Services Operations Management

Block

1

UNDERSTANDING SERVICE OPERATIONS

UNIT 1

Introduction to Service Operations **1-21**

UNIT 2

Interdependence of Service Industries **22-39**

UNIT 3

Virtual Value Chain and Profit Chain **40-55**

Editorial Team

Prof. R. Prasad
IFHE (Deemed-to-be-University), Hyderabad

Dr. Sanjay Fuloria
IFHE (Deemed-to-be-University), Hyderabad

Dr. Sindhuja
IFHE (Deemed-to-be-University), Hyderabad

Dr. Nasina Jigeesh
IFHE (Deemed-to-be-University), Hyderabad

Content Development Team

Dr. Y. V. Subrahmanyam
IFHE (Deemed-to-be-University), Hyderabad

Prof. Venkata Dharma Kumar
IFHE(Deemed-to-be-University), Hyderabad

Prof. R. Muthukumar
IFHE (Deemed-to-be-University), Hyderabad

Prof. V. Srinivasa Murthy
IFHE (Deemed-to-be-University), Hyderabad

Dr. Sumangla Rathore
IFHE (Deemed-to-be-University), Hyderabad

Proofreading, Language Editing and Layout Team

Ms. M. Manorama
IFHE (Deemed-to-be-University), Hyderabad

Mr. K. Venkateswarlu
IFHE (Deemed-to-be-University), Hyderabad

Ms. C. Sridevi
IFHE (Deemed-to-be-University), Hyderabad

Ref. No. SOM-SLM-IFHE– 082022B1

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

COURSE INTRODUCTION

Globalization has brought about a paradigm shift in Operations Management. Manufacturing became global and services became local. Service Operations constitute a lion's share of the production operations mix. Contribution of services sector in the growth of global and national economies is significant. In Indian scenario, services sector contributes nearly 70% of GDP of Indian economy. Services became a major force in influencing the value chain of organizations.

It is against this background that Service Operations Management attained importance in the business strategy of organizations. Advent of Information Technology revolutionized service operations, enabling them to spread across all major sectors such as manufacturing, finance and insurance, healthcare, education, travel and tourism, media and entertainment, legal services, citizen services etc.

The curriculum of the course, 'Service Operations Management' has been designed to address the emerging dimensions of service operations. The course is spread over four logically grouped blocks, with 20 units populating these blocks.

Block 1, Understanding Service Operations, provides clarity on service operations and associated conceptual framework with the help of three units. Starting with definition of a service product, its types and characteristics, concept of manufacturing continuum is presented. Inter-dependence of service operational performance is discussed, followed by the concepts of virtual value chain and profit chain.

Block 2, Strategy Formulation, covered in three units, focuses on Business Strategy encompassing vision, strategy hierarchy, different approaches and the concepts of qualifiers and order winners. Use of Customer Relationship Management (CRM) as a customer retention strategy is discussed, covering the concepts of service encounter, service encounter triad, service recovery and CRM tools. Then, the topic of global service strategy is presented with coverage of generic international strategies, off-shoring and onsite operations.

Block 3, Designing Service Operations is spread over five units. Once the student understands the basic issues in services operations and strategize which model is to be adopted, the next step is designing the model. This block deals with various issues related to designing the services operations.

Block 4, Monitoring Service Operations Performance, with the help of nine units, exhaustively covers different aspects and contemporary trends in monitoring the performance in service industry. Once service operations management system is designed and implemented, its effectiveness needs to be monitored for necessary mid-course corrections, if any. This needs an understanding of the performance parameters and tools identified.

This edition has added a large number of contemporary examples and deleted old examples and exhibits.

BLOCK 1: UNDERSTANDING SERVICE OPERATIONS

Across the business world, service operations are playing an increasingly dominant role. Services contribute a lion's share in the national GDP, to the extent of nearly 70%. Therefore, a need arises to understand the various dimensions of service operations. This block provides an entry to this important subject through an overview of conceptual topics as briefed hereunder.

Block 1 provides an understanding about service operations and associated conceptual framework with the help of three units. Starting with an introduction to service operations covering definition of a service product, its types and characteristics, concept of manufacturing continuum is presented. Inter-dependence of service operational performance is discussed, followed by the concepts of virtual value chain and profit chain.

Unit 1, *Introduction to Services Operations*, defines a service product and familiarises the learner with various types of service products. Characteristics of a service product are highlighted, differentiating it from physical product. The unit explains manufacturing continuum and traces the contribution of services sector to the growth of Indian economy.

Unit 2, *Interdependence of Service Operational Performance*, discusses the nature of inter-dependence of service industries for operational performance. The sectors covered include: retail, healthcare, hospitality, IT, Communications, Logistics and e-commerce.

Unit 3, *Virtual Value Chain and Profit Chain*, defines the terms and provides an understanding of such topics as new processes, new knowledge, new products, new relationships in the ever changing services industry. A case study on Apollo Hospitals describes how profit chain is put to work in the healthcare industry and optimize the operational efficiency and increase the revenues and profit base.

Unit 1

Introduction to Service Operations

Structure

1.1 Introduction

1.2 Objectives

1.3 What is a Service Product?

1.4 Various Types of Service Systems

1.5 Characteristics of a Service Product

1.6 Physical Product vs. Service Product

1.7 Manufacturing Continuum

1.8 Importance of Operations in Services Management

1.9 Contribution of Services Sector in the Growth of Global and Indian Economy

1.10 Summary

1.11 Glossary

1.12 Self-Assessment Test

1.13 Suggested Readings/Reference Material

1.14 Answers to Check Your Progress Questions

"Customer service is just a day in, day out ongoing, never ending, and unremitting, persevering, compassionate, type of activity."

– Leon Gorman

1.1 Introduction

Service is an intangible activity. Remember, customer needs it 24X7. Thus a customer centric service oriented organization needs to plan their services to ensure that, they train their people for reliability, commitment and passion, and plan for continued support in equipping them to serve better. A quality oriented, consistent, reliable, customer focused service will undoubtedly lead to customer delight.

We seek and utilize a variety of services in our day-to-day life, starting from the services of janitorial or security agencies utilized by the organizations. Globalization brought into focus a new dimension and through a paradigm shift to the retail sector. Companies like Amazon, Flipkart and Walmart are dominating the retail market, supplying to any customer anywhere in the world as per committed schedules. Most of these services are of B2C nature. If we see

the B2B side, we can think of services of Janitorial or Security agencies rendering services to the organizations at the lower end and accounting, software development, logistics, HR recruitment, and payroll management at the higher end.

One common feature observed in the service sector relates to customer dissatisfaction due to the break-down of equipment, time delays, the inefficiency of staff, incompetence of service providers, discourteous service, perceived low value for money, and poor quality of service in general. Service operations management is the art of creating and delivering value to the customers at the right time, least cost and best quality as perceived by the customers.

With huge infrastructure and introduction of new technologies in operations management, manufacturing organizations offering their infrastructure as services to customers is gaining ground in the emerging field of servitization.

The service concept – focusing on experience, outcome, delivery mode, and value - is central to understanding customer requirements and focusing operations on those areas that have maximum impact on the customers' perceptions. Service providers have to recognize these operational issues and find solutions that will improve customer satisfaction and reduce the cost of service.

The services sector is the fastest growing part of the global economy in general and the Indian economy in particular. Across the world, services are contributing on an average, around 70% of GDP. Technological developments in the past two decades have facilitated the conversion of a number of small and large markets in various countries into a single market place where there is an abundant choice of goods and services at the click of a button or even a tap on the cell phone. This change is true to both manufactured products and service products as we see and hear of telemedicine for medical consultations and even surgeries through satellite communications. There are certain differences in the approaches of service operations when compared to manufactured product operations and we would explore these areas in the coming units

This unit focuses exclusively on understanding certain fundamentals of services in a generic sense like service product, physical and service products, service systems, importance and the need to study service operations and reemphasise the growing impact of services in economic development.

1.2 Objectives

At the end of this unit, you will be able to

- Define a service product.
- Establish a conclusion for a combination of physical and service attributes.
- Explain the study of operations in services.
- Examine the part played by services in the world economic development.

1.3 What is a Service Product?

Definition of Services: "Services are economic activities offered by one party to another. Often time-based performances bring about desired results to recipients, objects or other assets for which purchasers have the responsibility. In exchange for money, time and effort, service customers expect value from access to goods, labor, professional skills, facilities, networks and systems, but they do not normally take ownership of any of the physical elements involved."

- *Lovelock, Jochen Wirtz and Chatterjee*.

The definition of a service product can be understood if we consider an example, say the net-café usage for browsing or travel by the government transport system. When we travel by train from one place to another place, we do not purchase a train or rails or the stations. These are physical facilities used by the travel service provider, Railways department or its agency like the IRCTC (Indian Railway Catering and Tourism Services), to deliver the service product viz. travel. When we buy a ticket, we actually buy the service called 'travel'.

When we use the computer in an Internet café', we don't buy the computer systems but the service of 'hire' or 'use for money'. When we take internet connection in our homes or offices, we seek the support of a service provider.

When we go to a music concert, we buy the experience of listening to the concert. A service product is more in the nature of an 'experience' and the recipient/ buyer has to feel that he/ she has received the service as compared to a buyer of a physical product, say a mobile phone, where the product is handed over on receipt of money.

"A service" is a time-perishable, intangible experience performed for a customer acting in the role of co-producer.

Example: Customer Service in Hospitality Industry, 2020

At Ritz-Carlton, employees were empowered to spend up to $2,000 for redressal of any complaint raised by a guest, without giving any explanation to management. One of their customers, John DiJulius, forgot the charger at the Ritz-Carlton Sarasota. He was delighted to receive an air parcel next day which contained the charger. The exciting part was, a note stating: 'Mr. DiJulius, we were eager to reach this instrument in time in your hands, as we were definite of your need of this instrument for your work. However, we also are sending an additional charger for your computer.'

Given the empowerment, the employee could convert the error made by a customer as a great service opportunity and went beyond the needed help to ensure customer delight.

Contd….

The employee acted in a proactive way, properly foreseeing the need of the customer for his computer. Employees could achieve customer delight by right thinking, encouraging decision and showing necessary concern to ensure loyalty in long run.

Source: https://www.qualtrics.com/blog/customer-service-examples/, published September 30, 2020, updated July 4, 2022, Accessed on 13th July, 2022.

1.4 Various Types of Service Systems

There are a number of services that we come across like Medical and Healthcare, Transportation, Travel, Legal, Educational, IT/ITES, Hotels/hospitality, Banking, Insurance, etc. However, from the operations management point of view, these groupings do not adequately classify the services. They do not clarify the processes as in the case of manufacturing where we can classify industries as process-based, continuous process, critical processes, etc. It is useful to classify service systems based on the extent of customer contact. This refers to the physical presence of the customer in the system. Creation of service refers to the work process involved in providing the service itself. Hence, the extent of contact is the ratio of the time spent by the customer in the system to the total time of customer service.

Service systems with a high degree of customer contact like in a bank or a restaurant are more difficult to control and rationalize than those with lower levels of customer contact. The customer is more involved in the process in the case of high customer contact systems and can affect the demand, the nature of service, quality, and quantity. The processes are highly varying in the case of high customer contact systems. Hence service systems require that decisions on facility location, layout, product design, process design, work scheduling, production planning, quality systems, etc. are based on whether the system is of high customer contact or not. Firms with similar levels of customer contact are likely to encounter similar types of problems. They are capable of sharing experiences with similar group members. This facilitates the adaptation of best practices for the benefit of all members.

Service process matrix: This approach was proposed by Schmenner (1986) and it seeks to differentiate services based on

a) Degree of interaction and customization, like in real-estate or banking industry.

b) Degree of labor intensity:

- Low labor intensity and low interaction: Service Factory. e.g. Airlines and Hotels
- Low labor and high interaction: Service Shop. E.g. Hospitals, Diagnostic Labs.

- High labor and low interaction: Mass Service. E.g. Schools.
- High labour and high interaction: Professional Service. E.g. Lawyers, Chartered Accountants.

The challenges faced by each group are similar and solutions may be unique to an industry.

