

# 1. Jirani Platform - Our Proven Solution

## 1.1 Platform Overview

**Jirani** is our proprietary digital marketplace platform specifically designed for African MSMEs, with a strong focus on women-led businesses. The platform has been developed and refined based on real-world deployment experience, addressing the unique challenges of African markets including low bandwidth, mobile-first usage, and diverse payment methods.

### Platform Highlights:

Aspect	Details
<b>Current Status</b>	Production-ready, actively deployed
<b>Target Market</b>	African WMSMEs across multiple sectors
<b>Architecture</b>	Multi-tenant, white-label capable, microservices-based
<b>Mobile Optimization</b>	Progressive Web App (PWA), WhatsApp integration, offline capabilities
<b>Payment Integration</b>	M-PESA, Airtel Money, MTN Mobile Money, card payments, bank transfers
<b>Key Differentiator</b>	WhatsApp-first commerce and learning platform

## 1.2 Core Platform Features

### Marketplace Features:

Feature	Description
<b>Product Catalog</b>	Multi-category product listings with rich media, search, filters
<b>Order Management</b>	End-to-end order processing, status tracking, notifications
<b>Payment Processing</b>	Multi-channel payments (mobile money, cards, bank), escrow
<b>Seller Dashboard</b>	Inventory management, sales analytics, customer management
<b>Buyer Experience</b>	Product discovery, cart, checkout, order tracking
<b>Reviews &amp; Ratings</b>	Verified purchase reviews, seller ratings, moderation

<b>Feature</b>	<b>Description</b>
<b>WhatsApp Commerce</b>	Browse, order, pay, track via WhatsApp

