Project Interim Report: Improving Print Shop Job Management

Introduction

This project focuses on Accurate Litho and Printing, a family owned and operated specialty print shop. The shop produces a variety of printed materials, specializing in high quality, out of the ordinary projects. Common jobs include multi-piece invitations with intricate laser-die cut sleeves, promotional brochures, and hand-sewn booklets. Regular clients include marketing firms, party planners, and Universities. Accurate Litho currently tracks job orders using outdated systems, more specifically, paper books and physical job tickets. Once the customer places an order, a job ticket is generated and attached to the outside of a manila folder, in which all relevant paperwork is kept, including samples of the finished job. While we have a filing system in place, active job tickets tend to wonder off depending on who was the last person to need it. We do need to keep physical files for archiving sample pieces, but keeping all the information on an active job is inefficient. Misplaced tickets result in wasted time and increased frustration, which hurts product quality. We need an updated system for tracking and archiving jobs so that active job information is more easily accessible.

In the printing industry, Management Information Systems have taken the place of antiquated job tracking systems. These modular systems are flexible, allowing businesses to pick and chose what features they want in their system, offering support for every aspect of job production. While I know what the new system will look like, I do not know why we have not yet embraced this new technology. I am investigating how Accurate Litho can transition to a newer, more efficient job tracking system.

Methodology and Results

Improvement Cycle #1: Understanding Your Process

I used this improvement cycle to better understand the production process. The SIPOC diagram and flowchart illustrate how many different steps, most of which are in different production centers, are necessary for job completion. With each shift between production centers, there is a chance for a misplaced ticket. Each misplaced ticket costs time and risks the chance of miscommunication. I collected this information from my own experience working in the shop. I have worked in the shop for over ten years and thus have a very good understanding of the workflow. While I was aware that our outdated system would affect different levels of production, this improvement cycle shows just how many times a job typically changes hands during production. During this cycle, I tried to keep my description of the process as concise as possible, but I found myself unable to condense the workflow to fewer than nine steps. I learned that I had not fully comprehended how complicated our process is. Moving forward, I would like to investigate further the complexity of this workflow. If I were to do this cycle again, I would have gotten input from fellow employees so that I could be sure I did not leave anything out.

Improvement Cycle #2: Measuring Your Process Performance

I used a Pareto chart to explore more specifically which steps in our workflow most frequently reference the job ticket. I did this to show which workflow process's performance is most hurt by the current system. The more a workflow step refers to the job ticket, the more it is affected by the inefficient system and the more likely it is that an error will occur. These values are estimated averages as real time data is not attainable. However, the estimations are accurate (IE, each job

ticket is referred to only once during the billing workflow, but is usually checked 2-3 times during production). This showed that the current job ticket process most effects the production stage of workflow's performance. This is concerning as the production is the most critical part of the workflow. Mistakes made during production cost materials and burden our most expensive centers. Moreover, quality is critical to our business; subpar is not acceptable, and a job with errors will undoubtedly need to be reproduced. This cycle also illustrated how incredibly reliant our workflow is on the job ticket. I do not know the exact amount of time lost for each misplaced ticket; this illustrates the reach of the process inefficiency to each workflow point. If I could do this cycle again, I would ideally have a measurement of lost time and exact values. However, the process of collecting data would be both time consuming and likely inaccurate due to the natural frustration of tracking down a ticket.

Improvement Cycle #3: Identifying the Cause of Your Problem

For this improvement cycle, I chose to focus on why the outdated system is still in use to give me a better understanding of what kind of barriers would be present when updating the system. I brainstormed possible causes and organized them in an Affinity Diagram. To help determine the causes of the greatest impact, I used an interrelationship diagram. I chose these tools because they help prioritize causes in an easy to understand graphic. Through the brainstorming and Affinity Diagram I narrowed down the main issues to five categories: inconvenience, employee knowledge, employee attitude, system options, and investment. Initially I thought that employee attitudes would be the primary barrier; however, the interrelationship diagram clarified that employee attitudes were an outcome, not a driver. The two highest drivers were employee knowledge and system options. As we do not have any

control over the MIS options on the market, this exercise has directed me to focus on employee knowledge as the primary driver to be addressed. People fear what they do not understand, and an increased understanding of the benefits of an Management Information System will lead to less fear, and thus higher acceptance and a smoother system transition. Were I to do this cycle again, I would like to have gotten the feedback of other employees. My information came from my experience working in the shop, but I know that this left me with an incomplete picture.

