

ERP Simulation Game



Academic Year 2017-2018

MANUFACTURING EXTENDED

A Serious Game
for Learning
**Enterprise Resource
Planning Concepts**

Powered by **ERPsim**
Compatible with **SAP™ ERP ECC and Business Suite on HANA**

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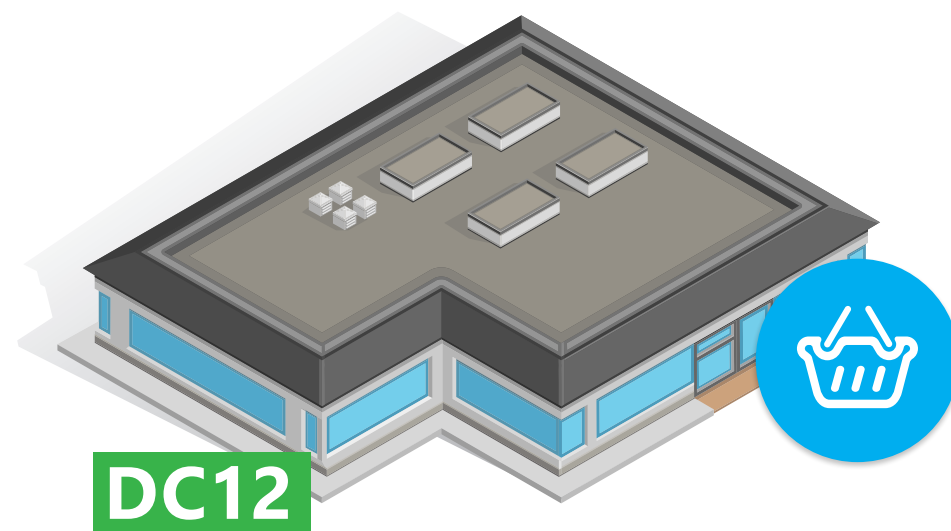
Welcome to Your New Job!



Make-to-Stock Muesli Manufacturing



Initial Market (Manufacturing Introduction)

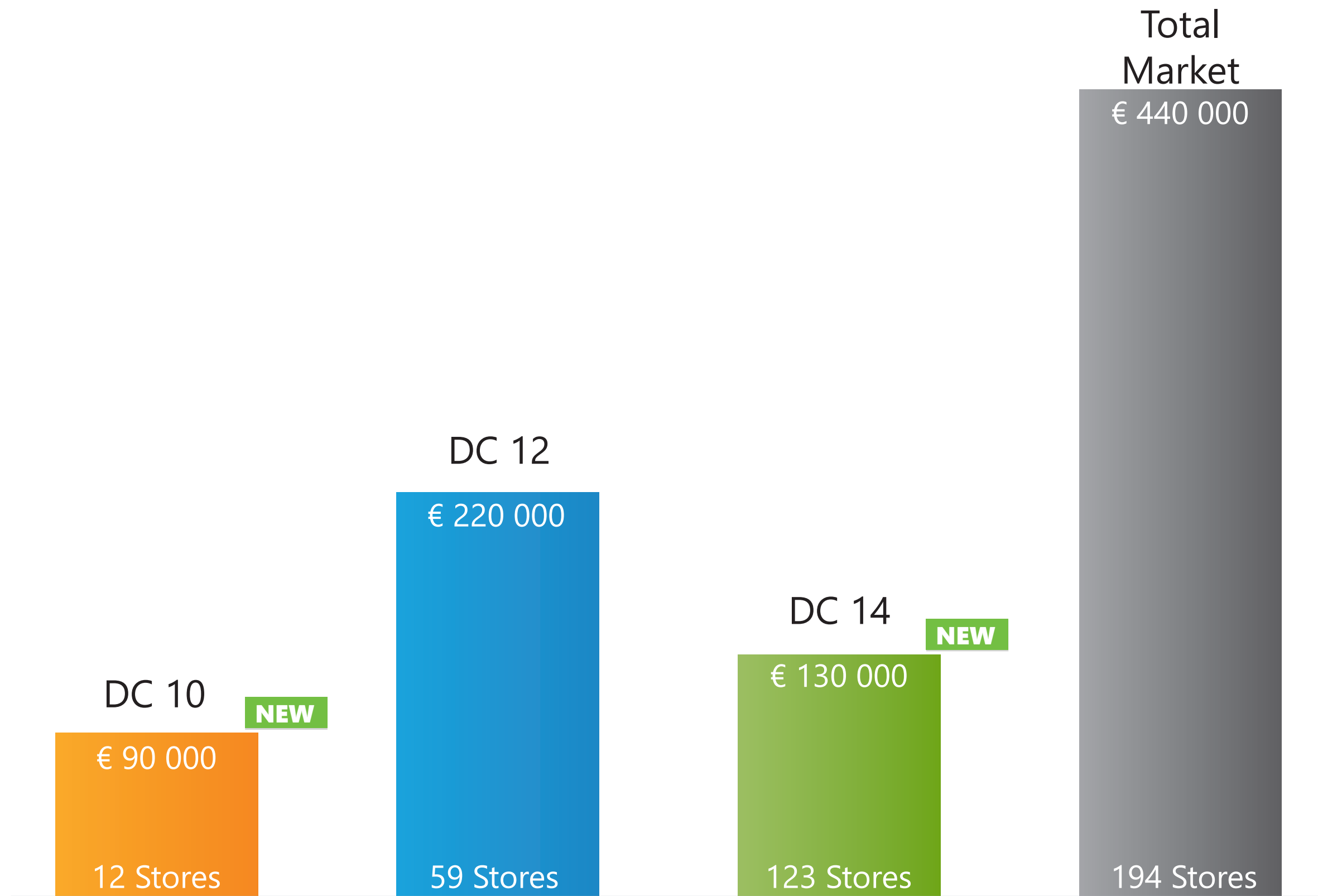


Grocery chains



- Starting Inventory for some products
- €0 Bank Loan
 - €0 interest charges
- €16 000 000 in Machinery and Equipment
 - 16,000 units / day in capacity
- 8 hours setup time
- Fixed Costs (paid every 5 days)
 - Direct labor: €10 000
 - Factory overhead: €7 500
 - S, G & A: €20 000
 - Depreciation (Building): €1 250
 - Depreciation (Equipment): €33 333

New Customer Markets



To service new customers, we need to be able to scale our production up to meet the increased demand. An €8 000 000 investment, financed by bank loan, has been made in Machinery and Equipment to increase your production capacity.

Impact of New Customer Markets

More customers implies:

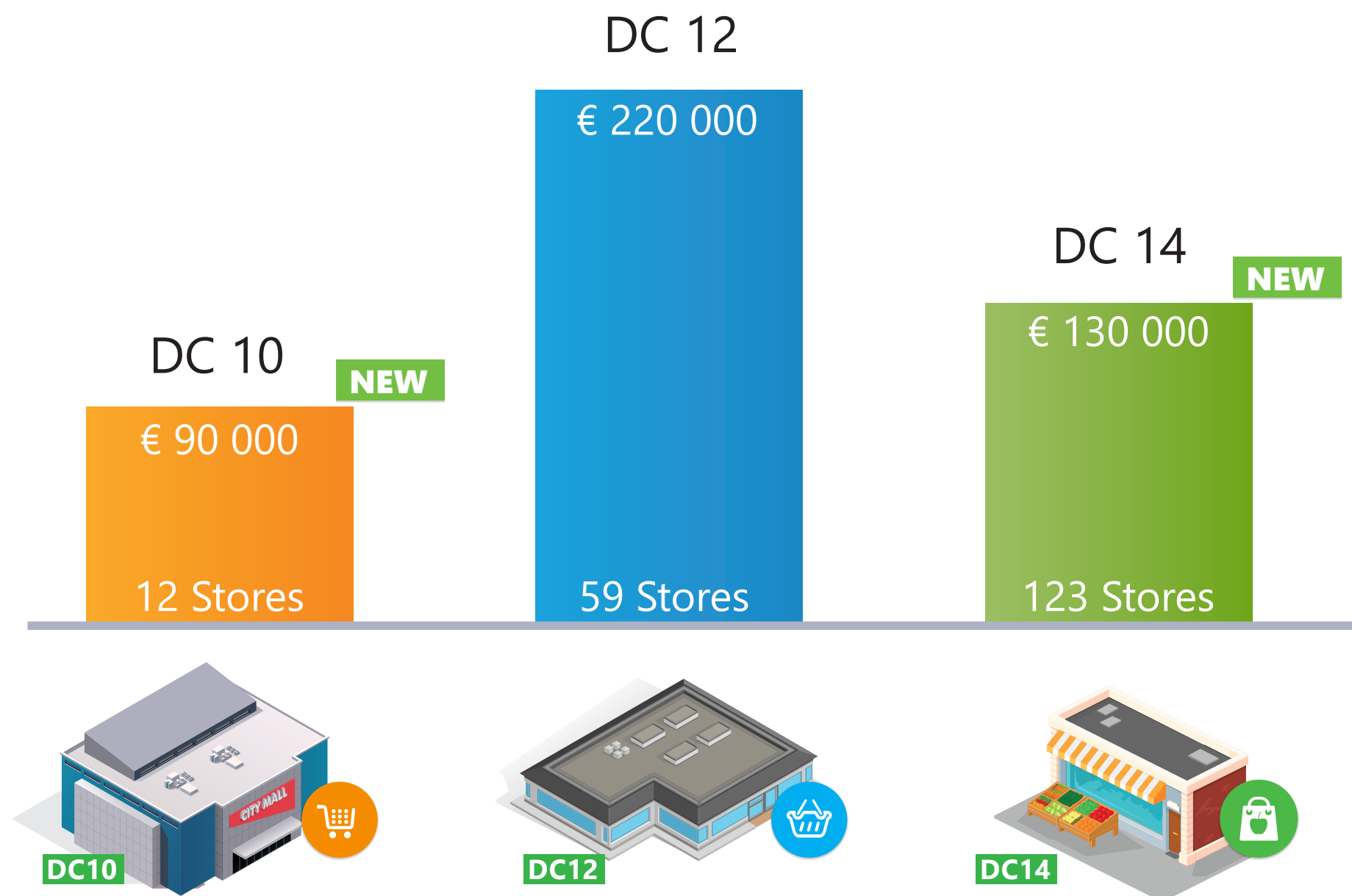
- More Sales Staff
 - Increases the S, G & A
- New Bank Loan
 - Adds interests charges to the fixed costs
- Purchase of Machinery and Equipment
 - Increases the equipment depreciation costs
 - Increases Overhead Costs
 - More Factory workers Increases Direct Labor costs



