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# Detailed Process Mapping

## Key Learning Points

1. Describe the importance of a detailed process map.
2. Explain how to develop a detailed process map.
3. Utilize detailed process maps in improvement projects.

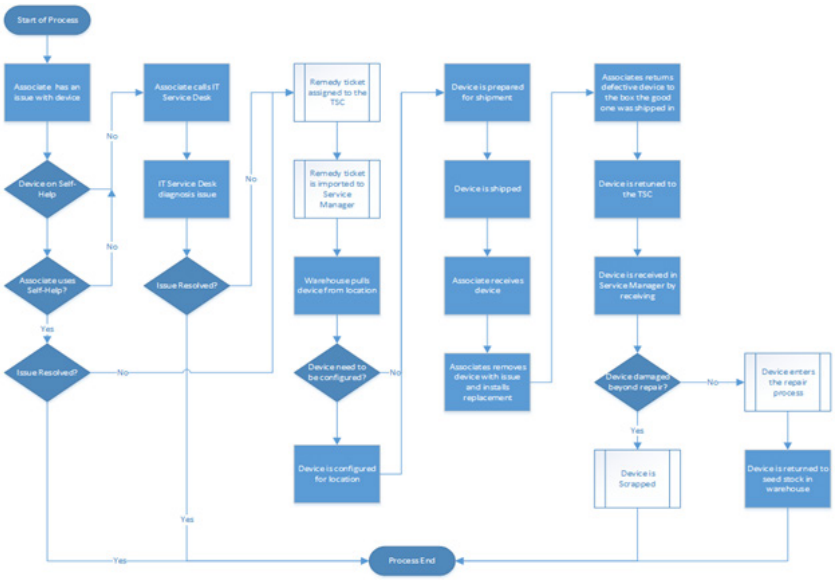
## What is a Detailed Process Map?

A process map is a graphic representation of the sequence of steps in a given process. The process map shows where a process begins and ends and also plots the major steps.

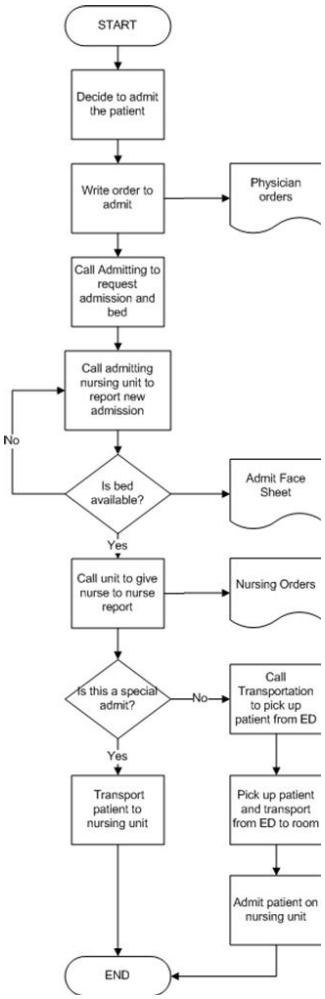
There are different levels of process mapping. A SIPOC map is a high-level process map, and displays a processes major steps and customers. A detailed process map is much more in-depth, and follows the "thing" going through the process.

- Map the As Is Process: A process map must always map the process "as it is," not as people think it should be.
- Validate the Map: The map must be validated by walking through the process and engaging the people who are involved in the process.

