**Final Project: Digital Transformation Strategy for a Mid-sized Retail Chain**

Instructions: Use this template to draft the project deliverables. You may modify the template to include more information.

**Step I: Current system assessment**

1. **System architecture overview**

The retailer's current technology infrastructure is fragmented and heavily reliant on legacy systems:

* **POS System**: Windows CE-based terminals with outdated card reader drivers. Transactions take more than 5 seconds, causing slow checkouts.
* **E-commerce**: Magento 1.9 on a standalone MySQL database. Poor performance metrics include cumulative layout shifts over 0.25 and slow page loads on mobile networks.
* **Data Storage**: On-premise SQL databases per store. Nightly batch updates result in inconsistent and delayed data synchronization with headquarters.
* **Inventory Management**: Manually maintained through Excel spreadsheets. This leads to inefficient restocking and frequent stockouts.

1. **Pain-points matrix**

|  |  |  |
| --- | --- | --- |
| **Pain point** | **Impact** | **Root cause** |
| Checkout delays | Reduced conversion rates | Slow POS processing on Windows CE |
| Restocking inefficiency | Stockouts and delayed orders | Manual inventory via spreadsheets |
| Fragmented customer data | Ineffective marketing, poor personalization | Disconnected data sources across e-commerce and stores |

**3. Key inefficiencies**

The architecture's dependence on manual and legacy systems hinders agility and scalability. Key inefficiencies include:

* Manual data entry and batch updates create operational bottlenecks.
* Lack of integration across e-commerce and store systems causes data silos.
* Real-time visibility into inventory is absent, limiting omnichannel capabilities.
* System sluggishness directly affects user experience and sales.

**Step II: Stakeholder requirements**

1. **Stakeholder identification**

|  |  |
| --- | --- |
| **Stakeholder** | **Interests** |
| Customers | Fast purchases, unified cart, real-time stock visibility |
| Store staff | Reliable, fast POS; inventory lookup across channels |
| Management | Unified customer view; real-time analytics; profitability insights |
| IT Team | Scalable, secure, API-first infrastructure; GDPR compliance |

**2. Requirements**

**Functional requirements:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Requirement** | **Justification** |
| FR01 | Process in-store sales in ≤5s | Addresses checkout delays for customers and staff |
| FR02 | Real-time inventory decrement | Prevents stockouts, supports omnichannel operations |
| FR03 | 360° customer profile via API | Enables personalized marketing and supports management analytics |
| FR04 | Support Buy Online Pickup In-Store (BOPIS) | Meets modern customer expectations and expands sales channels |

**Non-functional requirements:**

|  |  |  |
| --- | --- | --- |
| **ID** | **Requirement** | **Justification** |
| NFR01 | System availability ≥ 99.9% | Ensures reliable operations for all stakeholders |
| NFR02 |  |  |
| NFR03 |  |  |
| NFR04 |  |  |

**Step III: Alternative solution evaluation**

1. **Comparative analysis**

Compare three proposed solutions based on the evaluation criteria: Functional fit (40%), scalability (20%), total cost of ownership (20%), implementation risk (10%), vendor viability (10%).

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Criteria | Weight | Salesforce Commerce Cloud + POS | Shopify Plus + Square POS | Custom Microservices |
| Functional fit | 40% |  |  |  |
| Scalability | 20% |  |  |  |
| Cost (Year 1) | 20% |  |  |  |
| Implementation risk | 10% |  |  |  |
| Vendor viability | 10% |  |  |  |
| Total score | 100% | [Calculate weighted score] | [Calculate weighted score] | [Calculate weighted score] |

1. **Recommended solution**

[Enter the recommended solution and justify your choice with reference to stakeholder requirements and business goals.]

1. **Trade-offs**

Discuss trade-offs (For example, cost versus scalability, speed versus customization).

**Step IV: Feasibility and risk analysis**

1. **Feasibility analysis**  
   **Technical feasibility:**  
   [Describe the technical feasibility]

**Economic feasibility:**  
[Discuss the economic feasibility]

**Operational feasibility:**  
[Discuss the operational feasibility]

1. **Risk analysis**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Risk** | **Probability** | **Impact** | **Risk score** | **Mitigation** |
| Data migration loss | 3 | 4 | 12 | Two dry runs, checksum validation |
|  |  |  |  |  |

1. **Mitigation effectiveness**

[Explain how mitigations ensure project success within the nine-month timeline.]

**Step V: Visualizations and recommendations**

1. **Results and visualizations**

[Describe how the proposed solution addresses pain points]

**Visual artefact**

[Create at least one visual artifact (for example, process flow, ERD, UML diagram).]

1. **Implementation roadmap**

Key milestones for implementation within nine months

|  |  |  |
| --- | --- | --- |
| **Milestone** | **Timeline** | **Description** |
|  |  |  |
|  |  |  |
|  |  |  |