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Harrisons Malayalam Ltd.

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1 Introduction

1.1 Background

HML is part of The RPG Enterprises, one of the largest business conglomerates in India with business interests ranging from tyres, cables, power transmission, telecommunications, pharmaceuticals ,specialty chemicals to retail and consumer marketing, hotel, tourism and entertainment .

An integrated agriculture operation giant Harrisons Malayalam Limited is India's largest producer of rubber, South India's largest cultivator of Tea and perhaps the largest farmer of Pineapple in the region. It is also a major processor of other agricultural produce from neighboring farmlands.

The company also produces smaller quantities of a variety of other exotic horticultural crops like Areca nut, Banana, Cardamom, Cocoa, Coffee, Coconut, Pepper and Vanilla as well as limited quantities of Organic tea and Spices. These operations altogether are called FSO (Fruits, Spices and Others).

Microsoft Dynamics AX 2012 system would help Harrisons Malayalam Limited (HML) to integrate functionalities of all business lines with Finance to progress to a upgraded system environment with its Head Office in Cochin.

As a part of Up gradation Project, PricewaterhouseCoopers (PwC) has been appointed by HML to review their current processes and existing system (AX 4.0) in the following areas and help in streamlining them keeping in line with their current vision and strategy:

- Trade and Logistics
- Inventory
- Production
- Payroll and Budgeting
- Finance

The key focus of the assignment is to understand the existing business processes and finalizing the To-be processes with regard to the AX 2012 system. Main area to be studied is the direct fitment of the existing customizations into base features of AX2012 and incorporates as much of base features as possible & feasible and the rest to migrate into the new system. This would be followed by the upgradation of AX 4.0 to AX 2012 to meet the identified requirements.

In this document, Cost Budget & Revenue Budget processes are explained in line with the functional requirements.

1.2 Purpose of the Document

The Functional Requirements Document (FRD) lays out the functional requirements of HML, which will be used as a reference in the enhancement of the Microsoft Dynamics AX system. This document refers to the processes of Cost Budget. The purpose of the document is to freeze and finalize the requirements specification based on which the Microsoft Dynamics AX 2012 system will be configured, tested and implemented. The FRD contains the following details:

1. Envisaged functionalities and business processes related to Harrisons Malayalam
2. To-Be process flows with respect to Microsoft Dynamics AX 2012
3. Gap fitment for these processes in Microsoft Dynamics AX 2012

1.3 Sources of Inputs

The processes in this document have been envisaged based on the following inputs:

- Interviews conducted with the key users of HML
- Existing Budget Templates
- Minutes of Meeting

1.4 Scope of the Document

The document describes Tea / Rubber in Bearing budget, tea / rubber re-plantation budget, FSO budget and Tea Infilling Budget. It will be assumed that the entire Fitment is applicable on MS Dynamics AX 2012 and anything which might be available in AX 2012 is considered as a standard fitment..

Any customization will be applicable only on AX 2012.

List of Abbreviations:

- Harrisons Malayalam Ltd. – HML

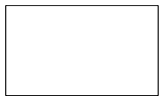
1.5 Fitment Types Notation

- C : Customization
- SF: Standard Feature
- E: External
- W: Workaround

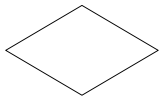
1.6 Flowchart Notations & Shapes



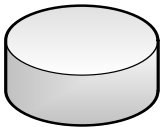
Start / Stop



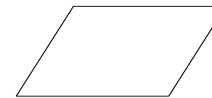
Process



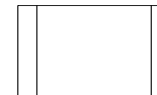
Decision



Database



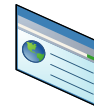
Data



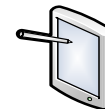
**Predefined
Process**



Stored Data



**Master /
Setup Data**



Easy Weigh

2 Company Setup & Configuration: An Overview

This is a customized area hence the standard setups and configurations would not be applicable. Any setup related information would be described in the Cost Budget specific setup and not in the company setup.

