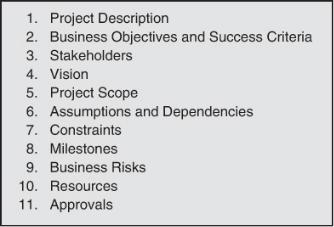


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|  |  |  |  | **BAHRIA UNIVERSITY,** | | |
|  |  |  |  | **(Karachi Campus)** | | |
|  |  |  | *Department of Software Engineering* | | | |
|  |  |  |  | **Assignment#02– Fall 2022** | | |
|  |  |  |  | **COMPLEX ENGINEERING PROBLEM** | | |
| COURSE TITLE: | **SRE** |  | | COURSE CODE: | **SEN-211** |  |
| Class: | **BSE 3B** | |  | Shift: | **Morning** | |
| Course Instructor: | **ENGR. BUSHRA FAZAL KHAN** | | | Assignment Date: | **06-Nov-2023** | |
| Max. Marks: | **4 Points: CLO 5** | | | Assignment Due: | **29-Nov-2023** | |
| Group Members: | Jawad Saleem, Muhammad Ali, Malik Taimoor, Abdullah Sadiq | | | | | |

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Question 1) As part of your Software Requirement Engineering Course your team have to work on a client-based project. For the groups & projects assigned in the class identify a client and create a Project Charter Document. Be sure to cover the following contents in your document.



Project Charter

For

Garments Supply Chain Management System

Version 1.0 approved

Prepared by (Jawad Saleem,

Muhammad Ali,

Malik Taimoor,

Abdullah Sadiq)

Garments Industry Specific Software

Date Created:12/2/2023

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**1. Project Description:**

The Garments Supply Chain Management System is a software solution that manages the entire process of creating, manufacturing, and selling garments. It contains modules for designing products, managing raw materials, overseeing production, ensuring quality control, and handling inventory. The system facilitates efficient order processing, supplier management, and distribution logistics. It also includes modules for retail and sales management, customer relationship management, financial transactions, and detailed analytics and reporting. With a focus on security, access control, and seamless integration, the system aims to enhance productivity, improve decision-making, and optimize the entire supply chain for the garment industry.

**Situation:** In the garment industry, there's a need for a computer system to better handle making and selling clothes, covering everything from designing to delivery.

**Problem:** Right now, there are issues like slow production and disorganized inventory, causing delays and higher costs in making clothes leading to inefficient business management.

**Implication:** If we don't fix these issues, it could mean more expensive clothes, late deliveries, and unhappy customers, making it hard to compete with other clothing brands.

**Benefit:** Using the new system will make things run smoother, saving money, making customers happier, and helping us stay competitive in the clothing market.

**Vision:** We imagine a future where our system makes everything from creating clothes to delivering them faster and easier, keeping customers happy and our brand strong.

**2. Business Objectives and Success Criteria**

**Business Objectives:**

1. **Efficiency Enhancement:**

Optimize the supply chain, reducing lead times by 20% and enhancing product quality with a 15% decrease in production flaws.

1. **Cost Optimization:**

Implement cost-effective measures to achieve a 10% reduction in operational costs, ensuring product quality through a 5% decrease in garment defect complaints.

1. **Inventory Management:**

Establish an efficient inventory system, targeting a 15% decrease in holding costs and a 10% reduction in excess inventory for improved financial efficiency.

1. **Supply Chain Visibility:**

Improve real-time tracking accuracy by 30% and decrease response time by 25%, fostering proactive issue resolution in the supply chain.

1. **Compliance and Sustainability:**

Attain 95% compliance with industry standards and regulations, alongside a 20% reduction in the supply chain's carbon footprint, integrating sustainability into operations.

**Success Criteria:**

1. **Reduced Lead Times** (time from product design to delivery)
2. **Cost Savings:**

Quantify cost savings in raw material procurement, production, and distribution processes.

1. **Inventory Turnover Improvement:**

Track an increase in inventory turnover rates, reflecting effective inventory management and reduction in holding costs.

1. **Customer Satisfaction Metrics:**

Monitor positive trends in customer satisfaction metrics, including feedback, order fulfillment times, and complaint resolution.

