

# **Figuring and Fixing Forfeiture Rates!**

## **An SOS Solutions Webcast**

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# Agenda

- Forfeiture Rate Intro
- Types of Forfeiture Rates
- Estimating Forfeiture Rates
- Applying Forfeiture Rates
  - Static
  - Dynamic
- Changing Application Methods
- Ways SOS Can Help!

# Survey Data

- SOS Data
  - Survey conducted August 2011
  - 78 responses

# Forfeiture Rate Introduction

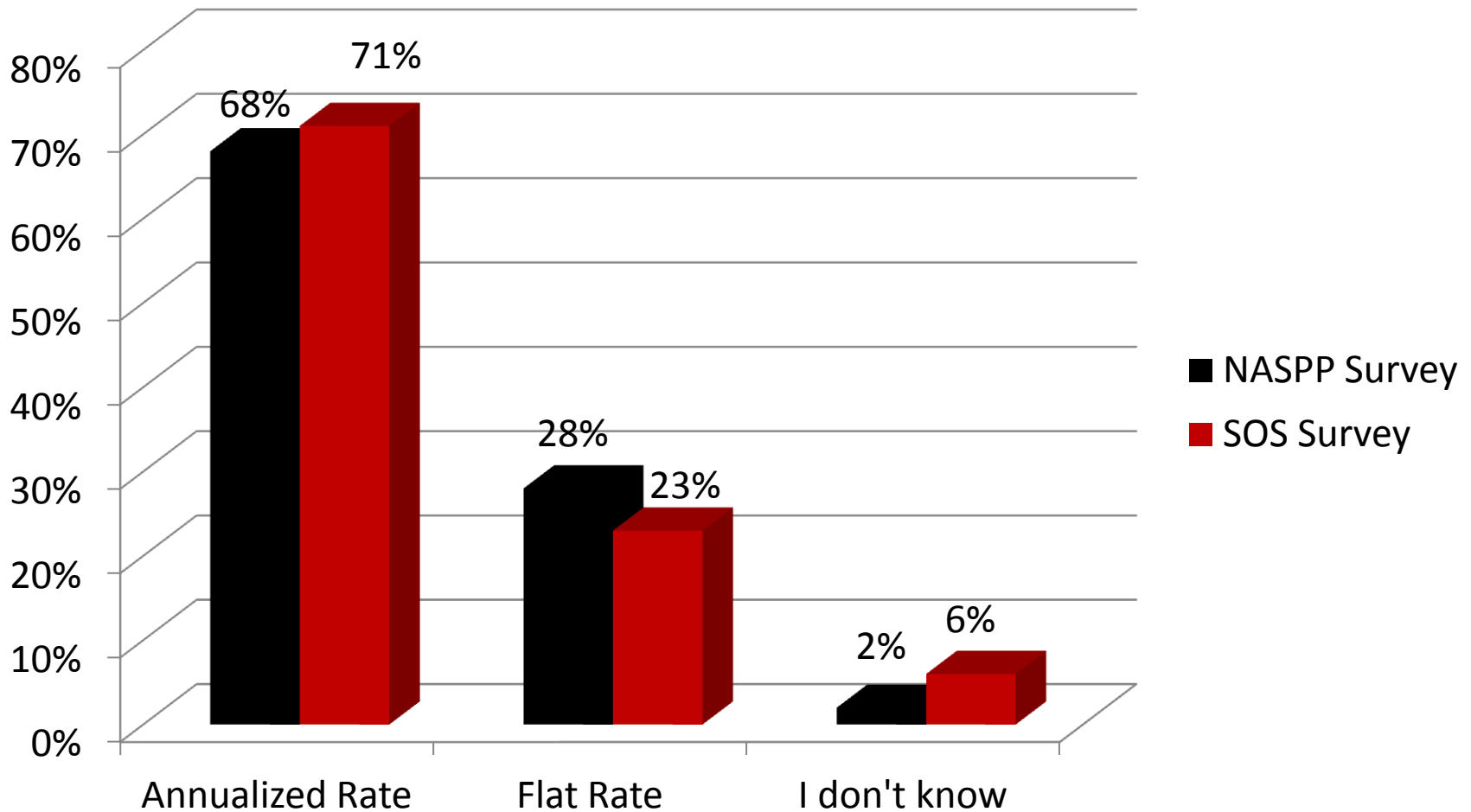
- FAS 123(R) / Topic 718 requires that expense for equity compensation be reduced by an expected forfeiture rate
  - Rationale: to produce even accruals over service period
  - 718 – 10 – 35 – 3 Forfeiture Rates

