A Lean Six Sigma Application

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The Pre-LSS PPMS process

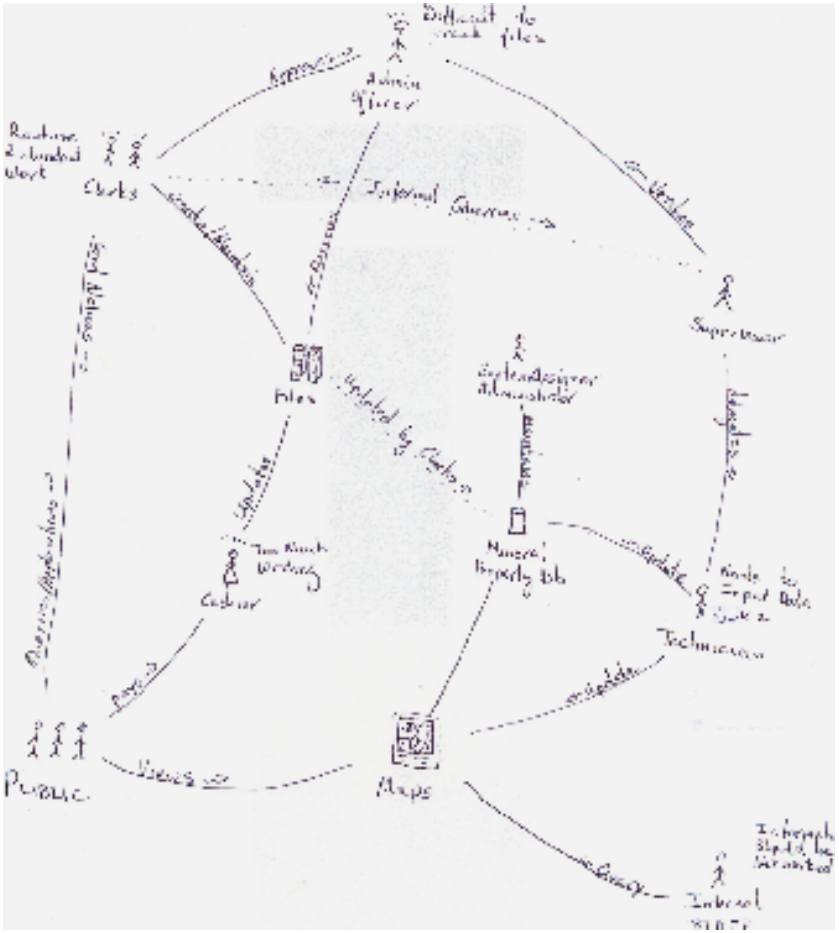


Diagram 1 Rich Picture Analysis of PPMS Process prior to standardisation

Define Phase

- **GOAL of Define**: Define the scope of the project in terms of customer-critical demands, and identify the process or service in need of improvement.
- **Main Objective:**
  - Reduce the PPMS cycle time from over 300 days to 75 days
- Other objectives:
  - To improve tracking
  - To improve information flow
  - To reduce operational cost
  - To reduce cycle time

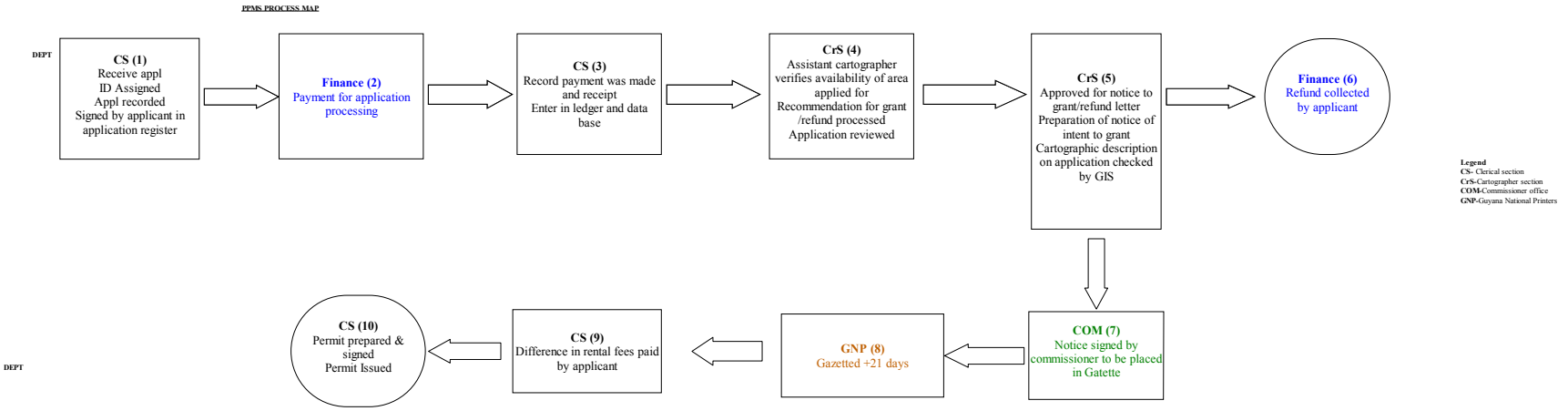
Tools used: Training, Process Diagram, Project Charter, Affinity Diagram.

