



Process Definition (5x5)

What is it?

This method outlines the major steps in a process, but limits the detail (to 25 steps) until an area is selected for detailed mapping. It can be used to:

- ◆ Design new processes, or
- ◆ Identify the boundaries and focus of an effort to improve an existing process.

POINTER: It is helpful to use this method prior to [Process Mapping "Is" \(current state\)](#) or [Process Mapping "Should" \(future state\)](#).



How do I use it?

- 1 Name the process to be defined.
- 2 Clarify [roles](#) and allow 45-60 minutes.
 - ◆ If someone is not designated as process Owner, identify who will assume that role.
 - ◆ Also identify those who operate/perform the process.



If the Owner and some Operators are not involved, stop! You can't separate WHAT process you study from WHO does so.

Are the meeting participants responsible for the process?

Do they have authority to change it?

If not, change the team or pick a different process.

- 3 Write the 5 Major Steps to establish the boundaries of the Process.

POINTER: If a [P4 method](#) was completed previously, then the five major steps of the process were already identified.



The major steps/boundaries are often established by the team leader or sponsor prior to the first team meeting.



Major steps and boundaries are a choice the team makes; there is no right/wrong answer.



Write steps on sticky notes. This makes it is easy to move them if you change your mind about sequence.

It is best to use the 5x5 method to study a process that:



- ◆ Is an integral "whole, with clear start/end points and provides a product/service output of value to a customer.
- ◆ Is more versus less complex.
- ◆ Involves multiple individuals, groups or functions.
- ◆ The right team can be assembled, including those with sufficient understanding of how it works and authority to change it.
- ◆ The sponsor agrees it is a priority.
- ◆ Is likely to yield significant payoff as a result of improvement.
- ◆ You are enthusiastic about changing.
- ◆ You aren't certain how to improve it, i.e., the answer is "unknown".

- 4 List up to 5 sub-steps for each of the Major Steps.



HINT: Process steps and sub-steps should be written on sticky notes in <Verb + Object> format e.g., Write the order, Select vendors, Order materials, Submit the order, etc.

- 5 Write the product or service **Output** that results from this process.



HINT: Write the Output in <Object + Past Tense Verb > format e.g., Order written, Problem solved, Vendor selected, Material Ordered, Position filled, Pizza delivered, etc.

The Output describes the *purpose* of the process, i.e., the reason we do it. Consider the following:

- ◆ Is the Output absolutely necessary? Why?
- ◆ Is it essential that we continue to deliver this Output? To operate this process?



If the purpose of a process is to rework, revise, check or correct something, then the best improvement strategy is usually to eliminate the need for this process entirely.

- ⑥ List the key **Customers** of the process.
 - ◆ Who receives and uses the outputs of this process?
 - ◆ Customers can be either internal or external to your organization.
- ⑦ List the **Requirements** of those customers for the product/service output of this process.
 - ◆ What do your customers need/want from the output provided by this process?
 - ◆ What are their most important requirements?
- ⑧ Review existing data to document Current performance levels for Cost, Quantity, Cycle Time, Quality, etc.



- **COST** (HOW MUCH?) — cost to operate the process accounts for people, materials and equipment, plus the cost of poor quality due to scrap, rework, waste, etc. Target price accounts for cost plus desired margins.
- **QUANTITY** (HOW MANY?) — the number of units produced or services delivered during a given time period, i.e., the capacity or throughput of a process. Process capacity, or throughput, is determined by a single constraint, which may be *internal* (production limited) or *external* (market, or demand limited).
- **TIME** (BY WHEN?) — *Cycle time* is the total time from start to completion of a process. This is a key driver of *In-time* performance, which refers to the ability to deliver a product or service rapidly, i.e., when the customer needs it. When the constraint is internal, capacity is a key driver of *On-time* performance, which refers to the ability to deliver a product or service reliably, i.e., when you said you would. *Value-added Index (VAI)* refers to the percentage of total cycle time spent in value-added operations (time in value-added steps ÷ total cycle time). For many organizations, VAI is less than 10%.
- **QUALITY** (WHAT is GOOD ENOUGH?) — measurable criteria for determining whether an output meets or exceeds requirements. This could include *Predictability* (i.e., the amount and type of variation in the process), *Capability* (i.e., the level at which the process is able to operate), and/or *Satisfaction*, (i.e., the customer's perception of the product or service experience).



If existing data for Current performance are not available, gather data to establish the **baseline** performance of the process.

- Do not spend a great deal of time and money to measure a process you are about to significantly change, or
- Establish measures that will likely be useful for measurement of performance after the redesign is complete.