Example: Customer Experience at a BPO, 2022

Alorica (BPO) had around 100,000 employees in 150 physical places, from among 17 countries worldwide. Alorica focused basically on 'customer relationship management' and total 'back office support'. It was known for multitude of world-class services, like acquiring, care, support and sales to the customer. The domains of business, Alorica covered included: 70 percent 'Fortune 500' set of industries, spanning 'communications, financial services, healthcare, retail, and tech'.

The company Verint and Alorica together were identified in the "Gartner Magic Quadrant" applicable to BPO industry in 2022. 'Verint Enterprise Workforce management', 'Verint Speech analytics', and the 'Verint Community apps' were used by Alorica in their BPO operations and services to customers. With 20 years of business experience, Alorica was announced as the "BPO of the Year" at the 2019 'CCW Excellence Awards'. This award was generally given to contact centers innovating in their operations, and having support to global clients and customers, and thus was a special honor.

Sources: https://www.cxtoday.com/contact-centre/8-insightful-cx-in-bpo-case-studies-to-read-in-2022/ dated May 30, 2022, Accessed on 13th July, 2022.

1.5 Characteristics of a Service Product

Service product is different from a manufactured product and the following characteristics differentiate it.

a) **Intangibility**: Services are intangible in nature and we experience the services. For example, when we visit a doctor for treatment of an ailment, we merely experience the treatment in terms of doctor's advice and this is called healthcare service. In an educational service, we gain knowledge and skill, which are perceived by us. Health, wellness, and knowledge are not physical products like a computer and in that sense, these are intangible products.

b) **Storage not possible:** Services cannot be stored or stocked for use at a later point in time. When we go to a movie, our experience of having seen and enjoyed the movie cannot be stored and resold to another person. In the case of a physical product, say a car, the product can be used by us and sold later for a price. The car manufacturer can produce cars or car parts, keep them in inventory and use them or sell later.

c) **Simultaneous production and consumption**: Services are produced and consumed at the same time. That is why they cannot be stored for later use. A lawyer's arguments in court for a client are produced and served at the same time. Once the argument for a day is completed, another argument on another day is a new service product as it is defined afresh. A musician's concert is consumed as it is produced and delivered.

d) **Service Quality:** It is difficult to gauge the acceptance of a service product as the quality of service is perceived differently by different customers. A doctor's treatment is felt as 'good' by some patients and 'poor' by another patient, both suffering from the same ailment. This could be due to the expectations of the two patients being different.

Example: Digital Bank's Financial Inclusion, 2022

TymeBank in South Africa was a fully digital retail bank founded with financial inclusion as a core business objective. In short span, the bank had 4 million customers. The noticeable characteristic of their service was that it aimed at serving low-income people as their customers, offering simple products like savings and checking accounts, with debit cards. They utilized a distribution network, combining interactions of both types of customers serving in online and offline ways, using the partnership of chain of grocery stores 'Boxer and PnP'. This helped the bank to reach customer segments, which were undeserved by conventional banking players.

This service characteristic proved to have transactional accounts at low-cost, but ensured the yields were high for the savings account. TymeBank's customers also expressed their enhanced ability to do digital transaction for receiving money. TymeBank also stood as a good example of CGAP's (the Consultative Group to Assist the Poor) recommendation of digital banks play role in the mission of financial inclusion.

Source: https://www.cgap.org/research/publication/tymebank-case-study-customer-impact-inclusive-digital-banking dated January 2022. Accessed on 13th July, 2022.

1.6 Manufacturing (Physical) Product vs. Service Product

The following Table 1.1 compares a manufacturing product and a service product.

Table 1.1: Manufacturing Product vs. Service Product

Manufacturing Product	Service Product
Tangible product. We can feel and see the physical features.	Intangible. We can merely experience it.
Stock keeping possible	Cannot be kept in stock for later use

Contd….

Product can be resold for a price after use by a customer.	Service is consumed as it is produced. Nothing left for resale.
Product acceptance is quantifiable.	Difficult to quantify acceptance as service is a perception.
Quality control with product specifications	Quality of service is subjective and can vary from customer to customer.

Source: ICFAI Research Center

Another important distinction between a physical product and service product is that many services must be close to the customer. For example, McDonald's have to open new outlets wherever customers exist, unlike a Maruti car plant that need not be close to the customers' location. However, closeness is a precondition to all services like specialty hospitals. They are few in a city due to the scarce availability of specialist doctors and such other resources. However, patients can be transported to the hospital by dedicated conveyance systems.

There are different criteria for choosing places for plant location in the case of service products as compared to physical products.

Mass production concepts are not applicable to the majority of service products where the type of service is tailor-made to suit the customer.

Example: Product Strategy of a Service Company, 2020

Netflix was the well-known and highly customer centric, 'largest streaming global service' with 193 million users as on July 2020. Being a service company, why it had to design a product strategy? and what was the secret? Netflix's need for product strategy was triggered by an aim of achieving big on DVD, as they started out as rentals of DVD, where DVDs were sent via postal services to the customers. Their highest priority as defined and set by the product team was, retention of customers on monthly basis, which was also measured through an engagement metric.

The other defined metrics to be paid attention included growth of the business and monetization, and increased profits ('margin-enhancing') in multiple ways. Netflix built some features of social experimentation like: 'Friends' in 2009, 'XBox Party Mode' in 2010, and 'Tell a Friend' initially, but discarded subsequently because of lack of usage of these features. 'Netflix Party' was a Chrome extension app to watch movies with friends and family jointly while able to chat parallel. This chrome extension was hard-to-copy in short time, and had the capability to increase profits, as it could be spread via word-of-mouth, and enhance retention.

Source: https://productled.com/blog/netflixs-2020-product-strategy/ dated April 26, 2022. Accessed on 13th July, 2022.

Activity 1.1

Covid-19 pandemic has brought healthcare services to main focus across the world. People flock to hospitals with high hopes of getting free from pandemic fear and other ailments. Keeping this in mind, find suitable and brief answers to the following healthcare related aspects of service operations:

i. Who are the customers to be served? What is the service product?

ii. What type of service system to be deployed?

iii. Identify the characteristics of the service product offered?

iv. Formulate the service provider's matrix for this situation

v. Find the reasons for customer dissatisfaction in healthcare services.

Answer:

Check Your Progress - 1

1. Which of the following is not a characteristic of 'Service process matrix' approach?
   a. Labor intensity
   b. Degree of interaction
   c. Degree of customization
   d. Both labor intensity and customer contact
   e. Neither labor nor contact
2. Which of the following is not a B2B service?
   a. Janitorial services
   b. IT infrastructure services
   c. Logistics services
   d. Banking services to individual customers
   e. Software development for a client

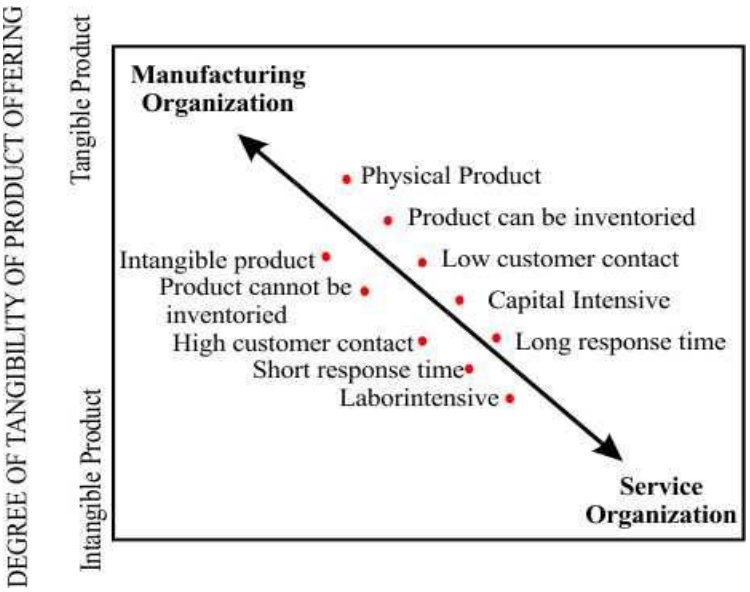
3. A treatment process for a patient in a hospital involves:
   a. High interaction between patient and service providers
   b. Low labor and high interaction
   c. High labor and high interaction
   d. Telemedicine
   e. B2C service
4. Which of the following is the average contribution of Service Operations to the GDP in India?
   a. 0-19%
   b. 20-39%
   c. 40-59%
   d. 60-79%
   e. 80-100%
5. When manufacturing infrastructure is used for service operations as a business strategy, what is it called?
   a. Service matrix
   b. Servitization
   c. Service as a product
   d. B2B service
   e. B2C service

1.7 Manufacturing Continuum

Sometimes we may have difficulty in distinguishing between a product and service as both may be overlapping to different degrees. Management theorists advise us to see the degree of physicality and the degree of intangibility to clear this problem. For example, a mobile phone has physical features like color, shape, weight, memory, etc. but the mobile phone is useful only when it is connected to a service network as all the features like mobile Apps, Wi-Fi, etc. can be used only then. This is probably midway in the product-service spectrum or extreme left. A CD player or a car is more physical and stand-alone and they are on one end. A banking or insurance product will be on the opposite end as it is intangible in nature. The insurance policy merely represents a promise to compensate for the loss in case of an event happening and the product, viz. promise is intangible. The extent of customer contact is another factor to determine whether a product

is a service product or not. Reid and Sanders have explained these aspects by a diagram as given below in Figure 1.1.

Figure 1.1: Degree of Customer Contact



Source: Reid & Sanders—Operations Management: Wiley 2002

The physical product-service continuum enables marketers to see the relative goods/services composition of total products. A product's position on the continuum, in turn, enables marketers to spot opportunities. At the pure goods end of the continuum, goods that have no related services are positioned.

Automobile sector is a classic example for showcasing product-service continuum. We see sales and service showrooms for almost all manufacturers across the world. With increasing focus on service quality as a primary expectation of customers, businesses are concentrating on high quality customer service as an ultimate selling proposition. We also come across TV and computer manufacturers and their service offerings. Such products are cheaper but repair and service are prohibitively costlier, encouraging the customer to exchange such products for contemporary models.

Example: Transforming Customer Experience through Extended Reality, 2022

SEACOMP (Engg. and Electronics design) company excelled in providing wide range of manufacturing answers providing solutions for "consumer merchandise, medical goods, and industrial industry related equipment". SEACOMP set its name above most other brands in the manufacturing industry of electronics, by providing their customers with reliable service, ethical operations, and immersive partnership.

Contd….

This embodied exhibiting an exceptional customer experience, covering entire gamut of their operations: development of products, manufacturing based on customer specifications, and building highly operational engineering roadmap. SEACOMP's customers depended on SEACOMP for ideas on futuristic products they work on. SEACOMP excelled in providing those expected incredible solutions to the customers.

To retain the glory, SEACOMP discovered that extended reality (XR) would be the right initiative to help develop stronger relationships with prospects and clients. SEACOMP and Matterport jointly worked in ensuring and transforming the customer expectations to achieve highest experience. SEACOMP could scan numerous 'digital twins' as part of the faculties under manufacturing to provide clients, amazing set of services. It also facilitated 3D walkthroughs of their infrastructure, at 'no cost to pay, time to spare, and any risks of health in this travel'. SEACOMP estimated that, the use of digital twin technology saved the company yearly around $250,0000 in travel costs, within the facility.

Source: https://www.xrtoday.com/mixed-reality/xr-manufacturing-case-study-in-focus-matterport-and-seacomp/ dated April 14, 2022. Accessed on 13th July, 2022.

