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Creating Process Performance Models

A Customer Services Example

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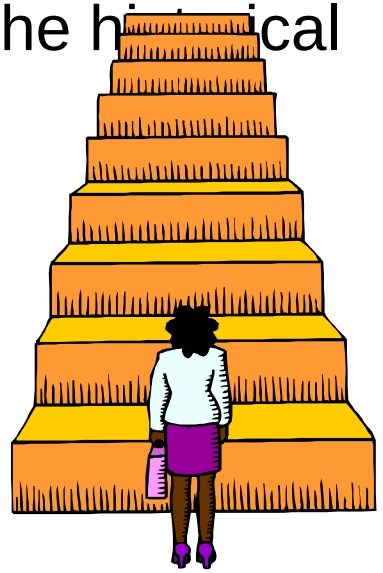
A FEW SIMPLE STEPS

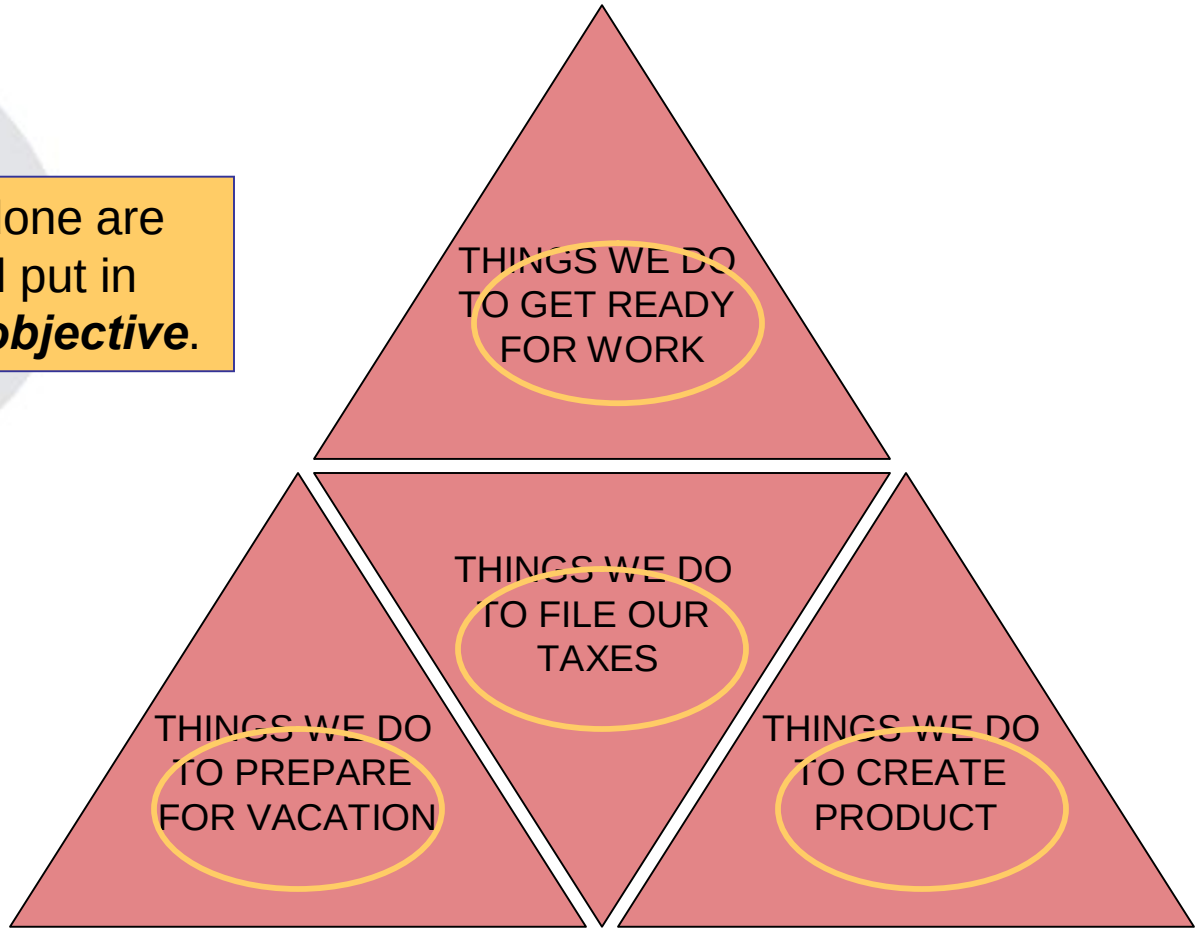
1. Determine what you are trying to accomplish!
2. Identify the activities involved in accomplishing the objective.
3. Understand how much the activities impact the outcome.
4. Gain a statistical understanding of the historical performance of key activities.
5. Do the math.
6. Model the objective.
7. Use the model.
8. Rinse and repeat.



