Measuring Company Performance and Customer Satisfaction

Key Themes

• What measurement instruments have been developed to control and manage service businesses?
• How are measurement tools used by service firms?
• Measurement tools
• Measuring service performance
• Measuring customer satisfaction and marketing
• Benchmarking
• Innovation capability measure

Measurement plays a critical role in the everyday management of service businesses and in the development, implementation and adaptation of both strategy and operations. It also plays an important role in monitoring and enhancing the quality of the service experience and in the co-creation of service innovations. Measurement plays an important role in underpinning and informing the everyday and strategic management of service businesses. Reading a business is part of a strategic approach to management in which a firm continually observes the business to monitor and evaluate the relationships between strategy, operations and the production of value, or outcomes. This involves identifying areas for improvement that could lead to adjustments to routines or everyday practices. This is a process of strategic reflexivity in which reading, including measurement, is a continual process supporting management practices.

Each chapter in this book contributes to understanding the ways in which service businesses develop and apply tools that are designed to measure performance, innovation and the evolution of the business. Nevertheless, it is important to focus on the ways in which service businesses develop and apply approaches to measurement as part of everyday business practices. This chapter explores the application of approaches to measurement and evaluation by service businesses. These include approaches to measuring service firms’ key performance, particularly production performance, customer satisfaction and innovation capabilities. This chapter engages with the debates explored in Chap. 5 on service operations and productivity, Chap. 7 on service innovation and Chap. 8 on customer satisfaction by exploring operational measurement tools and explaining them in detail.

These company performance measurements are intended to measure failure and problems in service production and delivery, for example, how to handle queuing problems and complaints, but also the measurement of efficiency in production and delivery systems. The costs related to an increase in performance are also part of some business approaches to measurement. Running a service business is not just a matter of improving

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performance as the cost of any alteration must also be taken into consideration; service businesses must be profitable and sustainable. It is important to appreciate that measurement involves both marketing, including a focus on customers, and operations. On the one hand, quantified marketing and customer measurements are often explored in marketing textbooks (e.g. Palmer 2005; Lovelock and Wirtz 2011; Hollesen 2015) and these are mostly directed towards measuring customer satisfaction. On the other hand, production performance measurements tend to be explored in service operations textbooks (e.g. Wright and Race 2004; Johnston and Clark 2005).

This chapter will first present and discuss core instruments for measuring production performance. This is followed by a discussion of service quality, customer satisfaction and marketing performance measures. Finally, this chapter explores measurement tools intended to explore firms’ innovation capabilities.

13.1 Measuring Production Performance

13.1.1 Capacity Planning and Yield Management

Services are traditionally considered to be labour intensive and this restricts the ability of firms to produce and deliver a certain amount of services at a given time. If a service firm cannot fulfill demand, then it loses business leading to dissatisfied customers. If a firm has unutilized overcapacity, then it also loses money as this overcapacity involves additional costs including salaries and other costs related to under-employed staff. It is difficult to balance service delivery with customer demand given variations in demand and it may be difficult to predict current and future demand. Therefore, the challenge for service businesses involves balancing decisions regarding capacity and utilization with actual and potential customer demand. Pricing is important and can be a means to regulate demand and this might enable a firm to balance capacity with demand. Systematic approaches and tools to investigate and regulate the relationships between capacity and demand have been developed (Belobaba 1989; Adenso-Díaz and González-Torres 2002). This approach has been conceptualized as a process of yield management (Kimes 1989; Berman 2005) or a process by which measurement and operational delivery tries to allocate capacity to certain type of customers at a given time. This section explores problems related to capacity planning and yield management including a discussion of measurement.

Capacity planning involves addressing alterations in service demand throughout the day and the week. This is particularly relevant for service businesses that absolutely must be produced at the moment of consumption and are unable to be stored. These services include restaurants, hotels, transportation services, call centres and medical clinics. Capacity planning is also relevant for lawyers and accountants, for example. Here it may be possible for firms to apply flexible approaches to staff management to try to equalize employee workloads. One implication being that accountants work exceptionally long hours towards the end of a tax or financial year as accounts need to be audited and approved.

Capacity must be planned, and the first step includes measuring demand, for example, counting the number of customers every hour or every day. Statistics and demand curves can then be created to inform operational decisions. One example is provided in Fig. 13.1 which highlights a peak in demand within a call centre.

In this example, there are several peaks making it difficult for a service business to optimize the service delivery process. Here the challenge involves developing an answer to the question: how many call centre operators should be employed per hour? The first observation is that customer demand peaks around lunch time—12:00–13:00. Call centre operators must work during this time and their lunch times must be scheduled around the lunchtime peak. There are relatively few calls during the first and last hour and thus call centre capacity can be reduced. This level of customer demand variation makes it difficult for a call centre to develop an optimum
solution. There are perhaps three options for the operator:

1. Employ more staff during the peaks. This might be difficult given the problems of persuading employees to work for 60 minutes and then to take an unpaid break.

2. Link call centres together ensuring that over-capacity at one centre can be transferred automatically to the next available centre.

3. Ensure that some customers are dealt with by automated systems by filtering out customers who could be dealt with by some form of automated system.

4. Estimate the average demand during the day, but employees must expect extremely busy periods and times during which there is limited demand.

The key issue is to monitor demand and to employ call centre operatives on relatively flexible contracts. Call centre operatives need to meet key performance indicators including response times and the average time required to deal with each customer. There is thus a clear focus on productivity combined with the quality of the service experience (see Chaps. 5 and 8). An alternative strategy is to engage in nudges intended to try to persuade customers to change their behaviours, and to use the call centre during times of reduced average demand. This can be achieved by informing customers of waiting times and, during key demand peaks, trying to persuade them to engage with the company at another time or via another service delivery channel, for example, a chatbot.

