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MINISTRY OF SKILL DEVELOPMENT
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Telecom Sector Skill Council

Participant Handbook

Sector
Telecom

Sub-Sector
Handset

Occupation
Sales and Distribution - Handset Segment

Reference ID: **TEL/Q2200,** Version **5.0**
NSQF Level **4.0**

Telecom Customer Care Executive - Repair Center

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> Skilling is building a better India. If we have to move India towards development then Skill Development should be our mission.

Shri Narendra Modi
Prime Minister of India

Certificate

COMPLIANCE TO QUALIFICATION PACK– NATIONAL OCCUPATIONAL STANDARDS

is hereby issued by the

TELECOM SECTOR SKILL COUNCIL

for

SKILLING CONTENT : PARTICIPANT HANDBOOK

Complying to National Occupational Standards of

Job Role/ Qualification Pack: **"Telecom Customer Care Executive - Repair Center"** QP No. **"TEL/Q2200, NSQF Level 4.0"**

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Authorised Signatory
(Telecom Sector Skill Council)

Acknowledgements

Telecom Sector Skill Council (TSSC) would like to express its gratitude to all the individuals and institutions who contributed in different ways towards the preparation of this "Participant Handbook." Without their contribution it could not have been completed. Special thanks are extended to those who collaborated in the preparation of its different modules. Sincere appreciation is also extended to all who provided peer review for these modules.

The preparation of this handbook would not have been possible without the Telecom Industry's support. Industry feedback has been extremely encouraging from inception to conclusion and it is with their input that we have tried to bridge the skill gaps existing today in the industry.

This participant handbook is dedicated to the aspiring youth who desire to achieve special skills which will be a lifelong asset for their future endeavors.

About this book

India is currently the world's second-largest telecommunications market with a subscriber base of 1.20 billion and has registered strong growth in the last decade and a half. The industry has grown over twenty times in just ten years. Telecommunication has supported the socioeconomic development of India and has played a significant role in narrowing down the rural-urban digital divide to some extent. The exponential growth witnessed by the telecom sector in the past decade has led to the development of telecom equipment manufacturing and other supporting industries.

Over the years, the telecom industry has created millions of jobs in India. The sector contributes around 6.5% to the country's GDP and has given employment to more than four million jobs, of which approximately 2.2 million direct and 1.8 million are indirect employees. The overall employment op-opportunities in the telecom sector are expected to grow by 20% in the country, implying additional jobs in the upcoming years.

This Participant handbook is designed to impart theoretical and practical skill training to students for becoming Telecom Customer Care Executive - Repair Center.

Telecom Customer Care Executive - Repair Centeris responsible for collecting e-waste from retailers, repair shops, and other unorganized stakeholders.

This Participant Handbook is based on Telecom Customer Care Executive - Repair Center Qualification Pack (TEL/Q2200) and includes the following National Occupational Standards (NOSs):

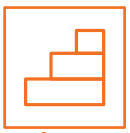
1. TEL/N2217: Maintain workplace efficiency and personal appearance
2. TEL/N2201: Troubleshoot basic mobile handset/accessory issues and coordinate repair or replacement
3. TEL/N9108: Follow sustainability practices in telecom operations
4. DGT/VSQ/N0102: Employability Skills (60 Hours)

The Key Learning Outcomes and the skills gained by the participant are defined in their respective units. Post this training, the participant will be able to manage the counter, promote, and sell the products and respond to queries on products and services.

We hope this Participant Handbook will provide sound learning support to our young friends to build an attractive career in the telecom industry.

Symbols Used


Key Learning Outcomes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Practical


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It is recommended that all trainings include the appropriate Employability skills Module. Content for the same is available here: https://www.skillindiadigital.gov.in/content/list

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Telecom Sector Skill Council

Unit 1.1 - Introduction to the Sector
Unit 1.2 - Roles of a Telecom Customer Care Executive - Repair Center
Unit 1.3 - Basics of a Mobile Handset

TEL/N2217

Key Learning Outcomes

By the end of this module, the paricipants will be able to:

1. Explain the importance of Telecom Sector.
2. Discuss the role and responsibilities of a Telecom Customer Care Executive - Repair Center.

UNIT 1.1: Introduction to the Sector

Unit Objectives

By the end of this unit, the participants will be able to:

1. Discuss about the telecom industry and its various sub-sectors in India
2. Outline the growth of the mobile handset industry in India
3. List the top telecom product manufacturers in India
4. Identify the regularity authorities in the Telecom industry in India

1.1.1 Introduction to the Telecom Sector in India

India's telecom sector has grown faster than the overall economy in recent years. As of 2025, the country has over 1.2 billion subscribers, making it the second-largest telecom market in the world. Broadband users have crossed 979 million, showing rapid digital adoption.

The sector continues to generate new jobs, especially in sales, supervisory, and managerial roles, driven by 5G expansion, rising data usage, and rural market growth.

Key Segments:

1. Network & IT Services – building infrastructure and connectivity.
2. Service Providers – offering mobile, internet, and digital services.
3. Retail & Distribution – ensuring product availability and customer engagement at the ground level.

The telecommunication sector is the backbone of India's digital economy and has revolutionized human communication by delivering high-speed voice and data services. With the rollout of 4G and 5G networks, the industry continues to drive industrial, economic, and social growth.

India is currently the second-largest telecommunications market in the world, with over 1.2 billion subscribers as of mid-2025. Broadband users have crossed 979 million, reflecting rapid internet adoption across urban and rural areas.

The telecom sector contributes significantly to India's GDP and is a major generator of employment. The rollout of 5G, cloud computing, AI, IoT, and big data analytics has created strong demand for skilled professionals. According to the Telecom Sector Skill Council (TSSC), the industry has a demand-supply gap of nearly 28%, especially in areas like 5G, mobile app development, AI/ML, and robotic process automation.

To bridge this gap, TSSC is working to train a world-class workforce and support the growth of telecom manufacturing, services, and distribution clusters.

1.1.2 Various Sub-Sectors of the Telecom Industry

Telecommunication is a multi-dimensional industry. It is divided into the following sub-sectors

- Telecom Infrastructure - It is a physical medium through which all the data flows. This includes telephone wires, cables, microwaves, satellites, and mobile technology such as fifth-generation (5G) mobile networks.
- Telecom Equipment - It includes a wide range of communication technologies, from transmission lines and communication satellites to radios and answering machines. Examples of telecommunications equipment include switches, routers, voice-over-internet protocol (VoIP), and smartphones.
- Telecom Services – A service provided by a telecommunications provider or a specified set of user- information transfer capabilities provided to a group of users by a telecommunications system. It includes voice, data and other hosts of services.
- Wireless Communication - It involves transferring information without a physical connection between two or more points.
- Broadband - It is wide bandwidth data transmission which transports multiple signals at a wide range of frequencies and Internet traffic types, that enables messages to be sent simultaneously and used in fast internet connections.

Fig. 1.1.1: Telecom Sub-Sectors

The major segments within these sub-sectors include the following:

- Wireless communications
- Communications equipment
- Processing systems and products
- Long-distance carriers
- Domestic telecom services
- Foreign telecom services
- Diversified communication services

1.1.3 Major Service Players in Telecom Industry

Wireless Operators

Market Share in 2022 (Wireless Subscribers)

As of February 2022, with ~ 1,145 million (114.5 crore) wireless subscribers (including inactive):

- Jio: 35.4 % (≈ 402.7 million users)
- Airtel: 31.5 % (≈ 358.1 million)
- Vodafone-Idea (Vi): 23.2 % (≈ 263.6 million)
- BSNL: 10.0 % (≈ 113.8 million)

These figures sum to ~ 100 % across those four players in the wireless space in that period.

The below graph shows each of these telecom giants' market share as of 2022.

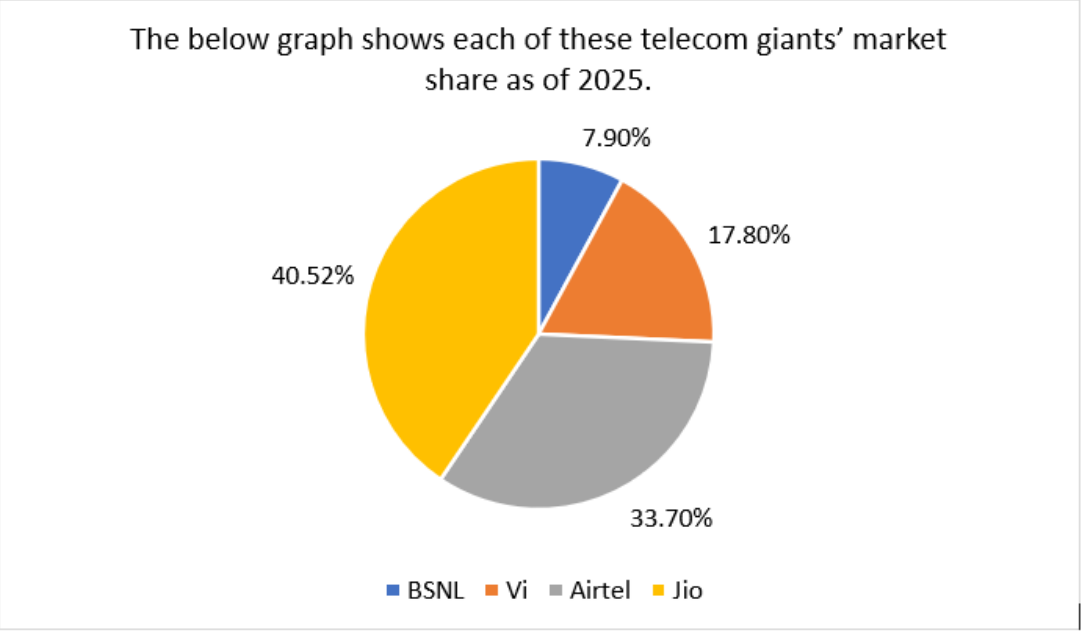


Fig. 1.1.2: Market share of mobile telecom operators in India
Source: https://www.trai.gov.in/service-providers-view

As of May 2025, there are about 3.87 crores (38.7 million) wireline subscribers in India, according to the Telecom Regulatory Authority of India (TRAI).

The below graph shows the market share of fixed-line telecom operators in India as of May 2025.

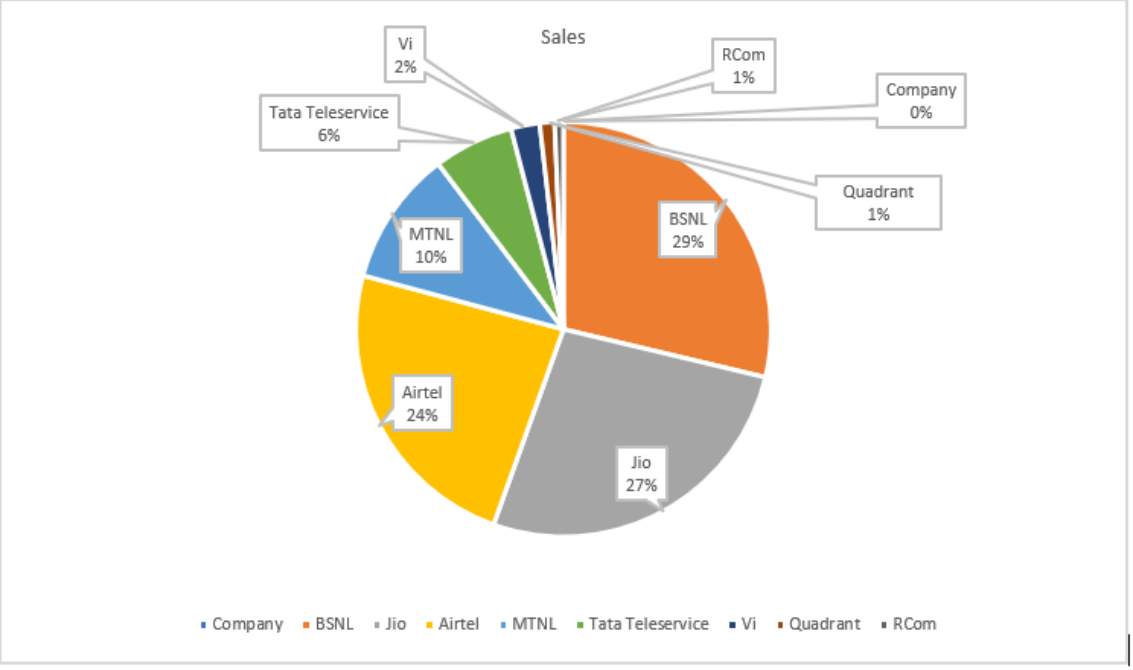


Fig. 1.1.3: Market share of Fixed Line telecom operators in India
Source: https://www.trai.gov.in/service-providers-view

Internet service providers (ISPs)

- An Internet Service Provider (ISP) is a company that provides individuals and organizations access to the internet and other related services. Below is the list of major ISPs in India (wired & wireless)

Reliance Jio	**Airtel**	**ACT Fibernet**	**Hathway**	**Vi**
BSNL	**Intech online private limited**	**Alliance Broadband**	**APSFL**	**Asianet Broadband**
DEN Networks	**Kerala Vision**	**Mu Internet**	**RailTel Corporation of India**	**Sify**
Spectranet	**Tata Communications**	**Tata Play**	**S Net**	**GAILTEL**
Tulip Telecom	**ERNET**	**National Knowledge Network (for educational institutions only)**	**PowerGrid**	**CtrlS Datacenters Ltd**

Fig. 1.1.4: Major Internet Service Providers in India

1.1.5 Regulatory Authorities in the Telecom Industry in India

Multiple regulatory authorities control the telecom sector in India. They are:

TRAI - Telephone Regulatory Authority of India

The Telecom Regulatory Authority of India, established in February 1997, regulates telecom services in India. Its scope includes fixing/revising tariffs for telecom services. The mission of TRAI is to create the environment needed for the growth of telecommunication at a pace that will empower India to play a major role in the emerging global information society.

One of the main objectives of TRAI is to provide a fair and transparent policy that facilitates fair competition. In January 2000, the Telecom Disputes Settlement and Appellate Tribunal (TDSAT) was set up to settle any dispute between a licensor and a licensee, between two or more service providers, between a service provider and a group of consumers, and to hear and dispose of appeals against any direction, decision or order of TRAI.

TRAI Regulation on Call Centre

1. 121 - General information number - Chargeable Call
2. 198 - Consumer care number - Toll-Free Number
3. Service Request - a request made pertaining to the account for:
    - Change in plan
    - Activation/deactivation of VAS/ supplementary service/special pack
    - Activation of service provided by the operator
    - Shifting/disconnection of service/billing details

COAI - Cellular Operators Association of India

The COAI was set up in 1995 as a registered non-governmental and non-profit society. COAI is the official voice for the cellular industry in India, and it interacts on its behalf with the licensor, telecom industry associations, man agreement spectrum agency and policy makers. The core members of COAI are private cellular operators such as Reliance Jio Infocom Limited, Idea Cellular Ltd., Bharti Airtel Ltd., Aircel Ltd., Videocon Telecom, Telenor (India) Communications Private Ltd., and Vodafone India Ltd., operating across the whole country.

TDSAT - Telecom Disputes Settlement and Appellate Tribunal

It is a special body set up exclusively to judge any dispute between the DoT and a licensee, between two or more service providers, or between a service provider and a group of consumers. An appeal against TDSAT shall be filed before the Supreme Court of India within ninety days.

The Department of Telecommunications, abbreviated to DoT, is a department of the Ministry of Communications of the executive branch of the GOI.

The DoT promotes standardization, research and development, private investment and international cooperation in matters relating to telecommunication services. It acts as a licensing body, formulates and enforces policies, allocates and administers resources such as spectrum and number, and coordinates matters in relation to telecommunication services in India.

भारत दूरसंचार
INDIA TELECOM

Notes

UNIT 1.2: Roles of a Telecom Customer Care Executive - Repair Center

Unit Objectives

By the end of this unit, the participants will be able to:

1. Discuss the key responsibilities of a Telecom Customer Care Executive in a repair center to ensure efficient and high-quality customer service.
2. Explain the significance of delivering effective in-person customer support at a repair center.
3. Elucidate the essential skills and technical knowledge required for a Telecom Customer Care Executive working in a repair center.
4. Describe the common challenges faced in diagnosing, testing, and resolving mobile handset and accessory issues in a telecom repair center.
5. Determine how precision and quality control in diagnosing and repairing telecom devices affect customer satisfaction and service reliability.

1.2.1 Telecom Customer Care Executive - Repair Center

A Customer Care Executive in a mobile repair center handles the walk-in customers, listen to their problems with regard to the handset/accessories and assist in getting their problem solved. They also follow up with them, if the problem is solved to their satisfaction. They are often responsible for front-facing duties that directly impact the customer's experience of an organisation. Thus, they are the link between the company and the customer.

Fig. 1.2.1 CCE-Repair Center

1.2.2 Key Responsibilities of a Telecom Customer Care Executive in a Repair Center

The key responsibilities are:

1. Greeting and Assisting Customers:

- Welcome customers courteously and listen carefully to their issues or complaints.
- Identify the nature of the problem—whether it is related to device malfunction, billing, network, or service.
- Maintain a positive and helpful attitude throughout the interaction.

2. Complaint and Service Request Handling:

- Register the customer's issue or service request in the company's system accurately.
- Generate service tickets or job sheets and provide a reference number to the customer.
- Explain the estimated time required for repair or service completion.

3. Coordination with Technical Team:

- Communicate customer complaints and device details to the technicians for inspection.
- Track the repair process and ensure it is completed within the promised timeline.
- Coordinate between the customer and the technical team for any additional approvals or updates.

4. Providing Information and Guidance:

- Inform customers about repair charges, spare part replacements, and warranty coverage.
- Educate customers on product usage, care, and preventive maintenance tips.
- Update customers regularly about the progress and expected delivery time of their repaired device.

5. Documentation and Record Maintenance:

- Maintain proper documentation of all service requests, invoices, and feedback forms.
- Record details of parts replaced, service dates, and technician remarks for reference.
- Ensure data accuracy and confidentiality of customer information.

6. Handling Customer Feedback and Follow-ups:

- Contact customers after service completion to confirm satisfaction.
- Record feedback to assess service quality and identify areas of improvement.
- Escalate unresolved or repeated issues to the senior team for further action.

7. Ensuring Service Quality and Compliance:

- Adhere to company service standards and telecom industry regulations.
- Ensure transparent communication regarding service terms and charges.
- Maintain cleanliness, order, and a customer-friendly environment in the service area.

8. Technical and Product Awareness:

- Keep updated with new telecom products, software updates, and service procedures.
- Understand common technical issues to communicate effectively with customers.
- Support customers with troubleshooting basic device or network-related problems.

9. Performance and Continuous Improvement:

- Meet targets such as customer satisfaction scores, resolution time, and service quality benchmarks.
- Suggest ideas for improving customer experience and repair center efficiency.
- Participate in training sessions to enhance communication and technical skills.

1.2.3 Essential Skills and Technical Knowledge Required for a Telecom Customer Care Executive in a Repair Center

A Telecom Customer Care Executive plays a vital role in maintaining customer satisfaction by ensuring effective communication, accurate problem resolution, and efficient service delivery. To perform these responsibilities efficiently in a repair center, the executive must possess a combination of technical knowledge and interpersonal skills.

1. Communication Skills

- The executive must be able to communicate clearly, confidently, and politely with customers.
- Effective listening is important to understand customer complaints accurately.
- The ability to explain technical information in simple language helps build trust and ensures customer clarity.
- Good verbal and written communication skills are essential for documentation and correspondence.

2. Customer Service Skills

- A positive attitude, patience, and empathy are necessary when handling upset or dissatisfied customers.
- The ability to remain calm under pressure and resolve issues promptly improves service quality.
- Strong problem-solving and conflict-resolution skills help in providing effective solutions.
- Professional behavior and maintaining service ethics are crucial to represent the company's image.

3. Technical Knowledge

- Basic understanding of telecom products such as mobile phones, routers, SIM cards, and network devices.
- Familiarity with telecom technologies like GSM, CDMA, 4G, and 5G networks.
- Knowledge of troubleshooting procedures for common hardware and software issues.
- Awareness of warranty policies, repair processes, and spare part replacement systems.
- Ability to interpret service reports, diagnose problems, and communicate them effectively to technicians or customers.

4. Computer and System Handling Skills

- Proficiency in using customer management software (CRM) for registering complaints and tracking repairs.
- Ability to generate service tickets, update records, and manage digital documents.
- Basic knowledge of data entry, email communication, and use of office applications like Word and Excel.
- Understanding of data privacy and maintaining confidentiality of customer information.

5. Coordination and Organizational Skills

- Efficiently coordinating between customers, technicians, and management to ensure timely service delivery.
- Managing multiple service requests and prioritizing tasks effectively.
- Maintaining proper documentation and records for future reference.
- Time management and attention to detail are key to ensuring smooth operations.

6. Product and Process Awareness

- Keeping updated with the latest telecom products, service plans, and company procedures.
- Understanding new technologies, software updates, and device features to guide customers accurately.
- Familiarity with standard operating procedures (SOPs) and repair center workflow.

7. Interpersonal and Teamwork Skills

- Working collaboratively with technicians, supervisors, and administrative staff.
- Demonstrating respect, cooperation, and adaptability in a team environment.
- Sharing customer feedback with the team to improve service quality.

8. Professional Ethics and Work Discipline

- Maintaining honesty, punctuality, and integrity in all customer dealings.
- Adhering to organizational policies and safety standards within the repair center.
- Ensuring transparency in communication and avoiding false commitments.

1.2.4 Common Challenges Faced in Diagnosing, Testing, and Resolving Mobile Handset and Accessory Issues in a Telecom Repair Center

In a telecom repair center, diagnosing and resolving problems in mobile handsets and accessories requires both technical expertise and analytical ability. However, several challenges arise during the process due to the complexity of devices, customer expectations, and limited resources. The following are some of the most common challenges faced by repair center professionals:

1. Identifying the Exact Cause of the Problem

- Modern smartphones are complex devices with multiple hardware and software components.
- Many symptoms, such as overheating, poor signal, or slow performance, can result from various causes.
- It often becomes difficult to differentiate between hardware faults (like damaged circuits) and software issues (like corrupted files or outdated firmware).
- Inaccurate problem descriptions from customers can further delay correct diagnosis.

2. Lack of Standardized Tools and Equipment

- Some repair centers may not have advanced diagnostic tools or updated testing machines.
- The absence of specialized instruments for motherboard testing, battery analysis, or screen calibration can affect accuracy.
- Using incompatible tools or outdated equipment can lead to incomplete repairs or device damage.

3. Unavailability of Genuine Spare Parts

- Genuine parts such as screens, batteries, or connectors may not always be readily available.
- Delays in procurement or the use of duplicate parts can reduce device performance and reliability.
- In some cases, parts for older or discontinued models are difficult to source.

4. Software Compatibility and Update Issues

- Frequent software updates by manufacturers may cause compatibility problems with diagnostic tools.
- Locked or password-protected devices make it hard to perform tests or reinstallation.
- Inconsistent network conditions or firmware errors can lead to repeated failures in testing and flashing procedures.

5. Handling Water-Damaged or Physically Broken Devices

- Devices exposed to water or physical impact often have multiple internal issues.
- Corrosion on circuit boards or broken micro components may not be visible immediately.
- Such devices require extra care during disassembly and reassembly, increasing repair time and risk.

6. Customer Miscommunication and Unrealistic Expectations

- Customers may not describe the issue clearly or may expect instant repairs.
- Lack of understanding about repair timelines, data loss risks, or costs can lead to dissatisfaction.
- Managing customer expectations while maintaining service quality is often challenging.

7. Data Security and Privacy Concerns

- Technicians must ensure that customer data (contacts, photos, messages) remains safe during repair.
- Accidental data loss or privacy breaches can harm the company's reputation.
- Proper backup and confidentiality procedures are essential but often time-consuming.

8. Multiple Device Models and Brand Variations

- Each brand and model has a different design, operating system, and repair procedure.
- Constantly updating knowledge and skills for new models is necessary but demanding.
- Availability of technical manuals or training for every device is often limited.

9. Time Constraints and Workload Pressure

- Repair centers often handle a large number of service requests daily.
- Balancing speed with accuracy becomes difficult, leading to potential errors or incomplete repairs.
- Pressure to meet deadlines while ensuring customer satisfaction adds to the challenge.

10. Quality Assurance and Post-Repair Testing

- Ensuring that the problem is fully resolved after repair requires detailed testing.
- Inadequate testing may result in repeated customer complaints or returns.
- Maintaining consistency and reliability across all repairs demands strict quality control procedures.

1.2.5 Impact of Precision and Quality Control in Diagnosing and Repairing Telecom Devices on Customer Satisfaction and Service Reliability

Precision and quality control are critical aspects of any telecom repair center's operations. They ensure that devices are accurately diagnosed, properly repaired, and returned to customers in optimal working condition. Maintaining high standards of precision and quality directly influences both customer satisfaction and service reliability.

1. Importance of Precision in Diagnosis

- Accurate identification of faults helps in applying the correct repair method and reduces the chances of errors.
- When technicians perform precise diagnostics, unnecessary part replacements and repeated service attempts are avoided.
- Precision saves both time and cost, leading to efficient service and customer trust.
- Inaccurate diagnosis, on the other hand, can result in unresolved issues, additional repairs, and customer dissatisfaction.

2. Role of Quality Control in Repair Processes

- Quality control involves systematic checks at every stage—diagnosis, repair, testing, and final inspection.
- It ensures that all components are functioning properly and meet the manufacturer's standards before delivery.
- Proper quality checks prevent defects, ensure consistency in service, and enhance overall reliability.
- Following standard operating procedures (SOPs) and using genuine spare parts are key components of quality control.

3. Ensuring Device Performance and Safety

- Precision and quality control guarantee that repaired devices perform safely and efficiently.
- Proper reassembly, correct wiring, and secure component fitting prevent overheating, short circuits, and other post-repair failures.
- This enhances the longevity of devices and reduces the number of repeat complaints.

4. Building Customer Trust and Satisfaction

- Customers value timely, accurate, and long-lasting repairs.
- When devices are repaired correctly the first time, it builds confidence in the service provider.
- Consistent quality encourages positive feedback, repeat business, and word-of-mouth promotion.
- Poor quality repairs or recurring issues can damage the company's reputation and result in loss of customers.

5. Contribution to Service Reliability

- Reliable services depend on the ability of the repair center to deliver consistent results over time.
- Regular monitoring, testing, and adherence to quality standards reduce breakdowns and service failures.
- Maintaining accurate records of repair data and quality audits improves accountability and traceability.
- A reliable repair process ensures that customers receive the same level of quality with every service interaction.

6. Continuous Improvement and Skill Development

- Precision and quality control practices encourage technicians to update their knowledge and refine their technical skills.
- Regular training and feedback sessions help maintain uniform service standards.
- Continuous improvement in repair methods enhances both efficiency and customer experience.

