

Report - Gamified Digital Commerce Platform

1. Company Information

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2. Recommended Team & Required Skill Sets

Recommended Team Size: 8-10 students (optimal for system complexity and parallel development tracks)

Required Skill Sets:

- Frontend Development (Nextjs, responsive design)
- Backend Development (Nestjs, API design, database management)
- Data Analytics and Visualization
- Real-time Systems Development
- Cybersecurity Implementation
- User Experience Design
- Quality Assurance and Testing

3. Project Title & Acronym

- Project Title: Gamified Digital Commerce Platform
- Acronym (short form for GitHub team project setup): GBCP (Glam Brandi Commerce Platform)

4. Project Overview & Problem Statement

This capstone project involves developing an innovative gamified digital commerce platform that revolutionizes how consumers discover and access discounted Products, Services, Activities, and Attractions (PSAAs) in the Las Vegas market. The system will demonstrate that discounting with gamification is significantly more effective than traditional discounting methods by leveraging real-time consumer demand analytics and personalized targeting.

Problem Statement: Current discount systems in the hospitality and entertainment sectors lack personalization and fail to optimize consumer engagement. Traditional discount offerings do not consider real-time consumer demand patterns, resulting in suboptimal conversion rates and customer satisfaction. There is a critical need for an intelligent system

that can analyze consumer preferences dynamically and deliver targeted, gamified discount experiences.

Target Users & YouTube Video Overview: Casino venues, Las Vegas attractions, tourists, and local consumers seeking entertainment and hospitality services. Video Overview (8Mt.): <https://www.youtube.com/watch?v=rpYCsmhbdME>

5. Solution Approach & Core System Components

The platform will create a comprehensive ecosystem serving two primary market segments:

- **Internal Casino Venues:** Gaming establishments, restaurants, spas, and retail shops within casino properties
- **External Las Vegas Attractions:** Shopping districts, entertainment venues, and tourist destinations throughout the Las Vegas metropolitan area

Key System Components:

1. **Real-Time Data Processing Engine** - Consumer-demand scraping, histogram-based demand analysis, dynamic content generation
2. **Personalization and Gamification Framework** - Consumer behavior analysis, dynamic discount calculation, gamified engagement mechanisms
3. **Multi-Tenant Customization Platform** - Customized interfaces for different seller categories with scalable branding capabilities
4. **Vacation Planning Integration** - Intelligent 4-day/3-night itinerary generation based on family composition, budget, and interests

6. Technical Considerations

Proposed Tech Stack:

- Frontend: Nextjs with responsive design
- Backend: Nestjs, RESTful APIs, real-time processing capabilities
- Database: Supabase with scalable database management system
- Cloud Services: Vercel with scalable hosting and data processing
- Security: JWT, Encryption protocols, secure authentication systems

Anticipated Technical Constraints:

- Real-time data processing requirements
- Multi-tenant architecture complexity
- Integration with existing point-of-sale systems
- Scalability for Las Vegas market volume

Alternative Design Approaches:

- Microservices vs. monolithic architecture
- Cloud-native vs. hybrid deployment
- Real-time vs. batch processing for analytics

Testing and Validation Methodology:

- CI/CD implementation
- A/B testing framework comparing gamified vs. traditional discount systems
- Dual-perspective testing (seller and consumer)
- Cross-platform compatibility testing
- Security penetration testing

7. Innovation & Competitive Advantage

Primary Innovation Areas:

1. **Real-Time Demand Analytics:** Revolutionary approach to understanding and responding to consumer demand patterns instantaneously
2. **Adaptive Gamification:** Dynamic adjustment of gamification elements based on individual consumer behavior and preferences
3. **Multi-Venue Integration:** Seamless experience across diverse Las Vegas entertainment and hospitality venues
4. **Intelligent Vacation Planning:** AI-driven itinerary creation that optimizes both consumer satisfaction and merchant revenue

Competitive Advantages:

- Superior personalization through real-time data processing
- Enhanced consumer engagement through gamification
- Comprehensive ecosystem approach covering entire Las Vegas experience
- Data-driven optimization for both consumers and merchants

8. Proposed Implementation Timeline & Deliverables

Phase 1: Foundation Development (Weeks 1-4)

- System architecture design and database schema
- Core backend API development
- Basic security framework implementation
- Initial frontend wireframes and design system

Phase 2: Core Functionality (Weeks 5-8)

- Real-time scraping and data processing implementation
- Gamification engine development

- Multi-tenant customization framework
- Basic testing and quality assurance

Phase 3: Advanced Features (Weeks 9-12)

- Vacation planning system integration
- Advanced analytics and reporting
- Comprehensive security implementation
- Extensive testing and optimization

Phase 4: Deployment and Documentation (Weeks 13-16)

- Production deployment preparation
- User training materials and documentation
- Final testing and bug resolution
- Project presentation and knowledge transfer

9. Deployment & Support Expectations

Deployment Requirements:

- Cloud-based hosting environment
- Scalable infrastructure for Las Vegas market
- Integration capabilities with existing merchant systems

Support Expectations:

- Comprehensive technical documentation
- Casino and merchant training program
- User experience training for merchant dashboard systems
- Consumer engagement strategy workshops
- Technical integration support and documentation

10. Confidentiality & Intellectual Property Considerations

NDA Requirements: All participating students must execute comprehensive non-disclosure agreements covering:

- Proprietary technology and methodologies
- Business strategies and market intelligence
- Consumer data and analytics insights
- System architecture and implementation details

Code Access Restrictions:

- Students will not have access to proprietary codebase after semester completion

- Collaboration limited to testing and functionality validation
- All code disclosure restricted to final academic team report
- External discussions prohibited until project completion

Academic Compliance: All confidentiality measures will comply with UNLV academic requirements while protecting proprietary business information.

11. Proposed Success Metrics

Quantitative Success Indicators:

- Improved conversion rates compared to traditional discount systems (target: 25%+ improvement)
- Enhanced consumer engagement metrics and session duration
- Increased merchant revenue and customer acquisition
- System performance benchmarks (response time <2 seconds, 99.9% reliability)

Qualitative Success Indicators:

- User satisfaction scores from both consumers and merchants (target: 4.5/5.0)
- Ease of integration and deployment feedback
- Innovation and creativity in solution approach
- Professional documentation and presentation quality

12. Mentorship & Communication Plan

Meeting Schedule: twice per week check-ins via Zoom

Mentorship Support:

- Technical guidance from company's SW lead engineer
- Domain expertise in hospitality and gaming industry
- Real-time feedback on development progress
- Coordination and evaluation of work effort

Tools and Resources Provided:

- Access to existing discount data for baseline analysis
- Industry best practices documentation
- Integration APIs and technical specifications
- One-hour project overview presentation for initial understanding

Communication Tools:

- Zoom meetings for regular check-ins
- Email coordination with multiple contact points

- GitHub integration for code collaboration (private repository due to NDA requirements)

13. Additional Notes (Optional)

- **Work Commitment:** Students are expected to dedicate 10 hours per week to this project
- **GitHub Setup:** Each team will have a private GitHub repository within the class organization
- **Presentation Opportunity:** Students will be prepared for UNLV-wide presentation and competition with emphasis on innovation, commercialization, and sustainability
- **Industry Relevance:** Project addresses real-world challenges in the rapidly evolving digital commerce landscape
- **Deliverables Alignment:** Project structure aligns with course requirements including Design Portfolio phases and minimum 6 meaningful pull requests with code reviews
- **Initial Class Date:** August 25, 2025 - project details have been shared through class announcements