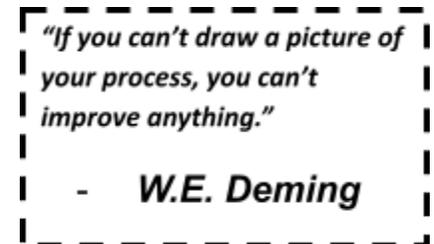# Process Mapping

Key Terms

A **process** is a series of steps that transforms inputs to outcomes. All work is made up of processes.

A **process map** is a visual aid for picturing processes, including steps, decision points, and the links between them. A process map describes a process as it works today, and is a valuable tool in improvement.
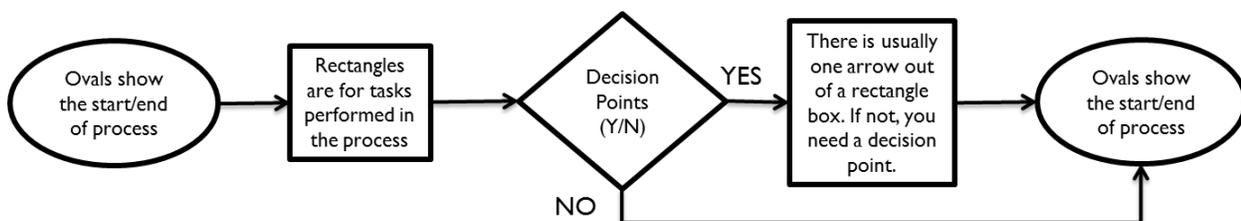
Process Maps and Improvement

Process maps allow you to explicitly articulate the steps and define the sequence of your work, an important step towards improvement. Making a process map promotes deep understanding and consensus among team members working on a process. Analyzing maps can provide valuable insights about strengths and gaps within current work flows.

> *"If you can't draw a picture of your process, you can't improve anything."*
>
> - **W.E. Deming**

How to Create and Use a Process Map

(1) Create the map
- Assemble the team that is responsible for the process
- As individuals, brainstorm key steps of the process.
- Share steps with the group, noting commonalities as well as points of divergence.
- Together, craft a visualization of the process **as is**, making note of variation in experiences/perspectives. Avoid trying to "fix" the process. Include:
    - What happens at each step and who does it
    - How much time it takes for each step and for the process as a whole
    - Decision points that affect which steps are followed
- Tips to Consider:
    - If you do not know how the process occurs, avoid drawing how it "should be" and leave it incomplete. Keep track of any areas where you need more information to build out the map.
    - If you find substantial variation in how people experience the process, consider drafting 2-3 different variations of how it may occur in practice.
    - Remember that your visualization does not need to be perfect and will likely change as you gather more information and data.

Process map flow diagram: Ovals show the start/end of process → Rectangles are for tasks performed in the process → Decision Points (Y/N) → YES → There is usually one arrow out of a rectangle box. If not, you need a decision point. → Ovals show the start/end of process. NO → Ovals show the start/end of process.

(2) Analyze the process
- Review your map to identify existing or potential gaps and problem areas, including:
    - Delays and bottlenecks
    - Wasted resources or time (unnecessary steps or redundancies)
    - Under- or over-utilization of people
- Consider drafting a visualization of an ideal process and using the "5-Whys" to think about why a gap exists between your current process and the ideal.
- Prioritize opportunities for improvement.

Process Map Example: **Improving a Professor's Grading Process**

(1) Create the map

Lawrence Morales, a college math professor, wants to decrease the time it takes for him to return graded exams to students. He makes a process map to help him better understand his current process, beginning with the creation of the answer key and proceeding through the individual steps involved in grading items, tallying scores, and returning exams to students. Note that he identifies two key decision points that direct the flow of his work.

```
                    ( Start )
                        |
                        v
            +---------------------+
            | Create Key (Solved  |
            |     Problems)       |
            +---------------------+
                        |
         NO             v             YES
    <------------<  Done w/all  >------------>  +------------------+
    |               problems?                   | Sum Scores for   |
    |                   ^                        |    each exam     |
    |                  NO                        +------------------+
    |                   |                                |
    v                   |                                v
+------------------+    |                        +------------------+
| Grade one new    |    |                        |  Record Grades   |
| item consistently|--> <  Are there  >          +------------------+
| using the key    |      issues?                        |
+------------------+    +-----------+                     v
    ^                        |                    +------------------+
    |                       YES                   |  Return Exams    |
    |                        |                    +------------------+
    |   +-----------+        |                            |
    +---| Re-Grade  |<-------+                            v
        +-----------+                            +------------------+
                                                 | Answer Questions |
                                                 +------------------+
                                                         |
                                                         v
                                                     (  End  )
```
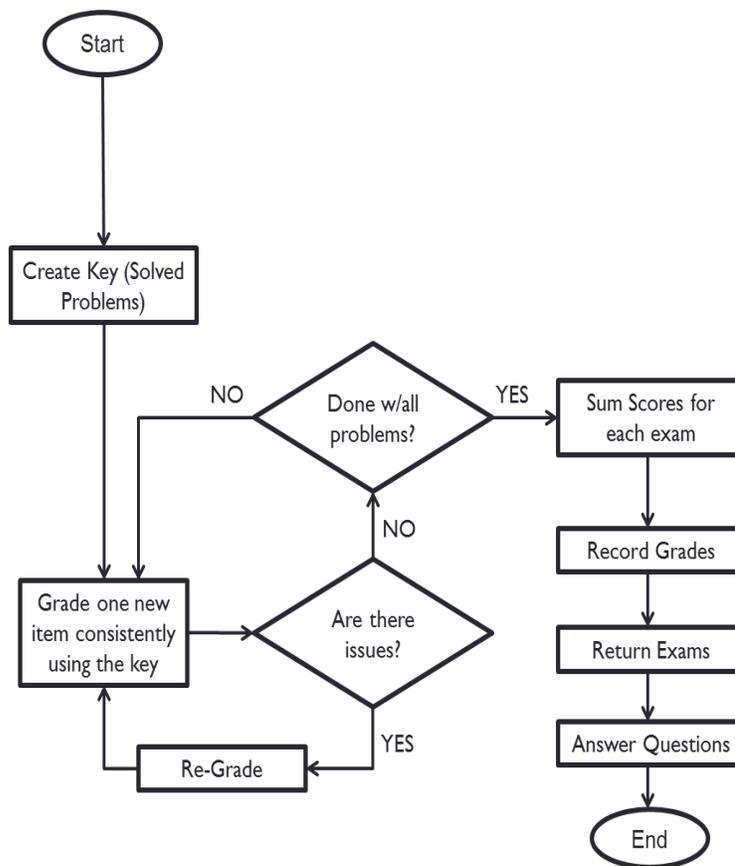
(2) Analyze the process

Now that Lawrence has articulated his current process, he may begin to identify opportunities for improvement. He decides to collect data around how much time passes between each step of his process. After recording the number of days that pass between each step of his process, he notices a particularly large lag between two steps: when he sums his students' scores and when he actually returns their exams to them. This delay accounts for a large portion of the time students' must wait for their results. He realizes there may be opportunities for improvement in the way he records grades in order to shorten that turnaround time, and he decides to begin testing changes to his process.

By helping us to clearly visualize our work and identify specific gaps in performance, a process map can be a powerful tool for improvement.