1.2.6 Basic Terminologies used in a Telecom Repair Center

- 1G: 1G is the first-generation cellular network that existed in 1980s. It transferred data (only voice) via an analog wave.
- 2G: 2G is the second-generation technology which introduced the concept of digital modulation which meant converting voice (only) into digital code (in your phone) and analog signals. Being digital helped to overcome some of the limitations of 1G as it omitted the radio power from handsets thereby making life healthier and it had enhanced privacy too.
- 3G: 3rd Generation in Mobile Telephony. It leads to use of speech and data services simultaneously. Up to 2 Mbps data rates are offered by it. 3G includes services like Video Calls, Mobile TV, Mobile Internet and Downloading. There are bunch of technologies which fall under 3G like WCDMA, EV-DO, HSPA and others.
- 4G: 4G is the latest generation of mobile data connectivity built on the foundations set by 3G. 4G offers a faster and more reliable connection. 4G offers features like downloading movies or music, streaming YouTube videos and uploading images to Facebook at a much faster speed than 3G. 4G is a quicker and easier technology as compared to earlier ones.
- 5G: is the fifth-generation technology standard and is the successor to the 4G for broad band cellular networks which began in 2019 worldwide. These networks will have higher download speed of up to 10gigabits per second and can connect different devices because of the higher bandwidth
  - AC: Alternate Current.
  - BSI: Battery Status Indicator
  - CDMA: Code Division Multiple Accesses CPU: Central Processing Unit DCT: Digital Core Technology
  - DC: Direct Current
  - ESD: Electro Static Discharge

- FM: Frequency Modulation
- GSM: Global System for Mobile phones
- IC: Integrated Circuit
- IMEI: The International Mobile Equipment Identity
- LCD: Liquid Crystal Device
- LED: Light Emitting Diode
- MIC: Microphone
- NFC: Near Field Communication
- PDA: Personal Digital Assistance
- PCB: Printed Circuit Board
- PFO: Power Frequency Oscillator RAM: Random Access Memory RTC: Real Time Clock
- SMD: Surface Mount Device
- SIM: Subscriber identification module

- Up-Sell: Up-selling is the action whereby a seller induces the customer to purchase more items, upgrades, or other add-ons in an attempt to make a more profitable sale.
- Cross-Sell: The selling of additional products and services to the existing customers, established clients, traders, markets etc is referred to as cross-selling.
- Customer Service: It refers to the provision of service to customers before, during and after a purchase. It is designed especially to enhance the level of customer satisfaction i.e. the feeling that the customer is happy and satisfied with the product or service.

Notes

UNIT 1.3: Basics of a Mobile Handset

Unit Objectives

By the end of this unit, the participants will be able to:

1. Identify the different parts of a mobile handset
2. Demonstrate how to assemble and disassemble a handset

1.3.1 Parts of a Mobile Phone

A mobile cell phone is a handheld device that can perform several communication functions. Mobile technology has become one of the fastest growing technologies in the world.

Mobile phone consists of several components. Let's have a look at each of them and functions of each of them. Given below is the table which explains the functions of the main parts

Parts of a mobile phone	Functions
Display	The most obvious component of a smart phone is its display. Two types are LCD and LED. These days LED are in use.
Battery	Batteries of phones typically use lithium-ion technology that is either removable or non- removable in mobile devices. You can charge the batteries with the help of a charger It acts as a source of power for a mobile phone
'System-on-a-chip' or SoC	SoC comprises the smartphone's CPU, GPU (Graphics Processing Unit), LTE (Long Term Evolution) modem, display processor, video processor, etc.
Memory and Storage	RAM is the area in the mobile which stores the operating system files and other system app files. Since the space in the RAM is limited, there are slots for external SD cards to store user files.
Power switch	It is used for switching on and switching off the mobile phone
Modem	The modems help the smartphone to receive and send text messages and to make calls.
Camera	A smart phone has front and rear cameras. It has three parts, sensor, the lens and the image processor.
Sensors	There are five sensors in every smartphone to detect the orientation, rotation, and tilting of the phone, to navigate the direction, screen light sensors, proximity sensor to lock the screen to prevent unwanted touch of command buttons

Fig. 1.3.1 Parts of a Mobile Phone

1.3.2 Internal Parts of a Mobile Phone

The table outlines the main sections of a mobile phone and how they are connected	
Internal Section	**Description**
SIM card section	SIM Card Interface section is directly connected with the CPU in most mobile cell phones. If there is no power supply in a mobile phone then the SIM section is connected with the CPU through the Power IC.
Memory card section	In most phones the micro-SD cardholder is connectedthrougha 8 pin socket. The memory card section is found inside the CPU
Ear Speaker Section	• Inmodern mobile cellphones, which have a separate ear speaker, the speaker is directly connected to the CPU. • It receives sound viasignals directly from the CPU of from the audio section inbuilt within the CPU. • In some mobile phones, these sound signals are received via coil / resistance. Some mobile phones have audio IC in the audio section, while others have audio samplifier.
Speaker/Ringer Section	• The ringer, buzzer or speaker inmostmobile phones are connected to the audio amplifier IC to obtain loud sound. • The amplifier IC amplifies the sound or audio signal received from the CPU of the audio section.

Key Backlight Section	• LED Lights are connected according to the parallel circuit in the key backlight section. Anode ends of all the LEDS are connected to each other and all the cathode ends to each other. 3 to 3.3 V is supplied for the functioning of these key LED Lights.
LCD Backlight Section	• LCD Backlight in mobile cell phones is made according to the series circuit. A Boost Voltage Generator section is built for the supply of high voltage (10 to 18V) for the functioning of the LCD LED. Boost coil, Boost Volt Driver IC, Rectifier • Diode are present in this section.
Vibrator Motor Section	• Positive power supply is given to this section directly from the positive end the battery. Negative power supply is given through a NPN transistor or from th ground of any circuit.
Network Section	• Antenna, External Antenna Socket, RX-Band Pass Filter, RF Crystal, FEM, PFO, TX- Band Pass Filter, RF IC, CPU are connected in the Network Section.
Battery Charging Section	• Charger and system interface connector is made together in most modern mob cell phones. Regulator section is made separately for the battery charging secti In some mobile phones, the battery charging section is made inside the Power IC.
FMRadio Section	• FM Radio Driver IC, FM Antenna, Signal and Supply Components are made in the FM Radio Section.
Bluetooth Section	• Bluetooth Antenna, Bluetooth RF Signal Filter, Bluetooth Driver IC, Supply and Signal Components are found in this section. The Bluetooth section functions lik the Network Section. The RF-CLK signal is given to the Bluetooth driver IC durin signal processing.
Handsfree (Earphone) Section	• The hands-free jack, hands free MIC, speaker signal component and hands-free audio amplifier are present in this section. Hands free symbol is displayed after connecting the Hands-free jack.

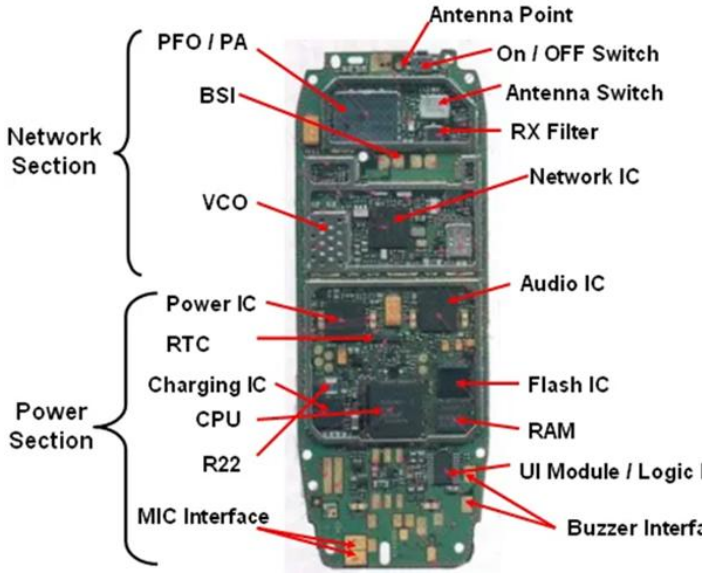


Fig. 1.3.2 Internal Parts of a Mobile Phone

1.3.3 Potential Hazards Associated with Mobile Phone Repair

What is a hazard?

A thing that has the power to cause harm to you or anything around is known as hazard. Let us first discuss about some of the terms associated with hazards. There are quite a number of potential hazards that one can encounter when servicing or repairing a mobile phone. These are listed in Table 1 together with the preventive actions that you could take to avoid them.

The following are some of the hazards and preventive actions for them:

Hazard	Preventive Actions
Burns	Use of well-insulated tools
	Useof gloves
	Keeping the soldering iron in the right place
	Unplugging equipment when not in use
Pricks by sharp objects	Appropriate storage of equipment
	Proper disposal of sharp objects
	Use of appropriate tools and equipment
Environmental pollution	Proper disposal of electronic wastes
Trailing electrical cables	Make sure electrical equipment is unplugged while not in use
	Safe storage of cables
Falls	Keep all tools, bins etc. in the right place

1.3.4 Disassembling a Mobile Phone

This is the beginning of all cell phone repairs. To be able to completely disassemble and reassemble any cell phone, you will be able to single out the root cause of the issue, and thus move on to repair it.

To disassemble is to take something apart or to break it down into pieces.

The following are the steps that you should take when disassembling a mobile phone:

- Switch off the phone
- Remove the battery cover
- Remove the battery, SIM card memory card (if any)
- Remove all the screws from the phone
- Lift back the cover with the help of a flat screwdriver
- Remove the strips (buzzer strip, display, camera, volume and speaker button strips)
- Remove the antennae wire from the outside
- Remove the motherboard and vibrator

You need to understand the internal sections of a mobile phone and how they are connected to the CPU, in order to successfully disassemble it.

This section is incredibly important due to the fact that after becoming familiar with the disassembling of phones and also the structure of certain phones and how they are made, you must be able to start identifying each part as you disassemble it. This is crucial in repairing phones considering diagnosing the phones relies heavily on the knowledge of the function and responsibility of each part.

1.3.5 Assembling a Mobile Phone

The Re-assembly is obviously just as important as the disassembly, considering this is where the replacement of faulty components takes place. Once again, practice makes a man perfect, eventually enabling you to freely tear and and re-construct any cell phone, replacing faulty components on the way.

The following are the steps that you should take when assembling a mobile phone:

- Fix the vibrator strips of speaker and volume button
- Fix the motherboard
- Connect the antenna with wire
- Place the camera and connect it
- Place the buzzer Put the camera cover
- Make sure that the LCD is working before you place the screen
- Put battery and battery cover

Exercise

Short Questions:

1. Why is effective in-person customer support important in a telecom repair center?
2. List three essential skills a Telecom Customer Care Executive must have when working in a repair center.
3. What are two common challenges faced while diagnosing mobile handset issues?
4. How does precision in device repair affect customer satisfaction?
5. Mention two key responsibilities of a Telecom Customer Care Executive in a repair center.

Multiple Choice Questions:

1. Which of the following is most important for providing effective in-person customer support?
   a) Speed of repair only
   b) Clear communication and empathy
   c) Technical knowledge only
   d) Following company timings strictly
2. Which skill is essential for a Telecom Customer Care Executive?
   a) Advanced marketing skills
   b) Technical knowledge of mobile devices
   c) Knowledge of international law
   d) Cooking skills
3. A common challenge in diagnosing mobile handsets is:
   a) Handling customer calls politely
   b) Identifying hardware vs software issues
   c) Filing GST reports
   d) Managing social media accounts
4. Precision and quality control in device repair primarily ensure:
   a) Faster employee turnover
   b) Higher customer satisfaction and reliability
   c) Reduced marketing costs
   d) Increased number of devices sold
5. A key responsibility of a repair center executive includes:
   a) Designing new mobile apps
   b) Diagnosing and repairing customer devices efficiently
   c) Writing novels
   d) Conducting market surveys

Fill in the Blanks:

1. Delivering effective _____ customer support helps build trust and satisfaction.
2. A Telecom Customer Care Executive must have strong _____ skills to communicate technical issues clearly.
3. Identifying whether a mobile device issue is hardware or software-related is a common _____ faced in repair centers.
4. Maintaining _____ in diagnosing and repairing devices ensures high service reliability.
5. One of the main responsibilities of a Telecom Customer Care Executive is to ensure efficient and _____ customer service.

Notes

2. Maintain Workplace Efficiency and Personal Appearance

Telecom Sector Skill Council

Unit 2.1 - Maintaining Professional Appearance and Workplace Etiquette

Unit 2.2 - Organizing and Managing the Work Area Efficiently

TEL/N2217

Key Learning Outcomes

By the end of this module, the paricipants will be able to:

1. Explain the importance of adhering to company-prescribed dress code, grooming standards, and workplace etiquette.
2. Describe the significance of maintaining personal hygiene, displaying identification badges, and greeting customers courteously.
3. Explain the importance of maintaining accurate customer records and service requests to enhance operational efficiency.
4. Describe the role of digital tools, CRM applications, and service benchmarks in managing customer service operations effectively.

UNIT 2.1: Maintaining Professional Appearance and Workplace Etiquette

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain the importance of following prescribed uniform/dress code and grooming standards as per organizational guidelines.
2. Describe the significance of maintaining personal hygiene and demonstrating professional etiquette in the workplace.
3. Elucidate the standard operating procedures for wearing and displaying identification badges.
4. Discuss best practices for greeting customers, understanding their concerns, and assisting them professionally.
5. Demonstrate how to wear and maintain the prescribed uniform and follow grooming standards as per company policies.
6. Show how to practice good personal hygiene and professional workplace etiquette.
7. Demonstrate the correct way to wear and display identification badges as per organizational protocols.
8. Show how to greet customers courteously, understand their concerns, and provide relevant assistance.

2.1.1 Grooming for Call Centre Executive

When working at a Repair Centre, CCEs need to present a neat and professional appearance as they are the one who meet the customers first and leave an impression in their mind. The primary goal is to "feel good" about the way you look and project a positive image of self and the organisation. Being well-dressed is a compliment to customers you meet.

Once you enter your store/department you need to be dressed in full uniform as per company norms, and also properly groom yourself as per the service standards.

Following Prescribed Uniform and Grooming Standards

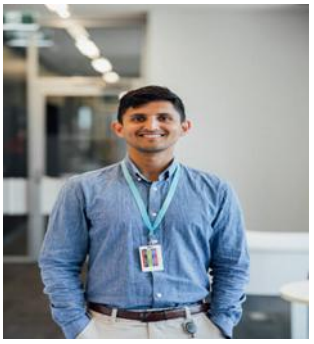
In the telecom and service industry, employees represent the face of the organization. The way a Customer Care Executive (CCE) or showroom staff dresses and maintains grooming directly influences customer perceptions, trust, and brand image. Following the prescribed uniform and grooming standards ensures professionalism, consistency, and discipline, while creating a positive first impression on customers. Adhering to these guidelines also reflects respect for company policies and enhances the overall workplace culture.

1. Importance of Following Uniform and Grooming Standards

Aspect	Explanation / Example
Professional Image	Wearing a clean, well-maintained uniform projects professionalism. Example: A neatly ironed company-branded shirt signals seriousness.
Brand Identity	Uniforms create a sense of belonging and make employees easily identifiable to customers. Example: Telecom showroom executives in branded T-shirts/jackets.
Customer Trust	Customers feel confident when served by well-groomed and properly dressed staff.
Equality & Discipline	Uniforms eliminate differences in attire, promoting equality and discipline in the workplace.
Hygiene & Cleanliness	Proper grooming ensures a hygienic appearance, which is especially important in customer-facing roles.
Compliance with Policies	Following dress codes shows adherence to organizational standards and respect for company rules.

2. Wearing and Maintaining Uniform & Grooming Standards

Action	Correct Practice	Images
Uniform	Wear the prescribed company uniform daily; keep it neat, clean, and properly ironed. Example: Telecom-branded shirt with ID card visibly worn.	
Footwear	Wear clean and formal/approved footwear as per company guidelines. Example: Black polished shoes, no casual sandals.	

ID Card	Always display ID card at chest level; never keep it in a pocket or hidden.	
Personal Hygiene	Maintain good hygiene: regular bath, trimmed nails, neat hair. Example: Hair tied neatly or kept professional.	
Grooming for Men	Shave regularly or maintain a trimmed beard, neat hairstyle, no strong perfumes.	
Grooming for Women	Neatly tied hair, minimal jewelry, light makeup as per policy, no flashy accessories.	
Uniform Care	Wash and iron uniform regularly, replace worn-out items as per company rules. Example: Report to supervisor if uniform needs replacement.	
Body Language	Stand upright, smile, and maintain a friendly, approachable appearance while interacting with customers.	

3. Benefits of Maintaining Uniform and Grooming Standards

- Builds customer confidence and satisfaction.
- Promotes professionalism and discipline at work.
- Enhances brand reputation through consistent employee appearance.
- Encourages a positive work culture with equality among staff.
- Creates opportunities for career growth by showcasing professionalism.

Following prescribed uniform/dress codes and grooming standards is much more than just a rule—it is a professional responsibility. Employees who maintain proper attire and grooming represent their company in the best light, improving customer experiences and strengthening brand image. Demonstrating professionalism in appearance reflects equally in the quality of service delivered.

2.1.2 Appearance

The frontline person/team is the brand ambassador of the store. Customers visiting the stores are greeted by this team and are assisted by them. Hence, they are expected to present a neat and clean appearance.

You are the CCE and being a part of this team, you should:

- Follow organisational guidelines with respect to standard uniform and name badges
- Adhere to specified uniform/dress code and grooming guidelines
- Wear name badges as per organisational guidelines
- Have neat and clean fingernails, teeth, shoes, hair and face
- Demonstrate a positive attitude
- Maintain eye contact with the customers
- Shake hands firmly
- Neither interrupt nor argue with customers
- Remember to smile and be friendly

2.1.3 Specific Uniform Guidelines

Following the prescribed uniform, dress code, and grooming standards is essential in maintaining a professional and consistent image of the organization. It reflects discipline, respect for workplace norms, and attention to personal hygiene, which helps create a positive impression on customers and colleagues. Adhering to these standards ensures safety in certain work environments, promotes team unity, and reinforces the organization's brand identity. Proper grooming and a neat appearance also enhance personal confidence and contribute to a professional work culture.

Sl.No.	Specifically for Men	Specifically for Women
1	Uniform prescribed should be clean and ironed.	Women mustier their hair, if they have longhair. Not much oil should be applied.
2	Shoes should be clean and polished.	They should avoid bright coloured nail polish and long nails as they may distract customers or damage merchandise on display.
3	Hair must be short, clean and tidy.	Minimum, non-flashy jewellery should be worn
4	One is expected to have a cleanshaven look.	Dangling earrings, noisy anklets & bangles must not be worn on the floor.
5	Beard and moust ache must be trimmed, neat and tidy	Only very light make-up to be applied (lip- stick of very light shades only).
6	Nails should be cut or trimmed neatly at regular intervals.	Any type of earrings studs & bracelets are not to be worn on the floor during official hours.

2.1.4 Professional Conduct

- Be on time. Being late impedes a company's operations and demonstrates a lack of consideration of the time concerns of others. If you are constantly late for work, meetings, or are always late with your reports and other tasks; it demonstrates to others that you are probably not executive material because you disregard the value of time.
- Be discreet. Keep company secrets such as new product designs, sales figures or any other confidences to yourself.
- Be courteous, pleasant, and positive. No matter how demanding your clients, customers, co-workers, or employees might be; always remain upbeat and positive. Projecting a positive company image has the same effect.
- Be concerned with others, not just yourself. Finding out a customer or client's point of view naturally helps you get ahead in any industry. Concern for others should include your superiors, co-workers and subordinates as well.
- Dress appropriately. Dress to be comfortable in your environment. Dressing poorly or too casually does not convey a good image, neither does overdressing, which breeds suspicion and mistrust, and will be seen as inappropriate.
- Use proper written and spoken language. People who can express themselves clearly are at an advantage. This goes beyond using good grammar, proper spelling, and appropriate diction in all your communications; you should also speak and write to the point.

2.1.5 Professional Behaviour

- Integrity: Consistent honesty; complete and accurate documentation of client information and activities; can be trusted with confidential information; being able to be trusted with the property of others.
- Empathy: Showing compassion for others; demonstrating a calm, compassionate and helpful demeanour toward those in need; responding appropriately to the emotional response of others and demonstrating respect for others; being supportive and reassuring to others, without getting emotionally involved.
- Self-Motivation: Taking initiative to complete assignments; taking initiative to improve and/ or correct behaviour; accepting and following tasks through which constant supervision; showing enthusiasm for learning and improvement accepting constructive feedback in a positive manner; consistently striving for excellence in all aspects of your profession and professional activities; taking advantage of learning opportunities.
- Self-Confidence: Exercising good personal judgement; demonstrating an awareness of strengths and limitations; demonstrating the ability to trust personal judgement.
- Teamwork: Showing respect for all team members; not undermining the team; placing the success of the team above self- interest; helping and supporting other team members; communicating with others to resolve problems; remaining flexible and open to change.
- Respect: Being polite to others; not using derogatory or demeaning terms; behaving in a manner that brings credit to your profession.

2.1.6 Personal Hygiene

Personal hygiene is keeping the body clean, and helps prevent the spread of germs. Maintaining good health also includes the following areas: Nutrition, Leisure/recreation opportunities, sleep, and exercise. There are many factors which contribute to feeling good and looking good. Both these things are important for each individual's emotional and physical well-being.

2.1.7 Practicing Personal Hygiene

Under the basic health and safety measures comes personal hygiene. Personal Hygiene is the set of practice to follow to preserve one's health.

- Teeth: Brush them twice a day with toothpaste, or toothpowder.
- Bath: Take shower every day.
- Clothes: Always wear washed and fresh clothes.
- Hands: Wash them before and after meal and after visiting the toilet.
- Feet: Scrub them and cut toe nails regularly.
- Nails: Keep them short and clean.
- Home: Clean every day.
- Bad Habits: None.

Fig 2.1.1 Personal Hygiene

2.1.8 Things to be Avoided

There are certain habits that have severe ill-effects on one's health. Such habits should be avoided for a healthy life.

Fig 2.1.2 Things to say no to

Alcoholism:

It's the tendency in which one consumes alcohol to cope with difficulties or to avoid feeling bad.

It's effects on Health:

- It increases risk of heart diseases, cancer, impaired immune system, liver infection (Cirrhosis) etc.
- Reduced work focus and drop in performance
- Degradation in social and economic status
- Withdrawal symptoms like anxiety, trembling, fatigue, headache and depression etc.

Tobacco:

Tobacco is the second largest cause of death in the world. It claims one death in every six seconds.

It's effects on Health:

- It is the biggest reason for oral cancer which affects mouth, tongue, cheek, gums and lips
- Chewing tobacco lessens a person's sense of taste and ability to smell
- Smokers face a greater risk of suffering from lung cancer

Gutkha:

Each sachet of gutkha contains 4000 chemicals, including 50 that cause cancer such as betel nut, Tobacco, Flavoring etc.

Impact of Gutkha on health:

- Loss of sensation in tongue
- Disfigured mouth
- Increased sensitivity to heat, spices and cold
- Inability to open the mouth
- Swelling, lumps and rough spots on gums or in other places inside the mouth
- Unexplained bleeding in mouth
- Difficulty in swallowing
- Mouth Cancer

Healthy eating habits include:

- Always try to eat home-made food.
- Avoid oily food.
- Always cook and eat fresh food.
- Avoid junk food like burgers, carbonated drinks etc.
- Eat fruits regularly.
- Drink lots of water.

Fig 2.1.3 physical fitness and good nutrition

2.1.9 Physical Fitness

Apart from following these hygienic practices, one should also be physically fit. Physical fitness is an outcome of regular exercise. Exercise may be of many different forms like jogging, morning walk, weightlifting, swimming, cycling, yoga and many more.

Healthy Eating

- One can follow hygienic practices and exercise regularly, but what you eat has the biggest impact on your health. To be healthy, one has to eat healthy. Eating a healthy, balanced diet provides nutrients to the body. These nutrients give energy; keep your brain active and your muscles working.

2.1.10 Basic Safety and Precautionary Measures

A Customer Care Executive should understand and follow the subsequent measures while in the store:

- Health and Hygiene: Do not work with power tools when you are not well, under strong medication, have consumed alcohol. Do not smoke during working hours.
- Proper Clothing: Do not wear loosely-fitted clothes or jewellery that can get caught here and there. Do not wear clothes that are highly flammable. Do not wear sandals, open-toed or canvas shoes.
- Clean Work Area: Keep the floor free of oil or any other type of litter. The work area that is cluttered is prone to accidents. Sparks can ignite scraps, or wire shot. Water can conduct electricity. When you are working with electrical tools, do not stand on damp floor or in rain, as it can lead to a major accident. Keep hands and tools dry.
- Working with Metals: Secure the metal material with clamps when working with it, in order to prevent it from moving.

2.1.11 Things to be Avoided

- Tool Operations: A power tool must not be used when it is coming to a stop point or it has reached operating speed. Do not force a tool by applying pressure. Allow the power tool to come to a stop when it has been turned off. Never force an object into moving parts to stop a machine.
- **Product Maintenance:** Always clean the handsets before putting them away. Put the handsets in their proper place before leaving the store
  i. Appropriate lighting
  ii. Good air quality

2.1.12 Standard Operating Procedures for Wearing and Displaying Identification Badges

In a telecom or customer service environment, identification (ID) badges serve as a proof of identity, authority, and affiliation with the organization. Correct usage of ID badges ensures security, professionalism, and easy identification by customers, colleagues, and supervisors. Following standard operating procedures (SOPs) for displaying badges is essential to maintain workplace discipline and compliance with organizational rules.

1. Importance of Wearing and Displaying ID Badges

Aspect	Significance / Example
Security	Helps restrict access to authorized personnel only. Example: Entry to server rooms or restricted areas requires visible ID badges.
Professional Identification	Customers and colleagues can identify staff quickly. Example: A Customer Care Executive wearing a badge with name and designation.
Accountability	Identifies the employee responsible for actions or service provided.
Compliance	Ensures adherence to company policies on security and uniform standards.
Brand Representation	Branded ID badges enhance the company's professional image.

2. Standard Operating Procedures (SOPs) for Wearing ID Badges

Step	Procedure / Example
1. Receive Badge	Collect ID badge from HR or administration at joining.
2. Check Details	Ensure the badge contains correct name, designation, and photograph.
3. Wear Badge on Uniform	Badge should be worn at chest level, on the left or right side as per company policy.
4. Visibility	Badge must be clearly visible at all times while on duty; never keep in pocket or under clothing.
5. Maintain Cleanliness	Keep badge clean, untarnished, and legible.
6. Report Loss	Inform supervisor immediately if badge is lost or damaged for replacement.
7. Return on Exit	Hand over badge to HR on resignation, transfer, or end of assignment.

3. Correct Way to Wear and Display ID Badges

Situation	Correct Action / Demonstration
Reporting to work	Wear badge on uniform before entering workplace.
Interacting with customers	Ensure badge is clearly visible, readable, and positioned upright.
Handling restricted areas	Badge should be accessible for verification by security personnel.
During breaks or meetings	Keep badge on uniform unless explicitly allowed to remove.
Damaged badge	Immediately request replacement from HR; do not attempt temporary fixes.

4. Benefits of Following ID Badge SOPs

- Ensures workplace security and restricted access control.
- Promotes professionalism and easy identification.
- Enhances customer trust and organizational credibility.
- Prevents policy violations and accountability issues.
- Supports compliance with internal and legal requirements.

Wearing and displaying ID badges as per SOPs is a simple yet crucial responsibility. Correct badge usage ensures security, accountability, and professionalism while reflecting the organization's standards. Employees who consistently follow these procedures contribute to a safe, disciplined, and customer-friendly work environment.

2.1.13 Greeting Customers and Providing Professional Assistance

In the telecom and customer service environment, the first interaction with a customer sets the tone for the entire experience. Courteous greetings, active listening, and professional assistance are essential to build trust, ensure customer satisfaction, and enhance the organization's reputation. Effective customer interaction not only resolves queries efficiently but also strengthens customer loyalty and encourages repeat business.

