology. This portfolio of services includes self-creation and booking of ads, online approvals, online payments, and complaints handling (Holland, 2006). The major benefits of these systems are that while advertisers gain control over their ads, publishers reduce time and costs from revising and rectifying mistakes (Campbell, 2005).

Many sophisticated editorial systems have been developed to support the operation. Advanced editorial systems are typically based on a type of database integrated with page layout software, such as Adobe InDesign or Quark XPress, and pagination engines. A very important function of editorial systems is the control of

documents from the creation of text, illustrations, and ads until they are merged onto the pages (Lindstrom, 2006).

The major challenge of publishing systems is the ability to deliver content for the traditional and new media channels without the need for independent applications and proprietary systems. This change from a product-oriented to a service-oriented business model requires a complete transformation of people's roles, habits, and skills, and also of system platforms (Campbell, 2005).

The use of XML and the development of web publishing systems are two significant trends in newspaper publishing. XML, because of its capability to manage great volumes of information independently from the output path, brings two great advantages: It streamlines the workflow and allows the implementation of cross-media applications. Web publishing systems, also called web-to-print systems, allow customers to create and manage their own content on websites and send it to conventional print workflows (Lindstrom, 2006).

Three important tools created to minimize mistakes complement editorial systems today: Collaborative soft proofing, preflighting, and color management systems. These work to control internal content, check incoming files, and assure accurate color reproduction (Lindstrom, 2006).

Today's editorial systems do more than merely produce newspapers. They connect and manage various technical environments, including web, video, podcast, and mobile-based devices, as well as the traditional daily production. Journalists deliver news anywhere and anytime, eliminating the concept of a single deadline that was used

for many years. Now, they work around the clock on a variety of different media (Prummer, 2006).

New Media

As customer behaviors in the advertising and readership market are changing quickly, new business paradigms are emerging. New media channels offer a variety of choices and solutions that replace traditional newspaper functions in a faster, cheaper, more timely, and simpler way. Interactive technologies are powerful tools that provide new ways to deliver information, do business, strengthen relationships, and convene communities in order to reach specific target groups (Christensen, 2006).

Traditional printing media is still the main product of publishing; however, the transfer to interactive advertising is growing rapidly every day. Old media (such as newspapers, magazines, radio, and television) are not capable of being at the same level with the resources presented by the Internet and other interactive, interchangeable media. Additionally, they cannot precisely measure effectiveness or return on investment (Christensen, 2006).

Newspapers are increasingly investing in technology, preparing their journalists to strengthen the online newsroom, and working to improve the design and content of their websites. Online advertising must be innovative and very attractive to be able to equal printing advertising revenues. The new media channels that publishers are incorporating in order to conform to an appealing cross media platform include video, podcasting, and mobile services (Riefler, 2007).

High-speed Internet access has increased the time consumers spend online. This also has driven the use of online videos, which have become a powerful content-delivery tool for news and advertising. Depending on the capabilities of the company and their chosen strategy, these videos can last anywhere from seconds to several minutes in length, and may also be updated throughout the day. In addition, the use of photo slide shows as opposed to full-motion videos is a popular tactic because of their effectiveness and simplicity (Covington, 2005). In the newspaper industry, the use of online videos has not yet reached maturity.

Recorded audio programs are an alluring new channel for newspapers because of the young audience this medium attracts, which mainly consists of consumers between 18 and 24 years of age. Although some work has to be done to attract more audience, and the revenue model is not yet well defined, podcasting creates a personal connection between provider and consumer at a very low cost (Northrup, 2005).

The major strength of mobile publishing is the capability to reach a great number of people. Newspapers are starting to use mobile phones to build relationships with young readers through real-time activities and other products such as ringtones and games. This strategy aims to recruit newspaper readers using a cross-media platform (Roper, 2005).

Printing (Traditional) Media

In order to satisfy the changing demands of a diminishing audience, a shift from increasing speed and reducing costs towards improving quality through better graphic

design, more color, and high quality pictures was generated early in the 1990s (Fairhead, 1993). The growing competition from new media and further advances in technology have changed readership and buying patterns, creating new challenges and opportunities for newspapers. Challenges have emerged because ad share and news delivery have acquired greater dimensions in much faster, different, and convenient ways that are foreign to the traditional model. Opportunities have been made available because the changes in technology have streamlined the workflow, improved quality, and increased efficiency (Donald & Peters, 2006).

Current Trends in Newspaper Production

Newspaper publishing has historically been a vertically integrated industry. The company maintained control of the complete process (from gathering the news to the distribution), and used a large amount of specialized resources. Another distinctive characteristic of this industry is excess capacity. The printing process takes only part of the night, leaving machines idle during the day in the pre-press, press, and post-press areas. In order to become more cost-efficient, some newspapers have decided to subcontract their production to reduce costs (outsourcing). Others are competing as hybrid printers to increase their revenues by taking advantage of their existing equipment (Zepeda, 2007).

Outsourcing

Outsourcing is a practice that has become popular in newspaper operations during the last few years. Today, a variety of companies offer different services, such as total ad production, development and management of online subscription-based services and digital archives, preventative and corrective maintenance, and printing operations (“Extension of the ‘service’”, 2007).

Printing costs represent a high proportion of overall newspaper production costs. Today, newspapers consider outsourcing this process to commercial printers as a strategy to reduce capital costs and release managerial time to focus more on the collection and distribution of information. Additional advantages of this model include the benefits of specialization. Commercial printers are constantly upgrading their technology, they (generally) have back-ups for their equipment, and the contracting parties have the possibility to pay as they use. However, such partnerships require commercial printers to acquire knowledge about newspaper standards, and quality controls and accountability must be clearly specified (Woods, 2005).

Hybrid Production

Hybrid production, also known as semi-commercial production, refers to the use of newspaper companies’ printing equipment to print other kinds of work aside from newspapers. The variety of products produced includes inserts, flyers, ads, catalogs, guides, and other publications that have traditionally been the work of commercial printers (“Converging technologies”, 2007).

This merger between newspaper printing and commercial work is not a new trend. This is a practice that many newspapers have used for a long time. Several factors have contributed to the development of hybrid production from the early 1990s until now. The introduction of full-color newspaper presses in the 1990s was fundamental—not only to add value to the core product, responding to the transformation and new needs of a declining audience—but also to set up the production of commercial jobs (Werfel, 2007).

New technologies developed during the last four years such as computer-to-plate (CTP), process control systems, high resolution screening, color management, and digitally controlled color have increased the possibilities for newspapers to develop a more competitive hybrid model, allowing them to obtain better quality and be more efficient (Monaco & Whitcher, 2006).

According to the *Value Added Printing of Newspapers Special Report* (Print City, 2006), newspapers have opportunities to grow in product enhancements such as special interest supplements and magazines, preprinted advertising inserts, better readability, more and better color, and upgraded paper.

Current Processes in Newspaper Production

Newspaper manufacturing is a linear production process. (*Ifra Special Report*, 2002). The main steps in a conventional process are plate production, press run, and post-production.

Plate Production

A printing plate is a template that carries image placement, inking specifications and other instructions to the press. Two kinds of processes are currently used for plate making in newspaper production:

Computer-to-Film (CTF). This is also called the conventional process. The pages are transferred from the raster image processor (RIP) to a roll of light-sensitive negative film through an imagesetter. The image is then developed onto an aluminum plate from those negatives (Fairhead, 1993).

Computer-to-Plate (CTP). The pages are transferred from the raster image processor (RIP) directly to the plate, eliminating one step in the process. There are several CTP processes available, which differ in the light source and type of plates used. The two main methods employed are violet photopolymer and thermal technology. Both have advantages and disadvantages regarding cost, efficiency, and quality (Junglas, 2006).

CTP technology was developed in the United States and introduced to the market at the end of the 1990s. However, many newspapers in Canada and the United States are still working with the conventional process. The main reasons for the slow adoption of this new technology, especially in large newspapers, are the high cost of CTP plates (which is comparable in cost to film and conventional plates combined), and because the

efficiencies gained with CTP do not compensate for the financial investment required—the equipment gives a low return on investment (Dutton, 2006).

Press Run

Newspapers are commonly printed in vertical blanket-to-blanket web coldset offset presses that work at very high speeds ranging from 8 mps (meters per second) to about 15 mps. The same basic components are found in old and new newspaper web offset presses: infeed system, printing system, and delivery system. Sophisticated newspaper presses today contain several pieces of auxiliary equipment that automate functions such as inking, dampening, register control, plate mounting, blanket washing, fountain solution control, and web break detection (Wilson, 2003).

Diverse types of presses and new technologies for newspaper operations, including improved inking systems, have been developed over the past few years. They have different characteristics and capabilities, but one common denominator: The possibility to print a wider range of better quality commercial jobs with more efficiency (Jeffrey, 2007).

Types of presses. Jumbo, compact, and digital are the three main types of newspaper presses. Jumbo presses are characterized as being highly productive. They can print six plates wide and two around (50% more than traditional four by two presses), while employing the same amount of operators (since they have the same number of towers).

KBA and MAN Roland have had good results with this kind of press (Janishchewski, 2005).

The second type, compact presses, refers to two characteristics: compact formats of newspapers and compact press design. Three presses fall into this category: Cortina and Commander CT, which are offered by Koenig & Bauer (KBA), and the Flexible Printing System (FPS) offered by Goss. In theory, these presses are attractive because of the quality they can achieve and their cost efficiency. However, in practice only a few have been sold (Holland, 2007b).

Digital presses (in this case) refer to digital controls and the automatic connection between pre-press and press, including closed-loop controls. This kind of press has not yet achieved maturity. The future development objective is to be able to fully integrate the production process (Janishchewski, 2005).

Inking systems. In addition to the types of presses, there are two kinds of inking systems available for newspaper printing: oil-based and radiation. They have different attributes which determine the type of substrates that can be printed, the quality of the jobs, and also the operating costs. Oil-based ink-drying systems have been used for newspaper production for a long time with excellent results in both coldset and heatset processes. Newspapers are traditionally coldset operations. However, in the hybrid production model, the use of hot air (heatset) is the most common drying system. It allows printing on standard or enhanced newsprint with superior color quality, is easy to operate, works at high speeds, and is cost-efficient (Print City, 2006).

Installation of hot air dryers allows a broad range of possibilities that can be adapted according to different needs. Horizontal web paths and vertical dryers mounted on a chill tower are available in new presses for press extensions. Also, the latest developments in new presses have the option to combine coldset and heatset processes in the same run, thus expanding advertising and editorial opportunities, which include Run of Press (ROP)¹ heatset on coated paper for covers, special sections, and posters (Print City, 2006).

Some of the disadvantages of heatset systems are that they entail an elevated initial capital investment and require large spaces for installation of the dryers. It also requires a long time and great effort to change from coldset to heatset (Whitcher, 2006).

The use of radiation-curing inks on newspaper presses is much newer than the use of heatset systems. Instead of using hot air to dry, inks are cured when exposed to UV light waves. UV inks perform well in a wider variety of substrates, including newsprint and coated stocks, have lower installation costs than heatset systems, and require less space. However, they are much more expensive than oil-based inks, have limitations regarding speed, can cause web breaks, and have technical issues such as high tack and problems with black and dark color curing. The use of UV dryers is common in the US in single-width newspaper presses with speeds of up to 5 mps (Print City, 2006).

