CASH & WORKING CAPITAL OPERATING CYCLES

- **Working capital operating cycle** is the length of time taken to convert an item of working capital from one stage to another in the process of generating cash.
- Gross working capital means the current Asset
- Net working capital means current Asset − current liabilities
- The period taken to convert working capital is known as turnover period

- **Cash operating cycle** is the length of time taken to convert cash into stock of raw material or finished goods up to the time it is obtained back as cash.
→ therefore cash operating cycle or cash conversion cycle refers to the net working capital

Aims of determining Cash Conversion cycles (Importance)

1. To assess the amount of working capital required during the period cash is tied up in working capital items
2. To assess the performance of the company in the areas of stock conversion, debtors collection period & creditors payment period.
3. To determine the performance of management in working capital management.

The W.C operating cycle is classified into depending on the industry in which the company operates as follows

(a) Non-manufacturing firms / Trading firms
(b) Manufacturing firms

(a) Non-Manufacturing firms

In this case, the operating cycle will only take into account, stock turnover period, debtors turnover period and creditors payment period

Operating cycle = Gross working capital cycle = Stock holding period + Debtors collection period in days

Cash conversion cycle = Net working capital cycle = Stock period + Debtors collection period − Creditors payment period in days.

June 2007 Q1

(a) The following information was extracted from the books of Shama Ltd as at 31 Dec 2006.

Trade debtor Balance (31 Dec 2006)	sh 10 million.
Trade creditor Balance (31 Dec 2006)	sh 3 million.
Sales for the year	sh 80 million.
Purchase for the year	sh 60 million
Gross profit margin	25%
Inventory turnover	4.8 times

All sales and purchases were on credit. Assume a 360-day year

Required.

(i) Operating cycle. (4mks)

(ii) Cash conversion cycle. (2mks)

Solution.

Stock holding period $= \frac{360 \times \text{Avg Stock}}{\text{cost of sales}}$ OR $\frac{\text{No of days in a year}}{\text{Stock turnover}} = \frac{360}{4.8} = 75$ days

Debtors collection period $= \frac{360 \times \text{Avg debtors}}{\text{Credit sales}} = \frac{360 \times 10}{80} = 45$ days

Creditors payment period $= \frac{360 \times \text{Avg creditors}}{\text{Credit purchases}} = \frac{360 \times 3}{60} = 18$ days

i) operating cycle

= Stock period + Debtors period

$75 + 45 = 120$ days

ii) Cash Conversion Cycle = Stock period + Debtors period - Creditors period

$75 + 45 - 18 = 102$ days

June 2011 Q1c

You are given the following financial statement information for Moto Ltd for the year ended 31 Dec 2010.

Item	Beginning sh000	sh000	Ending sh000
Inventory	17,340		15,960
Receivables	42,240		37,250
Payables	35,510		23,370
Net sales		120,000	
Cost of goods sold		92,000	

Required:

The operating and cash conversion cycle assuming 360 days year (10mks)

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Solution.

1) Stock holding period $= \frac{360 \times \text{Avg stock}}{\text{cost of sales}} = \frac{360 \times 16650}{92000} = 65$ days

Avg stock $= (17340 + 15960) \div 2 = 16650$

Debtors collection period $= \frac{360 \times \text{Avg debtors}}{\text{Credit sales}} = \frac{360 \times 39745}{120,000} = 119$ days

Avg debtors $= (42240 + 37250) \div 2 = 39745$

Creditors payment period $= \frac{360 \times \text{Avg Creditors}}{\text{purchases}} = \frac{360 \times 31440}{90620} = 125$ days

Avg creditors $= (35510 + 27370) \div 2 = 31440$

Cost of sale $= OS + P - CS$

$P = COS + CS - OS$

$= 92000 + 15960 - 17340 = 90620$

Operating cash cycle $= 65 + 119 = 184$ days

Cash Conversion cycle $= 65 + 119 - 125 = 59$ days

Assign = Dec 2009 Q3b

(b) Manufacturing companies

Cash Conversion cycle = Raw material Conversion period + work in progress Conversion period + Debtors collection period + Stock Holding period − Creditors payment period

