

GOVERNMENT PROCESS ANALYSIS

Agenda

- ❖ Classification of activities into Value Added (VA) & Non Value Added (NVA)
- ❖ Identifying process complexity
- ❖ The Seven wastes
- ❖ Hands on time, Turn around-time
- ❖ Cause & Effect analysis in a Government Process environment
- ❖ Five Whys
- ❖ Identification of key metrics & VA/NVA of a chosen process
- ❖ Defining a Desired or 'To-Be' State

What is process analysis

A step-by-step breakdown of the phases of a process,

used

to convey the inputs, outputs, and operations that take place during each phase.

**It can be used
to improve understanding of**

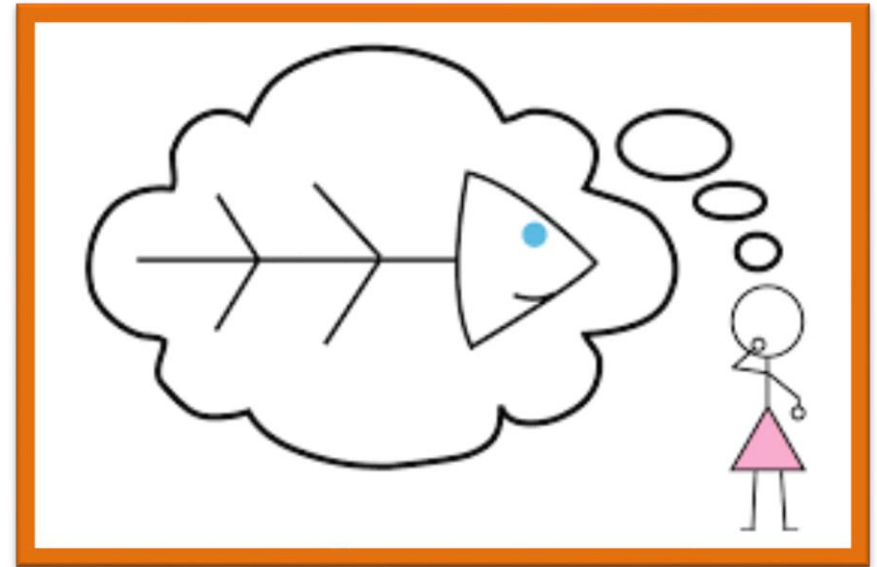
how the process operates,

and

to determine potential targets for process improvement through removing waste and increasing efficiency.

Identifying root causes

- ❖ Once current processes have been documented along with the data (relevant CTPs) it is useful to identify the root causes of problems and non-value adding activities in processes.
- ❖ Identifying the root cause of process dysfunction enables you to ensure that the process redesign solves the root cause, rather than simply addressing a symptom of a problem that will occur again.
- ❖ It also allow you to determine how many processes are affected by a single root cause. The more process problems a root cause creates, the higher priority it is for being addresses quickly and effectively.



Indicators of poor process

- ❖ Too much movement
- ❖ Too much re-entry and or copying
- ❖ Standard formats not easily available
- ❖ Process too much disintegrated
- ❖ Process needs many manual inputs requiring references from other documents
- ❖ Customers need to provide same information and or data multiple times
- ❖ Activities, information, data that does not serve any purpose and can be eliminated
- ❖ Activities, information, data, documents that can be integrated
- ❖ Activities, process can be simplified
- ❖ Activities, process, information, data that can be automated
- ❖ Process where 3 major benefits of Information Technology viz. Independence from PLACE, TIME & PERSON can be utilized.
- ❖ The process is 'MULTIPLE WINDOW'



A cause-effect diagram

IT IS A STRUCTURED APPROACH TO EXHAUSTIVELY DETERMINE PERCEIVED SOURCES (CAUSES) OF A PROBLEM (EFFECT)

- ❖ Why use it?
 - To help the team organize and graphically display all the knowledge it has about the problem

- ❖ What does it do?
 - It helps unearth all possible causes for the problem at hand by capturing views of all members
 - It creates a consensus around the problem and builds support for resulting solutions
 - It focuses the team on causes rather than symptoms
 - Organizing data serves as a guide for discussion and inspires more ideas

The Fishbone Diagram

- ❖ Ishikawa diagrams (also called fishbone diagrams or cause-and-effect diagrams) are diagrams that show the causes of a certain event.
- ❖ They were first proposed in the 1960s, by Kaoru Ishikawa who pioneered quality management processes in the Kawasaki shipyards, and in the process became one of the founding fathers of modern management. They are considered one of the seven basic tools of quality control



Brainstorming tool – 5 Whys approach

- ❖ The 5 Whys is a question-asking method used to explore the cause / effect relationships underlying a particular problem
- ❖ Used to come up with the root causes for the problem at hand
- ❖ Continue asking Why till you get to a root cause (need not necessarily be at the 5th Why...)
- ❖ Continue with the 5 whys process till all the possible root causes are covered

5 Whys approach – Example 1

- ❖ The following example demonstrates the basic process of 5 Whys:
- ❖ My car will not start. (the effect)
 - *Why? - The battery is dead. (first why)*
 - *Why? - The alternator is not functioning. (second why)*
 - *Why? - The alternator belt has broken. (third why)*
 - *Why? - The alternator belt was well beyond its useful service life and has never been replaced. (fourth why)*
 - *Why? - I have not been maintaining my car according to the recommended service schedule. (fifth why, a root cause)*
 - *Why? - Replacement parts are not available because of the extreme age of my vehicle. (sixth why, optional footnote)*

How to draw a fish-bone diagram? (1 of 2)

