

PN-ABZ-516  
52254

# TOOLKIT

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## *Working Capital and Cash Management*

*Seminar for Management*

*Final Version*

*September 30, 1996*

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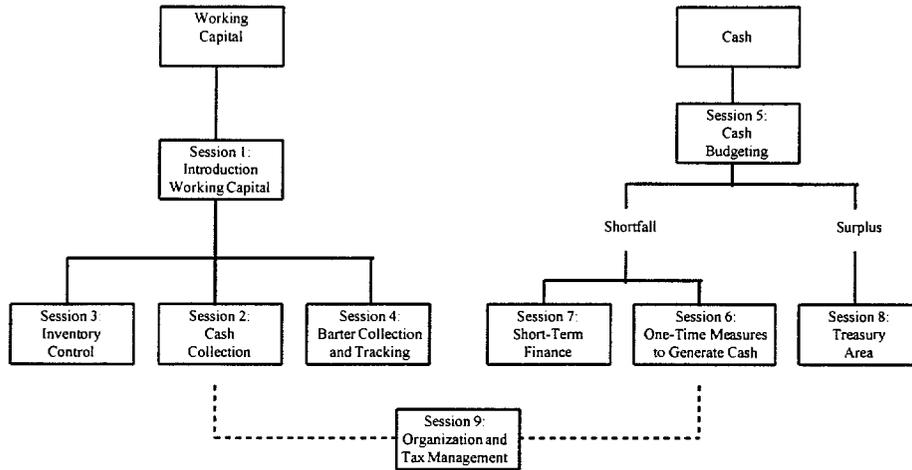
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## **Seminar Agenda**

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- Session 1: Working Capital
- Session 2: Cash Collection
- Session 3: Inventory Control
- Session 4: Barter Collection and Tracking
- Session 5: Cash Budgeting
- Session 6: One Time Measures to Generate Cash
- Session 7: Short-Term Finance
- Session 8: Treasury Area
- Session 9: Organization and Tax Management

## Seminar Overview



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## **Seminar Objectives**

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### ***Working Capital***

- What is working capital?
- Why do we need working capital?
- What are our working capital requirements?
- Ways to manage working capital through:
  - Inventory control
  - Optimizing cash collection
  - Barter transactions and barter tracking

### ***Cash***

- Cash is often a scarce resource
- Managing cash through cash budgeting
- How to cover shortfalls
- How to manage surpluses
- The impact of organization and tax management on working capital and cashflow

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## **Seminar Format**

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*The seminar will encourage your full participation in discussion sessions ...*



*... and will include class exercises and homework assignments to help you understand the material presented, practice using it and discuss the results with the presenter*



## Introduction to AO Bicycle Plant (AOBP) - Case Study To Be Used In the Seminar

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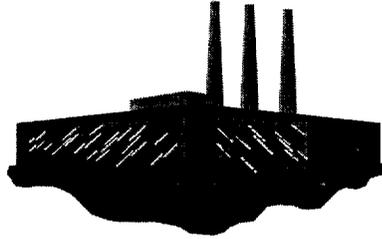
*AOBP is a Russian bicycle manufacturer*

*1995 production volume was 40,000 bicycles*

*AOBP is facing increasing competition*

*Therefore more favorable credit terms have been given to customers as an incentive to buy*

*The company was audited by the tax authorities and has had tax penalties imposed*



*You have a handout which has:*

- AOBP's financial statements for 1995
- Additional analysis of costs
- Summary information about the company

## Case Study of AOBP: Additional Information

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### *Production process*

- Metal processing
- Final assembling

### *Material inputs*

- Steel and aluminum shapes
- Pipes
- Bearings
- Tires

### *Sales*

- Primarily sold to wholesalers
- Offering more favorable credit terms to compete with imports
- Prepayment required for small and non-regular customers

### *Other issues*

- Audited in 1995 and significant tax penalties were imposed
- AOBP recognizes sales on a cash basis

wccm1e/Page6

### Case study of AOBP: Analysis of Cost of Goods Sold

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	January 1, 1995	January 1, 1996
	('000 RUR)	
Balance sheet entry for cost of goods shipped at sales value	1,944,000	3,465,000

#### *Analysis of cost of goods shipped goods ('000 RUR)*

	For 12 months of 1995
Raw materials	10,678,000
Payroll cost	3,059,000
Social insurance contributions	1,193,000
Depreciation expense	239,000
Utilities	1,285,000
Overheads and G&A	<u>1,714,000</u>
Total cost of sales	18,168,000

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**Financial Statements of AOBP-1995 (RUR'000s)**

<b>Balance Sheet</b>	<b>01.01.95</b>	<b>01.01.96</b>	<b>Profit and Loss Account</b>	<b>1995</b>
<b>Non-Current Assets</b>			Gross revenue from sales	26,218,000
Fixed assets	1,801,000	3,093,000	Less VAT	(6,456,000)
Investments	2,000	2,000	Net revenue from sales	19,762,000
	<b>1,803,000</b>	<b>3,095,000</b>		
<b>Current Assets</b>			Cost of goods sold	(18,168,000)
Inventories	1,323,000	3,775,000	Operating profit	1,594,000
Debtors	1,528,000	4,216,000		
Cash	197,000	379,000	Profit from other sales	222,000
	<b>3,048,000</b>	<b>8,370,000</b>	Other gains	115,000
<b>Current Liabilities</b>			Other losses	(50,000)
Short-term loans	0	1,000,000	Profit before tax	1,881,000
Creditors and accruals	1,989,000	4,608,000	Profit tax	(507,000)
	<b>1,989,000</b>	<b>5,608,000</b>		
<b>Net Current Assets</b>	<b>1,059,000</b>	<b>2,762,000</b>	Profit after tax	1,374,000
Long-term debt	0	2,000,000		
<b>Net Assets</b>	<b>2,862,000</b>	<b>3,857,000</b>		
Equity	2,862,000	3,857,000		

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**Instructor's notes:**

Get a couple of questions in where is the working capital in the Russian balance sheet. What are the main components of working capital?

What are the items relatively more significant for AOBP, less significant for AOBP? Do you think that this situation is typical for Russian companies now?

## Case Study of AOBP: Balance Sheet -- Assets

ASSETS	Line code	Opening balance	Closing balance
	2	3	4
<b>I. FIXED AND OTHER NON-CURRENT ASSETS</b>			
Intangible assets			
acquisition cost* (04)	010	-	-
accumulated amortization* (05)	011	-	-
net book value	012	-	-
Fixed assets:			
acquisition (revalued) cost* (01.03)	020	2,395,000	3,175,000
accumulated depreciation* (02)	021	875,000	1,319,000
net book value	022	1,520,000	1,856,000
Uninstalled machinery and equipment (07)	030	48,000	504,000
Construction in progress (08.01)	040	233,000	633,000
Long term investments (06)	050	2,000	2,000
Settlements with owners (75)	060	-	-
Other non-current assets	070	-	-
Total Section I	080	<b>1,803,000</b>	<b>3,095,000</b>
<b>II. INVENTORIES</b>			
Raw materials in stock (10.15.16)	100	712,000	1,394,000
Live stock (11)	110	8,000	40,000
Low value and short life assets			
acquisition cost* (12.16)	120	66,000	315,000
accumulated depreciation* (13)	121	39,000	121,000
net book value	122	27,000	194,000
Work in progress (20.21.23.29.30.36.44)	130	267,000	761,000
Expenses of future periods (31)	140	-	-
Finished goods in stock (40)	150	299,000	1,286,000
Goods for resale (41)	162	-	-
VAT reclaimable on purchases (19)	175	-	-
Other inventories	176	-	-
Total Section II	180	<b>1,323,000</b>	<b>3,775,000</b>

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Case Study of AOBP: Balance Sheet -- Assets (cont.)

ASSETS	Line code	Opening balance	Closing balance
	2	3	4
<b>III. RECEIVABLES, CASH AND OTHER</b>			
<b>MONETARY ASSETS</b>			
Balance of cost of goods shipped but not paid for (receivables) (45)	199	1,495,000	3,181,000
Receivables:			
Trade receivables for goods and services (62,76)	200	-	-
Bills of exchange and promissory notes (62)	210	-	-
Subsidiaries and related parties (78)	220	-	-
State budget (68)	230	12,000	34,000
Employees receivables (73)	240	-	1,000
Other receivables	250	16,000	35,000
Prepayments to suppliers and contractors (61)	260	5,000	965,000
Short term investments (58)	270	-	-
Cash and monetary assets:			
Cash at hand (50)	280	5,000	11,000
Cash in bank (national currency) (51)	290	130,000	255,000
Cash in bank (foreign currencies) (52)	300	34,000	42,000
Other monetary assets (55,56,57)	310	28,000	71,000
Other current assets	320	-	-
Total Section III	330	1,725,000	4,595,000
Losses:			
accumulated from previous years (88)	340	-	-
this year	350	0	-
<b>TOTAL (add lines 080, 180, 330, 340 and 350)</b>	360	4,851,000	11,465,000

\*these lines are not included in the total

**Case Study of AOBP: Balance Sheet -- Equity and Liabilities**

<b>EQUITY AND LIABILITIES</b>	<b>Line code</b>	<b>Opening balance</b>	<b>Closing balance</b>
<b>I</b>	<b>2</b>	<b>3</b>	<b>4</b>
<b>I. EQUITY</b>			
Statutory capital (85)	400	99,000	99,000
Additional capital (87)	401	1,420,000	2,091,000
Reserve capital (86)	402	9,000	9,000
Accumulation funds (88)	420	418,000	630,000
Social assets fund (88)	425	638,000	776,000
Grants and directed financing (96)	430	-	-
Lease payments (97)	440	-	-
Retained earnings (88)	460	-	-
Profit:			
Profit for the current year* (80)	470	0	1,881,000
Less appropriation of profit* (81)	471	0	1,881,000
Retained earnings for the current year	472	0	-
<b>Total Section I</b>	<b>480</b>	<b>2,584,000</b>	<b>3,605,000</b>

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**Case Study of AOBP: Balance Sheet -- Equity and Liabilities (cont.)**

EQUITY AND LIABILITIES	Line code	Opening balance	Closing balance
	2	3	4
Long term bank loans (92)	500	-	2,000,000
Other long term borrowings (95)	510	-	-
Short term bank loans (90)	600	-	1,000,000
Bank loans for employees (93)	610	-	-
Other short term borrowings (94)	620	-	-
Payables:			
Trade payables (60.76)	630	466,000	2,163,000
Bills of exchange and promissory notes (60)	640	-	-
Wages and salaries payable (70)	650	176,000	384,000
Social insurance payable (69)	660	132,000	263,000
Property and personal insurance payable (65)	670	-	-
Subsidiaries and related parties (78)	680	-	-
Non-budgetary funds contributions payable (67)	690	22,000	83,000
State budget (taxes payable) (68)	700	574,000	1,032,000
Other payables	710	196,000	327,000
Prepayments from customers (64)	720	387,000	453,000
Settlements with owners (75)	725	-	-
Deferred income (83)	730	-	-
Consumption funds (88)	735	278,000	252,000
Deferred charges (expenses of future periods) (89)	740	36,000	3,000
Bad debts provision (82)	750	-	-
Other short term liabilities	760	-	-
Total Section II	770	2,267,000	7,860,000
<b>TOTAL (add lines 480 and 770)</b>	<b>780</b>	<b>4,851,000</b>	<b>11,465,000</b>

\*these lines are not included in the total

## Case Study of AOBP: Profit and Loss Account

### 1. FINANCIAL RESULTS

Item	Line code	Profit	Loss (expenses)
1	2	3	4
Grants revenue from sales			
of goods and services	010	26,218,000	0
VAT and Special Tax	015	0	6,456,000
Excise taxes	020	0	-
	030	0	-
Cost of sales			
(cost of goods and services sold)	040	0	18,168,000
Operating profit (loss)	050	1,794,000	-
Profit and loss from other sales	060	222,000	-
Non-operating gains and losses	070	115,000	50,000
including:			
on securities and participation	071	3,000	0
in joint ventures	072	76,000	-
exchange rate gains and losses	073	-	-
Total profits and losses	080	1,931,000	50,000
Balance sheet profit (loss)	090	1,881,000	-

#### FOR REFERENCE:

Sales turnover (for trading companies) 101

### 2. APPROPRIATION OF PROFITS

Item	Line code	As at the end of the year
1	2	3
Budgetary payments	200	507,000
Appropriated to reserve capital and reserve fund	210	-
Appropriated to:		
Accumulation funds	220	387,000
Consumption funds	230	661,000
Charitable activities	250	-
Other uses	260	326,000

## Seminar Agenda

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<b>Session 1:</b>	<b>Working Capital</b>
Session 2:	Cash Collection
Session 3:	Inventory Control
Session 4:	Barter Collection and Tracking
Session 5:	Cash Budgeting
Session 6:	One Time Measures to Generate Cash
Session 7:	Short-term Finance
Session 8:	Treasury Area
Session 9:	Organization and Tax Management

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This series of slides describes the notion of Working Capital, explaining its importance, laying out the costs and benefits of investment in Working K, providing examples and templates for the calculation of actual Working K and Working K requirement.

It explains the importance of different components of the total working K requirement, shows how to calculate financial ratios and suggests their uses for managerial decisions.

## Seminar Agenda

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### What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

Calculation of Working Capital

Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

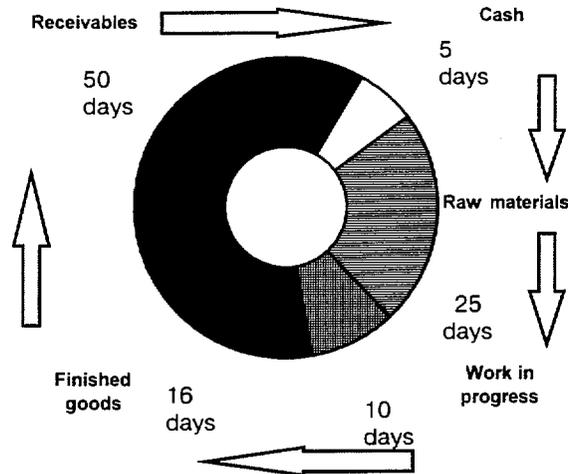
    Liquidity Ratios

    Turnover Ratios

Decisions About Working Capital

## The Working Capital of a Company is a Function of a Company's Cash Cycle

The diagram depicts a typical Russian manufacturing company's cash cycle



wccm1e/Page16

### Instructor notes:

**Cash conversion cycle** - the net time interval in days between actual cash expenditures of the firm and the ultimate recovery of cash through sales

**Operating cycle** - average number of days it takes to produce and sell the product

The operating cycle consists of: **raw materials storage period**, **conversion (Work in progress) period** and **finished goods storage period**.

**Collection period** - average number of days it takes to collect credit sales

If there is no requirement to pay for the raw materials at once, there appears a **payable deferral period**, that is to be deducted from the length of cash conversion cycle.

### Question

Ask the audience to provide the class with a very rough estimate of the length of their company's cash cycle-if necessary allow participants some a few minutes to think about this.

## Seminar Agenda

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What is Working Capital

**Why is Working Capital Important/Costs and Benefits of Holding Working Capital**

Calculation of Working Capital

Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

Liquidity Ratios

Turnover Ratios

Decisions About Working Capital

wccm1e/Page17

### **Instructor notes:**

Stress that the company must know the working capital in order to know:

- (1) How much capital is actually tied in its current activities
- (2) How much capital must be tied in the current activities
- (3) Make proper decisions to bring the working capital to its necessary level in order to avoid inefficiencies. Also, opportunity cost of investments needed are identified using the analysis of working capital.

Then explain that this presentation follows this logic:

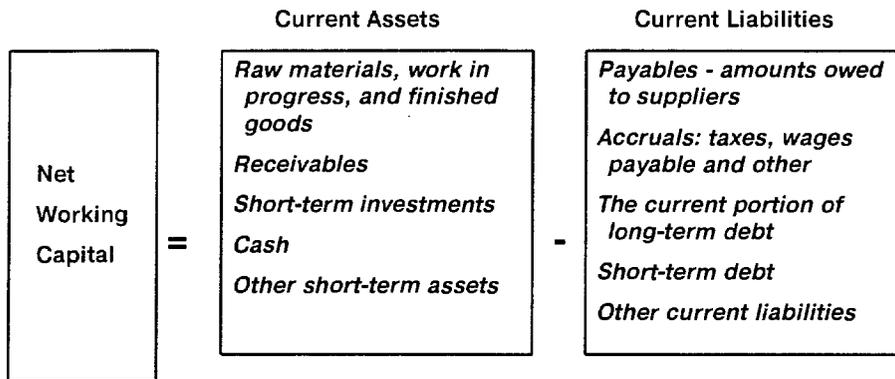
First, the existing amount of working capital is calculated

Second, the optimal amount of working capital that is called **the working capital requirement** is calculated

Third the techniques for detecting the inefficiencies and for optimizing the working capital structure are offered.

## What is Working Capital?

*Working capital - capital invested by the company in its current operations during each production cycle*



wccm1e/Page18

### **Instructor notes:**

**“Current” assets** - assets that are expected to be converted into cash within one year

**“Current” liabilities** - liabilities that are expected to be paid within one year

## Businesses Need Working Capital to Continue Operations in the Short term; However, Holding Working Capital is Expensive

### *Reasons for holding Working Capital*

- Time delays
  - Purchases of raw materials
  - Duration of the production cycle
  - Collection of receivables
- Transaction costs
  - 'Fire sale'-loss in value when assets need to be sold quickly to generate cash
  - Fees for buying and selling fixed assets or investments
- Hedge against financial distress costs
  - Legal costs associated with reorganizations
  - Management time associated with reorganizations

### *Costs and Risks of Holding Working Capital*

- Stocks can deteriorate physically or become obsolete
- Perishable products may be spoilt
- Stocks can be stolen or security costs may be significant
- Debtors can refuse to pay or become bankrupt
- Bankers holding cash may become bankrupt
- Costs of counting and safeguarding cash may be significant
- Higher inventory balances increase property tax
- Inflation can significantly diminish the real value of receivables and cash

wccm1e/Page19

### Instructor notes:

#### Time delays:

The **purchase of raw materials delay** is the time period between the payment for the raw material and the actual delivery of them to the company's warehouse.

The **production cycle** consist of:

- the **raw material storage period** that spreads between the moment when the raw materials are delivered to the warehouse and the moment when they are input into the production;
- the **conversion period**: time between the moment that the first operation is done and the moment when the finished goods are transferred to the warehouse;
- the **finished goods storage period**: between the delivery of the finished goods to the warehouse and the actual shipment of the goods to the customer (when payment documents are made out).

The **collection delay** is the time between the actual shipment of the goods to the customer and the actual receipt of money or other valuables (e.g.. barter) for this shipment.

A **"fire sale"** of assets to generate cash needed for essential operations occurs when: **(A)** there are management mistakes, **(B)** there is financial distress, **(C)** there is a sudden change in demand for products (upward and downward) and in prices of input elements (raw materials, labor, utilities etc..)

## **Seminar Agenda**

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What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

**Calculation of Working Capital**

Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

Liquidity Ratios

Turnover Ratios

Decisions About Working Capital

**Working Capital Calculation - Worked Example 1. AOBP Company**

Current assets	m RUR	Current liabilities	m RUR
Raw materials	1,728	Short-term loans	1,000
Work in progress	761	Current portion of long-term debt	0
Finished goods	1,286	Trade payables	2,163
Goods for resale	0	Taxes and social insurance payable	1,378
Trade debtors	3,181	Wages payable	284
Taxes recoverable	34	Other non-trade payables	327
Prepayments made	965	Prepayments received	453
Short-term investments	0	Deferred charges	3
Cash and other monetary assets	379	Other current liabilities	0
Other current assets	36		
<b>Total current assets</b>	<b>8,370</b>	<b>Total current liabilities</b>	<b>5,608</b>
<b>Net working capital</b>	<b>2,762</b>		

wccm1e/Page21

**Instructor notes:**

The figures have been taken from the balance sheet of AOBP, these are the closing balance figures.

Note that the raw materials balance consists of the following:

Raw materials:	1,494
Live stock:	40
Net book value of low value short life assets	<u>194</u>
	<b><u>1,728</u></b>

Cash consists of the following items:

Cash on hand	11
Cash in bank Rubles	255
Cash in bank Foreign currencies	42
Other monetary assets	<u>71</u>
	<b><u>379</u></b>

Settlements with the fiscal authorities consist of the following:

Social insurance payable	263
Non-budgetary funds contributions payable	83
State budget (taxes payable)	<u>1,032</u>
	<b><u>1,378</u></b>

Other assets include other receivables - 35, employee debtors - 1

### Tool 1: Calculation of Working Capital

In filling in this form use the instructions on the next pages

Current assets	m RUR	Current liabilities	m RUR
Raw materials		Short-term loans	
Work in progress		Current portion of long-term debt	
Finished goods		Trade payables	
Goods for resale		Taxes and social insurance payable	
Trade debtors		Wages payable	
Taxes recoverable		Other non-trade payables	
Prepayments made		Prepayments received	
Short-term investments		Deferred charges	
Cash and other monetary assets		Other current liabilities	
Other current assets			
Total current assets		Total current liabilities	
Net working capital			

wccm1e/Page22

#### Instructor notes:

This slide is the pro-forma for the calculation of Working Capital of the company.

It is to be distributed and supported by the filling-in aid (the next slide)

## **Instructions for Tool 1: Calculation of Working Capital**

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### ***Calculation of current assets***

- Sections 2 Inventories and 3 Receivables and Cash of the Assets side of the balance sheet are current assets, and have to be classified under the headings in the example on the previous page.
- If long-term investments (that are disclosed in section 1 Fixed Assets of the Balance Sheet) will be sold within the next year they should also be classified as current assets. If short-term investments are not planned for sale within the next year they should not be classified as current assets.

### ***Calculation of current liabilities***

- Section 2 Payables of the Liabilities side of the balance sheet comprises current assets with the following exceptions:
  - consumption fund in line 735 is not to be included in the current liabilities;
  - deferred charges are included in the current liabilities only if they are to be redeemed within the next year
  - only the portion of long-term debt that will be repaid within the next year is to be included in the Working Capital

wccm1ePage23

### **Instructor notes:**

These instructions are based upon the official form of yearly reporting for Russian companies for 1995.

These instructions are given for the sole purpose of assisting the participants to use the form given above in the calculation of their current Working Capital position.

As these instructions have not been tailored to the specific circumstances of one particular company, they may be changed to adapt to any unusual situation, for example:

there may be short-term assets classified as fixed assets in the balance sheet of the company;

there may be short-term liabilities classified as equity funds in the balance sheet of the company.

## **Seminar Agenda**

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What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

Calculation of Working Capital

**Calculation of Working Capital Requirement**

Calculation of Working Capital Ratios

Liquidity Ratios

Turnover Ratios

Decisions About Working Capital

**Inefficient Management Results in Excessive Working Capital in Comparison With What is Actually Needed by the Company**

*Inefficient management leads to excessive investment in working capital and results in higher operating costs*



*In this case the company has to ascertain its working capital requirements and to bring the working capital to the minimal and most efficient level*



*The first step is to estimate the working capital requirements of a company:*

- Step 1: estimate the potential sales of the company
- Step 2: set out the production plan for this level of sales
- Step 3: estimate the raw materials investment needed for this amount of sales
- Step 4: estimate the production period and the amount of investment in Work In Progress and Finished goods
- Step 5: estimate the investment in receivables on the basis of the credit policy of the company
- Step 6: estimate the credit terms required by suppliers of the raw materials and the consequent release of Working Capital through the payable lag

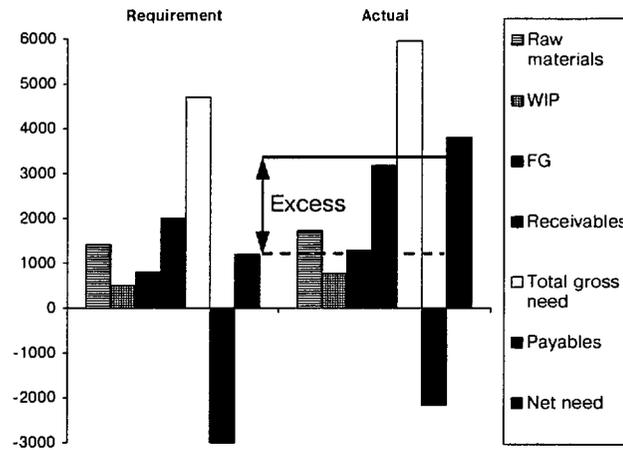
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## A Comparison of AOBP Actual Working Capital with that Required Reveals Inefficient Working Capital Management

### Working Capital

#### requirements for AOBP:

- investment in raw materials
- investment in work in progress
- investment in finished goods
- investment in accounts receivable
- minus accounts payable



*AOBP has an excess of working capital tied up in illiquid and non-interest bearing items, such as receivables*

wccm1e/Page26

### Instructor notes:

This graph is the graphic illustration of the difference between the actual investment in Working Capital of AOBP and its Working Capital requirement. The excess of Working Capital shows the effect of inefficiencies in Working Capital management of AOBP.

## Working Capital Depends on the Amount of Investment and Period of Holding - Worked Example 2

Management determines the desired quantity and turnover based on the situation of the enterprise:

	Desired quantity (items)	Unit price (m RUR)	Desired turnover (in days)	Total required (m RUR)
	(1)	(2)	(3)	(1) x (2) x (3)
1. Raw materials	200	0.50	14 days	1,400
2. Work-in-progress	200	0.60	4 days	480
3. Finished goods	200	0.70	6 days	840
4. Receivables payment	200	0.9	12 days	2,160
5. Total cash 'tied-up' (1) + (2) + (3) + (4)				4,880
6. Suppliers payment credit - cash 'freed'	200	0.5	30 days	-3,000
7. Cash required to finance working capital (5) - (6)				1,880

The unit price is estimated as invoice price for raw materials and suppliers. Accounting estimates are used for work-in-progress and finished goods. Selling price is used to estimate receivables.

wccm1ePage27

### Instructor notes:

Explain that the Working Capital requirement is composed of two parts:

- cash needed or 'tied-up' for operations
- cash freed because of payables' lag (time allowed by the suppliers to pay after delivery)

Then explain the structure of the cash need:

- cash needed for the production cycle
  - to finance the raw materials stock (the time the purchased inventories are waiting in the warehouse before they are put in production)
  - to finance the production cycle time (the time it takes to produce finished goods from initial raw materials)
  - to finance the finished goods stock (the time the finished goods spend in the warehouse before they are sold)
- cash needed to finance receivables' lag (to allow payment later than actual delivery)

Costs of cash needed:

- Raw materials are valued at the cost of raw materials
- Work in progress at cost
- Finished goods at cost
- Receivables at invoice value
- Payables at invoice value

**Important note:** the example assumes that one piece of raw materials gets processed and then sold as finished good to customers. The Unit prices are assumed for the example, there is no reference of these figures to AOBP costs.

**Important:** turnover here means the desired turnover. The desired turnover means:

- in case of WIP and FG - the minimum time required by the production cycle
- in case of Receivables - the time to collect the payment for the goods shipped, i.e., purely company policy issue;
- in case of Payables and Raw materials - time to get the deliveries of raw materials and to pay the suppliers, i.e., mixture of political and production factors.

### Exercise 1: Calculation of Working Capital Requirement

*Company A has the following working capital characteristics:*

- It usually has 20,000 pieces of raw materials and the cost of one piece (purchase price) is 30,000 Rubles
- The desired turnover of the raw materials is 10 days
- The Work in Progress calculation shows that the cost of one unit of Work in progress is 50,000 Rubles
- The turnover of Work in Progress is 5 days
- The cost of one unit of Finished Goods is 60,000 Rubles
- The desired turnover of Finished Goods is 15 days
- The selling price of one unit is 80,000 Rubles and the desired turnover of receivables is 30 days
- The credit from the suppliers of raw materials is 40 days.

*Calculate the working capital requirement for this company*

wccm1e/Page28

#### **Instructor notes:**

The correct calculation runs as follows:

(1) Raw materials: 20,000 pieces x 10 days x 30,000 RUR	<b>6 Billion RUR</b>
(2) WIP: 20,000 pieces x 5 days x 50,000 RUR	<b>5 Billion RUR</b>
(3) FG: 20,000 pieces x 15 days x 60,000 RUR	<b>18 Billion RUR</b>
(4) Receivables: 20,000 pieces x 30 days x 80,000 RUR	<b><u>48 Billion RUR</u></b>
(5) Gross Working Capital requirement (total 'cash tied-up'): 6 Billion + 5 Billion + 18 Billion + 48 Billion	<b>77 Billion RUR</b>
(6) Payables: 20,000 pieces x 40 days x 30,000 RUR	<b><u>-24 Billion RUR</u></b>
(7) Net Working Capital requirement: 77 Billion - 24 Billion	<b><u>53 Billion RUR</u></b>

## Tool 2 - Calculation of Working Capital Requirement

In filling in this form use the instruction on the next several pages

	Quantity	Cost/Price	Turnover in days	Total need
	(1)	(2)	(3)	(1) x (2) x (3)
1. Raw materials				
2. Work-in-progress				
3. Finished goods				
4. Debtors payment				
5. Total cash 'tied-up'				(1) + (2) + (3) + (4)
6. Suppliers payment credit - cash 'freed'				
7. Total cash needed (5) - (6)				

wccm1e/Page29

### Instructor notes:

Instructions on using this tool are provided on the following slides:

Explain the limitations of this model

- (1) This layout is made for simpler operations with few raw materials and one product or a limited number of similar models.
- (2) Explain that in the case of insufficient information it is much better to use approximations than to abandon this form.
- (3) Explain that the comparison of actual Working Capital and the Working Capital requirement signals immediately any inefficiencies in Working Capital management.

## **Instructions to Tool 2: Calculation of Working Capital Requirement (1)**

---

*If there are very different products manufactured, the Working Capital requirement is to be calculated separately for each product or groups of similar products (thus, for AOBP, the Working capital requirements for racing bicycles and children bicycles may be very different)*

**Calculation of "Work in progress investment" requirement:**

- Calculate the technical capacity of the production facilities of the company
- If the company is not able to sell all the products that are produced at technical capacity, take the maximum **sellable** amount
- Estimate (yourself or with the assistance of technical specialists) the total processing period in days
- Get an estimate by the planning department of the value and quantity parameters in the WIP, or the calculation of the accounting record of WIP may be used

## **Instructions to Tool 2: Calculation of Working Capital Requirement (2)**

---

### ***Calculation of raw materials investment requirements:***

- Calculate the turnover period for the raw materials (calculation is described in the ratios section)
- Get the estimate of raw materials costs for one unit of product from the planning or purchasing department

### ***Calculation of finished goods investment requirements:***

- Calculate the turnover period for the finished goods (calculation is described in the ratios section)
- Get the estimate for full production cost of one unit of finished goods from the planning department

### **Instructions to Tool 2: Calculation of Working Capital Requirement (3)**

---

#### ***Calculation of receivables investment requirement:***

- Calculate the turnover period for the receivables (calculation is described in the ratios section later)
- Calculate the average receivables period with the assistance of the sales/commercial department
- Input the sales prices of the products from price lists or actual quotations by the sales/commercial department

#### ***Calculation of payables investment requirement:***

- Calculate the turnover period for the payables (calculation is described in the ratios section later)
- Calculate the average payables lag with the assistance of the purchases/material supplies department
- Input the actual purchase price of the products from the purchases/material supplies department, accounting for discounts.

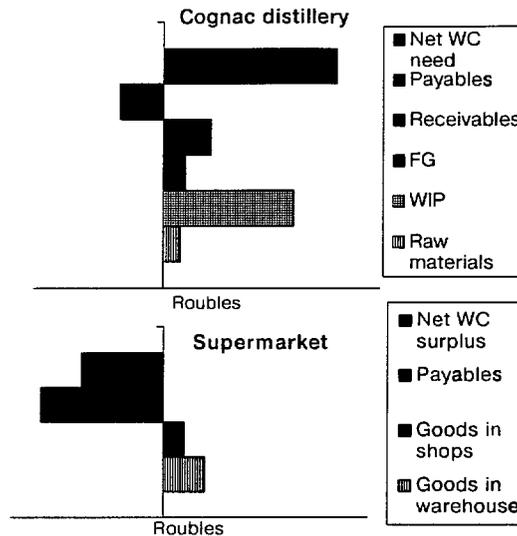
## **Instructions to Tool 2: Calculation of Working Capital Requirement (4)**

---

### ***Comparison of Working Capital requirement and the actual Working Capital***

- Upon calculation of the Working Capital requirement compare the results with the actual working capital calculated in tool 1
- Analyze the main reasons for the difference between the Working Capital required and the actual Working Capital:
  - errors in estimates
  - inefficient management
  - conscious 'prudent' choices
  - other reasons.

## Longer Production Period Leads to Larger Working Capital Requirements...



• Cognac distillery has significant working capital requirement as its production period is very long

• Supermarket has free cash because of short operation period and because clients pay cash while suppliers can be paid later...

wccm1e/Page34

### Instructors notes:

**Stress** that company's management has limited influence over the production (operation) period, especially in short-term and without additional investment.