1. Best Practices for Greeting and Assisting Customers

Practice	Explanation / Example
Greet Customers Warmly	Use polite phrases like “Good Morning,” “Welcome to [Company Name], how may I assist you today?”
Maintain Positive Body Language	Smile, make eye contact, and stand or sit upright to appear approachable.
Listen Actively	Pay full attention to the customer’s concerns without interrupting; paraphrase to confirm understanding. Example: “So you’re facing an issue with your internet speed, correct?”
Ask Relevant Questions	Clarify the problem using open-ended questions. Example: “When did you notice the slowdown?”
Provide Accurate Information	Share clear, concise, and correct guidance or solutions. Example: Explain steps to reset a router.
Offer Assistance Proactively	Suggest additional help if needed. Example: “I can also schedule a technician visit if the problem persists.”
Follow Up When Necessary	Ensure the issue is resolved by checking in via call or message.
Maintain Professional Etiquette	Avoid slang, keep a calm tone, and show patience even with frustrated customers.

2. How to Greet and Assist Customers Professionally

Situation	Correct Action / Demonstration
Customer enters showroom	Smile, greet politely: “Good Morning! Welcome to ABC Telecom. How may I help you today?”
Customer explains a billing issue	Listen carefully, nod to show understanding, and ask clarifying questions: “Can you tell me the invoice number?”
Customer requests a new connection	Explain the process step-by-step and provide accurate timeline: “Your new connection will be activated within 48 hours after submitting documents.”
Customer seems frustrated	Remain calm, empathize: “I understand your concern. Let me help you resolve this quickly.”
Customer leaves satisfied	Thank the customer politely: “Thank you for visiting ABC Telecom. Have a great day!”

3. Benefits of Proper Customer Greeting and Assistance

- Enhances customer satisfaction and loyalty.
- Projects a professional and trustworthy image of the company.
- Reduces miscommunication and repeated complaints.
- Encourages positive word-of-mouth and repeat business.
- Supports personal and professional growth of employees by improving interpersonal skills.

Greeting customers courteously, understanding their concerns, and providing professional assistance are core responsibilities of a Customer Care Executive. By combining politeness, active listening, and accurate guidance, employees can ensure high-quality customer service, strengthen brand reputation, and build long-term customer relationships.

Notes

UNIT 2.2: Organizing and Managing the Work Area Efficiently

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain the standard procedures for logging customer queries, complaints, and service requests in CRM software or designated registers.
2. Describe the process of recording and updating daily customer interactions, service requests, and unit intake for repair/replacement.
3. Elucidate the importance of verifying and validating customer documents for service processing while ensuring compliance with company policies.
4. Discuss the significance of monitoring turnaround time and adhering to Service Level Agreements (SLAs) for customer resolutions.
5. Enlist the functions of key departments and escalation protocols for issue resolution.
6. Explain the use of digital tools, CRM applications, and reporting systems in streamlining customer service operations.
7. Describe the importance of workload management in meeting productivity, service, and quality benchmarks.
8. Demonstrate how to log customer queries, complaints, and service requests in CRM software or designated registers.
9. Show how to accurately record and update customer interactions, service requests, and unit intake for repair/replacement.
10. Demonstrate the process of verifying and validating customer documents for service processing while ensuring compliance with company policies.
11. Show how to track turnaround time and adhere to SLAs for customer resolutions using digital tools.
12. Demonstrate the effective use of CRM applications and reporting systems for data entry and customer service tracking.
13. Show how to manage workload efficiently to meet productivity, service, and quality benchmarks.

2.2.1 Customer Relationship

Customer Relationship Management (CRM)

A customer relationship refers to the association that exists between an organisation and its customers. These relationships can be built and strengthened through the products or services offered. In the telecom industry, customer relationships are particularly important, as companies typically engage in long-term associations with their customers.

The process of maintaining and nurturing these relationships is known as Customer Relationship Management (CRM). CRM enables organisations to better understand customer needs and address them efficiently, effectively, and accurately. Since customer information extends far beyond what can be stored in human memory, organisations rely on CRM tools and applications to record, track, and manage customer data.

Advantages of CRM

- Maintain a History: CRM systems help record customers' past purchases, interactions, and requests. This historical data allows companies to anticipate needs, improve satisfaction, and increase profitability.
- Customer Categorisation: CRM enables segmentation of customers based on the value they bring to the business. This insight helps organisations tailor services and benefits to different customer groups.
- Improves Customer Loyalty: By fostering positive relationships, companies strengthen customer loyalty, leading to repeat business and long-term profitability.
- Encourages Word-of-Mouth Promotion & Enhances Reputation: Satisfied customers often share their positive experiences with others. This word-of-mouth advertising enhances the company's reputation and attracts new customers.

Fig. 2.2.1 Benefits of CRM

Customer Categorization

In today's world, telecom companies serve millions of customers, making it challenging to offer every individual the most suitable products and services. To address this, companies have adopted customer categorisation. By classifying customers based on specific criteria—broadly divided into landline users and cell phone users—telecom providers can better understand customer needs and design customised products and services that match those requirements.

Importance of Categorising Customers

With the wide range of products and services offered by telecom companies today, it becomes nearly impossible to provide customised solutions without categorising customers. Categorisation helps organisations understand customer needs more precisely, enabling them to offer relevant services and solutions. This not only enhances customer satisfaction but also leads to increased profitability for the company.

Types of Categorisations

Customers can be categorised based on various criteria such as:

- Geographical location
- Spending patterns
- Usage behaviour
- Services utilised
- Type of service
- Value-added services (VAS)

2.2.2 Customer Service

Customer service refers to the assistance, support, and guidance a company provides to its customers before, during, and after they purchase a product or service. It is a way for businesses to ensure customer satisfaction, build loyalty, and maintain a positive relationship with their clients.

Key Points About Customer Service

1. **Purpose:**
   - To help customers solve problems, answer questions, and meet their needs efficiently.
   - To create a positive experience that encourages repeat business.
2. **Forms of Customer Service:**
   - In-person: Assistance at stores, service centers, or offices.
   - Remote: Support via phone, email, chat, or social media.
   - Self-service: FAQs, knowledge bases, and tutorials that help customers help themselves.

3. **Importance of Customer Service:**
    - Builds trust and loyalty.
    - Improves customer satisfaction.
    - Enhances the company's reputation.
    - Increases sales and long-term business growth.
4. **Characteristics of Good Customer Service:**
    - Polite, friendly, and professional communication.
    - Quick and efficient problem resolution.
    - Active listening and understanding customer needs.
    - Accuracy, honesty, and reliability.

2.2.3 Phases of Customer Service

1. **Pre-Customer service**
    - Putting products in order (in proper shelf, stacked together with similar products, cleaned regularly etc.)
    - Getting product knowledge (company, price, user instruction, etc.)
    - Information about competitors (which company is selling similar products, their price, comparative features, advantage of your own product etc.)
2. **Customer Service**
    - Attend to customers (Greet, understand needs, give information asked for like guarantee, features, advantages, discounts, etc.)
    - Offer the best solutions to the customer (help to make the best choice keeping all interests in mind to ensure that a sale can be closed as well as ensure that the need of the customer is fulfilled)
    - Handle customer queries, requests or complaints
    - Clear doubts or queries, if any about price, quality, features, and handle objections.
3. **Post-Customer Service**
    - Analyse what more service can be offered (check the current service offered and plan how the customer service can be made better.

2.2.4 Characteristics of Customer Service

The theory of customer service is based on identifying and satisfying your customers' needs and exceeding their expectations. In order to gain and retain customer loyalty, a company must be totally committed to delivering consistently high standards of service.

Some important characteristics of excellent customer service are:

1. Listening Skills: A customer service representative must pay attention to the needs of customers. This can only happen if they listen properly to what the customer is saying. Listening will help them find out the exact issue the customer is having and thus, he will be able to resolve it accordingly.
2. Probing Skills: A customer service executive knows the importance of asking the right questions as the answers of such questions help in resolving the problems and addressing the issues. Quality questions help to uncover the actual needs, goals, objectives and concerns of the customers so the representative can work to meet those needs and alleviate the concerns.
3. Responsible: One has to be responsible enough if he wants to work as a customer service executive. This responsibility is two-sided, as it covers the agents' responsibility in attendance, service, loyalty and attitude. It also covers the ability of the agent to take responsibility for mistakes and results--to know that their own actions determine the results in customer situations.
4. Responsive: Bypassing a question because the answer is not known can leave a customer feeling ignored, so it is very important to pay attention each and every question the customer asks. It is important to fully respond to one inquiry before moving to another as many service-related inquiries are multi-faceted.
5. Knowledgeable: A customer service agent must have complete knowledge about the the department/ product/ service for which they are responsible. Along with this knowledge comes confidence, which leads to customer satisfaction. If there is a situation in which the agent is unable to answer or is confused, he must not lose confidence and admit that he does not know the answer and transfer the call to a representative who can provide the correct answer to the question asked.
6. Complete: A customer service representative should work through a situation to its completion. Instead of being quick to hand off the problem or hesitant in working through a customer's needs, the agent should be thorough and work through each situation step-by-step until it is resolved.
7. Timely: Customer service is at its best when it provides quick response. Do not put customer on hold or make him wait for a longer period of time. Provide timely response to his request, question or problem.

2.2.5 Open-Ended and Close-Ended Conversation

A customer Care Executive at a Repair Center has to be good at questioning. The appropriate questions they ask a customer who is visiting the Repair Center, and the answers given by the customer will give them an idea about the nature of the problem with the phone, and accordingly, they can suggest a solution.

We often face a situation, where the questions we put, we expect a yes or no answer which is called close-ended questions. This does not provide a chance of prolonging the conversation, but in other situations, the questions may be open-ended where the responder gives an explanation that can prolong the conversation.

And thus, an open-ended question opens up a topic for exploration and discussion, Open-ended questions lead to qualitative answers. They are optimal when we need input, collaboration, ideas, teamwork, and innovative thoughts. It always starts with "what" or "how". E.g what is your budget? How would you like to go ahead?

while a closed-ended question leads toa closed-off conversational path. After"Yes"or"No" or the specific one- word answer to the question, the thread is done.

while closed-ended questions lead to quantitative answers. They just don't get you alot of information. Closed-ended questions can be the most effective when asked at the end of a conversation to confirm commitment.

e.g Are you ready to buy? Is this the way you want to proceed?

Conversation between a Customer and CCE at the Repair Centre:

- CCE: Good after noon Sir. How can I help You?
- Customer: Good Afternoon. I am having problem with this phone. The screen is blank and I am not able to see who is calling. It does not show as its blank and black. CE: how long you have been using this phone sir... (open ended Question)
- Customer: I am using this since the last three years. It was working fine. But suddenly facing problem. CCE: It looks like the display screen is damaged. Let me get this checked by our Engineer.
- CCE to the Engineer(L2): Please get this screen checked. There is no display. Engineer(L2): The screen got damaged. This can be replaced. The phone will work
- CCE to the Customer: Sir, our Engineer checked this. He confirmed that the screen is damaged and this can be replaced. The parts are readily available with us. Can I proceed to change the screen sir? (Close-ended Question)
- Customer: Yes..

After changing the screen, the phone starts working the customer is happy and thank the CCE for providing the right suggestion/solution. Happy Customer.

2.2.6 Effective Customer Service Management using CRM

- Customer Relationship Management{CRM} is a business approach that understands, anticipates, and manages the need of current and potential customers of an organization.
- It helps in integrating the people, processes, and technology of an organization.
- Effective use of information about a customer to maximize customer satisfaction as well as cost reduction and increased profitability for an organization.
- Before CRM came into use only 40% of customer issues got resolved, but after using CRM 90% of issues are getting resolved.

2.2.7 Resolving customer queries and issues using CRM

- Every customer who walks into the repair center has either some queries or some issues concerning their product
- They visit the authorized repair center, approach the customer care executive, and explain their issue
- The Customer Care Executive addresses the customer's concern as per the Standard Operating Procedures of the organization
- The CCE handles the customer on a first cum first serve basis (according to the token system)
- Every CCE and the Technicians are trained in the CRM. How to make entries, take reports, open tickets, close tickets, etc.
- They move to the next customer in the queue after the previous customer's issue is addressed
- Every problem is addressed keeping in mind the Turnaround time(TAT). (The turnaround time is different for every problem). If the problem requires a thorough checking of the phones the customers may be asked to leave the phone with the center. In that case, the customer's sim is handed over to them and they will be asked to take a backup of a11 the crucial data
- The backend support team thoroughly checks the phone and tells the actual problem and gives a solution whether the issue can be resolved by a small repair or changing of parts. If the damage is beyond repair, then they may suggest replacing the old phone with a new one.
- Every person from CCE to Technicians is responsible for closing the customer issue with a Turn Around Time as defined in the Standard Operating Procedure
- Once the problem is resolved, the ticket is closed and feedback is taken regarding the quality of the solution provided

Note: Airtel uses the 1-CRMand Vodafone uses Siebel CRM for managing their Customer Information and service.

Benefits of CRM

- Manage customer expectation
- Provide innovative products & services
- Make customer loyal

2.2.8 Stock Management for Effective Customer Service

The Success of the product company greatly depends on its Stock management.

Stock management applies to every item a business uses to produce its products or services-from raw materials to finished goods. In other words, stock management covers every aspect of your business inventory.

There are many things to consider when it comes to stock that need to be addressed by the organizations. They need to check.

- Whether the right products are in stock?
- How do you know when your stock levels are low?
- Have you ever lost sales because of the non-availability of stocks?
- Are you losing money due to an excess of stock?

If you aren't managing your inventory effectively and holding up a lot of extra stock, it ties up a lot of cash. Organizations need to set up an early warning system that can alert managers as to low inventories and other key business conditions. All these repair center, will manage the stocks using their CRM. The CRM keeps track of the stocks and sends an alert when a particular item is going below the minimum stock level.

2.2.9 Ticket Creation

A ticket is a transaction document that records all the information that is related to a request. The ticket fields contain information that is required to understand and fulfil the request from the end user. Once, a ticket is created in a repair shop it gets assigned to a technician depending on the level of repair required. Given below are few main aspects of ticket progression, which are used when building the work-flow process:

1. Log the issue with:

- The customers details.
- The details of the device: Device, Model, Colour, Network, Problem.
- Details of problem being faced or experienced.
- A unique identification number assigned to it, for tracking.

2. Categorise the issue

- Classification of the problem into Ll, L2, L3

3. Prioritise the issue:

- An urgency value is assigned to each issue, based on the overall importance of that issue. Issues that are not very urgent and are minor must be resolved as time permits.

4. Respond to the issue

- Allocate to an appropriate technician.
- Create a status message - Status refers to the current stage of the ticket in its lifecycle. They can be New, Queued, Active, Pending, Complete, Resolved, Closed. Fixed ticket statuses cannot be modified. A ticket can move from one status to another- not necessarily in a specific order.
- Reason Code: - The reason for why a ticket is in a given status or phase is assigned by reason code. For example, a ticket could be set into pending status for several reasons - like Pending Customer(password etc), Pending Supplies, Pending Information.
- Resolve and close the issue.

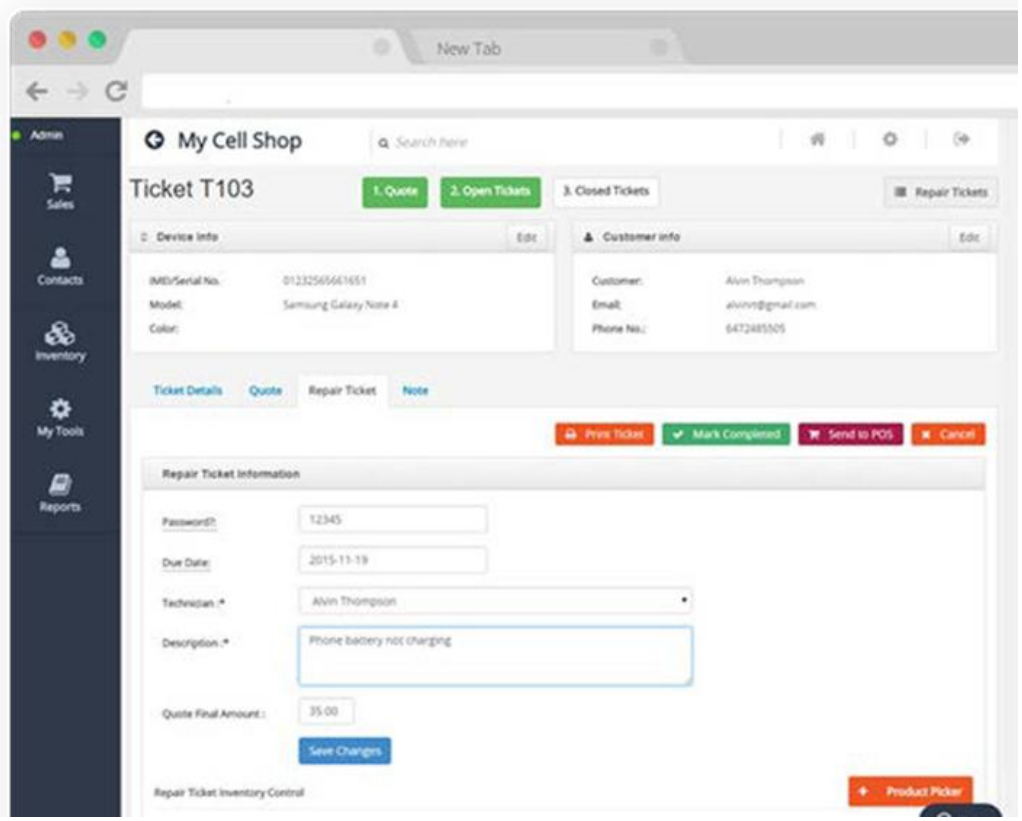


Fig 2.2.2 Ticket Creation

The work flow actions and ticket progression is managed by the combination of the ticket status and reason code. As a ticket progresses it grows to include activities toward resolving, fulfilling, and closing the request. Ticket progression also includes manual, automatic actions, and communications to and from the ticket.

2.2.10 Ticket Management Process

An example scenario is presented to show how the workflow in a repair shop would work:

1. Receiving a Request:

- A customer service technician receives a device from a walk-in customer for repair. You log in the incident.

2. Initial Diagnosis:

- The technician does a basic check to assess the problem and then assign es it for front-end (LI) or backend (L2, L3) repair.
- Some examples of LI are: broken screen/battery/small components repair/data recovery
- Some examples of L2 and L3 are: Water damage/glass only (refurbishing) repair, Motherboard/components soldering repair
- Knowledge bases and diagnostic manuals are helpful tools at this step, too.
- If the incident or issue is resolved by the first-level service desk based on his or her own available knowledge and initial diagnosis, then the issue is resolved. Else, it's time to escalate.

3. Creating a Ticket:

- The technician will also make sure that adequate information about the problem is obtained from the customer. This information generally includes the environment of the customer, when and how the issue occurs, and all other relevant circumstances.
- The technician creates the ticket in the system by entering all relevant data as provided by the customer

4. Incident Escalation:

- As a front-line support, you must be able to resolve a large number of the frequent incidents without escalating them.
- But for those you can't, the goal is to gather and log the right information to help second and third-level (more technical) support get up to speed quickly, so they can resolve the incident promptly.

5. Resolution:

- The technician updates the system with new data as soon as the work is done on that issue. Any attempt at fixing the problem should be noted in the issue system. Ticket status most likely will be changed from open to pending.
- The issue tracking system marks the issue as resolved after it has been completely addressed.

6. Incident closure:

- Then in order to close the issue, it is passed back to the service desk.
- Only service desk employees are allowed to close incidents, in order to maintain quality and ensure a smooth process

2.2.11 Benefits of a Ticket System

Using the Ticket system to service customers effectively:

As a CCE with an effective ticket system in place you will be able to service the customers more effectively.

- A ticket system, is specifically designed to organize issues as they are reported and keeps track of all fixes made, acting as a issue tracking system.

- When a ticket is created it is then put into the hands of someone who has the ability to resolve the problem.
- All solutions are tracked on the ticket file and the customer and administrator is notified when the problem is fixed. This not only makes you and the customer aware that the problem has been addressed but also allows the technical team to keep a track of how well the problem was handled.
- It helps you communicate with customers via email or SMS directly through the system to keep them updated of the progress.
- A ticket once resolved can be archived by the system. Most systems deal with similar glitches and each resolved ticket is searchable. That means if a similar ticket comes in, the tech team can pull up past issues and see how other techs resolved them for a quicker and more efficient fix. The data from each ticket to can tracked for trends and other associated information with the help of this issue tracking strategy.
- A ticket system also helps maintain a record of daily number of walk-ins, units accepted for repair and replacement in the center.
- Customers records are centrally stored. Customer repair and purchases are easily accessible. Within a customer's record are the dates of each repair and sale, including the all IMEi's and serial numbers. These tools make assisting customers, even if they've lost their invoice, faster.

A good repair ticketing system for your cell phone repair shop should reduce the time you spend on managing the customer issues and enables you to spend more time on creating great customer experiences. Great customer experiences are the key element to growing your business. These experiences keep your customers returning back to you.

2.2.12 Ticket Types

Ticket Types: There are five types of tickets:

Service Request: A Service Request helps in logging and managing standard requests for information or access to systems and services. Service requests are handled using service request management workflow processes and is monitored for SLA compliance. For example, an end user seeks information about how to set up and configure work emails for mobile devices.

Incident Ticket:

In order to report and manage issues like unavailability, disruption, reduction in the quality of a system or service an incident ticket is used. The incident management workflow processes helps in handling incident tickets. The response and resolution of these tickets is monitored for SLA compliance. For example, a request is logged when the end user is unable to send or receive emails from the cell phone. This service is typically available to the requester; and the service has been disrupted. Identify the cause of service disruption, restore the service quickly, and communicate with the requester about the resolution.

Problem Ticket: A Problem Ticket is used to investigate, resolve, or mitigate major issues affecting many users. The problem tickets are handled using problem management workflow processes. Generally, root-cause analysis and resolution take time; and these tickets could or could not be monitored for SLA compliance.

Change Request:

A Change Request is used to log and manage a request for change to the IT Infrastructure or services. Some changes could affect only the requester (or a small group of users); while others affect many users. All change requests go through a change approval process. Based on the nature of the change, the approval process varies and is handled using the change management workflow processes. A change request could be monitored for SLA compliance. The time that is required to respond and resolve a change is based on factors like getting an approval.

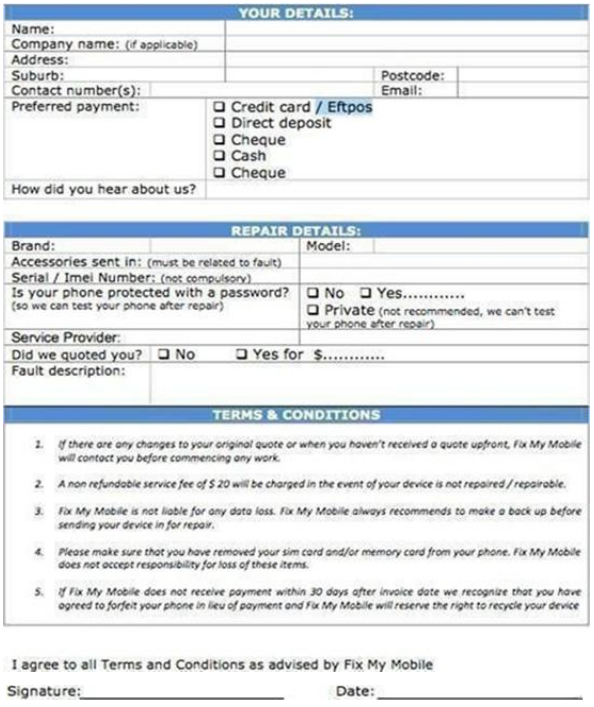
Task Ticket:

The tracking and managing of smaller units of work toward the completion of another ticket is done by tasks tickets. A Task ticket is logged as a child to another ticket. A Task Ticket is usually a Change or a Problem ticket. Each task can be handled either at a time by different people; or in a set sequence.

A Task ticket is never logged as an independent ticket but as children of a request, incident, problem, or change. A Task ticket is always used to divide individual units of work that is done to resolve another ticket.

2.2.13 Maintaining Records

As a CCE you are also responsible for maintaining records of daily number of walk-ins, units accepted for repair and replacement in the job sheets. This helps the organisation in keeping track of its progress as well as customer preferences and trends in the industry A sample of a job sheet format is given below for your reference.



YOUR DETAILS:			
Name:			
Company name: (if applicable)			
Address:			
Suburb:		Postcode:	
Contact number(s):		Email:	
Preferred payment:	❑ Credit card / Eftpos ❑ Direct deposit ❑ Cheque ❑ Cash ❑ Cheque		
How did you hear about us?			

REPAIR DETAILS:	
Brand:	Model:
Accessories sent in: (must be related to fault)	
Serial / Imei Number: (not compulsory)	
Is your phone protected with a password? (so we can test your phone after repair)	❑ No ❑ Yes..... ❑ Private (not recommended, we can't test your phone after repair)
Service Provider:	
Did we quoted you? ❑ No	❑ Yes for $.....
Fault description:	

TERMS & CONDITIONS

1. *If there are any changes to your original quote or when you haven't received a quote upfront, Fix My Mobile will contact you before commencing any work.*
2. *A non refundable service fee of $ 20 will be charged in the event of your device is not repaired / repairable.*
3. *Fix My Mobile is not liable for any data loss. Fix My Mobile always recommends to make a back up before sending your device in for repair.*
4. *Please make sure that you have removed your sim card and/or memory card from your phone. Fix My Mobile does not accept responsibility for loss of these items.*
5. *If Fix My Mobile does not receive payment within 30 days after invoice date we recognize that you have agreed to forfeit your phone in lieu of payment and Fix My Mobile will reserve the right to recycle your device*

I agree to all Terms and Conditions as advised by Fix My Mobile

Signature:_____ Date: _____

Fig. 2.2.3 Ticket Records

2.2.14 Logging Customer Queries, Complaints, and Service Requests

Accurate documentation of customer interactions is a critical aspect of customer service in the telecom sector. Logging queries, complaints, and service requests in CRM software or designated registers ensures timely resolution, accountability, and seamless communication between departments. Proper logging helps track customer issues, monitor follow-ups, and generate reports for performance analysis and service improvement.

Steps to Follow for Logging Customer Queries/Complaint/Requests

Step	Procedure / Description	Example / Demonstration
1. Receive Customer Request	Listen carefully to understand the customer's query, complaint, or service request. Ask clarifying questions if needed.	Customer calls and reports slow internet connectivity.
2. Verify Customer Details	Collect essential information: name, contact number, account ID, service type, and location.	Customer's name: Rajesh Kumar; Account ID: 123456; Location: Patna.
3. Identify Type of Interaction	Categorize the interaction as a Query, Complaint, or Service Request for proper tracking.	Slow internet → Complaint; Request for new SIM → Service Request.
4. Access CRM or Register	Open the authorized CRM software or designated physical/digital register to log the interaction.	CRM dashboard or register opened to log new entry.
5. Enter Detailed Information	Record all relevant details accurately: • Customer information (name, contact, account ID, service address) • Date & time of interaction • Type of interaction • Detailed description of issue/request • Immediate action taken	Customer reports slow internet: log name, account ID, call time, categorize as "Complaint," note troubleshooting steps given.
6. Assign Priority and Responsible Owner	• Set priority: High / Medium / Low • Assign to the appropriate department or person for resolution	Technical complaint → Technical Support Team; Billing discrepancy → Billing Team.
7. Generate Ticket / Reference ID	• Create a unique ticket/reference number for tracking • Share the ticket number with the customer	Ticket #12345 issued for slow internet complaint.
8. Confirm Logging with Customer	• Inform the customer about the ticket number, expected resolution timeline, and follow-up procedure • Maintain a polite and professional tone	"Your complaint has been logged as Ticket #12345. It will be resolved within 48 hours."

9. Follow-Up and Update Status	• Continuously update CRM/register with actions taken and status changes (In Progress, Pending, Resolved)	Technical team updates ticket with resolution steps; status updated to “Resolved.”
10. Close Interaction	• Mark ticket/interaction as closed once resolved • Record any customer feedback • Maintain logs for reporting and future reference	Ticket #12345 closed; customer feedback recorded as “Satisfied.”

