

Process Mapping ("Should" or Future State)

What is it?

A method used to design or redesign a process, i.e., to clarify the sequence of linked activities through which a product or service should be produced for a customer. The customer who receives and uses the process outputs may be either internal or external to your organization.

The "Should" or Future State map describes a new process or changes to be made in an existing process. It is used to:

- ◆ Clarify and communicate how a new or redesigned process will operate;
- ◆ Manage the operation of a process by defining the requirements, steps, measures and contingencies of a new or redesigned process.

How do I use it?

- 1 Name the process to be defined. Establish boundaries by agreeing upon the starting point and the product/service deliverable that is the output of the process.



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

- 2 Clarify roles and allow 45-60 minutes.

If a Process Owner has not been designated, identify who will be, and those who will operate the process.



If the Owner and at least some Operators are not involved in developing the Future State process map, stop!

The best way to ensure you fail in the implementation of a Future State process is to make sure none of the people who will implement or operate the Future state process is involved in its redesign.

It is better to "Get the system in the room." Those who perform the process should be involved in its design/redesign.

- 3 Before you begin developing the Future State process map, clarify the end-state for the process by writing SMART objectives or goals for the process in terms of Cost, Quantity, Cycle Time and Quality.

SMART Goals are:

- ◆ **S**trategic,
- ◆ **M**easurable,
- ◆ **A**greed upon,
- ◆ **R**ealistic,
- ◆ and **T**imebound.

SMART Goals are...

- **Strategic**-- Is this important to our strategy? Our customers? Does our goal approach best-in-class performance?
- **Measurable**--Do we have a clear understanding of how we will determine the success/failure of our improvement efforts?
- **Agreed upon**--Are we committed to achieving that level of performance? Is our sponsor? The process owner?
- **Realistic**--Can we succeed? Is achievement of the desired performance level likely? Do we have the resources we need? The right team?
- **Time-bound**--By when must the improvements be implemented? The gains realized?



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



HINT: In establishing improvement goals, it may help to clarify the relative priority of goals. For example, it is typical for a process redesign to target improvement in one area without loss in other areas, e.g., reduction in cycle time without an increase in cost or decrease in quality.

Before you redesign, use the following checklist of discussion questions to ensure clarity and understanding of key areas impacting the success of any redesign effort.

Things to Consider Before You Design...

Necessity and Sufficiency

- √ Are we certain the output of this process is important to customers? Or necessary for other reasons? If not, can the process be eliminated? Outsourced?
- √ Do we thoroughly understand customer requirements? Have these been translated into specific product/service and operational requirements?
- √ Do we know what the benchmark performance level is for this process? Do our goals approach this level of performance? Should they?
- √ Have we identified the best available practices for optimization of the particular type of process we are designing, e.g., cellular manufacturing, stage-gate development, etc.

Things to Consider Before You Design...

"Givens"

- √ Do we understand what is “off limits” for the redesign effort. Have we considered Money? People? Systems? Time?

Flexibility

- √ Must the process be able to adapt quickly and effectively to changing requirements, e.g., rapid changeovers, range of customized services, etc.

Standardization

- √ Will it be necessary for operators of the process to adhere to a specific sequence of steps, with documented procedures and requirements?
- √ Or is a preferred sequence of steps sufficient, if guided by a general understanding of competent performance, including timing and options?

Versions

- √ Is one version of the process sufficient?
- √ Or should the process include a “triage” step up front that triggers different versions based upon changing inputs, requirements, or circumstances?

- ④ By now you have likely used multiple methods to analyze the current state ("Is") process and brainstorm ideas for the Future State ("Should") process.

Review these prior analyses of the Current state and ideas for improvement of the Future State. Sources include:

- ◆ Stakeholder feedback,
- ◆ Data Analysis,
- ◆ Best Practices search,
- ◆ Brainstormed list of Ideas, etc.



HINT: One way to generate ideas is to post the [Current State \("Is"\) process map](#) in a public area with a pile of sticky notes handy so people can identify problem areas, and write their ideas for improvement directly on the map.



POINTER: If you have not done so already, sort possible ideas for improvement using methods from like [Multi-voting](#) in [Chapter 5](#) or [Upgrading IDEAs](#) in [Chapter 6](#).

- 5 The act of developing a Future State process map involves a creative synthesis of multiple prior analyses and idea generation sessions. Because it is a creative act, it is often best accomplished by individuals.



HINT: It is helpful to develop at least three alternative Future State process maps for evaluation purposes. One way to accomplish this is to have individual members of the team separately design their own draft Future State process maps.