1. **Enhanced Supply Chain Visibility:**

Assess the system's effectiveness in providing real-time visibility, ensuring accurate and timely information flow across the supply chain.

1. **Compliance Adherence:**

Ensure strict adherence to industry regulations and ethical standards, with no legal issues and positive recognition for sustainability efforts.

1. **Operational Performance Metrics:**

Evaluate overall operational performance through key indicators like on-time delivery, defect rates, and production efficiency.

1. **Return on Investment (ROI):**

Calculate a positive ROI by comparing financial benefits and cost savings against the initial investment in the project.

**3. Stakeholders**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Stakeholder** | **Roles** | **Interests** | **Influence** | **Needs** | **Concerns** |
| **Executives and Management** | Top-Level Decision Makers | Operational Efficiency, Cost Savings | Strategic Decision-Making Authority | Streamlined Processes, Cost Optimization | Implementation Risks, Resource Allocation |
| **Supply Chain Managers** | Oversee Supply Chain Operations | Smooth Operations, Cost Efficiency | Operational Decision-Making Authority | Efficient Supply Chain Processes | System Integration Challenges, Delays |
| **Production and Operations Managers** | Manage Production and Operations | Timely and Efficient Production | Operational Decision-Making Authority | Production Efficiency, Quality Control | Downtime, Equipment Failures |
| **Design and Development Teams** | Responsible for Product Design | Innovative Designs, Quality Products | Input in Design and Development | Design Tools, Collaboration Tools | Design Revisions, Resource Constraints |
| **Procurement and Supplier Managers** | Handle Raw Material Procurement | Cost Savings, Reliable Suppliers | Supplier Selection and Negotiation | Timely Procurement, Supplier Reliability | Supply Chain Disruptions, Quality Issues |
| **Logistics and Distribution Managers** | Oversee Distribution Logistics | Timely Deliveries, Cost-Effective Logistics | Distribution Decision-Making Authority | Efficient Logistics, On-Time Delivery | Distribution Challenges, Shipping Costs |
| **Sales and Marketing Teams** | Responsible for Product Sales | Increased Sales, Market Competitiveness | Marketing Strategies | Effective Sales Channels, Market Insights | Market Saturation, Consumer Preferences |
| **Finance Department** | Manage Financial Aspects of the Project | Cost Reduction, Return on Investment | Budget Allocation Authority | Financial Reporting, Cost Analysis | Budget Constraints, Unforeseen Costs |
| **IT Department** | Handle Information Technology | System Integration, Data Security | Technical Decision-Making Authority | Seamless Integration, Data Privacy | System Compatibility, Cybersecurity Risks |
| **Customers** | End Users of the Garment Products | Quality Products, Timely Deliveries | Purchase Decisions | Product Quality, On-Time Delivery | Dissatisfaction, Product Defects |
| **Suppliers** | Provide Raw Materials for Production | Regular Business, Timely Payments | Negotiation Power | Timely Payments, Long-Term Partnership | Late Payments, Unreliable Purchases |
| **Quality Assurance Teams** | Ensure Product Quality and Standards | Consistent Quality, Compliance | Quality Control Decision-Making | Compliance with Standards, Product Quality | Defects, Quality Assurance Costs |

**4. Vision**

**For:**

Tailored for garment industry professionals, **Garment Flow Pro** streamlines supply chain management for executives, supply chain managers, and production teams.

**Who:**

Addresses the industry's need for a unified platform, offering end-to-end visibility and efficiency in garment production.

**The:**

Introducing **"Garment Flow Pro"**, an advanced Supply Chain Management System for the garment industry.

**Is:**

Belongs to the category of industry-specific software, revolutionizing garment supply chain management.

**That:**

Empowers users with end-to-end visibility, reducing lead times by 20%, optimizing costs by 10%, and ensuring top-notch quality, making it a must-have for efficient and cost-effective garment production.

**Unlike:**

Stands out from traditional methods with real-time tracking, sustainability integration, and tailored features for garment production, surpassing generic alternatives.

**Our Product:**

**Garment Flow Pro** leads with unparalleled efficiency, cost optimization, and sustainability integration, offering a user-friendly interface and real-time supply chain visibility. It stands as the premier choice for streamlined and sustainable garment production.