POINTER: The methods in [Chapter 7](#) are used to measure process efficiency and effectiveness. [Scorecard Definition](#) is used to develop process measures. [System Performance Charts \(SPC\)](#) are used to evaluate Process Predictability. The [Histogram](#) describes how to evaluate Process Capability. A Process Capability Index (CpK) indicates the distance between the Specification Limits of a process (what the customer wants) and the Natural Process Limits (what the process is able to deliver). A greater distance between the two sets of limits translates into a larger Capability index, which indicates less likelihood that the process will produce defective product, i.e., product that falls outside the Specification Limits.



HINT: You may also decide to measure other process dimensions such as:

- SAFETY and/or SATISFACTION of those who operate the process.
- RELIABILITY of outputs, e.g., the mean time between failures, or level of repairs, returns, warranty claims, etc.
- FLEXIBILITY, i.e., able to customize products/services or simplify acquisition of the product, etc.

⑨ Clarify Desired Performance levels for Cost, Quantity, Time and Quality, etc. Consider:

- ◆ What level of performance is necessary to meet key customer requirements?
- ◆ What level of performance is necessary to meet key operating requirements?
- ◆ What level of performance is necessary to successfully compete in the marketplace?
- ◆ What is the benchmark level of performance for this process? What is possible?

⑩ Clarify the **Performance Gap/Targets** for each dimension. The gap is simply the difference between current and desired performance levels. This determines the target for each key dimension.



HINT: Since design may require trade-offs between dimensions, and to focus efforts, prioritize targets by numbering them (#1 is top priority, #2 is second, etc.)

Targets may involve improvement in one dimension without loss in other areas, e.g., Reduce cost without loss of quantity, time, or quality performance.

In addition to the performance "gap", other factors to consider when establishing targets include:



- ◆ The expectations of customers for each dimension,
- ◆ The size of each gap versus competitors,
- ◆ The known "best practice" or benchmark level of performance,
- ◆ The relative importance of each dimension to satisfying customers and/or meeting operational requirements,
- ◆ The team's enthusiasm for improving in each dimension, and
- ◆ The feasibility of improvement.



POINTER: Refer to the [Target Table](#) in [Chapter 3](#) for more on setting numerical targets for achievement of desired outcomes.



"Stretch goals" can drive imaginative and aggressive improvements... or paralyze your team. Stage the journey to world class by limiting stretch goals to one dimension now, another next year, etc.

In developing a rationale for "Stretch" targets, consider the following:



HINT: To build commitment among stakeholders for achievement of stretch performance targets:

- Develop a clear and compelling business case for the need to achieve the stretch target.
- Get benchmarks. People will think: *"If company X can, why can't we?"*
- Deconstruct the stretch target into achievable sub-objectives.
- Let targets evolve during the improvement process. As stakeholders learn more about the current state and benchmark what is possible, targets can be adjusted to reflect their increasing aspirations.

Check to see if your improvement targets are SMART?

- **Strategic**-- Is this important to our strategy? Our customers? Does our goal approach best-in-class performance?
- **Measurable**--Do we have specific, quantifiable criteria for improvement? How will we determine the success/failure of our improvement efforts?
- **Agreed upon**--Are we committed to it? Is our sponsor or process owner?
- **Realistic**--Can we succeed? Do we have the resources we need? The right team?
- **Time-bound**--By when must the improvements be implemented?

① Review the “5x5” and analyze each step in terms of its **Impact** on the process overall in terms of achieving your desired or target levels of Cost, Quantity, Cycle Time, Quality, etc.

- ◆ Use checkmarks to nominate those sub-steps suggested as having the greatest Impact.
- ◆ Agree upon and circle in red the 3-4 steps (total) with the greatest Impact on overall process performance.

Typically you will focus your further process analysis and improvement efforts on these key process steps.



HINT: Also consider the impact of suppliers on achievement of your desired or target levels of performance. Identify any new or modified **Supplier Requirements** that result from these performance targets, i.e., What do you need from your Suppliers to achieve these goals?

Suppliers are not part of the process, but may provide materials or information at any time during operation of the process. In reviewing implications to suppliers, don't go overboard; focus on the key ones.

On the next page is an example Process Definition (5x5) for pizza delivery.

On the page after that is a blank Process Definition (5x5) worksheet.