Where there is a direct price for a service, for example, the number of guests in a restaurant then customers’ behaviour can be influenced by price differentiation. The price can be reduced during hours or days with limited demand and increased during periods of peak demand. This leads to ‘happy hours’ with reduced prices in bars during the late afternoon and differentiated prices on flight travel and hotel rooms based on demand variations. Online retailers apply data analytics to predict demand altering prices to maximize profit as part of process of dynamic pricing known as surge pricing, demand pricing or time-based pricing. Pricing algorithms have been developed that challenge the relationship between product pricing, customer value and the pricing of competitor products (see Chap. 5, Sect. 5.3.2). Innovations in revenue management pricing systems have enabled companies, particularly in the hospitality and leisure industries, to link demand with alterations in pricing. This has led to dynamic pricing in which a provider instantly alters the pricing of a service or good as demand alters. Thus, prices...
will fall if there is a reduction in demand and will increase during times of peak demand. The integration of artificial intelligence with algorithmic pricing programmes has replaced human decision-making with automated systems that monitor demand and supply to facilitate dynamic pricing.

Dynamic pricing is one approach to yield management, or the process by which firms maximize revenue, through production planning. The aim is to reduce delivery costs by optimization focused on minimizing overcapacity as much as possible and increasing prices as much as possible. The latter is restricted by the customers’ willingness to pay; they may, for example, engage in comparator pricing seeking the least cost approach. Which price customers are willing to pay and at which time can be calculated theoretically, but is very difficult to measure in practice? Competitors also alter prices regularly to optimize yields. A service company may engage in pricing experiments by lowering and increasing prices at different hours during the day or over a week and then measure impacts on customer demand and revenues including the ratio between costs of service delivery and profitability. Service businesses can also ask customers about how much they might be willing to pay for services at different times. This may be a more laborious process. Such measurements can only be applied reasonably and only for services that are paid directly including airline tickets and hotel rooms. Developments in dynamic pricing, using algorithmic pricing programmes, have transformed the ways in which online service businesses manage the relationship between price, demand and operations. A service might be provided free as it is included as part of a much more complex service package, for example, an online or telephone ticket service for booking tickets to some event. In this case, a price experiment regarding the delivery of this type of service will not measure customers’ reactions to waiting times. A survey might, however, be developed to assess the waiting times that different customer segments would find acceptable.

Another technique for increasing revenue involves reducing the price of a service. This might be a single service that is paid for, or it might involve a service that is included as part of a larger service packet or bundle. That will reduce profit levels per customer, but it might also create an increased tolerance for longer service delivery waiting times because customers perceive that they are purchasing a discounted service and the expectation is that this will involve longer waiting times. A service firm can, therefore, decrease demand, particularly during periods of peak demand, and reduce delivery costs related to a reduction in delivery capacity. The aim is to try to spread demand, avoiding peaks, resulting in a reduction in service delivery costs. This is an optimization process.

Several effects must be taken into consideration and assessed in calculating the preconditions for, and revenue effects of, changing service delivery capacity. These preconditions and effects are:

- Customers’ price and waiting tolerance, and changes in that caused by other service companies’ offers
- The costs of expanding capacity, or saved costs by reducing capacity
- Lost revenue from customers leaving the firm permanently in response to an increase in waiting times. This results in an erosion of a firm’s client base and a reduction in customer loyalty
- The administrative costs of managing a differentiated price system

Many of the capacity problems can be overcome by digitizing service delivery processes (Wirtz et al. 2018). Self-serviced IT systems have much greater capacity compared to labour-intensive systems, and peak loads are normally not a problem. Furthermore, such capital-intensive systems are much cheaper as they have reduced variable costs. They come with other advantages including reductions in the costs of obtaining and analysing detailed knowledge about every service transaction. Such systems produce a continual stream of data and data analytics can be applied to identify patterns to inform operational decisions. This highlights the
enhanced importance of big data and the ability of service firms to monitor and modify service delivery. Nevertheless, not all services can be digitized including, for example, restaurant meals and live theatrical performances.

For services where capacity is difficult and expensive to alter, for example, hotel rooms and airplane seats, companies have developed a system based on overbooking. They sell more beds and seats than they have on the understanding that not all people will arrive. The advantage of this is a full utilization of capacity and thereby increased revenue. In addition, a service company may even benefit from selling the same room or seat twice as those who fail to utilize the service may still have to pay, for example, a hotel room or a flight reservation. This approach only works when the exact number of predicated non-arrivals occurs. If the number of non-arrivals is less than predicted, then the service company is in difficulty. They have more customers than capacity. A calculation is then made regarding losing customers, decreased customer satisfaction and loyalty. One solution is to pay compensation (e.g. airline companies) or to transfer customers to a competitor. All this adds additional costs that must be weighed against the increased income obtained by selling all seats or rooms and perhaps occasionally obtaining double payment. The management of services involved in overbooking requires measurement of the following variables:

- The probability of the number of customers who will not show up at a given time and place.
- The costs of procuring alternative services for customers including paying exemplary damages.
- The combined value of lost customers, customer satisfaction and loyalty including possible impacts on public relations. Furthermore, overbooking creates complaints and often results in aggressive behaviour to employees from customers who have booked and paid to receive a service but are unable to obtain this at the specified time and place. Employees may react by working to rule impacting on productivity, an increase in absences related to sickness and enhanced labour turnover. The financial impacts may be difficult to measure, but these wider impacts must be taken into consideration in the design of service businesses that adopt overbooking strategies. These businesses must also balance the tension between business efficiency, customer satisfaction and responsible business behaviour.

