User Requirement Specification (URS) :

Organization : SmartServe Solutions
Project Title : Web-Based Online Service Management System
Version : 1.0
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1. User Roles and Description

1.1 Customer

Description:
The Customer is an external end-user, typically a homeowner or business representative, who requires a service from SmartServe Solutions. Customers are the primary revenue source for the organization and interact with the system through a public-facing web portal.

Key Characteristics:

- May have varying levels of technical knowledge
- Expects a simple, intuitive, and user-friendly experience similar to e-commerce platforms
- Has access strictly limited to their own data and service requests

Responsibilities:

- Submit service requests online
- Track the status of service requests
- Make online payments
- View service history and invoices

Primary Goal:
To obtain required services conveniently, reliably, and with transparent communication throughout the service lifecycle.

1.2 Service Manager (Admin)

Description:
The Service Manager is an internal administrative user responsible for overseeing and coordinating all service delivery operations. This role functions as the system's operational superuser.

Key Characteristics:

- Office-based user

— Uses the system primarily on a desktop computer
— Requires full system access

Responsibilities:

— Manage and review customer service requests
— Assign and dispatch technicians
— Monitor job progress and service status
— Handle escalations and exceptions
— Communicate with customers when required
— Manage billing, payments, and service closure

Primary Goal:
To ensure smooth, efficient, and timely service delivery while maintaining high customer satisfaction.

1.3 Technician

Description:
The Technician is an internal field staff user responsible for performing on-site service work at customer locations. Technicians primarily access the system using mobile devices.

Key Characteristics:

— Mobile user (smartphone or tablet)
— Works in dynamic field environments
— Requires fast and reliable access to information

Responsibilities:

— Receive assigned service tasks
— View job details and customer information
— Update job status in real time
— Record service completion details
— Close assigned service requests

Primary Goal:
To efficiently complete assigned service tasks with minimal data entry while ensuring accurate and timely job updates.

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2. User Goals

2.1 Customer

Primary Goal:
The primary goal of the Customer is to submit service requests quickly and conveniently at any time without dependency on business hours or phone-based communication.

Key Goals:

- Submit service requests easily through an online portal
- Receive immediate confirmation that the request has been successfully registered
- Track the real-time status of service requests, including assignment, technician arrival estimates, and job completion
- Receive transparent and timely updates through automated notifications, minimizing uncertainty and follow-up calls
- Make secure online payments immediately after service completion to finalize the transaction seamlessly

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2.2 Service Manager (Admin)

Primary Goal:
The primary goal of the Service Manager is to ensure maximum operational efficiency and smooth coordination of service delivery activities.

Key Goals:

- Assign service requests to the most suitable and available technician with minimal manual effort
- Maintain a real-time overview of all active jobs, technician availability, locations, and workloads
- Identify and resolve delays, bottlenecks, or escalations proactively
- Enable automated communication between customers and technicians to reduce manual coordination
- Process invoices and payments efficiently to maintain consistent cash flow
- Generate performance and operational reports to analyze trends, evaluate technician productivity, and support data-driven decision-making

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2.3 Technician

Primary Goal:
The primary goal of the Technician is to efficiently complete assigned service tasks with accurate and timely system updates while working in the field.

Key Goals:

- Receive clear and timely job assignments on a mobile device
- Access complete job details, including customer information, service history, and specific requirements
- Use integrated navigation and optimized routes to reach job locations efficiently
- Update job status (e.g., *On Route, On Site, In Progress, Completed*) with minimal interaction
- Record work performed, parts used, notes, and photos directly from the field
- Capture digital customer approval or signature on-site to close jobs and trigger invoicing without paperwork

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3. Functional Requirements for Each User

3.1 Customer:

- **Secure Access Management:** The system will feature a robust user registration and secure login mechanism to protect personal and contact information.
- **Digital Service Intake:** Users can submit detailed service requests by selecting categories, adding descriptions, and uploading supporting images or documents.
- **Consolidated Service Dashboard:** The system will provide a live, centralized view of all past and current service requests for easy reference.
- **Visual Status Tracking:** Each active request will feature a visual progress tracker, allowing users to see exactly which stage their service is in.
- **Automated Communication Loop:** Real-time notifications via email or SMS will trigger automatically whenever a request status changes (e.g., technician en route).
- **Integrated Messaging:** A direct messaging channel will be built into each specific request, allowing seamless communication between the user and the office.
- **Financial Self-Service:** Users will be able to view, download formal invoices, and access an electronic receipt once a service is finalized.
- **Multi-Method Digital Payments:** A secure, integrated payment gateway will allow users to pay invoices online using credit cards or digital wallets.
- **Post-Service Quality Control:** After a job is closed, the system will present a digital feedback and rating form to capture customer satisfaction data.
- **Enhanced User Convenience:** The platform will include "quality of life" features like a saved address book for rapid booking and an integrated FAQ/Knowledge Base.