1.8 Importance of Operations in Services Management

Operations management, which was treated as the domain of manufacturing operations, has extended to include service operations also. Like manufacturing, service operations are also governed by similar processes such as supply chain management. With increasing share of services in national economies, focus on operations has gained increasing importance as briefly explained below.

a) Many services have different characteristics when compared to physical products and hence specialized managerial techniques are employed in managing services.

b) Many service organizations require the intensive application of operations management techniques for their existence and success. A restaurant should follow sound forecasting and inventory management to ensure that the working capital is not locked up in unwanted stores and the production of food items are not in excess of demand. A retail bank should know how to handle crowding and queues at certain times and relaxed working at other times. A hospital has far too many facilities like water supply, purification of water for use, sterilization of equipment, air-conditioning system, patient transportation, maintenance of hygiene, etc. Hence, these service units depend on the efficient use of operations management techniques.

c) As the services are consumed while they are produced, it is often difficult to clearly define a 'standard level' of resources to be consumed. This makes

standard costing difficult. However, the organizations have to find some basis for costing their services or service components so that the cost control measures can be implemented. Hence, operations management tools are useful in 'fixing' standards.

d) Quality management & control is made difficult by the fact that the 'quality' is a perception in the case of many services. This does not mean that service organizations need not worry about the 'quality' aspect. Survival and growth of service companies depend on the improvement in 'perceived' quality. Some concepts used in manufacturing quality assurance are useful for service industries as well.

e) Planning and scheduling: there are quite a few operations research techniques that come handy when service organizations face problems of queuing, crowding and highly varying service times and arrival times. For example, the time taken to service a customer depends on the kind of service. Cash deposit and withdrawal take less time as compared to the preparation of a demand draft. Handling varying service times and varying arrival rates and meeting customer service goals are indeed a challenge.

f) Facility layout: This aspect and ergonomics play a key role in determining customer experiences and perceived quality. The ambiance of a hospital should be good enough to comfort a patient. Testing facilities in a hospital should be 'reachable' and yet within the space constraints. These are aspects of 'plant layout' in operations management.

Many techniques and tools used in operations management of manufactured products are useful in service operations, though with modifications here and there.

In some service industries like retailing, the success of the venture could depend on the implementation of an operational management tool like Supply Chain Management or RFID (Radio Frequency Identification).

Service operations managers need abilities to manage the total chain of processes, which link together in delivering the service to customers or end-users.

Example: Service Operations in Food Industry, 2021

FieldFresh Foods Private Limited of India had a strategic drive to link Indian agricultural commodities to the world, taking advantage of the available Indian climate, vast area of production, volumes of labor force. They were faced with supply chain difficulties in the initial phases of their operation. After multiple experimentations, models of sourcing, varying crop types and other logistical options, they decided to concentrate on only baby corn.

Contd….

They worked for 2 years and overcame the road transportation issues, not so regular power supply problems, and unavoidable bureaucratic procedures. They had to work hand in hand with large numbers of farmers and gained the confidence and trust. Meanwhile, FieldFresh team established efficient supply chain across Punjab and Maharashtra for baby corn, covering all needed aspects like 'input delivery parameters, credit creation, irrigation methods, timely scientific advice to needed farmers, and production volumes' satisfying the European market. They paid highest attention to cautious harvesting, well planned produce handling, quick, hygienic, fast transportation, augmenting with necessary cold chain storage, got accredited for safety certification, and internationally approved grading, packaging, and labeling standards. In course of time, they could export fresh baby corn of 500 metric tons to Europe from their 'Agri Centre of Excellence (ACE), an R&D' farm.

Sources: https://som.yale.edu/story/2022/top-40-most-popular-case-studies-2021 Accessed on 14th July, 2022.

1.9 Contribution of Services Sector in the Growth of Global and Indian Economy

There are three primary sectors in every economy: agriculture, industry, and services. Initially, agriculture is a developing economy's most important sector. But as income per capita increases, agriculture loses its primacy, giving way first to a rise in the industrial sector, then to a rise in the service sector. All growing economies go through these stages. The economies of countries develop from agriculture to industry and industry to services in their journey of development. These stages of development are also called as pre-industrialization, industrialization, and post-industrialization phases.

In India, agriculture was the primary sector during 1950 that accounted for more than 70% of employment. As per Census 2011, 56.6% of people in the employable age group worked in agriculture-related industries, 14% in manufacturing, and the balance 30% in service industries. Modernization of agricultural methods and the spread of scientific farming processes continue to help the country achieve a better yield. However, an increase in the availability of educational opportunities and consequently in the number of educated and skilled youth has facilitated industrialization first and service industries next. In 2019, was 42.39%, 25.58% in industry and 32.04% in services.

The share of agriculture in total employment went up to 15.9% in 2020-21 from 15.4% in 2018-19.

The services sector is the largest sector of India. Gross Value Added (GVA) at the then current prices for the services sector was estimated at 96.54 lakh crore INR in 2020-21. The services sector accounted for 53.89% of total India's

GVA of 179.15 lakh crore Indian rupees. While the industry sector contributed 25.92% with GVA of Rs. 46.44 lakh crore, agriculture and allied sectors contributed 20.19%.[1]

As per Ricardo's principle of competitive advantage, the production of goods and services keeps moving from one country to another based on 'competitive advantage' factors. Thus, we see labor-intensive manufacturing industries moving away from the developed to developing countries and least developed countries in stages. As per capita income increases due to industrialization, people in developing and less developed nations look for services and consequently services grow. Now, the principle of competitive advantage has caught up with services also and hence we have BPO and Medical Tourism businesses flourishing in developing countries like India. India's software exports continue to grow mainly because we have a huge pool of educated and skilled labor, which would cost around US$ 15 per hour as against US$ 30-40 per hour in the USA. Heart surgery in India would cost 40% of what it costs in the USA and hence people choose to travel to India for surgery.

Services sector is the fastest growing sector in the world and as per the UNCTAD statistics on trade for the period from 1980 to 2013, the services sector accounted for 71% of Global GDP in 2010. Trading in services has caught up in the LDCs and developing countries enabling these economies to participate in world trade and improving their GDPs. The United Nations Conference on Trade and Development (UNCTAD) report of 2019 establishes that the growth rate of developing countries (3.5%) is better than that of developed countries (1.6%).

If we look at the growth of services sector as a percentage contribution to the country's GDP as per World Bank statistics for the period 1980 to 2013, we understand that many LDCs like Bangladesh, African countries, Cuba, Dominican Republic and others have gradually moved from agriculture to industrialization phase. Even in these countries, the services sector has grown between 2% to 20%. During this period, developing countries Indonesia and India have clocked a growth rate of 5% and 11% respectively in terms of percentage GDP.

The movement towards the services sector is more dramatic as is seen in the case of Australia (17%) and France (13%) and moderate in other developed nations like the USA, Japan, Germany, etc. Many regular services functions like data entry, medical transcription, transaction processing, extracting information from ECG and X-ray, etc. have been outsourced to countries like India where skilled manpower is available at competitive prices.

[1] https://statisticstimes.com/economy/country/india-gdp-sectorwise.php, 17 June 2021, Accessed on 1st August 2022

The compounded annual growth rate (CAGR) for services in India was 8.5% for the period from 2000-01 to 2013-14 as per statistics furnished by a research agency (ibef.org).

One of the reasons for the growth of the services sector is technological development, particularly in the field of Information and Communication that enables faster transfer of information and data across the globe thus making the world a global market place.

Another reason may be the opening up of the economy of many countries including India that facilitated the transfer of knowledge and technology at a faster rate. IT/ ITES has grown dramatically in the last 15 years, starting from the Y2K boom and evolving into software exports. Healthcare industry has also recorded high growth due to medical tourism and treatments/ sometimes surgery through web-enabled consultations, robotic surgery, etc.

The growth of the export of services during 1990-2000 was 9% for developing nations against 5.5% for developed nations. As per a study by the World Trade Organization (WTO), liberalization in services is expected to help developing nations to earn US$ 6 trillion by 2015 and impressively beyond 2015. Developed nations are the customers for the newly identified services and developing countries, with educated, trained and skilled manpower are the preferred suppliers due to cost advantages. It is expected that by 2020 and beyond, services will contribute more than 70% of GDP across the world. It is also predicted that developing countries will contribute significantly to the global economy.

Emerging scenario

The services sector is not only the dominant sector in India’s GDP, but has also attracted significant foreign investment, has contributed significantly to export and has provided large-scale employment. India’s services sector covers a wide variety of activities such as trade, hotel and restaurants, transport, storage and communication, financing, insurance, real estate, business services, community, social and personal services, and services associated with construction.

Market Size

The services sector is a key driver of India’s economic growth. The sector contributed 55.39 per cent to India’s Gross Value Added at current price in FY20*. Services sector’s GVA grew at a CAGR of 1.45 per cent to US$ 1,064.8 billion in FY20 from US$ 1,005 billion in FY16. Net export estimate in FY20 from services stood at US$ 214.14 billion, while import was at US$ 131.41 billion in FY20.

Nikkei India Services Purchasing Managers' Index (PMI) stood at 14.6 in May 2020, indicating a contraction as COVID-19 led shutdown impaired businesses.

Investments

Some of the developments and major investments by companies in the services sector in the recent past are as follows:

- Services sector is the largest recipient of FDI in India with inflow of US$ 82 billion between April 2000 and March 2020.
- In June 2020, Jio Platforms Ltd. sold 22.38 per cent stake worth Rs 1.04 trillion (US$ 14.75 billion) to ten global investors in a span of eight weeks under separate deals, involving Facebook, Silver Lake, Vista, General Atlantic, Mubadala, Abu Dhabi Investment Authority (ADIA), TPG Capital and L. Catterton. This is the largest continuous fundraise by any company in the world.
- In February 2020, Novartis launched Biome India, a digital innovation hub, in Hyderabad, its first such centre in Asia and the fourth globally.
- Indian healthcare companies are entering into mergers and acquisition (M&A) with domestic and foreign companies to drive growth and gain new markets.

Government Initiatives

The Government of India recognises the importance of promoting growth in services sector and provides several incentives across a wide variety of sectors like health care, tourism, education, engineering, communications, transportation, information technology, banking, finance and management among others.

The Government of India has adopted few initiatives in the recent past, some of these are as follows:

- The Cabinet Committee on Economic Affairs has given its approval for continuation of the process of recapitalization of Regional Rural Banks (RRBs) by providing minimum regulatory capital to RRBs for another year beyond 2019-20.
- Government of India has launched the National Broadband Mission with an aim to provide Broadband access to all villages by 2022.
- Under the Mid-Term Review of Foreign Trade Policy (2015-20), the Central Government increased incentives provided under Services Exports from India Scheme (SEIS) by two per cent.
- Government of India has been working to remove many trade barriers to services, for which it tabled a draft legal text on Trade Facilitation in Services to the WTO in 2017.

Achievements

Following are the achievements of the Government:

- India's rank jumped to 22 in 2019 from 137 in 2014 on World Bank's Ease of doing business - Getting Electricity ranking. Ministry of Tourism sanctioned 18 projects covering all the Northeast States for Rs 1,456 crore (US$ 211.35 million) for development and promotion of tourism in the region under Swadesh Darshan and PRASHAD schemes. A total of 11 projects worth Rs 824.80 crore (US$ 127.98 million) were sanctioned under the Swadesh Darshan scheme. During 2019-20, an additional fund Rs 1,854.67 crore (US$ 269.22 million) was sanctioned for new projects under this scheme.
- Statue of Sardar Vallabhbhai Patel, also known as 'Statue of Unity', was inaugurated in October 2018 and the total revenue generated till November 2019 stood at Rs 82.51 crore (US$ 11.81 million).
- IT-BPM industry's revenue was estimated at around US$ 191 billion in FY20 with a growth rate of 7.7 per cent.

Road Ahead

Services sector growth is governed by domestic and global factors. The Indian facilities management market is expected to grow at 17 per cent CAGR between 2015 and 2020 and surpass the US$ 19 billion mark supported by booming real estate, retail, and hospitality sectors.

By 2023, healthcare industry is expected to reach US$ 132 billion. India's digital economy is estimated to reach US$ 1 trillion by 2025. By end of 2023, India's IT and business services sector is expected to reach US$ 14.3 billion with 8 per cent growth.

Example: Service Sector Contribution in India, 2022

The Economic Survey of India analysed that 'Services Sector' contribution was over 50%, in India's GDP during 2021-22. FDI covered $ 16.73 billion (H1 2021-22), and contributing areas were: 'outsourcing, R&D, Courier, Tech Testing & Analysis, and Education'. Survey mentioned growth in 'gross exports services, exports of software, business and transportation services', with an increase of 22.8% (H1 2021-22).

This was facilitated due to policy changes made to 'drive innovation and technology adoption', relaxing of 'Services Provider Regulations', 'Telecom Sector Reforms and Consumer Protection (e-commerce) Rules, 2020'.

The startups in Services Sector had grown remarkably for the past six years. The cumulative cargo capacity of all existing ports had increased to 1,246.86 Million Tons Per Annum (March 2021) with 10.16% (April-November 2021) growth.