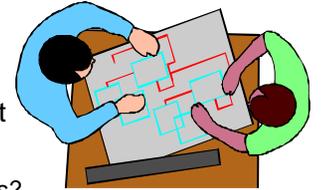


Consider the following questions as creative prompts to get you started.

- What would we do if we were starting from scratch? Faced no constraints?
- What is likely to be the best possible design in 1 year? In 5? Can we build toward that?
- What would the process be like if one person performed it start to finish?
- What systems would be necessary for that to work?
- What would be required to make this process "best in class"?

As you develop a Future State process map, use the following Checklist as guidelines.

Checklist for Creating Future State



- ☞ Start by identifying the bottleneck and/or the critical few steps in the process that must occur. Optimize these critical few and protect the bottleneck.
 - What is the best way to accomplish these steps?
 - What else is absolutely necessary to enable the smooth and effective operation of these steps?
- ☞ Streamline the process. Can you minimize the...
 - Steps or activities in the process? What can be eliminated? Outsourced?
 - Specialization and fragmentation? Can you cross-train and/or consolidate steps to reduce hand-offs, disconnects, non-value added steps?
 - Delays? Can you link activities and perform them in parallel?
 - "Spaghetti"? Can you change the layout to optimize the flow of work?
 - Variation? Can you limit the number of different suppliers, materials, equipment, procedures, people, or hand-offs?
 - Manual or "crummy" work? Can technology be used to automate the most frequently recurring, unsafe, mistake-prone, or dis-satisfying tasks?
- ☞ Prevent and Prepare for the most likely problems...
 - How can we prevent these problems? Mistakes? Errors? Interruptions?
 - How can we provide operators with rapid feedback so those who cause problems can find and correct them at the source.
 - What pre-defined contingencies are needed for handling common problems? Mistakes? Errors? Interruptions? Non-standard requests?
- ☞ Use Data and Information to Manage the Process...
 - How will we measure the key results?
 - What in-process measures will we use to control and prevent problems?
 - When and how will we evaluate and improve the overall process?

- ⑥ Document your synthesis of ideas by writing proposed process steps on sticky notes and arranging them in sequence on the map.



HINT: Unlike the [Current State \("Is\) map](#), when creating a Future State ("Should") map, you do not begin with Step ❶ and go forward from there.

Instead, begin by identifying the bottleneck, or the critical few steps that must occur in the process. Place these few key steps on the map. Determine the best way to accomplish them.

Everything else in the process should optimize these key steps and ensure their effective and smooth operation.

As described in the Checklist on the previous page, when building a Future State ("Should") process, focus on developing creative ways to:

- ◆ Streamline the process to reduce Operational Expenses, while protecting throughput.
- ◆ Prevent problems to reduce the Cost of Quality, i.e., expenses incurred to find and correct problems, and restore customer confidence.



POINTER: Refer to [Cost of Quality analysis](#).

- ⑦ Clarify the roles of various individuals, persons, functions, teams, departments, etc. in the operation or performance of the proposed ("Should") process.

One key role that must be clarified is the **Process Owner**, i.e., the person is accountable for overall process performance. This role will:

- ◆ Communicate with other teams, customers, suppliers, partners, etc. as appropriate.
- ◆ Clarify how the process will be managed day-to-day, including:
 - Who makes decisions, and
 - How these decisions are made.
- ◆ Establish measures and targets for review of process performance. (More in Step ⑨).
- ◆ Clarify how the process will be periodically evaluated and improved, including:
 - When performance reviews will occur?
 - What performance data will be used?
 - Who will gather and analyze the data?

In addition to the Process Owner, those who Operate or Perform the process must be identified. Write the names of each of the individuals, functions or departments who will operate or perform the process down the left-most column of the Process Map worksheet.



HINT: It is common practice to place the key customer of the process on the top row of the map so they line up with the Requirements box on the far right.

Operators/process performers are responsible to:

- ◆ Communicate with other teams, customers, suppliers, partners, etc. as appropriate.
- ◆ Adhere to the specific or preferred sequence of steps.
- ◆ Produce outputs, or deliver services that meet the acceptable standard.
- ◆ Use pre-defined contingency plans to address problems or non-standard requests, or quickly devise contingencies when the need arises. (More on this in Step 10).