3 Business Processes

3.1 Cost Budget: Business Process Description

HML maintains the annual cost budgeting out of the ERP system. Excel Templates are being used for various data entry screens and reports are generated from the data entered. This system is in practice since a decade and now the management wishes to move the budgeting into the AX2012 system.

HML currently practices the top down model for the budgeting. The annual budget is finalized and then it is further split up to monthly budgets. The management desires to have a bottom up approach. The monthly budget should be created first which should add up to the annual budget.

However the bottom up approach is only for parameterized activities / items. For overhead expenses like insurance etc the expectation is to have the annual figure entered into the system. This figure should be split by the system for each month which can be further edited by the user.

Cost Budget is done for the following

- Wages
- Material
- Other

Wages Cost: - The cost incurred as a result of deployment of resource to complete any activity.

Material Cost: - The cost of the consumables used to complete any activity.

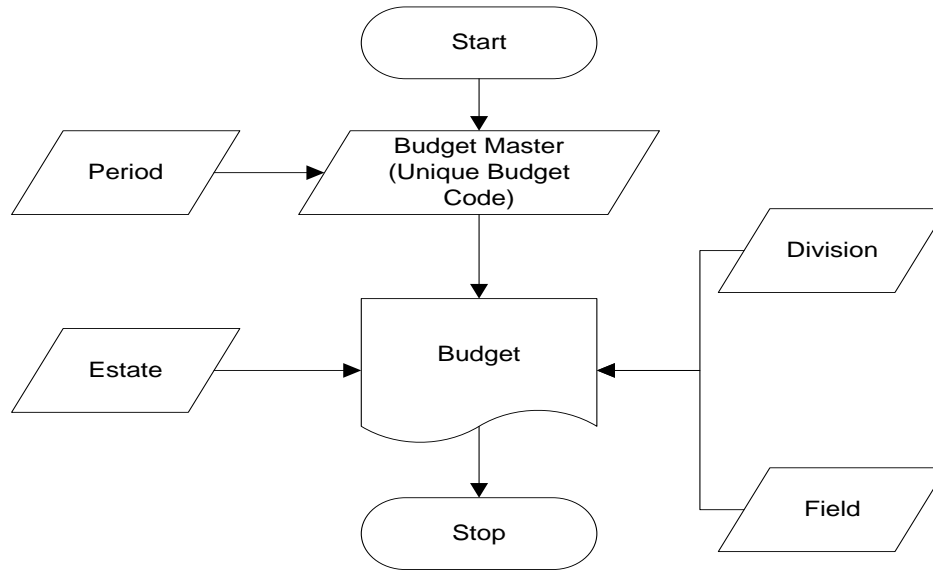
Other Cost: - Miscellaneous cost incurred.

Currently Budgeting is done with respect to Cost Center and Sub Ledgers (wherever applicable). However the actual expenses are not tracked to the nature of expenses. Hence the values in the current dimension code 'Purpose' should be migrate to the dimension code 'Sub Ledger' and the Purpose should be available for defining the nature of expenses. This migration should be based on the concept that the financial dimensions Cost Centre, Sub Ledger and Purpose will be used with a hierarchical relationship in that order, e.g. "Bungalows" will be a Cost Centre, each bungalow will be set in Sub Ledger and the each type of expenses like maintenance, electricity charges, Sweepers etc. will be set in Purpose dimension. A custom table required to store the hierarchy of cost center, sub ledger and purpose. The filtered lookup of sub ledger for a given cost center and purpose for a given sub ledger would be available in the custom tables of budget module only and base tables of AX 2012 would not have the filtered lookup for sub ledger or purpose dimension value based on the hierarchy.

3.1.1 Master Creation

Budgeting process would require creation and maintenance of various masters and setups. The application would require relevant information from masters & setups during the data entry. Failing to get any such information, the user would not be able to do the data entry in the relevant screen.

