PRINT COMMUNICATIONS SUSTAINABILITY STUDY
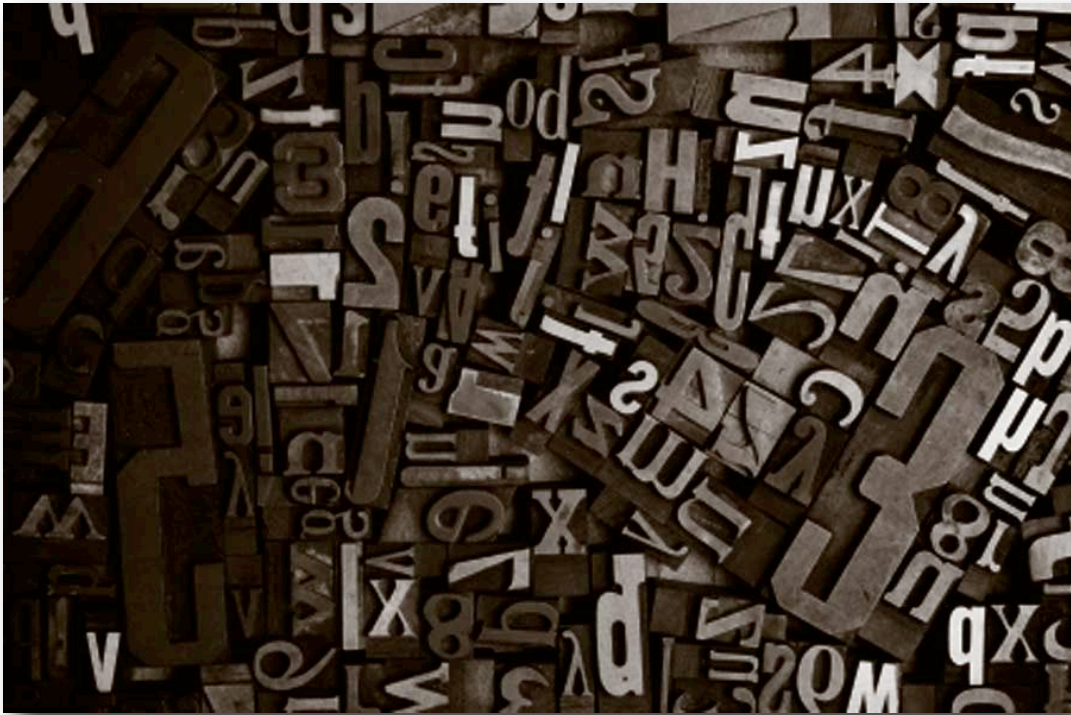
MASTER OF ARTS IN COMMUNICATIONS AND TECHNOLOGY

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PRINT COMMUNICATIONS SUSTAINABILITY STUDY

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ABSTRACT

Current trends in print communications are shifting due to technological advancements and environmental pressures, combined with emerging alternate forms of mass communications. The goal of the study is to identify public perception of the convergence of this communication medium, and the long-term sustainability of the various sectors of the print communications industry. Additionally, the study will perform a cross comparison through various age demographics to try to determine if different generations have varying perceptions. The research survey identifies the various sustainability timelines for print communications, environmental practices within the industry, and the emergence and combining of new and traditional technologies. The roles and functions of various communications mediums within society, and the affects they can have on public perceptions will be explored.

INTRODUCTION

This chapter will give a summary of the research problem, background information and the research questions used in the survey.

1.1 Background

Since the Chinese development of wooden block lettering and Johann Gutenberg's invention of movable type, printing has been an influential mass communication medium that has accelerated and enabled cultural, cognitive and societal changes (Crowley & Heyer, 2007). Innis concurs and expands: "Print was therefore essential to a shift in relative power between space and time; spatial expansion occurred while continuity between past and present was lost (Adams, 2009, pg.33)." Print media engages individuals to think, interpret and enlighten themselves and open the door for debate for the greater good of the society in which they live.

Marshal McLuhan defines print as a 'hot' medium that totally engages individuals with a minimal amount of stimulus, as opposed to 'cold' mediums such as television or seminars (McLuhan, 1964). Print media can be descriptive and concise without leaving individuals trying to determine the meaning of the message, unlike television viewers. McLuhan theorized that in the future we would become a global village through the use of electronic mediums; this is currently demonstrated with advancements of web, e-books and mobile technologies (McLuhan, 1962). However, McLuhan later expanded that "hybrid" or a convergence of various mediums may develop (McLuhan, 1964). Perhaps this convergence of print and electronic media can take place; thus public perceptions surrounding mass communications will take on new meaning.

Print communications can be subcategorized into several different disciplines. This research will focus on the following: newspapers (daily and weekly), magazines, stationery

packages (business cards, letterheads, envelopes), and books (academic, paperback novels, children's and textbooks). Another segment of the print industry will involve promotional items (pens, lanyards, garments) as well as posters, signage, banners and bulletin boards.

Media generated perception can greatly influence today's society, especially with increased access to news and the rapid dissemination of information. MSN Encarta defines perception as "an attitude or understanding based on what is observed or though" (MSN Encarta, 2009),"so the perception portrayed through mass media can be the general lens that society views itself; but does perception define reality? Most of us have heard media reports surrounding the declining state or imminent death of print communications, but are these reports indicative of the print industry in Canada or are they hyperbole created through media?

Print communication is in constant transformation; technological advancements and environmental pressures, combined with emerging forms of mass communication, are forcing the diversification of the traditional "ink on paper" methodology (Vivian, 2007). As current trends of print communications shift, public perception on this medium and its long-term sustainability come into question. The research will try to determine if various communication mediums can coexist, and perhaps enhance the readership of both disciplines.

The research will also focus on the role of all media and the influence they have on society. The ethics and perceptions of various forms of media representation will be evaluated. The sociocultural theory of communications and "social action media studies" by Gerard Schoening and James Anderson will also be explored (Littlejohn & Foss, pg. 295, 2008). This theory delves into how media content is interpreted and assigned meaning within communities; in cases, audiences are not characterized as an amorphous mass, but as individuals that interpret content in different and specific ways. This sociocultural theory aligns well with the research

topic, as the purpose is to determine if individuals within society are influenced by the various communications mediums (radio, television, internet, mobile media) as to their own perceptions relating to print communications.

The questioning and cross comparisons of the age demographics is to determine if different generational groupings have a variance in public opinions. The Weaver and Shannon model relating to the information theory also provides relevance in the fact that every message is subject to noise and interference, which can play a role in perception (Adams, 2009, pg.45).

1.2 Research Problem

There have been several studies and published reports surrounding the decline of print and how the Internet, Electronic books and E-readers will supersede as the dominant communication mediums within society; but do these reports reflect public opinion? In Canada, print media is still an effective and viable method of mass communications; granted, there are some segments of the industry that are in decline. Are these declining segments swaying the negative perceptions towards all print mediums, or does the public still view print as a long-term communications solution?

The study will also determine how different age demographics could play a role in perceptions or opinions towards print, or will it even be a factor? The age groups will be defined as under 25, 26 to 45 and over 45 years old.

The survey will also try to capture the public's perception surrounding environmental practices and the printing industry. The environment has become an important issue in all segments of society, and when relating to print sustainability, environmental issues are at the forefront. These issues may play a huge role in how the public views printing as an unfriendly medium that perhaps cannot sustain itself in the long term.

1.3 Survey Questions

The following multiple-choice questions were developed to address the research problem.

The data results will be presented in chapter 4, and the data analysis results in chapter 5.

1.Which age category would best describe you?

(A) 14 to 25 years

(B) 26 to 45 years

(C) over 45 years

2. How sustainable do you feel daily printed newspapers will be?

3.(*Edmonton Journal, New York Times*)

(A) 3 to 5 years

(B) 5 to 15 years

(C) 15 to 30 years

(B) printed daily newspapers will always be around

3. How sustainable do you feel printed weekly community newspapers will be?

4.(*Edmonton Examiner, Banff Crag & Canyon*)

(A) 3 to 5 years

(B) 5 to 15 years

(C) 15 to 30 years

(D) printed weekly community newspapers will always be around

4. How sustainable do you feel printed magazines will be?

(A) 3 to 5 years

(B) 5 to 15 years

(C) 15 to 30 years

(D) printed magazines will always be around

5. How sustainable do you feel print media such as stationery, letterheads, business cards and envelopes will be?

    (A) 3 to 5 years

    (B) 5 to 15 years

    (C) 15 to 30 years

    (D) business cards and stationary packages will always be around

6. How sustainable do you feel print promotional media such as posters, banners, bulletin boards and signage will be?

    (A) 3 to 5 years

    (B) 5 to 15 years

    (C) 15 to 30 years

    (D) posters, banners, bulletin boards and signage will always be around

7. How sustainable do you feel printed books will be?

8.(paperback novels, textbooks, children's books, academic books)

    (A) 3 to 5 years

    (B) 5 to 15 years

    (C) 15 to 30 years

    (D) printed books will always be around

8. How environmentally friendly and green do you feel printers are today?

    (A) not at all environmentally friendly

    (B) somewhat environmentally friendly, but will still need to improve

    (C) very environmentally friendly

    (D) extremely environmentally friendly and conscientious of the environment

9. How environmentally friendly and green do you feel printers will be in the future?

    (A) not at all environmentally friendly

(B) somewhat environmentally friendly, but will still need to improve

(C) very environmentally friendly

(D) extremely environmentally friendly and conscientious of the environment

10. Are you aware of the Forest Stewardship Council and the FSC certification process?

(A) yes

(B) no

(C) somewhat

11. Do you look for paper products that contain recycled content when purchasing?

(A) yes

(B) no

(C) somewhat

12. Are you familiar with the term Eco Paper?

(A) yes

(B) no

13. Do you feel there is a lot of "Green Rhetoric" surrounding the environmental impact of print media?

(A) yes

(B) no

14. Do you feel digital printing and print on demand technology will replace traditional ink on paper printing? (digital presses, quick copy, direct mail)

(A) yes

(B) no

(C) not familiar with the technology

15. Do you feel traditional book, newspaper and magazine printing will be replaced with electronic mediums? (PDF's, online web versions)

    (A) yes

    (B) no

    (C) a combination of both traditional print and electronic versions will prevail

    (D) not familiar with the technology

16. Do you feel hand held electronic e-readers will replace traditional book printing?

17.(Sony e-Book, Kindle)

    (A) yes

    (B) no

    (C) not familiar with the technology

17. How do you prefer to read information: in the printed form or an electronic version? (electronic referring to online, PDF, e-reader, etc.)

    (A) printed version

    (B) electronic version

1.4 Demarcations

       The survey will target the general populace to get varied perceptions surrounding print sustainability. Attempts have been made not to involve individuals who are currently in the printing or graphics industry as this could affect the results.

1.5 Outline

       This research project is divided into six chapters. Chapter one provides background information on the research and an overview of print communications. The second chapter will provide a literature review as broken into various segments of the industry, environmental trends

and public perceptions. Chapter two will also provide the foundations and relative information

for the survey development. The survey methodology will be explored in chapter three; chapter

four will present the survey empirical data and findings. The survey analysis and cross analysis

will be performed in chapter five. Conclusions, implications and recommendations will be

presented in chapter six.

REVIEW OF LITERATURE

The following chapter will focus on peer-reviewed literature based on the research questions. The literature will focus on sustainability, environmental issues and practices, emerging technologies and cross-synergies with traditional mediums, and public perceptions.

2.1 Traditional Print Communications

2.1.1 Is it Too Early to Write the Obituary for Print?

Is print communications dying or is it simply converging and morphing with new technologies to survive? The print industry has evolved over the past decades with printers becoming better corporate citizens by leaving a smaller environmental footprint with sustainable practices and technological advancements (Forest Stewardship Council Canada, 2008). Print communications also remains one of the most cost effective methods of mass communications, as well as a creditable source of information (Akin, 2009). In the greater Edmonton region the amount of commercial printing has doubled over the past two decades and shows no inherent signs of decreasing; granted, Alberta only makes up 8.3% of the total amount of printing done in Canada, which is very small in comparison to Ontario or British Columbia according to studies by the Canadian Printers Association (Canadian Printers Association, 2009).

In his book *Print is Dead*, Jeff Gomez analyses the longevity and the declining role of print media in mass communications within modern western society; his position has a very narrow scope but he does raise an old controversy and perception that many others possibly share; it appears that competing media are slowly eroding the economic base of publishing.

Of course, neither the "print is dead" argument nor the "future of the book" debate

are new topics. Both discussions have been floating around for decades, gaining

critical mass first in the mid-1980s when personal computers became commonplace

and then again in the 1990s at the dawn of the Internet. Back then, these were

primarily abstract debates. But the developed world's nearly totally digital society

now necessitates putting the debate at the forefront of public discussion (Gomez, p.5,

2008).

Gomez's comment on the ongoing debate does have merit; there has been a dramatic decline

within certain segments of the print industry, for example in business forms and catalogues.

Gomez also states that the true impact of new digital technologies may not be truly realized for a

few generations, until those that are being raised within digital realities deviate from the

traditional print mediums: "After all, if electronic reading means the instantaneous downloading

of text – probably through an instant wireless connection from any where in the world – then

publishers are put out of business, right?" (Gomez, 2008, p.55). It should be noted that Gomez

declares the "death of print" through the communication medium he states is as defunct.

Print media needs to deal with the time lag for physically moving and distributing

information (paper) to the readers in the shortest amount of time, especially time sensitive

material such a daily newspapers or weekly magazines (Moran, 2010). Online distribution of

information does overcome geographical barriers and reduces the issues surrounding space and

time.

2.1.2 The Newspaper Industry

The Penny Press newspapers came into being in the 1830s and targeted the emerging

middle class with news, commerce, politics, advertising and social aspects within the

community. Society has always looked towards the newspaper content as a credible source of information, but this credibility has come into question over the past several years, and the public perception is that television is becoming more credible than print media (Folkerts, Lacy, Larabee, 2008). If the credibility of newspapers comes into question, so too does the paper's readership and circulation.

