This internship report discusses my 14-week internship as the technical writing intern with the Central Ohio Transit Authority (COTA) in Columbus, OH, completed August 2009 through December 2009. My main responsibility during the internship was to create documentation for the Ellipse Optimization Project (EOP). The report has four chapters that discuss the organizational structure and culture at COTA, the documentation I created for the EOP, and my reflections on employment both during and after the internship period. The first chapter provides an overview of COTA, its organizational structure and culture, and my role as an intern. The second chapter discusses the various deliverables I worked on during my internship. The third chapter discusses a document on which I spent the majority of my time. Finally, the fourth chapter is a reflection on organizational changes at COTA that influenced my documentation process.
A TECHNICAL COMMUNICATION INTERNSHIP
WITH THE CENTRAL OHIO TRANSIT AUTHORITY (COTA) –
THE ELLIPSE OPTIMIZATION PROJECT

An Internship Report

Submitted to the
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in partial fulfillment of
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by

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Dedication

I want to dedicate this work to my first love, my mother, Christine Valentine Denayer, who instilled in me the confidence and courage to never give up. Mom, you have supported me and loved me through it all. Although we are thousands of miles apart, our bond is unbreakable.

Your best was always the best. I love you.
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I also want to thank my internship committee members, Michele Simmons and Gabriele Bechtel, for their feedback and support.

To Courtney McCrimmon: Before I took your Creative Nonfiction class at Pitt, I was adrift. Thank you for introducing me to the technical writing profession. Without you, my career path would have been far different.

To my husband, Anthony Judkins: Thank you for making everything possible.
Chapter 1 – Introduction to the Central Ohio Transit Authority

Between August and December 2009, I completed a professional internship to fulfill one of the requirements of the Master of Technical and Scientific Communication (MTSC) program at Miami University. The MTSC requirement for the internship is 14 weeks or 560 hours. During the period in which I did my internship, I consistently worked a minimum of 30 hours a week. Using this parameter, my official internship period was August 3, 2009 to December 8, 2009. However, I continued working at the Central Ohio Transit Authority (COTA) as an intern beyond this period.

During the internship, I was employed as a technical writing intern at COTA in Columbus, Ohio. In this chapter, I introduce the company, its organizational structure and culture, and my role as a technical writing intern.

About COTA

COTA provides transportation services throughout Franklin County, including parts of Delaware, Fairfield, Licking, and Union Counties. The coverage area remains the same today as it was during my internship. A map showing the location of these counties is shown on the next page.
Figure 1: Map of COTA coverage in four counties excluding Union County. Blue lines are the 19 local routes, green lines are the 8 crosstown routes, and red lines are the 38 express routes.
COTA, with a vision to be the region’s transportation leader, has two types of bus service: fixed-route and paratransit. At the time of my internship, fixed-route service consisted of 19 local bus routes, 8 crosstown routes, and 38 express lines. As it does today, local routes run north and south, crosstown routes run east to west, and express routes operate out of Park and Rides during morning and evening commutes. Park and Rides are locations where commuters can park their cars free of charge and ride an express bus downtown for a slightly increased price.

COTA also provides a shared-ride, paratransit service called Mainstream. Mainstream is for people who are unable to use fixed-route service. The paratransit fleet is about one-fifth the size of the fixed-route fleet. Potential customers complete an eligibility process which assesses their mobility needs. If they are eligible for Mainstream, customers can travel anywhere within the COTA service area if they schedule trips in advance.

**Organizational Structure and Work Environment**

It’s important to note that the organizational structure at COTA has changed since 2009. Some positions have been phased out and others have been added. I will point out when I am referring to the past or current organizational structure.

In 2009, COTA had 782 employees in the following areas: 102 administrative employees and 680 union employees. The union employees were comprised of 531 bus drivers, 116 vehicle maintenance technicians who repaired and maintained the buses, and about 33 other employees who performed various jobs, such as repairing fare boxes, maintaining all COTA facilities, and working in the customer service center.

A chart showing the organization of the 102 administrative employees and the departments where the 680 union employees reported is shown on the next page.
Figure 2: COTA’s organizational structure at the time of my internship. The first tier under the President/CEO, in bold, represents divisions. The second tier is departments and also shows where union employees report in green. My project manager and I worked in the Finance Division.

I was hired to create documentation for the Ellipse Optimization Project (EOP), a project created to upgrade COTA’s current 5.2.3.8 version of Ellipse. Ellipse is used at COTA across the entire organization, especially by the departments represented in the EOP team. The EOP team consisted of ten COTA employees, not including me, from various departments throughout COTA who represented a functional area affected by the upgrade. The departments were Vehicle Maintenance, Stores, Facilities, Accounting & Payroll, Supply Management, and IT (see Figure 3). For example, my project manager, Carl, and I worked in the Finance Division, which mostly consisted of accountants and analysts. Carl was also hired on a contract for the project’s duration while the other nine employees were full-time.
The team was supported by two companies throughout the project, Mincom and AddOns. Ellipse was an enterprise software originally created by Mincom (shorthand for mining company) to support best practices in asset-heavy industries such as mining, utilities, and transportation. AddOns was a consulting company based in Littleton, CO that assisted COTA with the project. The company developed the LinkOne plug-in during the EOP that would allow Vehicle Maintenance employees to order parts stocked in inventory with a unique interface.

The purpose of the upgrade was to reduce costs, improve efficiency, and increase productivity by making changes to the system. These changes were intended to support initiatives to improve business processes such as managing work orders that repaired buses with the COTA fleet, reduce waste in the department that stores COTA inventory, and help all employees understand how business processes in one department affect another. In addition to full-time workers’ normal duties, they provided insight into how the upgrade would affect the business processes in their departments, and they assisted me as I developed the documentation for all the end users. The end users for my documentation were mostly the union employees who worked in Vehicle Maintenance—the technicians who repaired and maintained the buses.

The project started in April 2008 and ended March 2010. As stated earlier, I began in August 2009. The entire project lasted 718 days. My participation lasted 235 days or 33% of the project’s duration.

The chart illustrating the departments that participated in the EOP team is shown on the next page.
While a few EOP team members worked in close contact on a daily basis with union staff (who were also end users of the upgrade), a separation also existed between the team and the end users. As an example, the primary meeting place and the room where I spent 90% of my day was located in a small room at the back of a building that was separated by a significant distance from the rest of the admin and union employees. In addition to the physical separation from administrative employees, the EOP team members were also separated from members of the union, which is understandable considering they were either driving or repairing buses. It was not reasonable to expect them to walk the halls and mingle with admin. However, being separated from my end users and missing the typical water cooler banter presented some challenges that I discuss in more detail in Chapter 4.
Office Life as the Lone Technical Writer

When I began my internship in 2009, I was the lone technical writer at COTA. Additionally, no single department owned internal communication. Even five years later (when I am now working as a full-time employee), I am still the lone technical writer. In addition, it is still the case—as it was during my internship—that no single department owns internal communication. Several employees created documentation, but did so in an unofficial capacity. Most of the current documentation I studied was quick guides typed in PowerPoint, primarily because the people who created the documentation had no professional training and had other job duties. In contrast, Corporate Communications was responsible for all external communications, including marketing to the public. For most large-scale projects like Ellipse, the company relied on consultants and out-of-the-box documentation included in the upgrade. For the EOP, Carl pushed for tailor-made documentation, and that decision led to the search for a technical writing intern, and I was hired.