3.1.1.1 Business Process Flow -Business Process Map



3.1.1.2 Business Process Description - Gap Fitment

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/W/E/SF
1	HML/BDG/001-01	Budget Master	The system should have the provision to define a unique budget code, description and the budget period. This can be the financial year code itself for easy retrieval	Y	A customized interface required to capture the budget details. Creation of Budget Master would be a one-time activity for each budget session. This master can be used for both Tea & Rubber. The budget period	C

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
					should also be defined in the master. At any given time only one active budget can exist. The system should automatically capture the active budget code with no manual intervention by the user.	
2	HML/BDG/001-02	Budget Account	<p>There should be provision to capture the various accounts against which budgeting is done. Some examples of such account are</p> <ol style="list-style-type: none"> 1) Salary & Allowances 2) Lorries & Tractors 3) Manual Weeding 4) Chemical Weeding 5) Manure <p>A budget account can be a cost center, sub ledger or purpose</p>	Y	<p>A custom table required to hold such information. There should be provision to define COA and cost center with each budget account. The system would not provide any checks or validation at the time of actual expenses posting based on the cost center and COA mapping definition. Such a setup can be used only as a reference. The COA could be wages, material or other expenses. There should be provision to define the nature of expenses or materials under each account. These nature of expenses / materials form the lowest level of cost budgeting.</p> <p>An un editable interface should be available to show</p>	C

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/W/E/SF
					the COA & Purpose mapping. The list of materials must be a filtered lookup and not the entire product list. A custom interface required to capture cost center wise items. The lookup of materials should be filtered on the basis of cost center selected.	
3	HML/BDG/001-03	Estate	The estate is captured as dimension. The new ERP system would inherit the same structure.	N	The information would be a shared data from payroll module	SF
4	HML/BDG/001-04	Field/Division	The Division & Field is captured as dimension. The new ERP system would inherit the same structure.	N	The information would be a shared data from payroll module	SF
5	HML/BDG/001-05	Estate Owner	There should be provision to define estate wise owner who would be responsible for approving the budgets	Y	There should be a custom interface to define the Estate, and the owner. The application should allow the estate owners to approve the budget templates.	C
6	HML/BDG/001-06	Template List	The budgeting is done by categorizing the budget accounts under different templates. Following templates are used to capture the information for tea in bearing.	Y	Custom interface required to define the Templates Names. Estate wise parameters like number of rounds, man days per hectare, quantity per hectare etc. may be set from HO, with a provision for each	C

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/W/E/SF
			<ol style="list-style-type: none"> 1) General Information 2) Production Plan 3) Fields 4) Material Costs 5) General Charges 6) Car & Ambulance 7) Motor Cycles 8) Lorries & Tractors 9) Tea – in- Bearing (General) 10) Weeding 11) Blister Blight 12) Pests & Diseases 13) Micro Nutrients 14) Manure Details 15) Rejuvenation Pruning 16) Irrigation 17) Plucking 18) Manufacture 19) Packing & Transporting 20) Factory Upkeep 21) Machinery Upkeep <p>Following templates are used to capture the information for rubber in bearing.</p> <ol style="list-style-type: none"> 1) General Information 2) Material Costs 3) Car & Ambulance 		<p>estate to override the same with permission. The modification by estates may be restricted to adjustment between the months but within the total allotted from HO.</p> <p>The total budget, cost/kg. & cost per hectare for each activity need to be displayed on the each template screen.</p> <p>Each of the template can have multiple versions but only one active at a time. While creating a new version the system should give the provision of copying the data from previous version.</p>	

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
			4) Motor Cycles 5) Lorries & Tractors 6) General Charges 7) Tapping Heights 8) Fields 9) Weeding 10) Pests & Diseases 11) Spraying 12) Field Wise Spraying (optional) 13) Rain Guarding 14) Tapping 15) Rubber-in-Bearing (General) 16) Production Plan (Estate Group) 17) Grades 18) Grade-Wise Crop 19) Rubber Factory Parameters 20) Rubber Factory (General) 21) Rubber Factory / Machinery Upkeep 22) CL Factory parameters 23) CL Factory General 24) CL factory / Machinery Upkeep 25) Skim Factory Parameters 26) Skim Factory - General 27) Skim Factory /			