Service Manager (Admin):

- **Centralized Command Center:** The system will provide an administrative dashboard with summary widgets to monitor real-time metrics like open requests and pending payments at a glance.
- **Dynamic Queue Management:** A filterable, consolidated view of all incoming requests will allow for efficient review and rapid assignment.
- **Technician Visibility:** Admins will have access to a live map and schedule view to track technician locations, current statuses, and availability.
- **Intelligent Dispatching:** The system will support both manual and rules-based semi-automatic dispatching to ensure the right technician is assigned to the right job.
- **Full Lifecycle Control:** Admins will have the authority to edit request details, prioritize urgent tasks, and dynamically reassign jobs as needed.
- **Unified Communication Hub:** A dedicated messaging system will allow the Service Manager to communicate directly with both customers and field technicians from within the platform.
- **Financial Oversight:** The admin module will support manual invoice management, including the ability to generate, send, or void invoices to ensure financial accuracy.
- **Comprehensive Resource Management:** Dedicated modules will be available to manage full customer histories, technician skill sets, and internal staff permissions.
- **Strategic Reporting & SLAs:** Robust tools will generate pre-defined reports on revenue and technician utilization, while allowing configuration of system pricing and Service Level Agreements (SLAs).
- **System Integrity & Audit:** An inventory management module will track part usage, while a comprehensive audit trail will log all system activities to ensure security and accountability.

Technician:

- **Easy Mobile App:** Technicians get a special, fast app made just for their phones to use while they are out working.
- **Daily To-Do List:** As soon as they log in, they see a clear list of their assigned jobs for the day so they know exactly where to go.
- **One-Tap Maps:** Technicians can click a single button to get instant GPS directions to the customer’s house.
- **Quick Status Buttons:** They can update the office instantly by tapping buttons like "On My Way" or "Job Finished."

- **All Info in One Place:** With one tap, they can see the customer's address, phone number, and exactly what needs to be fixed.
- **Simple Parts Logging:** Technicians can easily pick the parts they used from a list to make sure billing and stock are correct.
- **Photos and Notes:** They can take "before and after" pictures and type quick notes about the repair directly into the app.
- **Sign on Screen:** Customers can sign their name right on the technician's phone to confirm the job is done.
- **Works Without Internet:** If there is no signal, the app still works and will save all the info to send later when the signal returns.
- **Tech Help Library:** Technicians can look up repair manuals and check their own work schedules or performance directly in the app.

4. Non-Functional Requirements from User Perspective

4.1 Customer Perspective:

- **Usability:** The customer portal must be extremely intuitive, requiring no training; tasks like submitting a request or making a payment should be completable in under 3 minutes.
- **Availability:** The system must be accessible 24/7 from common web browsers and mobile devices, with uptime exceeding 99.5% during business hours.
- **Performance:** Page load times should be under 3 seconds, and status updates must be reflected in the customer's view in near real-time (under 30 seconds).
- **Security:** All personal data and payment information must be transmitted and stored using strong encryption; customers must feel confident their financial details are safe.
- **Reliability:** Notifications (email/SMS) must be delivered promptly and consistently without failure.
- **Accessibility:** The interface should adhere to basic WCAG guidelines (e.g., readable fonts, good color contrast, alt text for images) to be usable by people with mild disabilities.

4.2 Service Manager (Admin) Perspective:

- **Usability:** The administrative dashboard must present complex information in a clear, organized layout; critical actions like dispatching should be achievable with minimal clicks.
- **Performance:** Generating reports and filtering large lists of requests or customers must execute swiftly, with results appearing in under 5 seconds even with large datasets.

— **Reliability:** The system must be highly stable, with no data loss or corruption, as it is critical for daily operations.
— **Security:** Robust role-based access control is essential to prevent unauthorized access to sensitive financial and customer data.
— **Integrity:** The system must maintain strict data integrity, ensuring that all updates from technicians and customers are accurately and immediately reflected across all views.
— **Supportability:** The system should provide clear logs and diagnostic information to help troubleshoot any user-reported issues quickly.