Project Charter

PROJECT TITLE: Reduced processing time for processing of PPMS applications

Description: reducing the processing time for PPMS from in excess of 180 days to 42 days.				
Background: The current system takes on average 327 days .for an application to be processed. The current process is lengthy and tedious to customers and this is one area in which the commission can attain 80% customer satisfaction by June 2008				
Scope: The intended changes will affect customers and staff				
KIPV: Adequate staffing, computers, computer programs				
KOPV: Customer satisfaction, reduced processing time (since time is a cost factor)				
Estimated Costs: $10, 034, 710.00				
Goals: Improved processing time for applications for PPMS to 42 days, to be in sync width the customer satisfaction to above 80% by June 2008.				
Other Benefits: satisfied workers with lighter work load more applications being processed in a shorter time				
Role	**Name**	**Utilization**	**Start**	**End**
Project Champion	Mr .Woolford			
Team Member	D. Singh			
Sponsor	**K. Persaud**			
Team Member	G. Nestor			
Team Member	K. Goodchild			
Team Member	T. Curry			
Team Member	D. Kingston			
Team Member	C. Mathews			
Team Member	A. Butts			
Team Member	K. Josiah B. Monsie			
Team Member	L. Keer A. Roberts			
Team Member	A. Gibbs			
Team Member	D. Mc Donald			
Team Member	R. Benjamin			
Team Member	M. Howard			

Process Diagram



LSS based RIP Training

- Personal Time Management
- SIPOC Diagram
- Alignment of priorities via the Vision and Mission statements along with goals and objectives as stated by the Commissioner (a.g.).
- The Basic Quality Tools
- Problem Solving Tools
- Value Stream Mapping and Complexity Value Stream Mapping
- The Define, Measure, Analyze, Improve, Control (DMAIC) sequence
- Cost of Poor Quality
- Return on Investment Principles
- Internal and External Customer Satisfaction Principles
- Fundamental Principles and Core Values of the commission
- Department and Cross-functional Team dynamics
- Planning for successful Project execution within twelve week cycles

Modern Quality Tools

- Affinity Diagram
- Tree Diagram
- Process decision program chart (PDPC)
- Matrix Diagram
- Interrelationship digraph (I.D.)
- Prioritization matrices
- Activity network diagram

Measure Phase

- **Goal**: Translate the problem into a measurable form, gather data and assess the current status.
- **Actions:**
  - A 30 days time frame was set for completing the CVSM data collection.
  - The team came up with strategies to collect information on cycle time.
  - Tool used: CVSM

CVSM Data

STEP #	CT	LT	INV	COMPLX	SOLUTIONS	COMP. DATE	RESPONSIBILTY
6	3 mins		50 Apps.		Mandate to uplift files approx. every 2 hrs get additional staff to enter payments & return files Longterm - computerisation		K. Persaud
14	3-5 mins	1 wk- 1 mth	> 400	5	Pooling/Cross training flow to: FK→CR→DS→AB →Comm.		
15	7 mins	2 wks	> 300	7			
28	15 mins	1 mth	1 refer to step 15	3	Pooling		
29	15 mins	2 wks		7	Cross training	7/4/2009	D. Singh
30	10 mins	1 day	50	* * *	Develop smaller batch sizes (change from 50→20)		