**35-3** The total amount of compensation cost recognized at the end of the requisite service period for an award of share-based compensation shall be based on the number of instruments for which the requisite service has been rendered (that is, for which the requisite service period has been completed). An entity shall base initial accruals of compensation cost on the estimated number of instruments for which the requisite service is expected to be rendered. That estimate shall be revised if subsequent information indicates that the actual number of instruments is likely to differ from previous estimates. The cumulative effect on current and prior periods of a change in the estimated number of instruments for which the requisite service is expected to be or has been rendered shall be recognized in compensation cost in the period of the change. Previously recognized compensation cost shall not be reversed if an employee share option (or share unit) for which the requisite service has been rendered expires unexercised (or unconverted).

# Forfeiture Rate Types

- Annualized Forfeiture Rates
  - Most Frequently Used
  - What % of grants forfeited annually?
  - 5% chance each year of forfeiting
  - Formula to apply:
    - Service Period = Vest Date minus Grant Date
    - $(1 - \text{Rate})^{\text{Service Period}}$
- Flat/Aggregate Forfeiture Rates
  - Haircut by set amount
  - 5% off the top
  - Problems:
    - Not very complex or flexible
    - Does not take varied vesting schedules into account
    - Tends to overstate forfeiture rate when applied

# Annualized Rate vs. Flat Rate



# ESTIMATING FORFEITURE RATES

# Three-year Rolling

- Aggregate forfeitures from the last three years
  - Shares forfeited/shares granted
  - Each quarter one quarter “dropped off”
- Annualize using average vest period and / or opportunity
- Issue:
  - If any “unusual events” have occurred (e.g. RIFs) in quarter in which they “drop off” – large change in forfeiture rate



# Forfeiture Year Analysis

Forfeiture Rate Calculation As of 12/8/11								
Forfeitures	2005	2006	2007	2008	2009	2010	2011	Total
<b>Fiscal Year Granted -----</b>	<b>2005</b>	<b>2006</b>	<b>2007</b>	<b>2008</b>	<b>2009</b>	<b>2010</b>	<b>2011</b>	<b>Total</b>
<b>Forfeitures</b> <i>By: Valuation Disclosure Report Summary</i>								
<b>Fiscal Year Forfeited</b>	<b>Fall cycle</b>							
<b>2005</b>	12,500							12,500
<b>2006</b>	7,000	7,000						14,000
<b>2007</b>	21,189	37,627	10,000					68,816
<b>2008</b>	2,001	13,091	76,979	24,025				116,096
<b>2009</b>	1,459	3,063	60,151	108,695	-			173,368
<b>2010</b>	-	-	2,992	13,993	53,468	71,082		141,535
<b>2011</b>	-	50	22,950	8,713	31,271	60,150	79,361	202,495
<b>Total Shares Forfeited</b>	<b>44,149</b>	<b>60,831</b>	<b>173,072</b>	<b>155,426</b>	<b>84,739</b>	<b>131,232</b>	<b>79,361</b>	<b>728,810</b>
<b>year)</b>	14.86%	17.75%	6.20%	12.05%	7.64%	4.35%	2.98%	6.33%
<i>Mean:</i>	8.23%							
<b>Year Forfeited</b>	<b>Fall cycle</b>							
<b>2005</b>	4.21%	Cycles completed with Avg of complete cycles						
<b>2006</b>	2.36%	2.04%						
<b>2007</b>	7.13%	10.98%	0.36%					
<b>2008</b>	0.67%	3.82%	2.76%	1.86%				
<b>2009</b>	0.49%	0.89%	2.15%	8.43%	0.00%			
<b>2010</b>	0.00%	0.00%	0.11%	1.09%	4.82%	2.35%		
<b>2011</b>		0.01%	0.82%	0.68%	2.82%	1.99%	2.98%	
<b>2012</b>			0.01%	0.44%	0.59%	3.40%	5.22%	
<b>2013</b>				0.01%	0.44%	0.59%	3.40%	
<b>2014</b>					0.01%	0.44%	0.59%	
<b>2015</b>						0.01%	0.44%	
<b>2016</b>							0.01%	