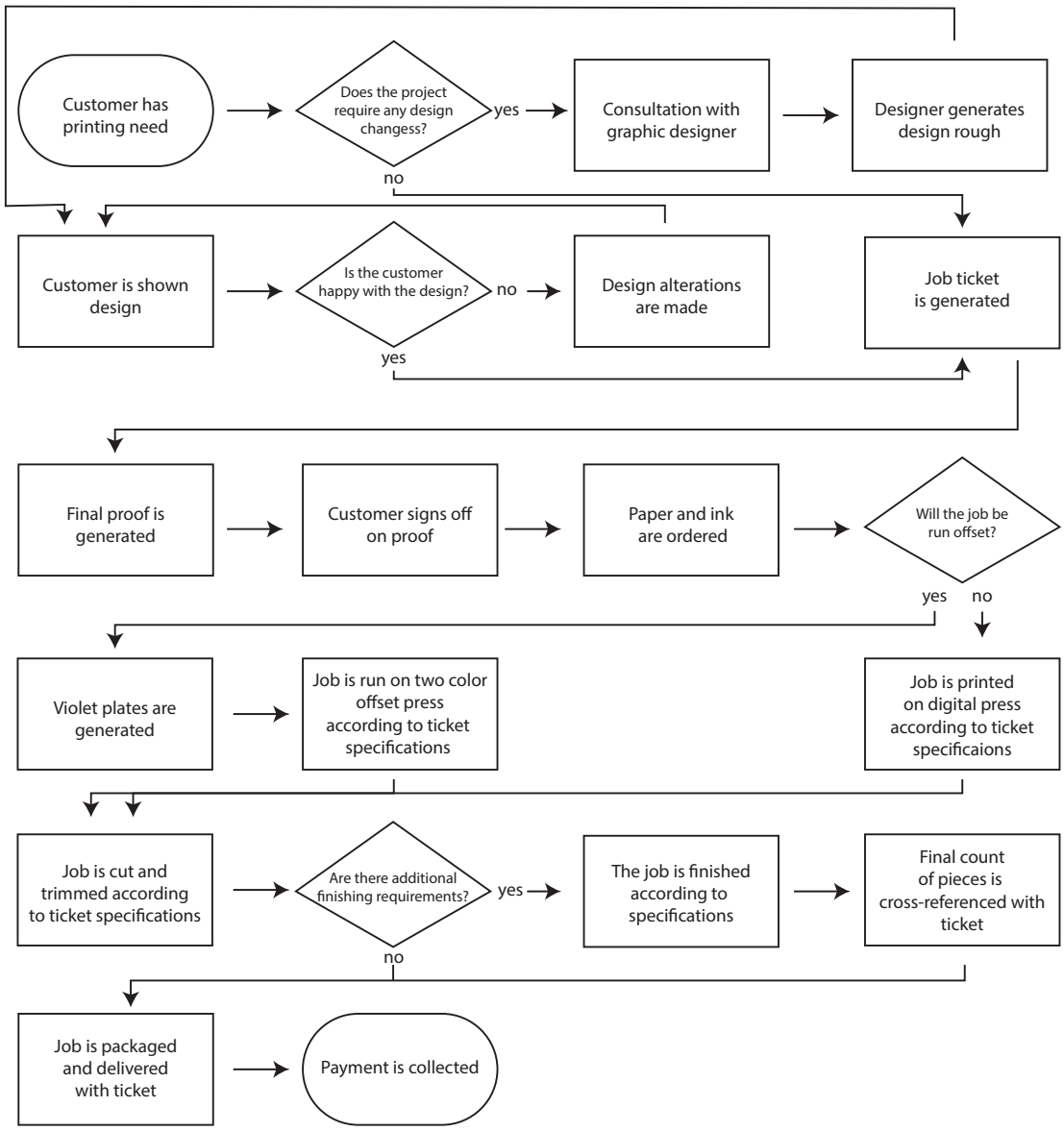
Improvement Cycle #4: Determining Recommended Solutions

