Service Management –
Service Quality

Univ.-Prof. Dr.-Ing. Wolfgang Maass
Chair in Economics – Information and Service Systems (ISS)
Saarland University, Saarbrücken, Germany

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Thursdays, 8:00 – 9:30 a.m.
Room HS 024, B4 1
General Agenda

1. Introduction
2. Service Strategy
3. New Service Development (NSD)
4. Service Quality
5. Supporting Facility
6. Forecasting Demand for Services (Part A)
7. Forecasting Demand for Services (Part A)
8. Managing Capacity and Demand
9. Managing Waiting Lines
10. Capacity Planning and Queuing Models
11. Services and Information Systems
12. ITIL Service Design
13. IT Service Infrastructures
14. Guest Lecture – Dr. Roehn, Deutsche Telekom
15. Summary and Outlook
Agenda Lecture 4

- Defining service quality
- Identification of service gaps
  - Gap model
- Measurement of service quality
  - SERVQUAL
  - Statistical process control: Control charts
    - \( \bar{X} \)-chart
    - \( p \)-chart
- Handling service failures
Defining Service Quality

“Service quality is a measure of how well the service level delivered matches customer expectations.” (Lewis & Booms, 1983)

“Service quality is more difficult for the consumer to evaluate than goods quality.” (Parasuraman et al., 1985)

“Quality evaluations are not made solely on the outcome of a service; they also involve evaluations of the process of service delivery.” (Parasuraman et al., 1985)
Defining Service Quality

**Perceived service quality:** Service quality from the customer’s point of view
- Comparison of expectations with perceptions
- Perceived service quality is often different from expected service quality

<table>
<thead>
<tr>
<th>Expectations versus Perceived Quality</th>
<th>Quality</th>
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<tbody>
<tr>
<td>Expectations &lt; Perceived Service Quality</td>
<td>Quality surprise</td>
</tr>
<tr>
<td>Expectations = Perceived Service Quality</td>
<td>Satisfactory quality</td>
</tr>
<tr>
<td>Expectations &gt; Perceived Service Quality</td>
<td>Unacceptable quality</td>
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</table>

**Factors of influence**

- **Perceived quality**
  - Tangibles
  - Reliability
  - Responsiveness
  - Assurance
  - Empathy

- **Expected quality**
  - Service promises
  - Past experiences
  - Personal needs
  - Word-of-mouth

(Parasuraman et al., 1985; Parasuraman et al., 1988; Zeithaml et al. 1993)
Agenda Lecture 4

• Defining service quality
• **Identification of service gaps**
  • Gap model
• Measurement of service quality
  • SERVQUAL
  • Statistical process control: Control charts
    • X-chart
    • p-chart
• Handling service failures
**Gap Model**: Framework to help formulating & implementing a high service quality strategy, integrating customer’s point of view (customer and company view)

<table>
<thead>
<tr>
<th>5 Gaps between customer and company view</th>
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<tbody>
<tr>
<td><strong>Gap 1</strong>: Expected service ≠ Company’s perceptions of customer’s expectations</td>
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<td><strong>Gap 2</strong>: Company’s perceptions of customer’s expectations ≠ Customer-driven service designs</td>
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<tr>
<td><strong>Gap 3</strong>: Customer-driven service designs ≠ Service delivery</td>
</tr>
<tr>
<td><strong>Gap 4</strong>: External communication ≠ Service delivery</td>
</tr>
<tr>
<td><strong>Gap 5</strong>: Expected service ≠ Perceived service (Customer Gap)</td>
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</table>

Objective: Identification and reduction of the gaps
- Customer gap (5): Main gap: Customer’s expectations are not met
- Gap 1-4: Reasons for failure of company to meet customer’s expectations

(Bitner et al., 2010, Parasuraman et al. 1985)
Identification of Service Gaps: Gap Model

(Bitner et al., 2010, Parasuraman et al. 1985)
Identification of Service Gaps: Gap Model
Strategies for Closing the Gaps

