Flow Charts and Process Mapping

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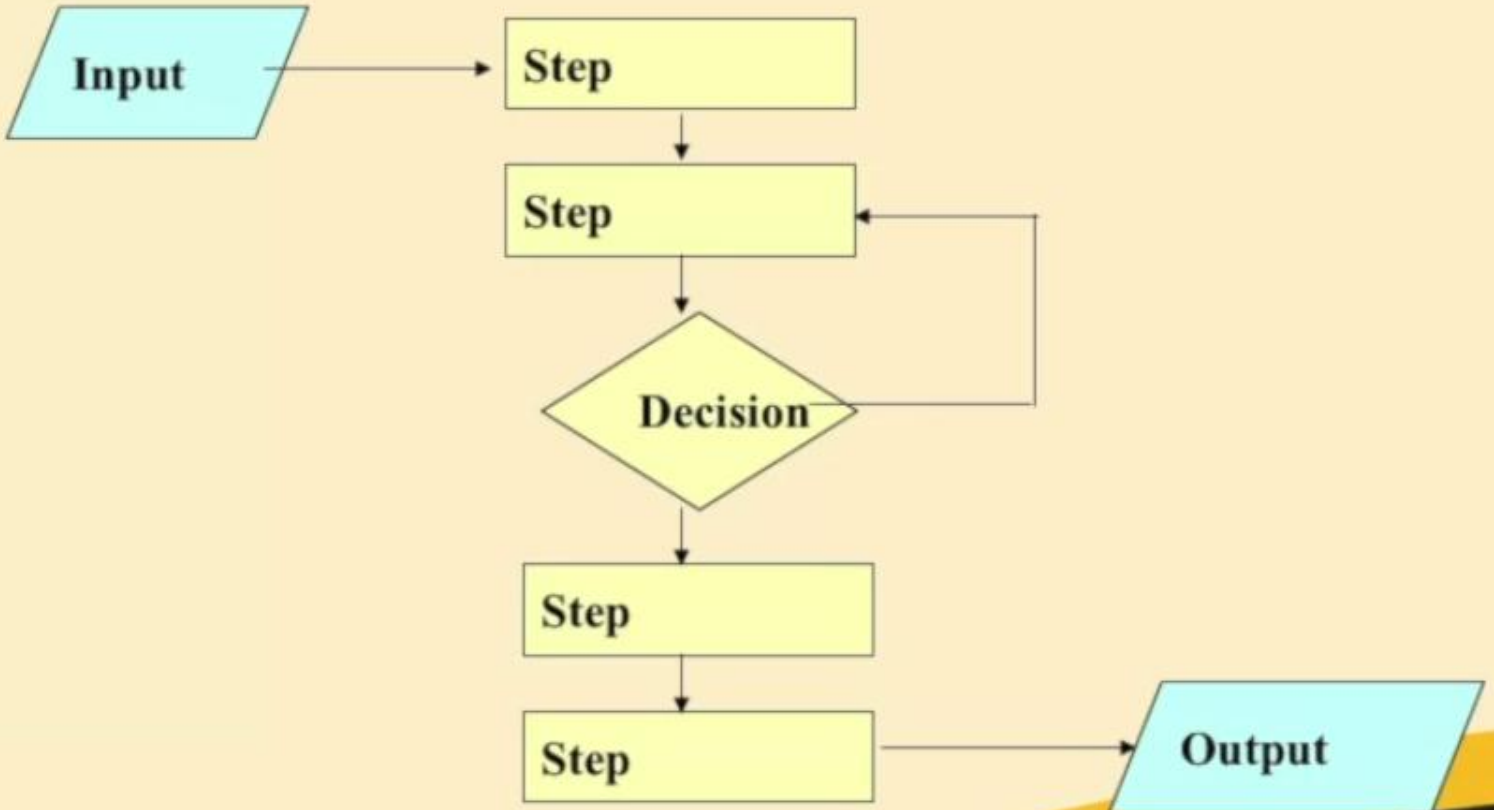


What is a process

- An activity the changes or transforms some input(s) to create an output

Tools for Mapping Processes

Process Maps - a picture of the sequence of steps in a process, represented by symbols

(used to plan projects, describe processes…)

Five Types

- Basic-outlines major steps in a process
- Detailed—used to improve a process
- Top down—major steps, next level of sub steps
- Deployment—detailed process with people
- Opportunity—highlights opportunities for improvement

Purpose

- The purpose of creating a process map is to gain an understanding of a process so we can improve it.
- Process maps are useful for documentation and for training, for certification and other uses.
- Process maps can help to eliminate written procedures by presenting them in a visual schematic.

