How to Understand the Impact of Business Improvement on Financial Measures

Value Chain Competitiveness (VCC)

Version: 2

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Scope

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This how-to will enable you to:

- Gain a basic understanding of traditional accounting statements
- Understand how Business Improvement activities affect financial results and impact traditional accounting

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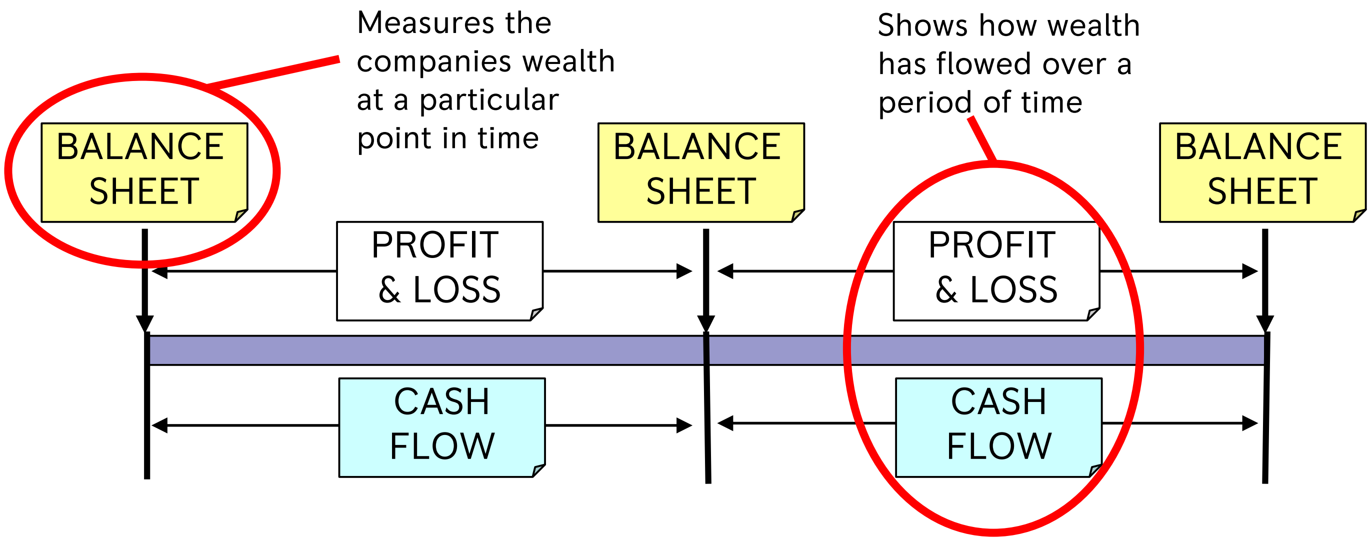
Understand financial reporting & behaviour

Financial Statements: There are three traditional accounting statements you can expect to come across. Most companies produce these statements annually.



These statements form the most important part of a companies annual report but to get a complete understanding it may also be necessary to look at footnotes

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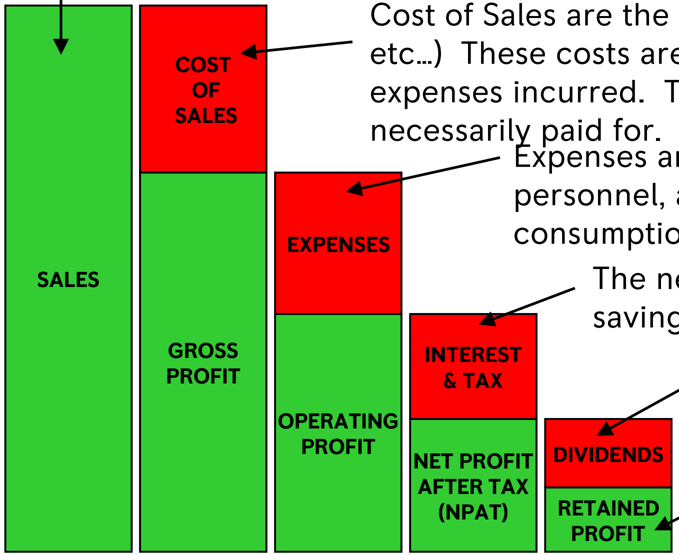
Profit and loss summary

PROFIT & LOSS

The Profit and Loss statement relates income earned in a period to the costs and expenses incurred in generating that income. Basically, 'How well is the business doing?'