Post-Production

The mailroom has undergone an extreme evolution during the past few years. For a long time, the final stage in the newspaper production process consisted only of

strapping and preparing for delivery. However, today there are a wide variety of activities that may follow the printing process in order to add value to the product. These range from inserting and wrapping to adding sticky notes (Janishchewski, 2006).

The trend toward a more flexible mailroom —installing new post-press capabilities and improving existing post-press processes in newspaper production—began as the result of several events. The increase in the amount of supplements that accompany the paper today has made the automation of inserting and the addition of wrapping necessary. The shift in production to shorter run lengths and more variable pagination, especially for the production of commercial jobs, has led to several developments in trimming, stacking, and strapping (Dinkovski, 2005). Additionally, the use of cards and sticky notes as an alternative form of advertising has become very popular, since these can be addressed to targeted audiences and their results can be easily measured (Janishchewski, 2006).

When the inserts are produced in-house, the technology employed for the inserting process is highly automated. Automatic loading systems using rollers make possible a workflow with no manual intervention from the press run until the product is ready for delivery. In the case of externally produced inserts—which are delivered stacked on pallets—some manual intervention is unavoidable to unpack and load the inserting machines. This activity can become a critical task due to the speed at which the process flows (“Improving mailroom logistics”, 2004).

Selective inserting is also feasible with an inline process that transfers the information to stackers and wrappers. On the other hand, there are inserters that have

stacker/bundlers attached, which can be addressed using pre-printed labels inserted in the stack. The increase in newspaper supplements also requires that the inserters be equipped to withstand heavy loads without sacrificing speed (Dinkovski, 2004).

At the same time that improvements have been made to the inserting systems to be able to manage several products of different sizes, the utilization of wrappings to prevent these inserts from falling off has become a necessity. The technology employed for this end uses film to package the product in plastic bags, providing a better presentation. However, the speed of polybagging equipment is still relatively slow, thus requiring more than one machine to be installed in many cases (Pascual & Vaseling, 2005a).

The use of sticky notes pasted to the newspaper as a form of advertising has existed for several years, but has generated high expectations only during the last few years. Along with the evolution of this trend, the same technology has been adapted to manage other related products such as labels, cards, and leaflets. These machines are installed inline and can reach high speeds (Pascual & Vaseling, 2005b).

Quality controls and improving the efficiency of the distribution process are two additionally areas that have had important improvements. Several suppliers offer equipment to detect mistakes in insertion using scanning systems. In addition, control and information systems allow tracking every copy from the folder to the delivery truck, along with real-time changes to production jobs (Pascual & Vaseling, 2005b).

Although not every newspaper business is willing to invest in post-press equipment, the main drivers for this selection are common to all operations, which

include processing speed, production safety, flexibility, efficiency, and added value (Janishchewski, 2006).

Challenges in Newspaper Printing

Newspapers have achieved a high degree of automation during recent years. This trend will continue as long as the market demands more and improved products. The use of new materials, different formats, and special effects are some of the challenges that the industry faces. Also, the development of digital printing has shown good potential in newspaper production because it brings more flexibility for products, as well as for processes.

New Materials

The materials that are being tested today to develop new advertising models include new types of papers (transparent, colored, very white, and scented), and new types of inks (scented, metallic, and fluorescent). The different types of papers introduce the possibility of a completely new and innovative appearance to ads. The main constraint to the use of these papers is the high cost of the materials as compared to regular newsprint. Scented inks are activated the moment they have contact with human skin, making the technique very efficient, but there are environmental issues that must be dealt with before they can be used in mass circulation. Metallic and fluorescent inks have not had a high rate of acceptance because they are very hard to handle due to absorption problems and surface structure (“Innovative Ads”, 2007).

Different Formats

New formats for advertising production include posters printed two, three, or even four pages wide in the middle section of the paper. The three- and four-page ads require special technology that allows the pages to be folded out on one or two sides (“Innovative Ads”, 2007).

Special Effects

The use of three-dimensional ads is not common, although they have existed for some years with good results. In addition, a new technique using existing technology was recently tried by a newspaper. A vertical perforation was applied in the middle of a double page, allowing the reader to “cut” the ad without using any other device. This technique can also be used in tabloid formats for smaller ads and for different functions (“Using what you have”, 2007).

Digital Printing

Although digital printers are being adapted for newspaper production, the process is still not mature. The speed is not high enough to compete with offset, while the price is still too high (Janischewski, 2007). Today, digital printing is used to complement the traditional newspaper with specialized sections or covers, and is also used to develop new markets in areas outside the core distribution zone. In the future, it is predicted that

digital printing will be employed to print personalized newspapers and subject-specific publications directly addressed to the customer (Holland, 2007a).

The newspaper has achieved a great degree of automation from prepress to delivery; however, they work independently, and there is still no solution for the tracking system. It is expected that in the future pre-press, press, mailroom, and distribution control systems will be able to interact with each other (*Ifra Special Report*, 2002).

Chapter 3

Research Questions

The dramatic transformation that the newspaper industry is experiencing implies that technologies, processes, and results will keep changing. Vendors and users have realized the importance of integration throughout the entire production chain. However, a complete solution to integrate the different processes has not yet been presented, although it is known that a certain degree of automation is necessary. This does not mean that small newspapers with unsophisticated equipment cannot improve their workflow. There are many opportunities for improvement in the production area, but, before taking any action, it is necessary to understand how the business operates today. This research only addressed the printing operation; publishing, editorial, new media, and distribution were not considered. The study attempted to respond to several questions, including:

- What technology is employed in plate production, press run, and post-production of newspapers?
- What is the degree of automation in the different steps of the production process?
- How does the company embrace the hybrid production model? What products are printed, and how is the workflow designed?

Chapter 4

Methodology

For this study, seven newspapers with an average daily circulation between 12,000 and 50,000 copies were analyzed. The newspapers that took part in the research were *The Gleaner*, *Kitsap Sun*, *Record Searchlight*, *Abilene Reporter-News*, *The Daily News*, *Vanguardia Liberal*, and *The Free Lance-Star*. The primary source of information was obtained from a survey developed by the researcher. A single person distributed and followed up on the questionnaire sent to the EW Scripps Group newspapers, which are the first four companies listed above. The researcher had no direct contact with these newspapers.

In the case of *The Daily News*, *Vanguardia Liberal*, and *The Free Lance-Star*, the research survey was complemented with personal interviews and facility visits. The initial plan was to schedule the visits before sending the surveys to the newspapers that would not be visited, but, due to time constraints, all questionnaires were distributed at the same time. Other sources of information for this study were books, specialized printing magazines, and informal interviews with people involved in the industry.

The original survey was primarily designed with open-ended questions, with the purpose of obtaining a high degree of detail without biasing the opinion of the respondents. However, before the full distribution, the survey was shared with people

related to the newspaper industry to make sure that all questions were clear and the format appropriate. From the feedback received, it was decided to use closed-ended questions with the possibility of expanding upon or clarifying the answers if needed. In addition, some of the questions were removed or merged with other questions in order to focus on the main research objectives.

Survey Design

The questions were divided into three sections. The first section, aimed at building a descriptive profile, consisted of questions about demographics, circulation, and revenues. The participants were asked to answer questions about area coverage, volume of printing (classified by kind of products), and incomes (classified by services provided).

The second section was designed to identify the core print audience (defined by age range), as well as the strategies employed to maintain or increase circulation. This also constituted part of the profile.

The third section was dedicated to printing production workflow. The questions were designed to obtain information about the technology employed in the current processes (including prepress, press, and post-press), the existing degree of automation, and planned equipment investments. This section also included questions about the hybrid production model. Participants were asked about the kind of commercial jobs produced, the technology employed, and finally, their future strategies for print production.

Limitations of the Study

Although a draft of the questionnaire was submitted to people in the newspaper industry to receive feedback on the content and form of the questions, and in spite of the fact that several changes were made according to the feedback received, the questionnaire was sent to all participants at the same time and no pilot test was carried out. Therefore, it was not possible to improve the questions based on the results of a pilot test.

A small sample of newspaper companies—which included four from the same parent organization—responded to the questionnaire. Therefore, the findings cannot be generalized to a larger population. The study only reflects the situation of seven newspapers within the size and areas defined.

Due to time and budget constraints, only three newspapers could be visited. This limitation restricted the researcher from ensuring that the feedback and quality of the information obtained were consistent across all of the companies studied.

Due to company policies regarding confidentiality, a few of the questions were not answered by some of the participants. Consequently, some of the conclusions were drawn on fewer answers, while others had to be eliminated from the study.

Chapter 5

Results

The general purpose of this research was to analyze the current production workflow in small newspapers categorized by the circulation of their core product². To achieve this, four main objectives were formulated:

- Define a descriptive profile for small newspapers.
- Represent graphically the current general workflow and possible variations for the production area within small newspapers.
- Estimate the degree of automation employed in plate production, press run, and post-press operations.
- Determine if small newspapers have developed the hybrid production model.

In this chapter, the responses of seven newspapers that answered the questionnaire are summarized and compared. Six of the respondents have their operations in the United States, while one is located in Latin America. The Latin American newspaper was included in the research because the researcher has excellent knowledge of the company and access to the required information. Although some differences are mentioned, the study does not include a comparison between U.S. and Latin American newspapers.

The information in this section was organized following the structure of the survey. First, the demographic and circulation information were analyzed; second, the audience questions; and third, the production (printing) workflow, including hybrid production. In order to create a structure with which to present the data, the newspapers were arranged by circulation, from the smallest to the largest. A synopsis of the responses of each newspaper is presented in Appendix B.

As only three of the seven newspapers that took part in the research were willing to provide information related to revenues, and since all three requested that this information be kept confidential, this information has been completely eliminated from the data analysis and the conclusions and recommendations chapters.

Demographic Information and Circulation

The seven newspapers that participated in the survey were *The Gleaner*, *The Daily News*, *Vanguardia Liberal*, *Kitsap Sun*, *Record Searchlight*, *Abilene Reporter-News*, and *The Free Lance-Star*. Four of them belong to EW Scripps Group, one to Johnson Newspapers Corporation, one to Galvis Ramírez & Cía, and one is an independent company. The companies are mainly located in small cities in different areas within the United States, while one is in Latin America. The number of employees ranges between 60 and 433 persons, including full-time and part-time workers. Table 1 illustrates the main demographic characteristics of the respondents.

