UniSA

BUSINESS ENTERPRISE

Accounting For Decision Making

Topic 8

Budgeting and Control

Goals for this session…

- Explain the importance of budgeting and control processes in achieving the organisation's goals, including the role of the planning and control cycle;
- Identify the strategic and operational purposes for budgeting;
- Describe budgeting process;
- Outline the behavioural issues associated with budgeting;
- Describe the major features of budgets and control systems;
- Explain how the balanced scorecard can be used for measuring performance (and strategic management).

The planning and control cycle

Strategic Planning

- … a long-term planning process through which an organisation formulates a set of strategies it intends to implement to achieve its objectives

- Involves three types of strategic decisions:

  - ***Corporate*** *Strategy ("What business should we be in?")*

  - ***Competitive*** *Strategy ("How should we compete?")*

  - ***Operational*** *Strategy ("How should we organise our resources internally to achieve the goals of the organisation?")*

The Budget

- … a quantitative expression of a short-term plan of action
- Specifies how resources are used and acquired during a specified period of time (12 months)
- Identifies the financial implications of the activities planned for the coming year.

How do budgets link with strategy ?

Strategic Planning and Budgeting

- The budget must tie in with the long-term strategic plan of the organisation

- Many organisations will have particular programmes or strategic emphases for which resources must be provided in the budget.

Budgeting - a pivot for change

"the fundamental purpose of new management systems is to *link market values and strategy* more directly with *enterprise competencies and operations*. ... an important pivot point occurs within the process of planning and budgeting. This is where a resolution between strategy and operations finally takes place and resource allocation is decided."

"Advanced budgeting : a journey to advanced management systems"
Bunce, P., R. Fraser and L. Woodcock, MAR 1995

The Budget ~ A Means to an End or an End in itself?

- To *plan how to implement* strategies over the short term
- To *allocate* resources and coordinate actions
- To *communicate* the plans to managers at all levels
- To *control actual* performance (of managers and their units) *against planned* performance
- To *motivate* managers to achieve the plans

Strategic reasons for Budgeting…

- *Translating* strategy into a detailed action plan
- Assessing whether there are *sufficient resources* to implement defined strategies
- *Linking* economic goals with leading indicators/measures of strategic performance.

Budget variances

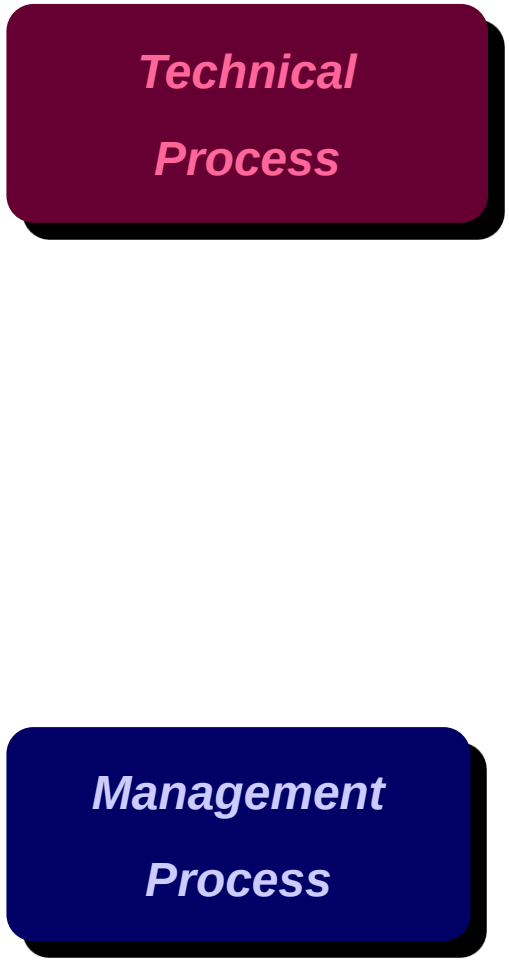
- Budgets are based on forecasts about the future, so **complete accuracy is impossible** and variances will occur:

- A **favourable variance** ('f') will occur when actual revenues > budgeted, or actual costs < budgeted.

- An **unfavourable variance** ('u') will arise when the actual revenue < budgeted, or actual costs > budgeted.

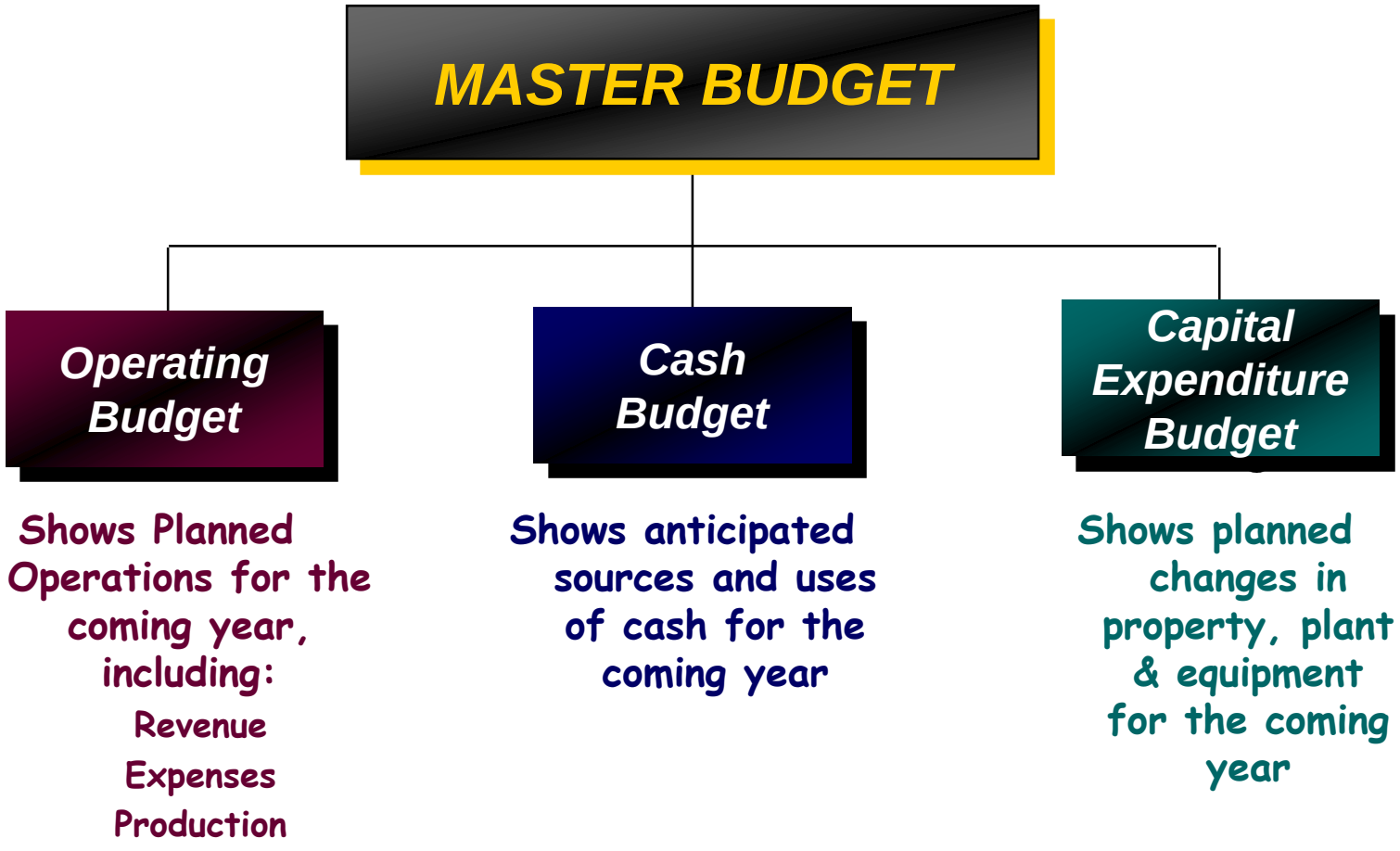
- Determining the underlying reasons for a budget variance is not a straightforward exercise.

