

BUSINESS REQUIREMENT SPECIFICATION (BRS)

HAN FOODS E-COMMERCE PLATFORM

Document: Business Requirement Specification

Project: Han Foods E-commerce Platform

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1. PROJECT OVERVIEW

1.1 Project Introduction

Han Foods E-commerce Platform is a comprehensive e-commerce platform specifically designed for the food and beverage industry. The system provides a complete solution for online sales with a powerful administrative dashboard to manage all business operations.

1.2 Business Objectives

- **Increase Sales Revenue:** Provide an effective online sales platform
- **Market Expansion:** Reach customers through digital channels
- **Management Optimization:** Automate sales processes and inventory management
- **Enhance Customer Experience:** User-friendly interface with diverse features
- **Improve Operational Efficiency:** Statistical dashboard and detailed reporting

1.3 Project Scope

- **Includes:** E-commerce website, product management, order processing, payment, reporting
- **Excludes:** Native mobile applications, external ERP integration

1.4 Success Criteria

- Platform launch within specified timeframe
- Customer satisfaction rating 4.0/5.0
- System availability 99.5%
- Support 1000+ concurrent users during peak hours

2. STAKEHOLDERS

2.1 Primary Stakeholders

Role	Description	Responsibilities	Success Metrics
System Administrator	IT staff managing the system	User management, system configuration, security	System uptime 99.5%
Business Manager	Sales management staff	Product management, orders, promotions, reporting	Revenue increase 30%
Customer	Product purchasers	Place orders, payment, track orders	Customer satisfaction 4.0/5.0
Warehouse Staff	Order processing personnel	Update order status, inventory management	Order processing time < 24 hours

2.2 Secondary Stakeholders

- Marketing Team: Content management, campaign execution
- Customer Service: Handle customer inquiries and complaints
- Accounting Department: Financial reporting and reconciliation
- Suppliers: Product information and inventory updates

3. BUSINESS REQUIREMENTS

3.1 Product Management

Business Objective: Provide a rich product catalog with detailed information and efficient management capabilities

Functional Requirements: - Create, edit, delete products with complete information (name, description, price, images, specifications) - Categorize products into hierarchical categories and subcategories - Manage product images (thumbnail + gallery with multiple images) - Set selling prices, promotional prices, and discount periods - Track inventory levels with automatic alerts for low stock - Enable customer product reviews and ratings system - Support product variants (size, color, packaging) - Bulk product import/export functionality

Business Rules: - Products must have at least 1 high-quality image (minimum 800x600px) - Promotional price cannot exceed original price - Cannot delete products with existing orders or order history - Automatically hide products when out of stock - Product descriptions must be at least 50 characters -

Maximum 10 images per product - Reviews can only be submitted by verified purchasers

3.2 Order Management

Business Objective: Process orders efficiently from placement to delivery with full tracking capabilities

Business Process Flow: 1. Customer adds products to cart 2. Review cart and apply coupons/discounts 3. Proceed to checkout with delivery information 4. Select payment method and delivery options 5. Confirm and create order 6. Process payment (if applicable) 7. Generate order confirmation and invoice 8. Update order status through fulfillment process 9. Handle delivery and completion 10. Post-delivery feedback collection

Order Status Lifecycle: - **Pending:** Order placed, awaiting payment confirmation - **Confirmed:** Payment verified, ready for processing - **Processing:** Order being prepared for shipment - **Packed:** Order packed and ready for pickup - **Shipped:** Order dispatched and in transit - **Delivered:** Order successfully delivered to customer - **Cancelled:** Order cancelled by customer or system - **Returned:** Order returned by customer

Business Rules: - Orders can be cancelled within 2 hours of placement (COD orders) - Online payment orders require payment verification before processing - Automatic order cancellation after 24 hours without payment - Order modification allowed only in Pending status - Minimum order value may apply for certain delivery areas

3.3 Payment System

Business Objective: Provide secure, convenient, and diverse payment options

Supported Payment Methods: - **Cash on Delivery (COD):** Traditional payment upon delivery - **VietQR:** QR code-based bank transfer - **Direct Bank Transfer:** Manual bank transfer with reference number - **Digital Wallets:** Support for popular e-wallets (future) - **Credit/Debit Cards:** Secure card payment processing (future)