Operators/process performers are responsible to:

- ◆ Gather and/or review appropriate data to:
 - Periodically evaluate and improve the overall process, (with the Owner)
 - Determine the extent to which customers of the process are satisfied/dissatisfied,
 - Monitor acceptability of process outputs,
 - Control the process,
 - Prevent problems,
 - Trace priority problems to the underlying root cause, to prevent future recurrence,

In addition to process owner and operators, other key roles that should be identified include:

- ◆ Suppliers
- ◆ Customers

Once the Operators/Performers of the process have been identified, place the proposed steps in time sequence (left to right) on the appropriate rows.

This map is often referred to as a “swim lanes” diagram because of this arrangement.



HINT: When you begin placing sticky notes on the map, you will forget steps and need to add these later. To minimize sticky note shuffling, leave room at the front of the map. Also, do not draw arrows to connect boxes until later. You will likely re-sequence steps after your first “draft” of the map.

Complete the Future State (“Should”) map at an appropriate level of detail.

- ◆ At this point avoid designing in too much detail.
- ◆ Instead, elaborate the map sufficiently to communicate the proposed process to its future operators.
- ◆ Clarify key steps, responsibilities, and hand-offs.



Don't let a desire for perfection cause paralysis. Just make sure you “Get better” and “Get on with it!”

- ③ Review the proposed redesign or Future State (“Should”) process map(s) with key stakeholders.



HINT: One way to get feedback is to post the proposed Future State “Should” process map in a public area with a pile of sticky notes handy so people can identify problem areas, questions, etc. directly on the map.

Another way to get feedback is to more formally review the process with individuals or challenge teams.

As you walk through and explain the Future State process, have these people jot PCIs on sticky notes.

- ◆ P=Pro's, I like it
- ◆ C=Con's, I don't like it
- ◆ I=Interesting, not sure if it would work, but it makes me say hmmm...



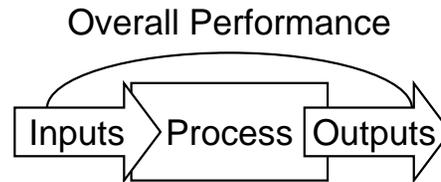
HINT: Don't expect stakeholders to love it. Change always meets resistance.

Review and consolidate stakeholder feedback and use it to improve the “Should” process design.

- ⑨ Develop **performance measures** and establish targets for each measure.

Establishing measures

As the diagram indicates, you must measure at multiple points and levels.



- ◆ *Outputs* -- Measure key process outputs or deliverables, to ensure the process is achieving key results or desired outcomes.
- ◆ *Process steps* -- Measure those critical steps in the process with the greatest impact on the ultimate process outputs or deliverables, to prevent problems and/or control the process.
- ◆ *Inputs* -- Measure those inputs to the process that are critical to the quality, cost, or timeliness of process outputs or deliverables. This may include measuring the supplier performance.
- ◆ *Overall Performance* -- Periodically evaluate and improve the process itself, by aggregating data from multiple cycles of the process, in order to determine gaps or opportunities to further enhance performance.

At each of these points/levels, consider measures and targets for Cost, Quantity, Cycle Time, and Quality.

- **COST** (HOW MUCH?) — cost to operate the process accounts for people, materials and equipment, plus the cost of poor quality.
- **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.
- **TIME** (BY WHEN?) — *Cycle time* is the total time from start to completion of a process.
In-time performance refers to the ability to deliver a product or service when the customer needs it.
On-time performance refers to the ability to deliver a product or service when you said you would.
- **QUALITY** (HOW GOOD?) — measures whether the process output meets or exceeds requirements.
Predictability refers to the amount and type of variation in the process.
Capability refers to the level at which the process is able to operate.
Satisfaction refers to the customer's perception of the product or service experience.

You might also measure Employee satisfaction, Productivity, Safety, etc.

 **POINTER:** Refer to [Chapter 7](#) for more on Measurement methods.

Establishing targets



- ◆ Numerical targets should be developed with input from those who are accountable for achieving them.
- ◆ Targets should NOT be arbitrary, i.e., “pulled from the sky”.
- ◆ Targets should be based upon competitive or marketplace necessities, baseline/benchmark data, or achievable sub-objectives.



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

- ⑩ Assume problems will occur. Develop prevention and contingency plans to minimize these problems.



POINTER: For more on this approach, refer to the [Murphy Matrix](#) in [Chapter 3](#).

Brainstorm possible problems. Consider:

- ◆ Possible mistakes, errors, or failure modes.
- ◆ Unexpected or non-standard customer requests.
- ◆ Short- and long-term consequences associated with the proposed "Should" process.
- ◆ Unintended "ripple" effects on other areas.

Rate each possible problem in terms of Frequency and Impact using the table below.

