Block

5

TOOLS AND FRAMEWORKS FOR MANAGING SERVICES

Ref. No. SOM-SLM-IFHE– 082022B5

For any clarification regarding this book, the students may please write to The ICFAI Foundation for Higher Education (IFHE), Hyderabad specifying the unit and page number.

While every possible care has been taken in type-setting and printing this book, The ICFAI Foundation for Higher Education (IFHE), Hyderabad welcomes suggestions from students for improvement in future editions.

Our E-mail id: cwfeedback@icfaiuniversity.in

Centre for Distance and Online Education (CDOE)
The ICFAI Foundation for Higher Education
(Deemed-to-be-University Under Section 3 of UGC Act, 1956)
Donthanapally, Shankarapalli Road, Hyderabad- 501203

BLOCK 5: TOOLS AND FRAMEWORKS FOR MANAGING SERVICES

Services continue dominating the advance economy of the world and all companies across the world view services as critical for attracting and retaining customers. Therefore, service operations managers and leaders must be able to identify and capture opportunities for improvement in service delivery and reduction in costs. This block is aimed at covering all relevant concepts in this vital area of service operations management.

Block 5, *Tools and Frameworks for Managing Services*, exhaustively covers different tools and frameworks that are applicable to service industry. Designing a tailored set of service models based on customer segments is a prerequisite for providing the desired services without overspending. The leaders of the organization must rigorously and holistically manage the factors that affect service delivery and costs. This needs an understanding of various frameworks and tools for managing services.

Unit 17, *Lean Management Concepts*, discusses lean management in service industry, inventory management, lean logistics and lean start-up concepts.

Unit 18, *Tools for Managing Services*, covers site management tools, factor rating, mathematical methods for delivered services, scoring systems, balanced score card and implementation problems.

Unit 19, *Managing Service Projects*, explain characteristics of service projects, building a winning project team, project management concepts, PERT/CPM and problems in implementation.

Unit 20, *Application Domain in Services*, provides a comprehensive discussion on service management in important industries such as IT/ITES, financial services, health care, hospitality, travel and tourism, education, media and entertainment and legal services.

Unit 17

Lean Management Concepts

Structure

"All we are doing is looking at the timeline from the moment a customer gives us an order to the point we collect the cash. And we are reducing that timeline in the value stream by removing non-value-added wastes."

- Taiichi Ohno

17.1 Introduction

Eliminating non-value adding steps in the service delivery cycle is the essence of Lean management in the service Industry.

In the previous unit, we discussed managing capacity and demand with specific emphasis on such concepts as demand forecasting in services, forecasting methods, regression models, time series approach and the factors to choose an appropriate model for each service segment.

The purpose of lean management is to focus on eliminating as much waste as possible. Waste includes all activities or moves that are not needed, unnecessary processing steps and excess inventory in the system. They are all targets for improvement in a lean management process. Some industrial consultants have coined the term "value chain" to refer to each step of the supply chain process that delivers a firm's primary product or service to the customer to create value. If a step doesn't create value then it should be removed from the process. The term 'lean management' has evolved from the Just-In-Time (JIT) concepts pioneered by Toyota motors in Japan. JIT gained worldwide prominence in the

1970s when Taiichi Ohno of Toyota motor used the JIT concepts to take Toyota's cars to the forefront of delivery and quality. In the 1990s, many companies mostly in the western world started adopting the term lean in place of JIT to emphasize on systematic elimination of waste throughout their supply chain. Lean principles are also based on the judgment that nothing will be produced until it is needed. The two most important philosophies of lean management are: Elimination of Waste and Respect for People.

In the present unit, we will discuss lean management in service industry, inventory management in service industry, lean logistics and lean start-up concepts for new ventures.

17.2 Objectives

By the end of the unit, you will be able to:

- Explain the benefits of lean management
- Discuss how lean principles are practiced in the service sector
- Explain the concept of lean logistics
- Discuss the lean start-up concepts

17.3 Lean Management in Service Industry

Many lean techniques have been successfully implemented by service firms. Just as in manufacturing, the relevance of each technique and the corresponding processes depend on the characteristics of the firm's market, production equipment technology, skill sets, and corporate culture. Service firms are not different in this respect.

17.4 Inventory Management in Service Industry

With simultaneous production and consumption in many service firms, inventory is not stored. However, the facilitating goods that supplement the service can be inventoried and the amount and the type of inventory represent a vital strategic decision. Many service sector firms, in fact, use inventory methods as a source of competitive advantage.

Inventory decisions are vital for five categories of services:

1. **Retail:** Grocers, auto parts, consumer electronics, department stores, etc.
2. **Wholesale**
3. **Field Service:** Computer repair, auto repair, etc.
4. **Military:** Number and type of goods to be put in artillery, submarines, soldier's pack, etc.
5. **Healthcare:** Emergency items such as oxygen cylinder, blood, bandage, injections, cotton, etc.

For each of these general service sectors, inventory is a major cost. More than just cost, inventory gives a competitive advantage. In services such as retail, field service, and military sectors, space is very limited, making it very valuable. Given any specific store size, more inventory of any one item means that the item is taking more shelf space, which in turn means less shelf space available for other items. The strategic choice then comes down to a lot of inventory of specific few items or a little inventory of a variety of items.

Inventory stock-outs mean lost revenue. So, proper inventory management can substantially improve the profit margins of service firms.

17.4.1 Service versus Manufacturing Inventory

Lean concepts are best applied in environments where the same products are produced over and over at relatively high volume. In service firms the high volume of repetition in the process is uncommon. Thus, it becomes very challenging in service firms to maintain a very lean inventory level. Apart from the inventory levels, there are some other inventory characteristics such as:

- Setup/ordering costs
- Number of products
- Limited shelf-space
- Lost sales versus backorders
- Demand variance
- Product substitution
- Information accuracy

How service inventory differs from the manufacturing inventory.

1. **Setup/ordering costs:** Although the inventory management techniques in manufacturing such as Economic Order Quantity (EOQ) are somewhat applicable in services, in most services inventory environments setup/ordering costs for all products can be substantial. At the same time the cost of ordering any one product can be insignificant.

   For example, in a retail outlet, the combined warehousing and distribution cost could be 20% to 30% of the cost of goods sold, but the cost of a store manager's decision to order or not to order a given product is essentially zero.

2. **Number of products:** A manufacturing firm at maximum may sell a few hundred, or a few thousand products. However, when it comes to services such as supermarkets replenish order weekly or multiple times per week.

3. **Limited shelf space:** Retail stores, even as big as Walmart mega stores are too small to carry all the different items that might sell, and certainly too small to carry all the items manufacturers would like them to display. A key decision is how to allocate the limited shelf space among different products.

4. **Lost sales versus backorders:** Manufacturers often cannot immediately transport items, because they may not carry sufficient inventory of the item. It is common for manufacturing firms to quote a lead time or place a requested item on backorder and then fill the orders weeks later. Although backorders may occur in some service firms, a more common result is lost sales. Imagine a supermarket clerk telling you to come back after one week for a cool drink bottle that is required in the evening on the same day.
5. **Product substitution:** In many service inventory situations the retailers keep nearly identical products from many different manufacturers, so service inventory models need to consider the effects of customer's option for substitution behavior when faced with product stock-outs. In other words, the decision of stocking levels of products should not be considered in isolation of each other and groups of substitutable products have to be considered as a whole.
6. **Demand variance:** The volatility of demand is often higher in services, especially for Stock Keeping Units (SKUs) in stores with a small average number of units sold. For example, about fifty per cent of dry goods SKUs in supermarkets sell less than one unit per week on average. However, on a given day an interested customer may clean out the entire stock. This high variance in the demand makes inventory decisions tougher to figure out in the service sector. Thus, it is almost impossible to create some mathematical models for inventory management for services unlike in the case of manufacturing.
7. **Information accuracy:** Managing information about the inventory in the service sector is very difficult. Grocers normally track inventory by physically walking to the aisles to see how much is on the self. When customers or employees steal some goods, the information about such goods is lost. Customer mis-shelving is very common in retail bookstores, where a book taken out from one section is re-shelved by the customer in some other section. The problem is magnified for these retailers because books do not look out of place in the wrong sections, unlike a bottle of tomato ketchup next to a shampoo in a grocery store, where it could be easily corrected by the employees

Activity 17.1

Lean has become important and even unavoidable due to raising costs of products and services and immense opportunities in growing services sector.

All have witnessed raising costs of healthcare services. Covid-19 treatment is a classic example of many patients spending their life-time savings. In a country like India, it is unaffordable and unwelcome.

Identify major challenges in the healthcare sector for offering healthcare to people.

Suggest a lean management strategy for a mid-sized 10-bed hospital in your locality. What should be focus areas to be addressed in the suggested strategy?

Check Your Progress - 1

1. Which of the following is not an objective of lean management?
   a. To eliminate waste
   b. To remove unnecessary processing steps
   c. To reduce waste elimination targets
   d. To target the excess inventory
   e. To create value for the customer
2. Which is the philosophy in lean management in addition to 'Elimination of Waste'?
   a. Value creation for customer
   b. To target excess inventory
   c. To remove unnecessary processing steps
   d. Respect for people
   e. Just-in-time
3. Which of the following is not a characteristic that will influence the implementation of lean practices in a service firm?
   a. Firm's market
   b. Production equipment technology
   c. Service planning and scheduling
   d. Corporate culture
   e. Employees skill set
4. Which of the following is not a technique for the successful application of lean management in service firms?
   a. Organizing problem-solving groups
   b. Upgrade Housekeeping
   c. Upgrade quality
   d. Eliminating unnecessary activities
   e. Delphi Method

5. For which of the following services, inventory decisions are not vital?
   a. Internet
   b. Retail
   c. Wholesale
   d. Military
   e. Healthcare

17.5 Lean Logistics

Most of the times we will find organizations stuck in constant cycles that require them to improve their business in order to gain any kind of competitive advantage. They consistently feel the stress to reduce costs, time and inventory. One way that has proven to improve organization efficiency substantially is a supply chain process known as 'Lean Logistics'. Lean logistics is a way to identify and eliminate wasteful activities from the supply chain in order to improve the material flow and speed.

In a supply chain, logistics cover mainly the areas of:

- Storage or warehousing of materials, semi-finished goods and finished goods including spare parts required for service operations.
- Movement of materials, finished goods and spare parts for repair and maintenance. This includes both internal and external movement. External movement is through appropriate means of transportation.
- Returns management of goods returned by the customers due to various reasons.

To achieve leaner logistics, organizations need to implement leaner thinking. Organizations that incorporate lean thinking into their supply chain can benefit from improved customer service, reduced environmental impact by reducing waste and even overall corporate citizenship.

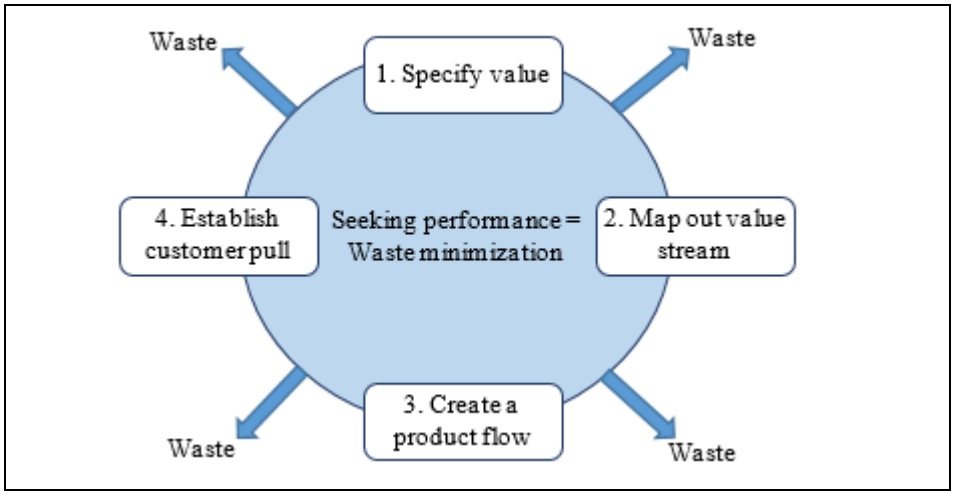
17.5.1 Lean Thinking

Lean thinking has its roots from manufacturing practices used by Japanese automobile manufacturing companies. Post-world-war II, due to the shortage of resources, they employed a production system that worked with minimum waste generation. This thinking soon spreads to all manufacturing areas, new product development and supply chain management and service operations. Lean thinking process follows a constant cycle in quest of perfection by eliminating waste and maximizing value addition. This process means that end-customers do not pay for the organization inefficiency and waste.

Four principles are involved in achieving minimal waste:

1. **Specify value:** Customer value is identified and added along with the supply chain network.
2. **Map out value stream:** Identifying all processes along with the supply chain network in order to eliminate the processes that do not create value to the overall product and associated services. This mapping helps us understand how the value is created into the product from the customer's perspective.
3. **Create a product flow:** Implementing the identified factors in order to make the processes smoother by minimizing interruptions, inventories, and downtime.
4. **Establish customer pull:** Manufacturing only in response to customer demand; implying that demand information is made available across the supply chain. Figure 17.1 depicts the lean thinking cycle.

Figure 17.1: Lean Thinking Cycle



Source: ICFAI Research Center

Each of the above four processes seeks exactness for continuously improving every process, minimizing waste and maximizing value.

17.6 Lean Start-up Concepts for New Ventures

Manufacturing companies have been using lean principles since the 1980s. Companies such as Dell computers, John Deere, Lantech, Beloit Corporation have reported several success stories of implementing lean principles in their organizations. In India also many companies are practicing lean for business excellence, such as TVS Motors, Sundaram Clayton, Sundaram Fastener, etc. Implementation of lean is no longer confined to manufacturing organizations; it is successfully applied in service companies also. Nowadays most of the start-ups are following the lean principles called "The Lean Start-up Methodology" to grow faster in the market.

