



Advanced Discussion on the Financial Disclosure of Equity Plan Values

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Agenda

- **Alan**
 - IFRS 2 and FAS 123 status
 - Accounting entries – all that glitters is not gold
- **Tom**
 - Implications for design and usage of equity plans
- **Elizabeth**
 - Valuation models and issues
 - *What models are allowed*
 - *Types of models and theoretical and practical strengths and weaknesses*

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IFRS 2

- **Effective date**
 - annual periods beginning on or after 1 January 2005, but applies to comparative information as well
 - so 2004 accounts to be restated
- **Transactions covered**
 - grants of shares, share options or other equity instruments after 7 November 2002
 - Disclose tabular information in respect of earlier grants
- **Biggest impact**
 - An expense for options

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Key highlights of IFRS 2

- **Unit of service methodology is scrapped, some truing up allowed**
- **Fair value of instrument at date of grant is the expense**
- **Key factor is nature of performance target used**
 - If target is not a **market condition** then the target is ignored when calculating the market value of the instrument, but the expense is adjusted to reflect the actual number of shares that vest
 - If target is a **market condition** then that condition is taken into account when estimating the fair value of the instrument, but no further reduction is given if all other vesting conditions are satisfied – even if options are not exercised
 - If no vesting because service conditions not satisfied, expense reflects the actual number of shares that vest

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Definitions needed to understand previous slide

- **Fair value**
 - The amount for which an equity instrument granted could be exchanged between knowledgeable willing parties in an arm's length transaction
- **Market condition**
 - A condition related to the market price of a company's shares such as achieving a specified share price or achieving a target based on market price of shares relative to an index of market prices of shares of other companies
- **SO THE NATURE OF THE PERFORMANCE TARGETS AFFECTS THE EXPENSE RECOGNITION**

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FAS 123 comparison

- **No final standard due until end of 2004**
- **After FASB has completed all phases of its project on equity compensation**
 - The IASB and FASB plan to undertake a convergence project with the objective of eliminating any remaining differences between international and US share based payment standards
- **Watch this space**
- **Health warning - Slide prepared on 24 March 2004**

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Accounting entries

- **All that glitters is not gold**
 - Not all expenses are real expenses
 - Not all P&L debits reduce the net assets of the organisation!
- **IFRS 2 paragraph 7**
 - The entity shall recognise a corresponding increase in equity if ... an equity settled share based payment transaction...
- **The accounting entries are therefore**
 - Debit wages
 - Credit share capital

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Profit & Loss Account

Consolidated statement of income

\$ millions except per share

	Original	Expensed	
Revenue	7,375	7,375	
Expenses	6,521	6,537	16
Income before taxes etc	854	838	
Tax, minorities etc	380	380	
Net income	474	458	- 16
Fully diluted EPS	1.79	1.73	- 0.06

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Balance Sheet

Balance sheet

\$ millions

	Original	Expensed	
Investments	6,019	6,019	
Cash	1,118	1,118	
Receivables	8,230	8,230	
Goodwill and other	6,884	6,884	
TOTAL ASSETS	22,251	22,251	
Policy liabilities	13,071	13,071	
General liabilities	4,942	4,942	
TOTAL LIABILITIES	18,013	18,013	
NET ASSETS	4,238	4,238	
Redeemable preferred stock	50	50	
Redeemable preferred capital securities	800	800	
Common stock	264	264	
Paid-in additional capital	706	722	16
Retained earnings	2,536	2,520	- 16
Treasury stock	- 118	- 118	
TOTAL STOCKHOLDER EQUITY	4,238	4,238	

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Design implications

- (a) Share option granted at \$1, which only vests if your TSR over 3 years is in the top quartile of the S&P500
- (b) Share option granted at \$1 but with a maximum gain per option of \$2 (ie you benefit from the share price rises up to \$3, but are capped at that level) – no performance conditions
- (c) Premium-priced share option granted when share price is \$1, but with an exercise price of \$1.50

Which would you rather have?

