Quality of Logistics Services –
A journey towards customer driven operational excellence along the supply chain

Dr Stephan Freichel

Mobility Forum Stuttgart
Agenda

- Quality: Definition and Basics
- Service Quality in the Logistics Services Business
  - Logistics Functions
  - Case Studies of customer service achievements
- Relationship models and Life Cycle oriented Quality for LSPs
- Supply Chain Quality
- Conclusions and Discussion
Quality: Definition and Basics
“Someone calling themselves a customer says they want something called service.”
Customer Service
Our priority.
Scope of Quality

- Quality is perceived by the customer, and therefore should be **defined by the customer**
  - changes over time, often in unpredictable ways
  - is associated with **creating customer value**

- **Quality meets or exceeds** the whole range of customer **expectations**,
  - ... some of which may be unspoken by the customer

As a complex concept, quality should and can only be addressed by the **whole organization working together across boundaries**
Developing Total Quality Management Systems -
EFQM’s Quality Excellence Model

The EFQM Excellence Model is the most popular quality tool in Europe, used by more than 30,000 organisations to improve performance. It supports you to self-assess and reflect. 84% of our members say that the EFQM Model helps to improve their organisation.

Source: http://www.efqm.org
Quality Dimensions in the Service Industry Business: The ServQual Model -
Relative importance of five dimensions of service quality from a customer's perspective

- **Reliability**
  - Ability to perform the promised service dependably and accurately

- **Responsiveness**
  - Willingness to help customers and provide prompt service

- **Assurance**
  - Knowledge and courtesy of employees and their ability to inspire trust and confidence

- **Empathy**
  - Caring and individualized attention

- **Tangibles**
  - Physical facilities, equipment and appearance of personnel

ServQual and the 5 Quality Gaps

Gap #1
• The gap between what customers actually expect, and what the organization thinks they expect.

Gap #2
• The gap between the organizational perception of customer requirements and the formal service specifications.

Gap #3
• Service delivery as compared to service specification.

Gap #4
• Communication to delivery gap.

Gap #5
• The sum of the other gaps. The total gap between customer expectations and their perception of actual performance.

Source: Zeithaml, Parasuraman, Berry, 1990
Viewpoints of Service Quality

- **Potential based view**
  - Performance potential regarding capability and readiness rather than ready-to-take-away product
  - Includes performance and sees service as a promise, not sure about the final quality

- **Process based view**
  - Integration of the customer as an external element into the production process (re. information, personal cooperation, resource integration)
  - Simultaneous production and use of the logistics service

- **Results based view**
  - Service result is partially immaterial
  - Service cannot be stored

... leading to a transactional service production model

<table>
<thead>
<tr>
<th>Logistics Service Provider</th>
<th>LSP Customer</th>
</tr>
</thead>
<tbody>
<tr>
<td>Provided production factors</td>
<td>Provided production factors</td>
</tr>
<tr>
<td>„Potential“</td>
<td>„Potential“</td>
</tr>
<tr>
<td>Production factors of</td>
<td>Production factors of</td>
</tr>
<tr>
<td>the Logistics Service</td>
<td>the Customer</td>
</tr>
<tr>
<td>Provider</td>
<td></td>
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<tr>
<td>Integration</td>
<td>Used</td>
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<tr>
<td>Potential quality</td>
<td>production factors</td>
</tr>
<tr>
<td>Process quality</td>
<td>„Process“</td>
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<tr>
<td>Process output</td>
<td>Direct output</td>
</tr>
<tr>
<td>Result quality</td>
<td>„Result“</td>
</tr>
<tr>
<td>Consequences</td>
<td>Sustainable</td>
</tr>
<tr>
<td>Final Quality</td>
<td>„Success“</td>
</tr>
</tbody>
</table>

Source: See also Stölzle, St.Gallen 2012, based upon Kuhlmann (2001)
Behavioural aspects of Service Quality – „Moments of Truth“ creating an environment for employees to deliver customer value

- Create a positive obsession with customers
- Select for, and develop empathy skills and mindsets
- Empower staff to respond to customer needs
  - Speed and Pro-activity
  - Ensure consistency
  - Do more than expected
- Feedback and systematic improvement

Source: see also Carlzon 1987
Development of Quality Management - a journey towards operational excellence driven by a toolbox of initiatives

