IFL INTEGRATED FINANCE LTD

Proposal by Integrated Finance Limited for Expensing Employee Compensatory Stock Options for Financial Reporting Purposes

Introduction

Integrated Finance Limited ("IFL") has developed an accounting approach for employee stock options that matches the expense of option-based compensation to the timing and magnitude of economic transfer. The approach, which is adaptable to either closed-form or binomial valuation models, complements the FASB draft proposal by providing a specific framework in which to apply the FASB recommendations.

The IFL approach is driven by the key insight that only the part of the option value earned without the obligation of continued employment should be treated as an expense.[1] We pay specific attention to the fact that most stock option plans stipulate that if the employee resigns or is terminated then the maturity for the *vested* option is truncated to 90 days. Hence, at any given point in time, an employee in fact owns (free and clear of any future commitment to work for the company) only a 90-day option, even if the stated maturity of the option is 10 years.[2] Thus, the "extension" of the maturity as a consequence of the employee's continued employment is the appropriate expense in each accounting period. This approach to expensing vested options in turn has implications for plans that require a vesting period. For such plans, IFL proposes that the option value to be conferred at vesting be estimated quarterly beginning at time of grant and that the corresponding estimated expense be revised and allocated as a pro-rata accrual each quarter over the vesting period.

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[1] The idea that only the value of the part of that option which is owned without requiring continued employment in the future should be expensed was first presented in "Accounting for Stock Options," Jeremy Bulow and John Shoven, Stanford University, unpublished manuscript, January 15, 2004.

[2] For some companies, the maturity because of termination may differ from 90 days. For a company with an N-day maturity provision, the underlying logic for quarterly accounting periods would still apply, and the expense each quarter would equal a 90-day extension of an N-day option. If the termination window is in fact 90 days, the extension and maturity conveniently match up, simplifying the valuation process.

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Summary: IFL Process for Expensing Employee Stock Options

For vested employee stock options that expire 90 days after employee termination, IFL proposes:

1. In the period after the option becomes vested ("the vested period"), outstanding employee stock options should be expensed at the end of each quarter for the incremental value of extending the option for an additional quarter. There is no option expense in the quarter when the option is either exercised or expires.
2. In the pre-vested period ("the vesting period"), employee stock options should be expensed based on an option maturity of the quarter-end date when the option vests plus the termination-linked time-frame dictated by the company option plan; typically, the quarter-end date when the option vests plus 90 days.
3. The expense of an unvested employee stock option should be spread over the vesting period on a pro-rata basis and recalculated each accounting period during vesting to reflect the then current value of the option; the cumulative expense charge over the entire vesting period will equal the fair-market value of the option at its vesting date.

Benefits of the IFL Process for Expensing Employee Stock Options

1. It reflects the actual economics of the exchange of labor for valuable consideration by charging the fair market value of what the firm has transferred to the employee and by allocating that expense to the accounting period in which the employee worked to receive that transfer.

2. In the vested period, valuation typically will not be based on maturities greater than 90 days, for which there are traded options; even when traded prices are not available, most agree that the Black-Scholes and other (lattice) models of option pricing are more accurate for shorter maturity options.

3. In the vested period, because the termination-linked option maturities generally are 90 days, adjustments in valuation for early exercise before expiration are not likely to be needed or material.
4. At grant, the time horizon for valuation is the vesting period plus 90 days, typically 1.25-3.25 years, which is within a maturity range for reasonably effective model pricing and allows benchmark pricing to publicly traded LEAPs (Long term Equity Anticipation Securities). Furthermore, because options cannot be exercised prior to vesting, any need to estimate early exercise dates is eliminated.
5. In the vesting and vested periods, the IFL approach should lead to a greater degree of comparability in option valuation and expense allocation among companies.
6. It is an option-expense approach that is consistent with expensing restricted stock.

Detailed Illustration of the IFL Process for Expensing Employee Options

We demonstrate the specific application of the recommended approach by means of two hypothetical examples, one for vested options and the other for unvested options.