NOTE - Sales may not match cash flow in the same period as many companies offer credit



Cost of Sales are the Direct costs incurred in making the product (e.g. labour, material etc…) These costs are based on consumption in the period and not on actual cash expenses incurred. To be included the resource must have been consumed and NOT necessarily paid for.

Expenses are other costs associated with running the business (e.g. non direct personnel, admin, depreciation etc.). As with Cost of Sales these must be based on consumption, not cash expenses incurred.

The net position of interest payable on borrowings, and received on any savings, after which tax is calculated and deducted

The Dividend is payable to shareholders.

This is what's left! Remember though, this may not be reflected in real cash. This value gets entered into the Balance Sheet and provides the link between the reports.

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Profit and loss - example

PROFIT & LOSS

Report covers a period of time – in this example, a year

PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED 31ST DECEMBER		YEAR 1
	£(M)	£ (M)
TURNOVER (SALES)		576
COST OF SALES		(307)
GROSS PROFIT		269
DISTRIBUTION COSTS	(65)	
ADMINISTRATIVE EXPENSES	(26)	*(91)*
		178
OTHER OPERATING INCOME		21
		199
INTEREST RECEIVABLE AND SIMILAR INCOME		17
		216
INTEREST PAYABLE AND SIMILAR CHARGES		(23)
		193
TAX ON PROFIT OR LOSS ON ORDINARY ACTIVITIES		(46)
PROFIT ON ORDINARY ACTIVITIES AFTER TAXATION		147
RETAINED PROFIT BROUGHT FORWARD FROM LAST YEAR		16
		163
TRANSFER TO GENERAL RESERVE	(60)	
PROPOSED DIVIDEND ON ORDINARY SHARES	(50)	*110*
RETAINED PROFIT CARRIED FORWARD		53

Gross profit

Operating profit

Net Profit after Tax

Retained profit – carry over onto Balance Sheet

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The balance sheet

BALANCE SHEET

The Balance Sheet reflects a snapshot of the companies financial affairs at a particular moment. It shows where the money in the business came from and how it has been used to acquire company assets.

TOTAL ASSETS		TOTAL LIABILITIES
CURRENT ASSETS Raw Materials Work In Progress Finished Goods Debtors Cash in the Bank	=	CURRENT LIABILITIES Short Term Loans Creditors LONG TERM LIABILITIES Long Term Loans
FIXED ASSETS Land Buildings Plant & Machinery Fixtures & Fittings Vehicles		OWNERS EQUITY Share Capital Retained Earnings

Expressed as an equation the Balance Sheet shows:

Current Assets + Fixed Assets = Current Liabilities + Long Term Liabilities + Owners Equity

You may sometimes see Working Capital split out

Working Capital = Current Assets – Current Liabilities

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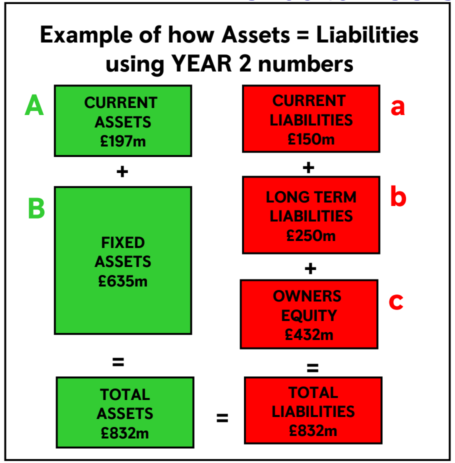
The balance sheet - example