Definitions (my version)

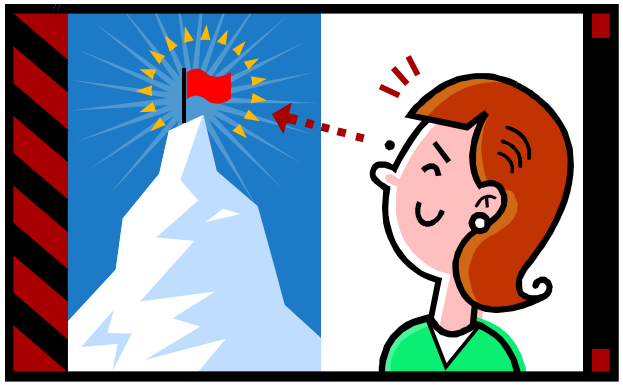
Å Objective ï something you are trying to accomplish

The things being done are meaningless until put in the ***context of the objective***.

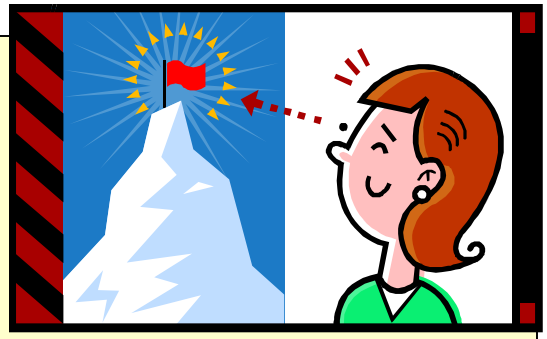


STEP NUMBER 1

- Determine what you are trying to accomplish!
  - What is the objective?



STEP NUMBER 1



Company XYZ

Increase Sales in Customer Service area by selling more features to existing customers.

