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Library Technical Services Process Improvement Based on LEAN

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Introduction

Lean Thinking …is to see and eliminate *Muda* 'waste' –which is essentially any activity in which absorbs resources but creates no *value.*

8 Types of Waste

- *Defects*
- *Overproduction*
- *Waiting*
- *Non-Utilized People*
- *Transportation*
- *Inventory*
- *Motion*
- *Extra Processing*

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How do we eliminate those *wastes*?

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Five Principles of Lean

1. *Value* – specified by the customer/end user
2. *Value Stream* – value adding activities
3. *Flow* – sequence of actions
4. *Pull* – just in time
5. *Perfection* – continuous improvement

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1. Value

Specified by the customer: where meaning is express for a specific good or service, while delivering highest of quality at the lowest possible cost.

2. Value Stream (VS)

Identify a set of activities required to produce a good/service from conception to delivery that creates 'specified value' and eliminates waste.

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Rush/Replacement & Firm Orders

Customers:

- Subject Liaisons (librarians) & library users (i.e. faculty, students, staff)

Good/Service:

- Rush/Replacement Orders (2-4 days)
- Firm Order (5-10 days)
- 100% Complete/Accurate

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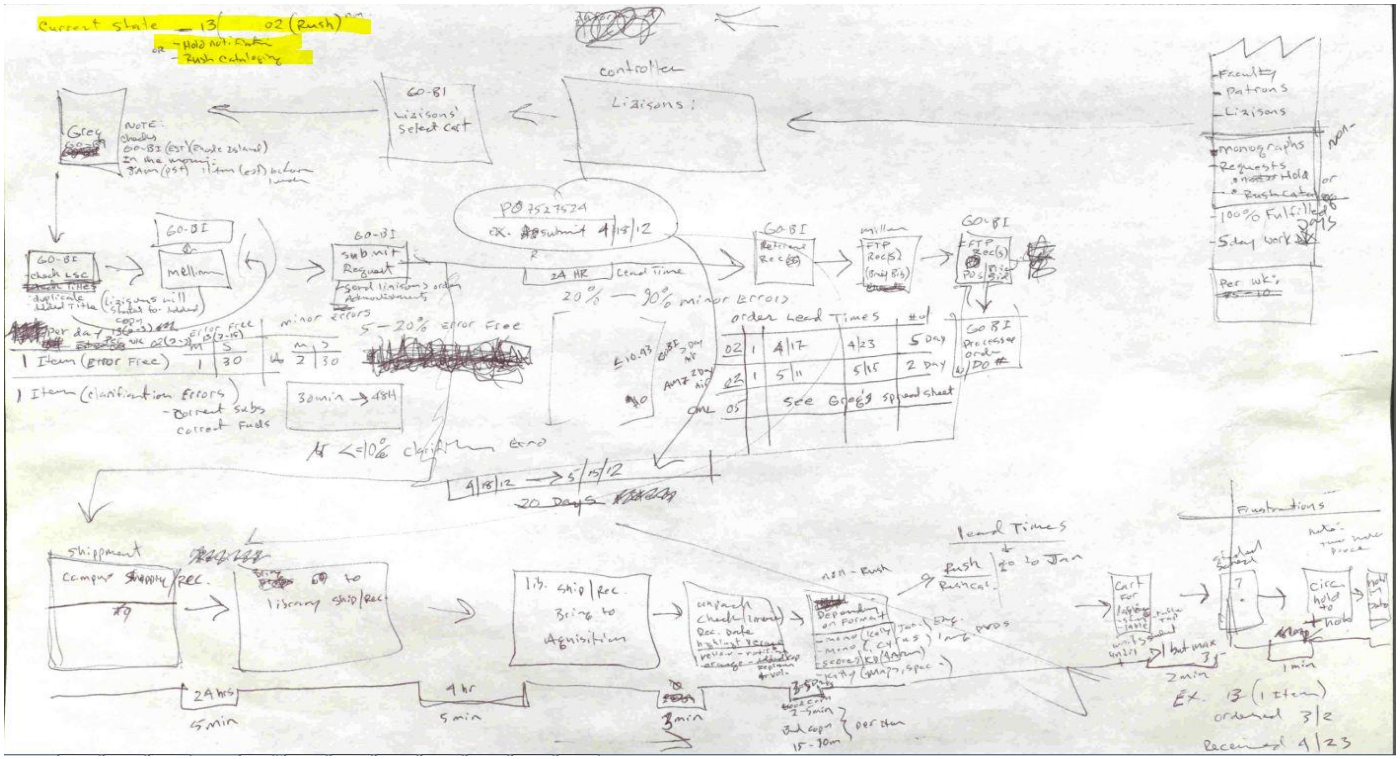
Value Stream – Current State

