

Social Media Automation System - 90-Day Implementation Roadmap

Project Overview

This roadmap outlines the complete implementation strategy for the Social Media Automation System, integrating WhatsApp Business API, Facebook Graph API, Instagram Business API, and Meta Pixel across three business sectors: Education, Hospitality, and Investment.

Phase 1: Foundation Setup (Days 1-30)

Week 1-2: Environment Setup and API Configuration

Day 1-3: Project Initialization

- ☐ Set up development environment
- ☐ Initialize Node.js project with Express
- ☐ Configure package.json with all dependencies
- ☐ Set up Git repository and branching strategy
- ☐ Create environment configuration files

Day 4-7: API Account Setup

- ☐ **WhatsApp Business API Setup**
 - Create Meta Business Manager account
 - Register WhatsApp Business API application
 - Configure phone numbers for each sector
 - Set up webhook endpoints
 - Verify business accounts
- ☐ **Facebook Graph API Setup**
 - Create Facebook Developer account
 - Set up Facebook App for each sector
 - Configure page access tokens
 - Set up lead generation forms
 - Configure webhook subscriptions
- ☐ **Instagram Business API Setup**
 - Connect Instagram Business accounts
 - Configure Instagram Shopping (for Hawana Cafe)
 - Set up content publishing permissions
 - Configure story automation

☐ **Meta Pixel Setup**

- Create Meta Pixel for each sector
- Configure conversion tracking
- Set up custom audiences
- Configure attribution models

Day 8-14: Core Infrastructure Development

☐ **Database Design and Setup**

- Design MongoDB schemas for all entities
- Set up database connections and models
- Create indexes for optimal performance
- Implement data validation

☐ **Authentication and Security**

- Implement JWT authentication
- Set up role-based access control
- Configure CORS and security headers
- Implement rate limiting and DDoS protection

☐ **Logging and Monitoring**

- Set up Winston logger configuration
- Implement error handling middleware
- Configure application monitoring
- Set up health check endpoints

Week 3-4: Core Infrastructure Completion

Day 15-21: API Service Layer Development

☐ **WhatsApp Service Implementation**

- Create WhatsApp API client
- Implement message sending functionality
- Set up template message system
- Configure webhook handling

☐ **Facebook Service Implementation**

- Create Facebook Graph API client
- Implement post creation and scheduling
- Set up lead form management
- Configure analytics retrieval

☐ **Instagram Service Implementation**

- Create Instagram Business API client
- Implement content publishing
- Set up story creation

- Configure shopping integration

☐ **Meta Pixel Service Implementation**

- Create Meta Pixel API client
- Implement event tracking
- Set up custom audience management
- Configure conversion tracking

Day 22-30: Middleware and Validation

☐ **Validation Middleware**

- Implement Joi schema validation
- Create sector-specific validation rules
- Set up file upload validation
- Configure phone number validation

☐ **Error Handling**

- Implement custom error classes
- Set up error logging and reporting
- Create error response formatting
- Configure error monitoring

☐ **Testing Framework Setup**

- Set up Jest testing framework
- Create unit test structure
- Set up integration test environment
- Configure test data and mocks

Phase 2: Core Development (Days 31-60)

Week 5-6: WhatsApp Business API Integration

Day 31-37: Message Template Development

☐ **Education Sector Templates**

- Order confirmation template
- Menu update template
- Delivery reminder template
- Template approval and testing

☐ **Hospitality Sector Templates**

- Reservation confirmation template
- Special offer template
- Loyalty points template
- Template approval and testing

☐ **Investment Sector Templates**

- Portfolio update template
- Meeting scheduling template
- Market alert template
- Template approval and testing

Day 38-44: Automated Response System

☐ **Sector Detection Algorithm**

- Implement keyword-based sector detection
- Create AI-powered message classification
- Set up phone number mapping
- Configure fallback mechanisms

☐ **Response Generation Engine**

- Create sector-specific response templates
- Implement dynamic content generation
- Set up personalization features
- Configure response timing

☐ **Webhook Processing**

- Implement webhook verification
- Create message processing pipeline
- Set up automated response triggers
- Configure error handling and retries

Week 7-8: Facebook Graph API and Instagram Integration

Day 45-51: Facebook Integration

☐ **Automated Posting System**

- Implement post creation API
- Set up scheduled posting
- Create cross-posting functionality
- Configure post analytics

☐ **Lead Generation System**

- Create lead form management
- Implement lead response handling
- Set up lead qualification
- Configure lead scoring

☐ **Engagement Tracking**

- Implement engagement metrics
- Set up performance analytics
- Create reporting dashboards