Major urban newspapers in the United States such as the dailies in Denver and Chicago have seen a decline in readership and subscriptions over the past decade (Hanson, 2008), and many daily newspapers across the United States have filed for bankruptcy. David Akin of Canwest News wrote a three-part editorial denouncing the negative image Canadian newspapers having been receiving over the past year; according to Akin, newspapers in Canada are still doing well unlike many of their counter parts in the United States. Canadian newspapers don't rely as heavily on revenues from classified advertising and have less competition than US markets (Akin, 2009). The following statistical data chart from the Canadian Newspaper Association also demonstrates the revenue differences between Canada and its US counterparts, and the volatile market fluctuations in America (Appendix A). The problem is that the Canadian and the US media outlets are so intertwined that crises happening south of the border could be assumed to be developing in Canada as well.

Canadian circulation revenues have shown a steady increase from 2007 to 2009 (Statistics Canada), which may compensate for some of the loss of advertising (Appendix B). During the Canadian and US recession, most communication mediums including radio and television took a hit in revenues, not just the printing industry. It is important to separate the overall downturn in print advertising from the recession that has plagued the United States and Canada over the past few years in relation to overall circulation.

Another major reason for the success of Canadian newspapers is that by creating online versions of the paper, which works to benefit both mediums; as Akin notes, "Readers continue to seek out newspapers, both in print and online. The combined offline and online readership in 2008 is the same as it was in 2003" (Akin, 2009). Newspapers are also directing digital-savvy customers to their websites that incorporate rich media such as video, podcasting, RSS feeds and mobile feeds (Turow, pg. 335, 2009). This cross-pollination of mediums helps to satisfy both traditional and digital customers. A 2009 / 2010 readership survey from NAD Bank shows that combining online and print communications has increased readership since 2005 (Appendix C).

QR (quick response) codes are another method to increase the collaboration between print and digital mediums. Users can scan the printed codes using their mobile devices that will then take them directly to a companies website. Projected sales through the use of mobile devices could be upwards of $119 billion by 2015 (Marin, 2011). Any method to increase mobile access whether digitally or print based will be viewed favorably.

Community newspapers, on the other hand, are seeing a slight decline in advertising but still have sales of 1.2 billion across Canada (Canadian Newspaper Association, 2011). Scott Fitzpatrick (personal interview, 2009), past president of the Alberta Weekly Newspaper Association, feels confident that local papers will still be viable in the future. Amalgamations, streamlining of production and automation, and an online presence have helped to keep local weekly papers competitive.

In his book *History and Future of Mass Media*, David Demers describes why there is still a future in localized papers: "One consequence of this relative lack of diversity is that the local weekly or community newspaper usually contains very little news that is critical of people or social institutions. Instead they are filled with 'booster' news – social and political news that

tends to project a view of the community as harmonious and wholesome" (Demers, 2007, p.274). People like to be associated within their communities, keeping current by way of weekly papers, even if the news is dated. According to the Newspaper Association of America's 2007 report, this demonstrates the strength of the weeklies (Appendix D).

A national survey conducted by ComBase showed that 74% of Canadians read their local community newspaper and 63% read the daily editions (Appendix E). Over 89% of the readers choose the weekly papers for local coverage of news and events, which may enable this medium to remain a sustainable communication medium for decades.

2.1.3 Magazines and Journals

Magazine publishers are increasing sales across Canada (Appendix F) with projected sales by 2014 increasing by 1.2 % at a value of over $1.03 billion (Ontario Media Development Corporation, 2010). However, the Canadian market is very small compared to sales and revenue from Europe or the United States. In the US magazines make about $7 billion in subscriptions and another $11.5 billion in advertising revenue (Hanson, 2008). Though the US and European markets are larger, Canada boasts the largest per capita readership of magazines in the world, which helps to maintain a stable market, keeping this print medium viable (Appendix G).

Magazine and academic journal publishers are also creating synergies between digital online versions and traditional print, thus diversifying and appealing to a wider audience (Folkerts, Lacy, Larabee, 2008). Research performed by BIG Research and Consumer Magazine finds that magazines have the most influence on driving consumers towards various websites for products and services (Appendix H). The online magazine versions contribute little in advertising revenue so print is still a main stay and revenue generator for many publishers. Internet magazines have also not replaced the glossy print format, largely because advertisers

have not embraced the electronic medium, and without revenue generation it is difficult to

survive, regardless of the communication media (Vivian, 2007).

Magazines have maintained success by finding niche markets through geo-marketing and

geo-targeting specific demographic editions (Turow, 2009, pg. 364). Since 2000 there has been a

steady increase in the diversity of magazine selections available in Canada (Appendix I).

In the book, *Who Wants Yesterday's Papers*, the authors struggle to find a common

ground for the decline of print in the world of academia collections. The consensus is that "the

movement toward a greater reliance on digital technologies is inevitable. Yet reliance is one

thing; total dependence would be another matter entirely" (Carignan, DuMerer, Koutsky,

Lindquist, McClurken, McElrath, 2005).

Another key point for long-term sustainability of magazines is that they tend to attract

younger readers (Appendix J) as opposed to other forms of print. For any communication

medium to survive long term, generating interest in younger generations is key.

We have all heard of the decline of local magazine sellers (independents and

corporations) due to financial difficulty; Borders in the United States is a prime example of this.

How would the collapse of a national chain affect the magazine industry? According to studies in

the US, 83% of magazine sales come from subscriptions, making print magazines less

susceptible than other print media on single copy retail sales (Turow, 2009). This is where an

online presence may allow subscribers to buy their reading material and have it mailed out

directly, thus avoiding the local retailers. Supermarkets and drugstores (Appendix K) distribute

over 51% of the retail market for magazines as compared to 11% for bookstores (Rodman,

2007), thus leaving consumers with access to retail outlets despite the decline of bookstores.

2.1.5 Promotional, Direct Mail and Sign Industries

In 2006 the United States spent more than 52 billion dollars on direct mail, 5.7 billon dollars on outdoor advertising and 34.65 million dollars on all other advertising (Hanson, p. 371 2008), and the industry is showing steady growth. Trade advertising can include promotional items (pens, lanyards, notepads, paperweights), signage, pull-up displays, vehicle wraps and billboards. From 1999 to 2004 the sign industry in Canada virtually exploded when newer digital technologies were introduced to the market (Appendix L). In 2005 and 2006 the sign industry dropped to reflect the true market place, but since 2006 stats show steady growth with little fluctuation (Statistics Canada, 2011).

Statistics also show a trend towards direct mailing of advertising using integrated xml database workflow systems and variable data merging (Xerox, 2009), which targets an individual or organization as opposed to mass marketing campaigns. If recipients receive promotional printed material that is personally addressed to them, the chances of the product being viewed is about 80% greater than mass mail-outs or flyer delivery. From a marketing prospective, direct mailing can also be tracked, measured and analyzed for positive results and future marketing campaigns (Rodman, 2007).

Unlike printing shops, 93% of sign shops make their profits on installs and post print production, and merely do a cost recovery on the sign printing. The garment industry is one of the stronger markets going into the future. Trends look optimistic for the sign, promotion and garment segments especially in educational institutions, athletic, corporate branding and nonprofit organizations (Marx, 2011).

2.1.4 Book Publishing

Throughout many of the readings, one common theme was that print media will survive, but perhaps not in its current form. We are witnessing a shift from traditional offset lithography (ink on paper) to technologies such as digital printing and print on demand. Evaluating social change and the decline of print media, David Demers looks at ways in which current publishers offset losses; one way is with publishing successes such as the J.K. Rowling's *Harry Potter* series (Demers, p.121 2007). Vivian concurs by stating, "Despite the risks, books can make enormous profits ... ... The result has been heightened competition for big-name authors and new attention to mass marketing" (Vivian, 2007, p.50).

Ralph Hanson elaborates on what he terms "Cross-Media Synergy" or cooperative activities whereby internet publishing, television, or movies are viewed as a complement medium as opposed to competition: "I think that history has shown that one medium doesn't necessarily replace another medium. It actually expands the number of people who come in and use information" (Hanson, p. 203 2008). When Yochai Benkler released *The Wealth of Networks* in 2006, the publishers released the book online and offline at the same time with the hope that people would become enticed to the online version, and subsequently purchase the print version as well (Turow, pg. 284, 2009).

Another evolving trend with book publishers is to create "momentum" publishing by beta testing E-book titles online. Publishers can track online interest and sales, and if a title or author becomes popular, a print version and media blitz would follow (Mandelman, 2010). Mandelman views the potential for these medium mash-ups: "In the future you'll likely see more of this and earnings of successful authors, book retailers and some publishers will likely rise" (Mandelman, 2010).

In the report New Technologies and Cultural Policies: Comprehensive Report,

Pierre Bélanger researches various mass communication mediums and provides insight as to

future directions. For print and publishing, Bélanger recommends that "Publishing support

programs should continue to focus primarily on publication, which does not exclude the

simultaneous production of digital format, or the development of derivative products" (Bélanger,

2007). Even with the shift to digital mediums, it is highly unlikely that traditional print will

disappear soon.

2.2 Current And Future Trends

2.2.1 E-Readers

E-Readers can be described as hand-held electronic devices, capable of storing anywhere

between 3,500 digital titles for the Amazon Kindle and Sony E-Reader, and up to 56,000 + for

interactive and multifunctional devices such as the Apple iPad or Samsung Galaxy Tab.

Currently Apple commands 68% of the market share when it comes to the e-Book devices, and

with the release of the iPad 2 sales are expected to show continued growth (Changewave

Research, 2011).

Digital books are hailed as the replacement for the traditional paper version, yet the

public has yet to totally embrace this "new" medium. Gomez, though not seeing longevity in

traditional print, also points to the early failures of the adoption of e–books: "Most recently, the

failure of E-books since their introduction in the late 1990s has only given publishing more

reason to stay on its current path" (Gomez, 2008, p.54). David Demers also downplays E–book

technology: "...consumers are slow to adopt E–book technology. Consumers clearly prefer a hard

copy book to an electronic one, and they especially do not like reading books on a computer"

(Demers, 2007, p.239). Demers also states that people may not readily adopt the technology, but

traditional mass media will lose their power over time. Ziming Liu writes that people's

preference for using the printed medium in the digital age will not diminish (Liu, 2008, pg.65).

People like the "feel" of paper and the credibility, portability, and ease of use this tangible

medium provides. Conventional paper books are easily shared as opposed to their digital

counterparts as the e-books can only reside on the device or software they were loaded onto.

According to presentations given at the 2007 Charleston Conference, the University of

Alberta already has over 4,000 online E–books and this will increase every year (D'Amour,

Carter, Shetler, 2008). Tony Horava demonstrates the popularity of digitizing repositories and

future trends within academia and what the future will be for universities: "It has become clear

that we are at an intersection between technology and strategic direction: we need to harness the

appropriate technological solution to help us meet our strategic goals. Exposing students and

faculty to a critical mass of E–book content in the Scholars Portal will bring a wealth of new

research and discovery opportunities" (Horava, 2008).

E-books and readers have advantages over traditional print in that they can be interactive,

provide full colour with high resolution graphics, are very portable, and students can easily

download the current editions of academic textbooks. Local libraries can also share material to

E-readers and the borrower never has to return the material, it simply expires. Another great

benefit of E-books is that travelers, who traditionally have carried multiple tour books and

guides, can have them all centrally located in one lightweight device. This is creating a content-

on-demand scenario, which combines a plethora of media, data and interactivity that will grow in

popularity.

One misconception surrounding E-books is that the prices of books would come down

due to the elimination of production and distribution costs. E-books have actually risen in price

and in some cases have become more expensive than their print counterparts. For example,

Amazon deeply cuts the price of hard cover books and in some cases the digital prices don't

reflect the same discount, leaving customers a bit bewildered (Marx, 2011). Most academic

textbooks seem to be the same price regardless of the output format.

Content, typography, imagery and advertising will be similar whether books are printed

or conveyed in an electronic form; which format will prevail in the future will ultimately be

decided by human behavior and human nature. Will individuals prefer the format and benefits of

an E-reader or the tangible feel and readability of print?

2.2.2 Online Books, Magazines And Repositories

Several readings state that E–books may not have a future as predicted, and the trend

is now toward on-line repositories such as Google Books (Google, 2009) or Project Gutenberg

(Project Gutenberg, 2009). Benefits that online digital media has over print is that books can be

searched and downloaded, and in some cases the information can be shared across networks. Of

course this accessibility comes at a high cost in terms of piracy, copyright, intellectual property

concerns and unethical sharing of the property. The Author's Guild of American Publishers

recently settled a class action lawsuit against Google Books for the use of published copyright

material and royalty losses. In 2010 the Chinese government wanted to exercise self-censorship

control over Google content and access to information that resulted in Google suspending

operations from that country.

A new technology called GoogleLitTrips allows readers of the online book to jump

across other mediums to enhance their reading experience. Readers can multitask by following

the characters' journeys through Google Maps or Google Earth, listen to music from the era, or

view various videos and photographs (Farquharson, 2011). If this type of reading becomes popular in the future, does this change the medium from "hot" to "hotter" according to Marshal McLuhan, as it further engages individuals? Conversely it could move the medium to the "cold" mediums as the engagement process becomes very passive and less thought processes are necessary?

Many people view Wikipedia as an online replacement for the traditional print based encyclopedias, but it is not considered a valid resource in the world of academia as the contents are not peer reviewed, nor can the credentials or motives of the authors be determined. Encyclopedia Britannica has long been the leader in reference books that are still available in print; they also publish an online format and an E-book version. The benefit to the digital formats is that they can be constantly updated almost instantaneously. A big drawback with print based media is that in our fast changing technological world, the information may be dated before the books are even printed and distributed.

Ziming Liu also raises concerns about the credence of online information: "People are generally comfortable with information only when they can 'feel it' in their hands and can make sure whether the important information is recorded properly. Why are all the important messages and agreements put on paper?" (Liu, 2008, p.144).

2.3 Environmental Practices

The printing industry in the past has been guilty of using environmentally damaging technologies and operations. These can be identified as the use of photographic chemicals, rubber based inks, alcohol water systems, clear cutting of forests for virgin pulp fibers, and using non-recycled materials. Today's printers rarely practice these methods, but the public still maintains this negative perception around the field of print based products.