Table 1. Demographic characteristics of the newspapers

Name	The Gleaner	The Daily News	Vanguardia Liberal	Kitsap Sun	Record Searchlight	Abilene Reporter-News	The Free Lance-Star
Year of Foundation	1883	1878	1919	1935	1850	1920	1885
Parent Organization	EW Scripps	Johnson Newspapers Corporation	Galvis Ramirez & Cia	EW Scripps	EW Scripps	EW Scripps	Independent
Location	Henderson, KY	Batavia, NY	Bucaramanga, Colombia	Bremerton, WA	Redding, CA	Abilene, TX	Fredericksburg, VA
Population	27,373	16,256	553,046	37,259	80,865	115,930	19,279
Designated Market Area	S Indiana, S Illinois and W Kentucky	Genesse, Wyoming, and Orleans County	Province of Santander, Col	Seattle, WA	Redding, CA	Taylor, Jones, and Callajan Countys	Washington, DC
Age of Core Audience	30-49	50-64	30-49	50-64	50-64	50-64	50-64
Number of Employees	60	146	450	200	191	150	433

The number of pages per edition ranges between 22 and 50 on weekdays and between 38 and 86 on Sundays. Although the apparent trend is higher circulation corresponding to a greater number of pages, *Vanguardia Liberal* seems to break this trend for both the weekday and Sunday editions. Figure 1 shows the number of pages for the weekday and Sunday editions of each newspaper.

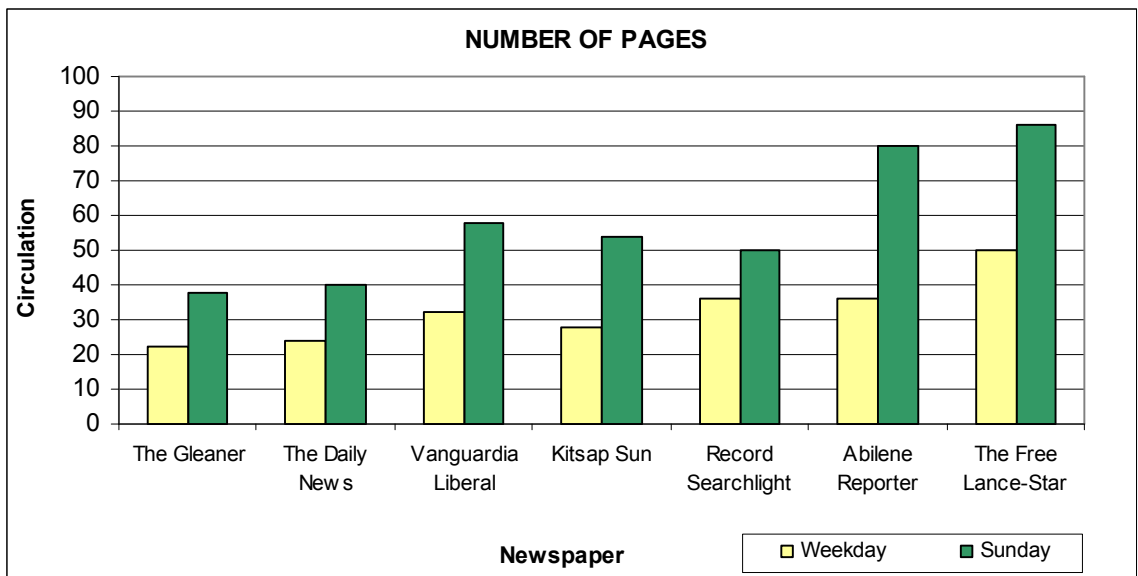


Figure 1. Number of pages of weekday and Sunday editions

The average daily circulation of the respondents ranges between 12,500 and 46,495 copies on weekdays and between 13,000 and 50,125 on Sundays. Although all newspapers have a considerably greater amount of pages in the Sunday edition³ than in the weekday edition, the circulation is slightly larger on Sunday. The exception for this case is *Vanguardia Liberal*, where the Sunday edition has a much greater circulation compared to the average on a weekday. Figure 2 shows the circulation for the weekday and Sunday editions.

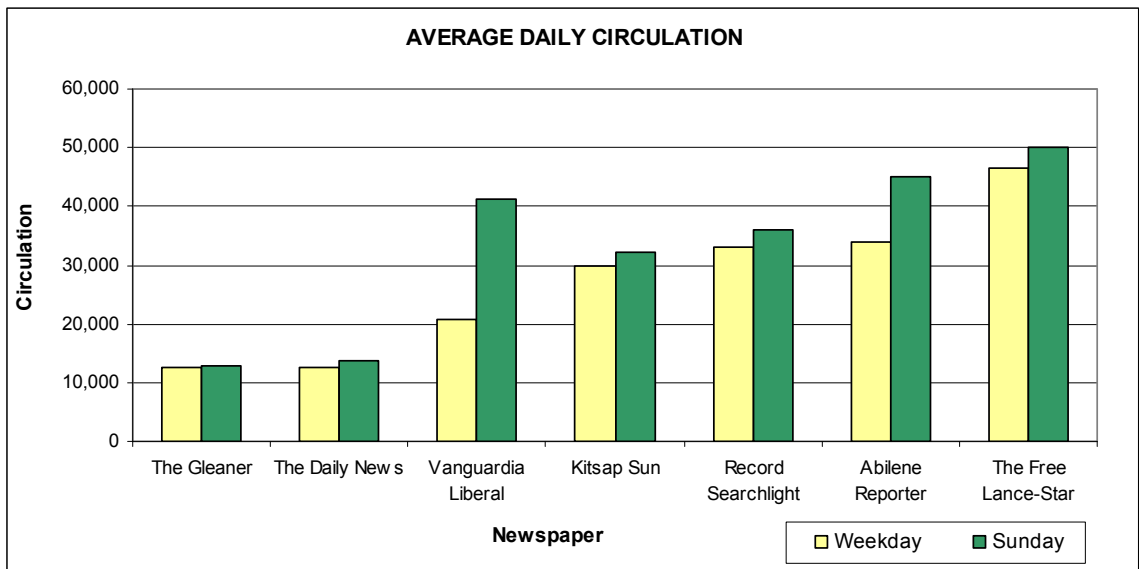


Figure 2. Comparison between the circulation of weekday and Sunday editions

To analyze the total production, the participants were asked to provide circulation of the products they print divided into three categories: Newspapers, TMCs⁴, and commercial jobs. The sum of the circulation of these categories is the total production. The number of pages was not taken into account in this case. The composition of the circulation was calculated for each newspaper by dividing the circulation of each

category by the total circulation. Two newspapers did not provide information regarding the circulation of Total Market Coverage (TMC) products and commercial jobs.

Newspaper circulation represents less than 40% of the total production in four newspapers. For The Daily News, newspaper production is only 21% of total production. *The Free Lance-Star* has newspaper production at 58% of total production, but the company is currently building a new facility with the objective of considerably increasing the production of commercial jobs. *Vanguardia Liberal* has a larger proportion of TMCs, which are 36% of total production. Figure 3 illustrates the composition of total production for five newspapers.

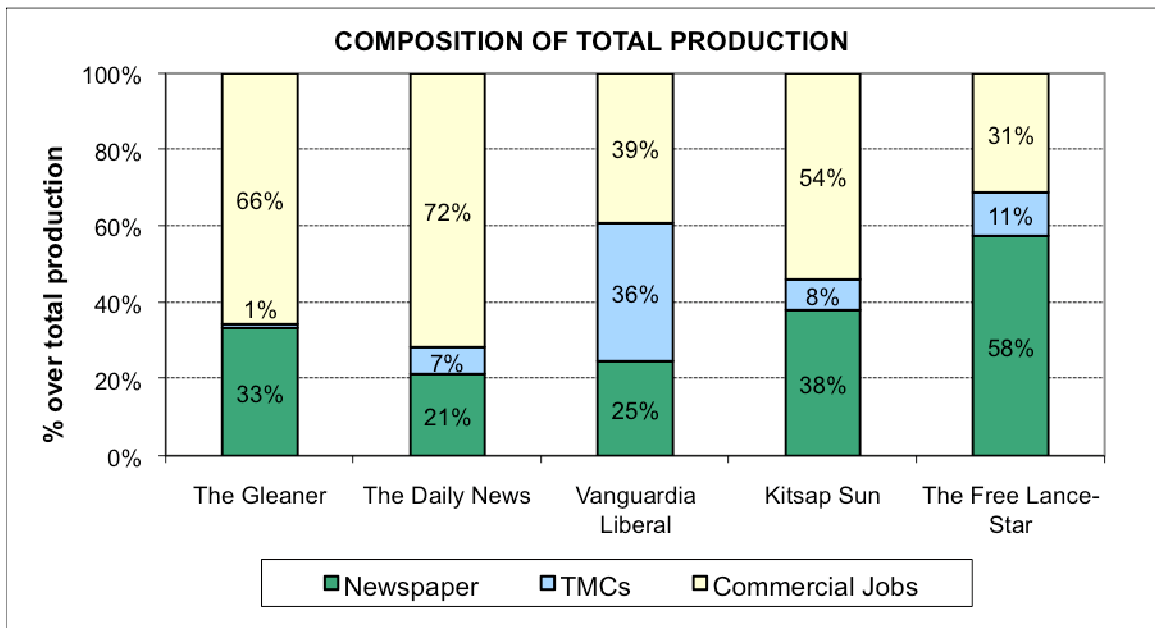


Figure 3. Composition of total production

Audience Questions

The average age of the core audience of almost all of the papers falls between 50 and 64 years old. Only two newspapers—*The Gleaner* and *Vanguardia Liberal*—responded that their core audience is between 30 and 49 years old. However, *Vanguardia Liberal* declared that the age of their core audience has been moving towards older audiences.

With the exception of *The Free Lance-Star*, all the respondents affirmed that the size of their core audience is decreasing. The respondents attribute this mainly to decreasing levels of readership among younger audiences, as well as to many people preferring the Internet as a source of information.

Establishing a leadership role in serving their core audience is the most-used strategy to maintain circulation. However, there is no clear preference for any particular strategy. Only two newspapers are trying to divest from their core audience. Figure 4 illustrates what strategies are used by the newspapers to maintain circulation within their core audiences.

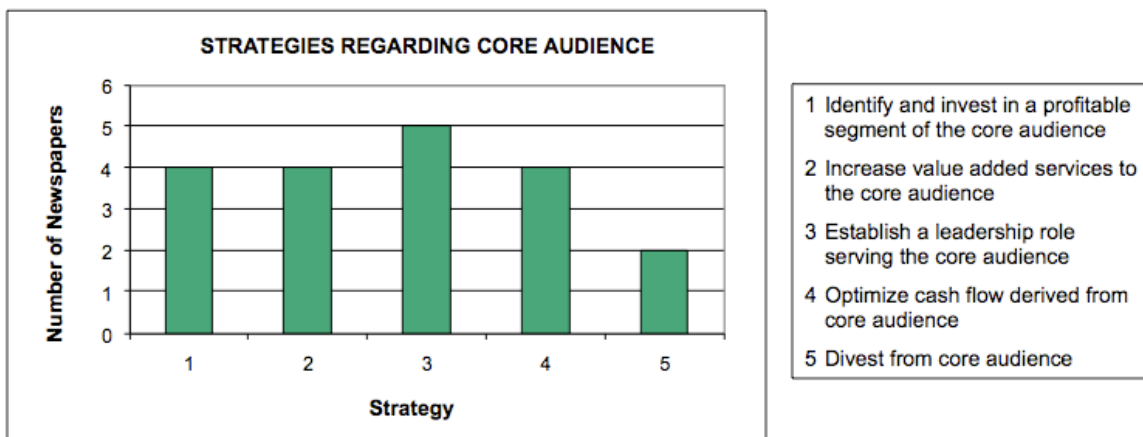


Figure 4. Strategies to maintain circulation within core audience

Production (Printing) Workflow

In the prepress stage, it was found that two of the seven respondents use film to produce plates. These newspapers are the two smallest in the group. One of them, the *The Daily News*, expressed that the company has considered CTP for the future. Four of the five who use CTP work with thermal plates, and the other one works with violet plates. The newspaper working with violet plates is *Vanguardia Liberal*.

