Lean Six Sigma
DMAIC Improvement Story

Green Belt   Project Objective:

Reduce the number of days to transport requested materials to customer choice pick-up location

Last Updated: 4-6-18

Team: **Library Prime**

Leo Gomez *(Co-Team Leader)*, Wil Fowler *(Co-Team Leader)*

Gigi Bolt (OMB), Philip Berry, Jessica Jarra,

Jeff Rosenberg, Juan Rodriguez-Galan (IT SME)

Ray Baker (Sponsor and Process Owner)

Lean Six Sigma Problem Solving Process

The team utilized the 5-Step DMAIC problem solving process.

Process Step		Description of Key Team Activities
Number	**Name**	
1	DEFINE	• Establish Method to Monitor Team Progress • Select Problem and Identify Project Charter and Timeline • Display Process Indicator Performance "Gap" • Construct related Process Flowchart • Identify Stakeholder Process output needs • Identify Costs of Poor Quality (for not meeting output needs)
2	MEASURE	• Develop Data Collection Plan • Stratify Problem (i.e. "Gap") • Develop Problem Statement from remaining data set and finalize target
3	ANALYZE	• Identify Potential Root Causes (s) • Verify Root Cause(s) • Assess Impact of Root Causes on Problem in Measure Step
4	IMPROVE	• Identify and Select Countermeasure(s) • Identify Barriers and Aids • Develop and Implement Action Plans • Confirm / Document Pilot Improvement Plan Effectiveness
5	CONTROL	• Confirm / Document Improvement Results • Standardize Improvements within Operations • Implement New Process Control System (PCS) • Document Lessons Learned • Identify Future Plans for Improvement

Define > Measure > Analyze > Improve > Control

The team developed a team Project Charter and secured signed off from sponsor.

Project Charter

Business Case	Project Name:	Transportation of requested materials between Library branches
	Problem/Impact:	The Miami-Dade Library System provides library materials at requested Branch locations, even if the material is located at another branch. Failure to provide timely materials can result in Client dissatisfaction, unnecessary handling of material status inquires, etc.
	Expected Benefits:	Quicker service, Improved Customer Satisfaction
Objectives	Outcome Indicator(s)	Q2-% Rqstd Readily Avail Mat'ls Rec'd at Branch within 2 days of Patron Rqst
	Proposed Target(s)	Target= 50% (32% Increase)
	Time Frame:	Nov 2017 thru March 2018
	Strategic Alignment:	RC 3-2 Strengthen and conserve local history, cultural resources and collections
Scope	In Scope:	Requests involving physical transfers of materials from Branch A to Branch B for materials Readily available
	Out-of-Scope:	Requests where no transport is need for request or Rqsts in Queue
	Authorized by:	Ray Baker
Team	Sponsor:	Ray Baker
	Team Leader:	Leo Gomez, Wil Fowler
	Team Members:	Gigi Bolt (OMB), Philip Berry, Jessica Jarra, Jeff Rosenberg
	Process Owner(s):	Ray Baker
	Mgmt Review Team:	Ray Baker, Carlos Maxwell, Michael Spring, Lourdes Avalos
Schedule	Completion Date:	3/30/18
	Review Dates:	Monthly and Final Review in April 2018
	Key Milestone Dates:	See Action Plan

Define > Measure > Analyze > Improve > Control
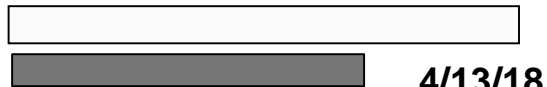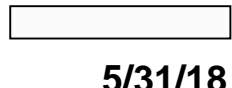
Develop Project Timeline Plan

3. ☑

The team developed a Timeline Plan to complete their Project.

Legend:	
■	= Actual
☐	= Proposed

WHAT: **Reduce # Days to Transport Requested Materials to Cust Choice Pick-up Locn**

HOW	WHEN						
	Month 2017-2018						
	Nov	Dec	Jan	Feb	Mar	Apr	May
1. DEFINE		Completed 12/15/17					
2. MEASURE			Completed 1/5/18				
3. ANALYZE			Completed 1/19/18				
4. IMPROVE						4/13/18	
5. CONTROL							5/31/18

Define ▷ Measure ▷ Analyze ▷ Improve ▷ Control

Project Alignment to MD Public Library Strategy

The Department's efforts align with the following Miami-Dade County Strategic Plan Goal/Objectives:

- GG1-1 Provide easy access to information and services

- GG1-2 Develop a customer-oriented organization

- GG1-4 Improve relations between communities and governments

Define | Measure | Analyze | Improve | Control

- Miami-Dade Public Library System (MDPLS) is the **7th largest Public Library System in the United States**

- MDPLS serving Miami-Dade County with a population of approximately 2.7 million

- MDPLS **50 library branches** circulating a total **of 3,939,170 items annually** (With **over 620,000 items** going through **the hold process**).

- MDPLS mission is to maintain and improve public library services reflecting the informational, educational, and recreational needs of our diverse community.

- A common **challenge among public libraries throughout the Country is how to meet the ever-growing expectation** of patrons for availability and delivery in and on demand environment of titles in multiple formats (print, e-book, audiobook, etc.) as well as through multiple software platforms and devices.

- To that end **we were charged with the mission of reducing the time it takes for a patron to receive an in stock item to two days** to get from the branch housing the item to the branch where the patron had made the request.
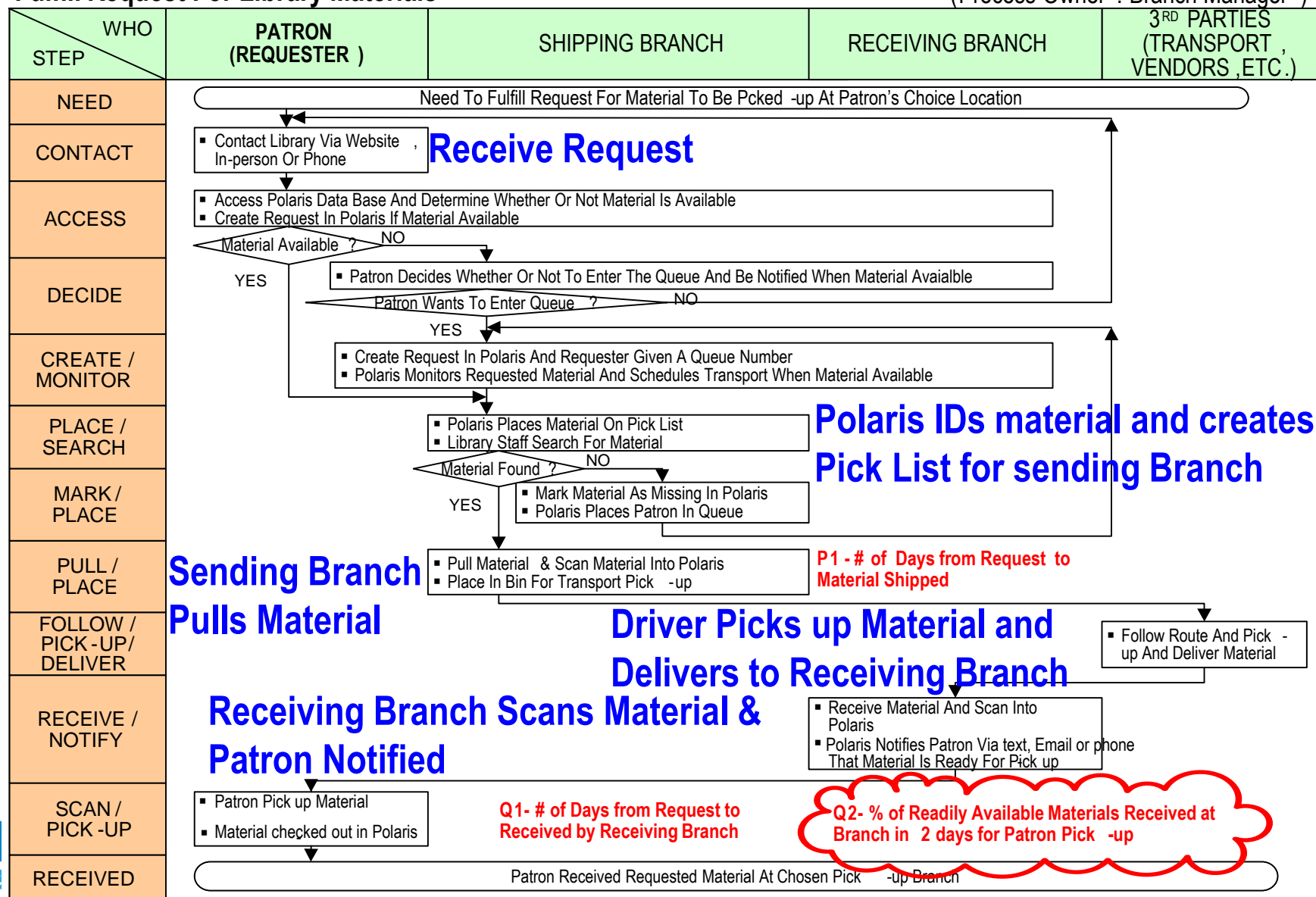