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Three big issues

1. A charge where there wasn't one before → A focus on cost control
2. Removal of a major accounting bias... → A focus on value for money
3. ...but introduction of a new one! → A few more things to think about

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Impact of performance conditions

Performance condition on option	Normalised Cost*
No performance condition	100
Total shareholder return performance condition (30% at Median, 100% at UQ)	80
Total shareholder return performance condition (100% at UQ)	70
Indexed option	70

Performance conditions probably have less impact on cost than on perceived value

*Lots of assumptions!
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Impact of premiums or caps

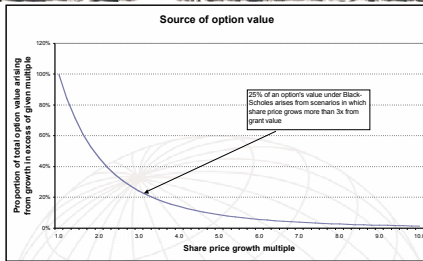
Premiums and caps	Normalised cost*
No premium or cap	100
25% premium	85
50% premium	70
100% premium	50
3x cap on gain	80
2x cap on gain	70
1x cap on gain	50

The impact of premium is surprisingly small, of caps surprisingly large

*Lots of assumptions!
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It's all in the upside



Much of the Black-Scholes value in an option comes from the small possibility of very large pay-outs

*Lots of assumptions!
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Removal of an accounting bias

- Accounting bias removed
- Designs that would have been ruled out are now in play
- Substantially levelled playing field:
 - between different types of equity award
 - between equity and cash
- Opportunity to focus on design to maximise value

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Focus on value for money

(a) Share option granted at \$1, which only vests if your TSR over 3 years is in the top 6 of the 20 largest European companies
Highest cost

(b) Share option granted at \$1 but with a maximum gain per option of \$2 (ie you benefit from the share price rises up to \$3, but are capped at that level) – no performance conditions
Lowest cost

(c) Premium-priced share option granted when share price is \$1, but with an exercise price of \$1.50
Middle cost

Humans are not option pricing models!

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Focus on value for money

- **Humans tend to undervalue extreme outcomes**
- **This opens up a gap between perceived value and IFRS value**
- **Particularly below the most senior organisational levels, value for money is improved by:**
 - reducing uncertainty of whether there will be a pay-out
 - reducing volatility of pay-out
 - cutting out extreme upside

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Focus on value for money

What does £100,000 of IFRS2 cost buy you?

Pay-out (£000s)	Options Probability (%)	Shares Probability (%)
0	30	0
0-50	10	5
50-100	10	25
100-150	10	35
150-200	5	15
200-250	5	10
250-300	5	5
>300	20	5

Assumptions: gtt yield 4.5%, dividend yield 2%, volatility 40%, shares return 3% in excess of gtt on average; no performance conditions.

Certainty of pay-out more valued, particularly at lower pay levels

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Focus on value for money

Plan	Eligibility
Restricted stock	Most senior executives
Options	Broad-based discretionary plan
Discounted option plan	All employees

In this context, does the current reward model make any sense at all?

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Market or non-market?

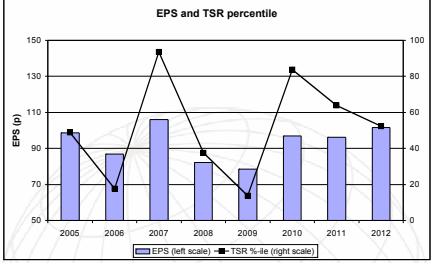
- **Non-market measures (e.g. EPS) – charge adjusted to reflect extent of vesting**
 - no charge if nothing vests
 - full charge if everything vests
 - better alignment between charge and corporate performance
 - greater volatility
- **Market measures (e.g. TSR – total shareholder return) – charge not adjusted to reflect extent of vesting**
 - same "partial" charge regardless of actual vesting
 - no alignment between charge and corporate performance
 - greater predictability

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Market or non-market?

Example – market vs non-market performance conditions



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What are we seeing?