13.1.2 Queue and Waiting Measures and Management

There is a continuum of service businesses. On the one side, are capital-intensive businesses that apply technological solutions to cope with balancing supply and demand. On the other hand, are labour-intensive businesses in which it is difficult to avoid queues and waiting lines emerging during times of peak demand, for example, self-service restaurants, call centres, car rentals and retail. A service company can investigate when and how such queues and waiting lines emerge. Techniques can be developed to make queuing more acceptable for customers reducing customer dissatisfaction levels. This was especially the case during Covid-19 when socially distancing had to be applied to the management of retail demand.

People do not want to wait in line in queues. They become stressed and dissatisfied and may decide to purchase services from another provider. Sometimes people turn around and leave when they see a queue, for example, in a supermarket or restaurant. Nevertheless, queuing frequently cannot be avoided.

It is important for a service company to explore acceptable customer queuing times. The company should attempt to reduce waiting time to this level, but this increases the costs of service delivery. For example, opening another supermarket checkout involves transferring an employee from one task to another. Furthermore, different customers will have different perceptions regarding acceptable waiting times. It is difficult to avoid the negative impacts of queuing
and this involves both optimizing service delivery systems combined with queue management. On the one hand, the service business must balance customer dissatisfaction with increased costs. On the other hand, queues provide an opportunity to engage with customers and to provide distractions that might enhance sales.

A service business can measure and calculate when queues occur and acceptable customer waiting times. This can be measured when queues occur including how many people are waiting and for how long. A queue, for example, in a supermarket or at a hotel reception, can be monitored and additional employees deployed to deal with peak demand, or technological solutions developed, for example, automated check in procedures at a hotel. For digitized services, an algorithm can be developed that automatically monitors demand and supply and tries to optimize delivery. In both cases, it is important to monitor when people leave the queue without completing a service transaction. This is a major problem for e-commerce retailers as customers select items and add them to their baskets, but never complete the transaction. All service businesses involving customer queuing must develop an appropriate approach to measuring and managing queues and in enhancing the customer experience of queuing.

There are theoretical and mathematical queuing models that can calculate when queues occur and waiting times. Let us consider one example based on calculating queue waiting times at supermarket check out counters. The probability of a customer waiting in a queue is:

$$P_w = \frac{m \times n}{c}$$

$$P_w = \text{Probability of waiting}$$

$$m = \text{Average number of minutes it takes to serve one customer}$$

$$n = \text{Average number of customers per minute}$$

$$c = \text{Number of counters}$$

An example is as follows. One counter is open ($c$) and it takes 2 minutes to serve one customer ($m$) and 3 customers arrive every minute ($n$):

$$P_w = \frac{2 \times 3}{1} = 6$$

Customers will continue to wait, and the waiting line will expand exponentially. Six counters would be required to avoid queues forming. Redundant capacity will occur if more than six counters are provided.

This calculation is about balancing cost by increasing capacity by opening more service lines versus loss of revenue as customers decide to leave a queue and perhaps obtain services from a competitor. This relationship between queue waiting, capacity and the identification of a balance point can be graphed (Fig. 13.2). Optimal capacity occurs where the missing income curve and the additional cost curve intersect.

There is a formula for calculating when an extension in capacity is profitable when the cost of extending the capacity is less than the missed income:

$$\frac{a}{b \times N} < 1$$

When the reduction of waiting time exceeds missed customer income by customers deciding to leave the queue:

$$(c \times N) > (b \times N)$$

$a = \text{Marginal cost of capacity expansion (e.g. opening an additional supermarket check-out counter)}$

$b = \text{Missing income per customer leaving the company}$

$c = \text{The marginal reduction of waiting time per customer (e.g. less waiting time in counter queue)}$

$N = \text{Number of customers having their waiting times reduced}$

There is an important distinction to be made between actual versus perceived queuing time. Customers waiting to be served require companies to try to manipulate actual time by altering customers’ perceptions of the actual length of time that they have spent queuing. These techniques involve distractions to try to ensure that those waiting ignore the actual amount of time spent waiting and instead are distracted by some experience. This
includes companies trying to increase customers’ tolerance for waiting by deploying a number of psychological mechanisms including:

- **Management of waiting numbers**
  A customer can be provided with a number ensuring that they no longer need to stand in line. This enhances the customer experience and waiting may become more comfortable and therefore acceptable. In a telephone queue, the service company may offer to return the customer’s call whilst retaining their place in the queue.

- **Reducing customer sight lines as they queue**
  This involves ensuring that a queue does not take the form of a single long line but is designed to restrict customer sight lines. This may reduce the perceived length of the queue.

- **Information provision**
  Service businesses must manage customer expectations regarding queuing. Part of this task involves providing information regarding waiting times. This type of information provision may increase customer tolerance levels encouraging customers to continue to queue. Information provision makes people feel safer and more in control. Nevertheless, notification of very long waiting times will encourage customers to leave the queue.

- **Entertainment**
  Provision of entertainment, for example, music or visuals on screens, whilst people wait may make them overlook the time spent queuing. In this case, entertainment is designed to distract or divert customers’ attention from the experience of queuing. However, it might also distract as people may leave the queue to avoid the entertainment. This type of diversion also involves placing merchandise adjacent to the queue and signage. For some service businesses, queues provide an opportunity to engage with customers as they represent an unusual time when customers face the same direction. This provides an important opportunity to communicate messages to customers.

- **Provision of complaint personnel**
  Employees may ‘work’ the queue to distract customers from the queuing experience by diverting their attention. In this case, customers may complain about the length of time spent queuing to employees. The danger is that this type of employment is not attractive as the role involves the management of unhappy customers. This type of human interaction between service providers and customers may also be used to educate customers to reduce service delivery times. At airports, employees inform customers in queues about preparations they should make before reaching a check-in point.

The key issue for a service firm is to balance the cost of service delivery, as measured by
staffing levels, against loss of income as frustrated customers decide to leave the queue without completing transactions. One solution is to hire part-time assistants to cover peak times. This is only a partial solution as such employees may be less experienced and will perhaps work at a slower rate compared to full-time employees.