Raw Material Conversion period $= \frac{\text{No of days in a year} \times \text{Avg Raw Material}}{\text{purchase of raw material}}$

WIP Conversion period $= \frac{\text{No of days in a year} \times \text{Avg WIP}}{\text{usage of raw material OR cost of production}}$

Nov 2016 Q3b

Stock holding period $= \frac{365 \times 26000}{1050,000} = 9$ days

Debtors collection period $= \frac{365 \times 48000}{1600,000} = 11$ days

Raw Material conversion period $= \frac{365 \times 32000}{1032000} = 11$ days

Work in progress Conversion period $= \frac{365 \times 35000}{440,000} = 29$ days

Creditors payment period = 16 days (given)

Determining purchase of Raw Material

P = pdn cost + closing stock (Rm) - opening stock (Rm)

1000,000 + 32000 - 0 = 1032,000

operating cycle = 9+11+11+29 = 60 days

Cash conversion = 9+11+11+29-16 = 44 days

(ii) Working capital Requirement

WC = CA - CL

inventory + Debtors + Raw material + WIP - Creditors

26000 + 48000 + 32000 + 35000 - 47167 = 93,833

Avg creditors = $\frac{\text{Creditors days} \times \text{Credit purchases}}{\text{No of days in a year}} = \frac{16 \times 1076,000}{365} = 47167$

P = COS + CS - O.S

1050,000 + 26000 - 0 = 1076,000

Dec 2007 Q4b

The following information was extracted from the books of Changa Ltd at the end of the financial years ended 31. Oct 2006 and 2007

	2006 Sh000	2007 Sh000
Stock of Raw materials	40,000	60,000
Work in progress	10,000	18000
Finished goods stock	50,000	70,000
Trade debtors	140,000	180,000
Annual Sales	2000,000	2,200,000
Cost of production	1000,000	1050,000
Annual Cost of sales	1200,000	1250,000
Trade Creditors	110,000	100,000
Annual purchase of raw material	700,000	780,000

Required:

(i) Working capital cycle in days of Changa Ltd. (8mks)

ii) Explain 2 ways in which Changa Ltd might reduce working capital cycle (2mks)

$\frac{40+60}{2} = 50$

Solution:

	2006	2007
Raw material:	$\frac{365 \times 40{,}000}{700{,}000} = 21$ days	$\frac{365 \times 50{,}000}{780{,}000} = 23$ days
WIP	$\frac{365 \times 10{,}000}{1000{,}000} = 4$ days	$\frac{365 \times 14{,}000}{1050{,}000} = 5$ days
Stock.	$\frac{365 \times 50{,}000}{1200{,}000} = 15$ days	$\frac{365 \times 60{,}000}{1250{,}000} = 18$ days
Debtors	$\frac{365 \times 140{,}000}{2000{,}000} = 26$	$\frac{365 \times 160{,}000}{2200{,}000} = 27$ days
Creditors	$\frac{365 \times 110{,}000}{1250{,}000} = 32$ days	$\frac{365 \times 105000}{1270{,}000} = 30$ days

$P = cos - cs + os$

$1200{,}000 + 50{,}000 - 0 = 1250{,}000$ | $1250{,}000 + 70{,}000 - 50{,}000 = 1270{,}000$

$2006 = 21 + 4 + 15 + 26 - 32 = 34$ days

$2007 - 23 + 5 + 18 + 27 - 30 = 43$ days

(ii) means of reducing working capital cycle.

1 Reduce credit period given to customers which will reduce average collection period.

2 Giving cash discount which will help to improve average collection period.

3 Better negotiation with supplier so as to improve/increase credit period will reduce operating cycle

4 Streamline the process of manufacturing so as to reduce raw material conversion period.

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FINANCIAL FORECASTING.

This involves the determination of financial requirement of the company in advance

Importance of financial forecasting.

1. It forces the managers to plan in advance and allocate resources efficiently.
2. It help the mgnt to avoid surprises which might occur in the course of operations. eg if there is any cash deficit.
3. Its used for control purposes i-e to enhance the control of expenses to avoid wastage during operations.
4. Its used for motivation purposes . Since managers and workers are aware of what is expected of them, they will work to achieve the objective of the company.