Our office set-up for the Ellipse project was unique. COTA had a large fleet of diesel buses housed in a garage attached to the main office building. All employees call this location McKinley. The room we worked in (which Carl called the War Room) was directly above the garage, meaning it was in close proximity to the diesel fumes and machinery noise that comes with maintaining a fleet of buses. Only three of the EOP team members used the room as their full-time office: Carl, Dan, our Quality Assurance Manager, and I. While Carl was my official boss, Dan also provided a significant amount of feedback and guidance. Years later, he was instrumental in advocating that my job be added to COTA’s roster. In such close proximity to two senior employees, I was in the unique position of being able to solicit feedback any time I wanted to. In an unofficial capacity, both Carl and Dan mentored me as I participated in my first full-scale project.

I believe I was (and continue to be) lucky to be able to blend work styles so seamlessly at my first full-time job in technical writing. Even today, my work style is first and foremost independent. I work best by being given a task and deadline and then figuring out how
to finish it. Along the way, I ask a lot of questions. In this situation, because no walls separated us, I was able to ask Carl and Dan questions throughout the day. There was no need to schedule a meeting or even walk away from my desk. To an inexperienced professional as I was, this set-up was ideal.

Even though I was an intern, Carl gave me the freedom to make a lot of decisions about the documentation that were accepted all the way to production. Neither Dan nor Carl micromanaged me or treated me “like an intern.” It’s only with the hindsight of being a full-time technical writer with several years of experience that I realize how valuable my situation was.

For example, when documenting a specific program in Ellipse, I would meet with the subject-matter expert (SME), Jim, before playing around in the test environment. After the tutorial on how the process worked, I would go back to the War Room and review the steps with Carl. We would walk through possible scenarios to anticipate an end user’s questions. Further down the line when a draft was ready for review, either Dan or Carl would use their expertise to assess if other departments needed to be involved or if more SME interviews were necessary. The turnaround for all these individual steps was very fast because we worked in the same room and had an easygoing, natural working environment where feedback was offered and accepted freely.

**Organizational Culture: Executive Cultural Assessment Report**

In May 2008, Sequent, an HR-consulting firm based in Dublin, OH, was hired to spend several days on-site interviewing employees to measure how employees felt about how all COTA employees interacted and communicated with each other. Even though the results had been published more than a year before I started working, the cultural assessment was clearly fresh in people’s minds. For the assessment, Sequent interviewed 33 of the 782 employees from different departments, including members of the senior leadership team to assess COTA’s cultural vitality. Sequent defines cultural vitality as “the willingness and ability of employees to meet competing stakeholder demands”
The senior leadership team hoped to use the results of this study to improve communication and productivity across the entire organization. And although it has taken some time, the results have been used for training initiatives I will discuss later in this report.

The results of Sequent’s interviews were compelling, as they continue to be today. Of all the notable behaviors participants listed, 52.75% were viewed as negative influencers on the culture. 42.25% of the participants believed the health of COTA’s organizational culture was losing ground. Further, the largest areas of concern identified were silo mentalities, turf issues, and low trust, each being mentioned at least once by more than 75% of participants.

While the results of this study are not always flattering, they help to provide a deeper understanding of several of the shortcomings for the Ellipse Optimization Project, the project of my internship, and of the resulting changes in the company that affected my documentation process. I will discuss these topics in more detail in Chapter 4.

For the remainder of this internship report, I will provide an overview of my major internship duties, discuss the details of the Ellipse Optimization Project (EOP) and discuss the relevance of organizational culture for developing and implementing technical documentation at COTA.
Chapter 2 – EOP Documentation

My official 14-week internship period was August 3, 2009 to December 8, 2009. However, my role as the technical writing intern for the Ellipse Optimization Project (EOP) extended beyond this period. Some of the documentation deliverables for the EOP were not completed before December 8th. All documentation discussed in this section was a part of the EOP. Full functionality for the project was pushed to all end users on February 2010 (the go-live date) and the project’s completion was formalized with a presentation to COTA’s leadership team on February 16, 2010.

In addition to the projects described in more detail in this section, I also completed less time intensive tasks: proofreading non-Ellipse related documents from other departments, designing a company flyer for a charity event and attending meetings. As stated in Chapter 1, COTA did not employ any other editors or writers and had one graphic designer on staff. The room I worked in was also very isolated, at the end of a long hallway of the main office building. My priority was to mingle with my coworkers on the main office floor so people knew who I was. When requests for my assistance started rolling in, I accepted them with enthusiasm, knowing these smaller projects would promote my workplace brand and lend credibility to my work on Ellipse.

I also spent the first two weeks reading documentation on Ellipse, the history of COTA, the Sequent study and refreshing my skills with InDesign, the software program I used to create the majority of the deliverables.

Figure 4 on the next page shows the weeks when I worked on a deliverable during my internship. The weeks represent when I completed tasks related to the document. Figure 5 on page 19 shows the time devoted to each project as a percentage and, for all deliverables listed, represents the total amount of work required in comparison to the others.
The seven major deliverables I worked on during my internship hours are discussed on the following pages in the order in which I began them.

**Deliverables Started Within the Internship Period:**

- Creating the Supervisor’s Guide
- Creating training materials
- Publishing documentation on COTA’s intranet
- Creating a quick reference guide
- Participating in user acceptance testing
- Writing the HTML for the LinkOne interface
- Creating a PowerPoint presentation

**Figure 4:** Timeline representing when I worked on deliverables during my internship.

**Creating the Supervisor’s Guide**

Creating the Supervisor’s Guide was the most time intensive of all seven projects. I worked on the guide throughout my entire internship and devoted 40% of my time to tasks related to the project. While the details of how I created this guide will be discussed in Chapter 3, I provide an overview below.
The Supervisor’s Guide was the foundation for several other documents – the quick reference guide and the majority of the training material. If a new employee started working in Vehicle Maintenance, the Supervisor’s Guide was intended to serve as his or her complete guide for understanding how to complete critical work functions in Ellipse such as creating a work order and ordering parts to repair buses. Organized by six separate chapters, the guide explained Ellipse programs, LinkOne and how to produce reports using Ellipse.

I spent my time on the following activities for the Supervisor’s Guide:

- Reading literature on Ellipse produced by EOP team members and by the vendor assisting with the project
- Learning how to use Ellipse programs from a SME
- Practicing what I learned in the Ellipse test environment
- Researching the internet, books and magazines for model documents to inspire the creation of the template for the guide
- Learning and becoming more efficient with InDesign—the software used to create the guide
- Reviewing and revising the guide with my project manager, Dan, and the SME

**Creating Training Materials**

Creating training materials for Ellipse was the project I began the second earliest, starting the second week of my internship and completed during week 13. I spent 20% of my time on this project. All the training materials were screencasts created in a screen capture program called Adobe Captivate which allows a user to record a video of the computer screen and adjust the timing of the video, add text and icon emphasis and also record audio instructions. I began teaching myself how to use the software as soon as I could. The screencasts allowed new Ellipse users to watch videos on the proper steps for using the work order screens and LinkOne. I created eleven separate screencasts, including a screencast with hints and tips for using Ellipse.
Before beginning the recording of the Ellipse screens, I had to spend at least 30% of the time practicing so I didn’t make any mistakes when I was recording. Although Captivate allows users to delete mistakes on-screen by removing frames from the final product, it is time-consuming, and too many deletions cause the video to jump. I also included audio instructions instead of text boxes. I was not excited to record my voice over the training material, but the number of text boxes required would have been distracting and could make the audience feel rushed to read everything. I often had to record the audio with a high-quality microphone at home, the only place without ambient noise. I used Adobe Soundbooth to remove occasional background noise created by the computer’s operating system. The final material was exported to a .swf file and uploaded to the intranet so users could play the videos any time to learn how to use Ellipse.

Because I began this project so early, I often made the mistake of having to redo the screencasts when I discovered, after completing revisions in the Supervisor’s Guide, that the flow of information did not work and needed to be changed. It would have been more efficient to complete the screencasts after the Supervisor’s Guide was final. I also realized that voice-over artists do not have easy jobs. When I recorded a line of instruction and I didn’t like it, I found it very difficult to break the habit of repeating the same mistake over and over again.