13.1.3 Balanced Scorecards

One of the most important generic instruments that has been used to measure company performance over the last decades has been the balanced scorecard approach (Kaplan and Norton 1996). This approach has also been applied to services. A balanced scorecard approach tries to develop a holistic account of an organization ensuring that productivity enhancement occurs across an organization. The balanced scorecard is a tool to measure how close a company comes to implementing its strategies and business goals. Several quantitative measures and several qualitative assessments are included and placed in a matrix. A balanced scorecard is not a single index summarizing all variables, but rather it is a series of measures of the important factors or goals which best reflects a company’s strategy and business goals. The first step is, therefore, to define which factors or variables should be included in a firm’s balanced scorecard. Kaplan and Norton (1996) identified four performance areas which should be included:

1. Financial performance
2. Customer relations
3. Internal business processes
4. Innovation, learning and growth

Within these four areas a single company can define which variables and factors it wants to include. The balanced scorecard approach is a tool that supports a company by providing a set of measures that management can use to assess how far a firm is meeting its stated goals. It is not a type of scientific prediction index that will lead to theoretically pre-defined and guaranteed results. The selection of variables and factors should be decided carefully based on the identification of which factors are most critical for the company’s business success. These factors should be measurable, either quantitatively or as a qualitative description of the state of the company. The metrics included within a balanced scorecard must be identified using a SMART approach. They must be Specific, Measurable, Achievable, Realistic and Timely. They must not include aspects of business performance that cannot be measured, and the SMART metrics must be closely aligned with a company’s strategic plan. It is worth noting that this approach should not dominate the everyday management of a business as critical processes might not be fully reflected in a set of quantifiable measures. Thus, it is important to remember that not everything can be measured used SMART metrics.

The factors included in a balanced scorecard reflect different operational processes and stakeholder interests. All companies must satisfy owners, customers and employees. Sometimes these three different types of stakeholder group can be satisfied by a company performing across the same set of SMART metrics, but often there may be divergent interests leading to conflict. Different factors and variables in the balanced scorecard approach promote different stakeholders’ interests. A company then must decide which factors are the most important to be included. That is why it is meaningless to combine all factors in one index. Creating a single index would be possible, but it would hide more than it would reveal (Table 13.1).

A balanced scorecard can be created for individual employees and managers to measure their individual performance or, for managers, their department’s performance. The measurement results can be used to discuss and adjust employees’ and managers’ tasks and work performance. These alterations should be designed to ensure that the company comes closer to realizing its strategic and business goals. Safari (2016) developed a measurement tool that quantitatively can measure individuals’ and teams’ performance. The tool is based on identifying
and setting target goals which are predefined for a period and an employee. The tool is an index that measures whether the employee, within a designated period, has under- or over-performed. These target goals are expressed in measurable SMART terms. Table 13.2 is an example of how this type of approach, known as a credit grid, is created for an employee involved in personal customer handling in a retail bank. The credits are measured as the number of work tasks fulfilled over a period. For example, if an employee, within a designated period, has agreed 180 loan applications and the agreed goal was 150 then there is a credit of +30 and an over-performance of 20%. The credit points of all work tasks are then summarized creating the employee’s total credit points for a designated period. This calculation might be used to calculate bonuses recognizing over-performance.

Such individual performance measures are widely applied by service companies to provide SMART measures to support salary systems. It can motivate employees and managers to enhance performance but within the parameters set by the company’s strategy. Such systems have, however, been criticized by employees and trade unions for being very Tayloristic (cf. Frederick Taylor’s famous industrial employee management system) and related to enhanced employee stress levels, illness and attrition. They might also be considered as an approach in which employees are very closely monitored.

| Performance area          | Strategic goal                              | Measure                                      | Target                  |
|---------------------------|---------------------------------------------|----------------------------------------------|-------------------------|
| **Financial performance** | Saving costs                                | Expenses as % of the budget                  | 90%                     |
|                           | Initiatives to save costs                   | Number of suggestions for cost savings       | 2 per employee          |
|                           | Use a specific cost sheet to obtain an overview of the costs | Number of employees using the sheet          | 75%                     |
| **Customer relations**    | Identify customer needs                     | Number of new customer needs reported to the innovation and development department | 2 per employee          |
|                           | Increased efficiency in saving customer problems using hotlines | Reduced answer time                          | Answering time reduced by 10% |
|                           | Increase customer satisfaction              | Customer satisfaction survey                 | >15% increased customer satisfaction |
| **Internal business processes** | Provide a reliable IT architecture       | Number of service calls related to IT architecture | >5% reduction of these calls |
|                           | Action regarding software training and knowledge base | Number of inquiries for new training activities | >1 per employee         |
|                           | Employees handling own stress and work environment situation | Work satisfaction survey                     | >10% increased satisfaction score |
|                           | Reduction of internal procedure failures    | Number of reported failures                  | >20% reduction          |
| **Innovation, learning and growth** | Leader training development with mutual exchange of experiences | Leaders attending internal training courses | >30% of the leaders attending |
|                           | Innovative ideas                            | Number of ideas for innovations from employees | >20 ideas               |
|                           | Investment in innovation projects           | Investment in new innovation projects        | >100,000 €              |
|                           | Information from projects stored in a learning database | Number of experiences from projects stored   | >50                     |

Source: Authors’ own
and appraised. It is important that a company does not become too distracted by SMART measures. The key issue is overall performance including the relationship between service delivery costs and profitability. There is another critical issue to consider. This is the provision of services that differentiate one company from another and perhaps one service worker from another. There are many aspects of service employment and service co-creation that are perhaps impossible to measure (see Chaps. 8 and 9). These more intangible aspects must not be overlooked as they perhaps underpin performance measured by any SMART metrics.