My previous improvement cycle revealed that the main addressable cause of the outdated system was a lack of employee knowledge. Because the MIS system will only be effective if we have the full support our employees, I chose to use this improvement cycle to determine the best way to increase employee knowledge to minimize friction when implementing the new system. I brainstormed potential approaches to employee education: individual conversations, moving forward without addressing the issue, informational posters, a group conversation, and informational flyers. To narrow down my options, I decided to use a PICK chart, which revealed that the best solution is to have a group conversation. By bringing all of our employees together and explaining the benefits and roles of the new system, it will help ease the transition to the new system. This is both time effective and impactful. It will also create an environment in which we can answer employee questions and address their concerns. If I were to do this cycle over again, I would have a specific system selected to have a better grasp on what kind of information would need to be communicated.

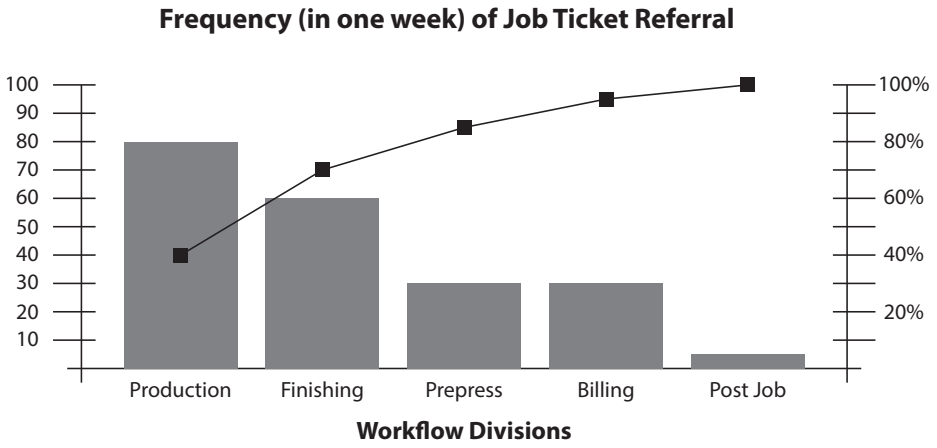
Appendix A – SIPOC Diagram

Suppliers	Inputs	Process	Outputs	Customers
Clients Graphic designers Administrative staff Pressmen Paper and Ink distributers Guillotine operator Bindery assistants Press Manufacturers	Customer Order and Approval Graphic Elements Administrative services Digital Proofs Paper stock Ink Presswork Finishing work Packaging services	1. Customer places print order 2. Job is designed/retooled 3. Job ticket is generated 4. Proof is generated and approved 5. Job is printed 6. Job is cut and trimmed 7. Job is finished 8. Job is packaged and delivered 9. Payment is collected	Graphics Layouts Printed materials Revenue	Universities Marketing firms Party planners Fundraising groups General customers Employees