- ❖ Take the problem as the end effect
- ❖ Take a large sheet of paper and write the effect in the right hand middle in a block
- ❖ Draw the center bone / line
- ❖ Begin by using the 5-Why methodology & build the bones of the diagram
- ❖ Lines should flow towards the “effect” and touch with the arrow heads
- ❖ Start from right with a main “Why” category bone and add sub-categories bones to the main line
- ❖ At every level ask Why this is caused / What causes this?
- ❖ Keep asking this question and build the fishbone until the causes are specific enough to verify – Be sure to work from the level of symptom to cause
- ❖ General thumb rule is to ask “Why” five times to reach to a verifiable cause

How to draw a fish-bone diagram? (2 of 2)

- ❖ For every cause that is not a sub-category to the earlier “Why” and is a distinct family/ category of cause, add a new bone to the diagram
- ❖ Build the major categories/ families (bones) towards the left
- ❖ Brain storm to collect all the possible causes that the team knows
- ❖ Build the diagram by linking the brainstormed causes under appropriate categories
- ❖ Refine categories where necessary
- ❖ It is a good practice to bring-in more and more people to look at the Fishbone diagram to add to the cause
- ❖ Circle the causes that seem most probable
- ❖ Some of these causes can be taken up for measurement & verification

Cause & effect diagram for “CSK’s defeat in IPL-6 final cricket match”

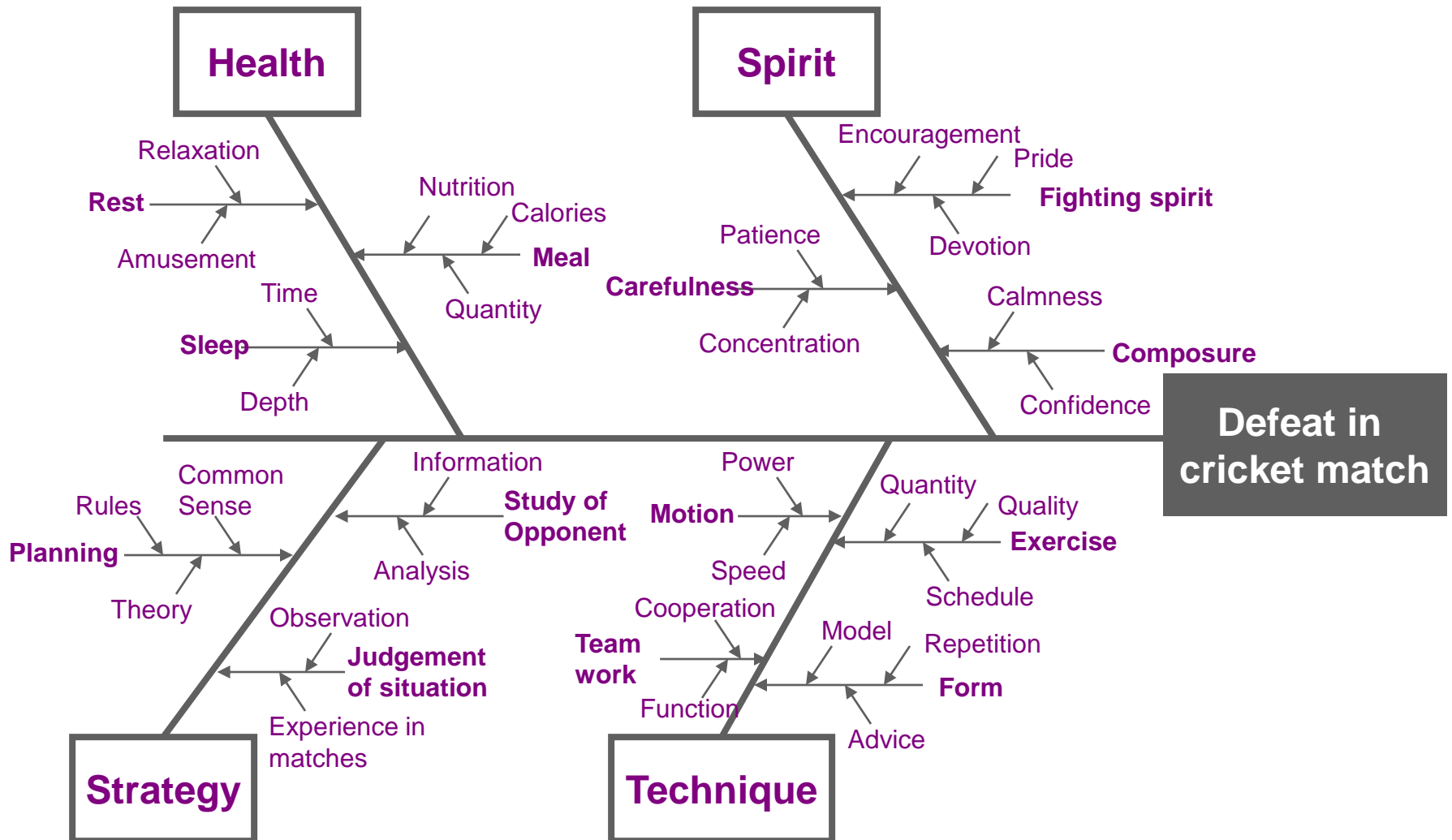
Identify all possible causes....

