

**Graduation Project Proposal Form**

**1. Project Information**

* **Project Title:** Implemention of Odoo ERP for A Kemet Sports Wear Co, that integrates manufacturing, import, export, and retail operations
* **Course/Track:** NXT1\_GIZ2\_ERP1\_G1 / Odoo Applicant Consultant
* **Team Members:**

1. Maged Erian Kamel Khalil
2. Muhammad Ahmed Marzouk
3. Wafaa Badr Hassan
4. Asmaa Samir Abdelghany

**2. Project Overview**

* **Objective:** To implement a tailored Odoo ERP system for a Clothing company that integrates manufacturing high level quality knitted garments, exporting to Prime Brand in both the USA and Europ, beside Wholsale to famous Clothing Clients in the Local Market and retail operations within 7 branches allover Egypt. The system will streamline production processes for export ready made graments to clients in the USA and Europe while also supporting local sales across seven branches in the domestic market and wholesale throue th Head office. This implementation aims to enhance operational efficiency, improve inventory management, optimize production planning, and provide seamless integration across manufacturing, import row materials, export, logistics and retail functions.
* **Scope of Work:**

1. **System Analysis and Requirement Gathering**
   * Conduct a detailed Gap analysis of the company’s current workflows for manufacturing, import row mtarials, exporting ready made garments, logistics and drawback customes clearence, stock control and retail operations.
   * Identify key pain points, inefficiencies, and areas for automation.
   * Document all business requirements for tailoring the Odoo ERP system.
2. **Module Implementation**
   * **Manufacturing Module:**
     + Configure Bill of Materials (BOM), work centers, and routing for efficient production management.
     + Implement tools for quality control and production scheduling.
   * **Inventory Management Module:**
     + Optimize stock control for raw materials, finished goods, and supplies.
     + Implement multi-warehouse management to track inventory across the manufacturing plant and retail branches.
   * **Sales Module:**
     + Set up workflows for export sales orders, including currency management and international shipping documentation.
     + Configure sales pipelines for domestic retail branches.
   * **Point of Sale (POS) Module:**
     + Install and configure POS systems for all seven branches.
     + Ensure integration with inventory for real-time stock updates.
   * **Accounting Module:**
     + Automate financial processes, including invoicing, payment tracking, and VAT compliance.
     + Support multi-currency transactions for export sales.
   * **CRM and Customer Management:**
     + Implement tools to manage relationships with export clients and retail customers.
     + Track leads, opportunities, and customer interactions.
   * **Purchase Module:**
     + Implement tools to manage foreign and local purchase orders.
     + Automate PO creation using reordering rules or minimum stock levels.
     + Evaluate vendor performance using reports and analytics.
     + Track price history for better negotiation.
   * **Employees (HR Management) Module:**

* Centralized employee information management
* Maintain employee profiles with details like contact info, job title, and department.
* Attach important documents (e.g., contracts, ID proofs).
* Track work anniversaries and other milestones.
  + **Recruitment Module:**
* Simplifies hiring and onboarding processes.
* Publish job openings on your website.
* Manage applications and resumes.
* Use a kanban view to track recruitment stages (applied, interview, hired).
* Automate communication with candidates via email templates.
  + **Attendance Module:**
* Manages employee check-ins and check-outs.
* Record attendance using PINs, badges, or biometric devices.
* Track hours worked for payroll calculations.
* Generate attendance reports.
  + **Time Off Module:**
* Tracks employee leave and absence.
* Set up leave types (e.g., annual, sick, unpaid).
* Employees can request time off through the system.
* Automate leave approval workflows.
* Monitor remaining leave balances and history.
  + **Payroll Module:**
* Manages employee compensation.
* Configure salary structures with components like basic pay, allowances, and deductions.
* Automate salary computations based on attendance and overtime.
* Generate payslips and export payroll data for accounting.
* Ensure compliance with local tax and labor laws.
  + **Appraisal Module:**
* Streamlines employee performance evaluations.
* Schedule periodic appraisals.
* Use pre-defined templates or custom questions for evaluation.
* Analyze employee performance trends.
  + **Expenses Module:**
* Tracks employee reimbursements.
* Employees can submit expense reports with receipts.
* Managers approve expenses directly in the system.
* Integrates with Accounting for payment processing.
  + **Fleet Management Module:**
* Manages company vehicles.
* Track vehicle usage, maintenance, and fuel costs.
* Assign vehicles to employees.
* Schedule reminders for renewals and servicing.