***Example #1: Expensing of Vested Options*.**

Consider three employees of *XYZ Corporation*, "*A*", "*B*", and "*C*", each of whom has identical total compensation histories at *XYZ* and each of whom has worked at *XYZ* for at least the entire 2003. *XYZ* has an employee stock option plan, which grants 10-year at-the-money options that vest immediately upon grant. If the employee leaves the firm, whether voluntarily or as a result of having been terminated not for cause, the vested options must be exercised within 90 days. Thus, upon leaving the firm, the effective maturity of the vested option becomes 90 days. On December 31, 2003, the price of *XYZ* shares is $100. Suppose each of the employees is granted a 10-year option with an exercise price of $100, which vests immediately.

To determine the valuation and allocation of the option expenses, consider what happens if employee *A* resigns from the firm the next day, January 1, 2004. The expiration date of his option immediately becomes March 31, 2004. As is common for many listed companies, 90-day options on *XYZ* with the same $100 exercise price as the granted options are trading in the public market at $8.20 per option. Since employee *A* owns that option and will not perform any further work for the firm in the future, the fair-market value of that option, $8.20, must be a compensation expense for past effort. The option was granted and vested in 4th Q 2003 and thus we would allocate the entire $8.20 expense to that quarter. It is difficult to justify allocating any of the expense to an earlier quarter unless there was a specific allocation of the option prior to the 4th Q 2003, which, in effect, would have been a grant. Furthermore we want to avoid a process that causes periodic restatements of earlier quarter income. Since employees *B* and *C* had the same rights to leave the firm and retain the option value that *A* has, we charge the same amount, $8.20, as a 4th Q compensation expense for each of them as well.

Continuing with the example, consider what happens if on March 31, 2004, both employees *B* and *C* are at the firm and on April 1, 2004, employee *B* is terminated not for cause. As a result, the expiration date of *B*'s option immediately becomes June 30, 2004. Suppose the March 31, 2004 closing price on *XYZ* is $120 and the fair market value of *B*'s 90-day option with an exercise price of $100 is $22.54. How much of that option value did *B* earn as a consequence of being employed by *XYZ* during the 4th quarter? On December 31, 2003, employee *A* and employee *B* were in identical economic situations with respect to *XYZ*. Subsequently, employee *A* did not work at the firm and employee *B* did. Thus, since employee *B* will not perform any further work for *XYZ* in the future, the difference in the value of the option owned by employee *B* and the value of the option owned by employee *A* on March 31, 2004 must be the option-related compensation received by employee *B* for working in 1st Q 2004. March 31, 2004 is the expiration date of employee *A*'s option and so its value is its intrinsic value, ($120-$100 =) $20. Thus, the difference between the fair market value of employee *B*'s option and employee *A*'s option is $22.54 - $20.00 = $2.54 and that is the compensation expense for *B*'s option in the 1st Q 2004. In effect, by *B* working another quarter beyond *A*, he received a 90-day extension on the maturity of his option relative to *A*'s option. The value of that extension in this case is exactly the *time value of a 90-day option*, the difference

between the fair-market value of a 90-day option and its intrinsic value. Since on March 31, 2004, employees *B* and *C* were in identical positions in terms of their relationship to *XYZ*, the compensation expense charged for *C*'s option in the 1st Q 2004 should be the same as for *B*'s or $2.54. Note that there is no further compensation expense charged for *A*'s option because he did not work at *XYZ* in 1st Q 2004.

We now derive the quarterly expenses for employee *C* if he continues to work for *XYZ* for another year. Suppose that on June 30, 2004, the stock price is $90 and the fair market value of a 90-day option on *XYZ* with a $100 exercise price is $3.72. Since *B*'s option expires on June 30, its fair market value is its intrinsic value, $0. Since the only difference between *B* and *C* is that *C* worked the 2nd Q 2004 and *B* didn't, the option-based compensation charge for *C* is the difference between the value of his option, $3.72, and *B*'s, which is worthless.

