1.5% Bulk Discount
100+ units

eBuildify: Construction Materials E-commerce

Presented by: BuildTech Solutions

1 **Project Details**

Client: Sol Little By Little Enterprises

2 **Project Duration**

16 weeks (June - December 2025)

3 **Scope**

Development of a comprehensive e-commerce platform for construction materials, including order automation, inventory management, diverse payment options, and delivery logistics optimization.
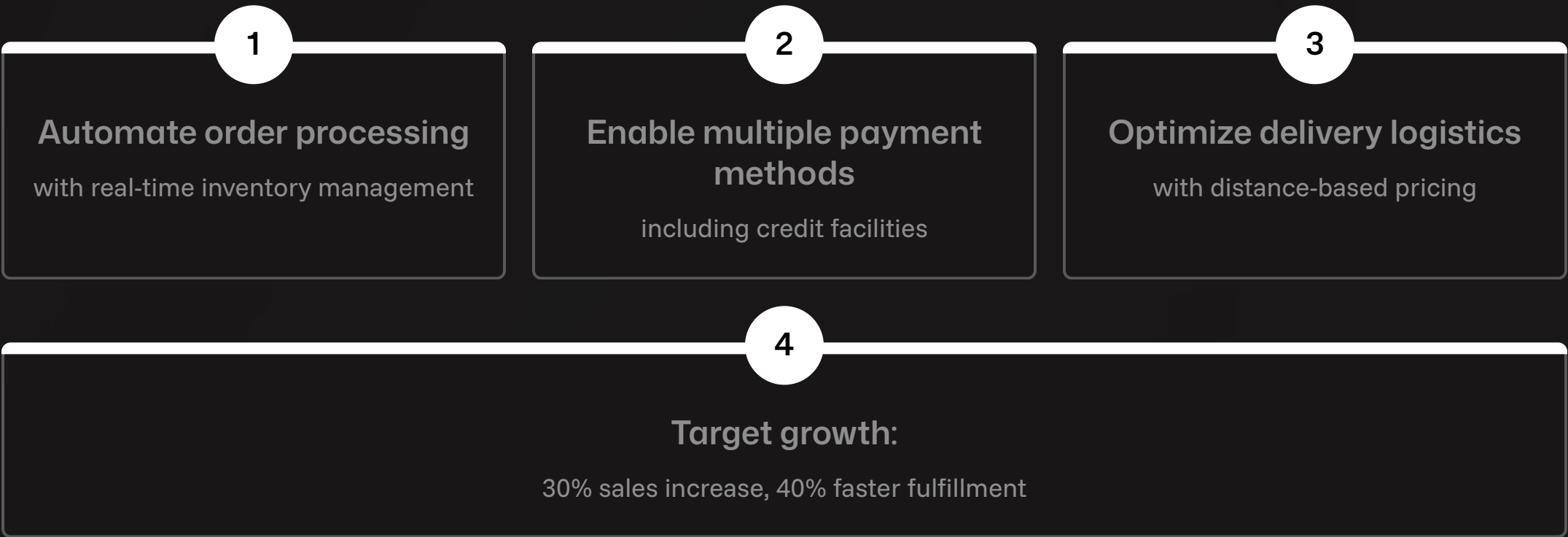
Team Members & Roles

- **Enoch Amarteifio:** Scrum Master & Frontend Developer
- **Ocran Bransford Charles:** Product Owner & UI/UX Designer
- **Abdul Rashid:** Backend Developer
- **Jimba Muzamil:** QA Engineer & Testing Lead
- **Timeon Able:** Documentation & Demo Lead
- **Dompreh Jerry Jabari:** Additional Developer
- **Asare Benjamin Acheampong:** DevOps/CI-CD Lead:

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Problem Statement & Goals

Sol Little By Little Enterprises processes orders manually through calls and WhatsApp, causing:

01

Order errors and delays

02

Inventory discrepancies

03

Limited payment options

04

Poor delivery tracking

Project Goals

1

Automate order processing

with real-time inventory management

2

Enable multiple payment methods

including credit facilities

3

Optimize delivery logistics

with distance-based pricing

4

Target growth:

30% sales increase, 40% faster fulfillment

Key Features
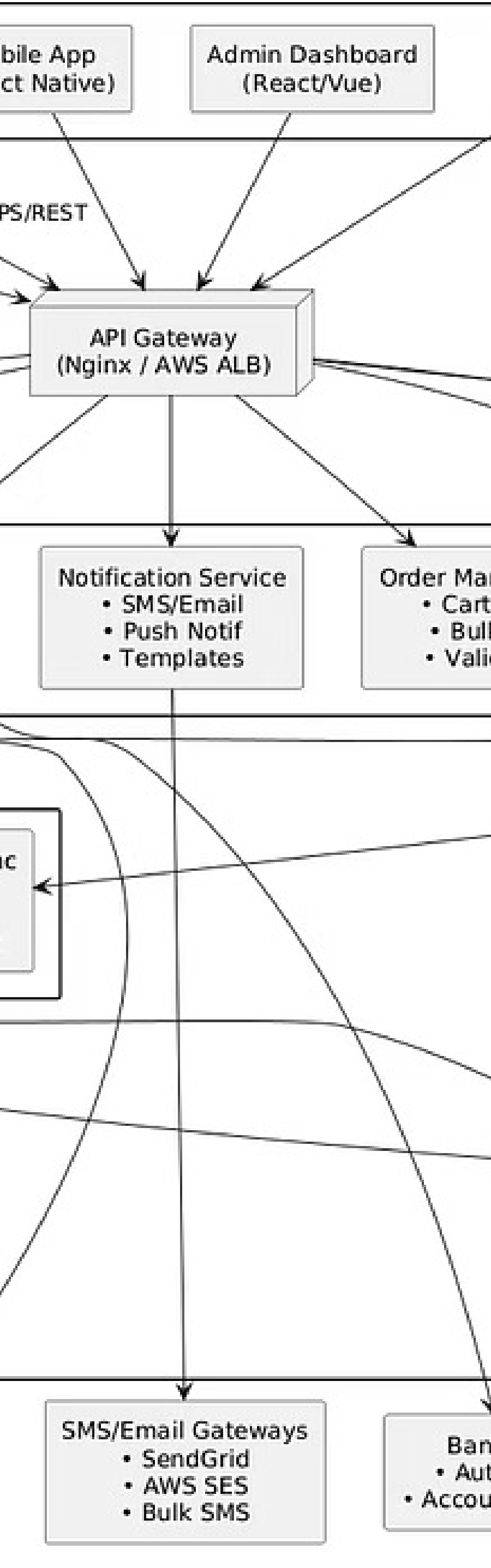
Ghana Card verification system

Multi-tier user management (customers, contractors, admins)

Credit management with automated payments

Service consultation booking

Mobile-first PWA design

yered Architecture - System Overview

bile App
ct Native)

Admin Dashboard
(React/Vue)

PS/REST

API Gateway
(Nginx / AWS ALB)

Notification Service
• SMS/Email
• Push Notif
• Templates

Order Ma...
• Cart...
• Bul...
• Vali...

uc

SMS/Email Gateways
• SendGrid
• AWS SES
• Bulk SMS

Ban...
• Aut...
• Accou...

Technical Deliverables Overview

System Requirements Specification (SRS)