1. **System Customization**
   * Customize workflows and reports to align with business requirements.
   * Design custom dashboards for key stakeholders to monitor KPIs like production output, inventory levels, and sales performance.
2. **Data Migration**
   * Migrate existing data from legacy systems, including customer data, product catalogs, and financial records.
   * Ensure data integrity and accuracy during the transition.
3. **User Training and Change Management**
   * Conduct training sessions for employees across all departments to ensure smooth adoption.
   * Provide user manuals and on-site support during the initial phases of implementation.
4. **System Testing and Quality Assurance**
   * Perform rigorous testing of all modules to ensure they meet functional and performance requirements.
   * Address and resolve any issues identified during the testing phase.
5. **Go-Live and Post-Implementation Support**
   * Roll out the Odoo system across the manufacturing facility and retail branches.
   * Provide ongoing technical support and system maintenance for a defined period post-launch.
6. **Continuous Improvement**
   * Gather user feedback after go-live to identify areas for further optimization.
   * Develop additional features or enhancements as needed.

* **Expected Outcomes:**

1. **Enhanced Operational Efficiency**
   * Streamlined production workflows in the manufacturing facility with better scheduling and resource allocation.
   * Automated processes reduce manual errors and save time across departments.
2. **Improved Inventory Management**
   * Real-time tracking of raw materials, work-in-progress, and finished goods across the manufacturing plant and retail branches.
   * Optimized stock levels to minimize overstocking and stockouts, ensuring cost efficiency.
3. **Seamless Export Management**
   * Simplified handling of export orders with automated documentation, currency management, and compliance with international standards.
   * Improved visibility into export sales performance and client satisfaction.
4. **Enhanced Retail Operations**
   * Efficient Point-of-Sale (POS) systems across seven branches for seamless transactions.
   * Centralized tracking of branch-wise sales and inventory to enable data-driven decision-making.
5. **Data-Driven Decision Making**
   * Access to comprehensive dashboards and reports for monitoring key performance indicators (KPIs) like production efficiency, inventory turnover, and sales trends.
   * Better forecasting and planning for both production and sales.
6. **Improved Financial Management**
   * Automated accounting processes, including VAT compliance and multi-currency transactions.
   * Accurate financial reporting to support strategic planning and auditing.
7. **Enhanced Customer Relationship Management**
   * Improved client management for export customers with tools to track interactions, sales history, and preferences.
   * Better understanding of local market trends and customer preferences through retail CRM tools.
8. **Scalability and Adaptability**
   * A flexible ERP system capable of accommodating future business growth, such as adding new branches, products, or export markets.
   * Enhanced adaptability to market changes or regulatory requirements.
9. **User Adoption and Satisfaction**
   * Empowered employees with an easy-to-use, integrated system for daily operations.
   * Higher satisfaction among all users due to reduced redundancies and efficient workflows.

**3. Problem Statement:**

The company’s current operational processes for manufacturing, exporting, and retailing lack integration, leading to inefficiencies and challenges in scalability. The existing systems are fragmented, resulting in:

1. **Manual and Error-Proof Processes**
   * Heavy reliance on manual tasks for production planning, inventory tracking, and sales management, which increases the likelihood of errors and delays.
2. **Inventory Management Issues**
   * Inadequate visibility into stock levels across the manufacturing facility and retail branches, causing overstocking, stockouts, and misallocation of resources.
3. **Challenges in Export Management**
   * Complicated and time-consuming handling of export orders, including documentation and compliance with international standards.
4. **Limited Retail Insights**
   * Absence of a centralized system for managing sales and inventory across seven branches, leading to a lack of data-driven decision-making in the domestic market.
5. **Inefficient Financial and Tax Management**
   * Manual accounting practices hinder accuracy and compliance with VAT and multi-currency transactions, particularly for export operations.
6. **Poor Integration and Reporting**
   * Disconnected systems create silos, making it difficult to generate accurate and comprehensive reports for monitoring business performance and KPIs.
7. **Scalability Constraints**
   * The current setup cannot efficiently accommodate business growth, such as new branches or markets, or adapt to evolving operational needs.

To remain competitive in both the local and international markets, the company needs an integrated ERP solution that unifies its manufacturing, export, and retail operations under one platform, driving efficiency, accuracy, and growth.

**4. Proposed Solution**

* **Technologies Used:**

Odoo 18, Microsoft Team’s for online meeting, Microsoft Excel & Power point

* **System Architecture:**

The proposed system architecture for implementing the Odoo ERP solution will consist of the following layers:

**1. Client Layer**

* **End-User Interfaces:**
  + Web-based Odoo interface for desktop access.
  + Mobile app for on-the-go management and retail operations.
  + Point-of-Sale (POS) terminals for retail branches.
* **Users:**
  + Manufacturing staff, warehouse managers, sales teams, finance department, and management.

**2. Application Layer**

* **Odoo Modules:**
  + Core modules: Manufacturing, Inventory, Sales, Purchase,Accounting, POS, CRM, Project , HR (Employees, Recuritment, Time off, Appraisals).
  + Custom modules for tailored features specific to export and retail operations such as ecpmmerce and logistics.
* **Custom Workflows:**
  + Configured to support processes such as production planning, export documentation, and real-time stock updates.

**3. Integration Layer**

* **Third-Party Integrations:**
  + Payment gateways for retail transactions (eCommerce and POS)
  + Shipping and logistics partners for export operations.
  + Tax and compliance systems for VAT and regulatory adherence.
* **APIs:**
  + Odoo's RESTful APIs to connect with external systems and extend functionality.