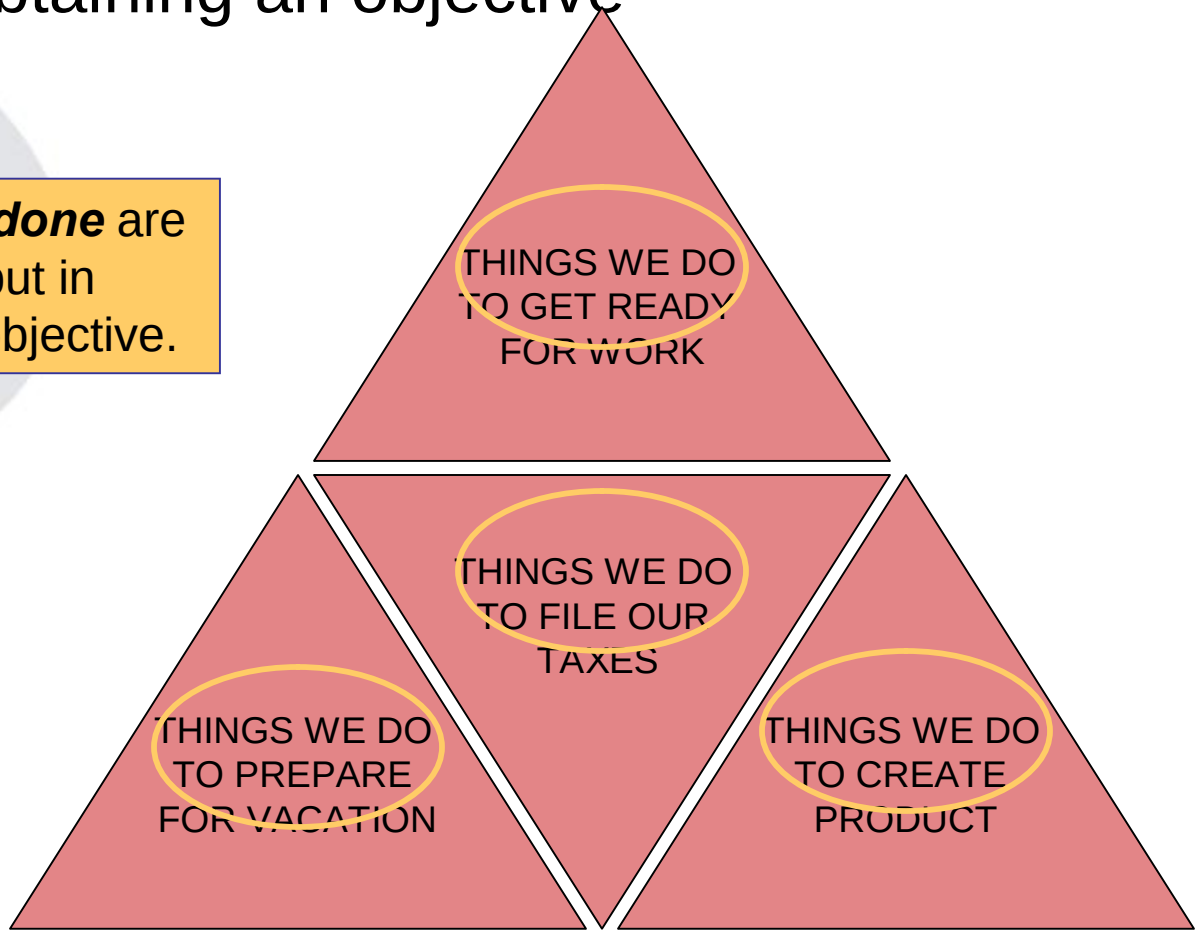
Why aren't they already doing this?
NO TIME!!!

Refined Objective: Create more time for customer service reps to have available for selling features to existing customers.

Definitions (my version)