Methods of financial forecasting

The key method include:

1. Percentage of sale Method.
2. Cash Budget

1. Percentage of sales Method.

This method involves the following steps

1. Identify Balance sheet items which varies as sales varies. This will include:
   a) Non-current Asset
   b) current Assets
   c) Current Liabilities
   d) Retained Earnings
2. Express the various balance sheet items which varies with sales as a percentage of sale.
3. Determine the to financial requirement by multiplying with incremental sales of percentage of sales.
4. Compute the external financial requirement during the forecasting period as follows

Increase in fixed Asset	XX
Increase in current Asset	XX
Total financial requirement	XX
less: Increase in current liabilities	(XX)
less: Increase in retained Earnings	(XX)
External financial requirement	XX

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June 2010 Q2b

The following statement of financial position relates to Magazzi Ltd as at 31 Dec 2009.

	Sh million	Sh million
Fixed Asset (NBV)		13
Current Assets		
Stock	3	
Debtor	2	
Current liabilities		
Creditors	(6)	(1)
		12
Financed by		
Ordinary share capital		4
Retained Earnings		6
Long term debt		2
		12

Additional information

1. Sales in the year ended 31 Dec 2009 amounted to sh 20 million. The sales for the current year ending 31 Dec 2010 are expected to increase by sh 4 million.
2. The net profit margin and retention ratio for the year ended 31 Dec 2009 were 8% and 30% respectively. These ratios are expected to be maintained in the foreseeable future.
3. All assets and current liabilities are expected to change in the current year ending 31 Dec 2010 at the same percentage as the changes in sales.

Required:

(i) The amount of external financial requirement for the year ended 31 Dec 2010 (4mks)

(ii) Proforma statement of financial position as at 31 Dec 2010 (6mks)

Solution:

External financial requirements

Fixed Assets	$(13 \div 20)100\% = 65\% \times 4$	2.6
Stock	$(3 \div 20) \times 100\% = 15\% \times 4$	0.6
Debtors	$(2 \div 20) \times 100\% = 10\% \times 4$	0.4
Creditors	$(6 \div 20) \times 100\% = 30\% \times 4$	(1.2)
Retained Earning	$24 \times 8\% \times 30\%$	(0.576)
External financial requirement		1.824

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(ii) Mayenzi Ltd

Proforma statement of financial position as at 31 Dec 2010

Assets		
Fixed Assets	13+2.6	15.6
Current Assets		
Stock	3+0.6	3.6
Debtor	2+0.4	2.4
Current liabilities		
Creditors	6+1.2	(7.2)
		14.4
Financed by		
ordinary share capital		4
Retained Earning	(6+0.576)	6.576
long term debt		2
External financial requirement		1.824
		14.4

NOV 2016 Q Q3a

(i)

incremental sales

plant & machinery	31200÷120000 x100% = 26% x 12000 =	3120
Furniture & fittings	18720÷120000x100% = 15.6% x 12000 =	1872
Motor vehicle	12480÷120000x100% = 10.4% x 12000 =	1248
Inventory	19200÷120000x100% = 16% x 12000 =	1920
Receivables	14400÷120000x100% = 12% x 12000 =	1440
Cash and Bank	3600÷120000x100% = 3% x 12000 =	360
Account payable	18000÷120000x100% = 15% x 12000 =	(1800)
Accrued expenses	12000÷120000x100% = 10% x 12000 =	(1200)
Retained profit	132000x 15% x 20%	(3960)
	External financial requirement	3000

Expected sales = 120000 x 110% = 132000

Incremental sales = 132000 - 120000 = 12000

Profit margin = $\frac{\text{Net profit}}{\text{Sales}} = \frac{18000}{120000} \times 100\% = 15\%$

(ii) Georgina Ltd

Statement of financial position

As at 31 Dec 2016.