Payment Processing Rules: - COD orders can be modified/cancelled within 2 hours - Online payment orders require immediate payment verification - Payment timeout: 15 minutes for online payments - Refunds processed through original payment method within 7-14 business days - Transaction fees clearly displayed before payment confirmation - Secure payment data handling with PCI DSS compliance

3.4 Customer Management

Business Objective: Build strong customer relationships through personalized experiences

Customer Registration & Authentication: - Email/Password registration with email verification - Google OAuth integration for social login - Password reset via email verification - Two-factor authentication (optional) - Account lockout after multiple failed login attempts

Customer Profile Features: - Personal information management (name, phone, email, birthday) - Multiple delivery address management with default settings - Order history with detailed tracking and reordering capability - Wish-list for saving favorite products - Persistent shopping cart across sessions - Notification preferences (email, SMS) - Customer service chat history

Customer Engagement: - Loyalty points system based on purchase value - Birthday and anniversary special offers - Purchase milestone rewards - Referral program with incentives - Product recommendation based on purchase history

3.5 Promotion & Marketing System

Business Objective: Drive sales through targeted promotions and marketing campaigns

Promotion Types: - **Percentage Discount:** 10%, 20%, 50% off - **Fixed Amount Discount:** \$5, \$10, \$20 off - **Free Shipping:** Waive delivery charges - **Buy X Get Y:** Bundle promotions - **Volume Discounts:** Bulk purchase incentives - **First-time Customer:** Welcome discounts - **Seasonal Promotions:** Holiday and special event sales

Promotion Application Rules: - Minimum order value requirements - Valid date ranges with automatic activation/deactivation - Limited coupon quantity with usage tracking - Customer segment targeting (new, returning, VIP) - Product category or specific product limitations - Maximum discount amount caps - One-time or multiple-use coupons

4. NON-FUNCTIONAL REQUIREMENTS

4.1 Performance Requirements

- **Page Load Time:** < 3 seconds for 95% of requests
- **Search Response Time:** < 1 second for product searches
- **Concurrent Users:** Support minimum 500 simultaneous active users
- **Database Response Time:** < 200ms for 90% of queries
- **Image Loading:** Optimized images load within 2 seconds
- **API Response Time:** < 500ms for 95% of API calls
- **System Uptime:** 99.5% availability (maximum 3.6 hours downtime per month)

4.2 Security Requirements

- **Data Encryption:** AES-256 encryption for sensitive data at rest
- **Transmission Security:** Mandatory HTTPS (TLS 1.3) for all communications
- **Authentication:** JWT tokens with secure session management
- **Authorization:** Role-based access control (RBAC)
- **Rate Limiting:** API throttling to prevent abuse and DDoS attacks
- **Data Backup:** Automated daily backups with 30-day retention
- **Password Policy:** Strong password requirements with complexity rules
- **Security Headers:** Implementation of OWASP recommended security headers
- **Vulnerability Scanning:** Regular security assessments and penetration testing

4.3 Scalability Requirements

- **Horizontal Scaling:** Architecture supports adding more server instances
- **Database Scaling:** MongoDB replica sets and sharding capabilities
- **CDN Integration:** Content delivery network for static assets and images
- **Microservices Ready:** Modular design allowing service separation
- **Load Balancing:** Support for load balancer integration
- **Caching Strategy:** Redis implementation for session and data caching
- **API Versioning:** RESTful API with versioning for backward compatibility

4.4 User Experience Requirements

- **Responsive Design:** Mobile-first approach supporting all device sizes
- **Browser Compatibility:** Support for Chrome, Firefox, Safari, Edge (latest 2 versions)
- **Accessibility:** WCAG 2.1 AA compliance for inclusive design
- **Internationalization:** Multi-language support structure (Vietnamese, English)
- **Progressive Web App:** PWA features for mobile-like experience
- **Offline Capability:** Basic offline browsing for cached content
- **Search Functionality:** Advanced search with filters, sorting, and auto-complete

5. INTEGRATION REQUIREMENTS

5.1 External Service Integrations

- **Email Service:** Gmail SMTP for transactional emails (order confirmations, notifications)
- **SMS Gateway:** Integration with local SMS providers for order updates

- **Google Analytics:** Comprehensive user behavior and conversion tracking
- **Google OAuth2:** Social login integration for user convenience
- **Payment Gateways:** Integration with local payment processors (VietQR, bank APIs)
- **Logistics Partners:** API integration with delivery service providers
- **Social Media:** Facebook, Instagram integration for marketing