1. **Project Scope**

**(to be made according to project representation techniques diagrams)**

The scope for the Garments Supply Chain Management System includes the efficient and effective development and implementation of a comprehensive solution. This system will cover the entire supply chain process, from product design to delivery, with a focus on optimizing efficiency, reducing costs, and enhancing customer satisfaction.

Key modules include:

1. Product design
2. Raw material management
3. Production oversight
4. Quality control
5. Inventory management
6. Order processing
7. Supplier and distribution management
8. Retail and sales
9. Financial tracking, and analytics.
10. Real-time visibility, and adherence to compliance and sustainability standards

**6. Assumptions and Dependencies**

**Assumptions:**

* **(AS-1) Stakeholder Engagement:** Assumption that key stakeholders will actively participate in the project, providing necessary information and approvals.
* **(AS-2) Data Accuracy:** Assuming the availability and accuracy of data for product designs, raw materials, production processes, and inventory.
* **(AS-3) Technology Infrastructure:** Assuming the availability and compatibility of the required technology infrastructure for system implementation.
* **(AS-4) Compliance Awareness:** Assuming that all stakeholders are aware of and committed to compliance with industry regulations and ethical standards.
* **(AS-5) User Training:** Assuming that adequate training resources and time will be provided for users to adapt to the new system.
* **(AS-6) Supplier Cooperation:** Assuming cooperation from suppliers in terms of timely deliveries and adherence to quality standards.

**Dependencies:**

* **(DE-1) Resource Availability:** Dependency on the availability of skilled project team members, developers, and IT support.
* **(DE-2) Regulatory Changes:** Dependency on stable regulatory conditions, as sudden changes may impact compliance requirements.
* **(DE-3) Data Migration:** Dependency on a smooth and accurate data migration process from existing systems to the new system.
* **(DE-4) User Adoption:** Dependency on user acceptance and adoption of the new system, requiring effective training and change management strategies.
* **(DE-5) Supplier Collaboration:** Dependency on effective collaboration with suppliers for the timely and quality supply of raw materials.
* **(DE-6) Testing and Quality Assurance:** Dependency on thorough testing and quality assurance processes to identify and resolve potential system issues.
* **(DE-7) Timely Decision-Making:** Dependency on timely decision-making by stakeholders to avoid project delays.

**7. Constraints:**

|  |  |  |  |
| --- | --- | --- | --- |
| **Dimension** | **Driver (State Objective)** | **Constraint (State Limits)** | **Degree of Freedom (State Allowable Range)** |
| **Schedule** | Release 1.0 available by 10/1, release 1.1 by 12/1 | Adherence to specified release dates | Some flexibility for minor adjustments within a reasonable timeframe |
| **Features** | 70-80% of high-priority features must be included in release 1.0 | Inclusion of high-priority features | Flexibility to adjust within the specified percentage range based on project needs |
| **Quality** | 90-95% of user acceptance tests must pass for release 1.0, 95-98% for release 1.1 | Success rate of user acceptance tests | Some flexibility for adjustments, allowing for necessary improvements |
| **Staff** | Maximum team size is 1 PO, 1 BA, 6 developers, 3 testers | Team composition and size | Minor adjustments based on project demands and workload |
| **Cost** | Budget overrun up to 15% acceptable without sponsor review | Budgetary limits | Some flexibility for unforeseen expenses within the specified percentage range, requiring sponsor review beyond that limit |

1. **Milestones**

|  |  |  |
| --- | --- | --- |
| **Event or Deliverable** | **Target Date** | **Responsibility** |
| **Project Initiation and Planning** | - | Project Team |
| **System Analysis and Design** | - | Analysts, Design Team |
| **Core Module Development** | - | Development Team |
| **Prototype Testing and Feedback** | - | Development Team, Stakeholders |
| **Full System Development** | - | Development Team |
| **User Training and Acceptance** | - | Training Team, Project Team |
| **Pilot Implementation** | - | Implementation Team, Stakeholders |
| **Full-Scale Deployment** | - | Implementation Team, Stakeholders |
| **Post-Deployment Evaluation** | - | Project Team, Stakeholders |
| **Ongoing Support and Maintenance** | - | Support Team, Development Team |