BALANCE SHEET AS AT 31ST DECEMBER YEAR 1 AND YEAR 2

	YEAR 1 £(M)		YEAR 2 £ (M)
FIXED ASSETS			
INTANGIBLE ASSETS:			
PATENTS AND TRADEMARKS	44		37
TANGIBLE ASSETS:			
LAND AND BUILDINGS	241		310
PLANT AND MACHINERY	110		*125*
FIXTURES, FITTINGS, TOOLS AND EQUIPMENT	155		163
	550	B	635
CURRENT ASSETS			
STOCKS	44		41
DEBTORS:			
TRADE DEBTORS	115		123
PREPAYMENTS AND ACCRUED INCOME	6		16
CASH AT BANK AND IN HAND	2		17
	167	A	197
CURRENT LIABILITIES			
BANK OVERDRAFT	14		-
TRADE CREDITORS	44		39
CORPORATION TAX	32		46
DIVIDEND PROPOSED	40		50
ACCRUED EXPENSES	11		15
	141	a	150
NET CURRENT ASSETS (WORKING CAPITAL)	26		47
TOTAL ASSETS LESS CURRENT LIABILITIES	576		682
LONG TERM LIABILITIES			
LOAN	400	b	250
	176		432
OWNERS EQUITY			
CALLED UP ORDINARY SHARE CAPITAL	150		200
SHARE PREMIUM ACCOUNT	-		40
REVALUATION RESERVE	-		69
GENERAL RESERVES	10		70
RETAINED PROFIT (FROM PROFIT AND LOSS)	16		53
	176	c	432



Includes this years and last years results as of a certain point in time (Dec 31st)

Working Capital calculation. Highlights the liquidity of the business.

Retained Profit: This figure is carried over from the Profit and Loss Account

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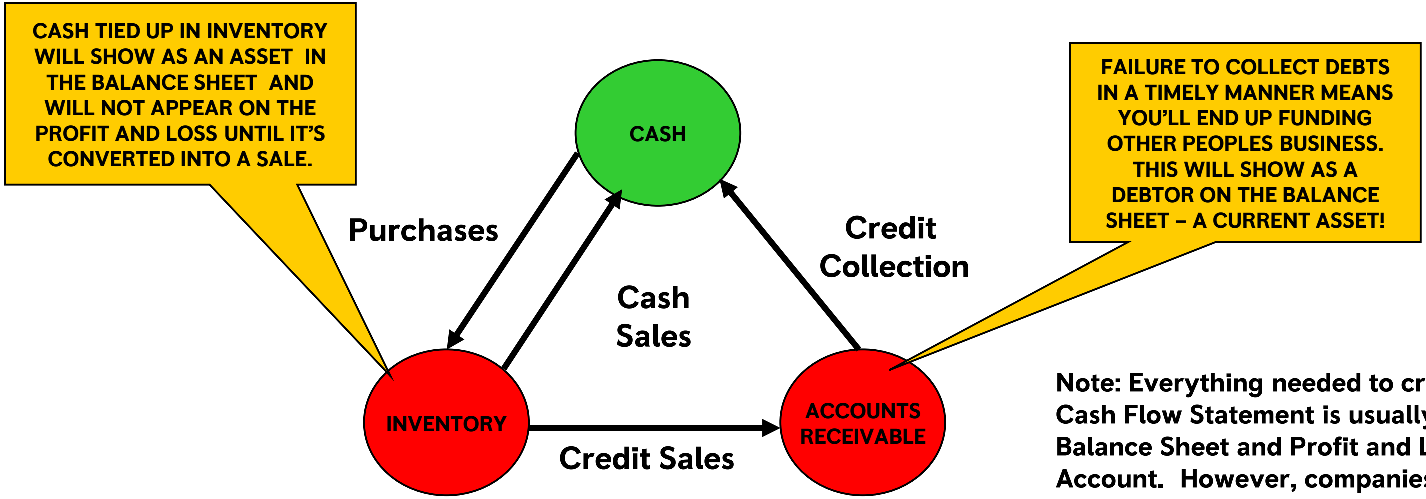
Cash flow statement

CASH FLOW

The Cash Flow Statement breaks down the flow of money in and out of the business. Cash is the oxygen of any operation, as without it the business can't buy the things it needs to carry on working. Remember, Profit is NOT the same as Cash!



CASH FLOW CYCLE

Note: Everything needed to create a Cash Flow Statement is usually on the Balance Sheet and Profit and Loss Account. However, companies produce them as part of their Annual Reports anyway.

