Beijing-Dublin International College

BDIC3026J Software Proj Management

Project Chapter: Starbucks Sustainable Coffee Development Platform

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Date

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1 Background

Starbucks has initiated this project to improve transparency and sustainability in its coffee supply chain. As a global leader in Coffee, Starbucks has long championed ethical sourcing, rights of Coffee growers and climate resilience. Key initiatives include its C.A.F.E. Practices verification and a commitment to 100% ethically sourced coffee. However, keeping track of coffee beans from millions of smallholder farmers is still a significant challenge. The supply chain's multilayered structure - growers, processors and distributors across 50+ countries. It difficult to ensure that environmental and social standards are consistently met.

"To inspire and nurture the human spirit — one person, one cup, and one neighborhood at a time"(Starbucks Mission). Recent reports show problems in coffee farming: illegal tree cutting, poor working conditions, unfair profit sharing... These challenges have led to criticism that Starbucks' sustainability efforts are not genuine ("greenwashing"). To regain trust, Starbucks needs clear, tech-based proof of its actions.

This traceability project empowers Starbucks to digitally map its coffee bean supply chain, enhancing transparency for consumers and reinforcing the brand's commitment to sustainable sourcing practices

2 Goals

To establish a digital platform that supports Starbucks' sustainable coffee vision by linking farmers, consumers, and supply chain stakeholders through a unified and transparent system, supporting the UN Sustainable Development Goals(SDGs). To strengthen corporate accountability and consumer trust by showcasing Starbucks' sustainability efforts across the coffee value chain, contributing to SDG-aligned practices in ethical sourcing and production.

This platform aims to empower coffee farmers by providing access to technical training, funding opportunities, and promotional tools, ultimately improving their productivity, market visibility, and long-term sustainability. By offering features such as online learning resources, application portals for financial aid, and personalized farm pages, the system ensures that farmers are not just suppliers but active participants in the sustainable coffee value chain.

For customers, the platform serves as an interactive educational and purchasing environment. It allows them to explore Starbucks Reserve Partner Farms around the world, understand their unique stories, climate practices, and ethical certifications, and make informed purchases of coffee beans that align with their values of responsible consumption.

The platform also enhances Starbucks' internal operations by streamlining the management of farmer partnerships, sustainability programs, and data analytics. Administrators can efficiently review funding applications, deliver technical content, and monitor project impact through a centralized dashboard.

Overall, the platform is designed to be globally accessible, multilingual, and inclusive of both technologically advanced and remote regions. It contributes to Starbucks' broader mission of advancing equity, transparency, and environmental stewardship across its coffee supply chain.

3 Scope

3.1 End of Use

The website offers different functional permissions for different roles.

- **Visitors** can browse the promotional pages on the site, including introductions to coffee farms and coffee origins, information about Starbucks' promotion of sustainable agriculture and fair trade, and user loginand registration pages.
- **Farmers** can edit information about their farms, post promotional articles, attend Starbucks technical trainings, apply for financial support, apply to be selected as a Starbucks Reserver Farm, watch e-learning videos, and process orders for customer purchases.
- **Starbucks administrators** manage core platform operations, including uploading and updating financial aid programs, technical assistance initiatives, and e-learning resources; reviewing and approving applications from farmers seeking funding, training, or partnerships with Starbucks-certified.
- **Customers** can purchase coffee beans form Starbucks Reserve Partner Farms and track their orders. Through an interactive global coffee map, users can explore these partner farms, click on specific regions, and discover their unique flavor profiles, climate stories, and ethical farming innovations.

3.2 Phase of Work

- System Design & Planning: Define the overall system architecture, assign user roles, and outline core functionalities and development priorities.
- Platform Development: Implement the main features, covering both frontend and backend development.
- Testing & Optimization: Conduct functional, security, and usability testing to identify and fix issues, ensuring system stability and a smooth user experience.
- Deployment & Launch: Conduct functional, security, and usability testing to identify and fix issues, ensuring system stability and a smooth user experience.

3.3 Exclusions

No Development of a mobile application (the platform will be web-based);
No Comprehensive logistics management, such as warehousing and shipping coordination;
No Direct financial transactions outside the platform (e.g., handling third-party payment disputes).