<table>
<thead>
<tr>
<th>Era</th>
<th>Initiatives</th>
</tr>
</thead>
</table>
| Pre-1900s                   | • Craft Era  
|                             | • Skilled workers, peer-assessment                                         |
| 1900-1950s                  | • Standardisation, Mass Production & Quality Assurance  
|                             | • Industrialisation, scientific management, unskilled labour, 100% inspection |
| 1930-1950s                  | • Quality Control Era  
|                             | • Statistical Process Control, supplier assessment                         |
| 1950-1970s                  | • Total Quality Management Era  
|                             | • Deming, Leadership, Systems Thinking, Customer Focus, Involvement and empowerment of staff |
| 1970s-1990s                 | • Standards and Awards  
|                             | • ISO 9000, Baldrige Award, European Foundation for Quality Management Excellence Award |
| 1990s-present               | • Initiative Era  
|                             | • Lean, Business Process Re-Engineering, Six Sigma                         |

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Service Quality in the LSP Business
Actual Scope of Logistics Services (2011) –
Shippers continue to outsource a wide variety of logistics services

<table>
<thead>
<tr>
<th>Outsourced Logistics Service</th>
<th>User Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All Regions</td>
</tr>
<tr>
<td>Domestic Transportation</td>
<td>83%</td>
</tr>
<tr>
<td>International Transportation</td>
<td>75</td>
</tr>
<tr>
<td>Warehousing</td>
<td>74</td>
</tr>
<tr>
<td>Customs Brokerage</td>
<td>58</td>
</tr>
<tr>
<td>Forwarding</td>
<td>53</td>
</tr>
<tr>
<td>Cross-Docking</td>
<td>38</td>
</tr>
<tr>
<td>Product Labeling, Packaging, Assembly, Kitting</td>
<td>36</td>
</tr>
<tr>
<td>Reverse Logistics (Defective, Repair, Return)</td>
<td>35</td>
</tr>
<tr>
<td>Transportation Planning and Management</td>
<td>31</td>
</tr>
<tr>
<td>Freight Bill Auditing and Payment</td>
<td>28</td>
</tr>
<tr>
<td>Information Technology (IT) Services</td>
<td>20</td>
</tr>
<tr>
<td>Supply Chain Consultancy Services Provided by 3PLs</td>
<td>18</td>
</tr>
<tr>
<td>Order Entry, Processing and Fulfillment</td>
<td>16</td>
</tr>
<tr>
<td>Fleet Management</td>
<td>15</td>
</tr>
<tr>
<td>Customer Service</td>
<td>13</td>
</tr>
<tr>
<td>LLP/4PL Services</td>
<td>13</td>
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</tbody>
</table>

Source: CapGemini Third-Party Logistics Study 2011
Value Added Logistics Services –
Customer Requirements for Logistics Service Providers

<table>
<thead>
<tr>
<th>Requirement</th>
<th>Implementation today</th>
<th>Expected growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead Logistics Provider</td>
<td></td>
<td></td>
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<tr>
<td>Financing of inventory</td>
<td></td>
<td></td>
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<tr>
<td>Human Resources</td>
<td></td>
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<tr>
<td>Supply chain transparency</td>
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<td>Environmental-friendly sourcing</td>
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<td>Environmental Packaging</td>
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<tr>
<td>Increased use of intermodal-transportation</td>
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<tr>
<td>Use of renewable energies to power vehicles</td>
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<tr>
<td>Monitoring &amp; Accounting of environmental impacts of logistics</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Relocation of logistics to country of origin of goods perceived as beneficial</td>
<td>75%</td>
<td></td>
</tr>
<tr>
<td>Interest in local supply chains</td>
<td>60%</td>
<td></td>
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</tbody>
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Quelle: Straube et al.: Global Logistics 2015+
Core Elements of Logistics Service Quality

... in a nutshell

- Fulfilling the Basics
- Metrics and Transparency
- System
- People
- Innovation and Communication

... practical examples on how Logistics Service Providers report on their customer and quality initiatives

- Mail
- Express Business
- Forwarding and Transport
- Supply Chain / warehousing solutions
Example - Mail Business

- Customers rate the quality of services based on posted items reaching destinations
  - quickly,
  - reliably and
  - undamaged.

