The Effectiveness of Total Quality Management Principles in the Printing Industry

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Abstract

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The purpose of this study was to determine the history and implications of the term "Total Quality Management", to define the core principles of the concept, and to test their prevalence and effectiveness within the printing industry.

The research consisted of an in-depth survey, which was distributed to employees of printing companies across the country. The survey aimed to collect data that was predominately qualitative in nature. It inquired upon the utilization of quality management systems within the participant's companies, the core objectives and direct effects of these systems, as well as upon the knowledge and usage of Total Quality Management principles in those companies. The collected data was then analyzed using content analysis, and case studies were developed by the information that was gathered.

Results from the research showed that the core principles of Total Quality Management were widely implemented in printing companies. It was also seen that, despite this, not many employees of these companies had a clear idea of what TQM is, and that the more successful companies tended to have a more solid knowledge and usage of the TQM principles. These companies may benefit by taking time to fully understand TQM and use it to its fullest potential.

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Chapter 1
Introduction

Statement of the Problem

"Quality" is an abstract concept that can be applied to every aspect of life. Our world as it exists today relies on the continuous reach for a higher level of excellence. This is certainly why the idea of "quality management" is often regarded as a top priority for any type of company that wants to prove successful. Especially since World War II and the need for accelerated revival, the world economy has thrived on continuous improvement. This resulted in the rapid developments of various theories and philosophies on quality and quality management. Theorists such as W. Edwards Deming, Joseph Juran, Aramand Feigenbaum and Philip Crosby have made great strides in this vast area of study. Systems such as Lean manufacturing, ISO (International Organization for Standardization), Six Sigma, the Malcolm Baldrige National Quality Award, the Deming Prize, etc. have been implemented in various institutions in ways that have proliferated their levels of success. The problem that has ensued from these varying philosophies is the increasing difficulty of applying the optimal quality management philosophy to a particular type of organization.

Not unlike the development of quality theories themselves, the print and graphic communications industry is changing at an extraordinarily fast pace. No longer are these companies considered traditional family-owned print shops; they are now incorporating marketing plans, web and social media, variable data, and

other service-based solutions for their customers. The success of organizations in this industry is now relying on an ability to embrace constant change. Because of this continuous progression, it is a far more complicated process for the management team of one of these companies to choose a quality management system that can be effective on the company as a whole.

This study will focus on the theory of Total Quality Management and it's effectiveness on the modern businesses within the print industry. Using historical case studies and survey research, the research intends to determine whether or not TQM and its core principles have proven functional for overall positive growth and significant improvement of proficiency for companies that fall within this category. While it will not aim to create a side-by-side comparison of different quality management philosophies, it intends to provide a comprehensive view on the ability to rationalize a dependency on TQM. The study hopes to derive a level of expectation a graphic communications company (particularly print-based companies) should have for a TQM system's success or failure – whether or not a business should be inclined to put Total Quality Management into practice. In turn, managers and employees alike can make a better-informed decision for the good of the company.

Significance of Research

Each quality management system that has significant presence in businesses today has it's own merits; and, naturally, it's own deficiencies. The same can be said about each individual business within the printing industry, which is why they are

all striving for continuous improvement. In today's business world, where failure can happen suddenly and easily, there is little room for trial and error when it comes to implementing a whole new approach to running your company. Because there are more and more variables emerging in modern definitions of the print industry, it is important for current and future managers of these organizations to understand what quality management system will be most likely to lead their company toward excellence.

Interest in the Problem

As a graphic communication management student, the idea of perfecting a process – particularly a print-based process – from start to finish is a fascinating concept. I have easily learned to appreciate the immense amounts of research and dedication it takes to find an effective way to control the avoidable inconsistencies and weaknesses that exist within an entire organization made up of interdependent components. Because I am interested in a career path in quality control, I believe this study will serve as the launching point for determining the direction myself and others would like to take to help lead the print industry in the course of a career. A full understanding on the pros and cons of a Total Quality Management system and it's ability to create a state of cohesiveness within a graphic communications business will guide many decisions students like myself will make for the benefit of the future of the print industry.

Chapter 2
Literature Review

TQM and its Parameters

"Total Quality Management" (TQM) is a concept that is now nearly a century old that has been applied to every possible industry. It is a broad and adaptable term that is often specifically altered to meet the goals of the organization that is implementing a TQM system. Different organizations use it in very different ways and conform the concepts in order to fit their own personal goals, which makes it difficult to clearly define its parameters and confounds any coherent analysis. In order to come to a conclusion about the generally accepted aspects of a Total Quality Management system, we can look at various quality organizations and philosophies that exist, and the frameworks they have each created for this concept. We can then cross-examine them to result in a clear and concise illustration of TQM that can guide future research.

One widely accepted definition comes from the American Society for Quality's website. It explains, "…(TQM) describes a management approach to long-term success through customer satisfaction. In a TQM effort, all members of an organization participate in improving processes, products, services, and the culture in which they work" ("Total Quality Management"). The ASQ explains TQM as a system that is primarily focused on customer-focus. There are eight principles that they list as the constraints that must be present within a TQM system; customer-focused, total employee involvement, process-centered, an integrated system, a strategic and systematic approach, continual improvement, fact-based decision

making, and communications. According to the ASQ, while each of the elements are intended to work together to create an all-encompassing system that will constantly improve every area of an organization, these efforts are meant to ultimately lead to the main goal of TQM: customer-focus and an improvement in customer satisfaction. One very important principle that the ASQ is determined to keep in the forefront of the TQM process is that "the customer determines whether the efforts to worthwhile" – in other words, if the customer isn't happy, you wasted your time and money.

A study by Ioan Milosan in 2011 from the Transilvania University of Brasov, Romania entitled "Studies about the Total Quality Management Concept" provides a different perspective on the implications of a Total Quality Management system. Milosan explains, "Total Quality Management is an organizational strategy founded on the idea that performance in achieving a quality education is achieved only through involvement with the perseverance of the entire organization in improving processes permanently. The objective is to increase the efficiency and effectiveness in satisfying customers" (p. 45). Later on in her study, Milosan concludes, "TQM refers to an integrated approach by management to focus all functions and levels of an organization on quality and continuous improvement"(p. 45). Milosan's research surmised that there are six key elements to successfully implement a TQM process: confidence, training, teamwork, leadership, recognition, and communication. By focusing on three different quality management models, she came to the realization in this study that TQM needs to focus on using all of these key elements to create a "continuous flow" of small and progressive improvements from the very bottom of

the organization, and work it's way up through the rest of the hierarchy. As an overarching statement, she confines a successful TQM strategy as a "lasting commitment to the process of continuous improvement" (Milosan 45).

Six Sigma is a statistically based quality system that is often implemented in companies as another method of continuous improvement. iSixSigma.com defines Six Sigma as "a disciplined, data-driven approach and methodology for eliminating defects (driving toward six standard deviations between the mean and the nearest specification limit) in any process" ("What Is iSixSigma?"). This quality system is used in virtually every type of business, from manufacturing to customer-based services. TQM is often introduced as a facet of the Six Sigma approach, and iSixSigma.com features several articles on the origination and implementation of Total Quality Management. The featured definition of TQM on their site reads: "TQM is a management philosophy that seeks to integrate all organizational functions… to focus on meeting customer needs and organizational objectives"(Hashmi 2010). They, too, have a list of principles they see as being a requirement to be considered a TQM system; these are management commitment, employee empowerment, fact-based decision-making, continuous improvement, and customer focus. They see the main objective of TQM is to "do the right things, right the first time, every time." It sees the system as most concerned with continuous improvement; more specifically, continuously improving results in every aspect of an organization. iSixSigma believes that the main way to do this is not necessarily by implementing new systems or procedures, but by preventing mistakes in the current ones. They

emphasize that TQM is very purpose driven, and that the whole organization has to be focused on the ultimate goal for the plan to be successful.

