KAI HOBERG

SERVICE LEVEL MINI-CASE
TEACHING STUDENTS ALTERNATIVE PERFORMANCE METRICS
INSTRUCTOR GUIDELINES
ABOUT THE AUTHOR

Prof. Dr. Kai Hoberg

• Professor of Supply Chain and Operations Strategy at Kühne Logistics University since 2012
• Ass. Prof. at Kühne Logistics University, visiting scholar at National University of Singapore, Cornell University and Israel Institute of Technology,
• Project manager and strategy consultant at Booz & Company in the Operations Practice
• Dr. rer. pol. at Münster University in supply chain management
• Faculty in the Supply Chain Academy of leading global consultancy

Please feel free to contact me directly for any questions or improvement comments
ROLE PLAY OBJECTIVES AND APPROACH

Objectives
1. Highlight different definitions of service levels.
2. Improve understanding which service level is appropriate, based on customer requirements and demand.

Approach
1. Role play between three students representing
   - Head of Sales
   - Head of Supply Chain Management
   - CEO
   to highlight the problem of high service levels and poor customer satisfaction.
2. Data analysis of order fulfillment data to highlight differences between different service level definitions and poor applicability of current service level definition.
AGENDA

- Introduction
- Instructions for Role Play
- Slides for Presentation
- Instructions for Analysis
- Solution
WE WILL OBSERVE A DISCUSSION ON CUSTOMER SATISFACTION

“I am Ronda, the head of sales”

“I am Ron, the CEO”

“I am Frank, the head of SCM”

Meeting 1
Situation

• Your are Ronda, the head of sales. You conducted a customer satisfaction survey and feel that your company has a problem. Customer feedback is that
  - orders are shipped too late
  - quantities shipped are lower than ordered
  - however, quality is fine
• In addition, you get many calls from your customers complaining about the delivery performance of your company.
• You believe that something is really going wrong in operations and SCM since customers are not satisfied.
• You believe that only a happy customer is a good customer – accordingly you would like to identify the issues that set up today’s meeting.

Objective

• You would really like to understand what is going on in operations! What is operations and SCM doing wrong?
• You would like to convince the CEO to take actions against SCM!

Meeting 1

You are meeting Ron the CEO and Frank the head of SCM to bring up the issues that are really troubling your customers
CUSTOMERS ARE UPSET ABOUT THE LONG LEAD TIMES AND DELAYS

Feedback from current Customer Satisfaction Survey

“We often do not get the quantity we ordered – the last items are often late”

“Your quality is fine but your orders never arrive on time”

“I often call and your guys tell me that the part is not available”

“Often the most important part is arriving just two weeks late”

“If you continue like this, we will permanently switch to another supplier – I am really sick of waiting”

Customer Satisfaction with Delivery Performance

4.2

Source: Kühne Logistics University
INSTRUCTION TO FRANK – HEAD OF SCM

Situation

• Your are Frank, the head of SCM. You have been with the company for six months and you are happy with planning operations.
• You have reduced inventories by more than 30% in the past months and introduced a new KPI (“Key Performance Indicator”) board.
• The KPIs are indicating that you are doing just great – in particular you have measured a 97% service level which is great compared to competitors with often only 90%
• You heard about some complaints by customers about late deliveries. However, this is normal: there are always some customers that are not happy! Lead times are an indicator that our products are great.

Objective

• The KPIs system is your “baby” and you are very proud of it!
• You would like to highlight your great service level compared to peers!

Meeting 1

You are meeting Ron the CEO and Ronda the head of Sales and you don’t really know what the problems are...
SERVICE LEVELS ARE SIGNIFICANTLY ABOVE COMPETITORS

STATUS OCTOBER

Source: Kühne Logistics University
INSTRUCTION TO RON – CEO

Situation

• Your are Ron, the CEO of the company.
• You hired Frank, the new head of SCM, six months ago and he is a great guy. He started two big initiatives:
  (i) SCM KPI measurement system implementation
  (ii) Inventory reduction project
• He did both very successfully – in particular inventories are down which saves a lot of working capital.
• However, recently you got numerous calls from your customers complaining about the delivery performance – orders are late and quantities shipped are too low!
• You asked Ronda, the head of sales to conduct a customer satisfaction survey.