- Next Day Delivery
  - Letters: **95% of letters** posted during daily opening hours or before final post box collections are delivered to their recipients the **next day** (external assessment)
  - Collections from business customers: **90%** of the deliveries reached **destination next day**

- Time Definite Delivery
  - Cross-border letters international: Target **85%** of all posted letters within the EU **delivered within three days** of posting exceeded **specification** significantly with a rate of 96%.

- Certified
  - **Quality management** based on a system **certified** each year by TÜV
Example - Express Business

- Objective to deliver best-possible service quality to customers places **high demands on total quality of**
  - products,
  - processes,
  - infrastructure and
  - employees

- Need to **track the ever-changing requirements** of customers and **measure services proactively and reactively**, 
  - for instance, using mystery shoppers
  - maintaining a dialogue with customers on various media platforms

- Special initiatives: working steadily on **improving internal and external processes**
  - eg setting-up separate service hotline for large customers
  - providing comprehensive shipping information simply and transparently

- **Tracking shipments** and **dynamically adjust processes** using state-of-the-art quality control centres
  - In unforeseen events: flight and shipment routes can be altered immediately

- Operational safety, compliance with international **ISO and TAPA standards** and **quality** of service at facilities are **reviewed regularly**
Example - Forwarding and Transport Business

- **Surveyed customers** accounting for 70% of total revenue; developed and implemented specific plans for improvements; **putting the customer at the centre** of all activities.

- Working with top global customers to analyse and improve processes as part of **Customer Improvement Programme**. Individual activities have already delivered upwards of €xx million in increased revenue as well as cost savings of over €xx million.

- **Customer examples**:
  - improved **on-time performance** from 92% to 97% and **exceeded the customer’s expectations** for shipping quantities
  - introduced **new technologies**, i.e. temperature sensor, enables healthcare customers to obtain in-transit data related to temperature-sensitive goods

- Customers are becoming increasingly aware that **continuous improvement process offers added value**
Example - Supply Chain / Warehousing Solutions

- **Use of tested processes** in order to **offer** customers everywhere comparable solutions and **uniformly high service standards**

- Customer retention: 2010: eight out of ten customers **confirm the company as provider of choice** in the supply chain business.

- **Key Performance indicators**, achieved more than 95% of service standards worldwide:
  - safety,
  - productivity and
  - inventory accuracy

- implemented **“Quality path programme”** to ensure
  - consistency,
  - transparency,
  - simplicity and
  - robustness of logistics processes.

- **Customers recognise the benefits** of the results achieved; use of external communication like trade publications
Core Elements of Logistics Service Quality

- **Fulfilling the basics**
  - **Delivery Time** (short lead times)
  - **Reliability / Robustness / Resilience** (time definite, consistent process requirements, stability even in volatile situations…)
  - **Flexibility** (coping with volatility, unexpected situations, high/low season demands …)
  - **Condition / Undamaged deliveries / protection** (safety, security, environment…)

- **Metrics and Transparency**
  - **Consistency** and sustainable uniform service levels (i.e. across locations, regions etc.)
  - **Information and Transparency** (delivery note feedback, SCEM, reliable fast and consistent data along the supply chain)
  - **Measuring** quality and taking bold, pragmatic, immediate **actions** to fix deviations

- **Reliable System and Lean Approach**
  - **Certified QM System** (ISO, Tapa, SQAS …), consistent quality standards and behaviour („365 days / 24 hours“)
  - **Systematic TQM approach**, regular quality initiatives to improve know-how, behaviour, infrastructure, processes, IT etc.
  - **Lean** Management in the sense of „**putting the customer first**“ and transparent win-win benefits

- **Empathy and customer oriented people**
  - **Accessible** people, services and resources; **customer-oriented** know-how kept and shared
  - Continuous and pro-active **listening** adapting, adopting and **improving processes** and practices
  - Close **personal dialogue** with customers incl. serious Top Management involvement

- **Innovation and Communication**
  - Show innovation, be **at the frontline of new developments**, setting-best practices achieving „customer enthusiasm“
  - Active transfer of benchmarks and cross-industry **best practices** in order to support customers
  - **Communicate** and make quality visible in terms of potential, process, result and final quality
Relationship models and Life Cycle oriented Quality for LSPs
Supplier driven cost based relationship model

- **Logistics cost savings** are the #1 goal: Suppliers need to drive down cost year-on-year
- **Short term** contracts with LSPs: keep LSP suppliers „on their toes“!
- **Competitive** Tendering: open competition, avoid becoming complacent with suppliers
- **Opportunistic** supplier squeezing: „suppliers are not your friend!“
- **Spreadsheet analysts** rather than long term thinking experienced buyers