Define ▶ Measure ▶ Analyze ▶ Improve ▶ Control

Construct Process Flow Chart

5. ✔

The team constructed a Process flow chart describing the Process.

Fulfill Request For Library Materials (Process Owner : Branch Manager)

WHO / STEP	PATRON (REQUESTER)	SHIPPING BRANCH	RECEIVING BRANCH	3RD PARTIES (TRANSPORT , VENDORS ,ETC.)
NEED	Need To Fulfill Request For Material To Be Pcked -up At Patron's Choice Location			
CONTACT	• Contact Library Via Website , In-person Or Phone			
ACCESS	• Access Polaris Data Base And Determine Whether Or Not Material Is Available • Create Request In Polaris If Material Available			
DECIDE	Material Available ? NO / YES	• Patron Decides Whether Or Not To Enter The Queue And Be Notified When Material Avaialble Patron Wants To Enter Queue ? NO / YES		
CREATE / MONITOR		• Create Request In Polaris And Requester Given A Queue Number • Polaris Monitors Requested Material And Schedules Transport When Material Available		
PLACE / SEARCH		• Polaris Places Material On Pick List • Library Staff Search For Material Material Found ? NO / YES		
MARK / PLACE		• Mark Material As Missing In Polaris • Polaris Places Patron In Queue		
PULL / PLACE		• Pull Material & Scan Material Into Polaris • Place In Bin For Transport Pick -up		
FOLLOW / PICK -UP/ DELIVER				• Follow Route And Pick -up And Deliver Material
RECEIVE / NOTIFY			• Receive Material And Scan Into Polaris • Polaris Notifies Patron Via text, Email or phone That Material Is Ready For Pick up	
SCAN / PICK -UP	• Patron Pick up Material • Material checked out in Polaris			
RECEIVED	Patron Received Requested Material At Chosen Pick -up Branch			

Receive Request

Polaris IDs material and creates Pick List for sending Branch

Sending Branch Pulls Material

P1 - # of Days from Request to Material Shipped

Driver Picks up Material and Delivers to Receiving Branch

Receiving Branch Scans Material & Patron Notified

Q1- # of Days from Request to Received by Receiving Branch

Q2- % of Readily Available Materials Received at Branch in 2 days for Patron Pick -up

Stakeholder Needs

The team identified stakeholder needs for the process outputs.

Stakeholders Needs	
Stakeholders	**Process Output Needs**
Patrons	Timely delivery of the requested material
	Material in good condition
	Available at customer choice Library Branch
Library Staff	Timely processing of reports Timely delivery of all materials
Library Administration /BCC	Meeting strategic objectives
	Increase patron satisfaction with library services
	Ongoing analysis to continually improve process

Cost of Poor Quality

The team identified the hidden costs of failing to fulfill timely requests.

Stakeholder	Pain Experienced	Annualized "Costs"
Patron	Patron dissatisfaction; delays with delivery of holds result patrons who do not pick up material	Multiple occurrences of patron's dissatisfaction will result in patrons going elsewhere for their informational needs. Patron dissatisfaction may also lead to an unwillingness to support the library system when it seeks operational funding increases. During the past 12 months, over 47,000 items had to be reshelved because they were not picked up. Based on conservative costs for processing and logistics, these 47,000 items cost the library system over $118,000. Holds account annually for approximately 620,000+ transactions in material circulation. This is a valuable library service and the goal is to increase patron participation. For this reason it is critical to identify areas of concern and address them immediately to mitigate any adverse impacts on operations.
Library Staff	Not having the ability to reconfigure Polaris routing for optimal selection of delivery site	
	Reshelf requests that do not get picked up	
Library Admin /BCC	Adverse impact of dissatisfaction with the holds system	

Total Cost of Poor Quality Savings = $118,000 Annually

library Prime

Define | Measure | Analyze | Improve | Control

MIAMI-DADE COUNTY

Identify Data Collection Needs

The team developed a spreadsheet to help analyze the process.

### Library Requested Book/Material Delivery Summary *(every row is a request)*

Line Number	Hold Request ID	Created On	Created Branch Name	CreatedBy	ShippedOn	Shipped Branch Name	Shipped By	ReceivedOn	Received Branch Name	# of Days from Created to Shipped	# of Days from Shipped to Rec'd	# of Days from Created to rec'd	Provided within 2 days?
										Average Days			%Y
										15.1	3.1	18.1	11%
										P1	P2	Q1	Q2
1	6066682	8/1/17 8:25 AM	Miami-Dade Pu	OPAC Defau	8/1/17 11:19 AM	Sunset	otanoa	8/1/17 12:57 PM	Pinecrest	0	0	0	Y
2	6066786	8/1/17 10:12 AM	Pinecrest	hernandezje	8/1/17 11:28 AM	Country W	imbimbog	8/1/17 5:27 PM	Pinecrest	0	0	0	Y
3	6070272	8/2/17 5:22 PM	Main Library	garciam	8/18/17 9:12 AM	Doral	delgador	8/2/17 5:33 PM	Main Library	0	0	0	Y

Received By	PatronCode	PatronStatClassCode	BibliographicRecordID	ItemRecordID	ItemStatisticalCodeID	AssignedCollectionCodeID	Patrons Assigned Branch	Item's Asgnd Brnch
pineraa	Resident	Resident	1252931	5075180	Dewey 640	Nonfiction	Pinecrest	Sunset
cofinon	Branch Accou	Branch Account	1082588	4575409	Fiction	Children's Vide	Pinecrest	Country W
burgea	Resident	Resident	984248	3791339	Dewey 240	Social Sciences	Main Library	Main Libra

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Display Indicator Performance "Gap"