The Lean Start-up Methodology provides a scientific approach for creating and managing startups and getting a desired service or product to customers' hands faster. The Lean Start-up framework explains how to drive a start-up, and when to persist and grow a business with maximum acceleration. It is a useful approach to new product development. The different steps involved in the Lean startup framework are as follows:

1. **Develop an MVP:** A core element of the Lean Start-up method is the build-measure-learn feedback loop. First, we need to outline the problem that needs to be solved and then develop a Minimum Viable Product (MVP) and start the process of learning as quickly as possible. Once the MVP is available, the start-up can work on "priming the pump". This process will involve measurement and learning. It must include actionable metrics to demonstrate cause and effect relations.
2. **Validated learning:** The metrics for measuring the progress of Lean Start-ups is validated learning. Once the entrepreneurs embrace validated learning, the development process can contract largely. When the focus is on figuring the right thing to build the product that the customer wants, you need not wait for a product beta launch to change the company's direction. Instead, as an entrepreneur one can adapt their plans incrementally.
3. **Eliminate uncertainty:** The lack of a customized management process has led many start-ups to abandon their processes. Instead, they take a "just do it" approach without following any forms of management. This is not a good approach. Instead, using the Lean Start-up approach to test the vision continuously is better. Lean isn't simply about spending less money. It is about putting a process, a methodology around for the development of a new product or service.
4. **Work smarter not harder:** The Lean Start-up methodology works with the premise that every start-up is a grand experiment that attempts to answer a question-not "Can this product be built?" but "Should this product be built?" and "Can we build a sustainable business around this set of products and services?" This experiment is more than just a theoretical inquiry of the first product. If it is successful, it allows a manager to start his or her campaign: enlisting early adopters, adding employees to each further experiment or iteration, and eventually starting to build a product. By the time that product gets ready to be distributed widely, it will already have established customers.

Example: Onprem Solution Partner - a Consulting Start up Based in Austin, Texas, uses "Lean Start Up Methodology" for Developing a One-Page Business Plan

Onprem solution partners is a start-up consulting company operating out of Austin, Texas. The company works with companies providing consultancy services for technology solutions.

Contd….

The company, being a start-up, follows Lean management techniques from inception to avoid all kinds of wastes-materials, processes, process steps, rework, redesign etc. The company adopted Lean Start-up methodology in the preparation of its business plan. It did not want to commit the mistake of developing a 50-page plan which gets outdated very soon. Using the principles of Lean Start up methodology, it prepared a one-page plan with vision and mission statements which will not change. In nine years, it never changed the plan. It is only revisited once in 2 years to see if the company is on track as far as the broad strategy is concerned.

Source: https://www.forbes.com/sites/theyec/2022/06/30/nine-common-business-plan-mistakes-to-avoid-as-a-new-entrepreneur/? Accessed on 30/06/2022

Activity 17.2

We understood core principles of lean management as reducing waste and respective people.

Apply these principles to a branch of a bank in your area and identify to what extent lean management is followed

Suggest a few processes in the bank branch for improvement in the domain of lean management.

Check Your Progress - 2

6. What needs to be implemented by organizations to achieve leaner logistics?
    a. Total quality control
    b. Leaner thinking
    c. Promotional strategies
    d. Improved customer service
    e. Just-in-Time
7. The Lean thinking process follows a constant cycle in quest of perfection by eliminating waste and which of the following?
    a. Maximizing value addition
    b. Reduce defects
    c. Improving efficiency
    d. Developing new products
    e. Managing supply chain

8. Which of the following is not a principle involved in achieving minimal waste?
   a. Specific value
   b. Map out the value stream
   c. Create a product flow
   d. Economic order quantity
   e. Establish customer pull
9. Which of the following is not a step of lean start up framework?
   a. Develop a Minimum Viable Product (MVP)
   b. Developing inventory management process
   c. Validated learning
   d. Eliminate uncertainty
   e. Work smarter not harder
10. Which of the following is the metric for measuring the progress of lean start-ups?
   a. Service efficiency
   b. Specific value
   c. Tax savings
   d. Validated learning
   e. Value stream

17.7 Summary

- Despite technology and training interventions, customers are facing problems such as long lead times and unpredictable error rates.
- A management structure built around the lean principles is not only an enabler of operational excellence but also helps to bring simplicity in the way operations are managed in a firm.
- What service companies require in the future is to develop robust, waste-free, flexible processes, while also keeping in mind the views of the customers.
- Only those firms that have an efficient business operation unique in meeting the customers' needs will be in a position to sustain in the future marketplaces.
- The need for leaner is echoed by various research studies carried across different industries and the lean thinking is nowadays widely being practiced by the start-ups for their survival and growth.

17.8 Glossary

Forecast: A prediction of the future value of a time series.

Lead time: This is the end-to-end time required for the execution of a process, which starts at the time the customer places the order and ends when the customer receives the product or service.

Lean Logistics: It can be described as a way to recognize and eliminate wasteful activities from the supply chain in order to increase product flow and speed.

Lean production: Integrative activities designed to achieve high-volume, high-quality production using minimal inventories.

Lean Start-up: The Lean Startup movement is taking hold in companies both new and established to help entrepreneurs and managers to make better and faster business decisions.

Service operations management: Service operations management addresses the design and management of systems for services.

Supplier: Supplier is a person or entity that is the source for goods or services.

17.9 Self-Assessment Exercises

1. Will lean work in service environments? Why or why not?
2. In what ways do the service sector inventory problems differ from typical manufacturing inventory problems?
3. Explain lean management in the service industry.
4. Explain the significance of inventory management in the service industry.
5. Discuss the benefits of lean logistics.
6. Explain the lean start-up concepts.

17.10 Suggested Reading / Reference Material

1. Chase R. B., Ravi Shankar, Jacobs F. R. (2018), Operations and supply chain management, McGraw Hill, 15th edition.
2. Haskett J. L. (1986), Managing in the service economy, Harvard Business School Press.
3. Nitin Joshi, S. Rajagopalan (2019), Service Operations Management: Towards Excellence, Himalaya Publishing House, 1st edition.
4. Mathur S. S., S Mathur and Kenyon A. (2017), Creating Value: Successful Business Strategies, Routledge, 2nd edition.
5. Robert Johnston, Michael Shulver, Nigel Slack and Graham Clark (2020), Service Operations Management: Improving Service Delivery, Pearson, 5th edition.

17. 11 Answers to Check Your Progress Questions

1. (c) To reduce waste elimination targets

To reduce waste elimination targets is not an objective of lean management

2. (d) Respect for people

Respect for people is the philosophy in addition to elimination of waste in lean management philosophy.

3. (c) Service planning and scheduling

Service planning and scheduling is not a characteristic that will influence the implementation of lean practices in a service firm.

4. (e) Delphi Method

Delphi method is not a technique for the successful application of lean management in service firms.

5. (a) Internet

Internet services do not need inventory decisions.

6. (b) Leaner thinking

Leaner thinking needs to be implemented by organizations to achieve Learner Logistics

7. (a) Maximizing value addition

Maximizing value addition is the focus of lean management in addition to waste elimination

8. (d) Economic order quantity

Economic order quantity is not a principle involved in achieving minimal waste.

9. (b) Developing inventory management process

Developing the inventory management process is not a step of lean start-up framework.

10. (d) Validated learning

Validate learning is the metric for measuring the progress of Lean Start-ups.

Unit 18

Tools for Managing Services

Structure

"Excellent firms don't believe in excellence – only in constant improvement and constant change."

– Tom Peters

18.1 Introduction

Improving customer service is not a one-time exercise. Service organizations should listen to customer voice continuously and improve accordingly.

In the previous unit, we discussed lean management in service industry, inventory management in service industry, lean logistics and lean start-up concepts for new ventures.

Increasingly, services are becoming a science rather than an art. This unit examines the tools and techniques for effective management of services. With new thinking and associated methods, enormous benefits accrue both for the business and practicing managers. Selection of optimal site influences profitability. A decision system for allocation of resources to customers and determination of right customers to target, greatly affect the business health of service organizations. While the tools are largely quantitative in nature, they do

not require high-end mathematical applications. Further, the focus is on the application of the tools and not their sophisticated mathematical development.

In this unit, we will discuss tools for managing services covering site selection for service organizations, demand sensitive services, delivered services, quasi-manufacturing services, factor rating for demand sensitive services, mathematical solution methods for delivered services, tools for location selection for quasi-manufacturing services, scoring systems and balanced scorecard approach to services operations management.

18.2 Objectives

By the end of the unit, you will be able to

- Discuss site selection for different service organizations.
- Explain the application of factor rating, mathematical solution methods, scoring systems and balanced scorecards.
- Identify the issues associated with effective implementation.

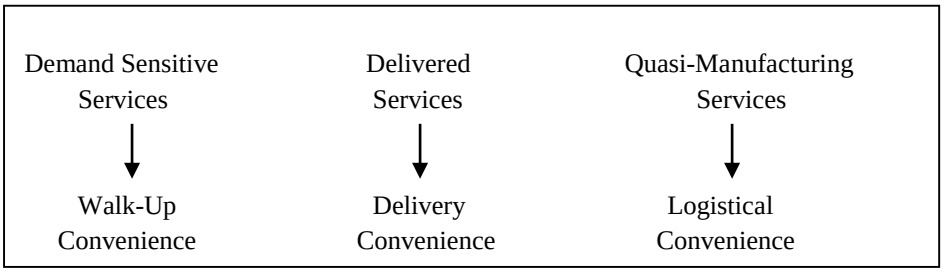
18.3 Site Selection for Service Organization

There are fundamental differences in the selection of sites for locating manufacturing organizations and service organizations.

- Selection decisions for manufacturing operations are infrequent and factors like cost reduction, tax concessions and policies of local governments and availability of low cost and skilled human resource come into play.
- On the contrary, for service organization the issues of site selection can be frequent and location decisions are based around how the location affects revenue generation. Further, despite effective management, wrong location may lead to failure. Often, such decisions are based on gut feel and popular opinion and not so much on scientific logic and facts.

Based on the needs, the issues and criteria vary for different types of service organizations. Figure 18.1 shows site selection aspects of service organizations.

Figure 18.1: Service Organizations: Principal Objective for Site Selection



Source: Metters, King-Metters, Pullman and Walton, Successful Service Operations Management 2006

18.3.1 Site Selection: Demand-Sensitive Services

Demand-sensitive service organizations like retail consumer stores, pharmacy dispensers, restaurants and banks focus on attracting customers through convenient location. Since the clients are to be energized and motivated to reach the service location, site selection assumes paramount importance and involves critical decision. At times, the difference could mean in being either in profit or in loss.

Walk-up convenience this, becomes a major decision criterion for potential customers.

18.3.2 Site Selection: Delivered Services

Delivered services imply that representatives of service organizations travel to the customers and deliver requisite services. Postal services, police and fire services, food / provisions / vegetables delivery, courier services, medical / emergency medicines / ambulance services, and maintenance / repair services fall under this category.

Delivery comfort, therefore, happens to be the major objective for such services.

18.3.3 Site Selection: Quasi-manufacturing Services

It is common that quasi-manufacturing services are offered from multiple locations. Ware housing facilities, in-land transportation, back-office operations led services by insurance companies and banks, call centers, reservation centers and several organizations engaged in the wholesale sector and ancillary support and maintenance services are select examples.

Therefore, minimizing the cost of logistics is a key objective and takes critical importance.

Decisions regarding location of corporate and regional headquarters / offices, internet-based services, disaster backup / duplicate systems, etc. may not lend themselves to scientific analysis and logical systems / models.

The following discussion looks at some tools used in managing services for the above types of service organizations.

Example: Walmart Allows Local Restaurants to Open Ghost Kitchens Inside their Stores to Address the Site

Location problem

Walmart, the retail giant enables local restaurant owners (who must close their operations due to the pandemic) to open “ghost kitchens” brand store in their stores. But for this, it would have been impossible for the owners to select sites and incur huge expenses in site selection, building a shop and building a customer base.

Contd….

With the Walmart offer, the owners are assured of good site, ready space and ready customer base. In fact, Walmart offers few months rent free and also reduced rents in the first few years for the business to stabilize and grow. It is a win win-win for Walmart and its tenants

Source: https://www.dallasnews.com/food/restaurant-news/2022/06/13/dallas-taco-shop-owners-to-launch-ghost-kitchen-inside-walmart-in-plano/ Accessed on 30/06/22

18.4 Factor Rating for Demand Sensitive Services

With regard to the selection of site for locating demand-sensitive services, a list of attributes that characterise an appropriate location is considered in each case. However, preparing a list is not good enough. A tool or technique that helps in presenting and weighing the conflicting advantages of the attributes for each location is the need of the hour. In the absence of one such agreed tool, organizations are forced to depend on the biased and often conflicting opinions of select executives.

Factor rating and regression help in achieving some order to the available data. Geographical Information System (GIS) is also being used for exploring location data. Given this scenario, it is generally understood and agreed that none of these three tools can totally replace the art of site selection. In a way, these three methods complement human judgment. They are best used through a data reduction process of eliminating the sites that have poor scores and examining the rest for a final selection.

In the application of a factor-rating tool, the possible attributes are listed and each is assigned a weight. The prospective sights/ locations are assigned values for each attribute that are combined with the attribute weights to arrive at an overall score.

There are two possible methods of factor rating:

1. With higher point total for more important attributes and
2. With each attribute judged on the same scale (e.g., 0-10). In either case the score is multiplied by a weightage based on the importance of the attribute.

Table 18.1 Application of Factor Rating to determine site for Fast Food Vegetarian Restaurant: Attributes, Site Values, Weightages and Rating Scores

Table 18.1: Factor rating to determine site for Fast Food Vegetarian Restaurant

Attribute	Scale	Weightage Multiplier
Income of neighbourhood Community	0-10	.40

Attribute	Scale	Weightage Multiplier
Nearness to popular shopping centers	0-10	.25
Accessibility (with parking)	0-10	.15
Visibility/ Ease of reaching	0-10	.10
Traffic/ Congestion	0-10	.10

Potential Site Locations >>>>	Kapra	AS Rao Nagar	Sainikpuri	Yellareddiguda
Income of neighbourhood Community	4	8	10	6
Nearness to popular shopping centers	2	7	10	4
Accessibility (with parking)	1	9	8	4
Visibility/ Ease of reaching	6	9	7	6
Traffic/ Congestion	3	8	8	5

Potential Site Locations	Total Score
Kapra	3.15
AS Rao Nagar	8.00
Sainikpuri	9.20
Yellareddiguda	5.10

Source: ICFAI Research Center

Example calculation of score: 10 x 0.4 + 10 x 0.25 + 8 x 0.15 + 7 x 0.1 + 8 x 0.1 = 9.20

Thus, the total rating scores for the four potential sites in Secunderabad area for a fast food vegetarian restaurant: Kapra, AS Rao Nagar, Sainikpuri, and Yellareddiguda are 3.15, 8.0, 9.2, and 5.1 respectively. Sainikpuri tops the list with a 9.2 factor rating score and hence merits serious consideration for decision.