Source: https://www.livemint.com/economy/economic-survey-services-sector-contributed-over-50-to-india-s-gdp-11643622695809.html dated 31st January, 2022. Accessed on 13th July, 2022.

Activity 1.2

The implementation of Goods and Services Tax (GST) is a major tax reform in the post-independent India. It is claimed that it has created a common national market and reduced the overall tax burden on goods. GST implementation is expected to cut costs in the long run on account of availability of GST input credit, which will result in the reduction in prices of services.

You are required to explain the process of GST implementation, hurdles faced in the process, how to overcome the hurdles and its implications in the future, keeping in view the fast moving service operations in India.

Answer

Check Your Progress - 2

6. Which of the following does not exemplify manufacturing continuum as a framework to verify whether a product as a service product or not?
   a. Degree of tangibility
   b. Physicality
   c. Degree of customer contact
   d. Ability to store
   e. Cost
7. Which of the following is a unique characteristic of a manufactured product as different from a service product?
   a. Off-line quality control
   b. High customer contact
   c. Intangibility
   d. Short response time
   e. Immediate consumption
8. Which is the most adversely effected problem due to the growth of services in a country?
   a. Raising unemployment
   b. Reduction in GDP growth
   c. High costs
   d. Technology
   e. Reduction in labour-intensive manufacturing

9. Which aspect is not true as per Ricardo's theory of competitive advantage?
    a. Movement of manufacturing and service sectors from developing to developed countries
    b. Focus on advanced technologies in developed countries
    c. Increase in the need for better services in developing countries
    d. Employment opportunities for developing countries in services sector
    e. Reskilling is an essential aspect of emerging service sector

1.10 Summary

- Services are intangible products and we consume a wide variety of services in our day-to-day life.
- As services are intangible and generally tailor-made to each customer on each occasion, the quantity of service is difficult to measure and control and quality is a perception that can vary from customer to customer.
- Services are classified based on the degree of customer contact and industries having similar levels of customer contact can share their experiences for adaptation of best practices.
- The services sector has significantly contributed to the world economy in general and the Indian economy in particular.
- Services account for nearly 60% of our GDP and help us grow at a faster rate. Technology has been a major enabler of this growth.
- Growth of service industries enables high job opportunities and understanding the dynamics of the situation offers a competitive advantage in this fast-growing sector.
- National economies have to move fast in today's services-driven economic opportunities for faster growth in GDP.
- Services sector growth is governed by domestic and global factors.
- By 2023, healthcare industry is expected to reach US$ 132 billion. India's digital economy is estimated to reach US$ 1 trillion by 2025. By the end of 2023, India's IT and business services sector is expected to reach US$ 14.3 billion with 8 per cent growth.
- The implementation of the Goods and Services Tax (GST) has created a common national market and reduced the overall tax burden on goods. It is expected to reduce costs in the long run on account of availability of GST input credit, which will result in the reduction in prices of services.

1.11 Glossary

Business Process Outsourcing (BPO): Business process outsourcing (BPO) is a method of subcontracting various business-related operations to third-party vendors. When business process outsourcing began, it applied chiefly to manufacturing entities, such as soft drink manufacturers that outsourced large segments of their supply chains.

Business to Business (B2B) Transactions: These are transactions among different organizations.

Business to Customer (B2C): Business-to-consumer, denoting trade conducted via the internet between businesses and consumers.

Gross Domestic Product (GDP): Gross Domestic Product (GDP) is the monetary value of all finished goods and services made within a country during a specific period.

Information Technology (IT): It is the technology based on computer hardware and software, used for information processing

Information Technology Enabled Services (ITES): These are the services provided by deploying Information technology

Least Developed Country (LDC): The Least Developed Countries (LDCs) is a list of developing countries that, according to the United Nations, exhibit the lowest indicators of socioeconomic development, with the lowest Human Development Index ratings of all countries in the world.

Radio Frequency Identification (RFID): This is a technology using a barcode system to identify products and materials for easy traceability.

The Year 2000 (Y2K): This refers to the year 2000 where a financial crisis was expected in the banking sector, for which Y2K software was developed.

1.12 Self-Assessment Test

1. What are the important characteristics of service products? Compare these characteristics with physical products.
2. What is the manufacturing continuum? How does it help in the classification of products as service or physical products?
3. Trace the growth of service industries in India over the last 20 years.
4. Do you think that services have grown only in countries like India, the USA, China or the UK? Explain your views with statistics.
5. Discuss the concept of competitive advantage and its impact on the migration of manufacturing and service industries.

1.13 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.

1.14 Answers to Check Your Progress Questions

1. (d) Neither labor nor contact.

It is a situation which is not a characteristic of Service Process Matrix.

2. (d) Banking services to individual customers

It is not a B2B e-commerce application.

3. (e) B2C, Business to Customer service

It is the e-commerce activity of organizations directly selling goods and services to customers.

4. (d) 60-79%

60-79% is the share of services in Indian GDP during 2019.

5. (b) Servitization

It is the business strategy of utilizing manufacturing infrastructure for service operations.

6. (e) Cost

Cost will not exemplify manufacturing continuum as a framework for services.

7. (a) Off-line Quality Control

It is a unique characteristic of manufacturing operations.

8. (e) Reduction in labour-intensive manufacturing

It is the most adverse impact due to increase in service operations.

9. (d) 30-49%.

It is the average employment in service industry in India.

10. (a) Movement of manufacturing and services sector from developing to developed countries

It is not the trend happening due to increasing service operations.

Unit 2

Interdependence of Service Industries

Structure

2.1 Introduction

2.2 Objectives

2.3 Agglomeration and Association

2.4 Coalition of Service Industries

2.5 Industry-specific Associations

2.6 Retail Industry dependence on Logistics/ SCM Industries

2.7 Hospital Management depending on Inventory Management and Hospitality Industry

2.8 Supply Chain Industry and Software Industry

2.9 Interdependence of IT and Communications Industries

2.10 Hotel & Tourism Industries

2.11 Summary

2.12 Glossary

2.13 Self-Assessment Test

2.14 Suggested Readings / Reference Material

2.15 Answers to Check Your Progress Questions

"Service to others is the rent you pay for your room here on Earth."

- Muhammad Ali

2.1 Introduction

Rendering service to others is a basic human requirement beyond transactions.

In the previous unit, we discussed, Introduction to Service Operations. The concepts covered include, What is a Service Product?, Various Types of Service Systems, Characteristics of a Service Product, Physical Product vs. Service Product, Manufacturing Continuum, Importance of Operations in Services Management and the Contribution of Services Sector in the Growth of Global and Indian Economy.

Global economy develops when all the parts or sectors in the economy develop. Even though some sectors in an economy migrate to another country as per the principle of competitive advantage, global economic development continues as the migrating sector creates value in a new setting and a new sector takes its place in the country from where the migration took place.

Large-scale migration of automobile industry from developed countries is a classic example.

- In this sector, real migration of manufacturing activity happened from developed countries to developing countries mainly due to cost considerations. After globalization, China became the workshop of the world, followed by India, and other countries. After its economy was also developed to a global level, China too ceased to be a low cost location. Migration continued to other countries in Asia and Africa.
- Another important reason for such migration is to locate plants closure to the places of consumption to serve the customer better. This strategy is because of increasing costs of transportation and to meet exacting customer delivery demands.

Expansion of world trade has been greatly facilitated by the growth of businesses in services that account for more than 60% of Foreign Direct Investments (FDI) across the world. In developing countries like India, service industry is a dominant sector in the national economy, contributing around 70% to the national Gross Domestic Product (GDP).

Another factor that we should remember is that every sector depends on the fortunes of another sector for its existence and growth.

- The growth of textile industry mostly depends on the off-take from garment industry. Electronics industry depends mostly on industries supplying raw materials in the downstream. Original equipment manufacturers (OEMs) in the upstream industries also use components, parts and subassemblies
- Service industry is mutually dependent on other service industries as deemed necessary.
- Real estate industry survives only on its inter-dependence on all other supplier industries.

Future Prospects of the Service Sector in India

The service sector in India has the highest employment elasticity among all sectors. Thus, it has the potential for huge growth as well as the capability to deliver highly productive jobs - leading to revenue generation. To address the challenge of job creation, the Skill India program aims to create jobs by fostering private sector initiatives in skill development programs, and by providing them with the necessary funding.

Similarly, the Make in India program - while attempting to bolster the manufacturing sector - will cause a multiplier effect in adding to the portfolio of the Service Sector. In this context, the Startup India initiative is a key enabler for both the manufacturing as well as service industry in India - by offering to support innovative start-ups.

In the light of fast developing services sector as a dominant contributor to national economy, inter-dependencies are increase among various sectors. This is further accelerated by the adoption of IT everywhere.

This unit will discuss the mutual dependence of service industries for their operational survival, growth, and excellence.

2.2 Objectives

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

- Discuss the concept of the mutual dependence of service industries
- Identify different trade associations in the service sector
- Examine the role played by technology in enabling operational efficiency.

2.3 Agglomeration and Association

The traditional trade theory states that a country would produce and export those products where the country has a competitive advantage in terms of availability of factors of production. The new trade theories also focused on mass production, economies of scale, and cost of production as the basis for international trade. Though this is true to some extent, the following fall-outs were noticed as per a research paper (ISSN: 1439-2305) prepared by Prof. Astrid Krenz of Universitat Gottingen, Germany.

a) In the case of homogenous goods, countries would specialize in these goods only when their market share is high. When the market share drops, these countries would migrate to some other products irrespective of economies of scale.

b) In the case of heterogeneous goods, intra-industrial trade groups and cartels regulate so that all players get equal opportunity.

New economic geography approach connects transport costs with coming together of similar industries. Agglomeration is coming together of industries that face an opportunity to grow together and make the best of trade opportunities.

Example: Agglomeration of High-skilled Tradeable Services Led to Differences in Productivity Gap between Different Areas in UK

Increasing service-related economy vis-à-vis industry related economy is a fundamental change over the last 20 years or so. Cities like London have become hub for high skilled tradeable services like insurance, consultancy which can be taken global. The high skilled service companies have formed agglomeration to enhance their overall growth while competing individually.

Contd….

Cities where such associations were not in place or where the high skilled workforce was not available, the overall economic activity has not grown. In fact, it was seeing a downtrend. This explained the economic and productivity among cities and urban/rural areas.

Source: https://blogs.lse.ac.uk/businessreview/2022/07/05/bridging-the-productivity-gap-between-different-areas-in-the-uk/ Accessed on 18/07/2022.

2.4 Coalition of Service Industries (CSI)

"A Coalition of Service Industries in a developing country can identify market access priorities for governments in trade negotiations at the WTO, regionally and bilaterally as well as contribute to a domestic agenda that strengthens services trade and export opportunities", says the concept paper by International Trade Centre of UNCTAD/ WTO.

These CSI units assist respective Governments to formulate strategies for international trade negotiations before WTO. These were started to facilitate the developing countries to establish powerful mechanisms to articulate their growth potential, constraints and requirements to the respective governments. These CSI units are needed to identify problems in market access, trade barriers (both tariff and non-tariff) and their priorities in WTO negotiations. CSI agenda will focus on the General Agreement in Services (GATS), share of exports, and metrics for service trade. CSIs are constituted by experts and representatives from different service industries like hospitality, healthcare, financial services, logistics, airlines, software, technology, etc.

Activities of CSI (Coalition of Service Industries) are as follows:

- Conduct regular meetings of members
- Develop position/ status reports and representations to the Governments
- Take up with Government agencies to resolve trade barriers
- Conduct conferences in collaboration with CSIs of other countries
- Maintain relations with media, governments, and stakeholders

Confederation of Indian Industries (CII) is one such CSI for all industries—service and product-based.

Example: Thirty-seven Companies and Organizations Across 8 Countries form a Coalition of Service Industries to Address Global Cyber Security Issues

Thirty-seven companies and organizations across 8 nations formed a Coalition of Service Industries esp. related to Cyber Security. The company list included AT&T IBM Cisco etc. The list of organizations includes Coalition of Service Industries (CSI).

Contd….

The coalition was making a case with their governments to bring centre-stage international security management systems like ISO 27110/27113, NIST framework for cyber security. The objective was to mitigate risk and enhance growth.