Before the €8 000 000 investment.
Capacity : 16,000 units/day

After the €8 000 000 investment.
Capacity : 24,000 units/day

Current Market (Manufacturing Extended)



- No Starting Inventory
- New €8 000 000 Bank Loan to finance production capacity improvements
- €24 000 000 in Machinery and Equipment after investment
 - 24,000 units / day in capacity
- 8 hours setup time
- Fixed Costs (paid every 5 days)
 - Direct labor: €20 000
 - Factory overhead: €15 000
 - S, G & A: €40 000
 - Depreciation (Building): €1 250
 - Depreciation (Equipment): €50 000

Distribution Channels

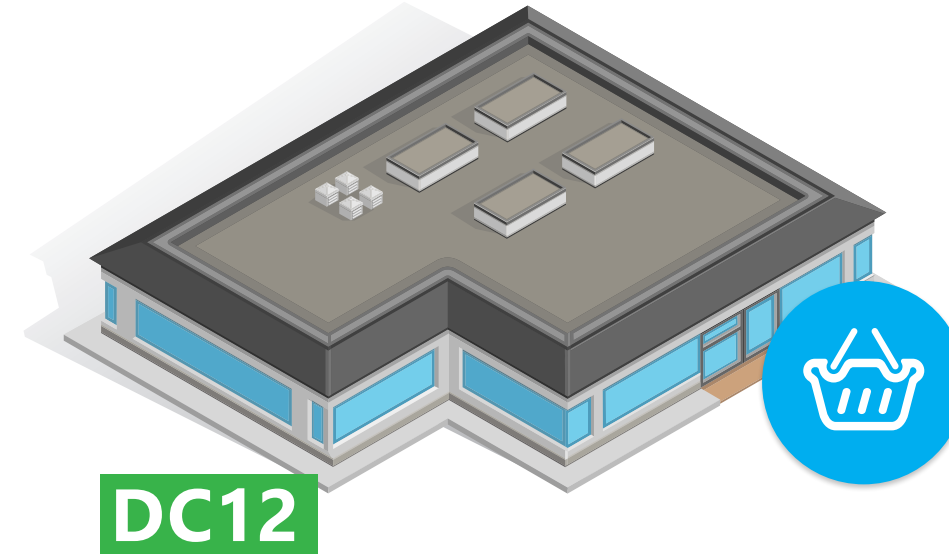


Hypermarkets

- Only buy large boxes (1kg)
- Orders 3 products at a time
- Payment delay of 20 days
- Very High sensitivity to price
- Low sensitivity to advertising

Approximate Market Size

- €90 000 per team per week (5 days)

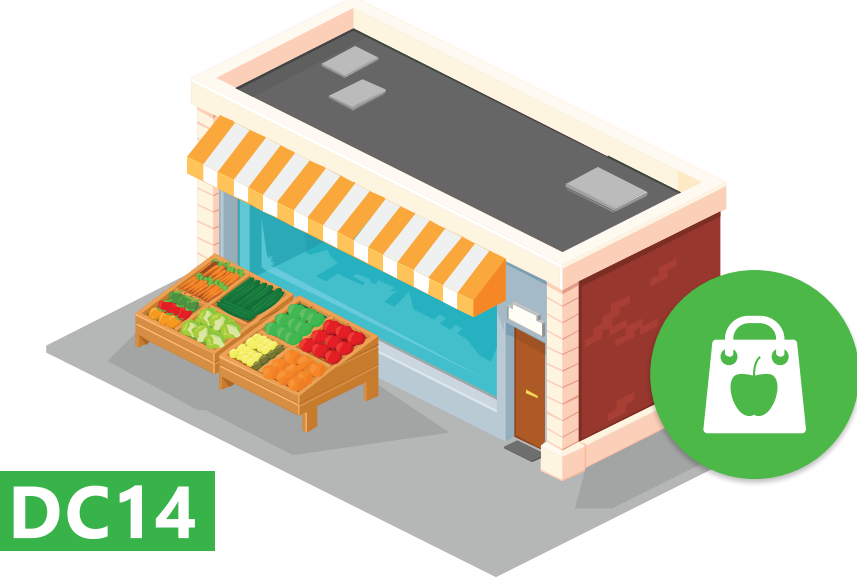


Grocery stores

- Buy all sizes of boxes (1kg and 500g)
- Orders 4 products at a time
- Payment delay of 10 to 20 days
- High sensitivity to price
- Medium sensitivity to advertising

Approximate Market Size

- €220 000 per team per week (5 days)



Independent grocers

- Only buy small boxes (500g)
- Orders 1 product at a time
- Payment delay of 1 to 20 days
- Medium sensitivity to price
- High sensitivity to advertising

Approximate Market Size

- €130 000 per team per week (5 days)