Probable Frequency of occurrence	Impact when it occurs on the ability to deliver outputs or meet key requirements
0 = Never	0 = None
1 = Seldom	1 = Small
2 = Occasionally	2 = Some
3 = Often	3 = Large
4 = Frequently	4 = Very large
5 = Always	5 = Enormous



HINT: Don't spend too much time debating the ratings. You are using the rating scales to grossly evaluate the relative importance of different possible problems.

Multiply your ratings of Frequency + (Impact x 2) to establish Priorities.

Frequency + (Impact x 2) = Priority Ranking



HINT: To ensure you focus on those problems with the greatest Impact, the rating for this dimension is multiplied times 2 to give it extra weight.

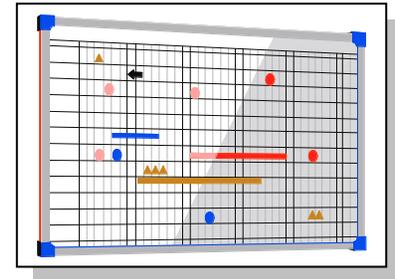
For the priority problems:

- ◆ Determine how to prevent them from occurring, by mistake-proofing the process in some way. This may require addition of an **in-process measure** to identify problems at the source and enable the operator to resolve them.
- ◆ Develop contingency plans for handling priority problems when they do occur. Write these **contingencies** in the right-hand column of the map.

11 Develop plans for implementation of the new or redesigned process. These plans should include:

- ◆ Changes in communication or reinforcement strategies, training, documentation, information systems, etc.

- ◆ Measures to monitor progress in implementation of the redesigned process. This will usually include a timeline with key milestones.



POINTER: In [Chapter 3](#) refer to the [Action Planning Matrix](#) for a method to clarify implementation plans. Refer to [Mapping Stakeholders of Change](#) for a method to help you effectively manage change.



POINTER: Refer to the [IPESAC Table](#) for a means of documenting each step of the redesigned process in detail.

Use the following checklist to ensure you consider key factors in your Implementation Planning.

Use the following to complete Implementation Planning

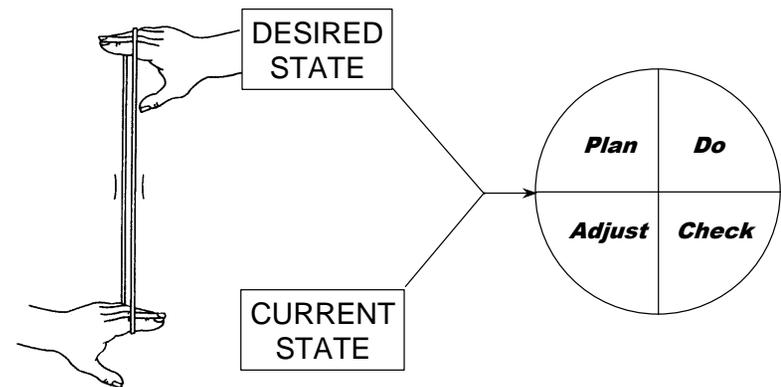
- √ Assess the current culture, values, traditions or unwritten rules. Do they conflict with the new process? What expectations must be established or policies changed for the process to succeed?
- √ Given the Owners/Operators of the new process, what staff or reporting changes are required? Will roles and responsibilities change?
- √ Do we have the appropriate knowledge/skills to perform the new process, either individually or as teams? Will changes be required in the way we select personnel? Train or develop?
- √ What rewards and recognition are necessary to ensure people perform as desired in the new process? What changes to compensation or recognition are needed to reinforce performance?
- √ Who is likely to advocate for the change? Resist it? How can we get buy-in and support?
- √ Can we pilot test the proposed "Should" process before implementing it on a full scale? Can implementation be designed as a series of gradually larger scale tests, evaluated and improved at each stage?
- √ Can we smooth the transition from the current approach to the new process? Can customers or employees gradually adapt the new process? Can we build multiple steps from current to future?



At the risk of oversimplifying, the key to successful implementation is adopting a mindset of improvement as an ongoing process, not a one-time event.

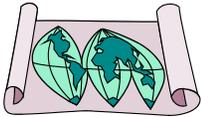
Cycles of *Plan-Do-Check-Adjust* are needed to implement any Desired Future State process. This is illustrated in the diagram below.

Improvement is Ongoing, Not a One-Time Event



On the next page is an example Future State map for the process of Hiring from within an organization. It includes both in-process and outcome measures (per step ⑨) and contingencies (per step ⑩).