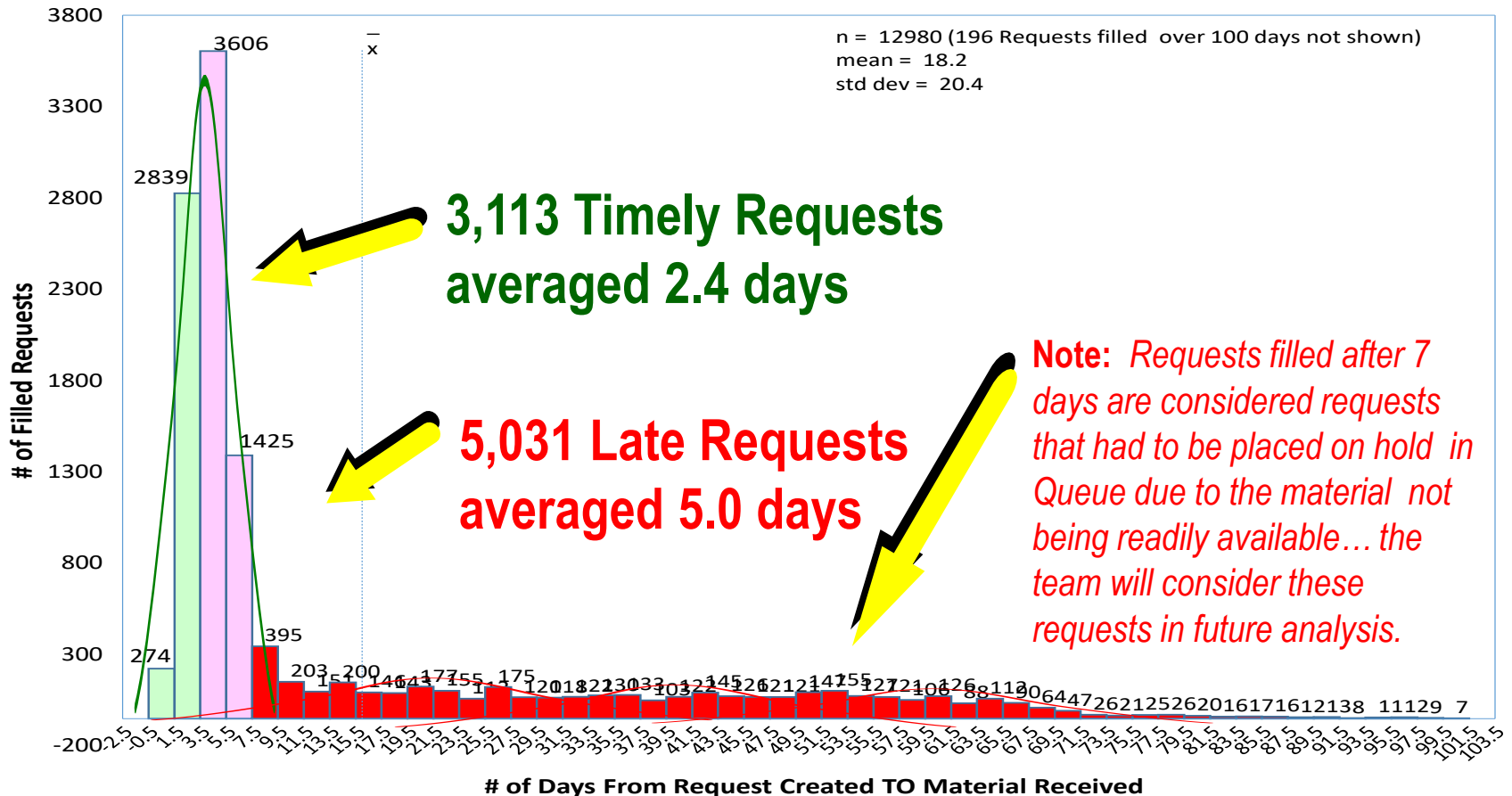The team collected Q2 indicator data and reviewed performance trends:

Q2 - % of Requested Readily Available Materials Received at Branch within 2 days of Patron Request
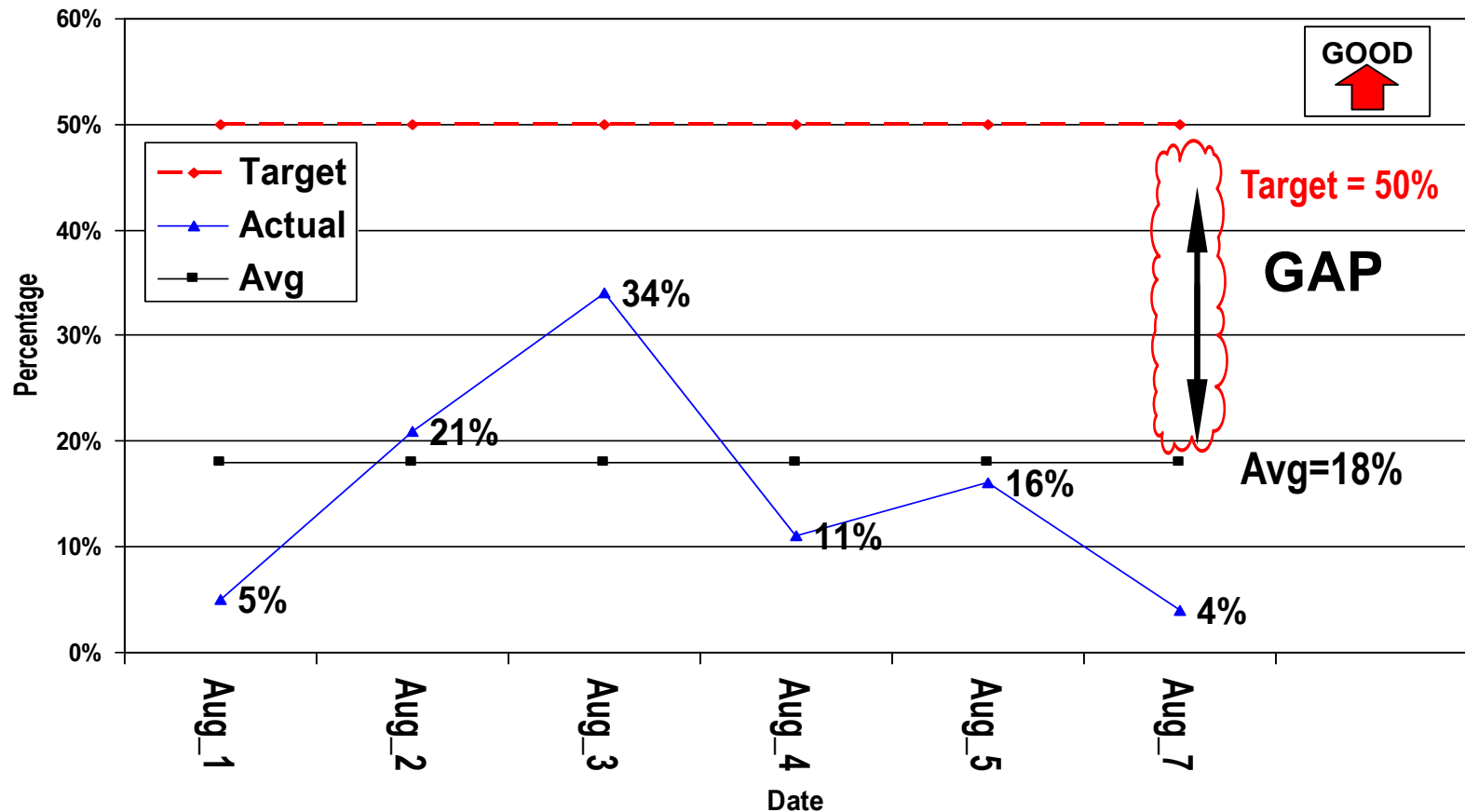
Stratify the Problem

The team stratified recent Library Material Requests filled using a histogram and found…