**9. Business Risks**

|  |  |  |  |
| --- | --- | --- | --- |
| **Risk** | **Probability** | **Impact** | **Mitigation** |
| **Technological Challenges** | Moderate | High | Thorough testing, selecting scalable solutions, and contingency plans for technological hiccups. |
| **Stakeholder Engagement and Alignment** | Low | Moderate | Regular communication, stakeholder workshops, and clear documentation of objectives. |
| **Data Accuracy and Integration** | Moderate | High | Rigorous data validation, data cleansing processes, and thorough integration testing. |
| **User Adoption and Training** | Low | Moderate | Comprehensive training programs, user-friendly interfaces, and involving end-users in the design process. |
| **Market Conditions and External Disruptions** | Moderate | High | Building contingency plans, flexible project timelines, and regular risk assessments. |
| **Security Concerns** | Low | High | Implementing robust security measures, encryption protocols, and regular security audits. |

**10. Resources**

1. **Human Resources:**
   * Project Team: Project manager, business analysts, developers, testers, UX/UI designers.
   * Domain Experts: Garment supply chain specialists, compliance experts, quality assurance teams.
   * Training Personnel: Trainers for user adoption and system training.
2. **Technology Resources:**
   * Hardware: Servers, computers, networking equipment.
   * Software: Development tools, integration platforms, security software, ERP/CRM systems.
   * Data Storage: Cloud storage or on-premises storage solutions for data management.
3. **Financial Resources:**
   * Budget Allocation: Funding for development, implementation, training, and ongoing maintenance.
   * Cost Estimates: Analysis of costs related to software licenses, hardware procurement, and personnel expenses.
4. **Time Resources:**
   * Project Timeline: Defined schedule for different phases from planning to deployment.
   * Resource Availability: Dedicated time from key stakeholders and project team members.
5. **Supplier and Partner Resources:**
   * Supplier Collaboration: Engagement with suppliers for raw material procurement and cooperation in system integration.
6. **Training and Support Resources:**
   * Training Materials: Development of manuals, guides, and training materials for users.
   * Support Infrastructure: Helpdesk, support staff, and resources for ongoing user assistance.
7. **Physical Resources:**
   * Office Space: Workspace for project teams, meeting rooms for stakeholder discussions.
   * Utilities: Electricity, internet, and other essential office utilities.
8. **Testing and Quality Assurance Resources:**
   * Testing Tools: Software tools for system testing, QA processes, and bug tracking.
   * Test Environments: Dedicated environments for testing various system functionalities.

**11. Approvals**

1. **Project Plan Approval:**
   * Stakeholders Involved: Executives, management, project sponsors.
   * Criteria for Approval: Alignment with business objectives, feasibility, budget approval.
2. **System Design Approval:**
   * Stakeholders Involved: Design and development teams, IT department.
   * Criteria for Approval: Functional alignment, feasibility, technological compatibility.
3. **Prototype Approval:**
   * Stakeholders Involved: Project team, key users, stakeholders.
   * Criteria for Approval: User-friendliness, meeting functional requirements, stakeholder feedback.
4. **Full System Approval:**
   * Stakeholders Involved: Executives, management, department representatives.
   * Criteria for Approval: Functional completeness, successful testing, compliance adherence.
5. **Training and User Acceptance Approval:**
   * Stakeholders Involved: Users, training personnel, department heads.
   * Criteria for Approval: User readiness, understanding of system functionalities, willingness to adopt.
6. **Pilot Implementation Approval:**
   * Stakeholders Involved: Pilot departments, management.
   * Criteria for Approval: Successful performance, issue identification, stakeholder feedback.
7. **Full-Scale Deployment Approval:**
   * Stakeholders Involved: Executives, management, relevant department heads.
   * Criteria for Approval: Smooth deployment, issue resolution, readiness for operational use.
8. **Post-Deployment Review and Approval:**
   * Stakeholders Involved: Users, management, project team.
   * Criteria for Approval: Achievement of success criteria, user feedback, optimization recommendations