### 13.2 Measuring Quality, Marketing Performance and Customer Satisfaction

Customer satisfaction and sales performance are connected to the concept of service quality. Consequently, their measurement is often conceptualized as measures of service quality. Service quality and customer satisfaction are central to marketing practice and theory. Sustainable competitive advantage within service businesses is founded upon delivering high quality services creating satisfied customers. Customer satisfaction is related to customer retention and loyalty and underpins profitability, market share and the relationship between investment and return. Service quality is also related to cost and profit (see Chap. 8 and the quality of service experiences). Improving service quality may increase service delivery costs and perhaps the key issue is the relationship between additional costs versus any increase in revenue. Service quality can also be considered as part of an analysis of competitors’ processes and products. A service firm should perhaps not provide a quality that is better than competitors, at least not if this difference is not reflected in higher prices. Such considerations must be reflected in measures of service quality and customer satisfaction.

There are many costs related to the enhancement of service quality. These are both tangible, or easy-to-measure, and more intangible costs and related impacts. In Table 13.3 some of these potential additional costs are considered.

In this section we explore some of the most common measurement instruments of service quality and customer satisfaction.

#### 13.2.1 Dimensions in Measuring Service Quality and Customer Satisfaction

Before measurement, service quality must be defined operationally or, in other words, a framework must be developed enabling a company to measure quality quantitatively. The first decision

| Table 13.2 Individual performance credit point grid for a bank employee |
| --- |
| Performance category | Activity | Credit points |
| --- | --- | --- |
| Payment-personal banking | Bill payment | 5 |
|  | Personal loan payment | −10 |
|  | Credit card payment | 8 |
|  | Mortgage payment | 22 |
| Investigation-personal account | Pre-authorized payment | 2 |
|  | Charge-back | −5 |
| Errors/defects, returns, reworks | Monthly statement review | 15 |
| TOTAL | | −25 |

Source: After: Safari (2016, p. 215)

| Table 13.3 Examples of service quality improvement costs |
| --- |
| Internal costs | External costs | Quality measurement costs |
| Reorganizing service processes. Facility downtime. Higher employee turnover. Loss of productivity. | Service guarantees. Possible loss of income from customers who leave because of service changes. | Time and money spent on quality investigations. Employees spending time on providing information for quality measurement. |

Source: Authors’ own
that must be made concerns what a company wants to measure. There are choices here. A company can measure the quality and satisfaction of a single service, service quality and satisfaction of a customer or customer attitudes towards the service firm—or all of these. Measurement instruments have been developed that measure different aspects of quality and customer satisfaction (Table 13.4).

A decision needs to be made regarding the most appropriate individual to assess service quality. Sometimes the customer cannot be easily identified, for example, in the provision of business services. Business service providers, including the provision of outsourced work canteens, office cleaning, or call centres or personnel administration (including pay and pensions), have many possible different stakeholders (Table 13.5). The selection of which group to include in any assessment of service quality is a difficult decision; all stakeholders’ satisfaction and quality assessments are important for customer firms and for providers of outsourced business services.

A debate needs to occur regarding the definition of each dimension included in any measurement of service quality. A service firm will not be able to assess all quality dimensions and should not attempt to do so as the rewards will not reflect costs, including time, of this type of appraisal. A service firm should, therefore, only attempt to measure and enhance quality up to an optimal point defined by the point at which income from improved service quality exceeds the costs of

| Table 13.4 | Service quality dimensions and how they can be measured |
|------------|--------------------------------------------------------|
| Dimension  | How the service is constructed and produced? Services and deliveries must be specified and any reduction in quality reflects deviations from the specified quality. Example: Airplanes should not be delayed. Measured from arrival times. |
| Construction quality | Employees’ attitudes and behaviour in customer interactions or customers’ experience of the firm’s website. Example: Maximum 10% of customer calls to the firm’s hotline should lead to customers not receiving a satisfactory answer to his/her problem. Measured by a short questionnaire and recording of telephone conversations (qualitative measurement). |
| Process quality | The customer is generally satisfied with the service. Example: Is the customer satisfied with the insurance he/she has and the insurance company? Measured by general customer surveys. |
| Result quality | Customers’ satisfaction with the services with price taken into consideration. How customers assess this service firm and its services compared to competitors? Example: Car repairs. Is the repair/service including customer handling and information about pricing and what has been repaired satisfactory? Is the price fair? Would the customer prefer to use an alternative provider? Measured by questionnaire to customers or measuring the proportion of repeat customers. |

Source: Authors’ own
improving quality (Chap. 8). This can be calculated when a firm knows the additional expenditure required to enhance quality and is then able to calculate the impacts on profitability. Any attempt to enhance quality must balance the importance of each measure of service quality against performance (Fig. 13.3).

### 13.2.2 Mapping Service Quality and Customer Satisfaction

Many methods and tools for measuring service quality and customer satisfaction exist (see also Forsyth 1999; Bourne and Neely 2003; Franceschini et al. 2009). It is important to appreciate the interrelationships between service quality and customer satisfaction. Both customer satisfaction and service quality are multi-dimensional constructs requiring similar measures (Sureshchandar et al. 2002). In the following we explore the most important and widely used measurement instruments.

#### Total Service Quality Indexes

Different indexes that combine service quality dimensions can be constructed. In Table 13.6 an example of such an index of service quality is provided which includes the importance of each indicator and performance for a provider of broadband services. The index includes economic performance and employee satisfaction (which is important for customers’ experience of the service encounter (cf. Chap. 8)).