5.2 API Requirements

- **RESTful API:** Standard REST endpoints for all system operations
- **Mobile App Ready:** API structure suitable for future mobile applications
- **Webhook Support:** Real-time notifications for third-party integrations
- **Data Export APIs:** Programmatic access to business data and reports
- **Partner APIs:** B2B integration capabilities for suppliers and vendors
- **Rate Limiting:** API usage controls and monitoring
- **Documentation:** Comprehensive API documentation with examples

5.3 Future Integration Readiness

- **ERP System:** Hooks for enterprise resource planning integration
- **CRM System:** Customer relationship management system connectivity
- **Inventory Management:** Third-party inventory system integration
- **Accounting Software:** Financial system integration capabilities
- **Marketing Automation:** Email marketing and campaign management tools

6. DATA AND REPORTING REQUIREMENTS

6.1 Business Intelligence Reports

Revenue Analytics: - Daily, weekly, monthly, and yearly revenue reports - Revenue comparison with previous periods - Revenue by product category and individual products - Customer segment revenue analysis - Payment method performance analysis - Geographic revenue distribution

Product Performance Reports: - Best-selling products with quantities and revenue - Slow-moving inventory identification - Product profitability analysis - Category performance comparison - Seasonal trend analysis - Product review and rating summaries

Customer Analytics: - New customer acquisition metrics - Customer lifetime value (CLV) calculation - Customer retention and churn analysis - Purchase frequency and patterns - Customer segment behavior analysis - Geographic customer distribution

Operational Reports: - Order processing time analysis - Delivery performance metrics - Return and refund analysis - Inventory turnover rates - Customer service response times - System performance and uptime reports

6.2 Real-time Dashboard Analytics

- **Executive Dashboard:** High-level KPIs and trends
- **Sales Dashboard:** Real-time sales metrics and goals
- **Inventory Dashboard:** Stock levels and alerts
- **Customer Dashboard:** Active users and engagement metrics
- **Performance Dashboard:** System health and performance metrics
- **Marketing Dashboard:** Campaign performance and ROI

6.3 Data Export and Import Capabilities

- **Export Formats:** Excel, CSV, PDF, JSON
 - **Import Functions:** Bulk product upload, customer import, order import
 - **Scheduled Reports:** Automated report generation and email delivery
 - **Data Backup:** Complete database backup and restore functionality
 - **Data Migration:** Tools for data transfer and system migration
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7. COMPLIANCE AND LEGAL REQUIREMENTS

7.1 E-commerce Legal Compliance

- **Vietnam E-commerce Law:** Full compliance with local e-commerce regulations
- **Business Registration:** Display complete business information and licenses
- **Tax Compliance:** VAT calculation and reporting as per local regulations
- **Consumer Protection:** Clear return policies and customer rights information
- **Terms of Service:** Comprehensive terms and conditions for platform usage
- **Privacy Policy:** Detailed privacy policy explaining data collection and usage

7.2 Data Protection and Privacy

- **Personal Data Protection:** Compliance with Vietnam's personal data protection laws
- **GDPR Readiness:** European data protection regulation compliance for international customers
- **Data Subject Rights:** Allow users to access, modify, and delete personal data

- **Consent Management:** Clear consent mechanisms for data collection and processing
- **Data Retention:** Defined data retention periods and automatic deletion policies
- **Third-party Data Sharing:** Transparent policies for data sharing with partners

7.3 Financial and Payment Compliance

- **PCI DSS:** Payment card industry data security standards compliance
 - **Anti-Money Laundering:** Transaction monitoring and reporting capabilities
 - **Financial Reporting:** Accurate financial record keeping and audit trails
 - **Currency Regulations:** Compliance with local currency and exchange regulations
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8. IMPLEMENTATION ROADMAP

8.1 Development Phases

Phase 1: Core E-commerce Platform (Completed - 3 months) - Basic product catalog and management - Shopping cart and checkout process - User registration and authentication - Order management system - Basic payment processing (COD, VietQR) - Admin dashboard for basic operations - Responsive web design

Phase 2: Enhanced Features (Planned - 2 months) - Advanced search and filtering - Product reviews and ratings system - Comprehensive reporting and analytics - Email marketing integration - Inventory management improvements - Customer service chat system - SEO optimization

Phase 3: Advanced Marketing & Analytics (Planned - 3 months) - Marketing automation tools - Advanced customer segmentation - AI-powered product recommendations - Loyalty program implementation - Mobile application API - Multi-vendor marketplace capability - Advanced reporting and business intelligence