Source: https://www.darkreading.com/risk/37-major-companies-and-organizations-pledge-to-enhance-cyber-resiliency-and-counter-evolving-global-threats dated June 9, 2022. Accessed on 18/07/2022.

2.5 Industry-specific Associations

These are the associations which focus on the specific issues confronted by the members of the association. They may pertain to government policies, tax concessions, export incentives etc.

i) NASSCOM: This is an association of IT/IT-enabled services industries established with the vision, which reads as under:

"To help the IT and IT-enabled products and services industry in India to be a trustworthy, respected, innovative and society friendly industry in the world".

Activities include:

a) Set strategic directions for industry, b) Policy advocacy for industry growth, c) Sharing best practices and collaboration, d) International partnerships and affiliations, e) Workforce development, and f) Sustainability.

ii) Federation of Indian Airlines (FIA): This is an apex body of airline industries in India formed to articulate the business-related issues of the industry and act as a single representative of the industry in negotiations with the government. Some of the issues articulated are regarding safety, passenger facilities, ground services, aviation protocols, fuel cost increases, international aviation-related problems, etc. The association also maintains a relationship with the International Air Transport Association (IATA) and the International Civil Aviation Organization (ICAO).

iii) Healthcare industry: Following are some of the associations in healthcare industry.

- Indian Medical Association
- Indian Homeopathy Medical Association
- Association of Surgeons in India
- Indian Association of Physiotherapists
- Indian Dental Association
- Indian Cancer Society
- Indian Healthcare Federation (hospitals, device producers, pharma firms, etc.)

There are similar associations for every service industry and all of them have been formed to act as that particular industry representative in interacting with the governments and participating in negotiations. This trend is continuing with increasing rigor, as the healthcare sector is a critical service area.

Example: Federation of Indian Airlines (FIA) Opposes Proposed Hike of Charges at Goa Airport Citing Post Covid Recovery of Airlines

Federation of Indian Airlines had major airlines like Indigo, SpiceJet as its members. The federation worked for common causes of member airlines that increased the bargaining capacity. Recently Goa Airport management got approval to increase both the aeronautical fees paid by Airlines and User fee directly borne by the passengers. With this move, the running costs for the airlines were going to increase and the passengers had to pay more for air travel specially generating a heavy burden on middle class passengers. The federation opposed the move strongly citing the fate of middle-class passengers and fate of airlines just recouping from Covid effect.

Source: https://timesofindia.indiatimes.com/city/goa/goa-flights-set-to-get-more-expensive-from-next-month/articleshow/92114190.cms dated June 10, 2022. Accessed on 18/07/2022.

2.6 Retail Industry Dependence on Logistics and SCM Industries

Retailing industry's profitability depends on how well they manage their supplies, the effectiveness of the working capital management, the ability to respond to changing phases of the customer expectations, responsiveness, management of obsolete and non-moving stocks, etc. All these matters fall within the realm of Supply Chain Management. Retailing is the last step in the supply chain, which starts with customer demand and ends with the fulfilment of that demand. Logistics management is a sub-set of the SCM and deals with movement, storage and distribution of material---- raw materials, components, and finished products.

Only successful management of logistics and supply chain could ensure significant savings in terms of interest saved, reduced loss due to obsolescence, transit damages, assured service to customers, which would ensure repeat purchase, etc.

Customer demands fluctuate based on the change of tastes, preferences, and a host of unknown variables, which make forecasting demand difficult. SCM tools for forecasting would be of great help for the retailer who would otherwise face the following problems:

- Overstocking unwanted goods – locked up working capital
- Stock-out of some items and hence customer dissatisfaction
- Compulsion to liquidate unwanted stock by discount sales.
- Shortage of storage space and shelf space for fast-moving products
- Firefighting and emergency purchases at a higher cost, etc.

SCM systems enhance competitive performance through the process of integrating not only the concerned departments/ functions in an organization but also providing linkage with suppliers and customers through appropriate software and technology applications like Radio Frequency Identification (RFID), Electronic Data Interchange (EDI), Barcodes, Quick Response (QR) systems etc. In large retail companies, the trigger for purchase and movement of the stock starts immediately after a sale and integration ensures that vendors get to know stocks online simultaneously.

Retailers can no longer work in isolation for their own performance and have to adopt a collaborative approach with customers as well as suppliers. This is made possible by SCM and Logistics systems working hand in glove.

Example: Amazon India Partners with Magenta Mobility to provide Last Mile Connectivity through Electric Vehicles to Reduce Its Carbon Footprint

Amazon, the retail giant, had a plan to use 100% electric vehicles for customer deliveries and achieve zero emission by 2040. As part of this, it was working with Magenta Mobility (an Electric Vehicle company) to go electric in the last mile delivery in the Logistic chain. Magenta Mobility also took care of charging stations. Amazon will add 25000 EVs by 2025.

Source: https://egov.eletsonline.com/2022/07/magenta-mobility-partners-with-amazon-india-to-provide-ev-fleets-and-charging-stations/ dated July 15, 2022. Accessed on 18/07/2022.

2.7 Hospital Management depending on Inventory Management and Hospitality Industry

In the early days, hospitals were welfare activities of governments and hence we had only Government hospitals all over the world. Subsequently, some service organizations started hospitals to increase the coverage of population and we had charitable hospitals alongside government hospitals. Today we have corporate hospitals that are run with both service and profit motives. These corporate hospitals are run in the most efficient manner, with modern equipment and methods and best-in-class medical professionals like doctors, surgeons, and nursing staff. We find these hospitals are maintained very neat and clean and following good housekeeping materials, staff, and schedules. Corporate hospitals have all facilities like testing, CT scan, MRI scan, ECG, etc.

In the case of Government hospitals, they do not generally provide food even for the in-patients leave alone the others who attend on the patients. At best there may a canteen where food items are sold at specified timings. In government and service organization-run hospitals, the change of bed linen does not follow any specified frequency and consequently, patients sleep on same bed sheets, same

pillowcases for weeks together that actually make recovery harder due to infections.

In the other hospitals which are better managed, hospitality industry concepts like personal hygiene, cleanliness, spic and span maintenance of floors, restrooms, wash areas, lobby management, well-appointed waiting areas, customer care management, room service from the food court or canteen, courteous behavior of staff, etc. are practiced.

The bed linen is changed with pre-determined frequency and also in case of need if the linen is dirtied by the patients. Food for the in-patients are generally prescribed by a qualified dietician and prepared and delivered in the rooms for the patients by the hospital kitchen. The food service is such that food is warm and packed in neat containers in hot-packs as in star hotels. The staffs in the housekeeping section are trained specially in laying beds, changing clothes, wash area cleaning, etc. by professional trainers like hospitality. These hospitals endeavour to give a 'pleasant stay' experience to the patients and their attendants and relatives. The ambiance in these hospitals is as good as a star hotel and the sum-total experience facilitates early recovery.

Thus in the hospital industry, there is lot of dependence for the procurement of medicines, equipment and other materials for patient and staff care and their inventory management to ensure that there is no shortage of any material, as healthcare is an emergency service.

Similarly, taking care of the patients, hospital staff and guests is essential for ensure customer satisfaction management. This needs efficient relationship management and facilities such as canteen, guest rooms etc.

Example: Medikaabazaar – An Online Marketplace for Hospital Supplies, Enables Hospitals Reduce Operational Expenses by up to 30%

Traditionally hospitals procured their requirements in the age-old offline mode. The company identified vendors, contacted them for product details and price details, negotiated and then placed orders. This resulted in paying higher prices especially for emergency supplies. This was passed onto patients who paid higher prices for the inefficiencies of hospital procurement.

Medikaabazaar set up an online marketplace to bring hospitals and suppliers on an online platform. About 1 lakh products were in the online catalogue. The hospital quickly compared and decided to buy from the best vendors at the best prices in turn saving up to 30% and able to pass it onto patients. Medikabazaar also provided flexible payment options.

Source: https://www.medikabazaar.com/, Accessed on 18/07/2022

Activity 2.1

Indian services sector has become and will continue to be a destination for employment- seekers.

In the context of the inter-dependent service sector:

- Identify the sector where employment opportunities are increasing
- Try to examine the skills required to grab such opportunities

Answer:

Check Your Progress - 1

1. Which of the following is the focus of Traditional trade theory?
   a. Competitive advantage
   b. Cost of production
   c. Market attractiveness
   d. Economy of scale
   e. Transport cost & nearness to source
2. Which is the major concern of an agglomeration of industries?
   a. Interests of a specific industry
   b. Interests of industries whose fortunes are inter-linked
   c. Interest of global economy
   d. Interest of national economy
   e. Interests of the community likely to be affected
3. Which is not the sector focused exclusively by CII in India?
   a. Manufacturing industries
   b. Service industries
   c. International trade
   d. Domestic trade
   e. Agriculture

4. Which of the following is not the focus of Logistics industry?
   a. Transportation of goods
   b. Ware-housing
   c. Inventory control
   d. Project Management
   e. Industrial relations
5. Which is the most inter-dependent sector for the Healthcare industry?
   a. Hospitality
   b. Manufacturing
   c. Information Technology
   d. Logistics
   e. Retail

2.8 Supply Chain Industry and Software Industry

Supply chain management is concerned with making available the right material, sourced from the right source, of the right quality, at the right price and at the right time. A supply chain starts from a customer need and ends with the customer need being satisfied. In order to perform their operations efficiently, SCM depends on information that flows as per the needs of the industry and transportation. Industry requires information to keep traveling about the material required, how much is it required at different time points, the transportation cost from different sources to different destinations, the balance between cost of storage and the cost of procurement for each lot, etc. The information is required as 'real time' information.

The users or customers of the SCM system do not want their working capital to be locked up and at the same time do not accept stock-outs. The logistic service providers have to necessarily implement systems that help integrate different arms of the supply chain like user/ consumer, assembly facilities, component manufacturing, raw material, transportation, warehouses, etc. so that the information about the requirements, stock levels, consumption pattern, bottleneck processes, etc. flows continuously. Traditional stock and bin-card systems cannot provide accurate and real time information.

Logistic and supply chain management depends heavily on appropriate software and networking systems, which enable the availability of information for the customers and vendors as well as at every station in a supply chain.

All the suppliers cater to the needs of logistics service providers. The integration is such that moment a product is sold to a customer, say in a retail store, a trigger for moving a new item from stock is raised, a stock replenishment order is raised, sometimes a purchase order is made and the stock moves from the vendor without any delay.

SCM/logistics depends also on innovative data capturing and transferring systems like barcoding, Radio frequency id, and a host of goods-tracking systems to make information available to all stakeholders. Mobile tracking of people and consignment with the help of GPS and mobile technology is nowadays common in the logistics industry.

2.8.1 Logistics Industry Dependence on IT Applications, Software and Development

India's natural coastline and vast river network give it a competitive edge in providing transportation and logistics services, both domestically and internationally. These can be classified into ports and ports services, warehousing, trans-shipment services, e-logistics, inland waterways for freight and passengers, expressways and dedicated freight corridors. India's logistics service sector itself is expected to grow from $ 115 billion to $ 360 billion by 2032.

Efficient logistics management calls for effective use of technology for tracking, monitoring and controlling movements of men, materials and vehicles. If Amazon is committing and delivering goods to anywhere from anywhere, it is because of effective deployment of technologies, which are based essentially on IT and communication technology**.** Thus the dependence of logistics industry on IT applications is important. This calls for conceiving emerging requirements and developing necessary software and application development.

Example: Amazon Wants to Address its Labour Shortage Crisis with More Warehouse Automation

Amazon, the retail major, was facing labour shortage in its warehouses which became a crisis affecting its customer deliveries. The company was taking the automation route by deploying robots and other technologies to support its supply chain management. It was not trying to address the human resource issues. There were complaints that the staff was not provided even some basic facilities in their warehouses. But experts believed automation was not a replacement for human resources. At best it enabled the humans do their jobs more efficiently. It was a harsh reality that in spite of enhanced automation, Amazon's human resource requirements were not coming down. Technology had to be coupled with motivated workforce.

Source: https://www.modernretail.co/platforms/amazon-briefing-as-a-labor-shortage-looms-amazon-faces-a-crisis/ dated July 7, 2022. Accessed on 18/01/2022.