The current press technology used by all respondents is coldset web offset. Nevertheless, *The Free Lance-Star* has already purchased a new press with the capability to print heatset and coldset at the same time, and which also includes automatic controls for make-ready and the press run. The new press will begin the production of commercial jobs (along with the newspaper) in 2009. *Vanguardia Liberal* is evaluating the possibility of a new press with dryers to compliment their current equipment and also to increase the production of commercial jobs.

In general, the respondents do not use a wide variety of finishing processes. The only post-press process used by all of these newspapers is inserting. Some have also implemented trimming and/or stacking, but none uses poly bagging, which is one of the new trends in post-press processes. Figure 5 illustrates the post-press processes employed by each newspaper.

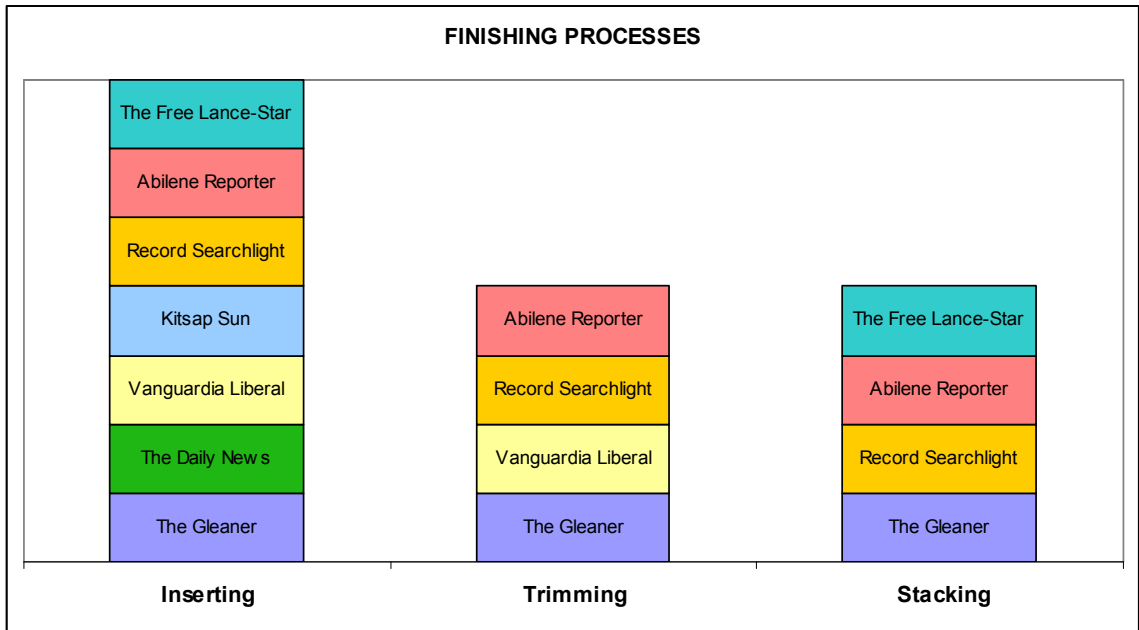


Figure 5. Post-press processes used in newspaper production

The degree of automation found in the participants' workflows is relatively low compared to the capabilities offered by printing equipment manufacturers. The stage that shows the highest level of automation is prepress (plate punching, plate binding, and page reception). Make-ready is the part of the process where less automation has been implemented. Figure 6 illustrates the degree of automation for each sub-process.

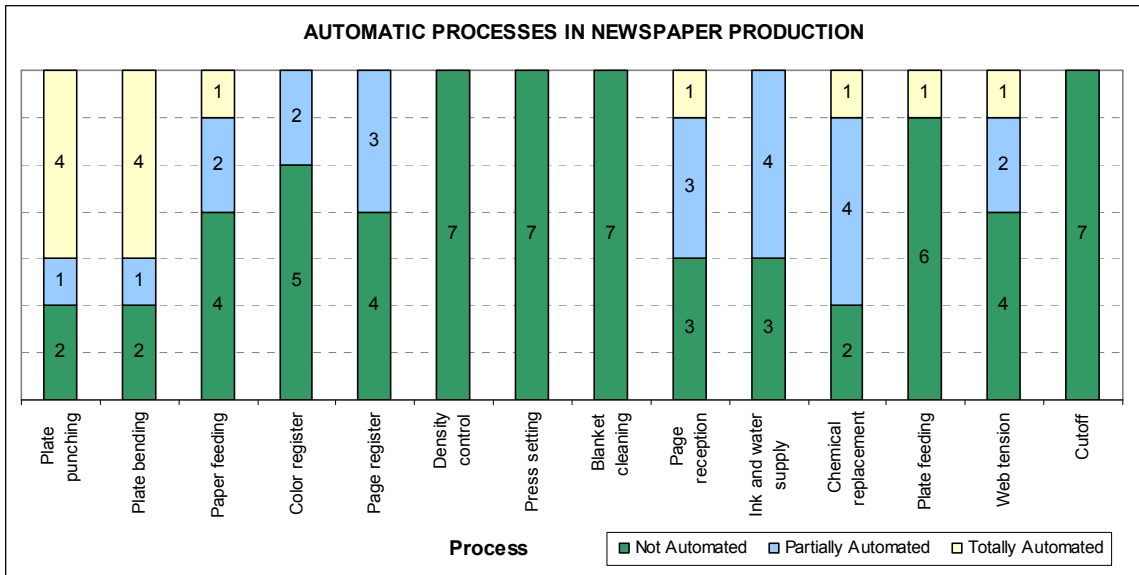


Figure 6. Degree of automation of each subprocess in the production workflow

Four newspapers responded that the process that is most frequently a bottleneck is finishing. Another two respondents stated that make-ready is a major restriction for the process. None of the respondents consider plate production or the press run to be bottlenecks in the workflow. Figure 7 shows the frequency at which the different processes are considered to be bottlenecks.

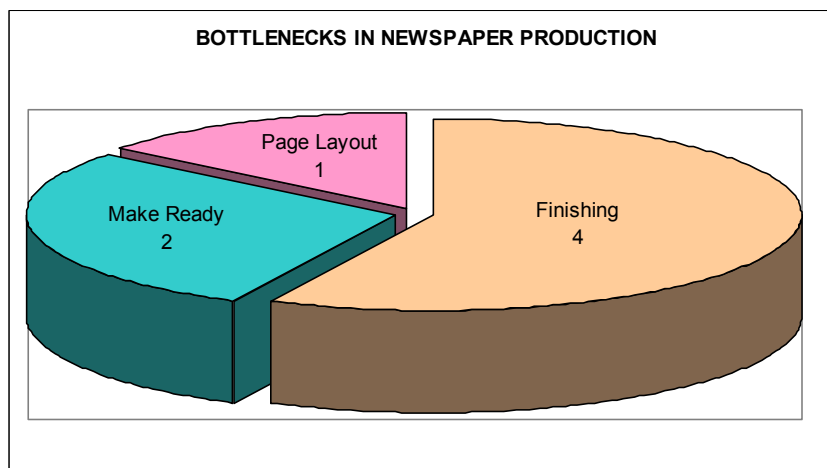


Figure 7. Bottlenecks in newspaper production

The majority of the participants responded that they have not implemented a process to ensure quality. Only the *Abilene Reporter-News* has established a Standard Operating Procedure (SOP)⁵ for quality control. Other newspapers mentioned independent measurements to control specific parameters.

It was also found that little information is collected within the respondents' production processes. Additionally, in the majority of the cases this information is manually obtained. The reporting of starting and finishing times is a common denominator in all stages—prepress, make ready, press run, and post-press—for almost all of the newspapers. Finishing is the stage in the workflow where fewer newspapers gather information, while the press run stage is where more information is obtained.

Figure 8 illustrates the kind of information collected in the different stages of the workflow.

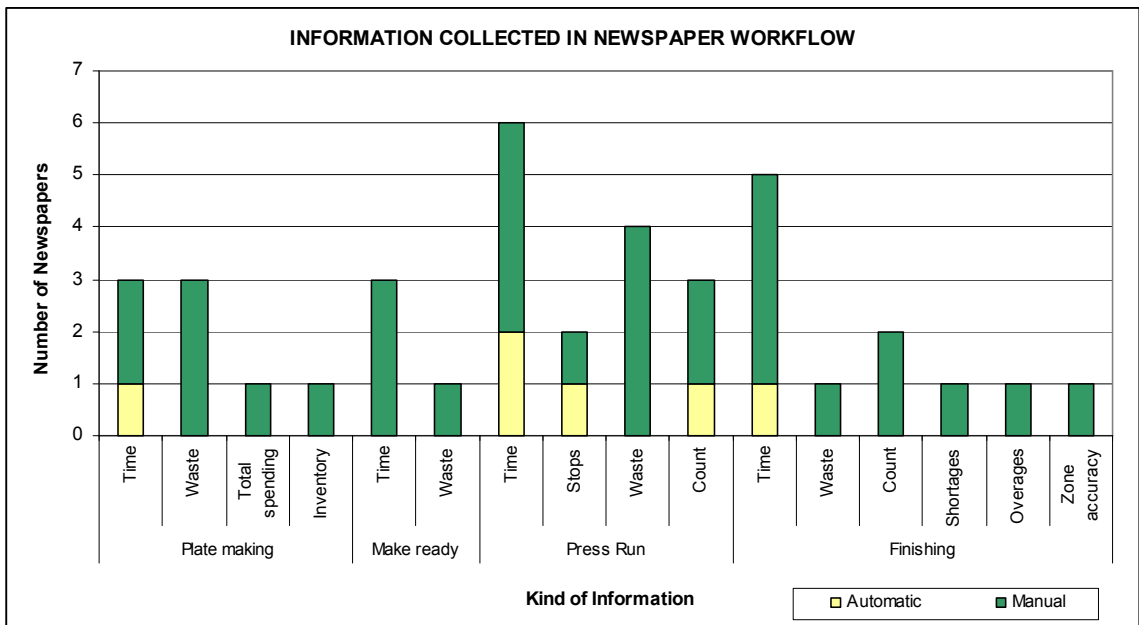


Figure 8. Information generated in newspaper production

The physical changes considered by the participants are mainly related to contraction. Six of the newspapers have contemplated reducing web width, and four have considered reducing page count and eliminating sections. Figure 9 shows the possible future physical changes considered by the participants for the newspaper printed edition.