Taking each of these TQM synopses into account, and finding the overlaps in each of the definitions, we can relatively easily narrow down the key components of Total Quality Management. While each source emphasized different aspects of the system, we can see a clear relationship that sectors TQM into three main categories: total employee involvement, continuous improvement, and customer focus. Communication is also an underlying factor in every aspect of the TQM methods that were mentioned in each of these three sources, whether it is improved communication between individuals within the organization, or between the organization itself and it's customers. These three factors, along with an overarching goal of better communication, will be the basis upon which this study will be implemented.

The History of TQM

The term "Total Quality Management" was originally coined in the 1980's by the Naval Air Systems Command to describe its Japanese-style management approach to quality improvement ("History of Total Quality Management"). But the American Society for Quality contends that it started to gain momentum much earlier during the depression era, especially when a strong opposition to unions arose in the context of workers not being able to directly impact working conditions. It then progressed into the 1930s, when Walter Shewart began the first methods for statistical process control, and launched a true interest in the idea of quality

management and process improvement. Management philosophers W. Edwards Deming, Aramand Feigenbaum, Joseph M. Juran, and Philip B. Crosby made a huge impact on the TQM theories in the 1950s; Deming taught statistical analysis and quality control in the Japanese business market, Feigenbaum wrote a book entitled "Total Quality Control", Juran led quality improvement through management, and Crosby developed the idea of the "zero defects" approach to quality. Kaoru Ishikawa is also a renowned quality management leader from the 1960s, known for the Ishikawa (also called "fishbone") diagrams.

According to a paper entitled "Total Quality Management: Origins and Evolution of the Term", written in 1998 by professors Angel R. Martinez-Lorenta of the University of Murcia Spain, as well as Frank Dewhurst and Barrie G. Dale of the Manchester Institute of Science and Technology, Feigenbaum and Ishikawa were the two quality philosophers that made the greatest contributions to the term "TQM". Juran, Deming, and Crosby are seen as great developers of TQM concepts, but it is revealed that none of the three ever actually used the exact term "Total Quality Management". The paper lists several events throughout the century that led up to the current definition of the term, including the first true usage of the term in the Japanese Naval Air Systems command, as mentioned previously. Associatively, the authors came to the conclusion that "most theoretical developments in the advancement of the concept have been made in the USA whereas Japan has held the initiative in terms of application"(p. 12). Overall, it is made obvious that the abstractions of the TQM concept took a few decades to thoroughly develop, and that there have been many differences in both the definition and application of TQM over

the years and amongst the different quality "gurus" and their theories since its origins.

Today, several companies implement TQM as a "broad and systemic approach to managing organizational quality" ("Total Quality Management"). It umbrellas over several specific quality programs such as ISO 9000, the Malcolm Baldrige National quality Award, Six Sigma, the Deming Prize, LEAN management, and so on. Although to some it may seem like a "buzz word" that has gone in and out of popularity within the last several decades, its concepts and principles are constantly being implemented across all industry and business types. The process of actually implementing a Total Quality Management system is the next step in identifying the framework of this quality system.

How TQM is Implemented

Defining your approach.

As mentioned previously, there are several different directions that can be taken when it comes to defining the scope of a TQM process. The same can be said for the implementation of TQM. We can once again analyze the varying approaches taken by different quality organizations and philosophies.

The *Certified Manager of Quality/Organizational Excellence Handbook* (Westcott 2005, p. 306-307) from the American Society for Quality identifies 5 different possible strategies for implementing a Total Quality Management system. They are as follows:

- ***The TQM element approach.*** This approach includes key business processes of the particular business and uses the main tools of TQM to stimulate improvements. This widely included putting TQM elements into practice as they are learned more extensively throughout the process.
- ***The guru approach.*** This self-explained approach uses one or more of the quality philosopher's methods to determine where the business/organization has room for improvement, and directly parallels the solutions to that of the chosen "guru".
- ***The organization model approach.*** This involves companies choosing a successful TQM-based company on which to model their own quality improvement plan. They combine the model's ideas with their own in order to better apply it to their specific needs.
- ***The Japanese total quality approach***. This approach is modeled off of the Deming Prize. Companies using this approach "develop a long-range master plan for in-house use" and often use it to actually compete for the Deming Prize.
- ***The award criteria approach.*** This approach is a general system that chooses any of the quality award criteria – Malcolm Baldrige, Deming Prize, European Quality Award, or otherwise – in order to implement a total quality system.

Many organizations specifically choose one of these approaches to implement a total quality management system; others may combine facets of more than one to create their own custom plan.

These different approaches are certainly a good way to begin the planning process for implementing TQM. But there are certain things that must be done at the start of the process to get a clear vision of exactly where the organization needs to go with the chosen approach. Another iSixSigma article (*Introduction and Implementation of Total Quality Management)* outlines the implementation process of a TQM system, and recognizes that a crucial first step is to "assess the organization's current reality". This essentially means do a widespread and thorough audit of the company, and particularly it's management, to determine where the organization is function well and where it may need a significant amount of work. The article points out that a company generally needs to be already healthy in order to successfully implement TQM; if the company has some significant problems in the first place, these would need to be resolved before even considering a TQM approach.

Developing your approach.

Once you have decided where your company is going to focus it's TQM efforts, a clear and concise plan needs to made for how to get to those goals. The same iSixSigma article gives some steps for managing the transition into a TQM system; "identifying tasks to be done, creating necessary management structures, developing strategies for building commitment designing mechanisms to communicate change, and assigning resources" (Hashmi, iSixSigma.com). Carefully and thoroughly carrying out each of these steps to the best of the organization's ability will be a difficult and ongoing process, and the article emphasizes that getting ideas and contribution from different stakeholders in your company and making

sure your employees are involved as much as possible are both crucial to the process.

After considering many case studies of companies that implemented total quality management, John Sherwood and Sherwood, the authors of "The Total Quality Paradox: Part Two – How to Make Total Quality Work" from *The Journal for Quality and Participation*, concluded with 7 principles that guide successful quality improvement. They are as follows:

1. The way an enterprise is organized determines how well customers are served
2. Substantial improvements come from systemic changes
3. The change process is collaborative in design and implementation
4. Employees should be given a voice in how their work is done
5. The building block of organizational change is the unit of work – the team
6. The change process itself is competently managed
7. The vision stretches expectations of what is possible

This comprehensive study draws attention to the importance of continuous improvement, resulting in increased customer satisfaction, as well as reduction in cycle time and therefore unit cost and waste as well. They also explained that these processes will reduce the amount of employee absenteeism and turnover; this would be as a result of increased customer satisfaction.

A last position on the methods for implementing Total Quality Management comes from an article entitled "It Takes More Than Statistics" by Sid Chadwick from the *American Printer* (1992). Chadwick explains, in response to elevated emphasis

on statistical quality control, that in order to effectively improve your level of quality you first need to focus on your customer needs and expectations. You cannot focus on data when you don't first have customers to produce your data. He points out that if you implement a TQM system, and you don't have customer focus to keep your company growing, TQM is merely a fad that will fade away with time. He also explained that performance training for employees is also a necessity in order to actually meet that customer satisfaction.

Each of these approaches to Total Quality management once again seems to emphasize customer focus, employee involvement and continuous improvement, and we now have more specific steps that show us how to get to our TQM goals. Although each discussed approach has some differentiation, there are certainly many overlaps that can give us a reliable blueprint for a solid application of Total Quality Management. We can now specifically apply these principles to the printing industry itself, and analyze the similarities as well as the variations in a TQM process that must exist in order to be successfully implemented into this specific field – therefore creating the framework for further research in this study.

Analyzing TQM in the Printing Industry

In the recent past, it has become more common for print companies to start to take the initiative to implement some form of Total Quality Management. Although each company is unique in some way when it comes to the parameters it sets to implement the system, the three basic aspects that have already been discussed are present in both examples that will be featured in this analysis. These

two case studies focus on two different approaches to analysis of TQM effectiveness: the first being more of a statistical approach, whereas the second is a philosophical and psychological approach. Both procedures are successful in analyzing the means of TQM implementation in printing companies, and it is important to understand how each can be utilized in order to measure the companies' success.