Gap 1:
- Listening to customers: Customer research, employee communication
- Building a relationship: Understand and fulfill customer’s wishes in the long run

Gap 2:
- Employing “services R&D”: Well-defined practices regarding new service development and innovation
- Using customer-defined instead of company-defined standards

Gap 3:
- Efficient integration of technology
- Training of human resources (e.g., hiring, training, support systems) to deliver excellent services

Gap 4:
- Employment of integrated communication strategy among the whole company
- Development of internal communication strategy to avoid overpromises to customers

Gap 5:
- Employment of SERVQUAL

(Bitner et al., 2010, Parasuraman et al. 1985)
10 service quality determinants: Customer’s criteria for evaluating service quality

- Refer to gap 5 (customer gap)
- Influence expected & perceived service

<table>
<thead>
<tr>
<th>Service quality determinants</th>
<th>6) Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) Access</td>
<td>• Consistency &amp; dependability of service</td>
</tr>
<tr>
<td>• Service easily available</td>
<td></td>
</tr>
<tr>
<td>• Short waiting time</td>
<td></td>
</tr>
<tr>
<td>2) Communication</td>
<td>7) Responsiveness</td>
</tr>
<tr>
<td>• Explain service itself</td>
<td>• Timeliness of service</td>
</tr>
<tr>
<td>• Explain cost of service</td>
<td></td>
</tr>
<tr>
<td>3) Competence</td>
<td>8) Security</td>
</tr>
<tr>
<td>• Knowledge &amp; skills of personnel</td>
<td>• Physical &amp; financial safety</td>
</tr>
<tr>
<td>4) Courtesy</td>
<td>• Confidentiality</td>
</tr>
<tr>
<td>• Politeness &amp; friendliness of personnel</td>
<td></td>
</tr>
<tr>
<td>5) Credibility</td>
<td>9) Tangibles</td>
</tr>
<tr>
<td>• Trustworthiness &amp; honesty</td>
<td>• Physical facilities &amp; equipment</td>
</tr>
<tr>
<td>10) Understanding the customer</td>
<td>• Learning of customer’s needs</td>
</tr>
<tr>
<td>(Parasuraman et al., 1985)</td>
<td></td>
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</tbody>
</table>
5 Minutes

• Please read the case (will be handed out) and identify the service gaps.

• How could you close these gaps?

• Please write your solution down (one person is going to present it to the others).
Agenda Lecture 4

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- **Measurement of service quality**
  - SERVQUAL
  - Statistical process control: Control charts
    - $\bar{X}$-chart
    - $p$-chart
- Handling service failures
SERVQUAL: Instrument for measuring perceived service quality from the customer‘s point of view

- Implementation of Gap model concept
  - Refers to Gap 5
  - Reduces service quality determinants to 5
- Combines customer expectations with their perceptions of a service
- Questionnaire with 22 items: Customers state their level of agreement on a scale

**Most important functions of SERVQUAL**

- Identification of departments offering low service quality: Sources for customer dissatisfaction
- Periodic surveys to discover trends in service quality
- Identification of competitive advantages when comparing own services with competitors’

(Parasuraman et al., 1988; Fitzsimmons & Fitzsimmons, 2011)
Measurement of Service Quality: SERVQUAL

22 Items within 5 dimensions (service quality determinants)

Reduction of 10 service quality determinants to 5 of SERVQUAL

1) Tangibles (4 items)
   - Appearance of personnel
   - Physical facilities & equipment

2) Reliability (5 items)
   - Ability to perform the promised service dependably & precisely

3) Responsiveness (4 items)
   - Willingness to help customers
   - Provision of a quick service

4) Assurance (4 items)
   - Knowledge and friendliness of employees
   - Ability to inspire confidence

5) Empathy (5 items)
   - Caring & individualized attention regarding customers

(Bitner et al., 2010, Parasuraman et al. 1988)
Item (Q): Consist of 1 expectation statement (E) and 1 perception statement (P)

e.g., “Reliability” consists of Q5, Q6, Q7, Q8, Q9
- Q5: E5 “When these firms promise to do something by a certain time, they should do so.” and P5 “When XYZ promises to do something by a certain time, it does so.”

