The Training Material on "Logistics Planning and Analysis" has been produced under Project Sustainable Human Resource Development in Logistic Services for ASEAN Member States with the support from Japan-ASEAN Integration Fund (JAIF). Copyright Association of Southeast Asian Nations (ASEAN) 2014. All rights reserved.
Logistics Planning & Analysis
Chapter 10
Logistics Performance Indicators
Objectives

• Define and understand the concept of performance.
• Examine the function of performance indicators.
• Understand how performance indicators are created from organization’s objectives.
• Examine examples of performance indicators.
Introduction

- Management is defined as planning, organizing, controlling and monitoring of objective-directed activities.
- Control processes take place within the management process.
- Control is considered as a necessary activity of operations and the aim of control is to detect deviations.
- Logistics performance is about filling the gaps between customers’ expectations and company’s performance.
Concept of Performance Indicators

• One of the main things to understand is that in terms of performance measures you need to:
• Monitor performance against the criteria that are important to your customers.
• Monitor performance against the criteria that are important to you (costs).
Concept of Performance Indicators

Figure 10-1: Balance of Cost of Service vs Service Level
Transformation Model

Material, Labor, Capital, Information → Transformation Process → Output

- Price
- Time
- Quality
- Quantity
- Place

Figure 10-2: Transformation Model
Performance Indicators

Retailer
- Cost as % of sales
- Sales as % inventory
- Freight as % of COGS
- Costs as % of sales
- YOY sales increase vs YOY increase of cost
- Delivery reliability

3PL
- Logistics cost
- Cost per line
- Cost per order
- % pick accuracy
- Service level – delivery to schedule
- Direct & indirect hours
- Lost time / cost

Figure 10-2: Performance Measures Examples of Retailer vs 3PL
Feedback System

Figure 10-3: Feedback System
Guidelines on Creating Performance Indicators

• Performance indicators must reflect the logistics objectives of the firm,
• The flow of materials from supplier to end user must be reflected through performance indicators.
• Performance indicators must be able to show the responsibility area.
• Each performance indicator must be clearly defined using SMART objectives.
Guidelines on Creating Performance Indicators

- Performance indicators must reflect the logistics objectives of the firm,
- The flow of materials from supplier to end user must be reflected through performance indicators
- Performance indicators must be able to show the responsibility area.
- Each performance indicator must be clearly defined using SMART objectives.
Framework for Performance Measures

- Determine functions & activities
- Determine org structure
- Determine logistics objectives
- Determine measurements per objective

Activities on which reporting has to take place

To whom & at which level reporting has to take place

Performance indicators used in reporting

Figure 10-4: Framework for Performance Indicators
Measurement Tools

• Manual forms.
  ▪ Slow
  ▪ Prone to error
  ▪ May require duplication of data entry which leads to more errors
  ▪ Supposedly cheap but can be costly if there are mistakes
  ▪ Limited data processing
Measurement Tools

- Automatic data collection (ADC) eg barcode, RFID.
  - Instantaneous
  - Very low in errors
  - Less manpower to collect data
  - Data can be processed quickly and in many ways
  - Expensive in acquisition of hardware and software
Measurement Tools

• Data entry using hand held devices or computers.
  ▪ Faster than manual system
  ▪ Less prone to errors because dependent on operators
  ▪ Less manhours
  ▪ Data can be processed quickly
  ▪ Less expensive compared to ADC
Performance Indicators

• One can create many performance indicators.
• If there are too many indicators, it would be difficult to use them appropriately and productively in logistics.
• As a norm, a department should not have more than 5 indicators.
• These so-called indicators will provide a big picture view of the performance.
• If the indicators show that the department is not doing well, then the management of the functional area need to look into the details.
Performance Indicators

Figure 10-6: Feedback & Correction Flowchart
## Performance Indicators

<table>
<thead>
<tr>
<th><strong>Materials Dept</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Inventory level</td>
<td>Inventory beginning of period; inventory issued in month</td>
</tr>
<tr>
<td>Lead time purchasing</td>
<td>Receipt order instruction until confirmation of supplier</td>
</tr>
<tr>
<td>Lead time transport</td>
<td>Completion reported until receipt at gate</td>
</tr>
<tr>
<td>Lead time supplier</td>
<td>Confirmation until completion reported</td>
</tr>
<tr>
<td>Delivery reliability supplier</td>
<td>Real delivery date in relation to latest date agreed upon per PO</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Materials Planning</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Delivery time</td>
<td>Receipt customer PO until delivery ex-works of all customer orders</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Warehouse</strong></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Order picking</td>
<td>Number of orders per warehouse staff per unit of time</td>
</tr>
<tr>
<td>Lead time</td>
<td>Receipt of order pick list to delivery of order ex-works warehouse</td>
</tr>
</tbody>
</table>

Figure 10-6: Examples of Performance Measures
Conclusion

• Performance indicators are unpopular for the reason that they exert pressure on staff to perform better.
• No amount of convincing will help if logisticians do not buy in into the system.
• Communicating the importance and relevance of performance indicators is necessary.
• Management need to inform staff that the performance indicators are achievable.
• Constant feedback on performance is mandatory.