2.9 Interdependence of IT and Communications Industries

IT and ITES industries depend on continuous contact with their customers. The Business Process Outsourcing (BPO) industry in particular renders business process services to customers who are spread all over the world. BPO employees work on the timings of their clients and their response in general is 'online' and in real-time.

IT and software industry has also to work as per customer timings as most of the time their software is tested, established, and proved with customers' real time feedback and information. Trouble-shooting of software problems cannot be delayed and most of the time, it depends on the interaction between customer and trouble-shooter.

As such, IT industry performance is heavily dependent on network efficiency and speed. Likewise, communications industry performance is dependent on the fortunes of IT and ITES industries as they are the primary customers accounting for the highest sales turnover. Communication industry managers have to constantly work on speeds of their networks as well as make available trouble-free and error-free service. All the major players like Airtel, Vodafone, etc. compete aggressively to capture software company businesses and work with these IT majors for improving service efficiency.

2.9.1 Dependence of e-commerce on Technology

Increasing dominance of e-commerce is due to its dependence on technology. Whether it is B2B or B2C, IT and Communications technology superimposed on the Internet, is the platform. Walmart's use of technologies like Robots and RFID are the basic reason for the efficiency of its service operations. Since the last 20 years, the e-commerce industry is growing significantly due to the higher consumer interest, participation, and increased demand. In this time the B2C e-commerce was gaining the speed with B2B e-commerce and this trend is continuing all over the world. The technology is the main fuel behind the evolution and existence of B2B and B2C E-commerce industry. As the technology changing the transactions between the business and consumer, the consumer is accessing various tools to estimate prices, find alternatives, stores and obtain coupons.

The Rise of E-commerce Sites

The increase in e-commerce websites helped people a lot. Without going anywhere, they like to buy online and they are also benefitted by getting various offers and discounts.

Costumers get Better Shopping Experience

E-commerce industry has changed the process of business and cash transactions. It has introduced a lot of new, modern and useful factors by which customers enjoy easy and hassle-free shopping.

Faultless Payment Process

The most popular thing about E-commerce industry is its mode of payments. Most of the cases, the payment is done digitally. By knowing the convenience and other advantages of digital payment, people are adopting this process. E-wallets and gift cards are increasing the business. The technological

advancements have gained the faith of people and they like to expend more on e-commerce websites because of its transparency and the safety of money.

Give Personalized Information in B2B Sector

As companies changing to B2B e-commerce, increasing real-time procurement data will be gathered. The B2B e-commerce competitors access this data to better understand the actions of the customer and provide services according to the data.

Artificial Intelligence Improves the E-commerce Industry

Artificial Intelligence will find a huge transformation in B2B e-commerce. It is different from B2C e-commerce as there are large numbers of users and use-cases. But B2B e-commerce will have fewer numbers of users. B2B e-commerce will apply AI and adopt it eagerly as it is very uncomplicated and powerful. Businesses get efficient by doing effective decision making at purchases, computerization of several routine tasks, offer important insights, release several man-hours behind procurement and doing business purchases clear and low cost.

Thus the impact of technology on e-commerce is profound.

Example: Walmart Ensures Acceptance of 90% for Substitutes for Stock Out Items using AI Technologies

During the Covid, online sales increased dramatically for Walmart. This coupled with logistic issues, there were frequent stock outs leading to customer dissatisfaction. Walmart suggested substitutes, but it was not that easy for human beings as a large number of parameters were involved which decided product substitution by the customer. Wrong substitution suggestion can do more damage to customer satisfaction. Walmart R&D team came up with an AI based solution for this which considered all relevant data and suggested an alternative. The factors included size, price, customer past preferences etc. After deploying the new solution, Walmart found the acceptance of suggested substitutes rose to 90%.

Source: https://corporate.walmart.com/newsroom/2021/06/24/headline-how-walmart-is-using-a-i-to-make-smarter-substitutions-in-online-grocery-orders Accessed on 18/07/2022.

2.10 Hotel & Tourism Industries

Hospitality & tourism industries are major players in the economic development of India. Together they account for 10% of India's GDP and are among the largest employment generators. Economic surveys estimate performance of US$ 38 billion in 2014 and it is estimated that the sector has a growth potential to reach US$ 71 billion in the next decade, i.e. by 2024, but there are hurdles to cross. World Trade & Tourism Council (WTTC) points out that the slow growth of India's hotel and restaurant segment is a reason and impediment to tackling. Airport infrastructure has to develop in a big way with better passenger amenities,

better arrival and departure lounges, restrooms, local transport facilities, inter-terminal transit facilities, etc. GMR Infra, GVK, Siemens, L&T, Maytas, and others are actively working on addressing these issues relating to infrastructure. It is very common to see aviation companies investing in hotel chains or working for hotel industry growth. Travel companies like MakeMyTrip, Thomas Cook, Travelyari, Cleartrip, IRCTC, Yatra, Goibibo, etc. also have a hotel booking business alongside the travel business.

Both the industries work together to promote each other and provide a one-stop service to customers to reduce the hassles of travellers. Travel/Tourism and Hospitality industries are dependent on each other for their individual growth and hence collaborate well for mutual benefit.

Against the backdrop of a fast growing services sector, Indian private sector is playing a major role.

Example: Ovolo Hotels Positions Itself as "The Place to Experience" More Than Just "Place to Stay"

Ovolo Hotels, based out of Hongkong, was a chain of lifestyles hotels catering to premium customers who were willing to pay up to 15% more for the unique experience the group provided for stay and for food and beverages. The hotels chain was known for its signature interiors, highly trained staff, excellent choice in food and beverages. It was winning Best Hotel award for so many years.

Source: https://www.hospitalitynet.org/news/4111106.html dated 20th June, 2022. Accessed on 18/07/2022.

Activity 2.2

The phenomenal growth of services sector across the world is essentially due to the significant impact of technology.

- Taking tourism as an example, try to identify the inter-dependencies of tourism sector and other sectors.
- Examine the role of technology is making the tourism sector more efficient and attractive.

Answer:

Check Your Progress - 2

6. Corporate hospitals offer the following from the hospitality industry:
   a. High cost of stay
   b. High cost of food in food-courts
   c. Good house-keeping practices
   d. Customer care focus
   e. Speedy recovery
7. Which is the main difference between government and corporate hospitals?
   a. High costs
   b. Better quality of service
   c. Patient care
   d. Speedy treatment and patient discharge
   e. Expertise
8. Which of the following decide the supply chain efficiency of a firm?
   a. Processes
   b. Customers
   c. Shareholders
   d. Community around the firm
   e. Government
9. Which is the approximate share of services sector towards Indian GDP?
   a. 10-20%
   b. 20-40%
   c. 40-60%
   d. 60-80%
   e. 80-100%
10. Which of the following is mainly responsible for the inter-dependence of IT and communications industries?
    a. Growth of the IT industry
    b. Speed of the network
    c. Mobile apps
    d. Government policies
    e. Superior hardware

2.11 Summary

- Each industry has to depend on others like customers, vendors, raw material and component producers, financial institutions, governments, and society at large for their survival and growth.
- The society depends on industries for their supplies. Service industries have these mutual dependence relationships.
- Agglomerations are the grouping of service industries whose fortunes are tied together. Trade and industry associations are formed to represent their cases in bilateral and multilateral negotiations with the government for issues like taxes, tariffs, and non-tariff barriers, constraints, etc. which impact the operational performance of the member industries.
- Two or more service industries can become dependent on each other for technology transfer/ applications which will benefit the performance of the members of the small groups.
- We have also seen instances of two industries collaborate for mutual survival and growth. The software industry finds new concerns coming up in the Logistics sector and develops new applications to improve their business and also to help the Logistics sector to do better in operations.
- The aviation sector invests in improving hospitality so that tourism develops which is beneficial for all the three sectors.

2.12 Glossary

Agglomeration: A grouping of industries whose performances are directly related to each other.

Electronic Data interchange (EDI): It is the information and data exchange by using electronic means.

IT Information Technology: IT refers to the use of computer hardware and software to manage information resources.

ITES Information Technology enabled Services: These are the services performed by deploying IT.

QR (Quick Response): It refers to the rapid replenishment of a customer's stock by a supplier with direct access to data from the customer's point of sale.

RFID: Radio Frequency Identification. It is a technology used to identify various items for tracing them along the supply chain.

SCM Supply Chain Management: SCM is the process of planning, organizing, controlling, directing and achieving the results of all the activities right from receipt of the customer order to the execution of the order and after-sales service.

UNCTAD: United Nations Conference on Trade and Development. It is an organization under the United Nations to promote trade and development across member countries.

WTO: World Trade Organisation. It is a global organization, replacing GATT to promote business across the world.

2.13 Self-Assessment Test

1. Discuss the concepts of Agglomeration, Association and Coalition with respect to service industries.
2. What operational aspects of the retail industry would improve with an efficient implementation of Supply chain/Logistics systems?
3. What are the Hospitality management concepts adapted by corporate hospitals? How would the hospital's performance improve by this?
4. Discuss the dependence of SCM systems on the technology sector. Who are the major developers of dedicated SCM software?

2.14 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

2.15 Answers to Check Your Progress Questions

1. (a) Competitive advantage

Traditional trade theory focuses on competitive advantage. At that time, migration of factors of production was very low and hence economists believed that countries would concentrate on those sectors where they have an advantage in terms of supply.

2. (b) Interests of industries whose fortunes are inter-linked

Agglomerations are concerned about mutual survival and growth.

3. (e) Agriculture

Agriculture is not the major concern of CII.

4. (e) Industrial relations

Industrial relations is not in the domain of logistics industry.

5. (a) Hospitality

Hospitality is the main inter-dependent sector for Healthcare sector.

6. (d) Customer care focus

Customer care is the benefit of the corporate hospital to offer from hospitality sector.

7. (a) High costs

Cost is the main difference between corporate and government hospitals.

8. (a) Processes

Processes decide the supply chain efficiency.

9. (d) 60-80%

About 60-80% is the contribution of service sector to Indian GDP.

10. (b) Speed of the network

Speed of the network is responsible for the inter-dependence of IT and Communication industries.

Unit 3

Virtual Value Chain and Profit Chain

Structure

3.1 Introduction

3.2 Objectives

3.3 Physical Value Chain and Virtual Value Chain

3.4 Putting Profit Chain to Work

3.5 Case Study: Apollo Hospitals

3.6 Summary

3.7 Glossary

3.8 Self-Assessment Test

3.9 Suggested Reading / Reference Material

3.10 Answers to Check Your Progress Questions

"You can close more business in two months by becoming interested in other people than you can in two years by trying to get people interested in you."

- Dale Carnegie

3.1 Introduction

Understanding customers by knowing their requirements will generate more business for an organization than trying to impress customers with your products or services.

In the previous unit, we discussed the topic of the mutual dependence of service industries for their operational survival, growth, and excellence.

This unit addresses the essentials of virtual value chain and profit chain, such as new processes, new knowledge, new products and new relationships.

3.2 Objectives

After going through this unit, you will be able to

- Explain the concept of the virtual value chain
- Establish the importance of new processes and new knowledge
- Identify different strategies for developing new products and new relationships
- Discuss how we can put the profit chain into work.

3.3 Physical Value Chain and Virtual Value Chain

Michel Porter's generic value chain model consists of activities such as procurement of raw materials, manufacturing operations, delivery, sales & marketing, firm infrastructure, technology development, and human resource management. However, in the last decade advancement of information technology (IT) has changed the way one looks at the value chain. IT has helped in the development of the concept of the virtual value chain. The virtual value chain concept proposed by John Sviokla and Jeffrey Rayport is a business model explaining the distribution of value-generating information services throughout an extended supply chain (an extended enterprise), an organization that cooperates closely with other organizations to provide products or services.

In the virtual value chain, information is treated as a dynamic element for achieving a competitive advantage. The information is used for generating innovative and new concepts. This translates to a new level of value for the customer. The transfer of information between all actions and among all stakeholders is the primary objective of using this model. The concept of a virtual value chain was developed looking at current internet penetration. It provides intensification to the existing value chain. IT also helps in getting a wider view of the physical value and making it efficient and effective. Today's IT systems are proficient in capturing information from every component of the value chain. This information could be used for optimizing performance at every stage of the value chain. It can also be used to improve employee productivity, satisfaction and customer loyalty at every stage leading the concept of "Service Profit Chain." Thus, the Service Profit Chain links employee satisfaction to customer loyalty and profitability.