55 User Stories

across 9 epics

24 Use Cases

with complete traceability

16 Non-functional requirements

covering performance, security, scalability

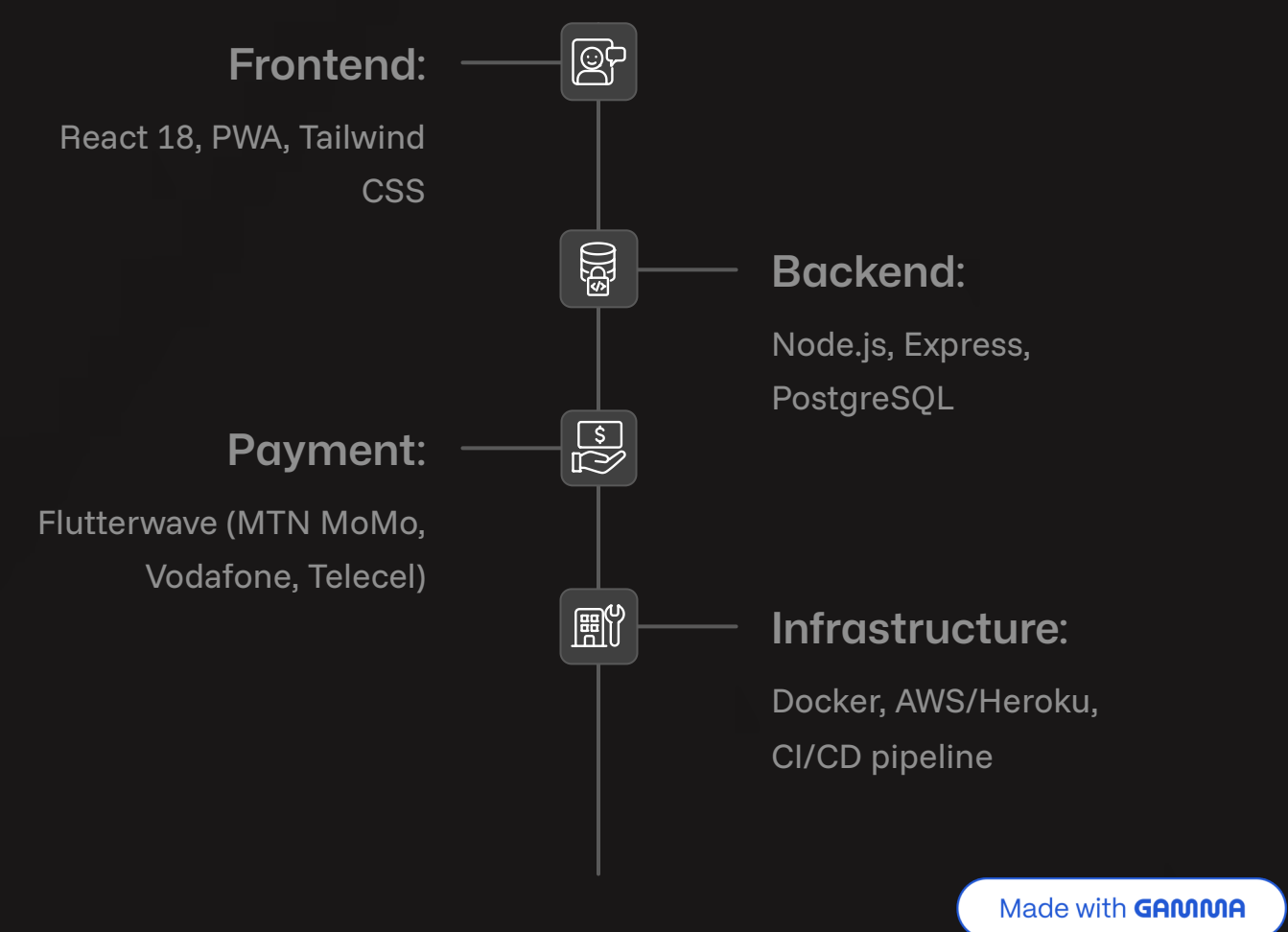## Product Backlog Highlights

369 story points

total backlog

INVEST-compliant

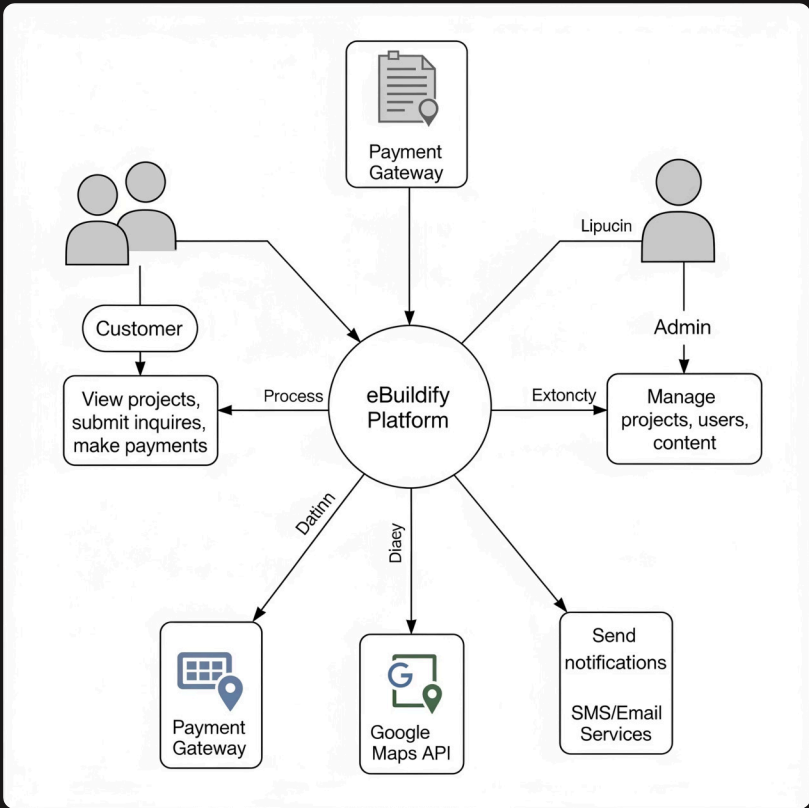user stories

MoSCoW prioritization

framework

Planning Poker estimation
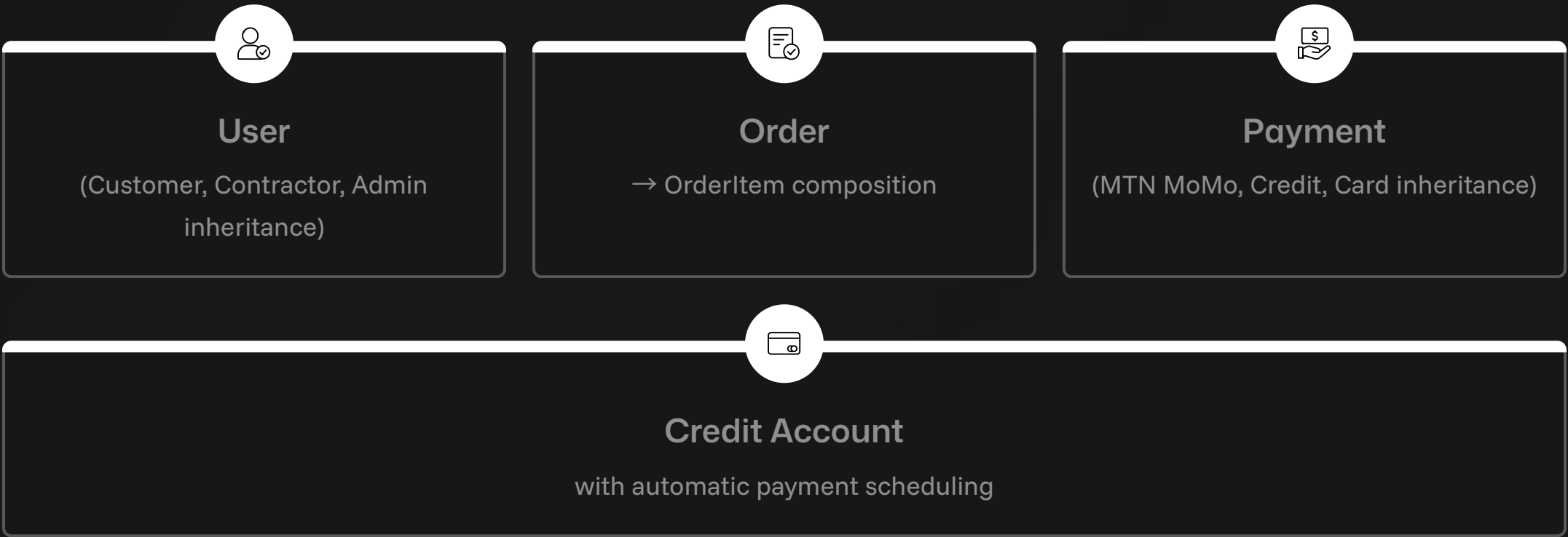
with Fibonacci scale