Phase 4: Enterprise Features (Future - 4 months) - B2B functionality and wholesale pricing - ERP system integration - Advanced inventory management - Multi-location support - Custom workflow automation - White-label solution capability

8.2 Implementation Timeline

- **Phase 1:** Months 1-3 (Completed)
- **Phase 2:** Months 4-5
- **Phase 3:** Months 6-8

- **Phase 4:** Months 9-12

8.3 Resource Requirements

- **Development Team:** 4-6 developers (Frontend, Backend, Full-stack)
 - **Design Team:** 2 UI/UX designers
 - **Quality Assurance:** 2 QA engineers
 - **DevOps Engineer:** 1 infrastructure specialist
 - **Project Manager:** 1 experienced PM
 - **Business Analyst:** 1 requirements specialist
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9. ROI AND SUCCESS METRICS

9.1 Key Performance Indicators (KPIs)

Financial Metrics: - **Online Revenue Growth:** Target 50% increase within 6 months - **Average Order Value (AOV):** Target 20% increase from baseline - **Customer Acquisition Cost (CAC):** Maintain or reduce by 15% - **Customer Lifetime Value (CLV):** Increase by 30% within 12 months - **Return on Investment (ROI):** Achieve 300% ROI within 18 months

Operational Metrics: - **Conversion Rate:** Achieve and maintain 2-3% conversion rate - **Cart Abandonment Rate:** Reduce to below 70% - **Order Fulfillment Time:** Average processing time < 24 hours - **Customer Retention Rate:** Achieve 60% repeat purchase rate - **System Uptime:** Maintain 99.5% availability

Customer Experience Metrics: - **Customer Satisfaction Score (CSAT):** Maintain 4.0/5.0 rating - **Net Promoter Score (NPS):** Achieve score 50 - **Customer Support Response Time:** < 2 hours during business hours - **Page Load Speed:** Maintain < 3 seconds average load time

9.2 Business Impact Measurements

Revenue Impact: - Monthly recurring revenue growth - Market share increase in target segments - Cross-selling and up-selling effectiveness - Seasonal revenue optimization

Cost Savings: - Reduction in manual order processing - Decreased customer service workload - Inventory optimization and waste reduction - Marketing efficiency improvements

Market Position: - Brand recognition and awareness metrics - Competitive positioning analysis - Customer base expansion - Geographic market penetration

10. RISK MANAGEMENT

10.1 Technical Risks Assessment

Risk Category	Risk Description	Probability	Impact	Risk Score	Mitigation Strategy
System Performance	High traffic causing system slowdown	Medium	High	8	Load testing, auto-scaling, CDN implementation
Security Breach	Unauthorized access to customer data	Low	Critical	9	Security audits, encryption, monitoring
Database Corruption	Data loss or corruption	Low	Critical	9	Daily backups, replica sets, disaster recovery
Third-party Failures	Payment gateway or shipping API failures	Medium	Medium	6	Multiple provider options, failover mechanisms
Code Quality Issues	Bugs affecting user experience	Medium	Medium	6	Code reviews, automated testing, QA processes

10.2 Business Risks Assessment

Risk Category	Risk Description	Probability	Impact	Risk Score	Mitigation Strategy
Market Competition	Competitors launching similar platforms	High	Medium	7	Continuous innovation, unique value propositions
User Adoption	Slow customer adoption of new platform	Medium	High	8	User training, marketing campaigns, incentives

Risk Category	Risk Description	Probability	Impact	Risk Score	Mitigation Strategy
Regulatory Changes	New e-commerce regulations affecting operations	Low	High	7	Legal consultation, compliance monitoring
Economic Downturn	Reduced consumer spending	Medium	High	8	Flexible pricing, cost optimization, market diversification
Supplier Issues	Product supply chain disruptions	Medium	Medium	6	Multiple supplier relationships, inventory buffers

10.3 Risk Mitigation Strategies

Technical Risk Mitigation: - Implement comprehensive monitoring and alerting systems - Establish disaster recovery and business continuity plans - Conduct regular security assessments and penetration testing - Maintain updated documentation and knowledge bases - Create automated backup and recovery procedures

Business Risk Mitigation: - Develop contingency plans for various market scenarios - Establish strong supplier and partner relationships - Create flexible pricing and promotion strategies - Implement customer feedback loops and rapid response mechanisms - Maintain adequate financial reserves for unexpected challenges