The first case study was featured on the iSixSigma website in an article entitled "Newspaper Aims to Improve Printing: A TQM Case Study" (Goyal 2010). This three-part series followed a newspaper printing plant in India during their process to convert to a Total Quality Management system. The company owned a 6-unit, web-fed press whose ink stations had to be set manually. Their main goal was to make turnaround faster while also improving the quality of the physical print jobs.

The company started by forming a TQM group consisting of the general manager, two printers, the quality manager, and the print floor shop manager. They attended a two-day TQM awareness program to begin the process. They then sat down and clearly defined what problems had to address, including blurred borders on images and the hues of the images not being correct. The team then performed the "Five Why" or "Why-Why" analysis (constantly asking why to every answer that is given when asked why a problem exists). To give an idea of how this method works, they started with the question "Why is the picture blurred?" and ended up realizing that there were two different plate making machines whose notches influenced the plates to be superimposed from different sides. This led to shifting

the roller on one of the units, which ended up solving the problem of blurred images.

The next problem they addressed was the color accuracy issue. They first used statistical analysis to determine how close their ink flow and registration was to their desired ranges, and found that 99.7% of the dots were between +/-3 sigma (90% of the dots were out of the desired range). The article explained that the TQM team thought reaching the desired range was going to be nearly impossible, so they initially decided to aim for only a 45% inaccuracy. They did more statistical quality analysis to measure ink flow measurements and performed more why-why analyses and determined that they needed to consistently and accurately measure the amount of ink flow across each page of the newspaper. They were hesitant to the change at first, but they installed level controllers on all of the ink units and found them to be acceptable. The team carefully documented measurements and improvements over the process, and ended up reducing the sigma by another 5o% – which was beyond their original goal. From that point on, the implemented a daily control chart, daily managerial reviews and team reviews for several aspects of the company – beyond just print quality (customer service, employee collaboration, etc). After their TQM process, the company decided, "if you do not improve, you deteriorate". They also found that this improvement significantly decreased their amount of paper waste, since less paper was used on pages whose color or registration was unacceptable.

Overall, this newspaper company used several different TQM tactics in order to improve two specific problems within their process, and ended up with a

completely different system that was improving quality within every aspect of their business. This example finds Total Quality Management true to its name (if implemented correctly) in that it completely affects every aspect of the business in a way that ensures improvement in the long run.

The second example comes from a dissertation for a Doctorate of Philosophy by John D. Miller at the University of Wisconsin – Madison in 1995. The dissertation was entitled "A Case Study of the Effects of Implementing Total Quality Management at Perry Printing Corporation and Implications for Adult Learning". Miller's main goal was to understand the views that were held about TQM principles by employees of a company in order to determine whether the process is actually effective. He conducted interviews and observation for research, asking separate sets of questions to the machine operators and to the managerial roles of the company. The organization had been committed to a TQM philosophy for five years prior and had consistently achieved positive results in working with TQM, and had continuous TQM training for employees, which is why this particularly company was chosen. Perry Printing was involved with heatset web offset, mailing, binding, poly bagging, and other similar processes. Their customers included Time Magazine, InStyle, and Sports Illustrated, as well as other publications and newspapers.

There were five main research objectives in this case study: the first to find employee's personal involvement in the TQM program, the second to find which tools and techniques that were typically part of TQM were actually being put into practice, the third to find if employees had felt any real change since the implementation of the TQM system, the fourth to find if any significant lessons had

been learned by the employees through the TQM system, and the fifth whether or not the Deming quality philosophies were understood by the employees after the implementation, and in what way. Thirty interviews were conducted to determine the changes organizational behavior of Perry Printing as a result of the TQM process.

The dissertation analyzed the interview responses and observations and split them into categories, addressing each topic individually. Miller then included a summary of his major findings related to the objectives mentioned above. In relation to the first objective, Miller found that participation and involvement from all employees was seen as necessary elements to the success of TQM, and set as a known requirement within the company. Almost all employees received quality awareness training and were expected to begin the change immediately. He also found, pertaining to the second objective, that various quality tools (diagrams, charts, etc.) needed to be proven and endorsed as effective in order to resonate with the employees. The third objective analyzed "mental models" of the employees, and Miller found that the majority of employees saw improved relationships and communication within the company, especially in accordance with discussion of organizational processes. Employees especially felt that their opinions were held at higher esteem, which then directly translated to higher customer satisfaction. The fourth objective found that TQM training programs need to be open to learning, small in relation to the whole learning process (most of the learning needs to be done in real-time), that employees need to interact through groups in order to spread and adapt to the new "mental models", and that they need to be regularly

assessed based on the requirements of the process. The final objective realized that Perry Printing's TQM model was not necessarily totally based on Deming philosophies but that they were used as a "seed" and "initial inspiration" for the implementation of the change. Miller did find that the more general and "most useful" of Deming's 14 points were utilized actively in Perry Printing's TQM process, but were still used more as guidelines that were tailored to their own needs. In fact, Miller himself felt that Deming's principles had not contributed much to Perry Printing's success at all. The findings for each of these objectives comment on the direct impact the TQM process had on the internal components of the company itself.

Although the specific means of TQM were not actively discussed in this case study, several important topics were revealed about the employee perceptions of a TQM change within an organization, and how they directly impacted the effectiveness of that change. This objective approach can be just as telling as a statistical and more methodical approach can be, and can be very helpful for future suggestions for improvements to the process.

Both examples of TQM in the printing industry showed overall positive results when the basic principles were carried out. And although the two case studies had very different methods to analyzing the success of the TQM systems, each gave very significant insight as to where the processes had room for improvement. These two methods will serve as a basis for determining the methodology of research and analysis that will be used for this specific study.

Summary

After thoroughly discussing the parameters, history, implementation, and methods of analysis of a Total Quality Management system, it can be concluded that there are varied means to determining exactly what is included in TQM, which can be narrowed down to some fundamental principles. First of all, it is clear that throughout history Total Quality Management is seen as an all-encompassing procedure that is intended to improve virtually every area of a business. Secondly, it is also apparent that, although each TQM-based company may choose to use different approaches to their Total Quality Management system, nearly all examples utilize the same basic principles: customer focus, employee involvement and continuous improvement. We can also observe that there may be both a statistical and psychological approach to evaluating the effectiveness of a TQM process, and that each has its own individual merits that can be employed in the analysis process. Every basic principle that has been surmised through this literature review can be put into practice through the methodology and research that will be done to further the study of Total Quality Management within the printing industry.

Chapter 3
Methodology

This study aimed to determine the prevalence and effectiveness of the core principles of Total Quality Management systems within the printing industry. Previously given historical research served to determine which principles of TQM would be considered the "core". They were then tested within modern print businesses to determine their legitimacy in the industry, and the potential they have to continue to prove successful amidst the constant changes that are taking place in graphic communication companies.

The objectives of this research were to determine if TQM principles are currently being used in the printing industry, which TQM principles are primarily being used (which ones are given more or less emphasis), and determine if the usage of these TQM principles were or were not beneficial to these companies and why. The results of this study will be used to determine what factors influence the effectiveness of Total Quality Management implementation overall.

The sample population consisted of employees of printing companies around the United States, primarily in California. For the purpose of the research, the term "printing companies" encompassed any business whose primary service and generator of income is a printing operation (whether it be digital, lithography, flexography, gravure, screen, or any other print process). The study included companies who have been in existence long enough to have experienced various changes in their quality control programs (or to have made observations regarding the lack of any quality control program); the aim was to involve companies that

have been established for at least 5 years. It included members at various hierarchical levels and areas of employment, ranging from the pressman to the salesmen to the CEOs of the various companies.

The type of data that was collected was predominantly qualitative in nature. There are two main types of data that were gathered. Descriptive data was convened through the use of online surveys, over the phone and face-to-face interviews. Historical research was accumulated through case studies and background research on the companies that are being analyzed. The descriptive data collection included survey and interview questions (listed in the Appendix) that intended to ascertain both demographic data on the employees themselves and their respective companies, as well as the employee's perspective on Total Quality Management. Also, the quality management systems and principles implemented in their companies, and the employees' suggestions for change and improvement within those systems were recorded. Historical data was gathered through the surveys and interviews, as well as research on the company through outside sources.