- Sub-Process or process elements ï the activities involved in obtaining an objective

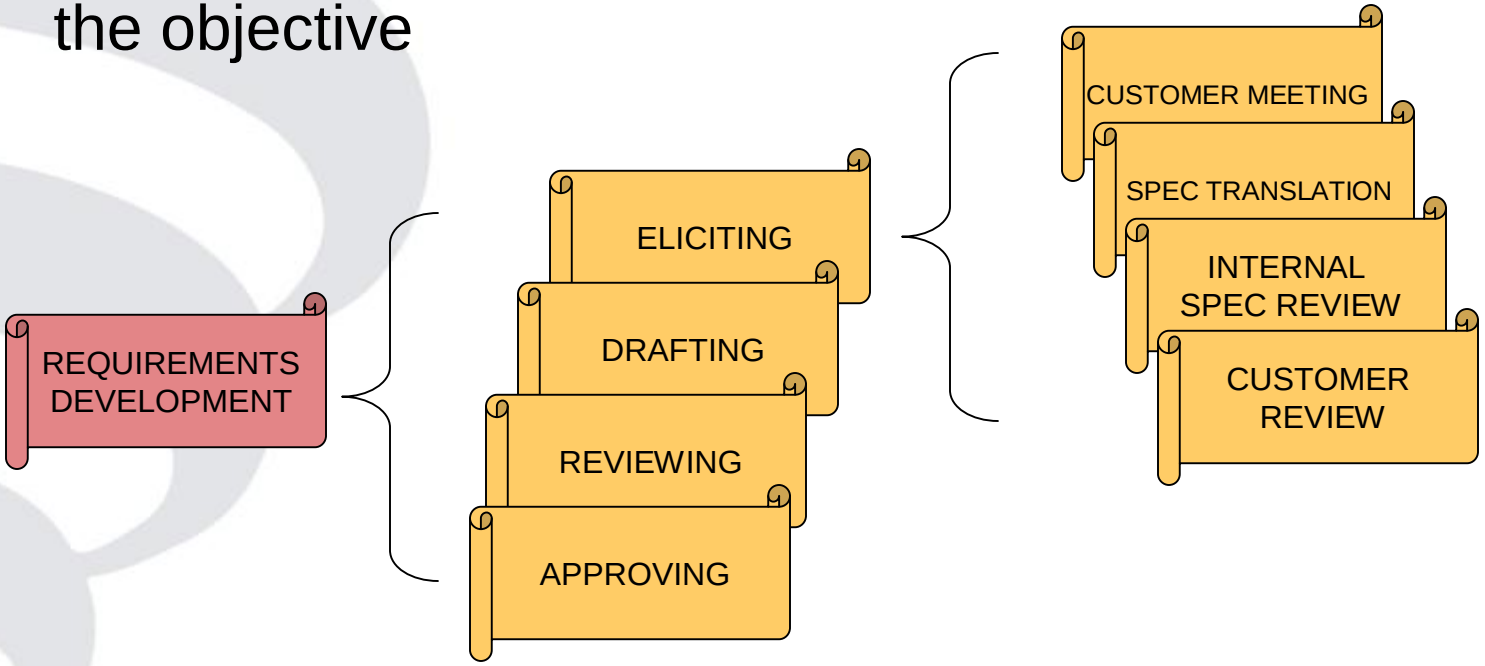
The ***things being done*** are meaningless until put in the context of the objective.