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CASH FLOW STATEMENT FOR THE YEAR ENDED 31ST DECEMBER YEAR 2

	£(M)	£ (M)
NET CASH INFLOWS FROM OPERATING ACTIVITIES		262
RETURNS FROM INVESTMENT AND SERVICING OF FINANCE		
INTEREST RECEIVED	17	
INTEREST PAID	(23)	
NET CASH OUTFLOW FROM RETURNS ON INVESTMENT AND SERVICING OF FINANCE		(6)
TAXATION		
CORPORATION TAX PAID	(32)	
NET CASH OUTFLOW FOR TAXATION		(32)
CAPITAL EXPENDITURE		
PAYMENTS TO AQUIRE TANGIBLE FIXED ASSETS	(95)	
NET CASH OUTFLOW FOR CAPITAL EXPENDITIRE		(95)
		129
EQUITY DIVIDENDS PAID		
DIVIDENDS PAID	(40)	
NET CASH OUTFLOW FOR DIVIDENDS		(40)
		89
MANAGEMENT OF LIQUID RESOURCES		
FINANCING		
REPAYMENTS OF DEBENTURE STOCK	(150)	
ISSUE OF ORDINARY SHARES	90	
NET CASH OUTFLOW FOR FINANCING		(60)
NET INCREASE IN CASH		29

This figure is calculated as: Operating Profit (from the Profit and Loss Account)

Add

Depreciation (calculated from the changes in asset value on the Balance Sheet + any additions)

Less

Changes to short term debtors / creditors (from the Balance Sheet)

Add

Decrease in Inventory and increase in accrued expenses (from the Balance Sheet)

This will be the tax for YEAR 1 accounts as tax is paid 9 months after the end of the year

Will actually be the payment of the YEAR 1 Dividend in YEAR 2

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Analysing financial statements

Analysts use a variety of ratios and tests that help convert the numbers into useful information:

- Used to compare one company against another.
- Used to trend performance of a company over several accounting periods.
- Benchmark performance against industry averages.

There are 4 main types of ratios used:

Type	Liquidity	Profitability	Activity	Solvency (Coverage)
What does it measure?	How well can the business meet its short term obligations	How profitable the business is, relative to assets and revenue	How efficiently the businesses assets are being used	How well positioned is the business to repay all its debts
Ratios Used	Current Ratio, Quick (Acid) Test, Current Cash Debt Coverage Ratio	Gross Profit Margin, Profit Margin, Return on Assets, Return on Equity, Earnings per share, Price / earnings Ratio, Payout Ratio	Receivables Turnover, Inventory Turnover, Asset Turnover	Debt to Total Assets, Times Interest Earned, Cash Debt Coverage Ratio

This training will not cover all the ratios its possible to use, but formulae for calculating some of the most useful ones are included here.

Ratio	What does it tell us?	Formula to calculate
Current Ratio	Compares short term assets to liabilities and measures the companies ability to meet it's obligations	$\frac{\text{Current Assets}}{\text{Current Liabilities}}$
Quick Ratio	As for the Current Ratio but excludes Inventory as sometimes this can be hard to convert to cash quickly	$\frac{\text{Current Assets – Inventories}}{\text{Current Liabilities}}$
Profit Margin (Return on Sales) - %	Measures a companies efficiency in converting sales into a net income	$\frac{\text{Net Profit}}{\text{Sales (Revenue)}}$
Return on Assets - %	Measures a companies efficiency in utilising their assets to generate a net income	$\frac{\text{Net Profit}}{\text{Total Assets}}$
Inventory Turnover (Stock Turns) – No. of times	How many times a company sells and replaces its Inventory in a period, therefore, how efficiently they use their Inventory	$\frac{\text{Sales}}{\text{Inventory}}$

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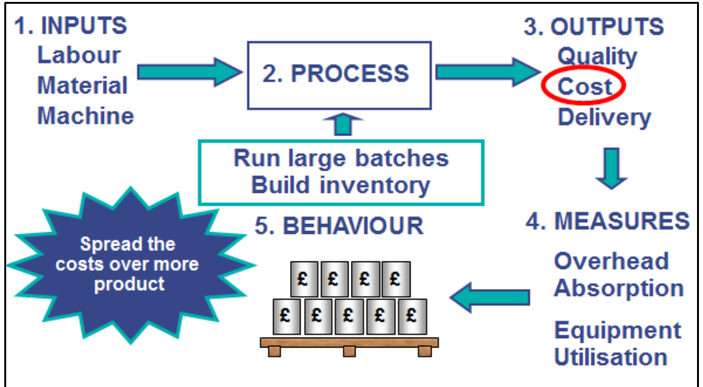
Accountancy and business improvement

The two different perspectives:

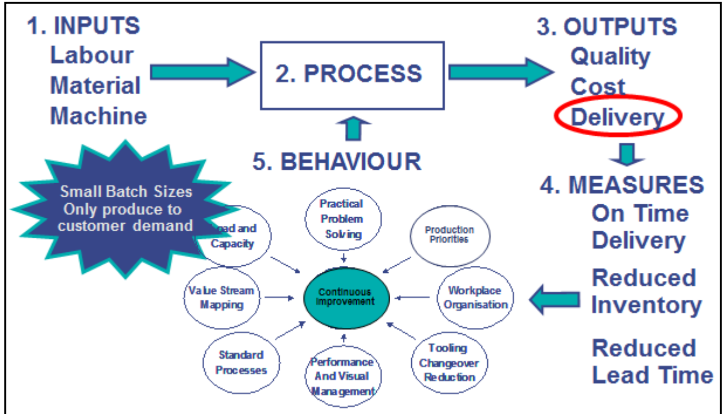
Accounting practices and Business Improvement objectives may drive managers to make decisions in different ways. Placing emphasis on different output measures can drive different behaviours associated with internal production and stock control.

Accountants



Traditional Accounting can drive the behaviour of running large batches which results in increased inventory

Business Improvement



Business Improvement supports Lean Manufacturing behaviours

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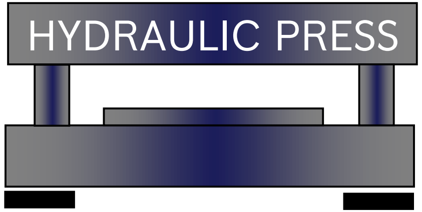
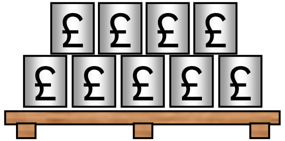
Example – Hydraulic Press

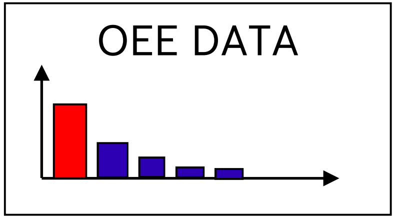
The initial reaction was to investigate buying a new Press which would have shorter cycle times to eliminate the bottleneck and reduce the cost per unit (according to traditional accounting.



- Bottleneck process
- High levels of WIP



The Business Improvement team started collecting OEE data which showed low availability and long set-up time. Set up reduction, kitting and 5S were implemented, resulting in improved availability and reduction in WIP.



- Overall Equipment Effectiveness (OEE)

On paper the new press might look like a good idea. It will have quicker cycle times allowing it to produce more product. Asset utilisation and overhead absorption measures will look great on the new press as product is pushed through.

This means unit cost will be reduced as the overhead costs are spread across more product.

But the new press would have been expensive and probably take months to source, build and commission.

The Business Improvement approach avoids the high capital investment cost of buying a new press and will allow the supplier to use the extra capacity they now have to burn off the WIP and potentially reduce batch size to reflect the customers order quantities.

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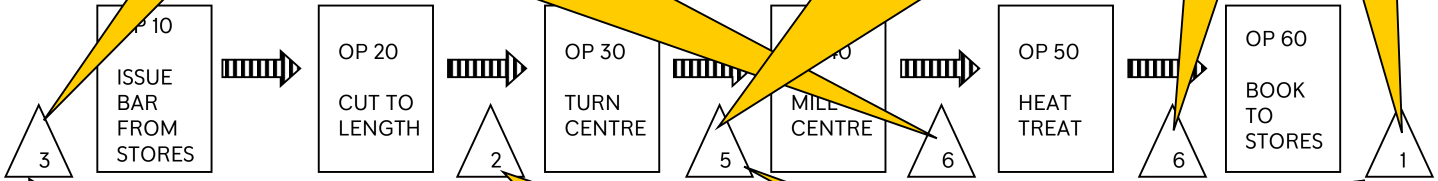
Inventory – Why do we need it?

Inventory is a result of the decisions made about how to run and measure your process. Accounting practices may make managers want to spread the costs of manufacturing over as much product as possible (within reason!) however lean thinking sees inventory as a waste to be eliminated. But there can be reasons for holding inventory, some of which are:

ECONOMIES OF SCALE DRIVE HIGHER BATCH SIZES AND INCREASED INVENTORY OFTEN FOR THE PURCHASE OF RAW MATERIAL AND SUB CON PROCESSES
E.G. BATCH SIZE OF 6 BASED ON FILLING HEAT TREAT OVEN.