- Configure alert systems

Day 52-60: Instagram Integration

☐ **Content Publishing**

- Implement post creation
- Set up story automation
- Create hashtag management
- Configure content scheduling

☐ **Instagram Shopping (Hawana Cafe)**

- Set up product catalog
- Implement shopping posts
- Create product tagging
- Configure purchase tracking

☐ **Cross-Platform Integration**

- Implement Facebook-Instagram cross-posting
- Set up unified content management
- Create platform-specific optimization
- Configure performance tracking

Phase 3: Advanced Features (Days 61-90)

Week 9-10: Meta Pixel Integration and Analytics

Day 61-67: Meta Pixel Implementation

☐ **Event Tracking Setup**

- Configure conversion events
- Set up custom events
- Implement user data hashing
- Configure attribution models

☐ **Custom Audience Management**

- Create audience building tools
- Implement lookalike audience creation
- Set up retargeting campaigns
- Configure audience optimization

☐ **Conversion Tracking**

- Implement purchase tracking
- Set up lead tracking
- Create registration tracking
- Configure consultation tracking

Day 68-74: Analytics and Reporting

☐ **Dashboard Development**

- Create comprehensive analytics dashboard
- Implement real-time metrics
- Set up performance monitoring
- Configure alert systems

☐ **Cross-Platform Analytics**

- Implement unified analytics
- Create attribution reporting
- Set up ROI calculations
- Configure performance optimization

☐ **Automated Reporting**

- Create scheduled reports
- Implement email notifications
- Set up WhatsApp summaries
- Configure custom report generation

Week 11-12: Testing, Optimization, and Deployment

Day 75-81: Comprehensive Testing

☐ **Unit Testing**

- Complete unit test coverage
- Test all API endpoints
- Validate business logic
- Test error handling

☐ **Integration Testing**

- Test cross-platform integration
- Validate webhook processing
- Test automated workflows
- Validate data synchronization

☐ **Performance Testing**

- Load testing for high traffic
- Stress testing for API limits
- Performance optimization
- Scalability testing

Day 82-88: Optimization and Security

☐ **Performance Optimization**

- Database query optimization

- API response optimization
- Caching implementation
- CDN configuration

☐ **Security Hardening**

- Security audit and fixes
- Penetration testing
- Vulnerability assessment
- Security monitoring setup

☐ **Compliance Verification**

- GDPR compliance audit
- Data protection verification
- Privacy policy implementation
- Compliance documentation

Day 89-90: Deployment and Launch

☐ **Production Deployment**

- Set up production environment
- Configure load balancers
- Set up monitoring and alerting
- Deploy application

☐ **Final Testing and Launch**

- End-to-end testing
- User acceptance testing
- Performance validation
- System launch

Key Milestones and Deliverables

Milestone 1: Foundation Complete (Day 30)

- ☐ All API accounts configured and verified
- ☐ Core infrastructure operational
- ☐ Basic authentication and security implemented
- ☐ Development environment fully functional

Milestone 2: Core Features Complete (Day 60)

- ☐ WhatsApp Business API fully integrated
- ☐ Facebook Graph API operational
- ☐ Instagram Business API functional
- ☐ Automated response system working

Milestone 3: Advanced Features Complete (Day 90)

- ☐ Meta Pixel integration complete
- ☐ Analytics dashboard operational
- ☐ Cross-platform integration working
- ☐ System ready for production

Risk Mitigation Strategies

Technical Risks

- **API Rate Limits:** Implement comprehensive rate limiting and queuing
- **Service Outages:** Set up fallback mechanisms and monitoring
- **Data Loss:** Implement robust backup and recovery systems

Business Risks

- **Compliance Issues:** Regular compliance audits and updates
- **User Adoption:** Comprehensive training and documentation
- **Scalability:** Performance testing and optimization

Success Metrics

Technical Metrics

- System uptime: 99.9%
- API response time: < 200ms
- Error rate: < 0.1%
- Test coverage: > 90%

Business Metrics

- Message delivery rate: > 95%
- Lead conversion rate: > 15%
- Customer engagement: > 25%
- ROI improvement: > 30%

Post-Launch Support

Week 13-16: Monitoring and Optimization

- ☐ Performance monitoring and optimization
- ☐ User feedback collection and implementation
- ☐ Bug fixes and improvements
- ☐ Feature enhancements based on usage data

Ongoing Maintenance

- ☐ Regular security updates
- ☐ API version updates
- ☐ Performance optimization
- ☐ Feature enhancements

This roadmap provides a comprehensive guide for implementing the Social Media Automation System within 90 days, ensuring all requirements are met and the system is production-ready.