Preparing the Budget



- Mechanics of the system
- Procedures for assembling budget data
- Budget Formats
- Procedure & format similar to preparation of Financial Statements
- Reflects future expectations rather than historical events
- Our focus!

Budget Components…



The Operating Budget

- *Revenue Budget:*
  - Summary of estimated revenues

- *Cost Budgets:*
  - Summary of estimated cost of operations
  - Can include:
    - Production budgets
    - Materials budgets
    - Labour budgets
    - Overhead budgets

The Cash Budget…

- Shows detailed expected cash receipts and planned cash payments

- Includes large cash inflows & outflows
  - Eg: borrowings, sale of assets

- Considers timing of cash inflows & outflows, therefore reveals when shortages & surpluses are expected to occur.

Example of a Cash Budget

Ainsworth Enterprises has provided the following estimates relating to the first quarter of 2014:

Cash sales	$46000
Credit sales	92400
Receipts from debtors	71500
Cash payments:	
Wages	54000
Office furniture	12600
Utilities expenses	3800
Administrative expenses	14100
Depreciation on office furniture	315
Receipt of loan	15000
Credit purchases	65600
Payments to creditors	52900

The cash balance at 1 January 2014 was $11 250.

Prepare a cash budget for the quarter ending 31 March 2014.

Example of a Cash Budget

AINSWORTH ENTERPRISES
Cash budget
for first quarter ending 31 March 2014

Cash receipts		
Cash sales	46 000	
Receipts from debtors	71 500	
Receipt of loan	15 000	132 500
Cash payments		
Wages	54 000	
Office furniture	12 600	
Utilities	3 800	
Administrative expenses	14 100	
Payments to creditors	52 900	137 400
Net cash flow		$(4 900)
Bank balance at 1 January 2014		11 250
Bank balance 31 March 2014		**6 350**

Schedule of receipts from debtors/ accounts receivable

- For an entity that provides goods or services on credit, one of the main tasks in the preparation of a cash budget is the calculation of the cash receipts from the sales or fees generated

- This is commonly shown in a ***schedule of receipts from debtors/accounts receivable***.

Example of a Schedule of receipts from debtors/accounts receivable: XYZ Co

2014 estimates

	Quarter ending			
	31 March	30 June	30 September	31 December
Sales revenue	$600000	$700000	$800000	$850000
Purchases	385000	410000	390000	420000
Cost of sales	300000	350000	400000	425000
Marketing and administration expenses	150000	150000	150000	150000
Occupancy expenses	68000	68000	68000	68000
Depreciation expense	12500	12500	12500	12500

Example of a Schedule of receipts from debtors/accounts receivable

Additional information:

- Sales in the December quarter 2013 were $500 000
- All sales are on credit, of which 70 per cent are collected in the quarter of sale and 30 per cent in the following quarter
- Purchases are on credit, and entity policy is such that all purchases are paid for in the same quarter
- The marketing and administration expenses incurred and paid the same (i.e. paid in the same quarter as they are incurred)
- Occupancy expenses incurred and paid are the same, except that the December quarter does not include the last month's electricity usage, equal to $510
- A major IT hardware acquisition of $25 400, to be paid for in cash, is expected in the December quarter
- The bank balance at 31 December 2013 was $18 260.

Example of a Schedule of receipts from debtors/accounts receivable

a. A schedule of receipts from debtors

Sales	*Mar.*	*Jun.*	*Sept.*	*Dec.*
Dec. ($500,000)	$150,000			
(2013)	*(30%)*			
Mar. ($600,000)	420,000	$180,000		
	(70%)	*(30%)*		
Jun. ($700,000)		490,000	210,000	
		(70%)	*(30%)*	
Sept. ($800,000)			560,000	240,000
			(70%)	*(30%)*
Dec. ($850,000)				595,000
				(70%)
Total	$570,000	$670,000	$770,000	$835,000

Example of a Schedule of receipts from debtors/accounts receivable

b. Cash budget

Cash budget

for 12 months ended 31 December 2014

	Mar.	Jun.	Sept.	Dec.
Cash receipts				
Receipts from debtors	570 000	670 000	770 000	835 000
Total receipts	**570 000**	**670 000**	**770 000**	**835 000**
Cash payments				
Payments to creditors	385 000	410 000	390 000	420 000
Marketing and Administration	150 000	150 000	150 000	150 000
Occupancy	68 000	68 000	68 000	67 490
IT equipment				25 400
Total Payments	**603 000**	**628 000**	**608 000**	**662 890**
Net cash flow	(33 000)	42 000	162 000	172 110
Bank balance at start of month	18 260	(14 740)	27 260	189 260
Bank Balance at end of month	(14 740)	27 260	189 260	361 370

Additional requirement: prepare a variance report.

At the end of March, the actual figures collected were as follows: $588,000 receipts from debtors; $382,000 purchases; $153,000 marketing and administrative expenses; $67,000 occupancy expenses.

Cash Budget Variance Report for March

	Mar. budget	Mar. actual	Variance
Cash receipts			
Receipts from debtors	570 000	588 000	18 000(f)
Total receipts	570 000	588 000	18 000(f)
Cash payments			
Payments to creditors	385 000	382 000	3 000(f)
Marketing and Administration	150 000	153 000	3 000(u)
Occupancy	68 000	67 000	1 000(f)
Total Payments	603 000	602 000	1 000(f)
Net cash flow	(33 000)	(14 000)	19 000(f)
Bank balance at start of month	18 260	18 260	
Bank Balance at end of month	(14 740)	4 260	19 000(f)

The Capital Expenditure Budget…

- Plan for the acquisition and disposal of fixed assets (buildings, plant & equipment)

- Shows the estimated cost of each project and the timing of the related expenditures

- Evaluation of Capital Projects to be covered in our next session.

Budgeting terminology…

- Static budgets
  - *Annual budget is a static budget*
  - *Static budgets provide a poor basis for control*

- Flexible budgets
  - *Flexible budgets are budgets that reflect a range of different activity levels*
  - *Flexible budgets provide a better basis for control.*

More budgeting terminology

- Zero base budgeting
  - *Works from a base of zero, in setting budgeted amounts for the coming year*
  - *Managers must justify every activity they want funded*
- Program budgeting
  - *Budget allocations made by program*
  - *Control achieved through the identification and monitoring of program objectives*