For high level business processes, That cross functional boundaries, there often is no one person who knows the whole process. This is why we need teams to map processes.

The participants in a process mapping exercise should include the people who actually use the process on a daily basis.

An example of a business process map might be the process of creating purchase orders.

How to use

- Process maps are appropriate and necessary in nearly any process improvement effort. They should be one of the first things that a process improvement team does.
- It's important to map the process as it is actually being performed, not the way it was designed or the way the manager thinks it's done.

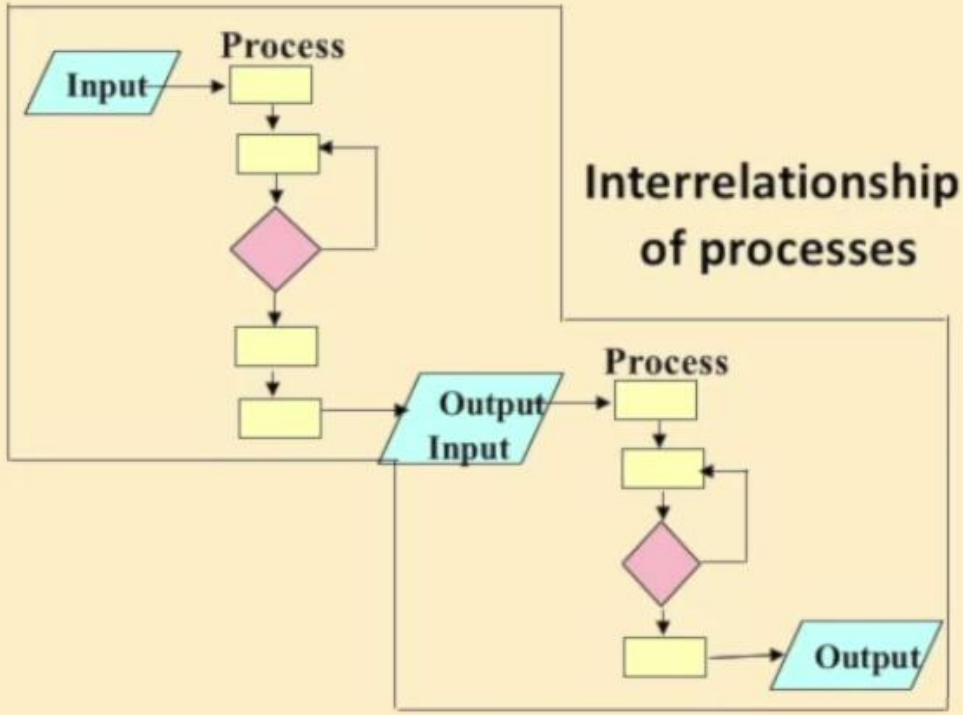
How to use

- We call this the current state map.
- As we mentioned, there are many levels of processes.
- We're going to talk about two, **business processes** and **work processes**.

How to Use

Business processes

- High level processes
- Cross Functional
- Contain work processes
- Interrelated



Business processes tend to be high level processes like accounting, customer service, etc.

They often cut across functional departments. They also contain work processes.

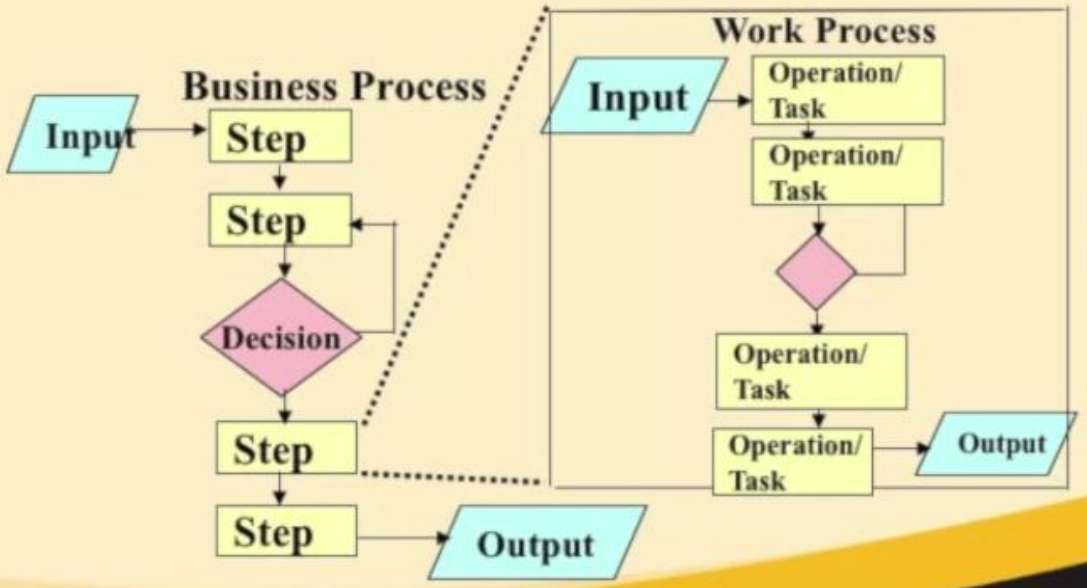
Most processes are also interrelated, with outputs from business processes and work processes being inputs for other processes Because business processes are high level processes, they contain multiple work processes.