Suppose that on September 30, 2004, the price of *XYZ* stock is $140 and the fair market value of a 90-day option with an exercise price of $100 is $40.92, then the option-related compensation charge for *C* having worked for the 3rd quarter is the value of an extension of his option maturity date for another 90 days, $40.92-$40.00 = $0.92. Suppose that the stock price on December 31, 2004 is $160 and the fair market value of a 90-day option with an exercise price of $100 is $60.57, then *C*'s option-based compensation charge for working the 4th Q 2004 would be $60.57 - $60.00 = $0.57. Suppose that the stock price of *XYZ* on March 31, 2005 is $175 but *C* had exercised his option some time on or before March 31. An employee with the same option as *C* on December 31, 2004 but who left the firm on January 1, 2004 could have exercised at exactly the same time that *C* did during the 1st Quarter of 2005 and would have received the identical payout. Thus, *C* earned no option-based compensation as a consequence of his working for *XYZ* in the 1st Q 2005 and hence, there is no expense. And of course since his option no longer exists, there will be no expense for it in any later quarter. The entire time path of expensing is summarized in Table 1.

Observations on the effect of truncation of maturity drawn from this example:

The provision in standard option plans that calls for the maturity of a vested option to truncate to 90 days upon the employee leaving the firm has a very substantial effect on the magnitude of option expenses and on the allocation of

those expenses to various accounting periods. To demonstrate how substantial this effect can be, consider the expensing that would occur in the same hypothetical situation, if the plan terms are changed so that vested options retain their full stated maturity (in this case 10 years from time of grant) even if the employee leaves the firm, voluntarily or as a result of having been terminated not for cause.[3] Under this condition, the options held by employees *A*, *B* and *C* would have had the identical value at all points in time, independently of continued employment beyond the vesting date. By analysis parallel to that leading to a charge of the value of the 90-day option on December 31, 2003, as an expense to 4th Q 2003, we would instead charge the value of a 10-year at-the-money option on that date to the 4th Q 2003. The fair-market value of such an option with the stock price at $100 might be around $50. So without the plan provision of the maturity truncation, there would have been a $150 charge to 4th Q 2003 earnings for the three employees' options and no further expense after that, whether or not the employees left *XYZ*.[4] In contrast, the total expense charged for these options with the truncation provision was: $34.89, allocated: $24.60 for 4th Q 2003; $5.08 for 1st Q 2004; $3.72 for 2nd Q 2004; $0.92 for 3rd Q 2004; $0.57 for 4th Q 2004 and no further expenses thereafter.

The large difference ($150 vs. $35) in the cumulative expense and its distribution across accounting periods caused by the maturity truncation provision is not simply a result of employees with vested options leaving the firm. If all three employees had instead remained at the firm and then exercised in March 2005, the cumulative expenses would have been only $47.85. Furthermore, provided that the stock remained deep in the money at each quarter end from March 2005 to December 2013, even if all three employees had stayed at the firm and did not exercise before the expiration date, still the total expenses charged on the options, $ 65.35, would be considerably less than $150. And that smaller total

[3] Even plans with maturity truncation for termination often contain an exception if termination is a consequence of retirement on or after a specified retirement age. In that case, the retiring employee's vested option retains its entire stated maturity. In the quarter when an employee qualifies for that exception, the expense for maturity extension should be the time value of an option with the remaining stated maturity, not 90 days.

[4] There is no further expense because the options held by the employees contain no greater obligations than if options were issued by the company to non-employee investors for capital infusion. Hence, for financial reporting, the subsequent value of the option including its intrinsic value at time of exercise or expiration is not a compensation expense in return for services to the firm but a capital account matter. It is for that same reason that we expense the intrinsic value, if any, only at the time of vesting and subsequently expense only the time value of the 90-day maturity extensions.

expense would be distributed over 40 quarters from 4th Q 2003 through 3rd Q 2013 instead of concentrated in a single quarter, 4th Q 2003.[5]

As discussed in the circulated FASB Draft Proposal, the prospect of early exercise of a long-dated option can have a significant effect on its valuation and thus such considerations should be taken into account. However, as we see here for plans with a maturity truncation to 90 days after leaving the firm, no vested option expense valuation involves a maturity of greater than 90 days. Therefore, not taking into account early exercise possibilities will have a relatively small effect on that valuation.