**Advantages:** Efficiency counts!
- Reduce dependency
- Turn-on and –off suppliers
- Taking new opportunities

**Disadvantages**
- Learning cost
- Understanding
- Invest pay-back
Quality based partnership model

- **Looking out for the strategic fit**
  - between service provider offering and customer requirements

- **Achieving medium/long term relationships**
  - to free up efforts for improvements rather than go into looking for the next business opportunity

- **Collaborative approach**
  - focused on working together, solving the (unknown) issues down the road jointly, minimal contracts, leading to coping with change and total supply chain improvements

- **Trust based working**
  - for mutual benefit rather than opportunistic behaviour; difficult to achieve however the heart of a true partnership and leading to significant reduction of transaction cost

- **Transparent and open working relationship**
  - Helping to build trust; sharing information increases effectiveness, allowing joint cost saving and resilience in times of high volatility

- **Pragmatic and fair gain sharing**
  - as part of the collaborative nature of the relationship facilitates effective assignment of resources to most interesting areas to achieve win-win situations

- **Joint problem solving and learning**
  - focussing on key mutual problems allied with trust and sharing and learning from experience within the partnership

Source: see also Slack et al (2006), Christopher (1998)
Total Life-Cycle Service Quality Management for LSPs – „Triple C Triple I“

needs to be applied to every single activity along the transaction process of business development, operations and customer retention

<table>
<thead>
<tr>
<th>Activity</th>
<th>Phase</th>
</tr>
</thead>
<tbody>
<tr>
<td>People: Employee Qualification</td>
<td>Consult</td>
</tr>
<tr>
<td>Sales, Business Development and KAM</td>
<td>Calculate</td>
</tr>
<tr>
<td>Internal Tender Management Process</td>
<td>Contract</td>
</tr>
<tr>
<td>Calculation and Process Design</td>
<td>Implement</td>
</tr>
<tr>
<td>Consulting and Negotiation</td>
<td>Improve</td>
</tr>
<tr>
<td>Contracting, SLA and KPIs</td>
<td>Innovate</td>
</tr>
<tr>
<td>Project Implementation</td>
<td></td>
</tr>
<tr>
<td>Continuous Improvement and Change</td>
<td></td>
</tr>
<tr>
<td>Claims Handling and Complaint Management</td>
<td></td>
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<tr>
<td>Insurance and Liability Management</td>
<td></td>
</tr>
<tr>
<td>Contract Administration and Cash-to-Cash Process</td>
<td></td>
</tr>
<tr>
<td>Business Innovation</td>
<td></td>
</tr>
<tr>
<td>Risk Management and Compliance</td>
<td></td>
</tr>
<tr>
<td>Key Account Management, Customer Loyalty and Retention</td>
<td></td>
</tr>
</tbody>
</table>

Source: See also Freichel, S.: Life Cycle-Risikomanagement in der Kontraktlogistik. In: Pfohl, H.-Chr. (Hrsg.): Sicherheit und Risikomanagement in der Supply-Chain, S. 166
Supply Chain Quality
The **SCOR** Structure

- **PLAN**
- **DELIVER**
- **SOURCE**
- **MAKE**
- **DELIVER**
- **SOURCE**
- **MAKE**
- **DELIVER**
- **SOURCE**
- **MAKE**
- **DELIVER**
- **SOURCE**