## Example Detailed Process Map




## Healthcare Example

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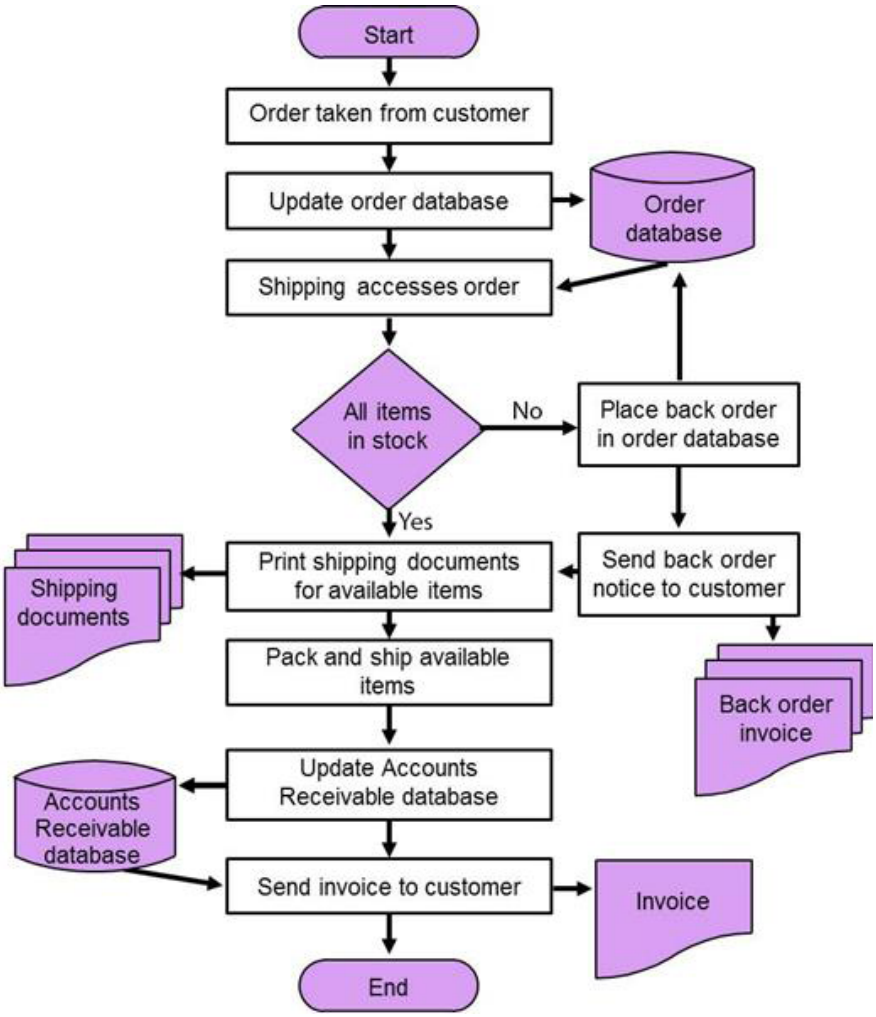
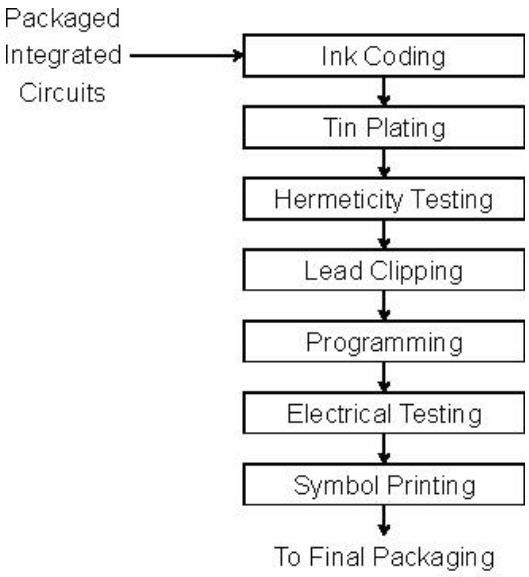
## Service Example




## Manufacturing Example

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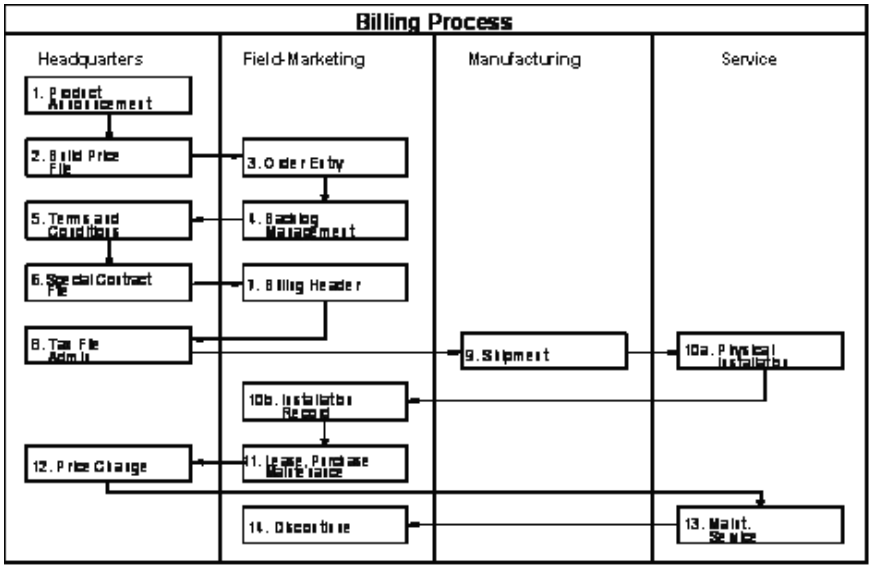
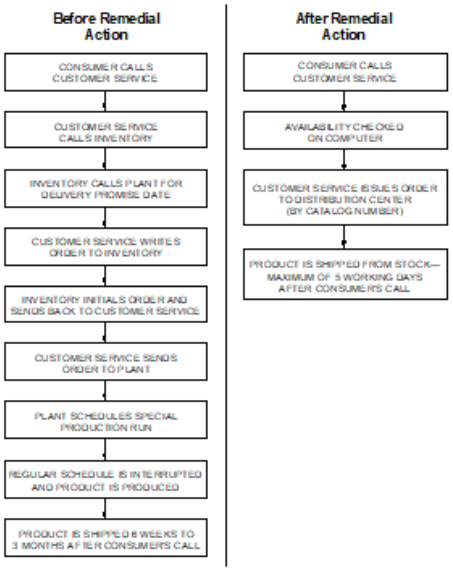
## Other Types of Detailed Process Maps