- ❖ Planning
- ❖ Sleep
- ❖ Study of opponent
- ❖ Judgment of situation
- ❖ Composure
- ❖ Meal
- ❖ Carefulness
- ❖ Form
- ❖ Team work
- ❖ Fighting spirit
- ❖ Motion
- ❖ Rest
- ❖ Exercise

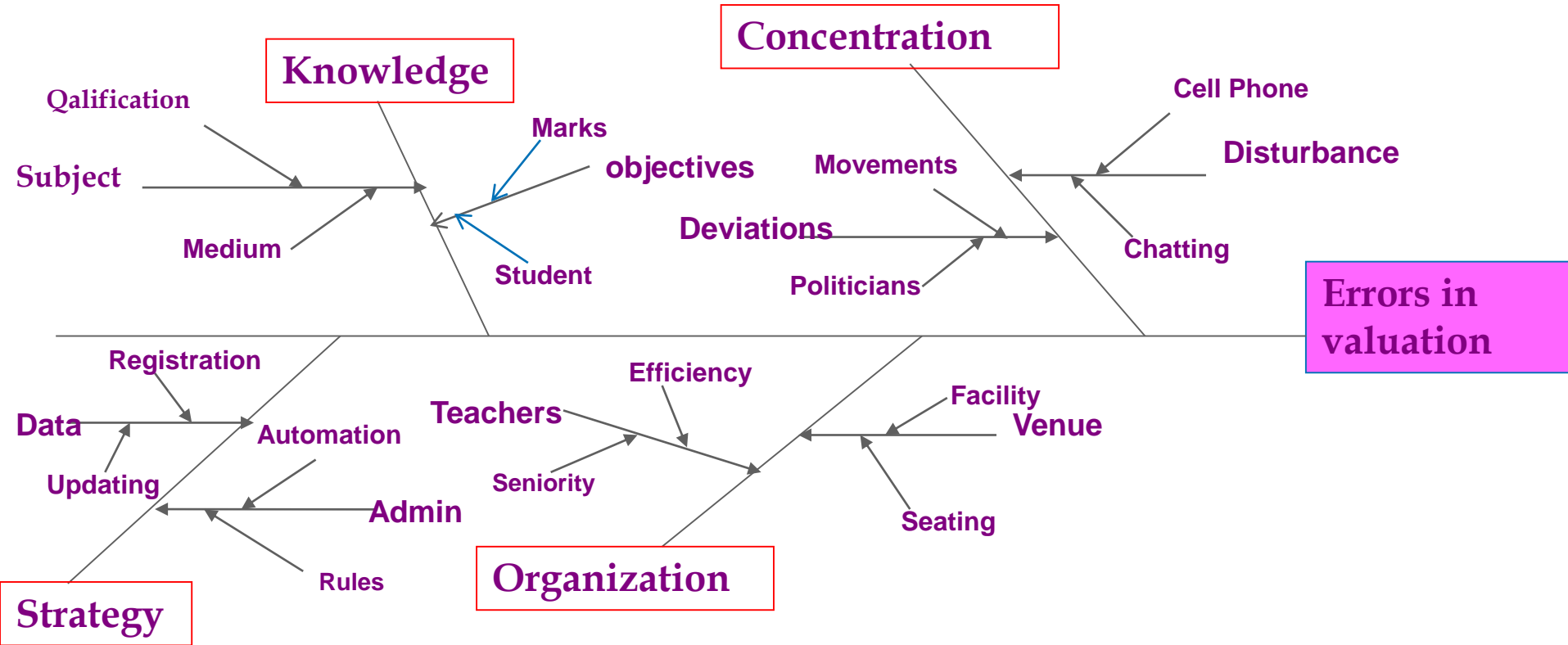
Affinitize causes into categories...

- ❖ Rest
 - ❖ Sleep
 - ❖ Meal
 - ❖ Planning
 - ❖ Study of opponent
 - ❖ Judgment of situation
 - ❖ Carefulness
 - ❖ Composure
 - ❖ Fighting spirit
 - ❖ Team work
 - ❖ Motion
 - ❖ Exercise
 - ❖ Form
- Health**
- Strategy**
- Spirit**
- Technique**

Cause & Effect diagram for “Indian cricket team’s defeat”



Cause and Effect Diagram for Errors in Valuation



Cause & effect for low inland fish production

1. Availability and quality of the Inputs
2. Common Property – results in disputes
3. Conflict of interest
4. Delay in Confirmation of the right to fish
5. Fish Feed
6. Fish Seed Quality
7. Fishermen unaware
8. Greedy fishermen
9. Grow out period – not sufficient
10. Illiteracy of fishermen
11. Large Reservoirs
12. Litigations with department/other fishermen
13. Nets/ Boats
14. Old Techniques used by fishermen
15. Poor Governance by department
16. Rain-fed fish ponds
17. Scattered all over the area
18. Silt/Weed in the fish ponds
19. Staff at Gross root not trained
20. Stocking Density - poor
21. Stocking Size - poor
22. Subsidy to the Fishermen
23. Training of fishermen

