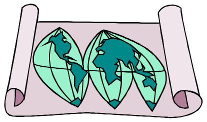
Kilbride's Tools for Managers and Teams



Process Mapping ("Is" or Current State)

What is it?

A tool for documenting the sequence of linked activities through which a product or service is currently produced for a customer. The customer who receives and uses the outputs of a process may be either internal or external to your organization.

Current state, or "Is" process mapping helps you to:

- Clarify and communicate how a process works.
- "Drill down" on high impact areas identified using the Process Definition (5x5) tool, page xx
- Analyze the causes of problems and opportunities for improvement in a process.

Mapping is an essential tool for organizations attempting to be systematic, i.e., to work through defined and repeatable processes.

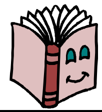
It facilitates improvement by making complex activities understandable and by focusing attention on HOW work is done, rather than on WHO is doing it.

How do I use It?

❶ Name the process to be defined.

Establish boundaries by agreeing upon the start/end points. This is a choice.

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



QUOTE: "Anything less than the universe is an arbitrary distinction." – J. Willard Gibbs

❷ Clarify roles and allow 45-60 minutes.

If someone is designated as process Owner, identify that person and those who operate/perform the process.

If the Owner and at least some Operators are not involved in the mapping exercise, stop! You cannot separate WHAT process you study from WHO does so, i.e., Scope and Membership. Are those doing the mapping responsible for the process? Have the authority to change it? If not, change the mapping team or select a different process.

❸ Write the process steps on sticky notes.

HINT: For work activities or operations, write steps in <Verb Object> format, e.g.,

- Write the order
- Buy materials
- Submit the order, etc.

Write these activity or operation steps on rectangular sticky notes. Though you shouldn't add these arrows yet, each activity box will have one arrow coming out of it, indicating the flow of materials or information.

For decision steps, turn sticky notes 45 degrees to make a diamond shape.

Write decision steps in <Yes/No question> format, e.g.,

- Order confirmed?
- Buyer chosen?
- Inspection passed? Etc.

Each diamond will have two arrows coming out of it--one for YES; one for NO.

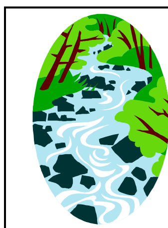
There are several ways to identify process steps. The simplest is to transcribe steps from a Process Definition (5x5) worksheet onto sticky notes and place them on the map.

In this case, it is common to include most or all of the 25 steps from the "5x5" outline as originally written, but to elaborate the Impact areas and map these in greater detail.

HINT: Mapping should be completed at a level of detail appropriate to the objectives of the exercise.

To identify problems and improvement opportunities, include enough detail to:

- Represent frequently encountered problems.
- Clarify responsibilities for key steps.
- Identify hand-offs between persons or groups who operate the process.
- Include steps taken to check for, correct and recover from problems.



HINT: Think of a process as being like a river. Through mapping you want to lower the water level of the river enough that rocks, branches and other "problems" at the bottom of the river are surfaced.

A common tendency is to record an idealized version of the process, rather than the way it actually works.

HINT: Do not draw arrows to connect boxes until later. You will likely add missing steps and/or re-sequence steps after your first "draft" of the map.

To capture the process as it IS, rather than as it SHOULD be, another option is to:

- Have a person(s) who recently performed the process tell the story of an actual, **specific instance.** This helps visualize the process, "warts and all."
- Someone else writes the steps in this specific instance on sticky notes in <Verb-Object> format. Be faithful to the story-teller's words.
- A third person places steps on the map, leaving room for later insertion of missing steps.
- Others ask questions to help clarify or jog the memory of the person telling the story, but don't debate what happened or the "value" of individual steps at this point.
- After the first draft, discuss alternatives or exceptions to make the map more representative of the usual process flow.

❹ After capturing all key activities and decisions on sticky notes, make certain these steps are in the proper sequence and fill in any "holes" you identify. It is certain that you forgot some steps; add these now. Also consider alternatives or exceptions to make your map representative of the typical process flow.

Review the draft map to identify missing or overlooked…

- Decisions,
- Documentation steps,
- Inspections,
- Rework, fixes, or recovery actions of any kind.
- Transport, or
- Storage of materials or information.

❺ As you write process steps on sticky notes, identify the persons, functions, teams, or departments who operate or perform each step of the process.

Write the names of these operators in the left-most column of the worksheet, in roughly the order in which they participate in the process.

> HINT: This type map is often referred to as a "swim lanes" diagram because each person, function, team, or department who participates in the process has its own horizontal row, or "swim lane" on the map.

> 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.

❻ Place sticky notes on the worksheet. Arrange them…

- From left to right in the time sequence in which they occur.
- If more than one individual is involved in a single step, you can straddle the two rows.

> HINT: When you begin placing sticky notes on the map, it is likely you will forget some steps and need to add these later. To minimize sticky note shuffling, leave room at the front of the map. Continue adding, re-sequencing, etc. until you arrange the process steps in the correct order.

❼ Draw arrows to show the flow from one step to another.