Going forward, what has changed that makes print media environmentally sustainable? The Forestry Stewardship Council Canada (FSC) is a governing body that sets environmental policies and standards for printing companies to follow to become certified. Companies that achieve the defined FSC standards become certified and are regularly audited. FSC companies can use the FSC logo on their printed products that demonstrates to society that this is an environmentally friendly product (Appendix M). The FSC certification goes well beyond simply using post consumer recycled content in the paper, or using forest friendly (no clear cut logging methods) for the virgin pulp. For example, FSC printing plants must have low voltage lighting, low flush toilets, environmentally friendly heating systems, and must practice recycling throughout the plant; how many other industries can boast these standards (Forest Stewardship Council Canada, 2010)? FSC certified papers and printers and have grown rapidly in Canada over the past five years (Appendix N). By 2005 approximately 30 printers had been certified in Canada; in 2010 there are now over 512 (Elliott, 2011).

Why do printers feel compelled to be involved in the FSC process? Consumer demands are forcing the change, and printers also want long-term sustainability for print. Sawmill residues and recycled paper now provide 87% of the fiber used to make new paper and paperboard (Newspapers Canada, 2011). Canada also boasts some of the toughest forestry environmental standards when it comes to deforestation and tree replanting; more than 600 million seedlings are planted annually to help the regeneration of forests (Newspapers Canada, 2011). Canada's forests also have the highest number of FSC certified hectares in the world (Appendix O).

Studies have shown that the e-waste generated from computers, mobile devices, televisions and phones can be more harmful to the environment than traditional paper products. After their lifespan, many of these devices are shipped to 3rd world countries and create huge

toxic dumps resulting in catastrophic environmental damage. These devices also consume huge amounts of electricity during the manufacturing stages and then throughout their life spans. A German study demonstrates that reading online for 30 minutes can have the same environmental impact as a printed newspaper (Newspapers Canada, 2011).

2.4 Media Perceptions, Ethics and Biases

Gerard T. Schoening and James A. Anderson researched social actions and media studies, determining that meaning is not so much in the message as in how the message can be interpreted. Commenting on "the influence of media content and its (presumed) signifying structures over the behaviors of media audiences" they conclude:

Whereas few, if any, media studies follow a "direct" (or "bullet") theory of effects wherein content is said to stimulate behavioral outcomes directly the majority do hold that the organizational structure of content (i.e., its coded nature) sets the terms for how content is understood, and behavior is presumed to accord with the meanings that can be ascribed to the content's codes (Schoening & Anderson, 1995, p.94).

Schoening and Anderson research six premises of social media studies, and its influences on society. The six premises as defined by Littlejohn and Foss are:

- Different audiences will interpret or understand what they read and view in different ways.

- Audiences actually do things with what they hear, read and view and are no longer just passive downloaders of information.

- The meanings of the media are constantly shifting.

- The greater community and not the individuals who reside within the community establish the meaning of the message.

- Group social interactions will determine the group's interpretation of media content.

• If you want to understand social action media you must belong to the community.

The social interactions (language and action) of the community and the individuals within them

will determine interpretation and meaning of stories in the media (Littlejohn & Foss, 2008, pp.

295-297). Even if media bias is present, the consensus of the public or the individuals within the

community will decide the true meaning of the message being conveyed.

As stated in the introduction, perceptions could be classified as the lens through which

society views itself. What if the information that is being presented to the general public has a

predisposed bias? For example, what if the public relations department for an E-reader

manufacturer tries to create a marketing "buzz" around their product by claiming printed books

will soon be replaced by their product and E-books? Would this social action affect public

perception and have a lasting impression on society regarding print? Does the public fear being

left behind?

Unethical behaviors or reporting from newspapers, magazines, advertisements, online

blogs or social media could have future cultural, political and economic implications (Folkerts &

Lacy & Larabee, 2008). The survey will try to determine how society perceives the future of

print as opposed to non-print media.

METHODOLOGY

This chapter will cover the research methodology and approaches used to develop the research survey, collect data obtained from the research questions, and check for reliability and validity.

3.1 Goals And Approach Of The Research

When performing academic research there are various methodologies that are commonly used by researchers: evaluation research, using available data, field research and surveys can be incorporated. Survey methodologies seem to be the likely choice for this research project; Royce Singleton and Bruce Straits summarize key points of the survey methodology:

Survey design is indeed an art as well as an evolving science that draws upon communication, cognitive and behavioral theories. The design of the instrument must (1) ensure effective two-way communication between the respondents and the researcher; (2) assist the respondents in recalling and clarifying their experiences, attitudes, and thoughts; and (3) keep the respondents interested and motivated (Singleton, & Straits, 2005, pp. 300 - 301).

When identifying the research design for the Print Sustainability Study, it is important to define which design methodology would be most effective and comfortable to incorporate. Strategies of inquiry that could be explored for the research project were qualitative, quantitative and mixed methods (Creswell, 2009). A quantitative research design was chosen for the project as it lends itself towards the survey research strategies as described by Creswell: "Survey research provides a quantitative or numeric description of trends, attitudes or opinions of a population by studying a sample of that population" (Creswell, 2009, p.12). For the print survey,

this method aligns perfectly as it addresses the public's perception and experiences surrounding print sustainability. Surveys also allow a means for testing and measuring the collected variables and data.

The goal of the research was to determine public perceptions towards the sustainability of various segments of print communications. The research will provide a basis to compare these public perceptions with peer-reviewed literature. Also, it will identify whether various age demographics share or differ in opinions regarding the print mediums.

The analyzed information will be used by the Northern Alberta Institute of Technology's (NAIT) Graphic Communications program to determine future direction and curriculum development. The data results will also be shared among the members of the graphics and printing community, the Northern Alberta Printers Association, and the Graphic Communications Advisory Board. Members of the Department for Teaching and Academic Development at NAIT requested to have the results presented to members of their team.

3.2 Research Strategy

A cross-sectional, fixed choice survey (Creswell, 2009) was determined to be the best research tool; both an online and print survey was created to provide wide accessibility for participants. The survey was granted approval by the University of Alberta's HERO (Human Ethics Research Online) system to ensure that the integrity and ethics of the university were being upheld. Participants of the survey were required to read and complete the consent form or online agreement (Appendix P). Topics covered within the consent form are: research sponsors, about the research, purpose of the research, rights and confidentiality, ethics approval and contact information.

A field test or pre-experimental survey was tested within the Graphic Communications program and administered to program staff and students to determine if the survey was well constructed, provided reliability, and the questions were valid (Singleton & Straits, 2005), before being administered to the general public. The survey was developed in a longitudinal format to be deployed over a 4-week period.

The survey was developed to try to limit any biases through "leading questions" which might suggest possible answers (Singleton & Straits, 2005). When participants were asked questions pertaining to new or developing technologies, they were allowed to answer "not familiar with the technology," which would not skew the results if the responder did not understand the meaning of the question. When asked environmental questions they were only given yes or no responses that do not allow for grey areas (Singleton & Straits, 2005).

3.3 Data Collection Method

The web-based survey was hosted at:

http://web.me.com/ndpeterson1/Print_Sustainability_Survey/welcome.html, which included the survey description and consent release. The online data collection was completed through the use of commercial software, Survey Gizmo (http://www.surveygizmo.com). This survey tool was chosen for its ease of use, cost considerations, excellent report generation and the direct importing of data into IBM's statistics software SPSS (http://www.spss.com). Analysis, evaluation and data mining will be performed within the statistical analysis software. The software also provides analysis for variables, values and data validity.

This survey format of data collection is considered a self-administered questionnaire (Creswell, 2009); participants have the choice to (or not) participate, they can withdraw from the survey at any time, and they can forward the link to other people who may be interested in

participating. The survey was set up in a sequential fashion so participants had to choose an

answer before moving on to the next question. This type of survey does not allow for partial

submissions; the participants must complete all the questions. The sequential questioning also

was applied to question 1, which asks if they accept the terms and conditions of their

participation in the survey; individuals who did not accept these terms were not allowed to

continue.

3.4 Sample Selection

Participants in the survey were selected at random and there was no stratification within

the survey selection process. The link to the website was distributed to various individuals within

the Public and Catholic schools throughout the Edmonton region, the Northern Alberta Institute

of Technology, the University of Alberta (peers within the MACT), and personal contact lists.

Participants were asked to share the survey link to anyone they thought might wish to participate.

Attempts were made to sample approximately 300 individuals to find a good cross

section that reflects the general perception on print communications within society. To achieve a

balance to cross-examine, attempts were made to contact the same number of individuals from

each of the three age demographics as identified within the survey. The sampling target were

individuals of the general public, other than students in the Graphic Communications program;

attempts were also made to not involve members of the print or graphics industry to be sure the

results are unbiased.

3.5 Data Analysis, Validity And Reliability

Within SPSS software a wide selection of data analysis can be performed. For the Print

Sustainability Survey it was important to be able to do a multiple comparison of the recorded

data. The data comparisons are between the answers given to each question, and how those answers would compare to other individuals from the different age demographics.

The methodology used within the SPSS software that provides the multiple means for this data comparison is referred to as ANOVA (ANalysis Of VAriance). Sandy Eckel of the University of Southern California defines ANOVA as a "Statistical technique for comparing means for multiple (usually greater than or equal to 3) independent populations. To compare the means in 2 groups, just use the methods we learned to conduct a hypothesis test for the equality of two population means (called a t-test)" (Eckel, 2008).

To demonstrate Eckel's analogy of multiple comparisons, let's look at questions concerning people's health. For a One-Factor type, respondents answer; what is your body mass index (BMI) (below average, normal, above average)? For a Two-Way Factor type take the BMI index answer and add, what is your gender (male, female)? For a Three-Way Factor add, what is your level of exercise (low, moderate, high) (Eckel, 2008)? As a researcher, you can now get multi data comparisons to see if there are correlations or variations between BMI, gender, and exercise. For the research on print sustainability a two-way comparison will be used: responses to the posted questions and age categories. This comparison methodology can also be referred to as group comparisons (Creswell, 2009).

When developing and performing the print sustainability survey, researchers must be aware of threats to the validity, both internally and externally (Creswell, 2009). Possible internal threats that could affect the print sustainability survey could be participant selection and diffusion of treatment. Efforts will be made for participant selection that does not predispose them to certain outcomes. For example, efforts will be made not to include members of the print community as they may have differing views that could threaten the validity of the survey. The

survey link and participation can involve anyone in the general populace; this helps to reduce

participants with certain characteristics, biases, and demographics. Diffusion of treatment is a

situation where participants could communicate with each other and influence the outcomes.

This will be difficult to control but it is hoped each participant adheres to the contract.

An external threat to the validity of the Print Sustainability Survey is the possibility of

interactions and responses becoming too narrow in scope. Attempts will be made to reach 100

participants from each age demographic. If the responses are too low in any given age category

the validity could be questioned.

SURVEY RESULTS AND DATA PRESENTATIONS

This chapter will review the data results from the Print Sustainability Survey. The results have been presented in chart formats for ease of interpretation.

1. Which age category would best describe you?
■ Age 14 to 25   ■ Age 26 to 45   ■ Age over 45
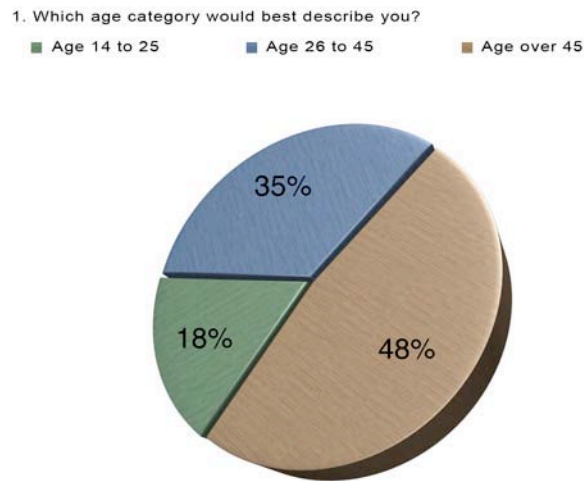
4.1 Age Demographic Question

The online survey recorded a total of 284 completed responses. This falls within an acceptable range for the goal of 300 responses. Another 144 surveys were abandoned and no one was disqualified.

A shortcoming of the survey sampling was the inability to capture more of the under 25 year olds for reporting. It would have been preferred to have 33.3% for each category. One explanation for the shortcoming could be that the survey was sent to several high school teachers who were asked if they could have their students participate; this may not have been pursued. Regardless, the number of responses will still allow the survey to be valid and allow for multiple comparisons, as the results are calculated as a percentage within each of the age categories.

4.2 Print Sustainability Questions

The following questions are presented in a bar graph displaying the different age categories through differing colours and placement. Numbers within each bar represent the number of responses or modes from the different age groups. The percentages convey the response values for all ages according to how participants responded to each of the answers. For example, for the graph shown below, 22.1% or all respondents from all age categories believe daily newspapers will always be available.

2. What timeline do you feel daily printed newspapers will be sustainable?
(Edmonton Journal, New York Times)
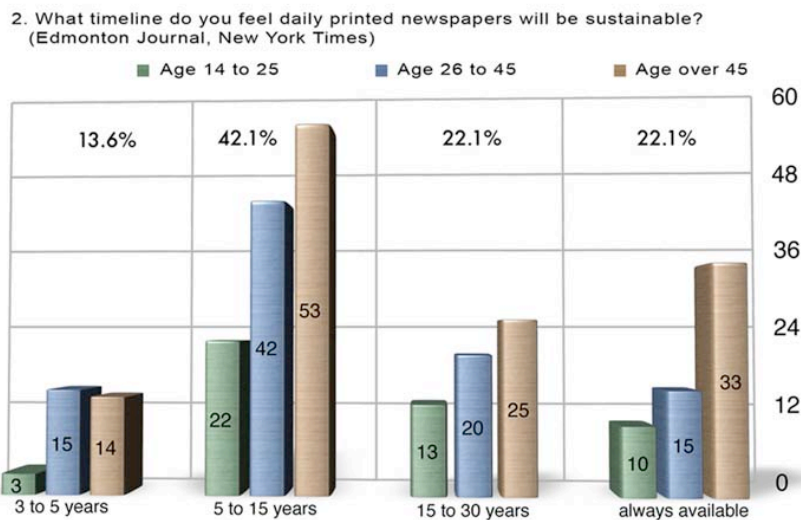
Results surrounding daily newspapers vary considerably. The overall consensus is that within 5 to 15 years there could be a major shift or decline within the newspaper industry. Proportionally, it appears that all age groups feel there may be a long term future (15 + years) for this medium; in the future there may be fewer papers available, thus reducing the competition and allowing the remaining papers to be viable.