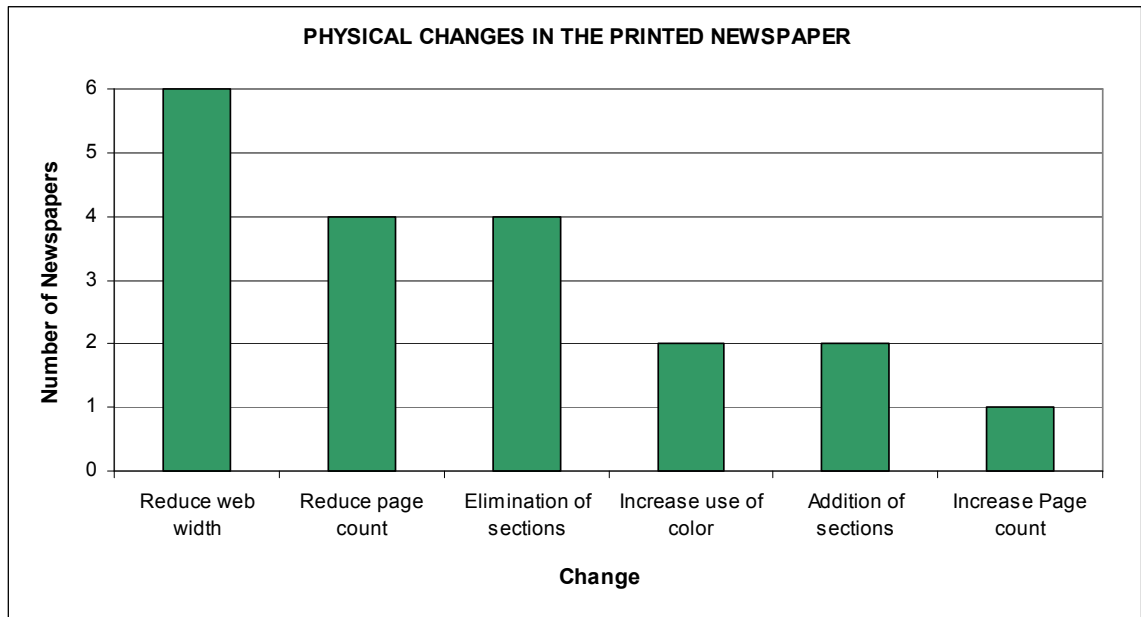


Figure 9. Possible physical changes in printed editions

All of the surveyed newspapers produce at least one kind of commercial job. The production of other newspapers and inserts are the two most common. *Vanguardia Liberal* offers a wider variety of commercial products, including posters and magazines, while the rest of the companies offer limited kinds of jobs. Figure 10 illustrates the kind of commercial jobs produced by each of the respondents. Because some of the newspapers did not provide or do not have statistics from their commercial jobs, it was

not possible to analyze the size (pagination and circulation) or others characteristics of their work.

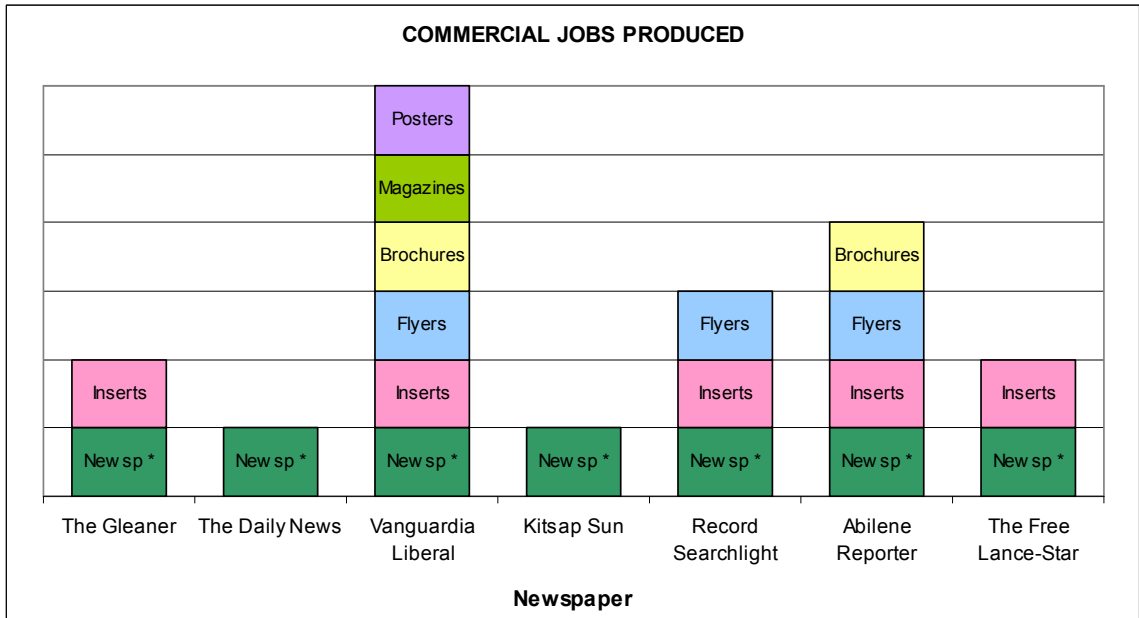


Figure 10. Kinds of commercial jobs produced by newspapers

Although separating printing from publishing and the consolidation of printing facilities are the two preferred strategies among the respondents, there is no clear trend towards any specific strategy. Three of the newspapers—*The Daily News*, *Kitsap Sun*, and *Record Searchlight*—stated that they have no planned strategy, at least for the near future. Table 2 shows the responses regarding production strategies.

Table 2. Types of strategies in newspapers printing production

	The Gleaner	Vanguardia Liberal	Abilene Reporter	The Free Lance-Star
Separate printing from publishing	X	X		X
Outsourcing printing	X			
Consolidation of printing facilities	X	X	X	
Focus on commercial printing				X

Chapter 6

Conclusions and Recommendations

The previous chapters contain the definition, background, and significance of the problem, a literature review of newspaper technologies, the objectives of the research, a description of the methodology used to collect the information, and the presentation of the results. Based on the information provided by the seven newspapers that responded to the questionnaire, this chapter will provide an answer for each of the proposed objectives. In addition, it will detail the limitations of the study and conclude with recommendations for further research.

The four main objectives defined for this research were:

- Define a descriptive profile for small newspapers.
- Represent graphically the current general workflow and possible variations for the production area within small newspapers.
- Estimate the degree of automation employed in plate production, press run, and post-press operations.
- Determine if small newspapers have developed the semi-commercial or hybrid production model.

Descriptive Profile for Small Newspapers

The factor used to classify newspapers in this study was the average daily circulation. A newspaper with a daily circulation of 50,000 copies or less was considered to be a small newspaper, regardless of the other print jobs produced by the company. The three features used to define the descriptive profile for this study are audience, process and total production.

Using these features, a small newspaper can be defined as a local newspaper with an average daily circulation between 12,000 and 50,000 copies, and with a pagination from 22 to 50 pages on weekdays and from 38 to 80 pages on Sunday. The average age of the core audience is between 50 and 64 years of age.

The printing process includes computer-to-film and computer-to-plate in prepress, coldset web offset in production, and inserting, trimming, and stacking as the main post-press processes. The total production, measured as the number of copies, is distributed, on average, as 36% newspaper, 15% complimentary products (TMCs), and 49% commercial jobs. Figure 11 represents the descriptive profile for small newspapers.

DEMOGRAPHIC INFORMATION	
Size (Daily Circulation)	12,000 - 50,000
Number of daily pages	22 - 50 Weekday
	38 - 80 Sunday
# of employees	60 - 450
AUDIENCE	
Location	Small city
Market	Local
Age of core audience	50 - 64
PROCESS	
Prepress Technology	CTF - CTP
Press Technology	Web offset coldset
Number of presses	One or two
Postpress Processes	Inserting
	Trimming
	Stacking
PRODUCTION	
Newspaper	20% - 40%
TMCs	5% - 20%
Commercial	30% - 65%

Figure 11. Descriptive profile for small newspapers

Workflow Graphic Representation

Generally speaking, the printing workflow is essentially the same for any newspaper—it includes plate production, press run, and post-press. Additionally, the press process that is common to the great majority of newspapers is web offset. It seems that what creates differences between companies is the degree of automation employed to streamline the workflow. Figure 12 illustrates a workflow model for small newspapers indicating the degree of automation according to the information provided by the participants.