The advantages of Factor Rating as a site selection tool are transparency and ease of use. It is easily understood for application. The disadvantages are arbitrary nature of weightage multipliers and rating scales; multicollinearity with several attributes being correlated with each other thereby the tool assigning points to the same attribute. Using common sense, this can be partly addressed.

In the regression tool, multicollinearity, where several attributes may be correlated with each other but receiving weightages, can be easily addressed using tests provided in elementary statistics. The weights that the attributes receive in this method are derived from their actual relationships to results and not by the managerial acumen or wisdom.

Further, the GIS tool links location to information in a user-friendly visual format. It also uses information stored in geographic databases to predict demand. Business use of GIS is increasing rapidly for different applications.

Example: San Francisco based Electric Vehicle Charging Service Company Voltas Selects Locations which can Attract Drivers for Shopping, Dining and Other Services

Voltas is a San Francisco based Electric Vehicle charging service company. While selecting locations for its charging stations it does not follow the traditional model followed by gas stations where location is selected just based on demand for fuel. That is the only factor Voltas follows a dramatically innovative approach. It wants to select locations where the communities do not have paying capacity. They need to be provided green energy option at prices they can afford. But the company needs to cross subsidies. So, they select locations where supermarkets, food joints and movie theaters are located. While the vehicle is charged, ads are shown on big screens. There is ad revenue. Then, for the duration of the charging (which may last from minutes to few hours depending on the power), the drivers can go and shop, dine etc. Those companies pay Voltas revenue streams.

Source: https://www.barrons.com/articles/shop-while-you-charge-up-your-car-how-voltas-ev-strategy-differs-from-beam-or-blink-51612915594, February 10, 2021. Accessed on 30/06/2022

Activity 18.1

Covid-19 pandemic affected jobs throughout the world. A software engineer was working in an IT company that was engaged in developing software applications for clients in the US. As many customers were not willing to place orders in view of the uncertainties imposed by the pandemic, the company closed down its operations in India and sent home the entire staff.

The software engineer decided to develop applications from home and offer to electrical car manufacturers. The market survey encouraged him to embark on such an approach to utilize his skills in the promising area.

• Identify the different types of services and select the most applicable type for this situation. • What are the characteristics of such a type of service? **Answer:**

Check Your Progress - 1

1. What is the principal objective of site selection for demand-sensitive services?
   a. Delivery
   b. Walk-up
   c. Logistical
   d. Web site
   e. Mobile App
2. Which of the following is an example of delivered services?
   a. Back office operation
   b. Ancillary
   c. Reservation
   d. Courier
   e. Banking
3. What is the major advantage of Factor Rating as a Site Selection Tool?
   a. ATPs
   b. Offices
   c. Ease of Use
   d. Professionals
   e. None of the four
4. Which of the following is of critical importance to location of quasi-manufacturing services?
   a. Cost of logistics
   b. Delivery convenience
   c. Reach in the neighbourhood
   d. Cost of labor
   e. Cost of infrastructure.

5. In the regression tool, what can be easily addressed using tests provided in elementary statistics?
   a. Ease of use
   b. Transparency
   c. Simplicity
   d. Visual information
   e. Multi-collinearity

18.5 Mathematical Solution Methods for Delivered Services

Since the objective is delivery convenience, these tools attempt to either minimize costs for multiple sites or maximize effectiveness from limited sites. To facilitate related decisions, the steps include agreeing on the service goal, mathematical representation of a service area, determine the demand from the service area, listing potential sites and establishing the relationship of sites to demand. The procedure delivers a good solution and not a perfect solution. Mathematical solution methods are getting increasingly sophisticated with the use of technology and sophisticated algorithms.

Example: Zepto (Retailer in the Fast Commerce Segment) Ensures Deliveries Within 10 Minutes with Innovative Delivery Strategies Based on Mathematical Models

Zepto has come up with a 10-minute delivery promise in select cities revolutionizing delivered services. It can supply around three thousand products with an average delivery time of 8 minutes. The company has grown by 50 percent in a year. Its business model is based on a network of dark shops (local distribution centers which are not visible to the customers). The company uses mathematical models to design and enhance the network to ensure its delivery promise. The factors which facilitate the fast commerce include traffic flows, geographical data, road network, weather, retail space and local intelligence.

Source: https://www.inventiva.co.in/trends/how-does-zepto-deliver-in-10-minutes/, June 7, 2022. Accessed on 30/06/2022

18.6 Tools for Location Selection for Quasi-Manufacturing Services

Most of these services like telephone call centers and back-office operations of financial services organizations entail little face-to-face contact with clients. The main objective being least costs, the decisions are to do with number of sites, respective locations, and staffing. Several commercial software products are available in different price range to provide optimal solutions.

In the order of lowest price to highest price, the software uses heuristics, deterministic simulation, and mixed integer/ linear programming methods. Heuristics represent 'rule of thumb' and 'gut feel' methods ranging from simple rules focusing on optimal solution to complex ones that are closer to the best possible solution. Deterministic simulations are programmed to provide the overall cost for a specified set of locations. Linear programming is used to find the best set of required number of locations from a given larger number of specified locations.

Example: Chennai is the Second Largest Data Center Hub in India due to Submarine Cable Landing Station and Other Critical Advantages

India is becoming a global hub for data centers with enabling government policies, cost advantage, robust infrastructure, and availability of skilled person power. Chennai has become second largest hub for data centers after Mumbai for the following contributing factors. Four undersea cable landing stations, surplus power, proximity to main Asian hubs are the factors responsible for this. The city also boats a within city connectivity.

Source: https://w.media/is-chennai-becoming-the-2nd-largest-data-centre-cloud-hotspot-in-india/, May 6, 2022. Accessed on 30/06/2022

18.7 Scoring Systems

Leading service organizations like home loan companies rely on recently developed scoring systems for a variety of purposes like attracting customers, selection of customers from a larger mass, allocation of resources among prospective clients, and data reduction.

Well-designed scoring systems are treated as company confidential. They are used for cost reduction. Scoring systems determine leads for conversion into prospects for a service product. Thus, there is tremendous scope to reduce costs for acquisition of clients.

Scoring models are also used in effective allocation of resources. These models help in replacing individual expert judgment with a cost effective and more reliable method. Scoring systems are used in healthcare industry to determine the general level of health in infants. Thus, the application of scoring systems is so widespread that the development of scoring systems for different service sectors in itself is a significant service industry.

Automobile insurance, education, healthcare, telemarketing/ bulk mail, retailers, merchant banks, retail banks and financial services, tax collectors, and utility companies are examples of organizations that benefit from increasing use of scoring systems.

Example: US Military uses Artificial Intelligence Based Models (Which Include Scoring Systems) to Decide who will get Medical Care when the Resources are Limited

When military personnel are severely injured in an operation, it is always a big challenge how to choose who will get the priority for medical care when the available resources are scarce. Historically humans used to decide based on experience and knowledge. But such heuristic-based decisions can be bad. So, US military is developing AI based models which use such techniques as "casualty scoring systems", injury data bases etc.

Source: https://www.washingtonpost.com/technology/2022/03/29/darpa-artificial-intelligence-battlefield-medical-decisions/ Accessed on 30/06/2022

18.8 The Balanced Scorecard (BSC) Approach to Services Operations Management

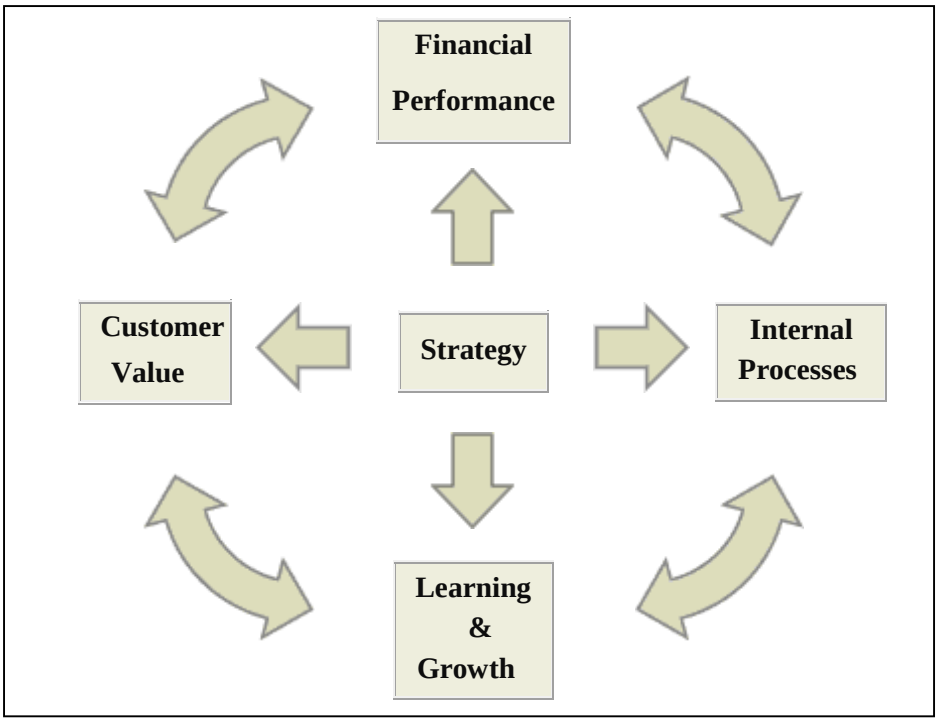
The BSC approach aims to balance customer, internal process, learning and growth measures against traditional financial measures. Financial indicators do not give the complete picture of an organization. Originally conceived as an improved performance measurement system, BSC has evolved into a strategic management system to implement strategy at all levels of the organization by facilitating clarification of strategy, communicating strategic objectives, planning, setting targets, aligning strategic initiatives, strategic feedback, and learning.

The BSC attempts to answer the important question, "How well are we doing?" by addressing intangible aspects to give the manager a bigger picture of performance. Thus, three performance aspects combine with financial performance to form the BSC framework:

1. The customer value: This is to do with what we offer to our customers. This comprises customer satisfaction, customer retention, and customer growth that follow directly if the customer values the products and services offered.
2. Internal processes: These deliver the value to customers through effective manufacturing and delivery systems.
3. Learning and growth: These assets relate to the skills, knowledge, and culture of the organization and are critical to the ultimate success of the organization.

Traditionally, these aspects have not been tracked by organizations as much as financial performance measures. Together, these aspects form 'The Four Perspectives' of BSC. The Balanced Scorecard framework is depicted in Figure 18.2.

Figure 18.2: Diagram of the Balanced Scorecard



Source: ICFAI Research Center

Each perspective can be explained by a key question (Table 18.2) with which it is associated.

Table 18.2: Perspectives of BSC and Key Questions

Perspective	Key Question
Financial Performance	To succeed financially, how should we appear to our stakeholders?
Customer Value	To achieve our vision, how should we appear to our customers?
Internal Processes	To satisfy our customers and shareholders, at what business processes must we excel?
Learning and Growth	To achieve our vision, how will we sustain our ability to change and improve?

The answers to each key question become the objectives associated with that perspective, and performance is then judged by the progress in achieving these objectives. Though there are four basic perspectives proposed, it is important to understand that these perspectives reflect a unique organizational strategy. And organizations vary in the nature of business. So the perspectives and key questions should be amended and supplemented as necessary to capture that strategy. For example, a non-profit or government organization would not have the same perspectives as a for-profit organization.

The BSC has been one of the most enduring management tools of the last twenty years. Surveys have revealed that more than 60% of Fortune 500 companies have implemented the BSC framework. It continues to be listed among the most important business tools for organizations across the world. Over a period, the BSC has been progressively applied in private sector companies, non-profit organizations, and government agencies. However, successful organizations among these provide testimony to support the understanding that, while strategy is important, it is the execution that counts.

Example: UK Based Brand Finance (leading global rating agency) rates Tata Group as the best Indian Brand by using a Balanced Score Card of Metrics Source

Tata Group is ranked as the Best Indian Brand by the Global Agency Brand Finance (BF). The agency also ranked Taj Hotels as the Strongest Indian Brand. The scoring system is not just based on one dimension. It used a Balanced Score card approach which includes many matrices under each of the four categories of BSC. It uses market research data from thousands of respondents from across the globe.

Source: https://timesofindia.indiatimes.com/business/india-business/tata-group-most-valuable-indian-brand-taj-hotels-the-strongest-report/articleshow/91941719.cms, June 2, 2022. Accessed on 30/06/2022

Activity 18.2

Leading service organizations rely on scoring systems for a variety of purposes like attracting customers, selection of customers from a larger mass, allocation of resources among prospective clients, and data reduction. Scoring systems determine leads for conversion into prospects for a service product. Thus, there is tremendous scope to reduce costs for acquisition of clients. They are also used in effective allocation of resources.

These models help in replacing individual expert judgment with a cost effective and more reliable method. Scoring systems are used in healthcare industry to determine the general level of health in infants. Thus, the application of scoring systems is so widespread that the development of scoring systems for different service sectors in itself is a significant service industry. Automobile insurance, education, healthcare, telemarketing/ bulk mail, retailers, merchant banks, retail banks and financial services, tax collectors, and utility companies are examples of organizations that benefit from increasing use of scoring systems.

You are required to discuss the perspectives in Balanced Score Card system and establish its effectiveness as a scoring system in service operations management.

Check Your Progress - 2

6. What type of method is Heuristic method?
   a. Deterministic
   b. Simulation
   c. Linear programming
   d. Rule of thumb
   e. Consultative
7. Which of the following tools leading service organizations rely on for a variety of purposes like attracting and selecting of customers?
   a. Scoring systems
   b. TQM
   c. Heuristics
   d. Regression
   e. Linear Programming
8. Which of the following is the popular use in allocation?
   a. Services
   b. Resources
   c. Machines
   d. Finances
   e. Time
9. Against which of the following measures the BSC approach aims to balance customer, internal process, and learning and growth measures?
   a. Policy
   b. Physical
   c. Financial
   d. Professional
   e. Empirical
10. Which of the bodies accredits only duly approved academic programmes and not educational institutions?
    a. QCI
    b. ISO
    c. SPIN
    d. NABH
    e. NBA

18.9 Summary

- Increasingly world economy is transforming into a services-oriented economy.
- Discourse on Strategic services operations is the new order of the day.
- Tools are continuously being developed to manage service operations.
- This unit has covered brief insights on the application of these tools to manage in the three types of services.
- The way to strategize service operations using BSC has also been explored.