Technical Stack

Frontend:

React 18, PWA, Tailwind CSS

Backend:

Node.js, Express, PostgreSQL

Payment:

Flutterwave (MTN MoMo, Vodafone, Telecel)

Infrastructure:

Docker, AWS/Heroku, CI/CD pipeline

Software Engineering Models

Data Flow Diagram (Level 0)

UML Class Diagram Key Classes

User
(Customer, Contractor, Admin inheritance)

Order
→ OrderItem composition

Payment
(MTN MoMo, Credit, Card inheritance)

Credit Account
with automatic payment scheduling

System Architecture

Microservices Design:

- API Gateway → Load Balancer
- User Management, Product Catalog, Payment Services
- PostgreSQL + Redis caching
- External integrations (Flutterwave, Maps, SMS)

Live Demonstration

Working Prototype Features ✅

1 User Registration & Authentication

- Ghana Card verification system
- Role-based access control

2 Product Catalog

- Advanced search and filtering
- Mobile-responsive design
- Real-time inventory display

3 Shopping Experience

- Offline cart functionality
- Bulk pricing automation (1.5% discount ⩾100 units)
- Product comparison tool

GitHub Repository

Organization:

BuildTech-Solutions

Active branches:
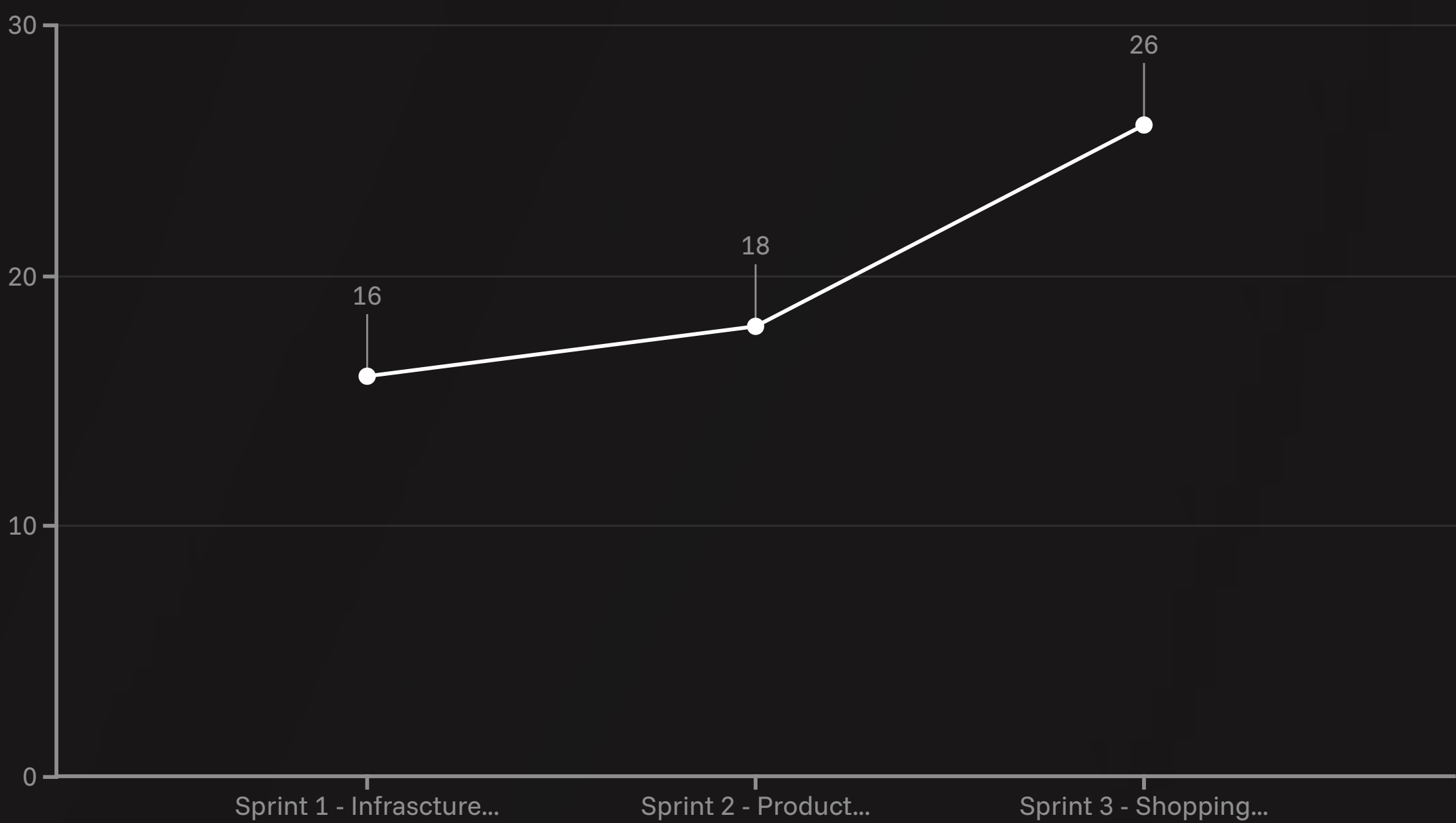
main, develop, feature branches