Number of Stores by Geographical Area

West



NEW	Hypermarkets	3
	Grocery stores	17
NEW	Independent grocers	40

South



NEW	Hypermarkets	7
	Grocery stores	23
NEW	Independent grocers	38

North



NEW	Hypermarkets	2
	Grocery stores	19
NEW	Independent grocers	45

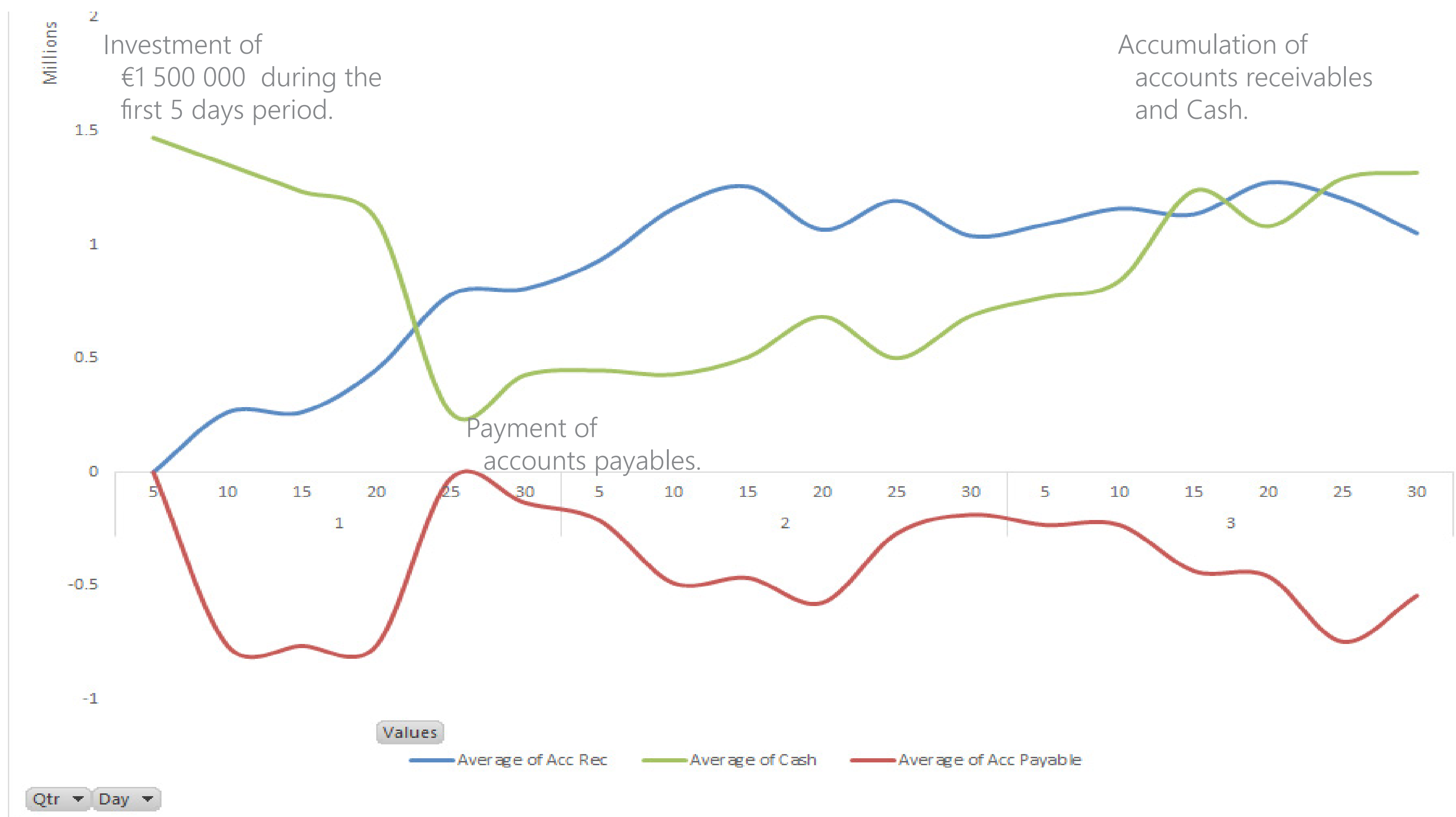
Total



NEW	Hypermarkets	12
	Grocery stores	59
NEW	Independent grocers	123



Financial Situation and Cash Management



Initial situation

- €2 000 000 in Bank Cash Account
- Loan of €8 000 000
- Fixed costs paid every 5 days
- Sales revenue received after 1 to 20 days

Determining Company Value

$$\begin{aligned} \text{Company Value} &= \frac{\text{Yearly Profit}}{\text{Company Discount Rate}} \\ &= \frac{\left(\frac{\text{Current Profit} - \text{Setup}}{\text{Nb. Rounds Played} * 12} \right) + \text{Setup}}{\text{Market Risk Rate} + \text{Company Risk Rate}} \end{aligned}$$

Where Setup = Setup Time Reduction Investment

This formula is adapted from the standard Dividend Discount Model (DDM) for stock valuation, assuming no growth and 100% dividend payout.

Company Valuation Example

Company Situation

Current profit: €125 000

Setup time reduction: €-75 000

Number of rounds played: 1

Market Risk Rate: 7%

Company Credit Rating: BBB

Company Risk Rate*: 6%

* linked to BBB credit rating, see next slide

$$\begin{aligned} \text{Company Value} &= \frac{\left(\frac{\text{Profit} - \text{Setup}}{\text{Nb. Rounds Played}} * 12 \right) + \text{Setup}}{\text{Market Risk Rate} + \text{Company Risk Rate}} \\ &= \frac{\left(\frac{125\,000 - (-75\,000)}{1} * 12 \right) + (-75\,000)}{7\% + 6\%} \\ &= \frac{2\,325\,000}{13\%} \\ &= \text{€}17\,884\,615 \end{aligned}$$

Determining Company Discount Rate

$$\begin{aligned} \text{Discount Rate} &= \text{Market Risk Rate} + \text{Company Risk Rate} \\ &= 7\% + f(\text{Company Credit Rating}) \end{aligned}$$

$$\text{Company Credit Rating} = f(\text{Debt Loading})$$

$$\text{Debt Loading} = \overbrace{(\text{Cash} + \text{Acc. Receivables})}^{\text{Positive Values}} + \overbrace{(\text{Loan} + \text{Acc. Payables})}^{\text{Negative Values}}$$

- The market risk rate is based on historical stock market average returns of 7%.
- Company credit ratings are determined using the lookup table.

LOOKUP TABLE

Debt Loading	Rating	Risk Differential
€ -	AAA+	+3,00%
€ -1 000 000	AA+	+3,75%
€ -2 000 000	AA	+4,00%
€ -3 000 000	AA-	+4,25%
€ -4 000 000	A+	+4,75%
€ -5 000 000	A	+5,00%
€ -6 000 000	A-	+5,25%
€ -7 000 000	BBB+	+5,75%
€ -8 000 000	BBB	+6,00%
€ -9 000 000	BBB-	+6,25%
€ -10 000 000	BB+	+6,75%
€ -11 000 000	BB	+7,00%
€ -12 000 000	BB-	+7,25%
€ -13 000 000	B+	+7,75%
€ -14 000 000	B	+8,00%
€ -15 000 000	B-	+8,25%
€ -16 000 000	CCC+	+9,00%
€ -17 000 000	CCC	+10,00%
€ -18 000 000	CCC-	+11,00%
€ -19 000 000	CC	+12,00%
€ -20 000 000	C	+15,00%

Company Valuation Example

Company Situation

- Current profit: €125 000
- Cash: €1 500 000
- Accounts Receivable: €450 000
- Bank Loan: €-10 000 000
- Accounts Payable: €-350 000
- Number of rounds played: 1
- Market Risk Rate 7%

$$\begin{aligned}\text{Debt Loading} &= (\text{Cash} + \text{Acc.Receivables}) + (\text{Loan} + \text{Acc.Payables}) \\ &= (1\,500\,000 + 450\,000) + (-11\,000\,000 + -350\,000) \\ &= -8\,400\,000\end{aligned}$$

$$\begin{aligned}\text{Company Credit Rating} &= f(\text{Debt Loading}) \\ &= f(-8\,400\,000) \\ &= \text{BBB}\end{aligned}$$

$$\begin{aligned}\text{Company Risk Rate} &= f(\text{Company Credit Rating}) \\ &= f(\text{BBB}) \\ &= 6\%\end{aligned}$$

$$\begin{aligned}\text{Company Value} &= \frac{(\text{Profit} - \text{Setup}) / \text{Nb. Rounds Played} * 12 + \text{Setup}}{\text{Market Risk Rate} + \text{Company Risk Rate}} \\ &= \frac{(125\,000 - (-75\,000)) / 1 * 12 + (-75\,000)}{7\% + 6\%} \\ &= \frac{2\,325\,000}{13\%} \\ &= €17\,884\,615\end{aligned}$$

Impact of Financial Decisions

Investment/Account	Positive Values		Negative Values		Impact		
	(Cash	+ Acc.Receivable)	+	(Loan + Acc. Payable)	Credit Rating	Profit	Weekly Costs
Buy Equipment	—	0		0 0	—	0	+
Setup Time Reduction	—	0		0 0	—	—	0
Pay Back Bank Loan	—	0		+ 0	0	0	—

- Keep in mind that all investment decisions typically involve large up front payments or commitments of resources that generate future operational returns (increase efficiency, decrease costs, increase revenue).
- Note that since credit ratings are tiered based on debt levels, the impact on credit rating is dependant on the size of the investment; e.g. a €3M purchase of machinery will reduce your credit rating by three levels.

Impact of Operational Activities

Activity/Account	Positive Values		Negative Values		Impact		
	(Cash + Acc.Receivable)		(Loan + Acc. Payable)		Credit Rating	Profit	Weekly Costs
Send Purchase Order	0	0	0	0	0	0	0
Goods Receipt	0	0	0	—	—	0	0
Pay Vendor	—	0	0	+	0	0	0
Sales	0	+	0	0	+	+	0
Receive Customer Payment	+	—	0	0	0	0	0

- To increase the value of your company, you should focus on making profitable sales. Both the increase in profit and improvement in credit rating make the company more valuable.
- Note that since credit ratings are tiered based on debt levels, the impact on credit rating is dependant on the size of the transaction; e.g. You would need €1m of new sales to increase your credit rating one level.