VS Manager



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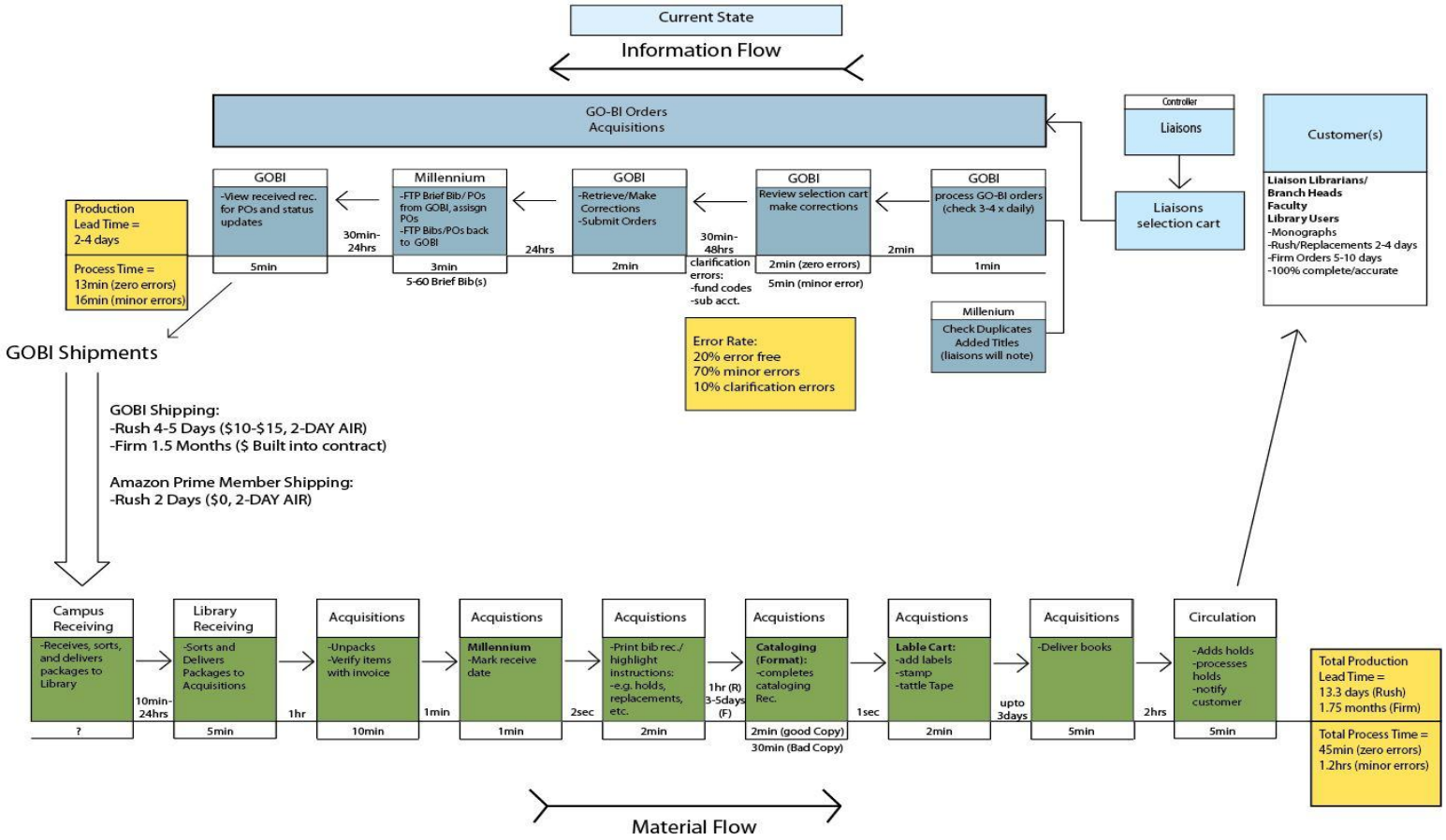
Value Stream – Current State

Computer Version



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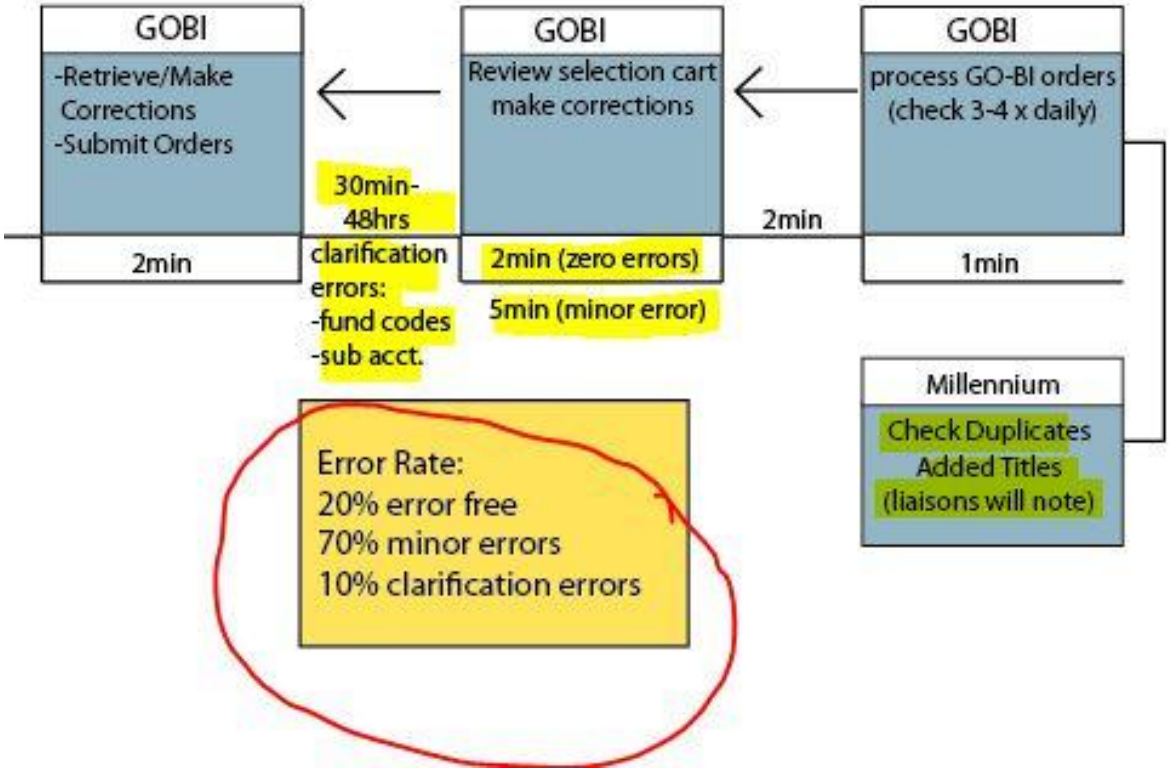
Value Stream – Current State