See Appendix A for two images of a screencast I created in Captivate.

Publishing Documentation on COTA’s Intranet

I spent 5% of my time publishing documentation to COTA’s intranet during weeks 9 and 10 of my internship. The scope of this project was reduced significantly. At the beginning of my internship, my project manager had envisioned creating a company wiki with interactive elements all employees at COTA could use. However, other deliverables such as the Supervisor’s Guide required more of our time and resources than we had planned. The original scope of creating a wiki was reduced to simply publishing Ellipse documentation to our company intranet.
During my internship period, it was standard practice at COTA for employees to save documents to their own personal drives and to save information on the W drive—a repository on COTA’s server. However, to ensure everyone had the most up-to-date version of all documentation and to prevent any unauthorized changes to files, the EOP team started sending hyperlinks for all documents published to the intranet.

COTA’s Applications Project Manager from the IT department trained me on how to update the intranet page with the most current versions of Ellipse documentation and from then on I took control of the page. To update the intranet, I added a row to an Excel document with the URL for each document’s location. The intranet accessed the single Excel document with the shortcuts so I only had to update a single file to maintain the page.

My project manager and I also discussed redesigning the intranet page, but this task was postponed.

**Creating a Quick Reference Guide**

I spent 15% of my time writing and designing the quick reference guide during weeks 13 through 15. The guide was a shorter version of the Supervisor’s Guide, and the audience was technicians in Vehicle Maintenance—the employees who maintained and repaired COTA’s fleet of buses.

The guide was intended to supplement training and to be used as a refresher for small nuances within Ellipse. For example, one page discusses how to change the quantity of items added to the cart in LinkOne, something a user might have forgotten if he or she hadn’t used this feature in a while. The topics for the guide vary in complexity from a high level view of what screens look like in Ellipse to more detailed tips on how to use the software more efficiently.
A 20-page document would have been cumbersome to use on the shop floor. For this reason, I reduced the size of the quick reference guide to 4.25” x 5.5” and 12 double-sided pages. At this size, it was possible for the document to be placed in the pocket of a technician’s uniform. The quick reference guide was created after the Supervisor’s Guide. I discussed the topics we would cover in the technician’s guide with my project manager. With the more detailed information for the Supervisors already in place, I imported the directions for the selected topics into the template for the technician’s guide using InDesign.

I was also responsible for printing 150 copies of the quick reference guide. For this final step of the project, I traveled to a local printer and reviewed possible binding options while being mindful of the printing budget. The final design was spiral bound and also laminated to protect it from the typical hazards of a repair garage. I was very eager to use the Preflight option for packaging fonts, images and colors, a step I learned in the MTSC program. However, the printer only required me to export the document to PDF, making this extra step unnecessary.

See Appendix B for a page from the quick reference guide.

**Participating in User Acceptance Testing**

I spent the least amount of time participating in user acceptance testing (UAT), 2.5% of my internship; however, activities related to UAT lasted weeks 13 and beyond.

The EOP team spent one day completing user acceptance testing with the testers who were Supervisors in the Vehicle Maintenance department. During UAT, a member of the EOP team presented the seven UAT documents to the Supervisors in a training room next to the office space used by Carl, Dan, and me. UAT documents were associated with the three work order management screens in Ellipse: MSQ620, MSQ140 and MSO62W. UAT documents were also associated with LinkOne. Each UAT document describes a common scenario in Ellipse from start to finish that can vary depending on user input.
For example, throughout the process of adding parts to a work order in LinkOne, users must answer three questions:

1. Are parts for a repair associated with a PM (preventative maintenance)?
2. Are parts for a non-PM repair?
3. Do you need additional parts?

One scenario for LinkOne was for users to answer “No” to all three questions. The users’ ability to complete the steps after answering no to the three questions along with comments asked by the EOP team or the end users was logged on the UAT documents (see Appendix C).

My responsibility for the UAT documents was to review their accuracy before the Supervisors used them to ensure the testing ran smoothly and to create buy-in for the project. To review the documents, I ran through the document and replicated the scenarios in LinkOne and the three screens in Ellipse.

User acceptance testing for the EOP did not involve all end users such as the technicians who also used Ellipse. I believe this decision was made because of the number of people who would need to be tested and the required time to test them. At the time of my internship, COTA employed 12 Supervisors and 116 technicians.

In the small sample we did test, no significant issues were reported to jeopardize our go-live date. All documents were completed and submitted to the vendor assisting with the project. The most common issues reported during UAT were in-depth discussions revisiting the project’s scope and a shifted focus to training instead of testing.
Writing the HTML for the LinkOne Interface

I spent 12.5% of my time designing and writing the HTML code for the LinkOne interface during weeks 14 through 16.

LinkOne was developed by AddOns, a consulting company headquartered in Littleton, CO, that partnered with COTA on the Ellipse upgrade. We chose LinkOne because it would allow technicians to view COTA’s part inventory in real-time to select and view parts for repairs. After technicians opened LinkOne, they could view a Table of Contents that organized the major systems that comprised each bus. Then technicians could view diagrams with the parts labeled, and a sidebar would appear with the part number, description and COTA’s current inventory. Technicians were further able to add parts from as many different categories as necessary and then complete a few simple steps to attach the parts to a work order.

However, before the technicians could benefit from this improved functionality, navigation had to be developed to create a bridge between the homepage and the Table of Contents for the major systems for repair that comprised each bus. The categories were buses, engines, transmissions, HVACs and wheelchair ramps. These categories would allow the technicians to search for the parts depending on the type of repair.

Writing the HTML for LinkOne was straightforward because there was only one layer of navigation. I was merely creating a link between a homepage on a web browser and the LinkOne books, as they were referred to by everyone involved in the project. To accomplish this, I created five separate HTML documents labeled buses.html, engines.html, transmissions.html, HVAC.html and wcramps.html. Each page displayed the top layer of navigation in orange and the current page in red. The design for the buttons for all the HTML files was controlled by a cascading style sheet. My cascading style sheet (CSS), a single document that created consistency in design for multiple HTML files, determined the button size, color and alignment as well as the font type and size for each page.
See Appendix D for a picture of the homepage, a Table of Contents, a diagram with the parts labeled and the HTML navigation I created.

**Creating a PowerPoint Presentation**

The final project, on which I spent 5% of my time, was to create a PowerPoint presentation for COTA’s leadership team during week 16 and beyond. My project manager requested my assistance designing 4 of the 10 slides for the presentation. Even though I did not spend a lot of time on the PowerPoint presentation, I was able to be creative and enjoyed presenting my work in real time to our leadership. At the time I designed the slides, I had achieved some level of success with my other internship projects. Feedback from the EOP team and the rest of the organization was favorable, so I felt confident taking a risk with one of my final projects.

I had relied heavily on Nancy Duarte’s book *slideology* when I was researching how to complete the training for Supervisors, and I revisited the book for this project. I was unable to use her suggestions to their full capacity for the training project. The work required to complete all documentation for the EOP limited the amount of time I could spend on training material. My initial idea was to create interactivity with quizzes. However, I jumped at the chance to execute one of her core messages for the PowerPoint: presentations are not documents (6-7, 144). To execute Duarte’s rule of creating a presentation and not a document, I used brightly colored images and included as little text as possible. While collaborating with my project manager, I attempted to demonstrate that PowerPoint could be effective when words are kept to a minimum. And, while today, I see the slides as still much too reliant on text, I believe they were effective.
The audience for the presentation was COTA’s CEO, Vice Presidents, and Directors. Removing text entirely was not a viable option because I knew, at this level, they would want to see the successes of Ellipse written in a large font. I believed changing the deeply ingrained organizational practice of using text-heavy PowerPoint slides was possible, but beginning this transition while introducing Ellipse was unwise.