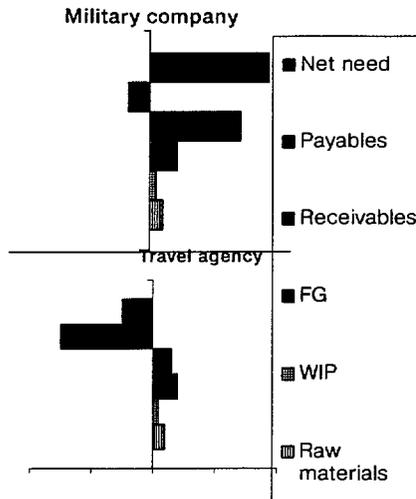
The second example shows that some companies, especially in trading business have 'in-built' negative Working Capital requirements, therefore, can finance part of its longer-term decisions with operating revenues.

**Stress** that the tasks for the management of these two companies are different:

- distillery has to finance its Working Capital needs
- supermarket has to invest the excess cash efficiently

**Ask** to the audience to think of possible synergetic effects of two companies with different Working Capital requirements.

### ...As Does the Longer Receivable Period and Shorter Payable Period



#### *Different results because of different receivable and payable lags:*

- The military company has to pay for the inputs with short credit, but the state pays only once a quarter with a long delay
- Therefore, the company requires substantial Working Capital
- The travel agency collects money at once but pays the hotels and air carriers after a delay
- Therefore the company has cash surplus

wccm1e/Page35

#### **Instructor notes:**

**Stress** that even companies with similar production cycles may have very different net cash position. The success formula is simple: do not pay as long as you can, get payment as soon as possible, that means you make your clients finance your operations.

## **Seminar Agenda**

---

What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

Calculation of Working Capital

Calculation of Working Capital Requirement

### **Calculation of Working Capital Ratios**

- Liquidity Ratios
- Turnover Ratios

Decisions About Working Capital

## Ratios Are Very Illustrative in Understanding the Company's Working Capital Position

Ratio	How calculated	Meaning	Use
<b>Liquidity ratios</b>			
Current ratio	Current Assets / Current Liabilities	To which extent the current assets cover the current liabilities	Overall liquidity of the company
Quick ratio/Acid Test ratio	(Cash and Debtors) / Current Liabilities	How the near-cash assets cover the current liabilities	Quick liquidity of the company
"Absolute Liquidity" ratio	Cash / Current Liabilities	Which portion of current liabilities may be paid for by the cash of the company	Immediate liquidity of the company
<b>Turnover ratios</b>			
Inventories turnover	Average Inventory / Cost of Sales * 365 days	How long is the production cycle of the company	Production period management efficiency
Receivables turnover	Average receivables/Sales * 365 days	How long is the receivables' payment cycle	Collection management efficiency
Payables turnover	Average payables / Sales * 365 days	How long is the payables' payment cycle	Purchasing management efficiency

## **Seminar Agenda**

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What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

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Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

### **Liquidity Ratios**

Turnover Ratios

Decisions About Working Capital

### Calculation of Liquidity Ratios: Worked Example 3 for AOBP

	Opening balance	Closing balance	Change
1. Current assets	3,048	8,370	+5,322
2. Current liabilities	1,989	5,608	+3,619
3. <b>Current ratio (1) / (2)</b>	<b>1.53</b>	<b>1.49</b>	<b>-0.04</b>
4. Inventories	1,323	3,775	+2,452
5. Current assets - Inventories (1) - (4)	1,725	4,595	+2,870
6. <b>Quick ratio (5) / (2)</b>	<b>0.87</b>	<b>0.82</b>	<b>-0.05</b>
7. Receivables and other non-cash items	1,528	4,216	+2,688
8. Cash items (6) - (7)	197	379	+182
9. <b>Absolute liquidity ratio (8) / (2)</b>	<b>0.10</b>	<b>0.07</b>	<b>-0.03</b>

wccm1e/Page39

### Instructors notes

Ask the audience how they would interpret the ratios:

Have they ever used any ratios?

Which of them they think to be most useful?

Do they think that the application of refined version of these ratios by the Russian Federal Bankruptcy Agency in establishing the insolvency of a company may be used in all cases?

Try to make the audience think of cases when these ratios are misleading?

Generate some discussion.

### Tool 3: Calculation of Liquidity Ratios

---

Calculate the liquidity ratios for your company using the instructions on the next slide

- |   | Opening<br>balance | Closing<br>balance | Dynamics |
|---|--------------------|--------------------|----------|
| 1. Current assets   |                    |                    |          |
| 2. Current liabilities  |                    |                    |          |
| 3. Current ratio (1) : (2)                                    |                    |                    |          |
| 4. Inventories  |                    |                    |          |
| 5. Current assets - Inventories (1) - (4)                     |                    |                    |          |
| 6. Quick ratio (5) : (2)                                      |                    |                    |          |
| 7. Receivables and other non-cash<br>items                    |                    |                    |          |
| 8. Cash items (5) - (7) or directly from<br>the balance sheet |                    |                    |          |
| 9. Absolute liquidity ratio (8) : (2)                         |                    |                    |          |

wccm1e/Page40

### **Instructions to Tool 3: Calculation of the Liquidity Ratios**

*Step 1: The current assets are input from the balance sheet or from previous exercise*

*Step 2: The current liabilities are input from the balance sheet or from previous exercise (note that reserves are included in current liabilities in this calculation, but sometimes they can be excluded)*

*Step 3: The current ratio is calculated dividing the current assets in line 1 by the current liabilities in line 2*

*Step 4: The value of the inventories is pulled separately from section 2 of the Assets part of the balance sheet. In line 5 it is deducted from the current assets.*

*Step 5: The quick ratio (acid test ratio) is calculated dividing the receivables and cash calculated in line 5 above by the current liabilities in line 2*

*Step 6: There are two ways of determining the absolute liquidity ratio:*

*(a) all cash items are taken from the balance sheet and input directly into line 8 of the calculation; or*

*(b) all receivables and other non-cash items are taken from part 3 of the Assets part of the balance sheet and input in line 7 of the calculation. Then they are deducted from the receivables and cash shown in line 5. The result of this operation is shown in line 8*

wccm1e/Page41

### **Instructor notes:**

The second option of calculating the absolute liquidity ratio is better if those who calculate the ratios are not certain in their knowledge of the statutory balance sheet and do not know how to classify some items.

**Note** that there are no unified ways of calculating ratios and they are always tailored for the user needs. But it is necessary for everyone to understand exactly what is meant by any ratio.

## **Seminar Agenda**

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What is Working Capital

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Calculation of Working Capital

Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

Liquidity Ratios

**Turnover Ratios**

Decisions About Working Capital

### Turnover Ratios: Worked Example 4 for AOBP

	Opening balance	Closing balance	1995 average (A)	Type of ratio	Ratio-in days (B)
1. Sales (Net of VAT)			19,762		
2. Cost of sales			18,168		
3. Raw materials	757	1,728	1,243	Raw materials turnover (3A) : (2A) x 365	25
4. Work in progress	267	761	514	Work in progress turnover (4A) : (2A) x 365	10
5. Finished goods	299	1,286	793	Finished goods turnover (5A) : (2A) x 365	16
6. Total inventories	1,323	3,775	2,550	Inventories turnover (3B) + (4B) + (5B)	51
7. Receivables at cost	1,528	4,216	2,872	Receivables turnover at cost (7A) : (2A) x 365	58
8. Receivables at sales value	1,944	3,465	2,705	Receivables turnover at sales value (8A) : (1A) x 365	50
9. Total current assets	3,048	8,370	5,709	Current assets turnover (9A) : (2A) x 365	115
10. Payables	1,989	5,608	3,799	Payables turnover (10A) : (1A) x 365	70

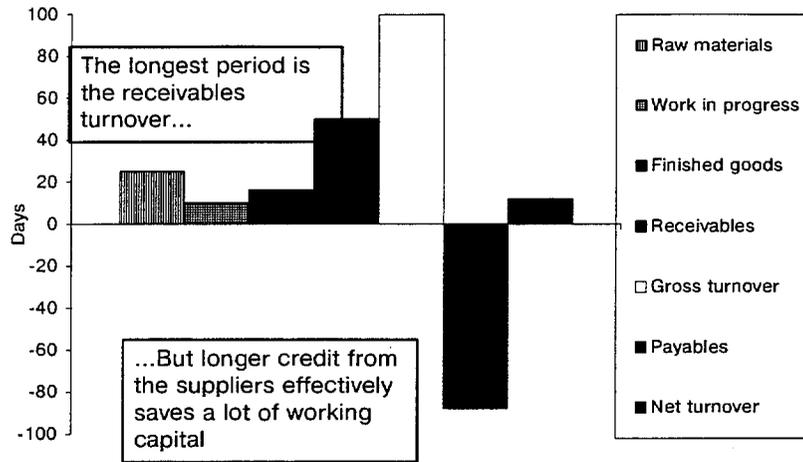
wccm1e/Page43

#### Instructor notes:

Note that the meaning of turnover ratios may differ depending on the accounting policies adopted by the company because sales on a cash basis do not include receivables in Western accounting terms. Similarly, cost of sales under cash basis may differ from cost of goods produced in the period.

Stress importance of consistency in calculating turnover ratios. For example cost of goods shipped, i.e., receivable at cost should be divided by cost of sales not by sales.

**The Turnover Ratios Easily Illustrate the Working Capital Cycle of AOBP**



wccm1e/Page44

**Instructor notes:**

Note that longer credit from suppliers is the result from either good credit terms offered by supplier or from non-payment and increasing intercompany indebtedness.

### Tool 4: Turnover Ratios Calculation

In filling in this form follow the instructions on the next page

	Opening balance	Closing balance	1995 average	Type of ratio	Ratio (in days)
Sales (Net of VAT)					
Cost of sales					
Raw materials				Raw materials turnover	
Work in progress				Work in progress turnover	
Finished goods				Finished goods turnover	
Total inventories				Inventories turnover	
Receivables at cost				Receivables at cost turnover	
Receivables at sales value				Receivables at sales value turnover	
Total current assets				Current assets turnover	
Payables				Payables turnover	

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#### Instructions to Tool 4: How to Calculate Turnover Ratios

---

- (1) Input the sales figure from the profit and loss statement of the company (line 010) after having deducted from it the VAT and special tax (line 015), excise duties (line 020) and other turnover related levies (line 030).*
- (2) Input the cost of sales from the profit and loss statement of the company (line 040).*
- (3) Input the opening and closing balances of the raw materials, work in progress, finished goods, receivables and payables from the appropriate lines of sections 2 and 3 of the Assets part of the Balance sheet and section 2 of the Liabilities part of the balance sheet of the company. In order to get the receivables balances at sales value additional information from the accounts of the company or from addendum to the annual balance sheet is needed.*
- (4) Calculate the annual average balances by adding the opening balance to the closing balance and then dividing it by two.*
- (5) Calculate the raw materials, work in progress, finished goods and receivables at cost turnovers in days by dividing the average yearly balances by the cost of sales and then multiplying the product of the division by 365.*
- (6) Calculate the receivables turnover at sales value and the payables turnover in days by dividing the average yearly balances by the sales value and then multiply the product of the division by 365.*

## **Seminar Agenda**

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What is Working Capital

Why is Working Capital Important/Costs and Benefits of Holding Working Capital

Calculation of Working Capital

Calculation of Working Capital Requirement

Calculation of Working Capital Ratios

- Liquidity Ratios
- Turnover Ratios

**Decisions About Working Capital**

## Management Decisions on Working Capital

---

### *Inventory control*

### *Collection*

- Cash collection
- Barter collection and tracking

### *Cash management*

- Short-term finance
- One-time measures to generate cash
- Treasury

### *Organization and tax management*

The following sections of the seminar will provide an understanding of the tools management can use to reach decisions on Working Capital needs

wccm1e/Page48

### **Instructor notes:**

**Collections and disbursements** -(A) to manage the collection of funds from customers, (B) to pay suppliers, (C) to pay employees, (D) to pay taxes, (E) to pay some of the administrative expenses (advertising etc.). This function includes cash and check collection system, the development of various systems for making cash disbursements cost effective.

**Cash concentration** - designing and implementing a system to gather the funds from the banks for better management and investment purposes

**Liquidity management** - determination of expected surpluses or deficits of cash (via cash budgets), management by type and maturity of firms short-term marketable securities and short-term borrowings

**Bank relations** - determining which banks to deal with and the services that will be secured from each

**Receivables** - determining basic credit terms (together with the sales/marketing functions)

**Inventory** - determine: (A) how much investment in inventory is needed, (B) how to finance it.

Ask the audience to give examples of their latest Working Capital decisions and how they assessed them in practice.

## **Seminar Agenda**

---

Session 1: Working Capital

**Session 2: Cash Collection**

Session 3: Inventory Control

Session 4: Barter Collection and Tracking

Session 5: Cash Budgeting

Session 6: One Time Measures to Generate Cash

Session 7: Short-Term Finance

Session 8: Treasury Area

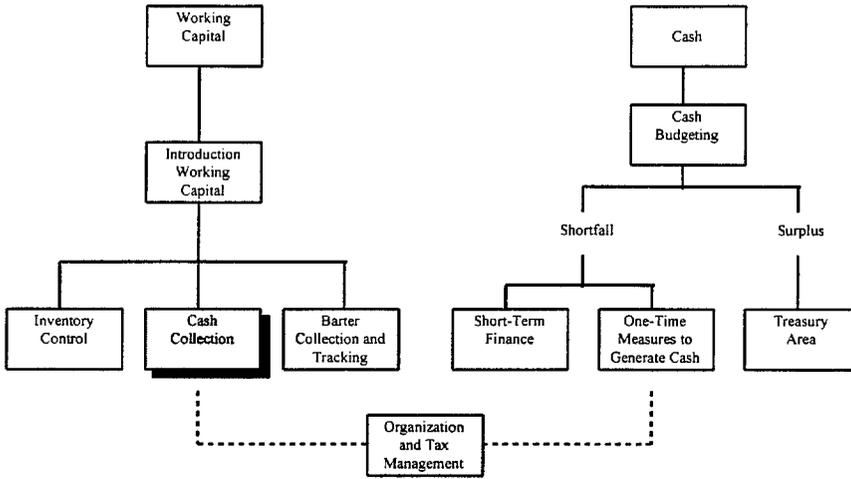
Session 9: Organization and Tax Management

wccm2e/Page1

This section covers the issues of credit sales and managing accounts receivable balances. There are a number of financial and organizational tools offered, including:

- Arrangement of flexible contract terms and contracting policy;
- Analysis of discounts for early payments and penalties for late payment;
- Organization of effective customer monitoring system;
- Simple rules for making credit decisions;
- Methods of accelerating collection processes.

## Seminar Overview



wccm2e/Page2

### **Seminar Agenda**

- **Understanding importance of cash collection for a company**
- **Types of sales and discount and credit policy**
- Flexibility of contracts
  - Payment terms and modes
  - Discounts in contracts
  - Cost of discounts and determining discount rate
- Credit analysis
  - Sources of information
  - Customer monitoring journal
  - Credit decisions
- Collection process
- Factoring

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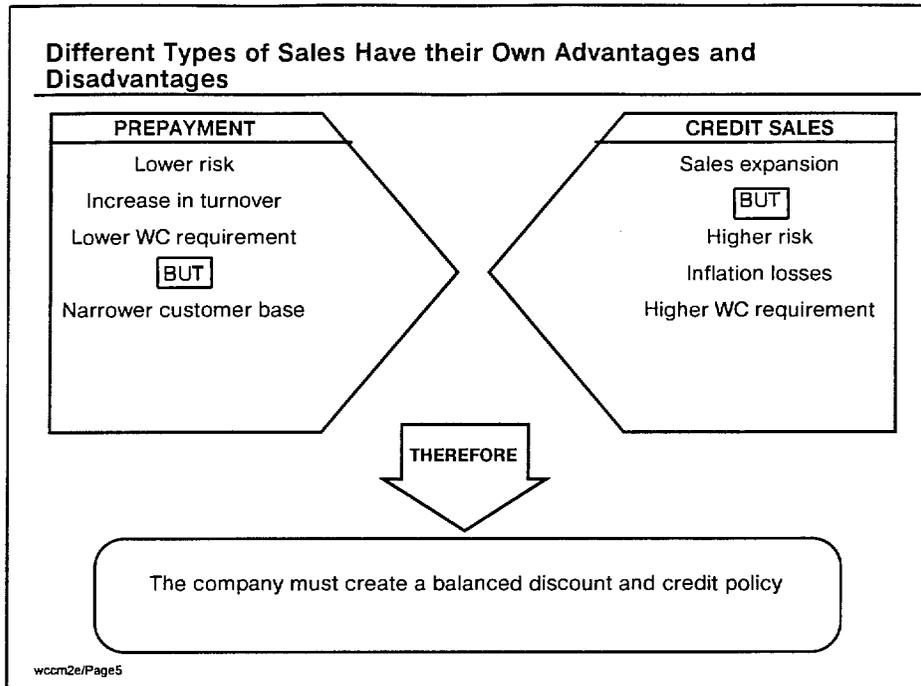
#### **Instructor notes:**

The purpose of this slide is to present the agenda and objectives of this section of the seminar.

### **Why is Cash Collection so Important in Russia?**

- Collection of payments from receivables is the only regular source of cash inflows for a company
- Recession in the Russian economy has caused declines in both company operations and sales narrowing cash generating potential and requiring more attention to cash collection
- General lack of resources in the economy has made companies change their payment terms. Established credit and collection procedures have been altered, requiring companies to create new approaches to their credit and collection policy
- Inflation patterns for various groups of inputs and outputs for a company are often different, complicating coordination between purchase and credit policies, and placing additional emphasis on establishing effective cash collection procedures
- Credit decisions have rarely been addressed by Russian companies, with little, if any, real consideration of the costs and benefits of such decisions. Now, enterprises should be encouraged to use credit decisions as a tool for expanding sales and increasing turnover
- Russian companies' receivable tracking and cash collection functions have traditionally been divided between various departments, often without a single authority or coordinator. It is important to coordinate these efforts and to use all tools available

wccm2e/Page4



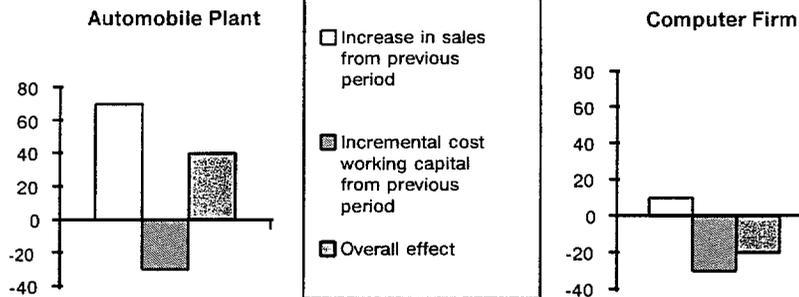
**Instructor notes:**

**Risks of credit:** There is always a risk that the customer will not pay for the goods or services delivered. Customers fail to pay for various reasons: disputes about the quality of the product, contractual terms, bankruptcy, or simply refusal to pay.

**Benefits of credit:** Contribution from increased turnover by attracting more business.

Though responsibility often falls mostly on the finance section to make credit decisions, credit is equally a marketing decision and should be made in full consultation with the marketing department.

## Evaluation of General Business and Industry Environment Before Establishing a Credit Policy



The diagrams above illustrate the effects of discount and credit extension policy. The automobile plant operates in a relatively less competitive industry and the growth of sales, which is due to higher discounts or more favorable credit terms, exceeds incremental working capital requirements. Conversely, the computer trading firm operates in a highly competitive industry where higher discounts or more favorable credit terms offered by the firm are shortly matched by competitors. In this circumstance, additional cash inflow from the growth of sales is less than incremental working capital requirement. So the overall effect is positive in the former case, and negative in the latter.

wccm2e/Page6

### Instructor notes:

This slide illustrates the importance of such external factors as industry structure for the decision on credit policy.

If the company does have monopolistic power it usually does not extend credit to its customers. If the company is a monopolist but its sales are limited with the lack of immediate purchasing power of its customers, it may be beneficial for the company to extend credit on a larger basis.

If a company operates in a highly-competitive area, it may be detrimental to extend credit as more flexible credit policy will require additional financial resources but other companies because of the competition will soon match this increase and the total increase in sales will be marginal.

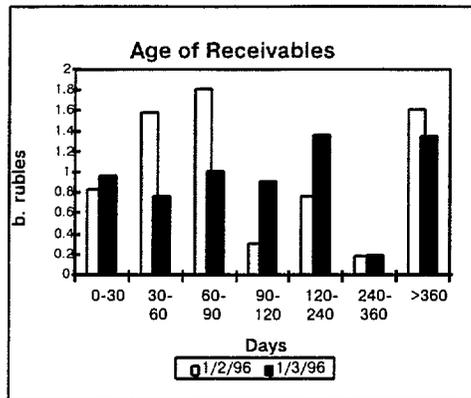
### Question

Ask the participants to consider their businesses. Do they provide more credit than they need to?

Could they reduce the amount of credit given without causing a decline in sales?

## Analysis of Aged Debts

*In order to assess how effective and balanced its discount and credit policy is, the company should perform an analysis of aged debts on a permanent basis.*



wccm2e/Page7

### Aging analysis:

- Shows effects of overall credit policy of the company
- Helps to compare actual credit policy with set targets
- Visually represents the areas where additional effort to collect debts is required
- Gives estimates for building provisions for bad and doubtful debts

### Instructor notes:

Analyze this chart with the participants and draw the attention to the following facts:

- (A) There is a decline of accounts outstanding for 1-3 months.
- (B) There is a growth in the month of accounts outstanding for 3-6 months
- (C) This shows that some of the accounts that were outstanding for more than 3 months have not been repaid in February 1996.
- (D) The proportion of debt outstanding for more than a year is very high. This shows that collection work is performed very poorly at the company.
- (E) There is a growth in accounts outstanding for more than a year. If there is no information to the contrary from the past experience of the company this debt may be regarded as uncollectable. A provision for this debt is required
- (F) There are less accounts payable outstanding for 1 month. That signals that the company either requires prepayment or immediate payment or gives extended credit.

### Question

Ask the audience if they perform aging analyses of receivables and use the information to assess their collectibility and to focus their collection efforts?

### **Determining Collection Period**

---

*Apart from aging analysis the company should also use ratio analysis in order to evaluate how well its receivables are collected.*

*For this purpose the company should analyze actual collection period which serves an important indicator of efficiency of the collection process.*

- Actual collection period - a time between the goods are delivered and paid for
- Average collection period - an average time between the goods are delivered and paid for. Average collection period is used for the purpose of analysis

$$\text{Average collection period (in days)} = \frac{\text{Average balance of trade receivables}}{\text{Sales on the accrual basis}} \times 365 \text{ days}$$

## Determining Collection Period (AOBP example)

### *Determining the collection period at AOBP*

- Sales on the cash basis for 1995 RUR26,218 m
- Opening balance of trade receivables at sales value RUR1,944 m
- Closing balance of trade receivables at sales value RUR3,465 m

### *1. Calculation of the average balance of trade receivables:*

$(\text{Opening balance} + \text{Closing balance}) / 2 = \text{Average balance}$

$(\text{RUR1,944 m} + \text{RUR3,465 m}) / 2 = \text{RUR2,704 m}$

### *2. Calculation of sales on the accrual basis:*

$\text{Sales on the cash basis} + \text{Closing balance of trade receivables} - \text{Opening balance of trade receivables} = \text{Sales on the accrual basis}$

$(\text{RUR26,218 m} + \text{RUR3,465 m} - \text{RUR1,944 m}) = \text{RUR27,739 m}$

### *3. Calculation of average collection period:*

$(\text{Avg. balance of trade receivables} / \text{Sales on the accrual basis}) * 365$   
days = Avg. collection period

$(\text{RUR2,704,500} / \text{RUR27,739,000}) * 365 = 36 \text{ days}$

wccm2e/Page9

## **Seminar Agenda**

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- Understanding importance of cash collection for a company
- Types of sales and discount and credit policy

- **Flexibility of contracts**

- **Payment terms and modes**
- **Discounts in contracts**
- **Cost of discounts and determining discount rate**

- Credit analysis
  - Sources of information
  - Customer monitoring journal
  - Credit decisions
- Collection processes
- Factoring

## Flexibility of Contracts

---

*Discount and credit policy of a company should be balanced in order to maximize cash inflows. To achieve this the company needs to establish a contract system with flexible terms and modes of payment:*

- **Partial prepayment:** Combines advantages of prepayment and credit sale. This mode of payment can be offered to new customers.
- **Progress billing:** This mode is efficient for long-term, in particular construction contracts, and provides regular cash inflows as the work progresses.
- **Bank warranty:** Provides that in the case of default the bank will repay the due amount. Furthermore, bank warranty can act as security for borrowed funds. It is advisable that new customers provide bank warranties.
- **Flexible pricing:** Protects the company from inflation losses. Flexible prices can be set in various forms:
  - tied to general inflation index
  - tied to the inflation index of particular products
  - depending on the actual time of payment
  - exchange rate
- **Discounts:** This is the tool to encourage customers either to buy more or to pay earlier. Discounts are considered below.
- **Consignment sales:** Consignment contract normally provides that the company retains ownership over the goods until the payment received.

**Prepare a Properly Authorized Strategy of Contracting Based on the Financial Calculations of Contracts' Attractiveness**

---

*To have more flexibility in the contracts:*

- If full prepayment is not possible, then introduce partial prepayment on a more frequent basis
- Introduce a **system** of discounts, rather than several discounts without proper linkage
- Establish a system for the analysis of the influence of discounts on the financial performance of companies
- Establish targets for the different kinds of sales: the portion of credit sales may be reserved only for:
  - marginal customers who do not have cash readily available
  - new important markets
  - other extraordinary cases
- Base the compensation to the sales personnel upon these measures of collection effectiveness and contribution to the overall financial performance

wccm2e/Page12

## Discounts in Contracts

*Offering discounts to customers is normally justified when such an action results in overall higher profits. But when a company has a shortage of cash, discounts can be granted in order to increase cash inflows though in a longer term an overall cash effect for the company is negative.*

*There are various categories of discounts:*

- Early payment
- High volume
- Long-term contract
- Long-standing business relationship and value of the customer
- High credit rating of the company
- Lower or inconsistent quality delivered

*Other things equal, discounts for early payment should be preferred to penalties for late payment because higher effective revenues will result in higher taxes, discounts will lead to lower taxes.*

*Discounts are also more practicable: an incentive always works better than a penalty.*

wccm2e/Page13

### Instructor notes:

Note that discounts should be all tied into one system.

Stress that apart from their objective, value discounts always have some subjective psychological attraction and this may be part of the overall strategy of the firm.

Stress that it is better from the point of view of the company's image to have discounts offered than penalties imposed:

Example: A company sells 30% of its products for cash, 70% on credit. The cash price of one unit of products is RUR 10,000, on credit it is 11,000. There may be the following pricing strategies with the same financial result:

(A) The selling price is RUR 10,000, penalty for payment later than 3 days is 10% of the price.

(B) The selling price is RUR 11,000, discount for early payment is 9%.

Ask the participants to chose the better strategy for them.

Note that the discount structure depends a lot on the nature of the business.

Note that a lot of different discounts makes the system of controlling discounts and evaluating the performance extremely complicated and costly.

### Tool - Analysis of Discounts

	Number of customers using	Volume of sales with this discount	Who is making the decision about the discount	Who is reviewing the decision about the discount
Discount for volume				
Discount for early payment				
Discount for long-term contract				
Discount for lower quality				
Other discounts				

wccm2e/Page14

#### Instructor notes:

This tool may have two applications:

(1) It is an effective form to analyze the existing discounts. The exercise of filling in this form may be quite revealing to the management of the company.

(2) This table may be used as the first step in planning a new system of discounts.

Ask the participants to fill in this form and to analyze the existing discounts from the point of view of their necessity, reasonableness, and financial soundness with the tools offered in the next slides.

### Cost of Discounts - Early Payment

- Early payment frees up cash that can be invested with profit instead of being tied up in stocks
- Thus, early paying customers should be offered a discount
- The discount should not exceed benefits from early payment
- A discount scale can be developed which relates payment periods to discounts
- Same logic applies when deciding on contractual penalties for late payment

$$\text{Discount (\%)} < [\text{Interest Rate(\%)} \times \text{Remaining Collection Period(Days)}]$$

wccm2e/Page15

#### **Instructor notes:**

One alternative which might be offered to customers instead of extended credit is a discount for early payment. It is important to know the implicit cost of making such an offer.

Offering a discount instead of extending credit involves two variables, that are very important for cash management: absolute payment value, and its timing. Discount offer implies receiving lower payment, but sooner, than in case of credit sale.

To evaluate costs of offering a discount, one should estimate time value of money. This implies choosing an appropriate interest rate, which would approximate difference between getting money now or some time in future.

With a discount proposal, a company receives payment, that is lower than original one by the value of discount, but it does so earlier by collection period time.

Thus, value of a discount should not exceed benefits of receiving payment earlier.

**Determining Discount Rate - The Company Uses Borrowed Funds for Working Capital (AOBP Example)**

(A) AOBP accrual sales	27,704,500
(B) AOBP accounts receivable	2,704,500
(C) Average collection period ((B)*365)/A	36 days
(D) Prevailing interest rate or inflation rate, if greater	120%

If the company wants to encourage immediate payment it should grant a discount. When evaluating the discount, the immediate cash inflow should earn the interest over average normal collection period to compensate for the discount.

(E) Interest accrued over the collection period(D)*(C)/365	11.8%
(F) Maximum amount of possible discount (A)*(E)	3,269,131

Thus, to make the customers switch from buying on credit to immediate payments, the company could offer discounts of **up to 11.8%**.

Higher discounts will not justify immediate payment.

wccm2e/Page16

**Instructor notes:**

**The first step** is to estimate average collection period. For this purpose, one should get the number for credit sales from sales department.

A/R is divided by average credit sales to estimate the average collection period.

**The second step** is to calculate the time value of early payment, or benefits of receiving the payment now rather than after the collection period.

To do so, calculate the interest:

(A) If the company uses borrowed funds for its working capital purposes this interest will be the interest that could be received if the payment is received today and decrease the amount of working capital that is to be borrowed from the bank.

If as a result of early collection the company will have a cash surplus this extra cash can be invested in bank at the prevailing interest rate on deposits. In this case the discount rate will be not the credit rate but the deposit rate. As it is unusual for most of the Russian companies to work without borrowed funds for the working capital needs then this case is not analyzed in the table above

This figure, either in percentage or monetary terms, would show the **maximum** value of the discount to be offered. Emphasize that this percentage and value of discount are for **immediate payment only**. For later payments the same approach applies but a discount sliding scale can be developed which relate payment period and discount from the maximum for immediate payment to zero for the payment at the end of collection period.

### Tool - How to Determine Discount Rates

---

*Accrual Sales* = \_\_\_\_\_ (A)

*Accounts Receivable* = \_\_\_\_\_ (B)

*Prevailing interest rate, or inflation rate, if greater (%)* = \_\_\_\_\_ (C)

*Collection Period* =  $((B)/(C)) \times 365$  = \_\_\_\_\_ (D)

*Interest accrued over the collection period, %* =  $(C) \times ((D)/365)$  = \_\_\_\_\_ (E)

*Maximum amount of discount* =  $(A) \times (E)$  = \_\_\_\_\_ (F)

*Maximum Discount that could be offered to customers is (F), or (E) in percentage terms.*

*Larger discount would not justify early payment.*

wccm2e/Page17

#### Instructor notes:

This form is made for the participants to analyze discount rates compatible with the circumstances of their own company.

It is necessary to have data on the actual split of sales between immediate cash sales and credit sales.

Barter transactions are too complicated for this analysis, so they are excluded from this analysis.

### Determining Discount rate: Class Exercise

---

1. *Company A sells its goods on credit. For 1995 its revenue from sales was RUR 10b. The balance of accounts receivable at sales value had no significant fluctuations during 1995 and was RUR 800m. Calculate the average collection period for 1995.*
2. *Company B sell its goods on credit and the average collection period is 30 days. At present the company does not offer any discounts for immediate payment to its customers. If customers are prepared to pay immediately if offered a good discount and the prevailing bank deposit rate is 60%, what is the maximum discount rate the company should offer?*

wccm2e/Page18

#### **Instructor notes:**

1. The average collection period is

$$(0.8\text{bn}/10\text{bn}) * 365 = 29 \text{ days}$$

2. The company's maximum discount would be equal to the bank interest accrued over collection period

$$30/365 * 60\% = 4.9\%$$

### Premiums/Penalties - Late Payments (AOBP Example)

Contract terms should provide for sufficient compensation when the company agrees to receive payment later.

(A) Accrual sales	27,739,000
(B) Cash receipts for the year (assumed to be 40% of accrual sales)	11,095,600
(C) Average accounts receivable	2,704,500
(D) Collection period (C)/(A)*365	36 days
(E) Prevailing interest rate, or inflation rate, if greater	120%
If the company's sales contract specifies a payment period of 10 days, a premium for credit should be included in the contract value in order to compensate for inflation	
(F) Contractual payment period	10 days
(G) Premium for credit payment (E)*(F)/365	3.3%
(H) Contract value (B)*(100%+(G))	11,461,755
Since the actual collection period is longer than the contractual one, the company should include in the contract penalties for late payment in order to compensate for inflation. The company must consider whether the increase in price will reduce the number and or volume of purchases. Here we assume there is no price effect.	
(I) Minimum penalties for past due payments (E)/365	0.33%/day
(J) Total Penalties for past due payments (B)*(I)*((D)-(F))	952,002
(K) Total Payments (H)+(J)	12,413,757

wccm2e/Page19

#### Instructor notes:

Credit sales contract terms should secure adequate compensation for postponement of payment and any past due payments.