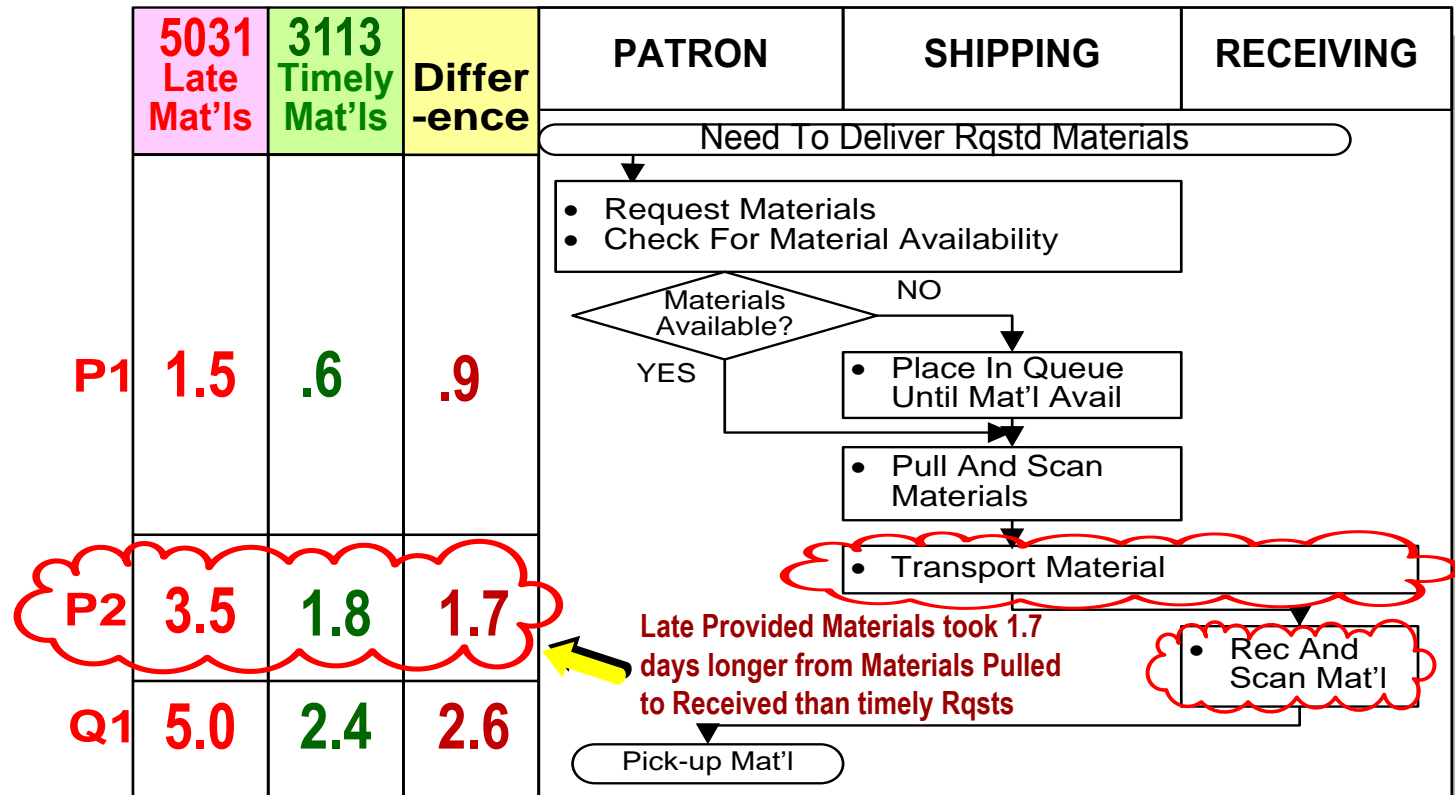### Library Material Requests Received between Aug 1 and Aug 7, 2017

n = 12980 (196 Requests filled over 100 days not shown)
mean = 18.2
std dev = 20.4

3,113 Timely Requests averaged 2.4 days

5,031 Late Requests averaged 5.0 days

Note: Requests filled after 7 days are considered requests that had to be placed on hold in Queue due to the material not being readily available… the team will consider these requests in future analysis.

# of Days From Request Created TO Material Received

The team looked closer at comparing the Late to the Timely Materials.

Stratify the Problem

The team compared the LATE Materials to the TIMELY Materials and found…
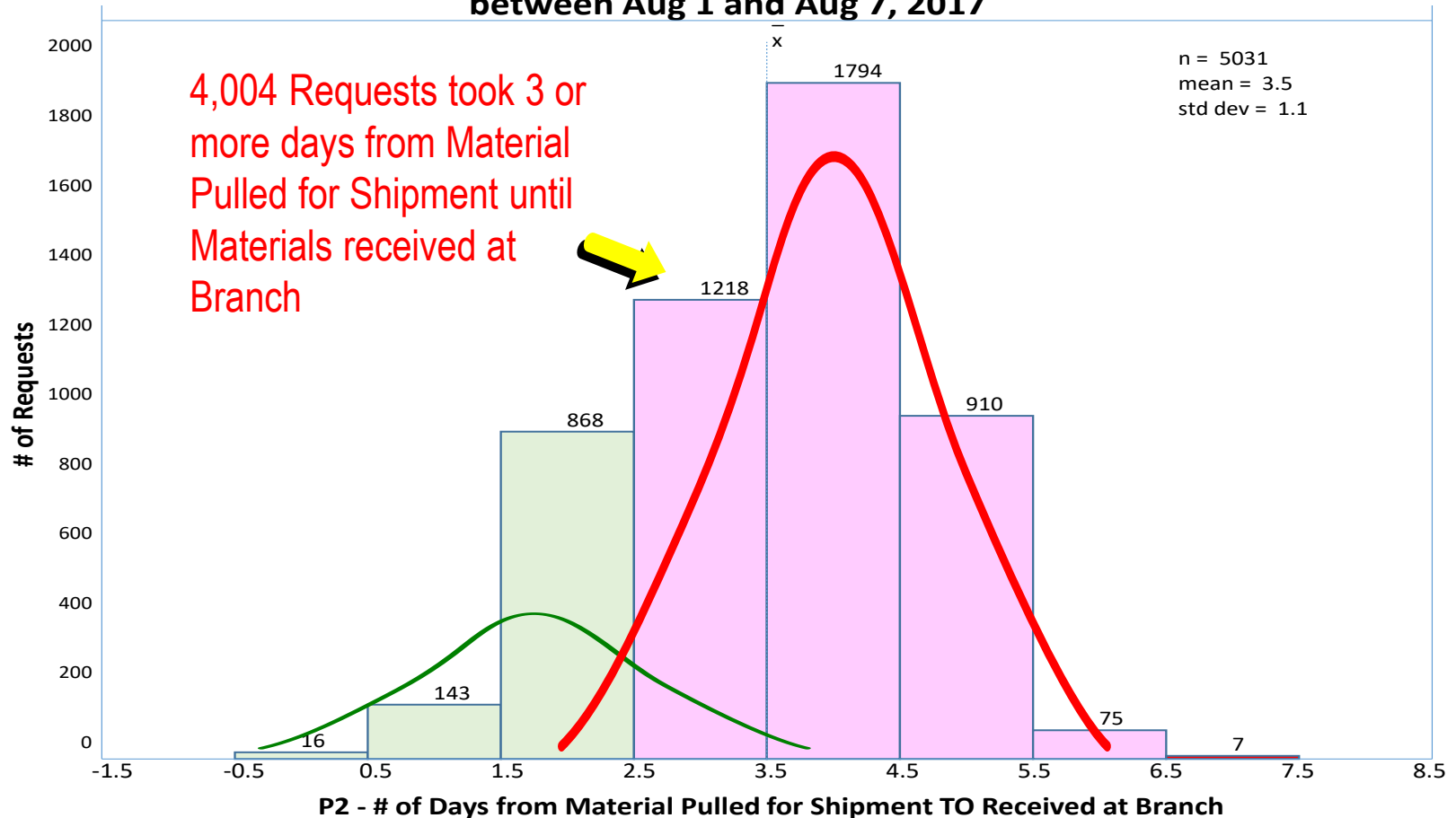
Fulfill Requests for Library Materials