The advent of information technology, followed by the internet, has changed the approach towards value chain. It is radically different from the traditional value chain processes. A physical value chain consists of procurement, transformation through planned operations, testing, delivery, and post sales service.

Virtual value chain consists of the following components:

Gathering: Organization gather relevant information through internet. This information is usually in the form of text, data tables, videos etc.

Organizing: This information is organized in such a way as to easily retrieve necessary information for further processing/analysis.

Selection: The captured information is used to add value to customers. Organizations develop better strategies and processes to deal with customers, product delivery, etc. using selected information.

Synthetisation: The relevant data is synthesized in the desired format to ensure that it meets the end user requirements.

Distribution: The synthesized information is ultimately delivered to the end user.

In a traditional physical value chain, products are delivered to customers and in the virtual value chain a digital product is delivered. For example, digital movie streaming of movies instead of delivery of DVD.

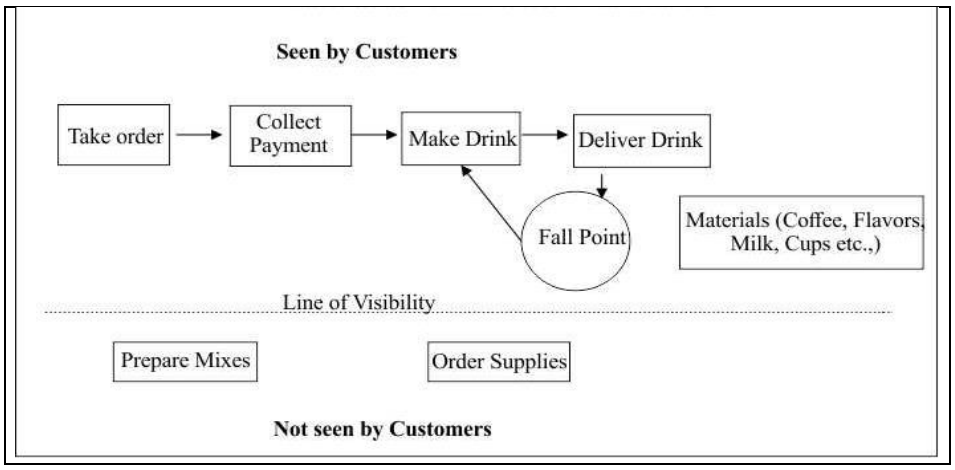
3.3.1 New Processes

Just as is the case with new process design for manufacturing, the standard tool used for new service process design is a flowchart. In recent times, different service gurus have begun calling the flowchart as a "Service Blueprint" to emphasize the importance of process design. A unique feature of the service blueprint is the distinction made between the high customer contact aspects of the service and those activities that the customer does not see. This distinction is made with a "line of visibility" on the flowchart.

First, a clear delineation separates the front office or high-contact area from the back office or low or no customer contact area. A "line of visibility" divides these two functional areas and the processes occurring in each. When developing a new service process, designers must consider who will perform that task, what activities will happen in front of the customer and what is behind the scene, when should the process occur and in what sequence, and why the process is placed in that sequence and visibility area.

Figure 3.1 provides a glimpse at the value chain of Café Coffee Day. Cafe Coffee Day - India's favorite coffee shop & hangout place, popularly known as CCD, could pre-grind the espresso beans used for "Cappuccino" behind the scene, but the act of grinding them within the customer's view shows the customer the freshness of the drink and creates a certain sensory experience.

Figure 3.1: Service Process for Cafe Coffee Day



Source: ICFAI Research Center

Second, designers can determine standards or maximum execution times, materials, and the exact details of a particular step. The designer can also incorporate the exact sequence in which the employee takes the customer's money and gives back the change during the purchase transaction. The diagram addresses the materials required for each process and where the purchase and

ordering responsibility occurs. The CCD uses coffee, flavoring ingredients, cups, and lids as the materials in its process. The shop may sell other items such as mugs, coffee-making machines, coffee powder, books, and CDs, but these items belong to another design element, not the drink-making design.

Third, designers can examine potential failure points and come up with strategies for preventing or recovering from failures. The mistake-proofing strategy, or poka-yoke, can be an integral part of the design. Poka-yokes are generally warnings- physical, or visual contact methods. They cover the task to be done, the customer treatment, and the tangible or environmental features of the service. The CCD example shows a fail point at drink delivery. Here the customer may receive a drink that does not match what was ordered. Poka-yoke design aims to prevent this failure. The steps in this regard include: the employee marks the drink specifications on the paper cup as the customer orders, the employee then repeats back what the customer ordered, the customer confirms or corrects the order at this point, and when the drink is finished the employee again repeats the order just completed.

3.3.2 New Knowledge

Many organizations have recognized that by improving the services provided by them, they can make significant and sustainable gains in the marketplace. Knowledge of services and service delivery can be, and increasingly are becoming a competitive weapon for organizations. For manufacturing and product-oriented organizations, service may be an important means for differentiation, particularly if they are operating in markets where there is little product differentiation or where product development is slow, difficult, expensive, or short-lived. The nature of the services available and the way in which services are delivered may provide a means to competitive success.

Service-oriented companies are recognizing that there is a real need to provide high levels of customer service. Increasing competition, declining sales, and more service-aware customers are putting pressure on service organizations to rethink and improve the levels of service that they offer. Service knowledge on creating valuable customer retention and loyalty, on attracting other customers, and on the financial position of an organization is important. In addition, for organizations that compete on cost, knowledge has a role to play in ensuring right-time delivery at low operational costs.

3.4.1 Competing on Knowledge and Outcomes

Some service organizations compete on new knowledge whereas others on the service outcomes, while some manage to compete on both (Figure 3.2). There are a number of positions that the service organization may take up, when compared with its competitors. This analysis can also be applied by public sector and non-governmental organizations (NGOs) since they too are in competition for different types of resources with other organizations. The different positions are as explained below:

Failing: These organizations' outcomes are below industry specification, and their knowledge level is also poor. Traditional services that have failed to move with market trends find themselves in this position. Some years ago Indian Post, the government-operated postal system in India, found that it was left behind by different courier companies such as First Flight and DTDC in terms of technology, higher standards, and faster service.

Complacent: In this kind of organizations, the new knowledge level is excellent but the way customers are treated is poor. Professional services sometimes fall into this category by being perceived as arrogant by their clients. They may be experienced and know much better than their clients know but this cannot be an excuse for an offensive service. Often, the medical profession comes in for criticism for dealing with patients, not as human beings.

Retaining customers in the short term: It is possible to develop customer loyalty through good service knowledge. However, if the total service outcome falls below the standard, customers will only tolerate this for a relatively short period. If the service experience is excellent, the emotional switching costs are quite high for customers. Some computer companies have used this strategy to retain customers in the period between phasing out an old product and launching a new one.

Average: This is the position that many high-volume business-to-customer services believe they occupy. In many traditional service sectors, there are often a number of reasonably established competitors, all conducting business in a similar fashion. The insurance service sector in India was a good example with the presence of several players and little to choose between them. As the competition has become tough, many have tried to differentiate themselves through the way they deal with their customers.

World-class: These organizations are universally recognized as being the best in all that they do. There are only a few of these in existence. The retailing service practices by Walmart are universally known to be the best.

Competing on knowledge and outcomes scenario is shown in Figure 3.2.

Figure 3.2: Competing on Knowledge and Outcomes

Level of outcomes as compared with	Excellent	Arrogant or Complacent	Average	World-Class
	Poor	Failing		Retaining customers in the short term
		Poor		Excellent
		Level of knowledge as compared with the competitors		

Source: ICFAI Research Center

Activity 3.1 What are issues involved in retaining a corporate client in a service industry like courier service? **Answer:**

Check Your Progress - 1

1. Which of the following is not an element of Michael Porter's value chain?
   a. Manufacturing operations
   b. Procurement of raw material
   c. Competitors' Information
   d. Sales and marketing
   e. Delivery
2. In a virtual value chain, which of the following is treated as a dynamic element for achieving competitive advantage?
   a. Manufacturing operations
   b. Sales and marketing
   c. Data
   d. Information
   e. Knowledge
3. What is the name of the line that divides the high contact area from low customer contact area?
   a. Line of separation
   b. Line of visibility
   c. Line of control
   d. Line of contact
   e. Line of balance
4. Which of the following is not a position that may be taken by a service organization when compared with its competitors?
   a. Failing
   b. Complacent
   c. Average
   d. World Class
   e. Retaining customers in the short term

5. Which is the method suited for new process designers to examine potential failure points?
   a. Analyzing competitors' information
   b. Gathering point of sales data
   c. Studying service delivery methods
   d. Inspecting the operations process
   e. Using mistake-proofing strategy

3.3.3 New Products

In the past, service developers were not often used to follow any new product development processes, but instead used to develop their own ad-hoc processes. They followed this approach for several reasons. Due to the intangible nature of services, it is difficult to prototype and field-test any new concept. Moreover, most service firms do not have formal research and development departments. Even though service providers are often slow in adopting formal new service development processes, successful service providers are more likely to develop new products. Nevertheless, designing and then developing new service products is not an easy task. Products are as varied as the service organizations of which they are a part. Some are extremely flexible and are able to meet a wide range of customer requirements using the same set of resources. For example, some management consultants are able to utilize a wide range of operations in developing customized solutions for their clients. Other products, as in many call center operations, are much more narrowly defined in order to achieve benefits of consistency and efficiency. Similarly, some products depend a great deal on the skill, knowledge, and expertise of individual employees, such as medical doctors in general practice.

Usually, a formalized new product development process consists of four key steps: design, analysis, development, and final launch. The process could be conceptualized as a sequence from design through launch or a full cycle if a continuous improvement approach is incorporated. In reality, the process tends to be nonlinear and iterative. Design and analysis are planning activities, while development and launch are execution activities. The design stage covers the formulation of a new service objective and strategy, idea generation and screening, and concept development and testing. The analysis stage includes business analysis and project authorization. The development stage addresses the complete service design and testing, process and system design and testing, marketing program design and testing, personnel training, service testing, and pilot run, and test marketing. The launch is the full-scale launch and post-launch review.

At the heart of the model sits the service delivery system: the people, technology, and system that go into designing and delivering the product. Organizations that continuously develop successful new products tend to organize their people into cross-functional teams, provide them with appropriate tools and resources for planning and execution, and develop an organizational context that facilities testing the entire process so that products can be developed quickly and effectively.

3.3.4 New Relationships

A service manager develops new relationships during the execution of tasks like finding new staff to meet supply chain strategies, managing quality systems for continuous improvement of service delivery system, selecting sites for the new locations, stocking inventory for new services, etc. The impact of new relationships should not be taken for granted. First, it is harder to develop a new relationship than most people think. Second, as companies execute their strategic vision, their competencies may change, their relationships along the supply chain will definitely change, compelling them to build of some new relationships. Thus, a critical component of the virtual value chain is to develop new strategic relationships that ensure the company to be very efficient in producing and delivering services of everyone's interest.

Example: Deploying Predictive Analytics for Recruiting the Best Talent Leading to Better "Service Outcomes"

Validus Senior Living was a Tampa based long term care company for seniors. Taking care of mom and dad was at the core of the company operations.

The company believed in adopting the right people and technologies to derive expected "service outcomes" for its customers. The nature of business demanded that the selected employees should align with the culture of the company in keeping the care of the residents uppermost in mind. Frequent attritions affected the service outcomes badly. So, the company took the services of an analytics company to develop a predictive analytics model to select the right candidates who have a cultural fit with the company and stay with the company long term to serve the senior residents.

Source: https://www.prnewswire.com/news-releases/validus-senior-living-partners-with-arena-analytics-to-improve-employee-retention-through-cutting-edge-ai-and-data-science-301585172.html dated July 13, 2022. Accessed on 19/07/2022.