- Each box (activity or operation) should have one arrow coming out of it, indicating the flow of materials or information.
- Each diamond (decision) should have two arrows coming out from it:
  - ❑ One for the path followed if the answer is YES;
  - ❑ One for the path followed if the answer is NO.

❽ When first mapping the current state, don' t worry about requirements, measures and targets, or contingencies (on the bottom and right sides of the worksheet). Just use the map to document the current state of the process.

TOOL TIP: For more on Requirements, Measures and Contingencies, see Steps #9-10 of the Future State ("Should") process design tool, page xx.

9. Analyze the map to identify problems and opportunities for improvement in the "Is" or Current state process.

Prepare to develop a "Should" or Future state map by completing some or all of the following analyses as appropriate:

- Flipchart the **Strengths** and **Opportunities** in the current process.

Strengths	Opportunities
• What do we currently do well? • What is unique, or gives us an advantage versus competitors? • What should we keep doing?	• What doesn' t work? • What can we do better? • What should we change or do differently in the future?

- **Validate** the "Is" map by observing the process and reviewing your map with key stakeholders.

Use these conversations to build their understanding of the need for change, and to gather information from them about problems and ideas for improvement. This will help build commitment to the change on their part.

TOOL TIP: See Go-See-Listen, page xx, or Interviews, page xx. For help with change management, see Stakeholder Mapping, pg. xx.

- **Conduct a benchmarking study** (see pg. A-57). Either study best practices of others within your own organization, or search for benchmarking partners outside your firm.

Benchmarking can identify best practices to adapt and integrate into your process, and will often stretch a team's ideas about what is possible for improvement of a process, causing them to set higher objectives.

HINT: After documenting the "Is" map is the best time for benchmarking. In fact, many companies won't allow you to study their processes unless you have documented your own.

- Complete a **DO DIRTS** Activity Analysis

  This is used to evaluate each step in the process in terms of the type of activity it involves. In general, there are two basic categories of activities.

  Within these categories are different types. The name of this analysis (**DO DIRTS**) comes from the initials of these types of activities.

The two categories and six types of activities are:

- *Value added,* including…
  - **D**ecisions, and
  - **O**perations or activities in which inputs are being transformed into outputs.
- *Non-value added,* including…
  - **D**ocument,
  - **I**nspections,
  - **R**e-work of any kind,
  - **T**ransport / internal movement, or
  - **S**torage.

Symbols commonly used for each activity type are shown below:

Process Mapping Symbols

- Decision making
- Operation or work activity
- Document
- Inspection (checking on others)
- Rework, Revise, Re-anything
- Transport or internal movement
- Storage

To perform a DO DIRTS Activity analysis, review each step on your process map to identify activities of each type (DO DIRTS). Add or change symbols on the map to reflect the type of activity being performed.

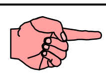
The key learning comes from using the DO DIRTS activity types to help you identify non-value added steps that were not previously included in your process map.

Other steps to analyze Current state ("Is") and prepare to develop Future state ("Should") follow.

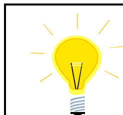
- **Review** existing data **or gather** new **data** on current performance versus key requirements.

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.



TOOL TIP: See the Measurement and Data Analysis section.



HINT: See the definitions at right of Cost, Quantity, Time, Quality, etc. Use the prompts on the next page to identify those areas with the greatest impact on Cost, Cycle Time, Quantity, 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).

Cost

- ❑ Any outputs that are not absolutely essential? Required by the customer?
- ❑ Any steps that are unnecessary? Redundant?
- ❑ Which steps are high cost, especially in terms of people cost?
- ❑ Which steps account for the most rework, waste, non-value added activity?

Time

- ❑ What is the total cycle time of the process, from start to finish?
- ❑ What is our On-time delivery performance?
- ❑ Are we able to deliver In-time, i.e., when the customer needs it?
- ❑ What is the *Value-added Index (VAI)* of this process. VAI refers to the percentage of total cycle time spent in value-added operations. For many organizations, VAI is less than 10%.

$$\frac{\text{time spent in value-added processing steps}}{\text{total cycle time of the process}}$$

Quantity

- ❑ What is the throughput capacity of the process, i.e., units of product/unit of time?
- ❑ Which step(s) is the key constraint that limits the throughput?
- ❑ Can the constraint' s cycle time be reduced or capacity increased without adding cost?

Quality

- ❑ Any outputs that are not required by the customer(s) of this process?
- ❑ Any outputs for which requirements are unclear or ambiguous? For which no feedback is provided to performers on their output quality?
- ❑ Is this process able to deliver what the customer needs (e.g., capability).
- ❑ Which steps have the greatest impact on the quality of the final product/service?
- ❑ Which steps are most unreliable? Variable? Prone to mistakes? The cause of frequent complaints? Interruptions? Breakdowns?
- ❑ Any steps that have inputs which are frequently missing or of poor quality?

- Finalize your analysis by developing a flipchart of your **Data** and **Information Needs**.