The general principle here is the same as in the case of discount valuation -- later payment should be compensated by greater payment value.

**First step** -- collection period calculation (see previous slide).

**Second step** -- time value of late payment (premium). One should calculate interest, that could be received if the payment is received today and invested at the prevailing interest rate for time period equal to contractual payment period.

Adjusting cash sales value by the premium for delayed payment, one could calculate Contract Value.

**Third step** -- provisions for past due payments. Penalties for past due payments should be at least at the level of the prevailing interest rates (not to mention additional expenses related to collection process).

Given the fact, that average collection period is usually much longer than contractual payment period, such a provision is a must. Total penalties for past due payments figure shows that the value of such a provision is quite significant

## Tool - Late Payments

Accrual sales		= _____ (A)
Cash receipts for the period		= _____ (B)
Accounts Receivable		= _____ (C)
Collection Period	$=((C)/((A)-(B)) \times 365$	= _____ (D)
Prevailing interest rate, or inflation rate, if greater (%)		= _____ (E)
Contractual Payment Period		= _____ (F)
Premium for delayed payment, %	$= (D) \times ((F)/365)$	= _____ (G)
Contract Value	$= (B) \times (1+(G))$	= _____ (H)
Minimum penalties for past due payments, % per day	$= (E)/365$	= _____ (I)
Total penalties for past due payments	$= (B) \times (I) \times ((D) - (F))$	= _____ (J)
Total Payments	$= (H) + (J)$	= _____ (K)

Benefits of properly specified provisions for late payments are clearly seen if to compare sales (A) with the payments that could be received had the provisions been included in the contracts (K).

wccm2e/Page20

## **Seminar Agenda**

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- Understanding importance of cash collection for a company
- Types of sales and discount and credit policy
- Flexibility of contracts
  - Payment terms and modes
  - Discounts in contracts
  - Cost of discounts and determining discount rate
- **Credit analysis**
  - **Sources of information**
  - **Customer monitoring journal**
  - **Credit decisions**
- Collection process
- Factoring

## **Establishing a Credit Policy**

---

***Companies should develop a credit policy: a standard set of procedures to decide which customers should receive credit, and on what terms, and to ensure that credit terms are observed***

- The credit policy should be standardized
- Top management should only be involved in making specific credit decisions in exceptional circumstances

***An effective credit policy involves the following:***

- Assessment of the credit risk of a customer
- Constant monitoring of payments
- Evaluation of the financial impact of customer credit

## Credit Analysis

---

*Information on major customer creditworthiness should be gathered in order to make credit decision.*

### *Necessary information*

- Payment history of the company
- Credit history of the company
- Financial statements of the company

### *Sources of information*

- Company's files on the customer
- Banks information
- Trade associations and former superior body information
- Specialized credit rating and financial information agencies: Adam Smith Institute (Tel. (095) 203 6823); AK&M (Tel. (095) 132 61 30); Dun&Bradstreet (Tel. (095) 940 18 16) or banks and other contacts

*Since credit information is rather expensive there is no need to collect this information on all customers. Set criteria when you collect information (e.g., order size, long-term contract, etc.).*

wccm2e/Page23

### **Instructor notes:**

The purpose of this slide is to provide participants with information about the available sources of data required for credit analysis.

### Tool - Customer Monitoring Journal

The following journal form will enable the management to have a timely and inexpensive control log of customers payment.

The instructions on filling in the forms are supplied on the next slide

Customer	Contract	Number	Quantity	Price	Payment type	Payment due on	Payment received on	Penalties assessed and paid	Next contract type
Small company "ITchP-3"	No. 368	2	100	890	10/3/60	30/9/95	30/11/95		only prepayment
Shop 15	No. 12	1	25	920	cash	15/9/95	15/9/95		cash
Shop 23	No. 280	8	20	900	10/3/60	26/9/95	24/9/95		any

wccm2e/Page24

#### Instructor notes:

The purpose of this slide is to provide participants with the example of customer monitoring journal.

### **How to Maintain the Customer's Journal**

- **Name of customer** is entered when a contract is signed.
- **Contract number** is entered for identification purposes. It should be made a rule that no contract is to be signed without a number. The numbering of contracts should indicate the type of sale and the month when the contract was signed.

For example:

Contract No. 32/3/6/2 means that it is the 32nd contract signed in March 1996 for the sale of children's bicycles (the last digit stands for the type of product sold).

- **Number** is the consecutive number of contracts with this customer. This allows the management to see how long this company has been a customer without making special analysis of the whole journal.
- **Quantity and price** are entered in accordance with the contract.
- **Payment type** may be any abbreviation that is agreed with the users. If some special signs are used, it is advisable to have a caption written on the first/last page of the journal. This simple rule is very helpful.
- **Dates** are entered by the sales administration personnel with the assistance of accountants.
- **Type of next payment** is to be entered by the person making decision about the payment type.

wccm2e/Page25

#### **Instructor notes:**

The purpose of this slide is to provide participants with guidelines on using the customer monitoring journal.

Remind participants that accounting software and databases can do it automatically when the volume of work exceeds a certain level.

## Credit Decision and Credit Policy

*Credit decision involves a strong dose of judgment. Some basic things to remember:*

- *Maximize profit/return on capital*
- *Assess the impact of credit decisions on cash flow*
- *Concentrate analysis time on "risky" accounts*
- *Look beyond immediate orders for long-term impacts*

Some of these decisions are to be taken on a routine basis:

- top management does not have time to take these decisions individually

**BUT**

- top management cannot lose control of these decisions

Credit decisions should be made in accordance with the credit policy of the company. The credit policy should be adopted, communicated, and controlled by the top management. Set up a system, do not control decisions, control compliance with the system!

Immediate control of the top management only for:

- unusual decisions
- large volume decisions.

wccm2e/Page26

### Instructor notes:

**Maximize profit.** It is important to keep in mind that efforts should not be geared towards just minimizing the number of bad accounts. The main purpose is to maximize expected profit. Therefore, one should recognize that one is concerned with trade-offs. The best that can happen is that the customer pays promptly; the worst is default. In the one case the firm receives the full additional revenues from the sale less the additional costs; in the other it receives nothing and loses the costs. One must weigh the chances of these alternative outcomes. If the margin of profit is high, one is justified in a liberal credit policy; if it is low, one cannot afford many bad debts.

**Cash flow influence.** Some contracts may be profitable but there are moments that the company will need cash earlier than it is actually received from the customer, therefore the profitability analysis is to be accompanied with a cash receipts analysis.

**Concentrate on risky accounts.** One should not expend the same effort on analyzing all credit applications. If an application is small or clear-cut, one's decision should be largely routine; if it is large or doubtful, one may do better to move straight to a detailed credit appraisal. Most credit managers don't take credit decisions on an order-by-order basis. Instead they set a credit limit for each customer. The sales representative is required to refer the order for approval only if the customer exceeds this limit.

**Look beyond the immediate order.** The credit decision is a dynamic problem. One cannot look only at the immediate future. Sometimes it may be worth accepting a relatively poor risk as long as there is a likelihood that the customer will grow into a regular and reliable buyer. New businesses must, therefore, be prepared to incur more bad debt than established businesses. This is part of the cost of building up a good customer list.

## **Seminar Agenda**

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- Understanding importance of cash collection for a company
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  - Discounts in contracts
  - Cost of discounts and determining discount rate
- Credit analysis
  - Sources of information
  - Customer monitoring journal
  - Credit decisions

- **Collection process**
- **Factoring**

### **Collection Process**

---

- Pressure the non-paying debtor, but do not offend him
- Clear communication between enterprise and its customer.
- Formalized procedure for collection actions. This allows the manager to have easy control of customers and to avoid misrepresentation by lower personnel. Customize the format of your customer monitoring journal for the purposes of the following steps:
  - When account is 10-15 days overdue, contact the customer. Later, sell the customer only on prepayment. You may indicate the date when you should contact the customer in your customer monitoring journal.
  - After 60 days contact the customer again -- explain that the contractual credit terms have been violated, and ask for the reason why the payment has not been effected. You may indicate the date when you should contact the customer for the second time in your customer monitoring journal.
  - After 90 days initiate legal proceedings. You may indicate the date when you should start legal proceedings.

wccm2e/Page28

### **Instructor notes:**

Collection of debts is a vital problem for many Russian enterprises. In a situation where companies delay payments or simply refuse to pay, disappear etc., a proper collection policy should be put in place.

The basic concept of collection in business is 'so called' "dunning". The norms and rules of such a policy are based on business approach and common sense. (Read through the slide)

At collection of the overdue debts the following approach is usually taken:

- reach agreement on the amount of the debt
- straighten out the reasons and resolve problems, connected to non-payment
- achieve an agreement on the maturity date
- consider an opportunity and conditions of additional delay

This is a very important job and those who are doing it should know how to do it legally.

**To ask how their (audience) suppliers collect cash from them.**

## **Regulation of Collection Process**

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*Due to a serious problem of intercompany indebtedness in Russia, a number of regulations have been issued establishing a legal framework to resolve this problem.*

- President's Decree No 2240 established that bad debts are to be written to P&L after four months upon receipt of the goods by the customer
- Government's Regulation No 817 established that writing off bad debts does not affect taxable profit of the company
- Accounting regulation No 170 allows companies to create a bad debt provision on the basis of a receivables examination. This provision is tax deductible. Bad debts are debts which are overdue and not secured
- The written-off debts should be kept off-balance sheet for five years and all steps should be taken to recover these debts

## Selling/Discounting Debt

**Factoring:** a specialized agency (the "factor") and the client agree on receivables list and on the collection period. The client then notifies each customer that the factor has purchased the debt. Thereafter, it is the factor's responsibility to collect debts, and he makes payments to the client based on agreed collection period regardless of whether the customer has paid. For providing such a service, factors take a discount off the face value of debts.

**The factor provides assistance with collection of bad debts due to:**

- better access to creditworthiness information through own established channels
- more efficient collection process due to specialization and economy of scale
- more competence in payments settlement

**Factoring can be used for sales expansion:**

- possibility to sell to new groups of customers
- faster turnover of capital

**Factoring has some disadvantages:**

- net loss of value of debt collected
- loss of control over receivables
- loss of information about receivables

**Major factors in Russia:** Alfa-bank Tel. (095) 207 70 81  
Mosbiznesbank Tel. (095) 924 30 38

wccm2e/Page30

### **Instructor notes:**

Factors' rationale for buying debts depends on several issues:

- It is easier for a factor to collect creditworthiness information on a wide range of companies. Specializing in credit issues, they can afford themselves to spend significant money and effort in credit research.
- Being constantly involved in debt collection activities, factors accumulate experience in this market and could effectively organize payments settlement through debt trading, barter, market power, etc.

Besides just selling out bad or doubtful debts, a company could use factoring as a means for its sales expansion. Instead of refusing to sell in credit to customers, whose creditworthiness is doubtful, a company could consult a factor. And, if the factor agrees to buy this would-be debtor, the company goes ahead, thus increasing its turnover and profits.

### Evaluating Factoring (AOBP Example)

(A) AOBP closing accounts receivable	3,465,000
(B) AOBP average collection period	36 days
(C) Prevailing interest rate, or inflation rate, if greater	120%
<i>Factor's terms:</i>	
(D) Collection Period	2 days
(E) Average Discount	10%
(F) Discount Value (A)*(E)	346,500
<i>The company should be able at least to recover amount of the discount:</i>	
(G) Interest accrued over the "recovering" period -- $((C)/365)*((B)-(D))$	11.2%
(H) "Recovered" amount (A)*(100%-(E))*(G)	349,272
 <i>349,272 &gt; 346,500 i.e. factoring is effective</i>	

wccm2e/Page31

#### Instructor notes:

When considering a sell-off of receivables, one should compare the terms offered by the factor with collection terms that the company maintains itself.

As factors usually require discount off the face value of receivables, but deliver the payment earlier, the calculations are very similar to the ones on discount valuation.

Factors will not necessarily accept all receivables for collection, but there may be many opportunities for generating immediate cash by selling off some receivables to factoring agencies.

## Tool - Evaluating Factoring

Accrual Sales = \_\_\_\_\_ (A)

Accounts Receivable = \_\_\_\_\_ (B)

Collection Period = \_\_\_\_\_ (C)

Prevailing interest rate, or inflation rate, if greater (%) = \_\_\_\_\_ (D)

Factor's terms:

Collection Period = \_\_\_\_\_ (E)

Average Discount, % = \_\_\_\_\_ (F)

Discount Value = (B) x (F) = \_\_\_\_\_ (G)

The company should be able at least to recover amount of the discount:

Interest accrued over the "recovering" period = ((C)/365) x ((C)-(E)) = \_\_\_\_\_ (H)

"Recovered" amount = (B)(1-(F)) x (H) = \_\_\_\_\_ (I)

If recovered amount (I) is greater than discount value (G), the company should sell its debts to the factor.

## **Summary**

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- Efficient collection of accounts receivable is vital for a company because it is the only regular source of cash
- Discount and credit policy should take into account general business and industry environment, inflation and prevailing interest rates
- Flexible payment terms and discounts in contracts are the primary tool of efficient cash collection
- When determining discount rates or credit terms time value of money should be taken into account
- A company needs to perform regular analysis of creditworthiness of customers and to maintain an efficient customer monitoring system
- Collection process should be effectively formalized
- Various techniques, for example factoring, can speed up cash collection. But all costs and benefits should be thoroughly analyzed

wccm2e/Page33

### Seminar Agenda

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Session 1: Working Capital

Session 2: Cash Collection

**Session 3: Inventory Control**

Session 4: Barter Collection and Tracking

Session 5: Cash Budgeting

Session 6: One Time Measures to Generate Cash

Session 7: Short-Term Finance

Session 8: Treasury Area

Session 9: Organization and Tax Management

wccm3e/Page1

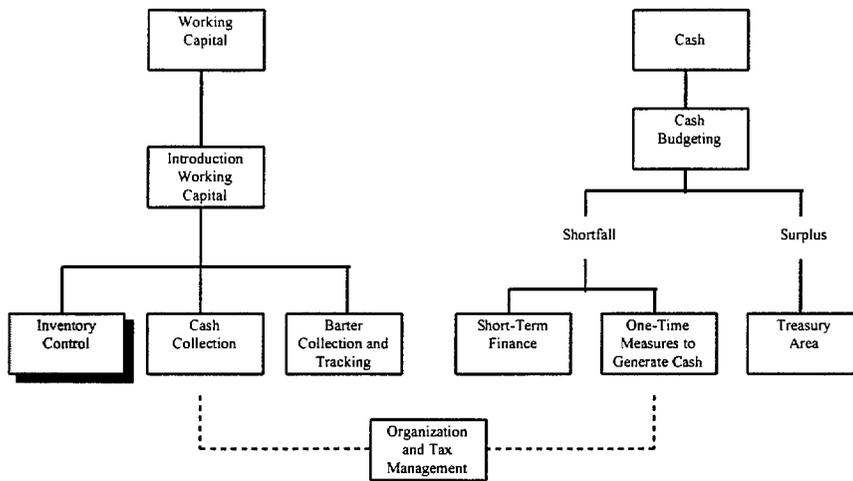
### INSTRUCTOR'S NOTES:

This part covers the management tools for inventories that the company has including a

- more detailed description of what the inventory of a company comprises
- how to calculate the optimum amount of investment into inventories
- how to ensure that the company does not lose its money through excessive or improper control of inventories

All the practical examples and tools have got sequence numbering, so the cross-referencing is made between the examples and tools to simplify the calculations.

## Seminar Overview



wccm3e/Page2

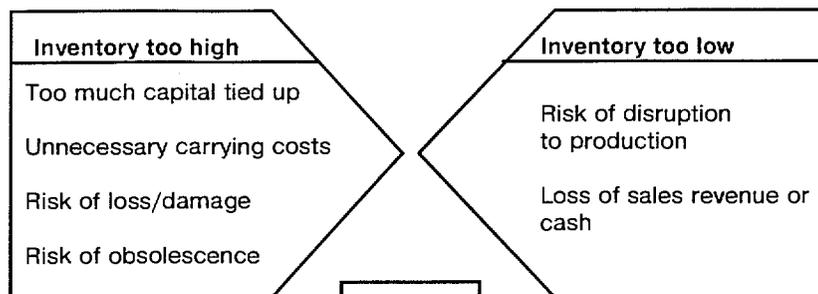
## Seminar Agenda

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- **Importance of inventory control**
- Deciding which inventories need more control and management time
- Ordering at optimal levels
  - Understanding and calculating inventory carrying costs
  - Understanding and calculating ordering costs
  - Using cost information to determine optimal order size
- Knowing when to order inventories

wccm3e/Page3

## Inventory Control is One of the Critical Factors of Working Capital Management



*It is very important to analyze the costs and benefits of holding inventories to optimize their investment*

wccm3e/Page4

### Instructor notes:

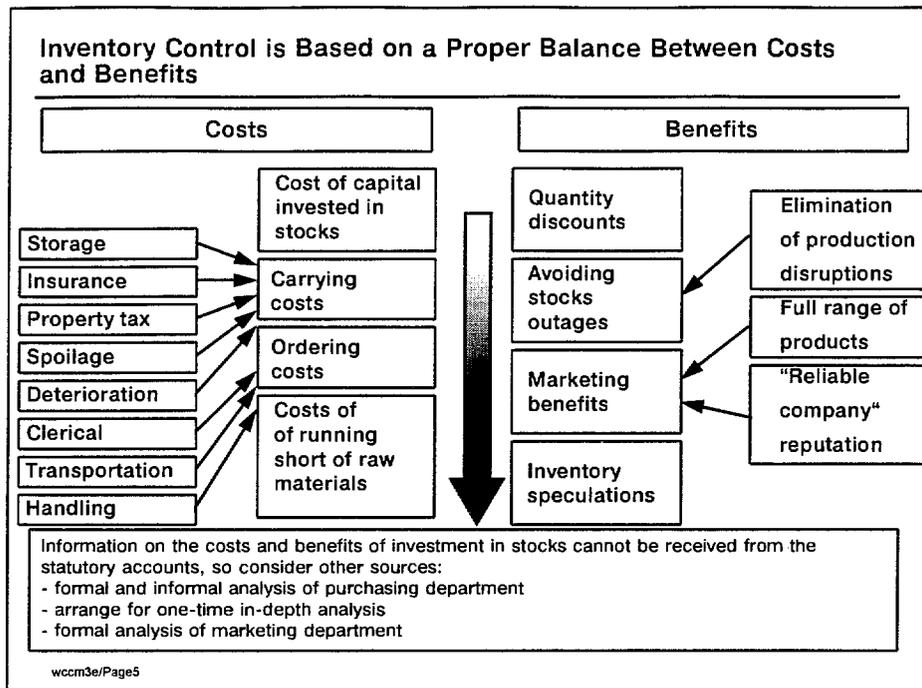
Analyze the following examples from AOBP experience with the participants from the point of view of Working Capital management:

(1) The company has bought additional stocks of tires using a loan.

**Line of argument:** though the tires will be used for the production, additional cost will be incurred for sharing stock and storing and monitoring of stocks, interest payable on the loan will be effectively an additional cost of carrying this stock.

(2) A large wholesaler from the Ukraine approached the company and ordered 500 bicycles within one month. The company has declined the offer as it takes at least 2 weeks to make a procurement order for the raw materials and approximately the same time to get them to the company. How did it affect the company?

**Line of argument:** Company may have saved storage/carrying costs of inventory but has lost a sale = lost profits/cash



**Instructor notes:**

**Make sure** that the audience understands that there are real costs connected with surplus raw materials balances, so buying more does not mean good management.

**Stress the important marketing benefits** such as the reputation of a 'reliable company'. Note that reliability is not only the reliability of getting the product, but reliability of getting **consistently the same product**. The lack of consistency is currently one of the weakest market points of Russian companies. Stress that consumers like to plan their purchases in advance and want to get exactly the same quality of products every time.

## Seminar Agenda

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- Importance of inventory control
- **Deciding which inventories need more control and management time**
- Ordering at optimal levels
  - Understanding and calculating inventory carrying costs
  - Understanding and calculating ordering costs
  - Using cost information to determine optimal order size
- Knowing when to order inventories

wccm3e/Page6

## The Way Out of the Dilemma is Selective Control of Inventories

Controlling all the inventories effectively can take too much management time

?

Define the critical inventories and control others less closely

Control often

Control by policy

### *Critical inventories*

Expensive products  
Difficult to obtain products  
Seasonal products  
Products involving high carrying cost  
Perishable products

### *Other inventories*

Inexpensive products  
Substitute products  
Products for non-core businesses  
Products with stable suppliers

wccm3e/Page7

### Instructor notes:

This slide is the introduction to the concept of 'well thought-out' rather than at random approach to choosing which inventory to control.

**Stress** that optimal inventory control seems time consuming because of the vast number of different inventories and suppliers. The management does not have to worry about the majority of items as they are insignificant from the point of view of the Company's overall performance, but there are always a few items that are critical.

Ask the participants to give their opinion about the decision factors for these inventories control criteria.

### How to Define Critical Raw Materials - Practical Example 1

- Divide raw materials into three categories:

	Category A Critical inventories	Category B Less critical inventories	Category C Non critical inventories
Percent of total stocks in value	50%	30%	20%
Categories of stocks	Few	Up to a preestablished limit	Very many
Control level	Continuous, daily control of all transactions	Periodic stock-taking	Only occasional stock taking
Procedures applied	Calculation of requirements, planning, constant control, deviations analysis	Periodic revisions of requirements, periodic control	Basic planning requirements, delegate control to lower management levels

wccm3e/Page8

#### Instructor notes

This slide shows an example how to formalize the selection of inventories for more detailed control.

**Explain** that though the management knows which inventories are more important than others, formalizing the inventory analysis procedures brings value to most of the enterprises.

This tool may be used by the management as the guidance for their purchasing and warehouse control personnel in setting up the control system.

## Tool 1 - Stock Control

For working with this form follow the instructions on the next page

	Category A Critical inventories	Category B Less critical inventories	Category C Non critical inventories
Categories of inputs			
Percentage of total stocks in value			
Desired control measures	Continuous, daily control of all transactions	Periodic stock- taking	Only occasional stock taking
Existing control measures			
Changes necessary			

wccm3e/Page9

### Instructor notes:

Ask the participants to use this form as a first step in reviewing their inventory control.

Stress one more reason in favor of formalizing this control: the company may have very experienced purchases personnel who do not need to introduce this new form, but if something happens to these persons - he/she resigns, goes onto vacation, falls ill - usually all this accumulated knowledge is lost and the normal production flow may be seriously disrupted. This means substituting individual, subjective knowledge by objective, embedded one.

Also rapidly changing operating environment by formalizing control process can readily identify new elements/developments which will impact inventory costs

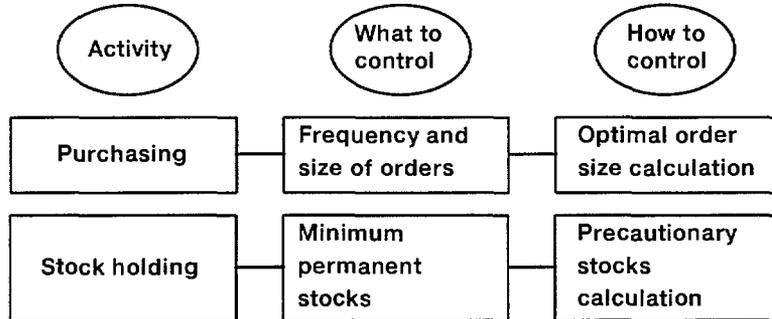
### **Instructions for Tool 1: How to Use the Stock Control Tool**

- Step 1:** Determine the stocks at the closing balance sheet date from the accounting records of the company
- Step 2:** Identify the most valuable or the most important items from the complete list of inventories.
- Step 3:** The ratio of selected stocks to total stocks held is important. Usually, the ten most important items account for over 50% of total inventories.
- Step 4:** Identify the management procedures currently applied to control different types of stocks.
- Step 5:** Compare existing control measures with measures offered in this table and identify the necessary steps to improve stock control or eliminate unnecessary control procedures.



## The Most Important Stocks should be Monitored with Sophisticated Techniques

After having defined the critical inventories choose an efficient control mechanism



Effective application of these techniques will minimize investment in inventories without damaging production

wccm3e/Page11

### Instructor notes:

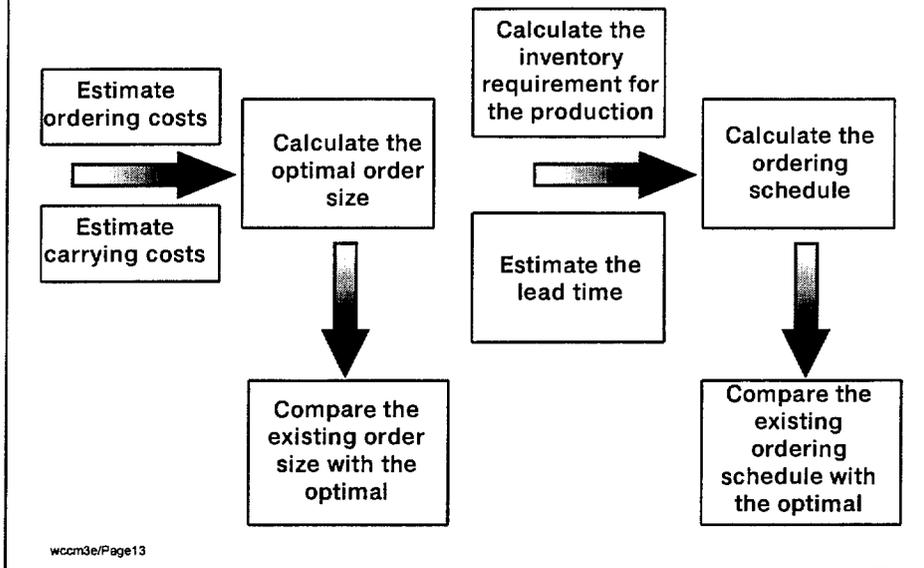
Stress that more sophisticated inventory control measures will require additional analysis and information. There is no magic formula or key, so the aggregation of information is the only way to have more effective inventory control.

## Seminar Agenda

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- Importance of inventory control
- Deciding which inventories need more control and management time
- **Ordering at optimal levels**
  - **Understanding and calculating inventory carrying costs**
  - Understanding and calculating ordering costs
  - Using cost information to determine optimal order size
- Knowing when to order inventories

**Effective Inventory Control Requires the Purchasing Department to Estimate the Optimum Size and Frequency of Orders**



**Instructor notes:**

The purpose of this slide is to illustrate the logical flow of analyzing the existing inventory control and highlighting the inefficiencies.



**Step 1: Calculation of Carrying Costs for AOBP - Practical Example 2**

Item	Total
Average annual inventories (given)	2,550,000
Interest (20% p.a.)	510,000
Depreciation (given)	4,500
Salary (given)	2,200
Utilities (given)	3,300
Pilferage (given)	250
Administrative (given)	2,000
Security (given)	500
Total carrying costs	522,750
Carrying cost per RUR 1,000 m worth of inventories	205

- The example for AOBP shows the carrying cost of RUR 1,000 m worth of inventories
- Interest is the interest lost on money invested in inventories. It is calculated as multiplication of the current deposit rate by the average annual inventory figure
- The calculation is difficult but it is to be performed as needed
- The critical factor in the current Russian environment is the interest loss on money tied up in stocks

(Figures in RUR millions)

wccm3e/Page14

**Instructor notes:**

For all these costs **only the variable part** is to be included in the estimate, costs that will be incurred in any case are to be excluded. There is no formal guidance on how to segregate these costs, so management judgment is the only tool.

**Loss of interest** calculation:  $20\% \text{ p.a.} \times 2,550 = 510 \text{ m}$  for the year

**The depreciation of the warehouse** is to be taken from the accounting records of the company or a management judgment of the accounting personnel. This charge is to be included only if it is variable

**Salary of personnel** is to be calculated only for the additional personnel that is to be engaged in handling these materials.

**Utilities costs** are to be estimated on the basis of the accounting department or the calculation of planning department.

**Pilferage and natural loss** is to be estimated by the accounting personnel, the data from the last stock-take may be efficiently used. This item is especially important for consumer goods enterprises.

**Administrative costs** consist of the costs of processing more documents in handling inventories, have more supervising personnel etc.

**Security costs** are to be estimated either as the sum of the security contract if the security is provided by an outside company or as the salary of in-house security department.

Then the **average annual value of inventories** is calculated. The simplest way is to add the opening inventories to the closing inventories and divide them by two.

Then the total carrying costs for the year is divided by the average annual value of inventories. Thus the carrying cost of 1000 m RUR worth of inventories is calculated.

Then in order to estimate the carrying cost for a particular item its cost is multiplied by the carrying cost of RUR 1000 m worth of inventories.



## Tool 2 - Calculation of Carrying Costs

Calculate the carrying costs with the information from the warehousing and accounting departments

Item	Total
Average annual inventories	2,550,000
Interest (_% p.a.)	510,000
Depreciation	4,500
Salary	2,200
Utilities	3,300
Pilferage	250
Administrative	2,000
Security	500
Total carrying costs	522,750
Carrying cost per RUR 1000 m worth of inventories	205

•Use the instructions on the following pages

(Figures in RUR millions)

wccm3e/Page15

### Instructor notes:

Before distributing this tool ask the participants to name the carrying costs that are not included in this table that are important for their business. In analyzing these costs, stress that the concept is to analyze the variable costs and not the fixed costs.

The format of this tool is more for illustrative purposes than a rigid working document.



## Instructions for Tool 2: Calculation of Carrying Costs (1)

Calculation of average inventory:

- Take the average of beginning and ending inventories from the balance sheet (raw materials, low value short life items net of depreciation, work in progress, finished goods, goods for resale). For more precise analysis you may take the average of quarterly balances

Calculation of interest expense on inventories:

- The interest cost of inventories = the interest on money invested or the interest charged on loans
- Multiply the average annual inventory by the average interest rate on either investments of the company or the bank deposit rate

wccm3e/Page16

### **Instructor notes:**

**Interest calculation:** average inventory is multiplied by either:

- the current interest rate charged on company's loans to finance working capital. This rate is applied if the company borrows money to finance the working capital and this is the case for most of the companies now in Russia

- the **current deposit rate:**

may be obtained from the bank;

may be taken from newspapers, e.g.. Finansovye Izvestia, Finansovaya gazette;

This option is applicable to companies with working capital surplus, it may be applicable to some trading companies but is rarely practicable now for Russian manufacturers.

- or the income from company's investment may be applied to obtain the interest lost.

Note that the second method is applied in the case when the investment is made in order to have current benefits, not in order to have some strategic advantages (for example, when you buy the shares to control your supplier, customer or a competitor) or future benefits (when the investment is made in hope that the target company will generate cash only in the future) or other benefits (investment in the bank where the current account is held in order to have access to cheaper money and cash). Russian environment the second option is rarely applicable.

## **Instructions to Tool 2: Calculation of Carrying Costs (2)**

---

Calculation of other carrying costs:

- Input the budget for warehouse maintenance
- Input accounting data on the costs of warehousing
- Segregate fixed carrying costs (costs that do not change if the quantity of raw materials changes) from variable carrying costs (that change). Input only the variable cost in the calculation because
  - fixed costs of warehousing (e.g. building maintenance) would be borne irrespective of additional inventory
  - the aim is to calculate only the immediate costs of the additional inventory--which are variable costs
  - if the stock changes considerably (for example, twofold), but the costs remain the same, treat this cost item as fixed
  - if the costs change significantly, then there is a variable portion in this cost item - finding this portion is sometimes difficult--use management judgment
- However with high interest rates, as is the case now in Russia, other carrying costs are less important for estimating overall inventory carrying costs

wccm3e/Page17

### **Instructors' notes:**

Variable costs (here) - costs that change with the level of inventory.

Fixed costs - costs that do not change with the level of inventory.

Variable costs are the only costs that are to be taken into account, as fixed costs will be incurred anyway. Therefore fixed costs can not be avoided in short term and they will not influence the decision on how much inventory to have at the company.

### Alternative Calculation of Carrying Cost

Carrying costs may be estimated at market price

- Simpler
- More reliable
- Information not always available

Get price quotations from commercial warehouses for storing particular types of inventory. These rates can be used as an estimate of the company's own carrying costs for similar items.

Other possible sources of commercial warehouse storage rates include:

- Newspapers
- Property brokers (if existent) ('Register skladov' in Moscow - Tel. 217- 9753)
- Specialized publications and surveys
- Other sources (local trade associations, opinions of the business circles)

wccm3e/Page18

#### **Instructor notes:**

Stress that this alternative calculation has the advantage of being closer to the market opportunity costs but has limited use.

This analysis can be applied in two cases:

- the company does not have its own warehousing facilities;
- the company contemplates renting out part of its warehousing facilities and wants to minimize its own use of warehouses;
- the management believes that its own warehousing facility does not have differences from the facilities existing on the market for rent.

The information on warehouses in some regions is scarce so it is sometimes difficult to rely on this information if it is way out from the cost approach information.