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/W/E/SF
			<p>Machinery Upkeep</p> <p>28) TSR Factory Parameters</p> <p>29) TSR Factory General</p> <p>30) TSR Factory Upkeeps</p> <p>Following templates are used for Monthly Tea & Rubber Re plantation</p> <ol style="list-style-type: none"> 1. Preliminary 2. 1'st Year Field 3. 2'nd Year Field 4. 3'rd Year Field 5. 4'th Year Field 6. 5'th Year Field 7. 6'th Year Field 8. 7'th Year Field 9. 8'th Year Field 			
7	HML/BDG/001-07	Budget Template Account	There should be provision to define the budget accounts applicable for each template	Y	A custom interface required to capture the template specific budget accounts, nature of expenses / materials. This interface should open from the Template list. Against each template name the user should be able to select the list of budget accounts, nature of expenses /	C

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
					materials.	

3.1.2 Budget Entry: Business Process Description

The budgeting process would start with budget templates where the user enters the budget month wise for the following parameters.

- Budget Code
- Estate
- Division
- Field
- Cost Center
- Sub Ledger
- Purpose

Splitting of budgeting from Estate to Division / field or from Division to field is not possible. The user must enter the budget at division or field level as per the requirement.

The budgeted figures entered into the templates can be of two types

- Direct
- Derived

Direct: - Some of the cost is budgeted directly with respect to the value. The user mentions an estimated figure for the relevant nature of expense and this is shown in the reports.

Following are some examples of nature of expenses for which direct budgeted figures are entered into the templates.

- Lorries & Tractors -> Stitching Charges
- Lorries & Tractors -> Washing Allowances
- General Charges -> Kit Allowance - Asst. Managers
- General Charges -> WPA Subscription

Derived: - The budgeted amount is not entered manually. Certain parameters are entered on the basis of which the amount is derived. The material cost can be derived by the rate and quantity (quantity might be a derived figure). The wage cost is derived from the checkroll average for a given period and the number of man days estimated (number of man days might be a derived figure).

Tea :-

The derived wage cost (calculated from man days) should have a breakup of Payroll/Incentive/OT/Contract percentage. The contract wage should be in amount and the others should be in man days. Following table shows the breakup

Activity: Weeding, Area: 200 Ha.	
Payroll/Incentive/OT percentage : 70%	Contract Wages : 30%
Man Days/Ha: 10	Amount/Ha : 100
Man Days required : $200 * 70\% * 10 = 1400$	Amount required : $200 * 30\% * 100 = 6000$
Payroll : 60 % (840, payroll wage rate will be applied)	
Incentive : 30% (420, Incentive wage rate will be applied)	
OT : 10% (140, OT wage rate will be applied)	

Each cost center should have the provision to select the differential wage. The Payroll / Incentive / OT wages should be worked out considering these two.

Separate Chart of accounts to be maintained for Payroll, Incentive, Overtime and Contractual Wage. The system should show the availability of payroll man days in the budget quantum screen. However the system would not restrict the user from entering the incentive, overtime and contractual man days. Separate wage rates for workers and supervisors would be used to calculate the total payroll wage cost. The Statutory components would be calculated on the

basis of the wages arrived by wage rate * man days from budget module. Certain percentage would be applied to calculate the statutory components. The following are the statutory components of Wages.

Provident Fund (PF)
Annual Leave Wages (ALW)
Holiday Pay
Gratuity
Bonus

For crop budgeting there should be validation in the system to check the factory capacity and the budgeted figure should not exceed the factory capacity. Each factory should have provision to define the budget for Orthodox & CTC separately.

Provision is needed to capture the Made tea per man day for each packing material and the man day budget to be worked out based on this.

Following are some of the examples of the derived budget figure.

- General Charges -> Basic Land Tax
- General Charges -> Office Expenses -> Materials
- Weeding -> Manual Weeding
- Pests & Diseases -> No of Rounds for calculating man days & man days per hectare

Tea Revenue Budget :-

For each line of monthly total qty (made tea) in the production plan there should be another window where the production person can define the Grade % against each grade (sum of that should be 100 %) The grade % should be governed by the range. Based on the grade % the system should suggest the grade wise quantity from the Total Quantity (Made Tea). Also there should be a column to capture the opening stock for the grade.