Objective

• You are a fact-based guy – numbers count – if there is something odd, your guys should really look into the details of the numbers.
• You would like to run a great company!

Meeting 1
You are meeting Frank the head of SCM and Ronda the head of Sales and would like to know how the company is performing

Prof. Dr. Kai Hoberg
Source: Kühne Logistics University
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WE WILL OBSERVE A DISCUSSION ON CUSTOMER SATISFACTION

“I am Ronda, the head of sales”

“I am Ron, the CEO”

“I am Frank, the head of SCM”

Meeting 1

Source: Kühne Logistics University
CUSTOMERS ARE UPSET ABOUT THE LONG LEAD TIMES AND DELAYS

Feedback from current Customer Satisfaction Survey

"Often, you cannot deliver and I have to order at another supplier who does not provide the same quality"

"I often call and your guys tell me that the part is not available"

"We often do not get the quantity we ordered – the last items are often late"

"Often the most important part is arriving just two weeks late"

"If you continue like this, we will permanently switch to another supplier – I am really sick of waiting"

"Your quality is fine but your orders never arrive on time"

Customer Satisfaction with Delivery Performance

Source: Kühne Logistics University
SERVICE LEVELS ARE SIGNIFICANTLY ABOVE COMPETITORS

Source: Kühne Logistics University
### Service Levels Are Great: 97% Compared to 90% at Peers

Feedback from Customer Survey

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<th>Order Line</th>
<th>Order Lines per Order</th>
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**Total** 97%
AGENDA

- Introduction
- Instructions for Role Play
- Slides for Presentation
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- Solution
## DATA DESCRIPTION

### Data Description

<table>
<thead>
<tr>
<th>Order Number</th>
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- **Order number for all SKUs within a single order**
- **Number of different SKUs in the orders**
- **Number of units ordered per item**
- **Number of units delivered per item**
- **Delivery date requested by customer**
- **Confirmed delivery date to customer**
- **Actual delivery date from DC**
- **Service Level**

Source: Kühne Logistics University
## SERVICE LEVEL DEFINITIONS

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<th>Delivery vs.</th>
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<td><strong>Percent of units delivered on time</strong></td>
<td>β-service level-R</td>
<td>β-service level-C</td>
</tr>
<tr>
<td><strong>Percent of order lines delivered on time and in full (α-service level)</strong></td>
<td>α-service level-R</td>
<td>α-service level-C</td>
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<tr>
<td><strong>Percent of orders delivered on time and in full (all order lines OTIF&lt;sup&gt;1)&lt;/sup&gt;)</strong></td>
<td>O-OTIF-R</td>
<td>O-OTIF-C</td>
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Note: OTIF .. On-Time-In-Full
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DATA FILES

Instructor file contains five sheets that can be used to create random order fulfillment data:

- Parameters – all parameters to create fulfillment data
- Random Data – random order fulfillment data with SL calculation
- Service Levels – graphical representation of service levels
- Data for Case – data as used in this case study
- Case Solutions – data with all service level calculations

Student file contains only one sheet with data to be used for case:

- Data for Case – data as used in this case study
SERVICE LEVELS DIFFER SIGNIFICANTLY BY DEFINITION APPLIED

Service Level Comparison

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</table>

Source: Kühne Logistics University
KEY DRAWBACKS IN DATA AND SERVICE LEVEL DEFINITION

Data
• Lost sales are not reported due to limited material availability, e.g. orders are only entered into the system once they are confirmed.
• “True” delivery date to customer not recorded but only order processing at DC (usually lead time from DC to customer – no pickup).

Service Levels
• $\beta$-service level vs confirmed delivery date is not representing customer understanding of service requirement.
• $\alpha$-service level is more appropriate in settings where full quantity of good is required at the time of delivery (e.g. batch production); $\alpha$-service level always lower or equal to $\beta$-service level.
• Order OTIF is more appropriate if all different parts in an order are required at the same time (e.g. spare parts setting).