4.3 Technician Perspective:

— **Usability:** The mobile interface must be designed for gloved or dirty hands, with large buttons, simple menus, and minimal typing required.
— **Performance:** The mobile app must be responsive, with smooth transitions and instant feedback on actions like status updates, even on slower cellular networks.
— **Reliability:** It must function reliably in varying field conditions, with robust offline capabilities so work is not halted by poor connectivity.
— **Battery Efficiency:** The mobile app should be optimized to minimize battery drain on the technician's personal or company-provided device.
— **Security:** Secure authentication is required to prevent unauthorized access to the app, and local data stored on the device during offline use must be encrypted.
— **Integration:** Seamless integration with native device features (GPS for location, camera for photos, maps for navigation) is expected for a smooth workflow.

5. User Constraints and Assumptions

5.1 Customer:

— **Integration:** Seamless integration with native device features (GPS for location, camera for photos, maps for navigation) is expected for a smooth workflow.
— **Basic Tech Needs:** It is assumed that customers have a working internet connection and a modern phone or computer to use the system.
— **Clear Descriptions:** Customers are expected to provide an accurate description of the problem so the right help can be sent.
— **Admin Picked Techs:** A rule of the system is that customers cannot pick a specific technician; the company will assign the best person for the job.
— **Communication Channels:** Customers must have a valid email or phone number to get important updates and receipts from the system.

— **Account Requirements:** While the system prefers users to create accounts, some may want to book as a "guest," which is a limit the system must handle.
— **Private Access:** To keep things safe, customers are restricted to seeing only their own information and service history.
— **Payment Methods:** Most customers will pay online with a card, but the system must still allow the office to record cash or cheque payments manually.
— **Process Start:** Customers must understand that sending a request starts the process, but it doesn't mean a technician will arrive instantly.
— **Accurate Location:** It is the customer's responsibility to give the correct address and tell the technician how to enter the property.
— **Easy Design:** Since some customers may not be good with technology, the system must be very simple to use, with a backup option to call the office.

5.2 Service Manager (Admin):

— **Required Training:** It is assumed that Admins will be fully trained on how to use every part of the system before they start managing jobs.
— **Data Dependency:** The system only works well if customers and technicians enter their information accurately and on time.
— **High-Speed Access:** Admins are expected to have a fast, stable internet connection in the office to manage the dashboard without delays.
— **Business Rule Limits:** Admins must follow the specific rules set in the system, such as fixed pricing, service levels, and technician skill sets.
— **Decision Authority:** It is assumed the Admin has the power to change job priorities, reassign workers, and give customer discounts.
— **Real-World Delays:** Scheduling is limited by things the system can't control, like heavy traffic, job difficulty, or weather.
— **Device Reliability:** A major challenge is the system’s dependence on technicians having working phones and good cell service in the field.
— **Manual Overrides:** Admins are expected to step in and fix problems manually if a situation doesn't fit the system's automatic rules.
— **Desktop Focused:** It is assumed that Admins will do their work on office computers or laptops rather than trying to manage everything from a phone.
— **Financial Responsibility:** The Admin is responsible for checking that digital payments are correct and managing any links to the company’s accounting software.

5.3 Technician :

— **Device Availability:** Technicians are expected to have a smartphone or tablet that can run the system’s app throughout their entire shift.

— **Signal Challenges:** Since internet signals can be weak in some areas, the app must allow technicians to work offline and sync later.
— **Basic Tech Skills:** It is assumed that technicians know how to use standard mobile apps and can navigate the system with basic training.
— **Job Detail Limits:** Technicians must follow the job details sent by the office; they cannot change the main service type on their own.
— **Active Status Updates:** The system relies on technicians manually tapping buttons to update their status (like "Arrived" or "Finished") as they work.
— **Battery Life Constraints:** A major practical limit is the device's battery, which needs to stay charged for the full workday to keep the office updated.
— **Data Privacy Rules:** Technicians can only see information for the specific jobs assigned to them, not the company’s entire customer list.
— **Fast Data Entry:** Because technicians are busy with hands-on work, the app must make it very quick to log parts or notes with minimal typing.
— **Stock Accuracy:** The system assumes the digital inventory list matches what is actually in the technician's van, though physical differences can happen.
— **Signature Requirements:** Whenever a customer is present, technicians are responsible for getting a digital signature on their screen to close the job.