

A Technical Roadmap to Expense Allocation Under FAS 123(R)

Overview

As of this writing, there are many approaches to recognizing the compensation expense associated with share awards under Financial Accounting Statement 123 (Revised). Some companies apply forfeiture rates (pre-vesting) in the aggregate, while others apply forfeiture rates to each individual grant. Many reconcile against actual forfeiture experience on quarterly interim periods, while others reconcile at annual periods, and others reconcile on the vest date. Best practices are continuing to evolve.

However, it is our opinion that it will become *best practice* to reconcile forfeiture experience quarterly based upon individual option grants, and therefore any incremental changes in estimates will consistently be re-amortized over the requisite service period during interim periods. This approach will lend to less volatile financial statements comparatively against less frequent reconciliations.

The intent of this summary is to illustrate a recognition approach that can be a roadmap for companies in amortizing compensation expense as well as reconciling actual forfeiture experience. But before doing so, a company must make a couple of decisions, with respect to the amortization policy, and the forfeiture rate that is anticipated to occur.

FAS 123(R) allows companies to recognize compensation cost for an award with a graded vesting schedule either on a straight-line basis for each separately vesting portion (“tranche”) of the award (consistent with Financial Interpretation Number 28) or on a straight-line basis for the entire award. However, the amount of compensation cost recognized at any date must at least equal the vested portion at that date.¹

Additionally, companies shall base initial accruals of compensation cost on the estimated number of shares to vest. That estimate shall be revised if subsequent information indicates that the actual number of instruments is likely to differ from previous estimates.² We recommend that companies look at historical rates of forfeiture, as well as any other economic and demographic reasons for why the future may differ from the past. One approach to doing so is an actuarial analysis of termination and mortality rates based upon the current demographic profile of option holders.

After making these decisions, the steps below will illustrate the allocation of compensation expense under FAS123(R).

¹ Per paragraph 42 of FAS123(R)

² Per paragraph 43 of FAS123(R)

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Step 1: Determining the Expected Awards to Vest

The first step in the process needs to be in determining the expected number of awards to vest. This determination should consider all relevant characteristics such as vesting schedules, change in control provisions, retirement eligibility, and other provisions.

Therefore, to calculate expense at any *Measurement Date (MD)* at time i , the projected awards to vest, PV_i , must be estimated. Further, the accrued vested shares, AV_i , at time i can be determined. As mentioned earlier and in Paragraph 42, at no time can the expense recognized be less than the accrued number of shares to vest, and therefore AV_i can be viewed as an expense minimum floor.

Again, this calculation should consider the probability of early vesting for reasons such as retirement eligibility. Therefore, if awards are to vest upon retirement eligibility, and the actual service *Vesting Date (VD)* is a period later than the retirement eligibility date, then the expected awards to vest should reflect this. It may be necessary to calculate an adjusted *Vesting Date (VD)* to reflect for an early recognition of vesting provisions. For simplicity purposes, the forthcoming examples do not adjust the *Vesting Date (VD)* to reflect for any early vesting provisions.

For each vesting tranche t at a *Measurement Date (MD)* i , PV_i^t should be estimated:

$$PV_i^t = \sum_{t=1}^n \left(\frac{\text{Number of Options in Tranche } t}{(1 + \text{Forfeiture Rate})^{\frac{\text{Max}(VD^t - MD_i, 0)}{365.25}}} \right)$$

(In the rare cases of daily vesting, we recommend that the above calculation be simplified to more generalized annual vesting, with vesting occurring mid-year – and therefore reasonably estimate the number of awards to vest).

Further, it can be ascertained for each vesting tranche t , the number of options that are currently vested at *Measurement Date* i , AV_i^t .

Since different types of individuals may have different expectations of turnover and thus forfeiture rates, we believe that best practice will lead towards calculating PV_i^t on an individual award basis, rather than for the aggregate number of awards.

Step 2: Expense Recognition

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At any *Measurement Date*, (*MD*), in between the *Grant Date* (*GD*) and *Vesting Date* (*VD*), the projected required expense can be calculated as the ratio of the days since grant to the requisite vesting period (where *MD* after the *VD* is 100% recognized, and *MD* prior to the *GD* is 0% recognized).