Errors



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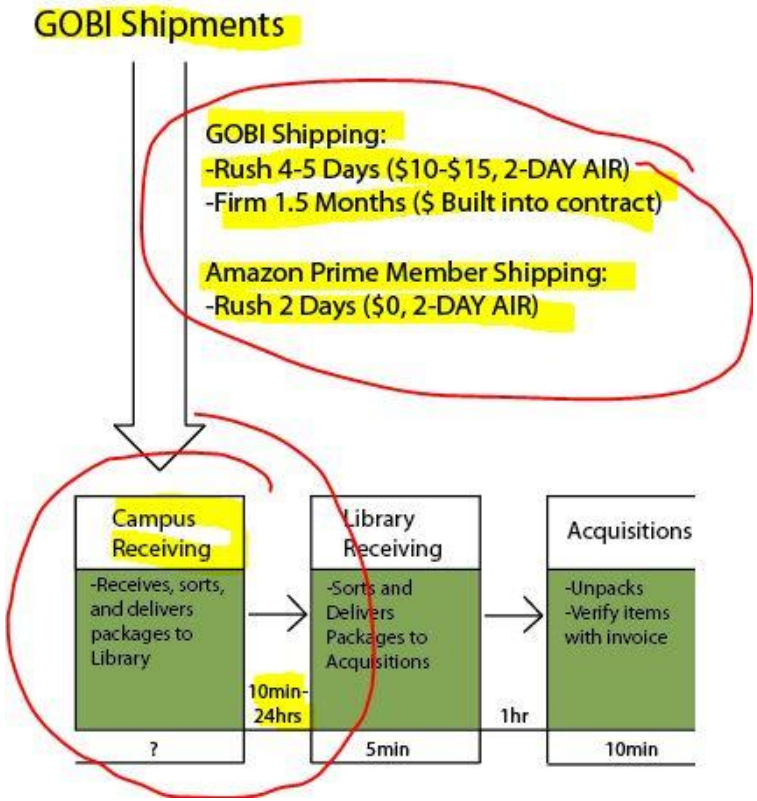
Value Stream – Current State

Shipping



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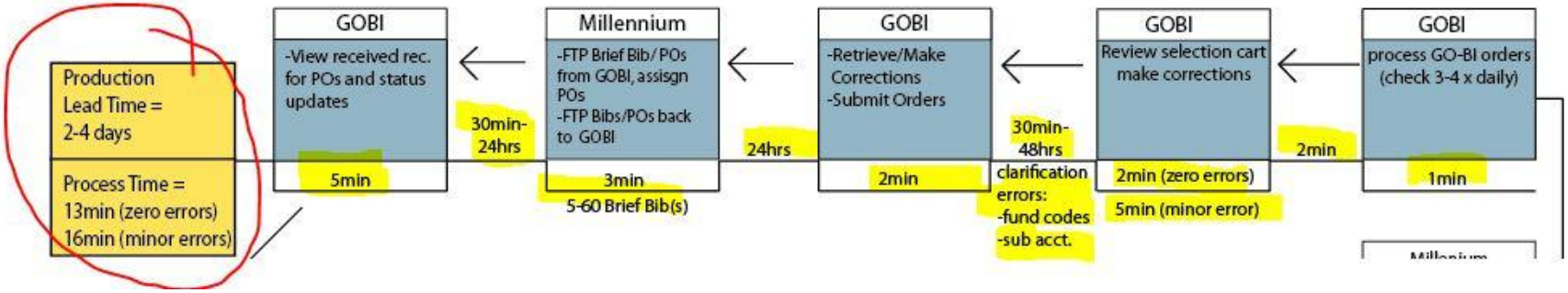
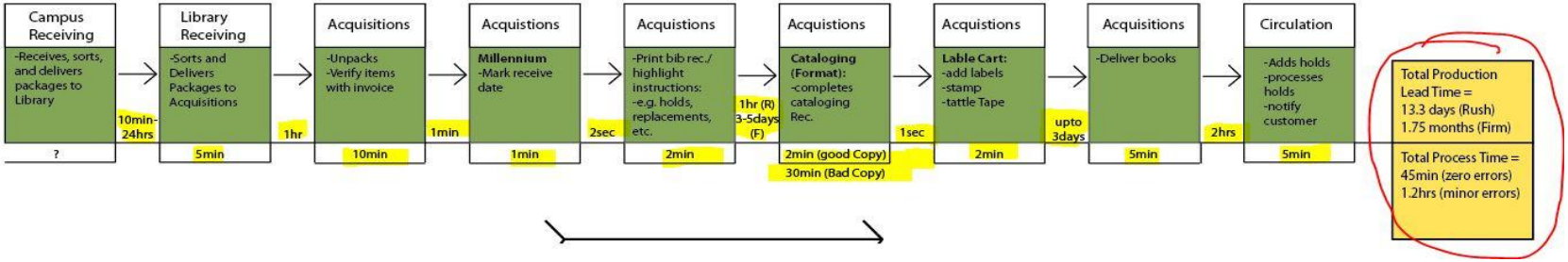
Value Stream – Current State

