Important Performance Measures for Processes

- The *service level* for each simulation is the fraction of demand that is satisfied.

  Service level for entrance = Objects entering process / (Objects entering process + Objects unable to enter)

  For our example, in simulation #1:

  Service level = _____.

- The *overall mean service level* of the process is the mean of the service levels calculated for each simulation; in this example it equals _____.

Important Performance Measures for Processes

- The *mean cycle time* at a buffer is the mean amount of time an object takes to move through the buffer during a simulation.

  For our example, in simulation #1:

  Mean cycle time at Line = _____.

- The *overall mean cycle time* at a buffer is the mean of the mean cycle times of the buffer for each simulation.

  In this example, the overall mean cycle time at Line = _____.

Option 1: Improving the system

We would like to analyze how would the performance of the bank be improved by the addition of a check-reading machine.

Suppose the addition of a check-reading machine would reduce *service time per customer* from Nor(2.4,.5) to Nor(2,.5).

How to change the original process simulation model?

Option 1: Process Improvement Results

- Before the change,
  - Overall mean service level = 0.88.
  - Overall mean waiting time (i.e., overall mean cycle time at Line) = 10.59.

- After adding a check-reading machine,
  - Overall mean service level = _____.
  - Overall mean waiting time = _____.

Option 2: Improving the system

How would the performance of the bank be improved by the addition of a second teller?

Process flow map for adding a second teller:

Option 2: Process Improvement Results

- Before the change,
  - Overall mean service level = 0.88.
  - Overall mean waiting time (i.e., overall mean cycle time at Line) = 10.59.

- After adding a second teller,
  - Overall mean service level = _____.
  - Overall mean waiting time = _____.