Using a straight-lined approach, only the final and terminal vesting date is required to determine the current *Cumulative Amortization Ratio* (*CAR*),

$$CAR_i = \text{Maximum}(\text{Minimum}\left(\frac{MD_i - GD}{VD - GD}\right), 100\%), 0\%)$$

Using a FIN28 approach, it will be necessary to calculate the *Cumulative Amortization Ratio* for each respective vesting tranche *t*.

$$CAR_i = \sum_{t=1}^n \text{Maximum}(\text{Minimum}\left(\frac{MD_i - GD}{VD_t - GD}\right), 100\%), 0\%)$$

(Again, in the rare cases of daily vesting, we strongly urge the use of a straight-lined recognition policy, or else a company will need use a simplification technique to estimate the *Cumulative Amortization Ratio*).

Therefore, regardless of the expense recognition policy (either straight-line or FIN 28) the required *Amortized Expense* that needs to be accrued through the *Measurement Date* can be expressed as AE_i :

$$AE_i = \text{Maximum}\{AV_i \times FV, PV_i \times FV \times CAR_i\}$$

Note that under fixed accounting, the *Fair Value*, *FV*, of an award will not vary as a function of the *Measurement Date*, *i*.

Since AE_i should represent the entire *Amortized Expense* recognized to date, then the *Current Expense* for period, CE_i , should be offset by any accruals during prior financial reporting periods, AE_{i-1} , which can be tracked over reporting periods.

$$CE_i = AE_i - AE_{i-1}$$

Example 1 on Page 5 illustrates the calculation of expense.

Step 3: Actuarial (Gain)/Loss Analysis as part of the Reconciliation

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We believe that a (gain)/loss analysis which reconciles the prior expense projections to the current period expense is an important aspect of understanding its sensitivity.

At a minimum, a (gain)/loss analysis should incorporate changes due to:

- New options granted into the pool
- Actual forfeitures comparatively against projected forfeitures

To prepare this analysis, first isolate all options that have *Unrecognized Amortization Expense* as of the end of the prior measurement period, $UAE_{i-1} \geq 0$

Therefore, these options are isolated to those who are being recognized during the duration of the current measurement period.

At *Measurement Date i*, for each grant x , with fair value, FV_x , calculate the following,

$$\sum_{x=1}^n (PV_i^t - PV_{i-1}^t) \times FV_x \times CAR_i = \Delta \text{ due to forfeiture experience}$$

Starting on the next page (Example 1), we have laid out examples for the next several reporting periods of applying the concepts for Steps 1 through 3.

Example 1

The following example illustrates the recognition of expense. During the January 1, 2007 – March 31, 2007 (Q1) fiscal period, Company ABC issued 7,800 options at various Grant Dates, and market prices. All options have 4 year graded vesting, and Company ABC anticipates a 5% annual rate of pre-vesting forfeiture. Company ABC intends to recognize the compensation expense using a straight-line basis. Assuming all options are outstanding as of March 31, 2007, the following chart summarizes expense during Q1:

Assumptions

Measurement Date 03/31/07
Forfeiture Rate 5.00%

Name	Options	Strike Price	GD Grant Date	VD Full Vest Date	Fair Value	AV _I Accrued Vest	PV _I Projected To Vest	Expense Recognition			
								1/1/2007 3/31/2007	4/1/2007 6/30/2007	7/1/2007 9/30/2007	10/1/2007 12/31/2007
Grant 1	100	\$10.00	1/1/2007	1/1/2011	\$3.00	0.00	89.71	\$16.39	\$16.76	\$16.95	\$16.95
Grant 2	200	\$11.00	1/2/2007	1/2/2011	\$3.30	0.00	179.39	\$35.66	\$36.87	\$37.28	\$37.28
Grant 3	300	\$12.00	1/3/2007	1/3/2011	\$3.60	0.00	269.05	\$57.68	\$60.33	\$60.99	\$60.99
Grant 4	400	\$13.00	1/4/2007	1/4/2011	\$3.90	0.00	358.69	\$82.34	\$87.13	\$88.09	\$88.09
Grant 5	500	\$14.00	1/5/2007	1/5/2011	\$4.20	0.00	448.30	\$109.54	\$117.28	\$118.56	\$118.56
Grant 6	600	\$15.00	1/6/2007	1/6/2011	\$4.50	0.00	537.89	\$139.17	\$150.76	\$152.42	\$152.42
Grant 7	700	\$16.00	1/7/2007	1/7/2011	\$4.80	0.00	627.45	\$171.10	\$187.59	\$189.65	\$189.65
Grant 8	800	\$17.00	1/8/2007	1/8/2011	\$5.10	0.00	716.99	\$205.23	\$227.76	\$230.26	\$230.26
Grant 9	900	\$18.00	1/9/2007	1/9/2011	\$5.40	0.00	806.51	\$241.45	\$271.26	\$274.24	\$274.24
Grant 10	1,000	\$19.00	1/10/2007	1/10/2011	\$5.70	0.00	896.00	\$279.65	\$318.11	\$321.60	\$321.60
Grant 11	1,100	\$20.00	1/11/2007	1/11/2011	\$6.00	0.00	985.47	\$319.72	\$368.28	\$372.33	\$372.33
Grant 12	1,200	\$21.00	1/12/2007	1/12/2011	\$6.30	0.00	1,074.91	\$361.54	\$421.80	\$426.43	\$426.43
TOTAL	7,800					0.00	6,990.34	\$2,019.48	\$2,263.93	\$2,288.81	\$2,288.81