## **Seminar Agenda**

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- Importance of inventory control
- Deciding which inventories need more control and management time
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  - Understanding and calculating inventory carrying costs
  - **Understanding and calculating ordering costs**
  - Using cost information to determine optimal order size
- Knowing when to order inventories

### Step 2. Calculation of Ordering Costs - Practical Example 3

Item	Amount - m RUR	
Transportation	72.3	•After having calculated the carrying costs of inventories, it is necessary to calculate the ordering costs to perform the optimal ordering quantity analysis
Security	9.6	
Insurance	5.1	
Administrative	12.5	•This is the analysis of ordering cost incurred by AOBP for RUR1,000 m worth of inventories
Other costs	6.1	
<b>Total</b>	<b>105.6</b>	•This analysis was prepared by the purchasing personnel of AOBP with the use of accounting and operation control data.
<b>Number of orders</b>	<b>4</b>	
<b>Cost of one order</b>	<b>26.4</b>	

(Figures in RUR millions)

wccm3e/Page20

#### Instructor notes:

The purpose of this slide is to present the logic of the calculation of ordering costs for AOBP. The concept of variable costs and not the fixed costs was applied here.

The information on the **transportation costs** was given by the internal transportation department of AOBP. This is composed of:

- the costs of the transportation department (lorries) relating to the transportation of raw materials (a percentage of total costs of the department was assigned to the raw materials carrying costs by the management of the department basing on their past experience), and
- the railway tariff.

The security costs were given by the security department.

The insurance is the sum of the insurance contract.

Administrative is a portion of all administrative costs.

The number of orders is the total number of orders per 1 b RUR of inventories.

### Tool 3 - Calculation of Ordering Costs

Estimate the ordering costs with the use of accounting and operations information

Item	Amount - m R U R
Transportation	
Security	
Insurance	
Administrative	
Other costs	
<b>Total</b>	
<b>Number of orders</b>	
<b>Cost of one order</b>	

•In filling in this table, read the instructions on the following page.

wccm3e/Page21

#### Instructor notes:

Before distributing this form ask the participants to name their company-specific ordering costs that may be of interest to other participants.

This template is a guidance tool, not a rigidly-designed form.

### **Instructions for Tool 3: Calculation of Ordering Costs**

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Estimate the overall ordering costs:

- Step 1:** If there is a budget for the purchasing department, take the data relating to the orders, not to the functioning of the purchasing department
- Step 2:** Obtain estimates for transportation, security, insurance, administrative and other costs from the accounting and/or purchasing department
- Step 3:** Use information on how many orders the purchasing department made for the main raw materials (precise data is not needed, the magnitude of figures is important)
- Step 4:** Divide the total ordering costs by the number of orders and get the ordering cost per purchase

### **Instructions to Tool 3: Calculation of Order Size**

---

If there is information on the order size, input it into the calculation directly:

- The company may have the record of order size
- The company may have an agreed order size with suppliers

If there is no permanent minimum stock with the company, then divide the average stock by the number of orders and multiply by two.

If there is a known or estimated minimum stock, then divide the average stock by the number of orders, multiply by two and deduct the minimum stock.

## Seminar Agenda

- Importance of inventory control
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  - Understanding and calculating ordering costs
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- Knowing when to order inventories

### Determining the Optimal Order Size

*Company A purchases 5,000 ball bearings per year*      Million Rubles

Order size (comparison of possible options)	50	200	400	600	1000	5000
Average inventory in units or value (assumed to be half of the order size)	25	100	200	300	500	2500
Number of purchase orders (annual purchase of 5,000 / order size)	100	25	12.5	8.3	5	1
Annual carrying costs (assumed 0.5 m RUR per unit of inventory)	13	50	100	150	250	1,250
Total purchase order cost (assumed 8 m RUR per order x number of orders)	800	200	100	66	40	8
Total annual relevant costs (carrying costs + purchase order costs)	813	250	200	216	290	1,258

wccm3e/Page25

#### Instructor's notes:

Main premises of this example:

**Need for supplies:**      5,000 ball bearing : 250 days = 20 ball bearings per day

#### Calculation of carrying costs:

The calculation of carrying costs and ordering costs starts with the existing order amount. Then the same total carrying costs and ordering costs are spread for different order size. (Remember, that only variable costs are to be considered here, it is not the general level of figures that is important, but it is to find the lowest figure in comparison with other)

Annual return on inventories (desired by the company) :

$$10\% \times 4,000 \text{ RUR} = 400 \text{ RUR}$$

Rent, insurance, taxes per unit per year (estimated by the planning or accounting departments):

$$100 \text{ m RUR}$$

The total carrying costs per unit per year makes (in Million RUR):

$$0.4 + 0.1 = 0.5$$

**Ordering costs:** Costs per purchase order (clerical, stationery, telephone, estimated by the planning or accounting departments):

$$8 \text{ million RUR}$$

**Example 4: Optimal Ordering Size of Ballbearings for AOBP**

	Million Rubles				
<i>AOBP purchases 160,000 ballbearings per year</i>					
Order size (units)	10,000	20,000	30,000	40,000	80,000
Average inventory in units (0.5 order size)	5,000	10,000	15,000	20,000	40,000
Number of purchase orders (purchasing need/order size)	16	8	6	4	2
Annual carrying costs (average inventory x 1,650 RUR per unit)	8.3	16.5	24.8	33.0	66.0
Total purchase-order cost (number of purchase orders x 2.64 Mln RUR per order)	42.2	21.1	15.8	10.6	5.3
Total annual relevant costs (carrying costs + purchase order cost)	50.5	37.6	40.6	43.6	71.3
	<b>optimal ▲</b>			<b>▲ existing</b>	

The optimal order size for AOBP appeared lower than the existing size!

wccm3e/Page26

**Instructor's notes:**

Note that in the case of a purchase order of 30,000 ballbearings, there are 5 orders of 30,000 and 1 order of 10,000 (so the total is 160,000). The order costs are assumed to be the same however.

#### Tool 4: Calculation of Optimal Ordering Size

---

Order size  
Average inventory in  
units  
Number of purchase  
orders  
Annual carrying costs  
  
Average purchase-  
order cost  
Total annual relevant  
costs

In filling in this form use the instructions on the following page

wccm3e/Page27

#### **Instructions for Tool 4: Order Size Calculation**

---

- Input actual figures for the plant in the middle column
- Change the order size to make it 25%, 50%, 150% and 200% of the order size
- If there is no "safety buffer", discussed later, then the average inventory is half of the order size. Recalculate the carrying costs with the use of the new inventory size. If there is "safety buffer", then add it to the average inventory
- Calculate the new total order costs:
  - multiply the actual order size by the actual number of orders and get the raw materials need for the year
  - divide the raw materials needed for the year by the new order size and get the new number of orders
  - multiply the new number of orders by the ordering cost to get the total ordering cost for the year

wccm3e/Page28

### Another Method to Calculate Order Size

---

*There is a simple and effective formula for the calculation of optimum orders*

$$E = \sqrt{\frac{2AP}{S}}$$

- E - order size
- A - annual quantity used in units
- P - cost of placing an order
- S - cost of carrying one unit in stock for one year

Calculate your own optimum order size using this formula and compare it with your current practice.

wccm3e/Page29

### Instructor notes

Though it may seem that using this formula is easier, the previous example shows exactly the driving factors, not only the result, but the formula is applied when a decision needs to be taken quickly.

Calculate the optimum order size for AOBP using this formula with the following information:

- annually the company needs 80,000 wheels
- the cost of placing an order is 50,000 Rubles
- the cost of carrying one wheel for one year is 100,000

Rubles

Then the calculation shows that the optimum order size is 8,944 (around 9,000) wheels.

There is no need to show how this formula has been calculated, but if there is a specific interest of the audience, then show that this formula is the product of the following equations:

$$\text{Total carrying costs} = S \cdot E / 2$$

$$\text{Total ordering costs} = P \cdot (A/E)$$

$$\text{Total costs} = S \cdot E / 2 + P \cdot (A/E)$$

m (Total costs) = when differential of Total costs in respect of E (order size) equals 0:  $0 = S/2 - P \cdot A/E^2$ , E = formula above.

### Calculation of Optimal Order Size - Exercise 5

---

*Calculate the optimal order size with the formula for wheels that are used by AOBP:*

- The cost of placing an order for wheels is RUR35 m
- The annual demand for wheels is 80,000 wheels (for 40,000 bicycles)
- The annual carrying cost of one wheel is (calculation as in the previous example): RUR 132,000

Use the formula on the previous page when there is a need to estimate optimal orders for important deliveries

wccm3e/Page30

#### **Instructor notes:**

#### **Solution for Exercise 5:**

The calculation is performed in the following way:

$$(2 \times 80,000 \times 35 \text{ m RUR}) / 0.132 \text{ m RUR} = 42,424,242$$

Square root of 42,424,242 is 6,513, meaning that the optimal ordering size for wheels is approximately 6.5 thousand wheels.

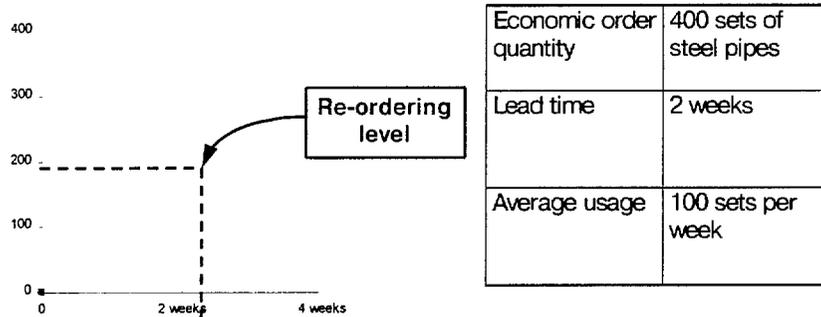
## Seminar Agenda

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- Importance of inventory control
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  - Understanding and calculating ordering costs
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- **Knowing when to order inventories**

## When to Re-order

- In order to know when to order the manager has to estimate:
  - the interval between placing an order and receiving delivery
  - the order quantity for this raw material
  - the certainty of selling the products



wccm3e/Page32

### Instructor notes

The realistic calculation of this requirement includes the following action:

(1) The **lead time** means a realistic estimate of the time between placing the order and receiving the goods in condition ready for processing. There may be the following complications for this calculation:

- there may be a gap between the moment when the warehouse manager finds the need to order and the moment when this need is communicated to the purchase manager. A manager should allow this in his/her calculation of proper order timing

- there may be some time required to prepare the goods for the production processing: unwrapping, putting into special loading devices, etc.... This time must be included in the estimate

(2) **Economic order quantity** is calculated as described before

(3) Certainty of sale is to be taken into consideration. Do not build up raw materials stocks.

### More Detailed Inventory Analysis

- If the inventory amounts are significant for the company, a two step analysis may be done:

Step 1: Prepare the following table stating separately each important component

Item	Quantity produced/ purchased	Price (RUR thousands)	Cost of stock (m)
Tires	2,500 units	60	150
Aluminium pipes	73 tons	7,530	550
Ball bearings	10,000 units	40	400
Other materials	n/a	n/a	394
Total			1494

wccm3e/Page33

#### **Instructor notes:**

The data about the quantity purchased was obtained from the warehousing service of the company. Usually there are reliable records in physical units.

The price was taken from the accounting record of the company.

As there are a lot of various other materials, there is no information on the physical number and price of each, but they are included in the calculation in order to include them in the appropriate calculation and to link this information with the statutory accounting data.

### Calculation of Repurchase Time - Practical Example 6

Step 2: Calculate the holding period of current inventories:

Item	Inventory held now m RUR	Monthly consumption m RUR	Days of stock (1)/(2)	Lead time	When to repurchase (3) - (4)
	(1)	(2)	(3)	(4)	(5)
Tires	150	402	11	10 days	Now
Aluminium pipes	550	503	33	3 days	In 30 days
Ball bearings	400	536	23	20 days	In 3 days
Other materials	394	151	78	30 days	In 1.5 months

- A simple rule for making decisions about the excess stock may be applied to every item that can last more than, say, 4 months:
  - sell the excess stock
  - no more purchases of this stock in the near future

wccm3e/Page34

#### Instructor notes:

##### Consumption calculation:

(1) **Tires:** 40,000 bicycles per year/12 months = 3,333 rounded to 3,350

Cost of one tire by number of bicycles produced x 2 wheels per bicycle:

$$3,350 \times \text{RUR K60} \times 2 = 402 \text{ m}$$

(2) **Aluminum pipes:**

Cost of one set of aluminum pipes by number of bicycles produced:

$$3,350 \times \text{RUR K150} = 503 \text{ m}$$

(3) **Ball bearings:**

Cost of one bearing by number of bicycles produced x 4 bearings per bicycle

$$3,350 \times \text{RUR K 40} \times 4 = 536 \text{ m}$$

(4) **Other materials:**

Cost of set of other materials by number of bicycles produced:

$$3.350 \times \text{RUR K 45} = 151 \text{ m}$$

**The lead time** is the time between placing the order and getting the materials at the factory. If the raw materials require some time for preparation toward the production process, this period is to be included in the lead time.

##### Analyze this table with the participants:

(1) Identify the critical stock item: - here it is tires.

(2) Note that the excessively high levels of other materials are not to be held, therefore arrange for more close analysis of other stocks in order to find out the excessive materials (there may be some materials that are not to be used for a long time).

**Stress** that even a rough approximation helps to take the decisions.

### Calculation of Repurchase Time - Tool 6

Analyze your own important materials using the following table and the instructions on the next page

Item	Inventory held now m RUR	Monthly consumption m RUR	Months lasting (1) / (2)	Lead time (months)	When to repurchase (3) - (4)
	(1)	(2)	(3)	(4)	(5)
Material 1					
Material 2					
Material 3					
Material 4					
Other materials					

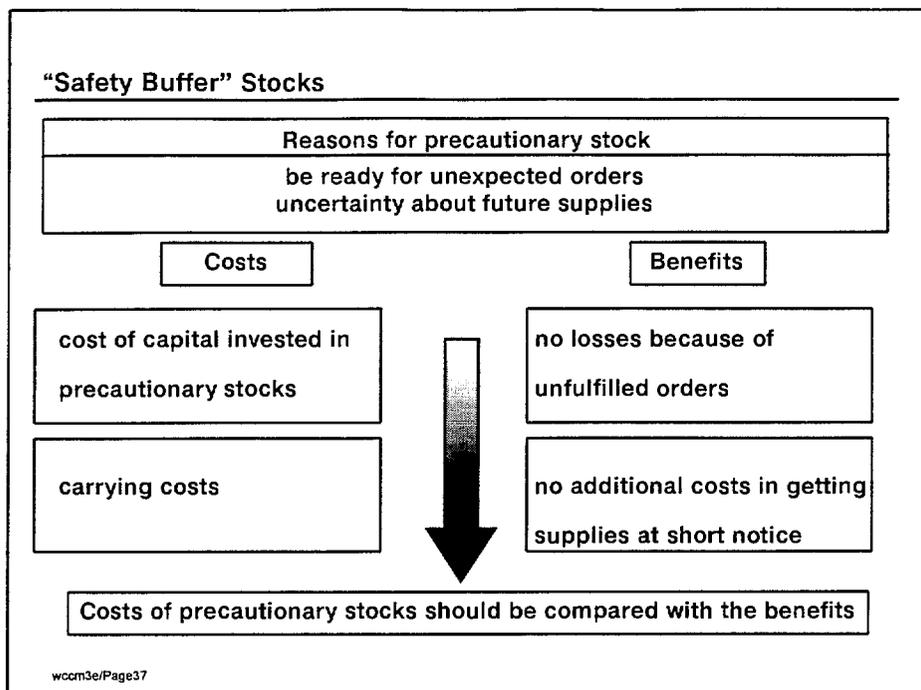
- Create a list of the three most important conclusions from this analysis
- Apply this table to the work of your purchasing department

wccm3e/Page35

### **Instructions for Tool 6: How to Calculate the Repurchase Time**

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- **Raw materials:** list the materials that are the most important
- The **sum of stocks** in Rubles may be taken from the accounting or the warehousing department
- **Monthly consumption** is calculated from either (descending preference):
  - production plan for the nearest future
  - production estimates of sales/marketing/operations
  - data on the past production (adjusted for the inflation if needed, the adjustment is made by the calculation of physical production instead of value figures)
- The **lead time** is to be estimated by the purchases department. It is better to make this estimate separately for each type of stock.



**Instructor notes:**

This slide introduces the concept of precautionary stocks that are an important safety tool in present Russian environment.



**The Level of Precautionary Stock is Estimated by Calculating the Expected Cost of Lost Sales in the Event of an Increase in Demand Comparing it with the Carrying Costs of Holding Extra Stock**

A	B	C	D	E	F	G
Safety Stock	Unexpected Demand	Probability	Expected Cost	Remaining Stock	Carrying Cost	Total Expected Cost
		(See below)	$(400,000 \times (B-A) \times C)$	(Utilized portion of A)	$(120,000 \times E)$	$(D + F)$
0	10	0.30	1,200,000	0	0	1,200,000
	20	0.05	400,000	0	0	400,000
	30	0.02	240,000	0	0	240,000
						1,840,000
10	10	0.30	0	0	0	0
	20	0.05	200,000	0	0	200,000
	30	0.02	160,000	0	0	160,000
						360,000
20	10	0.30	0	10	1,200,000	1,200,000
	20	0.05	0	0	0	0
	30	0.02	80,000	0	0	80,000
						1,280,000
30	10	0.30	0	20	2,400,000	2,400,000
	20	0.05	0	10	1,200,000	1,200,000
	30	0.02	0	0	0	0
						3,600,000

  
**Optimal balance**

Probability = likelihood of a given level of demand

Price = 400,000 per unit      Carrying Cost = 120,000 per unit

wccm3e/Page38

**Instructor notes:**

- (1) Safety stocks are the alternative amounts of additional inventory that is kept by the firm in order to avoid peak shortages
- (2) Carrying costs are calculated on the basis of estimates by planning/accounting personnel, these are the costs connected with storing the inventories (storage costs: warehouse depreciation, wages of warehouse personnel, utilities costs, security costs etc., reserve for pilferage, obsolescence etc.) and processing additional costs information (roughly the salary of the accounting personnel engaged in materials accounting, times the percentage increase of raw materials costs)
- (3) Excess demand is estimated mainly by management judgment, a rough estimate may be the number and volume of orders turned down for the last year.
- (4) The probabilities listed represent the likelihood that that the amount of additional, unexpected demand actually will arise. They are assumed in this chart.
- (5) The remaining stock represents the amount of safety stock that is not used to meet unexpected demand.

### Calculation of Precautionary Balance - Practical Example - 7

The precautionary balance for ball bearings for AOBP have been calculated

A	B	C	D	E	F	G
Safety Stock (Ball Bearings)	Unexpected Demand of Ball Bearings	Probability	Expected Cost	Remaining Stock of Ball Bearings	Carrying Cost	Total Expected Cost
		(See below)	$(250,000 \times ((B-A) \times C)/4)$	(Utilized portion of A)	$(16.53 \times E)$	$(D + F)$
0	800	0.40	20,000,000	0	0	20,000,000
	1,600	0.20	20,000,000	0	0	20,000,000
	2,400	0.10	15,000,000	0	0	15,000,000
						55,000,000
800	800	0.40	0	0	0	0
	1,600	0.20	10,000,000	0	0	10,000,000
	2,400	0.10	10,000,000	0	0	10,000,000
						20,000,000
1,200	800	0.40	0	400	6,612	6,612
	1,600	0.20	5,000,000	0	0	5,000,000
	2,400	0.10	7,500,000	0	0	7,500,000
						12,506,612
2,000	800	0.40	0	1,200	19,836	19,836
	1,600	0.20	0	400	6,612	6,612
	2,400	0.10	2,500,000	0	0	2,500,000
						2,526,448

Optimal balance



Probability = likelihood of a given level of demand  
 Price = 250,000 per bicycle    Carrying Cost = 16.53 per ball bearing  
 4 ball bearings per bicycle

wccm3e/Page39

#### Instructor notes:

- (1) The precautionary stock is calculated as the excess stock that is held by the company but not used under "normal conditions".
- (2) The carrying costs were calculated as the average carrying costs for ball bearings from the previous examples multiplied by this precautionary stock figures
- (3) The probabilities of unexpected demand are calculated as the amounts of refused orders divided by the total number of orders received by the company. This data was given by the sales/marketing department of AOBP. Emphasize that when the companies calculate 'refused orders/total orders' they should only include orders refused due to stock-outs. Enterprises might be turning down orders for other reasons: poor credit history, inability to pre-pay, inappropriate sort of barter offered as payment, etc.
- (4) The expected costs are an approximation of the lost profit and a portion of fixed costs relating to this unfulfilled order. This was estimated by the management of the company as 250,000 RUR per one bicycle. Then these lost benefits are multiplied by the probability. Example of calculation of the first line:  $250,000 \times ((800 \times 0.4)/4) = 20,000,000$ .

### Tool 7 - Calculation of "Safety Buffer"

Calculate the precautionary stock for your company using the instructions on the next page

A	B	C	D	E	F	G
Safety Stock	Unexpected Demand	Probability	Expected Cost	Remaining Stock	Carrying Cost	Total Expected Cost
		(See below)	(Price x (B-A) x C)	(Utilitized portion of A)	(Carrying cost per item x E)	(D + F)

### **Instructions to Tool 7: How to Calculate "Safety Buffer"**

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- (1) **The precautionary stock** is calculated as the excess stock held by the company but not used under normal conditions
- (2) **The carrying costs** are calculated as the average carrying cost for critical items, taking the data from the previous calculation of carrying costs and multiplying the carrying cost per RUR1,000 m worth of inventories by the value of the excess stock
- (3) The probabilities of unexpected demand are calculated as the number and size of refused orders divided by the total number of orders received by the company. The information about the frequency and the size of refused orders should be provided by the sales/marketing department
- (4) The expected costs are an approximation of the lost profit and a portion of fixed assets relating to this unfulfilled order. This is to be estimated by the management of the company. The lost benefits are multiplied by the probability of the unexpected demand growth

wccm3e/Page41

## **Summary**

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- **Effective inventory management is based on a proper balance between the costs and benefits of holding inventories**
- **“Critical” inventories should be defined and managed through a number of stock control tools**
- **The methods of estimating carrying and ordering costs and determining the optimal order can reduce inventory investments**
- **Calculating the “safety buffer” prepares enterprises for unexpected orders and uncertainty about future supplies**

wccm3e/Page42

## Seminar Agenda

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Session 1: Working Capital

Session 2: Cash Collection

Session 3: Inventory Control

**Session 4: Barter Collection and Tracking**

Session 5: Cash Budgeting

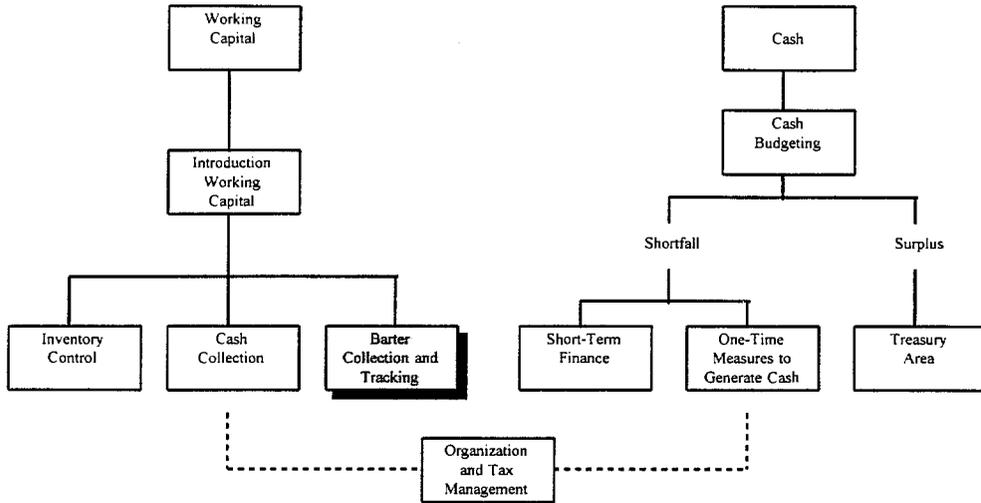
Session 6: One Time Measures to Generate Cash

Session 7: Short-Term Finance

Session 8: Treasury Area

Session 9: Organization and Tax Management

## Seminar Overview



wccm4e/Page2

## Seminar Agenda

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- **General effects of barter transactions**
- Use of goods received through barter
- Bartering for finished goods
- Bartering for raw materials
- Possible cash flow effects
- Understanding your use of barter
- Evaluating barter transactions
- Responsibilities of barter processing

wccm4e/Page3

### Instructors notes

Ask the participants what percentage of their company's sales are made on a barter basis

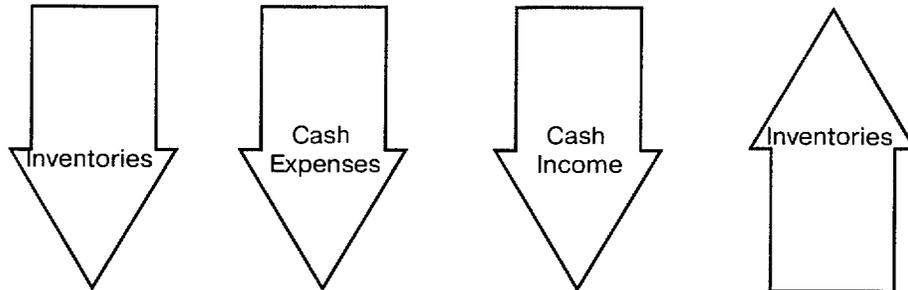
Ask what effect barter transactions have on their profitability and on their cash/working capital

(Note-the next slide addresses these issues)

## Most Barter Transactions Have the Same Effect on Current Assets

*Know your objectives before entering a barter deal*

- Can you afford the decrease in cash income?
- Can you benefit from the reduction in cash expenditures?
- Can you exchange under-producing inventories for more useful inventories



wccm4e/Page4

### **Instructor notes:**

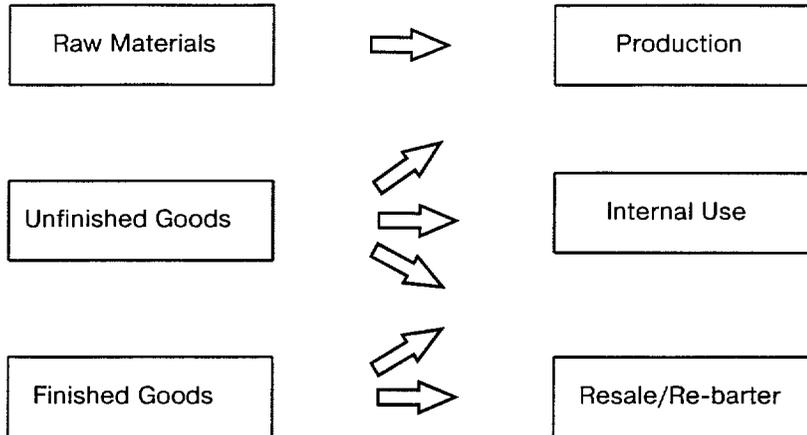
All barter transactions tend to have the same effect on a company's current assets and cash flow. Managers should be aware of these effects so that they can use barter as an effective lever to balance current needs.

By using barter to purchase materials, cash expenditures are reduced. This reduction can be very helpful during cash shortages. However, when using finished goods to buy materials or when accepting another type of barter payment for finished goods, cash income is reduced. This reduction can sometimes be harmful in times of cash shortages. Of course, sometimes the reduction in cash income is unavoidable in order to keep production volumes up or because it is more important to reduce cash expenditures.

Barter also has an effect on inventories. Since barter is an exchange of goods, some inventories will decrease and some will increase. It is essential that the company is exchanging existing inventories for goods that it can use or sell more easily than what it already has.

### Goods Received Through Barter Have Limited Uses

*Before accepting barter, make sure that you can use or liquidate the incoming goods*



wccm4e/Page5

#### **Instructor notes:**

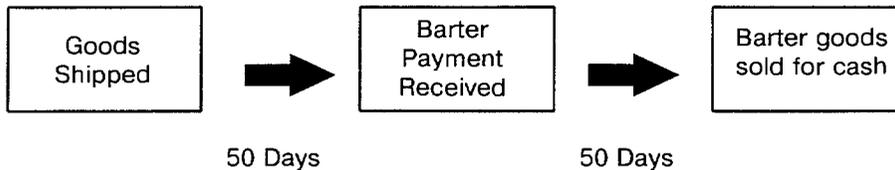
Goods of any type are less liquid than cash. In using barter, managers must be aware of the possible uses for what they will receive and have a plan for the use of these goods.

Remind participants that they should avoid bartering for goods which they cannot easily resell or use in-house. Unusable or unsellable goods simply tie up working capital in a non-productive form.

## Receiving Goods for Resale Lengthens the Cash Cycle

*Realization of barter sales does not occur until the goods are sold*

- The example for AOBP below has the same effect on the cash cycle as extending credit for 100 days



- When bartering for finished goods, make sure that you have a use for the product or a channel for its liquidation
- Otherwise, you do not effectively realize the sale and will also incur indirect costs for storage and sales

wccm4e/Page6

### Instructor notes:

If the goods you are to receive cannot be used in production or for other internal purposes, then they must be sold or re-bartered. The process of finding a buyer or barter partner takes time and the efforts of sales and procurement staff.

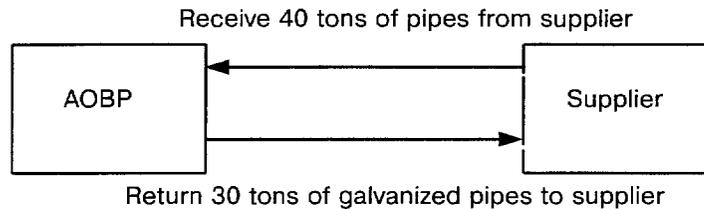
Receiving goods that cannot be used in-house delays the realization of the sale of the original goods. The time that it takes to turn the received goods into something useful (cash, raw materials) has basically the same effect as if you had extended credit to the purchaser.

Managers should be aware of this “cost” of barter transactions and price their goods appropriately based on the level of liquidity of the goods to be received. If the realization time is expected to be excessively long, managers should consider foregoing the transaction. Other considerations may be more important, however.

## Bartering for Raw Materials Can Be Beneficial During Cash Shortages

*Receiving raw materials for payment reduces cash expenditures and preserves existing cash for other purposes*

- Give-and-take transactions are an example of such a transaction



- The price of the 10 units retained by AOBP is the cost of galvanizing 30 units
- Give-and-take transactions can also help to alleviate the inefficiencies of low production levels

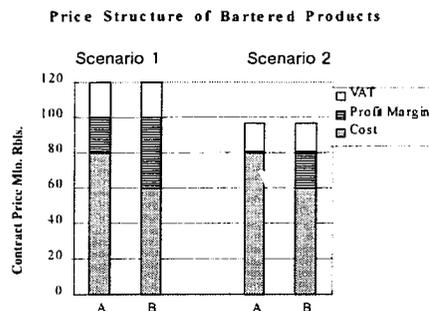
wccm4e/Page7

### **Instructor notes:**

Bartering for raw materials helps to reduce cash expenditures. In times of cash shortage such a reduction is essential. Some operational items must be paid in cash, so by using barter you can preserve limited cash resources for those items that cannot be bartered (taxes, social security, interest on bank loans).

Give-and-take transactions are special example of such activity. In such transactions a company pays for raw materials through processing additional materials for its supplier.

## Some Barter Transactions May Provide Tax Reduction and Cash Flow Benefits



### Scenario 1 (Contract price - 120 m.)

- Company A and Company B take their normal margin

### Scenario 2 (Contract price - 97 m.)

- Company A sets a minimum (1%) margin
- Company B adjusts its margin to contract price

Under Scenario 2 as compared with Scenario 1:

- Sales related tax (VAT) is reduced due to lower margin and sales figures
- Profit tax the current year is lower due to lower margin and sales price. Profit will be increased in future period because of the lower cost of the materials purchased. Therefore current year cash flow is improved by deferring profit tax payment till next year.

wccm4e/Page8

### Instructor notes:

The above example shows how barter transactions may reduce some tax liabilities and result in cash flow benefits. Two scenarios of bartering the same products are shown. Under the first scenario the contract price is RUR120 m. Company A agrees to exchange its product has production costs of RUR 80 m. Such a price leaves profit margin as 25% after taking out VAT of RUR 20 m. Company B has a cost of production of 60 m rbls and a profit margin of 67%.

Under the second scenario the company with the higher cost of production(Company A) takes only a 1% profit margin. Thus the contract price will be RUR 96.96 m. In this case company B has a profit margin of about 35%.