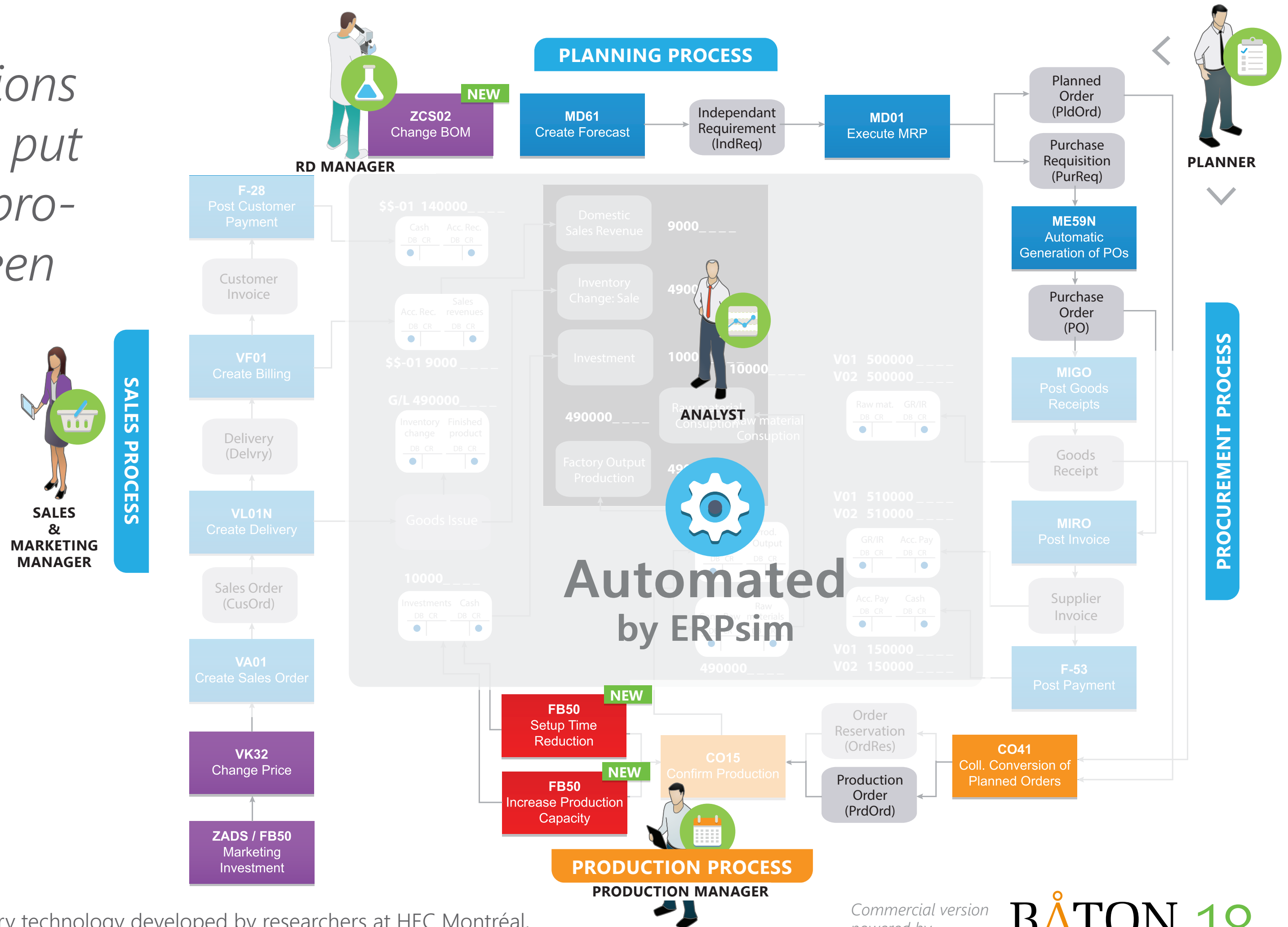
Operations in the Cash-to-Cash



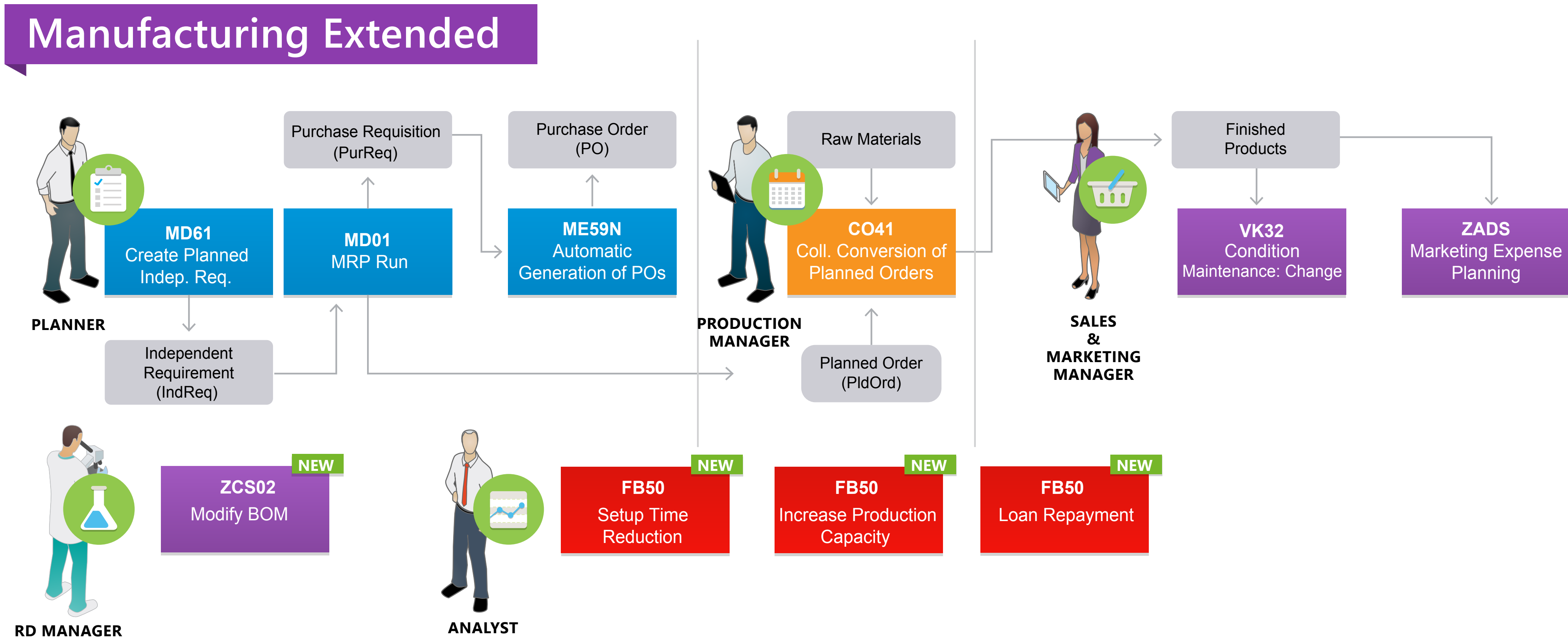
Integrated Business Processes

WITH ERPsim

With ERPsim, many clerical transactions are automated by the simulator to put emphasis on the decision making processes and the collaboration between the players.



Manufacturing Extended Game



Productivity Decisions

Setup time reduction



- Initial setup time of **8 hours** between production runs of two different products with the option of reducing it by investing.

Production capacity increase



- A bank loan of **€8 000 000** has been invested in production capacity to increase your Initial production capacity from **16,000 to 24,000 units / day**. You also have the option to increase it further.

R&D Management

Muesli Cereals: Composition



Available Recipes



Nut	
\$\$-F01	500g
\$\$-F11	1kg

20% wheat*
30% oat*
20% nut*
1 box / 1 bag*

*minimum



Blueberry	
\$\$-F02	500g
\$\$-F12	1kg

20% wheat*
30% oat*
20% blueberry*
1 box / 1 bag*

*minimum



Strawberry	
\$\$-F03	500g
\$\$-F13	1kg

20% wheat*
30% oat*
20% strawberry*
1 box / 1 bag*

*minimum



Raisin	
\$\$-F04	500g
\$\$-F14	1kg

20% wheat*
30% oat*
20% raisins*
1 box / 1 bag*

*minimum



Original	
\$\$-F05	500g
\$\$-F15	1kg

20% wheat*
30% oat*
1 box / 1 bag*

*minimum



Mixed	
\$\$-F06	500g
\$\$-F16	1kg

20% wheat*
30% oat*
30% fruits & nuts**
1 box / 1 bag*

*minimum

**At least some of all fruits/nut

Bill-of-Material

CHANGE PRODUCT DESIGN

Modify BOM (ZCS02)

- 1

In *Material*, enter the product to redesign : \$\$-F##
- 2


- 3

Change quantities
- 4


- ?

If prompted the "incorrect recipe" message, click on  to modify it

Material BOM

Edit

Goto


Extras


Environment


Settings


System


Help





























Change material BOM: General Item Overview















Material

ZZ-F01

500g Nut Muesli

Plant

ZZ

Factory Z

Alternative BOM

1

Mater...