#### The Service Journey

This is an instrument to systematically assess how a typical customer experiences service delivery with all the touch points that they might have with a service firm. This experience is seen as a journey during which the customer becomes aware of the problem which the service will solve, to the solution of this problem or, in the worst-case scenario, there is perhaps no solution. The customer’s journey can be drawn as a model using a blueprint technique (Bitner et al. 2008). This tool can be applied by a service firm to understand and re-design the service delivery system. It can be used as a framework to formulate questions in customer surveys and to collect experiences from employees about each customer touch point. Customers can also be asked to experience the journey in a laboratory-like situation. Figure 13.4 is an illustrative example of such a service journey model based on a railway company. At each touch point the customer can be satisfied, which brings them closer to becoming a satisfied loyal customer, or they can be dissatisfied encouraging them to find an alternative mode of transportation.

#### Surveys

Service firms often use standardized surveys to ask customers about service quality. We all have experienced several such surveys. They typically ask actual customers to comment on a series of concrete and detailed points, often just after the service has been delivered (Fig. 13.5).

These questionnaires can be varied in many ways. They are either given to customers at the end of the service delivery process or sent to customers after the service event has concluded either by e-mail or via smartphones. A problem is the reliability of these customer surveys. People receive many service quality questionnaires and there are low response rates. There is a risk that only the most dissatisfied customers respond, and
Leaving-the train journey
Customer’s considerations
Are going to Ipswich
- Monday morning
- Does the time fit with your needs?
- How difficult was it to obtain a ticket?
- From where does the train leave?
- Can you ask somebody?
- GOOD EXPERIENCE

Getting to the station
Underground train stops
- Delay
- Stress
- BAD EXPERIENCE

The concept innovatively thought and implemented
- Business class
- Food

Communications
The transport Experience:
- GOOD/BAD?

Arrival in time?
Train delayed
- What do you do?
- BAD EXPERIENCE

Train personnel order a taxi
Exceptional extra service
- GOOD EXPERIENCE

The office
- Food
- Service
- Personnel

THE CORE
Easy to handle on www?
- Telephone service? -no

Back office

Touch point (customer encounter)

Fig. 13.4 Service journey with touchpoints. Example a train journey from London to Ipswich. (Source: Authors’ own)
perhaps the over-satisfied, extremely loyal, customers are also more likely to respond.

**Web-Based Satisfaction Scoring Platforms**

There exist many Web-based review platforms where people can evaluate service quality and service experiences, both quantitatively via standard questions based on categories and qualitatively by providing comments (see also Chaps. 3, 4 and 11 for digitalisation tendencies in services). These may be provided on the service provider’s website, or via a third-party platform. Often service firms are given overall scores enabling potential clients to compare one provider with another. These third-party review platforms include TripAdvisor for hotels and restaurants and Trustpilot for customer services.

These platforms are business models in their own right generating revenue from linking customers with service providers (see Chap. 3). It is important that the revenue-based nature of these operations is considered in any assessment of their ability to provide an independent assessment of the quality of a service firm’s products. Customers provide feedback on service providers for free and the review platforms play an increasingly important role in influencing consumer decision-making. Customers can easily access and explore these online reviews to compare with different levels of service quality provided by different firms.

These review platforms do not provide a completely objective and balanced review of service quality. There are problems with response bias as well as the possibilities of false or fake reviews. False reviews might be provided by employees of the service provider or by rival companies. Often service firms are able to comment on individual reviews and these responses may influence customer assessments.

**Focus Groups**

A focus group is a qualitative method intended to obtain information about customers’ impressions of a service firm’s service quality. A service firm can invite a small number of customers, preferably about eight to ten, to discuss service quality and their experiences of a firm. The customers are, for example, asked to discuss some good and some bad service experiences with this service firm and perhaps to compare with other service experiences that were extremely good or extremely bad. A focus group should develop

| Weight (importance) | Indicators                      | Performance measured points |
|---------------------|--------------------------------|------------------------------|
| y1 30               | Economy                        |                              |
|                     | Achieved budget total          | a1                           |
|                     | Return for the year            | a2                           |
|                     | Change in value from last year | a3                           |
|                     | Income per employee            | a4                           |
| y2 45               | Service                        |                              |
|                     | Installation precision, time delays | b1                     |
|                     | Fault in deliveries, numbers   | b2                           |
|                     | Corporate image vs other providers | b3                     |
|                     | Customer service centre, number of enquiries | b4                     |
|                     | Customer service centre, waiting time | b5                     |
|                     | Online service centre, number of enquiries | b6                     |
|                     | Number of faults reported by customers | b7                     |
|                     | Customer complaints, number    | b8                           |
| y3 25               | Employee satisfaction          |                              |
|                     | Number of work accidents       | c1                           |
|                     | Support from supervisor (qualitative measure) | c2                     |
|                     | Team spirit (qualitative measure) | c3                     |
|                     | Sick leave days per working hour | c4                     |

Source: Adapted and Developed from Edvardsson, Thomasson and Øvretveit (1994, p. 189)

Note: Index values = \[y_1 \times (\sum a_1 - a_4) \] + \[y_2 \times (\sum b_1 - b_8) \] + \[y_3 \times (\sum c_1 - c_4) \]
into a conversation amongst customers and during this discussion the customers influence and often determine the structure of the conversation. The focus group organizer is only able to guide or shape the discussion rather than completely control it. Focus groups are recorded and transcribed and then analysed using qualitative approaches based on coding and the identification of key themes.

The advantage of a focus group discussion compared to a standardized survey is that a service firm can acquire a detailed understanding of quality problems including identifying customers’ criteria for good service quality. There is always the possibility that quality issues not identified by the service firm emerge during focus group discussions.

**Critical Incidents and Service Quality**

Critical incidents are events or occurrences where a service delivery fails in some way or some problem is avoided. All service firms should identify, monitor and explore critical incidents as they occur during the service co-creation process.
Employees involved in an event must provide a detailed account of the incident. A firm must explore the origins of any potential service quality failure and learn to avoid them. A critical incident could, for example, involve an accountancy firm failing to identify an account irregularity, or failing to meet an expected deadline. Some critical incidents are so critical that they threaten the continued existence of the service business.