2.2.15 Recording and Updating Daily Interactions and Unit Intake

Accurate recording of all customer interactions (queries, service requests, and physical unit intake for repair) is mandatory for a Customer Care Executive. This process ensures that the organization has a reliable history of service provided, maintains accountability, and adheres to service level agreements (SLAs).

1. The Process of Recording and Updating

The overall process must adhere to three principles: Timeliness, Accuracy, and Completeness.

A. Recording Customer Interactions (Queries and Service Requests)

The recording process typically occurs in real-time using the Customer Relationship Management (CRM) software.

Step	Action	Key Information Recorded
1. Initiation	Acknowledge the customer contact (call, email, chat).	Start Time of Interaction, Channel (Phone, Email, etc.).
2. Verification	Identify the customer and verify their identity and account status.	Customer ID, Account Status (Active/Inactive), Name.
3. Log Creation	Create a new case or ticket (if it's a new issue) or open an existing one.	Unique Case ID, Date Logged, Priority (High/Medium/Low).
4. Documentation	Record the customer’s statement and the nature of the issue.	Issue Description: Specific, detailed narrative of the problem (e.g., "Dropped calls in Sector 5," "Incorrect ₹500 charge on bill").
5. Action/Resolution	Note the immediate steps taken (troubleshooting, advice, information given).	Action Taken: "Troubleshooting performed," "Referred to FAQ," "Solution provided."
6. Status Update	Change the status immediately based on the outcome.	Status: Resolved (if fixed), Pending (if waiting for customer info), or Escalated (if passed to a specialist).

B. Unit Intake Process (for Repair/Replacement)

When a customer physically brings a faulty device (e.g., router, set-top box, mobile phone) for repair or replacement, an additional, crucial logging process must be followed to track the physical asset.

1. Verify Service Request (SR): The customer must usually have an existing Service Request (or case ID) logged in the CRM before a physical unit is accepted.
2. Physical Inspection: The executive must visually inspect the unit and note its condition (scratches, water damage, missing accessories). This detail is critical to avoid future disputes.
3. Serial Number Matching: Record the unit's Serial Number (S/N) and ensure it matches the S/N recorded in the customer's account profile (if applicable).
4. Create a Repair Order (RO) or Intake Log: In the CRM, create a separate Repair Order linked to the customer's main case ID. This RO must include:
   - Unit Model and S/N.
   - Observed Fault (e.g., "Screen dead," "No power").
   - Condition Notes (from the inspection).
   - List of accessories received (e.g., "Unit only," "Unit + Charger").
5. Generate Intake Receipt: Print or generate a digital receipt for the customer acknowledging the acceptance of the physical unit and its condition. This receipt must show the new Repair Order (RO) number and the expected turnaround time.
6. Update Physical Status: The CRM status of the unit intake must be updated from New Request to Unit Received - Awaiting Technical Review.

2. Accurately Recording and Updating

Scenario: Logging an Escalated Technical Complaint

Customer Issue: Mr. Arjun (ID: 987654) calls, reporting that his fiber broadband keeps dropping connectivity every 15 minutes, despite trying basic restarts himself.

Action Point	Executive Logging Procedure	CRM Field/Note
1. Initial Log	Create a new Case/Ticket ID (e.g., CCE-94021) in the CRM, linking it to Mr. Arjun's account.	Case Title: Intermittent Connectivity Drops - S/R 987654. Case Type: Technical Complaint. Priority: Medium.
2. Detailed Description	Record the specific nature of the problem, including the customer's troubleshooting efforts.	Description: "Customer reports internet drops every ~15 minutes. Attempted to restart router and factory reset, issue persists. Line seems stable when working."
3. Action Taken (Troubleshooting)	Check the line diagnostics tool in the CRM. Note the initial findings.	Action Note 1: "Checked CRM diagnostics; line voltage appears normal, but logged several recent disconnection events matching customer's timeline."

4. Escalation	Since basic troubleshooting failed, escalate the issue to the Level 2 Technical Team (or Field Support).	Action Note 2: "Escalated to L2 Technical Support for remote port check/firmware upgrade." Assigned To: L2 Team, Tech Specialist A.
5. Status Update	Change the case status to reflect that the issue is now with another team.	Status: Pending Technical Escalation.
6. Follow-up Reminder	Set a reminder for yourself to check the status or call the customer back within the SLA window (e.g., 24 hours).	Follow-up Note: "Set reminder for 10:00 AM tomorrow to check L2 resolution status and update customer."
7. Final Update (Resolution)	Once the L2 Team updates the case (e.g., "Replaced outdoor cable," "Issue Resolved"), change the final status.	Status: Resolved - Monitoring. Resolution Note: "L2 reported faulty cabling replaced. Tested speed OK. Contacted customer and confirmed services are restored."

2.2.16 Document Verification and Compliance

When a customer signs up for a new service, upgrades their plan, or requests a transfer of ownership, verifying supporting documents is critical. This process ensures legal compliance and protects both the customer and the company from fraud.

A. Importance of Verification and Validation

Document verification is non-negotiable in the telecom industry for several key reasons:

- Regulatory and KYC Compliance: Telecom companies are legally required to perform Know Your Customer (KYC) checks to confirm a customer's identity and address. Failing this leads to heavy government penalties.
- Fraud Prevention: Validating identity and address proofs (Aadhaar, Passport, Utility Bills, etc.) prevents fraudulent connections, which can be used for illegal activities, thereby protecting the company's network and reputation.
- Service Accuracy: Ensures that the correct service is being provided to the correct individual at the verified address. This prevents service installation errors or incorrect billing.
- Policy Adherence: Ensures every transaction aligns with company policies, such as age limits for service agreements, proof of relationship for family plans, or required documents for corporate accounts.

B. Document Verification Workflow

The process below demonstrates how a Customer Care Executive verifies a document received from a customer, ensuring it meets all compliance standards.

Step	Action	Compliance Check/Policy Adherence
1. Request and Receive	Specify only the required documents as per policy for the service (e.g., Proof of Identity and Proof of Address). Receive the documents (digital copy or physical).	Policy Check: Ensure the document types are those listed in the official company KYC manual. Avoid accepting outdated or unofficial proofs.
2. Authenticity & Legibility Check	Examine the document for legibility (is the text clear?) and authenticity (is it a photocopy, an original, or a manipulated image?).	Fraud Check: Look for signs of tampering, mismatched fonts, or blurry photos. For physical documents, check for original watermarks/seals.
3. Validation Against Profile	Compare the details on the document (Name, Date of Birth, Address) against the data already entered in the CRM system.	Data Integrity Check: Names must match exactly. The address on the proof must match the service installation address.
4. Time-Bound Check	Check the validity period of the document (e.g., passports must not be expired; utility bills must be less than 90 days old).	Regulatory Compliance: Adhere to government mandates for how recent address proofs must be.
5. Final Action and Logging	If all checks pass, Approve the document in the CRM and attach the file to the customer's case ID. If checks fail, Reject the document and clearly inform the customer why it was rejected.	Audit Trail: Log the date and time of verification, the name of the executive who verified it, and whether it was approved or rejected.

2.2.17 Significance of Monitoring Turnaround Time (TAT) and Adhering to SLAs

Turnaround Time (TAT) is the total time taken from when a customer issue or service request is logged to the moment it is fully resolved. Service Level Agreements (SLAs) are formal commitments (internal or external) defining the specific timeframes and quality standards for resolution.

1. Enhancing Customer Satisfaction and Trust

- Meeting Expectations: Customers expect prompt resolution. When you adhere to an SLA (e.g., "all technical complaints resolved within 48 hours"), you meet or exceed those expectations, leading to high customer satisfaction scores.
- Building Trust: Consistently meeting SLAs demonstrates reliability and professionalism. This builds long-term customer loyalty and reduces the rate of customer churn (customers switching to competitors).

- Preventing Escalation: A monitored TAT ensures issues are resolved quickly, preventing the customer from calling back multiple times or escalating the complaint to higher management or regulatory bodies.

2. Ensuring Operational Efficiency

- Resource Planning: By tracking TAT, the management can identify bottlenecks in the process. For instance, if technical complaints consistently exceed the 48-hour SLA, it indicates a need for more Level 2 technicians or better training.
- Performance Measurement: SLAs serve as clear, measurable metrics for evaluating the performance of individual Customer Care Executives and entire teams. This provides objective data for appraisals and improvement plans.
- Process Improvement: Analyzing cases that consistently fail to meet the TAT allows the company to pinpoint systemic failures (e.g., faulty equipment, unclear internal handover processes) and fix them, making the entire service delivery chain more efficient.

3. Compliance and Regulatory Adherence

- Regulatory Fines: In the telecom sector, many countries have specific regulations regarding complaint resolution timelines (e.g., resolving billing disputes within a set number of days). Failing to meet these regulatory SLAs can result in substantial financial penalties and legal issues.
- Contractual Obligations: For corporate or high-value customers, SLAs are often legally binding contracts. Breach of these agreements can lead to compensation claims and loss of lucrative contracts.

4. Protecting Company Reputation

- Managing Negative Feedback: Slow resolution times are the primary driver of negative online reviews and social media complaints. Adhering to SLAs ensures that negative feedback is minimized and that any issues are publicly seen as being managed responsibly and promptly.
- In summary, monitoring TAT and adhering to SLAs is not just about following rules; it's about translating customer requirements into measurable goals that drive operational excellence, legal safety, and business success.

2.2.18 Tracking Turnaround Time (TAT) and Adhering to SLAs

Digital tools, primarily the CRM system, automate the calculation and monitoring of resolution times, providing real-time alerts to executives.

A. How TAT and SLA are Calculated in CRM

1. Start Time: The clock for TAT and SLA starts precisely at the moment the case is logged and assigned a status of Open or Pending.
2. Stop Time: The clock stops the moment the executive changes the status to a final resolution status, such as Resolved, Closed, or Completed.
3. Calculation: TAT = Stop Time - Start Time. (The system usually calculates this in business hours, excluding weekends/holidays).

B. Real-Time SLA Monitoring in CRM

Let's use the example of an SLA set for different priority levels:

Priority	Issue Type	SLA Target (Resolution)
High	Full service outage	4 Hours
Medium	Intermittent technical issue	24 Hours
Low	General billing query	48 Hours

Executive Action	CRM System Response/Functionality	Purpose
Case Creation	When the case is logged as Priority: Medium, the system automatically stamps the SLA Due Time (e.g., 24 hours from the start time).	Establishes the target time immediately.
Time Tracking	A dynamic SLA Timer begins running on the case dashboard (e.g., "Time Remaining: 23:55:00").	Provides a visual, real-time indicator of urgency.
Violation Warning	When the case is within a threshold (e.g., 4 hours from the deadline), the CRM dashboard changes the case row color to Amber (Yellow) and sends an email/pop-up alert.	Prompts the assigned executive to prioritize the case before breach.
SLA Breach	If the resolution time exceeds the SLA, the timer turns Red, and the case is automatically flagged as 'SLA Violated'. An automated email is sent to the team supervisor for immediate action.	Ensures accountability and triggers management intervention to prevent further delay.
Resolution Log	When the executive changes the status to Resolved, the system records the final resolution time and whether the SLA was met or violated.	Creates an auditable record of the outcome for performance reporting.

By relying on the automated CRM functions, the Customer Care Executive ensures that every case is handled with the appropriate urgency and that the company's commitment to prompt service is met.

2.2.19 Escalation Protocols and Department Functions

When a Customer Care Executive (CCE), known as Level 1 Support, cannot resolve an issue, they must escalate it to a specialized team. Escalation ensures the customer receives expert assistance without delay.

A. Standard Escalation Levels (L1, L2, L3)

Issue resolution typically follows a tiered support model defined by increasing levels of technical complexity:

Level	Role	Responsibility and Function	Escalation Criteria
L1 (You)	Customer Care Executive	First point of contact. Responsible for basic troubleshooting, handling common queries, logging cases accurately, and processing standard service requests.	Inability to resolve the issue using available knowledge base or tools, or when the issue requires specialist access.
L2	Technical Specialist/Field Dispatch Team	Handles complex issues requiring deeper technical knowledge, network access, or physical site visits (e.g., advanced line diagnostics, server restarts, on-site cable repair).	L1 determines a network/device fault that requires specialist investigation or physical intervention.
L3	Network Engineering/Product Development	Handles highly complex, unique, or systemic issues (e.g., core network outages, major system bugs, product design flaws).	L2 confirms the issue is not localized or requires changes to core infrastructure or software.

B. Functions of Key Supporting Departments

The CCE must know which department handles which type of escalated case to ensure the issue is routed correctly and the SLA clock continues to run efficiently.

Department	Primary Function	Types of Issues Escalated
Technical Operations (NOC/Field)	Manages network health, infrastructure maintenance, and system stability.	No service/total outage, intermittent connectivity, slow speed, physical cable damage, equipment failure diagnosis.
Billing and Finance	Handles all aspects of customer invoicing, payments, and credit/debit adjustments.	Incorrect charges, refund requests, payment processing failures, applying discounts or promotional credits.
Sales and Retention	Focuses on upgrading services, contract renewal, and preventing customer churn (cancellation).	Customer threatening to cancel service, requests for special pricing, complex plan changes, win-back offers for inactive customers.
Logistics/Warehouse	Manages the inventory, repair, and replacement of customer equipment (modems, set-top boxes).	Tracking repair status of submitted equipment, verifying stock availability for new installations or replacements.

By accurately identifying the nature of the escalated issue and routing it to the correct specialized department, the CCE ensures the customer's issue is resolved efficiently and within the defined SLA.

2.2.20 Digital Tools, CRM Applications, and Reporting Systems in Streamlining Customer Service Operations

Digital tools are essential in modern customer service because they transform a complex, multi-departmental process into a unified, efficient workflow.

1. CRM Applications (Customer Relationship Management)

The CRM is the foundational digital tool, acting as the central nervous system for all customer interactions:

- Centralized Data and History: The CRM collects all interactions, service requests, and billing history in one place. This allows the Customer Care Executive (CCE) to instantly verify the customer's identity, review past issues, and avoid asking the customer to repeat information, significantly speeding up the troubleshooting process (as seen in Section 2 of the Canvas).
- Real-Time Logging and Task Management: It ensures mandatory logging procedures (Section 1) are followed accurately. It automatically assigns case IDs, tracks the owner of the issue, and facilitates seamless transfer during escalation (Section 5) without losing critical details.
- SLA Enforcement: As demonstrated in Section 4, the CRM automates the calculation of Turnaround Time (TAT) and tracks Service Level Agreements (SLAs). It provides visual warnings (Amber/Red alerts) and escalates the issue automatically upon breach, ensuring that the promise of timely resolution is met.

2. Digital Tools and Automation

Digital tools extend the capabilities of the CRM to handle non-voice interactions and administrative tasks:

- Process Consistency: They enforce compliance rules, such as the document verification workflow (Section 3), by often requiring mandatory fields to be filled or documents to be uploaded before a case can proceed, minimizing human error.
- Automated Communication: Tools handle routine updates, sending automated SMS or emails to customers with case IDs, status changes, or repair tracking information, freeing up the CCE to focus on complex resolutions.

3. Reporting Systems

Reporting systems take the raw data logged in the CRM and convert it into actionable insights for management:

- Identifying Systemic Issues: By analyzing high volumes of cases, reports highlight recurring technical faults, common customer pain points, or departments (Section 5) that are frequent bottlenecks in the escalation process. This drives process improvement.

- Performance Tracking: Reports provide metrics on individual and team performance, particularly by showing the SLA Adherence Rate (how often SLAs are met) and Average TAT. This data is crucial for coaching and training CCEs.
- Forecasting: Analyzing trends in service requests helps the company forecast staffing needs, optimize network capacity, and better manage inventory (Logistics/Warehouse department).

In essence, these digital tools streamline operations by providing visibility (knowing the issue status), accountability (tracking who owns the resolution), and speed (using automation and centralized data).

2.2.21 Effective Use of CRM and Reporting Systems

Effective use of digital tools is the skill that ties together all customer service operations, turning raw data into actionable results.

A. CRM for Data Entry and Tracking

The CCE uses the CRM daily for two primary, linked purposes: accurate data entry and efficient tracking.

1. Data Entry for Accuracy and Audit

Action	CRM Function	Impact on Service Tracking
Standardizing Description	Uses pre-defined drop-down menus for fields like Issue Type (e.g., 'Payment Failure', 'No Signal') instead of free text.	Ensures consistency. Data can be reliably aggregated by the reporting system to identify top failure points.
Mandatory Fields	The CRM requires fields like Priority, Serial Number, and Resolution Code before the case can be saved or closed.	Prevents incomplete logging. Ensures critical information needed by L2/L3 teams is always present.
Resolution Codes	Upon resolving, the CCE selects a specific code (e.g., 'Troubleshooting Successful', 'Billing Adjustment Applied').	Facilitates managerial review. Allows the reporting system to accurately track the effectiveness of the resolution method.

2. CRM Dashboard for Tracking and Prioritization

The CCE relies on a customized dashboard to manage their workload efficiently:

- Active Cases List: Displays all cases currently assigned to the CCE. This list is automatically sorted by SLA Countdown Timer. The CCE always works on the case with the least time remaining before the SLA breach.
- Case Ownership: The CCE can quickly filter to see cases that are currently with L2 or Field Support but still require a Customer Follow-up. This prevents cases from stalling and ensures the customer is kept informed.
- Search Functionality: The CCE uses the search bar not just for Account ID, but for Case ID (provided to the customer) to give quick status updates, thus reducing hold time.

B. Reporting Systems for Insight

Every log entry by the CCE feeds a central data warehouse, which generates reports for management. The accuracy of the CCE's data entry directly affects the quality of these reports.

Report Type	Purpose/Insight Provided	Data Points Required (from CCE Logging)
SLA Adherence Report	Shows the percentage of cases resolved within the agreed-upon SLA for each team.	Start Time, Stop Time, Status (Resolved), Priority Level. (Directly relies on accurate time stamping).
First Call Resolution (FCR) Report	Measures the number of issues solved during the customer's first contact, indicating CCE efficiency.	Interaction Count, Resolution Status. (Relies on the CCE correctly marking initial contact as 'Resolved').
Root Cause Analysis Report	Identifies the top 5 recurring reasons for service failures across the network.	Issue Description, Issue Type (from drop-down), Resolution Code. (Requires CCE to consistently use standard logging categories).

By ensuring accurate data entry and utilizing the tracking features of the CRM, the Customer Care Executive plays a direct and vital role in the company's continuous improvement cycle.

2.2.22 Workload Management for Productivity and Quality

Effective workload management is the key practice that allows a Customer Care Executive (CCE) to consistently meet all business targets—productivity, service speed (SLA), and resolution quality.

A. Importance of Workload Management

Benchmark	Importance of Workload Management
Productivity	Efficient organization ensures the CCE closes the maximum number of cases per day without unnecessary delays or context switching. It helps meet targets like Cases Closed per Day.
Service (Speed)	Proper prioritization, often using the CRM's built-in SLA timers, ensures that high-priority cases and those nearing the SLA deadline are addressed first, preventing service breaches.
Quality	A manageable workload prevents rushing. Rushing leads to incomplete logging, incorrect troubleshooting, and choosing the wrong resolution codes, which negatively impacts reporting and customer satisfaction.
Executive Well-being	Proactive management reduces stress and prevents burnout, leading to better focus, fewer errors, and higher job satisfaction.

B. Efficient Workload Management

The CCE should follow a structured approach daily to manage their queue:

Management Technique	CCE Action	Resulting Benchmark Improvement
1. Prioritize by Deadline (SLA)	Upon starting the shift, filter the Active Cases List (Section 6) by the SLA Countdown Timer. Begin work on the oldest, highest-priority case first, regardless of the issue type.	Meets Service (SLA) Benchmarks. Ensures no critical case is breached due to poor time management.
2. Batch Processing	Group similar low-priority tasks together. For example, dedicate 30 minutes in the morning and 30 minutes in the afternoon solely to checking and responding to Pending Customer Follow-up emails.	Improves Productivity. Reduces the time lost to context switching (moving from a phone call to an email to an internal chat).
3. 'Triage and Handover' Check	Review all recently escalated cases (Status: Pending Escalation). Verify the L2/L3 team has accepted ownership. If not, chase the transfer, ensuring the case clock does not unnecessarily tick against the CCE's name.	Improves Quality and Service. Ensures continuous movement on the case and accountability by the specialized team.
4. Administrative Time Blocking	Reserve a small, dedicated time slot (e.g., 15 minutes) for non-case activities like updating personal knowledge articles, team training, or clearing the physical desk.	Improves Quality. Prevents administrative clutter from interfering with high-stakes resolution tasks.

By employing these techniques, the Customer Care Executive transforms their workload from a chaotic stream of tasks into a prioritized, measurable queue, enabling them to meet complex service requirements consistently.

Exercise

Short Questions:

1. Why is it important to follow prescribed uniform and grooming standards in an organization?
2. How does maintaining personal hygiene and professional etiquette impact workplace efficiency?
3. What is the significance of wearing and displaying identification badges correctly?
4. Explain the process of logging customer queries, complaints, and service requests in CRM software.
5. Why is monitoring turnaround time and adhering to SLAs crucial for customer service?

Multiple Choice Questions:

1. Which of the following is a key reason to follow organizational grooming standards?
   a) To improve personal style only
   b) To maintain professional appearance and credibility
   c) To impress friends outside work
   d) To save time in the morning
2. Demonstrating professional etiquette includes:
   a) Speaking politely and listening attentively
   b) Ignoring customer concerns
   c) Wearing casual clothes at work
   d) Completing tasks without interaction
3. Identification badges should be:
   a) Kept in a drawer
   b) Worn and displayed visibly as per company protocols
   c) Shared with colleagues
   d) Used only during meetings
4. SLAs in customer service are important because they:
   a) Ensure customers are attended to within agreed timelines
   b) Reduce employee salaries
   c) Eliminate the need for documentation
   d) Increase paperwork unnecessarily
5. Which of the following helps streamline customer service operations?
   a) Using digital tools, CRM applications, and reporting systems
   b) Ignoring customer complaints
   c) Delaying updates in registers
   d) Avoiding escalation protocols

Fill in the Blanks:

1. Following the prescribed _____ and grooming standards ensures a professional appearance.
2. Maintaining _____ and professional etiquette is essential for a positive workplace environment.
3. Customer queries, complaints, and service requests should be logged in _____ software or designated registers.
4. Adhering to _____ ensures timely resolution of customer requests as per organizational agreements.
5. Efficient _____ management helps meet productivity, service, and quality benchmarks in customer service.

Notes

3. Troubleshoot Basic Mobile Handset/Accessory Issues and Coordinate Repair or Replacement

Telecom Sector Skill Council

Unit 3.1 - Device Diagnostics and Basic Troubleshooting

Unit 3.2 - Customer Query Resolution and Escalation

Unit 3.3 - Interpersonal skills for Effective Customer Service

TEL/N2201

Key Learning Outcomes

By the end of this module, the paricipants will be able to:

1. Describe the processes for token and ticket management, service entry logging, and interdepartmental coordination in issue resolution.
2. Discuss mobile operating systems, handset/accessory offerings, warranty policies, and Dead-on Arrival (DOA) assessment criteria.
3. Elucidate common technical issues, troubleshooting procedures, and available software updates/upgrades.

UNIT 3.1: Device Diagnostics and Basic Troubleshooting

Unit Objectives

By the end of this unit, the participants will be able to:

1. Discuss different mobile operating systems and the range of handsets/accessories offered by the organization.
2. Elucidate common technical issues, software bugs, and available updates/upgrades.
3. Describe standard troubleshooting procedures, including physical inspection, connectivity checks, and battery performance tests.
4. Explain the types of open-ended and close-ended questions to gather issue details efficiently.
5. Describe the procedures for logging service entries in CRM systems, Excel sheets, or paper registers.
6. Describe organizational repair/replacement workflows, including interdepartmental coordination.
7. Explain the responsibilities of Level 1, Level 2, and Level 3 support teams for issue resolution.
8. Determine the pricing structure, service charges, and company-defined TAT for different service requests.
9. Demonstrate how to engage with customers to gather information about mobile phone/accessory issues and usage conditions.
10. Show how to log customer issues using the token/ticket management system as per standard process.
11. Demonstrate how to conduct preliminary inspection and diagnostic tests on the handset/accessory.
12. Show how to classify the issue as front-end (Level 1) or requiring back-end (Level 2 or 3) intervention.
13. Demonstrate how to perform basic troubleshooting, including software/hardware resets, firmware updates, and connectivity checks.
14. Show how to provide guidance to customers regarding software updates, security patches, and device maintenance.
15. Demonstrate how to document findings and create a job sheet after receiving the handset/accessory.
16. Show how to verify warranty status, assess repair/replacement costs, and communicate estimated charges to the customer.
17. Demonstrate how to identify and process devices that qualify as Dead on Arrival (DOA) cases per company guidelines.

3.1.1 Initial Diagnostic and Troubleshooting

Initial Diagnostic and Troubleshooting is the process of identifying, analyzing, and resolving technical issues in devices or systems at the first point of contact. In a telecom repair center, it involves performing preliminary inspections, basic tests, and simple corrective actions on mobile handsets and accessories to determine the cause of a problem and decide the appropriate next steps for repair or escalation.

Key Points:

1. **Initial Diagnostic:**
   - The first step in examining a device or accessory to identify any visible faults, error messages, or abnormal behavior.
   - Includes asking the customer relevant questions and reviewing the device's usage history.
2. **Troubleshooting:**
   - Applying systematic procedures to detect and correct faults.
   - Can involve software checks, connectivity tests, battery performance assessments, and minor hardware adjustments.
3. **Purpose:**
   - To quickly identify the root cause of the problem.
   - To decide whether the issue can be resolved immediately (Level 1) or requires advanced intervention (Level 2/3).
   - To minimize repair time, reduce errors, and ensure customer satisfaction.

3.1.2 Hardware & Software of a Mobile Phone

The mobile phone system is divided into two categories, software, and hardware. Hardware refers to the physical and visible parts of the Mobile phone like the display screen, battery, keyboard, and internal parts. Whereas the Software refers to the set of instructions that enable the hardware to perform specific tasks. Without the software, the hardware is of no use. The software must be installed in the system for the hardware to function properly and similarly, the hardware must be present for the software to be installed.

If there is damage to the hardware the software does not work. Similarly, if the software is corrupt the hardware does not function properly. Thus, they both are interdependent, yet they are also different from each other.

3.1.3 What is an Operating System

A mobile operating system (OS) is software that allows smartphones to run applications and programs. A mobile OS typically starts up when a device powers on, presenting a screen with icons or tiles that present information and provide application access. It is a program that acts as an interface between the System hardware and the user and handles interaction between the software and the hardware.

3.1.4 Mobile Operating Systems and Range of Handsets/ Accessories

A mobile operating system (OS) is software that allows smartphones to run applications and programs. A mobile OS typically starts up when a device powers on, presenting a screen with icons or tiles that present information and provide application access. It is a program that acts as an interface between the System hardware and the user and handles interaction between the software and the hardware.