CI/CD Pipeline:

Automated testing, deployment

Code coverage:
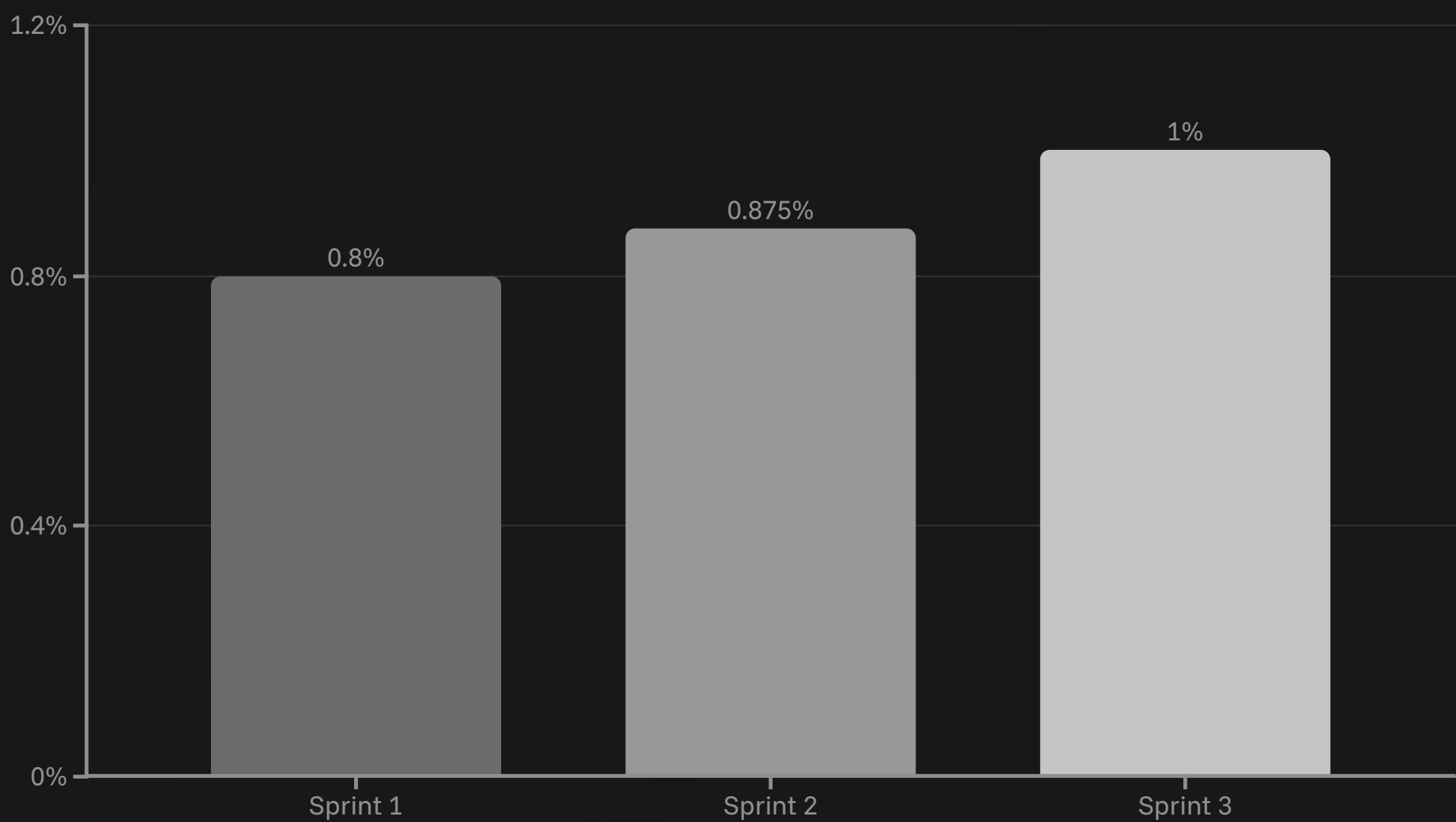
92% (exceeds 80% target)