Expense Recognition for the January 1 – March 31 Interim Reporting Period

To summarize the mathematics of the prior example, first we need to calculate the expected number of options to vest as of the *Measurement Date*, 3/31/2007. We have illustrated this example for Grant #1.

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

As of 3/31/2007, the first vesting tranche of Grant #1 has 276 days until vesting. Therefore the expected number of options can be determined to be 24.10, based on the following formula:

$$PV_1^1 = \left(\frac{\text{Number of Options in Tranche 1}}{(1 + \text{Forfeiture Rate})^{\frac{\text{Max} (VD^1 - MD_1, 0)}{365.25}}} \right) = \frac{25 \text{ options}}{(1.05)^{\frac{276}{365.25}}} = 24.10 \text{ options}$$

Using a similar approach for each of the vesting tranches determines that 89.71 options are expected to vest.

Vest Date	Days To Vest	Total Options	Expect To Vest
1/1/2008	276	25.00	24.10
1/1/2009	642	25.00	22.95
1/1/2010	1007	25.00	21.85
1/1/2011	1372	25.00	20.81
TOTAL		100.00	89.71

Therefore, PV_1^T at 3/31/2007 is equal to 89.71 for all tranches. Since no options are vested as of 3/31/2007, then AV_1^T is equal to zero.

From *Grant Date* to *Vest Date*, there are 1,461 days. As of the *Measurement Date* of 3/31/2007, 89 days have expired, and therefore the *Cumulative Amortization Ratio* to date is determined as:

$$CAR_1 = \text{Maximum}(\text{Minimum}(\frac{89}{1461}, 100\%), 0\%) = .06091718$$

(Please note that if a company is not straight-lining, and is instead recognizing expense under FIN 28, then the determination of the *Cumulative Amortization Ratio*, *CAR*, is the only item that will change.)

Therefore as of 3/31/2007, the required *Amortized Expense* and the *Current Expense* that needs to be recognized is equal to \$16.39.

Example 1 (continued)

Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

$$AE_1 = \text{Maximum}\{AV_1 \times FV, PV_1 \times FV \times CAR_1\} = \text{Maximum}\{0 \times \$3.00, 89.71 \times .06091718 \times \$3.00\} = \$16.39$$

$$CE_1 = AE_1 - AE_0 = \$16.39 - \$0 = \$16.39$$

Since no expense has been recognized in prior reporting periods, the entire expense needs to be recognized during Q1.

Following a similar pattern for each of the above grants dictates that as of 3/31/2007, \$2,019.48 should be accrued during Q1.