Critical incidents must be considered as the outcome of a set of processes which must be analysed to identify what, where and how the problem emerged. This involves a process of tracing back the processes and the ways in which they worked to produce a critical incident in service delivery. The key point of the critical incidence approach is to identify what occurred to ensure that any possible reoccurrence can be avoided. This might involve alterations to employee training combined with adaptations to everyday service delivery routines, or everyday practices.

**Benchmarking**

Often a service firm, or a department within a service firm (e.g. a bank branch), is measured and benchmarked against other similar service firms or departments. Benchmarking against other service firms, particularly competitors, is intended to challenge a service firm’s existing services to enhance service quality. A key issue is to highlight, develop and refine differentiation in the marketplace by product and process. Benchmarking can be used as the basis for quality improvements and to optimize service quality. The service quality of a service firm should meet that of comparable competitors but should not be significantly higher. This is to highlight the importance of product and process segmentation by price and quality. The balance between price and quality determines profitability.

Benchmarking the internal departments of a service business is intended to inspire, encourage and sometimes force each department to enhance their service quality and customer satisfaction rates. This should be undertaken without increasing costs. Productivity within each department could also increase through benchmarking.

**SERVQUAL**

A much-used benchmarking measure of relative service quality, or the service quality of a service firm in relation to its competitors, is the SERVQUAL scale. This was developed by Parasuraman, Zeithaml and Berry (1988). This scale measures service gaps, for example, where a service firm provides a lower or higher perceived service quality than its competitors.

The SERVQUAL scale is based on a survey requesting customers to provide details about their experiences of a service firm. Customers are asked to provide feedback on a series of service quality and customer satisfaction variables. The SERVQUAL method is divided into two measures. First, an expectation section which measures how important each variable is for the customer. Second, a perception section which measures how the customer assesses this service firm’s performance against each variable. This tool is constructed to measure service quality gaps or how the perception of the actual quality lives up to the interviewees’ expectations. The actual service quality may be lower, similar or higher than customer expectations. A third measure might be added, namely how customers assess competitors’ services compared to the service firm under examination. This could be achieved by asking interviewees to indicate their perception of competitors’ service quality (the B-score column in Table 13.7).

The SERVQUAL tool as it was developed by Parasuraman, Zeithaml and Berry (1988), includes five dimensions (Table 13.7). On each dimension, several variables are measured, and the interviewee is asked to assess each variable on a 7-point scale where 1 is ‘strongly disagree’ and 7 is ‘strongly agree’. The interviewee should answer questions regarding their expectation of the service in general and then explore their actual perceptions. Each answer is scored from 1 to 7. A service firm can then calculate the gap between each service variable in terms of the relationship between expected and perceived outcomes. This highlights whether the perceived quality variable was given a higher or lower score compared to customer expectations. A total quality score gap can then be calculated.
### Table 13.7 SERVQUAL: Dimensions, variables and scores

| Expectations to XY (any service field, e.g. banking, cleaning) companies | A.Score (1–7) How important is this? | Perceptions of ZW’s service (any company within the chosen service field) | B.Score (1–7) How does ZW perform? | Gap score B–A |
|---|---|---|---|---|
| **Tangibles** | | | | |
| v1 XY firms should have up-to-date equipment | A1 | ZW has up-to-date equipment | B1 | B1–A1 |
| v2 XY firms’ physical facilities should be visually appealing | A2 | ZW’s physical facilities are visually appealing | B2 | B2–A2 |
| v3 XY firms’ employees should be well dressed and appear well dressed | A3 | ZW’s employees are well dressed and appear well dressed. The appearance of ZW’s physical facilities is in keeping with the type of services provided | B3 | B3–A3 |
| v4 The appearance of the physical facilities of XY firm should be in keeping with the type of services provided | A4 | | B4 | B4–A4 |
| **Reliability** | | | | |
| v5 When XY firms promise to do something in a certain time, they should do so | A5 | When ZW promises to do something in a certain time, they do so | B5 | B5–A5 |
| v6 When customers have problems, a XY firm should show a sincere interest in solving them | A6 | When you have problems, ZW shows a sincere interest in solving them | B6 | B6–A6 |
| v7 XY firms should perform the service right the first time | A7 | ZW performs the service right the first time | B7 | B7–A7 |
| v8 XY firms should provide their services at the time they promised | A8 | ZW provides their services at the time they promised | B8 | B8–A8 |
| v9 XY firms should keep their records accurately | A9 | ZW keeps their records accurately | B9 | B9–A9 |
| **Responsiveness** | | | | |
| v10 Employees of XY firms should tell customers when services will be performed | A10 | Employees of ZW tell customers when services will be performed | B10 | B10–A10 |
| v11 Employees of XY firms should give prompt services to customers | A11 | Employees of ZW firm give prompt services to customers | B11 | B11–A11 |
| v12 Employees of XY firms will always be willing to help customers | A12 | Employees of ZW firm are always willing to help customers | B12 | B12–A12 |
| v13 Employees of XY firm will never be too busy to respond to customer requests | A13 | Employees of ZW are never too busy to respond to customer requests | B13 | B13–A13 |
| **Assurance** | | | | |
| v14 Customers should be able to trust employees of XY firm | A14 | You can trust employees of ZW | B14 | B14–A14 |
| v15 Customers should be able to feel safe in their transactions with XY firms | A15 | You feel safe in your transactions with ZW | B15 | B15–A15 |
| v16 XY firms’ employees should be polite | A16 | ZW’s employees are polite | B16 | B16–A16 |
| v17 XY firms’ employees should get adequate support from their employers to do their jobs well | A17 | Employees get adequate support from ZW to do their jobs well | B17 | B17–A17 |
| **Empathy** | | | | |

(continued)
It is not only the size of the gaps between expectations and perceptions that are important. The results must also be seen in relation to the size of the expectation score. In principle, interviewees are free to expect that a service firm provides the highest service quality on all variables; however, they are supposed to provide realistic expectations. Another problem with SERVQUAL is that price is absent from the analysis of the appraisal of service quality. A service firm, applying the SERVQUAL scale to improve service quality, may fail to retain or attract customers because of price differences between competitor products. There is a risk that, despite improved service quality with perhaps the same pricing, customers decide to purchase from another firm offering similar services, but at a lower price. An ideal scale should also ask customers about pricing and the relationship between expectations and perceptions.