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Agile Metrics Analysis

Sprint Velocity Trend

Team Velocity Growth: +62% improvement from Sprint 1 to 3

Sprint Success Rates

Key Metrics

85%	96%	0
Code Coverage	**Story Point Accuracy**	**Quality**
Consistently above	estimation accuracy in Sprint 3	critical bugs in production features

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Sprint Reflections & Achievements

What Went Exceptionally Well ✅

Technical Foundation:
Robust CI/CD pipeline and security implementation

Team Maturation:
100% Sprint 3 completion shows growing expertise

Quality Focus:
92% code coverage with comprehensive testing

Innovation:
Offline cart functionality exceeds industry standards

Client Alignment:
All demos received positive stakeholder feedback

Key Technical Achievements

1 **Ghana Card Verification:**
Secure encryption and validation system

2 **Payment Integration:**
Flutterwave gateway ready for multiple providers

3 **Offline Functionality:**
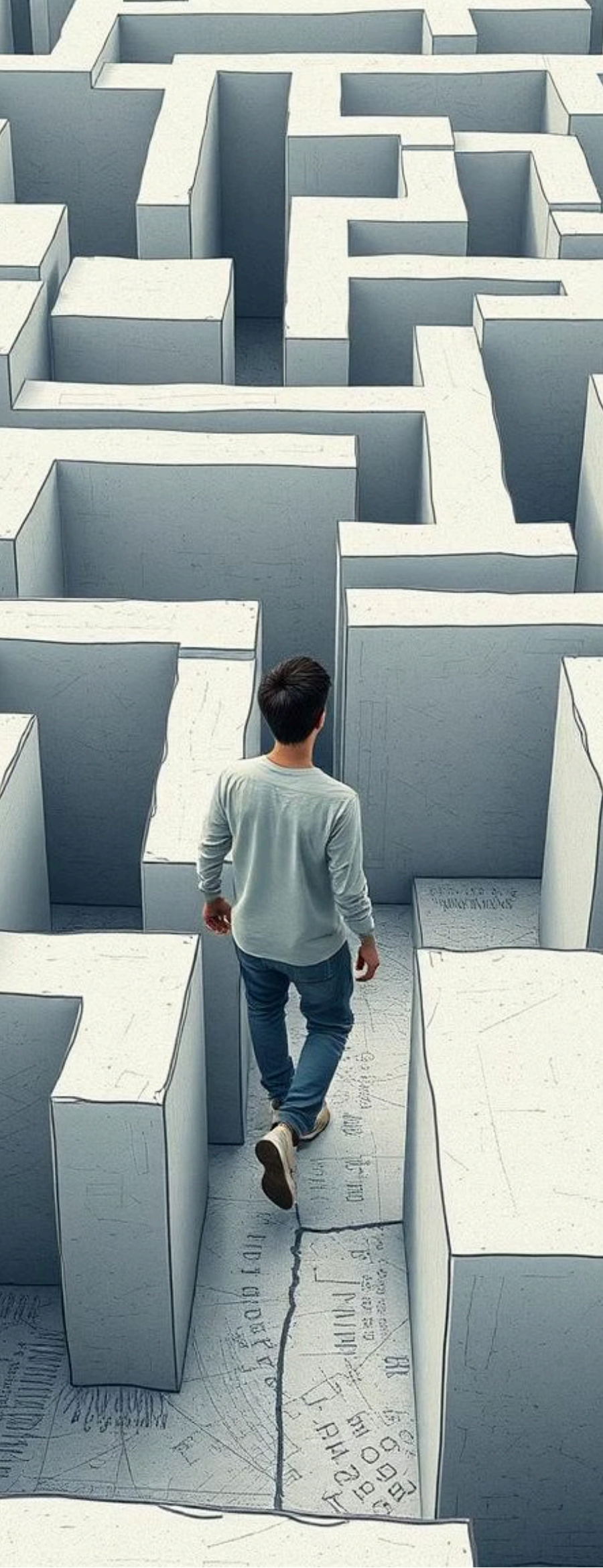Cart persists in poor connectivity areas

4 **Bulk Pricing Engine:**
Automated 1.5% discount system

5 **Mobile Performance:**
2.1 second average load time

Challenges & Risk Management

Major Challenges Encountered

Payment Gateway Complexity
- **Impact:** Integration more complex than estimated
- **Mitigation:** Dedicated payment sprint with API testing phase

Ghana Card API Integration
- **Challenge:** Government partnership requirements unclear
- **Solution:** Implemented basic verification with enhancement options

Team Coordination
- **Issue:** 7-member team communication overhead
- **Resolution:** Enhanced daily standups and clear role definitions

Risk Mitigation Strategies

Technical Spikes:
2-day research phases for complex integrations

Buffer Time:
Built into critical path activities

Fallback Options:
Multiple payment providers, offline functionality

Process Improvements Implemented

Agile Methodology Evolution

1

Sprint 1 → Sprint 3 Improvements:

- Enhanced estimation accuracy (60% → 96%)
- Better story decomposition following INVEST principles
- Improved cross-team collaboration