The questions regarding weekly newspapers demonstrate similar results to those for the dailies from the 5 to 15 year mark, but responses to the other timeframes are more closely distributed and balanced. Perhaps media reports about the closing of some weekly newspapers played a role in the higher percentage of people who feel weeklies will be defunct within 5 years. A good example is the closing of a weekly newspaper in Morinville, Alberta. What the media outlets failed to state was this small community already had two other weekly papers, as well as competition from the two local daily newspapers. The survey results hold true to the literature, stating that weeklies may be more sustainable than dailies because they convey local news, sports, advertising and events.

3. What timeline do you feel printed weekly community newspapers will be sustainable?
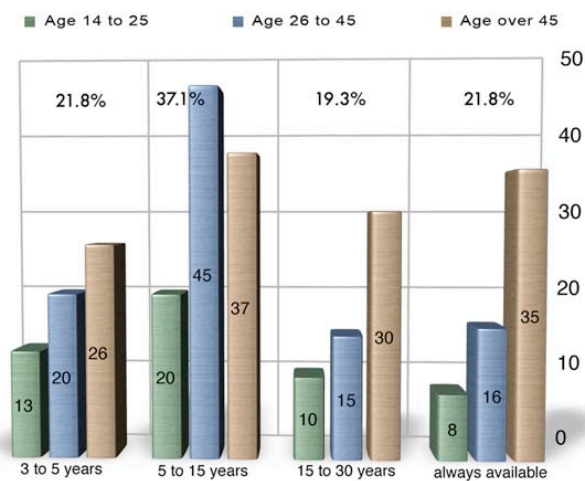
Public perceptions around the lifespan of magazines align with the information presented in the literature review. The literature noted that many young readers prefer reading magazines, and the survey results concur with those findings. Results also reflect that magazines will not be disappearing soon as all age groups appear to have a strong connection to this medium. In the literature it was shown that magazines could also target specific audiences and interest groups that seems to have an appeal for readers.

4. What timeline do you feel printed magazines will be sustainable?

■ Age 14 to 25   ■ Age 26 to 45   ■ Age over 45

| 9.6% | 28.9% | 25.7% | 35.7% |

3 to 5 years: 3, 10, 13
5 to 15 years: 12, 31, 35
15 to 30 years: 14, 22, 30
always available: 18, 25, 49
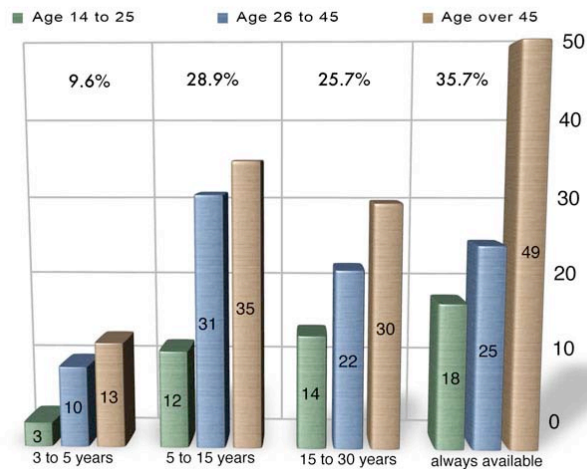
Some encouraging news for small print shops and digital printers is that over half of the

respondents foresee stationery packages never going out of favor. Over 73% of respondents

thought this type of printing will be around 15 + years or always be available. Similar survey

results were submitted from all age demographics. This should be a benefit to local economies as

most of this type of print media is produced locally due to time constraints and short run lengths.

5. What timeline do you feel print media such as stationary, letterheads, and business cards will be sustainable?

■ Age 14 to 25   ■ Age 26 to 45   ■ Age over 45

| 7.5% | 18.2% | 21.8% | 52.5% |

3 to 5 years: 2, 6, 10
5 to 15 years: 10, 20, 19
15 to 30 years: 12, 20, 26
always available: 23, 50, 70
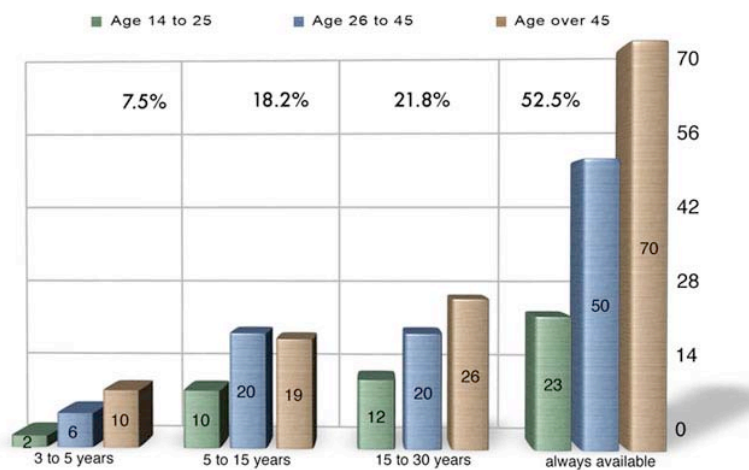
The survey results also demonstrate a strong connection to promotional media. Over 65% of participants believe these communications will always be available, perhaps demonstrating future prospects that are greater than that of offset lithographic printing. Many traditional offset printers want to diversify to become multi discipline providers by combining print and promotional mediums.

6. What timeline do you feel print promotional media such as posters, banners, bulletin boards and signage will be sustainable?
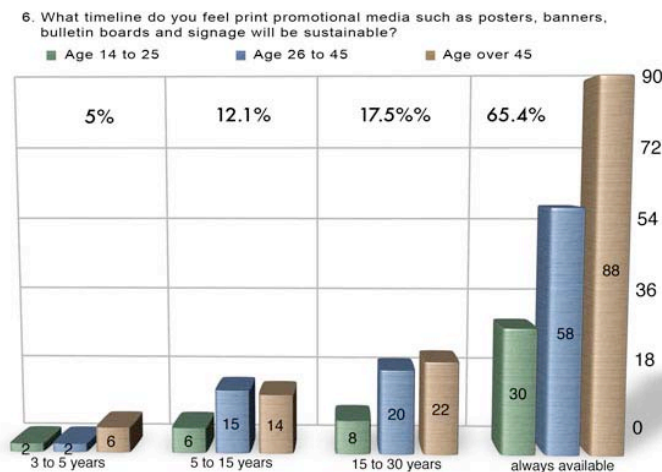
When reviewing the literature it is difficult to find information pertaining to the promotional and sign industries, partly due to the fact they are usually small independently run shops. Data is also limited relating to the promotions industry except from Statistics Canada. The survey portrays an industry that is not in jeopardy and may have growth potential.

The results regarding the sustainability of printed books are interesting, given all the media rhetoric surrounding the decline of traditional printed books. With the arrival of E-books and Google Books online one would think that printed books would be losing a large percentage of the marketplace. Apple, Kindle, Google and other e-publishers have huge marketing campaigns for their digital media, but it appears the general public still have an affinity with the tangibility and readability of printed books. Almost 60% of respondents feel printed books will

never disappear and over 83% feel that nothing will dramatically change within the next 15 years.
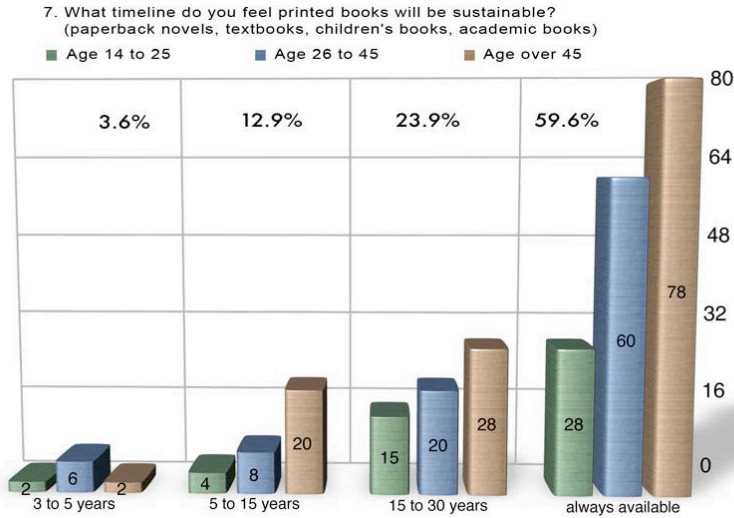
4.3 Environmental Questions
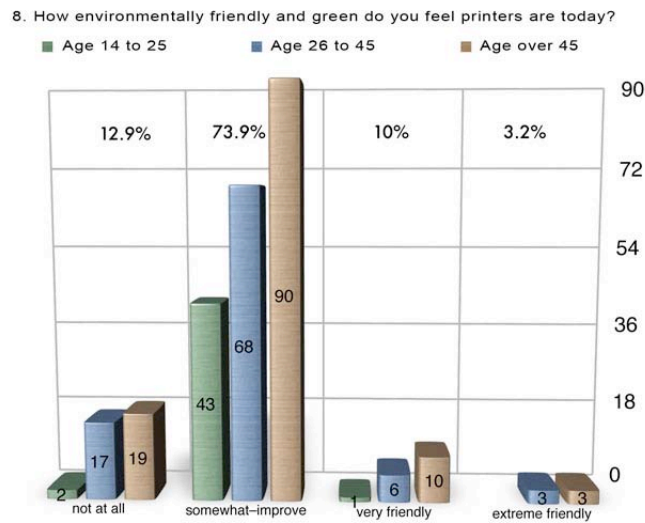
The environment has become a very hotly debated topic in recent years and the printing industry has become an easy target for environmentalists. The submitted responses demonstrate that the industry needs to improve its reputation in the public forum. Given the literature, the

industry has come a long way in environmental protection and sustainability, but it fails to

deliver this message to the general public.

9. How environmentally friendly and green do you feel printers will be in the future?
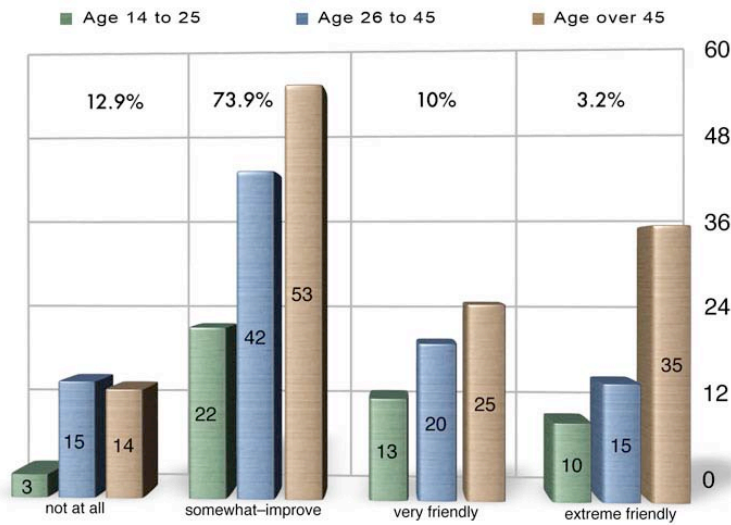
An interesting observation is that while a majority of respondents think that printing is

only somewhat environmentally friendly, yet, when asked how green printers will have to

become in the future, most responded that they will only have to improve as opposed to

becoming very or extremely friendly. Perhaps the public is taking notice of some of the

improvements and advancements in printing technologies. A future study could research what

segments of the industry people feel require improvement or how to better educate the public.

10. Are you aware of the Forest Stewardship Council and the FSC certification process?
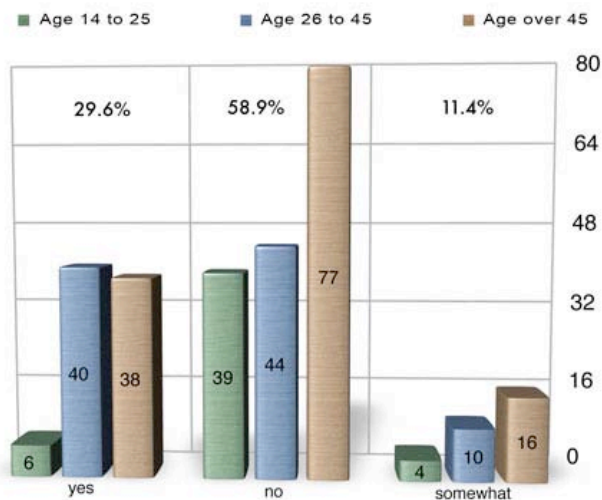
The Forest Stewardship Council is a strong voice within the printing industry and is a governing body that holds companies to high environmental standards, providing the companies are members of the FSC. Statistics show that FSC is on the rise throughout Canada, but almost 60% of respondents are not aware of the FSC process. This is another example of where the public may need to be educated, or an awareness campaign created to update the public.

11. Do you look for paper products that contain recycled content when purchasing?

- Age 14 to 25
- Age 26 to 45
- Age over 45

	yes (41.1%)	no (22.5%)	somewhat (36.4%)
Age 14 to 25	14	17	13
Age 26 to 45	38	38	20
Age over 45	44	60	25

12. Are you familiar with the term Eco Paper?

- Age 14 to 25
- Age 26 to 45
- Age over 45

	yes (66.1%)	no (33.9%)
Age 14 to 25	38	12
Age 26 to 45	60	40
Age over 45	90	42
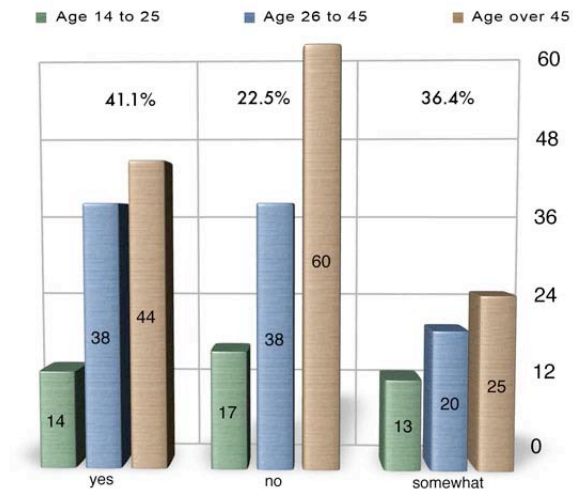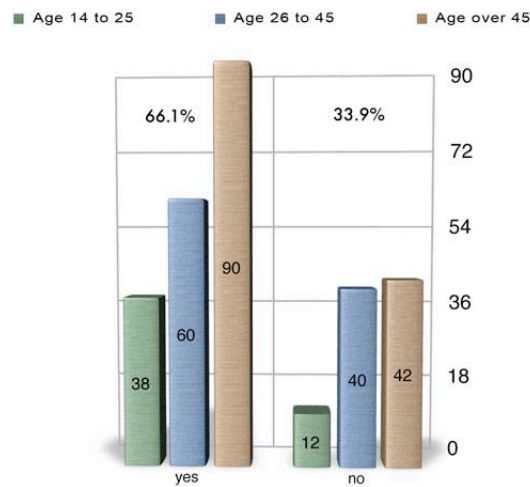
It appears that most of the public is very aware of issues surrounding recycled content and Eco papers, though the way in which various media outlets view printing and the environment does not seem to align with this public perception. Almost 67% think there is a bias from various media and special interest groups to create a persuasive impression, creating "green rhetoric."