Once this sheet is approved, the application should populate another window for the marketing team to choose the grades to be sold for (Auction / Export / Bulk) and the user should enter the price and the premium against each grade. The marketing team to select Auction / Export / Bulk against each grade (quantity for each grade derived by the % applied in the previous sheet). There should be a column to define the sale quantity for each sales channel type. There should be provision to import the data into this interface from an excel sheet. The system should validate that the total closing stock for a given grade should never be less than zero in any month. This can be achieved by the following formula

Closing stock := opening stock + production stock – (Stock sold in auction + Stock sold in bulk + Stock sold in export).

The system would suggest the sale price as quantity * (Price + Premium). This should be defined for each month & each estate. The scope of revenue budgeting is only limited to set sales target for the marketing team as explained above.

Rubber :-

Field-wise Yield per tree will be entered from which the crop will be derived field-wise depending on No. of Trees. (No. of total trees, No. of tapping trees. and No. of panels will be captured in the field master with effective dates of change).

Latex & FC % will be budgeted for each field.

The no of working days should be calculated by reducing the holidays only. Sunday is working for tappers.

For Pests & Diseases, Spraying and Stimulant Application, the number of rounds needs to be captured.

The derived wage cost (calculated from man days) should have a breakup of Payroll/Incentive/OT/Contract percentage. The contract wage should be in amount and the others should be in man days. Following table shows the breakup

Activity: Weeding, Area: 200 Ha.	
Payroll/Incentive/OT percentage : 70%	Contract Wages : 30%
Man Days/Ha: 10	Amount/Ha : 100
Man Days required : $200 * 70\% * 10 = 1400$	Amount required : $200 * 30\% * 100 = 6000$
Payroll : 60 % (840, payroll wage rate will be applied)	
Incentive : 30% (420, Incentive wage rate will be applied)	
OT : 10% (140, OT wage rate will be applied)	

Each activity should have the provision to select the differential wage. The Payroll / Incentive / OT wages should be worked out considering these two.

Separate Chart of accounts to be maintained for Payroll, Incentive, Overtime and Contractual Wage.

The system should show the availability of payroll man days in the budget quantum screen. However the system would not restrict the user from entering the incentive, overtime and contractual man days. Separate wage rates for workers and supervisors would be used to calculate the total payroll wage cost. The Statutory components would be calculated on the

basis of the wages arrived by wage rate * man days from budget module. Certain percentage would be applied to calculate the statutory components. The following are the statutory components of Wages.

Provident Fund (PF)
Annual Leave Wages (ALW)
Holiday Pay
Gratuity
Bonus

Stock holding days of raw material need to be captured to derive production plan for the factory.
Factory Production should be derived by applying the following calculation:

Crop Intake = (Total Estate wise Crop sent to the Factory + Bought Crop)

Factory Production for the month = (Opening Balance + Crop Intake – (No. of Stock holding days * Crop Intake / No. of Working days for the month)

Closing Balance for the month (Opening Balance for next month) = Op. Balance + Crop Intake – Fty Production for the month.

This is applicable for all type of factories.

Man day requirement to be calculated based on the following parameters

Rubber Factory : Kgs./Man day (Kilograms of Latex/FC per Man day).

CL Factory : Factory Workers per day

Chemical requirement parameter should be qty of chemical per 100 Kgs of crop.

Packing Labor parameters to be captured for each In-Grade.

Rubber Factory : Kgs. Per Man day

CL Factory : For Barrels existing calculation can be used. Additional provision is required for other types of packing for which the man days per Kg. can be captured to work out the budget.

TSR Factory : Bales per Man day

Packing Material parameters also to be captured for each In-Grade.

Rubber Factory: Packing Size, Qty to be packed and Qty. per packing material. Work out the packing material quantity based on these parameters.

CL Factory: Qty per unit of packing material.

TSR Factory: Qty per Bale

For transporting, the rate per ton per km may be captured and the transporting cost may be worked out.