Data	Information
• What data do we have?	• What don' t we know?
• What data do we need?	• How will we find that out?
• How will we get it?	• Who should we talk to?
• Who needs to do what by when?	• Who needs to do what by when?

On the following pages are:

- An example "Is" Process Map.
- A blank Process Map worksheet.

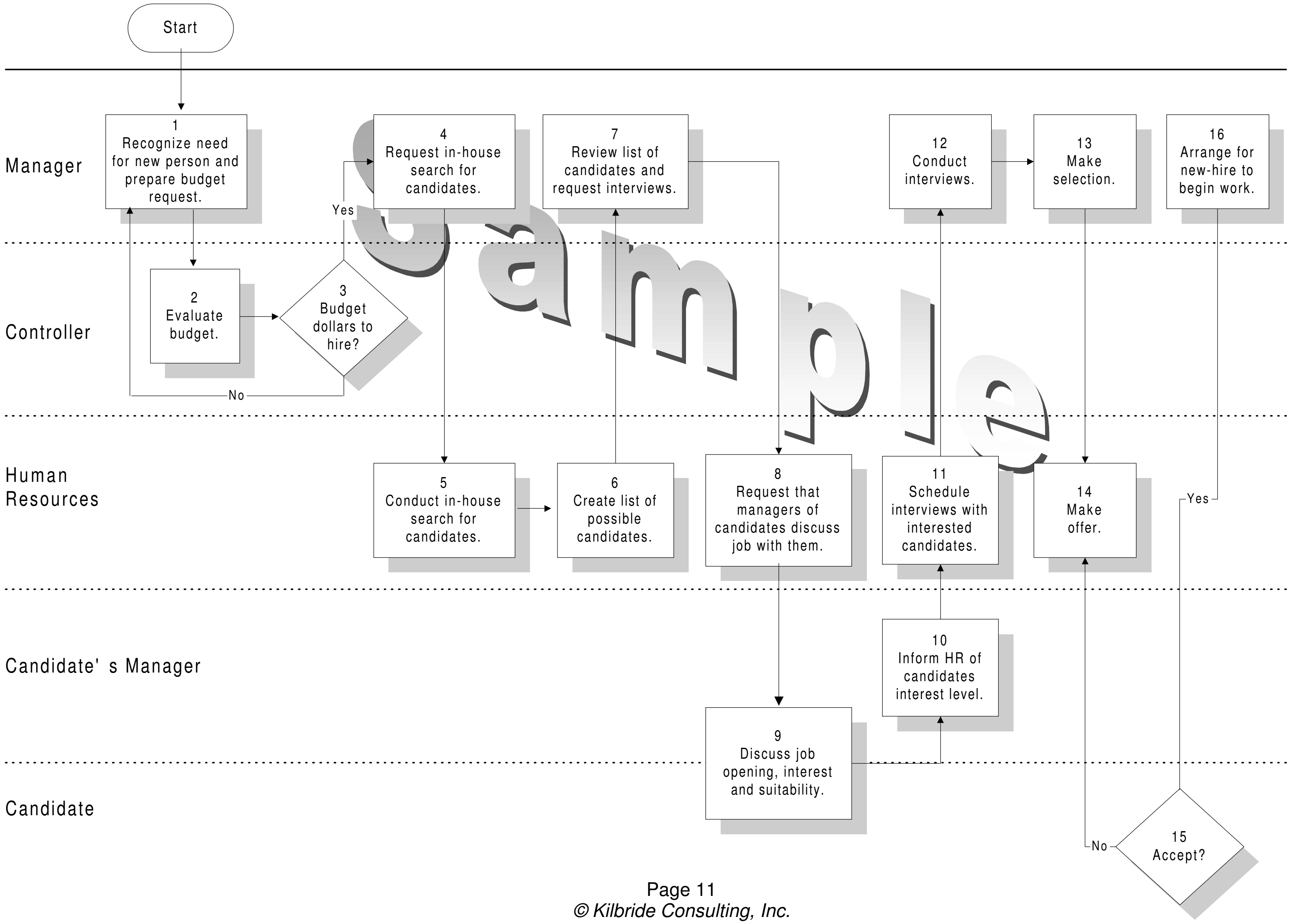
Process Mapping ("Is" or Current State)

❷ Roles

❶ PROCESS: HIRING FROM WITHIN | Scribe: H. Remington | Facilitator: H. Hunter

Date: Today | Meeting participants: Doc, Sleepy, Grumpy, Sneezy | Timekeeper: Tim Exuprey

Process Owner: HR Manager | Process Operators/Performers: All managers



Process Mapping ("Is" or Current State)

❷ Roles

❶ PROCESS:______ Scribe:______ Facilitator:______

Date: Meeting participants: Timekeeper:

Process Owner: Process perators/Performers:

TIME

Person/Group

Start

Product/Service Deliverable

Requirements (Specs)

Measures

Targets & Limits

Contingencies

In-process Measures

Targets & Limits

Collect data
Who
How
When

A Sample of
Tools for Managers and Teams