13. Do you feel there is a lot of "Green Rhetoric" surrounding the environmental impact of print media?
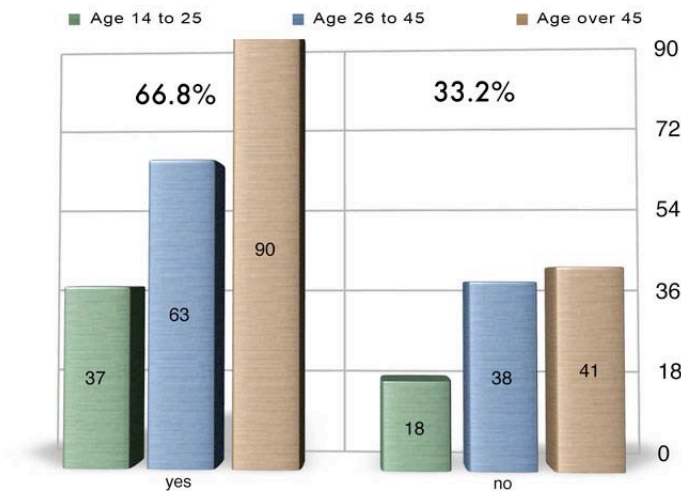
This general environmental perception may shift in the future when the public sees the toxic waste created from E-readers, computers and the devastation caused by power generation. Future rhetoric could turn against the e-mediums, but once people ingrain the technologies into their everyday lives it may be difficult to disconnect from E-technologies.

4.3 Emerging Technologies Questions

The chart below shows that digital printing and print on demand technology is likely to complement traditional printing methods. A strong case can be made that digital technology may replace the traditional methods of ink on paper printing, just not anytime soon. The 26 to 45 year-old age category responded more frequently than others that they were "not familiar with

14. Do you feel digital printing and print on demand technology, will replace traditional
offset lithography ink on paper printing?
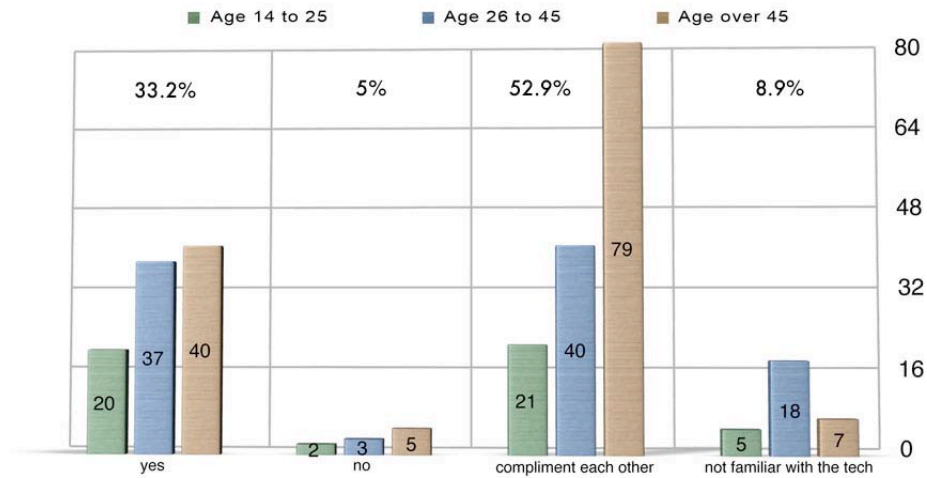
the technologies." A case could be made that the industry needs to promote digital technologies

to the 26 to 45 age demographic. Traditional offset printers may need to diversify and

incorporate some form of digital printing for long term sustainability.

The results surrounding online media coincide with much of the literature that

sees a cross platform synergy between print and web. Newspapers, magazines and book

publishers will need to use both print and web to increase readership, regardless of which

platform an individual chooses. Will web replace print? According to the responses it certainly

will not be in the near future, and if it does it may be a slow transition.

15. Do you feel traditional book, newspaper and magazine printing will be replaced
with electronic mediums? (PDF's, online web versions)

16. Do you feel hand held electronic e-readers will replace traditional book printing?
(Sony e-Book, Kindle, iPad)

■ Age 14 to 25   ■ Age 26 to 45   ■ Age over 45

| 34.3% | 64.3% | 1.4% |

90
72
54
36
18
0

90
60
40
38
20
24
2
4

yes   no   not familiar with the tech.
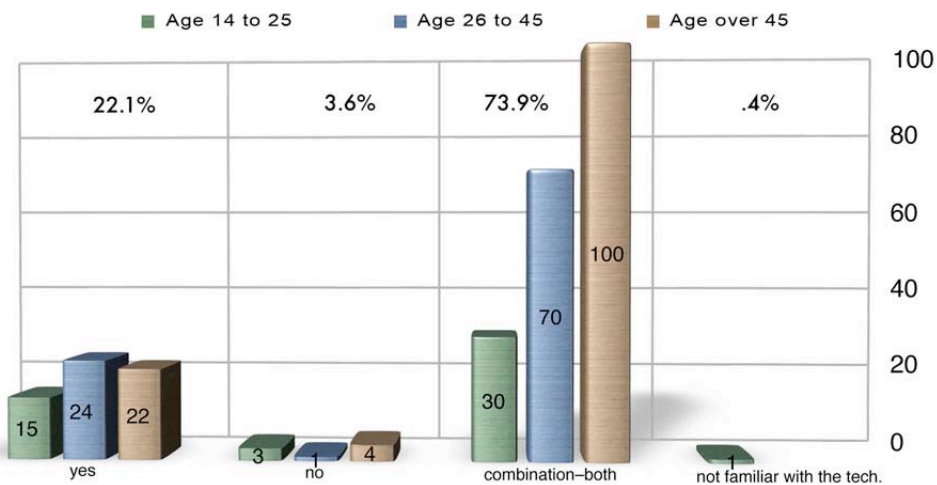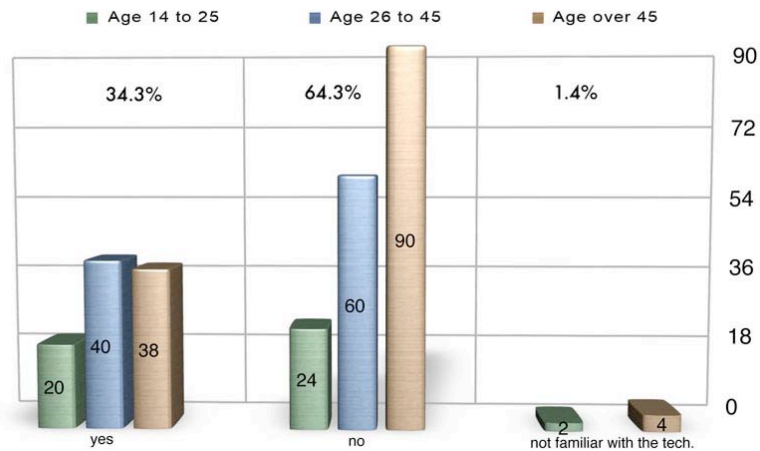
With respect to E-readers and E-books, age demographics do become a factor in the

survey. The under 25 year olds are almost split between using E-readers or print in the future. As

the age demographic increases so does the shift away from E-readers to print. E-readers are a

relatively new phenomenon and early black and white versions with high prices, low resolution

and short battery life did little to appeal to the public (Amazon, 2011). With the new full colour

interactive tablets such as the Apple iPad (http://www.apple.com/ca/) or the Samsung Galaxy

Tab (http://www.samsung.com) these results may shift in the future.

17. How do you prefer to read information; in the traditional printed form or an electronic version?

■ Age 14 to 25   ■ Age 26 to 45   ■ Age over 45

| 77.5% | 22.5% |

110
88
66
44
22
0

110
77
38
12
20
21

printed version   electronic version
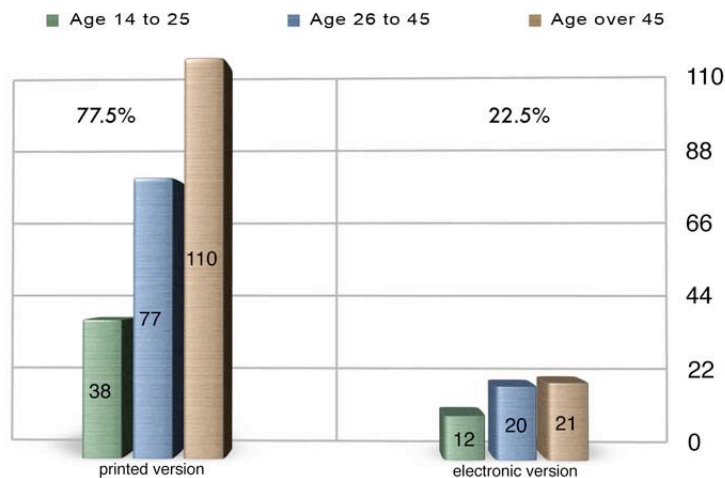
The final question of the survey was intentional created for a yes or no response. Some survey participants stated they would have liked to have a "combination" answer available. The goal of the question was to determine if readers still prefer print to electronic media, so a combination answer could cause confusion. If a participant was allowed to select a combination of both, how much time would they be spending using the various mediums, which type of electronic mediums would they be using, etc.? This is why it was created as a simple yes or no answer. Looking into the future it may be interesting to see the results if the same questions were posed 5, 10 or 20 years from now.

ANALYSIS

This chapter will review the data, analysis and validation of the survey questions. This analysis will provide the background for the conclusions in the following chapter.

5.1 Data Analysis Tools

The online data was collected using SurveyGizmo software that allows for basic statistical reporting such as summaries, turf, cross tab and fall-off (SurveyGizmo, 2011). SurveyGizmo exports data directly into IBM's SPSS statistical data software, which allows for greater depth of statistical mining (SPSS, 2011, http://www.spss.com). SPSS has the tools capable of checking the data quality and complexity, elements necessary for good construct design and validity (Creswell, 2009).

5.2 Data Analysis Summary

In chapter 3 on methodologies introduced the ANOVA group comparison that would be used within the SPSS software. Sandy Eckel expands upon the formulations that are used within ANOVA to compare the means between the age categories (Figure 5.1). While performing the testing, the SPSS software performs the following calculations based on the questions and categories selected, and the data entered by the researcher.

When running the statistics the first step is to find the mean, which is calculated by adding up all the responses and dividing by the total number of responses. The next process is to determine the midpoint of distribution or referred to as the median (Singleton, & Straits, 2005).

ANOVA partitioning of the variance II

SST This is the sum of the squared deviations between each observation and the overall mean:

$$SST = \sum_{i}^{n}(X_i - \bar{X})^2$$

SSW This is the sum of the squared deviations between each observation the mean of the group to which it belongs:

$$SSW = \sum_{i}^{n}(X_i - \bar{X}_{group(i)})^2$$

ANOVA partitioning of the variance III

SSB This is the sum of the squared deviations between each group mean and the overall mean, weighted by the sample size of each group (n_{group}):

$$SSB = \sum_{group} n_{group}(\bar{X}_{group} - \bar{X})^2$$

If the group means are not very different, the variation between them and the overall mean (SSB) will not be much more than the variation between the observations within a group (SSW)

(Figure 5.1. Eckel, 2008)

The mode is the highest number of values or responses given; the number assigned to each column within the charts from chapter 4 demonstrates this.

The measure of dispersion, which will give the varying results, is referred to as the standard deviation. This variation can determine the statistical significance between each observation and if it supports or contradicts the hypothesis (Creswell, 2009). When comparing the standard deviation (Figure 5.2), a result of .05 (5%) or less is a significant difference. A reporting of 1.0 is considered moderate in terms of significance; reporting greater than 1.0 means that there is little to no difference. The 5 percent may require some additional analysis or research to determine if there are factors or threats surrounding this result.
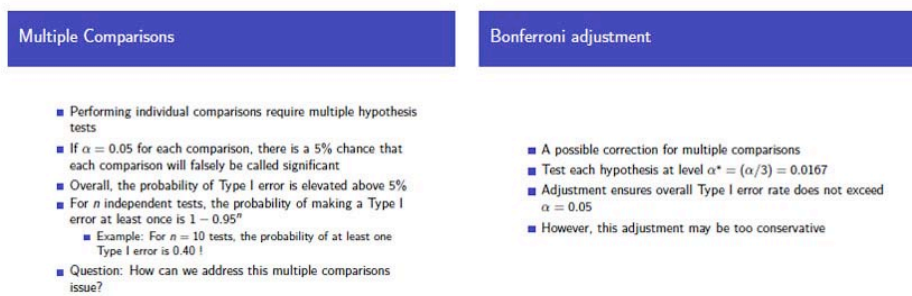

Multiple Comparisons

- Performing individual comparisons require multiple hypothesis tests
- If $\alpha = 0.05$ for each comparison, there is a 5% chance that each comparison will falsely be called significant
- Overall, the probability of Type I error is elevated above 5%
- For n independent tests, the probability of making a Type I error at least once is $1 - 0.95^n$
  - Example: For $n = 10$ tests, the probability of at least one Type I error is 0.40 !
- Question: How can we address this multiple comparisons issue?

Bonferroni adjustment

- A possible correction for multiple comparisons
- Test each hypothesis at level $\alpha^* = (\alpha/3) = 0.0167$
- Adjustment ensures overall Type I error rate does not exceed $\alpha = 0.05$
- However, this adjustment may be too conservative

(Figure 5.2. Eckel, 2008)

What could cause a low result? Perhaps only a certain age category are "not familiar with the technology" question, shifting the results. For example, if you asked an under 25 age group if they are familiar with an early linotype machine the results could be drastically different than if

the same question was posed to the over 45 age group. Skewed results could also come from a poorly worded question, or from false reporting. A 5% is not always considered a bad report or skewed results; this could be just be validating the hypothesis.