The analysis of the data collected was performed through content analysis. For example, the practice of the different core TQM principles was inserted into a chart to determine which principles are used most frequently. The survey (particularly demographic-based) questions were also given visual representation through charts and graphs, and directly compared to the results of the interview questions. For the purpose of the study, the "success factors" that were considered

were primarily company growth profitability. The correlation of TQM factors to growth and profitability served as the key indicator of TQM effectiveness.

Chapter 4
Results

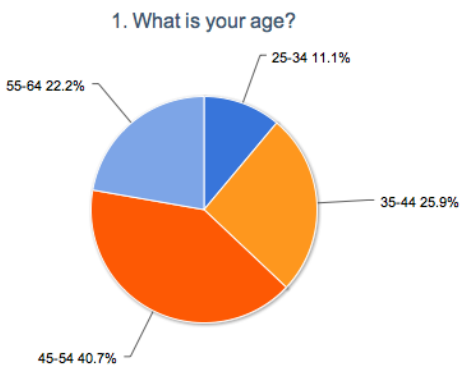
Survey Overview

In this study, an extensive survey/interview questionnaire was developed. It was intended for both an online survey format, formulated with an online survey-creating platform, as well as for use through in person and phone interviews. There were 223 contacts, collected from various sources, which were individuals known to work or have worked in the printing industry. These contacts were sent an email (see Appendix), given the option to complete the questionnaire through the online format, or to contact the sender if they opted to complete it in person or on the phone as an alternative (none of the contacts requested an in-person or phone interview). They were also asked to forward the email to any others they knew were involved in the printing industry.

The questionnaire consisted of 30 questions (see Appendix), ranging from radio button (one answer only), checkbox, fill in the blank, and essay format questions. There were two main categories of questions: the first set was demographic in nature, while the remaining questions inquired for subjective and descriptive information/opinions on Quality Management Systems. The contacts were given the option to answer as many, or as few, questions as they would like, and to remain anonymous if they so chose. They were given two weeks to complete the survey, and were able to save their progress and return to it later if they so chose.

Set 1: Demographics

The survey yielded 38 responses; 27 completed responses as well as 11 partially completed responses. They represented 24 different companies throughout the United States. There were also 7 responses from individuals that chose to let their company remain anonymous. The most highly represented companies were Premier Press in Portland, Oregon (yielding 3 responses), Smyth Companies LLC in Minneapolis, Minnesota (yielding 4 responses), and The Flesh Company in St. Louis, Missouri (yielding 2 responses). Because these companies had greater response rates, they will be given a heavier focus in the data report and analysis in the form of case studies.



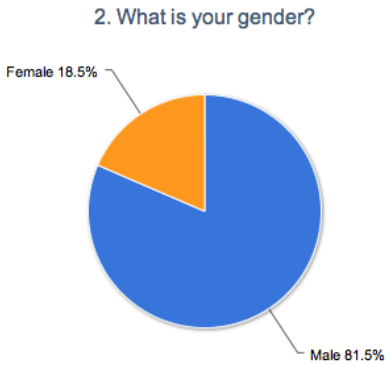


Figure 1: Age

Figure 2: Gender

Of all respondents, the majority (40.7%) were ages 45-54, and 81.5% were male. In addition, 70.4% identified their current position as a Management role, 51.9% identified their current position as an Operations role, and 33.3% identified

their current position as a Quality Control role.

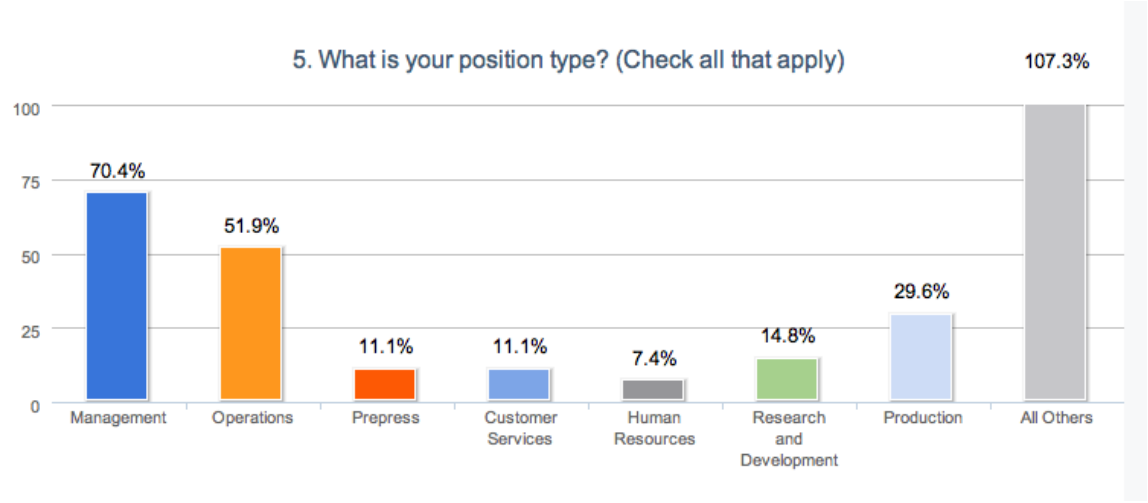


Figure 3: Position Type

Of all of the individuals, 37% had been working at their current company for 1-5 years, and 22.2% had been working at their current company for 20+ years. Additionally, 14.8% had held their current position for 1-5 years, and 11.1% had held their position for 16-20 years. A wide majority (59.3%) had been working within the printing industry for 21+ years.

Of all the companies discussed in the surveys, 40.7% had been founded in 1950 or earlier. Only one respondent was from a company that was less than 5 years old (which was the target for the minimum company age for this study). Also, 51.9% identified their company as a commercial printing company, and 48.2% identified their company as "Other". The services the companies offered were very widespread; the majority offered offset (92.3%) and/or digital printing (73.1%).

Set 2: Quality Management Systems

The series of questions on Quality Management then followed the Demographic data. When asked if their company has a Quality Management System, 85.2% said they do, and 84% were currently using the designated QMS. Many companies had implemented more than one QMS in the past; 88% had implemented LEAN, 44% had implemented Six Sigma, 40% had implemented the ISO series, and 44% had implemented Total Quality Management. Of all respondents, 32% had been using their QMS for 1-5 years, and 48% had been using it for 6-10 years; only 4% had used their current QMS for 21+ years. The main objectives for their current Quality Management System were each very highly selected, but Continuous Improvement was the most occurring answer with 96.2%.