Analyze Phase

- **Goal:**
  - To identify and investigate influencing factors and root causes that determine the CTQs behavior
- Actions
  - The team brainstormed possible solutions for reducing the cycle time for the PPMS process.
  - Pooling and cross training was used to address the delays in the PPMS process
  - A short term solution to the problem is mandating to uplift files approximately every two hours and to get additional staff to enter payments and return files. While a long tern solution is having computerized assistance.
- Tools used: I.D., A.D., CVSM, Tree Diagram, Process map

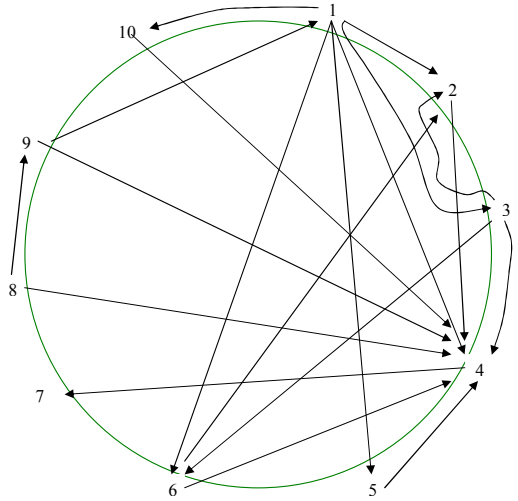
A.D. Contributors – Inputs to I.D.

- Lack of Automation of Procedures
- Time taken to update files at cashier
- Inadequate amount of Staff
- Bottleneck @ steps 6, 14, 15, 28 – 31 of process map
- Unnecessary Redundancy 12 – 13 of process map
- Errors @ steps 7 – 17 of process map
- Unnecessary institutional impedance steps 19-20 of process map
- External Factors
- Equipment Failures
- Multiple Checks

Interrrelationship Digraph

Land Administration Department

Mineral Property Management Diagraph



Legend

KEY	Description	Causes (in)	Effects (out)
1	Lack of Automation of Procedures	1	6
2	Time taken to update files at cashier	4	1
3	Inadequate Staff	1	3
4	Bottleneck @ steps 6, 14, 15, 28 – 31	8	1
5	Unnecessary Redundancy 12 – 13	1	1
6	Errors @ steps 7 – 17	3	2
7	Unnecessary institutional impedance steps 19-20	1	0
8	External Factors	0	2
9	Equipment Failures	1	4
10	Multiple Checks	1	1