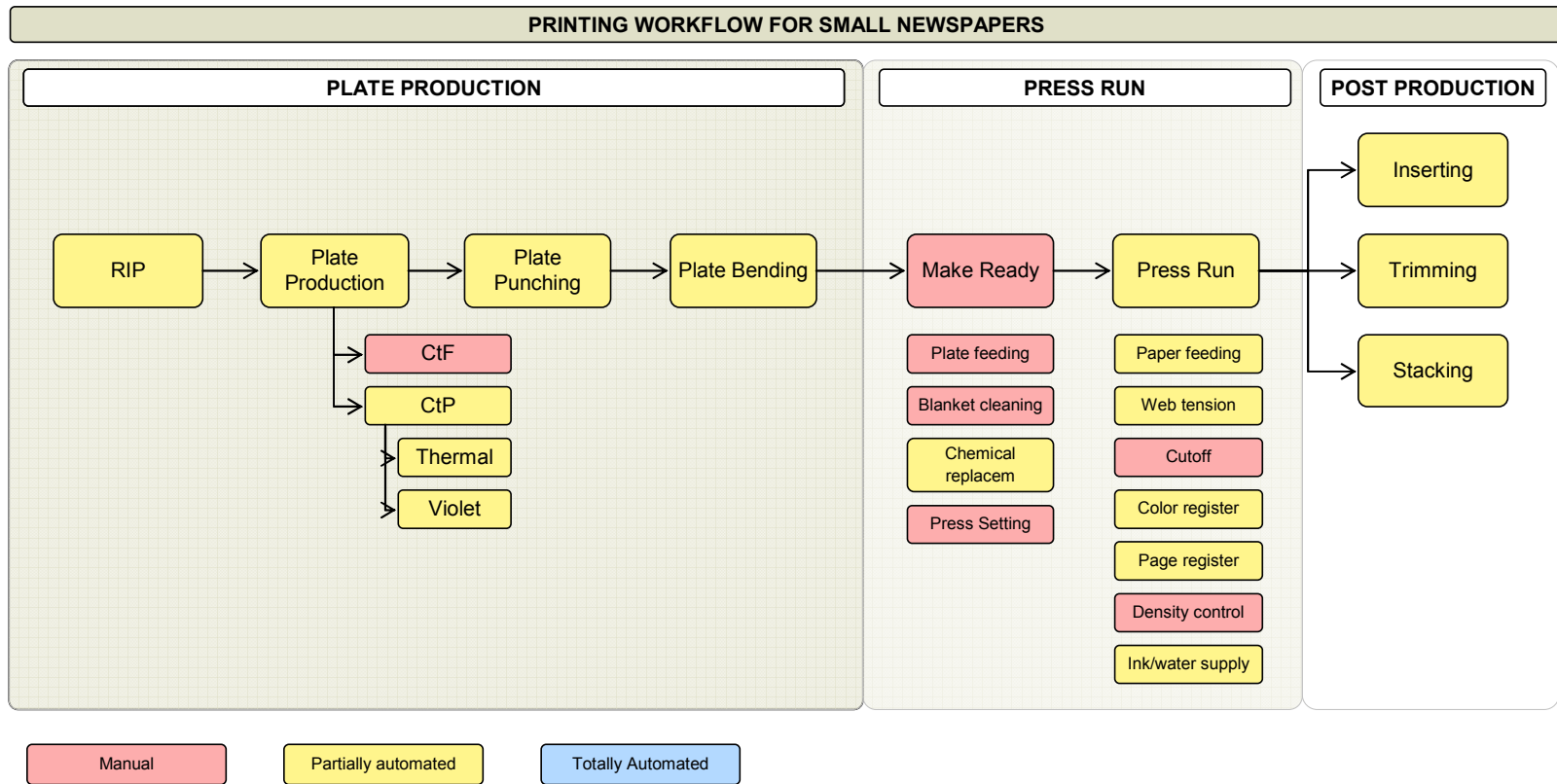


Figure 12. Production workflow for small newspapers

Degree of Automation in Plate Production, Press Run, and Post-press Operations

Plate Production

Plate production is the process where the highest degree of automation was found. The reception of pages is at least partially automated in four of the newspapers. At the same time, only *The Gleaner* and *The Daily News* still use the conventional film method to develop plates. These newspapers are the ones with the smallest production within the group of respondents. In an interview, the production manager at *The Daily News* said that the main reason for not installing computer-to-plate (CTP) equipment is the cost. In such a small operation, labor cannot be reduced, and therefore CTP does not represent any savings for the company.

Four of the five participants that are currently using CTP technology have installed plate punching and plate bending inline, thereby reducing manual intervention to a minimal level.

Press Run

The degree of automation found in the pressroom is low. Ink and water supply and chemical replacement are the only two sub-processes that have been partially automated by a majority of respondents. Color registration, page registration, and web tension are partially automated by a few respondents, while other sub-processes such as density control, press-setting, blanket cleaning, and cutoff have not yet been automated.

Post-Press

The post-press process common to all respondents is inserting. Almost all totally automated inserting equipment has been developed for large operations. Most of the inserters used by the respondents still require manual loading. Some of the respondents use manual labor during peaks to increase inserting speed, while some use it for the complete inserting process.

Two respondents—*Vanguardia Liberal* and *The Free Lance-Star*—stated their intentions of acquiring new equipment with higher levels of automation. The rationale behind these planned purchases is to increase the production of commercial jobs. At the same time, *The Daily News*, *Kitsap Sun*, and *Record Searchlight* indicated that there are no changes or strategies planned for the near future in the production area.

Hybrid Model in Small Newspapers

All of the participants produced at least one kind of commercial job. Nevertheless, the only kind of job common to all is other newspapers. In addition, the majority produces no more than two kinds of commercial jobs. *Vanguardia Liberal* is the only newspaper that prints magazines and posters.

With the exception of *The Daily News*, all newspapers employ the same equipment and personnel to produce commercial jobs that they do to produce the newspaper. (*The Daily News* uses a different workflow for commercial jobs because the only customer the company has uses CTP equipment to process their plates, and also has

a quality control procedure that applies only to this workflow.) Additionally, five of the seven respondents did not openly state intentions of developing new capabilities, increasing capacity, or improving their workflow to increase the production of commercial jobs.

Other Important Findings

The use of quality controls in production among the participants was fairly low. Only the *Abilene Reporter-News* has implemented a standard procedure for quality assurance. In some cases, the company relies on the skills and experience of the operators to achieve good color appearance, but does not use any parameter for comparison.

Little data is collected from the three main stages of the production workflow, and the great majority of that information is manually gathered. Process times are the most important data, and press time is the only record common to almost all newspapers. Some newspapers keep waste registers in the press stage, but almost none keep them during prepress and post-press. There is almost a complete absence of information collected during post-press.

Two respondents—*The Free Lance-Star* and *Vanguardia Liberal*—are currently acquiring new equipment and expanding facilities. They are doing this not only to serve their core business, but also to diversify and penetrate the commercial print market. The other five newspapers have no major investments planned for the future, and three of them also have no future production strategies.

Implications for the Industry and the Community

From the printing production perspective, small newspapers have what large newspapers are pursuing today. They provide local content to a relatively small audience. The majority of them have been in business for many years, and they have the trust and respect of their community. This fact somehow makes them less vulnerable to the threats posed by new media. Nevertheless, their local roots have not prevented their circulations from shrinking.

Small, well-positioned newspapers have the potential to create strong alliances with larger newspapers. The benefits of a partnership are mutual. This allows national newspapers to get closer to the audience and to provide more personalized content. For local newspapers, this could be an opportunity to develop new products for younger audiences. This could also provide the opportunity to upgrade the equipment and/or to improve the workflow by utilizing the experience and insight of the larger newspaper.

Another strategy is the acquisition of such companies by larger newspapers. This may provide similar benefits as an alliance, but other business considerations must be taken into account.

The hybrid production model, when extended to products such as magazines, brochures, and posters, requires certain levels of automation and the implementation of quality practices that several of the surveyed newspapers do not have. Small newspapers with no interest in developing the hybrid model and investing in better equipment can reduce their excess capacity by sharing facilities with other papers located in nearby areas. Companies such as GateHouse Media, which owns several newspapers that print

about 500 publications within the U.S., have consolidated the production of several of these publications in centralized facilities. Other newspaper groups—as well as independent newspapers—can use this strategy to improve efficiency and reduce costs without affecting their own circulation.

Equipment replacement in newspaper operations is extremely expensive. The installation of a new press or updating an existing one takes a long time and is labor-intensive. Such a large capital investment requires a careful evaluation of many factors, and must be clearly justified. The most important reasons for substituting equipment include: frequent and expensive maintenance; obsolescence of the old machinery; increases in efficiency that allow the company to significantly reduce expenses; and a considerable and stable increase in sales.

For small newspapers, obsolescence and greater efficiency are two factors that are not considered in most cases. This is due to the fact that coldset web offset is still used by a large majority of companies, and is also due to the fact that such purchases cannot always be supported by personnel reduction in small companies. Another possible reason as to why some small newspapers have decided not to make any important equipment acquisitions is because they do not foresee an increase in production and, therefore, there is no economical benefit in such an action.

The consolidation of facilities and the absence of investment in small newspaper operations have some consequences. One important consequence for press manufacturers is the fact that maintenance and parts become the primary services for this market. A consequence for the community, since many of these newspapers are located

in small cities, is the fact that any downturn for the company can mean a loss of employment. If the company goes out of business entirely, this can be a significant loss within a small community.

Possibilities for improvement

The responses to the survey indicate that little importance is given to collecting and evaluating information from the production process. All surveyed newspapers keep a record of production times, but only a few collect any other types of data. If this is the case for many other newspapers, this could prove to be a problem for improving the efficiency of their operations. Maintenance, quality, and waste are areas where such newspapers could gain efficiency with appropriate data collection, analysis, planning, and training. This is also an area that can be improved with a minimal investment.

Another area where respondents lacked adequate procedures was quality assurance. In plants where one or a few highly experienced employees control quality, consistency and repeatability cannot be assured. It is therefore important to define and establish processes addressed to evaluate and maintain quality standards. Additionally, if hybrid production has not yet been developed, then the implementation of quality programs is a value-added service for advertisers and for readers as well.

Recommendations for Further Research

Several factors seem to indicate the need for printing production strategies. First, the future of the traditional printed newspaper is uncertain. Second, newspapers are trying to reduce their costs. Finally, newspapers are trying to maximize their capacity usage. At

apparent odds with these factors were the research findings that three of the seven participants do not have a printing production strategy for the next few years. Therefore, this would be an interesting subject for further research, in order to determine if this is the case on a more national or global level. To do so, the research would need to analyze a larger sample, and then estimate if this is indeed a trend among small newspapers.

Another interesting area of study would be information management in small newspapers. Although tracking systems are still in a development phase and they require up-to-date equipment, it is still important to collect information during the different processes. The newspapers studied give more importance to gathering information during the press run stage. Almost no data is recorded in the prepress stage, even if the new CTP systems allow the automatic recording of the times per page and daily consumption figures.

Finally, because six of the respondents affirmed that they do not have quality procedures, the researcher recommends evaluating in-depth what are the reasons behind this trend. Possible research questions could include: Why do small newspapers not implement quality systems? What are the impacts that such practices could have on the company, the readers, and the advertisers?

Summary and Generalizations

Small newspapers have the benefit of a monopolistic environment. National mass media do not have the capability to offer continuous hyper-local content; therefore, they do not represent a direct competition for small newspapers.

The possibilities to automate the process in newspaper printing production are wide, but the competitive advantage for small newspapers relies more in the content they are able to provide. However, continuous improvement in printing production is essential and can be achieved by evaluating the process and implementing quality programs.

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Appendices

Appendix A

Newspaper Production Survey

Introduction

The latest developments implemented in equipment and software for newspaper production have achieved a high degree of automation in the different stages of the production chain. New mechanisms have been created to improve efficiency in plate-making, new features, capabilities, and functions have been added to the offset web press, and many different alternatives for finishing systems have been adapted for newspaper mailrooms.

This study will focus on four main objectives:

- Define a profile for small newspapers.
- Represent graphically the current general workflow and possible variations for the production area for small newspapers.
- Estimate the degree of automation employed in plate-making, pressroom, and finishing operations.
- Determine how small newspapers follow the semi-commercial or hybrid production model.

As a newspaper professional you are being asked to provide information which will assist the researchers in achieving the objectives outlined above. Your name and the name of the company will not be published without consent.

A. Demographic Information and Circulation

Name and location of company _____

Parent Organization _____

of employees _____

DMA(s) (designated market area) _____

Person (s) interviewed _____

Position/job responsibility _____

Print circulation

Main Newspaper: Average daily circulation

	Daily	Weekly	Weekend	Other
Circulation				
Number of pages				

Specialty Products: Total impressions per month

Pages	1-4	4-8	8-16	16-32	> 32
Circulation					
1 - 1,000					
1,001 - 2,000					
2,001 - 5,000					
5,001 - 10,000					
10,001 - 20,000					
20,001 - 50,000					
50,001 - 100,000					
> 100,000					

Revenues for content and advertising products sold/offered (e.g. daily paper, local/community papers/other publications, etc.)

Service	Category	Revenues \$ Current	% Total Revenues Current	% Total Revenues Future (5 yrs)
Advertising-Print	Classifieds			
	Other			
Advertising	Online			
Advertising	Other			
Circulation	Subscriber			
	Retail			
	Bulk			
Inserting				
Other Products	Commercial Print			
	Specialty Products			
	Other			
Other Services	Distribution			
	Addressing			
	Other			

B. Audience Questions

1. What is the average age of your core audience (Core audience is defined as the single largest group of readers)?

18-29	30-49	50-64	65+

2. Average age of core audience ten years ago

18-29	30-49	50-64	65+

3. Size of core audience compared to ten years ago

Larger	Same	Smaller

If size of audience has changed, what do you attribute the change to?