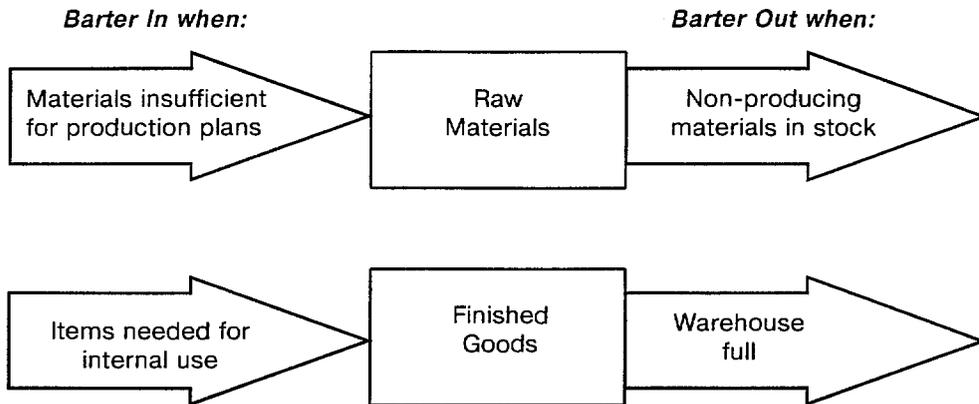
The lower contract price reduces turnover-related tax liabilities. Currently these taxes are: 1. Road tax (2.5%) 2. Housing, social and cultural objects maintenance tax (1.5%).

**Conclusion:** Maximum reduction of turnover-related taxed is assured when the contract price is equal to the cost of production of the company with the higher cost of production of bartered products. The cash flow benefits result from deferring profit tax (about 7 m for each company in the example). The lower profit in the current period should be offset with lower production costs in future (raw materials bartered-in).

In case of bartering-in products to be capitalized (heavy equipment, construction materials, and some other) the depreciation base will be lower. Some practical examples show that to be competitive, some companies include only 50% of depreciation costs into the price of their products.

## Barter Operations Must be Linked With Inventory Control

*A thorough knowledge of what is in inventory and what is needed will help you to use barter as an effective tool of inventory control*



wccm4e/Page9

### **Instructor notes:**

Since barter is usually an exchange of goods it must be connected with inventory control. The objective in barter is to give what you do not need, have plenty of, or cannot use effectively for what you need or can use more effectively than what you already have.

Those with barter responsibilities should be aware of warehouse contents and their intended uses. Such awareness requires bringing together sales, production, inventory, and procurement information. Mention the Management Reporting System which includes the linking of such information.

## Barter is Often Unavoidable and Sometimes Preferable to Cash

### *Barter may be unavoidable:*

- As settlement of long-overdue receivables
- If competitors accept barter
- During cash shortages
- When a major customer demands it

### *A certain level of barter is even preferable to cash when bank accounts are frozen*

- Barter "income" bypasses the bank account, allowing management more control

**BUT**

Barter transactions generally incur higher costs than cash

wccm4e/Page10

### **Instructor notes:**

Sometimes barter is unavoidable. In cases of long-outstanding receivables, it may be barter or nothing. When your competition accepts barter payment, you may be forced to do so as well. And when you don't have any cash, you are forced to use barter to get the materials you need. Also, if you are a supplier to a large company which has a significant position in your market, you may be forced to accept their terms if you want their business.

Even when barter is unavoidable, you must be aware of your current situation and your needs and use barter as a lever, getting what you can use or what you need. Otherwise, barter will become a noose due to its illiquidity.

## Understand Why You Use Barter Transactions

*In the following cases, barter may be helpful or even necessary:*

- Are you trying to decrease cash expenditures?
- Are your customers unable to pay cash?
- Do you need to raise your production levels?
- Do competitors accept barter transactions?

*In other cases, barter may be the problem or a sign of another problem:*

- Are customers unwilling to pay cash because of product shortcomings?
- Is a lack of effective marketing forcing the enterprise to accept barter?
- Is excessive bartering a cause of current cash shortages?

### FURTHERMORE

*Barter may be a part of current problems and also part of the solution*

Finding the right balance is crucial because you cannot rely on barter only - some payments, e.g. taxes and social insurance, wages and salaries can be made in cash only

wccm4e/Page11

### **Instructor notes:**

The acceptable level of barter operations will depend on the individual enterprise's operational and financial realities.

The immediate sign of excessive barter transactions is a lack of available cash for cash expenditures such as salaries, taxes, energy.

Management should then look at current production levels. Increased production levels can provide additional flexibility in pricing policies since fixed costs can be allocated over a greater amount of product. Barter transactions can often help to increase production levels by allowing the enterprise to sell to customers who cannot or will not pay cash.

If competitors accept barter, then the enterprise has extra pressure to accept barter so as not to turn away customers who would otherwise go to a competitor.

If an enterprise's current operations (e.g., lack of cash, low production volume) force it to pursue barter transactions, then management needs to examine the forces that brought the enterprise into its current situation. Excessive barter transactions may be part of the problem. If customers are pressing for barter transactions, then the enterprise has more leverage to control its level of barter operations. Of course, other factors such as the variety of uses for the enterprise's product, number and variety of customers, etc. also has great impact.

## Each Transaction Should Be Evaluated Separately

### *Strategic Considerations*

- Is the enterprise or the barter partner more interested in the transaction?
- Does the transaction agree with your defined barter objectives?

### *Tactical Considerations*

- What is the effective price of the goods/services to be received?
- What is the 'liquidity level' of the goods to be received, i.e. how easily can you use or resell the received goods?
- Does the proposed price match the level of liquidity?
- Can I use or dispose of the goods? Do I need them?
- Are there indirect costs involved in turning the goods into something useable?
- Will I get the goods in time for my needs?
- Am I better off accepting than losing the sale?

wccm4e/Page12

### **Instructor notes:**

Management should determine if the transaction fits within its plan for barter use. Is it the right type, does it bring the desired benefits, is it being driven by the right factors?

Calculate cash flow effects, considering the type of goods involved, price agreements, shipment and receiving dates, turnover time if applicable, and indirect costs.

Monitoring of prices for incoming bartered products is necessary in order not to overpay for them even though there is no cash involved. Monitoring of prices for products similar to outgoing bartered products is necessary in order not to let the competition get advantage and take away the partner.

The liquidity level of incoming barter can have a significant impact on cash flow. If the incoming goods are to be used in production then they are highly liquid. If the incoming goods are to be resold, they may be considered less liquid. Less liquid goods may involve indirect costs of resale and prolong the turnover of sales. As a rule consumer goods are more liquid but even in this case there are high risks of being involved in unknown business (see above).

Another important aspect of the evaluation of barter profitability is proper timing. Late receipt of needed products may adversely affect production plans. Late receipt of goods to be sold increases the turnover period of the sale.

## **Barter Acceptability Analysis - Example of the Avtozavod Company (Part 1)**

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### *Source Data*

- Avtozavod entered into a deal with Uralstal for the purchase of six automobiles.
- The price of the six automobiles was set at RUR 180 million.
- Avtozavod offered a payment schedule of RUR 30 million per month for six months.
- Uralstal wanted to pay Avtozavod with RUR 30 million worth of steel each month. Avtozavod uses this steel in the production of its automobiles.
- Avtozavod normally uses RUR 25 million worth of this steel each month, which is the maximum amount of steel its capacity allows.
- Avtozavod budgeting requires that each month it must receive RUR 60 million from the proceeds of this sale in order to cover its monthly working capital requirements for the next six months. If this amount is not received, Avtozavod will have to borrow enough money to make up the deficit.
- The present interest rate at which Avtozavod can obtain financing is 10% per month.
- Carrying costs for excess steel are RUR 500,000 per month.

*Avtozavod wants to assess the differences between these two payment options.*

wccm4e/Page13

This example is presented to demonstrate simply that sometimes it can be more expensive to trade using the barter system than to deal in cash.

We assume that the carrying costs do not vary with the amount of steel kept in inventory.

## Barter Acceptability Analysis - Example of the Avtozavod Company (Part 2)

### Calculation of Monthly Costs To Finance Sale Under Both Options

	Cash Payments	Barter
(1) Value Of Cash Or Steel Received	30,000,000	30,000,000
(2) Amount That Can Be Applied To Working Capital	30,000,000	25,000,000
(3) Amount of Working Capital Required	60,000,000	60,000,000
(4) Amount That Needs To Be Borrowed To Cover Working Capital [(3) - (2)]	30,000,000	35,000,000
(5) Interest Payments On Money Borrowed [(4) x 10%]	3,000,000	3,500,000
(6) Carrying Costs for Excess Steel	0	500,000
<b>Total Monthly Costs To Finance Sale [(5) + (6)]</b>	<b>3,000,000</b>	<b>4,000,000</b>

wccm4e/Page14

There can be other expenses associated with bartering for goods that are not dealt with in this simplified example.

For example, there can be costs associated with the damage or wastage of the goods that are used as payment while they are stored in inventory.

There also can be costs related to inflation. If the bartered goods are held and sold later at a price below the rise in inflation, then there will be a loss.

There is also a possible opportunity cost that is lost. If a company receives a cash payment instead of goods, it can invest this cash. In some cases a company may have an opportunity to invest this cash and earn a return that is higher than the cost of financing to meet its working capital needs. By receiving relatively illiquid goods instead of cash, the company loses the opportunity to invest this cash.

Also not shown in the example are the possible transaction costs associated with barter. These include transportation costs, sales and marketing costs to sell the excess bartered goods, etc.

### Barter Acceptability Analysis - Example of the Avtozavod Company (Part 3)

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#### Summary

- The costs that will be incurred with the barter payment option are higher than those incurred under the cash payment option.

<i>Cash Payment Option Cost</i>	<i>3,000,000 x 6 months = 18,000,000</i>
<i>Barter Option Cost</i>	<i>4,000,000 x 6 months = 24,000,000</i>

- There are two main reasons for the higher costs incurred through the barter payment option:
  - Avtozavod must borrow extra money to make up for the value of the steel it receives that it cannot apply to its working capital requirements.
  - Avtozavod must pay for the carrying costs of the excess steel that it receives.
- Although the barter option in this example is not desirable because it costs more than the cash payment option, such an undesirable payment option may need to be used in order to make the sale. If the alternative is no sale, sometimes the barter option is better than nothing.

wccm4e/Page15

It should be noted that the extra costs incurred through the barter option can be alleviated or decreased through the sale of the excess steel during the month.

The barter system is often used because sales could not be possible through ordinary cash or credit deals. In such cases, companies may realize that they will lose some money by using the barter system. But they also realize that often a smaller profit is better than no profit.

### **Barter Transactions Require Special Handling**

- Barter transactions are handled differently from cash transactions
- Documents related to barter transactions must be clearly identified
- Evaluation of the transaction's acceptability is crucial
- Managing the execution of the agreement will reduce risks and minimize costs
- Responsibilities are determined by the type of transaction:
  - incoming barter
  - outgoing barter
  - barter resulting from purchase requisition
- Barter transactions require greater coordination between departments because such transactions involve more departments
- Standard record keeping may be of great help to keep track of the barter situation (this issue is discussed in more detail in the Restructuring an Organization's Finance Function seminar)

wccm4e/Page 16

#### **Instructor notes:**

These are the key points to remember:

Barter transactions are more complex than cash transactions. The many differences between barter and cash transactions require a separate method of processing.

Marking barter-related documents will make the analysis of agreements, and barter operations in general, much easier.

Before agreeing to a barter contract, the steps mentioned earlier under "Is a barter transaction acceptable?" should be performed.

After the decision of bartering is made the department (sales, procurement, etc....) responsible for the transaction is nominated. This department monitors the flow of documents and shipment/receipt of bartered goods (delivery of services). The department should take all necessary measures to assure the objectives of the barter transaction.

Barter is inherently more risky than cash. Aggressively monitoring and managing the terms of the agreement is essential.

Barter cycle is of crucial importance especially in complex transactions involving more than two parties. Proper timing will reduce costs (TVM).

All documents concerning barter transactions should have special tag *Barter*.

## **Responsibilities for Incoming Barter**

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### ***Sales Department***

- Receives purchase inquiry from customer
- Assesses ability to convert offered barter products
- Requests valuation of barter products from:
  - purchasing and commercial departments - raw materials
  - services and commercial departments - services
  - planning and commercial departments - other consumer goods

### ***Commercial Department***

- Prepares draft contract and forwards to Finance Department

### ***Finance Department***

- Approves contract
- Prepares production order and sales invoice

wccm4e/Page17

### **Instructor notes:**

In the "Incoming Barter" cycle, the enterprise is contacted by a purchaser who wants to buy the enterprise's goods in a barter transaction.

The sales department is responsible for evaluating the offer in consultation with other departments. Other departments will provide information on the need for the goods offered, valuation of the goods offered, etc. The sales department should honestly evaluate the whether the characteristics of the transaction match the objectives of the enterprise.

The commercial department will prepare the required documents

The finance department must thoroughly evaluate the cash flow implications and other financial impacts. If these are acceptable, then the director of the finance department approves the contract

Accounting is responsible for record keeping.

## **Responsibilities for Outgoing Barter Transactions (Sale of Finished Goods)**

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### ***Sales Department***

- Identifies non-cash purchaser of finished goods
- Assesses ability to use offered barter products in order of priority: sale for cash, raw materials, internal use, re-barter
- Coordinates with Planning and Finance Departments determine market value and quantity of products to exchange

### ***Commercial Department***

- Prepares draft contract and forward to Finance Department

### ***Finance Department***

- Approves contract

wccm4e/Page18

### **Instructor notes:**

The main difference in the "Outgoing Barter" cycle is that the enterprise is more interested in the barter sale. The Sales department must find a willing buyer. The motivation in this case is to move inventories or increase production. The sales department will then, consulting other departments, evaluate the ability to use or sell the bartered goods offered.

Ask the participants if they feel that barter transactions in their company are being properly controlled and why or why not?

## **Barter Resulting from Purchase Requisition**

### ***Purchasing Department***

- Collects purchase requisitions from production
- Assesses necessity and Identify vendor
- Negotiates barter purchase
- Prepares exchange valuation report
- Prepares draft contract and forward to Finance Department

### ***Finance Department***

- Approves exchange valuation report
- Signs purchase order
- Approves draft contract

wccm4e/Page19

### **Instructor notes:**

The purchasing department is central in transactions related to the procurement of needed materials. The purchasing department may be interested in using barter because of a lack of cash resources or in order to reduce inventories of other goods received through barter, finished goods, or unneeded materials.

The finance department has the responsibility of approving the transaction. The financial department needs to make the evaluation of whether the deal is acceptable. The purchasing department is interesting primarily in supplying materials to meet the production plans. The finance department must confirm that the exchange meets the enterprise's objectives.

The accounting department once again is responsible for the record-keeping.

## Seminar Agenda

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Session 1: Working Capital

Session 2: Cash Collection

Session 3: Inventory Control

Session 4: Barter Collection and Tracking

**Session 5: Cash Budgeting**

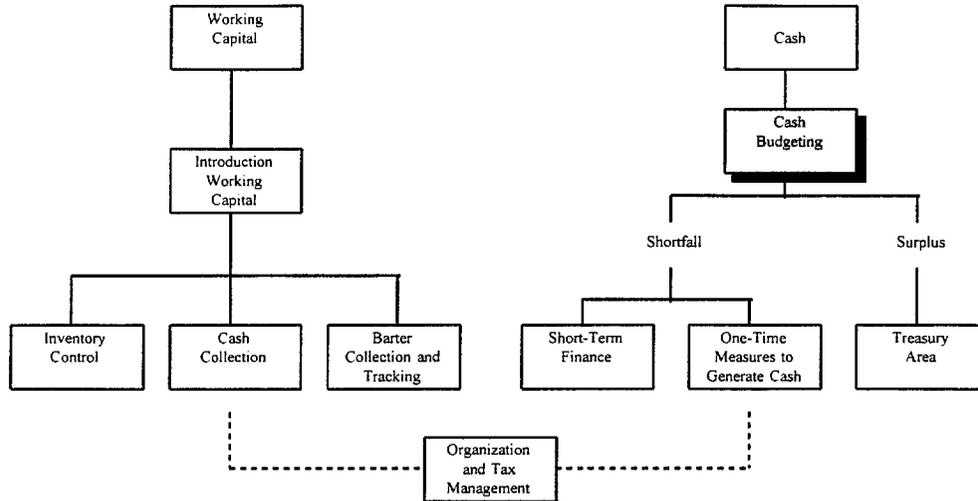
Session 6: One Time Measures to Generate Cash

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## Seminar Overview



wccm5e/Page2

## **Seminar Agenda**

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- Importance of a cash budget
- Components of a cash budget
- The cash budgeting process
- Analysis of the cash budget

### The Cash Budget is an Essential Element of Business Forecasting

- What is a cash budget?
  - Detailed statement of expected inflows and outflows of cash
- When should it be produced?
  - Prepared on a monthly or quarterly basis
- Why is it helpful?
  - Alerts management to future cash needs or surpluses
  - Improves the continuity of business
  - Assists in resource allocation decisions
  - Provides a standard against which future performance can be judged

wccm5e/Page4

#### **Instructor notes:**

Stress the importance of the cash budget in the Russian economic environment

Most Russian companies are short of cash and this increases the need for good cash budgeting which should be performed monthly where possible.

Many Russian businesses have their daily operations disrupted due to shortages of cash. Some of these disruptions could be avoided by simple cash budgeting.

#### **Question**

Ask the participants if they use any cash budgeting techniques in their company.

If so is it useful? Why?

If not, how do they forecast their cash requirements?

**Cash Budgets Must Include all Cash Inflows and Outflows**

<i>Cash Inflows</i>	<i>Cash Outflows</i>
<ul style="list-style-type: none"><li>• Cash sales</li><li>• Collection of accounts receivable</li><li>• Payments in advance</li><li>• Sale of goods acquired through barter</li><li>• Sale of assets and investments</li><li>• Income from investments or related companies</li><li>• Loans</li><li>• Capital contributions</li><li>• State subsidies or grants</li></ul>	<ul style="list-style-type: none"><li>• Cash purchases, payments to creditors, prepayments</li><li>• Wages, salaries, bonuses and utilities, rent, insurance</li><li>• Repairs, maintenance, sub-contractors</li><li>• Taxes, levies, duties and social security</li><li>• Fixed assets, financial investments and interest, dividends</li><li>• Loan repayments</li><li>• Tax penalties</li><li>• Social asset expenditures</li></ul>

wccm5e/Page5

**Instructor notes:**

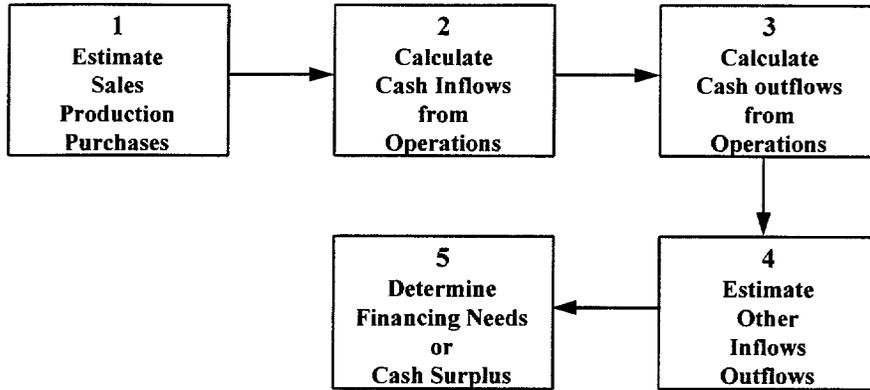
Stress that much thought needs to be given to the inflows and particularly the TIMING of inflows especially if the business is seasonal, such as AOBP which sells more bicycles in the Summer months.

State that managers should actively seek the information necessary to estimate the amount and timing of outflows to state authorities.

Stress that businesses differ, that the above headings are not exhaustive and that the cash budgeting process should capture all known/likely inflows

## The Basic Steps In Cash Budgeting

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wccm5e/Page6

### **Budgets Should be Projected Forward and Allow for Alternative Scenarios**

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- Why? The future is uncertain
- Single estimates could result in large deviations
- This could cause incorrect decisions to be made
- Managers can determine which estimates have the most impact on cash flows
- More effort can be directed to the important estimates (e.g. sales or production volume estimates)

wccm5e/Page7

#### **Instructor's notes:**

Stress that it is even more important to estimate a range of outcomes in Russia due to the rapidly changing business and economic environment over the last few years.

Ask participants to think about their own business.

Have they prepared financial plans/budgets in the past few years?

If they were based on single estimates, how useful were these plans after a small period of time had elapsed?

If they were based on multiple estimates, how many were prepared and how wide was the variance?

### Cash Inflows Example AOBP-2nd Qtr

	Feb R m	Mar R m	Apr R m	May R m	Jun R m	Jul R m
Total Forecasted Sales	2000	2000	2500	2500	3000	3000
<b>Inflows From Operations</b>						
Collections- 1 month lag (30% of previous month's sales)			600	750	750	
Collections- 2 month lag (40% of sales of 2 months ago)			800	800	1000	
Cash sales (20% of total)			500	500	600	
Prepayments - 1 month (10% of forecasted next month's sales)			250	300	300	
Total inflows from operations			2150	2350	2650	
<b>Other Inflows</b>						
Asset disposals			50	25		
Loans receivable				250		
Dividends					5	
<b>Total Inflows</b>			<b>2200</b>	<b>2625</b>	<b>2655</b>	

This slide presents a possible cash inflows budget for AOBP in the 2nd quarter

wccm5e/Page8

#### Instructor's notes:

The sales revenues include VAT. Emphasize that the sales forecast should be used.

The sales revenues are increasing over the Summer period in line with the seasonal increase in demand for bicycles. Inflation has also increased sales prices and sales revenues

Explain to participants that they should budget for operational revenues by making assumptions about the time lag in collecting revenues and also about advance payments that may be received from customers.

Also explain that in some cases they may need to budget separately for a portion of sales revenue. For example a very large customer may have special credit arrangements. Also management may know that a large old/doubtful debt will be repaid during the budgeting period.

### Cash Outflows Example AOBP-2nd Qtr

	Mar	Apr	May	Jun	Jul	Aug
	R UR m	R UR m	R UR m	R UR m	R UR m	R UR m
Total Forecasted Sales		2500	2500	3000	3000	2500
Total purchases (60% of next month's sales) (1 month in advance)	1500	1500	1800	1800	1500	
<b>Operational Outflows</b>						
Credit purchases- 1 month lag (60% of total purchases)		900	900	1080		
Cash purchases (10% of total purchases)		150	180	180		
Prepayments- 1 month (30% of current month's total purchases)		540	540	450		
Payroll and social security		400	420	420		
Utilities		125	140	140		
Overheads and administration		160	165	165		
Profits and other taxes		130	10	10		
Tax penalties			150			
VAT		150	160	170		
<b>Operational Outflows</b>		<b>2555</b>	<b>2665</b>	<b>2615</b>		
<b>Other Outflows</b>						
Loan interest		250	250	270		
Fixed asset purchase			200	300		
<b>Total Outflows</b>		<b>2805</b>	<b>3115</b>	<b>3185</b>		

This slide presents a possible cash outflows budget for AOBP in the 2nd quarter

wccm5e/1Page9

#### Instructor's notes:

The sales/purchases revenues/costs include VAT. Emphasize that sales forecast should be used.

Explain that in this case the materials necessary for the next month's sales need to be purchased a month earlier. However, the company receives some credit and can pay for some goods in the month of sale.

Also point out that whereas customers are often paying after two months, purchases are being paid for after a maximum of one month.

Furthermore, the proportion of purchases being paid for on a prepayment basis is significantly higher than the proportion of sales being paid for by prepayment, thereby worsening the structural cash outflow of the business..

**Exercise: Budgeting Cash Inflows and Outflows from Sales for Elektromash, a Producer of Electrical Equipment**

*Estimate cash inflows and outflows for April based on sales, purchases, barter usage, and payment terms*

*unit: m RUR*

	<u>Jan</u>	<u>Feb</u>	<u>Mar</u>	<u>Apr</u>	<u>May</u>	<u>Jun</u>
<i>Sales (m RUR)</i>	110	115	130	140	140	120
<i>Purchases (40%)</i>			52	56	56	

**Barter**

- 30% of sales received in barter
- 50% of materials purchased with barter

wccm5e/Page10

**Instructor's notes**

There is more information for the exercise on the next slide.

### **Exercise: Budgeting Cash Inflows and Outflows from Sales for Elektromash**

---

#### ***Credit Terms***

- 20% of cash sales received as prepayment (1 month in advance)
- 20% of cash sales received in month shipped
- 30% of cash sales received with 1 month lag
- 20% of cash sales received with 2 month lag
- 10% of cash sales received with 3 month lag

#### ***Payment Terms***

- Materials procured in month prior to usage
- 50% of cash payments made as 1 month prepayment
- 25% of cash payments made in month procured
- 25% of cash payments made with 1 month lag

wccm5e/Page11

#### **Instructor's notes:**

If time permits, change the proportion of barter sales and the proportion of purchases with barter, and recalculate.

This exercise does not represent a full cash budget nor does it cover all inflows and outflows from operations. It is intended to be an exercise demonstrating the effects of credit and payment terms and barter transactions

**Solution to Exercise: Budgeting Cash Inflows and Outflows from Sales for AO Elektromash(RUR m)**

**Step 1. Determine cash levels of sales and purchases by removing barter operations from the indicated figures:** (RUR m)

	Jan	Feb	Mar	Apr	May	Jun
Non-barter sales (70% of total sales)	77	80.5	91	98	98	84
Non-barter purchases (50% of total purchases)			26	28	28	

**Step 2. Determine portion of cash sales from previous months, budget month, and future months to be received in April based on the credit terms on the previous slide:** (RUR m)

	Cash sales (a)	Percent received in April (b)	Total received in April (a x b)
Jan	77	10%	7.7
Feb	80.5	20%	16.1
Mar	91	30%	27.3
Apr	98	20%	19.6
May	98	20%	<u>19.6</u>
			90.3

wccm5e/Page12

**Solution to Exercise: Budgeting Cash Inflows and Outflows from Sales for Elektromash (RUR m) (continued)**

*Step 3. Determine payments for purchases to be made in April based on the payment terms for supplies; add them up to determine expected cash outflows for April:*

	Cash payments for purchases	Percent received in April	Total received in April
	(a)	(b)	(a x b)
Mar	26	50%	13
Apr	28	25%	7
May	28	25%	7
			27

*Step 4. Determine net cash flow from operations:*

Cash inflows	90.3
Cash outflows	- 27.0
Net cash flow from operations	63.3

**Solution: Net cash inflow from operations in April is RUR 63.3m**

### Net Cash Flow in 2nd Quarter AOBP: Summary of Cash Inflows and Outflows

	Apr RUR m	May RUR m	Jun RUR m	Total RUR m
Cash inflows from operations	2200	2625	2655	7480
Cash outflows from operations	<u>-2555</u>	<u>-2665</u>	<u>-2615</u>	<u>-7835</u>
Net cash flow from operations	<u>-355</u>	<u>-40</u>	<u>40</u>	<u>-355</u>
Other cash inflows	50	275		325
Other cash outflows	<u>-250</u>	<u>-450</u>	<u>-570</u>	<u>-1270</u>
Net cash flow	<u><u>-555</u></u>	<u><u>-215</u></u>	<u><u>-530</u></u>	<u><u>-1300</u></u>

This slide presents a possible cash budget for AOBP in the 2nd quarter



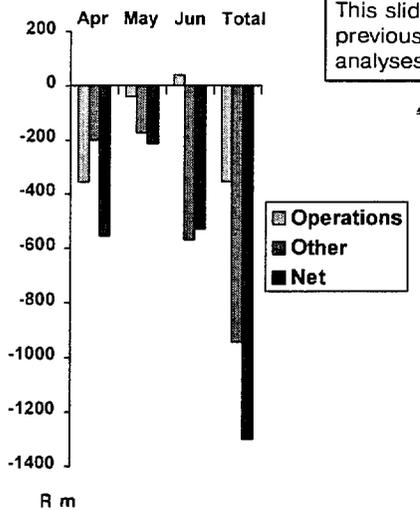
AOBP will have a shortfall of RUR1.3 billion using current estimates

wccm5e/Page14

#### Instructor's notes:

The purpose of this slide is to present a version of cash budget of AOBP for the 2nd quarter.

## Analysis of Financing Requirements for AOBP



This slide graphically illustrates the data from the previous slide and offers possible explanations and analyses

### Analysis and Explanations

- Much working capital is required to finance increased purchasing, production and sales in the peak season
- The terms of credit/prepayments with suppliers are not as favorable as those granted to customers
- Loan interest totaling RUR770 million is payable in the 2nd quarter
- RUR500 million is required for capital investments
- Tax penalties account for RUR150 million
- The RUR1.3 billion financing requirement is required despite a loan of RUR250 million receivable in May

wccm5e/Page15

### Instructor's notes:

Insist on distinguishing between structural drivers of the net cash flow situation and elements which result from conscious management decisions.

### **Resolving The Financing Problem**

---

- Repeat the budgeting process for a range of outcomes
- Seek several solutions or a combination of solutions
- Often loans are **NOT** the only or best solution
  - Interest rates are often high
  - Interest repayments significantly impact future cash flow
  - Loans have to be repaid!
  - If loans are not repaid when due, severe interest penalties may be imposed
- Many Russian companies have resorted to debt finance too quickly
- Include the effects of financing solutions in future budgets

wccm5e/Page16

#### **Instructor's notes:**

Introduce the concept of "sensitivity analysis" within the scenarios:

"If factor A changes by X%, then your cash situation moves by Y%"

### **Exercise - what are the possible solutions for AOBP**

---

- Review the cash budgets prepared for AOBP
- Suggest solutions to AOBP's financing problems
- Rank the solutions in order of priority
- Note: Loans are only one of many possible solutions

wcm5e/Page17

### **Instructors Notes**

The possible solutions are on the next slide.

Give the participants 5-10 minutes to list their solutions and then invite them to share their solutions (and reasoning) with the other participants

## Possible Solutions For AOBP

---



Order of consideration

- Postpone/cancel capital investments
  - management has nearly complete control of these decisions, but
  - investment decisions cannot be put off forever
- Offer discounts to customers for earlier payment
- Consider barter transactions
- Increase sales prices (greater demand in peak season)
- Attempt to reduce credit terms to customers
- Seek better credit/prepayment terms with suppliers
  - may be difficult, but should be constant effort
- Seek loans to meet the remaining financing needs
  - don't forget to incorporate interest payments in budgeting for future periods
- Determine whether opportunities exist to generate one-time cash (e.g. disposals of idle assets/inventories)
  - consider asset sales carefully
  - sell non- or under-producing assets only

wccm5e/Page18

### Instructor notes:

Interval controls should also be mentioned; for example, the timing of issuing invoices.



### **Instructions: Operations Inflows**

---

- Obtain actual or estimated sales for the 3 months previous to the budget month
- Estimate sales for budget period by using price and quantity estimates. Price and quantity estimates should incorporate known and likely orders, seasonal adjustments, projected inflation, recent trends
- Estimate sales for two months following the budget month for the budget period. These estimates will have a variable degree of accuracy depending on the length of the enterprise's business cycle
- A portion of sales will likely be made through barter. Based on accounting records, estimate the percentage of sales which is made through barter. Multiply by sales to obtain an estimate of cash-related sales. This must be done for each month's sales
- Estimate what percentage of the company's sales is sold for instant cash. This estimate can be based on historical data
- Estimate what percentage of sales is made on credit. Multiply this rate times each month's sales to obtain the monthly credit sales figures

wccm5e/Page20

### **Instructions: Operation Inflows (continued)**

---

- Estimate income from previous months' sales. Use current outstanding receivables as a guideline. Apply percentages obtained through evaluation of receivables to credit sales to estimate income in the budget month
- Estimate prepayments to be received during the month for shipments in following month(s)
- Indicate income from old/bad debt based on actual payment agreements
- Estimate cash to be received through the sale of goods acquired through barter. Most likely these sales will reflect barter sales from previous periods, as well as a portion of the budget period's sales if the goods can be liquidated quickly
- Sum all of the above cash inflows to obtain the estimated operational cash inflow for the period

wccm5e/Page21

## Tool: Budgeting Operations Outflows

---

### Operations Outflows

#### Payments for Materials

Cash payment for items purchased and used in the current month

Payment for items procured on credit in the previous month

Cash payment for goods procured for next month

Total Payments for Materials:

+ \_\_\_\_\_

Payroll and Social Security Payments:

+ \_\_\_\_\_

Energy and Utility Payments:

+ \_\_\_\_\_

Overhead and Administration Payment:

+ \_\_\_\_\_

Estimated Profit Tax

+ \_\_\_\_\_

Other Taxes

+ \_\_\_\_\_

Tax Penalty Payments:

+ \_\_\_\_\_

VAT Payments:

= \_\_\_\_\_

Total Operations Outflows

\_\_\_\_\_

wccm5e/Page22

### Instructor notes:

Recall the rationale for 3 months exercise, linking it to clients' and suppliers' payment terms.

Note that energy and utility payments are continuous cash outflows which do not go to 0 if we had no sales or output.