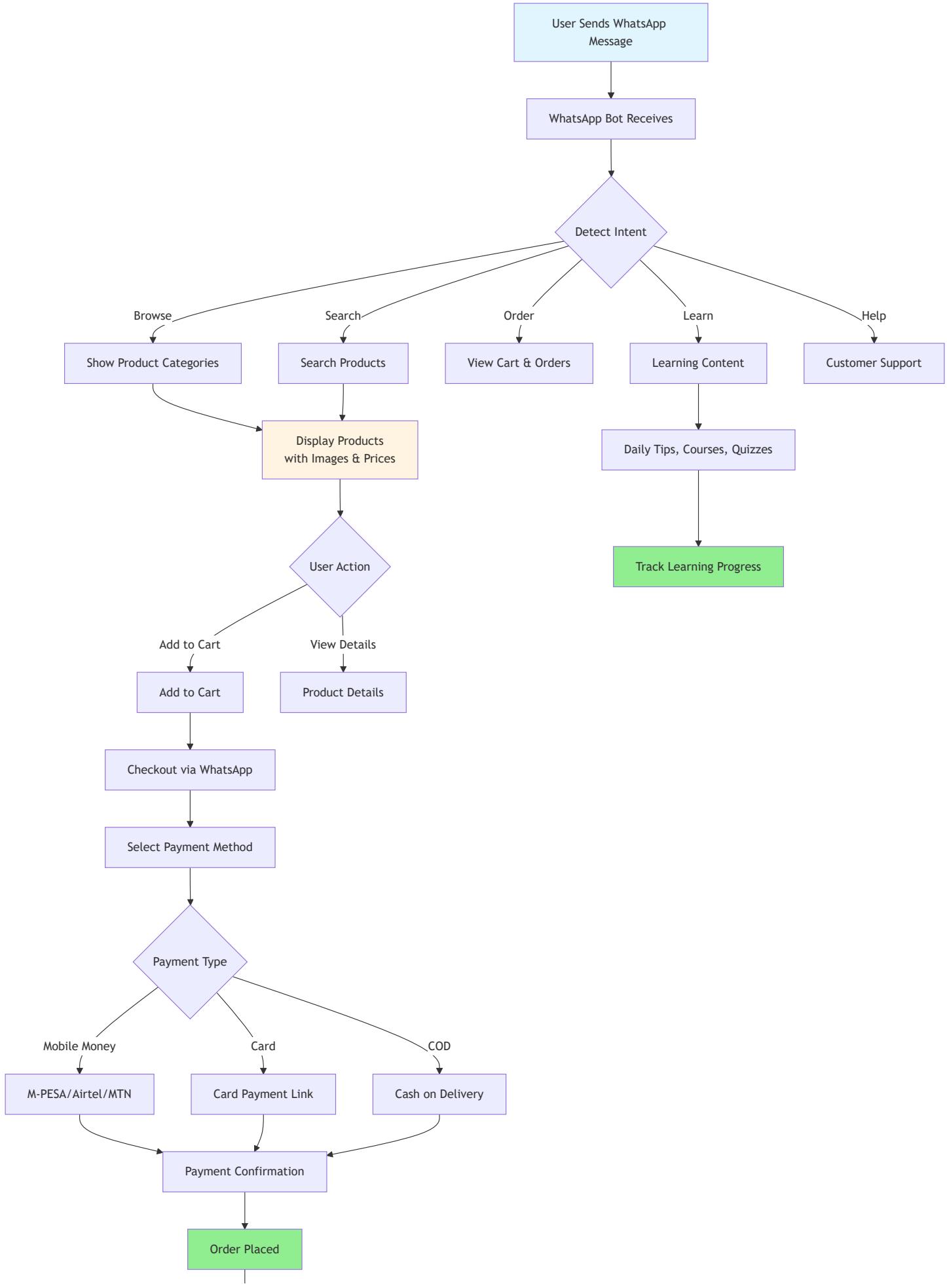
### **Business Support Features:**

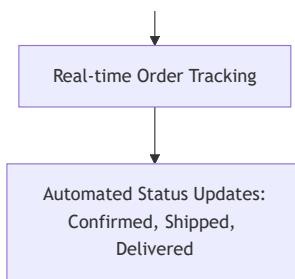
<b>Feature</b>	<b>Description</b>
<b>Market Linkage</b>	AI-powered business matching, supplier/buyer networks
<b>Financial Services</b>	Credit scoring, loan application, PFI integration
<b>Bookkeeping</b>	Invoicing, expense tracking, financial reports, OCR receipts
<b>Events Management</b>	Virtual/physical events, networking, matchmaking
<b>Logistics Integration</b>	Multi-carrier shipping, tracking, inventory management
<b>Digital Microsites</b>	Professional storefronts, SEO-optimized, custom domains

## **1.3 WhatsApp Integration - Our Signature Feature**

Jirani's WhatsApp integration is a game-changer for African WMSMEs, providing full platform access through the most popular communication channel in Africa.

### **WhatsApp Commerce Flow:**





## WhatsApp Features:

Feature	Capabilities
<b>Product Discovery</b>	Browse categories, search products, view images/prices, product recommendations
<b>Shopping Cart</b>	Add/remove items, view cart, modify quantities, save for later
<b>Checkout</b>	Complete purchase flow, address entry, payment selection, order confirmation
<b>Order Tracking</b>	Real-time status updates, delivery notifications, proof of delivery
<b>Customer Support</b>	24/7 chatbot, human agent escalation, order inquiries, complaint resolution
<b>Account Management</b>	Profile updates, order history, saved addresses, payment methods
<b>Notifications</b>	Order updates, payment confirmations, promotional offers, learning reminders
<b>Language Support</b>	English, Swahili (expandable to local languages)
<b>Offline Capability</b>	Queue messages when offline, sync when connected

## WhatsApp Technical Implementation:

Component	Technology
API	WhatsApp Business Cloud API (Meta)
Bot Framework	Custom NLP engine with intent recognition
Message Queue	Redis for message processing
Media Handling	Cloudinary for image optimization

Component	Technology
Session Management	Redis-based conversation state
Analytics	Message engagement, conversion tracking
Compliance	Opt-in management, GDPR/data protection

## 1.5 Technology Stack

Layer	Technologies
<b>Frontend</b>	React 18, Next.js 14, TailwindCSS, PWA
<b>Backend</b>	Node.js, Express, GraphQL, REST APIs
<b>Database</b>	PostgreSQL 15, Redis 7, Elasticsearch 8
<b>Storage</b>	AWS S3, Cloudinary (images/videos)
<b>Messaging</b>	WhatsApp Business API, Twilio (SMS), SendGrid (Email)
<b>Payments</b>	Flutterwave, Paystack, M-PESA API
<b>Infrastructure</b>	AWS (EC2, RDS, S3, CloudFront), Docker, Kubernetes
<b>CI/CD</b>	GitHub Actions, Docker, Terraform
<b>Monitoring</b>	Datadog, Sentry, CloudWatch
<b>Security</b>	SSL/TLS, OAuth 2.0, JWT, AES-256 encryption

## 1.6 White-Label Capabilities

Jirani is built from the ground up to support multiple Partner Financial Institutions (PFIs) with complete branding customization:

Customization	Options
<b>Branding</b>	Custom logo, color scheme, typography, favicon
<b>Domain</b>	Custom domain (e.g., <a href="#">marketplace.pfiname.com</a> ) or subdomain
<b>WhatsApp</b>	Custom sender names, branded messages
<b>User Interface</b>	Customizable homepage, navigation, footer

Customization	Options
<b>Payment Methods</b>	PFI-specific payment gateway configurations
<b>Content</b>	Custom landing pages, help center, FAQs
<b>Features</b>	Enable/disable features per PFI requirements
<b>Integrations</b>	PFI-specific API integrations (core banking, CRM)
<b>Reporting</b>	Custom dashboards and analytics per PFI

## 1.7 Scalability & Multi-Tenancy

### Multi-Tenancy Architecture:

- Shared infrastructure with isolated data per PFI
- Row-level security (RLS) for data protection
- Tenant-aware caching and session management
- Independent scaling per tenant
- Automated tenant provisioning (< 1 hour)

## 1.8 Compliance & Security

Aspect	Implementation
<b>Data Protection</b>	GDPR compliant, data encryption at rest and in transit
<b>Payment Security</b>	PCI-DSS Level 1 compliant
<b>Authentication</b>	Multi-factor authentication (MFA), OAuth 2.0, JWT
<b>Authorization</b>	Role-based access control (RBAC), granular permissions
<b>Audit Trail</b>	Immutable logs for all transactions and changes
<b>Backup</b>	Automated daily backups, 30-day retention, point-in-time recovery
<b>Disaster Recovery</b>	Multi-region deployment, RTO <4 hours, RPO <1 hour
<b>Penetration Testing</b>	Quarterly security audits, vulnerability scanning
<b>Compliance</b>	KYC/AML integration, financial regulations by country