QUALITY PROBLEMS TRIGGER STOCK TO BE HELD THROUGHOUT THE PROCESS TO ENSURE FULL ORDER QTY'S CAN BE SHIPPED TO THE CUSTOMER
E.G 80% YIELD FROM A PROCESS SO PLAN TO MAKE 5 FOR EVERY 4 FINISHED PARTS REQUIRED.



LONG LEAD TIMES MEAN RAW MATERIAL OR FINISHED PARTS STOCK IS HELD TO ENABLE A QUICK RESPONSE TO THE CUSTOMER
E.G. SPARES STOCK AT CUSTOMER.

OPS WITH DIFFERENT CYCLE TIMES AND BATCH SIZES REQUIRE BUFFER STOCKS INBETWEEN TO ENSURE FLOW CAN BE MAINTAINED
E.G. OP 20 HAS LONG CHANGE OVER TIME & REQUIRES LARGER BATCH SIZE THAN OP 30 – BUFFER IS REQ'D TO KEEP OP 30 WORKING

BUFFER STOCKS ARE PUT IN PLACE TO SAFEGUARD AGAINST DOWNTIME
E.G. OP 30 OFTEN BREAKS DOWN SO THERE'S PLENTY OF MATERIAL AT OP 40 SO THIS PROCESS DOESN'T STOP

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Inventory control & accounting

- The benefit of holding stock from an accounting perspective is that it appears as a current asset on the Balance Sheet because it can be turned into cash when it is eventually sold.
- Holding greater amounts of stock than is required by the business inflates the asset value and therefore perceived profitability.

- However, this position has to be balanced against the cost of holding stock.
- Holding costs such as warehousing, insurance, handling costs and obsolescence rise as the stock levels increase.

- The Inventory Turnover ratio is directly linked to Holding Costs: $\frac{\text{Sales}}{\text{Inventory}}$
- The greater the stock turn, the lower the holding costs.
- Reduced holding costs will increase profitability assuming the revenue remains constant.

- The ideal level of inventory has to balance the conflicting objectives of cost control and customer requirement.

- In many instances high levels of inventory exist in factories almost by accident or as a consequence of a short term decision. A decision to hold strategic buffer stocks of a known quantity in a specific location may not require a company to increase their overall inventory costs.

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Business Improvement application examples

1. Implementing strategic buffer stocks to improve delivery performance (to 100%)
   - Goods In inventory levels are set at a level proportionate to the disruption caused by historical poor delivery performance (safety stock).
   - Customer demand signal stabilises as delivery performance improves.
   - Focused to tackle the causes of poor performance (safety stock reductions).
   - Long term: Decreased overall inventory increases net cash. Sales increase and cost of holding stock are reduced.

2. Standardised small batch sizes
   - Varying batch sizes causing feast and famine material supply across the WIP locations, with constant manual intervention to manage the process and overtime working.
   - Implement standard batch of 3 with levelled mix and controlled launch / rules (FIFO).
   - Financially: Overtime reduction reduces costs and increased sales which increases cash and profitability. Reduced man hours per part reduces costs allocated to parts.

3. Set-up time reduction
   - Reducing set-up times allows a company to increase the amount of available time (capacity) of equipment.
   - Results: Increase product throughput increases sales. Reduced batch sizes match customer demand, which reduces inventory & lead times and increase flexibility.

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Business Improvement application examples

		Current State	Future State	Change
Operational	Lead Time			
	On Time Deliveries			
	Sales Per Person			
	Average Cost Per Unit			
Capacity	Productive			
	Non Productive			
	Available			
Financial	Inventory			
	Revenue			
	Material Cost			
	Maintenance			

Operational improvements create the opportunity to grow the business. Capacity increases can drive improved financial performance

Bring Financial and Delivery measures together to show the link between Operational and Company wide performance

Gate checklist: Understand the Impact of Business Improvement on Financial Measures

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- ☑ A basic understanding of traditional accounting statements is gained
- ☑ How Business Improvement activities affect financial results and impact traditional accounting is understood