### **Instructions: Operations Outflows**

---

- Estimate purchases required to determine sales figures during budget month, the previous month, and the following month. In many cases, some of these materials will be procured through barter. Do not include purchases made with barter in determining this amount
- Determine what percentage of materials are purchased in advance of the month in which they are used; of those materials, what percentage are purchased on credit
- During the budget month, payments must be made for credit purchases during the previous month(s), purchases made in cash for the budget month, and purchases made on prepayment terms for the following month(s)
- Estimate the amount that must be spent on salaries and social security expenses. These amounts should not be difficult to estimate, although it is important to consider planned staff reductions, inflation, bonuses, and the impact of any new legislation
- Estimate the amount that must be paid for energy and utilities. If possible, base these estimates on physical units and unit price. Be sure to incorporate known price increases

wccm5e/Page23

**Instructions: Operations Outflows (continued)**

---

- Estimate overhead and administration expenditures. These should remain fairly constant from month to month
- Calculate profit and other taxes due in the budget month
- Calculate any tax penalty payments which are due in the budget month
- Calculate VAT payments which must be made in the budget month
- Sum all of the expenditures expected during the budget period to determine the total of operation outflows

## Tool: Budgeting Other Inflows and Outflows

### Other Inflows

Sales of Assets			
Item	Unit Price	Quantity	Total
Item 1			
Item 2			
Total			_____
Estimated bank interest:			_____
Interest from securities:			_____
Dividends from securities:			_____
Other investment income:			_____
Other Outflows:			_____
Total Other Outflows			_____

### Other outflows

Purchase of fixed assets			
Item	Unit Price	Quantity	Total
Item 1			
Item 2			
Interest on Loans			
Loan	Loan Amt	Mthly Rate	Payment
Loan 1			
Loan 2			
Total			_____
Loan Repayments			
Loan			Amount
Loan 3			
Loan 4			
Dividend Payments			
No of shrs		Dividend per share	Total
Social Asset Expenditures			_____
Other Outflows:			_____
Total Other Outflows:			_____

wccm5e/Page25

### Instructor notes:

Compare the absolute orders of magnitude of inflows and outflows linked to financial operations with those linked to production and sales.

Comment on the importance of the company's equity structure when drafting such cash budgets.

### **Instructions: Other Inflows**

---

- Determine income related to the sale of fixed assets
- Estimate bank interest due during the month
- Calculate interest due during the month for securities (e.g. treasury notes)
- Calculate dividends due from investment securities held by the enterprise
- Determine any other known income (e.g. subsidies, grants, new capital)
- Sum the above amounts to obtain the total of other cash inflows

wccm5e/Page26

### **Instructions: Other Outflows**

---

- Calculate expected expenditures for fixed asset purchases
- Calculate interest payments on outstanding loans due during the period. Each loan should be calculated separately by multiplying the outstanding principal by the monthly rate of interest, or according to the specific loan terms if there are special circumstances.
- Determine if the enterprise will make any repayment of loan principals during the period. Sum the repayment amounts for individual loans to determine the total of loan repayments during the period
- Calculate the amount of any stock dividend payments to be made during the month. The total amount of dividend payments is determined by multiplying the number of shares by the amount of the dividend.
- Estimate social asset expenditures for the period. Often social asset expenditures are incorporated into overhead calculations, but such expenses are not truly operational
- Determine if there are any other outflows not covered in the above areas
- Sum the above items to get the total of other outflows for the period

wccm5e/Page27

## Worksheet: Cash Budget Summary

Total Inflows from Operations	
Total Outflows from Operations	- _____
Net flows from operations	=
Total Other Inflows	+
Total Other Outflows	- _____
Net Cash Flow	=
Cash at Period Start	+ _____
Shortage/Surplus	= <u>          </u>

### **Instructions: Cash Budget Summary**

---

- Collect the results of the previous worksheets
- Work on a month-by-month basis if budgeting for more than one month
- Begin with the sum of Operations Inflows for the first budget month. This number represents all income expected during the month related to the enterprise's main operations (i.e., buying, selling, manufacturing, and processing goods). Some of this income is related to the operations of previous and future months
- Next, subtract all of the expenses related to the enterprise's main operations which will be paid during the month. Again, some of these expenditures will be incurred in other periods, but the period of the payment is what is important
- The result is the net cash flow from operations
- Next, add to the above number the total of other inflows. These are inflows related to the enterprise's investment and financing operations
- Next, subtract the total of other outflows. These are expenditures which are related to the enterprise's investment and financing operations

wccm5e/Page29

**Instructions: Cash Budget Summary (continued)**

---

- The result of the preceding calculations represents the net cash flow for the enterprise during the budget period
- Next, determine how much cash will be available at the beginning of the budget period
- Add the figures for "net cash flow" and "cash at period start"
- If the sum is greater than 0, then the enterprise will be able to meet its requirements for the budget period (assuming that all estimates are correct)
- If the sum is less than 0, then the enterprise will need to find a way to make up the difference. See "Possible solutions for AOBP" above

### Seminar Agenda

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- Session 1: Working Capital
- Session 2: Cash Collection
- Session 3: Inventory Control
- Session 4: Barter Collection and Tracking
- Session 5: Cash Budgeting
- Session 6: One Time Measures to Generate Cash**
- Session 7: Short-Term Finance
- Session 8: Treasury Area
- Session 9: Organization and Tax Management

wccm6e/Page1

### INSTRUCTOR'S NOTES:

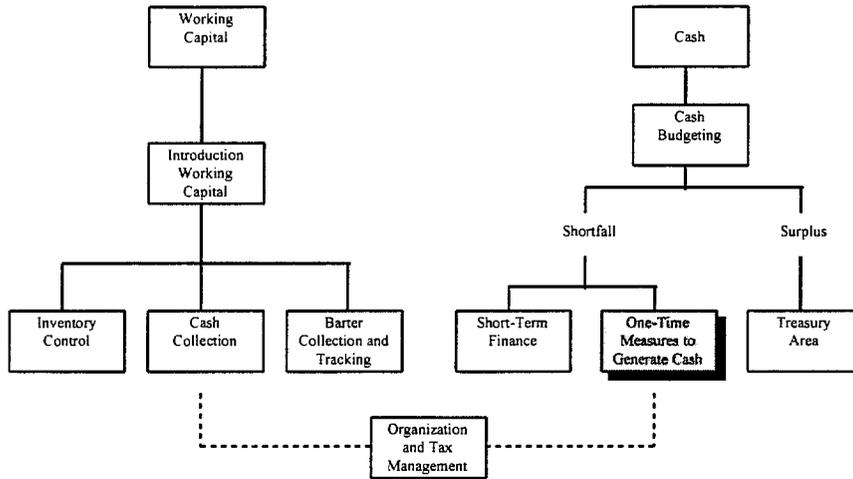
The following section is the one-time measures to generate cash section of the working capital and cash management module. This section is dedicated to issues of one-time measures regarding generating cash for a company.

A number of examples and assignments for course participants evaluating different alternative measures is provided.





## Seminar Overview



wccm6e/Page2

**INSTRUCTOR'S NOTES:**

## Seminar Agenda

### When the need for one-time measures to generate cash arises

#### Identifying assets and measures which can generate cash

- Which type of assets can be sold or leased
- Identifying specific assets that can be sold or leased
- Should assets be sold or leased out

#### Sale of unprofitable/cash negative business segment

- Identifying profitable and unprofitable products and business segments
- Discontinuing products and disposals of business segments
- Analyzing core and non-core businesses

wccm6e/Page3

### INSTRUCTOR'S NOTES:

The purpose of this slide is to name various alternatives to generate immediate cash inflows.

State that immediate cash generation from internal resources normally involves sale or other disposal of some company's assets.

Emphasize that management needs to think of products and business segments as well as of assets.

Ask participants to think what they would regard as a first choice for sale or other disposal and note their responses. Refer to the responses as you go through the section.

## A Company's Shortage of Cash is Caused by Various Factors

*Shortage of cash may be caused by internal and external factors:*

### Internal factors:

- inefficient cash management
- lack or inefficiency of internal controls
- low production volumes and capacity utilization
- declining sales and growing costs

### External factors:

- inflationary pressures
- regulatory pressures
- competition and loss of market power
- weak customer base

**Determine whether the company is economically viable in its current status:**

- **YES** use one-time measures to provide cash
- **NO** the company cannot be saved by one-time measures and needs restructuring, turnaround, or partial liquidation

**When a company has a shortage of cash, external sources of finance, such as bank loans, are often considered.**

**It is more efficient to mobilize internal resources:**

- Immediate measures generating one-time cash inflow
- Immediate measures reducing cash outflows

wccm6e/Page4

## INSTRUCTOR'S NOTES:

Distinguish between internal and external factors leading to the lack of cash. Ask the participants to name other reasons and circumstances which their companies faced.

Stress that internal factors are within management's control and it is important to identify, analyze them and develop a strategy how to cope with them.

Stress that external factors and circumstances are normally beyond management's control but it still management's responsibility to analyze and respond to them.

It is beyond the scope of this section to talk about viability study of the company. The main question to address here is whether the company can be saved by one time measures or it needs more serious help, e.g. restructuring.

**Emphasize that when improperly used, one time measures may even worsen the company's position.**

The purpose of this slide is to communicate that when the company has a shortage of cash, management needs to find internal sources of cash rather than turn to external borrowings.

Ask participants about their opinions and practices and how often and regularly they are looking for internal cash resources.

Say that this problem has two aspects:

1. Measures increasing cash inflows
2. Measures reducing cash outflows

Both aspects are equally important for the company in trouble with cash.

Ask participants what is their first priority: increasing cash inflows or reducing outflows.

## **Seminar Agenda**

---

### **When the need for one-time measures to generate cash arises**

#### **Identifying assets and measures which can generate cash**

- Which type of assets can be sold or leased
- Identifying specific assets that can be sold or leased
- Should assets be sold or leased out

### **Sale of unprofitable/cash negative business segment**

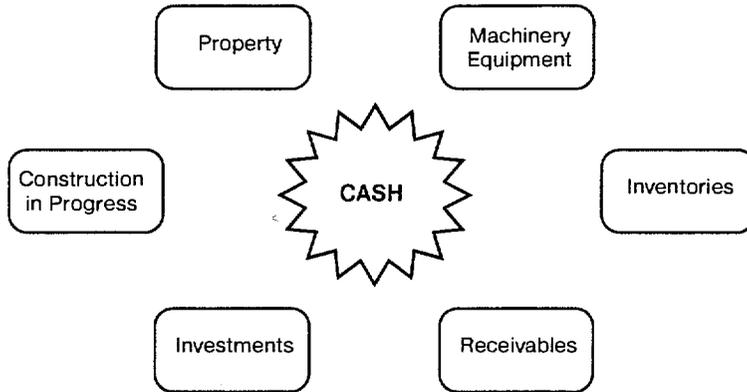
- Identifying profitable and unprofitable products and business segments
- Discontinuing products and disposals of business segments
- Analyzing core and non-core businesses

wccm6e/Page5

**INSTRUCTOR'S NOTES:**

**All Major Categories of the Assets Should be Analyzed to Determine What Can be Disposed of in Order to Generate Cash**

*All categories of the assets that your company has should be analyzed in terms of their cash generating potential*



wcm6e/Page6

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to illustrate what categories of assets could generate cash for the company.

Name the asset categories and briefly discuss with participants which category, in their opinion, has more cash generating potential and what are the problems associated with each category. Note participants' responses and refer to them when going through these topics in more detail.

**Question**

Ask the participants if their businesses need to generate cash through one-time measures and whether they could do so by raising cash from the 6 suggested assets above OR whether they have other ideas/suggestions which they could share with the participants.

**Before Identifying Specific Assets that Can be Sold or Leased You Need to Know Exactly What You Have - Physical Counting and Site Inspection Can Provide Required Information**

*Do you know exactly what you have?*

- A physical counting exercise and site inspection can:
  - reveal items which were considered lost and damaged items which cannot be used any more
  - determine current status and condition of buildings
  - determine current technical condition and utilization of machinery and equipment

*Why do a physical inspection?*

- Though some information is available in the company's books and technical documents
  - accounting information is normally historic and outdated
  - technical information of machinery and engineering department can be more up-to-date but it will not have value information necessary for making a decision
- For condition of fixed assets and construction projects, it is very useful to get quantitative information where possible

wccm8e/Page7

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to convey the idea that before making decision about the company's fixed assets, the management needs to know exactly what the company has.

Ask participants what is the procedure for site inspection and fixed assets counting at their companies and how regularly they are performed.

Emphasize that this exercise requires coordination of effort from technical as well as financial functions of the company and should not be just a formal action.

### Further Analysis of Results of Physical Counting and Site Inspection Identifies Specific Assets Which Can be Disposed

*Do you really need everything you have?*

- Identify cash generation opportunities through:
  - improvements in plant layout
  - sale or lease or unneeded current fixed assets
  - disposal of damaged, unused or underutilized assets
  - discontinuing unneeded construction in progress
  - disposal, transfer, or commercialization of social assets
- This phase requires coordination of financial, technical and production functions
- When assessing the condition of fixed assets, it is useful to split all existing buildings into several categories and permanently maintain this list at the company
- When assessing the cost of completion of construction in progress, it is important to critically analyze original construction budgets and inquire about current prices from construction companies

wccm6e/Page8

#### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with directions regarding analysis of the site inspection and physical counting results.

State that analysis of plant layout and fixed assets requirements is company specific.

Discuss with participants pressures connected with plans to dispose of social assets. Ask participants for their experience.

Note that asset utilization issues are discussed in more detail in the cost management module.

## Pay Attention to Your Inventory Balances - Often They Tie Up Too Many Resources

---

*Stock balances can generate cash*

*The following should be taken into account:*

- Perform a stocktake noting not only quantities but also age and condition of inventories
- Can the company afford holding large inventory balances? Determine optimal inventory balances (This was addressed earlier in the inventory control section)
- Increase turnover of inventory. It will help decrease amount of resources tied up in inventory (This was addressed earlier in the inventory control section)

wccm8e/Page9

### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with directions regarding analysis of inventories and their cash generating potential.

Again as in the case with fixed assets, stress importance of correct and up-to-date information regarding inventories. Again discuss various sources of information: accounting, technical, warehouses. Advise participants to prepare a summary list of inventories stating quantities, age and condition and to monitor this list permanently.

Say that it is very important to determine optimal inventory balances for the company and that excess inventories block the company's working capital. These issues are discussed in more detail in the inventory control section of this module.

Say it is important to monitor age and turnover of your inventories. For this purpose calculate corresponding financial ratios. These issues are discussed in more detail in the working capital introduction of this seminar.

## **A Critical Revision of Investments Can Bring Some Additional Resources to Your Business**

---

### ***Do your investments serve their intended purpose?***

- Distinguish between short- and long-term investments
- Evaluate whether your long-term investments bring you the benefits you forecasted or calculated (control or influence over the investee, access to information, etc.)
- For redundant investments, assess the possibility of converting them into cash
- For short-term investments, assess whether the profits are worth the investment of cash resources
- If the company committed resources for a period of time (e.g., bank deposit) evaluate costs and benefits of terminating the deposit agreement

wccm6e/Page10

### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with direction for the analysis of investments.

Ask participants how regularly they revise their investments. What were the results of such reviews? What decisions were taken?

Ask participants to name reasons for holding long-term investments:

- banks (to secure a better borrowing position)
- suppliers (to secure stable source of supplies)
- former regulatory agencies (to maintain communications and exchange of information within the industry)

**If in a Poor Financial Position a Company Should Make Immediate Steps to Convert its Receivables into Cash**

---

*Receivables are effectively cash to be received*

*Major issue here is receivables collectibility. Measures to improve collectibility can generate additional cash. These measures include:*

- Performing a receivables inventory and reassessment of collectibility
- Establishing or revising formal procedures for receivables control and actively pursuing outstanding receivables with a stricter credit collection policy
- Restructuring balances and rescheduling payments with major debtors. This may bring an immediate cash inflow in respect of one part of the receivable at the expense of further postponement of the remainder
- Discounting and factoring receivables. This measure brings an immediate cash inflow at the expense of discounting the debt amount. This issue is covered in more detail in the optimizing cash collection section of this seminar

wccm6e/Page11

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with direction for analyzing receivables for the purpose of generating cash. More detailed analysis is given in the credit collection section of this module.

**The Company Normally Chooses Between Selling and Leasing when Disposing of Assets Requiring Analysis and Evaluation of Different Alternatives**

*The two main options of disposing of assets:*

Sale	Lease
<ul style="list-style-type: none"><li>• identify all costs and benefits associated with a disposal</li><li>• assess opportunity costs of various alternatives</li><li>• consider tax implications</li></ul>	<ul style="list-style-type: none"><li>• evaluate lease terms (profit of lease must be assessed in real terms, especially for long-term leases in an inflationary environment)</li><li>• assess cost of lease - nominal and real</li><li>• consider tax implications</li></ul>

*Decision to sell brings an immediate cash inflow whereas decision to lease provides a sequence of stable cash inflows over the period of the lease.*

*It is essential, for decision making, to analyze costs relating to the asset by identifying the following categories of costs:*

- costs which will be eliminated in any case, whichever way is chosen (e.g. maintenance costs)
- costs which will remain in any case, whichever way is chosen (e.g. salary of service personnel)
- costs which relate to a particular method of disposal (e.g. insurance of leased out assets)

wccm6e/Page12

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with criteria to evaluate whether the company should sell or lease out an asset to be disposed of.

Note that it is essential for a right decision to analyze costs relating to the asset.

Note that in terms of immediate cash flow generation sale has a preference over leasing out. Ask participants to think what would be decisive factor for them in making a decision and how much future cash flow they would be prepared to forego opting for an immediate sale.

Emphasize that profit from lease must be assessed in real terms, especially for long-term leases in an inflationary environment.

Give participants the idea of sale/leaseback transactions where the company sells an asset and then leases a similar or even the same asset. This type of transactions is not widely carried out yet in Russia though it has been effectively done in the shipping industry and some leasing companies are considering possibilities in other industries (e.g., airlines).

### **Leasing Fixed Assets has Certain Advantages and Disadvantages Over Selling**

---

- *Under a leasing agreement the lessor usually retains ownership over the assets until the expiration of the agreement*
- *The lessor, as opposed to the seller, receives a cash advantage in respect of taxes payable:*
  - In the case of leasing, profit related taxes are spread over the term of the lease. Effectively, the lessor receives a tax free credit because the lessor's profit tax is credited over the term of the lease becoming payable when each lease payment is due
  - Conversely, upon a genuine sale of an asset, the seller has to pay profit tax in full
- *Uncertainty of legislation and regulations. The drawback of leasing transactions is the fact that legislation in this area in Russia is scarce and subsequent changes in legislation may impact the company's original calculations.*

wccm6e/Page13

#### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to communicate main features of leasing.

Emphasize that under the lease agreement the lessor retains the right of ownership over the leased assets. It serves as a guarantee against default of payment. Additionally, payment default can be insured separately and costs are passed on the lessee.

As for tax advantages, the lessor's profit tax gets credited over the term of the lease and becomes payable when each lease payment falls due. Conversely, upon a genuine sale of an asset the seller must pay profit tax in full.

The drawback of leasing transactions is the fact that legislation in this area is scarce. At present the bill of leasing law is being considered by the Ministry of Finance of Russia.

**There are a Number of Leasing Companies in Russia Ready to Help Your Business Structure its Leasing Operations**

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***Baltiisky Leasing (St.Peterburg)***

- Tel. (812) 114-41-71. Fax (812) 114-42-03

***PetroLeasing (St.Peterburg)***

- Tel. (812) 567-21-32. Fax. (812) 567-21-32

***PromStroyLeasing (Moscow)***

- Tel. (095) 209-14-18. Fax (095) 209-233-85

***International Leasing Company (Moscow)***

- Tel. (095) 165-27-74. Fax. (095) 165-08-92

***Ural Leasing Company (Ekaterinburg)***

- Tel. (3432) 58-68-06. Fax. (3432) 58-68-06

wccm6e/Page14

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with information about leading Russian leasing companies.

**Example and Tool: Evaluating Alternatives (1) AOBP Example Data Table**

AOBP wants to dispose of a machine tool. It is considering three options: to sell or to lease out on different terms. The example illustrate how possible options should be evaluated and what information is required for analysis

	Sale	Leasing out	Leasing out
		(Option 1)	(Option 2)
(1) Total receipt	1,000	2,000	3,500
(2) Discount factor p.a.		50%	50%
(3) Term of lease		5 years	5 years
(4) Discounted receipt (see next two slides)	1,000	694	1,216
(5) Transfer costs	80	80	80
(6) Book value of the asset	400	400	400
(7) Profit (4)-(5)-(6)	520	1,520	3,020
(8) Profit tax 35%*(7)	182	532	1,057
(9) Discounted profit tax (see next two slides)	182	184	167
(10) Net discounted cash inflow (4)-(5)-(9)	738	430	769

To evaluate real inflow from a long-term transaction in an inflationary environment the time value of money should get close attention. A significant excess receipt is required in order to compensate for time devaluation of cash inflows.

wccm6e/Page15

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to illustrate with an example how to evaluate various alternatives and choose the appropriate one.

Three options are offered: one sale option and two lease options. Two lease options differ in their total receipt over the term of lease.

Term of lease is five years, discount factor is assumed to be 50% p.a., book value of the disposed asset is 400, profit tax rate is 35%, transfer costs (transportation, dismantling, etc.) are immediate and amount to 80.

Lease payments are spread equally over the term of lease. The first payment is due in the end of the first year of lease. In order to adjust them for inflation they are discounted by inflation rate.

Amount of profit tax under the lease options is discounted over the period of lease because profit tax becomes payable when a lease payment is due.

Net cash inflow is the difference between discounted receipts, transfer costs and discounted profit tax.

Remind participants of the fact that the sale brings an immediate cash inflow, whereas the lease spreads cash inflow over the term of the lease.

**Example and Tool: Evaluating Alternatives (2) Discounted Cash Flow Technique is a Tool for Evaluating Sell-or-Lease Decisions**

- *Leasing contracts are normally long-term. It is essential to take into account the time value of money.*
- *Discounted cash flow analysis provides a net present value (NPV) - future receipts in today's money by applying a discount factor.*
- *Discount factor shows how much value of money you lose in each period because of inflation or the need to pay the bank interest on borrowed funds. (e.g. the prevailing bank interest rate or inflation rate, whichever is greater)*

$$DCF = CF_0 + CF_1/(1+r) + CF_2/(1+r)^2 + \dots + CF_n/(1+r)^n$$

where:            *DCF - net discounted cash inflow over the period of lease*  
                      *CF<sub>n</sub> - cash inflow in period N (annual lease payment);*  
                      *r - discount factor.*

wccm6e/Page16

**INSTRUCTOR'S NOTES:**

The purpose of this slide to remind participants of the discounted cash flow techniques.

Emphasize that because lease contracts are long-term, it is essential that time value of money is taken into account.

Draw attention of participants to the fact that discount factor is a complex phenomenon and measures risks and opportunities. For the purposes of this exercise it is appropriate to take annual inflation rate as a discount factor. Discount factors are discussed in more detail in the obtaining finance module.

Remind participants that some software packages, e.g. Lotus and Excel do discounted cash flow calculations automatically.

**Example and Tool: Evaluating Alternatives (3) Assessing the Leasing Decision (Option 1)**

**Lease out (Option 1)**

$CF_t$  - annual lease payment (400)

$N$  - number of periods (5)

$r$  - discount factor (50%)

$$DCF = CF_0 + CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + CF_4/(1+r)^4 + CF_5/(1+r)^5$$

$$DCF = 0 + 400/1.5 + 400/1.5^2 + 400/1.5^3 + 400/1.5^4 + 400/1.5^5 = 694$$

$$\text{Profit tax} = 35\% * (\text{Total receipt} - \text{Book value} - \text{Transfer costs})$$

$$\text{Profit tax} = 35\% * (2000 - 400 - 80) = 532$$

$$\text{Annual profit tax installment (APT)} = 532/5 = 106$$

Discounted profit tax =

$$0 + APT_1/(1+r) + APT_2/(1+r)^2 + APT_3/(1+r)^3 + APT_4/(1+r)^4 + APT_5/(1+r)^5$$

Discounted profit tax =

$$0 + 106/1.5 + 106/1.5^2 + 106/1.5^3 + 106/1.5^4 + 106/1.5^5 = 184$$

$$\text{Net discounted cash inflow} = DCF - \text{Transfer costs} - \text{Discounted profit tax}$$

$$\text{Net discounted cash inflow} = 694 - 80 - 184 = 430$$

wccm6e/Page17

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to show working calculations of NPV. Walk participants through the working calculation. Make sure that the logic of calculation is well understood.

**Example and Tool: Evaluating Alternatives (4) Assessing the Leasing Decision (Option 2)**

---

*Lease out (Option 2)*

$CF_t$  - annual lease payment

$N$  - number of periods

$r$  - discount factor

$DCF$  =

Profit tax =

Annual profit tax installment=

Discounted profit tax =

Net discounted cash inflow =

wccn8e/Page18

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with a tool to calculate themselves the net cash flow for Option 2.

Ask participants to compare their calculations with the last column of the sample table.

### Sell or Lease Decisions: Class Exercise

- 1. Company A plans to lease out a machine tool. The planned leasing period is three years. Annual lease payment is due in the end of each year and amounts to 2m RUR. If the discount factor is 30% p.a., what is the net present value of the company's receipts over the period of lease?*
- 2. Company B plans to lease out a car. The planned period of lease is three years. The book value of the car is 3m RUR and immediate transfer costs are 0.7m RUR. Total payment over the period of the lease is 8m RUR. Each installment is due at the end of each year. Profit from the lease is taxable when each lease payment falls due. If the profit tax rate is 35% and the discount factor is 20%, what is the net present amount of profit tax?*

wccm8e/Page19

### INSTRUCTOR'S NOTES:

1. To calculate net present value of future cash inflows use DCF formula:

$$DCF=0+2/1.3+2/1.3^2+2/1.3^3=0+1.54+1.18+0.91=3.63\text{mn RUR}$$

2. The overall profit tax payable is

$$(8-3-0.7)*35\%=1.505\text{mn RUR}$$

Since tax becomes payable when a lease payment is due the overall tax liability is payable by three equal installments:

$$1.505\text{mn}/3=0.502\text{mn RUR}$$

To calculate net present value of profit tax use DCF formula:

$$DCF=0+0.502/1.2+0.502/1.2^2+0.502/1.2^3=0.42+0.35+0.29=1.06\text{mn RUR}$$

## **Seminar Agenda**

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**When the need for one-time measures to generate cash arises**

**Identifying assets and measures which can generate cash**

- Which type of assets can be sold or leased
- Identifying specific assets that can be sold or leased
- Should assets be sold or leased out

**Sale of unprofitable/cash negative business segment**

- Identifying profitable and unprofitable products and business segments
- Discontinuing products and disposals of business segments
- Analyzing core and non-core businesses

wccm6e/Page20

### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to name various alternatives to generate immediate cash inflows.

State that immediate cash generation from internal resources normally involves sale or other disposal of some company's assets.

Emphasize that management needs to think of products and business segments as well as of assets.

Ask participants to think what they would regard as a first choice for sale or other disposal and note their responses. Refer to the responses as you go through the section.

**In Analyzing what Should be Disposed of it is Essential to Make a Distinction Between Profitable and Cash Positive Products**

Equation of Revenue-Cost-Profit analysis:

$$PROFIT = REVENUE - COST$$

Equation of Cash Flow analysis:

$$NET CASH FLOW = CASH INFLOW - CASH OUTFLOW$$

If the cash position is weak, it is important to identify both

- loss-making products and segments and
- cash negative products and segments

which require more cash than they bring in, and to reconsider decisions about further production and investment in respect of such products. This analysis involves a number of steps which are discussed in the following slides.

wccm6e/Page21

**INSTRUCTOR'S NOTES:**

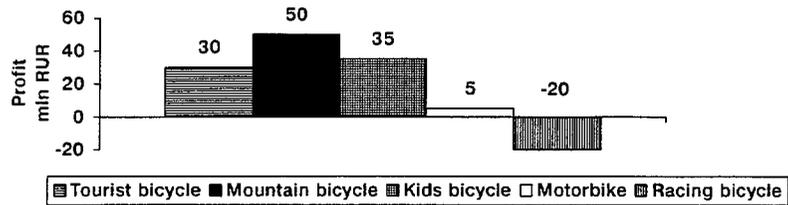
The purpose of this slide is to demonstrate the difference between profit and positive cash flow.

Draw attention to the fact that distinction between these equations is critical not only for the purpose of one-time cash generation but also for all major financial and business decisions, such as whether to:

- produce a new product
- enter into a capital investment project
- sell at a different price
- reallocate company's resources between products and business segments.

45

### Profitable Products and Loss-Making Products



*Conventional analysis illustrates how much profit each product or business segment brings. In most cases, decisions on whether to continue or discontinue a product are based on this sort of analysis. This may lead to a situation where production of a cash positive but loss-making product is discontinued. In the circumstance of cash shortage, this measure may worsen the company's cash position.*

wcom6e/Page22

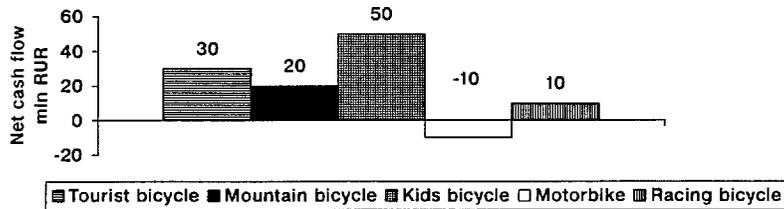
#### INSTRUCTOR'S NOTES:

The purpose of this slide is to show a conventional method of assessing product or business segment profitability.

Emphasize that in most companies management decisions are based on this type of information and analysis.

Ask participants to think what decisions they would make regarding each product when their company is in immediate need for cash.

### Cash Positive and Cash Negative Products and Segments



Analysis of products in terms of cash flows generated may provide different figures due to:

- distinct terms of payments for separate products and segments (such as styles of bicycles) or
- separate time patterns of expenses accruals and actual cash disbursements

e.g. a tourist bicycle has a net cash inflow near its profit, a mountain bicycle which is a profit leader brings relatively less cash. Conversely, a child's bicycle generates significantly more cash than profit. A motorbike has marginal profit but negative net cash inflow, thus it is the first candidate to be dropped. A racing bicycle is loss-making in conventional analysis and would be dropped. But it brings some positive cash inflow which could help a company experiencing a lack of cash.

wccm6e/Page23

### INSTRUCTOR'S NOTES:

The purpose of this slide is to exemplify that analysis of products and business segments in term of cash inflows and outflows often gives different results.

Compare the diagram on this slide with the previous one and analyze the results.

Compare the given conclusions with opinions of participants.

## Identifying a Loss-Making Product or Business

---

*When identifying a loss-making product or business, make sure that:*

- All costs and benefits are identified. Direct special attention to allocated costs. An improper allocation base may distort the total cost of a product and lead to a wrong decision
- The true measure of profitability is applied. Analyze how relevant or arbitrary the measure of profitability is
- Strategic considerations are not forgotten. Sometimes strategic considerations, such as penetrating a new market, outweigh losses from a product. In such cases these considerations cannot be vague. They must be determined, quantified, and clearly stated
- All possibilities to derive value from the segment are analyzed. Before making decisions about continuing or dropping a product, make sure that all possibilities are considered in order to increase its profitability without significant use of additional resources

wccm6e/Page24

### INSTRUCTOR'S NOTES:

The purpose of this slide is to provide participants with criteria to identify and analyze a loss-making segment or product.

### Identifying a Cash Negative Product or Segment

*When identifying a cash negative product or segment, make sure that:*

- All cash inflows and outflows are identified. This may require information which is not readily available at the company
- Cash flows related to this product or segment are properly segregated from others. If possible, cash flows relating to each product or segment should be identified
- Time patterns of cash flows are analyzed and major changes are foreseen. There may be seasonal fluctuations, temporary inflow reductions, etc. which should be taken into account
- Possibilities to derive cash from the segment are analyzed. Before making decisions about continuing or dropping a product, make sure that all possibilities are considered in order to increase net cash inflow without significant use of additional resources

wccm6e/Page25

#### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with criteria to analyze cash negative and cash positive products or segments.

Note that required information may not be readily available. Ask participants what information required for cash flow analysis would be readily available at their companies.

## **Discontinuing Products and Disposing of Business Segments**

*When you decide to dispose of a product or business segment, the following issues should be addressed:*

- Make sure that all relevant cash flows are taken into account, not only those relating directly to the transaction but also those which will be foregone, such as foregone cash outflows in respect of purchases for the disposed segment
- Identify who may be interested:
  - competitors
  - existing customers
  - state-owned enterprises
  - banks or investment companies
- Assess additional costs associated with disposal. They may include:
  - dismantling costs
  - transportation costs
  - substitution costs
- Compare all costs and foregone benefits with permanent savings expected

wccm6e/Page28

### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to show major steps in disposing of a product or business segment.

When talking about determination of value which can be derived from an asset, emphasize that not only flows relating to the transaction are taken into consideration but also those flows which will be foregone.

It is essential for determining value to assess additional costs associated with disposal.

### **Determine What are the Core Activities of Your Business**

---

*Many companies have a range of non-core business activities. Normally they include:*

- Social facilities
- Auxiliary productions
  - spare parts
  - printing and packaging
  - by-products from wastes
  - consumer goods
- Agricultural divisions

*Management explains the existence of such activities with reference to the:*

- Need for autonomy of resources
- Need to utilize by-product materials from the production process
- Pressures from local authorities
- Maintaining employment
- Social benefits

wccm6e/Page27

### **INSTRUCTOR'S NOTES:**

The purpose of this slide is to list various types of non-core business segments and reasons of having them.

Try to trigger a discussion among participants about cost and benefits of holding social assets within the company.