Process Definition (5x5)

② Roles

① PROCESS: Deliver Pizza

Scribe: Joe

Facilitator: Dan

Date: Nov. 28, 1999

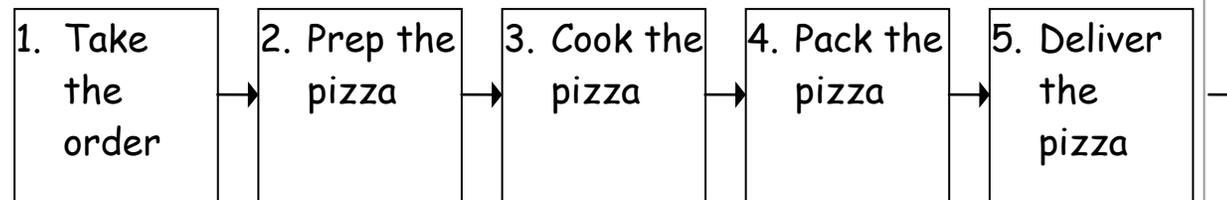
Meeting participants: Fred, Ethel, Lucy, Ricky, Jan, Peter

Timekeeper: Rollie

Process Owner: P. Pie

Process Operators/Performers: Bill, Ed, Jim, Leo, Pat, Margaret, Marie

③ Process Boundaries and Major Steps



⑤ Output	⑥ Customers	⑦ Requirements
Pizza Delivered <i>(all want taste, cost, options)</i>	Families	<ul style="list-style-type: none"> Variety Healthy
	Party givers	<ul style="list-style-type: none"> Value On-time
	Busy people	<ul style="list-style-type: none"> In time

④ "5x5" Substeps

1.1 Answer phone and greet the customer	2.1 Roll dough	3.1 Determine oven time	4.1 Put separator on pizza	5.1 Determine route
1.2 Write down order/info	2.2 Spread sauce	3.2 Determine place in queue	4.2 Fold box	5.2 Sequence pizzas
1.3 Repeat order/info	2.3 Cover with cheese	3.3 Put into oven	4.3 Insert pizza into box	5.3 Stack pizzas
1.4 State delivery time	2.4 Gather toppings	3.4 Check and rotate	4.4 Close box	5.4 Drive route
1.5 Pass order to kitchen	2.5 Place toppings	3.5 Remove from oven	4.5 Ring for delivery	5.5 Deliver and collect \$

	⑧ Current Performance Level	⑨ Desired Performance Level	⑩ Performance Gap/Targets
Cost	• 8 cents per inch	• 6 cents per inch	Reduce by 2 cents per inch (#6)
Quantity	• 175 per night	• 225 per night	Increase by 10 per night (#3)
Time	• 87% on time	• 93% on time	Improve OTD by 6% (#5)
Quality	<ul style="list-style-type: none"> • 5 wrong pizzas per month • 89% favorable rating 	<ul style="list-style-type: none"> • 0 wrong pizzas per month • 96% favorable rating 	Reduce # wrong pizzas by 5 per month (#4) Improve favorable rating 7% (#2)
Safety	• 5 accidents last year	• 0 accidents per year	Reduce by 5 accidents (#1)

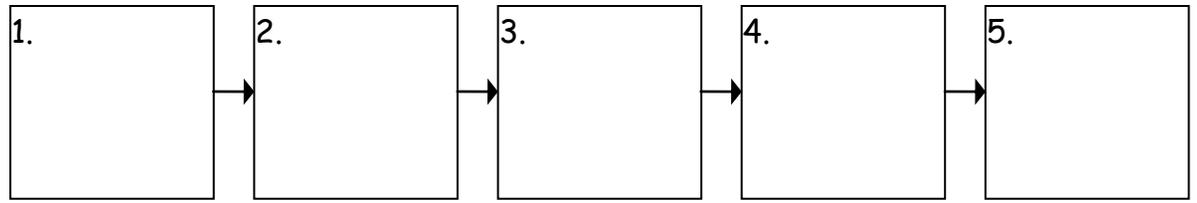


Process Definition (5x5)

② Roles

① PROCESS: _____ Scribe: _____ Facilitator: _____
 Date: _____ Meeting participants: _____ Timekeeper: _____
 Process Owner: _____ Process Operators/Performers: _____

③ Process Boundaries and Major Steps



⑤ Output	⑥ Customers	⑦ Requirements

④ "5x5" Substeps

1.1	2.1	3.1	4.1	5.1

	⑧ Current Performance Level	⑨ Desired Performance Level	⑩ Performance Gap/Targets
Cost			
Quantity			
Time			
Quality			

- 12 Checklist -- After completing the 5x5, review and consider the following checklist, which reminds you to consider key areas that frequently determine the success or failure of an improvement effort.