18.10 Glossary

Balanced Scorecard: A performance metric that helps the organization in strategic performance control and strategic learning.

Quasi-manufacturing Services: They are most like manufacturing organizations yet they provide a service. These businesses have low customer contact and are capital intensive.

Heuristics: Represent 'rule of thumb' and 'gut feel' methods ranging from simple rules focusing on optimal solution to complex ones that are closer to the best possible solution.

Linear programming: A linear optimization technique that is used to find the best set of required number of (outcome) locations from a given larger number of specified locations (alternatives) which has a set of constraints.

GIS: Geographic Information System is a computer system that analyzes and displays geographically referenced information.

18.11 Self-Assessment Test

1. Write a short note on site selection for service organizations.
2. Explain the differences between factor rating, regression, and GIS as tools for selection of sites for service organizations.
3. Briefly explain the mathematical solution methods for delivered services.
4. Explain the tools available for quasi-manufacturing services.
5. Write a short note on the advantages of the application of scoring systems.
6. Explain the role of BSC in strategic services operations management.

18.12 Suggested Readings / Reference Material

1. Chase R. B., Ravi Shankar, Jacobs F. R. (2018), Operations and supply chain management, McGraw Hill, 15th edition.
2. Haskett J. L. (1986), Managing in the service economy, Harvard Business School Press.

3. Nitin Joshi, S. Rajagopalan (2019), Service Operations Management: Towards Excellence, Himalaya Publishing House, 1st edition.
4. Mathur S. S., S Mathur and Kenyon A. (2017), Creating Value: Successful Business Strategies, Routledge, 2nd edition.
5. Robert Johnston, Michael Shulver, Nigel Slack and Graham Clark (2020), Service Operations Management: Improving Service Delivery, Pearson, 5th edition.

18.13 Answers to Check Your Progress Questions

1. (b) Walk-up

Using easy to reach location, demand-sensitive service organizations attract customers. Therefore, Walk-up happens to be the principal objective of site selection in demand-sensitive services offering.

2. (d) Courier

Delivered services expect representatives of service organizations to travel to the customers and deliver requisite services. Postal services, police and fire services, food/ provisions/ vegetables delivery, courier services, medical/ emergency medicines/ ambulance services, and maintenance/ repair services fall under this category.

3. (c) Ease of Use

The advantages of Factor Rating as a site selection tool are transparency and ease of use. It is easily understood for application.

4. (a) Cost of logistics

Since generally quasi-manufacturing services are offered from multiple locations, minimizing the cost of logistics is a key objective that takes critical importance.

5. (e) Multi-collinearity

In the regression tool, multi-collinearity, where several attributes may be correlated with each other but receiving weightages, can be easily addressed using tests provided in elementary statistics.

6. (d) Rule of thumb

Heuristics represent 'rule of thumb' and 'gut feel' methods ranging from simple rules focusing on optimal solution to complex ones that are closer to the best possible solution.

7. (a) Scoring systems

Leading service organizations like home loan companies rely on recently developed scoring systems for a variety of purposes like attracting customers, selection of customers from a larger mass, allocation of resources among prospective clients, and data reduction.

8. (b) Resources

Scoring models are also used in effective allocation of resources. These models help in replacing individual expert judgment with a cost effective and more reliable method.

9. (c) Financial

The BSC approach aims to balance customer, internal process, and learning and growth measures against traditional financial measures. Financial indicators do not give the complete picture of an organization.

10. (e) NBA

As per NBA's regulations, only duly approved academic programs and not educational institutions are accredited and this too only at the written request after agreeing to abide by the accreditation manual, rules, regulations, and notifications issued.

Unit 19

Managing Service Projects

Structure

"Operations keep the lights on, strategy provides a light at the end of the tunnel, but project management is the train engine that moves the organization forward."

- Joy Gumz

19.1 Introduction

Project management is well structured, metrics oriented, and well defined methodology to be applied in both product and project scenarios, to assess the continued progress, gaps in actual Vs planned estimates, understand likely effects on the overall project cost, time, quality and schedule measures. As projects are the dynamic and real time activities, especially in services with intangible environment, successful management of every service project is necessary for brand image, profits, and customer delight.

In the previous unit, we discussed site selection for service organizations, site selection: demand sensitive services, site selection: delivered services, site selection: quasi-manufacturing services, factor rating for demand sensitive services, mathematical solution methods for delivered services, tools for location

selection for quasi-manufacturing services, scoring systems and balanced scorecard approach to services operations management.

Services were hitherto being managed as an art with a "gut feel" and "rule of thumb" approach. However, it is now turning out to be more as a science with scientific and quantitative tools being developed continuously to help managers to make effective decisions. The scale and volume of services are also increasing. Application of these tools and methods yields enormous benefits to the service organizations in terms of profitability. Depending on the nature and size of the service organization, there is a range of tools to choose from. This unit focuses on the characteristics of service projects, applicable project management concepts, cutting-edge tools, methods & techniques and the approach to face challenges and solve issues.

In this unit, we will discuss managing service projects. The concepts covered include characteristics of service projects, building a winning project team, project management concepts, network diagram, effective project management with PERT/CPM, crashing and crash costs and problems in implementation.

19.2 Objectives

By the end of the unit, you will be able to

- Identify the characteristics of service projects
- Explain the process of building a winning project team for managing service projects
- Define project management concepts
- Explain the process and application of PERT/ CPM networks
- Examine the challenges and issues related to service project implementation

19.3 Characteristics of Service Projects

Projects are important means of getting things done in the business management of any functional area for any service sector. The project comprises an integrated and interrelated set of activities developed to achieve stated project objectives with designated structure & resources within a specified time frame. A set of projects together achieves the business objectives of a services organization. An effective project management system clarifies what needs to be done when and what resources are required. Further, the deliverables and who, where and how part are understood.

The project objectives are discovered in terms of tangible and intangible deliverables. Projects are universal in nature ranging from small and simple services to long duration, integrated and continuously changing and evolving service offerings. While their objectives could be diverse, the basic and advanced

tools and techniques used to achieve specific objectives are the same. Selection of the right tools and techniques for a given context is indeed a challenge. Despite the size and complexity, service projects have some common characteristics. They are:

1. **Numerous and diverse stakeholders**: Stakeholders come from different backgrounds, experiences, expectations and interests in the outcome of the project. There are teams of stakeholders operating and managing the interests of both the services organization and its client. Each may comprise of its own management, advisors, managers, employees, consultants and contractors. Further, the stockholders, the general public, political representatives, professional & social organizations and media may add up to complete the stakeholders' list. The challenge lies in not only identifying their diverse interests and expectations in the processes and outcome of the service project but also satisfactorily addressing the same. All these add to the complexity of the project.
2. **Unique and distinct focus**: In a way, every service project looks different with its own USPs. Nothing seems to be a repeat project. Change of technology, nature of processes, skills and resources add to the uniqueness. Each project looks distinct and presents new challenges
3. **Open to uncertainties:** Each service project, being unique, presents new business offerings, new uncertainties, unplanned, and unexplained events arise affecting objectives, resources, timelines and success.
4. **Absence of clear authority and accountability**: Often, projects are executed from multiple functional areas. The formal management structure and work culture could be different. Conflicting perspectives may arise due to a lack of clarity on responsibility, authority and accountability. With limited resources and span of control, problems may surface. All these present a challenge for success.
5. **Fixed timeline**: Poor communication and coordination, delays and mistakes may result in project completion issues. Suitable alternatives may not be readily available.
6. **Finite and limited resources**: Optimal allocation of resources among competing functional areas and satisfying the critical requirements that ensure on-time completion of the project are major challenges to be dealt with.

Read together, individually and collectively, the above characteristics give useful insights into the problems and issues that affect the completion of service projects. Generally speaking, the definition of success is not very clear. Identification of the key factors and the metrics that determine their level of achievement are prerequisites for qualifying success and failure in managing service projects.

Example: Customer Service Delivery

American Express was a well-known, top ranked credit card company, which stood among the top services groups. It offered their customers, a number of additional worldwide benefits like: free access to airline lounges, 'complimentary travel flight credit', individual insurance etc. American Express was well recognized for the 24/7 support line with global partners network. That earned the name, that they were a company which really connects with their customers wherever they were globally.

The characteristics of their services were: provision of services across borders, covering all time zones, satisfying customers by speaking different languages, providing services reliably and accurately to customers, wherever customers move globally.

Source: https://www.qualtrics.com/blog/customer-service-examples/ (September 30, 2020) Accessed on 16th July, 2022

19.4 Building a Winning Project Team

Teams are professionally built to manage service projects. Appropriate structure, allocation of resources, training manpower, developing standard operating procedures & practices, establishing monitoring and rewarding systems, etc. are necessary imperatives for a winning team. The goal of any service project is to 'complete on time, within budget, and to the specifications' even though it is a laudable and challenging objective.

Real life projects are dynamic and relatively vague processes and, therefore, are subject to mid-course uncertainties and changes. Despite the destination being clear, processes tend to be uncertain. At times, requirements and resource levels may change, so too timelines. All the same, many projects are said to have been completed successfully resulting in the emergence of many winning project teams.

This brings us to the question of how we determine that any project is a success. When stakeholders set about examining this, they may hold diverse interests, values, objectives, and goals. These are also susceptible to change over time.

For example, success may be measured in terms of reduction in costs for the client and also in terms of revenue generated for the consultant by the engagement. Identifying the measures that are most valid is most important. Hence, for successful project management, clear understanding and communication of project objectives are very important. These are then amenable for measurement and the associated metrics help in monitoring. Further, when the common causes for failure are addressed, a clearer understanding of the factors for success emerges.

Example: Building Project Team for Hospital Services

For more than 50 years, Hospital El Pillar, Guatemala City, Guatemala was well recognized for serving their patients with the highest level of wide ranging medical care covering, 'pediatrics, intensive care, oncology, cardiology and outpatient care'. The hospital's management recognized that, the application development team which focusses on 'solutions and strategies' helping hospital operations and ultimate outcomes, needed a focus and required strengthening of the team.

As part of the project team building, the first change made in the implementation was, redefining responsibilities of the application development team, by separating the support functionality activities from this team to build a winning team. This brought needed focus for the team to work on core purpose activities. The team learnt to use disciplined agile (DA), using its feature of starting at the place where they left in implementation. The team also got the benefit of optimizing all manageable activities while using the hospital's technologies and systems which gave continued immediate impact, a feature of DA.

The team got greater visibility on using dashboards, to gain working speed, average days to complete stories, tasks, reduce iterations etc. The application development team completed complex, high-profile development projects for the hospital. They also provided 'better solutions with least errors" leading for management to build better trust on the team.

Source: https://www.pmi.org/business-solutions/case-studies/hospital-el-pilar (23rd March, 2022) Accessed on 16th July, 2022

19.5 Project Management Concepts

For achieving success in managing success in service projects, one can employ both qualitative and quantitative methods and techniques.

Qualitative methods are mostly derived from experience. When the outcome of a project borders on failure experience, the approach is to analyze the root causes for failure and evolve appropriate methods to overcome them in relevant future projects. Thus, the focus is on what not to do rather than what to do to achieve success. This has been the case even on projects of space missions. Possible qualitative techniques in different areas are:

1. **Managing uncertainties:** As real world projects are faced with uncertainties, the best way to get adequately prepared is through conservative planning like budgeting 20% more resources than actually required, the markup percentage for each resource being determined based on 'gut feel'. This action creates an opportunity, if necessary to exceed the expectations as well

2. **Managing expectation:** Most critical to the success of a service project is achieving stakeholder expectations by monitoring and controlling the emerging changes with a view to understand and positively influence stakeholder expectations over time through:
    a. A conservative approach to project planning to effectively positioning for exceeding stakeholder expectations
    b. Imparting requisite execution and managerial skills to project managers and personnel in managing stakeholder expectations
    c. Developing softer people skills among the managers to effectively communicate and positively influence the expectations of diverse stakeholders with varied interests
3. **Managing increase in project deliverables:** Planned and unplanned increase in deliverables during the project life cycle occurs due to ineffective communication, unplanned changes in scope, and mismanaged expectations. This can be overcome through:
    a. Communicating in writing clearly defining project and work objectives to all stakeholders and understanding the related expectations of all stakeholders and documenting the agreed scope in a written form.
    b. Entering into contracts that limits project scope, objectives and deliverables of all concerned stakeholders and also clarifies what is not within the scope of the project.
    c. Budgeting for and creating a capacity cushion to cater to a reasonable increase in stakeholder expectations and increase in project workload

Apart from qualitative methods and techniques, cutting-edge technological skills and scientific tools and techniques are also important for effective management of service projects. Quantitative tools like network diagrams offer cutting-edge techniques for planning and managing successful service projects.

Example: Project Management for Health Care Activity

AstraZeneca Pharmacy Company partnered with the University of Oxford on a project, to arrive at the solution for vaccine problem of Covid-19, following the PMI (Project Management Institute) standards. The objectives of the project management were: managing all related critical trails and in parallel escalating the manufacturing capacity. An additional dimension was 'regulatory requirements and compliance framework challenges' put forth by the customers who were mainly governments. As part of building the infrastructure for the project management, they setup the PMO (Prime Minister's Office) office for their R&D division completely based on the PMI's PMBOK (*Project Management Body of Knowledge).*

Contd….

In addition, project management related environment was built fast to address complex challenges like identifying internal experienced development managers for vaccine development; ensuring that every necessary project management process was in place for the development of the vaccine at required speed to deliver on time; and creating an internal government contracting organization for the support of the project on hand. As of July 2021, AstraZeneca released 1 billion doses for supply to 170 countries.

Source: https://www.pmi.org/business-solutions/case-studies/astrazeneca-case-study (August 2021) Accessed on 16th July, 2022

Activity 19.1

Hyderabad Metro Rail Project was one of the most prestigious projects of the Government of Telangana. It was reported to be a role model for other such projects in the country due to its successful execution.

You are required to identify the characteristics of a service project and map each one of them to the Hyderabad Metrorail project.