**Distinguishing Between Core and Non-Core Businesses can Indicate Additional Sources of Cash for Your Company**

---

*As in the case with analysis of profitable and loss-making segments, it is very important to:*

- Define what is core and non-core for your business
- Identify all costs and benefits associated with the support segment
- Identify all cash flows associated with the support segment
- Identify candidates which could best use the cash freed up from disposal

*Besides the above the following issues should be considered:*

- Alternative ways of managing by-product materials from production
- Social implications of dropping a segment

wcm6ePage28

**INSTRUCTOR'S NOTES:**

The purpose of this slide is to provide participants with criteria for analysis of non-core business segments.

Note that management's approach in this case should be similar as for cash negative segments.

Emphasize that it should be clearly defined and stated what is core and support functions for the business and what is the main reason of keeping a non-core segment: profit making, waste utilization, employment maintenance or otherwise.

Emphasize that social implications are not always quantifiable and occasionally expert judgment is required.

### Summary

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- Before using one-time measures to generate cash, management needs to analyze whether the company has a temporary shortage of cash, or if it needs serious restructuring and turnaround
- Perform analysis of all major categories of assets, as their condition and use shows where additional cash can be generated
- Examine alternative methods of disposal
- Compare selling and leasing out an asset by taking into account all relevant factors: additional costs, time value of money, taxes, etc.
- Identify cash positive and negative products and segments and core and non-core activities

wccm6e/Page29

**INSTRUCTOR'S NOTES:**

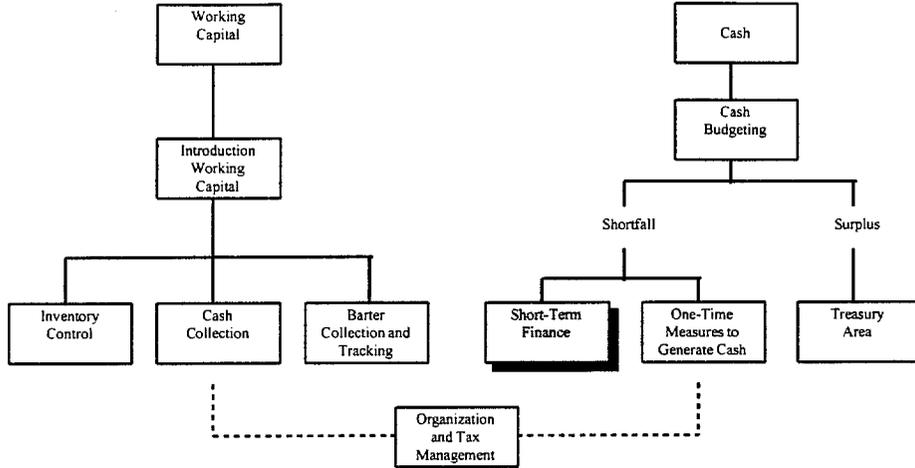
## Seminar Agenda

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- Session 1: Working Capital
- Session 2: Cash Collection
- Session 3: Inventory Control
- Session 4: Barter Collection and Tracking
- Session 5: Cash Budgeting
- Session 6: One Time Measures to Generate Cash
- Session 7: Short-term Finance**
- Session 8: Treasury Area
- Session 9: Organization and Tax Management

wccm7e/Page1

## Seminar Overview



wccm7e/Page2

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### Is Your Company Considering all Forms of Short-Term Finance?

#### *Options for short term finance for Russian enterprises:*

- Internal (better working capital management)
- Trade credit
- Tolling
- Bank finance for working capital
- Mutual settlement/offset
- Commercial paper/notes
- Sale or discounting of accounts receivable (factoring)
- Short term operating leases

wccm7e/Page3

#### **Instructor notes:**

##### **Emphasize:**

There are a number of potential sources of short term financing.

Of those listed, the most commonly available to Russian enterprises are those at the top of the list:

- Internal (better working capital management)
- Trade credit
- Tolling
- Bank finance
- Mutual settlement/offset

Relative cost of each type of financing should be determined, and weighed with strategic considerations to choose which is the best source.

## Internal Financing: the Cheapest Option

---

*Internal short term finance is generated by increasing accrued expenses and deferred income.*

### **Advantages:**

- Spontaneous and interest free source of finance arising from the time gap between the moment when cash is generated and the time of payment of salaries, taxes, etc.
- Grows with growth in the business
- Used for effective cash management within a short time frame, e.g. a month

### **Disadvantages:**

- Limited availability
- Company has limited control
- Can damage relationships with suppliers causing operating problems in future periods

wccm7e/Page4

### **Instructor notes:**

#### **Emphasize:**

In general, any internal generation of funds will be cheaper than going to outside sources, which expect to make a profit in return for offering financing.

The enterprise should take advantage of all sources of internal financing up to the point where it might damage trade relationships in the future.

## Trade credit: the Most Common Source of Financing in Russia

### *Trade Credit:*

- Credit received from suppliers in the normal course of business
- Usually an informal arrangement, not legally acknowledged as debt and practically recorded as accounts payable
- Grows with business and extension in credit period
- Appears to be free, but there is usually an implicit cost
  - a supplier extending trade credit incurs an opportunity cost of funds invested in accounts receivable
  - the supplier will usually pass on most of this cost in a higher price; however, the extent of the costs passed on will depend on market demand and supply conditions
  - the relative bargaining power of the two parties will also determine the cost of the trade credit
  - a cash discount can usually be negotiated with immediate payment

wccm7e/Page5

### **Instructor notes:**

#### **Emphasize:**

The user of trade credit needs to be aware of the actual cost of trade credit in order to make intelligent financing decisions

The implicit cost of trade credit should be compared with the cost of other available sources of short term finance

**[The example illustrated on the following slide demonstrates the cost of trade credit]**

#### **Related Concepts for Discussion:**

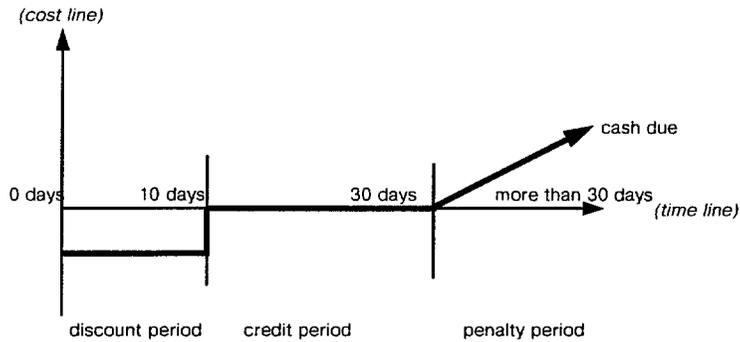
**Credit Terms:** the conditions under which the supplier sells to the buyer - include the due date and cash discount, if any, for immediate payment.

**Cash Discount:** Concessions offered to the buyer for immediate payment.

**Penalties/Interest for late payment:** The supplier may charge a penalty or interest charge for payments made after the due date.

## Is Trade Credit Free ?

Credit policies of suppliers usually include terms of credit, for example, 2/10, net 30, which means a 2% discount will be given for payment completed within 10 days after the date of invoice; no discount or extra fees would be implied for payment between 10 to 30 days after the invoice date and penalties will be imposed on the purchaser failing to pay off the invoice within 30 days



Careful consideration should be given to the cost of trade credit for each of the three periods in comparison to other credit options, e.g. bank loan etc.

wccm7e/Page6

### Instructor notes:

#### Explain:

If the buyer pays between 10 and 30 days after the date of invoice, while he is paying the stated amount of the contract, he is paying 2% of the contract value to finance use of funds (the value of the contract) for the number of days past the ten day discount period up to the date he pays

If the buyer pays after 30 days, he pays the 2% financing fee plus penalties (additional financing fees)

Again, these costs of financing must be compared to the costs of other types of short term financing to determine which is the cheapest option

### **Tolling: A Means of Acquiring Raw Materials**

---

*Definition of Tolling: a processor is provided with raw materials at no cost, processes them and returns the finished product to the owner. The processor is compensated by the owner for this work.*

*Example: A Russian clothing manufacturer is provided fabric and patterns free of charge by a German clothing distributor. The Russian company produces the clothing, which is returned to the German firm to distribute in western Europe. The Russian company is paid a set fee for sewing each garment.*

*Payments for tolling may be in cash or in a share of the finished product.*

*The owner of the raw material may choose tolling if:*

- he is not himself a processor
- he does not have the capacity to process as much material as he owns and for which he has a market for the finished product
- another entity can process his materials at a much lower cost

wccm7e/Page7

### **Instructor notes:**

#### **Another example:**

A Russian producer of stainless steel receives steel coils from a US metals trading company. The Russian company processes the coils into stainless steel, which it ships to the US firm. The US firm pays a processing fee to the Russian processor.

### **Question**

Ask the participants if their business is engaged in tolling activity.

If so why?

Do they know what effect tolling has had on their cash flow and on profitability?

### A Processor Should only Engage in Tolling if there are Economic Benefits

#### *Advantages:*

- provides a source of raw materials to enterprises without the resources to purchase them
- allows increased capacity utilization, spreading fixed costs between tolling and non-tolling operations, making non-tolling operations more profitable

#### *Disadvantages:*

- economic benefits primarily accrue to the owner of materials, who sells the finished product to the end user; the processor is paid only a processing fee
- subject in some cases to government quotas

wccm7e/Page8

#### **Instructor notes:**

##### **Emphasize:**

Tolling is extremely prevalent in Russia today, as so many companies are strapped for working capital for purchase of raw materials.

It is not always in the best interest of the Russian enterprise - the enterprise must be sure it is being paid a processing fee high enough to make it worthwhile.

Generally, it is better for an enterprise to engage in non-tolling operations rather than tolling operations if given the choice, unless there is a strategic reason to build a better trade relationship through tolling with the owner of the materials

### **Short-Term Bank Finance: Can Be Expensive**

---

*Overdraft or cash credit facility (ability for the company to withdraw more funds than its has on deposit at the bank)*

- costs depend on actual amount used, and number of days of overdraft
- rates vary considerably among banks - in mid-1995, percentage annualized rate for Ruble overdrafts between one and fourteen days varied by more than 100%
- advantages include: flexibility, ease of renewal/rollover
- major disadvantage: currently available only to a small number of well known enterprises

**Short term loans**

- relatively less flexible
- cost may be higher

wccm7e/Page9

### **Instructor notes:**

#### **Emphasize:**

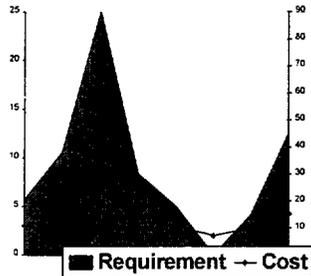
The decision to avail of overdraft/cash credit facilities depends on the structure of the company's cash requirements, and their ability to use lower cost sources of financing such as trade credit and customer advances to minimize their requirements.

In Russia today, cash credit and overdraft facilities are not easily available. Short term finance from commercial banks is likely to develop over the next few years.

## The Cost Difference between an Overdraft Facility and a Bank Loan

The cost of an overdraft is dependent on the amount of cash needed at a specific time and can be controlled by borrower

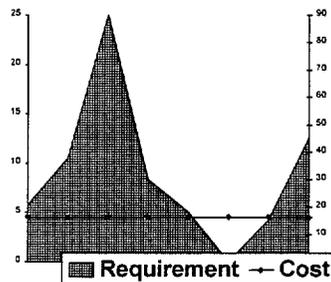
**Cost Structure of Overdraft**



wccm7e/Page10

The cost of bank credit remains constant as stipulated by a credit agreement with the bank; borrower should pay all interest throughout the period of the loan

**Cost Structure of Loan**



### Instructor notes:

#### Explain:

The advantage of using an overdraft or cash credit facility is that the borrower pays only for the financing required and used. There is however a fixed cost component for availing of this facility.

A company with high seasonality of demand, short production cycle or a large variety of different products would find overdraft facilities a lower cost option.

### **Mutual Offset: Typical Form of Settlement between Russian Suppliers and Purchasers**

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- Cash obligations between companies are settled by delivery of goods between two or more parties
- While these are non-cash transactions, any receipt of goods from a supplier before delivery of goods to another party equates to short-term borrowing
- Offset operations constitute currently more than 70% of sales amongst the largest production companies in Russia; and are thus a significant source of financing

wccm7e/Page11

#### **Instructor notes:**

Mutual offset, barter, and commercial paper are all related.

Barter can be considered a form of mutual offset where the goods received from a customer in payment are not raw materials of the seller. In this situation, any barter goods that can be converted into cash by the enterprise before it makes the offsetting delivery to the customer is equates to short term borrowing.

Commercial paper of an enterprise is often used as promissory notes in the mutual offset chain (see next slide).

### Commercial Paper/Notes: Limited Option in Russia at the Present Time

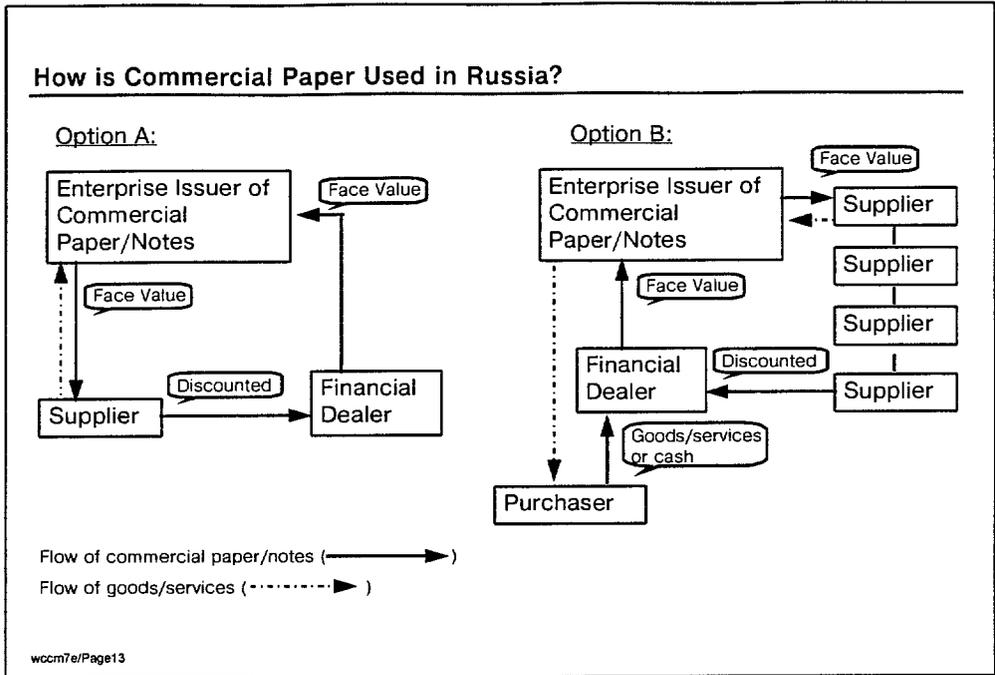
*Commercial paper/notes normally represent a company's promise of delayed payment*

- Unsecured, low cost alternative to trade credit
- Used as cash equivalent for operating receipts and payments when in a cash squeeze
- Stable market exists for notes issued by commercial banks, e.g. Inkombank
- The secondary market for notes issued by companies is limited - only a few companies have had successful issues, e.g. Avtovaz, Kombineft
- In western markets, there is an active secondary market for commercial paper and notes; however in Russia the range of dealers in such securities is limited to trade partners:
  - e.g. there is a fairly active market for KamAZ notes amongst the company's materials and parts suppliers (who receive the notes in place of cash) and KamAZ trade distributors and end users (who buy the notes at a discount and afterwards claim full redemption from KamAZ)

wccm7e/Page12

#### **Instructor notes:**

The graphic on the following page illustrates how commercial paper is traded between suppliers, customers, and banks in Russia.



**Instructor notes:**

**Explain:**

Option A: One Russian enterprise's notes accepted as payment by one supplier. This is the most simple example of this type of settlement. The supplier ships goods and accepts promissory notes in return, which it sells at a discount to a financial institution. The financial institution then collects the face value of the notes from the buyer at redemption date. This is also called forfeiting.

Option B: Two Russian enterprises issuing promissory notes, with the notes being passed down a "chain" of suppliers. This is a more realistic case in the Russian environment. The concept is the same as in option A.

### **Sale or Discounting Accounts Receivable (Factoring) is Also Limited in Russia**

---

- Once goods have been received by a buyer, the seller can receive immediate cash from the factoring bank discounted 10-40% depending on the creditworthiness of the buyer and the quality of the goods.
- The factoring firm then collects payment from the buyer on the date due.
- The advantage to factoring is that it allows the seller to maintain liquidity.
- The disadvantages are that factoring is expensive, and usually reserved for bank clients.
- Very few Russian banks offer factoring services to their clients. You should check with your bank to see if they provide such a service or if they know of any bank that does.

wccm7e/Page14

#### **Instructor notes:**

##### **Background:**

Factoring is a common form of short term finance in western markets.

Large and more experienced Russian commercial banks began offering factoring services to their clients in 1992, however, high inflation, the increase of fraudulent payment documents, and the insolvency crises has limited the development of this source of finance in Russia.

Therefore, this source of financing is extremely limited at the present time.

### Short Term Leases Can Save Cash Investment on Equipment the Enterprise Needs for a Limited Time Period

---

#### *Advantages of short term leases:*

- Alternative to small capital expenditure
- Matches cash outflows to cash inflows resulting from use of the asset
- Useful if lessee does not intend to use the asset over its full economic life, e.g. leasing transportation for a short period, leasing computers and office equipment
- Lessee pays for 'convenience' as lessor is usually responsible for maintenance

wccm7e/Page15

#### **Instructor notes:**

The financial tradeoffs of the lease vs buy decision are covered in the cash management seminar.

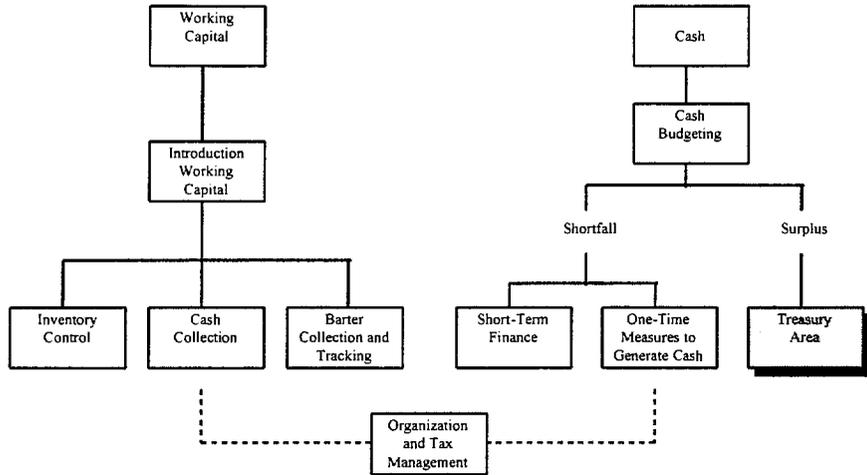
A list of top leasing firms in Moscow, St. Petersburg and Ekaterinburg has been provided the 'one-time measures to generate cash' section of the seminar, when we have discussed lease or sell decisions.

## **Seminar Agenda**

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- Session 1: Working Capital
- Session 2: Cash Collection
- Session 3: Inventory Control
- Session 4: Barter Collection and Tracking
- Session 5: Cash Budgeting
- Session 6: One Time Measures to Generate Cash
- Session 7: Short-Term Finance
- Session 8: Treasury Area**
- Session 9: Organization and Tax Management

## Seminar Overview



wccm8e/Page2

## Seminar Agenda

---

- What is a treasury function and what are its responsibilities
- **Investment policy**
- **Cash surpluses and investment opportunities**
- Objectives in the investment of surplus cash and investment instruments
  - Treasury bills
  - Municipal bonds
  - Corporate securities
  - Bank instruments and currency investments
- Centralized cash management techniques in a company group
- Establishing a basic treasury function

## **The Treasury Function**

---

### ***What is a treasury function?***

Treasury is a separate financial function within a company. Treasurers work closely with finance directors on the issues of borrowing, investment and working capital management. Treasury is normally separate from the accounting department and it is not large, as they are not involved in the detailed recording of transactions. The treasury function tends to rely heavily on new technology for accessing information.

### ***Responsibilities of the treasurer:***

- Investment and working capital management
- Provision of capital and investor relations
- Credits and collections
- Risk management and insurance
- Banking and custody

wccm8e/Page4

### **Instructor notes:**

The purpose of this slide is to give participants a definition of the treasury function and its main features, to explain the reasons for having a treasury department within a company and to list main responsibilities of a treasury.

Note that growing size and internationalization of companies add to both the scale and the complexity of the treasury functions.

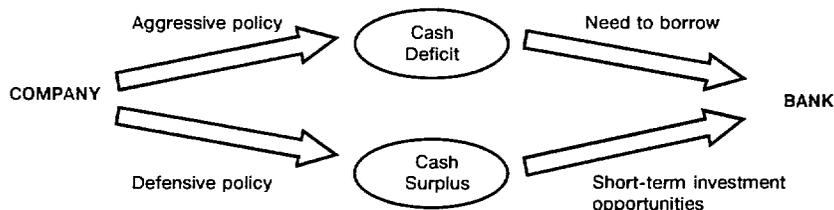
Ask participants which treasury function roles, in their opinion, are to be addressed in a Russian company.

## Investment Policy

*Companies hold cash not only for transaction needs, but also for precautionary and speculative motives*

*The company's attitude to risk and working capital management determine the planned cash holdings*

- Companies with an 'aggressive' working capital policy plan to minimize funds held and borrow when cash is needed
- Companies with a 'defensive' working capital policy plan to set aside cash in an investment portfolio, drawing upon it when the need arises



wcm8e/Page5

### Instructor notes:

The purpose of this slide is to remind participants of reasons of holding cash and to distinguish between companies with opposite working capital policies.

Note that companies with aggressive working capital policy tend to rely heavier on borrowed funds. If the company has an overdraft arrangement with its bank, it is more keen on an aggressive policy in case it needs to ask the bank for a loan.

Refer participants to the slide in the working capital section where there was a comparison of working capital requirements of a cognac distillery and a supermarket. Emphasize that nature of business determines investment policy of the company.

Note that companies with defensive working capital policy face investment decision rather than borrowing decisions.

### Short-Term Investment Opportunities Present Themselves when Cash Surpluses Exist

---

*A Cash surplus can be due to:*

- Overfunding
- Reduction in operating or other assets
- A surplus of retained earnings over the increase in net assets employed
- Cash mismanagement: some divisions have a cash surplus whereas others have a cash deficit

wccm8e/Page6

#### **Instructor notes:**

The purpose of this slide is to show when a company faces short-term investment decisions and what are the reasons for cash surpluses.

Note that overfunding can be deliberate or unintended. For example, if a company finds its market growing, its fixed assets and working capital should also be growing over the years, and it may from time to time fund this growth of assets from share or long-term debt issues. If the company deliberately funds more than its current short-term debt so as to make the issue a worthwhile sum, then it will have surplus cash until the growth of its net operating assets catches up with its long-term-funding.

A reduction in net operating assets occurs annually in all seasonal trades, or more irregularly where a trade runs into a more serious decline or indeed where the company deliberately reduces its working capital by improved efficiency or by a financial device like factoring its receivables.

## Seminar Agenda

---

- What is a treasury function and what are its responsibilities
- Investment policy
- Cash surpluses and investment opportunities
- **Objectives in the investment of surplus cash and investment instruments**
  - Treasury bills
  - Municipal bonds
  - Corporate securities
  - Bank instruments and currency investments
- Centralized cash management techniques in a company group
- Establishing a basic treasury function

wccm8e/ Page7

## Investment Objectives

---

*There are three main objectives behind investing the surplus cash of an enterprise:*

- Liquidity: the cash must be available for use when needed
- Safety: no risk of loss must be taken
- Profitability: the aim is to earn the highest possible after tax returns

*Investment instruments:*

- Treasury bills
- Municipal bonds
- Corporate securities
- Bank instruments and currency investments

**We will review each of these investment instruments**

wccm8e/Page8

### **Instructor notes:**

The purpose of this slide is to show participants with objectives of investments of surplus cash.

Note that liquidity objective solution is to match the maturity of the investment with the period for which the funds are surplus. Emphasize that there are complications in meeting this objective: the exact duration of the surplus period is not always known or an earlier withdrawal causes excessive penalty.

Note that safety in this sense can be defined as the certainty to get the original investment repaid.

### **Treasury Bills (T-Bills)**

---

- Treasury bills are issued by the Russian government on a regular basis. This is the most reliable and risk free investment available. T-Bills are issued in the following forms:
  - GKO (Government T-Bills). No-coupon bills sold at a discount
  - OFZ (Federal Bonds). Bonds with quarterly coupon
  - OGSZ (State Saving Bonds). Bonds with coupon
  - OVZ (Hard Currency Bonds). Bonds denominated in US Dollars
- Most leading Russian banks are authorized dealers (appointed by the Ministry of Finance) of treasury bills. Other banks work through authorized dealers
- At present Ruble denominated bonds have a yield of 60-100% p.a. depending on the issue and maturity date. US Dollar denominated bonds have a yield of 10-15% p.a.
- For each bank there is a minimum transaction amount varying from bank to bank. Normally, it is not less than 50-100m RUR.
- Bank commission on these instruments varies between banks according to transaction volume and the liquidity of the instrument. It varies from 0.1-1.0% for Government T-Bills, to 5-6% for State Saving Bonds.

wccm8e/Page9

#### **Instructor notes:**

The purpose of this slide is to provide participants with information about various groups of treasury bills.

Note that exact terms and conditions of transactions with treasury bills vary between banks and the servicing bank should be contacted.

## **Municipal Bonds**

---

- Regional and municipal authorities issue bonds to obtain additional financing. Bonds are issued in various forms:
  - with and without coupon:
    - income on a coupon bond is regularly received as a percentage of its par value in exchange for the coupon
    - income on a bond without a coupon is the difference between purchase and redemption price
  - fixed and floating rate
- Transactions with municipal bonds are normally carried out through local banks or local divisions of leading Russian banks
- Compared to T-Bills municipal bonds are:
  - a higher risk but are still reliable because they are guaranteed by the local authorities
  - less liquid because of a smaller market size
- St.Peterburg, Nizhny Novgorod, Yaroslavl and other regions all issue municipal bonds

wocm8e/Page10

### **Instructor notes:**

The purpose of this slide is to provide participants with information about municipal bonds.

Note that exact terms and conditions of transactions with municipal bonds vary between banks and the servicing bank should be contacted.

## Corporate Securities

- In Russia, corporate securities are represented by the equity of the large companies privatized over last four years
- As a short-term investment instrument they do not bring a fixed or guaranteed income because share prices fluctuate in both directions. The gain for the investor is a positive margin between the selling and purchase price of the shares. Broker's commission amounts to 0.5-20% depending on the share liquidity.
- The Russian equity market is highly fragmented. Among hundreds of traded shares only a few are liquid enough to be considered as a short-term investment, including:
  - MosEnerg
  - LUKOIL
  - RAO EES
  - RosTeleKom
  - YuganskNefteGas
- The Russian equity market is concentrated in Moscow. Operations are performed through investment brokers. The leading Russian investment brokers are:
  - Renaissance Capital                      Tel. (095) 258 77 77
  - Troika Dialog                                      Tel. (095) 332 44 80

wccm8e/Page11

### Instructor notes:

The purpose of this slide is to provide participants with information about various corporate securities.

Emphasize that short-term investment in corporate equity in Russia is high risk; a few equities are liquid, the equity market in Russia is highly volatile and permanent market research/monitoring is required in order to extract maximum return on the investment.

Note the exact terms and conditions of transactions with corporate securities vary between banks; an investment broker should be contacted.

### **Bank Instruments and Currency Investments**

- Bank instruments (Ruble bank deposits) and hard currency (Hard currency bank deposits) offer less risky short-term investments for enterprises with surplus cash
- Ruble deposits are taken by all banks, hard currency deposits by banks having a license for foreign currency operations
- Interest rates on Ruble and foreign currency deposits vary in accordance with:
  - the deposited amount
  - the term of deposit
  - the periodicity of the interest payment
- Currently interest rates on Ruble deposits are in the range of 50-90% p.a. and on foreign currency deposits between 13-25% p.a.
- Prior to 1995 many companies held their cash surpluses in foreign currency providing protection against devaluation of the Ruble. Upon introduction of the 'exchange rate corridor', the mere holding of foreign currency does not bring sufficient return as compared to other alternatives.

wccm8e/Page12

#### **Instructor notes:**

The purpose of this slide is to provide participants with information about various bank instruments and currency investments.

Note that an investment may not need to be held to maturity if an earlier withdrawal is permitted by the terms of the instrument without excessive penalty, or if there is a secondary market and its disposal in that market causes no excessive loss.

Note that exact terms and conditions of deposit transactions vary between banks and the servicing bank should be contacted.

## **Seminar Agenda**

---

- What is a treasury function and what are its responsibilities
- Investment policy
- Cash surpluses and investment opportunities
- Objectives in the investment of surplus cash and investment instruments
  - Treasury bills
  - Municipal bonds
  - Corporate securities
  - Bank instruments and currency investments

- **Centralized cash management techniques in a company group**
- **Establishing a basic treasury function**

## Enterprise Cash Management Techniques

---

*Large enterprises centralize the cash management function by using:*

- **Pooling:** centralizing all the group's cash resources
- **Netting:** setoffs the various companies within a group
- **Factoring:** selling of invoiced debts at a discount to a bank or a special finance company (the factor)
- **Intercompany Borrowings**

wccm8e/Page14

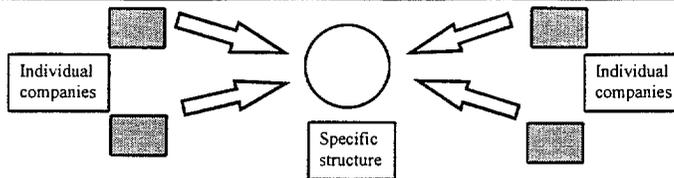
### **Instructor notes:**

The purpose of this slide is to provide participants with some techniques of centralized cash management.

Ask participants how centralized is cash management at their companies and how often they face a situation when one company of the group has cash surplus when another has cash deficit. Ask how such situations are resolved.

Note that centralized cash management system requires a clear organizational structure and day-to-day control within the group.

## Pooling



**Pooling** can be defined as cash made generally available, under the control of a centralized structure, to the various companies within one group

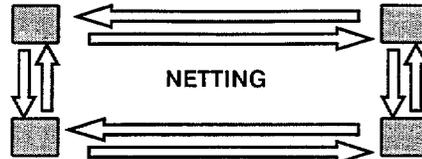
- By centralizing all the cash the group may negotiate better interest rates and conditions with banks
- The pooling can be organized at the level of a specific legal entity such as:
  - One of the companies of the group
  - A specific structure having, for example, a financial status
  - A structure outside the group
- An agreement between the participating companies is highly recommended in order to define the terms and conditions of the centralized cash management system
- In practice there are some limitations on choices imposed by law: a specific structure may need a bank license, or individual companies might lose their status as separate legal entities

wccm8e/Page15

### Instructor notes:

The purpose of this slide is to provide participants with information about pooling the cash resources within a group of companies.

## Netting



**Netting** can be defined as bilateral or multilateral compensation between mutual credits and debts of companies within a group. It is usually considered as a means of payment.

- Netting reduces bank charges as it limits bank intervention to achieve payment
- An agreement between the participating companies is highly recommended in order to define the terms and conditions and periodicity of nettings
- There is no need to have a centralized structure to do the netting for the whole group
- Netting may also involve third parties (for example, suppliers or clients of the group) in order to improve cash management

wccm8e/Page16

### Instructor notes:

The purpose of this slide is to provide participants with information about netting within a group of companies.

## **Factoring**

---

**Factoring** - a company sells its invoiced debts at a discount to a bank or a special finance company (the factor). The factor purchases the debt with or without recourse and is generally responsible for all credit control, sales and debt collection. He has no call on the company supplying the goods unless there is a dispute over delivery or quality of the goods.

- Factoring allows the subsidiaries to limit debtor risk, transfer the administration of the credits
- Factoring involves complex administration and some related costs:
  - Commission for all the costs relating to the administration of the receivables transferred
  - Commission for the risk taken by the factor if the receivables are transferred without recourse
  - Interest in consideration for the cash advance granted by the factor to its clients.

wccm8e/Page17

### **Instructor notes:**

The purpose of this slide is to provide participants with information about factoring receivables.

This area is covered in more detail in the optimizing cash collection section of this module.

## **Establishing a Basic Treasury Function**

***Establishing a basic treasury function involves the following procedures:***

- Analyzing and evaluating the financial information system of the company and information flows, including volumes, periodicity of document flows, and current information requirements
- Analyzing and evaluating control and authorization procedures
- Separating treasury department activities from accounting:
  - the treasury function deals with investment and borrowing decisions
  - the accounting function is responsible for maintaining records
- In some Russian enterprises, it may be appropriate that the finance department of the company performs, on a temporary basis, the treasury function by:
  - identifying a group or an individual responsible for investment, borrowing decisions and working capital management
  - formalizing investment and borrowing procedures
  - delegating authority in these areas from senior management
- In the course of establishing a treasury department specialized consulting advice is recommended.

wccm8e/Page18

### **Instructor notes:**

The purpose of this slide is to provide participants with necessary steps to establish a treasury department or group at their own companies.

