







DEFINE:

PROBLEM STATEMENT

Document Solutions needs to find \approx 20,000 ft² of space to maximize print efficiencies, by acquiring additional equipment.

COST OF NOT SOLVING THE PROBLEM

Continued need to outsource 165 print orders totaling \$765,000 annually, due to the lack of space for additional equipment.

Inability to expand in-house production capabilities to meet customers' needs.

ROOT CAUSE

Equipment gets installed where there is room due to the high cost of moving printing equipment. The high cost of moving equipment prevents the print center from streamlining systems / processes.

WHO ARE DOCUMENT SOLUTIONS CUSTOMERS

Document Solutions Customers are represented by every department and citizen across the State of Missouri; with printing, mailing, scanning, certificates, and signage to name a few products.

MEASURE:

PROPOSED SOLUTION

- Apply Six Sigma process/system reviews to the current
 print floor
- Consult with outside expertise and support

ANALYZE:

DESIRED IMPACT

- Space for incoming equipment
- Remove redundant equipment
- Save the state money
- **IMPROVE:**

RETURN ON INVESTMENT

- Avoid \$4 million dollars in construction costs
- Install 11 strategic pieces of equipment to enhance services
- Recover/repurpose of 20,000 ft²

RISK(S)

- Moving Large Equipment
- Production down time
- Unknowable costs

CONTROL:

- Apply Lean methodology to the current print floor
- Apply the combined knowledge of the 55 Documents Solutions team members
- Improve processes / prep areas
- Streamline systems
- Improved capabilities
- Save 205,962 steps or 96.42 miles in process improvements per year
- Increase production speed 200% 800% for certain processes

MITIGATION

- Professional equipment movers
- Project Planning and vendor support
- Continued collaboration with experts

NEXT STEPS Work with outside elements to discuss timelines, needed to support, and the updated design. Reach out to printing press experts on the movement and installation. Tape out the plan on the print floor.





DEFINE:

WHAT PROBLEM ARE YOU TRYING TO SOLVE?

Document Solutions needs to find ~20,000 FT2 of space to support incoming equipment and maximize print efficiencies.

COST OF NOT SOLVING THE PROBLEM

Continued need to outsource 165 print orders totaling \$765,000 annually, due to the lack of space for additional equipment.

Inability to expand in-house production capabilities to meet customers' needs.

WHO ARE THE DOCUMENT SOLUTIONS CUSTOMERS?

Customers are represented by every department / agency across the State of Missouri with printing, mailing, scanning, and signage to name a few products.

WHAT IS THE SCOPE?

The scope is confined to the Scruggs building and Document Solutions.

WHAT IS THE ASK?

Assistance in streamlining tenant space at Scruggs facility to gain necessary ≈20,000 ft² need to move forward. Grace and patience as we move through the transitions.

WHERE DID THE NEED FOR 20,000 FT² COME FROM?

20,000 ft² is needed to incorporate the incoming equipment, current Document Solutions equipment, safety lanes, and needed preparation areas.

WHAT DO THE DOCUMENT SOLUTIONS CUSTOMERS WANT?

Increased efficiency, reduced maintenance cost with incoming equipment, increased production capabilities, in-house quality control, and maintain quality.

WHAT DID DOCUMENT SOLUTIONS DO BEFORE THE ADDITIONAL EQUIPMENT?

Document Solutions outsourced to a commercial vendor.

HOW MUCH DOES DOCUMENT SOLUTIONS OUTSOURCE ANNUALLY?

Around 165 jobs, totaling \$765,000 per year.

BY KEEPING THE PRINT IN HOUSE WHAT DO WE GAIN?

Decreased costs for our customers and better-quality control.

WHY DO WE NEED THE INCOMING EQUIPMENT?

The equipment will help Document Solutions to meet the needs of its customers, provide modernized equipment, and increase the capabilities of Document Solutions.

MEASURE:

WHAT INFORMATION DO WE HAVE?

Document Solutions measured the current print floor, equipment, incoming equipment, and process flows. Measurements are placed into Vizio, which allows us to visualize the warehouse, existing equipment, incoming equipment, space, and equipment spacing.

HOW DID YOU GET THE MEASUREMENTS?

We use a laser range finder to measure the print floor and pieces of equipment. Step counts for the process reviews.

HEARD YOU MAY GET NEW EQUIPMENT. HOW DID YOU WORK THOSE PIECES IN?