In reviewing this checklist, recognize that some of the items will be more meaningful to your team than others. Don't get "hung up" on any one item. Simply use the checklist to clarify what you know, and identify what you still need to decide or discover.

Purpose & Scope

- √ Is the purpose of the improvement effort clear? Have goals/priorities for improvement been established? Agreed to by all key parties?
- √ How far will this team carry the project? Will it only study the current process and recommend changes? Or plan for implementation of the redesigned process? Or develop and implement the redesign? Or operate the redesigned process?
- √ Is there a known BEST PRACTICE for this process the team should study?
- √ What resources (people, time, money) will the team have access to?
- √ What is outside the team's scope or authority?

Governance and Membership

- √ Who will serve as the team's Sponsor, i.e., the person who initiates and funds the team?
- √ Will someone outside the team serve as a Gatekeeper, i.e., a person who reviews and approves team recommendations at key points? If so, who?
- √ Who will serve as the Team Leader, i.e., the person accountable to the sponsor for results?
- √ Will the team have an Advisor, i.e., someone to support the team and provide expertise on the improvement process itself?
- √ Given the clarified scope and purpose of the improvement effort, who should be members of the core team (5-7)?
- √ Who might be needed as extended team members, i.e., individuals brought in at key points, but not needed throughout entire project?
- √ Who are Customers or users of the product/service output that is produced by this process? How/when will they be involved?
- √ Are you certain there is not a previously existing team that already owns this process?
- √ Are you certain there is not another project team currently underway that this effort should be delegated to or merged with?

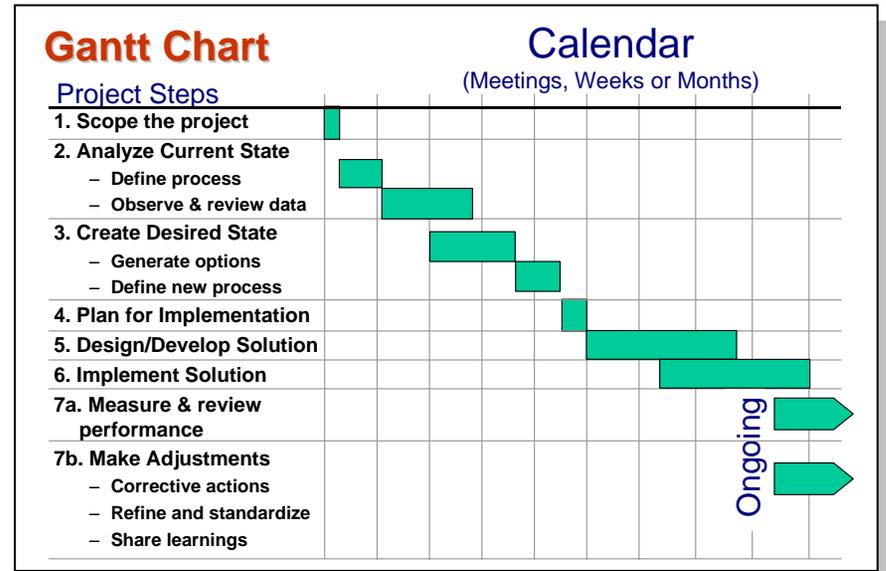
Transition into Ongoing Operations

- ✓ Who will Implement the process changes?
How/when will that team be involved?
- ✓ Who will Operate the redesigned process?
How/when will that team be involved?
- ✓ Who will "own" the Process? Who is the person responsible to manage the process day-to-day?

Plan

- ✓ What is the timeline for completing the project?
- ✓ What are the key milestones or checkpoints?
- ✓ When/how will the team's progress be monitored?
- ✓ Is there a deadline for recommending changes to the process? For implementation of process changes? For realizing improved performance from the redesigned process?
- ✓ Have the appropriate parties agreed to the team's overall plan for the improvement project? To the key process measures?
- ✓ How will the team be held ACCOUNTABLE for results?
- ✓ How will the improvement effort be prioritized relative to other work the team is required to do?

An example Gantt chart for an improvement project is shown below.



POINTER: Refer to [Project Planning](#) in [Chapter 3](#) for an approach to managing projects. Refer to the [Name Game](#) and [Clarity Ratio](#) for methods to ensure understanding of project requirements and scope.

 **HINT:** If the project will be more than quarter-time for team members, or last for more than one month, specific measures and rewards for individual performance should be established. For even longer projects, you should clarify what opportunities team members will have for future positions after completion of the project.