Rubber Revenue Budget :-

For each line of monthly total qty (factory output) in the production plan there should be another window where the production person can define the Grade % against each grade (sum of that should be 100 %) The grade % should be governed by the range. Based on the grade % the system should suggest the grade wise quantity from the Total Quantity (factory output). Also there should be a column to capture the opening stock for the grade.

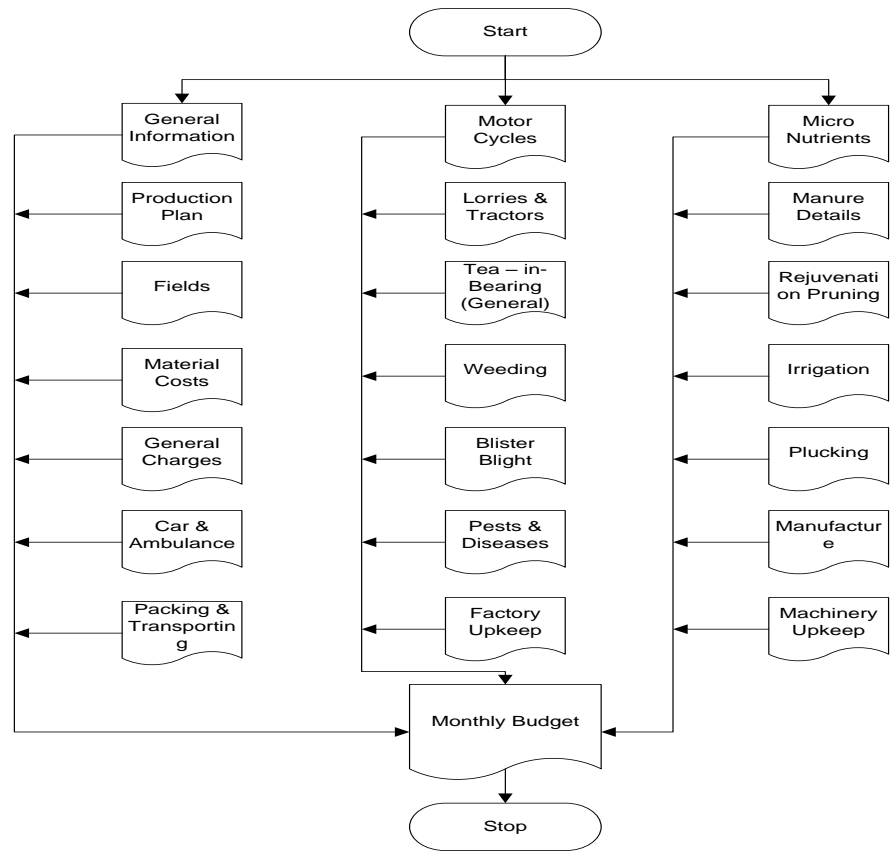
Once this sheet is approved, the application should populate another window for the marketing team to choose the grades to be sold for (Domestic / Export) and the user should enter the price, premium and additional premium against each grade. The marketing team to select Domestic / Export against each grade (quantity for each grade derived by the percent applied in the previous sheet). There should be a column to define the sale quantity for each sales channel type. There should be provision to import the data into this interface from an excel sheet. The system should validate that the total closing stock for a given grade should never be less than zero in any month. This can be achieved by the following formula

Closing stock := opening stock + production stock – (Stock sold in auction + Stock sold in bulk + Stock sold in export).

The system would suggest the sale price for domestic sale as quantity * (Price + Premium) and for export sale as quantity * (Price + Premium += additional premium). This should be defined for each month & each estate. The scope of revenue budgeting is only limited to set sales target for the marketing team as explained above.