Grouping of cause & effect for low inland fish production

Availability and quality of the Inputs

Fish Seed Quality

Nets/ Boats

Subsidy to the Fishermen

Fish Feed

Inputs

Conflict of interest

Litigations with department/other fishermen

Delay in Confirmation of the right to fish

Poor Governance by department

Large Reservoirs

Leasing Policy

Illiteracy of fishermen

Training of fishermen

Staff at Gross root not trained

Fishermen unaware

Greedy fishermen

Stake Holders

G.P. less focus

Silt/Weed in the fish ponds

Rain-fed fish ponds

Common Property - results in disputes

Scattered all over the area

Resources

Old Techniques used by fishermen

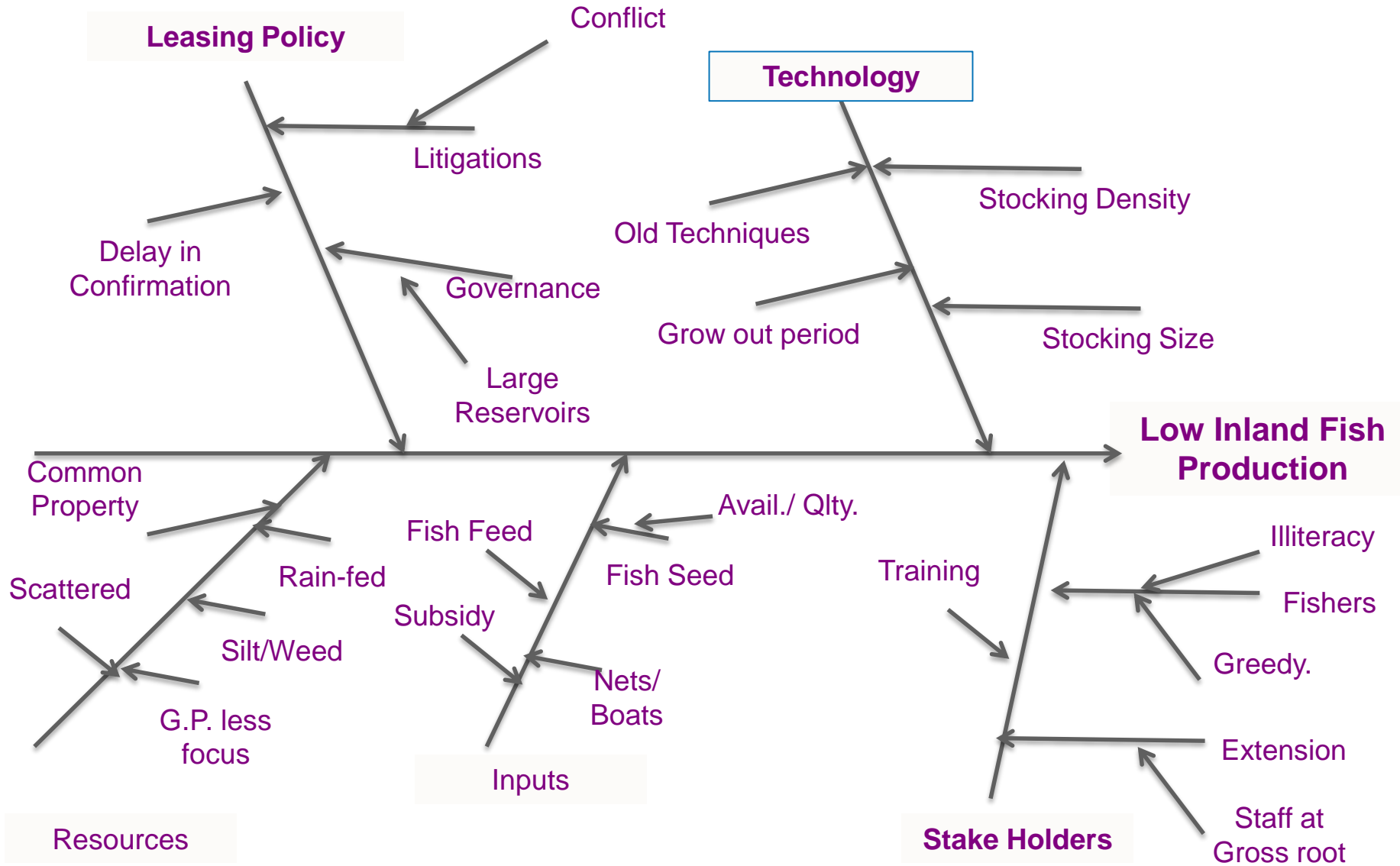
Stocking Density - poor

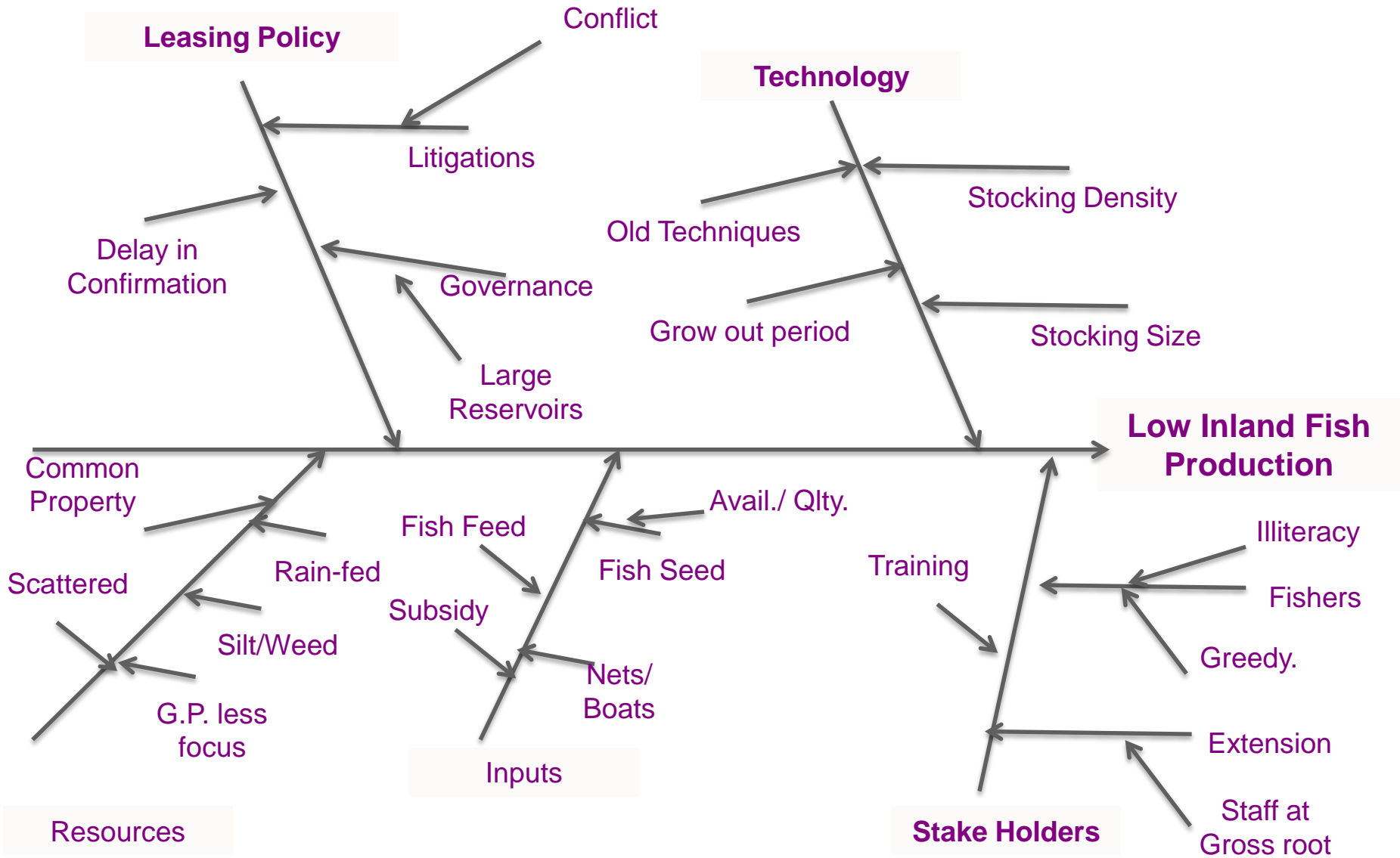
Grow out period - not sufficient

Stocking Size - poor

Technology

Cause & effect for low inland fish production





USAGE OF THE FISHBONE DIAGRAM

- ❖ Causes are derived from brainstorming sessions. Each cause or reason for imperfection is a source of variation
- ❖ Causes are grouped into major categories to identify these sources of variation. These groups are then be labeled as categories of the fishbone
- ❖ The 8 Ps (typical categories used in service industry, which is applicable also to government service delivery)
 - Product / Service: Actual product / service delivered
 - Pricing: Price of the product
 - Place: Place of service delivery
 - Promotion: promotion and publicity
 - People: Anyone involved in the process
 - Process: processes involved in delivering the service
 - Physical Evidence: Material cues on service quality (e.g. paper on which ticket printed)
 - Productivity & Quality

Do all the process activities add value?

NO

**& THIS IS WHY PROCESS ANALYSIS IS
CARRIED OUT**