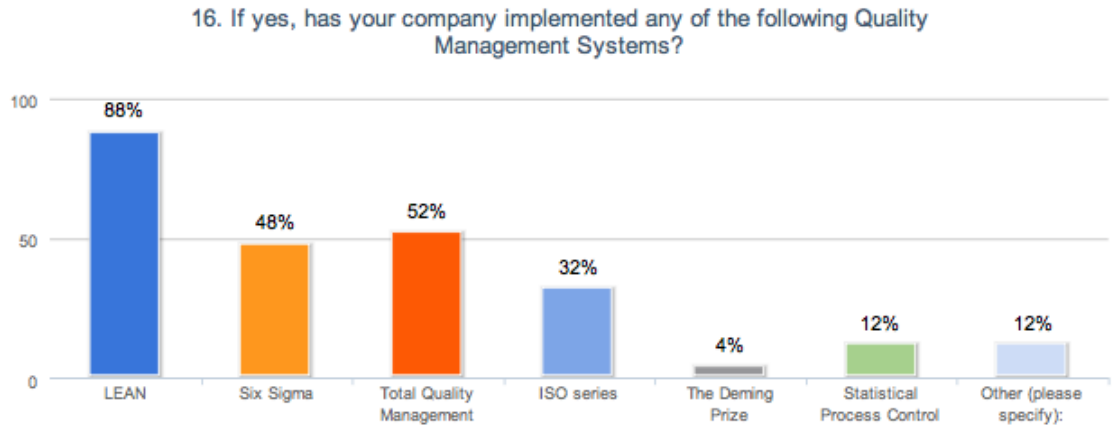


Figure 4: Implemented Quality Management Systems

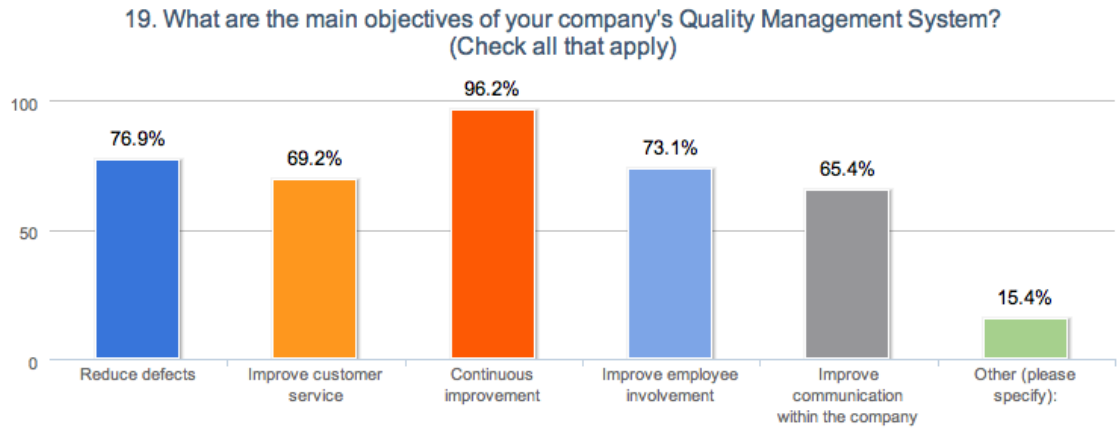


Figure 5: Main Objectives of Quality Management Systems

The essay portions of the survey are less quantifiable and needed to be analyzed based on content. When asked in what ways the company's Quality Management System was effective, a variety of answers resulted, but there were also widespread commonalities. The highest occurring topic within the answers dealt with improving the efficiency of production; 45.5% of respondents mentioned this improvement. The second highest occurring topic was employee involvement, with 36.4% of respondents including this in their response. Waste reduction was the third most listed improvement, included in 27.3% of answers. Other topics included saving cost (4%), reducing defects (13.6%), better analysis of statistical data (4%), improved customer service (9%), improving safety (9%), and overall improvement of quality (18%). When asked in what ways is their QMS flawed, less commonality arose. The most frequently occurring topics seemed to be flaws in the people instead of the system itself, encompassing 50% of the responses. These comments included the problem that people do not execute, that it is hard to manage employee's ability to perform the quality system, and that it is difficult to

keep people excited and engaged in the system. There were also 9% of respondents that mentioned their system is out of date, and 18% stated that it was too hard or they simply do not have enough time to accurately perform the system. Other issues included not being able to focus on the details (4%), not having a root cause analysis and action plan (4%), moving too fast through the system (4%), not being able to integrate plants at all locations through ISO documentation (4%), having the system seen as a separate entity from the core of the business (9%), and being corrective instead of preventative (4%). One respondent saw no flaw in their Quality Management System.

(See tables below)

Table 1

21. In your opinion, in what ways is this Quality Management System effective?	
Increased production efficiency	45.5%
Employee involvement	36.4%
Waste reduction	27.3%
Overall quality improvement	18.0%
Reduced defects	13.6%
Improved safety	9.0%
Improved customer service	9.0%
Improved data control	4.0%
Better consistency	4.0%
Cost reduction	4.0%

Table 2

22. In your opinion, in what ways is this Quality Management System flawed?	
Hard to manage people; lack of interest	50.0%
Too hard; not enough time	18.2%
Out of date	9.0%
Not integrated in core business	9.0%
Need root cause analysis	4.0%
Moving too fast	4.0%
Lack of ISO document control	4.0%
Can't focus on details	4.0%
Corrective instead of preventative	4.0%
Cost reduction	4.0%

The remainder of the survey questions inquired upon the knowledge and opinions on the topic of Total Quality Management. As an introductory question, those surveyed were asked if they had heard of TQM; 92.6% replied with a "Yes". They were then asked how they would describe TQM. Of all responses, 33% of the definitions included the concept of continuous improvement, 38% included customer focus/meeting customer expectations, 33% included the concept of complete integration of all processes, and 23.8% included complete employee involvement. Other occurring topics consisted of the maintenance of standards and procedures, the PDCA (Plan, Do, Check, Act) Cycle, increasing profits and employee wages, and using quantitative data collection.

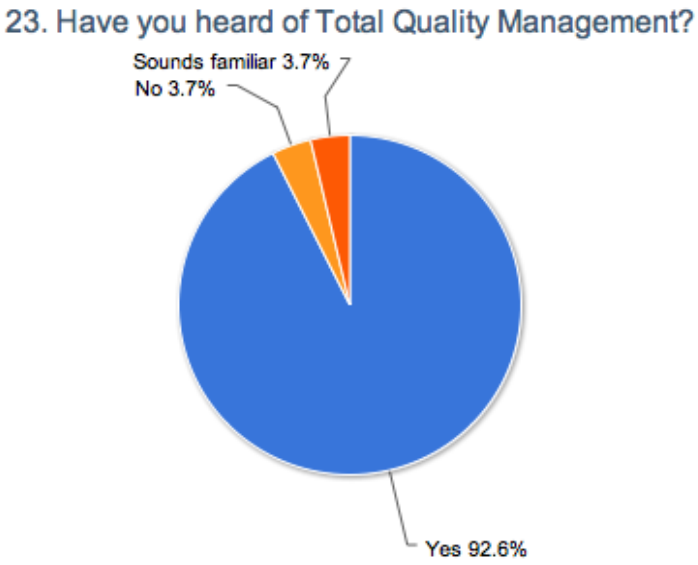


Figure 6: Have You Heard of Total Quality Management

24. How would you describe Total Quality Management?	
Customer focus, meeting customer needs	38.1%
Complete integration of processes	33.3%
Continuous improvement	33.3%
Employee involvement	23.8%
Focus on increased profits	9.5%
Plan, Do, Check, Act cycle	4.8%

Table 3

In the last portion of the survey, the respondents were given a description of the three "Core Principles" of Total Quality Management, as given in Chapter 2. They were then asked how they implement these principles in their own companies (these will be covered in the company profiles and case studies). They were also given a description of the Five Approaches to Total Quality Management, and asked which best describes their company's Quality Management approach. The most common answer was the TQM Element Approach, with 53.9% selected. The Organizational Model approach was selected by 42.3%. The Guru Approach was selected by 15.4%, the Japanese Total Quality Approach was selected by 7.7%, and the Award Criteria approach was not at all selected. They were then asked to elaborate on ways they use these approaches, which will also be covered in the company profiles and case studies.

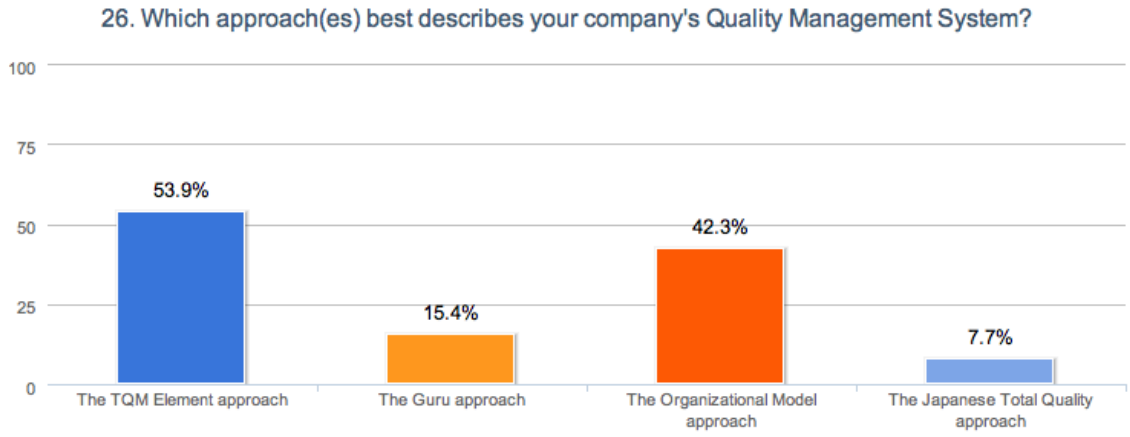


Figure 7: Approaches that Best Describe Quality Management Systems

As some final wrap-up questions, companies were asked if they would consider their company to be using Total Quality Management after learning the given information. Of the 27 respondents, 64% replied "Yes", 22.2% replied

"Maybe", and 14.8 replied "No". Those that answered "No" or "Maybe" were asked if they thought implementing a TQM system would be beneficial to their company; 80% replied "Yes", 10% replied "No", and 10% replied "I don't know".