Non-current Assets			**Financed by**	
Plant & machinery	31200 + 3120)	34320	ordinary share capital	42000
Fixtures & fittings	18720 + 1872)	20592	Retained profit 17600+3960	21560
Motor vehicle	12480 + 1248)	13728	Debenture Capital	10000
Current Assets			External financial requirement	3000
Inventory	19200 + 1920)	21120	**current liabilities**	
Receivables	14400 + 1440)	15840	Account payable 18000+1800	19800
Cash & Bank	3600 + 360)	3960	Accrued expenses 12000+1200	13200
		109,560		109560

Nov 2011 Q 4(a)

(i)

N·CA	187200 ÷ 360000 × 100% = 52% × 136800 =	71136
Inventory	57600 ÷ 360000 × 100% = 16% × 136800 =	21888
Receivables	43200 ÷ 360000 × 100% = 12% × 136800 =	16416
Cash	10800 ÷ 360000 × 100% = 3% × 136800 =	4104
Payables	54000 ÷ 360000 × 100% = 15% × 136800 =	(20520)
Accrued expenses	36000 ÷ 360000 × 100% = 10% × 136800 =	(13680)
Retained profit		(14572.8)
		64771.2

Expected sales

2012 = 360000 × 115% = 414000

2013 = 414000 × 120% = 496800

Incremental sales = 496800 − 360000 = 136800

Retained Earnings

2012 = 414000 × 8% × 20% = 6624

2013 = 496800 × 8% × 20% = 7948.8

14572.8

(ii)

Swere Ltd

Proforma statement of financial position as at 30 June 2013

		Sh000
Non-current Asset (187200 + 71136)		258336
Current Assets		
Inventory	(57600 + 21888)	79488
Receivables	(43200 + 16416)	59616
Cash	(10800 + 4104)	14904
		412344
Financed by		
Ordinary share capital		126000
Retained Earnings (52800 + 14572.8)		67372.8
12% Long term debt		30000
Commercial paper		64771.2
Current liabilities		
Trade payable (54000 + 20520)		70520
Accrued expenses (36000 + 13680)		49680
		412344

Assign Nov 2020 Q

June 2008 Q 1b

Assumptions / limitations of % of sale method:

1. It assumes that the company is operating at full capacity.
2. It ignores the inflation in the economy.
3. It ignores the time value of money
4. The corporate tax rate does not change during the period under analysis
5. The relationship between various Balance sheet item & sales remains constant.

2. CASH BUDGET

- This is a statement showing the sources of cash within a specified period and how this cash is used within the same period.
- This statement only record cash inflows and cash payments.
- Non-cash items like depreciation, provisions for bad debt are not recorded in the cash budget.

Functions of cash budget

1. It ensures that cash is available for the revenue expenditure.
2. It indicates when and how much cash will be required for a particular activity either on permanent or temporary basis.
3. It preserves liquidity during the period of expenditure.
4. It reveals the cash surplus for investment.
5. Used for planning purposes
6. Coordinating activities in the organization.
7. Controlling of finances in the organization.
8. It guides the mgnt on the financing of capital expenditure.

Ways of financing cash deficit:

1. Borrowing eg bank loans
2. Bank overdraft
3. Sell of securities
4. Sale of fixed Assets
5. Acquiring goods on credit
6. Insisting on cash sales

Illustrations

Dec 2006 Q 3b

You are a trainee in the finance department of Baraka Ltd. The head of department has requested you to assist in preparation of a cash budget for the month of Jan, feb and March 2007.
The Actual revenue and cost for the months of Sep, Oct & Nov 2006 and the estimated amounts for Dec 2006, Jan, feb, march, April 2017 are shown below

Months	Sales	wages	Material purchases	overheads
Year 2006	Sh000	Sh000	Sh000	Sh000
Sep	3000	600	2000	1000
Oct	4000	800	3000	1200
Nov	6000	1000	2500	1600
Dec	5000	900	3500	1400
Year 2007				
Jan	7000	1200	3000	1800
Feb	6000	1000	2500	1600
March	5000	900	2500	1400
April	5000	900	3000	1400