Document

General

Position...

Initial

Entry


1 / 5

Financial Accounting

Financial Statements

FINANCIAL STATEMENT

Financial Statements (F.01)

- 1 In *company code*, enter your company number (\$\$)
- 2 Select ALV Tree control (optional)
- 3 

Program Edit Goto System Help

Financial Statements

Financial Statements - ERPsim

OL Ledger
10 Currency type Company code currency
EUR Amounts in European Euro
2016-01-2016-12 Reporting periods

Financial Statement Items

Financial Statement Item/Account	Tot.rpt.pr	tot.cmp.pr	Abs. diff.
Balance Sheet	0.00	0.00	0.00
Assets	28,902,735.21	28,569,974.85	332,760.36
Liabilities and Owners' Equity	28,902,735.21-	28,569,974.85-	332,760.36-
Income Statement	437,235.21-	312,964.85-	124,270.36-
Revenues	2,808,847.90-	2,073,910.00-	734,937.90-
Cost of Goods Sold	898,622.13	669,910.00	228,712.13
Inventory Change	80,557.88-	37,844.00-	42,713.88-
Operating Expenses	965,416.64	700,416.65	264,999.99
Sales, General, and Administrative Expense	588,131.80	428,462.50	159,669.30
Net Income(Loss)	437,235.21	312,964.85	124,270.36
Calculated Result	437,235.21	312,964.85	124,270.36

Cost Accounting



Total Fixed Costs

FIXED COSTS (€ paid each 5 days)*

Direct labor	20 000
Factory overhead	15 000
S, G & A	40 000
Depreciation (Building)	1 250
Depreciation (Equipment)	50 000**

**Billed Automatically*

***Investing in additional capacity will increase equipment depreciation costs*

Product Cost Planning

PRODUCTION COST

Product Cost Analysis (ZCK11)

For each product, it shows variable and fixed costs and the price for each DC.

SystemHelp

Product Cost Planning

Fixed Costs (Daily)

4,000.00

Labor

3,000.00

Manufacturing Overhead

10,416.67

Depreciation-Equipment

250.00

Depreciation-Building

8,000.00

Sales, General & Administrative

2,644.80

Loan Interest

Total Fixed Costs

28,311.47

Production Capacity

25,000

Productivity (%)

75

X

Allocation Basis

=

18,750

/

Allocated Fixed Costs per Unit

=

1.51

EUR

Recalculate

NOTE: The allocation of fixed costs is entirely dependant on your productivity assumption. The cost analysis here does NOT include marketing, warehousing or any other expenses. Recalculate only takes into account a changed productivity assumption, and is not a full refresh.

Profitability Analysis

Material	Description	Variable	Variable + Fixed
ZZ-F01	500g Nut Muesli	0.90	2.41
ZZ-F02	500g Blueberry Muesli	1.23	2.74
ZZ-F03	500g Strawberry Muesli	1.23	2.74
ZZ-F04	500g Raisin Muesli	0.79	2.30
ZZ-F05	500g Original Muesli	0.77	2.28
ZZ-F06	500g Mixed Fruit Muesli	1.13	2.64
ZZ-F11	1kg Nut Muesli	1.61	3.12
ZZ-F12	1kg Blueberry Muesli	2.26	3.77
ZZ-F13	1kg Strawberry Muesli	2.27	3.78

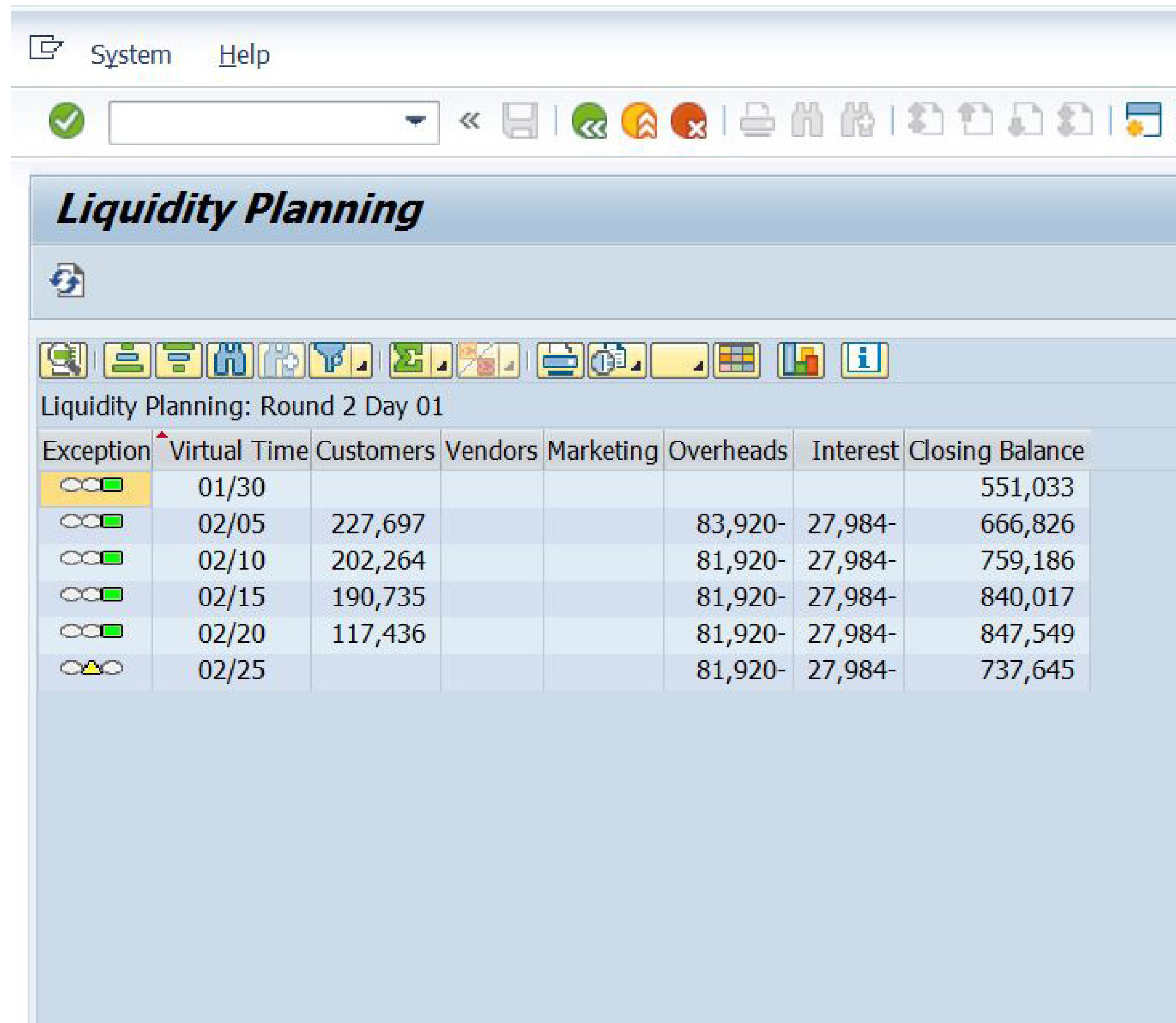
Variable: The cost of raw materials to manufacture the product, based on average historical purchase price.

Treasury Management

Liquidity Planning

Liquidity Planning (ZFF7B)

Displays an estimate of your cashflow for the incoming weeks



Exception	Virtual Time	Customers	Vendors	Marketing	Overheads	Interest	Closing Balance
	01/30						551,033
	02/05	227,697			83,920-	27,984-	666,826
	02/10	202,264			81,920-	27,984-	759,186
	02/15	190,735			81,920-	27,984-	840,017
	02/20	117,436			81,920-	27,984-	847,549
	02/25				81,920-	27,984-	737,645

Financial Transaction : Posting in the G/L

Document Edit Goto Extra Settings Environment System Help

Enter G/L Account Document: Company Code GG

Tree on Company Code Hold Simulate Mark

Basic Data Details

Document Date 2015-06-23 Currency EUR

Posting Date 2015-06-23

Reference

Doc.Header Text

Cross-CC no.