1. Types of Operating Systems for Mobile Phones

A telecom repair center deals with a variety of mobile devices, each running on different operating systems (OS) and supported by various accessories. Understanding the OS and available devices helps customer care executives provide accurate service and troubleshooting.

i. Android OS

- Developed by Google, widely used in smartphones and tablets.
- Known for customizability, app variety, and compatibility with multiple hardware brands.
- Supports regular software updates and security patches.

ii. iOS

- Developed by Apple, exclusively for iPhones and iPads.
- Known for smooth performance, security, and ecosystem integration (Apple Watch, Mac, iCloud).
- Limited customization but consistent updates and support.

iii. Blackberry OS (Research in Motion)

- BlackBerry OS is a proprietary mobile operating system developed by Canadian company BlackBerry Limited for its BlackBerry line of smartphone handheld devices. The latest version is (10.3.2.2876)

iv. Windows OS (Microsoft)

- Windows OS is developed by Microsoft. It is primarily designed for pocket PCs and smartphones. Moreover, it has the features of computer-based Windows OS and additional features for mobile phones. However, this OS is slowly becoming less popular in the market.

v. Tizen (Samsung)

- Tizen is a Linux-based mobile operating system backed by the Linux Foundation, mainly developed and used primarily by Samsung Electronics. Version 2.0 is the latest version of this OS. This is being widely used in wearable devices (smart watches) and SmartTV.

2. Range of Handsets

Telecom organizations typically offer:

- Smartphones: Advanced features, touchscreen, internet connectivity, cameras, and apps.
- Feature Phones: Basic calling and messaging, long battery life, often used by budget customers.
- Tablets and Phablets: Larger screens, media consumption, productivity tools.

3. Accessories Offered

- Chargers and USB Cables: Standard, fast chargers, wireless chargers.
- Batteries and Power Banks: Spare batteries (for some models), external power solutions.
- Headphones and Earphones: Wired and wireless (Bluetooth) options.
- Screen Protectors and Cases: To protect devices from damage.
- Memory Cards and SIM Adapters: Expand storage or enable dual SIM functionality.
- Other Accessories: Smartwatches, portable speakers, device cleaning kits.

4. Significance for Customer Service

- Knowing the OS helps in software troubleshooting and updates.
- Awareness of handset models and accessories ensures accurate advice and compatibility checks.
- Supports quick diagnosis, repair, and replacement decisions.

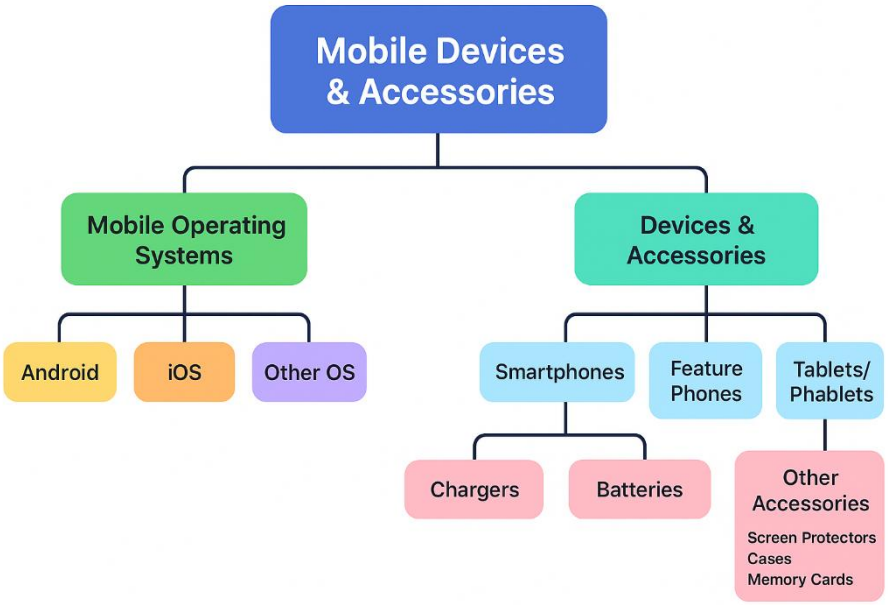


Fig. 3.1.1 Mobile devices and accessories

3.1.5 Functions of the Operating System

The operating system is an important part of any electronic device. It has a set of instructions that makes the hardware function and do the task they are designed for. Every device is preloaded with these instructions whenever you buy these devices.

An operating system performs various tasks. Let us study them. Several functions of OS are:

1. Memory Management

It is the management of the primary memory. Whenever we run an app, the instructions get loaded in the main memory Therefore, there can be more than one program present at a time. Hence, it is required to manage the memory. This memory is also called RAM (i.e Random Access Memory). Another type of memory that stores the system files is called ROM i. e Read-Only Memory.

The operating system:

- Allocates and deallocates the memory.
- Keeps arecord of which part of primary memory is used by whom and how much. Distributes the memory while multiprocessing.

2. Processor Management/Scheduling

When more than one process runs on the system the OS decides how and when a process will use the CPU. Hence, the name is also CPU Scheduling. The OS:

- Allocates and deal locates processor to the processes. Keeps record of CPU status.

3. Device Management

The processes may require devices for their use. This management is done by the OS. The OS:

- Allocates and deallocates devices to different processes through a concept called time slicing to keep records of the devices.
- Sets priority for the process to use the devices, on a first cum first serve basis.

4. File Management

The OS helps in managing our files stored in the different directories:

- keeps records of the status and locations of files.
- Allocates and deallocates resources.

5. Security

The OS keeps the system and programs safe and secure through authentication. A user id and password decide the authenticity of the user. For even unlocking a phone, the user will

- Provide key codes
- Use a pattern
- Use face detection
- Use fingerprints

These are the different ways using which we can prevent unauthorized users to access our devices.

Other Functions

Some other functions of the OS can be:

- Error detection.
- keeping a record of system performance.
- Communication between different software etc.

3.1.6 Mobile OS Updates

A vendor releases a new mobile OS update for various reasons. Some of the common reasons for releasing a mobile OS update are

Security patches: of late, there has been a few vulnerabilities detected in the device OS. Vendors release a new mobile OS update to fix the detected vulnerability. This is released in the form of new versions, and these updates are critical for the devices and should be installed immediately upon release.

New feature releases: Every OS provider is working on enhancing the user experience and device performance. To aid this, most vendors regularly release mobile OS updates to provide new features and device functionality and also enhance the existing features.

The mobile phone can stop working due to several reasons. It could be a problem with the hardware or software. The software problems can be resolved by uninstalling and reinstalling the software. The requires the help of an engineer in the Service/Repair Center. And for the hardware problem again we need the help of the engineers to open the phone and to diagnose the problem. There are few diagnostic tools available with these Repair centers using which they will analyze and tell exactly what the problem is.

3.1.7 What are Bugs and how they are solved

Smartphones have become an integral part of everybody's life and users are getting highly dependent on mobile applications for their daily needs. A lot of problems happening in millions of smartphone handsets that have led to significant user frustrations are due to bugs in the mobile OS and applications.

A bug is an error that occurs in a software program that causes unexpected malfunctioning of the device. Manual error is the reason behind these bugs and these errors are in design, coding, or architecture.

A program containing logical errors creates bugs, and these bugs interfere in the overall working of the applications. They either are slow, hang in between, or produce unexpected results. Bug reports provide a detailed description of the kind of bugs in a program.To resolve/rectify the bugs, the OS manufacturer releases patches, and they are made available to the users using push notifications. They install the patches and restart the s device to make these updates work.

3.1.8 Diagnosing the Damage

A. Initial Assessment (Visual & Basic Check)

Purpose: Identify obvious physical or functional damage before further technical investigation.

Steps:

1. **Check for Physical Damage:**
   - Inspect the screen for cracks, discoloration, or unresponsive touch areas.
   - Look at ports (charging, headphone) for bent pins or debris.

Fig. 3.1.2 Cracked Screen

- Check the back panel for swelling (battery issues) or liquid damage.

2. Check for Water Damage:

- Locate the Liquid Contact Indicator (LCI) (usually a small sticker inside SIM tray or battery compartment). Red/pink indicates water exposure.

3. Check Battery & Charging:

- Connect charger and see if the phone charges.
- Note if it heats excessively or shows intermittent charging.
- Tools Needed: Magnifying glass, flashlight, cotton swab for cleaning

B. Software & Functional Diagnosis

Purpose: Identify software-related issues that may mimic hardware damage.

Steps:

1. Power Cycle the Device:
   - Turn off and restart to eliminate temporary glitches.
2. Boot in Safe Mode (Android) / Diagnostic Mode (iPhone):
   - Safe Mode disables third-party apps to see if the problem is software-related.
   - For iPhones, run Apple Diagnostics.
3. Check for Firmware / OS Issues:
   - Ensure the OS is up-to-date.
   - Perform a factory reset if needed (backup first).
4. Check System Functions:
   - Test touchscreen responsiveness.
   - Test audio (speaker, microphone, headphone jack).
   - Test camera, sensors (proximity, accelerometer), and buttons.

Tools Needed: Software tools for diagnostics (e.g., phone manufacturer diagnostic apps).

C. Component Testing

Purpose: Identify faulty hardware components.

Steps:

1. **Display:**
   - Check for dead pixels, discoloration, flickering, or unresponsive areas.
   - Use test patterns or built-in diagnostic tools.
2. **Battery & Power Circuit:**
   - Measure voltage using a multimeter.
   - Look for swollen battery or leakage.
3. **Charging Port & Circuit:**
   - Inspect for bent pins or corrosion.
   - Test with a known working charger.
4. **Buttons & Switches:**
   - Test all physical buttons individually.
   - Check volume, power, and fingerprint sensors.
5. **Audio & Microphone:**
   - Record a short clip to test microphone.
   - Play audio to test speakers.
6. **Cameras:**
   - Check front and back cameras for focus issues, blur, or black screen.
7. **Connectivity:**
   - Test Wi-Fi, Bluetooth, GPS, and SIM card functionality.

Tools Needed: Multimeter, USB tester, replacement modules for comparison.

D. Advanced Hardware Diagnosis

Purpose: For internal circuit or chip-level issues.

Steps:

1 Disassemble Carefully:
- Remove back cover, battery (if removable), and screws.
- Keep track of screws and connectors.

2. Inspect for Damage:
- Look for burnt chips, corrosion, or disconnected ribbon cables.

3. Use Diagnostic Equipment:
- Use JTAG / ISP programmer for memory or boot issues.
- Use thermal camera to detect overheating ICs.

4. Replace/Swap Components:
- If a specific module is suspected (screen, motherboard, battery), swap with a known working component to confirm.

Tools Needed: Precision screwdriver set, plastic pry tools, magnifier or microscope, multimeter, thermal camera (optional).

E. Report & Solution Recommendation

After diagnosis:

1. Document all findings: physical damage, software issues, faulty components.
2. Recommend solution:
    - Software fix (update, reset, reinstall firmware).
    - Hardware repair (replace screen, battery, or another component).
    - Full replacement (if repair is not cost-effective).

F. Precautions During Diagnosis

- Always power off the phone before opening.
- Avoid static discharge; use anti-static mat/strap.
- Never force connectors or screws.
- Backup data if possible before testing or repair.

3.1.9 Standard Troubleshooting Procedures for Mobile Phones

Troubleshooting a mobile phone is a systematic process aimed at identifying, isolating, and resolving problems that affect the device's normal operation. Effective troubleshooting ensures device longevity, optimal performance, and customer satisfaction. The procedure typically involves three major steps: physical inspection, connectivity checks, and battery performance tests. Each step is explained in detail below.

1. Physical Inspection

Definition:

Physical inspection involves a careful examination of the mobile phone's exterior and interior components to detect visible signs of damage or wear that may affect functionality.

Objectives:

- Detect physical damage such as cracks, dents, or corrosion.
- Identify potential hazards like battery swelling or water ingress.
- Determine whether components require repair or replacement.

Procedure:

1. Exterior Examination:
    - Inspect the display screen for cracks, scratches, discoloration, or dead pixels.
    - Check the casing for dents, loose parts, or deformation.
    - Examine ports (charging, audio, SIM, and microSD) for dust, debris, or bent pins.

2. Internal Examination (if necessary):

- Remove the back cover (if removable) and inspect the battery, connectors, and ribbon cables.
- Look for signs of liquid damage indicated by corrosion or red/pink liquid contact indicators (LCIs).
- Ensure internal components are properly seated and free from physical obstructions.

Tools Required:

- Magnifying glass or inspection lamp.
- Compressed air for cleaning dust.
- Anti-static gloves and mat for safe internal handling.

Expected Observations:

- Cracks or unresponsive touchscreen areas may indicate screen replacement is needed.
- Swollen battery cells require immediate replacement.
- Dust or corrosion in ports may cause connectivity or charging issues.

2. Connectivity Checks

Definition:

Connectivity checks involve verifying the proper functioning of the mobile phone's communication interfaces, including cellular network, Wi-Fi, Bluetooth, GPS, and wired connections.

Objectives:

- Ensure uninterrupted network and data services.
- Identify faulty antennas, modules, or software configurations.
- Detect issues caused by external interference or damaged ports.

Procedure:

1. Cellular Network Check:

- Insert a valid SIM card and verify signal strength.
- Test calling, messaging, and mobile data functionality.
- Observe if the device frequently drops connections or fails to register on the network.

2. Wi-Fi and Bluetooth Testing:

- Connect to a stable Wi-Fi network and test internet access.
- Pair the device with Bluetooth peripherals to check for proper connectivity.
- Identify intermittent connectivity or failed pairing issues.

3. GPS and Location Services:

- Enable location services and verify GPS signal acquisition.
- Test location-based applications to ensure accurate positioning.

4. Port and Accessory Checks:

- Connect headphones, USB cables, or chargers to test proper functioning.
- Inspect for loose, bent, or non-responsive ports.

Tools Required:

- SIM cards from multiple network providers for verification.
- Wi-Fi router or hotspot for connectivity tests.
- Bluetooth devices such as headphones or smartwatches.

Expected Observations:

- Persistent signal loss or Wi-Fi drops may indicate antenna or module damage.
- Unresponsive ports suggest mechanical obstruction, corrosion, or internal circuit failure.

3. Battery Performance Tests

Definition:

Battery performance testing evaluates the health, efficiency, and safety of the mobile phone's battery to ensure it meets operational standards.

Objectives:

- Determine battery capacity and charging efficiency.
- Identify potential battery degradation or swelling.
- Prevent device malfunction or hazards caused by faulty batteries.

Procedure:

1. Visual and Physical Inspection:

- Check for swelling, leakage, or discoloration of the battery.
- Inspect battery contacts for corrosion or dirt.

2. Charging Test:

- Connect the phone to a known working charger.
- Observe charging speed, battery level progression, and any abnormal heating.
- Verify that the device reaches full charge without interruption.

3. Discharge Test:

- Fully charge the battery and monitor the time taken for the charge to deplete under normal usage.
- Compare observed battery life against manufacturer specifications.

4. Voltage and Health Monitoring (Optional):

- Use a multimeter or battery monitoring software to check voltage stability and health parameters.
- Identify batteries with significant voltage drops, indicating aging or damage.

Tools Required:

- Original or compatible charger and cable.
- Multimeter or battery analyzer.
- Battery health monitoring apps or diagnostic software.

Expected Observations:

- Rapid discharge, overheating, or failure to charge may indicate battery replacement is necessary.
- Swollen or leaking batteries pose safety hazards and require immediate removal.

3.1.10 Types of Questions to Gather Issue Details Efficiently

Effective troubleshooting and problem-solving often begin with asking the right questions. Gathering accurate and detailed information from users or clients requires understanding the difference between open-ended and close-ended questions and knowing when to use each type.

1. Open-Ended Questions

Definition:

Open-ended questions are questions that cannot be answered with a simple "yes" or "no." They encourage the respondent to provide detailed explanations, descriptions, or insights.

Purpose in Troubleshooting:

- To gather comprehensive information about the problem.
- To understand the user's perspective and context.
- To uncover additional issues or symptoms that may not be immediately obvious.

Characteristics:

- Begin with words like "how," "what," "why," or "describe."
- Allow the user to elaborate and provide examples.
- Encourage discussion and exploration of potential causes.

Examples:

1. "Can you describe what happens when you try to turn on your phone?"
2. "What steps did you take before the device stopped working?"
3. "How long has this issue been occurring?"
4. "What changes or updates were made recently on your device

Advantages:

- Provides rich, detailed information.
- Helps identify underlying causes.
- Encourages the user to share more than just the obvious symptoms.

Disadvantages:

- Responses may be long and require careful interpretation.
- Can be time-consuming if not guided properly.

2. Close-Ended Questions

Definition:

Close-ended questions are questions that can be answered with a single word or a brief response, such as "yes," "no," or a choice from predefined options.

Purpose in Troubleshooting:

- To confirm specific details quickly.
- To narrow down possible causes.
- To verify whether certain conditions are met.

Characteristics:

- Typically require short, precise answers.
- Begin with words like "is," "are," "did," "does," or "have."
- Useful for checking facts or confirming observations.

Examples:

1. "Is your phone turning on?"
2. "Did you recently install any new applications?"
3. "Does the screen display any error messages?"
4. "Have you tried charging the device with a different cable?"

Advantages:

- Quick and easy to answer.
- Helps focus on specific aspects of the problem.
- Useful for creating a structured troubleshooting flow.

Disadvantages:

- May not provide enough detail to identify the root cause.
- Can lead to incomplete understanding if used exclusively.

3. Using Open-Ended and Close-Ended Questions Efficiently

A combination of both types of questions ensures efficient and accurate data gathering:

1. **Start with Open-Ended Questions:**
   - Begin by encouraging the user to describe the problem in their own words.
   - Example: "What happens when you press the power button?"
2. **Follow with Close-Ended Questions:**
   - Use these to verify specifics, confirm symptoms, or rule out possibilities.
   - Example: "Does the device make any sound when you press the power button?"
3. **Iterative Approach**:
   - Alternate between open and close-ended questions to clarify details and narrow down causes.
   - This approach balances detailed insight with efficiency.

3.1.11 Procedures for Logging Service Entries

Efficient record-keeping is a critical part of customer service and technical support. Logging service entries ensures proper tracking of customer issues, timely resolution, and accountability. Depending on organizational practices, service entries may be logged using CRM systems, Excel sheets, or paper registers. The procedures vary slightly with the medium but follow the same basic principles.

1. Logging Service Entries in CRM Systems

Customer Relationship Management (CRM) systems are software tools used to record, track, and manage customer interactions efficiently.

Procedure:

1. **Access the CRM System:**
   - Log in using your authorized credentials.
   - Navigate to the "Service" or "Tickets" module.
2. **Create a New Service Entry:**
   - Click on "New Ticket" or "Add Service Request."
   - Fill in mandatory fields:
     - ✓ Customer Name and Contact Details
     - ✓ Device/Service Details
     - ✓ Issue Description (using the information gathered from open- and close-ended questions)
     - ✓ Priority Level (Low, Medium, High)
3. **Assign Ticket/Entry:**
   - Assign the service request to the relevant technician or department.
   - Set estimated resolution time based on issue severity.
4. **Save and Confirm Entry:**
   - Review all details for accuracy.
   - Submit the entry to generate a ticket number or reference ID.
5. **Update Progress:**
   - Regularly update the CRM with troubleshooting steps, follow-ups, and resolution details.
   - Close the ticket once the issue is resolved, noting the resolution method and customer feedback.

Advantages of Using CRM:

- Centralized and accessible records.
- Automated tracking and reminders.
- Easy reporting and analytics for management.

2. Logging Service Entries in Excel Sheets

Excel sheets provide a simple digital method for tracking service requests in environments where CRM systems may not be available.

Procedure:

1. Open the Excel Sheet:

Use a pre-defined template or create a new workbook with columns for essential information.

2. Create Columns for Key Details:

Typical columns include:

- Date and Time of Entry
- Customer Name and Contact
- Device/Service Details
- Issue Description
- Assigned Technician
- Status (Pending, In Progress, Resolved)
- Resolution Details

3. Enter Service Details:

- Record the information accurately immediately after receiving the request.
- Use dropdowns or data validation to maintain consistency in status or priority fields.

4. Update and Track Progress:

- Update the sheet as troubleshooting progresses.
- Highlight overdue or pending entries for follow-up.

5. Save and Backup:

- Save the file with a clear naming convention (e.g., "Service_Entries_2025.xlsx").
- Regularly back up the sheet to prevent data loss.

Advantages of Using Excel:

- Easy to set up and use.
- Flexible and customizable.
- Can generate simple reports and summaries.

3. Logging Service Entries in Paper Registers

Definition:

Paper registers are traditional manual logs used for recording service requests in environments where digital systems are not feasible.

Procedure:

1. Prepare the Register:

- Ensure the register has pre-printed columns for essential information, such as:
  - ✓ Date & Time
  - ✓ Customer Name & Contact
  - ✓ Device/Service Details
  - ✓ Issue Description
  - ✓ Assigned Staff
  - ✓ Status & Remarks

2. Record Service Entry:

- Write the details clearly and legibly.
- Include all relevant information to avoid ambiguity.

3. Assign Responsibility:

- Note the technician or staff responsible for resolving the issue.
- Maintain accountability by including signature or initials.

4. Track Progress:

- Use additional columns or color-coding to indicate issue status.
- Update the register as progress is made and once the issue is resolved.

5. Maintain and Store Records:

- Keep registers in an organized manner for easy reference.
- Archive older registers systematically for future audits or reporting.

Advantages of Using Paper Registers:

- Simple and does not require technology.
- Immediate availability in areas with limited resources.
- Provides a tangible backup for digital failures.

4. Best Practices for Logging Service Entries

- Ensure accuracy and completeness in all entries.
- Assign a unique identifier (ticket number, serial, or row number) to each entry.
- Update entries in real-time to maintain current status.
- Maintain confidentiality of customer data.
- Regularly review and audit entries for consistency and compliance.

3.1.12 Organizational Repair and Replacement Workflows

Efficient repair and replacement of devices or products within an organization requires a structured workflow that ensures timely resolution, proper documentation, and accountability. Workflows are designed to coordinate multiple departments, maintain service quality, and adhere to company policies and warranty guidelines.

An organizational repair/replacement workflow is a step-by-step process followed by a company to manage defective or malfunctioning products, from receiving a service request to completing repair or replacement, while ensuring coordination among relevant departments.

Key Objectives of the Workflow

- Ensure quick and accurate resolution of customer issues.
- Maintain compliance with warranty and company policies.
- Facilitate interdepartmental communication and accountability.
- Provide tracking and documentation of all service activities.
- Enhance customer satisfaction and trust.

Departments Involved in the Workflow

1. **Customer Service / Frontline Support:**
   - First point of contact for receiving complaints or service requests.
   - Responsible for logging service entries, gathering issue details, and providing initial troubleshooting guidance.
2. **Technical / Repair Department:**
   - Performs diagnosis, repair, and testing of defective devices.
   - Ensures adherence to safety standards and uses genuine parts.
3. **Quality Assurance (QA) / Service Quality Team:**
   - Checks that repairs meet quality standards before devices are returned to customers.
   - Monitors repair accuracy and compliance with company policies.
4. **Inventory / Spare Parts Department:**
   - Manages availability of replacement components.
   - Coordinates with the repair department to ensure timely access to necessary parts.
5. **Logistics / Shipping Department (if applicable):**
   - Handles delivery and pickup of devices for repair or replacement, especially for remote customers.
6. **Management / Authorization Team:**
   - Approves high-cost repairs, replacements, or warranty claims outside standard coverage.

Standard Repair/Replacement Workflow

Step 1: Service Request Initiation

- Customer contacts the company via call, email, website, or in-person service center.
- Frontline staff logs the issue in a CRM system, Excel sheet, or paper register.
- A ticket or reference ID is generated for tracking.

Step 2: Initial Assessment and Troubleshooting

- Frontline staff gathers information using open-ended and close-ended questions.
- Basic troubleshooting is performed to determine if the issue can be resolved immediately.
- If unresolved, the ticket is escalated to the Technical Department.

Step 3: Diagnostic and Repair

- Technical staff performs detailed inspection and diagnosis, checking components, connectivity, and software.
- Repair is carried out following company and manufacturer guidelines.
- Spare parts are requested from the Inventory Department if necessary.

Step 4: Quality Assurance Check

- QA team verifies the device's functionality, safety, and compliance after repair.
- Any discrepancies are reported back to the technical team for correction.

Step 5: Replacement (if Repair Not Feasible)

- Management authorizes replacement if repair is impossible or uneconomical.
- Inventory/warehouse prepares a new or refurbished device.
- Device exchange is documented in the service records.

Step 6: Customer Communication and Closure

- Customer is informed of the repair/replacement status.
- Instructions for data backup or device usage are provided.
- Service ticket is closed in the CRM or register after confirmation of resolution.

Interdepartmental Coordination

Coordination is crucial for smooth workflow:

1. Customer Service ↔ Technical Department:
   - Clear communication of issue details, ticket history, and troubleshooting steps.
2. Technical ↔ Inventory/Spare Parts:
   - Timely request and provision of genuine components.
3. Technical ↔ QA:
   - QA ensures repairs meet company quality standards before returning to the customer.
4. Management ↔ All Departments:
   - Approves non-standard repairs or replacements.
   - Resolves disputes and ensures compliance with warranty guidelines.
5. Customer Service ↔ Logistics:
   - Arranges pick-up and delivery for devices requiring offsite repair.
   - Maintains real-time updates for customer notifications.

Benefits of Interdepartmental Coordination:

- Reduces repair/replacement turnaround time.
- Ensures accountability and traceability.
- Prevents errors such as incorrect part usage or improper documentation.
- Enhances customer satisfaction through seamless service.

3.1.13 Support Team Levels and their Responsibilities

In technical support and customer service operations, issues are typically managed using a tiered support system. This system divides responsibilities among Level 1 (L1), Level 2 (L2), and Level 3 (L3) support teams, ensuring that problems are resolved efficiently according to their complexity. Each level has a specific role in issue identification, troubleshooting, escalation, and resolution.

1. Level 1 (L1) Support – First-Line Support

Definition:

Level 1 support is the initial point of contact for customers reporting issues. The team primarily focuses on basic troubleshooting and information gathering.

Responsibilities:

1. **Receiving and Logging Requests:**
   - Record incoming issues through calls, emails, chats, or service tickets.
   - Gather relevant customer and device information (e.g., serial number, purchase date, issue description).
2. **Basic Troubleshooting:**
   - Perform preliminary checks to identify common problems.
   - Guide customers through simple solutions, such as restarting the device, checking connections, or resetting settings.
3. **Classification and Prioritization:**
   - Categorize issues based on severity, type, and urgency.
   - Determine if the issue can be resolved at L1 or needs escalation.
4. **Escalation to L2:**
   - Escalate unresolved or complex issues to Level 2 support with complete documentation.

Typical Issues Handled by L1:

- Password resets and account access issues.
- Connectivity problems (Wi-Fi, Bluetooth).
- Software updates and basic configuration problems.

Key Skills Required:

- Good communication and customer service skills.
- Basic technical knowledge of devices and software.
- Ability to follow scripts and standard operating procedures (SOPs).

2. Level 2 (L2) Support – Second-Line Support

Definition:

Level 2 support handles issues that require deeper technical knowledge and cannot be resolved by Level 1. This team performs advanced troubleshooting, diagnostics, and component-level problem identification.

Responsibilities:

1. **Advanced Troubleshooting:**
   - Analyze logs, error codes, and system behavior to pinpoint the root cause.
   - Use diagnostic tools or software to assess device performance.
2. **Resolution of Complex Issues:**
   - Apply technical expertise to resolve hardware, software, or network-related problems.
   - Perform component replacements, software reinstallation, or system configurations when authorized.

3. **Coordination with Other Teams:**
   - Liaise with Level 3 support or specialized teams for issues requiring expertise beyond L2.
   - Communicate updates and resolution steps back to L1 or the customer.
4. **Documentation:**
   - Record all actions, diagnostic results, and solutions for future reference.
   - Update CRM or service records to maintain a knowledge base.

Typical Issues Handled by L2:

- Hardware malfunctions (screen, battery, motherboard).
- Complex software bugs or OS-related failures.
- Device performance issues requiring configuration or patching.

Key Skills Required:

- In-depth technical knowledge of devices, software, and networks.
- Problem-solving and analytical skills.
- Ability to document and communicate technical information clearly.