Lead Time/Processing Time

Information Flow



Material Flow



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Value Stream – Current State

Do we create value for the customer?

Value Desired

Customer(s)
Liaison Librarians/ **Branch Heads** **Faculty** **Library Users** -Monographs -Rush/Replacements 2-4 days -Firm Orders 5-10 days -100% complete/accurate

Value Stream: Current State – Value Creating?

Total Production Lead Time =
13.3 days (Rush) 1.75 months (Firm)
Total Process Time =
45min (zero errors) 1.2hrs (minor errors)

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Next Step:

Establishing a *Future State*

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3. FLOW

All steps required proceed through the value stream in a continuous flow without: backflow, scrap, and/or stoppages.

Media Process in BMS

- Process Redesign
- Flowchart
- Travelers

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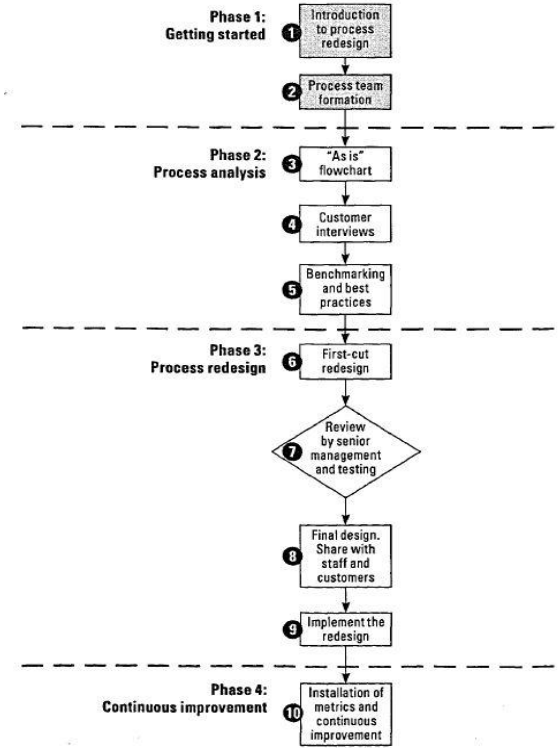
Process Redesign

Figure 6.1 Steps One and Two, Process Redesign



Madison, D. (2005). *Process mapping, process improvement, and process management.* Chico, CA: Paton Press LLC.

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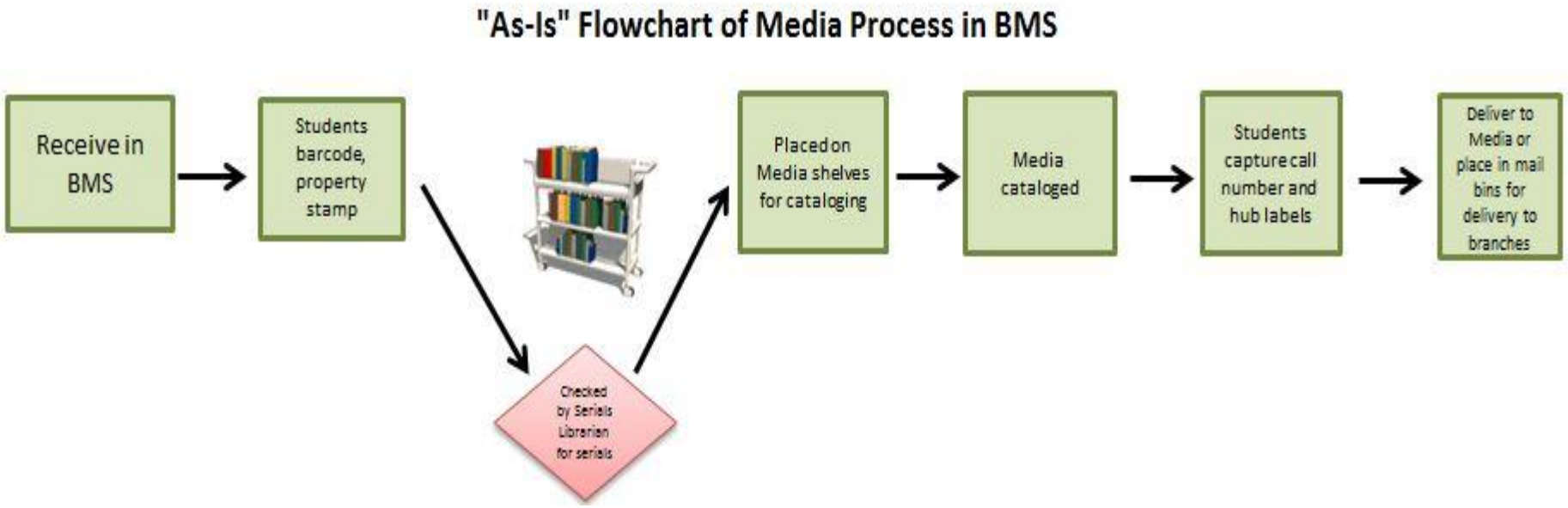
“As-Is” Flowchart: Media Process in BMS