- **Focus on cost**
 - tightening eligibility conditions for options
 - reduced discounts on all-employee plans, some capping of gains
 - new concerns about whether to offer all-employee plans
 - slight bias towards non-market performance conditions
- **Focus on value for money**
 - use of shares rather than options
 - use of cash / deferred bonus rather than options

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What are we seeing?

Overall, the new standard provides a great opportunity to focus on what form of compensation is right for your business

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Valuation Models: What's Required

The new standards require firms to expense the "fair value" of the equity instrument. How is fair value measured?

- **FASB exposure draft and IFRS 2 differentiate between "closed-form" and "lattice" models**
 - Closed-form models (e.g., Black Scholes formula) are relatively inflexible and must use weighted average assumptions. For example, volatility is averaged over the expected life of the option
 - Lattice models can accommodate variations in the assumptions over the life of the option, e.g., changing volatility, and can also incorporate additional factors that would affect option value under market conditions

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**Valuation Models:
What's Required**

- **Neither standard imposes a specific valuation method**
 - Firms must determine best method for themselves based on the characteristics of the award and the information available
 - Binomial and other “lattice” methods are preferred because they are considered more accurate than Black Scholes
 - If the firm switches from Black Scholes to another model, it cannot switch back later

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**Valuation Models:
What's Required**

- **Any model employed must accommodate the following 6 inputs:**
 - Strike price of the option
 - Fair market value of the underlying security on grant date
 - Expected volatility of the stock
 - Expected life of the option
 - Expected risk free interest rate over the life of the option
 - Expected dividend yield (if any)

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**Valuation Models:
What's Required**

- **Additionally, the model may also incorporate “other factors that knowledgeable, willing market participants would consider in setting the price”, such as:**
 - The possibility of early exercise
 - Black-out periods
 - Risk aversion
 - Post-termination exercise
 - Behavior based on groups

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Comparison of Models

- **Black Scholes model:**
 - Widely used, but developed for publicly traded options rather than employee options
 - Assumes the option holder is risk-neutral
 - Does not take into account vesting requirements, and related issues of cancellation and termination which may “force” exercise
 - Ignores the fact that employee options are non-transferable, and that there is dilution when stock options are exercised

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Comparison of Models

- **Binomial models**
 - Many varieties, including Cox Ross Rubenstein
 - Better suited to employee stock options because it can account for early exercise
 - Because of its “lattice” structure, it can accommodate varying assumptions over the life of the option, such as multiple volatility assumptions
 - Sophisticated variations exist to better approximate the unique conditions of employee options

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Better Models

- **In addition to the 6 required inputs, the Equity Methods Binomial Utility Model framework includes factors that estimate:**
 - The annualized expected return on the stock
 - The time until the option is vested
 - The ratio of outside wealth to the initial value of the shares underlying the option (a derived/fitted component from defined mathematical simulations)
 - The annualized probability that a departure state will occur (stopping state)
 - Coefficient of risk aversion (a derived/fitted component from defined mathematical simulations, which can be fitted to different employee classes)

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Better Models

- The use of a binomial utility model framework is supported by the first and only large scale evidence that demonstrate how exercise behavior affects option values. The evidence spans 1996 – 2003 and covers over 4,000 firms.
- The utility model is fitted to the data based on the assumption that the employee chooses an exercise policy that will maximize the expected utility of his wealth. (i.e. an optionee will exercise when the expected utility from early exercise is greater than the expected utility of continuing, and therefore the decision of the optionee to leave the option alive depends on the future values of the stock price and on future exercise decisions.

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Comparisons

Comparative example with high and low volatility firms

Model / Formula	High Volatility	Low Volatility
Utility Model	\$5.23	\$2.28
Binomial	\$6.60	\$2.34
Black Scholes	\$6.61	\$2.35
Assumptions		
Strike Price	\$10	\$10
Underlying Share Price	\$10	\$10
Expected Life (utility)	2.59	3.25
Expected Life	4.0	4.0
Expected Volatility	95%	25%
Expected Risk Free Rate	3%	3%
Expected Dividend Yield	0.5%	0.5%

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Any Questions?

Thank You

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