The following tables display the formulated results of the Print Sustainability Survey. The first set of ANOVA data (Figure 5.3) looks at each question between and within various groups. The next table relates the data from the different age categories (Figure 5.4).

(Figure 5.3)

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
What timeline do you feel daily printed newspapers will be sustainable? (Edmonton Journal, New York Times)	Between Groups	1.890	2	.945	.796	.452
	Within Groups	327.530	276	1.187		
	Total	329.419	278			
What timeline do you feel printed weekly community newspapers will be sustainable? (Edmonton Examiner, Banff Crag & Canyon)	Between Groups	8.392	2	4.196	3.819	.023
	Within Groups	303.207	276	1.099		
	Total	311.599	278			
What timeline do you feel printed magazines will be sustainable?	Between Groups	2.411	2	1.206	1.182	.308
	Within Groups	281.445	276	1.020		
	Total	283.857	278			
What timeline do you feel print media such as stationary, letterheads, business cards and envelopes will be sustainable?	Between Groups	.189	2	.094	.096	.908
	Within Groups	271.360	276	.983		
	Total	271.548	278			
What timeline do you feel print promotional media such as posters, banners, bulletin boards and signage will be sustainable?	Between Groups	.291	2	.146	.183	.833
	Within Groups	220.096	276	.797		
	Total	220.387	278			
What timeline do you feel printed books will be	Between Groups	.113	2	.057	.079	.924
	Within Groups	196.926	276	.714		

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
What timeline do you feel daily printed newspapers will be sustainable? (Edmonton Journal, New York Times)	Between Groups	1.890	2	.945	.796	.452
	Within Groups	327.530	276	1.187		
	Total	329.419	278			
sustainable? (paperback novels, textbooks, children's books, academic books)	Total	197.039	278			

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
How environmentally friendly and green do you feel printers are today?	Between Groups	.520	2	.260	.725	.485
	Within Groups	99.121	276	.359		
	Total	99.642	278			
How environmentally friendly and green do you feel printers will be in the future?	Between Groups	.712	2	.356	.603	.548
	Within Groups	163.030	276	.591		
	Total	163.742	278			
Are you aware of the Forest Stewardship Council and the FSC certification process?	Between Groups	2.181	2	1.090	2.908	.056
	Within Groups	103.497	276	.375		
	Total	105.677	278			
Do you look for paper products that contain recycled content when purchasing?	Between Groups	.615	2	.307	.534	.587
	Within Groups	158.934	276	.576		
	Total	159.548	278			
Are you familiar with the term Eco Paper?	Between Groups	.403	2	.201	.892	.411
	Within Groups	62.250	276	.226		
	Total	62.652	278			
Do you feel there is a lot of Green Rhetoric	Between Groups	.034	2	.017	.075	.928
	Within Groups	61.630	276	.223		

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
How environmentally friendly and green do you feel printers are today? surrounding the environmental impact of print media?	Between Groups	.520	2	.260	.725	.485
	Within Groups	99.121	276	.359		
	Total	99.642	278			
	Total	61.663	278			

ANOVA		Sum of Squares	df	Mean Square	F	Sig.
Do you feel digital printing and print on demand technology, will replace traditional offset lithography ink on paper printing? (e.g. digital presses, quick copy, direct mail)	Between Groups	1.428	2	.714	.657	.519
	Within Groups	299.805	276	1.086		
	Total	301.233	278			
Do you feel traditional book, newspaper and magazine printing will be replaced with electronic mediums? (PDF's, online web versions)	Between Groups	1.830	2	.915	1.318	.269
	Within Groups	191.661	276	.694		
	Total	193.491	278			
Do you feel hand held electronic e-readers will replace traditional book printing? (Sony e-Book, Kindle, iPad)	Between Groups	1.456	2	.728	2.960	.053
	Within Groups	67.863	276	.246		
	Total	69.319	278			
How do you prefer to read information in the	Between Groups	.367	2	.184	1.047	.352
	Within Groups	48.407	276	.175		

ANOVA						
		Sum of Squares	df	Mean Square	F	Sig.
Do you feel digital printing and print on demand technology, will replace traditional offset lithography ink on paper printing? (e.g. digital presses, quick copy, direct mail)	Between Groups	1.428	2	.714	.657	.519
	Within Groups	299.805	276	1.086		
	Total	301.233	278			
traditional printed form or an electronic version? (electronic referring to online, PDF, e-reader, etc)	Total	48.774	278			

(Figure 5.3)

Multiple Comparisons								
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval		
						Lower Bound	Upper Bound	
What timeline do you feel daily printed newspapers will be sustainable? (Edmonton Journal, New York Times)	(a) 14 to 25 years	(b) 26 to 45 years	-.203	.190	.855	-.66	.25
		(c) over 45 years	-.221	.181	.667	-.66	.21
	(b) 26 to 45 years	(a) 14 to 25 years	.203	.190	.855	-.25	.66
		(c) over 45 years	-.018	.146	1.000	-.37	.33
	(c) over 45 years	(a) 14 to 25 years	.221	.181	.667	-.21	.66
		(b) 26 to 45 years	.018	.146	1.000	-.33	.37
What timeline do you feel printed weekly community newspapers	(a) 14 to 25 years	(b) 26 to 45 years	-.109	.182	1.000	-.55	.33

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
will be sustainable? (Edmonton Examiner, Banff Crag & Canyon)		(b) 26 to 45 years	-.203	.190	.855	-.66	.25
		(c) over 45 years	-.411	.174	.057	-.83	.01
	(b) 26 to 45 years	(a) 14 to 25 years	.109	.182	1.000	-.33	.55
		(c) over 45 years	-.302	.140	.096	-.64	.04
	(c) over 45 years	(a) 14 to 25 years	.411	.174	.057	-.01	.83
		(b) 26 to 45 years	.302	.140	.096	-.04	.64
What timeline do you feel printed magazines will be sustainable?	(a) 14 to 25 years	(b) 26 to 45 years	.267	.176	.391	-.16	.69
		(c) over 45 years	.146	.168	1.000	-.26	.55

			Multiple Comparisons				
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.203	.190	.855	-.66	.25
	(b) 26 to 45 years	(a) 14 to 25 years	-.267	.176	.391	-.69	.16
		(c) over 45 years	-.121	.135	1.000	-.45	.20
	(c) over 45 years	(a) 14 to 25 years	-.146	.168	1.000	-.55	.26
		(b) 26 to 45 years	.121	.135	1.000	-.20	.45
What timeline do you feel print media such as stationary, letterheads, business cards and envelopes will be sustainable?	(a) 14 to 25 years	(b) 26 to 45 years	.075	.173	1.000	-.34	.49
		(c) over 45 years	.043	.165	1.000	-.35	.44
	(b) 26 to 45 years	(a) 14 to 25 years	-.075	.173	1.000	-.49	.34

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.203	.190	.855	-.66	.25
		(c) over 45 years	-.032	.133	1.000	-.35	.29
	(c) over 45 years	(a) 14 to 25 years	-.043	.165	1.000	-.44	.35
		(b) 26 to 45 years	.032	.133	1.000	-.29	.35
What timeline do you feel print promotional media such as posters, banners, bulletin boards and signage will be sustainable?	(a) 14 to 25 years	(b) 26 to 45 years	-.032	.155	1.000	-.41	.34
		(c) over 45 years	-.082	.148	1.000	-.44	.28
	(b) 26 to 45 years	(a) 14 to 25 years	.032	.155	1.000	-.34	.41

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval Lower Bound	Upper Bound
		(b) 26 to 45 years	-.203	.190	.855	-.66	.25
		(c) over 45 years	-.050	.119	1.000	-.34	.24
	(c) over 45 years	(a) 14 to 25 years	.082	.148	1.000	-.28	.44
		(b) 26 to 45 years	.050	.119	1.000	-.24	.34
What timeline do you feel printed books will be sustainable? (paperback novels, textbooks, children's books, academic books)	(a) 14 to 25 years	(b) 26 to 45 years	.059	.147	1.000	-.30	.41
		(c) over 45 years	.038	.140	1.000	-.30	.38
	(b) 26 to 45 years	(a) 14 to 25 years	-.059	.147	1.000	-.41	.30

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.203	.190	.855	-.66	.25
		(c) over 45 years	-.020	.113	1.000	-.29	.25
	(c) over 45 years	(a) 14 to 25 years	-.038	.140	1.000	-.38	.30
		(b) 26 to 45 years	.020	.113	1.000	-.25	.29

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound

How environmentally friendly and green do you feel printers are today?	(a) 14 to 25 years	(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
		(c) over 45 years	-.116	.100	.737	-.36	.12
	(b) 26 to 45 years	(a) 14 to 25 years	.061	.104	1.000	-.19	.31
		(c) over 45 years	-.055	.080	1.000	-.25	.14
	(c) over 45 years	(a) 14 to 25 years	.116	.100	.737	-.12	.36
		(b) 26 to 45 years	.055	.080	1.000	-.14	.25
How environmentally friendly and green do you feel printers will be in the future?	(a) 14 to 25 years	(b) 26 to 45 years	-.097	.134	1.000	-.42	.23
		(c) over 45 years	.012	.128	1.000	-.30	.32
	(b) 26 to 45 years	(a) 14 to 25 years	.097	.134	1.000	-.23	.42
		(c) over 45 years	.109	.103	.869	-.14	.36

Multiple Comparisons								
Dependent Variable	(I) Which age category would best describe you?		(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
							Lower Bound	Upper Bound
			(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
	(c) over 45 years		(a) 14 to 25 years	-.012	.128	1.000	-.32	.30
			(b) 26 to 45 years	-.109	.103	.869	-.36	.14
Are you aware of the Forest Stewardship Council and the FSC certification process?	(a) 14 to 25 years		(b) 26 to 45 years	.249	.107	.061	-.01	.51
			(c) over 45 years	.119	.102	.728	-.13	.36
	(b) 26 to 45 years		(a) 14 to 25 years	-.249	.107	.061	-.51	.01
			(c) over 45 years	-.130	.082	.344	-.33	.07
	(c) over 45		(a) 14 to 25 years	-.119	.102	.728	-.36	.13

Multiple Comparisons							
Dependent Variable	**(I) Which age category would best describe you?**	**(J) Which age category would best describe you?**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
						Lower Bound	**Upper Bound**
		(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
	years	(a) 14 to 25 years	-.119	.102	.728	-.36	.13
		(b) 26 to 45 years	.130	.082	.344	-.07	.33
Do you look for paper products that contain recycled content when purchasing?	(a) 14 to 25 years	(b) 26 to 45 years	.115	.132	1.000	-.20	.43
		(c) over 45 years	.127	.126	.947	-.18	.43
	(b) 26 to 45 years	(a) 14 to 25 years	-.115	.132	1.000	-.43	.20
		(c) over 45 years	.012	.101	1.000	-.23	.26
	(c) over 45	(a) 14 to 25 years	-.127	.126	.947	-.43	.18

Multiple Comparisons							
Dependent Variable	**(I) Which age category would best describe you?**	**(J) Which age category would best describe you?**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
						Lower Bound	**Upper Bound**
	years	(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
		(a) 14 to 25 years	-.127	.126	.947	-.43	.18
		(b) 26 to 45 years	-.012	.101	1.000	-.26	.23
Are you familiar with the term Eco Paper?	(a) 14 to 25 years	(b) 26 to 45 years	-.092	.083	.804	-.29	.11
		(c) over 45 years	-.018	.079	1.000	-.21	.17
	(b) 26 to 45 years	(a) 14 to 25 years	.092	.083	.804	-.11	.29
		(c) over 45 years	.074	.064	.743	-.08	.23
	(c) over 45	(a) 14 to 25 years	.018	.079	1.000	-.17	.21

						95% Confidence Interval	
Dependent Variable	**(I) Which age category would best describe you?**	**(J) Which age category would best describe you?**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**Lower Bound**	**Upper Bound**
		(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
	years	(a) 14 to 25 years	.018	.079	1.000	-.17	.21
		(b) 26 to 45 years	-.074	.064	.743	-.23	.08
Do you feel there is a lot of Green Rhetoric surrounding the environmental impact of print media?	(a) 14 to 25 years	(b) 26 to 45 years	.000	.082	1.000	-.20	.20
		(c) over 45 years	.022	.078	1.000	-.17	.21
	(b) 26 to 45 years	(a) 14 to 25 years	.000	.082	1.000	-.20	.20
		(c) over 45 years	.022	.063	1.000	-.13	.17
	(c) over 45	(a) 14 to 25 years	-.022	.078	1.000	-.21	.17

Multiple Comparisons

Multiple Comparisons								
Dependent Variable	**(I) Which age category would best describe you?**	**(J) Which age category would best describe you?**	**Mean Difference (I-J)**	**Std. Error**	**Sig.**	**95% Confidence Interval**	
						Lower Bound	**Upper Bound**
		(b) 26 to 45 years	-.061	.104	1.000	-.31	.19
	years	(a) 14 to 25 years	-.022	.078	1.000	-.21	.17
		(b) 26 to 45 years	-.022	.063	1.000	-.17	.13

Multiple Comparisons								
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Do you feel digital printing and print on demand technology, will replace traditional offset lithography ink on paper printing? (e g digital presses, quick copy, direct mail)	(a) 14 to 25 years	(b) 26 to 45 years	-.192	.181	.870	-.63	.24
		(c) over 45 years	-.182	.173	.886	-.60	.24
	(b) 26 to 45 years	(a) 14 to 25 years	.192	.181	.870	-.24	.63