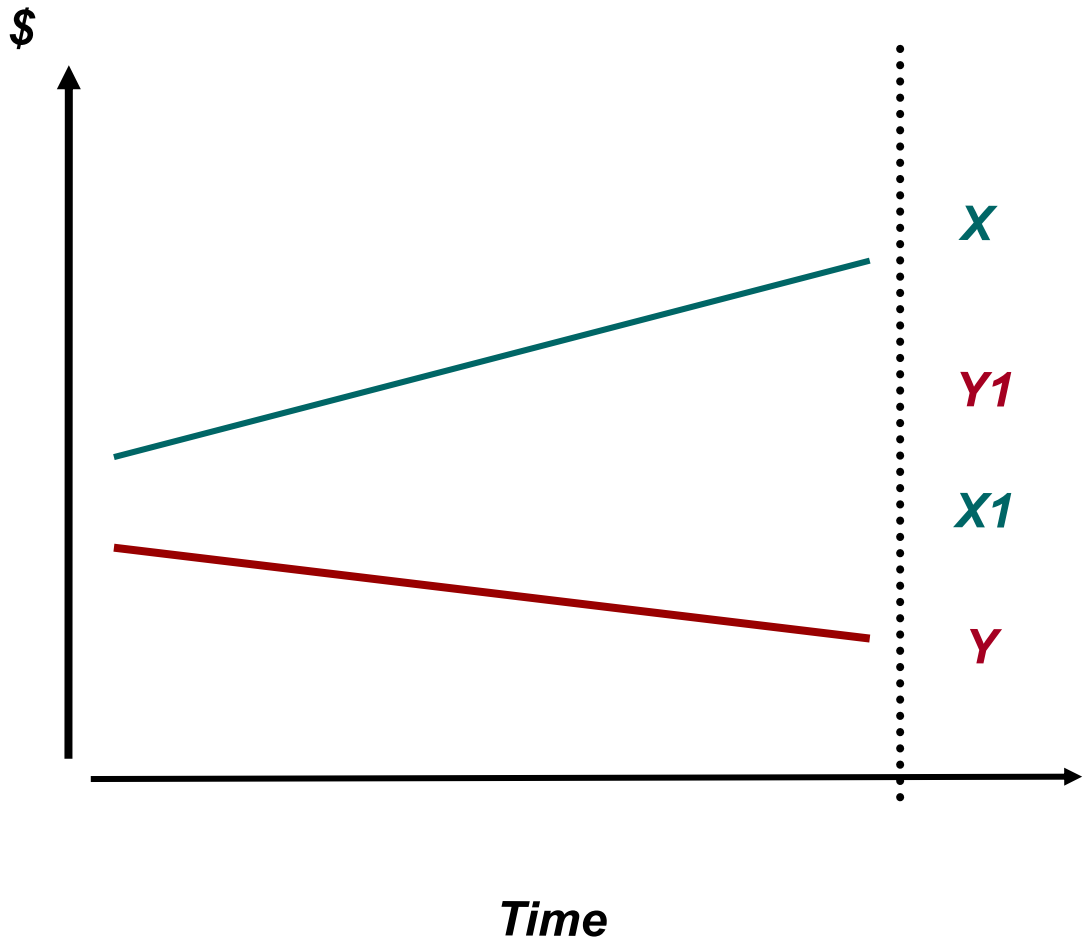
Managing the budgeting process...

- Administrative structure
  - budget committee and budget director
  - budget manual
  - budget timetable
    - annual v rolling budget
- The iterative nature of the budgeting process
- Political considerations

Behavioural issues in budgeting

- Participation
  - "bottom up" as opposed to "top down" approach
    - increases motivation
    - plans need to be tight but attainable
    - *Is a participative budgeting process preferable to an autocratic budgeting process?*
    - *Why?*
  - budgetary slack
    - Understating revenue/Overstating costs
    - *Why do Managers "Pad the Budget"???*
    - *How might we solve the problems of budgetary slack???*

GAMES PEOPLE PLAY…



Budgeting in action…

- Evaluating the feasibility of introducing a lithotripsy service within the private hospital system

Consider:

- *Demand of lithotripsy (Demographics)*
- *Revenue.*
- *Existing supply (in public sector hospitals) nationally)*
- *Attitudes of Urologists*
- *Availability of lithotripsy equipment/substitutes*
- *Purchase price*
- *Installation costs*
- *Maintenance costs*
- *Opportunity costs*
- *Staff costs*

A question without notice ~

your top 3 movies, or, your best ever World XI…?

1. ……..

2. ……..

3. ……..

Something that really matters…

1. Banks
2. Schnellinger
3. Riijard
4. Ronaldinho
5. Beckenbauer
6. Moore
7. Best
8. Maradona
9. Charlton, R.
10. Pele
11. Cruyff

Subs:

12. Van Basten
13. Socrates
14. Eusebio
15. Gullit

Some observations…

- *There is no "right answer"*
  - Probably about 200+ players/movies who could quite reasonably be selected

- *Selection is dependent upon personal experience.*
  - Movie selection confined to those you have actually seen
  - 73% of players from Europe & 25% from GB

- *Selection of reflects a personal view of what constitutes "best"*
  - Acting, story, music, …???
  - Few players > 6'; Where are the ball winners?

- *What criteria is used to select the "best"?*
  - Who sets the standards? On what basis? How will it change over time?
  - Is this the best "team", or a collection of the best individuals?

Performance – conceptually…

- A complex area
- Difficult to gain consensus
- Different criteria is used
- Criteria is rated differently

Performance Measurement…

"What gets measured gets done has never been so powerful a truth"

Tom Peters

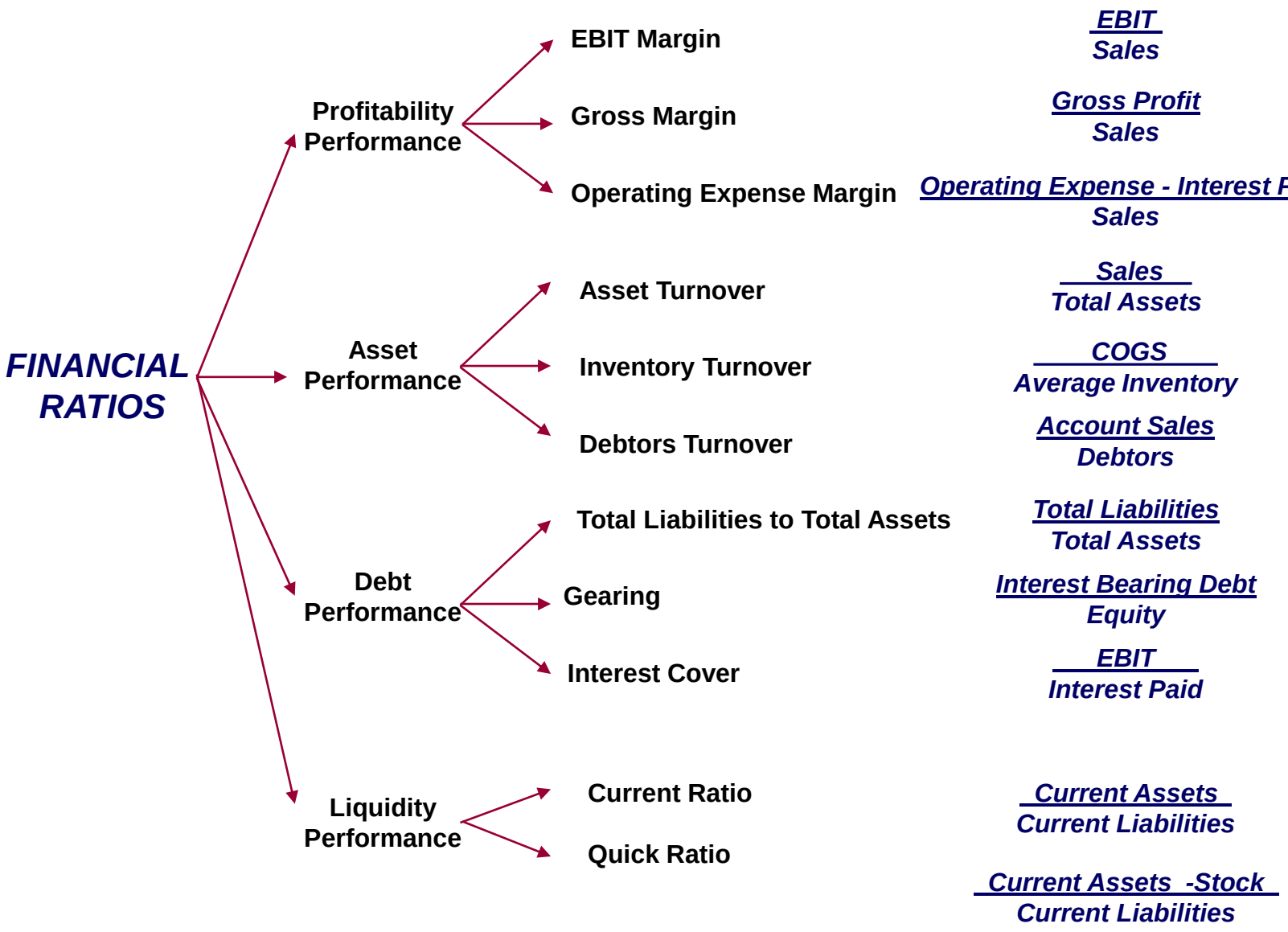
Performance Measures:

- Motivate
- Direct
- Reward
- Provide Feedback

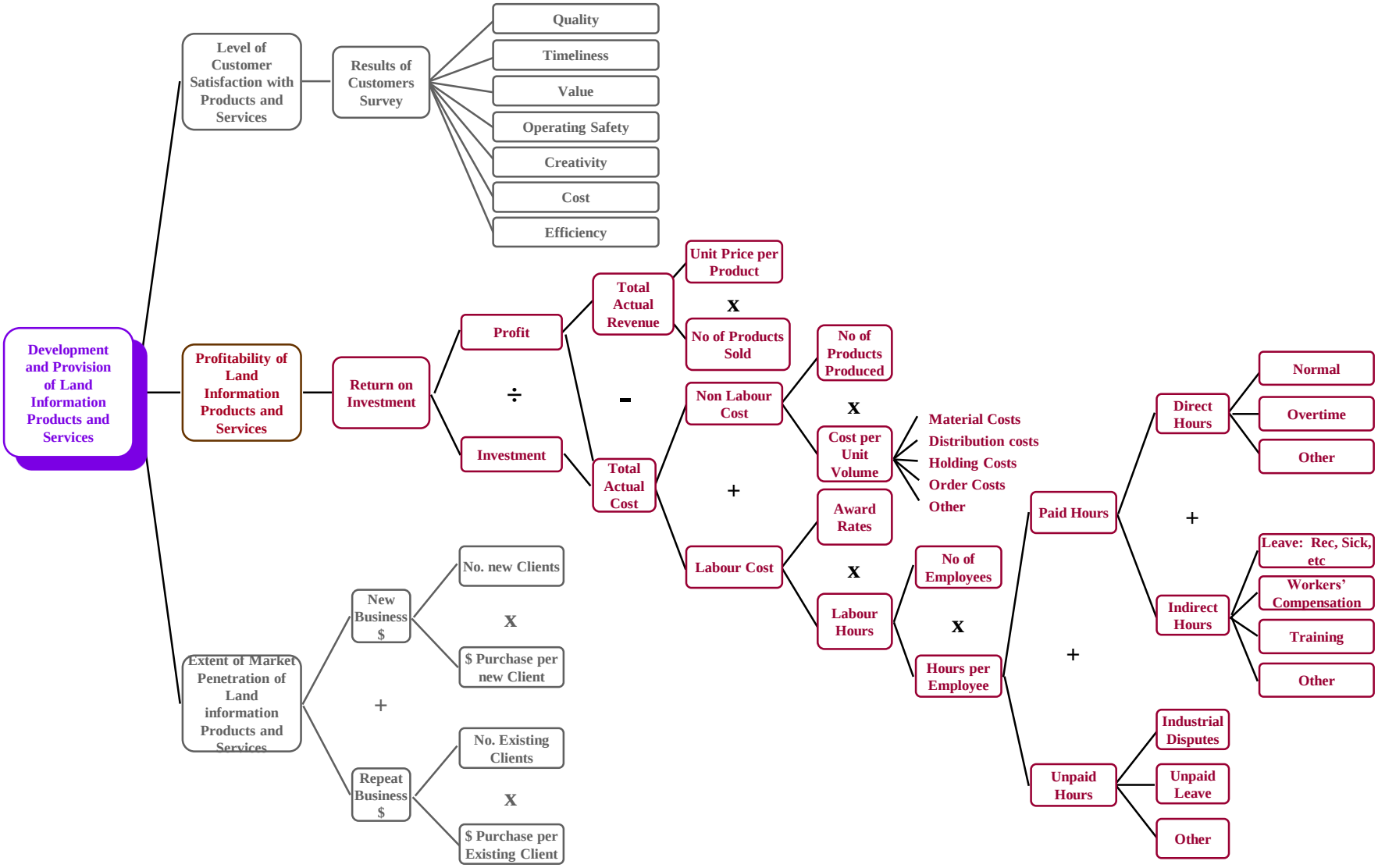
Traditional Approaches…

- mainly financial measures at the top of the organisation - ROI, profit, Return on Sales
- comparison of actual results with budget - individual revenue and expense
- operational measures