Took measurements of the incoming equipment and built Vizio pieces to represent them. This allows us to see where they would fit into the print center, and how to best implement them into our design and process flow.

WHAT METHODS DID YOU USE TO RECOMMEND ADJUSTMENTS?

Conduct Gemba walks, reviewed current process flows, and applied the Six Sigma DMAIC process.

IS THERE A PLAN FOR ADDITIONAL STORAGE?

Yes, Document Solutions is looking at building out the current racking situation and doing a 5S project on the paper room to generate additional storage.



ANALYZE:

WHAT WAS THE ROOT CAUSE?

PROBLEM: Document Solutions needs an additional 20,000 ft².

- WHY? 1: To replace antiquated equipment, get new equipment, re-calibrate processes, and support the MU equipment purchase.
- WHY? 2: Some equipment is outdated, to provide new equipment capabilities, re-align systems / processes.
- WHY? 3: Newer equipment is expensive and brought in as space allows which in turn disrupted process flows.
- WHY? 4: Equipment gets installed where there is room due to the high cost of moving printing equipment. The high cost of moving equipment prevents the print center from streamlining systems / processes.

DID YOU DO AN 5S PROJECTS IN PREPARATION?

Yes, we conducted a 5S for the sorter. The result is recovered space, a cleaner operating environment, and improved process flows. We have future 5S projects planned for bindery and the paper storage room.

WHAT RISKS ARE INVOLVED?

RISK(S)

- Moving Large Equipment
- Production down time
- Unknowable costs

- MITIGATION
- Professional equipment movers
- Project Planning and vendor support
- Continued collaboration with experts

HOW WILL PROCESS DIRECTLY IMPACT OUR CUSTOMERS?

SHORT TERM: There may be some limited delays but have mitigation efforts in place. **LONG TERM:** Safer environment, increase in quality control, and increase of capabilities.

IMPROVE:

WILL IT BE SAFE?

Yes, in fact the new process design flows products from south to north. Keeping the 1-ton rolls of paper at the south end of the building. The modernized equipment will enhance equipment safety. An external Life Safety Assessment will be conducted to ensure employee safety.

WHAT IS THE SAFETY PLAN DURING THIS OPERATION?

There will be safety observers during the operation. Additionally, there will be clear lanes identified, and external guidance/support.

WHAT DOES THE TIMELINE LOOK LIKE?

6-8 months, mostly due to the need of external support.

WHY USE THE PHASED APPROACH?

We will use a phased approach to limit the amount of downtime for each of the systems. We will also look ahead to outsource jobs as needed to maintain production requirements during this event.

HOW DO YOU ENSURE THE RIGHT CHANGES WERE MADE?

The Document Solutions managers and team leaders are engaged early and often during the process. We encourage open dialog, and all suggestions big/small to ensure we get the most from this.

CONTROL:

WHAT WERE THE IMPROVEMENTS:

- Reduction of 205,962 steps or 96.42 miles
- Outsource cost savings of \$765,000 for 165 orders
- Increased production power between 200%-800% depending on the system.
- Improved preparation areas
- 6 new capabilities
- Improved process and area safety
- Implementation of 11 modernized pieces of equipment

WILL THE PROCESS IMPROVEMENT BE SUSTAINABLE?

Yes, processes flow diagrams will be created. Additionally, as equipment is brought in Document Solutions will work to maintain the process improvements.

ARE WE GOING TO NEED ADDITIONAL FULL-TIME EMPLOYEES?

Yes, 2-3 additional full-time employees are needed due to the increased production rate of the new equipment.



DID WE VERIFY THE ROOT CAUSE?

Yes, by reviewing the systems, processes, equipment, and floor space we can confirm our root cause of "Document Solutions normally bring in gently used / refurbished equipment to save costs. It is also very expensive to move existing print equipment to better locations to support improved processes".

HOW MUCH ARE WE SAVING BY BUYING THE MU EQUIPMENT NOW VERSUS NEW IN THE FUTURE?

The MU equipment deal cost the state \$1,000,000 dollars. The cost of a single new press is \$4-5 million. The additional equipment would also cost an average of \$750,000, for a total of well over \$15,000,000.

THINGS TO BE ON THE LOOK OUT FOR.

- 1. Preparation areas is critical.
- 2. Installation needs/requirements need to be identified early and shared quickly.
- 3. Provide open and continuous communication with ALL parties involved to insure understanding and projections.