Expense Recognition for the April 1 – June 30 Interim Reporting Period

Assume that during the 2nd quarter (April 1 – June 30), no options have been forfeited. Also, note that a new grant occurred on 4/2/2007. A summary of all grants as of 6/30/2007 is as follows:

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Assumptions

Measurement Date 06/30/07
 Forfeiture Rate 5.00%

Name	Options	Strike Price	GD Grant Date	VD Full Vest Date	Fair Value	AV ₂ Accrued Vest	PV ₂ Projected To Vest	Expense Recognition			
								1/1/2007 3/31/2007	4/1/2007 6/30/2007	7/1/2007 9/30/2007	10/1/2007 12/31/2007
Grant 1	100	\$10.00	1/1/2007	1/1/2011	\$3.00	0.00	90.80	\$16.39	\$17.17	\$17.15	\$17.15
Grant 2	200	\$11.00	1/2/2007	1/2/2011	\$3.30	0.00	181.58	\$35.66	\$37.76	\$37.73	\$37.73
Grant 3	300	\$12.00	1/3/2007	1/3/2011	\$3.60	0.00	272.34	\$57.68	\$61.77	\$61.74	\$61.74
Grant 4	400	\$13.00	1/4/2007	1/4/2011	\$3.90	0.00	363.07	\$82.34	\$89.20	\$89.17	\$89.17
Grant 5	500	\$14.00	1/5/2007	1/5/2011	\$4.20	0.00	453.78	\$109.54	\$120.05	\$120.01	\$120.01
Grant 6	600	\$15.00	1/6/2007	1/6/2011	\$4.50	0.00	544.46	\$139.17	\$154.31	\$154.28	\$154.28
Grant 7	700	\$16.00	1/7/2007	1/7/2011	\$4.80	0.00	635.12	\$171.10	\$191.98	\$191.97	\$191.97
Grant 8	800	\$17.00	1/8/2007	1/8/2011	\$5.10	0.00	725.76	\$205.23	\$233.05	\$233.08	\$233.08
Grant 9	900	\$18.00	1/9/2007	1/9/2011	\$5.40	0.00	816.37	\$241.45	\$277.53	\$277.60	\$277.60
Grant 10	1,000	\$19.00	1/10/2007	1/10/2011	\$5.70	0.00	906.96	\$279.65	\$325.42	\$325.54	\$325.54
Grant 11	1,100	\$20.00	1/11/2007	1/11/2011	\$6.00	0.00	997.52	\$319.72	\$376.70	\$376.89	\$376.89
Grant 12	1,200	\$21.00	1/12/2007	1/12/2011	\$6.30	0.00	1,088.06	\$361.54	\$431.38	\$431.65	\$431.65
Grant 13	1,300	\$22.00	4/2/2007	4/2/2011	\$6.60	0.00	1,166.16	\$0.00	\$468.86	\$484.66	\$484.66
TOTAL	9,100					0.00	8,241.98	\$2,019.48	\$2,785.18	\$2,801.47	\$2,801.47

Note that the expense recognition for Q1 has not changed, as the amount accrued was fixed. We have highlighted that column to illustrate that it is consistent with the calculations done as of 3/31/2007.

Again, it is necessary to calculate the expected number of options to vest, given the experience to date. As of 6/30/2007, the first vesting tranche of grant #1 has 185 days until vesting. Therefore the expected number of options can be determined to be 24.39, based on the following formula:

$$PV_2^1 = \left(\frac{\text{Number of Options in Tranche 1}}{(1 + \text{Forfeiture Rate})^{\frac{\text{Max}(VD^1 - MD_2, 0)}}{365.25}} \right) = \frac{25 \text{ options}}{(1.05)^{\frac{185}{365.25}}} = 24.39 \text{ options}$$

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Using a similar approach for each of the vesting tranches determines that 90.80 options are expected to vest. (Note that after 3 months of experience, an additional 1.10 options are expected to vest)

Vest Date	Days To Vest	Total Options	Expect To Vest
1/1/2008	185	25.00	24.39
1/1/2009	551	25.00	23.23
1/1/2010	916	25.00	22.12
1/1/2011	1281	25.00	21.07
TOTAL		100.00	90.80

Therefore, PV_2^T at 6/30/2007 is equal to 90.80 for all vesting tranches. Since no options are vested as of 6/30/2007, then AV_2^T is equal to zero.