# Annualization

Forfeiture Annualized Rate Calculation - Options			
As of 12/8/11			
		Input Cell	
Average Forfeitures		11.46%	[A2]
Expected to Vest		88.54%	
Annualized Forfeiture Rate		5.5599%	
Summary			
# of Tranches	Vesting Tranche %	Vesting %	Service period
1	25.00	23.61	1.00
2	2.08	1.96	1.08
3	2.08	1.95	1.17
4	2.08	1.94	1.25
5	2.08	1.93	1.33
6	2.08	1.92	1.42
7	2.08	1.91	1.50
8	2.08	1.90	1.58
9	2.08	1.89	1.67
10	2.08	1.88	1.75
11	2.08	1.88	1.83
12	2.08	1.87	1.92
13	2.08	1.86	2.00
14	2.08	1.85	2.08
15	2.08	1.84	2.17

**This worksheet is setup to solve the annualized forfeiture rate using What If Analysis in Excel**

**Information Required** Cell = C7  
"Average Forfeiture" Rate

**Vesting Tranche %** is computed as a percentage of the vesting tranche.  
This vesting schedule for new hire grants has 37 tranches. 1yr cliff plus 36 months.  
Sample computation Cell B14 = (1/60) \* 75 = 2.08

**Vest %** derives the monthly forfeiture rate per period based on the annualized forfeiture  
Sample computation: Cell C14 = 'B14'\*(1-'C\$9')^D14

26	2.08	1.75	3.08		
27	2.08	1.74	3.17		
28	2.08	1.73	3.25	"Set Target Cell" =	\$C\$52
29	2.08	1.72	3.33	"Equal To"; Select "Value Of"	88.54% (Enter value from C8, Do not enter as a percentage)
30	2.08	1.71	3.42	"By Change Cells:"	\$C\$9
31	2.08	1.71	3.50	Select	OK
32	2.08	1.70	3.58		
33	2.08	1.69	3.67	<b>Note:</b>	The calculation worked if cell C52 equals C8
34	2.08	1.68	3.75		
35	2.08	1.67	3.83		
36	2.08	1.67	3.92		
37	2.08	1.66	4.00		
	100.00	88.54			

# Aggregate Rate by Year Annualized

- Aggregate Forfeiture Rate Annualized by Average Vest Period / Opportunity
  - For grants granted within a given year (e.g. 2010, 2011) up through current
  - $1 - ((1 - \text{Aggregate Forfeiture Rate \%})^{(1 / \text{Average Vest Period in each year})})$

Year	Agg Forf Rate % for All grants granted this year	Avg Vest Period	Annualized Forfeiture Rate
2011	7%	2.5	3%
2010	10%	2.5	4%
2011	12%	2.5	5%

# Forfeiture Opportunity vs. Vest Period

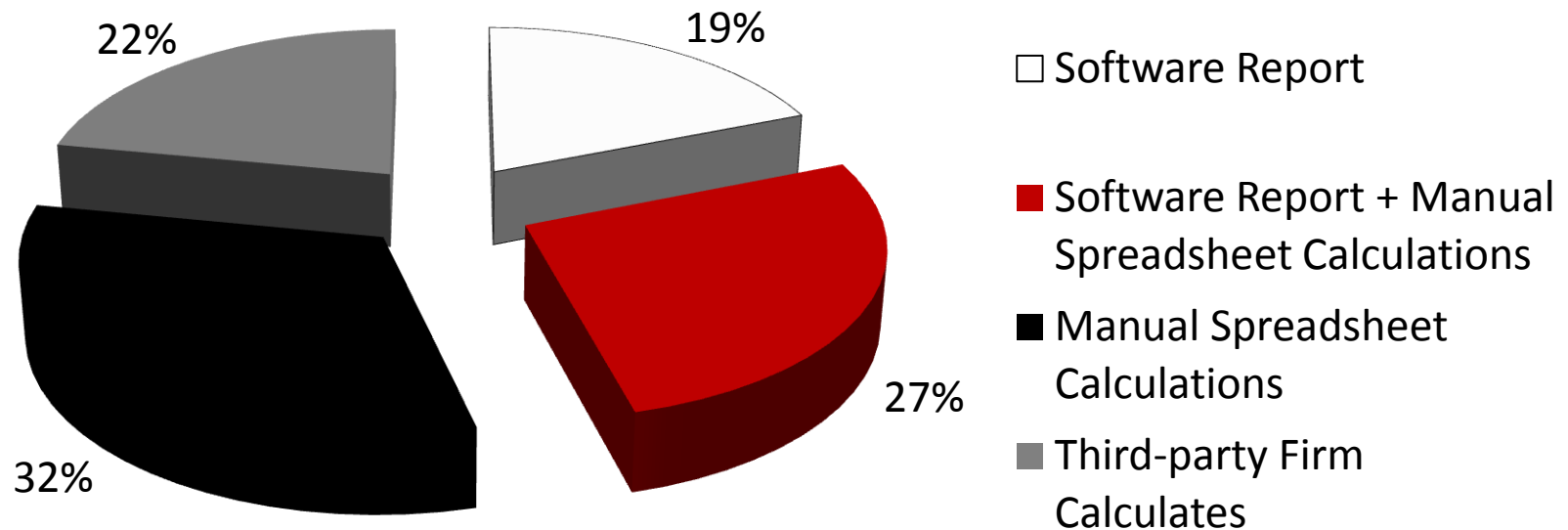
- Recent grants not outstanding long... less “opportunity” to forfeit
- Grants from 5 years ago - 5 years for terminations to occur
  - Full vest cycle complete
  - Average vest period can be used (often 2 or 2.5 years)
  - 10% aggregate = 5.132% annualized (2 years)
- Grants from 3 months ago not outstanding for 2 years
  - Annualizing by 2 years inaccurate
  - Not likely to have 10% forfeiture after 3 months
  - 2% aggregate = 1.005% annualized (2 years)
  - 2% aggregate = 7.763% annualized (.25 years)
- Formula for Opportunity
  - $=(\text{Min}(\text{today's date, vest date})-\text{grant date})/365.25$