4. Describe your organization’s business strategy regarding core audience?

Identify and invest in a profitable segment of the core audience	
Increase value added services to the core audience	
Establish a leadership role serving the core audience	
Optimize cash flow derived from core audience	
Divest from core audience	
Other strategy (please explain)	

C. Production (printing) Workflow

5. Which of the processes below have you implemented or have planned to implement within the next five years.

Process		Now	Future
Plate Technology	CTF		
	CTP Thermal		
	CTP Violet		
	Chemistry free		
Press Technology	Coldset		
	Heatset		
	Flexography		
	Digital Printing		
Press Configuration	2/1		
	2/2		
	4/1		
	4/2		
	6/2		
	Other		
Kind of Ink	Oil based		
	Alcohol free		
	UV		
Finishing	Inserting		
	Trimming		
	Poly bagging		
	Stacking		
	Other 1		
	Other 2		

6. Which of these processes in your production workflow have been automated?

Process	N	P	T	Process	N	P	T
Plate punching				Blanket cleaning			
Plate bending				Page reception			
Paper feeding				Ink and water supply			
Color register				Chemical replacement			
Page register				Plate feeding			
Density control				Web tension			
Press setting				Cutoff			
Other							

N = Not automated
P = Partially automated
T = Totally automated

Do you use the same resources than in the newspaper? Yes No

If no,

Stage	Description	Equipment	Comments
Platemaking			
Press Run			
Finishing			
Other			

12. Do you foresee any strategic changes in newspaper production?

- Separate printing from publishing
- Outsourcing printing or part of the process
- Consolidation of printing facilities
- Other _____

Appendix B

Case Studies

Case 1: The Gleaner

Demographic Information and Circulation

The Gleaner belongs to the EW Scripps Group. It is located in Henderson, Kentucky, and serves Southern Indiana, Southern Illinois and Western Kentucky. The total number of employees at *The Gleaner*, including full-time and part-time, is 60. The newspaper produces 12,500 copies of 22 pages on a weekday and 13,000 copies of 38 pages on Sundays. In addition to the main newspaper, this company also produces complimentary products. The circulation of these products is about 12,000 per month.

Audience Questions

The average age of *The Gleaner's* core audience falls in the range between 30 and 49 years old. This range has not changed as compared to 10 years ago. At the same time, the circulation has been stable during that period.

The strategies this company currently uses to approach the core audience are identifying and investing in a profitable segment, increasing value-added services, establishing a leadership role serving the community, and optimizing cash flow derived from its core audience.

Production (Printing) Workflow

Tables 3 and 4 summarize the current technologies and level of automation implemented by *The Gleaner*.

Table 3. Current technologies implemented by The Gleaner

Process	Technology
Plate Technology	CTF
Press Technology	Offset – Coldset
Press Configuration	2/1 and 4/1
Kind of Ink	Oil based
Finishing	Inserting Trimming Stacking

Table 4. Degree of automation in The Gleaner processes

Process	N	P	T
Plate punching	X		
Plate bending		X	
Paper feeding	X		
Color register	X		
Page register	X		
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception	X		
Ink and water supply		X	
Chemical replacement			X
Plate feeding	X		
Web tension	X		
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

The future investment *The Gleaner* foresees regarding production technologies is to purchase a computer-to-plate violet system. For this newspaper, make-ready and plate production are the two processes that most often become bottlenecks. The two practices implemented for quality control are the use of gray bars and density measurements.

Table 5 shows the type of information that is collected in each step of the production process and if that information can be obtained automatically or manually.

Table 5. Production information collected at The Gleaner

Process	Information Collected	A/M
Platemaking	Waste	M
Make ready	---	---
Press Run	Usage and time	
Finishing	Time and count	

A = Automatic
M = Manual

The physical changes that are being considered for the future are reducing web width, reducing page count, increasing the use of color, and eliminating sections. In the question about future strategic changes in newspaper production, *The Gleaner* selected separating printing from publishing, outsourcing printing or part of the process, and consolidating of printing facilities as an option, with no specific preference given.

The Gleaner does not offer a wide selection of commercial jobs. It is limited to inserts and other newspapers. To print these products, the company uses the same resources it does to produce the newspaper. This business has a monthly production of 750,000 copies, and is decreasing.

Case 2: The Daily News

Demographic Information and Circulation

The Daily News belongs to the Johnson Newspapers Corporation group. It is located in Batavia, New York, and serves Genesee, Wyoming, and Orleans counties. The total number of employees at *The Daily News*, including full-time and part-time, is 146. The newspaper produces 12,481 copies of 24 pages on a weekday and 13,863 copies of 40 pages on Saturdays. There is no Sunday edition; however, the Saturday edition contains the special sections that are usually published on Sundays in most newspapers. In addition to the main newspaper, this company also produces two complimentary products: *The Livingston County News*, which is a paid weekly publication with a circulation of 6,381 copies, and the *Drummer Pennysaver*, which is a free weekly publication with a circulation of 23,660 copies.

Audience Questions

The average age of *The Daily News*' core audience is between 50 and 64 years old. This range has not changed as compared to 10 years ago. The company responded that circulation has declined mainly because of some of the readers have moved or died and the new readers are not enough to replace them.

The two current strategies that the *The Daily News* is using to attract new readers are establishing a leadership role serving the core audience and optimizing cash flow derived from the core audience.

Production (Printing) Workflow

Tables 6 and 7 summarize the current technologies and level of automation implemented by the *The Daily News*, respectively.

Table 6. Current technologies implemented by the The Daily News

Process	Technology
Plate Technology	CTF
Press Technology	Offset – Coldset
Press Configuration	2/2
Kind of Ink	Oil based
Finishing	Inserting

Table 7. Degree of automation in the The Daily News' processes

Process	N	P	T
Plate punching		X	
Plate bending	X		
Paper feeding	X		
Color register	X		
Page register	X		
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception	X		
Ink and water supply		X	
Chemical replacement		X	
Plate feeding	X		
Web tension			X
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

The future investment this newspaper foresees regarding production technologies is to purchase a computer-to-plate system. However, there are no specific plans for this acquisition yet. The company considers inserting to be a bottleneck in the process. The explanation for this is that the speed at which the inserters work is much lower than the press speed. The next restriction identified is plate-making. *The Daily News* currently has no procedure in place for quality control.

Table 8 shows the type of information that is collected in each step of the production process and if that information can be obtained automatically or manually.

Table 8. Production information collected at the The Daily News

Process	Information Collected	A/M
Platemaking	Inventory, Last plate out	M
Make ready	Time	M
Press Run	Start, Stop, Waste	M
Finishing	Truck-out Times	M

A = Automatic
M = Manual

The physical changes being considered for the future are reducing web width, reducing page count, and the addition of and the elimination of sections. In regards to future strategies, the company has not planned consolidations, outsourcing, or separation of printing facilities.

The only commercial job produced at the *The Daily News* is *USA Today*. It is a newspaper that circulates five days a week with an average of 60,000 copies of 44 pages. The process utilizes the same resources as the newspaper, with the exception of plate production, in which CTP technology is employed. The equipment for plate production belongs to *USA Today*, as do all the expenses related to its function and maintenance. The workflow for the production of this newspaper also includes quality control procedures, the implementation of a color management system, and hard proofing.

Case 3: Vanguardia Liberal

Demographic Information and Circulation

Vanguardia Liberal belongs to the Galvis Ramírez & Cía group. It is located in Bucaramanga, Colombia, and serves the Santander area, which is in the northeast part of the country. The total number of employees at *Vanguardia Liberal*, including full-time and part-time, is 450. The newspaper produces 23,540 copies of 32 pages on a weekday and 44,170 copies of 58 pages on Sundays. In addition to the main newspaper, this company also produces a wide variety of complementary products. One is a daily publication called *Nuestro Diario* (in English, “Our Daily”). It is a paid paper which contains 24 tabloid pages and has an average daily circulation of 30,400 copies. Other products include several free targeted editions, ranging from two weekly publications that are geographically oriented to a number of monthly publications with different topics. These free editions have between 16 to 32 pages, and the circulation ranges between 20,000 and 30,000 copies.

Audience Questions

The average age of *Vanguardia Liberal*'s core audience falls between 30 and 49 years old. Statistics show that the average age was between 18 and 29 years old four years ago. The newspaper does not have an explanation for this change. During the last years, circulation has slightly decreased for the newspaper. However, with the introduction of new products, total circulation has increased.

The strategies this company has implemented with the aim of approaching the core audience are establishing a leadership role serving the community and divesting from the core audience.

Production (Printing) Workflow

Tables 9 and 10 summarize the current technologies and automation implemented by *Vanguardia Liberal*, respectively.

Table 9. Current technologies implemented by Vanguardia Liberal

Process	Technology
Plate Technology	CTP - Violet
Press Technology	Offset – Coldset
Press Configuration	2/2
Kind of Ink	Oil based
Finishing	Inserting Trimming

Table 10. Degree of automation in Vanguardia Liberal processes

Process	N	P	T
Plate punching	X		
Plate bending	X		
Paper feeding	X		
Color register		X	
Page register		X	
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception		X	
Ink and water supply	X		
Chemical replacement	X		
Plate feeding	X		
Web tension		X	
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

Vanguardia Liberal is currently installing two new inserters and a new trimmer-stitcher machine. For the future, the company foresees the acquisition of a new press with

semi-commercial capabilities and automatic processes such as dryers, press settings, page registration, color registration, and density control, among others. *Vanguardia* considers the major restriction in the workflow to be the layout of pages. In the production process, it is the press run that is most often a bottleneck. Although a procedure for quality control has not been defined, a Color Management System (CMS) does exist, and both hard and soft proofing is used to calibrate color.

Table 11 shows the type of information that is collected in each step of the production process and whether that information can be obtained automatically or manually.

Table 11. Production information collected at Vanguardia Liberal

Process	Information Collected	A/M
Platemaking	Starting time	A
	Finishing time	A
	Waste	M
	Total Consumption	A
Make ready	Time	M
Press Run	Starting time	A
	Finishing time	A
	Stops	A
	Waste	M
	Count	A
Finishing	---	---

A = Automatic
M = Manual

The physical changes being considered for the future are reducing web width, increasing the use of color, and the addition of and elimination of sections. In the question about future strategic changes in newspaper production, *Vanguardia Liberal*

replied that they have already consolidated printing facilities, and that the off-site printing of specialty publications is a possibility.

This newspaper has a broad selection of commercial jobs, including flyers, brochures, magazines, posters, inserts, and other newspapers as well. To print these products, the company uses the same resources it does to produce the newspaper. The business of commercial jobs has considerably increased during the past few years.