What constitutes process analysis?

- ❖ Measuring process efficiency – VA/ NVA activities
- ❖ Identifying process complexity – Data Entry Points (DEPs) / Hand off Points (HOPs) etc.
- ❖ Hands On Time (HOT) vs. Turn Around Time (TAT) analysis

Classifying Process Activities in VA/ NVA (1 of 3)

- ❖ An activity is classified as Customer Value Added activity (CVA) if:
 - The activity adds a form or feature to the end-product or service, and
 - The customer is willing to pay for it
 - The task enables a competitive advantage (reduce price, faster delivery, fewer defects)

 - e.g.: printing of passport, issue of food grains under PDS etc

Classifying Process Activities in VA/ NVA (2 of 3)







- ❖ An activity is classified as Business Value Added (BVA) if:
 - The customer may not want to pay for it but are required for some reason
 - The task required by law or regulation
 - The task reduces financial risk?
 - The process breaks-down if the task were removed
 - e.g.: quality testing, attestation / authorization of copies of documents etc

Classifying Process Activities in VA/ NVA (3 of 3)

- ❖ An activity that provides the process with no competitive advantage and which can be discarded without influencing the final outcome
 - It includes any of the following activities – rework, multiple signatures, counting, handling, checking, inspecting, transporting, down-time, delaying, storing

Transport / Handling	T	Moving people, information and/or things from one location to another
Redundancy / Duplication	R	Rework; unnecessary or duplicate performance of a task
Inspection / Verification	I	Ensuring a task was performed correctly / Checking / Reviewing
Preparation	P	Getting ready to perform a task / Prepare to do work