**Supplier's Supplier**

**Internal or External**

**YOUR ORGANIZATION**

**CUSTOMER**

**Internal or External**

**Customer's Customer**

# SCOR: Supply Chain Operation-Reference-Model
(Supply Chain Council)

<table>
<thead>
<tr>
<th>Level</th>
<th>Description</th>
<th>Schematic</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Top Level (Process Types)</td>
<td><img src="chart1.png" alt="Schematic" /></td>
<td>Level 1 defines the scope and content for the Supply Chain Operations Reference-model. Here, the basis of competition performance targets are set.</td>
</tr>
<tr>
<td>2</td>
<td>Configuration Level (Process Categories)</td>
<td><img src="chart2.png" alt="Schematic" /></td>
<td>A company's supply chain can be &quot;configured-to-order&quot; at Level 2 from core &quot;process categories.&quot; Companies implement their operations strategy through the configuration they choose for their supply chain.</td>
</tr>
</tbody>
</table>
| 3     | Process Element Level (Decompose Processes) | ![Schematic](chart3.png) | Level 3 defines a company's ability to compete successfully in its chosen markets, and consists of:  
- Process element definitions  
- Process element information inputs, and outputs  
- Process performance metrics  
- Best practices, where applicable  
- System capabilities required to support best practices  
- System/Tools  
Companies "fine tune" their Operations Strategy at Level 3. |
| 4     | Implementation Level (Decompose Process Elements) | ![Schematic](chart4.png) | Companies implement specific supply-chain management practices at this level. Level 4 defines practices to achieve competitive advantage and to adapt to changing business conditions. |

Source: Supply Chain.Org

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Supply Chain Council’s SCOR model

### Performance

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Metric</th>
</tr>
</thead>
<tbody>
<tr>
<td>RL Reliability</td>
<td>RL.1.1 Perfect Order Fulfillment</td>
</tr>
<tr>
<td>RS Responsiveness</td>
<td>RS.1.1 Order Fulfillment Cycle Time</td>
</tr>
<tr>
<td>AG Agility</td>
<td>AG.1.1 Upside Supply Chain Flexibility</td>
</tr>
<tr>
<td>AG Agility</td>
<td>AG.1.2 Upside Supply Chain Adaptablety</td>
</tr>
<tr>
<td>AG Agility</td>
<td>AG.1.3 Downside Supply Chain Adaptability</td>
</tr>
<tr>
<td>AG Agility</td>
<td>AG.1.4 Overall Value at Risk (VAR)</td>
</tr>
<tr>
<td>CO Cost</td>
<td>CO.1.1 Supply Chain Management Cost (total)</td>
</tr>
<tr>
<td>CO Cost</td>
<td>CO.1.2 Cost of Goods Sold</td>
</tr>
<tr>
<td>AM Assets</td>
<td>AM.1.1 Cash-To-Cash Cycle Time</td>
</tr>
<tr>
<td>AM Assets</td>
<td>AM.1.2 Return on Supply Chain Fixed Assets</td>
</tr>
<tr>
<td>AM Assets</td>
<td>AM.1.3 Return on Working Capital</td>
</tr>
</tbody>
</table>

### Process

Diagram is for example purposes only; additional business models possible.

### Practice

Operations | Environment | Risk
--- | --- | ---
Practices or Best Practices provide alternative ways to configure supply chain processes. SCOR has organized practices in 3 categories:
- General Supply Chain Operations Improvement best practices
- Environmental best practices (GreenSCOR)
- Supply Chain Risk Management best practices

Practices are linked to SCOR processes at all levels. Some best practices may reference the experienced metric improvement.

### People

Skills | Experiences | Aptitudes | Training
--- | --- | --- | ---
The standards for workforce - Skills and the skill defining elements: Experience, Aptitude and Training - support Organizational Design (OD) activities on a SCOR project. Additionally hiring managers can identify skills, experiences, aptitudes and training to look for in an applicant’s resume or existing staff profiles. Select one of the links below to browse workforce standards:
- HS : Skills
- HE : Experiences
- HA : Aptitudes
- HT : Training

Skills are linked to level 3 processes. Skills are defined by Experiences, Aptitudes and Training.

**Quelle:** http://supply-chain.org/online-access
Balanced Service Quality Score Card for Supply Chains

- Co-operation intensity
- Co-operation quality

Source: see also Elbert 2010, Based upon Weber 2001
CPFR: Collaborative Planning, Forecasting and Replenishment

… needs high level of co-operation intensity and quality amongst partners!

Source: Voluntary Interindustry commerce standards associations (VICS)
... instead of a conclusion:
Selected critical success factors for LSP Service Quality Management

- **Strategic alignment** with company values and level of customer focus
- Widespread engagement of top management, employees and supply chain **partners**
- Good **infrastructure and support** to allow for effective execution and follow-up
- Continuous **organizational learning** and improvement
- Pragmatic and fair **measurement** as well as motivating recognition and reward system
- **Communication** internally and towards quality stakeholders
... reaching the next level of Quality Management

The significant problems we face cannot be solved at the same levels of thinking we were at when we created them. “

Albert Einstein
Logistics Service Quality and real life challenges!
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A journey towards customer driven operational excellence along the supply chain

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