13.3 Innovation Capability Measures

Service innovation is important for the development of service firms (Chap. 7), and also for manufacturing companies (Chap. 12). It is more difficult to measure service firms’ innovation capabilities compared to measuring manufacturing firms’ technological innovation capabilities. Service innovation often does not involve research and development (R&D) activities and technological investments. R&D innovation usually involves significant capital and revenue investment and a formal innovation process which is relatively easy to measure. Service innovation capability is a complex phenomenon that amongst other variables includes employees’ entrepreneurship, management systems, customer interaction, co-creation of innovation with customers, service
processes and a series of other factors that are difficult to measure. An ideal measure of service innovation capability does not exist. Sundbo (2017) has developed a quantitative measurement instrument that identifies inputs to and outcomes of innovation processes. This instrument was developed based on a literature review and was tested using two cases. The conclusion was that it was impossible to construct a single measure—an index—of service innovation capabilities. The challenge is that so many different factors influence a firm’s service innovation capabilities. The result of the test was that some variables can be measured in companies, and combined the measures are able to provide an estimation of a service firm’s innovative capability. The factors included in this approach are divided into input factors (factors that determine innovation) and outcome factors (measures of the result of the innovation effort). The factors, and suggestions for quantitative measures, include the following:

**Input Factors**
These are investments in either money or time and time can be converted into an indicator of cost or a measure of financial value.

- **Working hours within the firm** (at all levels and including all activities, such as interacting with customers in co-creation activities, converted into a measure of financial value).
- **External advice and knowledge procurement** (both of which can be expensive, e.g. consultancy or paid research).
- **Expenditure on technology and other materials**.
- **Public support** (income, e.g. public grants or free advice provided).
- **Network benefits** (e.g. competitors who are also collaborators, representatives from the value chain and others from networks; inputs from network activities are normally free; however, the firm’s time used in network activities should be deducted).

**Outcome Factors**
Four types of outcome factors were identified as important:

1. **Income and growth**
   (a) *Turnover* (more sales—increased turnover).
   (b) *Profit* (either positive or negative).
2. **Employee factors**
   (a) *More employees* (an indicator of growth—may be a power factor for departmental managers).
   (b) *Productivity increase*.
   (c) *Employee motivation and competence* (more satisfied and efficient employees).
   (d) *Employee entrepreneurship* (employees more engaged in innovation activities).
3. **Customer/market factors**
   (a) *Increased service quality and customer satisfaction*.
   (b) *Branding and PR* (the firm becomes better known by the market because of the innovation).
   (c) *Penetration into new markets* (a new service product launched in a new market can result in firms being able to sell other services in that market).
4. **Strategic/business model factors**
   (a) *Organizational learning* (the firm learns how to innovate more effectively and efficiently).
   (b) *Changed strategy* (the firm may change to a more appropriate strategy because of the innovation).
   (c) *New networks* (if the innovation required relationships to be formed with new external actors, then these can be a future innovation resource).

The conclusion is that not many instruments have been developed to measure service companies’ innovation capabilities and it is difficult to construct a simple measure. Nevertheless, a multi-dimensional measurement framework can be developed.

### 13.4 Wrapping Up

There are two types of services. On the one hand, there are services that are customized and co-created between a service provider and consumer. These are labour-intensive services that are
highly customized service experiences. On the other hand, there are standardized services that are increasingly extremely capital intensive rather than labour intensive. There is an on-going process by which services are becoming increasingly digitized and automated.

Measuring the quality of a co-created highly customized service experience is difficult. The primary measure is based on the scale of repeat business. It is important that the measurement of service quality and customer experiences is not an end in itself. The aim of all investments in the measurement of service businesses must be a focus on service quality enhancement. It must be accepted that there are some aspects of a service experience that are more about emotions, feelings and perceptions and these are difficult to measure and compare. There is also the added difficulty in that a service experience is a very immediate experience and perceptions of the experience may fade with time. An important question is when and how to measure service quality and customer satisfaction? Measurement of the service outcome will not enable a service provider to modify the service process to enhance quality and customer satisfaction. Too much measurement during the service delivery process may interfere and perhaps undermine service quality. A further complication is the relationship between service quality and customer satisfaction. All service firms need to develop an approach that develops a solution to balancing the interrelationships between price, quality, value and expectation. This is critical as it is this relationship that plays an important role in the long-term viability of service businesses and their continued ability to compete.

**Learning Outcomes**

- Many tools to measure service company performance, service quality and customer satisfaction exist.
- Before measuring, service quality must be defined operationally or, in other words, a framework must be developed enabling a company to measure quality quantitatively.
- Customer satisfaction and service quality are complex multi-dimensional constructs.
- SERVQUAL is one of the most used instruments. There might be difficulties in using SERVQUAL because it does not measure the effect of price.
- Mapping the service journey is another widely used instrument.
- Queue handling is one of the areas where most measurement instruments have been developed.
- Very few tools have been developed to measure service firms’ innovation capabilities.

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https://www.slideshare.net/rockpulkit/servqual-model.