Check Your Progress - 1

1. Which of the following is the most important starting point for a project management system to focus before working out a strategy for implementation?
    a. Identification of activities
    b. Planning & monitoring
    c. Identification of resources
    d. Identification of manpower
    e. Preparation of budget
2. Which teams help in operating and managing the interests of both the services organization and its client?
    a. Suppliers
    b. Clients
    c. Consultants
    d. Advisors
    e. Stakeholders

3. Which of the following helps in identification of the key factors that determine level of achievement to facilitate qualification of success and failure of a service project?
   a. Metrics
   b. Characteristics
   c. People
   d. Professionals
   e. None of the four
4. Despite destination being clear, what is the state of processes in execution of projects?
   a. Delayed
   b. Failure
   c. Confused
   d. Uncertain
   e. None of the four
5. Which of the following is not a characteristic of service projects?
   a. Diver customers
   b. Unique and distinct focus
   c. Uncertainties
   d. Absence of clear authority and accountability
   e. Unlimited resources

19.6 Network Diagram

A service project comprises a set of integrated and interrelated activities. A network diagram is a pictorial representation of the activities and their precedence relationships. It helps in answering questions related to effective project management like:

1. How long the project will take for completion?
2. What are the critical paths?
3. Which activities fall on the critical path?
4. Where are the slacks?

To prepare a network diagram, one needs a complete set of activities and their durations and precedence relationships. Omissions and errors in this regard may significantly affect the success of the project. It is good to take up a small project to clarify in all details the principal project activities and requirements. A Work Breakdown Structure (WBS) can then be developed.

Example: Network diagram data for class room construction 2020

Adiewoso in the Western Region of Ghana decided to build a 3-unit classroom block for pupils of 5 to 10 years, and were adopting all project management principles. The project period was June 15, 2018 to January 14, 2019, with a total cost of the project approximately $63,265. During the assessment of the project at the end of July: activities A through H - completed, activities I and J - in progress, and activities K and L – yet to start.

Estimation of Activities Duration

Activity	Predecessor activity	Activity duration (Days)
Project Start		0
A	SS	20
B	SS	8
C	SS	7
D	B	33
E	B	15
F	B	5
G	C	19
H	A	11
I	D	13
J	F	44
K	E, I, J	67
L	G, K	33
Project Finish	H, L	0

Source: https://www.researchgate.net/figure/Network-Diagram-of-the-Case-Project_fig2_339211080 (February 2020). Accessed on 16th July, 2022

19.7 Effective Project Management with PERT/ CPM

Effective project management of a large-scale project requires planning and coordination of several activities, developing a realistic & implementable schedule and monitoring & controlling for completion. Two closely related operations research (OR) techniques, Programme Evaluation and Review

Technique (PERT) and Critical Path Method (CPM), help project managers in discharging these responsibilities for any kind of project. They use network diagrams for pictorial representation. The use of MS Project or tailor-made organization-specific software packages is also an order of the day. Over time, PERT and CPM have evolved and merged to the extent that today's project management often covers the important features of both. Thus, practitioners now use the two names interchangeably and also use the new acronym PERT/CPM. However, distinct original features of each are easily perceptible.

Table 19.1 displays nine activities, durations, and precedence of a sample systems development project (Source: Metters, Richard D., King-Metters, Kathryn H., Pullman, Madeleine. and Walton, Steve. '*Successful Service Operations Management*', 2006).

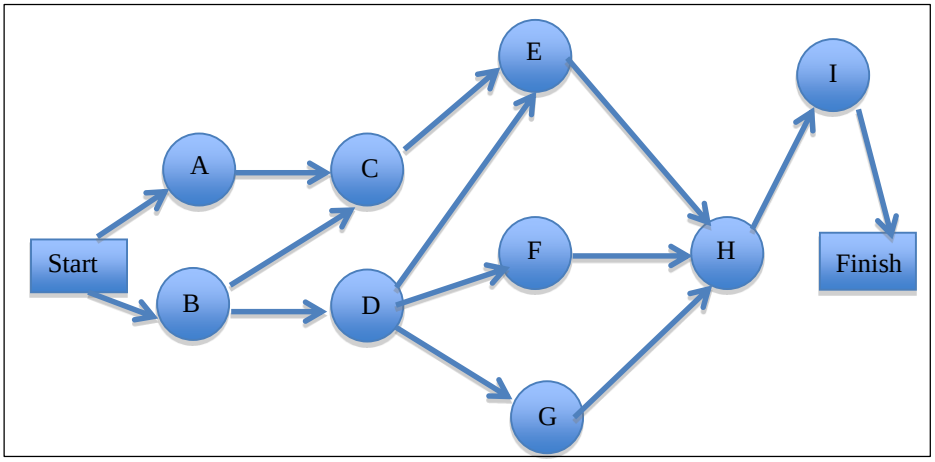
Table 19.1: Activity Profile for a Sample Systems Development Project

Activity	Description	Duration (weeks)	Immediate Predecessor(s)
A	Process analysis	4	-
B	Data analysis	3	-
C	Report design	5	A, B
D	Database design	5	B
E	Code reports	4	C, D
F	Code data entry	3	D
G	Code database	4	D
H	System and network testing	3	E, F, G
I	Installation and training	1	H

Activity-On-Node (AON) method and Activity-On-Arrow (AOA) method are the two universally accepted diagramming approaches to project networks. The selection is purely a personal choice.

Figure 19.1 presents an AON project network diagram for the above systems development project based on two rules: Each node represents a single activity and the arrows indicate precedence relationships. Dummy activities are introduced as required. Nodes and arrows are built using precedence relationships. Dummy start and end nodes signal the start and end of the project.

Figure 19.1: AON Network for the Sample Systems Development Project



Source: ICFAI Research Center

Project management software like Microsoft Project (MS Project) can also be used to generate a network diagram. This in turn is used to develop a project schedule. The project schedule comprises the duration of the project and start and end times for each activity. A gantt chart is another way, where activities are entered in a column and related timelines are presented horizontally with bars on a rolling calendar. The duration of the project is derived from the longest path, using the Critical Path Method (CPM), which connects start and end nodes with distinct activities. The sum of the durations of these activities is the duration of the project.

The network diagram identifies five possible paths for the completion of the project. The activities on these paths add up to five project durations. The critical path (the longest path) A-C-E-H-I adds up to a duration of 17 weeks. The other paths and respective durations are B-C-E-H-I (16 weeks), B-D-E-H-I (16 weeks), B-D-F-H-I (15 weeks), and B-D-G-H-I (16 weeks). The activities on the critical path are termed as critical activities. They are critical because their delayed completion results in overall project delays. Thus, their progress and completion require focus and continuous management attention.

Further, a project may have multiple critical paths of the longest duration. In large projects, computer packages are used to identify the same and to devote additional management effort on the related activities. However, lack of due attention on noncritical activities leads to some new activities becoming critical and emergence of new critical paths.

Non critical activities have slack, measured in terms of the time duration they can be delayed before turning out critical and delaying the overall project. Thus, activities with little or moderate slack also need adequate attention. Activity slacks are determined by computing early start, early finish, late start and late finish timings. The first two are computed starting from start node and the next

two starting from the finish node and working backward. For critical path activities, slack is zero. On computation, we discover that there is a slack of 3 and 3 days respectively on activities F: Code data entry – 2 weeks and I: Installation and training – 3 weeks. These can be gainfully utilized in managing critical path activities. Thus, the initial project plan for execution is certainly not the same as the one that would be implemented. They are dynamic and therefore the project networks are continually updated to reflect the ongoing changes during the life cycle of the project.

Example: PERT/CPM in Road Construction

One of the Indonesia's infrastructure developments project undertaken by the government was road pavement. CV. X was located in Namangan, and a construction project services company in the development, implementation, won the asphalt project tender with a contract value of IDR 4.046.873.346 and duration of 114 days. To control the difference between the schedule plan and the realization of development, CV. X needed to use network planning with the PERT – CPM method. The three estimate values, ta, tm, and tb for PERT, were obtained from the project executor as an estimate of the time required to carry out each activity.

The expected time (te) and variance (σ2) are computed as

$t_e = (t_a + 4t_m + t_b)/6$ and $\sigma 2 = [(t_b - t_a)/6]^2$

Table 1 – Collected data on project

No. Activity	Duration Day				
	t_a	t_m	t_b	t_e	σ^2
A. Re-Measurement and Survey	2	4	6	4	0.44
B. Pillar Installation	4	6	8	6	0.44
C. Making Director Keet Container 1	3	5	7	5	0.44
D. Installation of Nameplate Project 1	2	4	6	4	0.44
E. Traffic Security	3	5	7	5	0.44
F. Land Clearing	4	5	9	5.5	0.69
G.Soil Test	3	4	5	4	0.11
H. Procurement of Material	5	6	7	6	0.11
I. Procurement of Heavy Eq.	8	10	12	10	0.44
J. Excavation	5	7	9	7	0.44
K. Sand lining	3	5	7	5	0.44
L. Micropile Installation	4	6	8	6	0.44
M. Work Floor Casting	7	9	11	9	0.44
N. U-Ditch Installation	4	7	10	7	1.00
O. Granular Pavement Excavation	5	7	9	7	0.44
P. heap Land	6	8	10	8	0.44

No. Activity	Duration Day				
	t_a	t_m	t_b	t_e	σ^2
Q. Class B Aggregate Base	7	9	11	9	0.44
R. Class A Aggregate Base	8	11	14	11	1.00
S. The adhesive layer	4	7	10	7	1.00
T. Laston asphalt wear coated	4	6	8	6	0.44
AC/WC	5	7	9	7	0.44
U. Laston Layer Between Levelers	4	7	10	7	1.00
AC-BC	5	8	11	8	1.00
V. Road Shoulder Condition	3	5	7	5	0.44
Retrieval	8	11	14	11	1.00
W. Thermoplastic Road Markings	9	12	15	12	1.00
X. Finishing	8	10	12	10	0.44

The plan, schedule, and control shipping projects using the PERT – CPM method were computed from the given data.

Source: https://www.researchgate.net/publication/361501867_Network_Planning_Analysis_on_Road_Construction_Projects_by_CV_X_Using_Evaluation_Review_Technique_PERT_-Critical_Path_Method_CPM_and_Crashing_Method (June 2022). Accessed on 16th July, 2022

19.8 Crashing and Crash Costs

Using scientific and statistical analysis and methods, project networks could be adapted to explicitly address risks and uncertainties for effective service project management. Treating activity durations as probabilistic rather than certain, deterministic, and fixed, one can estimate the probability of finishing the project in a specified time frame. This approach requires optimistic, most likely, and pessimistic time estimates for each activity. The process entails calculation means & variances, analyzing probabilities and examining normal distribution and simulation concepts. The objective is to ascertain the chances of meeting successfully the project deadlines. The insights from these statistical tools help project managers to look at deploying additional resources, altering due dates, and reworking project deliverables.

Further, in the process of effective service project management, to meet diverse stakeholder interests and expectations, trade-offs between time, cost, and performance are inevitable. However, dealing with them scientifically and professionally is the order of the day. The choices available for project managers and teams are:

- Deploying additional resources to expedite project completion
- Altering specifications and deliverables
- Changing and managing stakeholder expectations
- A combination of all the above three approaches

Project crashing is the process of making time-cost trade-offs to achieve revised stakeholder expectations. This process requires normal time (NT), normal cost (NC), crash time (CT), and crash cost (CC) estimates of activities on the block. Assuming that activities can be crashed any number of weeks between normal time and crash time, per week crashing cost comes to (CC-NC) / (NT-CT). Crashing activities with the highest per week crashing cost amount to reducing the greatest amount of time for the least amount of money. However, this may not necessarily mean that the project finishes in reduced time duration. In this regard, three factors come into play:

1. It makes sense to crash only critical path activities. Hence, determine the critical path.
2. Identify critical path activities that reduce the critical path by one period for the highest per period crashing cost.
3. Stop when the desired project duration is achieved or no more activities can be crashed. Else, go to step 1.

Clearly, the above process is iterative. All critical paths must be reduced simultaneously. The crashing technique of managing projects facilitates the reduction of project durations by a trade-off between time and money. In the process, some important qualitative aspects like stress levels, extended work timings, and use of overtime, may be ignored if not explicitly considered. This may affect employee morale and attitude in negative ways.

Example: Project Time Crashing Using Liner Programming

"Development of heat transfer correlation in micro channels" was a research project where, linear programming model technique was applied to arrive at the reduction of project duration by crash costs approach. To begin with, normal and crashing costs for the project activities were obtained from the principal investigator of the project and were used for conducting the analysis in the excel solver. The main objective of the project was to "Crash the Project Duration" from originally proposed and expected completion times.

A project network diagram helped compute the "Earliest Start Time, Earliest Finish Time, Latest Start Time, Latest Finish Time, and Critical Path Length" which was used for formulating the linear programming mathematical problem. It was also ensured that, cost required for reduction in project duration by crashing was optimum. At the end, the findings concluded that, project if completed without crashing would be 300 days and project cost ₹ 470300, if it gets completed in 255 days by using crashing method, the project cost marginally increased to ₹ 493922.

Source: https://iopscience.iop.org/article/10.1088/1757-899X/998/1/012057/pdf (2020). Accessed on 16th July, 2022

19.9 Problems in Implementation

Projects may have dynamic and complex processes and are a standard feature of service organizations. They vary in size and importance. At times, their specific characteristics make them difficult to effectively manage for success. As has been seen, service projects are affected by multiple stakeholders, unique & distinct focus, uncertainties, lack of clarity on authority and accountability, inadequate structure, fixed timelines, and finite & limited resources. Each of these characteristics introduces additional complexity that makes effective project management that much more difficult. This requires effective management of stakeholder expectations, effective communication, and agreement on project outcomes on different parameters.

Effective and successful project management requires addressing common causes for failure and application of cutting-edge and scientific tools and techniques to plan and control activities and events during the life cycle of the service project. While mismanagement of uncertainties, improper management of stakeholder expectations and unplanned changes in scope and quantum of deliverables are common causes for failure, conservative project planning emerges as a critical success factor. Network diagrams offer an exceptional tool for effective project planning, scheduling, and re-planning for successful completion.

Example: Challenges in Construction Projects

Malaysian government wanted to integrate environmental management plan (EMP) in all their construction projects to reduce environmental effects. After careful literature review, interviews with industry professionals, surveys, using ANOVA, 21 main challenges and their interrelationships in project objectives implementation were identified. The two major components filtered out were: people-related and project-related.