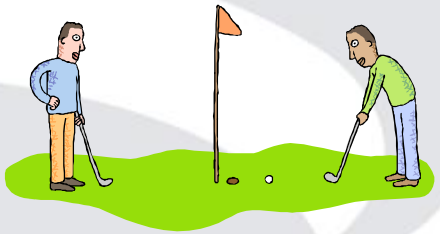
STEP NUMBER 2

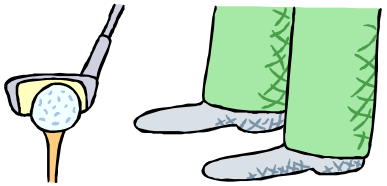
THINGS WE DO TOé

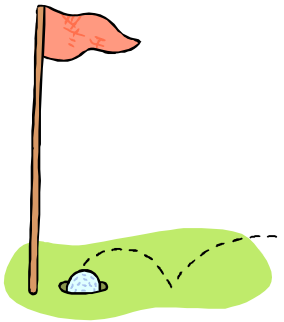
- Identify the *activities* involved in accomplishing the objective.
  - This could be an iterative step depending on the objective



Insert Metaphor Here





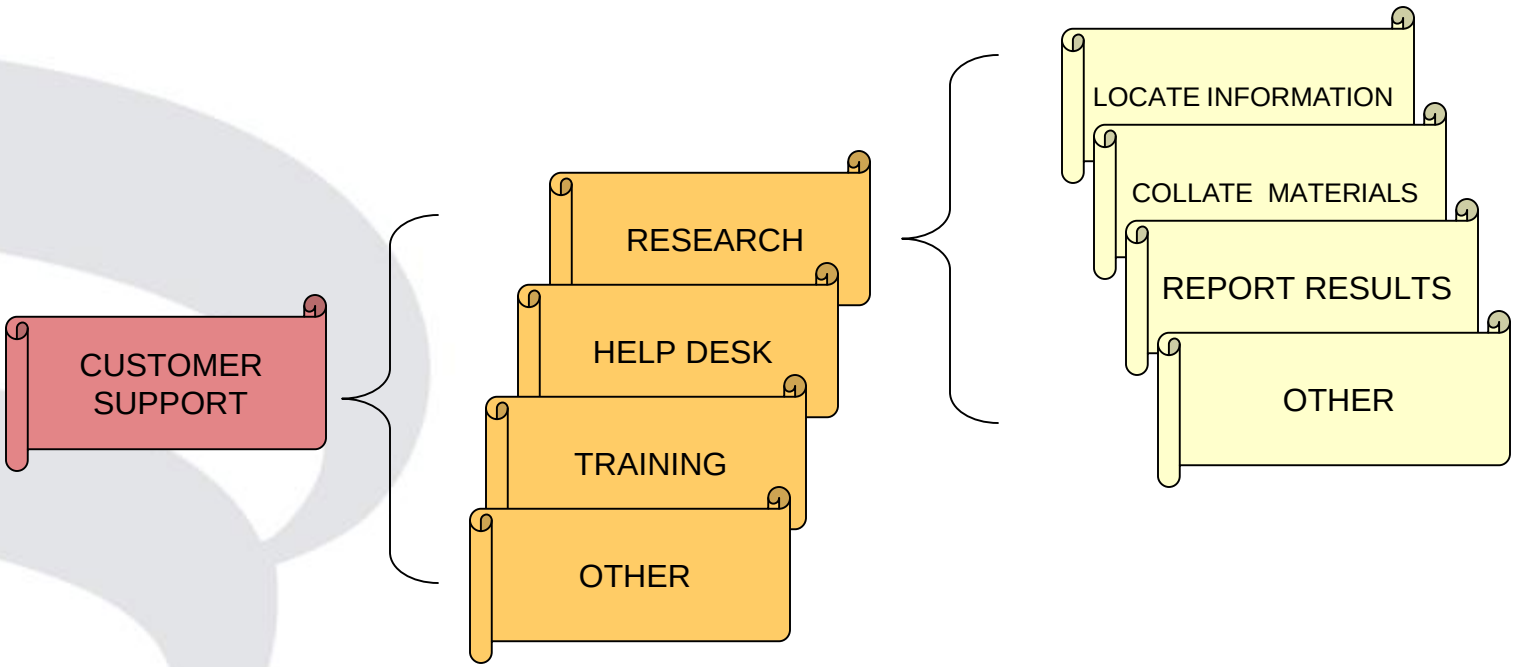


Tricks to Step 2

Break the activities down to something that can be *controlled*

- *Attendance*
- *Amount of material*
- *Amount of time*
- *Etc.*

STEP NUMBER 2 Example



STEP NUMBER 3

- Understand how much the *activities* impact the *outcome*
  - Many statistical techniques available to ascertain this, if necessary
    - ANOVA, Correlation, hypothesis testing, etc.

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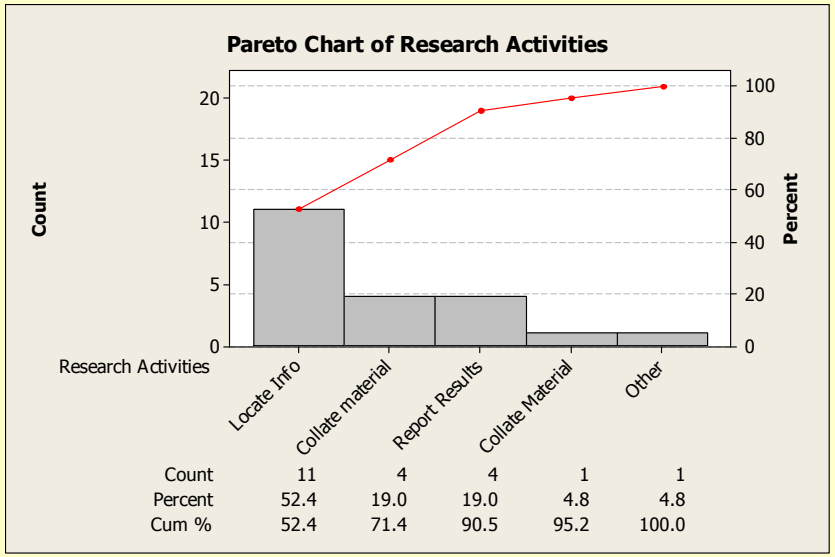
How much time is being spent in each of these Research Activities?