# Other Methods

- Annualized Turnover Rate from HR
  - Some HR departments will have this at their finger tips
  - Should be updated each year
  - If term data only - can use a similar method – annualize by avg length of employment
- Even with limited data – case can be made to use Forfeiture Rate from system/software
  - Will be trued up when share vest / are forfeited

# Calculation of Forfeiture Rates

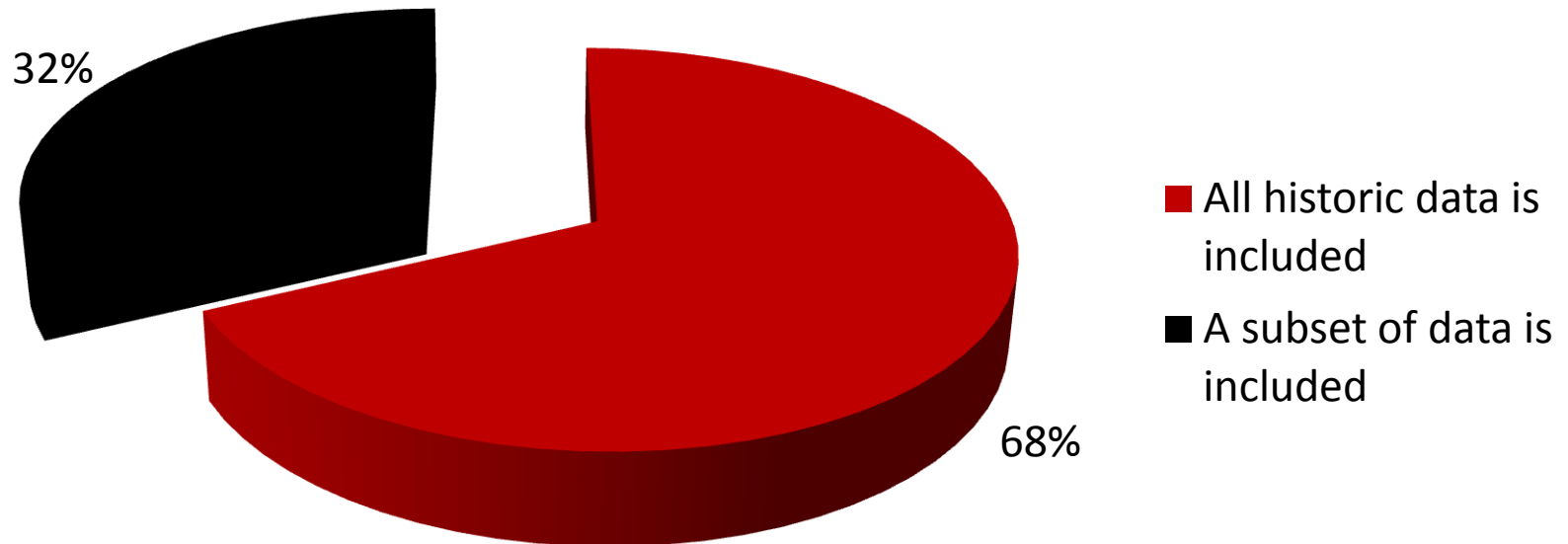
How do you calculate forfeiture rates?