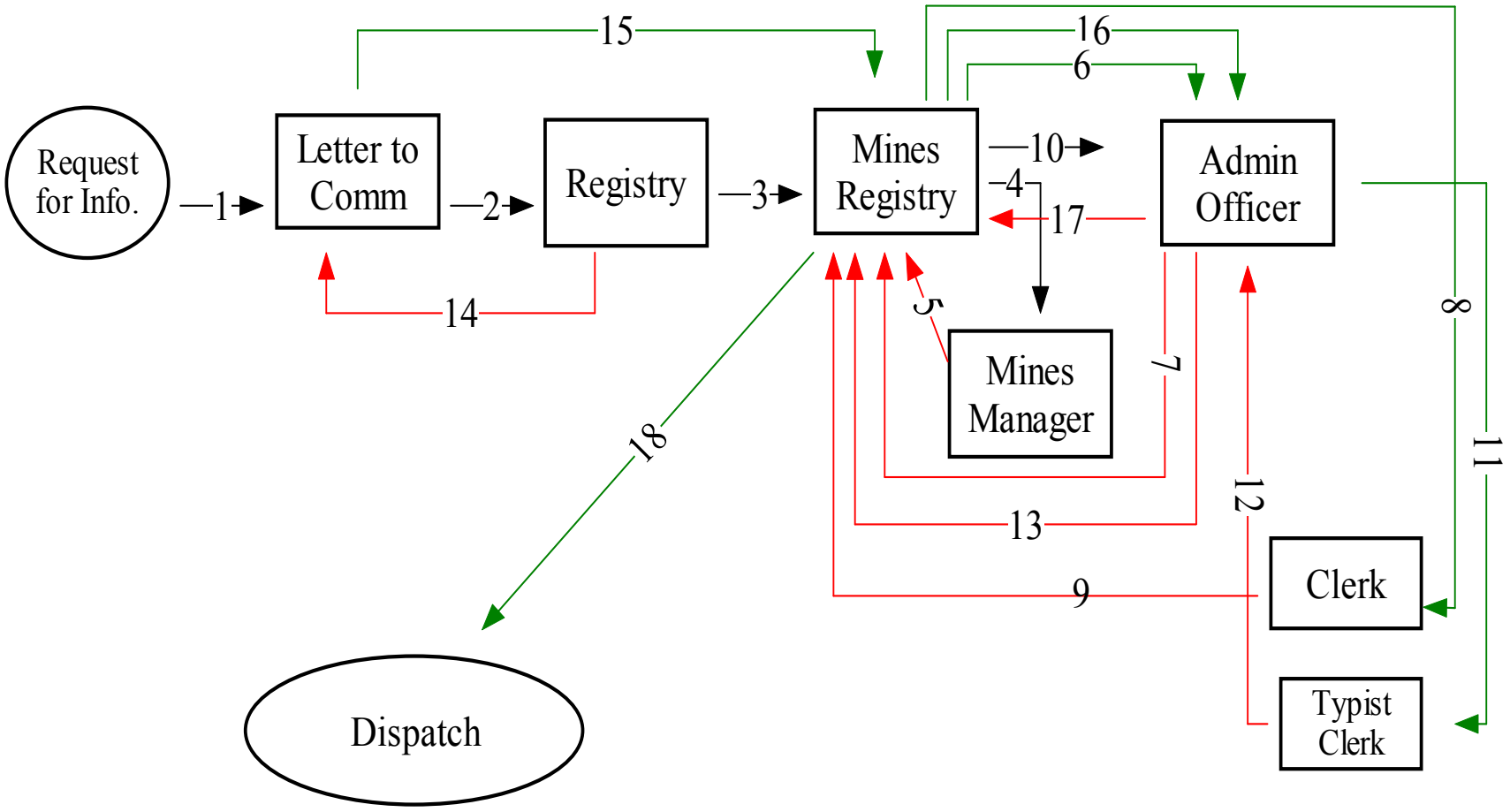
Results of I.D.

- Key causes -- the bottlenecks @ steps 6, 14, 15, 28 – 31 of process map and time taken to update files at cashier
- Key effects -- lack of automation of procedures and an inadequate amount of staff