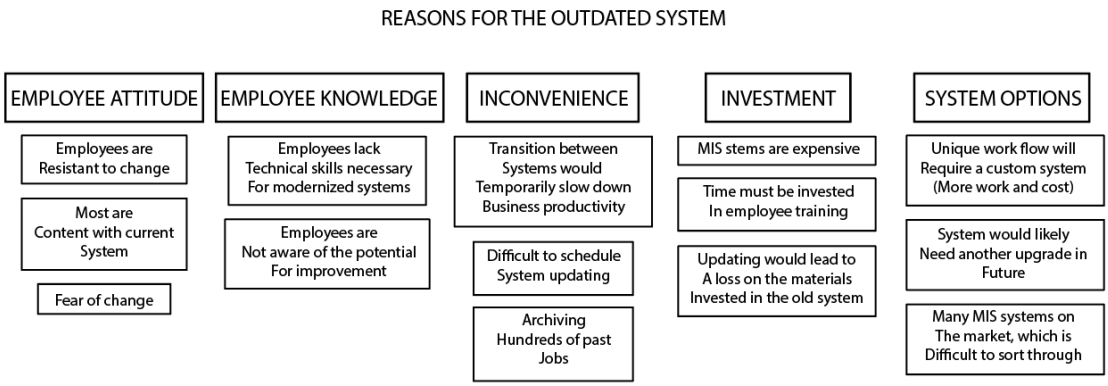
Appendix B – Flowchart



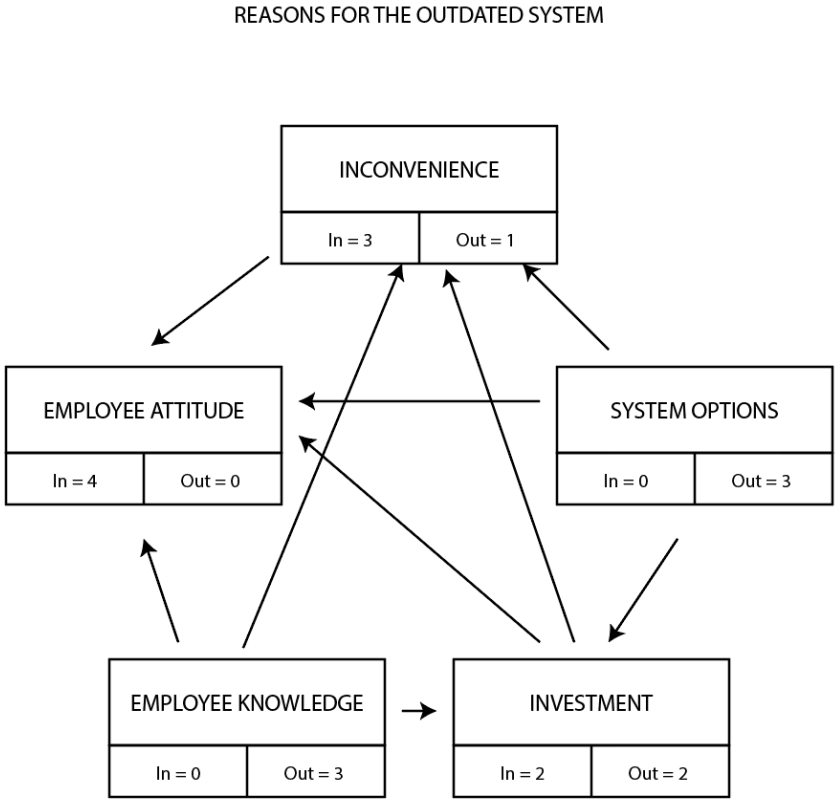
Appendix C – Pareto Chart



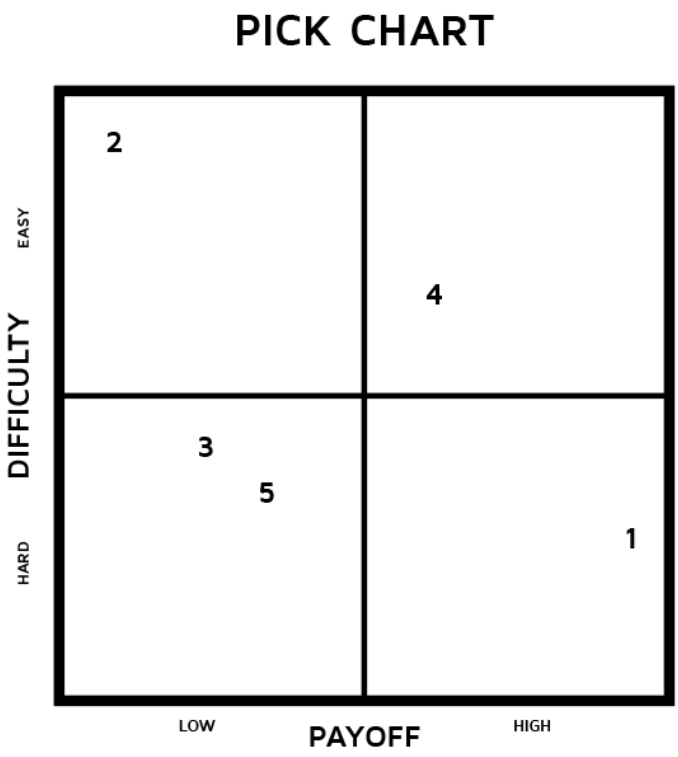
Appendix D – Affinity Diagram



Appendix E – Interrelationship Diagram



Appendix F – PICK Chart



1) Individual conversations
2) Moving forward without consensus
3) Informational posters
4) Group conversation
5) Informational flyers