\*SOS Survey Data

# Data Included

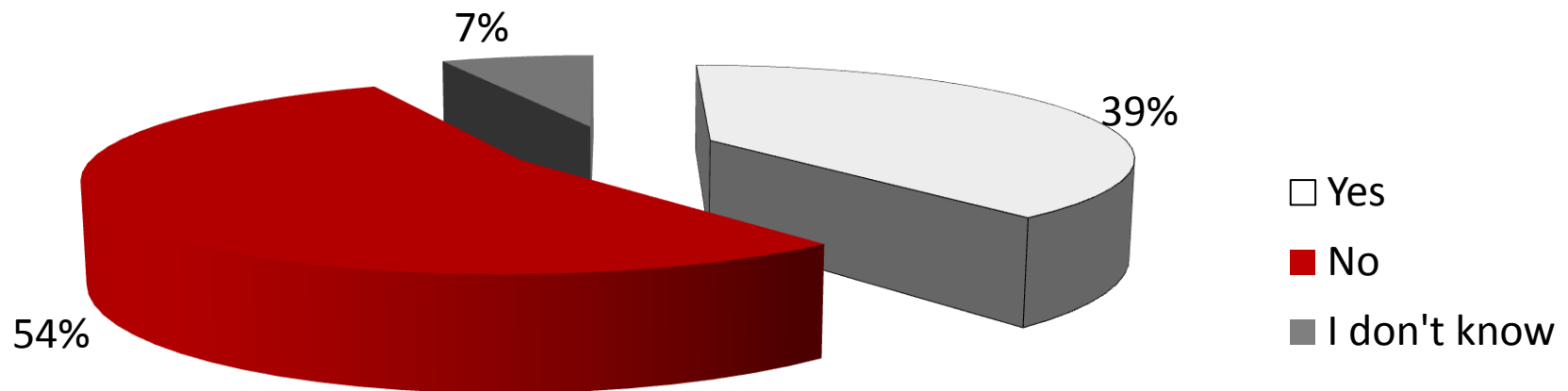
Which data do you include on the report or in your calculations?