From *Grant Date* to *Vest Date*, there are 1,461 days. As of the *Measurement Date* of 6/30/2007, 180 days have expired, and therefore the *Cumulative Amortization Ratio* to date is determined as:

$$CAR_2 = \text{Maximum}(\text{Minimum}(\frac{180}{1461}, 100\%), 0\%) = .123203285$$

Therefore as of 6/30/2007, the required *Amortized Expense* that needs to be recognized is equal to \$33.56.

$$AE_2 = \text{Maximum} \{ AV_2 \times FV, PV_2 \times FV \times CAR_2 \} = \text{Maximum} \{ 0 \times \$3.00, 90.80 \times .123203285 \times \$3.00 \} = \$33.56$$

Since during Q1 (see Page 5), \$16.39 was accrued, then the current expense required to be recognized is equal to \$17.17.

$$CE_2 = AE_2 - AE_1 = \$33.56 - \$16.39 = \$17.17$$

Following a similar pattern for each of the above grants, \$2,785.18 should be accrued during Q2 in the aggregate.

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Reconciliation of Actual Q2 Expense Against Projected Q2 Expense

During Q1, it was projected that Q2 expense would be equal to \$2,263.93. As of 6/30/2007, we now see that Q2 expense was equal to \$2,715.18. Why such a big difference? Following our approach for reconciling changes in expense we note:

Reconciliation of (Gain)/Loss from Prior Estimate to Current Expense	Period Expense
Prior Period Expense Projection	\$2,263.93
Change due to New Option Entry and Completion of Recognition Period	\$468.86
Change due to (Gain)/ Loss in Actual Forfeiture Experience	\$52.39
New Expense Projection	\$2,785.18

Note that an additional \$468.86 of current expense was recognized in Q2 due to a new grant, which was not projected in Q1. Further, an additional \$52.39 was recognized to reflect for the additional 85.49 options that are now expected to vest in the aggregate. (Note the 8,241.98 options expected during Q2 *less* the new grant of 1,166.16 *less* the prior estimate of 6,990.34)

$$8,241.98 - 1,166.16 - 6,990.34 = 85.49$$

To verify this reconciliation, we can look at each grant and compare the prior estimation of vested options compared to the new estimate (note that we have excluded the new grant during Q2).

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

	Total Options	Estimated	Estimated	Reconciliation				Alternative Reconciliation		
		<i>EV</i> ₂ 3/31/2007	<i>EV</i> ₂ 6/30/2007	Incremental Options	Fair Value	Total Expense	Amortized Expense	Prior <i>CE</i> ₂	New <i>CE</i> ₂	Additional Expense
Grant 1	100	89.71	90.80	1.10	\$3.00	\$3.29	\$0.41	\$16.76	\$17.17	\$0.41
Grant 2	200	179.39	181.58	2.19	\$3.30	\$7.24	\$0.89	\$36.87	\$37.76	\$0.89
Grant 3	300	269.05	272.34	3.29	\$3.60	\$11.85	\$1.44	\$60.33	\$61.77	\$1.44
Grant 4	400	358.69	363.07	4.39	\$3.90	\$17.11	\$2.07	\$87.13	\$89.20	\$2.07
Grant 5	500	448.30	453.78	5.48	\$4.20	\$23.03	\$2.77	\$117.28	\$120.05	\$2.77
Grant 6	600	537.89	544.46	6.58	\$4.50	\$29.60	\$3.55	\$150.76	\$154.31	\$3.55
Grant 7	700	627.45	635.12	7.67	\$4.80	\$36.83	\$4.39	\$187.59	\$191.98	\$4.39
Grant 8	800	716.99	725.76	8.77	\$5.10	\$44.72	\$5.30	\$227.76	\$233.05	\$5.30
Grant 9	900	806.51	816.37	9.86	\$5.40	\$53.26	\$6.27	\$271.26	\$277.53	\$6.27
Grant 10	1,000	896.00	906.96	10.96	\$5.70	\$62.46	\$7.31	\$318.11	\$325.42	\$7.31
Grant 11	1,100	985.47	997.52	12.05	\$6.00	\$72.31	\$8.41	\$368.28	\$376.70	\$8.41
Grant 12	1,200	1,074.91	1,088.06	13.15	\$6.30	\$82.82	\$9.58	\$421.80	\$431.38	\$9.58
TOTAL	7,800	6,990.34	7,075.83	85.49		\$444.53	\$52.39	\$2,263.93	\$2,316.32	\$52.39

Note that the chart above illustrates the original 6,990.34 shares expected to vest on 3/31/2007, the refined estimate of 7,075.83 on 6/30/2007, and the incremental difference of 85.49 options. The total expense required to be recognized over the requisite service period is equal to \$444.53. However, only \$52.39 needs to be recognized as of 6/30/2007, and the remaining expense of \$392.41 (\$444.53-\$52.39) is re-amortized and smoothed into the remaining service period.