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Traveler

Activity	Started Work Date	Time worked on the Item	Sent Out Date	Initials	Comments
Receiving in BMS					
Initial Processing					
Checking for Serials					
Media Shelves					
Cataloging					
Processing/Labelling					
Delivery					

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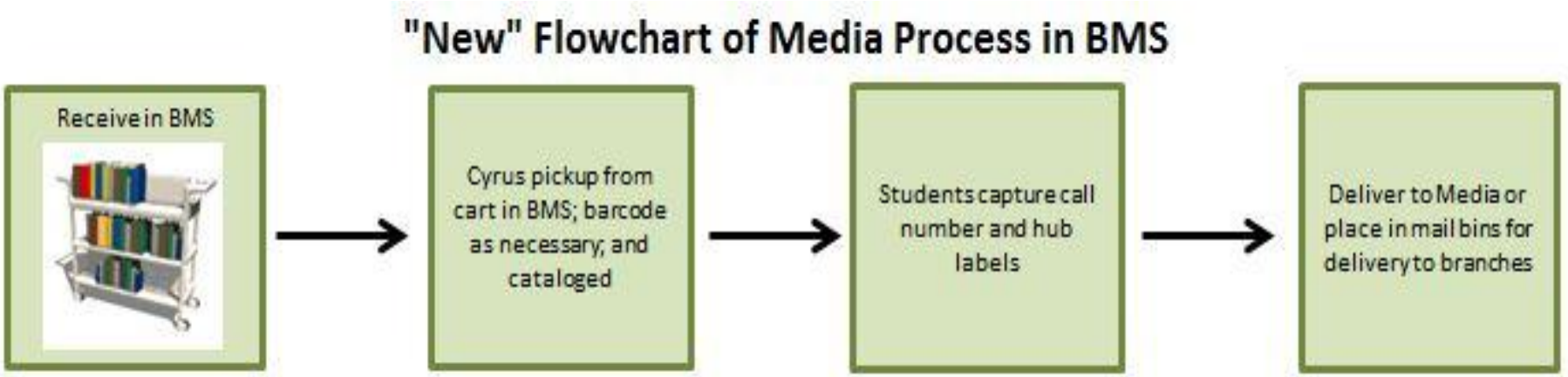
“New” Flowchart: Media Process in BMS



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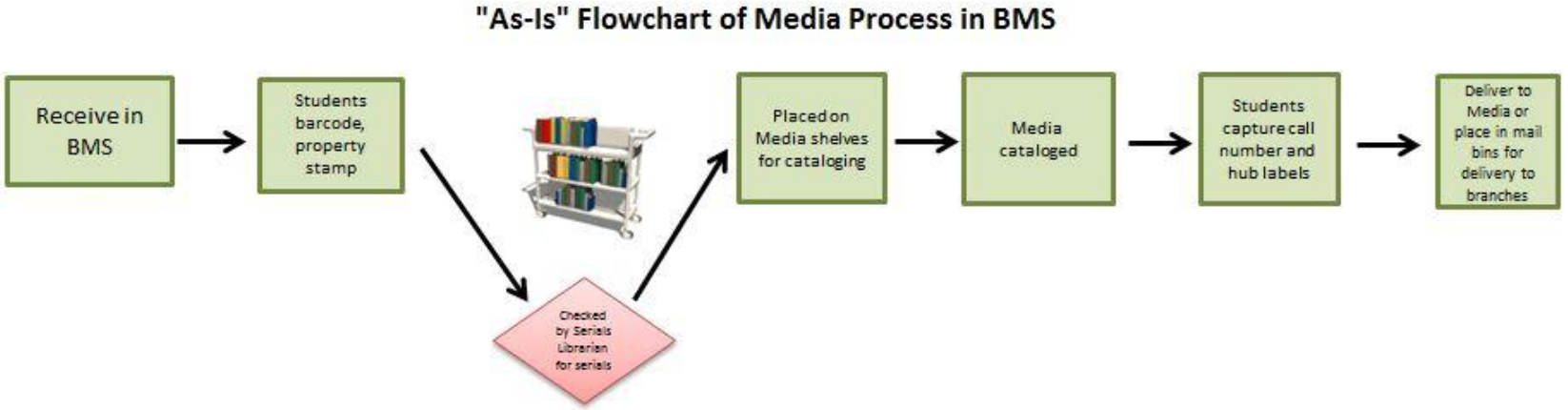
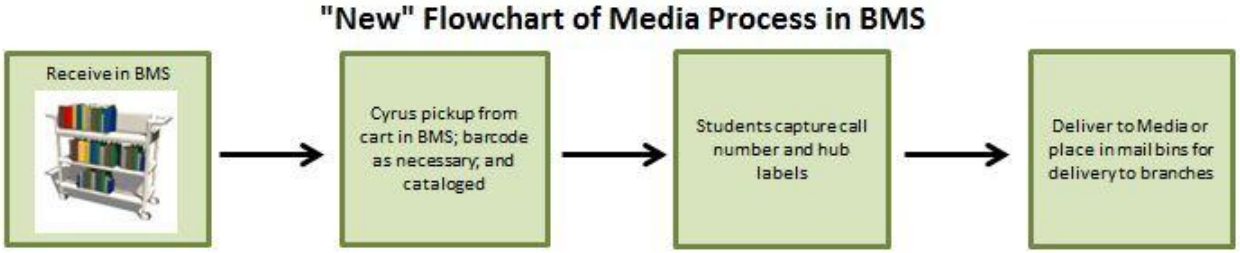
Flowchart: Comparison





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4. PULL

Tasks are taken by employees when they are ready for more work.