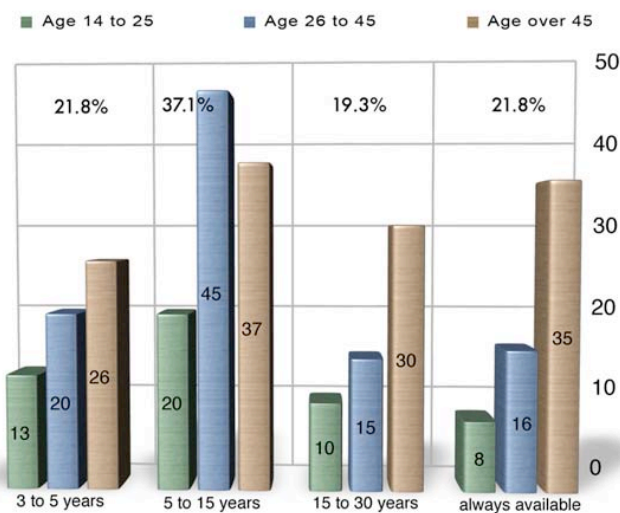| Multiple Comparisons								
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.192	.181	.870	-.63	.24
		(c) over 45 years	.011	.139	1.000	-.32	.35
	(c) over 45 years	(a) 14 to 25 years	.182	.173	.886	-.24	.60
		(b) 26 to 45 years	-.011	.139	1.000	-.35	.32
Do you feel traditional book, newspaper and magazine printing will be replaced with electronic mediums? (PDF's, online web versions)	(a) 14 to 25 years	(b) 26 to 45 years	-.054	.145	1.000	-.40	.30
		(c) over 45 years	-.194	.138	.489	-.53	.14
	(b) 26 to 45 years	(a) 14 to 25 years	.054	.145	1.000	-.30	.40

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.192	.181	.870	-.63	.24
		(c) over 45 years	-.139	.111	.636	-.41	.13
	(c) over 45 years	(a) 14 to 25 years	.194	.138	.489	-.14	.53
		(b) 26 to 45 years	.139	.111	.636	-.13	.41
Do you feel hand held electronic e-readers will replace traditional book printing? (Sony e-Book, Kindle, iPad)	(a) 14 to 25 years	(b) 26 to 45 years	-.008	.086	1.000	-.22	.20
		(c) over 45 years	-.150	.082	.209	-.35	.05
	(b) 26 to 45 years	(a) 14 to 25 years	.008	.086	1.000	-.20	.22

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.192	.181	.870	-.63	.24
		(c) over 45 years	-.142	.066	.100	-.30	.02
	(c) over 45 years	(a) 14 to 25 years	.150	.082	.209	-.05	.35
		(b) 26 to 45 years	.142	.066	.100	-.02	.30
How do you prefer to read information in the traditional printed form or an electronic version? (electronic referring to online, PDF, e-reader, etc)	(a) 14 to 25 years	(b) 26 to 45 years	.033	.073	1.000	-.14	.21
		(c) over 45 years	.091	.070	.581	-.08	.26
	(b) 26 to 45 years	(a) 14 to 25 years	-.033	.073	1.000	-.21	.14

Multiple Comparisons							
Dependent Variable	(I) Which age category would best describe you?	(J) Which age category would best describe you?	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
		(b) 26 to 45 years	-.192	.181	.870	-.63	.24
		(c) over 45 years	.058	.056	.903	-.08	.19
	(c) over 45 years	(a) 14 to 25 years	-.091	.070	.581	-.26	.08
		(b) 26 to 45 years	-.058	.056	.903	-.19	.08

5.3 Variance Reporting

Overall, the data results show minimal change between the questions and the age demographics. The analyzed results did produce significant differences for questions number 3, 10 and 16. These questions will need further analysis to determine why there was a change in the standard deviation of the results.

Question number 3, "What timeline do you feel printed weekly community newspapers will be sustainable? (Edmonton Examiner, Banff Crag & Canyon)" produced a .023 result in the between groups category within the ANOVA report. In looking at the question chart it does show a difference in the age group 26 to 45 for the answer 5 to 15 years. This is different from the other age categories so what could cause this shift? One explanation could be that the Gen X (26 to 45 years old) generation may have been exposed longer to electronic mediums and feel print will eventually be replaced by online versions. To reaffirm this, for question 16, 26 to 45 ages had the highest responses stating that E-readers would replace traditional book printing. Also, everyone in this age category was familiar with the new technology.

3. What timeline do you feel printed weekly community newspapers will be sustainable?

Question number 10, "Are you aware of the Forest Stewardship Council and the FSC certification process?" produced a .056 result between groups category in the ANOVA report and a .01 in the Multiple Comparisons report for the 26 to 45 age category.

When compared to the other age demographics (under 25 and over 45), the chart demonstrates that there is an almost even split for "yes" and "no" for the 26 to 45 age category.

10. Are you aware of the Forest Stewardship Council and the FSC certification process?
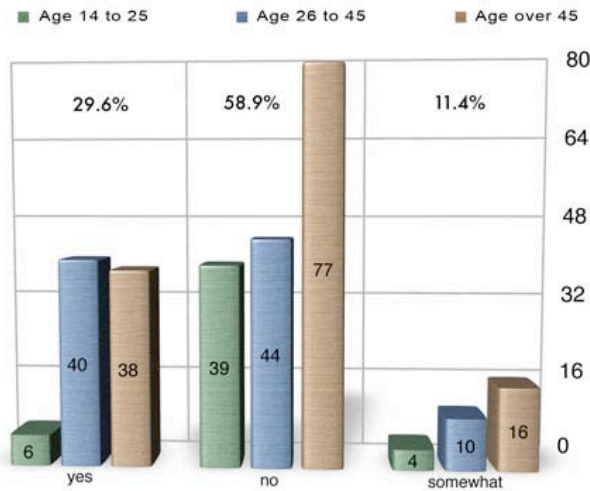
The other age groups responded higher to the "no" which explains the variance. Perhaps the Gen X generation have had more exposure to environmental issues causing this discrepancy, or it could be that the public is aware of environmental concerns, but just not the FSC process. When asked about their knowledge of Eco Papers, the results were very comparable between different age groups.

16. Do you feel hand held electronic e-readers will replace traditional book printing? (Sony e-Book, Kindle, iPad)
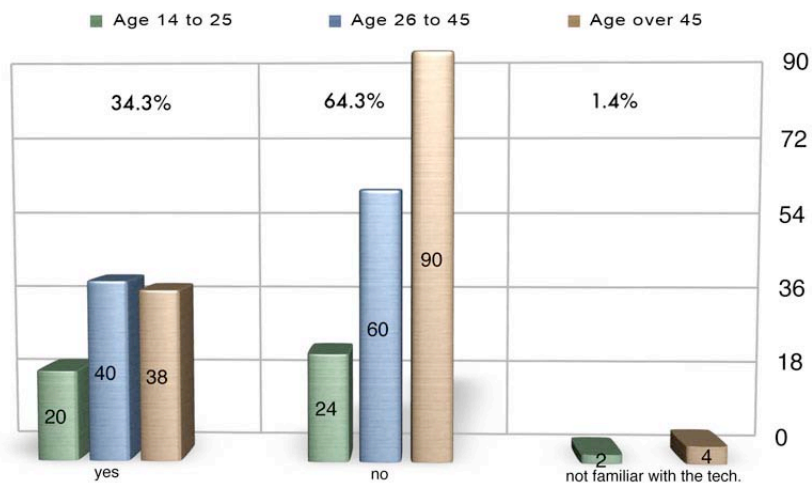
Question number 16, "Do you feel hand held electronic e-readers will replace traditional book printing? (Sony e-Book, Kindle, iPad)," produced a .053 result between groups category in

the ANOVA report. A .02 result for answer A, and .05 results for answer B in the Multiple

Comparisons report for the over 45 age category demonstrates there was some variance for the

responses for the "not familiar with the tech" but it is so minor it would not be considered a

factor.

While the 14 to 25 and 26 to 45 age categories produced similar responses for the yes and

no answers, the over 45 felt strongly that printed books were not going to be replaced by E-

readers in the future. Perhaps this is because the over 45 year olds grew up with printed books

and have a long-standing connection to this medium. As the age groups got younger the

responses were proportionately more digitally oriented, showing an almost equal split for the

under 25 age demographic for the future of E-books.

CONCLUSION

The goals of the research project were to collect, analyze and interpret the public's perceptions about the field of print communications, as well as to determine whether age demographics are a significant factor in recording opinions. The survey was developed with the intent to eliminate or minimize bias, and allow the personal perceptions and reflections of the respondents' own values to be conveyed. The conclusions could provide future research opportunities or further development of the theory.

6.1 Print Sustainability

According to the survey responses, certain elements of the print industry are going into decline; others seem to have long-term sustainability and possible growth opportunities. The main conclusions for print sustainability are:

- Time sensitive print media such as newspapers may see a major shift or decline within the next 15 years.

- The sign and promotions industry appears to be very stable and sustainable, with the possibility of future growth.

- Magazines appeal to a wide audience, which includes the under 25 age category. This could provide future readers and consumers with print copies for years to come.

- Books are still the preferred reading medium over E-technologies, but as future generations will be indentured using the E-technology, this could shift.

6.2 Environmental Issues

The public is very aware of environmental issues such as deforestation, water contamination, and power consumption issues caused by the print industry. The results demonstrate people do have basic awareness of these issues, but have a limited education about advances within the industry and its environmental standards.

The main conclusions for environmental issues are:

- The print industry needs to raise awareness of the strides that it has made towards environmental protection.

- Over 70% of the respondents have no, or limited, knowledge of the Forestry Stewardship Council certification process. The industry and the FSC must become better corporate citizens and do a better job of educating the public.

- Almost 70% of participants feel strongly that there is much Green Rhetoric when it comes to the print industry. Reports about the decline of print may make a good news article, or media sound bite. The advancements of E-books and their benefits may be exaggerated to boost sales of the reading devices.

6.3 Emerging Technologies

The future of print appears to require some alignment with the emerging technologies. Most responses don't see digital mediums taking over from offset lithography printing, but indicate that a combination of both will prevail.

The main conclusions for emerging technologies issues are:

- Almost all the participants are familiar with the new digital technologies that compete with or complement traditional printing.

- E-readers will not readily replace traditional printed books, but perhaps a generation from now this may need to be reevaluated.

- Digital printing will remain as a complement to offset lithography as only 5% of the participants feel it will replace ink on paper.

- Over 77% of respondents like reading print as opposed to electronic versions.

6.3 Implications Of The Research

The print sustainability research provides valuable data, statistics and general information that will now be distributed to the Graphic Communications program and Advisory Committee, the Northern Alberta Printers Association and the NAIT Development and Technology Advancement department. These various organizations and departments can review the results and analysis of the research and apply them within their own environments.

The printing industry will need to be proactive in promoting environmental advancements and get the message out to the general public. The industry is doing good things but it still needs to improve to become better corporate citizens.

The industry also needs to combat negative perceptions around this communication medium. Whether it is from a company promoting its new technology, or a news outlet looking for a story, the industry needs to push back. Printing is a very cost effective mass communication medium but the industry doesn't seem to be using this tool to its full advantage in educating the public. Perhaps various organizations within the industry need to align to create an awareness campaign as opposed to operating as separate entities. Organizations such as the Canadian Newspaper Association, Alberta Weekly Newspaper Association, Canadian Printing Industries Association, Northern Alberta Newspaper Association, Sign Association of Canada and the

various educational institutions across Canada could create a mass media blitz on print and

promotional sustainability.

6.4 Final Word

The research did show that change within the print industry is inevitable, but the

timeframe is uncertain. Even with upcoming digital technologies, people still have a close

affinity with print, but reading preferences are diverse and no single media seems to capture all

individuals within society.

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    %20GRAPHIC%20NEWS

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APPENDICES

Appendix A

Canada and U.S. Total Newspaper Advertising Revenue Trends

Sources: Ad Revenues in Canada collected by Grant Thornton and Borrell Associates for Canadian Newspaper Association. (CNA); U. S. ad revenue data from Newspaper Association of America (NAA).
Note: Online Newspaper Ad Revenues have been included in the totals.
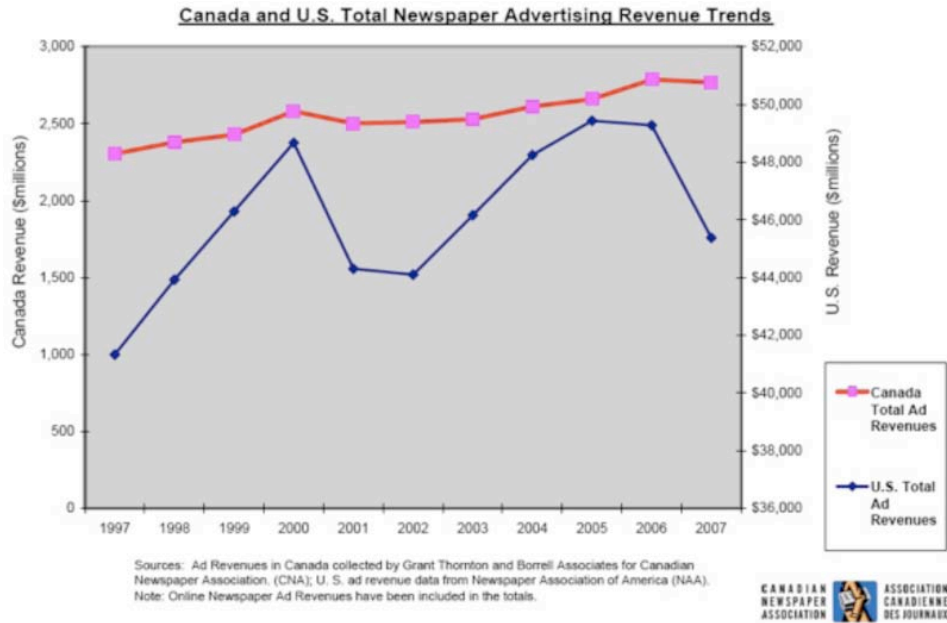
Appendix B

Home > Publications > 63-241-X > Newspaper Publishers > Statistical tables >

(*Note*: Content area on this page may be wider than usual.)

