

Manufacturing Sustainability Game (Preset 2)

User: \$_1 to \$_9

Initial password: ERPSIM

Adapted for Fiori and for SAP GUI
with Fiori Visual Theme Activated

© ERPSim Lab, HEC Montréal

Last Update: July 31, 2023

CHANGE PRODUCT DESIGN Validated BOM Change (ZCS02) <p>Select the material to change by clicking</p> <p>1 <input type="button" value="Edit BOM"/></p> <p>2 Change quantities and <input type="button" value="Save"/></p> <p>! If received error messages, click on <input type="button" value="Continue"/> to modify the entries</p>	FORECAST SALES Create Planned Indep. Req. (MD61) <p>Select <i>Product group</i> and enter the following information</p> <p>1 <input type="radio"/> Product group: \$\$-F</p> <p>2 <input type="button" value="Continue"/></p> <p>3 Enter your forecast quantities in the 2nd date column</p> <p>4 <input type="button" value="Save"/></p>	CALCULATE REQUIREMENTS MRP Run (MD01) <p>Press Enter or click <input type="button" value="Execute"/></p> <p>2 Ignore orange warnings Press two more times on Enter</p> <p>3 In the pop-up window, click <input type="button" value="Continue"/></p>	SELECT VENDOR Procurement Sourcing (ZME12) <p>1 Click on <input type="button" value="Assign Source of Supply"/></p> <p>2 For each <i>Material</i>, assign a vendor</p> <p>3 <input type="button" value="Save"/></p>	ORDER MATERIALS Create Purchase Orders (ME59N) <p>1 <input type="button" value="Execute"/></p> <p>! Purchase orders are created</p> <p>! If no open requisitions: <i>No suitable requisitions found</i></p>	RELEASE PRODUCTION Convert Planned Orders (C041) <p>1 <input type="button" value="Run Selection"/></p> <p>! If no planned order: <i>Planned order could not be selected</i></p> <p>2 Select orders</p> <p>3 <input type="button" value="Convert"/></p> <p>! If conversion fails, click on <input type="button" value="X"/> to see log</p>
PLAN STOCK TRANSFER Stock Transfer (ZMB1B) <p>1 In <i>Planning Mode</i>, select a <i>Push</i> or <i>Pull</i> transfer strategy</p> <p>2 In <i>Scheduling</i>, enter your delivery frequency</p> <p>3 If available: To sell from main warehouse, in <i>Direct Sales</i>, check <i>Sales from Sloc 2</i> & specify <i>Min Qty</i></p> <p>4 Enter the amount of each product you wish to send/maintain in each region</p> <p>5 <input type="button" value="Save"/></p>	MAINTAIN PRICES Change Price List (VK32) <p>1 Open the <i>Prices</i> folder and double click on <i>Price list</i></p> <p>2 In <i>Distribution channel</i>, enter 10, 12 or 14</p> <p>3 <input type="button" value="Execute"/></p> <p>4 Modify your prices</p> <p>5 <input type="button" value="Save"/></p>	PLAN MARKETING BUDGET Marketing Expense Planning (ZADS) <p>Enter your daily amount of marketing expenditure for each product per area</p> <p>1</p> <p>2 <input type="button" value="Save"/></p>	STANDARD INVESTMENTS Financial Postings (ZFB50) <p>1 Select the type of <i>standard investment</i> you wish to make</p> <p>2 Enter the <i>Posting Amount</i></p> <p>3 Click on <input type="button" value="Purchase"/></p> <p>4 Click on <input type="button" value="Post"/></p>	SUSTAINABLE INVESTMENTS Financial Postings (ZFB50) <p>1 Select the type of <i>sustainable investment</i> you wish to make</p> <p>2 Click on <input type="button" value="Purchase"/></p> <p>3 Click on <input type="button" value="Post"/></p>	PRODUCTION COST Product Cost Planning (ZCK11) <p>Shows variable and fixed costs for each finished product</p> <p>Recalculates costs based on production capacity and productivity level</p> <p>Shows daily amounts of fixed costs (overhead, depreciation and S, G & A)</p>
STOCK LEVELS Inventory Report (ZMB52) <p>Shows stock levels for both finished products and raw materials</p> <p>Shows quantities of raw materials reserved for production</p>	PROCUREMENT TRACKING Purchase Order Tracking (ZME2N) <p>Shows the details/status of each purchase order</p> <p>Shows expected goods delivery Date</p>	SALES AND MARKET DATA Summary Sales Report (ZVC2) <p>Shows aggregate daily sales by product</p> Detailed Sales Report (ZVA05) <p>Shows sales related info such as sales revenue by region</p> Price Market Report (ZMARKET) <p>Shows aggregate market sales data of past 5 days</p>	FINANCIAL STATEMENTS Financial Statements (F.01) <p>1 In <i>Company Code</i>, enter your <company code>*</p> <p>GUI step Select ALV Tree Control</p> <p>2 FIORI step In <i>Statement Version</i>, enter SIM1</p> <p>3 GUI step <input type="button" value="Execute"/> FIORI step <input type="button" value="Go"/></p>	MANAGE IT REPORTS Report Management (ZITM) <p>Shows report availability and allows report(s) purchase</p> CASH FLOW Liquidity Planning (ZFF7B) <p>Displays an estimate of your cashflow for the coming weeks</p>	PRODUCTION SCHEDULE Production Report (ZC00IS) <p>Shows released production orders</p> <p>For each order, the time released, started and finished (or to start and finish if incomplete)</p> <p>If Target Qty > Conf. Qty production is still pending</p>