Financial Ratios…



A Practical Example…

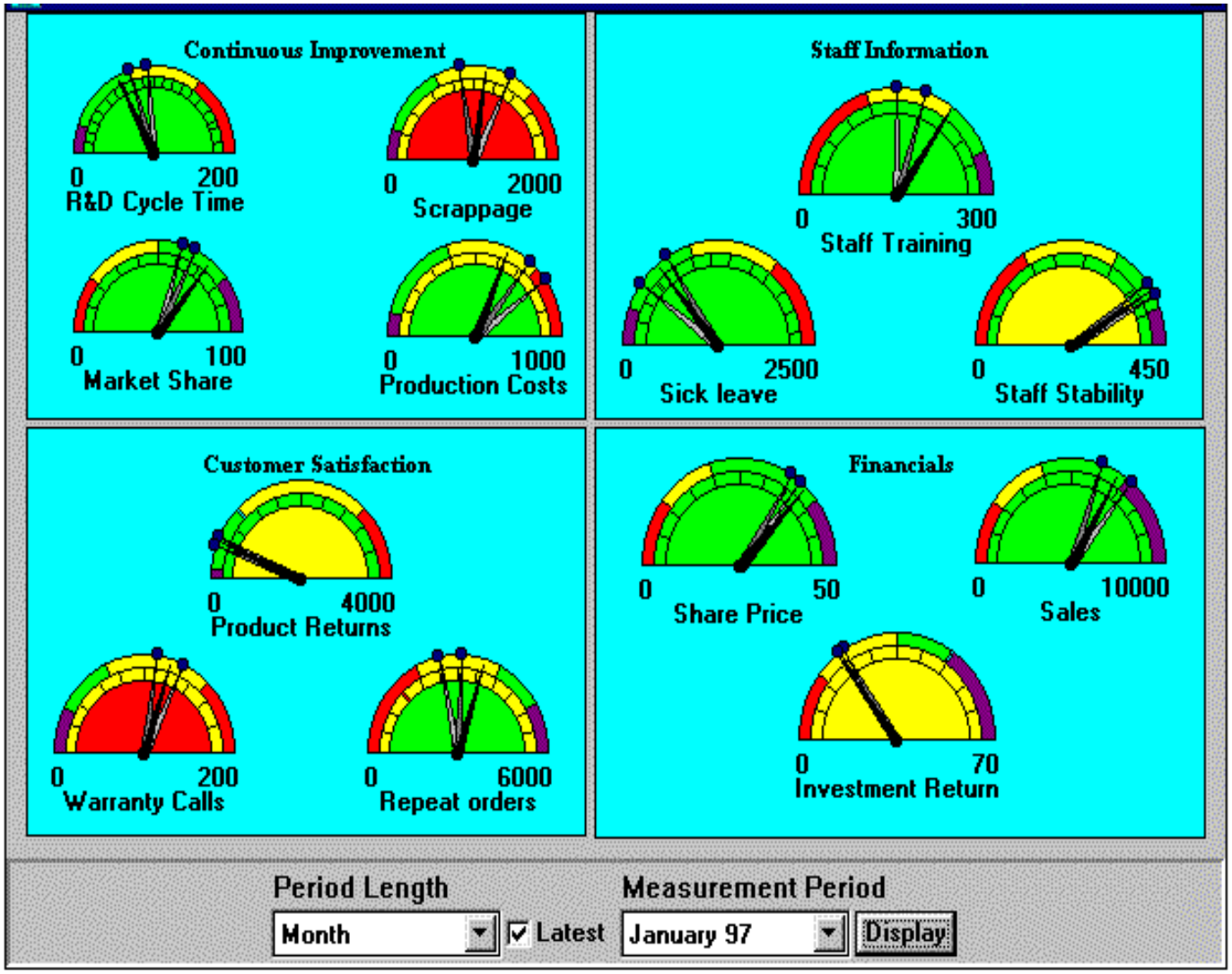


Limitations of Financial Ratios…

- Not readily actionable
- Focus on consequences not causes
- Emphasise only one dimension
- Lagging rather than leading.

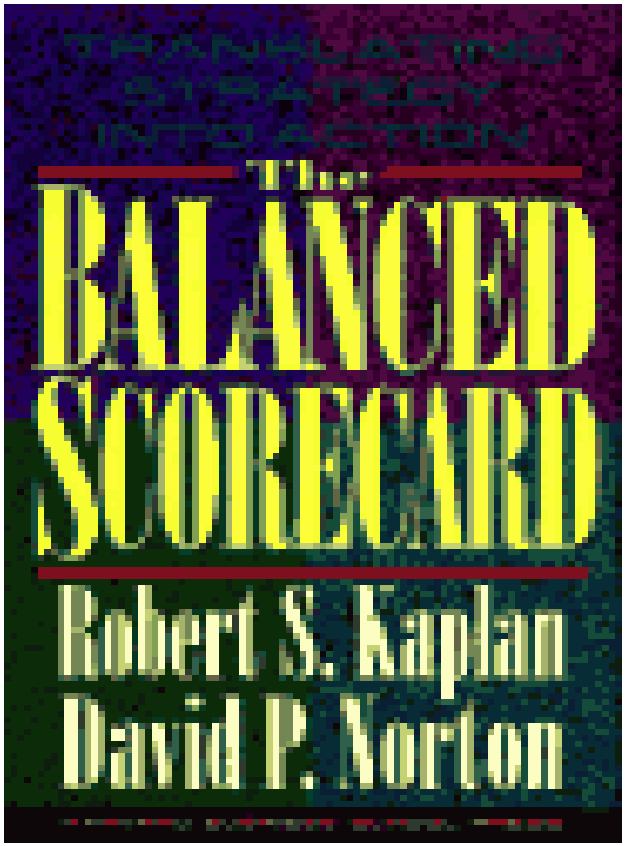

"This is the Captain. We've got the airspeed under control, now I'll work on the altitude. We appreciate your understanding."

Accuracy, in real-time, … and not too many…



Towards a more integrated approach…

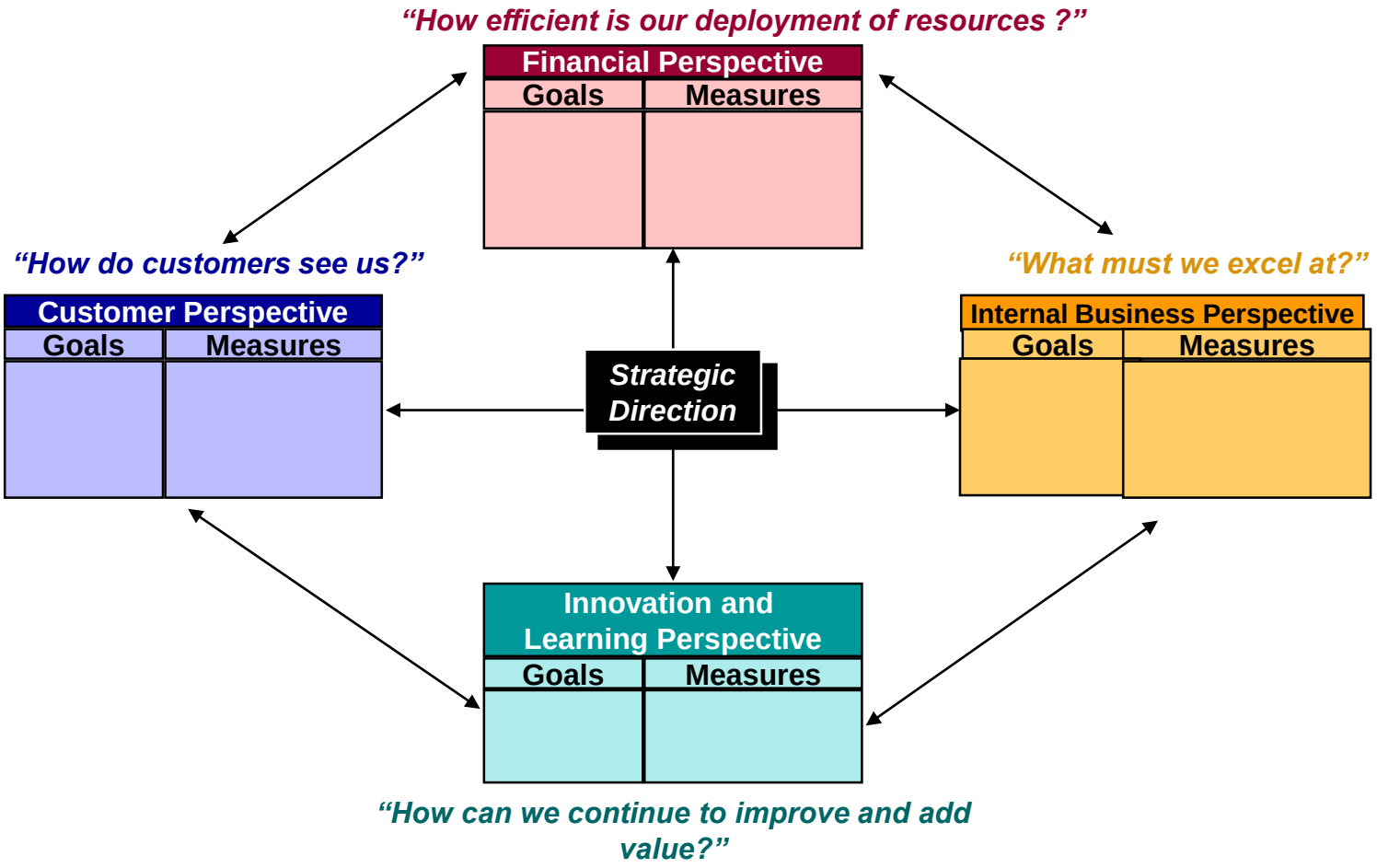
The Key Book…



Four Perspectives…

- Financial *(how do we look to shareholders?)*
- Customers *(how are we viewed by customers?)*
- Internal *(what must we excel at?)*
- Innovation and learning *(how do we continue to improve and create value?)*

The Balanced Scorecard framework…



Value of the Balanced Scorecard…

- Brings together in one report all the key success factors
- Balances short-run against long-run
- Can help organisations break out from a mindless obsession with short-run profit
- Connects critical factors through causal linkages.

and its limitations…

- Failure to account for the role of motivated employees
- Little detail of how to select specific measures
- Limited guidance on how means & ends should be linked analytically
- Reward structures are largely ignored
- Role of feedback is paid little attention

Today's case…

Case 24.1: Body Glove

- For what purposes does Body Glove use its budgeting system?
- How effectively can a company (organisation) function without a budget?
- What changes to Body Glove's budgeting and review processes would you recommend, if any?
- If Body Glove continues to grow &, perhaps diversifies, what changes will have to be made to the budgeting and review processes?