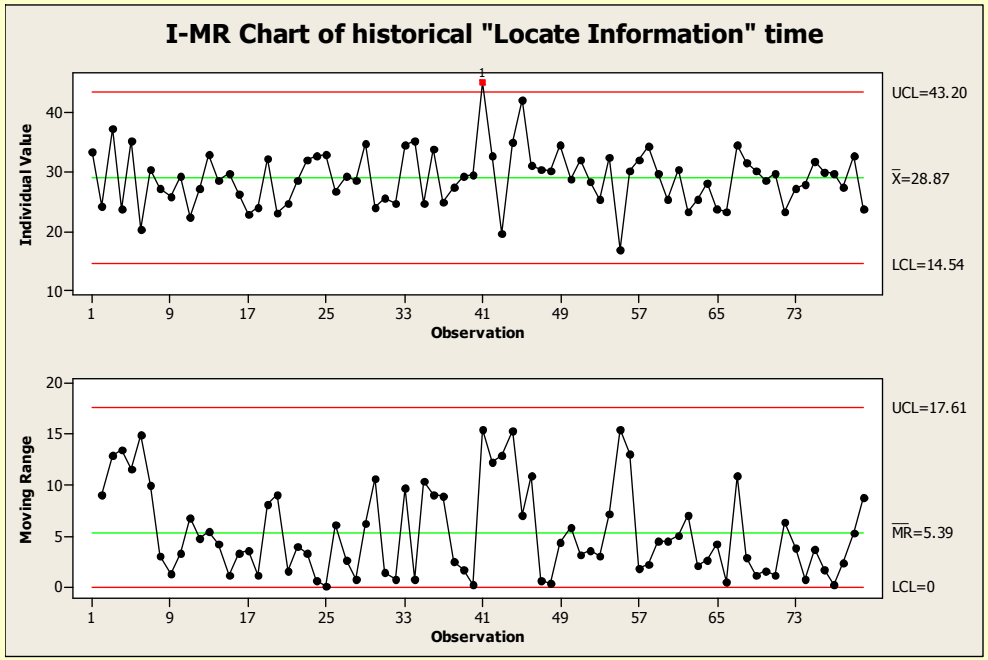


May want to use sampling techniques for initial data

STEP NUMBER 4

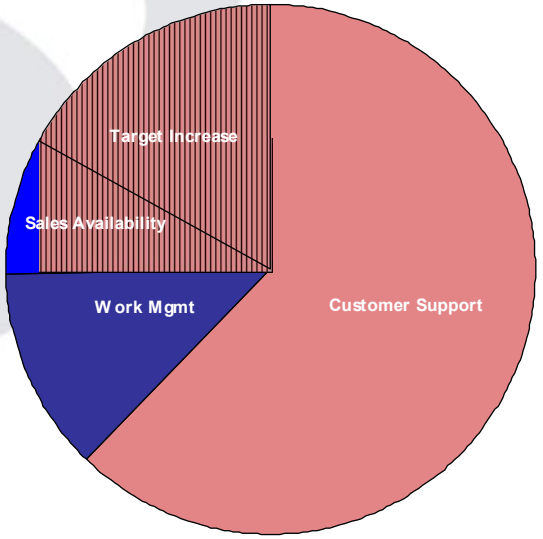
- Gain a statistical understanding of the *historical* performance of key activities
  - Typically use Control Charts for this, or some type of historical

Company XYZ historical results



STEP NUMBER 5

- Do the Math!
  - Locate Information = 52.4% of Research Time
  - Total Research Time = 65% of Customer Support Time
  - Need to Increase available time by 15%
  - Total CS Hours currently are 5500



Cut "Locate Information" time by 535 hours

STEP NUMBER 6

- Model the Objective!
  - May need to include multiple activities and process areas to put together the best picture for meeting the objective.
  - At this point we are really trying to understand how changes to the process activities impact the objective or target