\*SOS Survey Data

# Survey Data

**Do you calculate and apply different forfeiture rates for different groups of employees?**

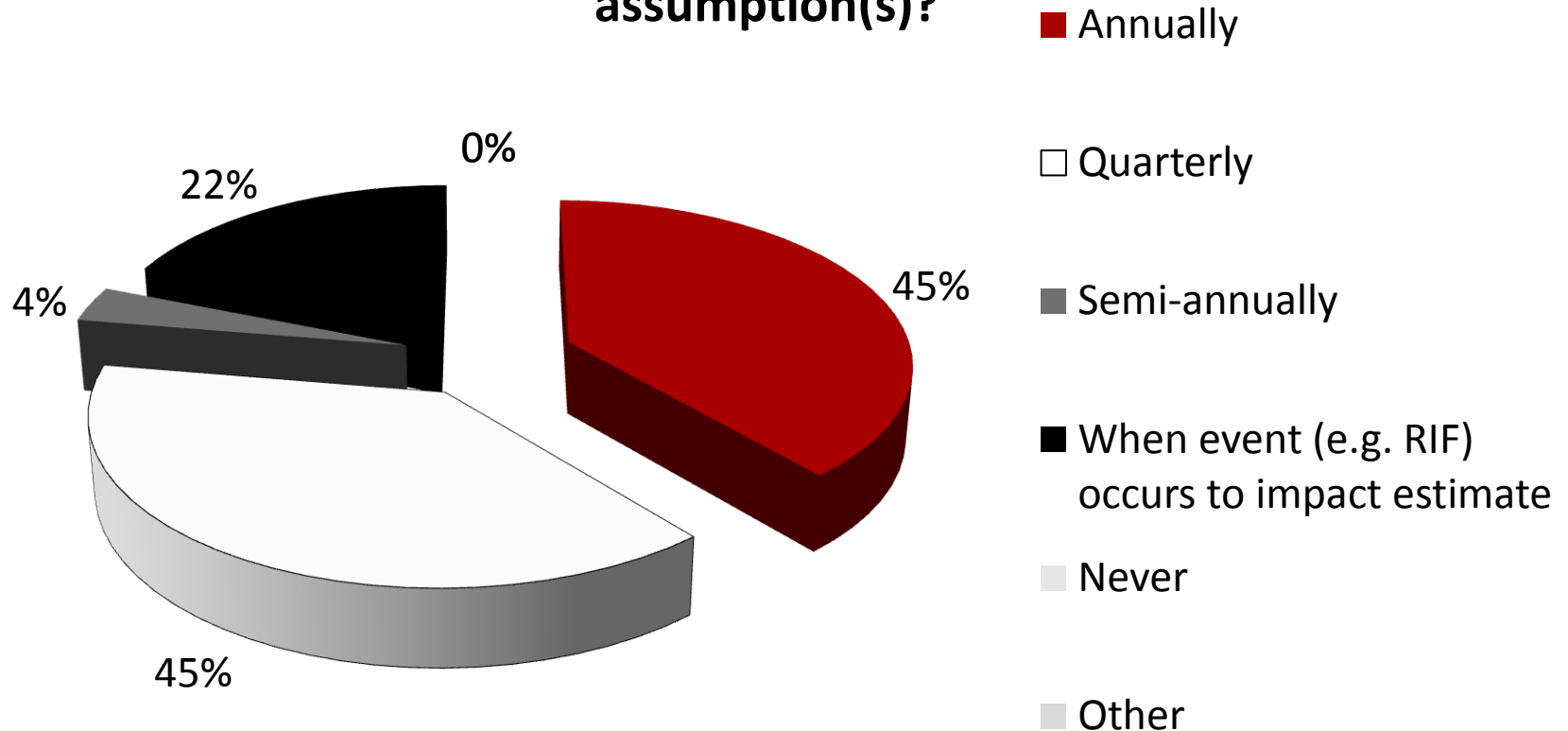


\*SOS Survey Data



# Survey Data

How frequently do you review your forfeiture rate assumption(s)?



\*SOS Survey Data

# Forfeiture Rate Calculation

- Make sure your calculation
  - is defensible
  - is easily repeated
  - Use your software/systems if you can...
- **Make sure your calculation matches the attribution method**
  - **Aggregate / Flat vs. Annualized**
- Common Mistakes
  - Excel miscalculations
  - Calculating an “aggregate rate” but application requires annual

# APPLYING FORFEITURE RATES

# Terminology

- Static Method
  - AKA “True Up at Vest”
- Dynamic Method
  - AKA
    - “True Up at Forfeiture”
    - “True Up at Termination”
    - Hyperbolic

# Applying Forfeiture Rates: Static Method

- True Up at Vest (Static)
  - Forfeiture Rate stays same over service period
  - Wait until vest date to true up
  - Examples given in ASC 718
  - Use full service period to apply annualized forfeiture rate
  - Forfeited grants remain on accrual reports until after FINAL vest date
  - If forfeiture rate accurate = even accrual over time
  - If forfeiture rate inaccurate, large true ups common
- Example
  - 4-year, cliff vesting
  - $(1 - \text{Forfeiture Rate})^{\text{Full Service Period}}$
  - $(1 - 5\%)^4$
  - $= .95 * .95 * .95 * .95$
  - $= 81\%$  Expected to Vest Rate

# Applying Forfeiture Rates: Static

- True Up at Vest (Static)
- Example
  - 4-year, graded vesting

Tranche	Service Period	Applied	Result	Note
1	1	$(1-5\%)^1$	95%	Used while first tranche accrues – trued up to 100% at vest.
2	2	$(1-5\%)^2$	90%	Used while 2 <sup>nd</sup> tranche accrues – trued up to 100% at vest.
3	3	$(1-5\%)^3$	86%	Used while 3 <sup>rd</sup> tranche accrues – trued up to 100% at vest.
4	4	$(1-5\%)^4$	81%	Used while 4 <sup>th</sup> tranche accrues – trued up to 100% at vest.

# Applying Forfeiture Rates: Dynamic Method

- True Up at Termination (Dynamic)
  - Application of the Forfeiture Rate changes during the service period
    - Theory: as time passes, more likely that grant will vest, therefore more expense accrued
  - Reverse all accrued expense at termination, stop accruing for forfeited grants
  - Developed after the release of ASC 718
  - Use remaining service period to apply forfeiture rate
  - Less even accrual over time, however...
  - If forfeiture rate inaccurate, true ups are smaller, more frequent
- Example on next slide

# Applying Forfeiture Rates: Dynamic Method

- Example
  - 4-year, cliff vesting

End of Quarter	Remaining Service Period	Applied	Result
1	3.75	$(1-5\%)^{3.75}$	83%
2	3.5	$(1-5\%)^{3.5}$	84%
3...	3.25	$(1-5\%)^{3.25}$	86%
8...	2	$(1-5\%)^2$	90%
12...	1	$(1-5\%)^1$	95%
15	.25	$(1-5\%)^{.25}$	99%
16	0	$(1-5\%)^0$	100%