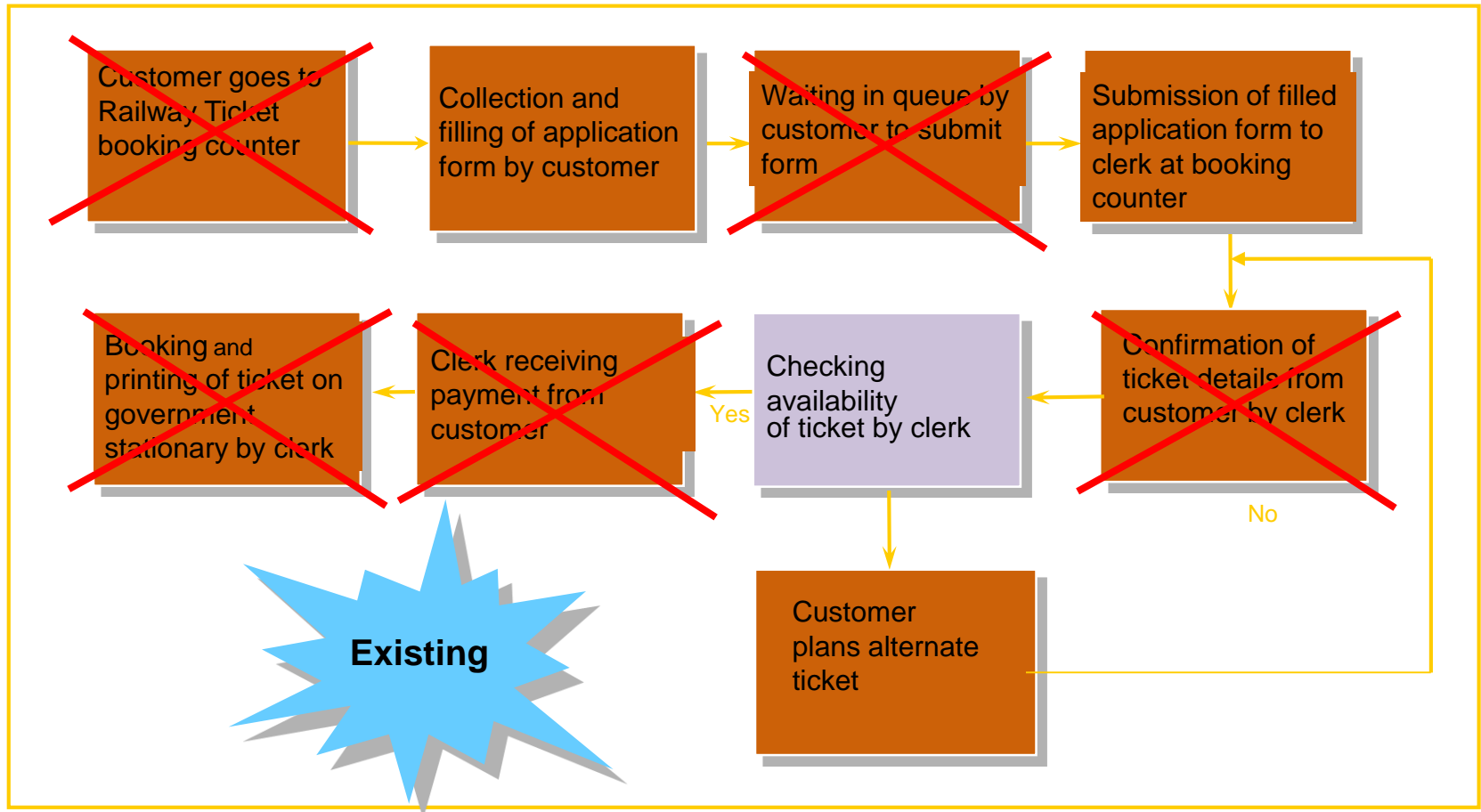
Process Activities Can Be Classified Into VA / NVA For The Purpose Of Reduction Of NVAs

Symbol	Notation	Usage	Example
	VA Activity	Changes the state of the product	Sanction of loan, Dispatch of passport
	Inspect	Checking	Scrutiny of file against checklist
	Transport	File movement from desk to desk (within or across departments)	File sent from Verification team to Data Entry team
	Storage	Data entry in Excel or System, writing on paper	Data Entry of file into system
	Delay	File waiting for processing, or user waiting for file	Files piled up on desk / wait for file to come from verification
	Decision	Yes / No decision	Allow deviation / is file complete as per checklist