3.4 Putting Profit Chain to Work

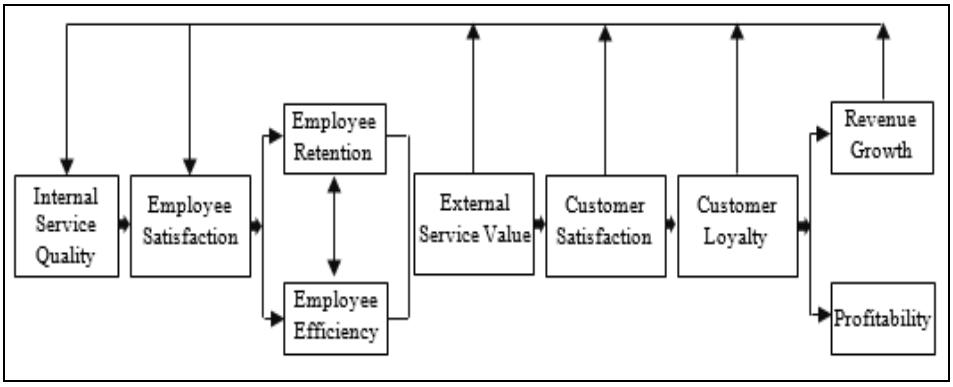
In the new service economy, front-office workers and customers need to be the center of focus for any management. Successful service managers pay attention to factors such as investment in people, technologies supporting front-office workers, contemporary recruiting and training practices and performance-based incentives for employees at every level. In recent times, companies such as Southwest Airlines, ServiceMaster, Taco Bell, and MCI have realized that when

they treat employees and customers supreme, then a far-reaching shift occurs in the way they manage and measure success. The new economics of service requires innovative measurement techniques. These techniques affect the impact of employee loyalty, satisfaction, and productivity on the value of products and services delivered to customers for developing loyalty and assess the subsequent impact on profitability and organizational growth. The lifetime value of a loyal customer can be enormous, especially when referrals by loyal customers are studied and added to the economics of customer retention and repeat purchases of related products. The service-profit chain is based on the lessons learnt from successful service organizations. They help managers in targeting new investments to develop services, and achieve customer satisfaction levels to maximize the competitive impact.

3.4.1 The Service-Profit Chain

The service-profit chain binds profitability, customer loyalty, employee satisfaction, and productivity together. The links in the chain are as follows: profit and growth are inspired primarily by customer loyalty; loyalty is a direct outcome of customer satisfaction; satisfaction is largely guided by the value of services provided to customers; value is generated by satisfied, loyal, and productive employees; employee satisfaction is achieved from high-quality support from management and policies that enable employees to deliver quality service to customers. Refer Figure 3.3.

Figure 3.3: Service Profit Chain



Source: ICFAI Research Center

Example: PulteGroup, an American Residential Home Construction Company, follows "Service Profit Chain" Effectively to Drive Growth and Profitability

PulteGroup, Inc. was an American residential home construction company based in Atlanta, Georgia, United States. The company was the 3rd largest home construction company in the United States based on the number of homes closed. In total, the company built over 775,000 homes.

Contd….

The company was named "one of the best places to work". The company believed that highly satisfied employees will stay with the company in both good and bad times. When the employees were satisfied and put their hearts into the work, the outcomes for the customers were very encouraging. The customers were loyal, they spread the message about the company. The sales and profits increased, and the company invested more in employee well-being. The service profit chain sustained the growth. One example of its HR policies was allowing flexible timings and work from home. The company also had individualized career growth plans.

Source: https://seekingalpha.com/article/4523059-pultegroup-an-exciting-buy-with-30-percent-potential-annual-returns-to-2024 dated July 13, 2022. Accessed on 19/07/2022.

3.5 Case Study: Apollo Hospitals

Apollo Hospitals is considered as the pioneer of the private healthcare service system in India and it was the country's first corporate hospital. A forerunner in integrated healthcare, Apollo has a robust presence across the healthcare spectrum. The Group has emerged as a leading integrated healthcare service provider in Asia, with a portfolio of companies that specialize in pharmacy, insurance, super specialty hospitals, and outpatient clinics, etc.

Apollo Hospitals started its operations from Chennai, in the year 1983. Apollo's Founder Chairman, Dr. Prathap C Reddy was the driving force behind the initiation. Endorsed as the architect of modern Indian healthcare, Dr. Prathap C Reddy started Apollo with the mission of bringing world-class healthcare to India in the private sector, at a price that Indians could afford. The backdrop to this development was the totally inadequate healthcare infrastructure prevailing in India at that time.

Apollo's first innovation was its business model. Earlier, only the very privileged people had access to quality treatment, as they could afford to travel abroad. Apollo hospitals introduced healthcare that matched best-in-class outcomes, at a fraction of the global healthcare prices. This brought in a revolution in health care in India. The cost-consciousness continues to be a key "service winner" in healthcare strategy. Some other service winners for the group are its value system and its continuous drive with a steady focus on key objectives such as excellence, expertise, empathy, and innovation.

One of Apollo's major contributions to the healthcare industry has been the adoption of clinical excellence as an industry standard. Apollo pioneered this concept. Apollo group was the first hospital to invest in the pre-requisites that led to international quality accreditation such as JCI. Apollo also developed centers of excellence in Cardiac Sciences, Orthopaedics, Neurosciences, Emergency Care, Cancer, and Organ Transplantation, etc. Apollo's expertise in excellence comes from its habit of scrupulously re-evaluating and reinventing. Protocols are built, taken apart, and built again to ensure that infection control is optimized to extreme levels; stringent internal scoring systems were created with the sole

objective of ensuring it matches the very best in the world. Apollo's initiatives such as ACE@25 and TASSC are indicators of its dedication to providing better global benchmarks in clinical excellence.

Apollo healthcare system leveraged on technology for building its integrated healthcare delivery models, which facilitate seamless electronic medical records, hospital information systems, and telemedicine-based health outreach initiatives, for superior access to medical care. Another critical manifestation of widespread technology has been the amazing advancement in medical equipment and Apollo has repeatedly pioneered the introduction of such innovations in India. Time and again, Apollo has introduced revolutionary new therapies such as the Proton Beam Therapy. From leveraging new age mobility to getting futuristic equipment, Apollo has always been ahead of its competitors. Currently, the group is targeting to harness tremendous potentials of the robotics and is investing heavily in making it a real and major option in the healthcare industry.

3.5.1 Social Sustainability at Apollo

[2]Apollo Hospitals has always strongly believed in social initiatives that help rise above barriers. In keeping with this, the group has started several impactful programs in this area. One of these initiatives is SACHi (Save a Child's Heart Initiative) - a community service initiative with the aim of providing quality paediatric cardiac care to children suffering from heart diseases in underprivileged sections of society. Apollo also runs the SAHI (Society to Aid the Hearing Impaired) initiative to help poor children with hearing impairment, and the CURE Foundation which is focused on cancer screening, cure, and rehabilitation. In the area of Cancer care, Apollo has also joined hands with cricketer Yuvraj Singh's YOUWECAN to organize large-scale cancer screenings. Apollo regularly conducts comprehensive health screening camps across the nation. The Group runs the incredible and successful Billion Hearts Beating campaign – a nationwide program that has awakened India to heart healthiness.

The Group continues to break new ground in adopting new technology. From leveraging new age mobility to getting futuristic equipment, Apollo has always been ahead of the curve. Apollo pioneered Tender Loving Care (TLC) and it continues to be the magic that inspires hope, warmth, and a sense of ease in the patients.

The cost of treatment in Apollo was a tenth of the price in the western world. Today as the group charts out its roadmap to take healthcare to a billion, the focus on driving a strong value proposition remains constant. Apollo Hospitals has taken the spirit of leadership well beyond the business metrics. It has embraced the onus of keeping India healthy.

[2] Source: www.apollohospitals.com

Apollo's remarkable story has captured India's attention. For its service to the nation, the Group was felicitated with the honour of a commemorative postage stamp bearing its name. For his untiring pursuit of excellence in healthcare, Dr. Pratap C Reddy was bestowed with the second-highest civilian award, the 'Padma Vibhushan', by the Government of India.

Activity 3.2
What are the issues involved in social sustainability in corporate hospitals?
Answer:

Check Your Progress - 2

6. Which of the following services depends a great deal on the skill, knowledge, and expertise of individual employees?
   a. Tele-banking
   b. Tele-medicine
   c. Call center operations
   d. Medical doctors in general practice
   e. Banking operations
7. Which of the following is not a step in the new product development process?
   a. Design
   b. Analysis
   c. Control
   d. Development
   e. Final launch
8. The analysis stage includes business analysis and what else?
   a. Project Planning
   b. Project Scheduling
   c. Project Authorization
   d. Project Control
   e. Project Execution

9. When does a service manager develop new relationships?
    a. Providing training to existing employees
    b. Selecting a site for the new location
    c. While quality testing
    d. Capacity planning
    e. Scheduling
10. Which one of the following factors may not be a focus area for a successful service manager?
    a. Investment in technologies
    b. Contemporary recruiting and training practices
    c. Performance-based incentives for employees at every level
    d. Channel integration
    e. Investment in human resource

3.6 Summary

- John Sviokla and Jeffrey Rayport proposed a business model called the virtual value chain, explaining the distribution of value-generating information services throughout an extended supply chain.
- In the virtual value chain, information is treated as a dynamic element for achieving a competitive advantage.
- In addition, organizations may compete on the excellence of their outcomes, the excellence of their new knowledge, or both.
- Perceived user value offers a way of identifying current and future strategies.
- Many organizations have recognized that by gaining new knowledge they can make significant and sustainable gains in the marketplace.
- There are a number of positions that the service organization may take when compared to its competitors.
- This analysis can also be applied by the public sector and non-governmental organizations (NGOs).
- Service providers are often slow in adopting formal new service development processes. The job of a service manager is to develop new relationships during executing tasks such as finding new staff, managing quality, selecting sites, and stocking inventory for new services.
- The service-profit chain concept is based on the lessons learnt from different successful service organizations. It helps managers target new investments to develop services and customer satisfaction levels to maximize competitive impact.

3.7 Glossary

Front Office: The main administrative office of a business or other organization having customer access

Non-governmental Organizations (NGOs): A non-governmental organization is an organization that uses its surplus revenues to further achieve its purpose or mission, rather than distributing its surplus income to the organization's shareholders as profit.

Product Differentiation: Product differentiation is the process of distinguishing a product or service from others, to make it more attractive to a particular target market.

Profit Chain: The central idea behind the profit chain concept is that a direct relationship exists between profit, growth, customer loyalty and satisfaction, value delivered, and employee satisfaction, loyalty and productivity.

Public Sector Organizations: Public Sector organizations are organizations that are owned and controlled by the government.

Strategic Vision: Strategic vision harnesses the various aspects of an organization and ensures that they support each other and are consistent with the direction indicated by the drivers of change.

Value Chain: A value chain is a set of activities that a firm operating in a specific industry performs in order to deliver a valuable product or service for the market.

Value: Ratio of quality to the price paid. Competitive “happiness” is being able to increase quality and reduce price while maintaining or improving the profit margins.

Virtual Value Chain: The virtual value chain concept proposed by John Sviokla and Jeffrey Rayport is a business model explaining the distribution of value-generating information services throughout an extended supply chain (an extended enterprise), an organization that cooperates closely with other organizations to provide products or services.

3.8 Self-Assessment Test

1. Explain the virtual value chain concept.
2. Describe the importance of new process and new knowledge.
3. Select any four organizations in the same service sector, like four food outlets, and assess their relative position in terms of their knowledge and outcomes.
4. Explain the new product development process for services.
5. Explain the service profit chain. What is the importance of a profit chain?

3.9 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

3.10 Answers to Check Your Progress Questions

1. (c) Competitors' Information

It is not an element of Michael Porter's value chain. It consists of activities such as procurement of raw materials, manufacturing operations, delivery, sales & marketing, firm infrastructure, technology development, and human resource management.

2. (d) Information

In virtual value chain, information is treated as a dynamic element for achieving competitive advantage.

3. (b) Line of visibility

Line of visibility divides the high contact area from low customer contact area.

4. (a) Failing

Failing is not a position that may be taken by a service organization when compared with its competitors.

5. (e) Using mistake-proofing strategy

It is the method suited for new process designers to examine potential failure points.

6. (d) Medical doctors in general practice

This service depends a great deal on the skill, knowledge, and expertise of individual employees.

7. (c) Control

Control is not a step in the new product development process.

8. (c) Project Authorization

It is the stage when a service manager develops new relationships.

9. (b) Selecting a site for the new location

It is the stage when a service manager develops new relationships.

10. (d) Channel integration

This may not be a focus area for a successful service manager.

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