Table 3
Circulation revenue by type of paper, Canada, 2007 to 2009

Symbols | Next | Previous

	2007	2008 [r]	2009 [p]
	millions of dollars		
Daily	823.1	827.5	837.2
Community and other [1] newspapers	37.3	37.7	38.1
Total	**860.4**	**865.2**	**875.3**
	growth rate (percent)		
Daily	-0.2	0.5	1.2
Community and other [1] newspapers	2.1	1.2	1.2
Total	**-0.1**	**0.6**	**1.2**

Appendix C

Total Weekly Readers 2005-2009/10
Printed & Online Editions

	Top 19 Markets	Top 10 Markets	1MM+ Markets
2005	12,305,300	10,624,100	8,977,900
2006	12,430,900	10,756,300	9,082,800
2007	12,376,600	10,710,900	9,064,500
2008	12,382,300	10,695,000	9,099,300
2009	12,765,900	11,051,800	9,381,800
2009/10			9,537,200

Source: 2005, 2006, 2007, 2008, 2009 & 2009/10 NADbank, Adults 18+
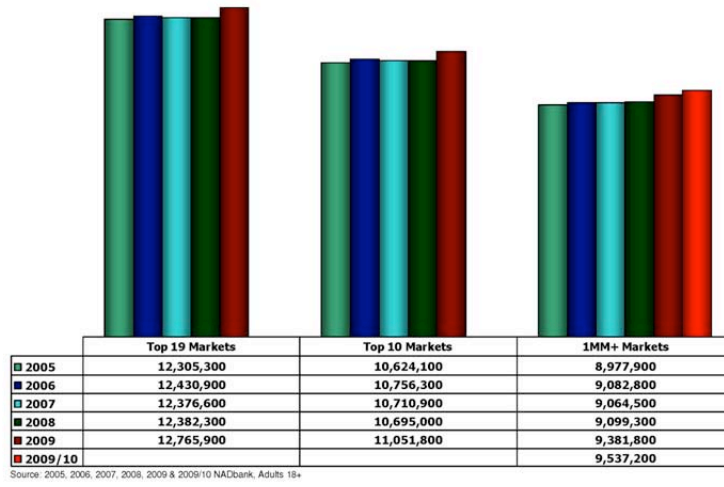
Appendix D

Table 8.5 Total U.S. Weekly Newspapers

Year	Total Weekly Newspapers	Average Circulation	Total Circulation
1996	6,580	6,977	45,911,510
1997	6,581	7,194	47,340,474
1998	6,642	7,338	48,742,278
1999	6,646	7,399	49,170,488
2000	6,579	7,295	47,990,892
2001	6,476	7,339	47,527,348
2002	6,699	7,467	50,023,378
2003	6,704	7,490	50,212,925
2004	6,692	7,444	49,814,806
2005	6,659	7,319	49,541,617

Source: Newspaper Association of America, accessed 2/19/07,
http://naa.org/thesource/16.asp
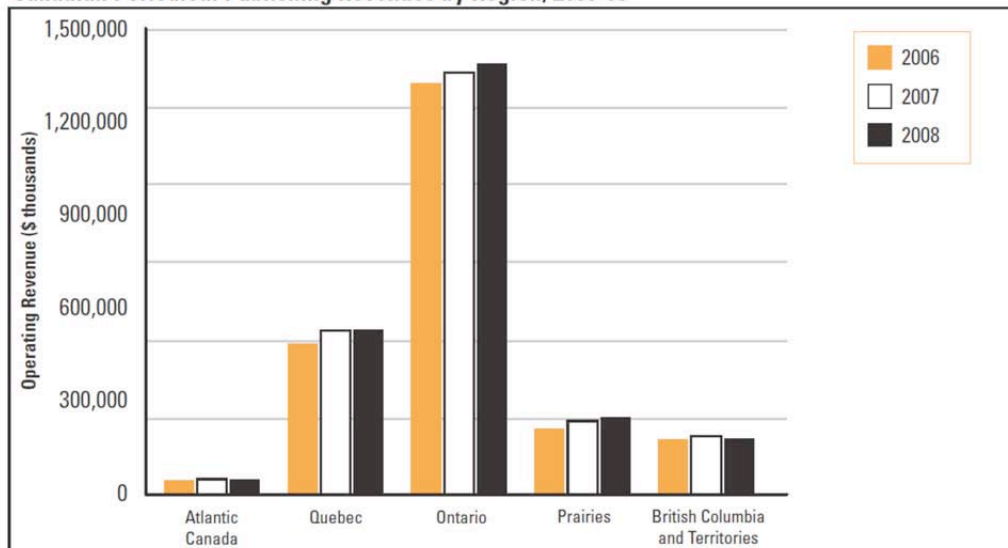
Appendix E

Appendix F

Appendix G

Magazines Canada

Consumer Magazines per Capita

Index of Number of Consumer Magazines per Capita: Canada = 100

Country	Index
Canada	100
France	61
UK	53
Australia	52
Germany	45
Japan	27
USA	23

Index
Number of consumer magazines per capita in Canada. Canada = Index of 100

Source : FIPP World Magazine Trends

Appendix H

MAGAZINES DRIVE SEARCH

Magazines have the most influence on consumers going to the web to get more info on products and services and to start a search for merchandise.

Media that trigger online search

Which media provides you with ideas that influence how to get information about products and services on the Internet?

Media	%
Magazines	57%
Cable TV	54%
Network TV	53%
Radio	51%
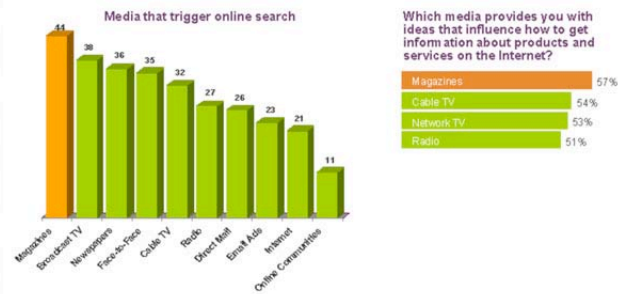
Source: BIGresearch Simultaneous Media Usage Study (SIMM 14), June 2009

Magazines Canada

Appendix I

Number of Canadian Consumer Magazines 2000-2009
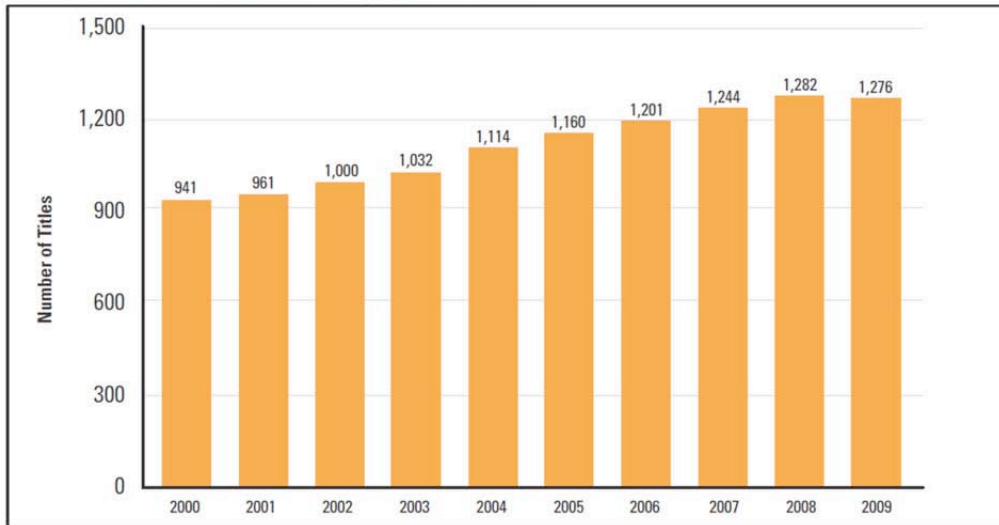
Source: Magazines Canada, *Consumer Magazine Factbook 2010.*

Appendix J

Magazines Canada

Magazines are Read by All Age Groups

% Read a Magazine in the Past 30 Days

Source : PMB

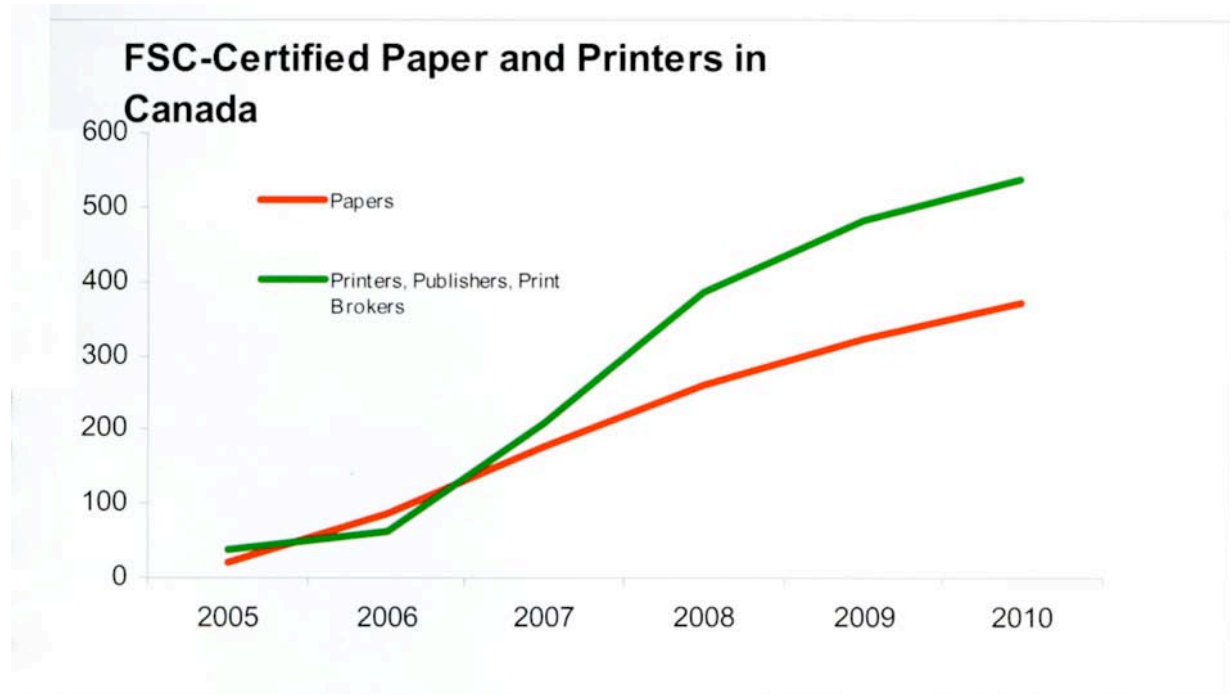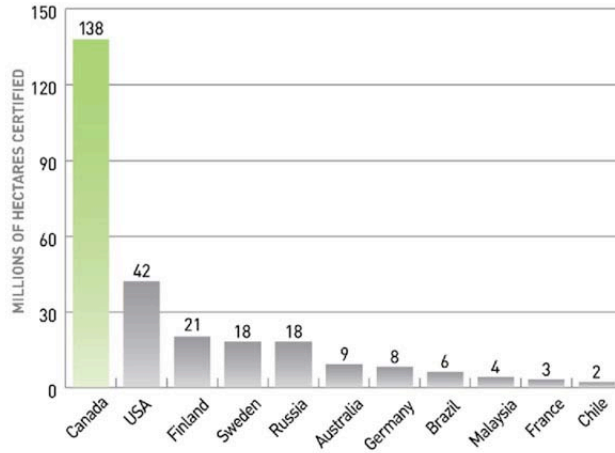Appendix K

Appendix L

Appendix M

Appendix N

Figure 3. FSC certified paper and printers in Canada 2005–2010.

Appendix O

CERTIFIED HECTARES BY COUNTRY

As of January 2008, Canada had 138 million hectars (341 million acres) of lands certified to one of three credible third-party programs – the Canadian Standards Association, the Forest Stewardship Council and the Sustainable Forestry Initiative.
- Forest Products Association of Canada

Appendix P

Print Communications Sustainability Survey

Researcher: Norm Peterson
Sponsors:
University of Alberta
Northern Alberta Institute of Technology

About the Research

I would like to invite you to participate in a Masters research project by completing the following survey. The survey is delivered through the Communications and Technology Graduate Program at the University of Alberta. The focus will be on print communications and it's sustainability as an effective mass communication medium.

The survey is seventeen questions in length and should take approximately five to ten minutes. The survey may be completed by way of the internet or traditional hard copies can be provided. Please answer the questions to the best of your ability and choose only one answer; if you have difficulty or need clarification, feel free to contact me. The answers given are your own perceptions and opinions; there are no right or wrong answers.

Purpose of the Research:

1. Gain insight as to individuals perceptions regarding print communications sustainability.

2. Determine public opinions surrounding environmental practices, current and future technologies.

3. Determine if age demographics factor into individuals perceptions of print sustainability.

The survey results will be used in presentations, teachings and strategic program direction for the Graphic Communications program at the Northern Alberta Institute of Technology. The findings will also be shared with the local printers association, the Graphic Communications Advisory Committee and the Communications and Technology Graduate Program at the University of Alberta. A copy of the survey results can be sent to you by contacting me directly.

Rights and Confidentiality:

Your personal information and survey results will remain confidential; your name is not associated with the data collected. The only personal information gathered is what age demographic you are categorized into so you will not be personally identified in the collected results. The data will be stored in a locked environment and on a secure server at the Northern Alberta Institute of Technology and will be destroyed after five years from the survey initialization. The electronic and hard copy data along with the consent forms will be destroyed so that privacy, anonymity and confidentiality are not jeopardized.

In completion of this survey you are implying your consent to participate in the research. You are not required to participate in the research, and you may withdraw at any time before or during the survey

without prejudice or penalty. Incomplete surveys will be destroyed and not be included in the data statistics.

There will be full disclosure of the presence of any apparent or actual conflict of interest on the part of the researcher.

Ethics Approval Statement

The plan for this study has been reviewed for its adherence to ethical guidelines and approved by the Faculties of Education, Extension, Augustana and Campus Saint Jean Research Ethics Board (EEASJ REB) at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Chair of the EEASJ REB c/o (780) 492-2614.

Contact:

If you have any questions or concerns surrounding the survey feel free to contact me, Norm Peterson, at 780.491.3198 or email normp@nait.ca . Thank you for your time commitment and participation.

If you would like to view the results of the survey, contact me and I would be happy to share the information and results.

Regards,

Norm Peterson
Chair, Graphic Communications Program
Northern Alberta Institute of Technology
p 780.491.3198 | f 780.491.3160 | e normp@nait.ca

Consent:

I _____, consent to participate in Print Communications Sustainability Survey conducted by Norm Peterson through the University of Alberta MACT program. I have understood the nature of the this survey and wish to participate. I am not waiving any of my legal rights by signing this form. My signature below indicates my consent.

Signature Date: _____

Signature: _____

Principal Investigator: _____

Norm Peterson