Manufacturing Sustainability Game (Preset 2)

User:

\$_1 to \$_9

Initial password:

ERPSIM

Adapted for Fiori and for SAP GUI
with Fiori Visual Theme Activated

© ERPSim Lab, HEC Montréal

Last Update: July 31, 2023

Bill of Materials

Nut		Strawberry		Original		Raisin		Blueberry		Mixed	
\$\$-F01	500g	\$\$-F03	500g	\$\$-F05	500g	\$\$-F04	500g	\$\$-F02	500g	\$\$-F06	500g
\$\$-F11	1kg	\$\$-F13	1kg	\$\$-F15	1kg	\$\$-F14	1kg	\$\$-F12	1kg	\$\$-F16	1kg
20% wheat* 30% oat* 20% nut* 1 box / 1 bag*		20% wheat* 30% oat* 20% strawberry* 1 box / 1 bag*		20% wheat* 30% oat* 1 box / 1 bag*		20% wheat* 30% oat* 20% raisins* 1 box / 1 bag*		20% wheat* 30% oat* 20% blueberry* 1 box / 1 bag*		20% wheat* 30% oat* 30% fruits & nuts** 1 box / 1 bag*	
*minimum		*minimum		*minimum		*minimum		*minimum		*minimum **requires all fruits/nut	

STORAGE CAPACITY AND COSTS

Product Type	Current Space	Daily Cost per additional 50 000 units*	Daily Carbon cost per additional 50 000 units*
Finished products	250 000 boxes	€500	2 500 (kg of CO ₂ e)/day
Raw materials	250 000 kg	€1 000	5 000 (kg of CO ₂ e)/day
Packaging (bags and boxes)	750 000 units	€100	1 500 (kg of CO ₂ e)/day

*Billed automatically

SUPPLIERS

Vendor	V01	V11	V02	V12
Lead time (days)	2-3	1-4	2-3	1-4
Delivery Cost (euros)	-	€ 1 000	-	€ 2 000
Delivery Carbon (kg of CO ₂ e)	10 000	10 000	6 000	15 000

CUSTOMERS



DC 10: Hypermarkets
Payment Time: 20 days
Approximate Market Size
€90 000 per team per week



DC 12: Grocery Chains
Payment Time: 10-20 days
Approximate Market Size
€360 000 per team per week



DC 14: Independent Grocers
Payment Time: 1-20 days
Approximate Market Size
€135 000 per team per week

TRANSPORTATION AND CARBON FEES

Movement type	Cost (€)	Carbon (kg)
Main Warehouse to Regions	500	750
Regions to Customers	-	200
Main WH to Customers (per unit)	0.05	0.25

FIXED CARBON TAX

Price (€/kg of CO ₂ e)	0.20
-----------------------------------	------

SUSTAINABLE INVESTMENTS

Type	Cost (€)	Carbon (kg of CO ₂ e)	Reduction (%)	Max. Reduction (%)
Freight Fleet Improvement	10 000	2 000	15	45
Sustainable Manufacturing	10 000	2 000	15	45

FIXED COSTS (€ paid each 5 days)*

Labor	20 000
Manufacturing overhead	15 000
S, G & A	40 000
Depreciation (Building)	1 250
Depreciation (Equipment)	50 000

*Billed automatically

DAILY OVERHEAD CARBON

Purchased Energy (kg of CO ₂ e)	500
Other Overhead (kg of CO ₂ e)	400

PRODUCTION CONSTRAINTS

Capacity (units/day)	24 000
Additional Capacity Cost (€ per 1 000 units)	1 000 000**
Additional Capacity Carbon Emission (kg per 1 000 units)	1 000
Production Carbon Emission	0.30 kg per box
Setup Carbon Emission	50 kg per hour
Minimum/Maximum Lot Size	16 000/48 000

**Investing in additional capacity will increase equipment depreciation costs

SETUP TIME REDUCTION

Setup time (hrs)	Cost (€)	Carbon (kg)
8	-	-
7	50 000	100
6	125 000	250
5	250 000	500
4	500 000	1 000
3	1 250 000	2 500