### Matrix Process Map (Swimlane Diagram)




### Before and After

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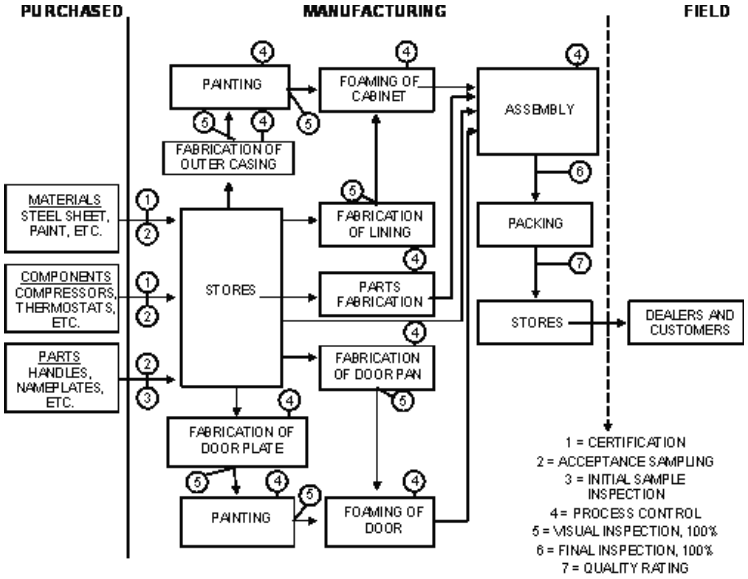
### Map Showing Monitoring Points




## Steps to Construct a Detailed Process Map

1. Line a large wall with butcher paper.
2. Discuss the purpose of the process map with the team.
3. Decide on the desired outcomes. What level of detail is desired?
4. Define the boundaries of the process. The best way to do this is to decide on the first and last steps of your process map.
    a. The first step is the answer to the question: “What signals you to begin the process?”
    b. The last step must answer the question: “How do you know that the process is complete?”
5. Another way to think about this is to state the last step in terms of process output or goals for the process.
6. Write a brief description of the first step on the butcher paper and secure it at the top center or left-hand edge of the wall.
7. Put the last step at the bottom center or right-hand edge of the wall.
8. Document each step in sequence, starting with the first step. The following set of questions will help guide the discussion.
    a. Are there any significant inputs associated with this step, such as database information, written information, etc.? Show these inputs using appropriate process mapping symbols.
    b. Does this step result in any significant output, such as a report? Show these outputs using appropriate process mapping symbols.

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c. When the step is completed, what is the very next activity? Show this as the next step on the process map using appropriate symbols.

9. When you encounter a decision, choose one branch and continue process mapping. Be sure to describe the decision inside the symbol in the form of a question and make a notation to describe the path coming out of the decision symbol: Yes, No, etc.

10. If you encounter a segment of the process that is unfamiliar to everyone in the room, make a note and continue process mapping. The team can go back and get the details of these steps later through direct observation or by interviewing knowledgeable people.

11. Go back and process map the other branches from the decision symbol.

12. Review the completed diagram to see if you have missed any decision points or special cases that might cause some work to follow a different process.

13. Discuss how the team will fill in the unfamiliar steps and verify the accuracy of the process map. Assign various team members to observe the process or interview knowledgeable people. Show the process map to co-workers to get their input and to verify that the flow depicts actual operations.

14. Make a permanent record of the process map when you are sure it is complete.

## Analyze the process map.

### Common Symbols Used In Process Mapping

The activity symbol is a rectangle that indicates a single step in the process. A brief description of the activity is shown inside the rectangle.