Eliminate Scheduled Tasks

- Prioritized list of daily tasks
- Next person does next task
- Reduce inventory/waiting

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5. PERFECTION

All activities along a value stream create value.

Shelving Accuracy Tracking

- Main purpose of Stacks
- How do we add value for users?

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Establish the goal.

Design method to track data.

Phase-in new procedures.

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SHELVING ACCURACIES

GOAL is 100%

January	1	2	3	4	5	6	7	8	9	10	11	12
Shelved	16	15	16	15	16	16	16	16		14	16	
Correct	16	15	15	15	16	15	15	16		13	15	
%	100.00%	100.00%	93.75%	100.00%	100.00%	93.75%	93.75%	100.00%	#DIV/0!	92.86%	93.75%	#DIV/0!
96.79%												

February	1	2	3	4	5	6	7	8	9	10	11	12
Shelved	16	16				15	16	15	15		16	16
Correct	16	15				14	16	13	15		14	15
%	100.00%	93.75%	#DIV/0!	#DIV/0!	#DIV/0!	93.33%	100.00%	86.67%	100.00%	#DIV/0!	87.50%	93.75%
94.40%												

March	1	2	3	4	5	6	7	8	9	10	11	12
Shelved	16	16	16	16				16				
Correct	16	14	15	16				16				
%	100.00%	87.50%	93.75%	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	100.00%	#DIV/0!	#DIV/0!	#DIV/0!	#DIV/0!
96.25%	4 in a row!			4 in a row!								

April	1	2	3	4	5	6	7	8	9	10	11	12
Shelved	15	16		16		16	15	15	16	14	16	
Correct	15	16		16		16	12	15	16	14	13	
%	100.00%	100.00%	#DIV/0!	100.00%	#DIV/0!	100.00%	80.00%	100.00%	100.00%	100.00%	81.25%	#DIV/0!
95.68%	5 in a row!			5 in a row!								

May	1	2	3	4	5	6	7	8	9	10	11	12
Shelved	16	16		16		16	16	15		16	16	
Correct	16	16		16		16	16	15		16	16	
%	100.00%	100.00%	#DIV/0!	100.00%	#DIV/0!	100.00%	100.00%	100.00%	#DIV/0!	100.00%	100.00%	#DIV/0!
100.00%	6 in a row!			6 in a row!								

Spring 2012 Average	1	2	3	4	5	6	7	8	9	10	11	12
96.65%	100.00%	96.20%	93.75%	100.00%	100.00%	96.83%	93.65%	97.40%	100.00%	97.73%	90.63%	93.75%