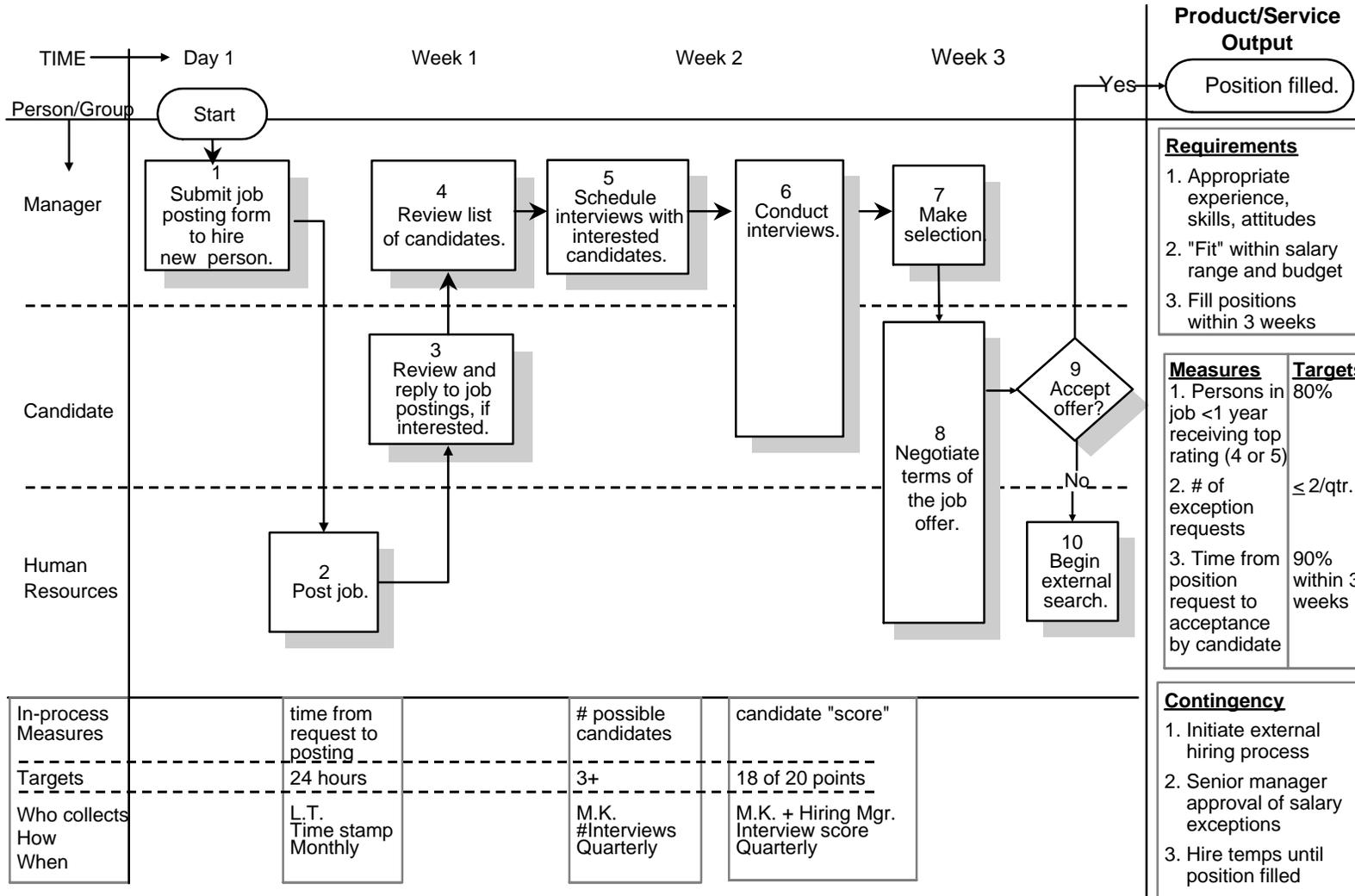
On the page after that is a blank Future State mapping worksheet.

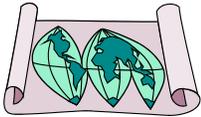


Process Mapping ("Should" or Future State)

Roles

● PROCESS: HIRING FROM WITHIN Scribe: H. Remington Facilitator: H. Hunter
 Date: Today Meeting participants: Doc, Sleepy, Grumpy, Sneezzy Timekeeper: Tim Exuprey
 Process Owner: HR Manager Process Operators/Performers: All managers





Process Mapping ("Should" or Future State)

Roles

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