3. Level 3 (L3) Support – Expert / Specialist Support

Definition:

Level 3 support is the highest tier of technical expertise, dealing with critical, rare, or unresolved issues that L1 and L2 cannot fix. This team often includes engineers, developers, or manufacturer specialists.

Responsibilities:

1. **Handling Escalated Issues:**
   - Take over cases that require deep technical expertise or code-level intervention.
   - Perform root cause analysis for complex system failures.
2. **System and Software Development Support:**
   - Develop patches, firmware updates, or software fixes.
   - Test solutions in controlled environments before deployment.
3. **Guidelines and Knowledge Sharing:**
   - Provide technical guidance and support documentation for L1 and L2 teams.
   - Recommend process improvements or workflow enhancements.
4. **Final Resolution or Replacement Decisions:**
   - Authorize replacements or warranty claims when repair is not feasible.
   - Approve hardware upgrades or critical component replacements.

Typical Issues Handled by L3:

- Critical hardware failures (e.g., motherboard, chip-level issues).
- Firmware or OS-level corruption.
- Issues requiring manufacturer-level intervention or specialized equipment.

Key Skills Required:

- Expert knowledge in hardware, software, and system architecture.
- Analytical and research skills to resolve uncommon problems.
- Ability to guide and mentor lower support levels.

3.1.14 Pricing Structure, Service Charges, and Turnaround Time (TAT) for Service Requests

In any service-oriented organization, establishing a transparent pricing structure, service charges, and TAT is critical for ensuring customer satisfaction, operational efficiency, and profitability. These factors define how services are delivered, how long they take, and how costs are calculated for various service requests.

1. Pricing Structure

Definition:

The pricing structure refers to the method by which service costs are determined for different types of service requests. It ensures that customers are aware of charges in advance and helps standardize billing.

Components of Pricing Structure:

1. **Service Type-Based Pricing:**
   - Charges vary according to the complexity and type of service.
   - Examples:
   - Basic Troubleshooting: Software updates, password reset. (Low or no cost if under warranty)
   - Intermediate Repair: Screen replacement, battery replacement. (Medium cost)
   - Advanced Repair: Motherboard repair, hardware module replacement. (High cost)
2. **Warranty vs Non-Warranty Services:**
   - Under Warranty: Repairs for covered defects are typically free of charge, subject to terms.
   - Out-of-Warranty: Customer bears full cost of repair, spare parts, and labor.
3. **Parts and Labor Costs:**
   - Service cost may be split into:
   - Parts cost: Cost of replacement components.
   - Labor charges: Technician fees based on complexity and effort required.
4. **Service Packages or Plans:**
   - Some organizations offer prepaid service packages covering multiple repairs or preventive maintenance at discounted rates.

2. Service Charges

Definition:

Service charges are the fees applied for performing repairs, maintenance, or replacement, which may include labor, consumables, or logistics costs.

Determining Service Charges:

1. **Standard Charges:**
   - Predefined charges for routine service requests such as:
     - ✓ Cleaning, software updates, basic diagnostics.
2. **Variable Charges:**
   - Charged based on the complexity, parts required, and urgency.
   - Examples:
     - ✓ Screen replacement may cost more for higher-end devices.
     - ✓ Emergency or same-day service may include priority charges

3. Company-Defined Turnaround Time (TAT)

Definition:

Turnaround Time (TAT) is the time taken to complete a service request from the moment it is logged until the device is returned or issue resolved.

Factors Affecting TAT:

- Type of Service Request:
  - Simple tasks (software updates, password resets): 1–2 hours or same day.
  - Intermediate repairs (screen, battery replacement): 1–3 days.
  - Advanced repairs (motherboard or component replacement): 5–10 days.
- Availability of Spare Parts:
  - Delays may occur if components are out of stock or require ordering.
- Workload and Staff Availability:
  - TAT may be adjusted according to the number of pending requests and technician availability.

Importance of TAT:

- Sets customer expectations for service completion.
- Helps in planning resources and inventory for service operations.
- Improves customer satisfaction through transparency.

4. Workflow for Determining Pricing, Service Charges, and TAT

1. **Identify the Service Request Type:**
   - Classify as basic, intermediate, or advanced.
2. **Check Warranty Status:**
   - Under warranty → minimal or zero charges.
   - Out-of-warranty → standard service charge applies.
3. **Calculate Cost:**
   - Add parts cost + labor charges + additional fees (if applicable).
4. **Assign TAT:**
   - Based on complexity, parts availability, and company guidelines.
   - Communicate expected completion time to the customer.
5. **Document and Approve:**
   - Record charges and TAT in service logs, CRM, or invoices.
   - Obtain customer approval if charges are applicable.

Notes

UNIT 3.2: Customer Query Resolution and Escalation

Unit Objectives

By the end of this unit, the participants will be able to:

1. Discuss warranty policies and company guidelines for repair and replacement.
2. Explain DOA guidelines and assessment criteria.
3. Describe standard procedures for query handling, issue resolution, and escalation management.
4. Describe the token and ticket management process for tracking customer queries.
5. Show how to inform the customer about resolution timelines, provide a job sheet copy, and manage expectations on service Turnaround Time (TAT).
6. Demonstrate how to coordinate with Level 2 specialists to resolve advanced technical issues.
7. Show how to escalate unresolved issues to Level 3 specialists and ensure proper handover with a complete job sheet.
8. Demonstrate how to follow the escalation matrix to report complex cases to supervisors or technical support teams.
9. Show how to notify customers within the committed TAT regarding the repair/replacement status and charges.
10. Demonstrate how to ensure proper customer handover of the repaired/replaced handset/accessory, collect payments if applicable, and update service records.

3.2.1 Warranty Policies and Company Guidelines for Repair and Replacement

A warranty is a formal assurance provided by a manufacturer or seller regarding the quality and functionality of a product. It outlines the terms and conditions under which repair, replacement, or refund will be provided if the product fails due to manufacturing defects or other covered issues. Understanding warranty policies and adhering to company guidelines is essential for both service staff and customers to ensure efficient resolution of device issues.

1. Warranty Policies

Definition:

A warranty is a legally binding commitment that guarantees the product will function correctly for a specific period. If the product fails during this period due to covered defects, the manufacturer or company is responsible for repair or replacement at no extra cost to the customer.

Types of Warranty:

1. Manufacturer Warranty:

- Provided by the company that manufactures the device.
- Covers defects in material, design, or workmanship.
- Typically, valid for a fixed period (e.g., 1 year for smartphones).

2. Extended Warranty / Service Plans:

- Optional warranty purchased separately by the customer.
- Extends coverage beyond the standard manufacturer warranty.
- May include additional services such as accidental damage protection.

3. Limited Warranty:

- Specifies certain exclusions, such as physical damage, water damage, unauthorized repairs, or misuse.
- Covers only specific components or types of defects.

Key Elements of a Warranty Policy:

- Coverage Period: The duration during which the warranty is valid.
- Scope of Coverage: Components or issues that are covered (e.g., motherboard, display, battery).
- Exclusions: Damage caused by accidents, mishandling, water ingress, or unauthorized modifications.
- Claim Procedure: Steps required to request repair or replacement, often involving proof of purchase or warranty card.

2. Company Guidelines for Repair

Definition:

Company guidelines provide standardized procedures for handling repairs to ensure consistency, safety, and compliance with warranty terms.

Repair Procedures:

1. Verification of Warranty:

- Check proof of purchase, warranty card, or digital records.
- Confirm that the device is within the warranty period and the defect is covered.

2. Initial Diagnostic:

- Perform standard troubleshooting to confirm the reported issue.
- Document symptoms and steps taken.

3. Repair Authorization:

- Only authorized service centers or technicians can perform repairs under warranty.
- Unauthorized repairs may void the warranty.

4. Repair Execution:

- Use genuine spare parts as recommended by the manufacturer.
- Follow safety and quality protocols during the repair process.

5. Testing and Quality Check:

- After repair, test the device to ensure functionality.
- Update service records in the CRM or register.

3. Company Guidelines for Replacement

Definition:

Replacement involves substituting a defective device or component with a new or refurbished one under warranty terms.

Replacement Procedures:

Eligibility Verification:

- Confirm warranty coverage and defect validity.
- Ensure the defect cannot be resolved through repair.

Approval and Documentation:

- Obtain authorization from the service or warranty department.
- Document the serial number, device model, and reason for replacement.

Replacement Process:

- Provide a new or refurbished device as per company policy.
- Record the exchange details in the service logs or CRM system.

Customer Communication:

- Inform the customer about any data loss risk.
- Advise on transferring data and restoring settings.

Post-Replacement Warranty:

- The replaced device may have a new warranty period or continuation of the original warranty, depending on company policy.

4. Customer Responsibilities

- Keep the proof of purchase and warranty card safe.
- Follow manufacturer guidelines for device use and maintenance.
- Report issues promptly to authorized service centers.
- Avoid unauthorized repairs or modifications that can void the warranty.

5. Benefits of Following Warranty Policies

- Ensures cost-free repair or replacement for covered defects.
- Maintains device safety and quality by using genuine parts.
- Builds customer trust through transparent and standardized procedures.
- Reduces disputes and liability for the company.

3.2.2 DOA (Dead on Arrival) Guidelines and Assessment Criteria

In technical service management, DOA refers to a product that is non-functional or defective at the time of delivery or first use. Proper handling of DOA products is essential to ensure customer satisfaction, warranty compliance, and streamlined replacement processes. Organizations establish guidelines and assessment criteria to determine whether a product qualifies as DOA.

1. Definition of DOA

- DOA (Dead on Arrival): A product is considered DOA if it fails to function properly immediately after delivery or during the first power-on, despite being new and unused.
- DOA typically applies to electronic devices, appliances, or technical equipment, including mobile phones, laptops, and other consumer electronics.

Purpose of DOA Guidelines:

- Protect customers from receiving defective products.
- Standardize the assessment process for replacement or repair.
- Ensure compliance with warranty and company policies.

2. DOA Guidelines

A. Eligibility for DOA Claim

1. Time Frame:

- The product must fail within a defined period, typically 7–15 days from the date of purchase or delivery.
- The specific time frame may vary depending on company policy or product type.

2. Proof of Purchase:

- Customer must provide a valid invoice, receipt, or warranty card as proof of purchase.

3. Original Packaging:

- Product should be returned in original packaging with all included accessories (charger, cables, manuals).
- Packaging helps prevent disputes regarding handling or usage.

4. Unaltered Product:

- The device should not show signs of misuse, modification, or unauthorized repair.
- Physical damage caused by the customer may void the DOA claim.

B. DOA Processing Steps

1. Initial Customer Contact:

- Customer reports the issue to customer service or sales channel.
- Customer service logs the DOA request in CRM or service register.

2. Preliminary Verification:

- Verify purchase date, warranty status, and packaging compliance.
- Gather device details such as model, serial number, and batch number.

3. **Device Assessment / Testing:**
   - Conduct a diagnostic test to confirm that the product is non-functional.
   - Ensure that failure is not caused by external factors such as battery discharge, improper setup, or environmental issues.
4. **Approval for Replacement:**
   - If DOA criteria are met, management or service department approves replacement or repair.
   - A new or refurbished product is issued according to company policy.
5. **Documentation:**
   - Record all findings, approval, and replacement details in the CRM or service register.
   - Include serial numbers, issue description, and date of replacement.

3. Assessment Criteria for DOA

To determine whether a product qualifies as DOA, organizations typically consider the following assessment criteria:

Criteria	Description
Power Functionality	Device does not power on or operate normally at first use.
Manufacturing Defects	Faulty components or assembly issues confirmed during inspection.
Battery / Charging Issues	Device fails to charge or battery is defective upon first use.
Display / Screen Issues	Dead pixels, blank screen, or display malfunction from the start.
Connectivity / Peripheral Failure	Ports, buttons, or network interfaces are non-functional.
Physical Integrity	Device shows no signs of physical damage or misuse by the customer.
Accessories and Packaging	All included accessories are intact and original packaging is preserved.

4. Key Takeaways

- DOA policies protect customers and ensure brand credibility.
- Assessment must be objective, documented, and standardized.
- Timely resolution of DOA cases improves customer satisfaction and reduces potential disputes.
- Companies must clearly communicate eligibility, time frames, and procedures for DOA claims.

3.2.3 Rules of Service: Turn Around Time

TAT can be defined as 'The time from customer service request to problem resolution'.

- TAT is measured in time units. Depending on the specifics of the industry sector the measurement unit could be in seconds, hours, days, weeks or months.
- A repair company is likely to measure TAT from the point of arrival of the defective item to its shipment
- The timeframe fora repairor service depends on the type of handset, the problem and what's required to conduct the repair- most are completed within 5-10 business days.

Some in-store repairs can be completed in Repair Centers as the customer waits or within 24 hours. These repairs may include:

- Software updates
- Device unlock/reset
- Antenna replacement
- Routine maintenance
- Phonebook swaps

An indicative repair TAT is :

- 2 Hours for Part replacement faults
- 24 Hoursfor Hardware related faults
- For pick drop service, there will be an additional.
- Sometimes it may take longer due to some complex hardware problems or non-availability of spares. To be effective in your service role your responsibilities include:
- Confirming resolution Turn Around Time with the customer ad getting his approval for the proposed repair.
- Resolving device issues in co-ordination with L2 & L3 technicians as necessary.
- Handing over the handset with accessories along with the job sheet to backend within TAT (Turn Around Time)
- Informing the customer through phone, SMS or mail about the TAT and progress, repair charges for collection of repaired/replaced handset/accessory and repair charges
- Obtaining handset with accessories handover from backend
- Handing over repaired/replaced handset/accessory to customer within TAT (Turn Around Time) and collecting payment, as applicable

When returning are paired phone to the customer as a CCE please complete the following checks to ensure that is phone is working properly:

- Ensure that all components are in
- Use the power key to turn the phone on and off.
- Press all the keys on the keypad to ensure that they work.
- Make and receive a call and ensure that both parties can hear each other clearly.
- Make sure the battery is charging; this should begin within 30 seconds of the phone being plugged in.

3.2.4 Customer Communication on Service Resolution and TAT

Effective communication with customers is critical to maintaining trust, ensuring satisfaction, and managing expectations during the service process. Customers need to be informed about resolution timelines, job status, and TAT in a clear and professional manner.

1. Informing the Customer About Resolution Timelines

Definition:

Resolution timelines indicate the expected duration required to diagnose, repair, or replace a device or service item. Communicating timelines helps customers plan accordingly and reduces uncertainty.

Procedure:

1. Assess the Issue:

- Determine the complexity of the problem based on initial diagnosis.
- Identify whether the issue requires basic repair, component replacement, or escalation.

2. Set the Expected Timeline:

- Refer to the company-defined TAT for the service type.
- Consider factors such as parts availability, technical expertise, and workload.

3. Communicate Clearly:

- Inform the customer verbally and in writing (if possible) about the expected completion date or duration.
- Example phrasing:
  - "Your device will be repaired within 3 business days, depending on parts availability."

4. Document the Timeline:

- Record the expected resolution date in the job sheet, CRM system, or service register.
- Provides accountability and a reference point in case of delays.

2. Providing a Job Sheet Copy

Definition:

A job sheet is a document that records all relevant details of a service request, including customer information, device details, issue description, and expected TAT. Providing a copy enhances transparency and accountability.

Procedure:

1. Prepare the Job Sheet:

- Include the following details:
- Customer name and contact information
- Device or service item details (model, serial number)
- Reported issue and preliminary diagnosis
- Service request date and expected TAT
- Assigned technician or service team
- Reference or ticket number

2. **Provide a Copy to the Customer:**
   - Hand over a printed or digital copy of the job sheet.
   - Explain the details verbally to ensure the customer understands the process.
3. **Maintain a Copy Internally:**
   - Keep the original or digital copy in the CRM system, service register, or repair log for tracking and follow-up.

Managing Customer Expectations on Service TAT

Definition:

Managing expectations involves setting realistic timelines and providing updates throughout the service process to prevent misunderstandings or dissatisfaction.

Procedure:

1. **Communicate Realistic Timelines:**
   - Avoid over-promising. Set timelines based on actual service complexity and company TAT policies.
2. **Explain Possible Delays:**
   - Inform customers about factors that may extend TAT, such as:
   - Parts unavailability
   - Escalation to higher support levels
   - External dependencies (e.g., manufacturer verification)
3. **Provide Regular Updates:**
   - Proactively inform customers if the service will take longer than expected.
   - Example: "The replacement screen is expected to arrive tomorrow, so the repair will be completed by [date]."
4. **Offer Alternatives When Possible:**
   - Provide temporary solutions, backup devices, or expedited service options if available.
5. **Document Communication:**
   - Record all updates and communications in the job sheet or CRM.
   - Ensures accountability and provides a reference in case of disputes.

Best Practices

- Use clear and simple language; avoid technical jargon when communicating with customers.
- Always provide written confirmation of TAT and service details through a job sheet or digital receipt.
- Set expectations upfront to minimize misunderstandings.
- Follow up proactively if there are delays or changes in the service timeline.
- Ensure consistent documentation in internal records for tracking and accountability.

3.2.5 Standard Procedures for Query Handling, Issue Resolution, and Escalation Management

Efficient customer service and technical support rely on structured procedures for handling queries, resolving issues, and managing escalations. A standardized approach ensures timely responses, consistent service quality, and customer satisfaction.

1. Query Handling

Definition:

Query handling refers to the process of receiving, recording, and addressing customer inquiries or complaints in a professional and organized manner.

Standard Procedures:

1. **Receiving the Query:**
   - Accept queries via phone, email, chat, social media, or in-person service centers.
   - Greet the customer professionally and create a welcoming environment.
2. **Recording the Query:**
   - Log the query in a CRM system, Excel sheet, or service register.
   - Include customer details, device or service information, and a brief description of the issue.
3. **Understanding the Query:**
   - Use open-ended and close-ended questions to gather complete information.
   - Confirm the issue by repeating key points to ensure clarity.
4. **Acknowledgment:**
   - Provide the customer with a ticket number or reference ID for tracking purposes.
   - Inform them of expected response time or preliminary next steps.

2. Issue Resolution

Definition:

Issue resolution is the process of identifying, analyzing, and fixing the customer's problem effectively and efficiently.

Standard Procedures:

1. **Initial Diagnosis:**
   - Assess the issue using information from the customer and service records.
   - Perform basic troubleshooting to determine if it can be resolved immediately.
2. **Assigning Priority:**
   - Categorize the issue based on urgency, impact, and complexity.
   - High-priority issues may require faster intervention or escalation.
3. **Technical Troubleshooting:**
   - Follow standard operating procedures (SOPs) for repair or troubleshooting.
   - Check hardware, software, connectivity, and other relevant components.
   - Document all steps taken during the troubleshooting process.
4. **Resolution Communication:**
   - Inform the customer once the issue is resolved.
   - Provide guidance or instructions for continued use and prevention of recurrence.

3. Escalation Management

Definition:

Escalation management is the procedure followed when an issue cannot be resolved at the current support level and requires attention from a higher level of expertise or authority.

Standard Procedures:

1. **Identification of Escalation Need:**
   - Recognize when a query or issue cannot be resolved within standard procedures or TAT.
   - Typical triggers: complex technical issues, repeated complaints, customer dissatisfaction, or warranty-related problems.
2. **Escalation Channels:**
   - Forward the issue to Level 2 (L2) or Level 3 (L3) support teams, or to management or specialized departments.
   - Clearly document the reason for escalation, actions already taken, and customer details.
3. **Communication During Escalation:**
   - Inform the customer that the issue has been escalated and provide updated timelines.
   - Ensure transparency to maintain customer trust.
4. **Follow-Up and Resolution:**
   - Escalated team investigates, diagnoses, and resolves the issue.
   - Maintain updates in the CRM or service register for tracking purposes.
5. **Closure and Feedback:**
   - Once resolved, communicate the solution to the customer.
   - Collect feedback on the resolution process to improve service quality.

Best Practices

- Maintain polite, professional, and empathetic communication throughout the process.
- Ensure accurate and complete documentation at every stage.
- Follow defined SOPs for troubleshooting and escalation to reduce errors.
- Provide timely updates to the customer, especially during escalations.
- Use feedback and analytics to continuously improve query handling and resolution processes.

3.2.6 Coordinating with Level 2 Specialists for Advanced Technical Issue Resolution

In technical support workflows, Level 2 (L2) specialists handle issues that require deeper technical knowledge and cannot be resolved by frontline (Level 1) staff. Effective coordination with L2 ensures faster resolution, accurate diagnosis, and enhanced customer satisfaction.

1. Understanding the Role of L2 Specialists

Level 2 Specialists:

- Have in-depth technical knowledge of devices, software, or systems.
- Handle complex hardware or software issues that require advanced diagnostics.
- Serve as a bridge between frontline support and expert/Level 3 teams.

Responsibilities include:

- Performing detailed troubleshooting.
- Diagnosing root causes of recurring or unresolved issues.
- Authorizing repairs or replacement of critical components.

2. Coordination Steps with L2 Specialists

Step 1: Identify the Need for Escalation

- Determine that the issue cannot be resolved at Level 1 using standard procedures.
- Example triggers:
  - Persistent hardware malfunctions (e.g., motherboard, chipset issues)
  - Software crashes after multiple troubleshooting steps
  - Complex network or connectivity failures

Step 2: Prepare Complete Issue Documentation

- Gather all relevant information before contacting L2:
  - Customer details and contact information
  - Device or system specifications
  - Detailed description of the problem
  - Troubleshooting steps already performed
  - Logs, error codes, or screenshots if applicable
- Document everything in CRM, service registers, or job sheets.

Step 3: Initiate Communication

- Contact the L2 specialist via ticket escalation, email, internal chat, or phone, depending on organizational protocol.
- Provide a concise summary highlighting key issue points and urgency.

Step 4: Collaborate During Diagnosis

- Share any findings, logs, or observations with the L2 specialist.
- Follow any instructions or diagnostic procedures provided by the L2 team.
- Remain available for clarification or additional information as needed.

Step 5: Monitor Progress

- Track updates from the L2 specialist regarding resolution status.
- Record any interim solutions, recommendations, or parts replacement requirements.

Step 6: Communicate Resolution to Customer

- Once L2 resolves the issue, inform the customer about the solution and any next steps.
- Provide guidance on device usage, preventive measures, or follow-up checks if necessary.
- Update CRM or service logs to reflect resolution and escalation history.

3.2.7 Escalating Unresolved Issues to Level 3 Specialists and Ensuring Proper Handover

Some technical issues may exceed the expertise of Level 1 (L1) and Level 2 (L2) support teams. Escalation to Level 3 (L3) specialists, who are subject-matter experts or engineers, is necessary for complex, rare, or critical problems. Proper handover ensures continuity, accountability, and faster resolution.

1. Understanding Level 3 Support

Level 3 Specialists:

- Possess expert-level technical knowledge and access to advanced tools.
- Handle critical hardware failures, firmware/OS issues, or manufacturer-specific problems.
- Provide guidance, patches, or solutions not available to L1 or L2 teams.
- Role in Escalation:
- L3 resolves issues that require deep diagnostics, engineering interventions, or specialized authorization.
- Ensures that unresolved problems are systematically and accurately addressed.

2. Criteria for Escalation to L3

Escalate to L3 when:

L2 Support Cannot Resolve the Issue:

- Complex hardware issues (e.g., motherboard faults).
- Firmware corruption, OS-level problems, or system crashes.

Critical or High-Impact Issues:

Problems affecting multiple users or critical operations.

Repeated Failures:

- Issues recurring despite proper repair or L2 intervention.

Customer Dissatisfaction Escalation:

- When the customer demands specialized attention for unresolved complaints.

3. Preparing for Escalation

Step i: Complete Documentation

Prepare a comprehensive job sheet containing:

- Customer details and contact information
- Device or system information (model, serial number)
- Date and nature of the issue
- Troubleshooting steps performed by L1 and L2
- Diagnostic results, error codes, logs, or screenshots
- Parts replaced or attempted repairs
- TAT already elapsed and current status

Step ii: Review and Verification

- Ensure that all relevant data is accurate, complete, and up to date.
- Include any customer-specific notes or observations.

4. Escalation Procedure

Step 1: Notify the Customer

- Inform the customer that the issue requires escalation to L3.
- Provide updated expected TAT and explain why escalation is necessary.

Step 2: Submit Job Sheet to L3

- Forward the complete job sheet along with any additional documentation to L3.
- Use CRM, ticketing system, or secure internal communication to ensure proper handover.

Step 3: Coordination with L3 Specialist

- Provide verbal or written briefing if needed.
- Be available to clarify any details or observations recorded during L1/L2 troubleshooting.

Step 4: Monitor Progress

- Track updates from L3 regarding diagnostics, repair, or replacement.
- Update the customer periodically on progress.

Step 5: Post-Resolution

Once L3 resolves the issue:

- Communicate the solution to the customer.
- Ensure device or system is fully tested and operational.
- Record final resolution in CRM or service register.

3.2.8 Following the Escalation Matrix to Report Complex Cases

An escalation matrix is a predefined hierarchy and procedure used in organizations to report unresolved or complex issues to higher authority levels. Following it ensures timely intervention, accountability, and proper resolution.

1. Understanding the Escalation Matrix

Definition:

The escalation matrix is a structured framework that defines:

- Who to contact at each level of escalation
- When to escalate an issue
- How to escalate effectively with proper documentation

Purpose:

- Ensures prompt resolution of complex or high-priority cases.
- Provides clear communication channels within the organization.
- Prevents delays due to confusion or miscommunication.

Typical Escalation Levels:

Level	Role	Responsibility
L1	Frontline Support	Initial query handling and basic troubleshooting
L2	Technical Specialists	Advanced troubleshooting and component-level repairs
L3	Senior Specialists / Engineers	Critical issue resolution and manufacturer-level intervention
Supervisor / Manager	Oversight	Monitors escalations, approves non-standard actions, ensures customer satisfaction

2. Criteria for Escalation

Escalate a case when:

- The issue is beyond your technical expertise.
- The problem has not been resolved within the defined TAT.
- The customer is dissatisfied or requests higher-level intervention.
- The issue is critical, affects multiple users, or impacts service continuity.

3. Steps to Follow the Escalation Matrix

Step 1: Identify the Need for Escalation

- Confirm that all Level 1 or Level 2 troubleshooting steps have been performed.
- Verify that the issue meets the criteria for escalation.

Step 2: Gather Complete Case Details

- Prepare a summary of the issue including:
  - Customer and device information
  - Issue description and severity
  - Steps already taken to troubleshoot
  - Error codes, logs, or screenshots
  - TAT elapsed and current status

Step 3: Determine the Appropriate Escalation Level

- Refer to the company's escalation matrix to identify whether the issue should be reported to:

Supervisor

Technical support team (L2 or L3)

Management for approval of special actions

Step 4: Initiate Escalation

- Use the approved communication channel (CRM system, ticketing system, email, or internal chat).
- Submit a formal escalation request with all case details and documentation.

Step 5: Communicate with the Customer

- Inform the customer that the case has been escalated.
- Provide updated resolution timelines or next steps.
- Maintain transparency and manage expectations.

Step 6: Monitor and Follow-Up

- Track the progress of the escalated case until resolution.
- Maintain communication between the higher-level support team and the frontline team.
- Update CRM or service logs with status and resolution details.

3.2.9 Customer Handover Procedure for Repaired/Replaced Devices

The handover process is the final step in the service workflow. Proper execution ensures that the customer receives their repaired or replaced device in good condition, understands the service performed, and that the company maintains accurate records.

1. Preparing for Handover

A. Verify Service Completion

- Ensure that all repairs or replacements are fully completed and tested.
- Conduct quality checks to confirm the device/accessory is fully functional.
- Confirm that all parts, accessories, and packaging are included.