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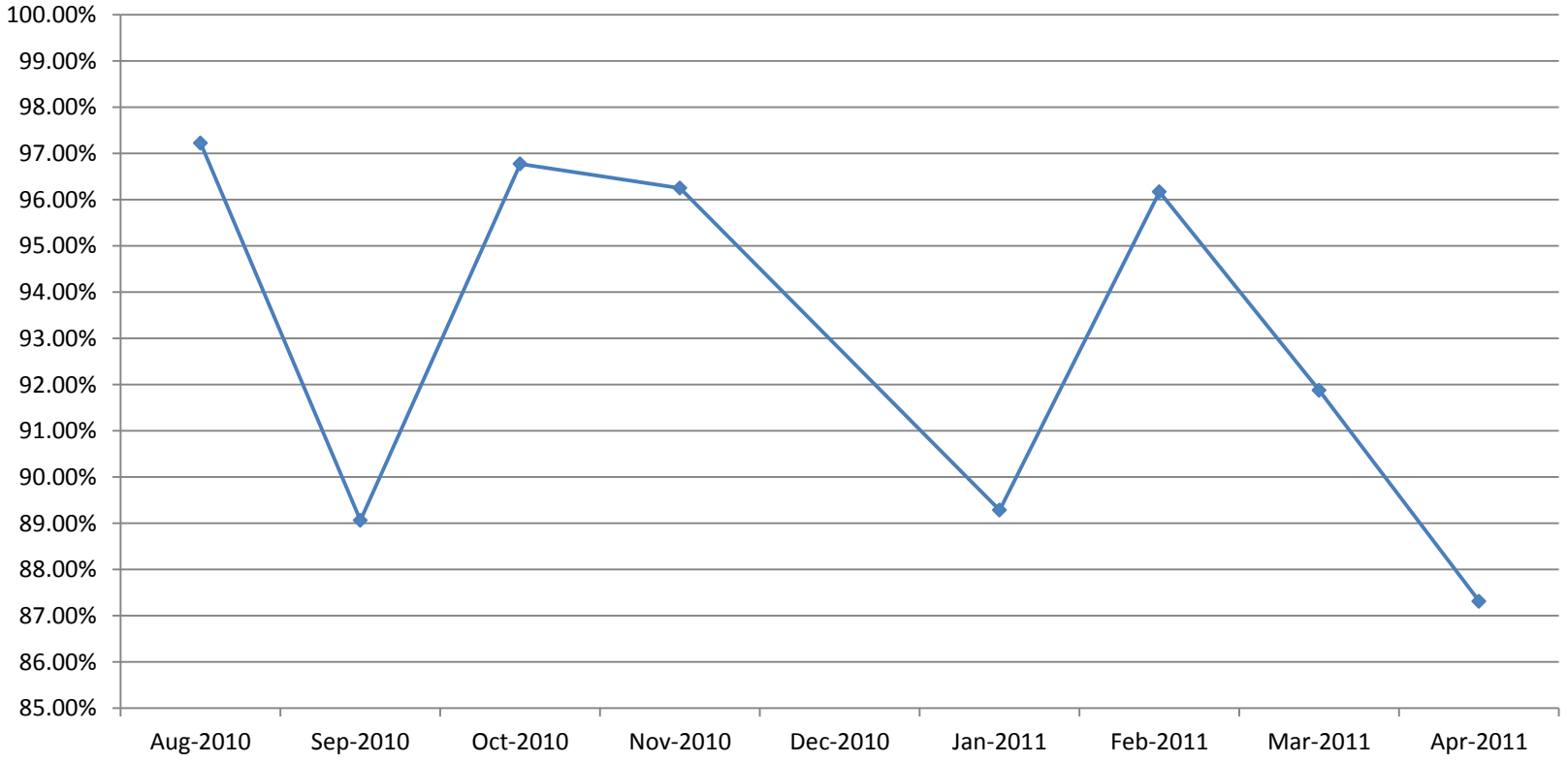
DATA FOR INITIAL AS-IS STATE



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Assess first round of data

Why was goal not attained?

Implement new idea:

- Incorporate Shelf-reading

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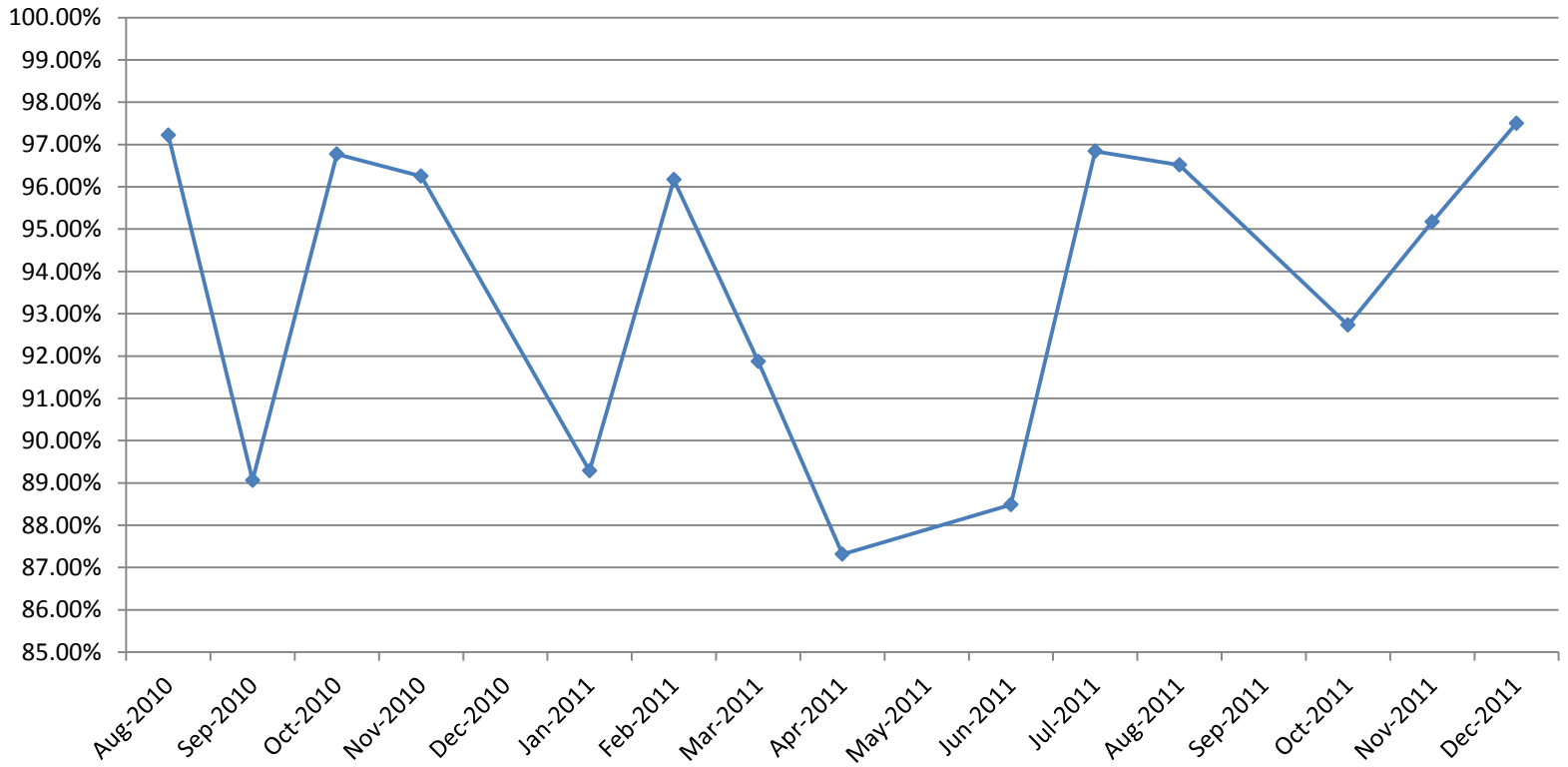
RESULTS AFTER FIRST REVISION