***Example #2: Expensing of Unvested Options*.**

Consider the same circumstances described in the preceding example but now *XYZ*'s option plan has a one-year (4 quarter) vesting period from time of grant. Thus, the at-the-money 10-year maturity options granted to employees *A*, *B*, and *C* on December 31, 2003 will vest on December 31, 2004, provided that the employee has not left the firm as of that date. If the employee leaves the firm for any reason prior to that date, the options are forfeited and the employee receives nothing. Because continued future employment during the vesting period (one year from grant in this example) is a condition for the employees to receive the options, it could be argued that no expense is incurred until the options vest. Under that approach, there would be no expense until the option date and then as described in the preceding example, the value on the vesting date of a 90-day option with a $100 exercise price would be charged as an expense to 4th Q 2004.

If however, as we believe, some of the employees' effort to remain at *XYZ* during the vesting period is attributable to the grant of the options, then there should be an accrual of some of the option expense to quarters Q4 2003, Q1 2004, Q2 2004, Q3 2004, as well as Q4 2004, when the option actually vests. The IFL-recommended accrual method is at the end of each quarter to take the fair-market value of an option that expires 90-days after the last quarter of the vesting period and allocate as an expense charge to each quarter the pro-rata value of that option for the number of quarters since grant less the cumulative amount of the option value already expensed in these earlier quarters. In our example, the

[5] Along the lines in the preceding footnote, there is no option expense for the quarter in which the option expires since the employee does not need to work that quarter to receive the full stated maturity remaining in the option.

expiration date of the option used for valuation in each quarter of the vesting period will be 90 days after the vesting date, namely March 31, 2005.

Suppose that the fair-market value of a one-year-and-90-day option on *XYZ* with an exercise price of $100 on December 31, 2003 is $18.75. The value of the three options granted to employees *A*, *B*, and *C* is $56.25. Since there are 5 quarters among which the option expense is to be allocated in the vesting period, ($56.25/5 =) $11.25 is the total expense in Q4 2003.

On March 31, 2004, the stock price is $120 and the fair-market value of a one-year option on *XYZ* with exercise price $100 is $30.40. Because employee *A* left the company during the quarter his option was forfeited, its value is now $0, and the combined value of the two options granted to employees *B* and *C* is $60.80. Since two of the 5 quarters for expense allocation are completed, the charge for Q1 2004 is ($60.80 x 2/5 – previous cumulative expense =) $24.32 – $11.25 = $13.07. On June 30, 2004, the stock price is $90 and the fair-market value of a 9-month option on *XYZ* with an exercise price of $100 is $9.14. Because employee *B* was terminated during the quarter his option was forfeited, its value is now $0, and there is only employee *C*'s option remaining. Since three of the 5 quarters for expense allocation are completed, the charge for Q2 2004 is ($9.14 x 3/5 – previous cumulative expense =) $5.48 - $24.32 = ($18.84) which is a *credit* to earnings of $18.84.

On September 30, 2004, suppose that the stock price is $140 and the fair-market value of a 6-month option on *XYZ* with an exercise price of $100 is $42.75. Since four of the 5 quarters for expense allocation are completed, the charge for Q3 2004 is ($42.75 x 4/5 –previous cumulative expense =) $34.20 - $5.48 = $28.72. On December 31, 2004, Employee *C*'s option becomes vested. The stock price is $160 and the fair-market value of a 90-day option on *XYZ* with exercise price $100 is $60.57. Since five of the 5 quarters for expense allocation are completed, the charge for Q4 2004 is ($60.57 – previous cumulative expenses =) $60.57 - $34.20 = $26.37.

Note that as a design feature of the IFL approach, the total cumulative option expense during the entire vesting period is equal to the fair-market value of vested options at the end of the quarter in which they vested, $60.57. Thus, the cumulative expense as of the time of vesting is the same as it would have been if

there had been no expensing of the options until they vest. However, the recommended accrual method of expenses permits an allocation of the expenses across the quarters in which some of the option-based compensation expense actually occurred, using best available estimates of fair-market value at the time of each accrual. It also ensures that the cumulative expenses are the actual expenses incurred as of the vesting date without a need to restate earlier periods' earnings or expenses.[6] The entire time path of expensing through the vesting period is summarized in Table 2.