Company Code GG Company G Hannover

Amount Information

Total Dr. 0.00 EUR

Total Cr. 0.00 EUR

0 Items (No entry variant selected)

St...	G/L acct	Short Text	D/C	Amount in doc.curr.	Loc.curr.amount	T.. Tax jurisdictn code	V Assignment	Value date
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			

Loan Repayment

LOAN REPAYMENT

Enter G/L account (FB50)

1 Enter current date (F4)

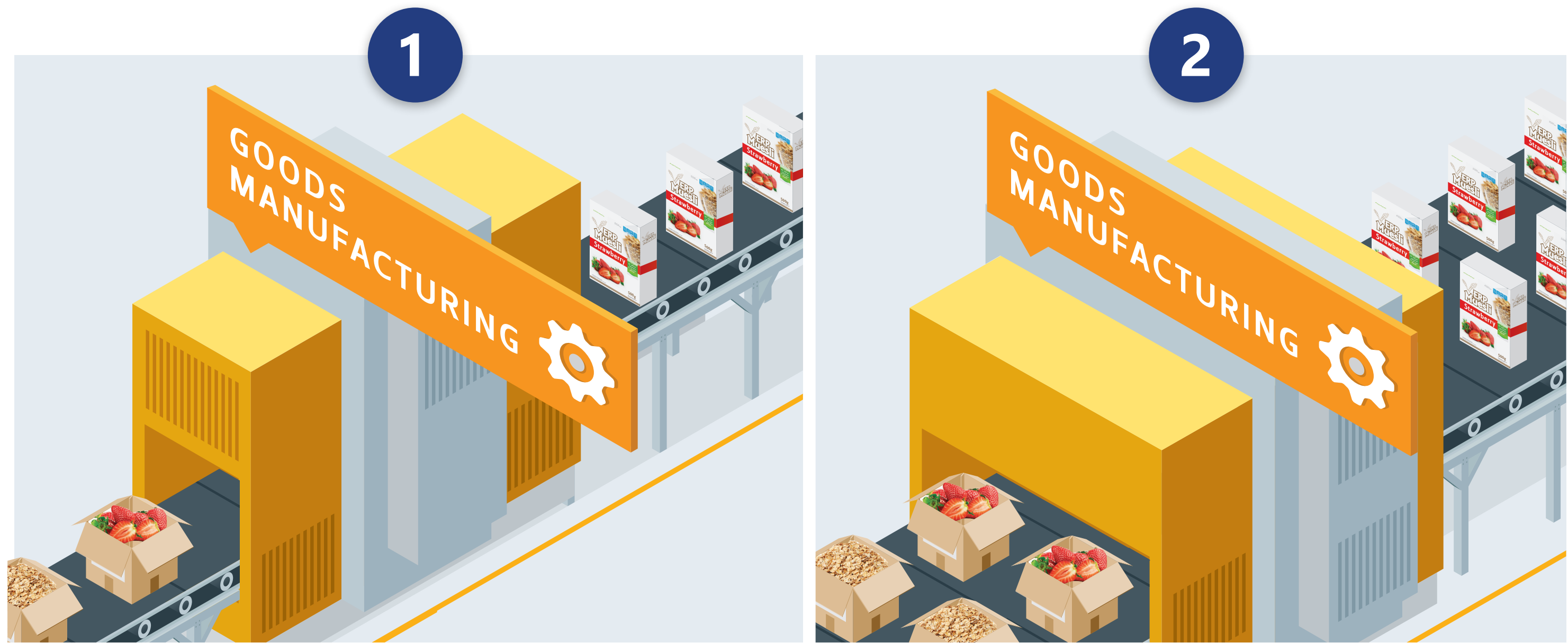
2	1st Line	2nd Line
Account	113300	113101
D/C	Credit	Debit
Amount	???	???

3 

[illegible]

Production Planning

Production Improvement: Capacity Increase



PRODUCTION CAPACITY

Capacity (units/day)	24,000
Additional Capacity (€ per 1,000 units)	1 000 000

$$\text{Capacity} = \frac{\text{Account \#11000 Balance}^*}{1\ 000}$$

**Machinery and equipment Account*

Balance Sheet : Capacity Improvement

INCREASE CAPACITY

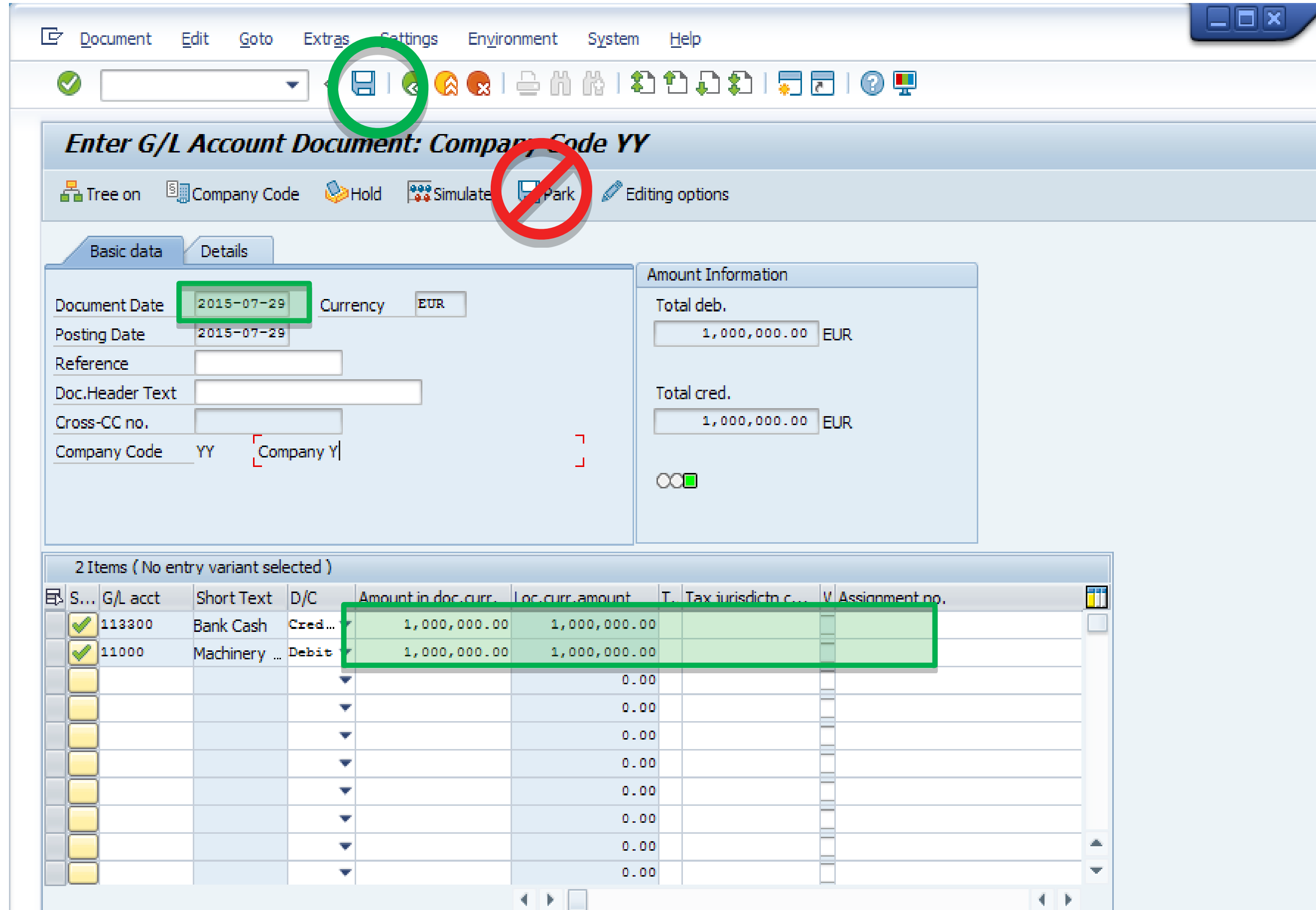
Enter G/L account (FB50)

1 Enter current date (F4)

2	1 st Line	2 nd Line
Account	113300	11000
D/C	Credit	Debit
Amount	???	???

3 

4 



Document Date: 2015-07-29, Currency: EUR, Posting Date: 2015-07-29

Amount Information: Total deb. 1,000,000.00 EUR, Total cred. 1,000,000.00 EUR

S...	G/L acct	Short Text	D/C	Amount in doc. curr.	Loc. curr. amount	T. Tax jurisdicth c...	V Assignment no.
✓	113300	Bank Cash	Cred...	1,000,000.00	1,000,000.00		
✓	11000	Machinery ...	Debit	1,000,000.00	1,000,000.00		
					0.00		
					0.00		
					0.00		
					0.00		
					0.00		
					0.00		
					0.00		

Lot Size (MM02)

MODIFY LOT SIZE

Change Material (MM02)

1

In *Material*, enter Product code :
\$\$-F0#

2

3

Select *View* : MRP 1

4

5

In *Plant*, enter your
Plant code : \$\$

6

7

Set up your new *Lot Size*.