4 Key Stakeholders

Role	Name(s)
Client	Starbucks, Coffee farmers
Sponsor	Starbucks
Project Manager	Yunhan Gao
Project Team Members	Bohan Zhang, Le Liu, Sicheng Yi, Ziheng Wang

Table 1: Key Stakeholders in the Project

5 Project Milestones

5.1 Milestone 1: Requirements Analysis & Design Completed

Date	Week 4, March
Deliverables	• Finalized Software Requirements Specification • System Architecture Document (including ER diagrams) • API Documentation
Acceptance Criteria	• All requirements approved and signed off by Starbucks • Design documents ratified by technical review board
Dependencies	Project kick-off meeting completed

5.2 Milestone 2: Core Development Completed

Date	Week 4, April
Deliverables	• Integrated frontend/backend modules (Auth, Supply Chain, Fair Trade Certification) • Unit test report (Coverage $\geqslant$ 80%)
Acceptance Criteria	• Passed smoke testing • 100% completion of critical path tasks (Gantt chart verified)
Dependencies	No major requirement changes

5.3 Milestone 3: System Testing Passed

Date	Week 4, May
Deliverables	• System test report (including performance metrics) • Defect resolution log • Deployment manual (with rollback plan)
Acceptance Criteria	• All P1 defects resolved • Response time $\leqslant$ 2s (TPS $\geqslant$ 50)
Dependencies	Test environment ready

5.4 Milestone 4: Project Delivery & Closure

Date	Week 4, June
Deliverables	• Production deployment report • User training manuals • Project retrospective report
Acceptance Criteria	• Client sign-off • Code and documentation archived
Dependencies	Successful demo presentation

6 Project Budget

6.1 Role-Based Cost Breakdown

Role	Hourly Rate	Hours/Month	Monthly Cost	Responsibilities
Project Leader	\$50	160	\$8,000	Planning, Stakeholder Mgmt
Backend Engineer (x2)	\$40	320	\$12,800	API, Database, Integration
Frontend Engineer	\$35	160	\$5,600	UI/UX Implementation
Test Engineer	\$30	160	\$4,800	Test Cases, Automation

Table 2: Monthly Personnel Costs by Role

6.2 Milestone-Based Allocation

Cost Category	M1	M2	M3	M4	Total
Personnel	$24,200	$32,400	$24,200	$14,600	$95,400
Tools (Licenses)	$2,500	$1,000	$500	$200	$4,200
Cloud Services	$800	$1,500	$2,000	$500	$4,800
Testing Resources	$0	$1,000	$3,000	$1,000	$5,000
Contingency (10%)	$2,750	$3,590	$2,970	$1,630	$10,940
Subtotal	$30,250	$39,490	$32,670	$17,930	$120,340

Table 3: Budget Distribution Following SPM Phase-Gate Model

7 Constraints, Assumptions, Risks and Dependencies

Constraints

- **Time Pressure**: 16-month deadline to finish the project.
- **Technical Complexity**: Blockchain integration, AI-driven logistics, and multi-platform compatibility may require specialized expertise and extended development time.
- **Team Limitation**: The technical team consists of 5 software engineering undergraduates.
- **Regulatory Compliance**: Evolving sustainability certifications (e.g., Fair Trade, Organic) may necessitate platform adjustments.

Assumptions

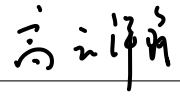
- **Technical Expertise**: Development teams possess web, Java, MySQL, and Redis skills to implement complex integrations.
- **Regulatory Stability**: Data privacy laws (e.g., GDPR) in target countries will not change significantly during the project timeline.
- **Stakeholder Cooperation**: Farmer cooperatives and NGOs will actively participate in pilot testing and provide actionable feedback.
- **Network Availability**: All platform users (including farmers in remote regions) have reliable internet access.

Risks and Dependencies

- **Technical Risks**: Integration issues between front-end and back-end may arise.
- **Schedule Risks**: Frequent requirement changes may cause delays.
- **Communication Risks**: Miscommunication among team members may lead to task misunderstandings.

- **Low Farmer Adoption**: Poor uptake of digital tools by farmers reduces platform value.
- **Budget Overruns**: High costs for blockchain/IoT development exceed IT allocations.
- **Regulatory Changes**: New data laws (e.g., stricter GDPR enforcement) require costly rework.

Approval Signatures

		
Project Client	Project Sponsor	Project Manager