The graph below shows the percentage of time spent on each of the seven deliverables.

![Pie chart showing percentage of time spent on EOP deliverables]

**Figure 5:** Percentage of time spent on EOP deliverables.

The third chapter of my report discusses the project on which I spent the majority of my time, the Supervisor's Guide for Ellipse.
Chapter 3 – Supervisor’s Guide for Ellipse

Throughout the period of my internship, and during the months leading up to the completion of the Ellipse Optimization Project, I created over ten deliverables (both online and in print) for a variety of audiences. Of all these different types of deliverables, the Supervisor’s Guide was a foundational document on which I spent the majority of my time. Figure 5, on the previous page, illustrates that I spent 40% of my time on the Supervisor’s Guide. The majority of my expertise with Ellipse and much of what I know today about COTA’s business processes originated from my research on this document.

This chapter provides an overview of the previous documentation created in PowerPoint that my work was replacing. I also summarize the chapters in the Supervisor’s Guide, which I created from scratch. Finally, I provide a detailed explanation of the steps I used to create the guide.

Previous Documentation

Prior to my employment, in October 2008, an employee who was a part of the EOP team produced training documents in Microsoft PowerPoint. Because the PowerPoint slides were created before the upgrade, they did not address the changes to Ellipse, including the implementation of LinkOne. The document consisted of screenshots of the Ellipse interface for each program discussed. Each step for completing the process was written inside a text box along with arrows alerting the user to the appropriate fields and task bar icons (see Appendix E).

The guide I developed included a new document design that covered much of the same material in the PowerPoint slides. The Supervisor’s Guide I created would be a cohesive document with instructions for both the updated processes and the new additions to the business such as LinkOne. The back-end of my documentation would also include job codes and examples of reports the Supervisors would use each day.
New Documentation - Chapters in the Supervisor’s Guide

Ellipse was a system used company-wide. If an employee worked in Finance, he or she would frequently use MSO200, a program that updated supplier information, but these employees would not use MSQ740, a program that supported creating the preventative maintenance schedule for buses. Employees in the Vehicle Maintenance Department also had unique programs in Ellipse for their daily work tasks. The Supervisor’s Guide explained four programs affected by the upgrade along with two chapters dedicated to job codes and Ellipse reports.

Each bullet point below summarizes one of the six chapters I created in the Supervisor’s Guide. The chapters are logically ordered to take a reader from beginning to end of creating a work order, ordering the parts, and then using the reports to manage the work:

• **Chapter 1 - MSQ620**
MSQ620 allows Vehicle Maintenance Supervisors to manage work orders. Both Supervisors and technicians create work orders. A work order would summarize repairs to a bus, and would include the bus number, the badge number of the employee who made the repairs, and the codes for the parts on the bus that were fixed or replaced. Supervisors can search for, edit, cancel, or assign work orders with this program.

• **Chapter 2 - MSO62W**
MSO62W allows Supervisors in Vehicle Maintenance to create work orders for unplanned or unscheduled repairs to buses. COTA is required by the Federal Transit Administration (FTA) to adhere to a planned, preventative maintenance schedule for every bus within its fleet. However, not all repairs can be planned. If a bus breaks down on the road because its water pump needs to be replaced, a Supervisor would need to create a work order with this program when the bus returned to the garage.
• **Chapter 3 – LinkOne**
  LinkOne allows Supervisors (and technicians) to order parts for a work order. After employees add parts to a cart, they complete a checkout process that requires them to link the parts to either a new or existing work order.

• **Chapter 4 - MSQ140**
  MSQ140 is used only by Supervisors to requisition (or obtain) parts stocked in COTA’s inventory for unplanned work orders. Work orders created in MSO62W cannot begin until parts are ordered – either with LinkOne or MSQ140.

• **Chapter 5 – Job Codes**
  All of the previous four programs discussed above consist of drop-down menus and text box fields. Chapter 5 is a section of the Supervisor’s Guide that listed the codes for six fields in Ellipse that provided information about the work performed. The six codes were work order type, maintenance type, component, component modifier, user status and completed codes. Chapter 5 was the most straightforward because it only consisted of definitions of the codes, where they were found within the program, and finally the list of codes.

• **Chapter 6 - Reports**
  The final chapter showed how to create a report called the PM Due Report. It also included an example of the report along with directions for understanding how to interpret the information. The final page showed an example of a work order.

**My Process for Creating the Guide**
The section below describes my approach for creating the Supervisor’s Guide. The steps included identifying work tasks, gathering information, organizing content, designing the template, writing the introduction, soliciting revisions and publishing the final product. Although imperfect, my method represents my very first attempt at creating documentation in my technical writing career.
Identifying Work Tasks
As stated in Chapter 1, I joined the EOP team during the last third of the project’s development, from August 2009 to March 2010. The project and documentation requirements were already pre-determined by my project manager and other EOP team members before I became a COTA employee. Members of the EOP team and AddOns, the vendor assisting COTA with the project, were making improvements to the software that would affect the entire organization. However, the focus of my documentation was the Vehicle Maintenance department.

The first step in creating the Supervisor’s Guide was for me to decide how to organize the document. It seemed straightforward because the chapters of the guide would be the programs in Ellipse: MSQ620, MSO62W, etc. However, creating the guide was more complicated than describing the programs. To be effective, the documentation had to address key job functions the Supervisors would perform every day.

My first objective, then, was to learn each program in Ellipse and explain its function by work task. Therefore, identifying the tasks that would make the guide coherent, relevant and easy to read happened while I learned how to use Ellipse instead of not before. The process of gathering information on how the Supervisors used Ellipse on the shop floor and also including the improvements to Ellipse that affected them was the next step.

Gathering Information
Before beginning to write content, I collected and refined information by using the following methods:

- meeting with a subject-matter expert who used Ellipse to schedule preventative maintenance for Vehicle Maintenance each day,
- reading documentation on Ellipse created by a COTA employee and provided by the vendor, and
- practicing in the Ellipse test environment to become proficient in the system.
Meeting with a SME

One of the first things I did as an intern was sit down with Jim, the Vehicle Maintenance Planner & Scheduler, and watched him run through the steps of using the MSQ620, MSO62W and MSQ140. He explained the process of exporting the PM Due Status Report and the FTA guidelines that defined the report’s requirements. Jim also showed me an example of a work order, also referred to as a job card by VM technicians, and explained how a work order was used each day.

We scheduled our meetings for one to two hours to keep the information manageable. Jim was extremely patient with me considering he had a full-time job in addition to the training he provided me. I asked questions when I did not understand the reason behind any particular step. For example, many of the fields were used later for reporting, and he explained their utility. After our meetings, I would take my notes and compile them in a Word document. As the days added up, this Word document was periodically organized by task.

The only program on which I was self-taught was LinkOne. I learned that application last because it was being developed by AddOns. As discussed in Chapter 2, I also wrote the HTML that created the front-end navigation. It was only after creating this HTML that I tested LinkOne and included the instructions in the Supervisor’s Guide. By this time, however, my research for the rest of the guide enabled me to pick up things pretty quickly.

Reading documentation

Another method I used for gathering information was reading documentation provided by the vendor and referring to the PowerPoint slides developed by another EOP team member. Both types of documentation explained the numerous ways any one particular program in Ellipse could be used. The developer for LinkOne also created a PowerPoint that explained how the systems at COTA supported the application. However, these documents were most effective when I reviewed drafts of my guide. The documents from
the vendor and developer were broad, so I relied more frequently on my subject-matter expert who had specific knowledge on how the Supervisors would use Ellipse at COTA.