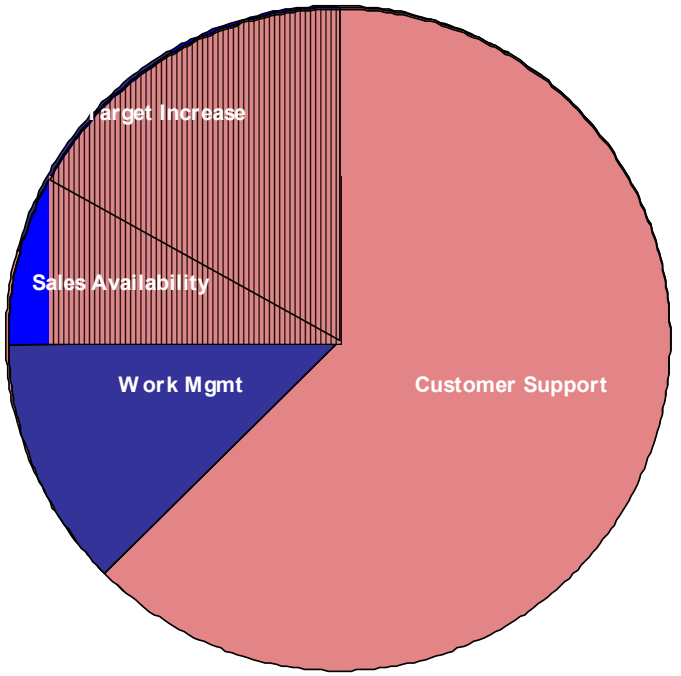
Company XYZ

How do we define Sales Availability as a function of "Locate Information"?

STEP NUMBER 6 Example

If it takes on average:

- 29 hours to locate info
- 30 hours to locate info
- 25 hours to locate info
- 20 hours to locate info



USING THE MODELS

- Understand ***quantitatively*** what needs to change, if anything, in order to reach the objective
  - How much, exactly, do we need to change? (from 29 to 20 hrs to ñocate informationòï sets the specification)
  - Maintain a statistical understanding of the ***current*** performance of key activities
  - The best way to ensure you will not exceed spec is to monitor average and variation in control chart
- Monitor the execution of the process activities in order to ensure consistent execution
- Regularly input process activity values into model equation to ascertain current status to objective

RINSE AND REPEAT!

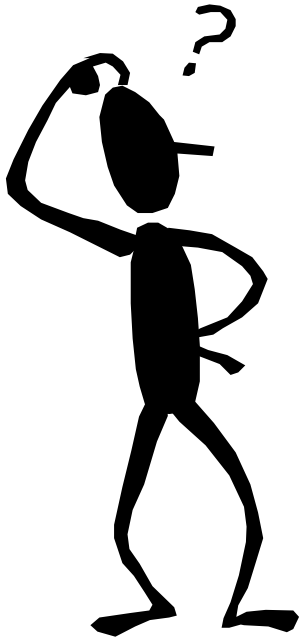
- Be aware
  - No model will be "accurate" the first time through, but it will still provide information
  - A few iterations must occur before you will adequately understand relationships between process activities and objectives
  - Continue monitoring process activities in order to ensure consistency of execution
  - The more unstable your process execution, the less predictable your model will be

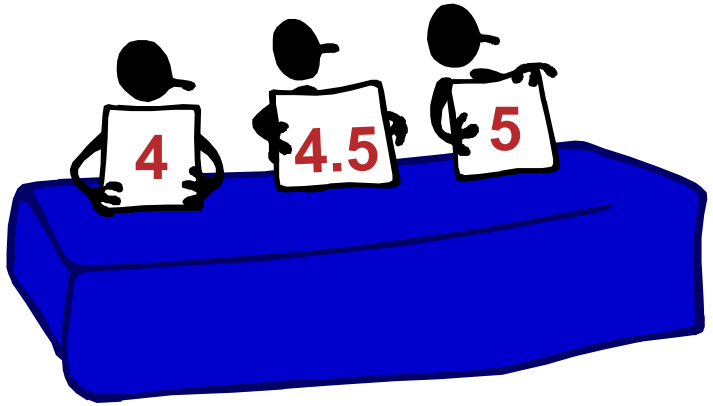
OTHER EXAMPLES OF PROCESS PERFORMANCE MODELS

- Post release defects as a function of amount of material inspected
- Schedule impacts as a function of customer attendance at requirements reviews
- Cycle time as a function of reused components
- Rework budget as a function of design inspection prep time

- ***YOUR MODEL WILL VARY!!!***

Questions or Comments?





For More Information

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