5031 Late Mat'ls	3113 Timely Mat'ls	Differ-ence	PATRON	SHIPPING	RECEIVING
			Need To Deliver Rqstd Materials		
P1 1.5	.6	.9	• Request Materials • Check For Material Availability		
			Materials Available? NO	• Place In Queue Until Mat'l Avail	
			YES	• Pull And Scan Materials	
				• Transport Material	
P2 3.5	1.8	1.7			• Rec And Scan Mat'l
Q1 5.0	2.4	2.6	Pick-up Mat'l		

Late Provided Materials took 1.7 days longer from Materials Pulled to Received than timely Rqsts

The team looked more closely at the 5,031 Late Requests in the P2 Step.

Define | Measure | Analyze | Improve | Control

Stratify Problem

The team stratified the 5,031 Late Requests using a histogram and found…

Library Material Requests Received 4 days or more from Rqst between Aug 1 and Aug 7, 2017
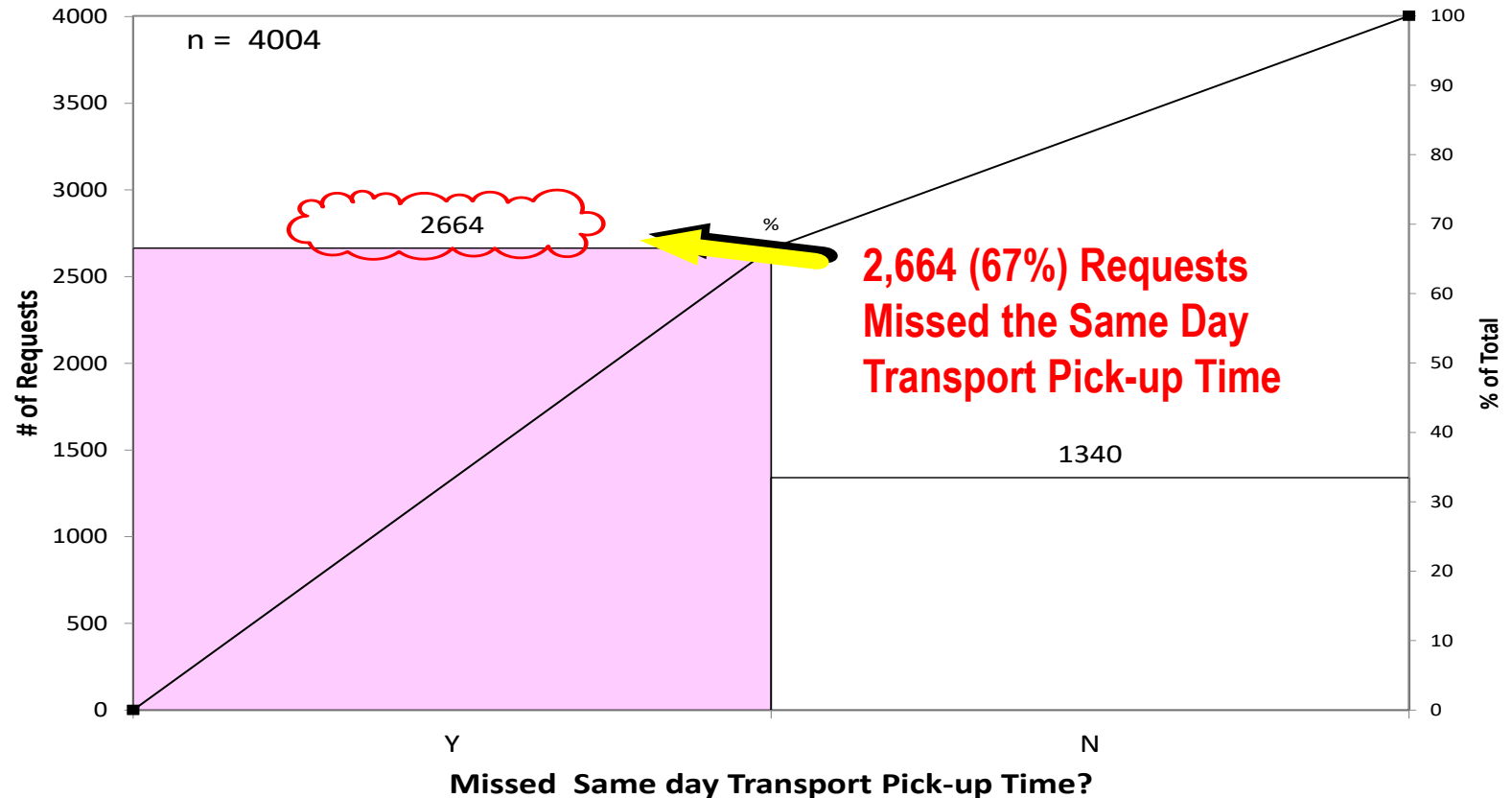
4,004 Requests took 3 or more days from Material Pulled for Shipment until Materials received at Branch

n = 5031
mean = 3.5
std dev = 1.1

Values shown on histogram bars: 16, 143, 868, 1218, 1794, 910, 75, 7

Y-axis: **# of Requests** (0 to 2000)

X-axis: **P2 - # of Days from Material Pulled for Shipment TO Received at Branch** (-1.5 to 8.5)

The team looked closer at the 4,004 requests.

Define Measure Analyze Improve Control

14

Stratify Problem

The team stratified the 4,004 Requests many ways and found…

Library Material Requests Received 4+ days from Rqst and took 3 or more days from Pulled for Shipment - Aug 1 and Aug 7, 2017

n = 4004

2664

%

2,664 (67%) Requests Missed the Same Day Transport Pick-up Time

1340

# of Requests

% of Total

Y   N

Missed Same day Transport Pick-up Time?

The team looked closer at the 2,664 Requests.

Define Measure Analyze Improve Control

The team stratified the 2,664 Requests many ways and found…

Library Material Requests Received 4+ days from Rqst and Missed same day Pick-up and took 3 or more days from Pulled for Shipment Aug 1 and Aug 7, 2017