**Practicing in the Ellipse test environment**
The last method I used was practicing in the Ellipse test environment. After meeting with Jim and watching him perform the steps in the three programs, I was confident enough to research Ellipse on my own. To test my proficiency, I used the Ellipse test environment. I was given a unique log-in and given the same rights in all three programs as a Supervisor would have. MSQ620 required the largest number of tasks for Supervisors and, therefore, took the longest to learn. MSO62W and MSQ140 were simpler, and I could repeat those steps much faster. Through repetition and asking more questions, I was able to complete all the steps for each identified task.

The next step in creating the Supervisor’s Guide was organizing the content: taking all of my notes and knowledge from the gathering information stage and transforming them into something coherent.

**Organizing the Content**
The way I started to make sense of the information I gathered from different sources is similar to how I’m writing this very report. I put everything in a Word document without worrying about sentence structure or organization. Where appropriate, I wrote notes to myself so I did not forget information, or included reminders to myself to complete more research.

After I had spent close to ten hours meeting with Jim, the SME, I researched vendor documentation, read the PowerPoint slides and practiced in the test environment until I could replicate the tasks without mistakes, I began organizing my pages of notes into something that could teach a beginner how to use the Ellipse programs. I also received feedback from Dan on the accuracy of the introductions I wrote for each program; Carl approved the organization of the document.
It was difficult to focus on organizing the content. I finished this step while beginning to design the template. After spending so many hours staring at grey screens in Ellipse, I began to become a little bored by it. And looking at bright colors in magazines for design inspiration and using InDesign captured my attention much more easily. I had to be disciplined while organizing because I wanted my content to be as close to final before importing everything in the template. Without this step, I worried I would waste time setting up a template that didn’t fit my content, trying to force information in an inappropriate design. Perhaps a screenshot would fit poorly or a line of text would hang by itself on an otherwise blank page. With discipline, I organized and sorted my content until it resembled a rough draft that was complete enough to provide guidance on an appropriate template.

The next section describes the task of creating the Supervisor’s Guide that I enjoyed the most: designing the template.

**Designing the Template**

While mastering the steps of how to use the programs in Ellipse, I began designing the template. I was given artistic license to introduce whatever design I thought was appropriate to my project manager and Dan. This freedom was unique because, at the time of my internship, most documentation had to be on a COTA template that limited what fonts and colors would be used. I was energized by this opportunity to create an engaging design for the updated system. I also had (and continue to have) a passion for learning more about graphic design. During my coursework in the MTSC program, I had success in an Information Design class designing a brochure and a website. The positive feedback I received from those projects validated my developing interest in the subject.

During my first week as an intern, I discovered a website that became an invaluable source of information for me as a lone technical writer. Tom Johnson, a technical writer, maintains a blog called I’d Rather Be Writing. On April 10, 2009, he wrote an article called Quick Reference Guides: Short and Sweet Documentation that I found helpful for
my quick reference guide documentation and for my template design of the Supervisor’s Guide. Tom recommended using magazines as inspiration for design layout. I browsed the Google search results of images on manuals, guides and documents. I also borrowed books from COTA’s graphic designer at the time.

However, it was Issue 16 of GOOD magazine, in an article on how to conserve water, that provided the spark I needed to make progress on the guide’s design. Figure 6 below is an excerpt from the magazine.

Figure 6: Sample page from Issue 16 of GOOD magazine. All original text and images have been removed and substituted with placeholders.
I chose this model over the numerous others I viewed because it displayed visual interest without being so bold that employees at COTA would be distracted by it. The use of color and contrast were the first features of the design that drew me in.

Only one color, blue, is used in addition to black and white and it has a strong effect. The blues are either very bright or tinted to create contrast (see the third column of text on page 27). I didn’t want too much color because the screenshots could be overpowered by it. I could also easily see how to adapt the numbering scheme and headings for my guide and the placement and contrast were perfect. I could immediately visualize where to place COTA’s logo and how to organize tasks by program (1A, 1B, and so on). The space in the box for the headings could also include a brief explanation and purpose of the programs in Ellipse.

Finally, the design is also organized by columns, so space was provided for call-outs, notes, tips, and screenshots both to the left and to the right of the main instructional content.

I also used the design principles of contrast, repetition, proximity and alignment taught in Information Design at Miami to refine the model document and make the template my own. I was vigilant about using the guides provided in InDesign to ensure the alignment was as close to perfect as possible. Alignment is usually only noticeable when an object is out of place. The contrast and repetition of the large, bold headings at the top of the page and of the bright blue Get Started that is present before the numbered instructions began were also conscious design choices that created visual interest. I adhered to the principle of proximity by keeping all call-outs, sidebars and supplementary information outside of the main column of text, which was dedicated to the numbered instructions.

With all these considerations accounted for, there were still a few limitations in my final design choice. The screenshots were not always as large as I would have liked for my
audience. When no sidebar was necessary, the left-hand panel seemed like wasted space. However, even looking at it today I am still pleased with the first impression it gives to a potential reader.

**Writing the Introduction**

The next step, which I completed during the design phase, was writing the introduction to the Supervisor's Guide. The purpose of the introduction was to highlight the changes that were made to Ellipse and to, most importantly, promote why it would make life easier for employees in Vehicle Maintenance. I spent about three hours writing this short introduction. It was necessary to be brief because of the limited space on the page; therefore, I had to be deliberate about each word. The first paragraph briefly discusses what the employees experienced before the upgrade. The second paragraph promotes the improvements to Ellipse as a result of the project. And the final paragraph forecasts what Supervisors can expect to learn in the guide.

The design was influenced again by layouts found in magazines: a bold heading, a large, colorful image and the tag line: “Ellipse has gone through a makeover...” I used the design principle of proximity to join the letters in the heading to the left foot of one of the clay figures.

Refer to page 51, Appendix F, for the introductory page to the Supervisor's Guide.

**Soliciting Revisions**

Sharing a workspace with two senior employees working on the EOP made the revision process more informal than it otherwise may have been. I was able to solicit feedback from Dan and Carl throughout the entire process. Often I would make changes right in InDesign without finalizing a draft.

Most of the revisions were minor and easy to implement, such as making the screenshots larger, where possible. However, the most significant change I made was an addition to the guide: Important Ellipse Terms. I added a table to the end of each
chapter that discussed an Ellipse program. This table included terminology unfamiliar to some users especially if it related to completing the steps in the system itself or the business processes that supported it. I also added a logo to the left-hand corner of each of these pages to advertise the training screencasts that would be available on the intranet. I received the most enthusiastic praise for the template design. Its use of bright colors and large images made it stand out from most documentation produced at COTA.

Dan, Carl, and Jim all approved the document content and layout, allowing me to complete the final step of the process: publishing the document before training began.

**Publishing the Final Product**

At first, Carl and I had planned to send the Supervisor’s Guide to a printer for production. We had envisioned the guide having a cover printed on paper of a heavier stock than the rest of the document. However, with the cost of the quick reference guide I was also designing, we decided to print the document in-house.

The final product was printed in full color, double-sided on regular weight paper. COTA’s Trainer distributed the manuals to the 12 Supervisors. Examples of the guide were also distributed to the senior leadership team during the presentation in February 2010.

Refer to Appendix F for pages from the final version of the Supervisor’s Guide for Ellipse.
Chapter 4 – Reflections on My Internship, My Full-Time Employment, and Organizational Change

My technical writing internship at COTA was my first introduction to creating documentation in a professional setting. This chapter discusses how my method differed from the Anderson problem-solving model I learned in the MTSC program, and then discusses how COTA’s organizational culture affected my documentation decisions at that time. My reflections, finally, show how organizational changes and my status as a hired, full-time technical communicator allowed me to influence the way information is shared and improved throughout the company.