How to Use

Work Processes

– Each Business process contains multiple work processes

– Each step in a business process may be one or more work process

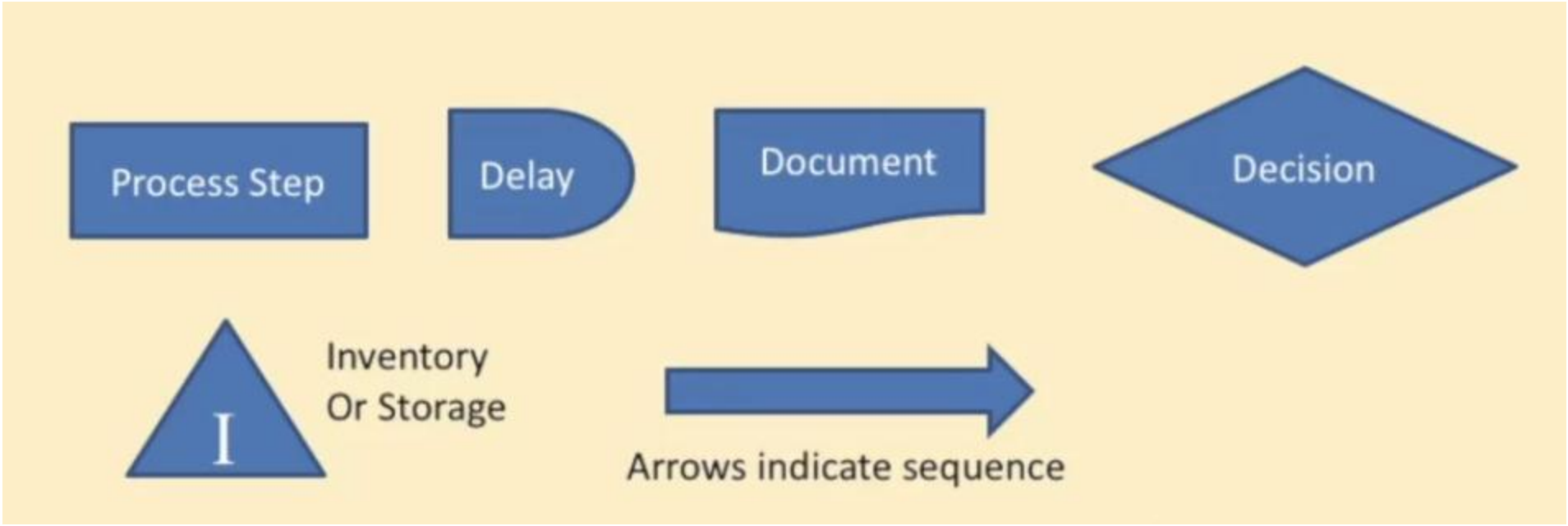


Relationship of Business processes to Work Processes

Because business processes are high level processes, they contain multiple work processes.

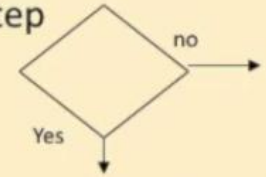
For example, accounting may include billing and tracking accounts receivable. Each step in a business process may contain one or more work processes which can be mapped separately and will provide much more detail.