Expense Recognition for the July 1 – September 30 Interim Reporting Period

Assume that during the 3rd quarter (July 1 - September 30), Grant #6 of 600 options was Forfeited. A summary of all grants as of 9/30/2007 is as follows:

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Assumptions

Measurement Date 09/30/07
 Forfeiture Rate 5.00%

Name	Number	Strike Price	GD Grant Date	VD Full Vest Date	Fair Value	AV ₃ Accrued Vest	PV ₃ Projected To Vest	Expense Recognition			
								1/1/2007 3/31/2007	4/1/2007 6/30/2007	7/1/2007 9/30/2007	10/1/2007 12/31/2007
Grant 1	100	\$10.00	1/1/2007	1/1/2011	\$3.00	0.00	91.93	\$16.39	\$17.17	\$17.78	\$17.37
Grant 2	200	\$11.00	1/2/2007	1/2/2011	\$3.30	0.00	183.83	\$35.66	\$37.76	\$39.11	\$38.20
Grant 3	300	\$12.00	1/3/2007	1/3/2011	\$3.60	0.00	275.71	\$57.68	\$61.77	\$63.98	\$62.50
Grant 4	400	\$13.00	1/4/2007	1/4/2011	\$3.90	0.00	367.56	\$82.34	\$89.20	\$92.39	\$90.27
Grant 5	500	\$14.00	1/5/2007	1/5/2011	\$4.20	0.00	459.39	\$109.54	\$120.05	\$124.34	\$121.50
Grant 6	600	\$15.00	1/6/2007	1/6/2011	\$4.50	0.00	0.00	\$139.17	\$154.31	(\$293.47)	\$0.00
Grant 7	700	\$16.00	1/7/2007	1/7/2011	\$4.80	0.00	642.98	\$171.10	\$191.98	\$198.83	\$194.35
Grant 8	800	\$17.00	1/8/2007	1/8/2011	\$5.10	0.00	734.73	\$205.23	\$233.05	\$241.38	\$235.96
Grant 9	900	\$18.00	1/9/2007	1/9/2011	\$5.40	0.00	826.46	\$241.45	\$277.53	\$287.45	\$281.03
Grant 10	1,000	\$19.00	1/10/2007	1/10/2011	\$5.70	0.00	918.17	\$279.65	\$325.42	\$337.04	\$329.56
Grant 11	1,100	\$20.00	1/11/2007	1/11/2011	\$6.00	0.00	1,009.85	\$319.72	\$376.70	\$390.16	\$381.55
Grant 12	1,200	\$21.00	1/12/2007	1/12/2011	\$6.30	0.00	1,101.51	\$361.54	\$431.38	\$446.79	\$436.98
Grant 13	1,300	\$22.00	4/2/2007	4/2/2011	\$6.60	0.00	1,180.58	\$0.00	\$468.86	\$496.45	\$490.65
TOTAL	9,100					0.00	7,792.70	\$2,019.48	\$2,785.18	\$2,442.22	\$2,679.92

Note that the expense recognition for Q1 and Q2 has not changed, as the amount accrued was fixed. We have highlighted those columns to illustrate that it is consistent with the calculations done as of 6/30/2007.

Again, it is necessary to calculate the expected number of options to vest, given the experience to date. As of 9/30/2007, the first vesting tranche of grant #1 has 93 days until vesting. Therefore the expected number of options can be determined to be 24.69, based on the following formula:

$$PV_3^1 = \left(\frac{\text{Number of Options in Tranche 1}}{(1 + \text{Forfeiture Rate})^{\frac{\text{Max}(VD^1 - MD_2, 0)}}{365.25}}} \right) = \frac{25 \text{ options}}{(1.05)^{\frac{93}{365.25}}} = 24.69 \text{ options}$$

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Using a similar approach for each of the vesting tranches determines that 91.93 options are expected to vest. (Note that after 3 additional months of experience, an additional 1.12 options are expected to vest)

Vest Date	Days To Vest	Total Options	Expect To Vest
1/1/2008	185	25.00	24.69
1/1/2009	551	25.00	23.51
1/1/2010	916	25.00	22.39
1/1/2011	1281	25.00	21.33
TOTAL		100.00	91.93

Therefore, PV_3^T at 9/30/2007 is equal to 91.93 for all vesting tranches. Since no options are vested as of 9/30/2007, then AV_3^T is equal to zero.

