

Project Scope Management

PJM 6005

Assignment 3

Title: Development of WBS, WBSD & Traceability Matrix

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**1. Executive Summary:**

The client is a billion-dollar manufacturer and marketer of beauty, personal care, and household products around the globe. The organization desires to expand its global appeal soon and therefore is in search of a new manufacturing facility which has 475,000-square-foot area with state-of-the-art technology fully functional within a year (Case study, n.d.).

**2.1 Work Breakdown Structure:**

|  |  |  |  |
| --- | --- | --- | --- |
| Task Name | Duration | Start | Finish |
| **New Manufacturing Facility** | **259 days** | **Wed 09-05-18** | **Mon 06-05-19** |
| **1. Initiation and Planning Phase** | **26 days** | **Wed 09-05-18** | **Wed 13-06-18** |
| **1.1 Sponsor Approval** | **7 days** | **Wed 09-05-18** | **Thu 17-05-18** |
| 1.1.1 Project Proposal Form | 4 days | Wed 09-05-18 | Mon 14-05-18 |
| 1.1.2 Sponsor sign-off | 3 days | Tue 15-05-18 | Thu 17-05-18 |
| **1.2 Documents** | **5 days** | **Fri 18-05-18** | **Thu 24-05-18** |
| 1.2.1 Project Charter | 2 days | Fri 18-05-18 | Mon 21-05-18 |
| 1.2.2 Team Charter | 3 days | Tue 22-05-18 | Thu 24-05-18 |
| **1.3 Facility Designs** | **14 days** | **Fri 25-05-18** | **Wed 13-06-18** |
| 1.3.1 Engineering Drawing of plan | 5 days | Fri 25-05-18 | Thu 31-05-18 |
| 1.3.2 2D Autocad Modelling | 2 days | Fri 01-06-18 | Mon 04-06-18 |
| 1.3.3 3D Solidworks Modelling | 2 days | Tue 05-06-18 | Wed 06-06-18 |
| 1.3.4 Prototype development | 5 days | Thu 07-06-18 | Wed 13-06-18 |
| **2. Execution Phase** | **225 days** | **Fri 18-05-18** | **Thu 28-03-19** |
| **2.1 Facility Location** | **13 days** | **Fri 18-05-18** | **Tue 05-06-18** |
| 2.1.1 Recruitment of a Real Estate Agent | 2 days | Fri 18-05-18 | Mon 21-05-18 |
| 2.1.2 Feasibility of location | 5 days | Tue 22-05-18 | Mon 28-05-18 |
| 2.1.3 Purchase/Rent of premises | 6 days | Tue 29-05-18 | Tue 05-06-18 |
| **2.2 Construction** | **212 days** | **Wed 06-06-18** | **Thu 28-03-19** |
| **2.2.1 Clearance procurement** | **9 days** | **Wed 06-06-18** | **Mon 18-06-18** |
| 2.2.1.1 Radiation clearance | 3 days | Wed 06-06-18 | Fri 08-06-18 |
| 2.2.1.2 Biological clearance | 3 days | Mon 11-06-18 | Wed 13-06-18 |
| 2.2.1.3 Chemical clearance | 3 days | Thu 14-06-18 | Mon 18-06-18 |
| **2.2.2 Foundation** | **62 days** | **Tue 19-06-18** | **Wed 12-09-18** |
| 2.2.2.1 Demolition of existing building | 40 days | Tue 19-06-18 | Mon 13-08-18 |
| 2.2.2.2 Excavation | 7 days | Tue 14-08-18 | Wed 22-08-18 |
| 2.2.2.3 Mounting | 10 days | Thu 23-08-18 | Wed 05-09-18 |
| 2.2.2.4 Levelling | 5 days | Thu 06-09-18 | Wed 12-09-18 |
| **2.2.3 Building** | **203 days** | **Tue 19-06-18** | **Thu 28-03-19** |
| 2.2.3.1 Raw materials procurement | 2 days | Tue 19-06-18 | Wed 20-06-18 |
| 2.2.3.2 Equipment set-up | 3 days | Tue 19-06-18 | Thu 21-06-18 |
| 2.2.3.3 Implementation | 200 days | Fri 22-06-18 | Thu 28-03-19 |
| **3. Monitoring, Controlling & Closing Phase** | **27 days** | **Fri 29-03-19** | **Mon 06-05-19** |
| **3.1 Documents review** | **15 days** | **Fri 29-03-19** | **Thu 18-04-19** |
| 3.1.1 Status reports | 5 days | Fri 29-03-19 | Thu 04-04-19 |
| 3.1.2 Risk Register | 10 days | Fri 05-04-19 | Thu 18-04-19 |
| **3.2 Inspection** | **5 days** | **Fri 19-04-19** | **Thu 25-04-19** |
| 3.2.1 On-site inspection | 5 days | Fri 19-04-19 | Thu 25-04-19 |
| **3.3 Lessons Learned** | **12 days** | **Fri 19-04-19** | **Mon 06-05-19** |
| 3.3.1 Project analysis | 12 days | Fri 19-04-19 | Mon 06-05-19 |
| 3.3.2 Experiences/learnings documented | 4 days | Fri 19-04-19 | Wed 24-04-19 |
| **3.4 Celebration** | **1 day?** | **Thu 25-04-19** | **Thu 25-04-19** |
| 3.4.1 Dinner party | 1 day? | Thu 25-04-19 | Thu 25-04-19 |