My Method Compared to the Anderson Problem-Solving Model

As an intern, I had to develop my own methods for creating documentation. However, my choices were based on Paul Anderson’s problem-solving model, and since it was a methodology taught in the MTSC program, I followed it when I could. The problem-solving model was created in part to help educators understand activities common to the technical writing profession and to provide an overview of tasks all technical writers should perform (Anderson, 162). When the model was introduced in the MTSC program, it included the five steps that are illustrated below in Figure 7.

![Figure 7: Paul V. Anderson’s problem-solving model.](image)

While I could plan and implement my documentation, the steps of my approach that differed from the Anderson problem-solving model were those that would have required direct contact with the audience. The sections below provide more detail on how my approach differed from three steps of the model: defining the problem, testing the solution, and evaluating the solution.
Defining the problem
Following the Anderson model (and best practice) requires that writers conduct an audience analysis before writing a document. An analysis requires, usually, gathering information from the users of the document--their experience, background knowledge, training, and needs for and interest in what is being written. The physical set-up of our office did not allow for me to easily interact with the audience: the technicians in the Vehicle Maintenance department.

Additionally, my participation in the project began at a point along the timeline where completing an analysis would have been impractical. I started in August 2009, which was the final third of a project that began in April 2008. In August 2009, the team was working with Mincom and AddOns to complete the final steps of the upgrade. The main objective of my project manager, Carl, was to start my education on Ellipse with SMEs so I could become proficient with the software. Additionally, the purpose, scope, and audience for all deliverables and audience needs discussed in Chapter 2 were defined before I began. Bringing a technical writer on board during the last stages of the product to complete documentation, as I was, is an unfortunate habit in this business.

Testing the solution
For the testing and evaluating step of the model, technical writers are urged to conduct usability testing to discover if users find the document to be useful and persuasive. More specifically, during testing, users should find that the tasks are accurate, easy to follow, and complete and that the visual and verbal features of the document are attractive and easy to understand.

One example of usability testing is the user test: a sample of the target audience is asked to use all or a part of the instructions while they are observed against objectives set by the technical writer to see if the users can perform the tasks successfully. Afterwards, the users are asked questions about the success of the physical features of the document that might also affect its usefulness and attractiveness.
The user acceptance testing (UAT) I discussed in Chapter 2 reviewed the functionality of the same Ellipse programs that were the focus of my various deliverables. They did not test the accuracy or usefulness of my documents. UAT assessed if the software functions as it should and identifies problems the vendors who were assisting COTA would be required to fix before the go-live date. The “testing” was not intended to test my documentation. The employees who supervised the technicians participated in the testing and the issues that were discovered did not affect my work. For the most part, the software performed as expected and the documentation was not questioned or responded to by users.

Just as with defining the problem, I was continually removed from my end users during testing the solution. The closest I came to testing was completing revisions of functionality with subject-matter experts. While the technicians were the primary audience of my document, other employees in the company understood how the software should have functioned. It was from this group of people that I was to solicit feedback, primarily Dan (an EOP team member who worked in the War Room with me), Jim (the SME I worked with most often), and Carl (my project manager). It was these people who reviewed my work.

Additionally, a trainer who worked in the Vehicle Maintenance department was tasked with formally training the Supervisors and the technicians. It was during this training session that the technicians would be given copies of the final documents on Ellipse.

**Evaluating the solution**

The final step of the model that differed from my approach was creating an evaluation method to measure the effectiveness of the documentation. The results of this evaluation method would have been shared with appropriate team members, which could have included leadership.
As with the other steps, evaluating the solution would have required me to return to my end users, this time to formally evaluate my documents. I did not participate in formal evaluation of my documentation. However, the feedback I received for both guides and the training material were overwhelmingly positive from employees inside and outside of the EOP team. After the training was completed and the software changes were introduced to the technicians, I did not receive any feedback that would prompt me to change or add to the documents. The VM Trainer also did not require revisions after using my documents to conduct training sessions. Because the deliverables provided instruction on work tasks that were critical to everyday business tasks, I am confident all documentation was thorough and complete.

In these next sections I discuss the cultural assessment results collected by outside consultants and how the changes in the organizational culture at COTA have directly and positively influenced my documentation process.

**Perception of the Culture**

As I mentioned in Chapter 2, the organizational culture was assessed by outside consultants with the goal of improving communication and productivity throughout the organization. The consultant company, Sequent, interviewed employees and the results of their study were shared throughout the company. Of all the responses given, 18.5% were positive drivers of the culture yet 52.75% were negative drivers. Among the negative responses, the following categories were most frequent: silo mentalities (75%), turf issues (77.5%), and low trust (80%). Comments about the top three negative drivers to culture addressed specific concerns such as the separation between administrative and union employees, the territoriality among departments, and the employees’ perception of miscommunication of goals from the top down. Below I explain why these decrease organizational functionality.
In his book *Knowledge Management in Theory and Practice*, Kimiz Dalkir states that workplaces are characterized by four types of organizational culture: communal, mercenary, networked, and fragmented. The figure below shows how the dimensions of solidarity and sociability are used to classify the four types of culture.

<table>
<thead>
<tr>
<th>High Solidarity</th>
<th>Low Solidarity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High Sociability</strong></td>
<td>Communal</td>
</tr>
<tr>
<td><strong>Low Sociability</strong></td>
<td>Mercenary</td>
</tr>
</tbody>
</table>

**Figure 8:** Four types of organizational culture as defined by solidarity and sociability.

The responses collected by Sequent for the cultural assessment provide insight on how to characterize COTA’s organizational culture. The consultants never formally described the culture, but the negative identifiers most frequently introduced in the study—silo mentalities, turf issues, and low trust—correlate to fragmentation, that is low solidarity and low sociability. These two dimensions describe a fragmented organizational culture. Fragmented cultures, according to Dalkir, have employees who prioritize task work and individual relationships over cooperation and commitment to the company.

As Dalkir (2005) states, “One of the fundamental prerequisites of a culture that fosters rather than hinders knowledge management is the notion of trust” (p. 182). It doesn’t take much of a leap to imagine how a lack of trust can create silo mentalities and turf issues where people segregate themselves into like-minded groups. A fragmented (low solidarity/low sociability) culture can present some challenges by hindering the free flow of information that is critical for all work and my work in particular. As a technical writer on the EOP, my most fundamental purpose was to support COTA’s documentation. From a documentation perspective the communal and networked cultures, which are characterized by sociability, will more easily facilitate the flow of information within a business.
The deviations in my document process from the problem-solving model occurred when I did not interact directly with my end users. The culture and physical set-up didn’t lead to a highly sociable environment where I had a lot of contact with real users of my documentation. I understood that I was expected to follow protocol and allow the trainer and the Supervisors to interact with the technicians who were end users of some of my documentation. And while I was never discouraged from interacting with my end users, it was also never discussed. As an intern, it did not seem wise to rock the boat. I was hired to follow my project manager’s instructions and deliver.

A Change in My Position and in the Culture
Leadership would never have completed the assessment of the organizational culture if they didn’t want to use the results to improve the culture. However, change can be slow. Nevertheless, as the company rethought the results of the cultural assessment conducted in 2008, it began to implement several changes. One of the first improvements was to create a Quality Assurance Department. This department would be a part of the Operations Division and help the entire company evaluate its performance and improve business processes.

Based on the documentation’s success and my performance overall, in January 2012, I was hired as a full-time technical communicator in the company. I became part of the newly created Quality Assurance Department. Even though I was part of the Quality Assurance Department, I was responsible for the documentation in the entire Operations Division and could be requested to assist other divisions in the company. Before the QA Department, no single department owned internal communication. The director of QA is Dan, who was one of the EOP team members I worked in close quarters with throughout the project, and Jim, the SME with whom I spent time interviewing and learning how to use Ellipse.