Emphasize that there may be no need to implement all functions of the treasury department at once.

Ask participants to think of which of the functions would be useful for their own companies and why.

Ask participants whether any of them has tried to move toward establishing a treasury or similar function.

## Summary

---

- Treasury operations should be a separate finance function responsible for investing the company's surplus cash through its bank or specialized financial institution
- In order to achieve set criteria for liquidity, safety and profitability, the treasurer uses various investment instruments, including treasury bills, municipal bonds, corporate equities and bank and currency investments.
- For a group of companies a treasury function is also responsible for centralized cash management, including pooling, netting, intercompany borrowings and factoring the company's accounts receivables
- In Russian companies treasury roles are divided between various departments - Russian firms should start thinking of establishing a basic treasury function, possibly within the finance department, which could be developed into a full-scale treasury department.
- Establishing a treasury function involves a number of steps, advice from a professional consultancy is required

wccm8e/Page19

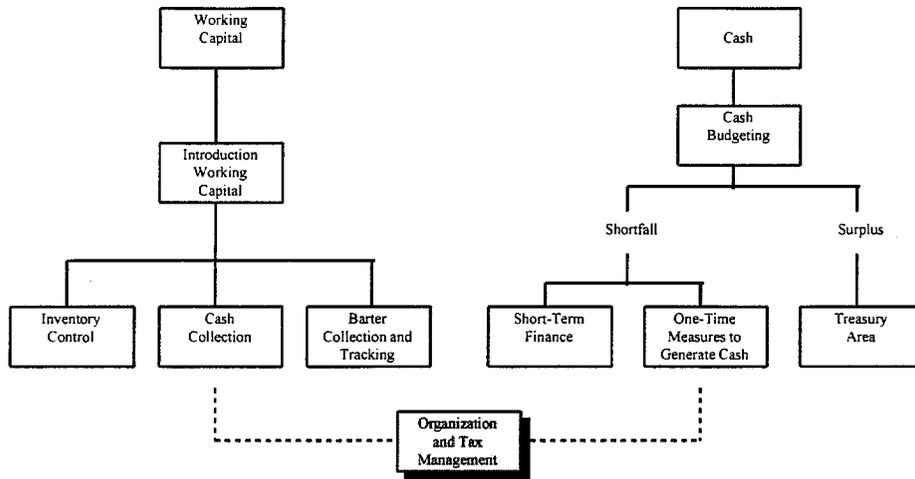
## Seminar Agenda

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- Session 1: Working Capital
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- Session 7: Short-Term Finance
- Session 8: Treasury Area
- Session 9: Organization and Tax Management**

wccm9e/Page1

## Seminar Overview



wccm9e/Page2

## Seminar Agenda

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- **The importance of organization and tax management**

- Managing frozen bank accounts
- Managing group cash and loans
- The need for tax compliance
- The importance of managing taxation
- Knowledge of legislation and where to seek advice
- The opportunities for managing taxation
  - Subsidiaries and group companies
  - Transfer pricing
  - Asset revaluations

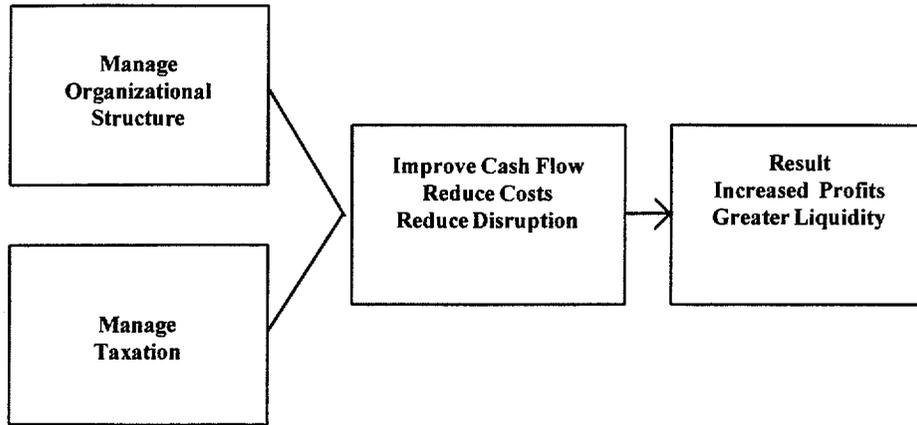
wccm9e/Page3

### Instructor notes:

State that this session aims to clarify the distinction between tax compliance and tax management and seeks to communicate the importance of tax management and its potential impact on cash flow.

State that this session aims to highlight some of the factors that need to be considered when structuring a group of entities and their impacts on cash flow.

## The Importance of Organization and Tax Management



wccm9e/Page4

### Instructor notes:

Stress that opportunities do exist in Russia for effective management of organizational structure and effective tax management to have a significant impact on business cash flow and costs.

Hence management need to take these issues seriously.

## Managing Frozen Bank Accounts

---

- Russian enterprises with large liabilities can have bank funds seized
  - business operations can be seriously disrupted
- Some enterprises have established small trading subsidiaries
  - separate legal entities
  - separate bank accounts
- The subsidiaries' bank accounts are used to receive funds and make important payments
  - hence business operations are disrupted to a lesser extent
- Seek legal advice prior to taking action
  - applicable legislation may differ according to the type or size of business
  - legislation changes frequently that increases risks of non-compliance

wccm9e/Page5

### **Instructor notes:**

State that in many cases the trading subsidiary makes purchases for the enterprise and sells on to the enterprises. Similarly the enterprise sells its goods/services to the trading subsidiary which sells on to the customers. Because the subsidiary is a separate legal entity, funds are not normally seized from its bank account. Hence the enterprises operations may not be as seriously disrupted as would be the case if the subsidiary did not exist.

State that legislation relating to different types of businesses/legal entities may differ.

Also state that as every one knows, legislation changes frequently

Stress that enterprises should seek legal advice prior to taking the above action or other similar action.

## Managing Group Cash/Loans

---

- The cash position of group companies can differ significantly
  - some entities may have surpluses
  - some entities may have large loans
  - other may have cash surpluses and loans
- Businesses need to allocate cash efficiently
- Inter-company loans can be used to reallocate cash
- Inter-company loans in Russia are no longer subject to Value Added Tax
  - from April 96



- Less disruption to business operations
- Increased profits due to reduced interest charges

wccm9e/Page6

### **Instructor notes:**

Explain that some companies may have cash surpluses whereas others in the same group may have loans with high interest rates

For the purpose of this slide an inter-company loan means a loan granted by a non-banking institution. Ownership between the two companies is irrelevant here.

State that from April 96 intercompany loans are no longer subject to VAT. Hence cash can be reallocated to related companies in the form of intercompany loans without VAT.

Also state that the loans can be interest free. Alternatively interest could be charged to redistribute profits to manage profits tax if the need opportunity exists.

## Tax Compliance and Tax Management

---

### Consultants have observed that:

- Most Russian businesses emphasize compliance
  - with tax legislation
  - with accounting legislation
- Few Russian businesses actively seek to manage taxation preferring
  - legal means for reducing taxes payable
  - legal means to defer tax related cash out flows

### However:

- Effective tax management can significantly benefit cash flow and reduce the taxation burden on enterprises

wccm9e/Page7

### **Instructor notes:**

Elaborate on the distinction between tax compliance and tax management

Tax compliance involves compliance with Russian accounting and tax legislation. Enterprises need to comply in their accounting of transactions, reporting and payment of taxes in within the prescribed time limits.

Tax management involves seeking legal means to reduce taxes payable or to legally defer tax payments thus improving cash flow

## The Importance of Tax Compliance

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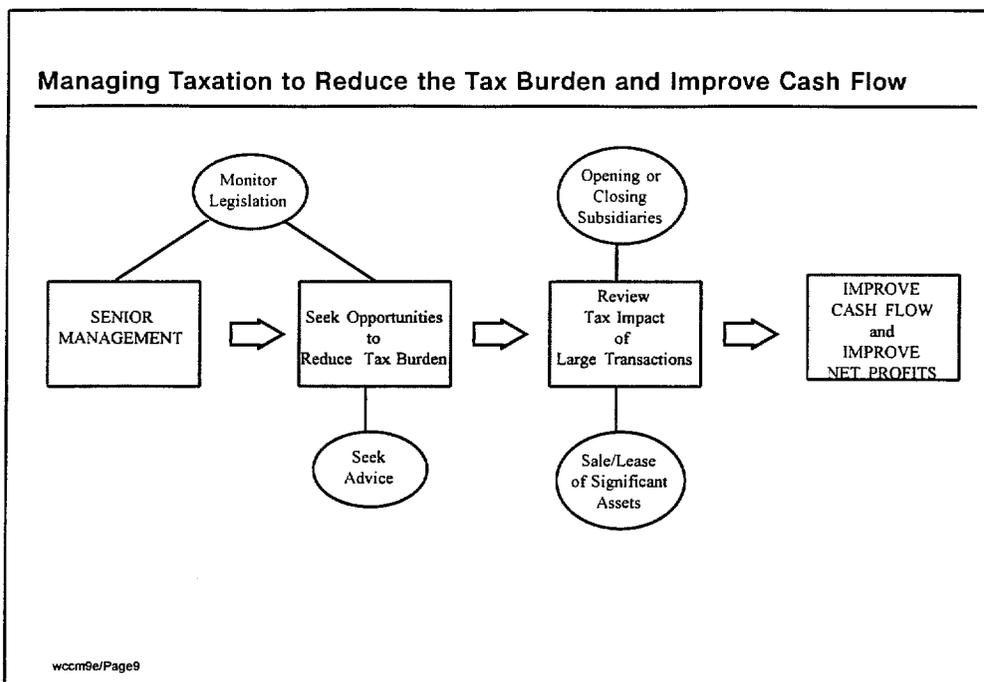
- Russian tax legislation can be confusing and is often ambiguous
  - Legislation is either too brief or cumbersome
  - Laws/decrees often contradict one another
- Tax legislation changes frequently and managing taxes in such a volatile regime results in higher risks for non-compliance
- Penalties for non-compliance and late payment can be severe:
  - Up to 100% of the underpayment
  - Late payment fine - 0.7% interest charge per day
  - Fines for incorrect accounting
- Later in the section we will provide guidance and contacts which will enable you to keep up to date with legislation

wccm9e/Page8

### **Instructor notes:**

Stress that Russian businesses are right to place importance on tax compliance and that they should not reduce its importance to the business. If anything they should encourage greater compliance if this is a weak area in their business.

One Moscow based business with a turnover of only \$5 million had to pay approximately US\$1m in tax penalties. This was the result of incorrect accounting for transactions and resulting underpayment of taxes. The company did not know that it was accounting for taxes incorrectly and was genuinely surprised and staggered at the size of the penalty.



**Instructor notes:**

Stress the importance of senior management being responsible for managing taxes, not just the Chief Accountant.

The Chief Accountant should be primarily responsible for tax compliance. He/she should contribute to the tax management efforts but would not necessarily be the decision maker

The decision makers should be the senior management, which would include the Chief Accountant.

## Knowledge of Legislation

---

- Newspapers and financial publications
  - Economics and Life (weekly)
  - 'Taxes' (journal)
  - New Tax Legislation (journal)
  - Accounting (journal)
- Legal databases such as 'Garant'
- Accounting and tax consultants such as 'Big 6'
- Law firms
- Local tax authorities

wocm06e/Page10

### **Instructor notes:**

Inform participants that the toolkit has a handout with the names, addresses and contact numbers of:

- Garant (legal database service)
- Deloitte & Touche (Accounting, Tax and Consulting Firm)
- Law firms

Also state that while it is understandable that they may exercise caution before contacting the tax authorities for information, this can nevertheless be a useful source of information, particularly for local taxes





## Opportunities To Manage Taxation

---

- Subsidiaries and small companies
  - refer to handout provided summarizing this legislation
- Transfer pricing
- Revaluations of fixed assets
- Available tax allowances
- Asset lease/buy decisions
- Seasonal VAT relieves
- Barter transactions
  - can reduce turnover related taxes
  - can defer profits tax cash outflows
- Labor costs
  - some bonuses and benefits are not tax deductible
  - may be possible to restructure compensation to have these costs tax deductible

wccm9e/Page12

### **Instructor notes:**

The opportunities highlighted on the slide are only examples. They may not be applicable to all businesses.

These examples are there to demonstrate that opportunities exist for legitimate tax management

Management needs to keep up to date with legislation in order to manage taxes and seek opportunities for tax management, especially for large transactions

Barter transactions can lower the impact of taxation because the contracts can carry lower prices. This reduces the impact of VAT on cashflow and cost of turnover related taxes such as Road Tax and Housing/Social Maintenance Tax. Lower contract prices can also result in a cash flow benefit on profit taxes. The lower contract price can reduce profits and profit tax in the current period but increases profits and profit tax in future periods due to the lower cost of goods purchased. This is addressed in the Barter section of the seminar.

Some labor related costs such as bonuses/benefits and social costs are not deductible costs for tax purposes. Hence enterprises should consider ways in which these costs are paid to employees, so that they are tax deductible (e.g.. through the normal payroll system) However, this may increase social security costs. Therefore consider the costs as well as the benefits prior to implementing such schemes.

## Subsidiaries and Group Companies

---

- Tax advantages and disadvantages of having several entities in a group
  
- Advantages
  - tax management (e.g.. through transfer pricing)
  - liability risk is dispersed
  
- Disadvantages
  - increase in overheads and administration costs
  - increase in sales revenue related tax charges on intercompany transactions such as Road Tax and Housing/Social Maintenance Tax

wccm9e/Page13

### **Instructor notes:**

Stress that companies should evaluate the costs and benefits of forming/closing subsidiaries and other group entities

They should not only consider taxes but also any increased/decrease in administration or overhead costs

## Transfer Pricing

---

- Useful when some group companies are loss making
- Normally tax losses are recovered over 5 years
- Potential tax benefits of transfer pricing:
  - reduce losses of group companies which are loss making
  - reduce profits of group companies which are profitable
- BEWARE:
  - tax authorities can override such schemes
  - they can calculate taxable profits based on market prices

wccm9e/Page14

### **Instructor notes:**

Explain that if tax losses are recovered over five years then:

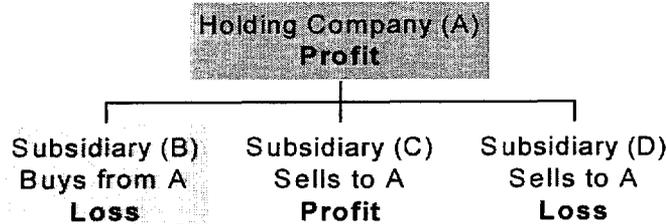
-cashflow is affected and;

-the real value of the amounts recovered is eroded by inflation

Stress that the tax authorities do have the power to override such schemes and have done so in some cases.

Hence any such schemes should not be too aggressive

## Transfer Pricing - Example/Tool



- Increase sales prices of D to A:
  - reduces loss of D and reduces profit of A
- Decrease sales prices from A to B
  - reduces losses of B and profits of A
- A incurs less profits tax and group cash outflow is reduced

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### Instructor notes:

Reiterate that adjustments to transfer prices to reduce group tax cash outflows, should not be too aggressive especially in the scenario above where A reduces its sales price to B because the tax authorities may impute market sales prices on A when computing its taxable profits.

Also in the scenario where D increases its sales prices to A-if this prevents A from operating at a reasonable profit, the tax authorities may impute a market based mark-up on the production cost of A in order to calculate profits.

Therefore such schemes should be implemented with caution and should appear to be reasonable.

## Use Available Tax Allowances

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*Current legislation allows several tax deductions which, if properly planned and managed, can bring your company significant benefits*

- Capital expenditures are generally tax deductible up to a reduction of 50% of profit tax base if they relate to production
- Property insurance is now tax deductible within certain limits set as a percentage of turnover
- Reserve fund is tax deductible to a certain limit

## Revaluations of Fixed Assets

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- There are periodic mandatory revaluations of fixed assets using State prescribed revaluation rates
- Independent valuations may be used
- Higher asset values result in greater depreciation, this leads to lower taxable profits and lower profit tax charges and, therefore, to reduced cash outflows
- Higher asset values result in increased property tax charges and, therefore, increased cash outflows
- Evaluate the costs and benefits of higher asset values
- Benefits are greater if asset lives are shorter
- To benefit from this scheme the enterprise must already be operating reasonably profitably to absorb higher tax deductible costs

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### **Instructor notes:**

State that independent asset valuations in Russia sometimes result in significantly higher asset values than those resulting from the use of State prescribed asset valuations.

The tax benefits of higher depreciation charges must be compared to the increased property tax charges. Property tax varies from 1% to 2% of asset values in 1996 and the rate is set locally in the Regions of Russia.

If the fixed assets have a shorter life then the tax benefit from increased depreciated may be greater than the increased cost of property tax.

### Tax Impact of Asset Revaluations - Example

(A) Net increase in asset value due to revaluation	RUR100 m	(A) Net increase in asset value due to revaluation	RUR100 m
(B) Avg. depreciation	10% p.a.	(B) Avg. depreciation	5% p.a.
(C) Property tax rate	2%	(C) Property tax rate	2%
(D) Profits tax rate	35%	(D) Profits tax rate	35%
<b>Result</b>		<b>Result</b>	
(E) Increase in depreciation expense (A)*(B)	RUR10 m	(E) Increase in depreciation expense (A)*(B)	RUR5 m
(F) Profits tax saving (E)*(D) due to increase in depreciation expense	RUR3.5 m	(F) Profits tax saving (E)*(D) due to increase in depreciation expense	RUR1.75 m
(G) Property tax rise (A)*(C)	RUR2.0 m	(G) Property tax rise (A)*(C)	RUR2.0 m
Savings (F)-(G)	RUR1.5 m	Additional cost (G)-(F)	RUR0.25 m
<b>Conclusion</b>		<b>Conclusion</b>	
Higher asset values desirable		Higher asset values undesirable	

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#### Instructor notes:

The cost of independent asset revaluations should also be set-off against the benefits which may result.

Given the tax assumptions above, higher fixed asset values would be desirable if average depreciation rates are 6% p.a. or greater.

State that the example above looks only at the tax impact in the first year after a revaluation. The benefits should increase in later years, if tax rates and gross asset values are constant:

-the tax benefit of increased depreciation remains the same

-however, the property tax charge should decrease in line with the decrease in the net book value of fixed assets

**Exercise-Perform the Calculation for AOBP**

<i>Ave. Dep.= Depn. pa</i> _____ / <i>Gross Fixed Assets</i> _____ = _____ %	(A)
<i>Property Tax</i>	= 1% (B)
<i>Profits Tax</i>	= 35% (C)
<i>Net increase in asset value assumption</i>	= R100 m

<i>1st Yr-Profits Tax Saving= R100 m x (A) _____ x (C) _____ = R _____ m</i>	(E)
<i>1st Yr-Property Tax Increase = R100 m x (B) _____ = R _____ m</i>	(F)
<i>1st Yr-Net Benefit/ Cost= (E) _____ - (F) _____ = R _____ m</i>	(G)

*If there is a benefit i.e. (G) is positive then higher fixed asset values are desirable and you should consider whether to have an independent fixed asset revaluation, if you have good reasons to believe that it would yield higher asset values than using State prescribed revaluation rates. However, you should also take into account the cost of an independent revaluation.*

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**Instructor notes:**

Ask participants to use the financial statements handout for AOBP to calculate whether higher asset values are desirable or not for AOBP.

**Suggested solution**

Ave. Dep.= Depn. pa (239) /Gross Fixed Assets (2395)	=10%	(A)
Property Tax	= 1%	(B)
Profits Tax	= 35%	(C)
Net increase in asset value assumption	= R100 million	

1st Yr-Profits Tax Saving= R100 m x (A) 10%x (C) 35%	= R 3.5mil (E)
1st Yr-Property Tax Increase = R100 m x (B) 1%	= R 1.0mil (F)
1st Yr-Net Benefit/ Cost= (E) 3.5 - (F) 1.0	= R 2.5mil(G)

**Solution-Higher asset values desirable.**

Note- The opening gross book value of fixed assets was used.

Participants may wish to use the average gross book value (i.e. average of opening and closing balances)

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### Tool-For Your Enterprise

*Ave. Dep.= Depn. pa \_\_\_\_\_/Gross Fixed Assets \_\_\_\_\_ = \_\_\_\_\_% (A)*

*Property Tax in your region = \_\_\_\_\_% (B)*

*Profits Tax in your region = \_\_\_\_\_% (C)*

*Net increase in asset value assumption = R100 m*

*1st Yr-Profits Tax Saving= R100 m x (A) \_\_\_\_\_ x (C) \_\_\_\_\_ = R \_\_\_\_\_ m (E)*

*1st Yr-Property Tax Increase = R100 m x (B) \_\_\_\_\_ = R \_\_\_\_\_ m (F)*

*1st Yr-Net Benefit/ Cost= (E) \_\_\_\_\_ - (F) \_\_\_\_\_ = R \_\_\_\_\_ m (G)*

*If there is a benefit i.e. (G) is positive then higher fixed asset values are desirable and you should consider whether to have an independent fixed asset revaluation, if you have good reasons to believe that it would yield higher asset values than using State prescribed revaluation rates. However, you should also take into account the cost of an independent revaluation.*

## Summary

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- Important to consider the legal structure of your business and consider whether it is optimal for group cash flow and profits
- Opportunities exist for tax management - USE THEM
- Effective tax management can improve cash flow and reduce the burden of taxation
- Tax management should be performed by Senior Management
  - NOT delegated solely to the Chief Accountant
- Seek advice if necessary

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**Homework Assignment**

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***Working Capital and Cash Management***

wccmhw/Page1

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***Exercise 1: Calculate the Working Capital Requirement for Your Enterprise***

### Calculation of Working Capital Requirement

In filling in this form use the instruction on the next several pages

	Quantity	Cost/Price	Turnover in days	Total need
	(1)	(2)	(3)	(1) x (2) x (3)
1. Raw materials				
2. Work-in-progress				
3. Finished goods				
4. Debtors payment				
5. Total cash 'tied-up'				(1) + (2) + (3) + (4)
6. Suppliers payment credit - cash 'freed'				
7. Total cash needed				(5) - (6)

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#### Instructor's notes:

Instructions on using this tool are provided on the following slides:

Explain the limitations of this model

(1) this layout is designed for relatively simple operations with few raw materials and one product or a limited number of similar models.

(2) Explain that in the case of insufficient information it is much better to use approximations than to abandon this form.

(3) Explain that the comparison of actual Working Capital and the Working Capital requirement signals immediately any inefficiencies in Working Capital management.

### **Instructions for Calculating the Working Capital Requirement (1)**

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*If there are very different products manufactured, the Working Capital requirement is to be calculated separately for each product or groups of similar products.*

**Calculation of "Work in progress investment" requirement:**

- calculate the technical capacity of the production facilities of the company;
- if the company is not able to sell all the products that are produced at technical capacity, take the maximum **sellable** amount
- estimate (yourself or with the assistance of technical specialists) the total processing period in days
- get an estimate by the planning department of the value and quantity parameters in the WIP, or the calculation of the accounting record of WIP may be used

## **Instructions for Calculating the Working Capital Requirement (2)**

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### ***Calculation of raw materials investment requirements:***

- calculate the turnover period for the raw materials (calculation is described in the ratios section)
- get the estimate of raw materials costs for one unit of product from the planning or purchasing department

### ***Calculation of finished goods investment requirements:***

- calculate the turnover period for the finished goods (calculation is described in the ratios section)
- get the estimate from full production cost for one unit of finished goods from the planning department

### Instructions for Calculating the Working Capital Requirement(3)

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***Calculation of debtors investment requirement:***

- calculate the turnover period for the debtors (calculation is described in the ratios section later)
- calculate the average debtors period with the assistance of the sales/commercial department
- input the sales prices of the products from price lists or actual quotations by the sales/commercial department

***Calculation of creditors investment requirement:***

- calculate the turnover period for the creditors (calculation is described in the ratios section later)
- calculate the average creditors lag with the assistance of the purchases/material supplies department
- input the actual purchase price of the products from the purchases/ material supplies department, accounting for discounts.

## Instructions for Calculating the Working Capital Requirement (4)

### *Comparison of Working Capital requirement and the actual Working Capital*

- upon calculation of the Working Capital requirement compare the results with the actual working capital calculated in tool 1
- analyze the main reasons for the difference between the Working Capital required and the actual Working Capital:
  - errors in estimates;
  - inefficient management;
  - conscious 'prudent' choices;
  - other reasons.

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***Exercise 2: Prepare a Cash Budget for Your Enterprise***

## Budgeting Operations Inflows

Actual Sales - Previous 3 Months Month -1 \_\_\_\_\_  
 Month -2 \_\_\_\_\_  
 Month -3 \_\_\_\_\_

Sales Estimates (for each month of budgeting period)

Item	Price	Units	Sales
Product 1			
Product 2			
Product 3			
Product 4			
Product 5			

Total Sales Month 0,1,2 \_\_\_\_\_

Estimated % of sales through barter: \_\_\_\_\_ X Sales = Barter-based sales

Estimated % of cash sales: \_\_\_\_\_ X Cash-based Sales = Income from cash purchases

Estimated % of sales on credit: \_\_\_\_\_ X Sales (Month x) = Credit-based sales (Month x)

Receivables (to estimate income from previous period sales)

Period	Amount	Percentage	
0 - 30 days	R _____	% _____	X Credit-based sales (Month -1) = Payments with 1 month lag
31 - 60 days	R _____	% _____	X Credit-based sales (Month -2) = Payments with 2 month lag
61 - 90 days	R _____	% _____	X Credit-based sales (Month -3) = Payments with 3 month lag
>90 days	R _____	% _____	

Estimated Prepayments % 1 month % \_\_\_\_\_ X Sales of Month 1 = Prepayments (1 month advance)

2 months % \_\_\_\_\_ X Sales of Month 2 = Prepayments (2 month advance)

Expected income from old receivables \_\_\_\_\_

Expected income from sale of barter goods \_\_\_\_\_

Inflows from Operations

Cash sales for current month  
 Payments with 1 month lag  
 Payments with 2 month lag  
 Payments with 3 month lag  
 Prepayments with 1 month advance  
 Prepayments with 2 month advance  
 Sale of Barter Goods  
 Total Inflows from Operations \_\_\_\_\_

### Instructions for Budgeting Operations Inflows (1)

- Obtain actual or estimated sales for the 3 months previous to the budget month budget
- Estimate sales for budget period by using price and quantity estimates. Price and quantity estimates should incorporate known and likely orders, seasonal adjustments, projected inflation, recent trends.
- Estimate sales for two months following the budget month of the budget period. These estimates will have a variable degree of accuracy depending on the length of the enterprise's business cycle.
- A portion of sales will likely be made through barter. Based on accounting records, estimate the percentage of sales which is made through barter. Multiply by sales to obtain an estimate of cash-related sales. This must be done for each month's sales.
- Estimate what percentage of the company's sales is sold for instant cash. This estimate can be based on historical data.
- Estimate what percentage of sales is made on credit. Multiply this rate times each month's sales to obtain the monthly credit sales figures.

### Instructions for Budgeting Operations Inflows (2)

- Estimate income from previous months' sales. Use current outstanding receivables as a guideline. Apply percentages obtained through evaluation of receivables to credit sales for the appropriate previous periods to obtain estimates for income from previous periods to be received in the budget month.
- Estimate prepayments to be received during the month for shipments in following month(s).
- Indicate income from old/bad debt based on actual payment agreements
- Estimate cash to be received through the sale of goods acquired through barter
- Sum all of the above cash inflows to obtain the estimated operational cash inflow for the period

## Budgeting Operations Outflows

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### Operations Outflows

#### Payments for Materials

Cash payment for items purchased and used in the current month

Payment for items procured on credit in the previous month

Cash payment for goods procured for next month

Total Payments for Materials:

+ \_\_\_\_\_

Payroll and Social Security Payments:

+ \_\_\_\_\_

Energy and Utility Payments:

+ \_\_\_\_\_

Overhead and Administration Payment:

+ \_\_\_\_\_

Estimated Profit Tax

+ \_\_\_\_\_

Other Taxes

+ \_\_\_\_\_

Tax Penalty Payments:

+ \_\_\_\_\_

VAT Payments:

= \_\_\_\_\_

Total Operations Outflows

\_\_\_\_\_

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### Instructor's notes:

The rationale for assessing outflows in a 3 months period is associated with the terms of payment assumed.

Note that energy and utility payments are continuous cash outflows which do not go to 0 if we had no sales or output.

### **Instructions for Budgeting Operations Outflows (1)**

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- Estimate purchases required to produce estimated sales figures during budget month, the previous month, and the following month. In many cases, some of these materials will be procured through barter. Do not include purchases made with barter in determining this amount.
- Determine what percentage of materials are purchased in advance of the month in which they are used. Also determine, of those materials purchased in advance, what percentage are purchased on credit.
- During the budget month, payments must be made for purchases made on credit in the previous month(s), purchases made in cash for the budget month, and purchases made on prepayment terms for the following month(s).
- Estimate the amount that must be spent on salaries and social security expenses. These amounts should not be difficult to estimate, although it is important to consider planned staff reductions, inflation, bonuses, and any new legislation
- Estimate the amount that must be paid for energy and utilities. If possible, base these estimates on physical units and unit price. Be sure to incorporate known price increases.

### **Instructions for Budgeting Operations Outflows (2)**

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- Estimate overhead and administration expenditures. These should remain fairly constant from month to month.
- Calculate profit and other taxes due in the budget month
- Calculate any tax penalty payments which are due in the budget month
- Calculate VAT payments which must be made in the budget month
- Sum all of the expenditures expected during the budget period to determine the total of operations outflows

## Budgeting Other Inflows and Outflows

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### Other inflows

Sales of Assets			
Item	Unit Price	Quantity	Total
Item 1			
Item 2			
Total			_____
Estimated bank interest:			_____
Interest from securities:			_____
Dividends from securities:			_____
Other investment income:			_____
Other Outflows:			_____
Total Other Outflows			_____

### Other outflows

Purchase of fixed assets			
Item	Unit Price	Quantity	Total
Item 1			
Item 2			_____
Interest on Loans			
Loan	Loan Amt	Mthly Rate	Payment
Loan 1			
Loan 2			
Total			_____
Loan Repayments			
Loan			Amount
Loan 3			
Loan 4			_____
Dividend Payments			
No of shrs	Dividend per share		Total
Social Asset Expenditures			
			_____
Other Outflows:			
			_____
Total Other Outflows:			
			_____

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### Instructor's notes:

Compare the absolute orders of magnitude of inflows and outflows linked to financial operations with those linked to production and sales.

Comment on the importance of the company's equity structure when drafting such cash budgets.

### **Instructions for Budgeting Other Inflows**

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- Determine income related to the sale of fixed assets
- Estimate bank interest due during the month
- Calculate interest due during the month for securities such as treasury notes
- Calculate dividends due from investment securities held by the enterprise
- Determine any other known income (subsidiaries, grants, new capital)
- Sum the above amounts to get the total of other cash inflows

### **Instructions for Budgeting Other Outflows**

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- Calculate expected expenditures for fixed asset purchases
- Calculate interest payments on outstanding loans due during the period. Each individual loan should be calculated separately by multiplying the outstanding principal by the monthly rate of interest, or according to the specific loan terms if there are special circumstances.
- Determine if the enterprise will make any repayment of loan principals during the period. Sum the repayment amounts for individual loans to get the total of loan repayments during the period.
- Calculate the amount of any stock dividend payments to be made during the month. The total amount of dividend payments is determined by multiplying the number of shares by the amount of the dividend.
- Estimate social asset expenditures for the period. Often social asset expenditures are incorporated into overhead calculations, but such expenses are not truly operational.
- Determine if there are any other outflows not covered in the above areas.
- Sum the above items to get the total of other outflows for the period

## Creating a Cash Budget Summary

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Total Inflows from Operations	
Total Outflows from Operations	- _____
Net flows from operations	= _____
Total Other Inflows	+ _____
Total Other Outflows	- _____
Net Cash Flow	= _____
Cash at Period Start	+ _____
Shortage/Surplus	= _____

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### **Instructions for Creating a Cash Budget Summary (1)**

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- Collect the results of the previous worksheets.
- Work on a month-by-month basis if budgeting for more than one month
- Begin with the sum of Operations Inflows for the first budget month. This number represents all income expected during the month related to the enterprise's main operations (i.e., buying, selling, manufacturing, and processing goods). Some of this income is related to the operations of previous and future months.
- Next, subtract all of the expenses related to the enterprise's main operations which will be paid during the month. Again, some of these expenditures will be incurred in other periods, but the period of the payment is what is important.
- The result is the net cash flow from operations
- Next, add to the above number the total of other inflows. These are inflows related to the enterprise's investment and financing operations.
- Next, subtract the total of other outflows. These are expenditures which are related to the enterprise's investment and financing operations.

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### Instructions for Creating a Cash Budget Summary (2)

- The result of the preceding calculations represents the net cash flow for the enterprise during the budget period.
- Next, determine how much cash will be available at the beginning of the budget period.
- Add the figures for "net cash flow" and "cash at period start."
- If the sum is greater than 0, then the enterprise will be able to meet its requirements for the budget period (assuming that all estimates are correct).
- If the sum is less than 0, then the enterprise will need to find a way to make up the difference.