8

Material Edit Goto Environment System Help

Change Material II-F11 (Finished Product)

Additional Data Org. Levels

Purchase order text MRP 1 MRP 2 MRP 3 MRP 4 Forecasting Work scheduling

Material II-F11 1kg Nut Muesli

Plant II Factory I

General Data

Base Unit of Measure ST items MRP group 0010

Purchasing Group 800 ABC Indicator

Plant-sp.matl status Valid from

MRP procedure

MRP Type PD MRP

Reorder Point Planning time fence

Planning cycle MRP Controller 101

Lot size data

Lot size EX Lot-for-lot order quantity

Minimum Lot Size Maximum Lot Size 50,000

Fixed lot size Maximum stock level

Ordering costs Storage costs ind.

Assembly scrap (%) Takt time

Rounding Profile Rounding value

Unit of Measure Grp

Planned Order List Edit Goto Environment System Help

Collective Conversion of Planned Orders: List

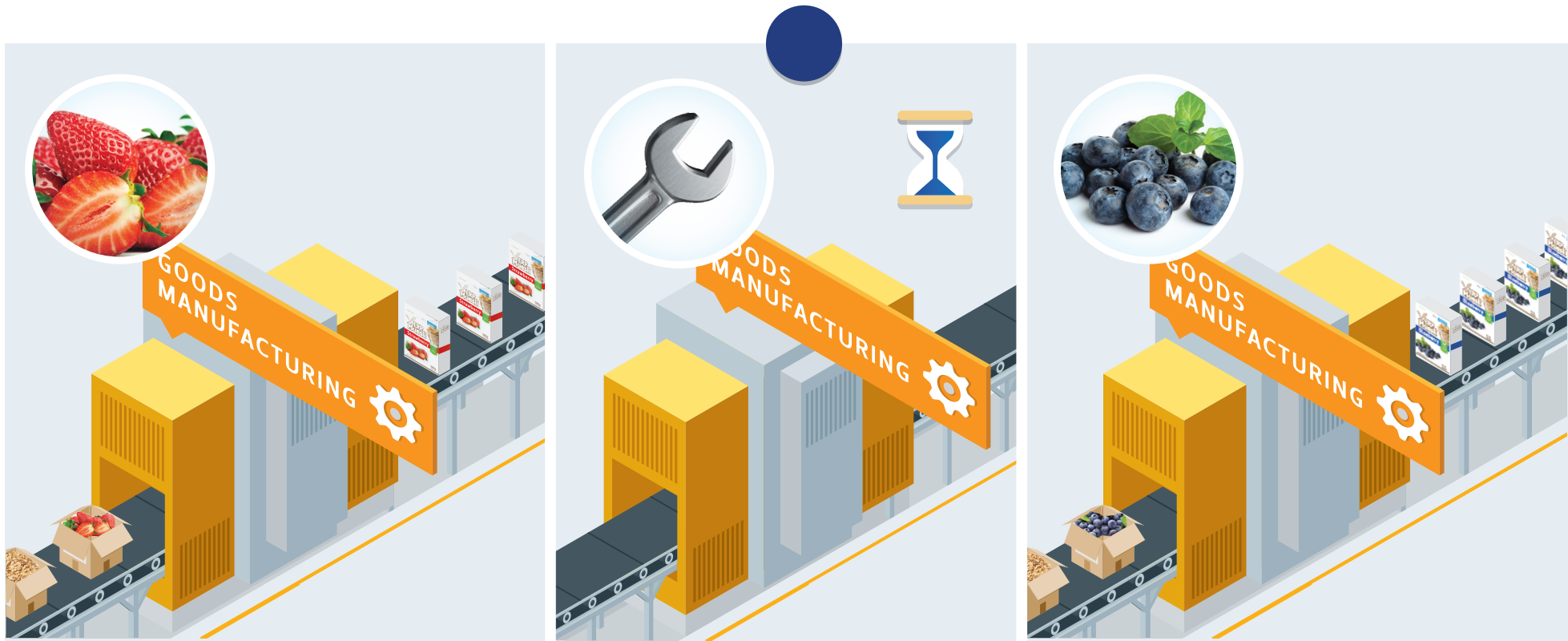
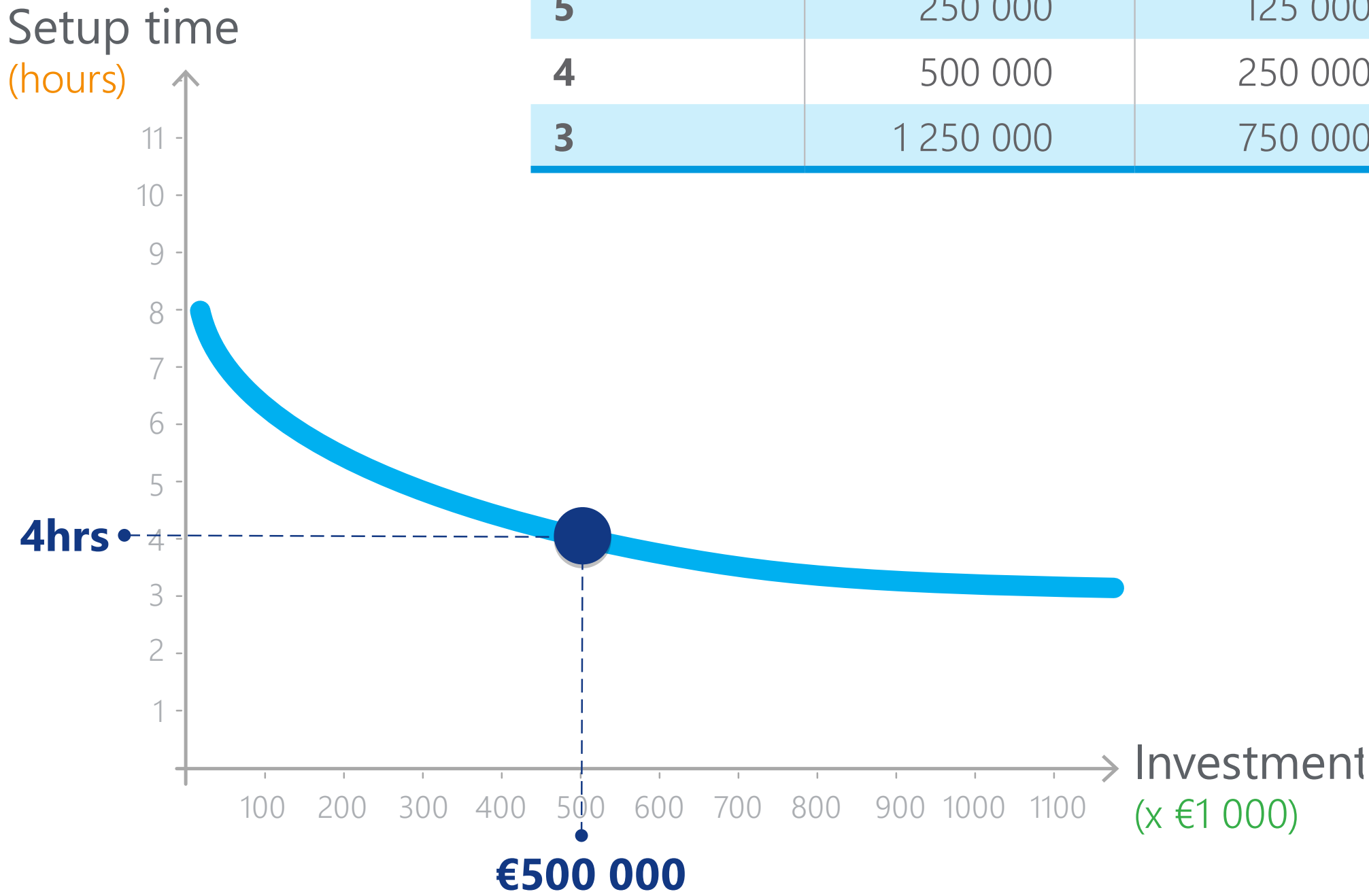
Planned Orders

Opening	Capacity ...	Start	End	Material	Description	Order Quantity
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F11	1kg Nut Muesli	50,000
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F11	1kg Nut Muesli	29,588
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F12	1kg Blueberry Muesli	50,000
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F13	1kg Strawberry Muesli	50,000
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F13	1kg Strawberry Muesli	2,352
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F14	1kg Raisin Muesli	50,000
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F15	1kg Original Muesli	50,000
2015-07-01	<input type="checkbox"/>	2015-07-01	2015-07-01	II-F16	1kg Mixed Fruit Muesli	50,000

WARNING: This transaction can only be used before the game starts and in between rounds.