Accounting For Decision Making

Topic 9

Capital Investment Decisions

Goals for this session…

1. Understand the nature and scope of investment decisions;
2. Apply payback period method;
3. Apply accounting rate of return;
4. Apply internal rate of return;
5. Calculate net present values and understand the factors that affect the discount rate;
5. Understand some practical issues in making capital investment decisions.

Capital investments in South Australia…

Features of capital investments…

- often involve **large** amounts of **resources**
- involve **risk** and **uncertainty**
- often span **long** periods of time
- normally require a relatively **large cash** outlay
- **returns** are received over a **long** period
- are often **difficult** to **reverse**.

Steps in investment decisions

1. Identification of current available investment alternatives
2. Set the decision rule
3. Gather data necessary to make decision
4. Analyse the data
5. Interpret the results in relation to the decision rule
6. Make the decision, arrange finance, plan…

Types of capital budgeting techniques…

- Non-DCF techniques
  - does not take into account the time value of money
  - techniques include: payback period, bail-out period, accounting rate of return
- DCF techniques
  - Does take into account the time value of money
  - techniques include: Net present value, internal rate of return, present value index, discounted payback period, discounted bail-out period.

Payback Period (PP)

- The **payback period** is the period of time necessary to recoup the initial outlay with net cash inflows.

e.g.

- if an initial investment of $10,000 creates a **net** cash inflow of $2,000 per year then we say the payback period for this investment is 5 years ($10,000/$2,000).

- if an initial investment of $10,000 creates a net cash inflow of $4,400 per year then pp is 2.27 years ($10,000/$4,400).

- if an initial investment of $10,000 creates a net cash inflow of $2,000, $4,400, $5,000, $8,000 in four years, then pp is 2.72 years [2 years + ($10,000-$2,000-$4,400)/$5,000].

Decision rule for Payback Period

- This varies between entities, but most have maximum periods beyond which they would not invest

- Obviously the **quicker** the PP the better!!

Advantages & Disadvantages of Payback Period

- *Advantages:*
  - simple to calculate
  - easy to understand
  - crude measure of risk in the decision because projects with high early cash inflows will have shorter PPs.

- *Disadvantages:*
  - **time value** of money is **ignored** as it treats all cash inflows equally
  - it ignores all cash inflows **after payback** has occurred (so **more**-profitable short-term investments may get the nod !)

Accounting Rate of Return(ARR)

- ARR expresses the average net profit over the period of the investment as a percentage of the average investment as shown:

$$\text{ARR} = \frac{\text{Average net profit}}{\text{Average investment}}$$

- Similar to ROA, but ARR involves expected values

Note: Average Investment = (Opening + Closing Value)/2

Decision rule for ARR

- Varies between entities;

- The ARR which is the **highest** or is **greater than** a required minimum required rate of return (**RRR**) is usually chosen.

Advantages of ARR

- Simple to calculate
- Easy to understand
- Consistent with the ROA measure.

Disadvantages of ARR

- The **time value** of money is **ignored**
- The importance of **cash** is **ignored** (the ultimate resource without which businesses cannot survive)
- → Therefore, ARR cannot differentiate between two equally profitable projects but with unequal timing of the profits
- Profits and costs may be measured in different ways for different projects.

ARR example

Kent Constructions is offered two contracts on the same day. The contracts promise total net profits of $9 million and $12 million, extending over four years and five years, respectively. Each will require investment of $10 million.

On the basis of ARR, which contract is more profitable?

ARR example

Contract 1:

Average profit = \$9 m / 4 = \$2.25 m

Average investment = (\$10 m + 0)/2 = \$5 m

→ ARR_1=2.25 / 5 = 45%

Contract 2:

Average profit = \$12 m / 5 = \$2.4 m

Average investment = (\$10 m + 0)/2 = \$5 m

→ ARR_2=2.4 / 5 = 48% (> 45%)

Contract 2 is more profitable.

DCF Techniques: Significance of time value of money concept

- Time value of money concept - money can earn a return (bank, sharemarket, other investments);
- Want to ensure that the return from money invested > the return from the other alternatives
- Need to incorporate time value of money concept when assessing the cash flows associated with various investments

The time value of money…

- Assume a company is obligated to pay a creditor $150,000 in 5 years time. What amount of cash should be invested now at 8% to yield such cash in the future?

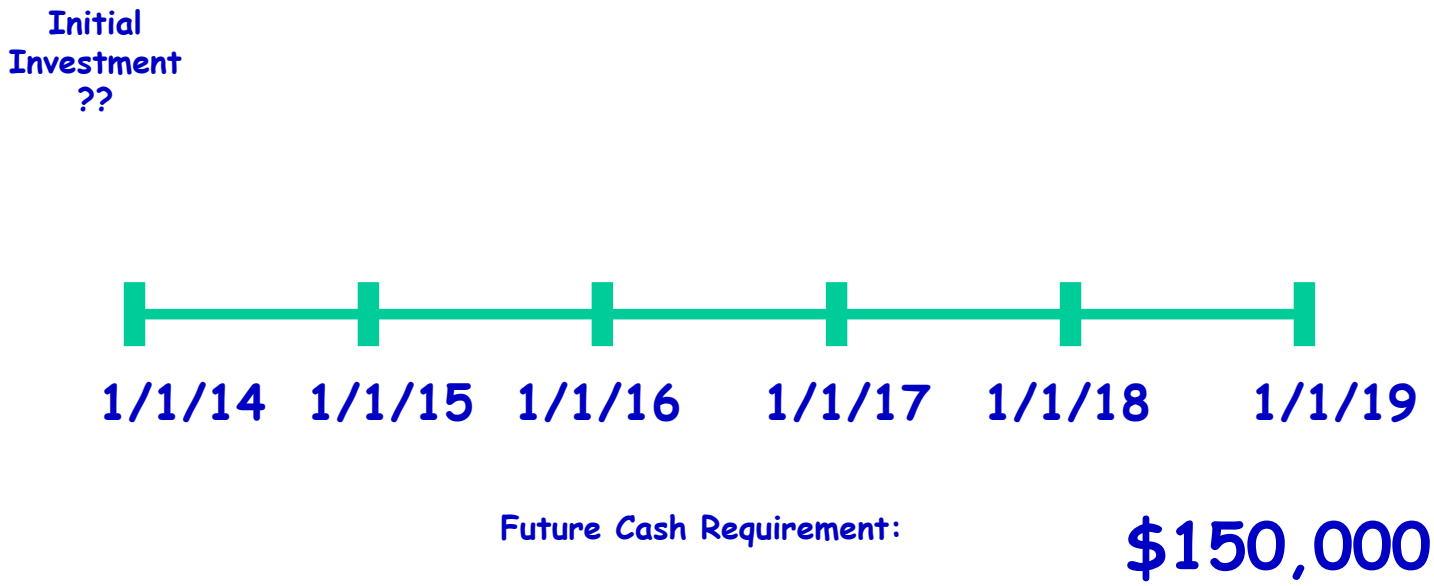


TABLE: Present Value of $1

Number of Periods	Discount Rate					
	5%	6%	8%	10%	12%	15%
1	.952	.943	.926	.909	.893	.870
5	.784	.747	.681	.621	.567	.497
10	.614	.558	.463	.386	.322	.247