B. Documentation Preparation

- Prepare the job sheet, service invoice, or receipt.
- Include details such as:
- Customer name and contact
- Device/accessory model and serial number
- Issue reported and service performed
- Any replaced parts
- Service date and reference number
- Amount payable, if applicable

2. Customer Handover Process

Step 1: Customer Verification

- Ask the customer to verify their identity using proof of purchase or ID.
- Ensure the job sheet or service receipt matches the customer and device details.

Step 2: Explain Service Performed

- Briefly explain the work carried out:
  - Repairs performed
  - Parts replaced (if any)
  - Preventive tips or usage instructions
- Answer any questions the customer may have.

Step 3: Device Inspection with Customer

- Allow the customer to inspect and test the device before leaving the service center.
- Check for:
- Screen/display functionality
- Buttons, ports, or connectivity
- Accessories, packaging, and any additional items

3. Payment Collection (if applicable)

Step 1: Verify Charges

- Confirm the amount due based on service type, parts replaced, and any additional fees.

Step 2: Payment Modes

- Accept payment via cash, card, digital payment, or company-approved channels.
- Provide a receipt or invoice for the payment.

4. Updating Service Records

- Log the final details of the service in the CRM or service register:
  - Date and time of handover
  - Device/accessory condition at handover
  - Payment details, if applicable
  - Customer acknowledgment/signature
- Attach the job sheet or invoice to the record for future reference.
- Close the service ticket after confirming all updates are recorded.

5. Best Practices

Ensure Transparency:

- Explain all charges, work performed, and any warranty coverage clearly.

Maintain Accuracy:

- Verify device details, serial numbers, and accessories before handover.

Customer Engagement:

- Allow customers to test devices to confirm satisfaction before leaving.

Documentation:

- Keep detailed records of service, payments, and customer acknowledgment for accountability.

Professional Interaction:

- Maintain polite, clear, and professional communication throughout the handover.

3.2.10 Token and Ticket Management Process for Tracking Customer Queries

In customer service operations, token and ticket management systems are used to organize, prioritize, and track customer queries or complaints efficiently. These systems ensure timely resolution, accountability, and a smooth workflow in service centers or support teams.

1. Token Management System

Definition:

A token system is a method of issuing sequential numbers (tokens) to customers as they arrive, enabling organized service delivery and reducing waiting time.

Purpose:

- Streamlines customer flow in service centers.
- Reduces confusion and overcrowding.
- Establishes a first-come, first-served order for service.

Process:

1. Issuing Tokens:

- On arrival, the customer receives a token number either physically (paper) or digitally (displayed on screens).
- Token numbers may indicate service type or priority.

2. Queue Management:

- Customers are called in sequence based on token numbers.
- Token displays or announcements notify customers of their turn.

3. Tracking Service Progress:

- Tokens help staff track which customer is being served and how many are waiting.
- Ensures fairness and reduces disputes regarding service order.

2. Ticket Management System

Definition:

A ticket system is a method of logging, monitoring, and resolving customer queries, especially in technical support or after-sales services. Each query is assigned a unique ticket number for tracking.

Purpose:

- Ensures organized record-keeping of customer issues.
- Provides accountability and follow-up mechanisms.
- Facilitates escalation and reporting for unresolved issues.

Process:

1. Query Registration:
   - When a customer raises a query, a ticket is created in the system (manual register, Excel sheet, or CRM).

Record details such as:

- Customer information (name, contact details)
- Device/product details (model, serial number)
- Description of the issue
- Date and time of query

2. Ticket Assignment:

- The ticket is assigned to the appropriate service agent or technician based on expertise, availability, and service type.

3. Tracking and Updates:

- Status of the ticket is updated throughout the service process:
  - Open: Issue logged and awaiting action
  - In Progress: Technician actively working on resolution
  - Escalated: Issue moved to higher support level if unresolved
  - Resolved/Closed: Issue fixed and customer notified

4. Customer Communication:

- Customers are provided the ticket number to track progress.
- Updates on resolution timelines, escalations, or delays are communicated through calls, SMS, email, or CRM notifications.

5. Closure and Documentation:

- After resolution, the ticket is closed in the system.
- Details of actions taken, parts replaced, and customer acknowledgment are recorded for future reference.

3. Benefits of Token and Ticket Management

- Organized Workflow: Prevents chaos and ensures structured handling of customer queries.
- Transparency: Customers can track their query or position in the queue.
- Accountability: Each service agent is responsible for the tickets assigned to them.
- Timely Resolution: Helps prioritize and monitor service requests based on urgency and complexity.
- Reporting and Analysis: Historical ticket data can be analyzed for service improvement, recurring issues, and training needs.

Notes

UNIT 3.3: Interpersonal Skills for Effective Customer Service

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain the significance of representing the organization appropriately and ensuring customer satisfaction.
2. Demonstrate polite and professional interaction with customers to understand and address their concerns.
3. Show how to maintain clear, empathetic communication while managing customer expectations.
4. Demonstrate active listening, patience, and professional behavior when handling queries or complaints.

3.3.1 Interpersonal Skills

Interpersonal skills are the abilities that enable a person to communicate, interact, and work effectively with others. They are sometimes called “people skills” or “soft skills” and are essential in both personal and professional contexts.

Importance:

- Facilitate effective communication and understanding.
- Improve teamwork, collaboration, and conflict resolution.
- Help in building trust, rapport, and professional relationships.
- Enhance customer service, leadership, and career success.

1. Types of Interpersonal Skills

1. **Communication Skills:**
   - Ability to convey ideas clearly and listen actively.
   - Includes verbal, non-verbal, and written communication.
2. **Active Listening:**
   - Paying full attention to the speaker, understanding their message, and responding appropriately.
3. **Empathy:**
   - Understanding and sharing the feelings of others, which improves relationships and teamwork.
4. **Teamwork and Collaboration:**
   - Working cooperatively with others to achieve common goals.
   - Includes sharing responsibilities, supporting teammates, and respecting diversity.
5. **Conflict Resolution:**
   - Handling disagreements constructively and finding solutions acceptable to all parties.
6. **Negotiation Skills:**
   - Reaching mutually beneficial agreements while maintaining positive relationships.

7. Adaptability and Flexibility:

- Adjusting behavior and communication style according to the situation or individuals involved.

8. Positive Attitude and Professionalism:

- Demonstrating respect, patience, and courtesy in interactions.

2. Key Components of Interpersonal Skills

- Verbal Communication: Clear speaking, tone control, and appropriate language.
- Non-Verbal Communication: Body language, facial expressions, gestures, and eye contact.
- Listening Skills: Understanding verbal and non-verbal cues from others.
- Emotional Intelligence: Managing one's emotions and understanding others' emotions.
- Relationship Management: Building, maintaining, and strengthening professional or personal relationships.

3. Benefits of Strong Interpersonal Skills

- Improved Team Performance: Enables smooth collaboration and coordination.
- Better Customer Relations: Facilitates understanding and addressing customer needs.
- Effective Leadership: Leaders can inspire, motivate, and guide teams efficiently.
- Conflict Reduction: Helps in resolving misunderstandings before they escalate.
- Career Advancement: Enhances employability, networking, and professional reputation.

4. How to Develop Interpersonal Skills

- Practice active listening and empathetic communication.
- Seek feedback from peers and supervisors on communication style.
- Participate in team activities and group discussions.
- Learn to manage emotions and respond calmly in challenging situations.
- Observe and emulate effective communicators and leaders.

3.3.2 Significance of Representing the Organization Appropriately and Ensuring Customer Satisfaction

In any service-oriented or customer-facing role, employees act as the face of the organization. How they present themselves, communicate, and handle interactions has a direct impact on the organization's reputation, credibility, and customer loyalty.

1. Representing the Organization Appropriately

Definition:

Representing the organization appropriately means behaving, communicating, and presenting oneself in a manner that aligns with the company's values, policies, and professional standards.

Significance:

1. **Building a Positive Image:**
    - Employees' conduct reflects the brand image.
    - Professional behavior fosters trust and credibility among customers.
2. **Enhancing Professionalism:**
    - Proper attire, grooming, and polite communication convey competence and reliability.
    - Adhering to company policies ensures consistency in service delivery.
3. **Influencing Customer Perception:**
    - Customers often judge the organization based on employee behavior.
    - Courteous and knowledgeable staff enhance the customer's overall experience.
4. **Promoting Organizational Values:**
    - Employees demonstrate the company's ethics, culture, and commitment to quality through their actions.
    - Helps in reinforcing the brand identity.

2. Ensuring Customer Satisfaction

Definition:

Customer satisfaction refers to the degree to which a customer's expectations are met or exceeded through service, product quality, and interaction.

Significance:

1. **Customer Retention:**
    - Satisfied customers are more likely to return and continue using the organization's products or services.
2. **Positive Word-of-Mouth:**
    - Happy customers share their experiences, enhancing the organization's reputation and attracting new clients.
3. **Competitive Advantage:**
    - High levels of customer satisfaction differentiate the organization from competitors.
    - Encourages loyalty and long-term relationships.
4. **Revenue Growth:**
    - Satisfied customers are more likely to purchase additional products/services and pay premium prices for reliable service.
5. **Feedback for Improvement:**
    - Engaged and satisfied customers provide valuable insights to improve products, services, and processes.

3. Best Practices for Representing the Organization and Ensuring Satisfaction

- **Professional Appearance and Etiquette:** Adhere to dress codes, grooming standards, and organizational protocols.
- **Effective Communication:** Listen actively, respond politely, and provide clear information.
- **Product and Service Knowledge:** Be informed about the organization's offerings to provide accurate guidance and solutions.
- **Timely and Reliable Service:** Meet promised timelines, follow procedures, and maintain service quality.
- **Handling Complaints Professionally:** Address issues with empathy, patience, and prompt resolution.

3.3.3 Polite and Professional Customer Interaction

Polite and professional interaction is the foundation of effective customer service. It involves communicating respectfully, listening actively, and responding appropriately to understand and resolve customer concerns.

1. Principles of Polite and Professional Interaction

1. **Courtesy and Respect:**
   - Greet customers warmly.
   - Use polite language (e.g., "please," "thank you," "may I assist you").
   - Avoid interrupting or speaking over the customer.
2. **Professional Appearance and Behavior:**
   - Maintain proper grooming and dress code as per organizational guidelines.
   - Display positive body language (smiling, maintaining eye contact, and nodding attentively).
3. **Active Listening:**
   - Pay full attention to the customer without distractions.
   - Listen for both verbal and non-verbal cues.
   - Paraphrase or summarize to ensure understanding:
     - Example: "So, you are experiencing battery issues after charging—is that correct?"
4. **Empathy and Patience:**
   - Show understanding of the customer's situation.
   - Remain calm even if the customer is frustrated.
   - Avoid defensive responses; instead, acknowledge their concern:
     - Example: "I understand how inconvenient this must be for you. Let's see how we can resolve it."

2. Steps to Address Customer Concerns Professionally

Step 1: Greeting and Introduction

- Welcome the customer politely:
  - "Good morning, I'm [Name]. How may I assist you today?"

Step 2: Understanding the Concern

- Ask open-ended questions to gather detailed information:
  - "Can you please describe the issue you are facing?"
- Use close-ended questions to clarify specifics:
  - "Did the problem start after the last update?"

Step 3: Acknowledge the Concern

- Show that you have understood and empathize:
  - "I understand that this issue is causing inconvenience, and we'll work to resolve it quickly."

Step 4: Provide a Solution or Next Steps

- Explain the resolution process clearly:
  - "We will run a diagnostic test, and if necessary, replace the faulty part. The process should take about 2–3 business days."
- Avoid technical jargon if the customer is unfamiliar with it.

Step 5: Confirm Understanding

- Ask the customer if they are clear with the solution:
  - "Does this solution address your concern?"
- Answer any additional questions patiently.

Step 6: Closing Interaction

- End politely and professionally:
  - "Thank you for your patience. Please feel free to contact us if you need further assistance."

3. Best Practices for Professional Interaction

- Maintain a calm and positive tone throughout the conversation.
- Avoid arguments or blame-shifting; focus on problem-solving.
- Take ownership of the issue, even if it requires escalation.
- Document customer concerns accurately for follow-up and tracking.
- Follow up if the issue requires additional time or external support.

4. Benefits of Polite and Professional Interaction

- Builds customer trust and confidence in the organization.
- Reduces conflict and creates a positive service experience.
- Facilitates accurate diagnosis and resolution of issues.
- Enhances organizational reputation and customer loyalty.

3.3.4 Maintaining Clear, Empathetic Communication While Managing Customer Expectations

Effective customer service requires clear communication to convey information accurately and empathy to understand and address customer concerns. Simultaneously, managing expectations ensures that customers have a realistic understanding of service timelines, outcomes, and limitations.

1. Principles of Clear Communication

1. **Simplicity and Clarity:**
   - Use simple, concise language.
   - Avoid technical jargon unless the customer understands it.
2. **Structured Information Delivery:**
   - Explain the issue, the solution, and the steps in a logical sequence.
   - Break complex information into digestible parts.
3. **Active Listening:**
   - Listen carefully to the customer's concerns.
   - Confirm understanding by paraphrasing:
     - Example: "So the device stops charging intermittently—is that correct?"
4. **Feedback and Confirmation:**
   - Encourage the customer to ask questions.
   - Confirm that they understand the solution or next steps.

2. Principles of Empathetic Communication

1. **Acknowledgment of Customer Concerns:**
   - Show that you recognize the customer's feelings and inconvenience.
   - Example: "I understand that this issue is frustrating, and I appreciate your patience."
2. **Patience and Calmness:**
   - Remain composed even if the customer is upset or frustrated.
   - Respond without judgment or defensiveness.
3. **Supportive Language:**
   - Use words that demonstrate helpfulness and commitment:
     - "Let's see how we can resolve this together."
     - "I will ensure your concern is addressed promptly."

3. Managing Customer Expectations

1. Set Realistic Timelines:

- Provide accurate estimates for service completion or issue resolution.
- Avoid over-promising; instead, give a conservative, achievable timeframe.

2. Explain Limitations Clearly:

- Clarify any constraints due to policies, warranty, parts availability, or technical complexity.

3. **Regular Updates:**
   - Inform the customer proactively if there are delays or changes in service timelines.
4. **Offer Alternatives or Options:**
   - If delays or limitations occur, provide alternatives:
     - Temporary replacement device
     - Priority service for critical issues
     - Escalation to higher-level support

4. Step-by-Step Approach

- Greet the Customer Professionally
  - "Good morning, I'm [Name]. How may I assist you today?"
- Listen and Acknowledge the Concern
  - Show empathy and confirm understanding.
- Provide Clear Information
  - Explain the cause, solution steps, and expected timeline.
- Set and Manage Expectations
  - Clearly communicate any limitations or potential delays.
- Encourage Feedback and Questions
  - Make sure the customer feels heard and understood.
- Close Professionally
  - Reassure the customer and provide contact information for follow-up.

Example: "We will resolve this issue within 3 business days. Please reach out if you have any concerns in the meantime."

3.3.5 Active Listening, Patience, and Professional Behavior in Handling Customer Queries and Complaints

Providing effective customer service is not just about resolving technical issues; it also requires interpersonal skills, including active listening, patience, and professional conduct. These skills ensure that customers feel valued, understood, and confident that their concerns will be resolved satisfactorily.

1. Active Listening

Definition:

Active listening is the process of completely focusing on what the customer is saying, understanding their concern, and responding thoughtfully. It goes beyond merely hearing words; it involves interpreting the message, emotions, and intent behind them.

Key Practices:

- Full Attention: Avoid distractions (e.g., phones, computer screens) while the customer speaks.
- Reflective Listening: Paraphrase or summarize to confirm understanding.

- Example: "So, you're saying the device stops charging intermittently, correct?"

- Observe Non-Verbal Cues: Pay attention to tone, gestures, and body language.
- Clarifying Questions: Ask open-ended questions to gather complete information:
  - "Can you describe the situation when this issue occurs?"
  - "Did this start happening after the last update?"

Benefit: Active listening ensures accurate understanding of the problem, reducing errors and improving resolution speed.

2. Patience

Definition:

Patience is the ability to remain calm and composed, even when dealing with frustrated, anxious, or repetitive customers.

Key Practices:

- Stay Calm: Maintain emotional control even if the customer is upset.
- Allow Full Expression: Let the customer explain the problem completely before responding.
- Repeat if Needed: Gently explain solutions multiple times if the customer does not understand immediately.
- Handle Difficult Situations: Focus on problem-solving rather than arguing.

Benefit: Patience prevents escalation, builds trust, and promotes a positive customer experience.

3. Professional Behavior

Definition:

Professional behavior is demonstrating competence, respect, and adherence to organizational standards during customer interactions.

Key Practices:

- Polite and Respectful Communication: Use courteous language and maintain a positive tone.
  - Example: "Thank you for your patience. I'll help resolve this issue promptly."
- Empathy: Acknowledge customer inconvenience or frustration.
  - Example: "I understand how frustrating this issue can be, and I'll make sure it is resolved quickly."
- Timely and Accurate Information: Provide clear instructions and updates on issue resolution.
- Accountability: Take ownership of the issue until it is fully resolved.

Benefit: Professional conduct enhances organizational credibility and customer loyalty.

4. Step-by-Step Approach to Handling Queries/Complaints

Step	Action	Example/Explanation
1	Greet Customer	"Good morning, I'm [Name]. How may I assist you today?"
2	Listen Actively	Allow the customer to explain fully; note all details.
3	Acknowledge Concerns	"I understand this is frustrating, and I appreciate your patience."
4	Ask Clarifying Questions	"Did this problem start after the last software update?"
5	Provide Clear Solution	Explain steps, timeline, or escalation clearly.
6	Confirm Understanding	"Does this solution make sense to you?"
7	Close Professionally	Thank the customer and provide follow-up info if required.

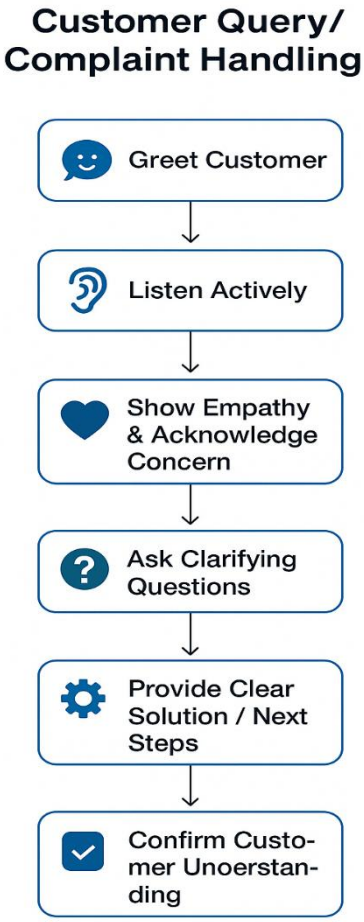


Fig. 3.3.1 Workflow for Handling Queries

Exercise

Short Questions:

1. Why is it important for a customer care executive to represent the organization appropriately?
2. Explain the token and ticket management process used for tracking customer queries.
3. What are some common technical issues encountered in mobile handsets, and how are they typically addressed?
4. Describe the standard procedure for determining if a device is Dead on Arrival (DOA).
5. What are the roles of Level 1, Level 2, and Level 3 support teams in issue resolution?

Multiple Choice Questions:

1. Which of the following is the primary purpose of a ticket management system?
   a) Tracking customer queries efficiently
   b) Recording employee attendance
   c) Displaying company announcements
   d) Marketing new products

2. When should a handset/accessory issue be escalated to Level 3 support?
   a) When the customer is impatient
   b) When the issue is complex and unresolved by Level 1 or 2
   c) For routine software updates
   d) For battery replacement only

3. What is the correct approach for gathering information from a customer?
   a) Using open-ended and close-ended questions
   b) Asking only yes/no questions
   c) Guessing the issue based on previous cases
   d) Ignoring the customer's explanation

4. The TAT (Turnaround Time) is important because:
   a) It determines customer satisfaction and service reliability
   b) It calculates employee salaries
   c) It tracks the number of devices sold
   d) It reduces the need for documentation

5. Which of the following steps is part of basic troubleshooting?
   a) Firmware updates, connectivity checks, and software resets
   b) Ignoring warranty policies
   c) Sending all devices directly to Level 3
   d) Skipping job sheet documentation

Fill in the Blanks:

1. Devices that fail immediately upon delivery and meet company criteria are classified as _____.
2. Customer issues should be logged in the _____ system, Excel sheets, or designated paper registers.
3. Level 1 support primarily handles _____ technical issues that can be resolved quickly.
4. _____ is the maximum time agreed upon for resolving a customer query or service request.
5. After repair or replacement, the customer should be provided with a _____ and all service records should be updated.

Notes

4. Sustainability Practices in Telecom Operations

Telecom Sector Skill Council

Unit 4.1 - Identification and Categorization of Recyclable, Reusable, and Disposable Components

Unit 4.2 - Adherence to Environmental Standards in Repair Operations

Unit 4.3 - Sustainable Repair Practices

Unit 4.4 - Compliance with Sustainability Protocols and Policies

TEL/N9108

Key Learning Outcomes

By the end of this module, the paricipants will be able to:

1. Explain the relevant environmental laws and regulations for the telecom sector.
2. Describe the different recyclable and hazardous components in telecom equipment.
3. Demonstrate how to identify telecom components that can be recycled, refurbished, or reused during repair and maintenance.
4. Discuss the relevant tools and techniques that support sustainable repair practices.
5. Elucidate the safe handling, storage, and disposal of hazardous materials.
6. Demonstrate how to follow guidelines for the safe handling, storage, and disposal of hazardous and non-hazardous materials.
7. Show how to sort and evaluate dismantled parts into recyclable, reusable, and hazardous waste categories for proper disposal.
8. Explain the process of e-waste recycling through certified vendors.
9. Describe the documentation required for sustainability and waste disposal.
10. Show how to maintain compliance with environmental regulations and record all e-waste disposal and recycling activities as per company policies.
11. Determine the proper waste segregation and sorting guidelines in the telecom industry.
12. Discuss the industry's best practices for reducing environmental impact.
13. Show how to label and segregate hazardous materials for specialized disposal, ensuring compliance with safety regulations.
14. Demonstrate the correct use of protective equipment when handling hazardous waste to prevent environmental contamination.
15. Show how to conduct regular audits of waste management processes to ensure alignment with sustainability standards.

UNIT 4.1: Identification and Categorization of Recyclable, Reusable, and Disposable Components

Unit Objectives

By the end of this unit, the participants will be able to:

1. Explain the difference between recyclable, reusable, and disposable components.
2. Identify common materials and components that can be recycled, reused, or need disposal.
3. Categorize waste materials appropriately during and after repair activities.
4. Demonstrate proper segregation techniques as per material type and disposal category.

4.1.1 Identification of Telecom Components

Adhering to sustainability practices begins with a fundamental understanding of what can and cannot be salvaged from a telecom device or component. Here, we focus on the ability to identify and categorize components for recycling, refurbishment, or reuse, which reduces waste and conserves resources.

1. Reusable Components:

These are components that can be salvaged from a faulty device and used as a direct replacement in another, similar device, without requiring significant repair.

- **Motherboards/Logic Boards:** A motherboard from a device with a cracked screen, but a perfectly functional board, can be reused.
- **Displays:** A display from a device with a logic board fault can be reused.
- **Cameras, Speakers, and Microphones:** These are often modular and can be easily salvaged.
- **Chassis and Housings:** The outer plastic or metal casing of a device can be reused if it is in good cosmetic condition.
- **Connectors and Flex Cables:** A functional connector or cable from a faulty device can be salvaged.

2. Refurbishable Components:

These are components that are faulty but can be restored to a functional state through repair. This is often more cost-effective and environmentally friendly than replacing them.

- **Motherboards with Minor Faults:** A motherboard with a short circuit on a specific power rail or a faulty IC can be repaired at the component level.
- **Connectors:** A charging port that has a single broken pin can be repaired.
- **Software Issues:** A device with a "bricked" operating system can be refurbished through software flashing.

3. Recyclable Components:
These are components that cannot be reused or refurbished but contain materials (metals, plastics, glass) that can be extracted and reused in a new manufacturing process.

- **Scrapped Motherboards:** A severely water-damaged or physically broken motherboard cannot be repaired but contains valuable materials like gold, silver, and copper.
- **Old Batteries:** Batteries that have reached the end of their life cycle cannot be reused or refurbished and must be recycled.
- **Plastic and Metal Parts:** Broken plastic housings and metal brackets can be sent for recycling.
- **Displays:** A physically damaged display can be recycled for its glass, plastic, and metal content.

How to Identify:

- **Visual Inspection:** Look for physical damage, cracks, or burnt components.
- **Functional Test:** A quick functional test can determine if a component is working.
- **Diagnosis:** Use a multimeter or a diagnostic tool to check for electrical faults.

By correctly identifying these categories, a technician can make informed decisions that promote a circular economy in telecom repair.

4.1.2 Sort Materials Into Recyclable, Reusable, and Hazardous Waste Categories

After identifying a component's potential for reuse, refurbishment, or recycling, the next step is to physically sort it into the correct waste streams. Proper segregation is crucial for a smooth and compliant disposal process.

1. The Three Categories:

- **Reusable/Refurbishable:** This category contains all the components that can be reused in a future repair or restored to a working state. These are valuable assets and should be treated as part of the company's inventory, not as waste.
- **Recyclable:** This category contains components that are no longer usable but can be recycled for their material content.
- **Hazardous Waste:** This category contains components that pose a risk to the environment or human health. These require specialized handling and disposal.

2. Segregation Protocols:

- **Labeling:** Use clearly labeled bins or containers for each category. Examples:
  - "Salvaged Parts - Reusable"
  - "E-Waste - Recyclable Components"
  - "Hazardous Waste - Batteries"
  - "Hazardous Waste - LCDs/OLEDs"
- **Container Specifications:**
- **Reusable Components:** Store in clean, organized bins or shelves. Use anti-static bags for sensitive components like motherboards.
- **Recyclable Components:** Store in a designated e-waste collection bin.

- **Hazardous Waste:** Use specific containers for hazardous materials. For example, a fire-resistant container for batteries.
- **Workplace Organization:** Place these bins in a dedicated area of the workspace, away from the active repair bench.

3. Common Hazardous Materials in Telecom:

- **Lithium-ion Batteries:** Can be a fire and safety hazard if punctured or damaged.
- **Circuit Boards:** Contain heavy metals like lead and cadmium.
- **Displays (older LCDs):** May contain small amounts of mercury.
- **Chemicals:** Spent cleaning solvents, flux removers, and other chemical waste.

By sorting materials correctly from the outset, you ensure that valuable resources are not lost and that hazardous materials are handled safely.

4.1.3. Examing Faulty Components for Potential Refurbishment

Before a faulty component is sent to the recycling or hazardous waste bin, it should be examined for potential refurbishment. This process turns a piece of waste into a reusable asset, which is a core tenet of sustainability in repair.

1. The Refurbishment Assessment:

- **Visual Inspection:** Use a magnifying glass or a microscope to inspect the faulty component for signs of repairability. Look for:
- **Minor Physical Damage:** A motherboard with a few broken traces can be repaired with micro-soldering. A charging port with a single broken pin can be replaced.
- **Software-Related Faults:** A component that is non-functional due to corrupted firmware can be repaired by flashing the firmware.
- **Cleanliness:** A component with light water damage can be cleaned with an ultrasonic cleaner and a solvent.
- **Diagnosis:** Use a multimeter or other diagnostic tools to confirm the specific fault. For example, a multimeter can be used to check for a short circuit on a power rail of a motherboard.