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Assess second round of data

Why was goal not attained?

Implement new ideas:

- Better training
- Reduce Batch Size

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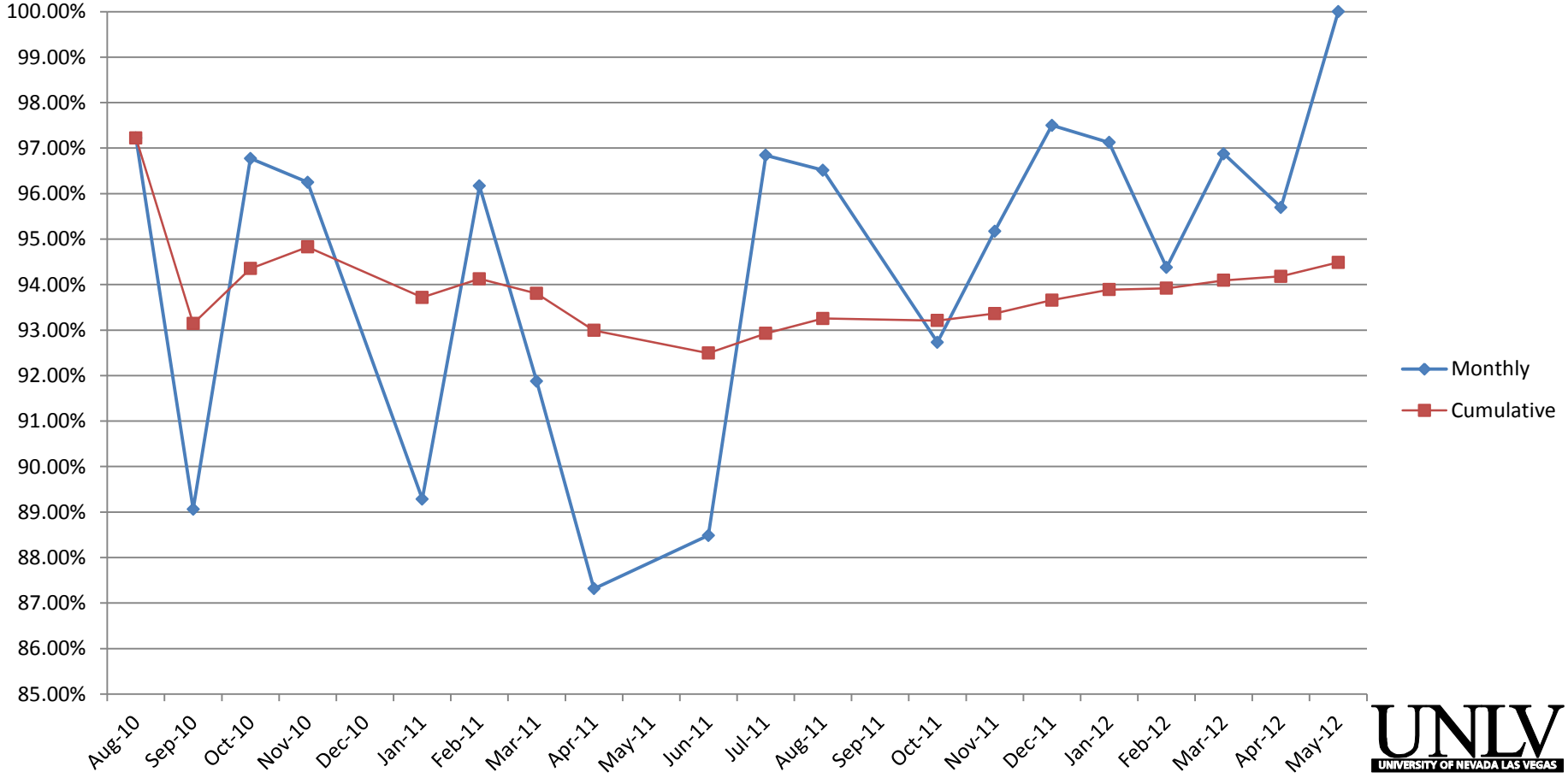
RESULTS AFTER SECOND REVISION



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"…If I find 10,000 ways something won't work, I haven't failed. I am not discouraged, because every wrong attempt discarded is often a step forward..."

Thomas A. Edison

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QUESTIONS?

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REFERENCES

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Rother, M., & Shook, J. (2009). *Learning to see: Value-stream mapping to create value and eliminate muda* (version 1.4). Cambridge, MA: Lean Enterprise Institute.

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SURVEY LINK

http://www.surveymonkey.com/s/alctsevents2012

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