Operational Risk Mitigation: - Cross-train team members on critical system components - Establish clear escalation procedures for issues - Implement change management processes - Create comprehensive testing environments - Maintain vendor relationships and support contracts

11. QUALITY ASSURANCE AND TESTING

11.1 Testing Strategy

Testing Phases: - **Unit Testing:** Individual component testing with 80%+ code coverage - **Integration Testing:** API and service integration verification - **System Testing:** End-to-end functionality validation - **Performance**

Testing: Load and stress testing under various conditions - **Security Testing:** Vulnerability assessment and penetration testing - **User Acceptance Testing:** Business user validation of requirements - **Compatibility Testing:** Cross-browser and device testing

Testing Environments: - **Development:** Developer testing and initial validation - **Staging:** Pre-production testing environment - **Production:** Live system with monitoring and rollback capabilities

11.2 Quality Standards

- **Code Quality:** Adherence to coding standards and best practices
 - **Documentation:** Comprehensive technical and user documentation
 - **Performance Standards:** Meeting all specified performance requirements
 - **Security Standards:** Compliance with security frameworks and standards
 - **Accessibility Standards:** WCAG 2.1 AA compliance verification
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12. TRAINING AND SUPPORT

12.1 User Training Requirements

Administrator Training: - System configuration and management - User account and permission management - Product and inventory management - Order processing and fulfillment - Reporting and analytics usage - Security and backup procedures

End User Training: - Customer account management - Product browsing and searching - Shopping cart and checkout process - Order tracking and management - Customer service access and usage

12.2 Support Strategy

Technical Support: - 24/7 system monitoring and alerting - Business hours technical support hotline - Online knowledge base and documentation - Remote assistance capabilities - Regular system health checks

Business Support: - User training sessions and workshops - Best practices consultation - Business process optimization advice - Marketing and promotional guidance - Performance review and optimization recommendations

13. APPROVAL AND ACCEPTANCE CRITERIA

13.1 Stakeholder Approval Matrix

Stakeholder Role	Approval Responsibility	Required Deliverables
Business Owner	Final business requirements approval	BRS sign-off, budget approval
Technical Lead	Technical feasibility and architecture	Technical design approval
Product Manager	Feature requirements and user experience	Feature specification approval
Quality Assurance	Testing strategy and acceptance criteria	Test plan and criteria approval
Legal Counsel	Compliance and legal requirements	Legal compliance verification

13.2 Acceptance Criteria Checklist

Functional Acceptance: - ☐ All core e-commerce functions operate correctly
- ☐ Product management system fully functional - ☐ Order processing workflow complete and tested - ☐ Payment systems integrated and working - ☐ User authentication and authorization working - ☐ Administrative dashboard fully operational

Non-Functional Acceptance: - ☐ Performance requirements met under load testing - ☐ Security audit completed and vulnerabilities addressed - ☐ Accessibility standards compliance verified - ☐ Cross-browser compatibility confirmed - ☐ Mobile responsiveness validated - ☐ Data backup and recovery procedures tested

Documentation Acceptance: - ☐ User manuals and training materials complete - ☐ Technical documentation comprehensive and current - ☐ API documentation complete with examples - ☐ Deployment and maintenance procedures documented - ☐ Security and compliance documentation finalized

13.3 Go-Live Criteria

- All acceptance criteria met and verified
- User acceptance testing completed successfully
- Performance benchmarks achieved
- Security assessment passed
- Backup and disaster recovery plans tested
- Support team trained and ready
- Marketing and launch materials prepared

14. DOCUMENT CONTROL AND REVISION HISTORY

14.1 Document Information

- **Document Name:** Business Requirement Specification - Han Foods E-commerce Platform
- **Document Version:** 1.0
- **Document Owner:** Phạm Nam Khánh
- **Review Cycle:** Quarterly or as business requirements change
- **Next Review Date:** September 11, 2025

14.2 Revision History

Version	Date	Author	Description of Changes
1.0	June 11, 2025	Phạm Nam Khánh	Initial BRS document creation

14.3 Distribution List

- Business Stakeholders
- Development Team
- Quality Assurance Team
- Project Management Office
- Legal and Compliance Team

Note: This Business Requirement Specification document serves as the foundation for the Han Foods E-commerce Platform development. It should be treated as a living document that evolves with changing business needs and market conditions. All changes must be approved by the designated stakeholders and properly documented.

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