People-Related Challenges: Many times, the low environmental awareness, put off the project stakeholders, in planning and achieving planned environmental protection. Also, it was an observed fact that, stakeholders gave more weightage to project objectives like time, cost, and quality, than environmental impact reduction, and had negative attitude towards environmental effects. The only solution was to raise the environmental awareness, and disclose the data from construction industry about the damage from pollution. Thus, greater success could be seen with positive attitudes and dedication and commitment among the project stakeholders in implementing allied measures for reducing environmental effects.

Project-Related Challenges: EMPs implementation was an extra cost activity. Project stakeholders in construction projects preferred to avoid uncertainties which affected business to save better and more.

Contd….

Clients were interested to invest in environmental management, but the contractors were not motivated because of increased operating costs, due to requirement of skilled and trained labor, heavy machinery, and specified advanced materials. Especially, contractors in Malaysia were not ready to pay for improved construction waste management. This rejected the contractors' attitudes in implementation of EMP, and unwillingness to participate. They implemented EMPs to barest minimum, for environmental protection control.

Source: https://www.researchgate.net/publication/360771239_Challenges_for_Implementing_Environmental_Management_Plans_in_Construction_Projects_The_Case_of_Malaysia (May, 2022). Accessed on 16th July, 2022

Activity 19.2

Any project faces challenges because of various factors, internal and external. Time over runs and cost overruns are common in many projects, more so when they are sponsored by governments.

Identify two major challenges faced by the Hyderabad Metro Rail project for executing the project and the ways in which they were addressed.

Check Your Progress - 2

6. Which quantitative tool offers cutting-edge techniques for planning and managing successful service projects?
   a. Network
   b. Flow
   c. Layout
   d. Process
   e. None of the four
7. Which of the following representation is used in a network diagram of the activities and their precedence relationships?
   a. Qualitative
   b. Quantitative
   c. Physical
   d. Pictorial
   e. Random

8. In AON project network diagram, each node represents which of the following?
   a. An event
   b. One activity
   c. An occurrence
   d. A milestone
   e. None of the four
9. Project crashing is the process of making which of the following trade-offs to achieve agreed stakeholder expectations?
   a. Time-manpower
   b. Deliverables-cost
   c. Time-cost
   d. Manpower-money
   e. Deliverables-money
10. While mismanagement of uncertainties, stakeholder expectations, and quantum of deliverables can be causes for project failure, which of the following emerges as a critical success factor?
   a. Mismanagement of uncertainties
   b. Improper management of stakeholder expectations
   c. Unplanned changes in scope
   d. Quantum of deliverables
   e. Conservative planning

19.10 Summary

- Effective project management ensures the success of service projects.
- The characteristics of service projects have been explained in detail.
- The process and steps used in ensuring the success of service projects have been explored.
- The project management concepts and the application of qualitative and quantitative tools and techniques have been introduced.
- The PERT/CPM technique has been covered in detail. Related to project management, the concepts of crashing and crash costs have been explained.
- Certain issues and problems encountered during the service project life cycle have been explored.
- All in all, effective project management of service projects results in increased profitability for service organizations.

19.11 Glossary

CC: Crash Cost. It is the cost of resources added for the least cost possible for a project activity

CPM: Critical Path Method. It is a project modeling technique that is used by project managers to find the important deadlines and deliver a project on time. In a project, the critical path is the longest distance between the start and the finish, including all the tasks and their duration.

CT: Crash Time. It is a method of shortening project duration by reducing the time of one or more critical project activities

NC: Normal Cost is an estimate or predetermined cost for a project activity.

NT: Normal Time is an estimate or predetermined time for a project activity.

OR: Operations Research. It is the application of scientific principles to business management, providing a quantitative basis for complex decisions.

PERT: Program Evaluation and Review Technique. It is a project management tool to schedule, realize and coordinate tasks within the project.

USP: Unique Selling Proposition. Is a marketing strategy of informing customers about how one's brand or product is superior to those of competitors.

WBS: Work Breakdown Structure. It is a popular project management tool. It is a diagram that helps break down large projects into smaller and more manageable parts that contain the project deliverables or outcomes that it will complete.

19.12 Self-Assessment Test

1. Enumerate and briefly explain the characteristics of service projects.
2. Write a short note on how to ensure the success of a service project.
3. Explain the qualitative techniques used in managing service projects.
4. Write a short note on the application of PERT as a tool for managing service projects.
5. List the differences between PERT and CPM and briefly describe CPM as a tool for managing service projects.
6. Write a short note on crashing and crash costs.

19.13 Suggested Readings / Reference Material

1. Chase R. B., Ravi Shankar, Jacobs F. R. (2018), Operations and supply chain management, McGraw Hill, 15th edition.
2. Haskett J. L. (1986), Managing in the service economy, Harvard Business School Press.

3. Nitin Joshi, S. Rajagopalan (2019), Service Operations Management: Towards Excellence, Himalaya Publishing House, 1st edition.
4. Mathur S. S., S Mathur and Kenyon A. (2017), Creating Value: Successful Business Strategies, Routledge, 2nd edition.
5. Robert Johnston, Michael Shulver, Nigel Slack and Graham Clark (2020), Service Operations Management: Improving Service Delivery, Pearson, 5th edition.

19.14 Answers to Check Your Progress Questions

1. (c) Identification of resources

An effective project management system clarifies what needs to be done when and what resources are required.

2. (e) Stakeholders

Stakeholders come from different backgrounds, experiences, expectations and interests in the outcome of the project. There are teams of stakeholders operating and managing the interests of both the services organization and its client.

3. (a) Metrics

Identification of the key factors and the metrics that determine their level of achievement are prerequisites for qualifying success and failure in managing service projects.

4. (d) Uncertain

Despite the destination being clear, processes in the execution of projects tend to be uncertain. At times, requirements and resource levels may change, so too timelines.

5. (e) Unlimited resources

Unlimited resources is not a characteristic of service projects.

6. (a) Network

Quantitative tools like network diagrams offer cutting-edge techniques for planning and managing successful service projects.

7. (d) Pictorial

A network diagram is a pictorial representation of the activities and their precedence relationships. PERT/CPM and Gantt Charts are two such examples.

8. (b) One Activity

In, AON project network diagram, each node represents a single activity and the arrows indicate precedence relationships.

9. (c) Time-cost

Project crashing is the process of making time-cost trade-offs to achieve revised stakeholder expectations.

10. (e) Conservative planning

While mismanagement of uncertainties, improper management of stakeholder expectations, and unplanned changes in scope and quantum of deliverables are common causes for project failure, conservative planning emerges as a critical success factor.

Unit 20

Application Domain in Services

Structure

"Profit in business comes from repeat customers, customers that boast about your project or service, and that bring friends with them."

- W. Edwards Deming

20.1 Introduction

Every domain having service operations need to understand that, excellent customer service at every touch point, connects with customers' at heart, and these delighted customers are loyal, become repeat customers and automatically promote the service provider's business, helping to get more customers and enhance brand name.

In the previous unit, we discussed managing service projects. The concepts covered include characteristics of service projects, building a winning project team, project management concepts, network diagram, effective project management with PERT/CPM, crashing and crash costs and problems in implementation.

Global economic scenario is increasingly becoming services-oriented. In terms of turnover, services organizations are matching with the best of manufacturing

companies. In terms of profitability, successful service organizations are proving a shade better than leading manufacturing companies. The domain for application of services operations management is vast and varied. As mentioned, phenomenal increase in the scale of operations of services led to broad classification into multiple services sectors like IT/ITES, financial services, healthcare services, hospitality, travel and tourism services, education services, media and entertainment services, legal services, and so on. Professional and strategic management practices and application of scientific and mathematical tools and techniques in managing services have become a part of standard operating practices.

In this unit, we will discuss application domain in services covering various service sectors. The topics include services operations management in different sectors/ industries such as IT/ ITES sector, financial services, healthcare services, travel, tourism, and hospitality services, education services, media and entertainment services, legal services and operational issues in services sectors.

20.2 Objectives

By the end of the unit, you will be able to:

- Explain the approach of services operations management in different sectors/ industries.
- Discuss Services Operations and Applications in IT/ ITES sector, financial sector, healthcare sector, hospitality, travel & tourism sector, education sector, media and entertainment sector, *and* legal services sector.

The following sections give an overview of services operations management philosophy and practices in different application domains.

20.3 Services Management: IT/ ITES Sector

Information Technology (IT) sector covers a wide-range of software and hardware development activities. In terms of services, the examples include IT consultancy, generic / tailor-made software product/ systems development, IT management, and maintenance services. Information Technology Enabled Services (ITES) cover a wide range of services, traditionally implemented through, Business Process Outsourcing (BPO), like:

- Routine office operations like:
    - Accounting, data processing / mining.
    - Billing and collection, e.g. Telephone and Tax bills
    - Claims processing, e.g. general and life insurance
    - Cash and investment management for financial institutions.
    - Pay roll and compensation credits and internal/ external audits.
- Call centers that provide client interactive services
- Medical Transcription

BPO organizations execute the services either through voice or non-voice methods depending upon nature of work. Routine operations run on traditional lines with human resource deployed both in client and BPO organizations. Examples include data entry, transaction processing, addressing queries, and managing all routine business processes. Call centers can be in bound (received from) or out bound (made to) with respect to clients. Examples include help desks, web-based email/ text services, sales support, tele-marketing, reservations, financial services, back end operations, client contact/ interaction, and customer relationship management. Medical transcription deals with preparing both voice and non-voice medical reports/ records in compliance of statutory requirements for medical applications. This is based on the doctor's recorded message on the patient's diagnosis/ treatment. Extensive commonality in offerings led the two sectors being called together as IT/ITES.

There are a number of operational issues in this dynamic sector. They include working at client's timings, diversity in work force and attendant cultural issues or on-site posting issues are real problems for IT/ITES. In view of the globalization of this sector innovative solutions are being found to address these aspects.

Example: Customer Service Management at BPO

Atento, which was popular for varied BPO services in 16 countries, partnered with Avaya to leverage 'AI and contact centre technologies', which helped build stronger relationships, boosting customer experience in the established complex digital world. Avaya's AI technologies provided multichannel interactions, ensuring the necessary help to employees for aligning conversations, spanning multiple platforms. Atento brought in different levels of agility, intelligence and efficiency. AI functionality helped Atento to evaluate language and voice inflections, recognizing customer satisfaction related parameters like: attitudes, opinions and emotions. With the joint working, Atento gained measurable improvements in productivity, increased customer satisfaction, and more in-calls. After call work on client's CRM records was reduced by 65%. This helped Atento measure radical improvements in customer experiences at lower costs.

Sources: https://www.cxtoday.com/contact-centre/8-insightful-cx-in-bpo-case-studies-to-read-in-2022/ and
https://www.avaya.com/en/success-stories/atento/ (2022) Accessed on 19th July, 2022

20.4 Services Management: Financial Services Sector

Financial services sector is engaged primarily in initiating or facilitating financial transactions. A variety of firms exist with unique and distinct production/ service processes and associated professional skills. Examples are central and other banks, depository and non-depository credit inter-mediators, securities and commodity exchanges, firms engaged in investment activities and insurance carriers.

The service applications/ offerings and activities of financial services organizations related to:

1. Cash flow and treasury management, customer statements, security settlements & mortgages, trade confirmations & reconciliations, loan servicing and support, dividends, premiums, claims & refunds, and taxation reports
2. Brokerage operations, security pricing, vendor support, net settlement, policies, procedures, regulations & compliance, revenue & profit benchmarks, and manage risk & key expenses
3. Systems regarding customer issues/ services, managing data, data integrity, & transactions, leveraging technology, back office operations, operational efficiency & controls, problem solving, streamlining activities, manage key expenses, work flow &management tools, Monitors work flow, production/testing, and quality systems like six sigma, and best practices

Financial services offerings are characterized by high volumes and diversity of clients with long-term contractual relationships, integration of marketing, finance, and operations, use of intermediaries, large scale use of technology, continuing service interactions, and clients' delight being mostly dependent on services.

Example: Customer Service Improvement in a Financial Sector

With PaySimple, companies accepted easy payments anywhere, at any time, which made it simpler to manage ongoing cash flow. PaySimple (2005) offered varied billing and payment solutions, covering daily higher than 17,000 businesses. The financial services were growing by 9.9% globally every year. This also put a challenge on the financial companies to improve on customer experience, stand out from the crowd, and gain trust from the customers. PaySimple struggled to achieve required excellent customer service owing to a wrongly implemented contact centre solution.

The said contact centre technology, did not have user-friendly environment, was also not of the state of the art type environment, and was also unreliable. That had resulted in loss of revenue and unsatisfactory customer experience. Talkdesk associated with PaySimple to build key integrations from Slack and Salesforce, and facilitate enhancement for PaySimple's contact centre related multiple operations, helping them to gain the satisfaction of reaching the next levels of customer satisfaction.

Source: https://www.cxtoday.com/contact-centre/7-insightful-financial-services-cx-case-studies-to-read-in-2022/ (Jan 26, 2022) Accessed on 19th July, 2022

20.5 Services Management: Healthcare Services Sector

Prominent applications of service operations management in healthcare include controlling healthcare costs, increasing the range of services, and enhancing the quality of healthcare services provided to the clients.

Services operations management in healthcare focuses on the standard practices designed to monitor, manage and control the processes related to the production and the distribution of relevant products and services. The major activities are product creation and service development and effective distribution. Planning and monitoring purchases, managing inventory and ensuring quality are the primary goals. Further, it generally includes analyzing a company's internal processes. The nature of products or services determines the way an organization carries out service operations.

Healthcare is an extremely diverse sector. It encompasses organizations and practitioners that take up the diagnosis, treatment and prevention of injury/ illness, disease, and other physical and mental sickness. A variety of specialties focuses on specific treatments in healthcare. Healthcare comprises primary, secondary, and tertiary care as well as public health. Social and economic conditions, policies and management of services affect access to health care. Adequate finance, a well-trained, well-skilled and well-paid workforce, credible information and policies, and well-maintained facilities are imperative. Healthcare sector is on a considerable amount of reform with a major focus on controlling costs. Overuse of expensive, technological and emergency-based treatment is the in-thing.

The goal for operations managers is to help strike a balance between necessary high-end treatment and community centers that offer preventive services. Primary care institutions are also a part of keeping patients away from needing expensive emergency services. For operations managers, the goal is to streamline costs and to create necessary funding to maintain adequate level and quality of services offered. Service operations management oversees healthcare facility operations in providing adequate and reliable treatment to the community they serve. Another major issue confronting healthcare services sector is the management of healthcare waste, safe disposal of which continues to be a neglected area. In view of the hazardous nature of some of the bio-medical waste, effective waste management practices, complying with the applicable regulatory framework are required.