Table 2.1

**2.2 Work Breakdown Structure Dictionary:**

|  |
| --- |
| Project: New Manufacturing Facility Construction |
| Work package id: 1.3.3 |
| Work package name: 3D Solidworks Modelling |
| Work package description: Develop complete and accurate designs of the manufacturing facility. |
| Assigned to: Robert Banner Department: Engineering Design |
| Date Assigned: June 5, 2018 Date Due: June 6, 2018 |
| Estimated Cost: $ 1000 Accounting Code: |

Table 2.2.1

|  |
| --- |
| Project: New Manufacturing Facility Construction |
| Work package id: 2.1.3 |
| Work package name: Rent the facility |
| Work package description: Complete the legal documentation and other paperwork to rent the area. |
| Assigned to: Clark Wayne Department: Sponsor & Purchasing Dept. |
| Date Assigned: May 29, 2018 Date Due: June 5, 2018 |
| Estimated Cost: $ 2,500,000(monthly) Accounting Code: |

Table 2.2.2

**3. Requirements Traceability Matrix**

|  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- |
| ID | Business Requirement Document BRD | | Functional Requirement Document FRD | | | Priority | Test case document |
|  | BRD  #ID | BRD Use case | FRD #ID | FRD Use case |  | | Test case ID |
| 1 | BR\_1 | Global Market | FR\_1 | Manufacturing facility location | Medium | | TC#001, TC#002,  TC#003, TC#004 |
| 2 |  |  | FR\_2 | Final product cost | High | | TC#026, TC#027 |
| 3 |  |  | FR\_3 | Final product quality | High | | TC#013, TC#014, TC#015 |
| 4 | BR\_2 | Employment opportunities | FR\_4 | Facility Design | Low | | TC#005, TC#006 |
| 5 |  |  | FR\_5 | Facility Construction | Medium | | TC#007, TC#008 |
| 6 | BR\_3 | Manufacturing culture standardization | FR\_6 | Manufacturing units design | High | | TC#009, TC#010 |
| 7 |  |  | FR\_7 | Integration of new manufacturing units | High | | TC#011, TC#012 |
| 8 | BR\_4 | Long-term cost savings | FR\_8 | Mass production capability | Medium | | TC#019, TC#020 |
| 9 |  |  | FR\_9 | Rework and overhead cost. | High | | TC#016, TC00#17, TC#0018 |
| 10 | BR\_5 | Customer satisfaction | FR\_10 | Product sales | High | | TC#021, TC#022, TC#023 |
| 11 |  |  | FR\_11 | Feedback | High | | TC#024, TC#025 |