Symbols


Process Step
Delay
Document
Decision
I
Inventory
Or Storage
Arrows indicate sequence

How to Use

- The simplest process maps may only use 3 symbols
  - Start / finish
    - Used only at the beginning and end, may represent inputs and outputs
  - Process steps
    - The actual work being done
  - Decision points
    - Depending on the answer to yes/no, follow the diagram in different directions, with no often looping back to a previous step



How to Use

- Sticky Notes
- Process Step

- Decision point

How to Use

- Software
  - Microsoft drawing bar has flowchart symbols under insert/shapes
  - Google Docs or Sheets
  - Open Office
  - Visio

How to Use

- Morning Routine – a simple process map

Checksheets

Checksheets

- **Checksheets are simple and flexible tools for collecting data**.
- When you begin in an **improvement project**, you may find that you don't have any of the data you need.
- The checksheet is a simple, quick and **usually temporary tool** for collecting the initial data that you need to get started.

Checksheets

- There is no single checksheet form that can be used on all applications.
- Therefore, the design of the form must be customized to the type of data that's to be evaluated.
- You can use checksheets to count or measure defects, complaints, phone calls or many other things.

Types

- **Recording checksheets** when you enter accounts or measurement data.
- **Checklists** which are written reminders
- **Measles charts** which can be used to identify the physical location of defects or other issues.

‘Recording Checksheet’ Example 1

Description	Tally Count	Total	Percent
Written Complaint	I I I		
Telephone Complaint	I I I I I I I		
E-Mail Complaint	I I I I I I I I I I I I I		
In Person Complaint	I		

‘Recording Checksheet’ Example 1

Description	Tally Count	Total	Percent
Written Complaint	I I I	3	12%
Telephone Complaint	I I I I I I I	7	28%
E-Mail Complaint	I I I I I I I I I I I I I I	14	56%
In Person Complaint	I	1	4%

An analysis of complaint methods like this might help you to start analyzing stuffing needs.

‘Recording Checksheet’ Example 2

Telephone Resolution Time		
To determine how many calls exceeded the specified limits.		
Response Time	Calls	Total
0 – 1 minutes	IIIII IIIII IIII	14
1.1-2 minutes	IIIII IIII	9
2.1-3 minutes	IIIII I	6
3.1-4 minutes	III	3
>4 minutes	II	2
Grand Total		34
Comments:		

‘How to use’ Example

DATA CHECKSHEET

Process being analysed: *Handling returned goods*
Information about: *goods returned by reason for return*
Area/location of data collection: *Main warehouse receiving*
Data collection method: *inspect `reason' noted on goods documents*
Name: *John Smith*

Date:	incorrect	warranty	not to spec	total
1/1/90	////	/	//	7
2/1/90	//	////	/	7
3/1/90	/	///	//	6

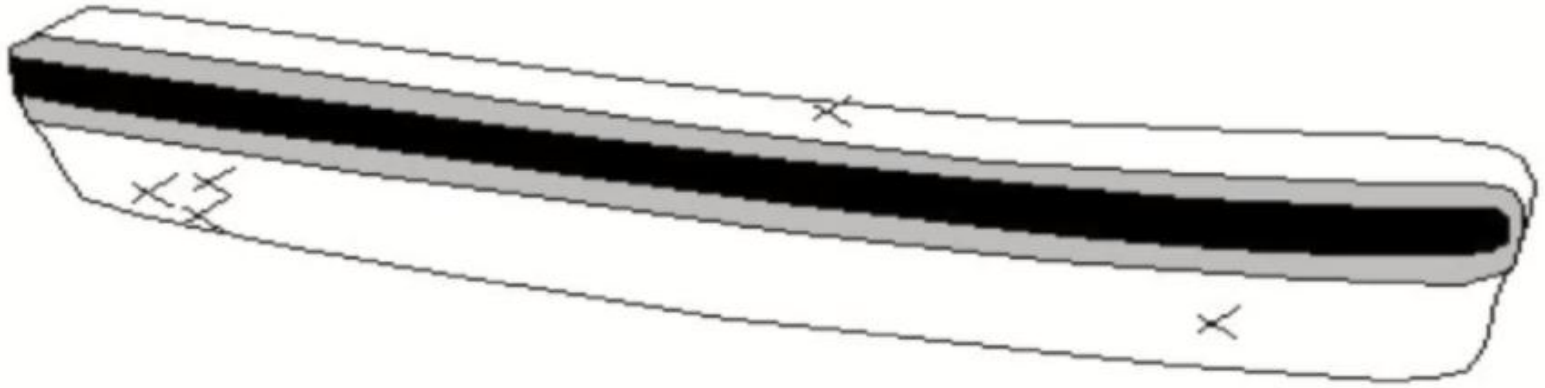
Checklist Example

- Pilots, Grocery, Medical Procedures

Whenever there's a complex or delicate procedure, a checklist will help **prevent errors**.