Advantages of SERVQUAL:

- High reliability & validity
- Can be used to compare service quality across different departments
- Can be used to compare service quality across different companies
- Framework can be adopted to different industries
- Companies can use it to better understand customer’s expectations & perceptions
- Problems can be identified according to the different dimensions
- Identification of service trends when used regularly

(Parasuraman et al. 1988)
For the next exercise, please search and download the following paper:

Statistical Process Control

Service process control: Evaluation of the quality of service processes

Problem: Services …
- … are intangible
- … cannot be stored
- … production and consumption occur at the same time
- … quality can only be judged after consumption

Statistical process control: Evaluation of service processes by key indicators, Ratios (e.g., police’s crime prevention program: Crime rate)

2 types of error when controlling services:
- **Type 1 error**: Process supposed to be working incorrectly, but it is correct (Producer’s risk)
- **Type 2 error**: Process supposed to be working correctly, but it is incorrect (Consumer’s risk)

<table>
<thead>
<tr>
<th>True state of service</th>
<th>Take corrective action</th>
<th>No action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Process is correct</td>
<td>Type 1 error</td>
<td>Correct action</td>
</tr>
<tr>
<td>Process is incorrect</td>
<td>Correct action</td>
<td>Type 2 error</td>
</tr>
</tbody>
</table>

(Fitzsimmons & Fitzsimmons, 2011)
**Control chart** = Visual display of average service performance over time

- Monitoring of service performance consistency
- Discovering deviations from the norm: Processes where corrective action is needed
- Control limits to detect unusual performances (confidence interval)
  - Upper control limit (UCL)
  - Lower control limit (LCL)
  
  Performance outside these is unusual, process is out of control

- 2 different types of control charts:
  - $\bar{X}$-chart (Variable control chart)
  - p-chart (Attribute control chart)

**Steps for constructing a control chart:**

1) Decide on a measure of service system performance
2) Collect historical data for calculation of mean $\bar{X}$ and variance of the system performance
3) Choose sample size and calculate control limits ( +/- 3 standard deviations: see table for values)
4) Create a control chart: (axis: time or number of sample; sample mean or fraction of errors), plot sample means of a certain time span
5) Check if processes are in or out of control

*(Fitzsimmons & Fitzsimmons, 2011)*
**X-chart** = Visual display of arithmetic mean $\bar{X}$ of several service performances (fractional values, e.g., time, length): Variable control chart

- Calculating the mean: Historical data needed
- Shows the performances above and below the mean
- **R-chart** = Variable measure of process dispersion (process variability)

$\bar{X} = \text{mean}$

$\bar{X} = \text{estimated population mean}$

$R = \text{range}$

$\bar{R} = \text{estimate of population range}$

\[
\bar{X} = \frac{\sum \text{sample values}}{\text{number of sample values}}
\]

\[
\bar{X} = \frac{\sum \bar{X}}{\text{number of observation periods}}
\]

\[
R = \text{highest value - lowest value per observation period}
\]

\[
\bar{R} = \frac{\sum R}{\text{number of observation periods}}
\]

(Fitzsimmons & Fitzsimmons, 2011)
**R-chart:**
D4 = Upper Control Limit (UCL)-value for sample size n (standard values in table)
D3 = Lower Control Limit (LCL)-value for sample size n (standard values in table)

\[
\text{UCL} = D4 \times \bar{R} \\
\text{LCL} = D3 \times \bar{R}
\]

Check if process is under control:
Compare UCL & LCL to \( \bar{R} \)

**\( \bar{X} \)-chart:**
A2 = Value for calculating control limits (standard values in table)

\[
\text{UCL} = \bar{X} + A2 \times \bar{R} \\
\text{LCL} = \bar{X} - A2 \times \bar{R}
\]

Check if process is under control:
Compare UCL & LCL to \( \bar{X} \)

(Fitzsimmons & Fitzsimmons, 2011)
**p-chart** = Visual display of population percentage $p$ of several service performances (discrete data, e.g., number of errors as percentage): Attribute control chart