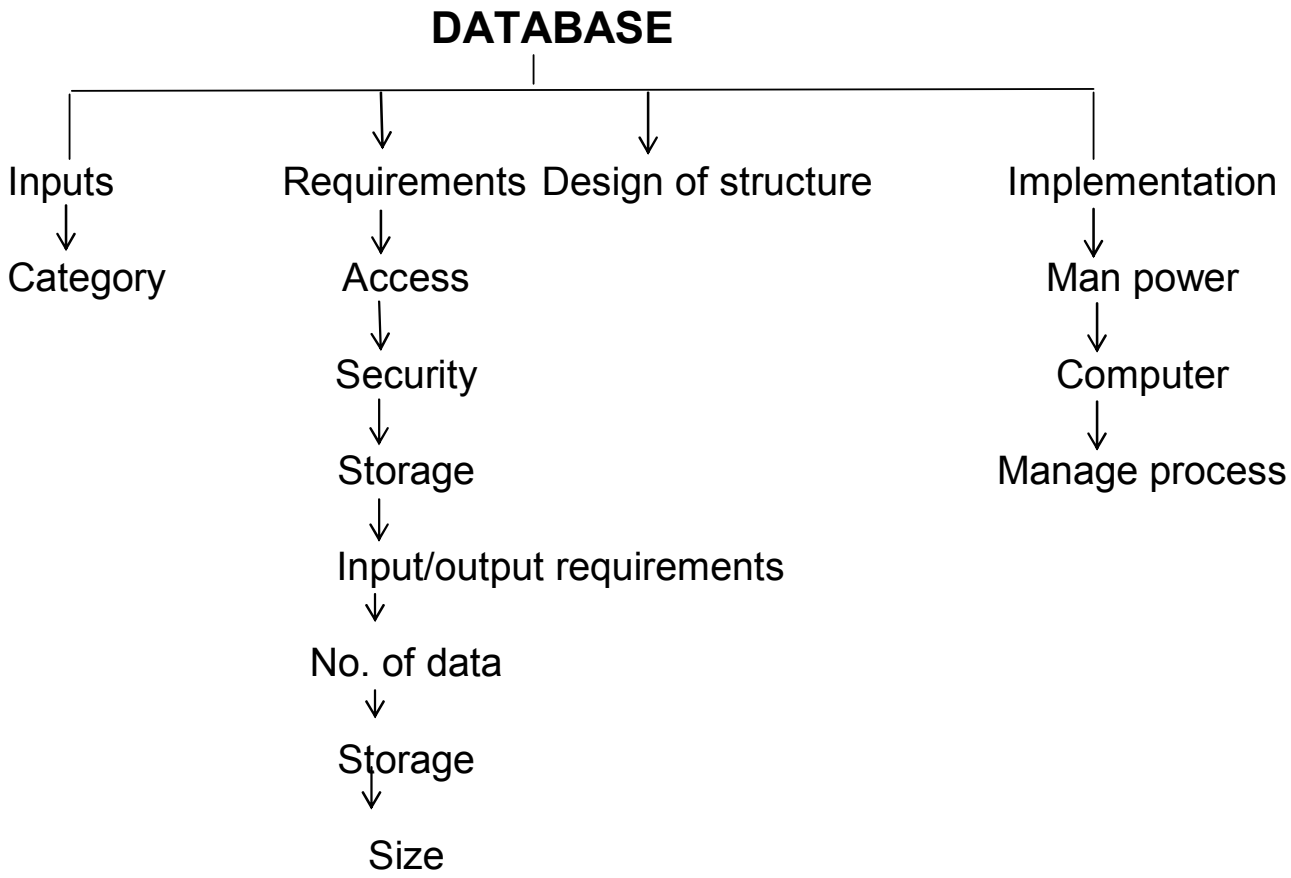
Affinity Groups – Reducing Cycle Time

Automation	Smooth flow of cycle	Set time line for each task	Lessen cycle time generally	Proper management	Availability of staff	Other
convert from file based management syst. to all electronic workflow syst.	allow customers to pay via invoices instead of files & stamps being updated	GIS time to be reduced	reduce full payment time	proper management	need more staff- cashiers	Advice by billboard of cycle time & procedure
					staff shortage	Standard form notices
have a digital workflow management	smooth flow of applications		reduce grant time for PPMS	need good management	add. Staff in GIS dept.	Mechanism for exceptions
automated systems computerise syst.			reduce typing time	improve management		Increase processing fees for non payment of applicants
automated syst. In GIS dept.						Files to return from customers same day
automate routine tasks						
TOTAL RESPONSES	5	2	1	3	3	3	5

Detailed Process Map based on I.D. Info.



Tree Diagram – Database Requirements



Improve Phase

- Process modified to improve performance by:
  - Reduced process steps
  - Developed Share Point
- Tools used: CVSM, Tree Diagrams, Process map