Calculating the present value

- Present Value

$$= \frac{FV}{(1 + r)^n}$$

= Future Lump Sum x Present Value Factor

= $150,000 x 0.681

= $102,150

Internal Rate of Return (IRR)

- The IRR is the rate of return, which discounts the cash flows of a project so that the **PV** of the **cash inflows** just **equals** the **PV** of the **cash outflows**, (i.e. the difference between the PV of the cash inflows and the PV of the cash outflows is zero)

i.e. if PV = INV, then r= ? %

$$CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + \ldots + CF_n/(1+r)^n = I$$

- With a scientific calculator or the use of discount tables, solving for *r* is a **trial and error** problem.

Decision rule for IRR

- Accept projects where the IRR exceeds the entity's RRR

- (RRR would normally be the cost of capital or finance for the entity, although some entities may have arbitrary RRRs which they have set for various reasons).

Advantages & disadvantages of IRR

❑ *Advantages:*

IRR takes into account:

- **all** of the expected **cash flows**
- the **timing** of expected cash flows (and cash flows received sooner are given higher weight)
- a concept (rate of return) familiar to managers.

❑ *Disadvantages:*

- Ignores the **scale of projects**, so it does not focus on the generation of absolute wealth
- In some cases produces **two IRR values** (and sometimes no IRR).

Net Present Value (NPV)

- NPV specifically recognises that if you received $1 sometime in the future from an investment then it is worth less than if you received that same $1 now !

- Time value of money.

  e.g. If you lent $100 to a friend at the beginning of the year, and your friend repaid $100 at the end of the year, the $100 received was worth less because of the change in prices (e.g. inflation) and opportunity cost (e.g. interest or other returns if you invest your $100).

NPV

- The NPV measure **compares** the sum of the present values **(PVs)** of all of the expected **cash inflows**, including scrap value, from the project **with** the **PVs** of the expected **cash outflows**.

$$NPV = [CF_1/(1+r) + CF_2/(1+r)^2 + CF_3/(1+r)^3 + \ldots + CF_n/(1+r)^n] - I$$

Where :

- CF = the **net** cash flow at the end of period n
- r = the selected discount rate per period
- n = the number of periods, and
- I = the initial investment

NPV example

A small washer-stamping machine costs $25,000 and is expected to earn annual net cash inflows of $11,000, $10,000, $9,000 and $8,000, before it wears out sufficiently to be unreliable and must be sold to a 'jobber' for an estimated $5000.

(a) If funds earn 10 per cent, what is its NPV?

(b) If funds earn 15 per cent, what is its NPV?

NPV example

Present Value of $1.00

Periods	10%	15%
1	0.90909	0.86957
2	0.82645	0.75614
3	0.75132	0.65752
4	0.68301	0.57175

NPV example

- 10%

Year			NPV
0			(25 000)
1	11 000 x .90909	=	10 000
2	10 000 x .82645	=	8 264
3	9 000 x .75132	=	6 762
4	13 000 x .68301	=	8 879
			$8 905

8,000 (Cash flow) + 5,000 (Salvage value) = $13 000

NPV example

- 15%

Year			NPV
0			(25 000)
1	11 000 x .86957	=	9 565
2	10 000 x .75614	=	7 561
3	9 000 x .65752	=	5 918
4	13 000 x .57175	=	7 433
			$5 477

Factors that affect the discount rate

- **Inflation**
  - → Invested funds will lose purchasing power
  - However, most of the time interest rates offered in financial markets have already incorporated the inflation effect
- **Risk**
  - Investment that involves more risk demand higher returns
  - Therefore, more risky investments have a risk margin added to interest rate
- **Opportunity cost**
  - Benefit foregone if the alterative investment is selected

Decision rule for NPV

- Invest in projects that have a **positive** NPV

- (i.e. where the present value of net cash flows > initial investment)

Advantages of NPV

NPV takes into account:

- **All** of the expected **cash flows**
- **Timing** of expected cash flows (with cash flows received sooner given more weight)
- **Cash flows only**, (so not subject to changing accounting rules and standards as profit figures are).
- That the decision **rule** is **explicit**, i.e. positive NPVs will increase business wealth (assuming data is correct).

Disadvantages of NPV

- The method relies on the use of an **appropriate** discount factor
- The **actual return** in terms of the % investment outlay is **not revealed**
- Ranking of projects in terms of highest NPVs may not lead to optimum outcomes

e.g. if projects A, B & C's initial costs are $60m, $35m, $25m, and NPV of each project is $2.7m, $1.5m and $1.3m. The NPV results support project A (highest NPV), However, project B&C together will have a higher NPV ($1.5m+$1.3m=$2.8m) with the same investment ($35m+$25m=$60m).

Comprehensive example 1

An Agatha Christie play is put on in a Melbourne theatre, and the producers plan on running for **50 weeks** if possible.

Given the size of the theatre and the expected seat sales rate, the producers think they can **gross $800 000** at the box office. The play will **cost $200 000** to mount in the first place, and the weekly running costs are expected to be **$10 000**. Assume for the NPV and IRR calculations that all funds are earned and paid, except the mounting costs, at the end of the 50 weeks. The producers can earn 10 percent elsewhere on their funds. The sets and costumes are expected to realise **$20 000** at the end of the run.

Calculate the PP, ARR, IRR & NPV & of the Project.

Comprehensive example 1

(a) ARR

ARR = Average net profit / Average investment

Average profit = $800,000 – $200,000 - ($10,000 x 50)
+ $20,000 = $120,000

Average investment is =($200,000 + $20,000) /2
= $110,000

ARR = 120,000 / 110,000 = <u>109.09%</u>

Comprehensive example 1

(b) PP

Initial cost = $200,000

Weekly cash inflow = ($800,000/50) – $10,000
= $6,000

(note: assume an even patronage over the period)

PP = $200,000 / $6,000 = <u>33.33 weeks</u>

Comprehensive example 1

(c) NPV (if 10% p.a.)

NPV = [$800,000 – ($10,000 x 50) + $20,000] / (1+10%)
-$200,000
= $90,909

(d) IRR

[$800,000 – ($10,000 x 50) + $20,000] / (1+ r)
=$200,000
r = 60%

Comprehensive example 2

Fly High Ltd has an opportunity to invest in a project that would operate for four years. The capital contribution required is $20,000 and the following estimates have been made.

	Year 1	Year 2	Year 3	Year 4
	$	$	$	$
Cash inflows	16,000	64,000	80, 000	22,000
Cash outflows	13,000	52,000	67,000	18,000

An alternative proposition is the purchase of new equipment for $20,000 which would result in an estimated annual saving (cash inflow) of $7,500 over a four year period. Fly High uses a discount rate of 16% p.a.