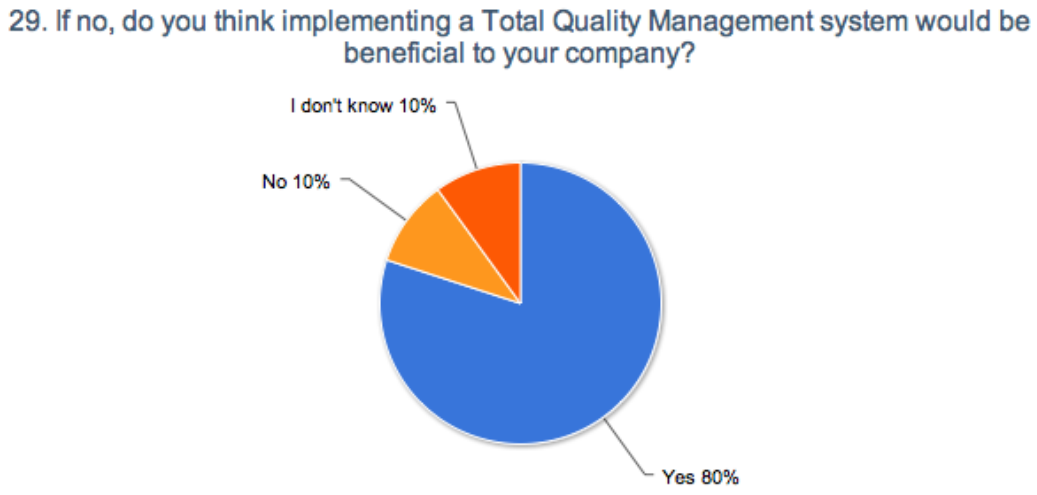


Figure 8: Would TQM Be Beneficial

The final question asked for any final thoughts or comments, which may be applicable to the following case studies.

Company Profiles and Case Studies

Premier Press

Premiere Press is primarily a commercial printer located in Portland, Oregon. The company has been family owned for over 35 years, and was founded in 1974 by Arnold Wheeler who borrowed a small press from a friend and $7,000 from his grandmother. His three

Illustration 1: Premier Press

daughters now own the business. Premier Press provides offset, digital on demand, wide format, and bindery/fulfillment services to their customers. They also feature letterpress, marketing services, variable data, mailing and fulfillment, website development, graphic design, and web-to-print services. According to their website, they are G7 Certified, and have a variety of Sustainability certifications. They do not have anything in particular about a quality management system or any quality assurance statement on their site.

Three individuals contributed to the survey from Premier Press. The first was Scott Gorman, a male aged 35-44, who is the Vice President of Manufacturing. Scott has been at the company for over 20 years, has been working in the printing industry for even longer, and has held his current position for 6-10 years. The second is the Fulfillment Lead, whose name is unknown. He has been at Premier for 11-15 years, has been in his current position less than 5, and has been in the printing industry for 16-20 years. The third is Jodi Krohn, CEO and Owner of the company. She grew up working in the business with her family. She is involved in all operations of the business, from customer services to research and development to marketing and quality control.

While the company has worked with different Quality Management Systems in the past, they do not seem to have one specific system set in stone. They have been incorporating components of Lean, Six Sigma, and their own specific quality management process, and have been doing so for less than 5 years. The main objectives of the Quality Management was clearly defined as follows:

- Reduce defects

- Improve customer service
- Continuous improvement
- Improve employee involvement
- Improve Communication within the company

Premiere uses several Lean manufacturing and Six Sigma tools in the workplace, such as the 5 Why's, Kaizen, 5S's, SMED. Overall, They seem to place higher emphasis on continuous improvement and employee involvement. They have hired a member of the staff that specifically focuses on Continuous Improvement within the company. They also hold weekly review meetings in each department in order to find any issues in production or workflow, to see what new tools are needed and solve any frustrations the employees may have. They use the white board approach for continuous record and visual aid. They also have "top down" meetings for specific project groups, which have the same objectives as the department meetings. These meetings help the entire company to improve processes, reduce cost, reduce stress and create a more positive work environment. They also have incorporated what they call a "Great Catch" program; when an employee catches a flaw or missing information within the production process, they are entered into a drawing for prizes and vacation days. The company also places a focus on customer focus through their employees, constantly going through training and education in order to establish Premier Press as a customer service company, serving both internal and external customers.

The three respondents from Premier saw themselves using three of Quality Management approaches: The Organizational Model approach, the TQM Element

approach, and the Japanese Total Quality Approach, based on their various quality management activities and the definitions of each approach that was provided. Both the Fulfillment Lead and Gorman considered themselves to be using Total Quality Management, while Krohn did not.

Smyth Companies, LLC

Smyth Companies, LLC is a labeling company stationed in Minneapolis, Minnesota. The company was founded in 1877 by Henry Martin Smyth, and is one of the oldest business entities in Minnesota. Their label products include pressure sensitive, cut-and-stack, in-mold, heat transfer, shrink sleeve, and promotional labeling. They also offer in-house design, prepress, and label application systems. Smyth utilizes offset, digital, flexography, specialty, and variable data printing. They primarily market to the food and beverage, personal and household care, alcoholic beverage, and private label sectors. They have won a few awards in various Label competitions, and are ISO 9001:2008 Certified.

Illustration 2: Smyth Companies, LLC

Four Smyth employees responded to the survey. The first is Andrea Mossong, Project Manager, who has been at Smyth and in the printing industry for less than 5 years. The second is Allen Hallberg, Vice President of Continuous Improvement, who has been at Smyth for less than 5 years but in the printing industry for over 21 years. The third is Greg Dooley, the Material Waste Coordinator and Estimator, who

has been at Smyth and in the printing industry for over 20 years. The fourth is William Denzen, General Manager, who has been at Smyth for less than 10 years, and has worked in the printing industry for over 21 years.

Smyth has been incorporating features from various Quality Management systems. Between the four respondents, various combinations of Lean, Six Sigma, Total Quality Management, Statistical Process Control, and ISO were named. They have been using components of these systems for the last 6-10 years. Their main objectives of the QMS is as follows:

- Reduce defects
- Improve customer service
- Continuous improvement
- Improve employee involvement
- Improve communication within the company

The company is ISO certified at 3 out of their 5 plants. Their Lean initiative entails that of the Shingo Prize: 1) an employee engagement program, 2) a team focused on developing and deploying training on Lean tools, as well as a focus on driving 20-30 Kaizen events per year per plant to drive improvement, 3) using Policy Deployment to deploy enterprise strategy within all business teams; and 4) focusing on results that are beneficial to both their customers and their stakeholders. They have implemented a system for reporting defects, and a root-cause analysis and counter measure process as well.

Smyth creates goals through their upper management and "filters" them down to each of their plants. Each plant then determines how to reach those goals

individually, using tools such as Kaizen events and projects. Each event gets assigned a "Lean leader" and is given a due date, as well as expected results. Mossong also mentioned an employee engagement initiative that was started less than one year ago. The entire company runs on the same share drive in order to see what is occurring across all plants, which has been improving communication and the ability to work toward the same goals.

Some flaws that were seen in their quality approach were not having a "common repository" for the ISO documentation of all plants, as well as a lack of a system to leverage resources at all plants to use common tools, templates, etc. They also thought they rushed into their Lean system, and could have taken the time to slow down in order to fully train their employees and implement the system to its fullest. Denzen also mentioned that it is difficult to make such a large change in culture throughout the company when implementing these quality programs.