Production Improvement: Setup Time Reduction

SETUP TIME (hours)	INVESTMENT (€)	MARGINAL INVESTMENT (€)
8	—	—
7	50 000	50 000
6	125 000	75 000
5	250 000	125 000
4	500 000	250 000
3	1 250 000	750 000



The exact formula for calculating the set up time as a function of investment:

$$\text{Setup Time} = 2 + \frac{6 \times 250,000}{250,000 + \text{Account 478 000 Balance}^*}$$

*Production Improvement Expenses Account

P/L : Setup Time Reduction

SETUP TIME REDUCTION

Enter G/L account (FB50)

1	Enter current date (F4)	
2	1 st Line	2 nd Line
Account	113300	478000
D/C	Credit	Debit
Amount	???	???
3		
4		

Document Edit Goto Extra Settings Environment System Help

Enter G/L Account Document: Company Code ZZ

Basic D... Details

Document Date2016-06-13CurrencyEUR

Posting Date2016-06-13

Reference

Doc.Header Text

Cross-CC no.

Company CodeZZCompany Z

Amount Information

Total Dr.
167,000.00 EUR

Total Cr.
167,000.00 EUR

2 Items (No entry variant selected)



Sta...	G/L acct	Short Text	D/C	Amount in doc curr	Loc.curr.amount	T...	Tax jurisdictn code	W Assignm
	113300	Bank Cash	Credi...	167,000.00	167,000.00			
	478000	Lean mfg expen...	Debit	167,000.00	167,000.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			
					0.00			

Forecasting

Forecasting

FORECAST SALES

Create Planned Indep. Req. (MD61)

- 1 Select Product group, then enter : \$\$-F
 - 2 
 - 3 Enter forecasted quantities in the 2nd date column
 - 4 
- ? The quantity corresponds to the replenishment level

STORAGE CAPACITY AND COSTS

Product type	Current space	Cost per additional 50,000 units*
Finished product	250,000 boxes	€500/day
Raw materials	250,000 kg	€1 000/day
Packaging (bags and boxes)	750,000 units	€100/day

Planned indep.reqmts Edit Goto Settings Environment System Help

Plnd Ind. Reqmts Create: Planning Table

Product group ZZ-F Product Group Z - Finished Products

Planning start 2016-06-01 Planning End 2017-07-18

Ta... Items Sched. Lines

Material	Plnt	V	A	BU	M 06-2016	M 07-2016	M 08-2016	M 09-2016	M 10-2016	M 11-2016	M 12-2016
ZZ-F01	ZZ	00	✓	ST		32,000					
ZZ-F02	ZZ	00	✓	ST		32,000					
ZZ-F03	ZZ	00	✓	ST		32,000					
ZZ-F04	ZZ	00	✓	ST		32,000					
ZZ-F05	ZZ	00	✓	ST		32,000					
ZZ-F06	ZZ	00	✓	ST		32,000					
ZZ-F11	ZZ	00	✓	ST		32,000					
ZZ-F12	ZZ	00	✓	ST		32,000					
ZZ-F13	ZZ	00	✓	ST		32,000					
ZZ-F14	ZZ	00	✓	ST		32,000					
ZZ-F15	ZZ	00	✓	ST		32,000					
ZZ-F16	ZZ	00	✓	ST		32,000					
	ZZ	00	✓								
	ZZ	00	✓								
	ZZ	00	✓								

Page 1

Review of the Major Rules

- 1 Customers preferences do not change throughout the game, hence you may learn from their past behavior
- 2 The company displaying the highest Company Valuation at the end of the simulation wins the game
- 3 You must behave ethically at all times
- 4 The end of game inventory will be value at cost price in the final balance sheet. Therefore, you shouldn't sell under cost at any time during the game.

Léger et al (2013): Manufacturing Participants Guide



Available at
<http://erpsim.hec.ca/en/node/291>



Manufacturing Extended Game

User: **\$1** to **\$9**
Password: **ERPSIM**

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Last Update: December 19th 2017

FORECAST SALES

Create Planned Indep. Req. (MD61)

1

Select Product group, then enter : \$\$-F

2

3

Enter forecasted quantities in the 2nd date column

4

?

The quantity corresponds to the replenishment level

CALCULATE REQUIREMENTS

MRP Run (MD01)

1

2

Click once again on *Enter*

3

In the pop-up window, click

PURCHASING

Automatic Gen. of POs (ME59N)

1

2

Purchase orders are created

?

If no open requisitions :
No suitable requisitions found.

RELEASE PRODUCTION

Coll. Conversion of Pld Orders (C041)

1

If no planned order: *Planned order could not be selected*

2

Select orders

3

Click on *Convert*. Message confirms the conversion.

?

If conversion fails, click on to see log

MARKETING EXPENSE

Marketing Expense Planning (ZADS)

1

Enter the daily amount of marketing for each product and each area.

2

To apply your marketing expense plan

CHANGE PRICE

Condition Maintenance: Change (VK32)

1

Open *prices* folder and double click on *Price list*

2

In *Distribution channel*, enter 10, 12 or 14

3

4

Enter your prices

5

FINANCIAL STATEMENT

Financial Statements (F01)

1

In *company code*, enter your company code (\$\$)

2

Select ALV Tree control (optional)

3

Liquidity Planning (ZFF7B)

Displays an estimate of your cashflow for the coming weeks.

STOCK LEVELS

Inventory Report (ZMB52)

Shows all stock levels

PO TRACKING

Purchase Order Tracking (ZME2N)

Shows for each purchase order, the issue , arrival and payment dates.

Vendor Pricing (ZME13)

Shows material prices for each vendor.

PRODUCTION SCHEDULE

Production Schedule (ZC00IS)

Shows released production orders, past and future. For each order the time released, started and finished (or to start and finish if incomplete).
Target Qty > Conf. Qty means still pending.

PRODUCTION COST

Product Cost Analysis (ZCK11)

For each product, it shows variable and fixed costs.

SALES AND MARKET DATA

Sales Order Report (ZVA05)

Shows sales transactions: time, sales revenues, boxes sold and price per box.

Summary Sales Report (ZVC2)

Aggregates the daily sales orders by product.

Price Market Report (ZMARKET)

Shows market sales for lagging 5 days - revenues, units, and average price.

CHANGE PRODUCT DESIGN

Modify BOM (ZCS02)

1

In *Material*, enter the product to redesign : \$\$-F##

2

3

Change quantities

4

?

If prompted the "incorrect recipe" message, click on to modify it

LOAN REPAYMENT

Enter G/L Account (FB50)

1

Enter current date (F4) in *Document Date*

2

	1 st Line	2 nd Line
Account	113300	113101
D/C	Credit	Debit
Amount	???	???

3

4

SETUP TIME REDUCTION

Enter G/L Account (FB50)

1

Enter current date (F4) in *Document Date*

2

	1 st Line	2 nd Line
Account	113300	478000
D/C	Credit	Debit
Amount	???	???

3

4

INCREASE CAPACITY

Enter G/L Account (FB50)

1

Enter current date (F4) in *Document Date*

2

	1 st Line	2 nd Line
Account	113300	11000
D/C	Credit	Debit
Amount	???	???

3

4

Product Design

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Nut

\$\$-F01	500g
\$\$-F11	1kg

20% wheat*
30% oat*
20% nut*
1 box / 1 bag*

*minimum



Blueberry

\$\$-F02	500g
\$\$-F12	1kg

20% wheat*
30% oat*
20% blueberry*
1 box / 1 bag*

*minimum



Strawberry

\$\$-F03	500g
\$\$-F13	1kg

20% wheat*
30% oat*
20% strawberry*
1 box / 1 bag*

*minimum



Raisin

\$\$-F04	500g
\$\$-F14	1kg

20% wheat*
30% oat*
20% raisins*
1 box / 1 bag*

*minimum



Original

\$\$-F05	500g
\$\$-F15	1kg

20% wheat*
30% oat*
1 box / 1 bag*

*minimum



Mixed

\$\$-F06	500g
\$\$-F16	1kg

20% wheat*
30% oat*
30% fruits & nuts**
1 box / 1 bag*

*minimum
**At least some of all fruits/nut

CUSTOMERS



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



DC 12: Grocery Chains
Payment Time : 10-20
Approximate Market Size
€220 000 per team per week



DC 14: Independant Grocers
Payment Time : 1-20
Approximate Market Size
€130 000 per team per week

STORAGE CAPACITY AND COSTS

Product type	Current space	Cost per additional 50,000 units*
Finished product	250,000 boxes	€500/day
Raw materials	250,000 kg	€1 000/day
Packaging (bags and boxes)	750,000 units	€100/day

*Billed automatically

FIXED COSTS (€ paid each 5 days)*

Direct labor	20 000
Factory overhead	15 000
S, G & A	40 000
Depreciation (Building)	1 250
Depreciation (Equipment)	50 000**

PRODUCTION CAPACITY

Capacity (units/day)	24,000
Additional Capacity (€ per 1,000 units)	1 000 000**

**Investing in additional capacity will increase equipment depreciation costs

SETUP TIME

Setup time (hours)	Investment (€)
8	-
7	50 000
6	125 000
5	250 000
4	500 000
3	1 250 000