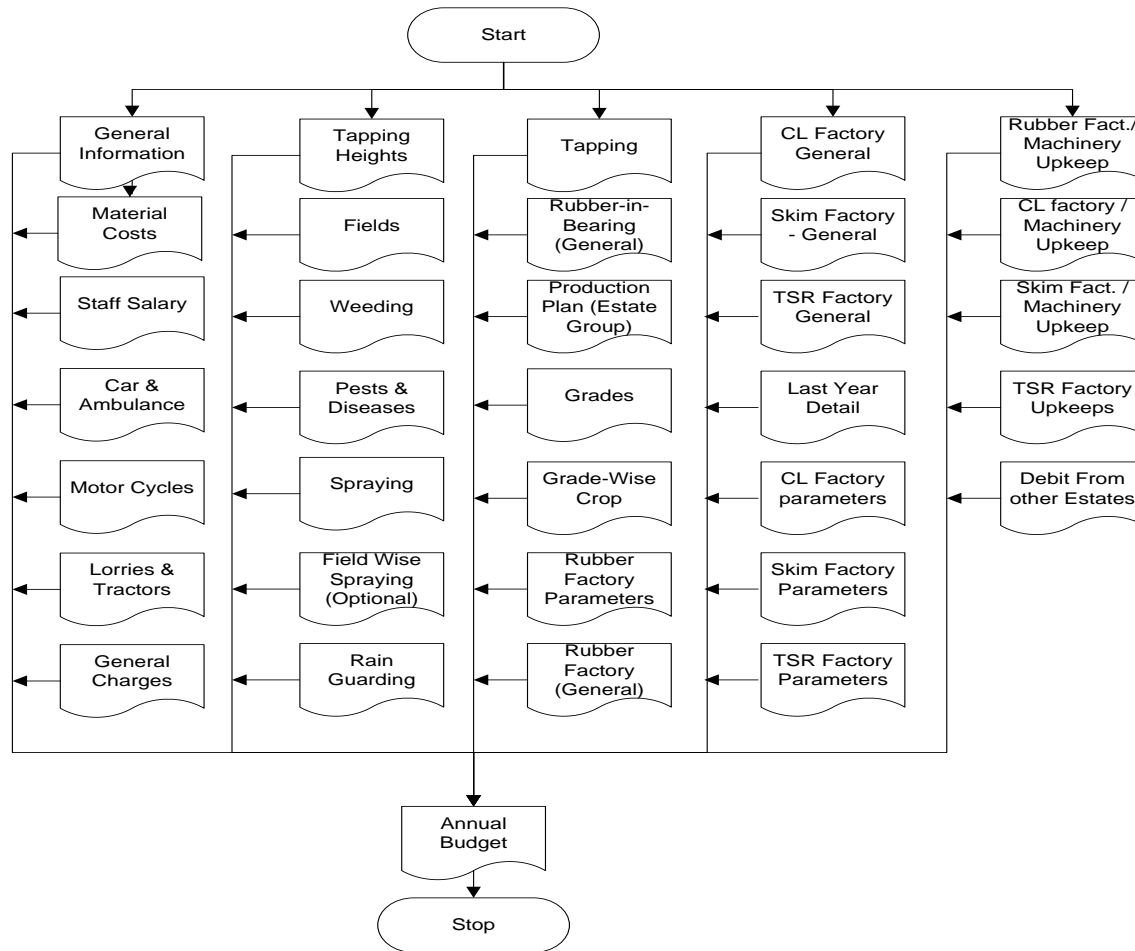
3.1.2.1 Business Process Flow -Business Process Map

Budget Entry for Tea



S

Budget Entry for Rubber



3.1.2.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/BDG/002-01	Budget Template	There should be provision to enter the budget amount / parameters against each account/ nature of services/material for a given budget template.	Y	The budget template should show only those accounts which are defined in the 'Budget Template Account' for the given template. The user should then be able to define the budget amount / parameters for each account/ nature of expenses / material.	C