Measles Chart Example

- A measles chart is a physical representation of something of interest.



Remarks

Date: / /

Batch: _____

Measles Chart Example

- This can be an accurate drawing or rough sketch.
- The idea is to make a mark on the drawing each time you find a defect and to make that mark in the same location on the drawing as the actual defect.
- In this case, we have a drawing of a bumper with several **X marks** to indicate where defects have occurred.

Measles Chart Example

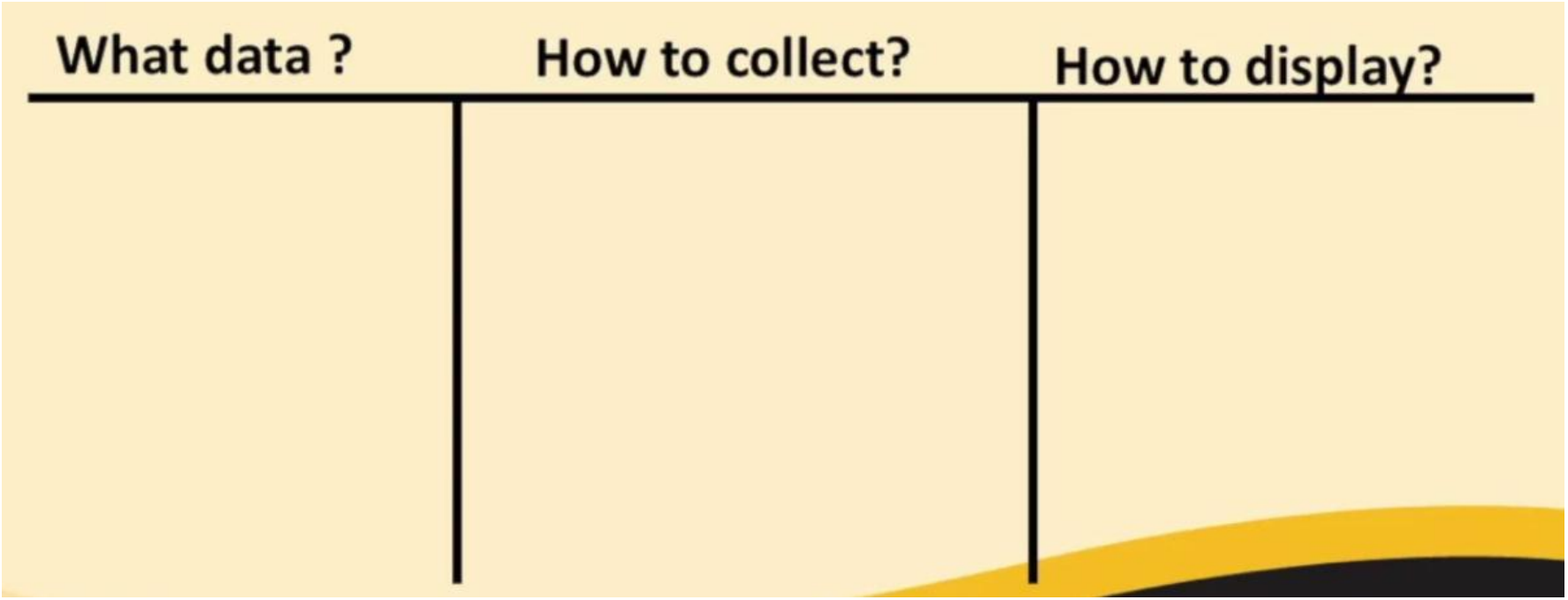
- It's also possible with the measles chart record more than one type of defect. And with every type of checksheet you can separate data by shift or by different production lines.

Line	Mon	Tues	Wed	Thur	Fri
Line 1	1 3 3 2	2 3 1	1 1 2	3 3 2	3 3 3 2
Line 2	1	2 1	2	2	1
KEY: 1 = paint defect, 2 = bent part, 3 = other					

How to use – Data Collection Plan

- Before you collect any data, even when something simple like:
  - a checksheet you should make a plan.
- You should know which data you want, how and who is going to collect it and what you think you will do with it.
  - What Data to collect
  - How to collect it
  - How to display and interpret it

How to use – Data Collection Plan



- The data collection plan does not have to be complicated.
- Just create some columns and list the answers to these questions.

Checksheets!

- Checksheets are a **simple** way to collect data that is not otherwise available.
- They're **quick**, **flexible** and can be **customized** to suit your needs.
- When you don't have any of the data that you need, this might be a good place to start.