n = 2664

2,050 (77%) Requests were received on Tuesday or Wednesday

# of Requests — % of Total

- Tu: 1258
- We: 792
- Sa: 427
- Th: 103
- Fr: 62
- Mo: 22

Day of Week Received By Branch
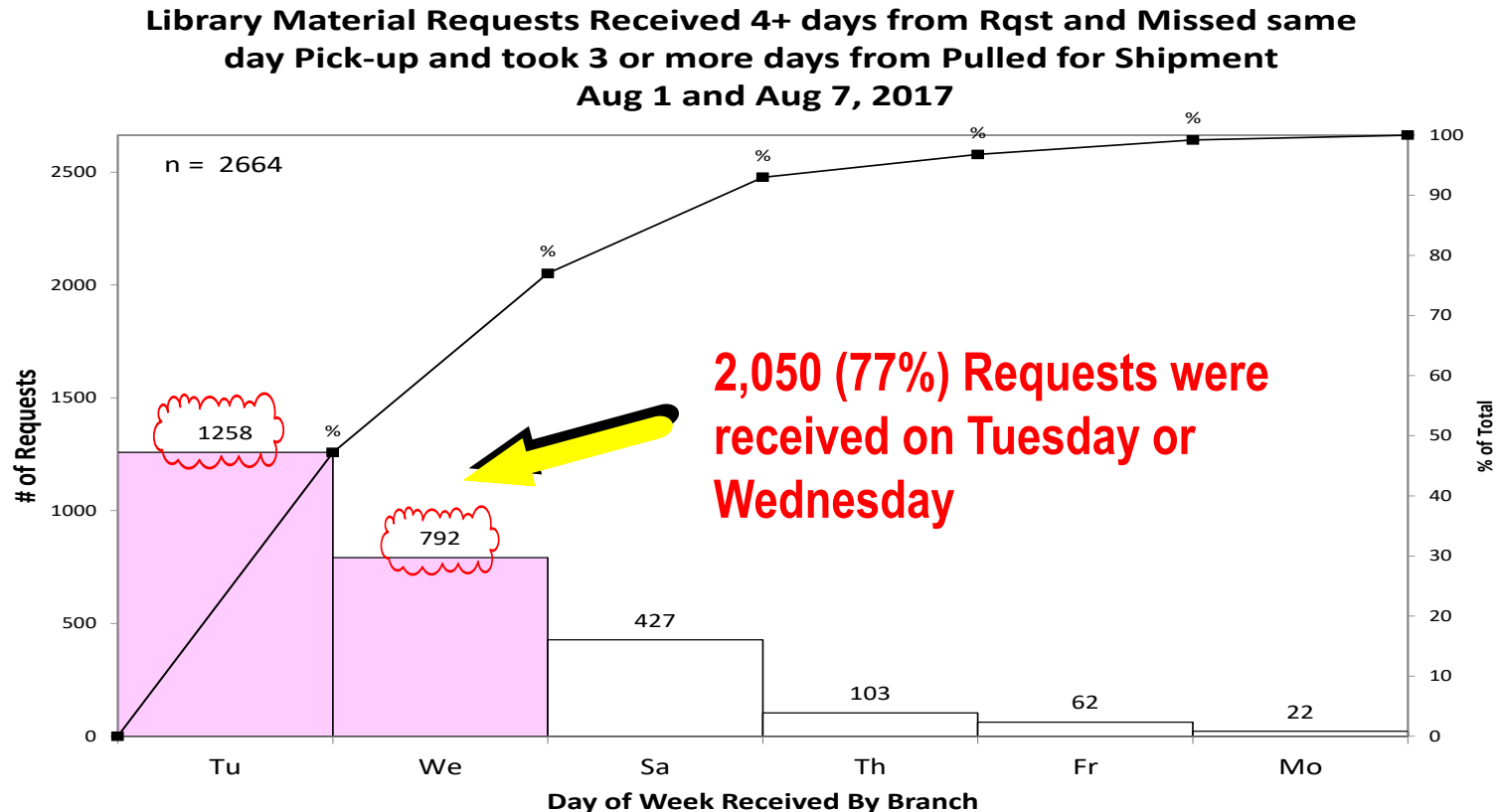
Problem Statement: *"2,050 Library Requested Material Received LATE (4+ days from Rqst) between Aug 1 and Aug 7, 2017, Missed the Same Day Pick-up at Shipping Branch and took 3+ Days from Material Pulled to Received by Branch"*

Define | Measure | Analyze | Improve | Control

The team completed the Fishbone Analysis…

C & E Diagram Problem Statement

Methods/ People

Staff Missed Same Day Pickup at Shipping Branch

Material Pulled after transport left

A No Formal Written Policy to Ensure Shipping Branch Pulls material prior to Pick-up

Requested Materials had to be transported on 2 or more routes

There are 4 Routes that don't coordinate with each other well

Polaris selected materials in locations requiring 2 routes

B

C Routing schedule Design is not optimum

Polaris System does not Consider Routes in its selection software

Environment/ Materials/ Systems

"2050 Library Requested Material Received LATE (4+ days from Rqst) between Aug 1 and Aug 7, 2017, Missed the Same Day Pick-up at Shipping Branch and took 3+ Days from Material Pulled to Received by Branch"

☁ =Potential Root Cause

The team collected data to verify the root causes and found….

Root Cause Verification Matrix

	Potential Root Cause	How Verified?	Root Cause or Symptom
A	No Formal Written Policy to Ensure Shipping Branch Pulls material prior to Pick-up	Team reviewed Library procedures and SOP s and interviewed Library Branch staff and found there is no formal written understood policy	Root Cause
B	Polaris System does not Consider Routes in its selection software	Team checked with Polaris IT experts and found that it is possible to reprogram Polaris to consider delivery routes…not currently done.	Root Cause
C	Better alignment of drivers routes & work functions with branch operational hours	Team reviewed Routing schedule and found routes established based on resources and even workload. While routing minimizes time between branches, it doesn't consider pick times and material timeliness to patron	Root Cause

All 3 Potential Root causes were validated as root causes.

Define | Measure | Analyze | Improve | Control

Identify and Select Countermeasures

The team brainstormed many countermeasures and narrowed them down to these for evaluation:

Countermeasures Matrix

Legend:
- 5=Extremely
- 4=Very
- 3=Moderately
- 2=Somewhat
- 1=Little or None

Problem Statement	Verified Root Causes	Countermeasure	Effective-ness	Feasi-bility	Overall	Take Action? Yes/No
"2050 Library Requested Material Received LATE (4+ days from Rqst) between Aug 1 and Aug 7, 2017, Missed the Same Day Pick-up at Shipping Branch and took 3+ Days from Material Pulled to Received by Branch"	**A** - No Formal Written Policy to Ensure Shipping Branch Pulls material prior to Pick-up	**A1-** Establish a Library System Wide policy of Material Pull Times that is coordinated with Route pick up times, currently generate once a day pick up list	4	5	20	Y
		A2- Already implemented "Pull Process" to include Polaris PRESORTED alpha-numeric pull list	4	4	16	Y
	B - Polaris System does not Consider Routes in its selection software	**B2-** Program Polaris with revised Pick-Up algorithms: *1st Review Requested Branch and find any requested available Material from any Branch within the same Route with an earlier Pick-up time; if no material then 2nd …Select any available Material within the same route; if no material, then 3rd. ..Select any material available.*	4	4	16	Y
	C- Routing schedule Design is not optimum for timeliness of pick-up	**C1-** Analyze routes, and revise other logistical processes to optimize both timeliness and costs	4	4	16	Y

The team selected 4 Countermeasures for implementation.

Define ⟩ Measure ⟩ Analyze ⟩ Improve ⟩ Control

The team performed Barriers and Aids analysis on the selected Countermeasures.

Countermeasure(s): Implement 4 countermeasures to Improve Timeless of filling		
Barriers		**Aids**
Impact (H, M, L)	**Forces against Implementation**	**Forces For Implementation**
M	1) Polaris IT Limitations in availablility, costs,etc *(Supported by Aids: A, B,)*	A) Benefits -$ savings improved and Patron Satisfaction; Easier for staff to pull materials
M	2) Opportunity costs relative to Other completed initiatives *(Supported by Aids: A,B)*	B) IT says they have ability to make changes

The team next sought to incorporate this analysis into the team's Action Plan.
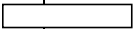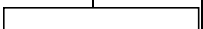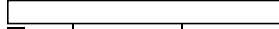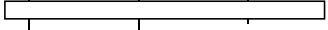
Develop and Implement Action Plan

The team implemented an Action Plan for the team's Countermeasures.