Note: Not every process is Value Added; Not all NVAs can be eliminated

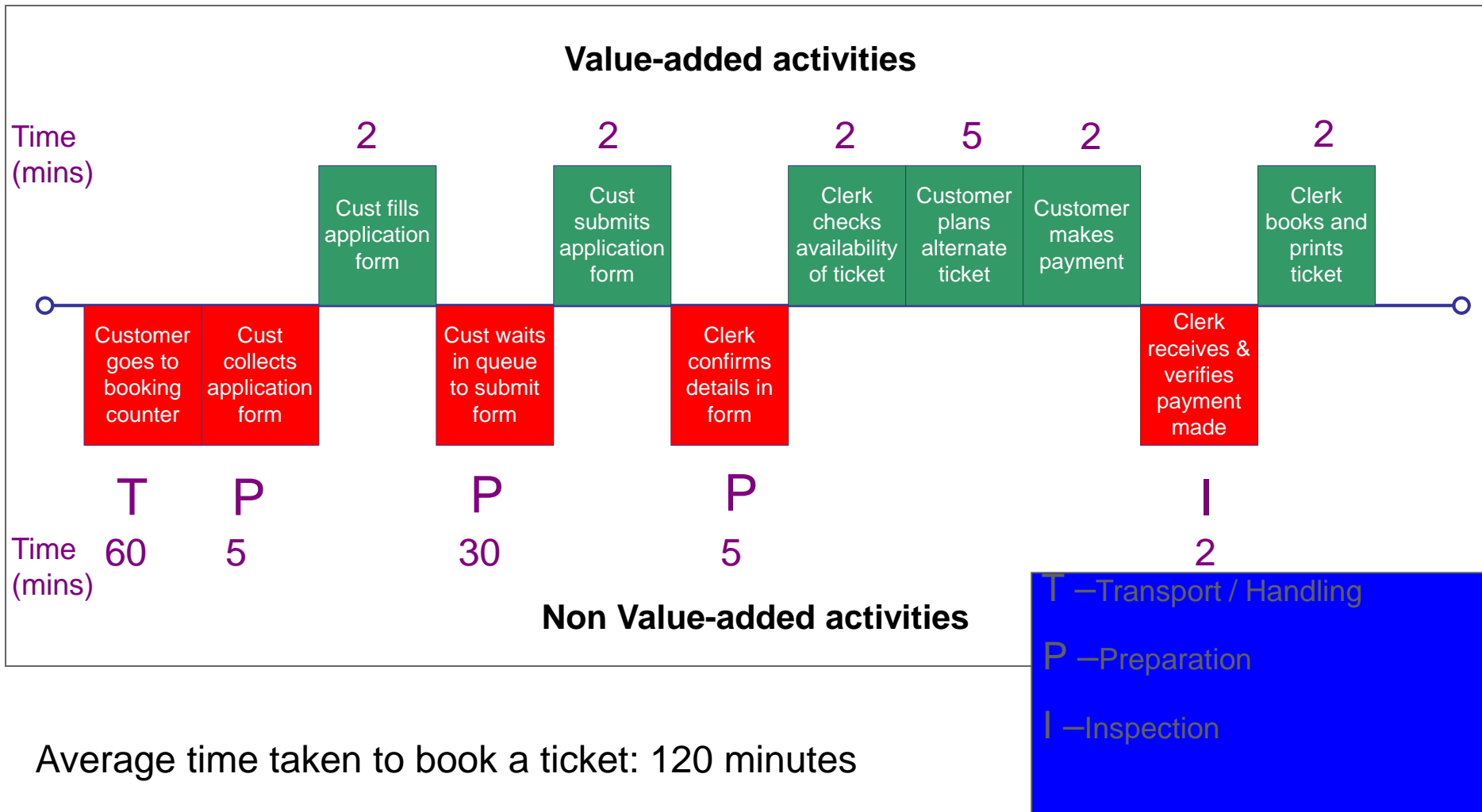
Identifying Non-Value Add activities

Railways – Ticket booking at counter



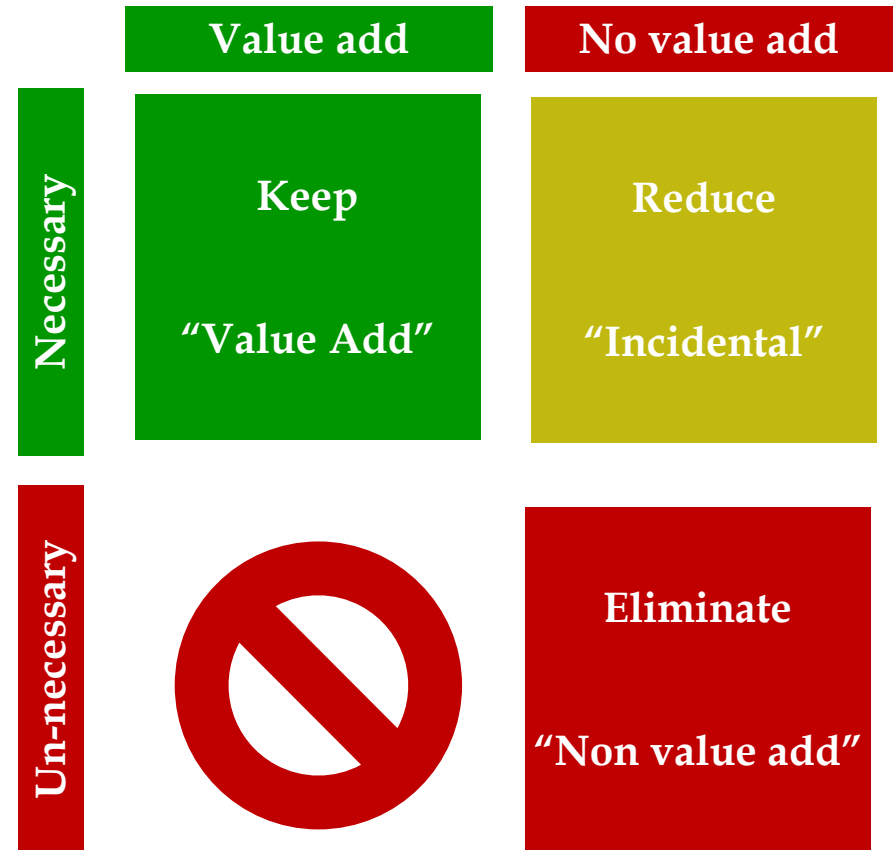
Average time taken to book a ticket: 2 to 3 hours

Railways Ticket booking – Non-Value Added activities



Introduction To The Concept Of 'WASTE'

- ❖ Not all non value added activities may be eliminated. Some NVA are “incidental” which need to be part of the process even though it does not add any value..
- ❖ Wastes are those activities which are non value adds and non incidental
- ❖ CAN YOU GIVE AN EXAMPLE
- ❖ Waste elimination is a critical feature of any LEAN organization



The Seven Wastes

- ❖ Let us understand the characteristics of waste.
- ❖ Seven deadly wastes
 - Motion
 - Waiting
 - Over Production
 - Unnecessary Processing
 - Defects
 - Inventory
 - Transportation
- ❖ All seven wastes add time & cost to the value stream.