2. Documentation:

- **Refurbishment Log:** Maintain a separate log for components that have been identified as candidates for refurbishment.
- **Key Findings:** Document the following:
- **Component:** The name and model of the component.
- **Fault:** The specific fault identified (e.g., "Short circuit on Vbat rail," "Broken trace," "Corrupted firmware").
- **Repair Feasibility:** A "yes" or "no" for whether the component is repairable, along with a brief reason.
- **Estimated Repair Cost:** A quick estimate of the time and parts required to refurbish the component.
- **Supervisor Approval:** In some cases, a supervisor's approval may be required before investing time and resources into refurbishing a component.

Importance:
This process helps the company build a stock of refurbished parts, which reduces procurement costs and contributes to a more sustainable business model.

4.1.4. Labelling and Segregation of Hazardous Materials for Specialized Disposal

Hazardous materials require specialized handling to protect both the technician and the environment. Here, we focus on the crucial steps of labeling and segregating these materials for specialized disposal.

1. The "Hazardous Materials" Label:

- **Clear Identification:** Use clear, standardized labels on all containers for hazardous materials.
- **Information:** The label should include:
- **Material Type:** "Lithium-ion Batteries," "Damaged LCD Panel," "Circuit Boards," "Chemical Waste."
- **Warning:** "Hazardous Material - Do Not Dispose in General Waste."
- **Date:** The date the material was placed in the container.

2. Segregation and Storage:

- **Dedicated Containers:** Use separate, dedicated containers for each type of hazardous material.
- **Battery Disposal:** Store all batteries (even seemingly dead ones) in a fire-resistant container. Do not mix them with other waste. Tape the terminals of the batteries to prevent accidental short circuits.
- **Circuit Boards:** Store all circuit boards in a separate container.
- **Chemicals:** Store spent cleaning solvents and other chemical waste in a dedicated container.
- **Specialized Disposal:**
- **Certified Recyclers:** Hazardous materials must be sent to certified e-waste recyclers who have the proper equipment and licenses to safely process them.
- **Never in the Trash:** Never dispose of any hazardous material in general waste or recycling bins.

Importance:
Proper labeling and segregation are essential for a safe working environment and for ensuring compliance with all environmental regulations.

4.1.5 Evaluation of Dismantled Parts for Recycling or Safe Disposal

The final step in the component-handling process is to make a final judgment call on the fate of each dismantled part. Here, we focus on evaluating a component to determine if it can be recycled for its material content or if it requires specialized, safe disposal due to hazardous materials.

1. The Final Evaluation:

- **Refurbishment Status:** First, check the refurbishment log to see if the part was deemed un-refurbishable.
- **Material Content:**
  - **Recyclable:** If the part is made of metal, plastic, or glass and does not contain hazardous materials, it can be sent to a standard e-waste recycling stream.
  - **Hazardous:** If the part is a battery, a circuit board, or an LCD/OLED panel, it must be treated as hazardous waste.
- **Documentation:** Document the final disposition of each part in the repair log.

2. Examples of Final Disposition:

- **Motherboard:**
  - **Un-refurbishable:** Goes into the "E-Waste - Recyclable" bin.
  - **Severely damaged/burnt:** Goes into the "E-Waste - Hazardous" bin.
- **Plastic Housing:**
  - **Un-reusable:** Goes into the "E-Waste - Recyclable" bin.
- **Battery:**
  - **Always:** Goes into the "Hazardous Waste - Batteries" bin.

Importance:

This final evaluation ensures that all parts are handled in an environmentally responsible manner and that the company is in full compliance with all e-waste regulations.

Notes

UNIT 4.2: Adherence to Environmental Standards in Repair Operations

Unit Objectives

By the end of this unit, the participants will be able to:

1. Identify different waste types and follow appropriate handling and storage practices, including segregation of materials, and placement in secure, ventilated areas.
2. Differentiate between hazardous and non-hazardous waste, and ensure safe, certified disposal through authorized recycling partners.
3. Maintain accurate records of e-waste disposal and recycling.
4. Select and use safety gear correctly to prevent injury and contamination while handling batteries, circuit boards, and chemicals.
5. Prevent environmental contamination through containment measures.
6. Participate in regular waste management audits and improvements

4.2.1 Safe Handling, Storage, and Disposal of Waste

Safe handling and storage are the foundation of responsible waste management. This involves understanding the nature of different materials and following established guidelines to prevent accidents and environmental contamination.

1. Handling Procedures:

- **Hazardous Materials:** Always wear appropriate personal protective equipment (PPE) such as gloves and safety glasses when handling hazardous materials like damaged batteries or circuit boards. Avoid puncturing or bending batteries, as this can lead to a fire hazard.
- **Non-Hazardous Materials:** While less dangerous, materials like plastic housings and metal frames should still be handled with care to avoid cuts and to prevent them from becoming contaminated.
- **Storage Guidelines:**
  - **Segregation is Key:** Store hazardous and non-hazardous materials in separate, clearly labeled containers.
  - **Dedicated Containers:**
  - **Hazardous Waste:** Store damaged batteries in a fire-resistant container. Store circuit boards and other electronic waste in a designated e-waste bin.
  - **Non-Hazardous Waste:** Use separate bins for materials like cardboard packaging or non-contaminated plastics.
  - **Secure Location:** Store all waste bins in a secure, well-ventilated area away from the main repair bench and any heat sources.

3. Disposal Guidelines:

- **Hazardous Waste:** Ensure that all hazardous materials are sent to a certified e-waste recycling facility that is equipped to handle them safely.
- **Non-Hazardous Waste:** Dispose of non-hazardous waste according to standard recycling or waste management protocols.

By following these guidelines, you ensure a safe working environment and maintain a clear chain of custody for all materials.

4.2.2 E-Waste Management Regulations

Compliance with environmental regulations is a non-negotiable part of modern telecom operations. A technician must be aware of and actively follow all rules and regulations governing the handling and disposal of e-waste to avoid legal penalties and environmental harm.

1. Understanding Relevant Regulations:

- **Local and National Laws:** Be aware of the specific e-waste regulations in your region. These laws often dictate how electronic waste must be categorized, stored, and disposed of.
- **Manufacturer Directives:** Many manufacturers have their own take-back programs or specific guidelines for the disposal of their products.
- **RoHS and WEEE:** Understand the basic principles of the European Union's **RoHS (Restriction of Hazardous Substances)** and **WEEE (Waste Electrical and Electronic Equipment)** directives, as they influence global standards for e-waste.

2. Practical Compliance Actions:

- **Proper Segregation:** Always sort waste into the correct categories as per company policy.
- **Use Certified Partners:** Ensure that all e-waste is collected and processed by certified and legally compliant recycling partners.
- **Documentation:** Record all disposal activities to provide a verifiable paper trail for compliance audits.

By maintaining strict compliance, you not only protect the environment but also the company's reputation and legal standing.

4.2.3 Recording E-Waste Disposal and Recycling Activities

Accurate and consistent record-keeping is a vital part of a sustainable workflow. It creates a verifiable history of all e-waste disposal and recycling activities, which is essential for audits and for tracking a company's environmental impact.

1. The E-waste Disposal Log:

- **Purpose:** The log serves as a formal record of every disposal event.
- **Information to Record:** The log should include:
- **Date of Disposal:** The date the waste was transferred for disposal.
- **Material Type and Quantity:** The type of material (e.g., "Lithium-ion Batteries," "Circuit Boards") and its weight or count.
- **Recipient of Waste:** The name of the certified e-waste recycler.
- **Disposal Certificate:** The log should reference the disposal certificate provided by the recycler.
- **Technician's Name:** The name of the technician who initiated the disposal.

2. Company Policies:

- **Frequency:** Follow company policy on how often to update the log (e.g., weekly, monthly).
- **System:** Use the designated company system (e.g., an electronic database or a physical logbook) for all record-keeping.
- **Audits:** The disposal log is the primary document used during internal and external audits to verify compliance.

By meticulously recording all disposal activities, you ensure a transparent and auditable process.

4.2.4 Use of PPE While Handling Hazardous Waste

The use of appropriate protective equipment is the primary defense against injury and environmental contamination when handling hazardous waste.Here we focus on identifying and using the correct PPE for specific tasks.

1. Personal Protective Equipment (PPE) for E-waste:

- **Gloves:** Use heavy-duty, puncture-resistant gloves (e.g., nitrile) to protect your hands from hazardous chemicals, sharp edges on circuit boards, and the contents of batteries.
- **Safety Glasses:** Wear safety glasses to protect your eyes from chemical splashes or flying debris, especially when handling components with pressurized or liquid content.
- **Fume Extractor/Mask:** Use a fume extractor when soldering and a respirator mask when handling any waste that may produce hazardous dust or fumes.

2. Preventing Environmental Contamination:

- **Spill Kits:** Have a spill kit readily available for any accidental chemical spills.
- **Containment:** Store all hazardous waste in closed, leak-proof containers to prevent spills or leaks into the environment.

- **Proper Disposal:** Ensure that waste is disposed of through certified channels to prevent it from ending up in landfills and contaminating soil and water.

By using the correct PPE and following containment procedures, you create a safe environment and prevent a negative impact on the ecosystem.

4.2.5 Regular Audits of Waste Management Processes

A robust waste management system requires a continuous cycle of implementation and verification. This often is performed by a senior technician or a supervisor, focuses on the auditing process that ensures all waste management activities align with the company's sustainability goals and regulatory standards.

1. The Purpose of an Audit:

- **Compliance Verification:** An audit is a systematic check to ensure that all waste handling and disposal activities are in compliance with local regulations and company policies.
- **Process Improvement:** It identifies weaknesses or inefficiencies in the waste management process and provides an opportunity for improvement.
- **Accountability:** It verifies that all technicians are following established procedures for segregation, storage, and documentation.

2. The Auditing Process:

- **Regular Schedule:** Audits should be conducted on a regular schedule (e.g., quarterly).
- **Checklist:** Use a standardized audit checklist that includes:
- **Waste Segregation:** Verify that all waste is correctly sorted into the designated bins.
- **Container Integrity:** Check that all hazardous waste containers are properly labeled, sealed, and in good condition.
- **Documentation:** Review the e-waste disposal log to ensure it is complete and up-to-date.
- **Recycling Certificates:** Verify that the company has received a certificate of disposal from the recycling partner for all waste transferred.
- **PPE Availability:** Check that all necessary protective equipment is available and in good condition.
- **Reporting:** Document the findings of the audit, including any non-compliances, and create an action plan for remediation.

3. The Technician's Role in an Audit:

- **Follow Procedures:** The most important role of a technician is to consistently follow all established waste management procedures.
- **Maintain Records:** Ensure that all documentation is accurate and up-to-date.
- **Cooperate:** Cooperate fully with the audit process and be prepared to answer questions about your waste management practices.

By participating in and supporting regular audits, you contribute to a transparent, compliant, and continuously improving waste management system.

Notes

UNIT 4.3: Sustainable Repair Practices

Unit Objectives

By the end of this unit, the participants will be able to:

1. Apply appropriate repair techniques to reduce waste and energy consumption.
2. Select and use energy-efficient and eco-friendly spare parts.
3. Assess, test, and catalog reusable parts for future use, reducing procurement and material waste.
4. Minimize the use of single-use materials in repairs.
5. Follow a systematic diagnosis process using appropriate tools and documentation to prevent the wastage of functional components.

4.3.1 Repair Techniques to Minimize Waste Generation and Energy Consumption

Sustainable repair techniques are a combination of efficient workflow, careful execution, and the use of eco-friendly tools. By adopting these methods, a technician can significantly reduce their environmental footprint.

1. Minimizing Waste Generation:

- **Component-Level Repair:** Instead of replacing an entire motherboard for a faulty IC, a sustainable technician will attempt a component-level repair. This extends the life of the board and reduces e-waste.
- **Salvage and Reuse:** Prioritize salvaging functional components from discarded devices. This reduces the need to purchase new parts and minimizes waste.
- **Consumable Management:** Use consumables like isopropyl alcohol and solder flux sparingly and only when necessary.

2. Reducing Energy Consumption:

- **Energy-Efficient Tools:** Use modern, energy-efficient repair stations. Many soldering stations and hot air guns now come with auto-sleep or low-power modes that automatically activate when the tool is not in use.
- **LED Lighting:** Use LED lighting in the workspace, which consumes significantly less energy than traditional fluorescent or incandescent bulbs.
- **Efficient Procedures:** Optimize the repair process to minimize the time the device and tools are powered on. For example, pre-diagnose the issue before powering up the device, and only turn on the hot air station or soldering iron when you are ready to begin the repair.

By being mindful of these practices, you can make a significant positive impact on the environment during your daily work.

4.3.2 Energy-Efficient and Eco-Friendly Spare Parts For Repairs

The choice of spare parts has a direct impact on a device's energy efficiency and environmental footprint. A sustainable technician considers more than just functionality when selecting a replacement component.

1. Energy-Efficient Parts:

- **Batteries:** When replacing a battery, select one with a high energy density and a long life cycle. A higher-quality battery will have a longer lifespan, reducing the frequency of replacement.
- **Displays:** Opt for displays with efficient backlights or those that use technologies like OLED, which consume less power than traditional LCDs.
- **Power Adapters:** For laptop and accessory repairs, choose power adapters that are certified as energy-efficient (e.g., have an "Energy Star" rating). These adapters are designed to minimize power draw when the device is not charging.

2. Eco-Friendly Parts:

- **Recycled Materials:** When possible, source replacement parts that are made from recycled materials.
- **Refurbished Parts:** Prioritize using refurbished components from discarded devices.
- **Lead-Free Components:** Ensure that all new components are RoHS-compliant and lead-free, especially for older devices.

3. Procurement Practices:

- **Authorized Suppliers:** Work with authorized and ethical suppliers who adhere to environmental and labor standards.
- **Bulk Ordering:** Order parts in bulk to reduce packaging waste and the carbon footprint associated with shipping.

By making conscious choices about the parts you use, you can contribute to a more sustainable supply chain.

4.3.3 Optimizing Material Usage

A key tenet of a circular economy is to reduce waste by giving functional components a second life. A sustainable technician is skilled at salvaging and reusing parts from devices that are beyond repair.

1. The Salvage Process:

- **Initial Assessment:** When a device is deemed Beyond Economic Repair (BER), conduct a final assessment to identify any components that are still functional.
- **Component Identification:** Identify the following components as potential candidates for salvage:
- **Motherboards:** If a device is BER due to a cracked screen, the motherboard is a valuable asset.
- **Cameras, Speakers, Microphones:** These modular components are often in good condition.

- **Internal Cables and Connectors:** Functional flex cables and connectors can be salvaged.
- **Screws and Brackets:** Small hardware can be reused.
- **Testing and Verification:** Before placing a salvaged component into inventory, perform a quick functional test to ensure it is in working condition.

2. Integrating into Inventory:

- **Separate Storage:** Store all salvaged parts in a separate, clearly labeled area of the inventory.
- **Documentation:** Document the salvaged parts, including the part number, the device they came from, and their condition. This makes it easy for other technicians to find and use these parts.

By actively salvaging and reusing components, you reduce both the environmental impact of e-waste and the company's procurement costs.

4.3.4 Minimizing the use of Single-Use Materials

Repair and maintenance tasks often rely on single-use materials like adhesive strips, swabs, and cleaning wipes. Minimizing their use and finding reusable alternatives is a simple but impactful way to improve a repair shop's environmental footprint.

1. Identifying Single-Use Materials:

- **Adhesive:** Many repairs require new adhesive strips for screens or back covers.
- **Cleaning:** Isopropyl alcohol (IPA) wipes, cleaning swabs, and lint-free cloths.
- **Packaging:** The plastic bags and foam that parts are shipped in.

2. Strategies for Minimizing Use:

- **Adhesive:** For some repairs, a technician can apply liquid adhesive from a reusable tube instead of using pre-cut adhesive strips.
- **Cleaning:** Use reusable lint-free cloths and a spray bottle for IPA instead of single-use wipes.
- **Rechargeable Tools:** Use rechargeable dust blowers instead of single-use canned air, which often contains harmful propellants.
- **Bulk Consumables:** Purchase consumables like IPA, solder, and flux in bulk to reduce the amount of packaging waste.

3. Best Practices:

- **Cleanliness:** Keep the workbench clean to reduce the need for excessive cleaning materials.
- **Reusability:** Clean and reuse plastic opening picks and other tools instead of discarding them after every repair.
- **Recycle Packaging:** Ensure that all cardboard and recyclable plastic packaging from new parts is sorted and sent for recycling.

By adopting these practices, you can significantly reduce the amount of waste generated from each repair.

4.3.4 Minimizing the use of Single-Use Materials

Accurate diagnosis is not just about a successful repair; it is a fundamental sustainability practice. A misdiagnosis can lead to the unnecessary replacement of a perfectly functional component, which creates e-waste and wastes valuable resources.

1. The Link Between Diagnosis and Sustainability:

- **Misdiagnosis Example:** A technician diagnoses a laptop's inability to charge as a faulty battery and replaces it. However, the true fault was a faulty charging port. The original battery, a valuable and functional component, is now unnecessarily discarded, and the new battery might also degrade from an ongoing charging issue.
- **Accurate Diagnosis:** A technician who accurately diagnoses the faulty charging port replaces only that part. The original battery is saved, and a new component is not wasted.

2. Strategies for Accurate Diagnosis:

- **Systematic Process:** Always follow a systematic diagnostic process, starting with the simplest and most likely causes.
- **Use the Right Tools:** Use the correct diagnostic tools (multimeter, diagnostic software) for the fault. Do not rely on assumptions.
- **Documentation:** Document every diagnostic step and its outcome in the repair log . This helps confirm the root cause and provides a record to prevent unnecessary replacements.
- **Consult Manuals:** Use service manuals and schematics to guide the diagnostic process.

Importance of Accuracy:

By ensuring an accurate diagnosis, you not only perform a more efficient repair but also contribute directly to waste reduction, making every repair a sustainable one.

Notes

UNIT 4.4: Compliance with Sustainability Protocols and Policies

Unit Objectives

By the end of this unit, the participants will be able to:

1. Follow organizational sustainability policies in repair operations.
2. Coordinate with certified recyclers for safe e-waste disposal.
3. Document waste transfers for compliance and traceability
4. Participate in sustainability and environmental training programs.
5. Promote sustainability awareness among colleagues and customers.

4.4.1 Organizational Sustainability Policies

An organization's sustainability policy is the guiding document that outlines its commitment to environmental responsibility. This ensures that a technician's daily actions are in direct alignment with this policy, creating a unified and compliant approach to sustainable repair.

1. Understanding the Policy:

- **Policy Review:** Familiarize yourself with the company's official sustainability policy. This document typically covers areas such as e-waste management, energy consumption, and responsible sourcing.
- **Key Principles:** The policy will outline key goals, such as reducing the company's carbon footprint, achieving a specific e-waste diversion rate, or implementing a circular economy model.

2. Practical Compliance in Daily Work:

- **E-waste Management:** Consistently follow the established procedures for segregating and disposing of waste. This is the most visible and direct way to follow the policy.
- **Energy Efficiency:** Actively use energy-efficient tools and minimize the use of electricity in the workspace.
- **Responsible Sourcing:** Prioritize the use of salvaged or refurbished parts as mandated by the policy.
- **Documentation:** Ensure all repairs and waste management activities are meticulously documented to provide evidence of compliance .

3. Accountability:

- **Reporting:** Report any non-compliance or potential improvements to your supervisor.
- **Continuous Improvement:** Be proactive in suggesting new ways to improve sustainability practices.

By following the organizational policy, you become an active and accountable participant in the company's commitment to a more sustainable future.

4.4.2 Coordination with Certified Recyclers for Disposal of Non-Recyclable Waste

The final stage of the e-waste management process involves the physical transfer of waste from the repair facility to a certified recycling agency. Here, we focus on the technician's role in preparing this waste and coordinating its pickup or transfer.

1. Preparation of Waste for Transfer:

- **Categorization:** Ensure all waste is correctly sorted and stored in the appropriate containers.
- **Final Check:** Before the waste is transferred, perform a final check of all bins to ensure that no hazardous materials (e.g., batteries) have been misplaced in non-hazardous waste.
- **Weight and Volume:** Log the approximate weight or volume of the waste to be transferred.

2. Coordination Process:

- **Recycler Contact:** Use the company's designated contact for the certified recycler to schedule a pickup or delivery.
- **Information Exchange:** Provide the recycler with all the necessary information, including the type and quantity of waste.
- **Transfer Documentation:** Complete all necessary transfer documentation, such as a waste manifest form, before the waste leaves the premises.

3. Follow-up:

- **Receipt and Certificate:** Ensure that a receipt or a certificate of disposal is provided by the recycling agency.
- **Record-Keeping:** File the certificate of disposal as part of the official records.

By actively participating in this coordination, you ensure that the e-waste is handled safely and responsibly by a certified partner.

4.4.3 Documentation of Waste Transfer to Recycling or Disposal Agencies

Documentation of waste transfer is a legal and auditable requirement that validates a company's commitment to responsible e-waste management. Here, we focus on the technician's role in meticulously completing and filing all necessary paperwork.

1. Waste Manifest Forms:

- **Purpose:** A waste manifest is a legal document that tracks hazardous waste from its point of generation to its final disposal.
- **Information:** The manifest includes information such as:
  - The type and quantity of waste being transferred.
  - The name and address of the waste generator (the repair facility).
  - The name and address of the waste transporter and the disposal facility.
- **Procedure:** The technician is responsible for completing their portion of the manifest form and ensuring it is signed by the waste transporter upon pickup.

2. Certificate of Disposal:

- **Purpose:** A certificate of disposal is a document provided by the recycling agency that confirms that the waste was received and disposed of in an environmentally sound manner.
- **Procedure:** Ensure that a certificate is provided for every waste transfer.
- **Filing:** File the certificate with the company's official records, linked to the e-waste disposal log.

By ensuring that all waste transfer documentation is accurate and complete, you provide a verifiable paper trail that is essential for regulatory compliance.

4.4.4 Participation in Training Programs on Environmental Conservation and Sustainability

The field of environmental conservation and sustainability is constantly evolving. A technician can ensure her/his knowledge is up-to-date by actively participating in training programs.

1. The Purpose of Training:

- **Knowledge and Skills:** Training programs provide the latest information on environmental regulations, best practices for waste management, and new sustainable repair techniques.
- **Policy Updates:** They ensure that all technicians are aware of any changes to the company's sustainability policies.
- **Personal Development:** They provide an opportunity for a technician to expand their skillset and contribute more effectively to the company's sustainability goals.

2. Participation:

- **Required Training:** Actively participate in all mandatory training programs on environmental conservation and sustainability.
- **Certifications:** Pursue relevant certifications that demonstrate a commitment to sustainable repair practices.
- **Continuing Education:** Stay informed on the latest developments in the field by reading industry publications and attending workshops.

By engaging in these training programs, you ensure that your skills and knowledge are aligned with the latest sustainability standards.

4.4.5 Promoting Awareness of Sustainable Practices

Sustainability is a collective effort. This final competency focuses on the technician's role as a leader and a promoter of sustainable practices within the workplace and among customers.

1. Internal Awareness (Team Members):

- **Lead by Example:** Consistently follow all sustainability protocols (e.g., proper waste segregation, energy-efficient practices).
- **Educate Colleagues:** Share knowledge and best practices with team members to ensure everyone is on the same page.
- **Foster a Culture of Sustainability:** Encourage a culture where sustainability is a shared value and a common topic of conversation.

2. External Awareness (Stakeholders/Customers):

- **Customer Communication:** When recommending a repair, explain the benefits of sustainable practices. For example, explain how component-level repair reduces e-waste and is a more eco-friendly option.
- **BER Communication:** When a device is Beyond Economic Repair (BER), explain the process of responsible disposal and encourage the customer to let the company handle the e-waste.
- **Transparent Practices:** Be transparent with customers about the company's commitment to sustainability, for example, by mentioning that faulty batteries will be sent to a certified recycler.

By promoting awareness, you help to create a more sustainable mindset, not only within your team but also in the wider community.

Exercise

Multiple Choice Question:

1. What is the main purpose of refurbishing components?

a. To generate e-waste
b. To turn a piece of waste into a reusable asset
c. To make the repair process more difficult
d. To save time during repairs

2. Which of the following is considered a hazardous material in electronic waste?

a. Plastic casings
b. Glass
c. Lithium-ion batteries
d. Metal screws

3. What is the purpose of a waste manifest?

a. To track a device's repair history
b. To track hazardous waste from its point of generation to its final disposal
c. To log a customer's personal information
d. To verify a component's functionality

4. Why should lead-free solder be used in repairs?

a. It is easier to use than leaded solder.
b. It has a lower melting point.
c. It reduces lead contamination and is required by many regulations.
d. It makes a stronger solder joint.

5. What is the purpose of regular audits of waste management processes?

a. To check for compliance with regulations and identify areas for improvement
b. To punish technicians for mistakes
c. To increase the amount of e-waste produced
d. To reduce the time spent on repairs

Fill in the Blanks:

1. A motherboard with a short circuit on a specific power rail can be considered a _____ component.
2. A component that cannot be reused or refurbished but contains materials that can be extracted and reused in a new manufacturing process is considered _____.
3. Before a salvaged component is placed into inventory, a _____ should be performed to ensure it is in working condition.
4. The primary tool for managing hazardous waste is a _____, which is a legal document that tracks hazardous waste from its point of generation to its final disposal.
5. A technician's most direct way to follow a company's sustainability policy is to consistently follow established procedures for segregating and disposing of _____.

Short Questions:

1. What are the three categories of salvaged materials?
2. Name a hazardous material found in batteries.
3. Why is it important to use a fume extractor when soldering?
4. How can a technician reduce energy consumption during repairs?
5. What are the benefits of using refurbished parts instead of new ones?
6. What is the purpose of keeping a log of all e-waste disposal and recycling activities?

Notes

5. Employability Skills (60 Hours)

Telecom Sector Skill Council

It is recommended that all training include the appropriate. Employability Skills Module. Content for the same can be accessed https://www.skillindiadigital.gov.in/content/list

DGT/VSQ/N0102

6. Annexure

Annexure I - QR Codes –Video Links

Annexure I

List of QR Codes Used in PHB

Module No.	Unit No.	Topic Name	Page No. in PHB	Link for QR Code (s)	QR code (s)
1. Role and Responsi-bilities of an In-Store Promoter	Unit 1.2 - Roles of a Telecom Customer Care Executive - Repair Center	Under-standing Your Customer		https://www.youtube.com/watch?v=Rpx1dOgkeq4	
	UNIT 1.3- Basics of a Mobile Handset	Top Mobile Handset Players in India		https://www.youtube.com/watch?v=TO-kUr7K-0g&feature=youtu.be	
2. Maintain Workplace Efficiency and Personal Appearance (TEL/N2217)	Unit 2.1: Maintaining Professional Appearance and Workplace Etiquette	Plano- grams		https://www.youtube.com/watch?v=9Ti4EH1owQ0	
	Unit 2.2: Organizing and Managing the Work Area Efficiently	What is CRM ?		https://www.youtube.com/watch?v=u_6mryURubQ	
		Customer Service		https://www.youtube.com/watch?v=tWFVthcnwdE	

Module No.	Unit No.	Topic Name	Page No. in PHB	Link for QR Code (s)	QR code (s)
3. Troubleshoot basic mobile handset/accessory issues and coordinate repair or replacement (TEL/N2201))	Unit 3.1: Device Diagnostics and Basic Troubleshooting	What is Hardware and Software		https://www.youtube.com/watch?v=FlMt1kotHfo	
	Unit 3.3: Interpersonal Skills for Effective Customer Service	Interpersonal Skills		https://www.youtube.com/watch?v=tDcwWo4WP6w	
4 Sustainability Practices in Telecom Operations	UNIT 4.1: Identification and Categorization of Recyclable, Reusable, and Disposable Components	Sustainability in telecom: From ambition to action		https://www.youtube.com/watch?v=CwddRdVm3ms	

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