Development Practices

Code Review:
Minimum 2 approvals before merge

CI/CD Pipeline:
Automated testing, security scans, deployment

Documentation:
Parallel development with features

Communication Enhancements

Client Demos:
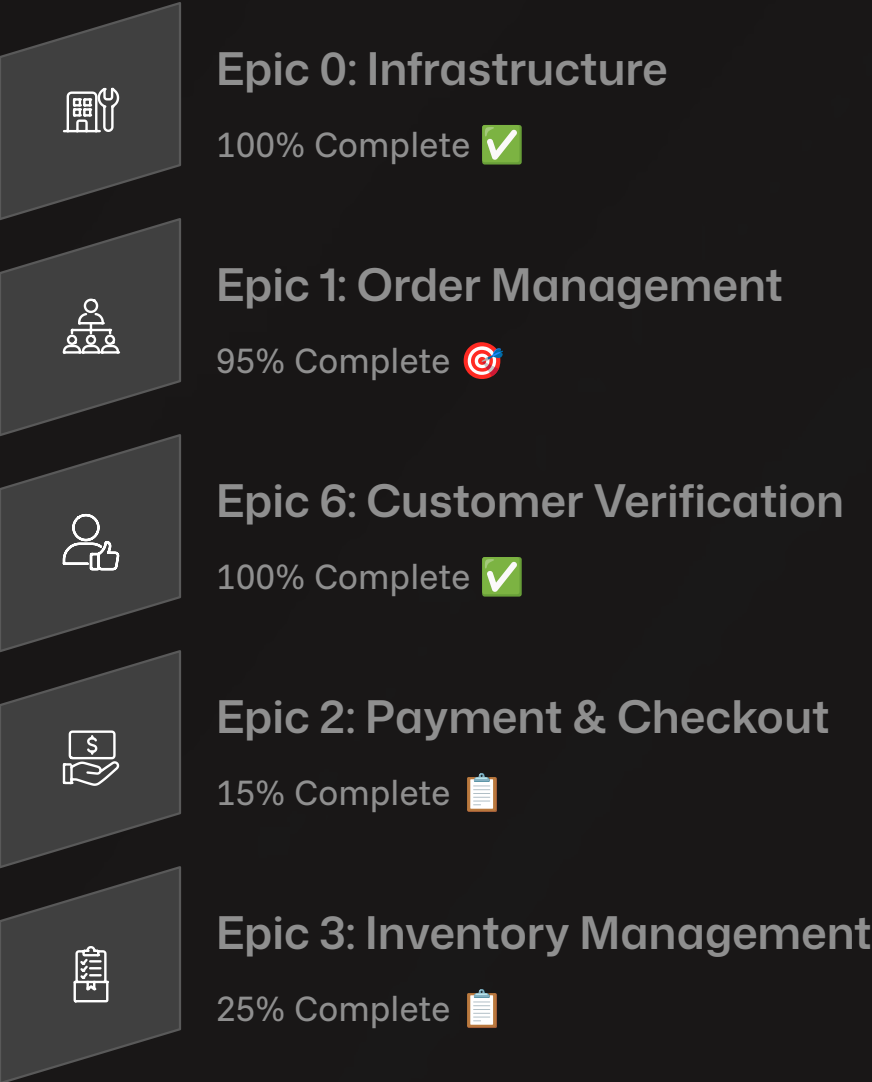Bi-weekly stakeholder presentations

Risk Assessment:
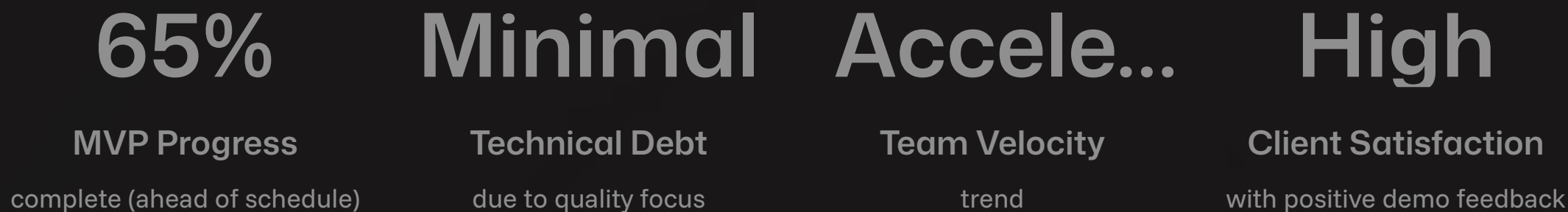Weekly evaluation during sprint planning

Knowledge Sharing:
Cross-training across technical domains

Current Project Status

Epic Completion Overview

Epic 0: Infrastructure

100% Complete ✅

Epic 1: Order Management

95% Complete 🎯

Epic 6: Customer Verification

100% Complete ✅

Epic 2: Payment & Checkout

15% Complete 📋

Epic 3: Inventory Management

25% Complete 📋

Overall Progress

65%	Minimal	Accele...	High
MVP Progress	Technical Debt	Team Velocity	Client Satisfaction
complete (ahead of schedule)	due to quality focus	trend	with positive demo feedback

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Sprint 3 Objectives & Next Steps

Immediate Priorities (Next Sprint)