Additional Information

1. It is expected that the cash balance on 31 Dec 2006 will be sh 2200,000

2 Overdraft facilities are available if and when required.
3 The Company pays the wages on the last day of the month in which they accrue.
4. It is the Company's policy to pay creditors three months after receipt of the supplies.
5 10% of the monthly sales are for cash while the balance are sold on credit. Debtors are expected to pay two months after delivery of the goods
6. Included in overheads is sh 200,000 per month representing depreciation on motor vehicle. There is a one month delay in paying overhead expenses
7. A commission of 5% is paid to sales agent on all sales on credit. The payment of commission is made in the month following that of sale. This commission is not included in overhead expenses
8. Delivery is expected in February 2007 for a new machine costing sh 4500,000 of which sh 1500,000 will be paid on delivery and sh 1500,000 in each of the following two months

Required:
A cash budget for the months of Jan, Feb & March 2007 (14 Mks)

Solution:
Workings

	S	O	N	D	J	F	M	A
Sales → cash sales	300	400	600	500	700	600	500	500
Credit sales	2700	3600	5400	4500	6300	5400	4500	4500
Receipt from debtors	—	—	2700	3600	5400	4500	6300	5400
Purchases								
Payment	—	—	—	2000	3000	2500	3500	3000
Commission 5%	135	180	270	225	315	270	225	225
Payment	—	135	180	270	225	315	270	225

Baraka Ltd.
Cash Budget statement for the month of

		January	February	March
Inflows				
Sales – cash		700	600	500
– credit		5400	4500	6300
Total inflows	(A)	6100	5100	6800
Outflows				
Purchases		3000	2500	3500
Wages		1200	1000	900
Overheads		1700	1600	1400
Commission		225	315	270
Purchase of machine		—	1500	1500
Total outflows	B)	5625	6915	7570
Net Cashflows	(A−B)	475	(1815)	(770)
Balance b/d		2200	2675	860
Balance c/d		2675	860	90

May 2017 Q39.

Workings

	sep	oct	Nov	Dec
Sales - within the month.	30	30	35	45
Receivable	29.4	29.4	34.3	44.1
→ After one month.	—	30	30	35
purchases payment	—	20	40	40
wages	12	15	17	13
Rent	10	—	—	10

Tsuma Enterprise

Cash Budget statement for the month of

	October	Nov	Dec
Inflows			
Sales - within month.	29.4	34.3	44.1
→ After one month	30	30	35
Total inflows (A)	59.4	64.3	79.1
outflows			
purchase	20	40	40
wages	15	17	13
Rent	—	—	10
Overheads	2	2	2
Plant purchase	–	25	—
Total outflow (B)	37	84	65
Net cashflows (A-B)	22.4	(19.7)	14.1
Balance b/d	10	32.4	12.7
Balance c/d	32.4	12.7	26.8

AUGUST 2024 Q 4C

Workings

	J	A	S	O	N	D
Sales - 130X40	5200	6000	6800	7600	7200	7200
cash sales (5%)	260	300	340	380	360	360
Credit sales (95%)	4940	5700	6460	7220	6840	6840
Cash receipt on credit sales	—	4940	5700	6460	7220	6840
Wages sh40 per unit	1400	1500	1800	2000	2200	2200
payable within the month 75%	1050	1125	1350	1500	1650	1650
one month credit 25%	350	375	450	500	550	550
payment	—	350	375	450	500	550
Material cost	700	750	900	1000	1100	1100
Material payment	—	—	700	750	900	1000

Faidika enterprises cash budget for the months of:

	Sep	Oct	Nov	Dec
INFLOWS				
Sales → cash	340	380	360	360
→ credit sales receipt	5700	6460	7220	6840
Disposal proceed of MV	—	—	300	—
Total inflows (A)	6040	6840	7880	7200
Outflows				
Wages - within the month	1350	1500	1650	1650
- one month payment	375	450	500	550
Material costs	700	750	900	1000
Variable OH (sh6)	1080	1200	1320	1320
Fixed OH [700-100]	600	600	600	600
Tax	—	1400	—	—
Purchase of new van	2000	—	—	—
Total outflows (B)	6105	5900	4970	5120
Net cashflows A-B	(65)	940	2910	2080
add: opening cash bal	1000	935	1875	4785
closing cash balance	935	1875	4785	6865