From *Grant Date* to *Vest Date*, there are 1,461 days. As of the *Measurement Date* of 9/30/2007, 272 days have expired, and therefore the *Cumulative Amortization Ratio* to date is determined as:

$$CAR_3 = \text{Maximum}(\text{Minimum}(\frac{272}{1461}, 100\%), 0\%) = .1861739$$

Therefore as of 6/30/2007, the required *Amortized Expense* that needs to be recognized is equal to \$51.34.

$$AE_3 = \text{Maximum} \{ AV_3 \times FV, PV_3 \times FV \times CAR_3 \} = \text{Maximum} \{ 0 \times \$3.00, 91.93 \times .1861739 \times \$3.00 \} = \$51.34$$

Since during Q1 and Q2 (see Page 5 and Page 8), \$16.39 and \$17.17 was accrued respectively, then the current expense required to be recognized is equal to \$17.78.

$$CE_3 = AE_3 - AE_2 = \$51.34 - \$33.56 = \$17.78$$

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

Following a similar pattern for each of the above grants, \$2,442.22 should be accrued during Q3 in the aggregate.

Reconciliation of Actual Q3 Expense Against Projected Q3 Expense

During Q2, it was projected that Q2 expense would be equal to \$2,801.47. As of 9/30/2007, we now see that Q2 expense was equal to \$2,442.22. Why such a big difference? Following our approach for reconciling changes in expense we note:

Reconciliation of (Gain)/Loss from Prior Estimate to Current Expense	Period Expense
Prior Period Expense Projection	\$2,801.47
Change due to New Option Entry	\$0.00
Change due to (Gain)/ Loss in Actual Forfeiture Experience	(\$359.24)
New Expense Projection	\$2,442.22

Note the reduction in projected expense due to the greater than anticipated forfeitures seen in Q3, seen by the 449.28 fewer options that are now expected to vest in the aggregate. (Note the 7,792.70 options were expected during Q3 *less* the prior estimate of 8,241.98)

$$7,792.70 - 8,241.98 = (449.28)$$

To verify this reconciliation, we can look at each grant and compare the prior estimation of vested options compared to the new estimate.

Example 1 (continued)
Straight-Line Accounting / Measurement Dates of 3/31/, 6/30, and 9/30

	Total Options	Estimated	Estimated	Reconciliation				Alternative Reconciliation		
		EV_3 6/30/2007	EV_3 9/30/2007	Incremental Options	Fair Value	Total Expense	Amortized Expense	Prior CE_3	New CE_3	Additional Expense
Grant 1	100	90.80	91.93	1.12	\$3.00	\$3.37	\$0.63	\$17.15	\$17.78	\$0.63
Grant 2	200	181.58	183.83	2.25	\$3.30	\$7.41	\$1.37	\$37.73	\$39.11	\$1.37
Grant 3	300	272.34	275.71	3.37	\$3.60	\$12.12	\$2.24	\$61.74	\$63.98	\$2.24
Grant 4	400	363.07	367.56	4.49	\$3.90	\$17.51	\$3.22	\$89.17	\$92.39	\$3.22
Grant 5	500	453.78	459.39	5.61	\$4.20	\$23.57	\$4.32	\$120.01	\$124.34	\$4.32
Grant 6	600	544.46	0.00	(544.46)	\$4.50	(\$2,450.09)	(\$447.76)	\$154.28	(\$293.47)	(\$447.76)
Grant 7	700	635.12	642.98	7.85	\$4.80	\$37.70	\$6.86	\$191.97	\$198.83	\$6.86
Grant 8	800	725.76	734.73	8.97	\$5.10	\$45.77	\$8.30	\$233.08	\$241.38	\$8.30
Grant 9	900	816.37	826.46	10.09	\$5.40	\$54.51	\$9.85	\$277.60	\$287.45	\$9.85
Grant 10	1,000	906.96	918.17	11.21	\$5.70	\$63.92	\$11.51	\$325.54	\$337.04	\$11.51
Grant 11	1,100	997.52	1,009.85	12.33	\$6.00	\$74.01	\$13.27	\$376.89	\$390.16	\$13.27
Grant 12	1,200	1,088.06	1,101.51	13.45	\$6.30	\$84.76	\$15.14	\$431.65	\$446.79	\$15.14
Grant 13	1,300	1,166.16	1,180.58	14.42	\$6.60	\$95.17	\$11.79	\$484.66	\$496.45	\$11.79
TOTAL	9,100	8,241.98	7,792.70	(449.28)		(\$1,930.27)	(\$359.24)	\$2,801.47	\$2,442.22	(\$359.24)

Summary

By continuing the process of Example 1 for each interim period, companies can continually re-assess the actual forfeiture experience comparatively against their prior assumption, and therefore re-amortize any changes over the remaining requisite service period. By reconciling less frequently than every interim reporting period, some troubling results may occur:

- Shares that have already been forfeited will continue to recognize compensation expense until the point of time that reconciliation occurs. This is most troubling when reconciliation occurs at the Vesting Date, as that may not occur for several years.
- Expense recognition patterns will be more jagged with less frequent reconciliation, and will have greater probability of material error. Therefore, companies who reconcile their awards more frequently will have expense patterns that are more predictable.
- Companies or audit firms are tasked to assess if reconciliation should occur on a quarterly basis. The assessment if a reconciliation should occur involves judgement, and is equally tasking as actually performing the reconciliation. On the other hand, if a company builds into its financial controls the process of updating for actual experience on an interim basis, it does not require a quarterly assessment of actual experience.

For the above reasons, we believe that quarterly reconciliation of individual option grants will become best practice in the arena of FAS123(R) amortization and expense recognition.

Glossary of Symbols and Terms

Term	Symbol	Definition
<i>Measurement Date</i>	MD_i	Representative of the date at which the expense is being calculated
<i>Grant Date</i>	GD	The initial date of grant, the beginning of the requisite service period
<i>Vesting Date</i>	VD^t	The date at which the awards vest. There may be multiple tranches t , and therefore multiple vest dates in a single award.
<i>Projected to Vest</i>	PV_i^t	The projected number of awards that will vest for each vesting tranche t at a given measurement date, i
<i>Accrued Vest</i>	AV_i^t	The accrued number of vested awards for each vesting tranche t at a given measurement date, i
<i>Cumulative Amortization Ratio</i>	CAR_i	The ratio of expense that needs to be recognized at a given measurement date, i
<i>Amortization Expense</i>	AE_i	The minimum amount of expense that needs to be expensed at a given measurement date, i
<i>Current Expense</i>	CE_i	The amount of expense that needs to be recognized during the current financial reporting period
<i>Unamortized Compensation Expense</i>	UCE_i	The unamortized amount of expense that needs to be recognized subsequent to the measurement date, i

If you have questions about this material, questions can be addressed to Terry Adamson at Radford Surveys + Consulting, tadamson@radford.com or alternatively at 610.834.2280 (work).

About Terry Adamson

Terry Adamson is a Vice President at Aon with over twelve years of benefit and compensation consulting experience. Terry is involved with all phases of equity compensation valuations, including design of executive packages, valuation of compensatory arrangements for purposes of a change in control under IRC 280G, SERP design and valuation, and employee stock option valuations and employee stock purchase plans under FAS 123 and FAS 148.

As national practice leader for Aon's employee stock option valuation practice and the lead project manager, Terry manages a team of valuation experts and is responsible for the completion of quarterly FAS 123(R) accounting valuations for approximately 150 public and private companies across the country.

He has recently co-authored articles in the *Tax Management Compensation Planning Journal* entitled "Golden Parachutes – New Planning Opportunities" and "Executive Compensation Audits – Planning Now to Avoid Trouble Later" and *Benefits Quarterly* "Employee Stock Options – New Valuation Responsibilities and Planning Opportunities", and *WorldatWork Journal* "Performance Equity Plans: The Design and Valuation under FAS123(R)".

Terry is a frequent speaker regarding stock option valuation at various conferences, seminars, and webcasts, most recently with the American Institute of Certified Public Accountants (AICPA), the Conference Board, the NASPP Conference, E-Trade's Directions2005, and with the Joint Board of Enrolled Actuaries. Terry was also on the FASB Round Table on Employee Share Options and is actively involved with the American Academy of Actuaries taskforce on stock option valuation.

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