Comprehensive example 2

REQUIRED:

1. Calculate the net present value for each option. Ignore tax considerations.

2. Calculate the payback period for each option.

3. Advise Fly High Ltd, with reasons, which project you would recommend they undertake.

Comprehensive example 2

Additional information:

Present value of $1.00

Years	*12%*	*14%*	*16%*
1	0.893	0.877	0.862
2	0.797	0.769	0.743
3	0.712	0.675	0.641
4	0.636	0.592	0.552
5	0.567	0.519	0.476

Present value of a series of $1.00 cash flows

Years	*12%*	*14%*	*16%*
1	0.893	0.877	0.862
2	1.690	1.647	1.605
3	2.402	2.322	2.246
4	3.037	2.914	2.798
5	3.605	3.433	3.274

Comprehensive example 2

1. NPV: **Option 1**

	Year 1 $	*Year 2* $	*Year 3* $	*Year 4* $
Cash inflows	16,000	64,000	80, 000	22,000
Cash outflows	(13,000)	(52,000)	(67,000)	(18,000)
Net cash flow	**3,000**	**12,000**	**13,000**	**4,000**

	Year1	*Year2*	*Year3*	*Year4*	
	$	*$*	*$*	*$*	
Net cash flows	3,000	12,000	13,000	4,000	
Discount at 16%	.862	.743	.641	.552	
Present value	**$2,586**	**$8,916**	**$8,333**	**$2,208**	22,043

Net Present Value = $22,043 – $20,000 = **$2,043**

Comprehensive example 2

1. **NPV: Option 2**

Present value of annual cash inflow $7,500 x discount @ 16% for 4 years

= $7,500 x 2.798

= $20,985

Net Present Value = $20,985 – $20,000 = **$985**

Comprehensive example 2

2. PP:

Option 1

Workings:
$20,000 less $3,000 = $17,000; less $12,000 = $5,000.

$5,000/$13,000 = .38 years
So, Payback period = **2.38 years**

Option 2

Payback period $20,000/$7,500 = **2.67 years**

3. Recommendation:

Option 1 appears to be financially more favourable than Option 2 as its PP is shorter, 2.38 years compared to 2.67 years, and its NPV is higher, $2,043 compared to $985.

Investment decisions

Decision making is not as simple as inputting numbers into a calculator and coming up with an investment decision!

There are a number of other issues that may complicate decision-making …

Other issues to be considered

- **Data collection** – costs and revenues may not be easy to determine

- **Impact of taxation** – company tax rate currently 30%. The impact of tax is to reduce net cash annual returns by 30%. Also non-cash costs such as depreciation may complicate the tax effect.

Other issues to be considered

- **Opportunity costs** — the cost of foregoing benefits that would be available if the resources had been used for the next best alternative

- **Risk levels** — data collected may be inaccurate or incomplete. External factors which have been built into the project analysis may change (unexpectedly):

  e.g. suppliers fail to supply materials, legislation change, resource availability, …

Other issues to be considered

- **Obtaining finance** — some investments look good on paper but may have trouble attracting finance

- **Human resources** — will there be employees or consultants available with the required skills available when required?

Other issues to be considered

- **retaining goodwill and future opportunities** — goodwill takes time as does customer loyalty that assists in a mutually-satisfactory business deal.

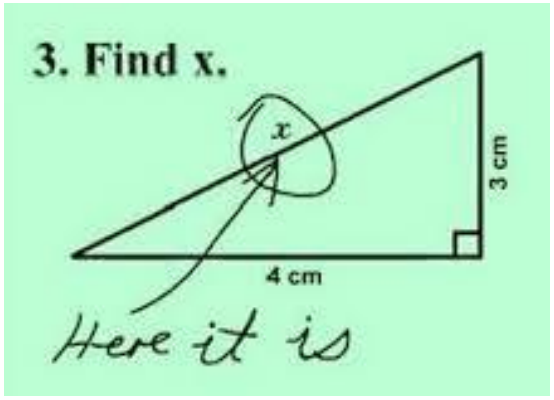
- **social responsibility** — social responsibility and care of the natural environment is now becoming more pronounced with investors and can also affect business decisions

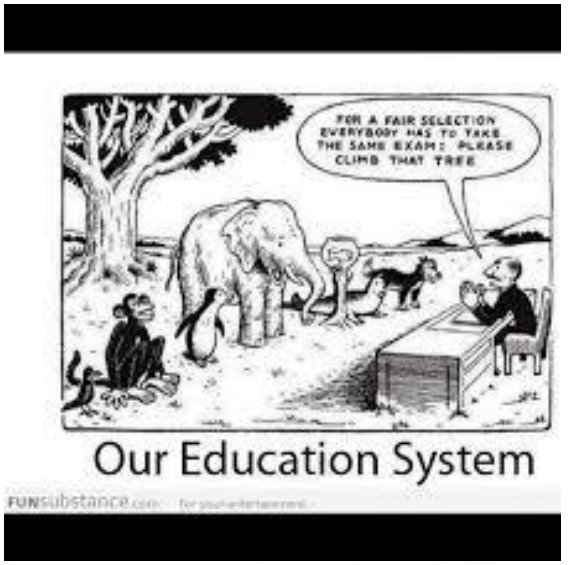
  (e.g. pollution responsibilities, saving our forests).

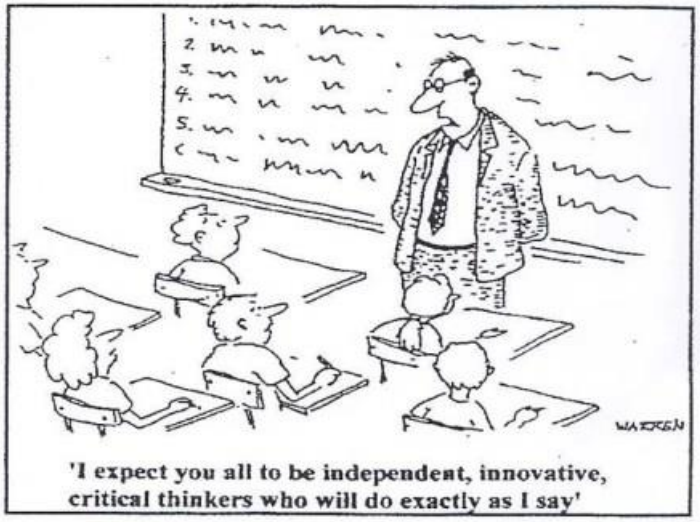
Congratulations…
….we made it!

(ALMOST…)

THE EXAM…



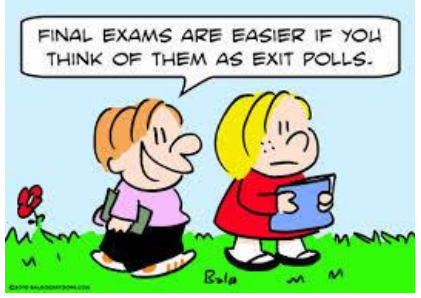




Gretchen encounters the mother of all SAT questions.

Teacher:
You failed the test.

Me:
You failed to educate me.



- OPEN BOOK EXAM

Length:

- 3 hours + 10 minutes
- Be on time!!!

- *Structure:*

(4 questions ~ all questions compulsory)

- ALL topics Examinable!
- A mix of *both* qualitative *as well as* quantitative questions
- First question based on a financial analysis of Red Cross (downloadable from the course website)

Revision strategy….

- Exam is *not* a test of memory, but of our ability to apply the concepts covered in the course
- REMEMBER – the **integrated** nature of the course:
  - Lectures + Cases + Textbook
- Essential reading – Textbook & Case Studies
- Revisit Case Discussions
- Study consistently up to the Exam.

Revision strategy….

- Make use of reading time
- Plan time strategically (Minutes/Mark)
- Read the questions very carefully
- Do the easy questions first
- REMEMBER - plan the use of your reading time

CONTACT ME FOR ASSISTANCE IF NECESSARY
(Before & After the Exam!!!)