The figure on the next page shows the current structure of the Quality Assurance Department.
The addition of the Quality Assurance Department to the company’s roster was a big move for COTA. When the department was created, the intention was to join employees from different departments in the Operations Division to create a unified effort managed by one Director. However, instead of operating in a bubble, the employees were to maintain and further develop the relationships they had built while working in their former departments. Because they had prior history with most of the employees in the Division, they were more accessible to those employees and better able to support communication because of their knowledge of them in former association. The new department members could assist the organization in discouraging the previous habits of operating in silos and not sharing information. And as a department they could represent multiple opinions and collect input across the organization. According to Gerson in *Technical Communication: Process and Product*, “the silo has become a metaphor for departments and employees that behave as if they have no responsibilities outside their areas. They build bunkers around themselves, failing to collaborate with others. In addition, they act as if no other department’s concerns or opinions are valuable.” (Gerson, p. 9). The negative identifiers discussed in the Sequent study—silo mentalities, turf issues, and low trust—the company decided could be addressed by creating a group of employees that would serve as a bridge by representing opinions from employees in the entire company.
When I started as an intern, I had to develop the knowledge to complete a highly visible project in a very short amount of time. Looking back, I see that I did not have as much time as I thought I did to be trained and learn the business and learn others’ opinions. Most entry-level employees are not required to complete deliverables for a major project in less than six months after their hire dates. I worked on a part-time basis as an intern, and when I was in the office my main focus was Ellipse.

Now, as a result of being hired as a full-time employee I have the mobility, ability, and visibility to do more and I have benefitted greatly from being in the QA Department—and so have my users. I have become a real part of the organization. The change in status has removed some of the barriers I encountered as an intern. First, I know almost all of the people I work with now. During my internship, the physical set-up of the War Room isolated me from most of the administrative staff. And although I did make an effort to introduce myself to people on the same floor, by the end of my internship I still had only met roughly 10% of my coworkers. Now, however, I also understand the business and how certain processes affect multiple departments. Understanding the relationships among the departments that make up COTA enables me to ask the right questions of the right people. Few documentation projects are isolated in a single department. When I interact with my end users today, I am able to ask contextualized questions and gather more valuable information.

More employees at COTA are also allowing us, employees in a different department, to assist with and provide insight about their methods for producing documentation. Soon after the QA Department was formed, our Division’s Vice President supported an initiative to implement a document control process in Operations. The updated process involved a template to create a uniform design, a document numbering scheme to organize the types of documents, and a final revision and review by me. We kicked off the process by conducting a marketing effort to publicize and communicate the value of technical communication to the entire Division. The process now even extends to the Finance Division, which is managed by a separate Vice President, as those employees
appreciate the value of a technical writer. Their willingness to participate in the process and trust our expertise is no coincidence; the EOP was managed by that Division.

Since the end of my internship, I have developed an ease and rapport with most of my coworkers that facilitates the audience analysis, testing, and evaluation necessary to produce quality documents. During my internship I had to explain who I was and what EOP was (it wasn’t fully understood by everyone). However, after I became a full-time employee in the Quality Assurance Department, those introductions were no longer necessary. After working for the company for more than five years, I have demonstrated that I can deliver a solid product. I also do not underestimate the impact of the credibility I gained as an intern creating flyers, editing documents, and assisting with other small tasks. Even if the task only took 60 minutes to complete, having that minor success built trust and developed relationships that now enable me to explain how my efforts can make their life easier.

As the document control process has gained a permanent place in our organization, I have been able to resolve discrepancies to improve communication between departments and improve the very process or policy I’m documenting. Misunderstandings about how processes connect and department needs overlap can occur because it’s common for employees to understand their areas, but overlook how other people and departments are affected. If, for example, I’m creating a document for the Transportation Department, I may have to consult employees in Vehicle Maintenance about a few steps that relate to their area. Vehicle Maintenance may then say the steps do not quite work as efficiently as they could and suggest some improvements. I then build a consensus in both groups to create a solution that works for everyone. Resolving these discrepancies may be emails back and forth, hallway discussions, or even formal meetings but sharing the information and supporting collaboration decreases myopic views of how the company operates.
In 2013, members of COTA’s leadership team also approved a project called the Customer Experience Project to provide internal customer service training to all administrative staff, in part as a response to the results of the Sequent study. Beginning during the second quarter of this year, all administrative employees will complete training that covers communication skills, business etiquette, giving effective feedback, and building trust and developing teams. I was asked by our Director of Training to write the content and develop the document design for the project. One possibility of developing the training could have been to buy the rights to material published by an outside company. COTA also could have hired a consultant to create it. Instead a group of employees who represent all departments in the company was formed. This group met and collaborated for a year and a half to contribute feedback and input that was incorporated within the training material. While this first phase of training provides customer service training for interacting within the organization, external customer service training will also be provided in 2016 to employees who interact with the public.

The content I created for the training documentation was directly influenced by team members’ suggestions for what topics should be stressed to improve communication and trust at COTA. These team members did not provide suggestions based solely on their individual opinions. They were also tasked with conducting surveys at the beginning of the project to solicit free-form responses from all employees. Together the team has edited the documentation at least 15 times. Three pilot groups have completed the eight-hour course to test the documents. I am very eager and excited to see what the rest of the company thinks about the focus and effectiveness of the training.

The transition from intern to full-time employee has allowed me to contribute to changes in the company. When I started in 2009, COTA did not rely on a professional to create documentation. Now, not only have I contributed to a document control scheme and a publishing process before documents are shared company-wide, but I continue to promote my value to the organization. My efforts appear to be effective as I am requested for projects big and small. Even though the position is only five and a
half years old, employees have not reverted to the do-it-yourself methods they employed before. I have created documentation under two very different sets of circumstances and come to appreciate the real import of frequent and sincere interactions with users. I am very proud of my work and the relationships I have built. I am fortunate to become an advocate for company change, witness its benefits and help promote it.
References


Sequent. (May 9, 2008). Executive Cultural Assessment Report. Dublin, OH.
Appendix A - Screencasts
### Appendix B - Quick Reference Guide

#### LinkOne

**Purpose:** Create parts requisitions

1. Select LinkOne icon on web page
2. Select part category on LinkOne - Part Catalog home page
3. Select category on the next table
4. On Table of Contents, select subcategory
5. Select category for part to open Part List table
   - **Note:** Parts are now listed by part number and description with an exploded assembly view showing how parts fit together
6. Double-click on part number to add to Selection List
   - **Note:** Red check means that parts have been added
7. Right click each highlighted part inside Selection List and select View Warehouse Info icon to check stock levels at MCK and FLDS

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## Test Case Description:

**MSQ62W - Create an Unplanned Work Order**

**Resp Person:** EOP Team  
**Completed by:** EOP Team  
**Test Approved by:** Carl Mitsoulis

**Test Purpose:**
The purpose of this UAT is to measure the functionality of MSQ62W as users navigate the screen to create an unplanned work order.