Observations on the effect of introducing a vesting period drawn from this example:

It is self-evident that the value of a vested option is greater than the value of an otherwise identical but unvested option at a given point in time. Thus, it may seem inconsistent that the cumulative expense of $60.57 for the unvested options in Example #2 exceeds the cumulative expense of $34.89 for the vested options in Example #1. However, this outcome is primarily the result of the particular time path followed by the stock during the vesting period, which ends up deeply in the money on the vesting date. For example, with the same employee termination pattern, had the stock of *XYZ* instead remained unchanged at $100 throughout the year from December 31, 2003, until December 31, 2004, the cumulative expense of the granted options for the immediate vested case of Example #1 would have been $65.60 and the cumulative expense of the granted options for the unvested case of Example #2 would have been only $8.20.[7] Thus, the after-the-fact differences in expenses between vested and unvested options depend on the time path followed by the stock during the vesting period and can be either larger or smaller.

[6] Robert Kaplan and Krishna Palepu present an accrual method for expensing options during the vesting period in "Expensing Stock Options: A Fair-Value Approach", *Harvard Business Review*, December 2003. While their method and the one presented here are different, they share a similar accounting philosophy. The IFL approach will typically produce a "smoother" time path of expenses than the Kaplan-Palepu procedure, although it is not proposed for that reason.

[7] This specific time pattern of stock price remaining at the money at the end of each expense period maximizes the expenses of the vested options because it maximizes the time value of the options at each expense date.

Table 1 - Example: Stock Expense during Vested Period

Option Description:	10 year maturity $100 strike price vests immediately maturity truncated to 90 days if terminated initial stock price $100

Timeline	Employee A	Employee B	Employee C	Company
December 31, 2003	granted option	granted option	granted option	expenses three 90 day options stock price $100 90 day option value = $8.20 expense = $8.20 x 3 options = $24.60
January 1, 2004	resigns now owns an option expiring March 31, 2004			
March 31, 2004	option expiring option value $20	employed	employed	expenses the extension of two options for 90 days stock price $120 90 day option value = $22.54 time value of 90 day option = $2.54 expense = $2.54 x 2 options = $5.08
April 1, 2004		terminated without cause now owns an option expiring June 30, 2004		
June 30, 2004		option expiring option value $0	employed	expenses the extension of one option for 90 days stock price $90 90 day option value = $3.72 time value of 90 day option = $3.72 expense = $3.72 x 1 option = $3.72
September 30, 2004			employed	expenses the extension of one option for 90 days stock price $140 option value = $40.92 time value of 90 day option = $0.92 expense = $0.92 x 1 option = $0.92
December 31, 2004			employed	expenses the extension of one option for 90 days stock price $160 option value = $60.57 time value of 90 day option = $0.57 expense = $0.57 x 1 option = $0.57
First Quarter 2005			option exercised	
March 31, 2005				no expense
				Total expense = $34.89

Table 2 - Example: Stock Expense during Vesting Period

Option Description:	10 year maturity $100 strike price 1 year vesting period option surrendered if terminated prior to vesting initial stock price $100

Timeline	Employee A	Employee B	Employee C	Company
December 31, 2003	granted option	granted option	granted option	expenses the accrued value of three options, maturing on March 31, 2005, spread over 5 quarters stock price $100 option value (maturity of March 31, 2005) = $18.75 expense = $18.75 / 5 x 3 options = $11.25
First Quarter 2004	resigns			
March 31, 2004		employed	employed	expenses the accrued value of two options maturing on March 31, 2005 stock price $120 option value (maturity of March 31, 2005) = $30.40 expense = $30.40 / 5 x 2 quarters x 2 options = $24.32, less $11.25 previously expensed = $13.07
Second Quarter 2004		terminated without cause		
June 30, 2004			employed	expenses the accrued value of one option maturing on March 31, 2005 stock price $90 option value (maturity of March 31, 2005) = $9.14 expense = $9.14 / 5 x 3 quarters = $5.48, less $24.32 previously expensed = -$18.84 (credit)
September 30, 2004			employed	expenses the accrued value of one option maturing on March 31, 2005 stock price $140 option value (maturity of March 31, 2005) = $42.75 expense = $42.75 / 5 x 4 quarters = $34.20, less $5.48 previously expensed = $28.72
December 31, 2004			employed	expenses the accrued value of one option maturing on March 31, 2005 stock price $160 option value (maturity of March 31, 2005) = $60.57 expense = $60.57 / 5 x 5 quarters = $60.57, less $34.20 previously expensed = $26.37 Total expense = $60.57