Legend:
- ■ = Actual
- □ = Proposed

WHAT Implement 4 Countermeasures to improve filling of Material Requests

HOW	WHO	WHEN 2018						
		Jan	Feb	Mar	Apr	May	Jun	Jul
1. Develop Countermeasures/ Practical Methods:	Philip, Circulation							
A1- Establish a Library System Wide policy of Material Pull Times that is coordinated with Route pick up times	Sup's, Michele S.	□ 2/19/18 ■						
A2- Standardize "Pull Process" to include Polaris Pull list to be PRESORTED alpha-numeric	Philip, IT	□ 2/19/18 ■						
B2- Program Polaris to consider in its algorithms Follows: 1st Review Requested Branch and find any	Gigi Leo, Jessica	□ 2/19/18 ■						
C1- Analyze routes, and revise other logistical processes to optimize both timeliness and costs	Will, Jeff, IT,	□ 2/19/18 ■						
2. Secure Management Approval of Countermeasures **(share benefits and savings)**	Team		□ ■	4/13/18				
3. Communicate/Train Staff in Countermeasures and related policies/procedures **(share benefits and Mgmt. Support)**	Team			□ ■	5/31/18			
4. Implement Countermeasures	Team			■ 4/30/18	□	6/30/18		
5. Establish On-going responsibilities and standardize countermeasures into operations	Team					□	On-Going	

Define ⟩ Measure ⟩ Analyze ⟩ Improve ⟩ Control

Estimated Return on Investment (ROI)

The team estimated the net Benefits and ROI.

ROI WORKSHEET for: **Reducing Time to Deliver Requested Materials**

ITEMIZED COSTS (DESCRIPTION)	$ VALUE (ANNUALIZED)	ITEMIZED BENEFITS (DESCRIPTION)	$ VALUE (ANNUALIZED)
A1- Establish a Library System-Wide policy of Material Pull Times that is coordinated with Route pick up times	No Cost	At the current 2-day delivery rate of 18 percent, over 47,000 items were returned because they were not picked up by patrons with an estimated cost of $118,000. With an original goal of 50%, two-day delivers would be increased by 32% and the cost for material not picked up should decrease by approximately $46,000.	
B2- Program Polaris with revised Pick-Up algorithms: 1st select Material from same Branch and earlier Pick-up time; if no material then2nd…Select Same route; 3rd...Select any route	No Cost		
C1- Analyze routes, and revise other logistical processes to optimize both timeliness and costs	No Cost	$118,000 annually: Team to improve 82% by 32% to 50% OR 50%.....(32/82)*$118,000=	$46,049
Total Annualized Costs	**$0**	**Total Expected Annualized Benefits**	**$46,049**
Net Benefits==>	**$46,049**		

Review Results

The team collected indicator data and reviewed performance trends:

**Q2 - % of Requested Readily Available Materials
Received at Branch within 2 days of Patron Request**
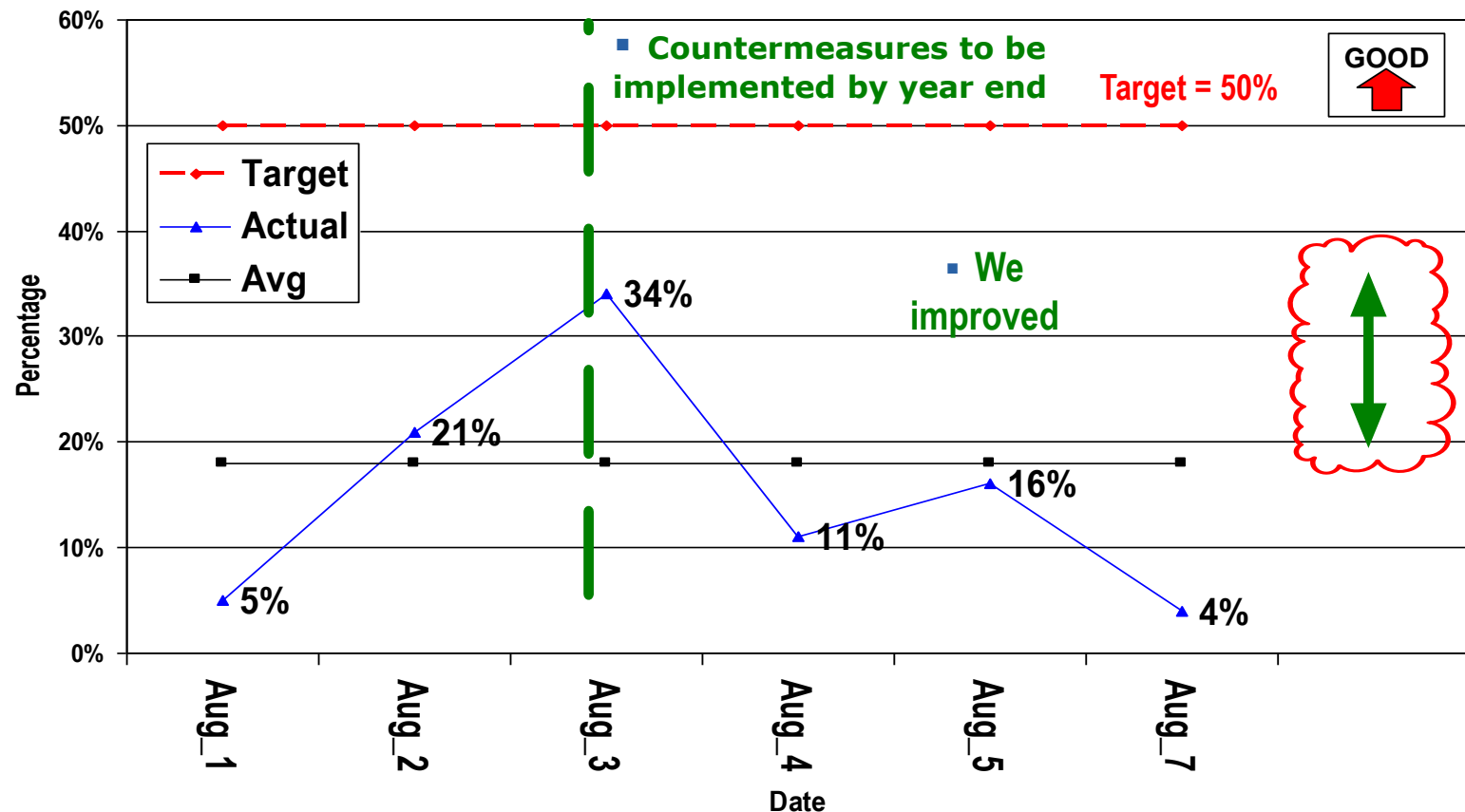
The team will continue to monitor the countermeasures.