All four participants had heard of TQM, and defined it by the principle of Continuous Improvement. They believed they used the three TQM principles through their employee engagement program, including anonymous employee surveys to set goals for more process improvement. They also use Gallup's Q12 Principles, and their continuous improvement and VOC (voice of the customer) focus, which Dooley stated is at the center of every decision made. Mossong believed they did not have a formal plan for Customer Focus, but mentioned Kaizen and 6S's programs that have been implemented for continuous improvement.

Between the four of them, these Smyth employees listed the TQM Element Approach, The Guru Approach, and the Organizational Model approach to Total

Quality Management. Because they combined multiple quality processes, the TQM Element approach seemed to be the most applicable, while the "Guru" approach was suggested through the use of Gallup's principles and the Shingo Prize. All four participants believed Smyth was using Total Quality Management at the end of the survey.

The Flesh Company

The Flesh Company is another family owned business that was founded in 1913 in St. Louis, Missouri. They started out as a distributor of business forms, and entered into the manufacturing of business forms after World War II. Today, they manufacture value added print products such as integrated products, label-form combinations, promotional printing, and document security. They utilize offset, flexography, and variable data print processes, as well as complete bindery and fulfillment services. Their manufacturing plant now has 160 employees, and has a total sales of $25,000,000.

Illustration 3: The Flesh Company

According to their website, Flesh has held three core business principles since it's start in 1913: "Always stay on the cutting edge of technology, always provide the best service in the industry, and stand behind every order you produce". They also have a detailed "Quality Policy", which reads:

- Quality is not a separate function of our production unit
- Emphasis is on consistent methods as well as quality results

- Emphasis is focused on continual improvement of systems and procedures
- Emphasis on empowerment of the associates
- Emphasis of providing feedback to the associates

In addition to these company-established quality policies, their Plant Manager, Randy Lewis, is Six Sigma certified.

There were two survey representatives from The Flesh Company. The first was Robert Berardino, President. He has been at Flesh for 11 years, and been in the printing industry since 1978. The second is the Production Supervisor, who has been at Flesh for 16-20 years, since he entered the printing industry. He oversees most operations of the business.

The Flesh Company has been implemented Lean Manufacturing in their production process for the last 6-10 years. The main objectives of their quality management system includes:

- Reduce defects
- Improve customer service
- Continuous improvement
- Improve employee involvement
- Improve communication within the company

They have also been integrating their Lean system with, as Berardino stated, “a slant to ISO”. They are not internally in need of an ISO system at this time, but because they have used ISO in the past, they have incorporated some of its principles into their Lean system. Berardino believes that this system has been very effective creating awareness throughout the company of waste, therefore reducing cycle time

and leading to improved customer service. He also believes that the most benefit has been in employee empowerment and involvement, and that through the program the associates have become the problem solvers in the business. They have implemented task teams and use a "manage by participation" approach with their employees. In addition, their quality management system has given their production employees a thorough understanding of the business end of the printing process. Berardino does say, however, that there is difficulty in keeping the employees excited and focused on the continuous improvement processes.

Both respondents had heard of Total Quality Management, and Berardino defined it in terms of understanding customer needs, rewarding associates and returning equity to the stockholders. They both believed to be using the Organizational Model approach. Berardino believed that the company was in fact using TQM, while the Production Supervisor saw a possibility that they were doing so. They both believed that implementing TQM would be beneficial to their company.

Chapter 5
Conclusions

The purpose of this research was to determine the prevalence and effectiveness of the core principles of Total Quality Management systems within the printing industry. The objectives were to determine if TQM principles are currently being used in the printing industry, which ones are primarily being implemented, and to determine if the implementation of TQM principles were or were not proving beneficial to companies, and the reasons for this. The in-depth survey used for data collection yielded several thought-provoking results, as well as raised some questions that has provided a means for further study on the topic of Total Quality Management.

From the research, data collection, and data analysis, it can be seen that the core principles of Total Quality Management are almost always emphasized, in some way, within printing companies. The companies surveyed understood that 1) Customer Focus, 2) Employee Involvement, and 3) Continuous Improvement are indispensable concepts to be implemented in a quality improvement process. An interesting observation taken from this research is the clear fact that the vast majority of employees of printing companies has heard of Total Quality Management – but often do not actually have a clear understanding of what Total Quality Management is. While realizing that TQM can have a wide range of definitions and applications, as discussed in Chapter 2, the self-written definitions asked for in the survey generated a very wide range of results that often could not realistically be designated as TQM. Many given definitions often encompassed the

concepts of other quality management systems, particularly Lean and Six Sigma. While the concepts of Total Quality Management, Lean, and Six Sigma can often overlap, many respondents confused the statistical process control and cost reduction aspects of Lean and Six Sigma with the core principles of TQM.

Similarly, many printing companies do not seem to realize whether or not they are actually using Total Quality Management in their company. Many companies that clearly emphasized the core principles of TQM did not see themselves as using TQM, while other companies that showed less emphasis of the core principles did regard themselves as using the process. While this was the case, it was seen that the majority of the companies surveyed did in fact use the core TQM principles, at least partially, as the core of their quality management process. Regardless of whether or not they actually knew what Total Quality Management was defined as, most of these companies were indeed using TQM and implementing it as a fundamental part of their quality strategy.

Another deduction drawn from this study, particularly through the case studies, is the tendency for more successful companies (profit wise) to show extreme emphasis of TQM principles. More prominently, these companies seemed to have a clear understanding of their quality management system from employee to employee – in other words, the employees from the larger and more profitable companies surveyed seemed to have very similar responses to one another. While the observation of this concept was limited due to only 3 companies yielding more than one participant, it was interesting to see the similarities and the differences in the given responses from coworkers.

Some questions arise from these results that may serve as a solid foundation for further study in this area. The primary application for additional research would be to determine whether or not the thorough knowledge of Total Quality Management and its parameters has an influence on the effectiveness of using TQM principles – does it matter whether not the companies *know* they are using TQM? Or is it enough that they understand that the core principles are important for implementation? While it may prove beneficial for the companies using the core TQM principles to dig even deeper into TQM to take advantage of its full potential, it may be that companies can be just as successful while using the core principles without ever actually using the term "Total Quality Management". A further look into this question could address the value of TQM as a whole, as opposed to the value of the core principles individually.

It would also prove beneficial to look more into the financial effects on TQM implementation. This could include conducting statistical research on profitability, cost reduction, etc. and making explicit comparisons in relation to the use of TQM concepts. The main purpose of this would be to observe the direct effects that TQM is making on the company, rather than simply accepting the respondents' own subjective reports of improvement by their own merits. This would expand the credibility of the research, and provide more accuracy about the effects of Total Quality Management.

The unmistakable presence and benefits from the use of Total Quality Management and it's core principles has been made clear through the research and surveys conducted in this study. When incorporated into a company's rooted values

and actions, and clearly communicated throughout the organization, it is seen to be a large factor in the success of that company. While the specific term "Total Quality Management" may no longer be a buzzword in the printing industry, its premise is just as important today as it was in the age of Deming and Juran's quality management efforts – and provides the opportunity to be used to it's highest capability as a powerful tool for success.

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Appendices

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Appendix B: Email to Contacts

April 27, 2013
Survey Link:
http://www.surveygizmo.com/s3/1237864/The-Effectiveness-of-Total-Quality-Management-Principles-in-the-Printing-Industry

Hello!

My name is Paige Cornelison, and I am a Graphic Communication student at California Polytechnic State University, San Luis Obispo.

You are receiving this message either because I know you personally, I was referred to you by one of my professors, or you attended the Continuous Improvement Conference in Indianapolis earlier this month.

I am currently working on my Senior Project, **"The Effectiveness of Total Quality Management Principles in the Printing Industry"**. I am using a survey for a method of research, and I would like you to participate!

The objectives of this study are to determine:
1) The prevalence of Total Quality Management (TQM) in the printing industry
2) Which TQM principles are being used
3) The effectiveness of these TQM principles when implemented in the printing industry.