### Test Details

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<th>Scenario</th>
<th>Item</th>
<th>Description</th>
<th>Expected results</th>
<th>Complete</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1</td>
<td>Click on Tools from the top menu</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>2</td>
<td>Select Customization from the drop-down menu</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>3</td>
<td>Select User Table</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>4</td>
<td>Select &quot;MINSPEC&quot; from the table for the Work Group</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>5</td>
<td>Select Attach</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>6</td>
<td>Select Close</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>7</td>
<td>Select &quot;RCEOL: ROADCALL, END OF THE LINE&quot; for the Standard Job</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>8</td>
<td>Hit Select</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>9</td>
<td>Type 2501 for the Reference number</td>
<td>Field accepts user's input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>10</td>
<td>Select any Component Code for the work order</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>11</td>
<td>Hit Select</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>12</td>
<td>Select MINSPEC: MCK - INSPECTION (RUNNING REPAIR) for the Work Group</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>Hit Select</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>14</td>
<td>Type &quot;4006&quot; in the Assign To field</td>
<td>Field accepts user’s input</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>15</td>
<td>Select &quot;2105061: RUNNING REPAIR- MCK&quot; for the Cost Centre/Account code</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>16</td>
<td>Hit Select</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>17</td>
<td>Select Save</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>18</td>
<td>Hit Confirm</td>
<td>User completes item</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Test Results

**Complete Comments**

### Case Description Notes:

1  
2  
3
Appendix D - LinkOne Screenshots

LinkOne homepage

![Link One - Part Catalog](image-url)
Parts Manual

COTA
Chassis Numbers 74822-74833
Coach Numbers 2501-2512
Diagram of a system component with parts labeled
HTML of the navigation I created for two out of the five pages
Appendix E - PowerPoint Documentation

Using a Std Job in a Work Order

- Std Jobs are used as patterns for repetitive work.
- The SJ code is selected during the WO creation process and the SJ will be inlaid when the WO is saved.
- This process helps to shorten the WO entry steps by filling in all the appropriate fields from...
Appendix F - Supervisor’s Guide for Ellipse

SHIFT INTO GEAR

Ellipse has gone through a makeover. Here’s how to maximize its utility.

Everyday work order tasks are being bogged down by the inability to access and manage basic information. Stuck in an outdated, one-size-fits-all model, Vehicle Maintenance technicians and supervisors lose time and resources because of an inefficient system that does not address their specific needs.

Resources need to be distributed more efficiently. Through an improved Ellipse system, technicians are now able to gauge resource availability—buses, fluids, fuel and parts—with increased precision. Parts are requisitioned without drilling through multiple screens with fuzzy requirements. The steps to accomplish common work scenarios are clearly outlined, which eliminates the need for anyone to re-learn established business practices.

This guide simplifies the work day. It explains the new LinkOne plug-in, which helps technicians find the right part with ease. Step-by-step instructions are provided for unplanned work, preventative maintenance and parts requisitions.
3A  LinkOne Introduction

Using the plug-in to add parts to selection list

The LinkOne plug-in is a new, graphical interface that will make requisitioning parts easier and faster. This simplified program catalogues all Vehicle Maintenance inventory and provides real-time status of each stock code’s availability. Part components are separated into categories or books. By selecting the appropriate category, users can find the right part by directly clicking on a diagram of the component.

Get Started

1. Select LinkOne icon on web page
2. Select part category on LinkOne - Part Catalog home page
3. Select category on the next table
4. On Table of Contents, select subcategory
5. Select category for part to open Part List table

Note: Parts are now listed by part number and description with an exploded assembly view showing how parts fit together

6. Double-click on part number to add to Selection List

Note: Red check means that parts have been added

7. Right-click each highlighted part inside Selection List and select View Warehouse Info icon to check stock levels at MCK and FLDS

8. Right-click anywhere inside Selection List and choose Select Requisition Checkout icon

9. Select New Repair Work Order (default) or Existing Repair Work Order

For New Repair Work Order, go to step 10

For an Existing Repair Work Order, go to step 22
## Important Ellipse Terms

### Learning the new lingo for creating requisitions

<table>
<thead>
<tr>
<th>ellipse term</th>
<th>what it means...</th>
<th>keep in mind...</th>
</tr>
</thead>
<tbody>
<tr>
<td>requisition</td>
<td>a request for goods or services</td>
<td>both the LinkOne plug-in and MSQ140 can be used to requisition parts</td>
</tr>
<tr>
<td>normal</td>
<td>type of requisition where materials are pulled from the store room and not ordered from an outside source</td>
<td>default designation of all work orders in Vehicle Maintenance</td>
</tr>
<tr>
<td>work order number</td>
<td>number assigned by Ellipse once work order is confirmed</td>
<td>a unique blanket work order numbed is now required for all durable goods requisitions</td>
</tr>
<tr>
<td>application parts list</td>
<td>list of standard materials used for maintenance scheduled tasks (MSTs)</td>
<td>list is sent to Stores, which then prints the Pick ticket and pulls parts for work order</td>
</tr>
<tr>
<td>requested by</td>
<td>badge number of the employee responsible for the requisition</td>
<td>also helps track total cost of work order</td>
</tr>
<tr>
<td>quantity required</td>
<td>amount of material - whether a stock code item or an APL - required for the work order</td>
<td>number will vary greatly for a stock code item but will usually be one (1) for an APL because it is a group of parts</td>
</tr>
<tr>
<td>cost center</td>
<td>account charged for all work order costs</td>
<td>no longer used in MSQ140</td>
</tr>
<tr>
<td>field release</td>
<td>a requisition that refers to work orders or is for more than one piece of equipment or account code</td>
<td>irrelevant for any work orders in Vehicle Maintenance</td>
</tr>
</tbody>
</table>

![Explore COTA intranet for screen casts on requisitions](image-url)
6. REPORTS | work order (job card)

Vehicle Maintenance Work Order
Sample report

The Work Order (job card) Report details the work order tasks to be completed for each inspection checkpoint to ensure compliance with FTA guidelines. The work order is different depending on MST being performed. The sample work order is shortened to show several work order tasks from the top and the technician inspection sign-off section from the bottom on one complete page.

### VEHICLE MAINTENANCE WORK ORDER JOB CARD

<table>
<thead>
<tr>
<th>WO NO:</th>
<th>00259489</th>
<th>SCHEDULED DATE:</th>
<th>7/6/09</th>
<th>SCHEDULED MILEAGE:</th>
<th>0</th>
</tr>
</thead>
<tbody>
<tr>
<td>EQUIP NO:</td>
<td>2601</td>
<td>WO TYPE:</td>
<td>PM</td>
<td>CURRENT MILEAGE:</td>
<td>202,286.7</td>
</tr>
</tbody>
</table>

**WORK ORDER DESCRIPTION:** BUS PM SERVICING & INSPECTION

**TASK:** 001 STEAM ENGINE COMPARTMENT & RADIATOR

**JOB INSTRUCTIONS:**
- 00001 PRE-TREAT SURFACES WITH APPROPRIATE CLEANER
- 00002 ENGINE COMPARTMENT - TRY TO STAY AWAY FROM ELECTRONICS
- 00003 RADITOR/INSIDE TO OUTSIDE FIRST/NOZZLE 1/2" FROM SURFACE

**TASK:** 002 6,000 PM SERVICE & INSPECTION CHECKLIST

**JOB INSTRUCTIONS:**
- 00001 HEADING
- 00002 TEST DRIVE: NOTE ANYTHING OUT OF THE ORDINARY (BRAKE TESTER)
- 00003 RADIO (MOUNT/HANDSET/SECURE/MIC CONDITION); CALL RADIO ROOM

**TECHNICIAN INSTRUCTION SIGN-OFF**

Assignment directions: Follow instructions as indicated. Note action taken as required. Record materials used.

Use blank spaces on form for comments. Record WO number on any receipts for materials purchased.

Additional repairs needed: Repair approved, repair completed, time to complete, code

Repair WO number, requisition number, staple limus paper here

Date completed, completed by, time to complete, additional repairs required?

Additional comments, for repairs see last page.

**TECHNICIAN REPAIR SIGN-OFF**

Date completed, completed by, comments

**SUPERVISOR**

Final sign-off and approval

Supervisor, date closed, additional assigned WO's