ASQ– Long Island Section 0303

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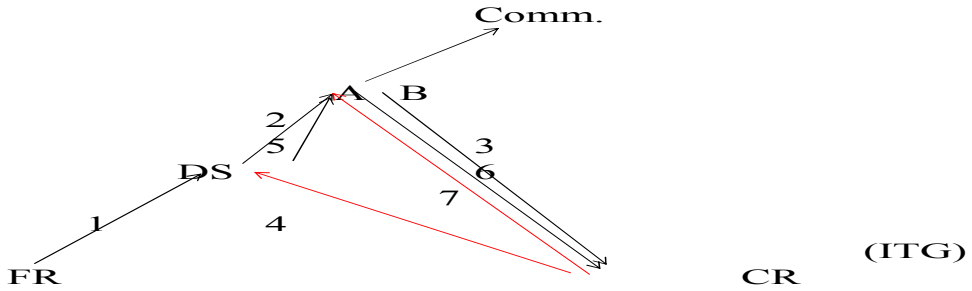
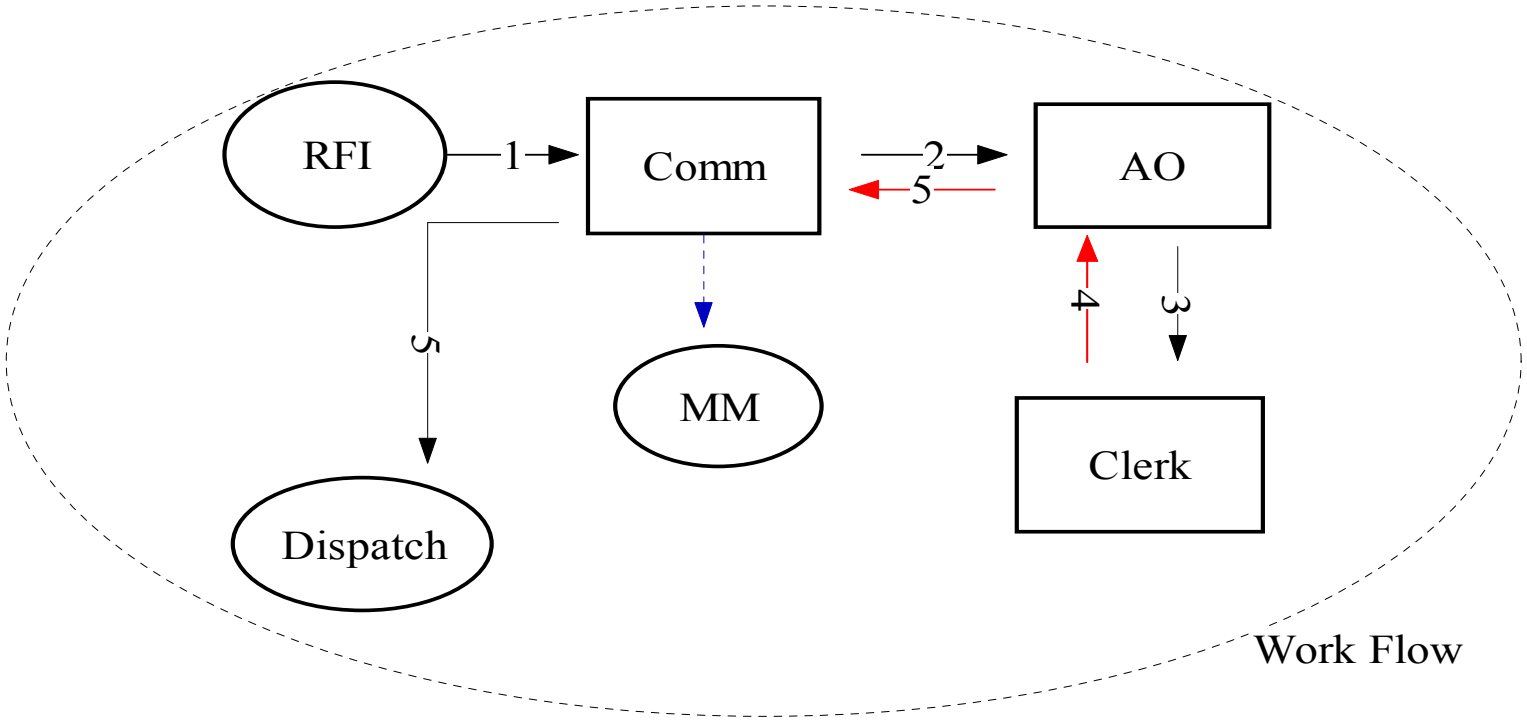
LT - Lab Time
CT - Cycle Time
INV - Inventory
COMPLX - Complexity

STEP 14 PROCESS MAP

Pooling/ Cross Functional Training



Improved Processing Share Point



KEY
RFI - Request for Info.
MM - Mines Manager
AO - Admin Officer

Executive Summary

- **GOAL**: Define the scope of the project in terms of customer-critical demands, and identify the process or service in need of improvement.
- **Results:**
  - To date, PPMS cycle time reduced from over 300 days to less than 100 days
- The overall objectives are being met:
  - Improved tracking
  - Improved information flow
  - Reduced operational cost
  - Significant reductions in cycle time