1

Payment Integration Sprint

- Complete MTN MoMo, Vodafone Cash, Telecel Cash integration
- Implement B2B credit system with admin approval workflow
- Develop automatic payment scheduling and penalty system

2

Technical Goals

- Maintain 90%+ code coverage
- Implement PCI-DSS compliance measures
- Complete payment security audit

Capacity Planning

Recommended Capacity:
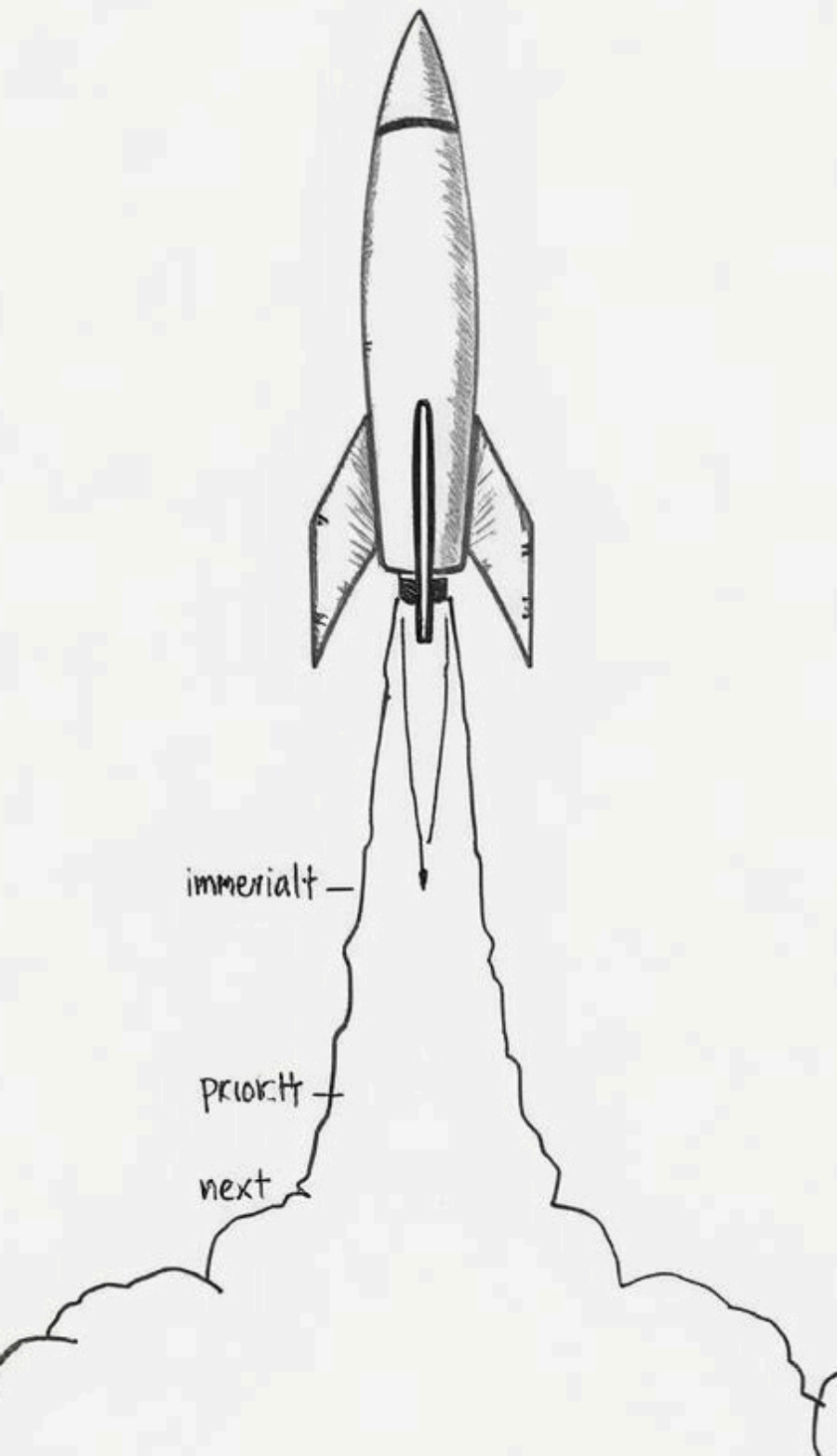
28-30 story points

Duration:

7 days focused on payment complexity

Team Availability:

All 7 members ready for integration work

Final Release Timeline

Remaining Development Phases

Phase 4: Delivery & Logistics

Sprints 4-5 focus on robust delivery management and logistics integration for efficient order fulfillment.

Phase 5: Booking & Contractor Portal

Sprints 6-7 will build out the service booking system and a dedicated portal for contractors.

Phase 6: Integration & Optimization

Sprint 8 ensures final system integration, performance tuning, and pre-launch quality assurance.

Launch Readiness Assessment

Expected MVP Launch:

October 1, 2025

Final Launch:

December 15, 2025

Budget Status:

On track with ₡174,944 total project cost

Success Metrics Target

Performance:

<3 seconds load time on 3G networks

Capacity:

Support **500+** concurrent users

Business Impact:

30% sales increase, **40%** faster fulfillment

Thank You!

Questions?

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We are ready for your live demo and technical questions!