**4. Database Layer**

* **Database Management System:**
  + PostgreSQL database for robust and scalable data storage.
* **Data Storage:**
  + Centralized storage for all operational data, including production logs, inventory records, sales transactions, customer data, and financial reports.

**5. Server Layer**

* **Hosting Options:**
  + Cloud-based hosting for scalability and accessibility (e.g., Odoo.sh, AWS, or Azure).
  + On-premise hosting for enhanced data control and security, if preferred.
* **Load Balancing and Redundancy:**
  + Ensures high availability and reliability of the system.

**6. Security Layer**

* **User Authentication:**
  + Role-based access control (RBAC) for restricting access based on job roles.
  + Two-factor authentication (2FA) for enhanced security.
* **Data Encryption:**
  + End-to-end encryption for data transmission and storage.
* **Backup and Recovery:**
  + Automated data backup processes and disaster recovery mechanisms.

**7. Reporting and Analytics Layer**

* **Dashboard and Reporting Tools:**
  + Customizable dashboards for tracking KPIs like production efficiency, inventory turnover, and branch sales performance.
  + Advanced analytics tools for forecasting and business intelligence.

This architecture ensures a robust, scalable, and secure system that can meet the needs of the company’s manufacturing, export, and retail operations while providing a foundation for future growth.

**5. Resources Needed**

* **Hardware/Software:**

**Hardware Requirements:**

1. **Servers:**
   * Cloud Hosting:
     + Virtual servers on platforms like AWS, Azure, or Odoo.sh.
     + Minimum specifications:
       - CPU: 4+ cores.
       - RAM: 16GB or more.
       - Storage: 200GB SSD (scalable based on data growth).
   * On-Premise Hosting (if preferred):
     + High-performance physical server with specifications:
       - CPU: Intel Xeon or AMD EPYC (8+ cores).
       - RAM: 32GB or more.
       - Storage: RAID-configured SSDs (500GB+).
2. **End-User Devices:**
   * Manufacturing Floor:
     + Tablets or workstations for production staff.
   * Retail Branches:
     + POS terminals with barcode scanners, receipt printers, and card readers.
     + Desktop PCs or laptops for branch managers.
   * Management and Office Use:
     + Laptops or desktops with modern specifications for accessing Odoo.
3. **Networking Equipment:**
   * High-speed routers, switches, and access points for reliable connectivity across manufacturing, retail branches, and offices.
   * VPN setup for secure remote access.
4. **Backup and Storage Devices:**
   * Network-Attached Storage (NAS) for local data backups (if on-premise).

Cloud storage solutions for automated backups and disaster recovery

**Software Requirements**

1. **Odoo ERP Platform:**
   * Enterprise edition with the required modules:
     + Manufacturing, Inventory, Sales, POS, Accounting, CRM, Reporting, and any necessary custom modules.
2. **Database Management System:**
   * PostgreSQL (default database for Odoo).
3. **Operating System:**
   * Server: Linux-based OS (Ubuntu Server recommended for hosting Odoo).
   * End-user Devices: Windows, macOS, or Linux.
4. **Third-Party Integrations:**
   * Payment Gateway Software: Compatible with local and international payment processors.
   * Logistics and Shipping API integration (e.g., DHL, FedEx, or local providers).
   * VAT and tax compliance tools.
5. **Productivity Tools:**
   * Spreadsheet and reporting software (e.g., Microsoft Excel or Google Sheets) for data export and analysis.
   * Email clients (e.g., Microsoft Outlook or Gmail) integrated with Odoo’s CRM.
6. **Security Tools:**
   * Firewall and endpoint protection software.
   * Encryption tools for data security.

**Human Resources**

From our Odoo provide implementation and training the team include:

1. **Project Manager:**
   * To oversee the implementation process and coordinate between stakeholders.
2. **ERP Consultant:**
   * Odoo-consultant for system configuration and customization.
3. **Software Developers:**
   * To develop and integrate custom modules or features as needed.
4. **System Administrator:**
   * To manage server setup, hosting, and system maintenance.
5. **Trainers:**
   * To conduct user training sessions and provide documentation.
6. **Support Team:**
   * Technical support team for post-implementation assistance.

From client the team:

1. **Project Manager:**
   * To coordinate with our Odoo team and Clients’ different département teams, follow up on the implementation process and training each department teams up to live stage.
2. **Financial Manager:**
   * To provide the chart of accounting with beginning balance and confirm all accounting cycle withing training of accounting and warehouse teams.
3. **Departments head:**
   * To provide his department work follow and ensure all training to all his teams as per schedules and follow up on the implementation stages up to live stage.

These resources will ensure a successful and smooth implementation of the Odoo ERP system tailored to the company’s needs.

**6. Approval**

* **Instructor/Advisor:** Eng. Ahmed Elmalky
* **Signature:**