The decision symbol is a diamond that designates a decision or branch point in the process. The description of the decision or branch is written inside the symbol, usually in the form of a question. The answer to the question determines the path that will be taken out of the decision symbol. Each path is labeled to correspond to an answer.

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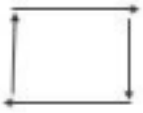
The terminal symbol is a rounded rectangle that identifies the beginning or the end of a process. “Start” or “End” is shown inside the symbol.

Flow lines are used to represent the progression of steps in the sequence. The arrowhead on the flow line indicates the direction of the process flow.



The document symbol represents written information pertinent to the process. The title or description of the document is shown inside the symbol.

The database symbol represents electronically stored information pertinent to the process. The title or description of the database is shown inside the symbol.

The connector is a circle used to indicate a continuation of the process map. A letter or number is shown inside the circle. The same letter or number is used in a connector symbol on the continued process map to indicate how the processes are connected.

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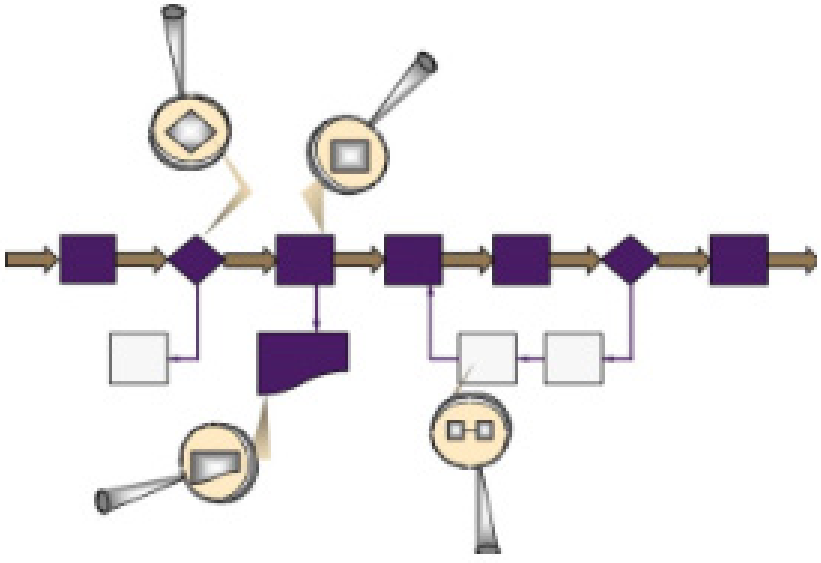
## When Should a Detailed Process Map Be Used?

- Detailed process maps are useful in diagnosing the cause.
- Often, the cause of a bottleneck is readily apparent when you view a detailed process map of the process.
- A detailed process map can also be used to analyze a variety of time-related problems.

## Important Points

- Involve people who can contribute
- Focus on the "As Is" current process
- Clarify process boundaries
- Brainstorm detailed steps
- Combine and clarify steps
- Validate and refine before analyzing
- Picture yourself as the "thing" going through the process
- Identify "moments of truth"

## Analyzing a Process Map



1. Examine each decision symbol: The diamond-shaped decision symbol can be used to indicate either an operational branch in the process or a checking activity. Checking includes inspections, tests, appraisals, reviews, etc. Checks in the process are often redundant, unnecessary, or incomplete, and could be eliminated, reducing costs and increasing productivity. Checking is often characterized by a branch to an earlier step in the process when the

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checking criteria are not met. Operational branches simply divide the process into alternative or parallel processing streams that continue on toward the completion of the process.

2. Examine each rework loop: Checking activities generates rework and unnecessary waste. Examine the activities in the rework loops and identify those which could be eliminated if the failures were prevented. Look for a way to use the information in the existing rework loop to help prevent errors from recurring. Look for ways to "shorten" the loop by moving the detection of the error closer to its source or by streamlining the process of correction when an error does occur.

3. Examine each activity symbol: Question the value of each activity relative to its cost and customer needs. Which errors are prevented by the basic design of the activity?

4. Examine each document or database symbol: When an unnecessary document or database entry is eliminated, odds are improved that the remaining documents and database entries will be more accurate. Pay particular attention to information that is recorded in more than one place. Finally, use the information contained in documents and databases to monitor or improve the process.

## Pitfalls to Avoid

### Pitfalls:

- Failure to document the actual process.
- Reluctance to draw illogical parts of the process.
- Rework loops are not documented.
- People involved don't know how the process actually operates.

### Avoiding Pitfalls:

- Commit to drawing only the actual process.
- Observe it first hand.
- Elicit support to review for accuracy.

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