3.1.3 Consumption Booking: Business Process Description

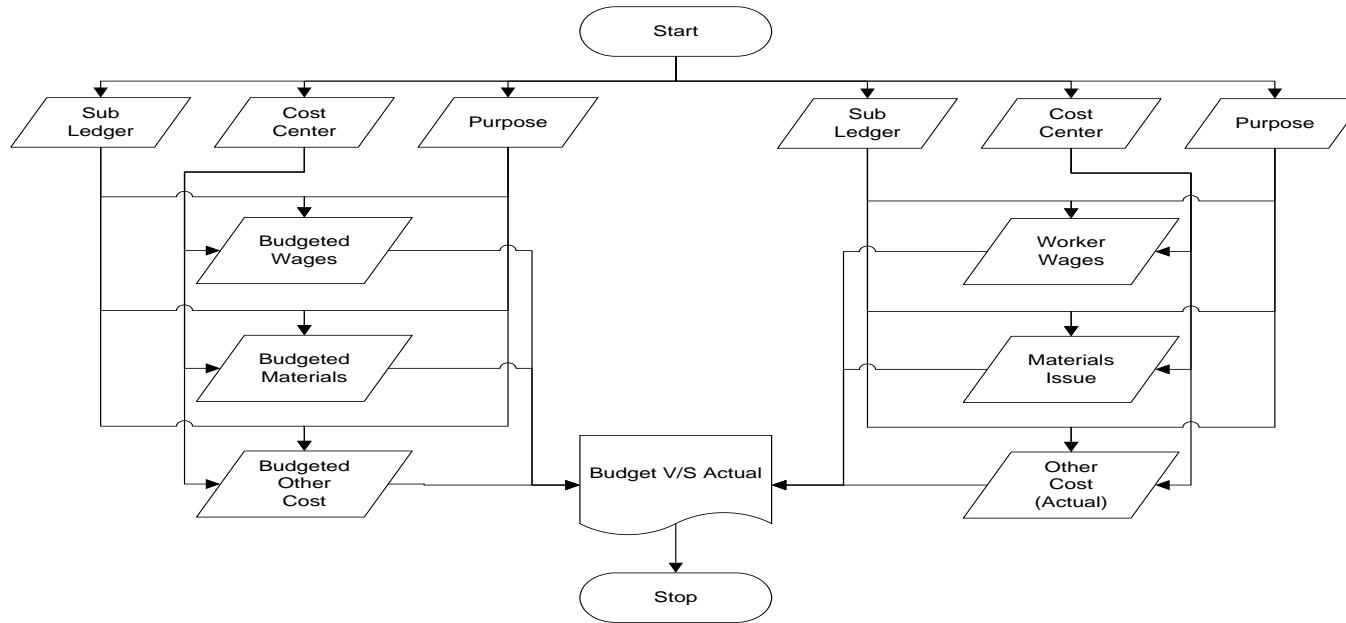
The budgeted v/s actual comparison is achieved for wages, materials and other costs.

Material Cost: - The materials issued / consumed within the budget period should be considered as the actual cost of the material. The actual cost of the material should be posted along with relevant cost centers, sub ledgers & purpose codes.

Wages Cost: - The worker wages can be captured in the system with respect to the cost centers, sub ledgers and purpose. This forms the actual wage cost incurred during the budget period for the given dimensions.

Other Costs:- Other expenses booked through vouchers should be tagged with relevant cost centers, sub ledgers and purpose.

3.1.3.1 Business Process Flow -Business Process Map



3.1.3.2 Business Process Description -Gap Fitment

Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
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Sl. No.	Reference Process ID	Activity Name	Activity Description	Gap (Y/N)	Gap Description	Fitment Type C/ W /E /SF
1	HML/BDG/003-01	Wage Cost	The easy weigh data contains the job code and against each job code there exists a mapping of the cost center, sub ledger and purpose dimension.	N		SF
2	HML/BDG/003-02	Materials Cost	Movement journals can be used to issue the consumables. The cost center, sub ledger and the purpose dimension should be tagged by the user before posting	N		SF
3	HML/BDG/003-03	Other Cost	Voucher used to post the other costs should be tagged with the cost centers, sub ledgers and purpose dimension.	N		SF

3.1.4 Reports

A separate FRD would be released for consolidated reporting requirements as a part of 50 reports that we will be delivered.

3.1.4.1 Business Process Flow -Business Process Map

N/A

3.1.4.2 Business Process Description -Gap Fitment

FRD Sign-off

Client Name

Name:
Designation:
Date:

Client Name

Name:
Designation:
Date:



