**Roadmap for Middleware (CSE & CMS)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Phase # | Phase Name | Key Features & Tasks | Timeline | Assigned Teams |
| 1 | UI/UX Design | • Design wireframes for all CMS & CSE pages (Figma) • Define typography, color schemes, and UI components.  • Develop interactive Figma prototypes.  • Ensure accessibility & responsive design.  • Set up approval cycles and design handoff to developers. |  | UI/UX |
| 2 | Infrastructure Setup & DevOps | • Deploy shared Azure storage, VM instances, and databases for CMS & CSE.  • Implement CI/CD pipelines for automated deployment.  • Set up API gateway, load balancing, and failover strategies.  • Deploy sandbox & production API environments.  • Enable server monitoring, security compliance & performance tracking.  • Automate periodic system backups and disaster recovery protocols. |  | DevOps |
| 3 | Database Design & Optimization | • Define schema for CMS static hotel metadata and CSE dynamic rate & availability data.  • Optimize data indexing, query performance, multi-provider compatibility.  • Implement structured storage for scalability.  • Enable schema normalization, redundancy elimination & failover protection. |  | Backend, Database Team |
| 4 | Dynamic Content Provider Integration (CSE) | • Set up API request handling for Amadeus (initial provider).  • Design a scalable framework for multi-provider support.  • Standardize data formats for future integrations.  • Implement dynamic response parsing across multiple providers.  • Conduct high-load concurrency testing (10,000 API requests/second). |  | Backend, API Team |
| 5 | CMS Static Data Population & Management | • Develop content management workflows for static hotel data.  • Enable bulk room & amenity data uploads.  • Implement automated metadata validation & duplicate detection.  • Optimize image retrieval speed for hotels/rooms. |  | Backend, CMS Content Team |
| 6 | API Development (CSE Rate & Availability Search) | • Implement API for searching hotel rates, availability, negotiated prices, loyalty pricing.  • Allow filtering by star rating, date range, guest count.  • Process API request via Amadeus (expandable to future providers).  • Optimize API response latency for real-time searches. |  | Backend, API Team |
| 7 | Booking & Cancellation Workflow (CSE) | • Develop APIs to manage booking confirmations & cancellations.  • Apply markup/VAT calculation & transaction validation.  • Automate email confirmations for booking status & cancellations.  • Enable refund workflows based on cancellation policy. |  | Backend, API Team |
| 8 | Customer Management & Role-Based Dashboards | • Implement unified authentication for CMS & CSE.  • Apply role-based access control (B2B/B2C/Admin).  • Enable sandbox & production API access management.  • Track subscription renewal dates & customer engagement analytics. |  | Frontend, Security Team |
| 9 | Subscription & Payment Integration | • Develop tiered subscription models for CMS & CSE API services.  • Integrate Telr for secure payments & invoicing.  • Automate renewal reminders & transaction history tracking. |  | Finance, Backend |
| 10 | Static & Dynamic Content Enrichment (CMS & CSE) | • Merge CMS static hotel data with CSE real-time pricing & availability responses.  • Optimize image retrieval workflows to provide complete hotel data in API responses. |  | Backend, Content Team |
| 11 | Customer Support & Ticketing | • Develop centralized ticketing system for CMS & CSE service requests.  • Enable real-time chat support & troubleshooting workflows.  • Automate ticket assignments, SLA monitoring & customer support analytics. |  | Support Team, Backend |
| 12 | Finance & Reports Dashboard | • Provide revenue tracking from API usage, bookings, subscriptions.  • Generate automated reports for B2B/B2C customers.  • Secure financial logs & transaction history management. |  | Finance, Backend |
| 13 | Automated Backups & Disaster Recovery | • Configure daily incremental backups & weekly full snapshots.  • Store backups securely in Azure Blob Storage.  • Implement rollback procedures for failure recovery.  • Set up alert monitoring for backup failures.  • Define disaster recovery protocols & failover protections. |  | DevOps |

**Middleware (CSE & CMS) - Webpages**

|  |  |  |
| --- | --- | --- |
| # | Page Name | Purpose |
| 1 | Landing Page | Introduction to CMS & CSE offerings, highlighting static and dynamic data services. |
| 2 | Login & Registration Page | Unified authentication system with role-based access for B2B/B2C, Admin, and Technical Support. |
| 3 | Admin Dashboard | High-level management of CMS static data and CSE dynamic API transactions. |
| 4 | Customer Dashboard | Tracks API usage, subscription details, rate searches, bookings, cancellations. |
| 5 | Tech Support Dashboard | Monitors debugging requests, API failures, logs, and customer support tickets. |
| 6 | Hotel Listings & Search | Retrieves both static and dynamic hotel content, including images, availability, and pricing. |
| 7 | Room Management | Manages room types, descriptions, images, metadata, amenities (CMS feature). |
| 8 | Booking & Cancellation Management | Handles CSE bookings and cancellations, applying markup/VAT, automated email confirmations. |
| 9 | API Features & Documentation | Comprehensive guide covering CMS hotel data APIs and CSE rate, availability, booking APIs, with live testing tools. |
| 10 | Pricing & Subscription Management | Lists subscription tiers, API request limits for CSE, customer pricing plans for CMS, and payment options via Telr. |
| 11 | Sandbox & Production Credential Requests | Allows customers to request authentication keys for CMS & CSE environments. |
| 12 | Ticketing & Service Request Tracking | Manages customer service requests, CMS content updates, CSE technical issues, and ticket assignments. |
| 13 | Finance & Reports Dashboard | Handles payment tracking, subscription revenue, API transactions, customer invoices. |
| 14 | User Management | Role-based permissions for Admin, B2B, B2C, Developers, Tech Support, ensuring secure account handling. |
| 15 | Audit Logs & Compliance | Tracks API access logs, booking history, admin actions, GDPR compliance. |
| 16 | Testimonials & Case Studies | Customer success stories, real-world API integration use cases. |
| 17 | Contact Us | Provides customer support options, inquiry submission forms, live chat, and office contact details. |