I am encouraging **all employees of printing companies** (companies whose primary service/generator of income is a printing operation) to participate in this survey.

I would thoroughly appreciate it if you could **forward this email** to anyone you know that would fit this criteria!

The data and responses collected from this research will be used for educational purposes only. Your identity will remain anonymous. Your answers can be as vague or specific as you would like. There are 30 questions, consisting of multiple choice, checkbox, and fill in the blank/essay responses. You can save your progress and come back to the survey at any time. None of the questions are required, but the more information you can give, the better!

I am also interested in doing in-person or phone interviews that would consist of very similar questions. If you would prefer to do this survey one of these ways, please contact me at my email address below.

I would like to have all responses in by **Saturday, May 11th.**

Thank you! Please feel free to contact me with any questions or concerns!

Paige Cornelison
pcorneli@calpoly.edu

[Note: Contacts were sent a reminder email the following week containing the same message.]

Appendix C: Survey Questionnaire

[Note: Lines indicate page breaks in the online survey.]

Total Quality Management in the Printing Industry

Intro letter
This survey is for use in my Senior Project, "The Effectiveness of Total Quality Management Principles in the Printing Industry".

The objectives of this study are to determine:
1) The prevalence of Total Quality Management (TQM) in the printing industry
2) Which TQM principles are being used
3) The effectiveness of these TQM principles when implemented in the printing industry.

I am encouraging all **employees of printing companies** (companies whose primary service/generator of income is a printing operation) to participate in this survey.

The data and responses collected from this research will be used for educational purposes only. **Your identity and responses will remain anonymous**. Your answers can be as vague or specific as you would like.

There are 30 questions, consisting of multiple choice, checkbox, and fill in the blank/essay responses. **You can save your progress and come back to the survey at any time.** This option is located at the top of the survey page. None of the questions are required. You can answer any questions you wish, and skip any that do not apply (but the more information you can give, the better!)

I would like to have all responses completed by **Saturday, May 11th.**

I appreciate your time and effort to support my Senior Project!

Thank you,

Paige Cornelison
Graphic Communication Student
Cal Poly San Luis Obispo

Demographics

1) What is your age?
( ) 18-24

( ) 25-34
( ) 35-44
( ) 45-54
( ) 55-64
( ) 65-74
( ) 75+

2) What is your gender?
( ) Male
( ) Female

Company Information

3) What is your company's name?
_____

4) What is the job title for your current position?
_____

5) What is your position type? (Check all that apply)
[ ] Management
[ ] Operations
[ ] Prepress
[ ] Customer Services
[ ] Human Resources
[ ] Research and Development
[ ] Production
[ ] Marketing
[ ] Sales
[ ] Finance/Estimating
[ ] Purchasing
[ ] Quality Control
[ ] Bindery/Finishing
[ ] Technician
[ ] Press Operator
[ ] Other (please specify):

Company Information

6) How many years have you been at your current company?
( ) Less than one year
( ) 1-5
( ) 6-10

( ) 11-15
( ) 16-20
( ) 20+

7) How many years have you held your current position?
( ) Less than one year
( ) 1-5
( ) 6-10
( ) 11-15
( ) 16-20
( ) 21+

8) How many years have you worked in the printing industry?
( ) Less than one year
( ) 1-5
( ) 6-10
( ) 11-15
( ) 16-20
( ) 21+

Company Information

9) When was your current company founded?
( ) 1950 or earlier
( ) 1951-1960
( ) 1961-1970
( ) 1971-1980
( ) 1981-1990
( ) 1990-2000
( ) 2000-2010
( ) 2010-present
( ) Name the specific year:: _____

10) Please provide a brief history of your company:

Company Information

11) Which of the following best describes your company type?
[ ] Quick Print/Retail
[ ] Commercial Printing
[ ] Other (please specify):

12) Which of the following does your company offer? (Check all that apply)

[ ] Offset printing
[ ] Digital printing (Inkjet/Electrophotography)
[ ] Flexography
[ ] Gravure
[ ] Letterpress
[ ] Engraving
[ ] Thermography
[ ] Reprographics
[ ] Specialty printing (screen, pad, etc.)
[ ] Marketing services
[ ] Variable Data/Direct Mail
[ ] Website Development
[ ] Graphic Design
[ ] Web-to-print

13) Other products/services:

Quality Management Systems

14) Does your company have a Quality Management System?

( ) Yes
( ) No
( ) I don't know

15) If no, why hasn't your company implemented a Quality Management System?

[ ] Not enough time
[ ] Too difficult to implement
[ ] Too expensive
[ ] No reason to do so
[ ] I don't know
[ ] Other (please specify):

16) If yes, has your company implemented any of the following Quality Management Systems?

[ ] LEAN
[ ] Six Sigma
[ ] Total Quality Management
[ ] ISO series
[ ] Malcolm Baldrige National Quality Award
[ ] The Deming Prize
[ ] The European Quality Award
[ ] Statistical Process Control
[ ] Other (please specify):

17) If yes, is your company *currently* using this Quality Management System?
( ) Yes
( ) No
( ) I don't know

18) How long has your company used/been using this system?
( ) 1-5 years
( ) 6-10 years
( ) 11-15 years
( ) 16-20 years
( ) 21+ years

Quality Management Systems
19) What are the main objectives of your company's Quality Management System? (Check all that apply)
[ ] Reduce defects
[ ] Improve customer service
[ ] Continuous improvement
[ ] Improve employee involvement
[ ] Improve communication within the company
[ ] Other (please specify):

20) Please provide a more detailed description of your company's Quality Management System:

21) In your opinion, in what ways is this Quality Management System effective?

22) In your opinion, in what ways is this Quality Management System flawed?

Total Quality Management
23) Have you heard of Total Quality Management?
( ) Yes
( ) No
( ) Sounds familiar

24) If yes, how would you describe it?

Total Quality Management
Total Quality Management (TQM) is a concept that describes an all-encompassing Quality Management System where an entire company is committed to the overall improvement of that company. Although there are

several definitions and versions of implementation, my research seems to point TQM to these three main principles:

- **Employee Involvement**
- **Customer Focus**
- **Continuous Improvement**

25) In what ways does your company focus on any of these three TQM principles? (Specific examples are encouraged!)

Total Quality Management

The *Certified Manager of Quality/Organizational Excellence Handbook* (Westcott 2005, p. 306-307) from the American Society for Quality identifies 5 different possible strategies for implementing a Total Quality Management system. They are as follows:

The TQM Element approach.

This approach includes key business processes of the particular business and uses the main tools of TQM to stimulate improvements. This widely includes putting TQM elements into practice as they are learned more extensively throughout the process.

The Guru approach.

This self-explained approach uses one or more methods of a known quality philosopher (W. Edwards Deming, Aramand Feigenbaum, Joseph M. Juran, Philip B. Crosby) to determine where the business/organization has room for improvement, and directly parallels the solutions to that of the chosen "guru".

The Organization Model approach.

Companies choose another a successful TQM-based company on which to model their own quality improvement plan. They combine the model's ideas with their own in order to better apply it to their specific needs.

The Japanese Total Quality approach.

This approach is specifically modeled off of the Deming Prize. Companies using this approach "develop a long-range master plan for in-house use" and often use it to actually compete for the Deming Prize.

The Award Criteria approach.

This approach is a general system that chooses any of the quality award criteria – Malcolm Baldrige, Deming Prize, European Quality Award, or otherwise – in order to implement a total quality system.

26) Which approach(es) best describes your company's Quality Management System?

[ ] The TQM Element approach

[ ] The Guru approach
[ ] The Organizational Model approach
[ ] The Japanese Total Quality approach
[ ] The Award Criteria approach

27) In what way(s) does your company implement any of these approaches?

Conclusion

28) After learning this information, would you consider your company to be using Total Quality Management?

( ) Yes
( ) No
( ) Maybe

29) If no, do you think implementing a Total Quality Management system would be beneficial to your company?

( ) Yes
( ) No
( ) I don't know

30) Any final thoughts/comments?