Problem: Resource Requirement

Calculate the resource requirements for both Hotline and Level 2 Staff for holiday peak demand of 125/day and with 5% higher items being sent for escalated support.
Solution: Resource Requirement

Calculate the resource requirements for both Hotline and Level 2 Staff for holiday peak demand of 125/day and with 5% higher items being sent for escalated support.

Customer Incoming Demand

4 Hotline and 4 Level 2 staff.

Customer Demand = 125

Review and Support Requests

Information Systems

Function

Demand = 125

Wait = 2

Decision

Demand = 125

Flow % = 100%

Resource Requirement

Calculate the resource requirements for both Hotline and Level 2 Staff for holiday peak demand of 125/day and with 5% higher items being sent for escalated support.

Resource Balance Chart

Legend

Effective Resource Time

First Time Reqd Resource

Resource Usage Chart before adding additional resources, shows that an additional 3 each are needed based on Effective Resource Time.

Resource Usage Chart with 4 Hotline and 4 Level 2 staff.

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Problem: Lead Time

What is the current Lead Time for items going through Escalated Support?

Customer Incoming Demand

Customer Demand 50 Unit Day

Review and Support Requests

Qty=100
Wait 2 Day
Demand 50.0 Unit Day

Decision

Demand 56.0 Unit Day
Time % 90 %

Escalated Support

Functions
Information Systems

Demand 5.6 Unit Min
Time % 90 %

Resource Quantity
1

Resource Time
8

Resource Rate
60

Resource PT
60

Resource Eff.
100 %

Level 2 Staff

Resource Quantity
1

Resource Time
8

Resource Rate
60

Resource PT
60

Resource Eff.
100 %

Hotline Staff

Resource Quantity
1

Resource Time
20

Resource Rate
5

Resource PT
10

Resource Eff.
100 %

Units
Day Wk Year
8 5 52
10 Day Wk

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Solution: Lead Time

What is the current Lead Time for items going through Escalated Support?

Escalated Support is on Route 2

Route Summary for Route 2 gives us the Lead Time for Escalated Support of 4 days.
Problem: Incorrect Routing

Some of the support requests are rejected at Review because of incorrect routing, typically at 10%. Show the impact on the map.
Solution: Incorrect Routing

Some of the support requests are rejected at Review because of incorrect routing, typically at 10%. Show the impact on the map.

Add a Termination Center to handle the rejections.

Resource Utilization is impacted.

<table>
<thead>
<tr>
<th>Route</th>
<th>Route Traversals</th>
<th>Route %</th>
<th>Cumulative Route %</th>
<th>Lead Time (longest)</th>
<th>Total Wait</th>
<th>PT Percent</th>
<th>Period Cost</th>
<th>Cumulative Cost %</th>
<th>Termination Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>39.80</td>
<td>79.60</td>
<td>79.60</td>
<td>0.00</td>
<td>0.69</td>
<td>132.67</td>
<td>4.17</td>
<td>10.00</td>
<td>Review</td>
</tr>
<tr>
<td>2</td>
<td>5.00</td>
<td>10.40</td>
<td>90.00</td>
<td>0.00</td>
<td>0.69</td>
<td>17.33</td>
<td>8.33</td>
<td>100.00</td>
<td>Rejected Calls</td>
</tr>
<tr>
<td>3</td>
<td>5.00</td>
<td>10.00</td>
<td>100.00</td>
<td>4.00</td>
<td>3.65</td>
<td>366.67</td>
<td>0.00</td>
<td>100.00</td>
<td>ES</td>
</tr>
<tr>
<td>Summary</td>
<td>50.00</td>
<td>100.00</td>
<td>100.00</td>
<td>3.10</td>
<td>0.99</td>
<td>516.67</td>
<td>100.00</td>
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</table>
### Problem: Handling Variation

There is a lot of variation in the number of units per day and also in the review and support turnaround time. How can you handle this on a VSM?

---

**Customer Incoming Demand**

- **Customer Demand**: 50

**Wait**

- **Wait**: 20 Min
- **Demand**: 50.0

**Review and Support Requests**

- **PT**: 25 Min
- **LT**: 1 Day
- **Demand**: 50.0

**Decision**

- **Demand**: 50.0

**Review**

- **Demand**: 10.8

**Escalated Support**

- **PT**: 60 Min
- **LT**: 1 Day
- **Demand**: 39.2
- **Stations**: 2

---

**Units**

- **Day**
- **Wk**
- **Year**

<table>
<thead>
<tr>
<th>Day</th>
<th>Wk</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>5</td>
<td>52</td>
</tr>
<tr>
<td>52</td>
<td>Hr</td>
<td>Day</td>
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<tr>
<td>Wk</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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**Solution: Handling Variation**

There is a lot of variation in the number of units per day and also in the review and support turnaround time. How can you handle this on a VSM?

**Variation** is the root cause of most problems in value streams. Here, variation could be causing long wait times, staff stress, unnecessary costs, errors, etc. The first challenge is to make sure everyone concerned is aware of the variation the value stream has to deal with. This can be done as shown in the example.

Value stream mapping is normally a static analysis based on a single data value for each input. You may use min, max, average, weighted average, or some other value which best represents the data for the analysis you are doing.

---

**Units**

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<th>Day</th>
<th>Wk</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>24</td>
<td>5</td>
<td>52</td>
</tr>
<tr>
<td>Hr</td>
<td>Day</td>
<td>Wk</td>
</tr>
</tbody>
</table>

---

For example, you could add the following data extensions to show the min max.

- **Customer Incoming Demand**
  - Day: 50
  - Unit: 50
  - Min: 30
  - Max: 80

- **Review and Support Requests**
  - PT: 25
  - Min: 10
  - Max: 40

- **Decision**
  - Demand: 50.0

---

Use these data extensions to show the min max.

Variation shown as standard deviation.

Decide what single value to use here: Min, Max, Average, Weighted average, etc.

---

**Escalated Support**

- PT: 60
- LT: 1
- Demand: 39.2
- Demand %: 78.40
- Stations: 2

---

Review

- Demand: 10.8
- Demand %: 21.60

---

**Units**

<table>
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