Case 4: Kitsap Sun

Demographic Information and Circulation

The *Kitsap Sun* belongs to the EW Scripps Group. It is located in Bremerton, Washington, and serves the Seattle area. The total number of employees at *Kitsap Sun*, including full-time and part-time, is 200. The newspaper produces 28,922 copies of 24 to 28 pages on a weekday, 30,836 copies of 40 pages on Saturdays, and 32,157 copies of 54 pages on Sundays. It produces approximately 12 different complimentary products with a total circulation of 190,000 copies per month.

Audience Questions

The average age of *Kitsap Sun*'s core audience falls between 50 and 64 years old. This range has not changed as compared to 10 years ago. The newspaper considers that the size of the audience has decreased mainly due to readers moving to the Internet and also to less time spent reading.

The two strategies implemented to maintain the core audience are identifying and investing in a profitable segment and optimizing cash flows.

Production (Printing) Workflow

Tables 12 and 13 summarize the current technologies and automation implemented by *Kitsap Sun*, respectively.

Table 12. Current technologies implemented by Kitsap Sun

Process	Technology
Plate Technology	CTP - Thermal
Press Technology	Offset – Coldset
Press Configuration	4/1
Kind of Ink	Soy
Finishing	Inserting

Table 13. Degree of automation in Kitsap Sun processes

Process	N	P	T
Plate punching			X
Plate bending			X
Paper feeding	X		
Color register	X		
Page register		X	
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception		X	
Ink and water supply		X	
Chemical replacement	X		
Plate feeding	X		
Web tension	X		
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

There is no major equipment investment planned for the future. This newspaper considers the major restriction in the process to be the post-press operation; in second place is the press run. The *Kitsap Sun* has weekly committee meetings to evaluate the

quality of the products; however, no specific procedure for quality control was mentioned.

Table 14 shows the type of information that is collected in each step of the production process and if that information can be obtained automatically or manually.

Table 14. Production information collected at Kitsap Sun

Process	Information Collected	A/M
Platemaking	Starting time	M
	Finishing time	M
Make ready	Time	M
Press Run	Starting time	M
	Finishing time	M
Finishing	---	---

A = Automatic
M = Manual

The only physical change contemplated for the future is reducing web width. In the question about possible strategic changes in newspaper production this newspaper responded that there are no plans for outsourcing, consolidating, or separating printing facilities.

The only kind of commercial job printed at *Kitsap Sun* is other newspapers. The company prints approximately 65 runs with a total of 1.3 million copies per month. They use the same workflow used in the production of the main paper, and this is a growing business for them.

Case 5: Record Searchlight

Demographic Information and Circulation

Record Searchlight belongs to the EW Scripps Group. It is located in Redding, California, and serves the Redding area. The total number of employees at *Record Searchlight*, including full-time and part-time, is 191. The newspaper produces 33,000 copies of 36 pages on a weekday and 36,000 copies of 50 pages on Sundays.

Audience Questions

The average age of *Record Searchlight's* core audience falls between 50 and 64 years old. This range has not changed as compared to 10 years ago. However, the newspaper says the size of the audience has decreased, mainly due to readers moving to the Internet.

The strategies this newspaper has implemented to approach their core audiences are identifying and investing in a profitable segment, increasing value added services, and establishing a leadership role serving the community. The company is also divesting from the core audience.

Production (Printing) Workflow

Tables 15 and 16 summarize the current technologies and automation implemented by *Record Searchlight*, respectively.

Table 15. Current technologies implemented by Record Searchlight

Process	Technology
Plate Technology	CTP - Thermal
Press Technology	Offset – Coldset
Press Configuration	4/2
Kind of Ink	Oil based
Finishing	Inserting Trimming Stacking

Table 16. Degree of automation in Record Searchlight processes

Process	N	P	T
Plate punching			X
Plate bending			X
Paper feeding		X	
Color register		X	
Page register		X	
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception	X		
Ink and water supply	X		
Chemical replacement		X	
Plate feeding	X		
Web tension	X		
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

The *Record Searchlight* has no major equipment investment planned for the future. This newspaper considers the major restriction in the process to be finishing. They also responded that prepress is another frequent restriction. There are no procedures implemented for quality control.

Table 17 shows the type of information that is collected in each step of the production process and if that information can be obtained automatically or manually.

Table 17. Production information collected at Record Searchlight

Process	Information Collected	A/M
Platemaking	Starting time	M
	Finishing time	M
	Defects	M
Make ready	---	---
Press Run	Starting time	M
	Finishing time	M
	Waste	M
Finishing	Starting time	M
	Finishing time	M
	Waste	M

A = Automatic
M = Manual

The physical changes considered for the future are reducing web width, reducing page count, and eliminating sections. In the question about future strategic changes in newspaper production, this newspaper responded that there are no plans for outsourcing, consolidating, or separating printing facilities.

The kinds of commercial jobs printed at the *Record Searchlight* include flyers, inserts, and other newspapers. They use the same workflow as in the production of the main paper, and it is a growing business.

Case 6: Abilene Reporter-News

Demographic Information and Circulation

Abilene Reporter-News belongs to the EW Scripps Group. It is located in Abilene, Texas, and serves Taylor, Jones, and Callahan counties. The total number of employees at *Abilene Reporter-News*, including full-time and part-time, is 150. The

newspaper produces 34,000 copies of 36 pages on a weekday and 45,000 copies of 80 pages on Sundays.

Audience Questions

The average age of the *Abilene Reporter-News*'s core audience falls between 50 and 64 years old. Ten years ago, the core audience was located in the range between 30 and 49 years old. The newspaper responded that the size of the audience has decreased mainly due to a lack of relevant content for younger audiences.

The strategies this newspaper has implemented to approach their core audiences include identifying and investing in a profitable segment, increasing value-added services, and optimizing cash flow derived from the core audience.

Production (Printing) Workflow

Tables 18 and 19 summarize the current technologies and automation implemented by *Abilene Reporter-News*, respectively.

Table 18. Current technologies implemented by Abilene Reporter-News

Process	Technology
Plate Technology	CTP - Thermal
Press Technology	Offset – Coldset
Press Configuration	4/2
Kind of Ink	Oil based
Finishing	Inserting Trimming Stacking

Table 19. Degree of automation in Abilene Reporter-News processes

Process	N	P	T
Plate punching			X
Plate bending			X
Paper feeding			X
Color register		X	
Page register		X	
Density control		X	
Press setting		X	

Process	N	P	T
Blanket cleaning	X		
Page reception			X
Ink and water supply		X	
Chemical replacement		X	
Plate feeding			X
Web tension		X	
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

The *Abilene Reporter-News* has major equipment investment planned for the near future. This newspaper considers the most frequent bottleneck in the production process to be make-ready. Another common restriction is finishing. In regards to quality control, the company responded that it has implemented Standard Operating Procedures (SOPs) for the production operation.

The data about the kind of production information collected was not provided. Table 20 shows if the information can be obtained automatically or manually for each step in the process.

Table 20. Production information collected at Abilene Reporter-News

Process	Information Collected	A/M
Platemaking		A
Make ready		M
Press Run		A
Finishing		M

A = Automatic
M = Manual

The physical changes considered for the future are reducing web width and reducing page count. In the question about future strategic changes in newspaper production, this newspaper selected consolidation of printing facilities as an option.

The kinds of commercial job printed at the *Abilene Reporter-News* include flyers, brochures, inserts, and other newspapers. They use the same workflow as in the production of the main paper, and it is a growing business.

Case 7: The Free Lance-Star

Demographic Information and Circulation

The Free Lance-Star is an independent newspaper. It is located in Fredericksburg, Virginia, and serves the Washington, D.C. area. The total number of employees at *The Free Lance-Star*, including full-time and part-time, is 433. The newspaper produces 46,495 copies of 50 pages on a weekday and 50,125 copies of 86 pages on Sundays. In addition to the main paper, it also prints three complimentary products: two weekly publications of 14 pages each, which have a total circulation of 63,783, and a monthly publication of 12,000 copies.

Audience Questions

The average age of *The Free Lance-Star's* core audience falls between 50 and 64 years old. This range has not changed as compared to 10 years ago. The newspaper responded that the size of the audience has increased, mainly due to population growth in the surrounding area.

The strategies this newspaper has implemented to approach the core audience are increasing value-added services and establishing a leadership role serving the community.

Production (Printing) Workflow

Tables 21 and 22 summarize the current technologies and automation implemented by *The Free Lance-Star*, respectively.

Table 21. Current technologies implemented by The Free Lance-Star

Process	Technology
Plate Technology	CTP - Thermal
Press Technology	Offset – Coldset
Press Configuration	2/2
Kind of Ink	Oil based
Finishing	Inserting Stacking

Table 22. Degree of automation in The Free Lance-Star

Process	N	P	T
Plate punching			X
Plate bending			X
Paper feeding		X	
Color register	X		
Page register	X		
Density control	X		
Press setting	X		

Process	N	P	T
Blanket cleaning	X		
Page reception		X	
Ink and water supply	X		
Chemical replacement		X	
Plate feeding	X		
Web tension	X		
Cutoff	X		

N = Not automated
P = partially automated
T = totally automated

The Free Lance-Star has already started a project to build a completely new facility. It will include new CTP – Thermal equipment, a new 6/2 web offset press with dryers and a high degree of automation, and the installation of several finishing

capabilities, including inserting, trimming, poly bagging, stacking, cold glue/flexi, and wire/tabs. This newspaper considers the most frequent bottleneck in the current production process to be finishing. They also responded that plate-making is another common restriction for the process. At this time, there are no procedures implemented for quality control, with the exception of density measurements. The new plant will have several tools that allow the execution of quality practices.

Table 23 shows the type of information that is collected in each step of the production process and if that information can be obtained automatically or manually.

Table 23. Production information collected at The Free Lance-Star

Process	Information Collected	A/M
Platemaking	Number of plates	M
Make ready	Number of impressions (waste)	M
Press Run	Starting time	M
	Finishing time	M
	Stops	M
	Count	M
Finishing	Number or inserts	M
	Number of inserted	M
	Shortages	M
	Overages	M
	Zone accuracy	M
	Starting time	M
	Finishing time	M

A = Automatic
M = Manual

The physical changes considered for the future are increasing the use of color and improving quality through the addition of a heatset system. In the question about future strategic changes in newspaper production, this newspaper responded that they are

currently working on separating printing from publishing and focusing on commercial/contract print.

The kinds of commercial jobs currently printed at *The Free Lance-Star* are inserts and other newspapers. They use the same workflow as in the production of the main paper, and it is a growing business.

Appendix C

Definitions and Clarifications

1. Run of Press (ROP): Generally refers to newspaper or magazine advertisements placed near editorial copy, as opposed to inserts or preprints
2. Small Newspaper: For this study, small newspapers are considered to have an average daily circulation of 50,000 copies or less for the core product.
3. The Daily News produces a Saturday edition instead of a Sunday edition, although the content is quite similar to most other Sunday papers.
4. Total Market Coverage (TMC): Supplement to a newspaper that can be paid or delivered for free to a certain audience with the purpose of attracting non-subscribers.
5. A Standard Operating Procedure (SOP): Prescribed action for a defined and specific process of any duration, lasting from moments to entire production shifts. Its aim is to achieve a uniform action or reaction for a process or event.