

University of Guadalajara

University Center of the Valleys



Software Configuration Management

Local system for sales in a store

Teacher: Omar Ali Zatarain Duran

Author: Elizabeth Baños Arias

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1. Understanding the Request

The project involves expanding the current sales system, which currently operates only locally in the store, to an online model. This requires implementing an e-commerce website, integrating digital payments, and ensuring real-time inventory synchronization between the physical store and the web platform.

2. Affected Modules

1. Cashier

- Reason: Currently, the cashier manages local sales with physical payment. The website must process online payments and generate digital receipts.
- Impact:
 - Integration with electronic payment gateways (cards, transfers, PayPal, etc.).
 - Generation of electronic receipts and automatic registration in the database.

2. Vendor

- Reason: Vendor supply products to the store. Managing their information ensures timely replenishment and accurate inventory.
- Impact:
 - Database integration to track deliveries and product availability.
 - Automatic updating of stock levels upon receipt of new products.

3. Products

- Reason: The product catalog must be available in both the physical store and the website.
- Impact:
 - An API or synchronization service is required.

4. Stock

- Reason: Stock control must be updated the moment a sale occurs, whether physical or online.
- Impact:
 - Prevents the sale of out-of-stock products.

- Involves implementing blocking mechanisms and simultaneous inventory updates for multiple users.

5. Sales

- Reason: The sales process must unify both channels (physical store and online platform), ensuring that every transaction is registered consistently.
- Impact:
 - Centralized management of all sales (local + online) in a single database.

3. List of system and project risks

List of system risks

- Risk of security breaches.
- Higher maintenance and hosting costs.
- System overload if not properly designed.
- Possible incompatibility between the local system and the new web platform.

List of project risks

- Poorly defined scope: The client requests new, unforeseen features that delay the project.
- Schedule delays: Technical tasks are more complex than expected, delaying deliveries.
- Human resource limitations: Limited availability of developers, designers, or testers.
- Lack of technical expertise on the team: Problems with new technologies such as payment gateways or inventory synchronization.
- Communication problems: Poor understanding between the team and stakeholders, leading to rework.
- Cost estimation errors: Unforeseen licensing, server, or security costs.
- Integration problems: Difficulty connecting the local system to the online platform.
- Key staff turnover: A developer or leader leaving the project, affecting continuity.

4. Resource estimation

| Category | Estimated Cost (MXN) |
|---|----------------------|
| Infrastructure (Hosting, Payment Gateway) | \$10,000 |
| Human Resources (Developers, Security Specialist, DateBase Administrator) | \$250,000 |
| Development Tools (GitHub, Testing) | \$10,000 |
| Support & Maintenance (3 months) | \$90,000 |
| Training & Documentation | \$12,000 |
| Time | 3 months |
| Total Cost (3 months) | \$500,000 |
| Profit | \$200,000 MXN |

✅ El proyecto te dejaría una **ganancia del 40%** en 3 meses.

Figure 1: Cost estimation