- Shows the percentage of bad service performances: Values above UCL
- Values on LCL: errorless (negative values are set to 0)

$\bar{p}$ = estimated percentage of population, $n$ = sample size

\[
UCL = \bar{p} + 3 \times \sqrt{\frac{\bar{p} \times (1 - \bar{p})}{n}}
\]

\[
LCL = \bar{p} - 3 \times \sqrt{\frac{\bar{p} \times (1 - \bar{p})}{n}}
\]

Check if process is under control:

Compare UCL & LCL to $\bar{p}$

(Fitzsimmons & Fitzsimmons, 2011)
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Handling Service Failures: Service Recovery

**Failures:** More often in service industry than in manufacturing: Service characteristics (e.g., co-production and intangibility) (Berry, 1980; Hess et al., 2003)

- **Costs of Service Failures** = Customer dissatisfaction, switching to competitor, negative word-of-mouth, negative image (Johnston & Hewa, 1997)
- Provision of a service recovery is very important, Reconstitute customer satisfaction (Berry, 1980; Hess et al., 2003)

**Service Recovery:** “A service [..] recovery encounter can be viewed as an exchange in which the customer experiences a loss due to the failure and the organization attempts to provide a gain […] to make up for the customer’s loss.” (Smith et al., 1999)

- Good service recovery: Turn a service failure into a service delight (Fitzsimmons & Fitzsimmons, 2011)
Handling Service Failures: Service Recovery

### Approaches to service recovery

<table>
<thead>
<tr>
<th>Approach</th>
<th>Description</th>
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<tbody>
<tr>
<td><strong>Case-by-case approach</strong></td>
<td>Each complaint handled individually</td>
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<tr>
<td><strong>Systematic-response approach</strong></td>
<td>Protocol and guidelines used to address complaints</td>
</tr>
<tr>
<td><strong>Early intervention approach</strong></td>
<td>Resolve problems in service process immediately before they attain customers</td>
</tr>
<tr>
<td><strong>Substitute service recovery</strong></td>
<td>Profit from service failure of competitor by offering recovery (e.g. offering excellent service to customer from overbooked rival hotel)</td>
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**Examples:**

- Delay of flight or train: Provide complementary drinks and snacks
- Construction in front of hotel: Offer price discount
- Long waiting time in restaurant: Offer coupon for further visit

Service recovery does not only comprise compensation, but also a friendly, sensitive and quick complaint handling

(Fitzsimmons & Fitzsimmons, 2011)
“A customer complaint should be treated as a gift.” (Fitzsimmons & Fitzsimmons, 2011)

A complaint is an opportunity to …

- … reconstruct customer satisfaction
- … build a relationship between the company and the customer
- … create customer loyalty

Policy examples:

- Consumers are elated to complain in case of a service failure
- Complaints are addressed quickly
- Employees are entitled to deal with complaints
- Every complaint handling is registered and used for further complaint handling

(Johnston & Hewa, 1997; Fitzsimmons & Fitzsimmons, 2011)
**Service Guarantee**: States e.g., that customer will get his money back if he is not 100% satisfied with service.

<table>
<thead>
<tr>
<th>Characteristics of a service guarantee</th>
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<tbody>
<tr>
<td>Unconditional</td>
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<tr>
<td>Meaningful</td>
</tr>
<tr>
<td>Easy to understand</td>
</tr>
<tr>
<td>Easy to invoke</td>
</tr>
<tr>
<td>Easy to collect</td>
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</table>

**Consequences:**

- Company focused on customers expectations (e.g., British Airways: Customers expect in particular care, initiative and problem solving)
- Explicit standards are set (e.g., clear instructions given to staff if guarantee states “Delivery until 10:00 AM“)
- Customer feedback is received (information on improvements provided)
- Company forced to analyse weaknesses in service delivery
- Customer loyalty is enhanced (satisfied customers return and spread positive word-of-mouth)

(Hart, 1988)
Outlook

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