Each of the 7 deadly wastes which add time and cost to an organization need to be addressed...(1 of 2)

Impact of Waste on key business metrics

LEAN Waste Category	Definition	Examples	TAT	Through - put	Errors
Waiting	Inability to move to the next processing step	Customers waiting in a queue at a branch or awaiting response in a call center, files waiting for sanction by a credit manager	↑		
Motion	Unnecessary movement of men during the course of the work	Movement to multiple workstations to collect documents like fax received to confirm a treasury deal , printout of customer query form at a branch		↓	
Transportation	Unnecessary movement of materials between processes	A physical movement of a loan sanction file to teams working across floors of a building or multiple locations of the bank	↑	↓	
Unnecessary Processing	Inappropriate production and delivery of service vs. customer specified requirement	Multiple layers of approval and review in a loan sanction process, multiple data entry points to capture the same information	↑	↓	

Each of the 7 deadly wastes which add time and cost to an organization need to be addressed...(2 of 2)

Impact of Waste on key business metrics

LEAN Waste Category	Definition	Examples	TAT	Through - put	Errors
Defects	Producing & delivering wrong or defective parts - An output which does not meet customer requirements is a defect	Wrong data entry , Incorrect transfer of funds, credit card statements with incorrect transactions	↑	↓	↑
Overproduction	Producing more than customer demand	Staffing for managing peak loads at a branch or a call center			
Inventory	Inventory is a cost of unstable processes. It is a buffer maintained since trust on stability of downstream processes is low	High Work-In-Progress at various workstations in loan processing; low ratio of applications forms received to forms printed	↑		

Verbs which are likely to have no business value

- Copying
- Collating
- Counting
- Preparing
- Searching
- Accumulating
- Revising
- Editing
- Checking
- Approving
- Storing
- Filing
- Retrieving
- Moving
- Inspecting
- Rework

Process Complexity Analysis (1 Of 2)

- ❖ Number of data entry points
 - Shows the number of times data is being captured
 - Identifies areas where duplication of work is taking place
- ❖ Number of hand-off points
 - Shows how many hands the file passes through for processing
 - Indicates areas where handoffs can be eliminated for speedier processing through elimination of unnecessary activities & waiting time
- ❖ Number of systems used
 - Shows the number of systems and excel sheets / registers where data is entered
 - Allows us to identify areas where duplicate data entry is taking place and helps eliminate un-necessary work

Process Complexity Analysis (2 Of 2)

- ❖ Facilitates identification of those elements in the process that can be eliminated
- ❖ Process Complexity Analysis documents the following:
 - Number of data entry points (DEP)
 - Number of hand-off points (HOP)
 - Number of systems used
- ❖ **More number of DEPs, HOPs and systems indicate a complex process**

Template for capturing Process Complexity

Process Complexity Parameter	As Is Process Analysis
No. of Activities	
Number of Data Entry Points (DEPs)	
Number of Handoffs Points (HOPs)	
Number of Systems	

HOT & TAT

❖ **HANDS ON TIME (HOT)**

- The time during which material or information is actually handled or action is taken on them in a process for changing its shape or form

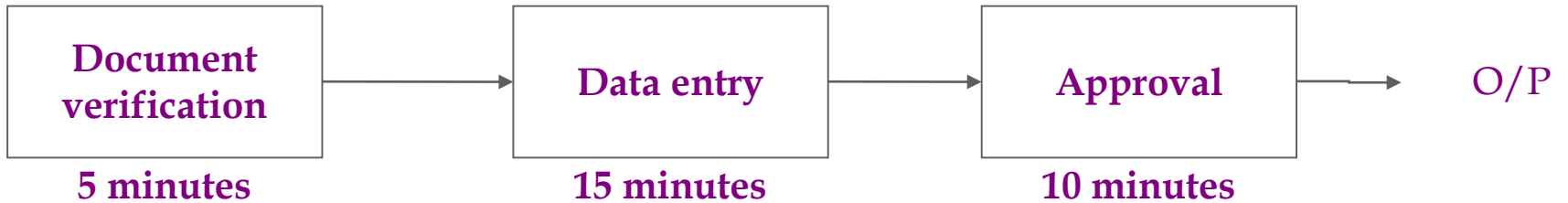
❖ **Turn Around Time (TAT)**

- The total time taken for material or information to move across in a process from the start point to the end point

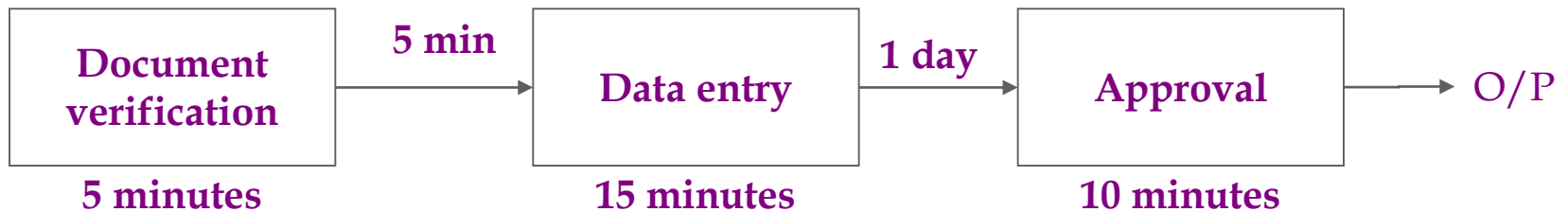
❖ $TAT = HOT + \text{Queue time} + \text{Changeover time (if any)} + \text{Transportation Time}$

❖ **Time other than HOT can be focused upon for improvement**

Example – HOT/ TAT



HANDS ON TIME = 5 + 15 + 10 = 30 minutes



Turn around time = 1 day & 35 minutes

END