**Phase 1: Foundation & Core Infrastructure (4-6 weeks)**

**1.1 Authentication & Authorization Module**

**Priority: Critical**

* User management (users, roles, permissions, user\_roles)
* Multi-factor authentication (mfa\_methods, mfa\_sessions)
* Password policies and security (password\_policies, security\_sessions)
* Session management (sessions, login\_attempts)

**1.2 Company & Multi-tenancy Module**

**Priority: Critical**

* Company setup (companies, system\_configuration)
* Geographic data (countries, regions, cities, states)
* Basic localization (languages, translations)

**1.3 Core Data Models**

**Priority: High**

* Member management (members, dependents)
* Groups and hierarchies (groups, entities, entity\_types)
* Document management foundation (documents, document\_templates)

**Phase 2: Product & Plan Management (3-4 weeks)**

**2.1 Product Catalog Module**

**Priority: High**

* Product definitions (product\_catalog, product\_features)
* Plan configuration (plans, plan\_types)
* Coverage setup (coverages, plan\_coverage\_links)
* Exclusions management (exclusions, plan\_exclusions)

**2.2 Pricing Engine Module**

**Priority: Critical**

* Pricing profiles (pricing\_profiles, pricing\_models)
* Age brackets and factors (age\_brackets, premium\_age\_brackets)
* Rating factors (rating\_factors, risk\_factors)
* Premium calculations (premium\_calculations)

**Phase 3: Quotation & Underwriting (4-5 weeks)**

**3.1 Quotation Management Module**

**Priority: High**

* Quote creation (quotations, quotation\_items)
* Quote versioning (quotation\_versions)
* Attachments (quotation\_attachments)
* Workflow tracking (quotation\_workflow\_logs)

**3.2 Underwriting Engine Module**

**Priority: Critical**

* Application processing (underwriting\_applications)
* Rules engine (underwriting\_rules, underwriting\_decision\_matrix)
* Decision workflow (underwriting\_decisions, underwriting\_profiles)
* Document management (underwriting\_documents)

**3.3 Risk Assessment Module**

**Priority: High**

* Risk profiling (customer\_risk\_profiles, risk\_assessments)
* Fraud detection (fraud\_detection\_models, real\_time\_fraud\_scores)

**Phase 4: Policy Management (3-4 weeks)**

**4.1 Policy Lifecycle Module**

**Priority: Critical**

* Policy creation and management (policies, policy\_types)
* Policy coverages (policy\_coverages)
* Endorsements (endorsements, policy\_endorsements)
* Policy renewals (policy\_renewals)

**4.2 Cards & Certificates Module**

**Priority: Medium**

* Digital cards (cards, medical\_cards, motor\_cards)
* QR code generation (qr\_styles, public\_card\_views)
* Document generation (generated\_documents)

**Phase 5: Claims Management (4-5 weeks)**

**5.1 Claims Processing Module**

**Priority: Critical**

* Claims intake (claims, claim\_history)
* Claims assessment (claim\_assessments)
* Claims documents (claim\_documents)
* Provider network (providers, provider\_networks)

**5.2 Provider Management Module**

**Priority: High**

* Provider onboarding (providers, provider\_types)
* Network management (provider\_networks, provider\_network\_members)
* Service pricing (provider\_services, provider\_service\_prices)

**Phase 6: Premium & Billing (3-4 weeks)**

**6.1 Billing Module**

**Priority: Critical**

* Premium invoicing (premium\_invoices, premium\_schedules)
* Payment processing (payment\_transactions, payment\_methods)
* Billing cycles (billing\_cycles, billing\_statements)

**6.2 Commission Management Module**

**Priority: Medium**

* Agent commissions (agent\_commissions, commission\_rules)
* Commission statements (commission\_statements)

**Phase 7: Reporting & Analytics (3-4 weeks)**

**7.1 Business Intelligence Module**

**Priority: Medium**

* Customer analytics (customer\_segments, customer\_segment\_analytics)
* Cohort analysis (cohort\_analysis, cohort\_definitions)
* Retention forecasting (retention\_forecasts)

**7.2 Regulatory Reporting Module**

**Priority: High**

* Compliance monitoring (compliance\_monitoring)
* Regulatory reports (regulatory\_reports, regulatory\_requirements)
* Audit trails (audit\_logs, usage\_logs)

**Phase 8: Advanced Features (6-8 weeks)**

**8.1 AI/ML Integration Module**

**Priority: Medium**

* AI conversations (ai\_conversations, conversational\_ai\_models)
* Recommendation engine (real\_time\_recommendations)
* Predictive analytics (churn\_predictions, customer\_lifetime\_value)

**8.2 IoT & Smart Devices Module**

**Priority: Low**

* Smart home integration (smart\_home\_systems, smart\_home\_events)
* Wearable devices (wearable\_devices, health\_metrics)
* IoT data streams (iot\_devices, iot\_data\_streams)

**8.3 Reinsurance Module**

**Priority: Medium**

* Reinsurance agreements (reinsurance\_agreements)
* Treaty management (treaty\_programs, treaty\_statements)
* Claims recovery (reinsurance\_claims)

**Phase 9: Integration & Communication (2-3 weeks)**

**9.1 External Integration Module**

**Priority: Medium**

* API management (api\_keys, api\_rate\_limits)
* Webhook system (webhook\_events)
* External services (external\_service\_status)

**9.2 Communication Module**

**Priority: Medium**

* Notification system (notification\_channel)
* Marketing campaigns (marketing\_campaigns)
* Personalized content (personalized\_content\_delivery)

# 🔧 Roadmap Enhancements (V1.1)

## Phase X: QA & Simulation Engine

Introduce a dedicated testing and validation phase to ensure the platform can scale, self-test, and simulate edge cases.  
- Automated integration tests (pytest, Postman, etc.)  
- Synthetic data generation for load simulation  
- Predefined test scenarios for workflows (claims, quotations, etc.)  
- CI/CD pipeline integration with test gating

## Phase 8.1: AI RAG + Vector Embedding Foundation

Deepen the AI module by preparing infrastructure for:  
- LangChain agents and RAG pipelines  
- `vector\_documents`, `embedding\_chunks`, `rag\_tasks` tables  
- OCR + text splitting + semantic chunking + GPT response framework  
- Future LLM hosting compatibility (OpenRouter, local models)

## Phase 1.2: Multilingual + Dynamic Branding Engine

Enhance early phases with:  
- Multilingual fields (`name\_ar`, `description\_fr`, etc.)  
- Per-user/company language and currency preference  
- Dynamic manifest.json and favicon/logo branding for PWA  
- RTL support toggle and theme auto-inheritance from company settings