Example: Improved Health Service to Citizens

The Cantabrian Health Service, an integrated healthcare environment, migrated to AWS: SAP, an established cloud model, for the unified purchase of health materials. The Cantabrian Health Service wanted to address the major challenge by finding a long term solution to improved health services to citizens, through cloud services. The unification of warehouse procurement system through different hospital management offices, 42 health centers, 125 on-premises health centers and primary assistance emergency services was a complex network task. But, at the end, all these centers used the same materials codification, benefitting healthcare stakeholders in many ways.

Contd….

With available SAP test environments on the cloud, the Government of Cantabria benefitted joining a European initiative to store and share one hundred health services and access the record of one hundred million patients. That facilitated a common format for all clinical record data throughout Europe, leading to quality health observational studies. It also used AWS Artificial Intelligence technology to an automated real-time reading of the antigens tests. Cloud environment also helped sensitive health data to be stored in a safer way for multiple medical analysis purposes.

Source: https://aws.amazon.com/solutions/case-studies/servicio-cantabro-de-salud/?did=cr_card&trk=cr_card (2022) Accessed on 19th July, 2022

Activity 20.1

The healthcare system in India has exposed its weaknesses during the period of the pandemic, Covid-19 exphasising the urgent need to strengthen it.

- Examine the weaknesses of the system and its effects on the people.
- Identify the initiatives taken by the government to address them
- Suggest some more steps to further strengthen it meet the requirements of the people

Check Your Progress - 1

1. On which of the following, doctor's message is based in Medical Transcription on the patient's diagnosis/ treatment?
   a. Written
   b. Email
   c. Recorded
   d. Telephone
   e. Noted
2. Which of the following justifies the extensive commonality in offerings that led the two sectors of IT and ITES being called together as IT/ITES?
   a. Commonality
   b. Diversity
   c. Coverage
   d. Development
   e. Growth

3. Financial services are characterized by high volumes and diversity of clients with which of the following?
   a. Lot of money
   b. Professional interests
   c. Skilled manpower
   d. Knowledge of financials
   e. Long-term contractual relationships
4. Which of the following represents a variety on specific treatments in healthcare?
   a. People
   b. Diagnostics
   c. Tools
   d. Specialties
   e. Prescriptions
5. Which of the following is the missing healthcare system from the three established systems apart from secondary, and tertiary care as well as public health?
   a. Initial
   b. Primary
   c. Basic
   d. Start-up
   e. Advanced

20.6 Services Management: Travel, Tourism, and Hospitality (TTH) Services Sector

A significantly vast range of service applications signifies the service operations management of travel, tourism, and hospitality (TTH) sectors. Examples of such applications include:

- In-flight catering function for an airline
- The check-in, security, and boarding function at an airport.
- Fast food restaurant production and services.
- The arrivals and dispatch function for an airline.
- The reservation services for TTH.

Hotels, restaurants, retail outlets, malls, fashion outlets, theaters, airlines, travel agents, tour operators, and theme parks are example sub-sectors in TTH sector. They have distinct operational features and characteristics. The associated standard operating practices facilitate the effectiveness, efficiency, and profitability of TTH businesses. Customer service experience is effectively managed through these systems. Ever evolving and improving operating systems and technologies impact TTH businesses, clients, and employees.

Structural features and factors like seasonality have significant implications for the management of operations in the TTH sector. Certain attractions like skiing that play a significant role in leisure activities of tourists are highly seasonal in terms of when it is most appropriate and enjoyable to indulge in. Relating to the availability of such facilities and services is, therefore, time limited. Similarly, outdoor activities like water sports that dependent on warm weather are limited to summer months. At times, the operational season can be extremely short lasting little more than six weeks to two months, during which time suppliers of tourism services seek to generate sufficient income to cover full year. Structural considerations, however, extend beyond seasonality. Location and distance from key geographical centers of population lead to the impact of peripherality on TTH facilities. Peripheral areas have poor communications and access and are disadvantageous in relation to destinations offering similar facilities and opportunities but located closer to major cities.

Examples of the operational features of the principal sectors within TTH are:

- Organization of guest transport from airport to hotels/ motels/ transit accommodation.
- Organization of bus tours for tourists.
- Guest reception and admission to a theme park or any other major attraction.
- Handling customer complaints at a major tourist location.

Example: Innovative Travel and Hospitality Customer Experience

G.M. Tour & Travel, Thailand was a top leading travel agency in delivering air tickets. The company established itself for providing convenient, predictably reliable, and quick support global travel agents. As they grew with increasing volume of tickets, response times increased and during the peak season, there was a need for agents to work extra hours. During peak times, many of the customers' emails went unanswered, leading to reduced customer satisfaction. They migrated to Freshdesk, and discovered that they were able to cater to larger customer needs of larger ticket volumes and customized services to agencies, for specific requests made upon. Freshdesk also improved agent productivity on a massive scale.

Contd….

Freshdesk's SLA features helped G.M. to reduce clutter in delivering to individual agents, and Freshdesk's dispatch rules aided them in identifying agents with apt skills to individual customers. G.M. also used social channels like Facebook for customer support, and made it primary communication channel. Freshdesk was instrumental in improving agent/sub-agent productivity. G.M. Tour & Travel mustered a strong and competitive advantage in the Thai market, even with the increased number of daily customer queries, as a best customer service travel agency in Thailand.

Source: https://freshdesk.com/general/good-customer-service-in-schools-blog/ (May 20, 2022) Accessed on 19th July, 2022

20.7 Services Management: Education Services Sector

In the education services sector, the applications comprise consultancy services and solutions. Designed to be cost effective, they help educators to reflect and rethink, to reinvent and rewire their learning, operations and business models.

In general, the broad areas of application and associated service components include:

1. Business Transformation and Reengineering: CRM strategy, enhancing student engagement, improving student-institute interactions, application of IT & mobile technologies for integrated instructional technology models to address evolving learning requirements.
2. Back Office Systems and Support: developing relevant metrics through integration of data warehousing, ERP, and other back-office systems
3. IT/ITES Infrastructure and Systems Support: infrastructure services for improved learning outcomes, decision-making, and institutional cost effectiveness like developing, upgrading, and maintaining institute applications, infrastructure consolidation, portfolio analysis and optimization.
4. Education Publishing: online content delivery and learning support to suit individual learning styles, digital products, and services, organized repositories of learning assets, mobile content for textbooks, tablets, and smartphones, learning analytics, collaboration with connected communities for knowledge sharing and cost reduction.

Specific examples of Educational Services Offerings/Projects with brief overview are:

- Harnessing adaptive learning to effectively deliver and transform student learning experience while expanding their product portfolios (Clients: Educational publishers and institutions).
- Managing continuous innovation and student expectations.

- Next-generation approaches to enrich student experience: adaptive and holistic higher-education learning environments, digital footprints by schools, and employers matching their own offerings and competency needs to learners' competencies and interests.
- Educators paving the way for next generation learners: outcome-based learning, new forms of test delivery for global reach, and universal services.
- Improving institutional effectiveness: Data analytics to track institute's performance against educational mission, financial and operational objectives.
- Enhancing learning technology performance: integrated and comprehensive learning administration initiatives to facilitate institutes to focus on strategic training and learning initiatives.
- Education Testing Solutions: de-risk technology failure using newer testing solutions with reliable software / hardware platforms.
- Effective use of technology to overcome diverse content development and learning challenges.

Example: School Services

Kern High School District (KHSD), California had 18 public schools and 11 special educational institutions, with over 45,000 active learners. The support services team at Kern responded to plentiful queries from various functional departments covering 'payroll, student systems, and general administration'. With such a number of requests, the support team resolved all those issues on time, reflecting stellar customer service and 100% customer satisfaction. The support team existed as different groups, but the team assigned requests to the respective agent groups within a single view on Freshdesk, and achieved magnificent level of accountability. Freshdesk helped to automate the communication of acknowledgment by sharing the details of the agent responsible to respond to the query.

This built confidence in teachers and students, and guided them to contact right people for updates. Most praiseworthy was, the support team being proactive in creating a seamless approach to raise queries, and then very prompt in communicating the status related to the progress of resolution. Kern High School District support team, thus, was geared up to identify and resolve the common customer frustrations of students and staff members. That also built lot of trust between students and staff that they were heard and also their issues were resolved.

Source: https://freshdesk.com/general/good-customer-service-in-schools-blog/ (May 20, 2022) Accessed on 19th July, 2022

20.8 Services Management: Media and Entertainment Services Sector

Top notch global services and consultancy organizations like Tata Communications, Cognizant, HCL Technologies, WNS (Holdings) Limited, Ernst & Young India, and Mckinsey & Co are in the business of offering IT, communications, and business process services and solutions for media and entertainment sector.

Digitization and convergence make companies create innovative business models for survival and growth. Growing demand for personalized content across multiple platforms and complexity in managing contracts with key stakeholders led to competitive differentiation being the need of the hour.

In the digital age we are in, media and entertainment services need swift and timely content delivery and maximization of monetization globally. The service offerings/ projects, therefore, tend to take a collaborative strategy of complementing the strengths of both the supplier and clients. Typical Business Process Management (BPM) service applications/ offerings/ projects and their elements include:

- Media asset management services: catalog, index, store, manage, and distribute rich media assets through efficient search and retrieval, reduce costly distribution methods, allowing organizations to focus on value-generating marketing activities, reducing time-to-market for localization, and ensuring brand consistency.
- Sales and Marketing solutions include: end-to-end management of the advertising production and distribution value chain, media planning support, and discovering the most appropriate media products & distribution strategy to achieve objectives of marketing campaign for a given brand / product.
- Creating customer loyalty programs: retaining existing customers and providing valuable insights into their lifestyles, motivations, interests, and purchasing decisions.
- Advertising operations support: sales & inventory management, campaign monitoring & management, quality control of live campaigns, order processing & data entry, business reporting, and traffic management.
- Finance and Accounting: better cash flow management and working capital, reduction in servicing spend, process automation, improved compliance and control.

Example: Service Management in Entertainment 2022

Koch Media was an award-winning, development and distributing, entertainment and digital gaming global company. The development teams were flying occasionally, for jointly working with other teams, because the work complexity, video resolution, and intricate video content, was very high.

Contd….

Traditional and available solutions for video conferencing were not adequate, which facilitated meaningful collaboration. Avaya and Koch Media joined hands, accessed 1080pixel real-time international video conferencing unlocked new methods of bringing high-definition video units and codecs to team members for a successful level of output by a strong teamwork. This took Koch Media to higher levels of service to global customers.

Source: https://www.uctoday.com/unified-communications/6-insightful-tmt-and-entertainment-case-studies-to-read-in-2022/ (March 24, 2022) Accessed on 19th July, 2022

20.9 Services Management: Legal Services Sector

The Indian legal laws and associated subjects for legal services for individuals and institutions are as follows:

- Banking and Finance laws: Report on Security Interest Act, Negotiable Instruments (NI) act, banking issues etc. has been discussed here
- Case Laws: Landmark judgments
- Civil Laws: Civil Procedure Code (CPC), and aspect to civil side of practice
- Company Law: The Registrar of Companies (ROC), Company's act in India, duties and rights of directors of a company, company's legal rights and liabilities
- Constitutional Law: Indian Constitution
- Consumer laws: Consumer rights, various consumer courts such as national and state commission
- Contracts laws: Meaning of Contract, consideration, acceptance, binding nature, valid contract, as par Contract act of India
- Criminal law: Code of Criminal Procedure (CrPC), Indian Penal Code (IPC), evidence act, prison laws, various statutes related to criminal laws
- Environmental Law: Environmental pollution and various laws being enacted to safeguard the environment
- Insurance/ Accident Claim: motor vehicles, Insurance to third party claim
- Immigration laws: Visa, Proof of address (POA), Citizenship, immigration
- Family law: Marriage, Divorce, adoption, maintenance, child custody
- Intellectual Property: Copyright, Trademark, patent, Industrial laws
- International Law: International war crimes, International court of Justice in relation to its impact on Indian laws
- Juvenile Laws: laws related to Children, Juvenile custody etc.
- Legal outsourcing: With the advent of internet, legal outsourcing has become a huge marketplace.
- Media laws: They are laws pertaining to Press laws, Advertisement laws, Freedom of Speech and Expression, PrasaraBharati Act, Etc.

- Medico legal: A report of Forensic laws, post mortem, Medical Jurisprudence, Autopsy, Clinical Trials, Foreign Drugs, Organ Transplantation
- Real estate laws: property laws, sale agreement, property loan, property registration deed laws.
- Tax Laws: Indian Tax laws
- Workplace Equality and Non-Discrimination: laws governing Sexual harassment in work place, sex workers, domestic maids
- Human Rights laws: Child labour, human trafficking, Dalit atrocities, Genocide, honour killings, gender inequality

Further, National Legal Services Authority provides certain free legal services to women and children, members of SC/ST, Industrial workmen, victims of mass disaster, violence, flood, drought, earthquake, and industrial disaster, disabled persons, persons in custody, and persons whose annual income does not exceed ₹ 1,00,000/-.

Example: An Example of Court Customer Service, 2022

Illinois Court made a step towards making something big by helping in changing the people attitude towards interactions with the court system. 'Illinois Court Help' which was a helpdesk, jointly launched by the "Illinois Supreme Court and the Administrative Office of the Illinois Courts ("AOIC")" in 2021, aimed at serving the court users, was one-of-a-kind aid, with proactive legal innovation. It played a key role during Covid-19 pandemic, to provide vital access to the information and needed responses for the court users. Illinois used E-filing system for court activities. E-filing needed well understood and human-centered designs, and human support for needed people, who could not understand the required technology of filing.

Illinois Court Help (IVR based) helped as the E-filing support desk. Clerks also were benefitted from Illinois Court Help, as it reduced the daily load, and gave the required guidance. 'Court guides' helped callers by identifying the necessary forms, detailed the legal processes to the callers, identifying other resources of help. Many times these were followed up with regular emails, sharing the links and necessary documents where required. Illinois Court Help ran on Zendesk, the backbone, an integrated service which simultaneously 'facilitated communication and collect information'. Typical response and closer times were four minutes each, for hundreds of users using this service daily. The human aspect and the human touch of Illinois Court Help was the most notable service asset.