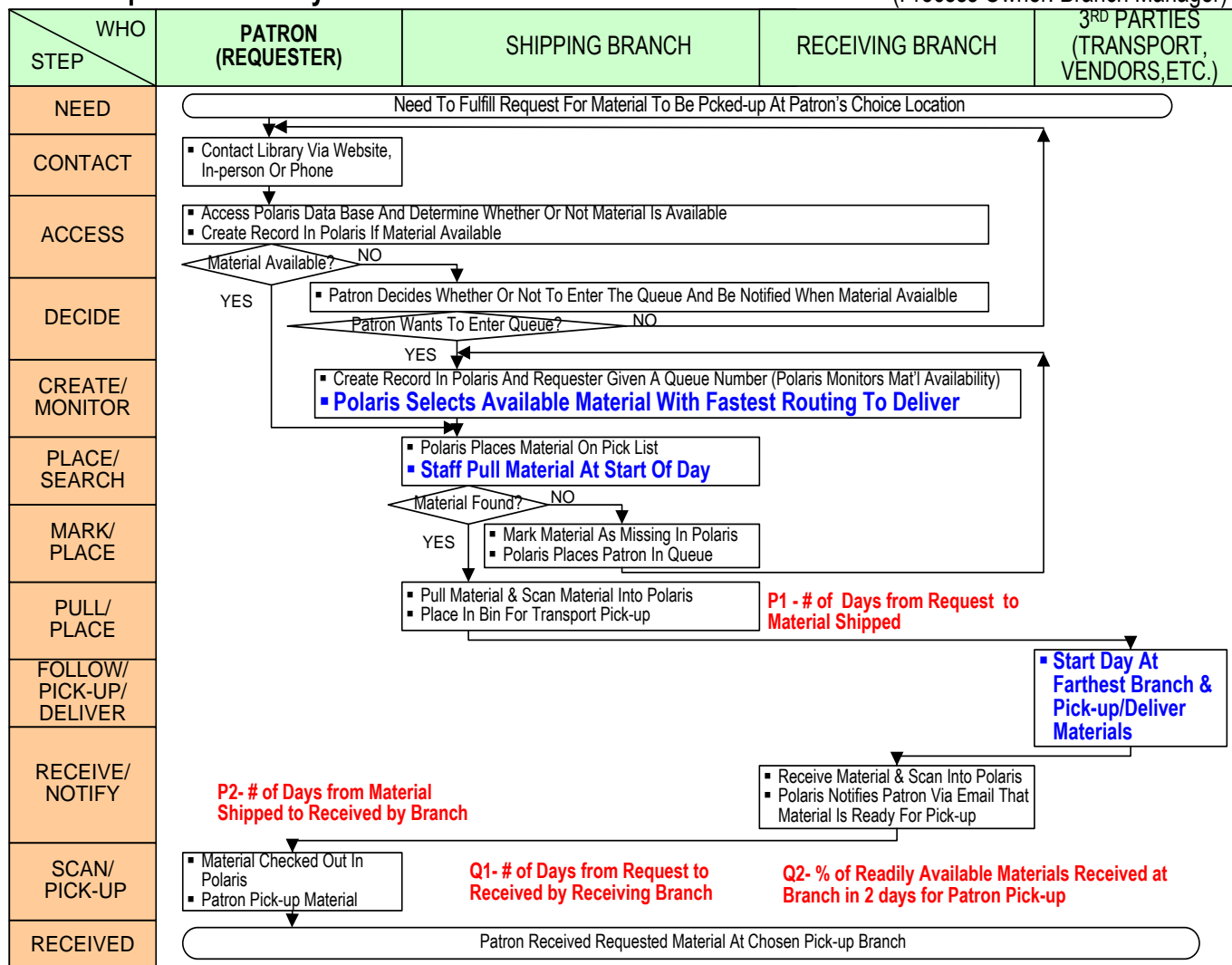Define > Measure > Analyze > Improve > Control

Standardize Countermeasures

The team incorporated their counter-measures into their Process Flowchart.

Fulfill Request For Library Materials

(Process Owner: Branch Manager)

WHO / STEP	PATRON (REQUESTER)	SHIPPING BRANCH	RECEIVING BRANCH	3RD PARTIES (TRANSPORT, VENDORS,ETC.)
NEED	Need To Fulfill Request For Material To Be Pcked-up At Patron's Choice Location			
CONTACT	• Contact Library Via Website, In-person Or Phone			
ACCESS	Material Available?	• Access Polaris Data Base And Determine Whether Or Not Material Is Available • Create Record In Polaris If Material Available		
DECIDE	YES	NO — • Patron Decides Whether Or Not To Enter The Queue And Be Notified When Material Avaialble Patron Wants To Enter Queue? — NO		
CREATE/ MONITOR		YES — • Create Record In Polaris And Requester Given A Queue Number (Polaris Monitors Mat'l Availability) **• Polaris Selects Available Material With Fastest Routing To Deliver**		
PLACE/ SEARCH		• Polaris Places Material On Pick List **• Staff Pull Material At Start Of Day**		
MARK/ PLACE		Material Found? — NO — • Mark Material As Missing In Polaris • Polaris Places Patron In Queue YES		
PULL/ PLACE		• Pull Material & Scan Material Into Polaris • Place In Bin For Transport Pick-up	**P1 - # of Days from Request to Material Shipped**	
FOLLOW/ PICK-UP/ DELIVER				**• Start Day At Farthest Branch & Pick-up/Deliver Materials**
RECEIVE/ NOTIFY		**P2- # of Days from Material Shipped to Received by Branch**	• Receive Material & Scan Into Polaris • Polaris Notifies Patron Via Email That Material Is Ready For Pick-up	
SCAN/ PICK-UP	• Material Checked Out In Polaris • Patron Pick-up Material	**Q1- # of Days from Request to Received by Receiving Branch**	**Q2- % of Readily Available Materials Received at Branch in 2 days for Patron Pick-up**	
RECEIVED	Patron Received Requested Material At Chosen Pick-up Branch			

MD_DMAIC_Story_Reduce Library Book Transport Time_FLOWCHART_AFTER_1-20-18.vsd 2/3/18

Define > **Measure** > **Analyze** > **Improve** > **Control**

The team completed the Process Control System form for the Process.

The team will monitor the process ongoing.

Process Control System						
Process Name: Fulfill Request for Library materials			**Process Owner**: CSS & Branch Manager			
Process Customer: Patron (Requester)			**Critical Customer Requirements:** Provide Material as requested timely at requested pick-up branch			
Process Purpose: Provide Requested Materials at patron Chosen Branch			**Current Sigma Level:** TBD			
			Outcome Indicators: Q1 and Q1			
Process and Quality Indicators			Checking / Indicator Monitoring			Contingency Plans / Misc. • Actions Required for Exceptions • Procedure References
Process Indicators And Quality Indicators		Control Limits Specs/ Targets	Data to Collect What is Checking Item or Indicator Calculation	Timeframe (Frequency) When to Collect Data?	Responsibility Who will Check?	
P1	# of Days from Request to Material Shipped	1 Day	(Date Shipped)- (Date Requested)	Weekly	Branch Mgr, CSS	Polaris; Contact Shipping Branches
P2	# of Days from Material Shipped to Received by Branch	2 Days	(Date Received)- (Date Shipped)	Weekly	Branch Mgr, CSS	Polaris; Contact transport/ Receiving Branches
Q1	# of Days from Request to Received by Receiving Branch	2 Days	(Date Received)- (Date Requested)	Weekly	Branch Mgr, CSS	Polaris; Investigate
Q2	% of Requested Available Materials Received at Branch in 2 days for Patron Pick-up	TBD	100* (# received within 3 days)/(# Received)	Weekly	Branch Mgr, CSS	Polaris; Investigate

Approved: _____ Date: _____ Rev #: _____ Rev Date: _____

Define ⟩ **Measure** ⟩ **Analyze** ⟩ **Improve** ⟩ **Control**

Identify Lessons Learned

Lessons Learned

1. **Need to standardize procedures for pulling requested material** for all branches is critical

2. **Polaris software system updates were essential** and did not consider good customer service protocols

3. **Pareto chart was very helpful** in pointing out Tues. and Wed. deliveries were days that late materials were delivered
   (Direct correlation to items pulled previous week on a Wednesday since
   there is no delivery on Friday, Sunday, Monday)

Next Steps:

Continue to implement countermeasures and monitor performance results as well as look at reducing requests that enter the queue due to material not being readily available.

Define > Measure > Analyze > Improve > Control