Table 3.1

**3.1 Test Cases**

|  |  |
| --- | --- |
| Test cases ID | Test cases description |
| TC#001 | Verify if the location is close to high-demand market. |
| TC#002 | Verify if the location is far from the high-demand market. |
| TC#003 | Verify if the location is close to airports or other transportation modes. |
| TC#004 | Verify if location is far from airports or other transportation modes. |
| TC#005 | Verify if there are sufficient laborers. |
| TC#006 | Verify if there are insufficient laborers. |
| TC#007 | Verify if existing designers are sufficient/competent. |
| TC#008 | Verify if existing designers are insufficient/incompetent. |
| TC#009 | Verify if the designs are detailed and accurate |
| TC#010 | Verify if the designs have loopholes or inaccuracy. |
| TC#011 | Verify if the new units enhance existing manufacturing product-line. |
| TC#012 | Verify if the new units diminish the product-line |
| TC#013 | Verify if the new facility produces a lower quality product. |
| TC#014 | Verify if the product quality remains the same. |
| TC#015 | Verify if the new facility produces a better quality product |
| TC#016 | Verify if the facility reduces overhead and rework cost. |
| TC#017 | Verify if the facility does not change the overhead and rework cost. |
| TC#018 | Verify if the facility increases overhead and rework cost |
| TC#019 | Verify if the manufacturing facility is capable of producing products in large quantities. |
| TC#020 | Verify if the manufacturing facility is incapable of producing products in large quantities. |
| TC#021 | Verify if there is an increase in product sales. |
| TC#022 | Verify if customers are buying more products. |
| TC#023 | Verify if customers are returning or demanding refund for the products. |
| TC#024 | Verify if customers are complaining about the product. |
| TC#025 | Verify if customers are appreciating the product. |
| TC#026 | Verify if the new production practice employed reduces product cost |
| TC#027 | Verify if the new production practice employed increases product cost. |

Table 3.1.1

**4. Success Criteria/Quality Standards**

* Gain significant market share, two months after the manufacturing facility is open and operational.
* Deliver affordable and good quality products.
* Manufacturing facility is capable to produce 1000 products/day/product line.
* Payback period is less than 7 months.
* Develop a good reputation for the organization.
* Become the leader in the cosmetic industry globally.
* Set an example that can be used as a reference for manufacturing of new facilities worldwide.
* Lean manufacturing principles employed reduces the production defects by 40%.
* The final quality inspection for a batch of products has no more than 0.5% defective products.
* The cost of the improved quality product is not greater than 20% of the product’s original price in the market.
* The company sells more than 70% of the products produced within 3 days; after delivery.

Note: 1) The payback period is estimated to be 6 months. But the success criteria has been defined as 7 months- an additional month, taking into account any uncertain factors/unforeseen event(s).

2) Overhead and rework cost is minimal. Therefore, there is no need to sell the product at an exorbitantly high price. A profit margin of 15% can be easily accomplished with 20% increase in the product price.

**5. Assumptions:**

* Employment of lean manufacturing principles along with high-functional capability of the facility produces large quantity of products as well as reduces the number of defects by 40% in a particular batch.
* The series of quality inspections are strict, eliminating 80% of the defective products in the first stage itself.
* Products are dispatched for delivery on the following day of production.
* Production cycle will be continuous for 3 months.
* Once every 3 months, a maintenance crew will conduct a thorough inspection to identify and rectify weak/susceptible areas that are not performing to full capacity.
* 90% products are estimated to sell within 1 week after manufacturing. Therefore, 70% sold within 3 days has been defined as a success criteria.

Appendices

List of Tables:

2.1 Work Breakdown Structure

2.2.1 Work Breakdown Structure Dictionary (Work package-1.3.3)

2.2.2 Work Breakdown Structure Dictionary (Work package-2.1.3)

3.1 Requirements Traceability Matrix

3.1.1 Test cases

References:

Manufacturing Facility Case. (n.d.). Retrieved May 11, 2018 from <https://northeastern.blackboard.com/bbcswebdav/pid-18059498-dt-content-rid-40698676_1/courses/PJM6005.80602.201835/PJM6005.80602.201835_ImportedContent_20180403050026/Manu%20Facility_PMS.pdf>

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