Source: https://www.legalevolution.org/2022/06/illinois-court-help-a-case-study-in-court-customer-service-310/#more-17408 (June 12, 2022) Accessed on 19th July, 2022

20.10 Operational Issues in Services Sectors

Service organizations are required to deal with several issues in order to effectively manage service operations. However, specific issues vary from sector to sector. In today's global context, there are special and generic issues to deal with like diversity in work force, associated cultural issues, on-site posting, working to client's timings, flexibility in compensation and HR policies etc. Thus, focus on these issues and specific sector-oriented operations need attention.

Services, in general, have different characteristics than products. As such, analogies and conceptual models may not work equally well with each other. Fundamental differences like intangibility, simultaneous production & consumption, closer proximity with customer, and inability to build inventory in case of services need different operational strategies even for similar challenges.

Even among services, managers traditionally believe that their problems are unique and that they share little in common with other service sectors. However, research studies reveal that commonalities can be found among the challenges, issues, and problems faced by several service sectors and that shared ideas can bring fresh approach to a business. Classification of service firms facilitates identification of commonalities between businesses that may demonstrate several differences. The sectors that have been discussed in this unit arise from such a classification. Concepts like customer contact model and service process matrix help in identifying challenges for effective services management.

Generally speaking, depending on labour intensity and level of interaction with customers, the generic challenges for service managers include:

- Attention to physical environment
- Need for standard operating practices
- Application of emerging technology
- Application of advanced models like analytics, scoring systems, etc.
- Managing growth
- Effective management of supply and demand
- Site selection
- Designing and scheduling service delivery
- Effective project management
- Managing front-office and back-office interface
- Managing offshoring and outsourcing services
- Training and development
- Employee welfare
- Control and monitoring of far flung locations
- Maintaining quality and application of tools like Six Sigma

- Managing customer responses
- Managing appropriate hierarchy and relationships
- Addressing cost increases
- Achieving customer loyalty

As mentioned, globalization brings in additional challenges.

Looking at specific sector oriented challenges and issues, in addition to the above generic challenges, there are the following to deal with.

20.10.1 IT/ ITES

Indian IT and ITES services have been a great success with a firm position in the global setup. Off shoring or outsourcing have become the buzz word with these global services. The industry has been shining and will continue to do so in future. However, the sector is going through a tough time faced with the following challenges:

1. **Resource retention –** motivating good people in organisation and keeping the attrition rate in control. Associated issues are rising cost of people, reducing profit margins, global companies opening up captives in India to reduce their cost of operations.
2. **Lack of trained people -** The supply and demand of quality engineers who are capable of working in the emerging IT fields has a huge gap. Companies are even hiring science graduates and providing them adequate training to enable them to work in IT sector. Clearly, quality of talent is declining and companies are struggling to hire new resources with requisite new skills.
3. **Rising Rupee –** Its strengthening against major currencies of the world and de-regulation of rupee is going to be tough for the sector.
4. **US slowdown –** Despite risk mitigation efforts, a US slowdown has negative effects on IT/ ITES organizations. The huge workforce they have would be a big nightmare in the India context.

20.10.2 Financial Services

The following are the key challenges in the financial services sector and emerging solutions:

- Meeting demand for improved customer service with immediate access to customer and case related information
- Meeting stringent compliance requirement by establishing secure procedures and record management solutions
- Driving efficiency and cost reduction by ensuring staff find information and relevant documents as quickly as possible
- Making best use of new technology for real-time access to critical business information

20.10.3 Healthcare Services

While a new enlightenment in every aspect of the healthcare ecosystem is globally making every player, from governments to organizations to individuals involved in improving healthcare, all health economies are facing similar challenges. At the same time, they have an opportunity to revolutionize the way care is delivered, and in doing so, to transform their societies. An outline of the challenges and emerging trends that will impact healthcare for the better is given below:

1. Rising costs and spending on healthcare challenging both receivers and providers of healthcare
2. Changing demographics with expectations of services on demand
3. As demand and spending increase, a need to balance ease of access to services against the cost of operating smaller hospitals
4. Focus on quality as patients begin to exercise their rights and demand transparency of data and processes
5. Becoming customer-driven, where the patient needs are at the heart of healthcare

To address the above challenges and needs, leading hospitals are taking several initiatives in the direction of moving from being supply driven towards a demand driven consumer model. As such, we see the following global healthcare trends:

1. Informed patients and the rise of social media
2. Patients exercising choice
3. Patient-centered medical home
4. Personalized medicine
5. Translational research

20.10.4 Travel, Tourism, and Hospitality Services

The following are the critical issues to be addressed in this sector:

- The role of operating systems and their interface with customers which have a direct and immediate impact
- The extent and role of evolving Information and Communication Technologies (ICT) in the above systems
- Key features of services and their improvement
- Role of customer feedback and its application
- Effect of standardization on operations, service, and customer satisfaction
- The role of front-line staff
- The health and safety issues of both the guests and employees

20.10.5 Education Services

The education sector underwent some major changes like enrolment in private schools outpacing government school enrolment, expanding tutoring businesses and universities offering new services, ever increasing online education services, and extensive use of technology in all areas of education over the past few years. Understand some of the major challenges that are faced by education sector today.

The following are some of the major challenges the education services sector is faced with:

1. Diminishing boundaries
2. Addressing policy change
3. Enhancing the role of stakeholders
4. Developing alternative teaching modes
5. Supporting social learning
6. Personalizing education
7. Assessing student learning

Further, despite impressive progress achieved during the last decade, both nationally and globally, much remains to be done in addressing the above challenges.

20.10.6 Media and Entertainment Services

Specific operational challenges in this sector are:

1. Making media and entertainment personal and predictive
2. Keeping media ahead of the game in all circumstances
3. Continuous innovation and modernization across the entire digital supply chain

20.10.7 Legal Services

The legal profession has always been a competitive one. With exciting, dynamic, and rapid changes in the way law is practiced and legal services are offered these days, come a host of challenges. Legal services organisations need to address them in order to stay competitive and relevant in their professional activities.

The biggest challenges facing legal profession currently are:

1. Changes in economy due to financial crash, global recession, the UK’s exit from European Union etc.
2. Changes in legal education and new lawyer development
3. Regulation
4. Impact of globalization and greater pricing competition

5. Application of new technology
6. Competition from non-traditional and low cast legal service providers
7. Commoditization of legal services
8. Dealing with social media

The changing face of legal services, as a result, has the following operational characteristics:

1. The office boom of established and new legal services organizations
2. Increased lawyer density
3. Rise of non-lawyers in law firms
4. Matching application of technology, the Internet, and client expectations
5. Enhance practice efficiency and responsiveness

Despite some unique operational issues and problems as above in each services sector, it is clear that there are several common challenges across sectors that service organizations face. Success lies in adapting the best practices to suit requirements in each organizational context.

Example: Avoiding Operational Issues in Customer Service

Quick Heal Technologies was a leading provider of internet security tools and anti-virus software, serving millions of users worldwide. Like many fast-growing companies, they experienced bottlenecks in their customer service helpdesk process due to the high volume of requests. Quick Heal was keen to improve the quality of online help desk, and thus the customer service support, as it was an established fact that, enhancing customer experience helped build their brand loyalties and revenues.

The problems Quick Heal was facing included: a system which could track various requests from multiple sources, an overall view of the customer requests, missing customer tickets and sometimes incomplete information, avoiding delays to responses to customers, and seamless workflow. Quick Heal found a right answer with Kayako through initial trials.

The benefits Quick Heal gained were: Kayako's 'Shared Inbox Solution' created a seamless integrated experience from varied sources like 'email, Facebook, Twitter, and live chat'. QuickHeal agents enhanced their customer service and also prevented dropped tickets and lost conversations. The ticket response and resolution times were reduced, duplication avoided, support hours got augmented and extended, and conversations from multiple sources were integrated and consolidated.

Source: https://kayako.com/blog/5-case-studies-to-improve-your-customer-service/ (2022) Accessed on 19th July, 2022

Activity 20.2

With the advent of Information and Communication Technology, entire very services sector is undergoing revolutionary changes. Education sector in India happens to be one among them undergoing many changes. During Covid-19 period, entire education sector right from KG to PG has demonstrated different approaches to save the academic year and employment opportunities.

- Examine the operational issues to be addressed in the education sector.
- Identify the initiatives being taken by the government in Higher education in India.

Check Your Progress - 2

6. Which of the following factors have significant implications for the management of operations in the TTH sector?
   a. Commonality
   b. Uncertainty
   c. Uniformity
   d. Seasonality
   e. Risk
7. Which of the following can lead to the impact of location and distance from key geographical centers of population on TTH facilities?
   a. Neutrality
   b. Uniformity
   c. Seasonality
   d. Commonality
   e. Peripherality
8. In the education services sector, the service applications comprise which of the following services and solutions?
   a. Appraisal
   b. Testing
   c. Consultancy
   d. Training
   e. Counselling

9. Which of the following types of content has growing demand for content across multiple platforms and complexity in managing contracts with key stakeholders led to competitive differentiation being the need of the hour for media and entertainment services?
   a. Personalized
   b. Generic
   c. Video
   d. Digital
   e. Radio
10. Which of the following is the highest beneficiary of the free legal services of National Legal Services Authority?
   a. Displaced persons
   b. Disabled persons
   c. Defense persons
   d. Persons of Indian Origin
   e. Women

20.11 Summary

- The emergence of service economy has brought in its wake a host of services sectors with ever changing client expectations.
- This unit covered the principal application domains these sectors have on offer and the challenges, issues, and problems they face in providing effective services.
- Strategic service operations management approaches and associated scientific and mathematical tools and techniques facilitate effective management of these applications leading to customer delight from the experience of the services on offer.

20.12 Glossary

BPM: Business Process Management. It is a technique for ensuring smooth operation of various business processes.

BPO: Business Process Outsourcing. It is a process of subcontracting certain operations to outside suppliers/subcontractors to save time and cost.

CPC: Civil Procedure Code. It is a code of conduct for behavior of citizens.

CRM: Customer Relationship Management. It is a IT based technique to help in establishing and maintaining customer relations.

CrPC: Criminal Procedure Code. It is a code of conduct for preventing criminal cases

ERP: Enterprise Resource Planning. It is an IT-based management technique for efficient utilization of organizational resources.

IPC: Indian Penal Code. It is a law laying down rules for penalties/punishment for crime

NI: Negotiable Instruments. It is a term used in labor relations to discuss with unions on different issues

POA: Proof of Address. It is an authentic source to prove the residential status.

ROC: Registrar of Companies. It a government appointed authority to register companies

20.13 Self-Assessment Test

1. Write short note on Services Management in IT/ ITES Sector.
2. Briefly explain Services Management in Financial Services Sector.
3. Write short note on Services Management in Healthcare Services Sector.
4. Briefly explain Services Management in Hospitality, Travel, and Tourism Sector.
5. Write short note on Services Management in Education Services Sector.
6. Briefly explain Services Management in Media and Entertainment Services Sector.
7. Write short note on Services Management in Legal Services Sector.

20.14 Suggested Readings / Reference Material

1. Chase R. B., Ravi Shankar, Jacobs F. R. (2018), Operations and supply chain management, McGraw Hill, 15th edition.
2. Haskett J. L. (1986), Managing in the service economy, Harvard Business School Press.
3. Nitin Joshi, S. Rajagopalan (2019), Service Operations Management: Towards Excellence, Himalaya Publishing House, 1st edition.
4. Mathur S. S., S Mathur and Kenyon A. (2017), Creating Value: Successful Business Strategies, Routledge, 2nd edition.
5. Robert Johnston, Michael Shulver, Nigel Slack and Graham Clark (2020), Service Operations Management: Improving Service Delivery, Pearson, 5th edition.

20.15 Answers to Check Your Progress Questions

1. (c) Recorded

Medical transcription deals with preparing both voice and non-voice medical reports/ records in compliance of statutory requirements for medical applications. This is based on the doctor's recorded message on the patient's diagnosis/ treatment.

2. (a) Commonality

Extensive commonality in offerings led the two sectors being called together as IT/ITES.

3. (e) Long-term contractual relationships

Financial services offerings are characterized by high volumes and diversity of clients with long-term contractual relationships, integration of marketing, finance, and operations, use of intermediaries, large scale use of technology, continuing service interactions, and clients' delight being mostly dependent on services.

4. (d) Specialties

A variety of specialties focus on specific treatments in healthcare. Healthcare comprises primary, secondary, and tertiary care as well as public health.

5. (b) Primary

Healthcare comprises primary, secondary, and tertiary care as well as public health.

6. (d) Seasonality

Structural features and factors like seasonality have significant implications for the management of operations in the TTH sector.

7. (e) Peripherality

Location and distance from key geographical centers of population lead to the impact of peripherality on TTH facilities.

8. (c) Consultancy

In the education services sector, the service applications comprise consultancy services and solutions. Designed to be cost effective, they help educators to reflect and rethink, to reinvent and rewire their learning, operations and business models.

9. (a) Personalized

Growing demand for personalized content across multiple platforms and complexity in managing contracts with key stakeholders led to competitive differentiation being the need of the hour for media and entertainment services.

10. (b) Disabled Persons

National Legal Services Authority provides certain free legal services to women and children, members of SC/ST, Industrial workmen, victims of mass disaster, violence, flood, drought, earthquake, and industrial disaster, disabled persons, persons in custody, and persons whose annual income does not exceed ₹ 1,00,000/-.

Services Operations Management

Course Structure

Block 1: Understanding Service Operations	
Unit 1	Introduction to Service Operations
Unit 2	Interdependence of Service Industries
Unit 3	Virtual Value Chain and Profit Chain
Block 2: Strategy Formulation	
Unit 4	Business Strategy
Unit 5	Customer Retention Strategies
Unit 6	Global Service Strategy
Block 3: Designing Service Operations	
Unit 7	Design and Development
Unit 8	Innovation and Service Development
Unit 9	Services Process Design
Unit 10	Designing a Service Delivery System
Unit 11	Front Office-Back Office Interface
Block 4: Monitoring Service Operations Performance	
Unit 12	Performance Measurement and Monitoring Service Industry
Unit 13	IT as an Enabler for Service Excellence
Unit 14	Quality Management in Services
Unit 15	Meeting Global Standards of Quality
Unit 16	Managing Capacity and Demand
Block 5: Tools and Frameworks for Managing Services	
Unit 17	Lean Management Concepts
Unit 18	Tools for Managing Services
Unit 19	Managing Service Projects
Unit 20	Application Domain in Services