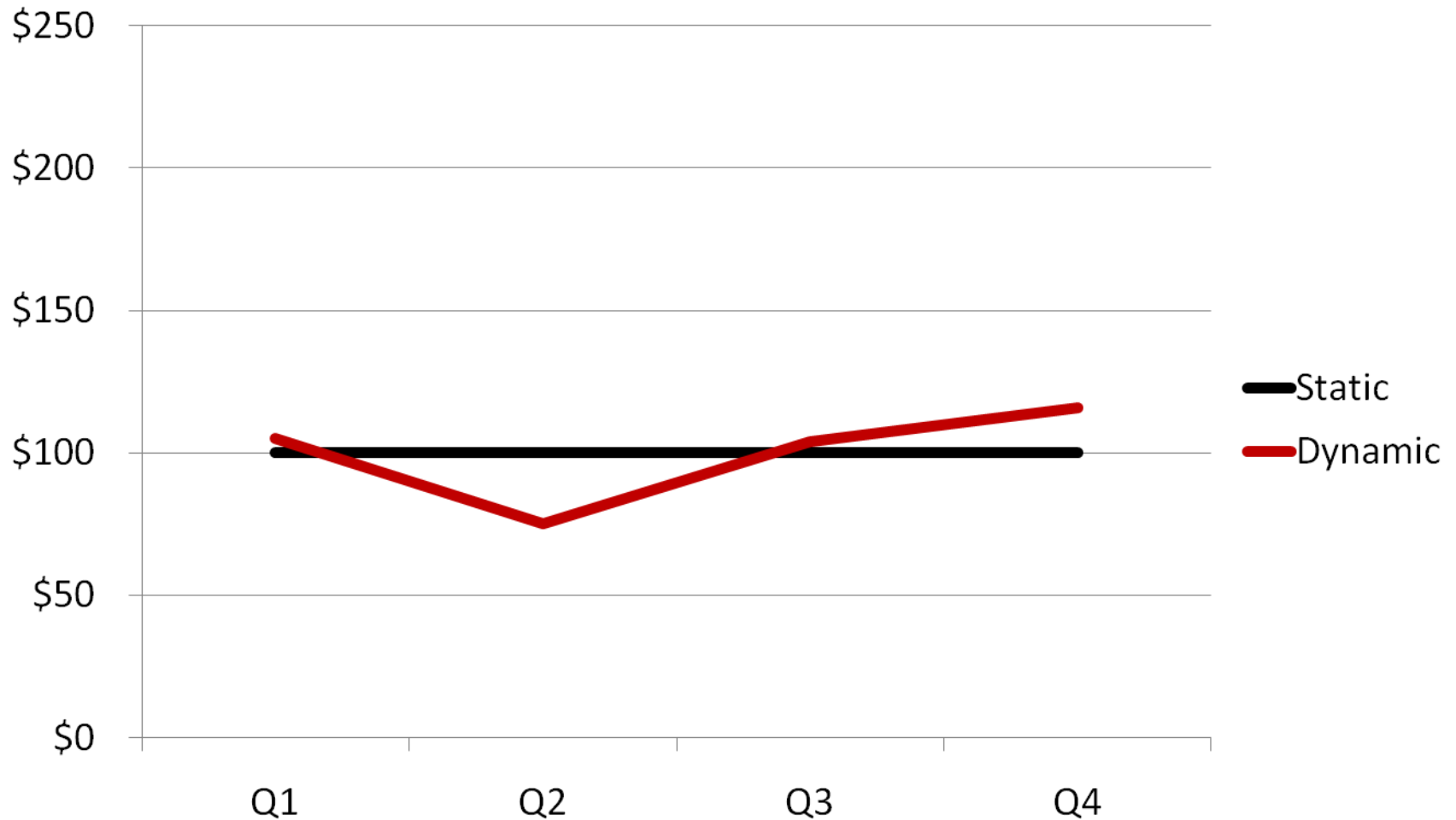


# Static Method: Accurate Rate

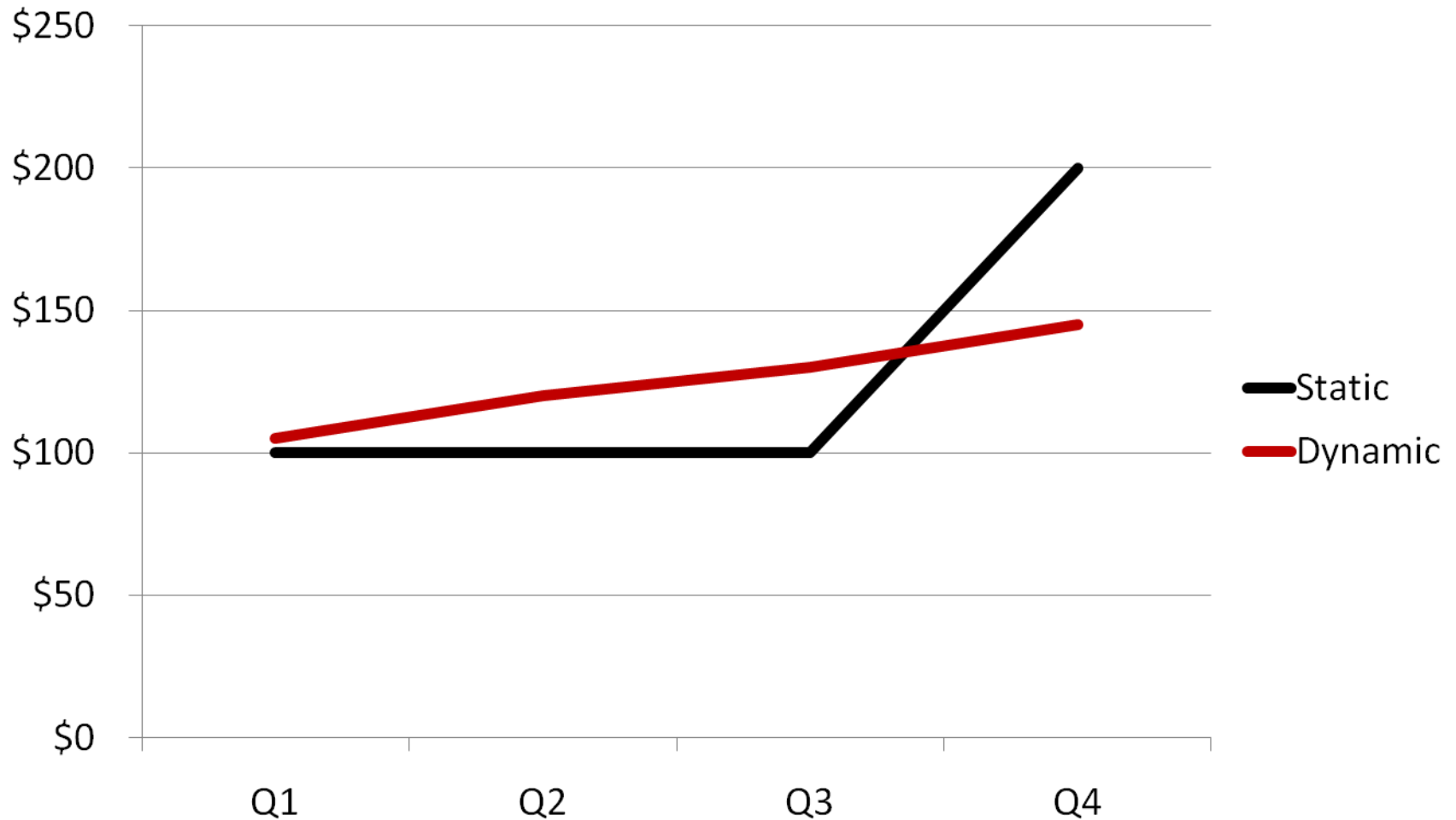
- Example:
  - 5 grants, \$100 fair value, one-year vesting, 20% forfeiture rate

Grant #	1 <sup>st</sup> Qtr	2 <sup>nd</sup> Qtr	3 <sup>rd</sup> Qtr	4 <sup>th</sup> Qtr	Comment/Total
1	\$20	\$20	\$20	\$40	True up to \$100 in vest quarter.
2	\$20	\$20	\$20	\$40	True up to \$100 in vest quarter.
3	\$20	\$20	\$20	\$40	True up to \$100 in vest quarter.
4	\$20	\$20	\$20	\$40	True up to \$100 in vest quarter.
5	\$20	\$20	\$20	-\$60	Forfeited in 2 <sup>nd</sup> Qtr. True up to \$0 in vest quarter.
	\$100	\$100	\$100	\$100	\$400

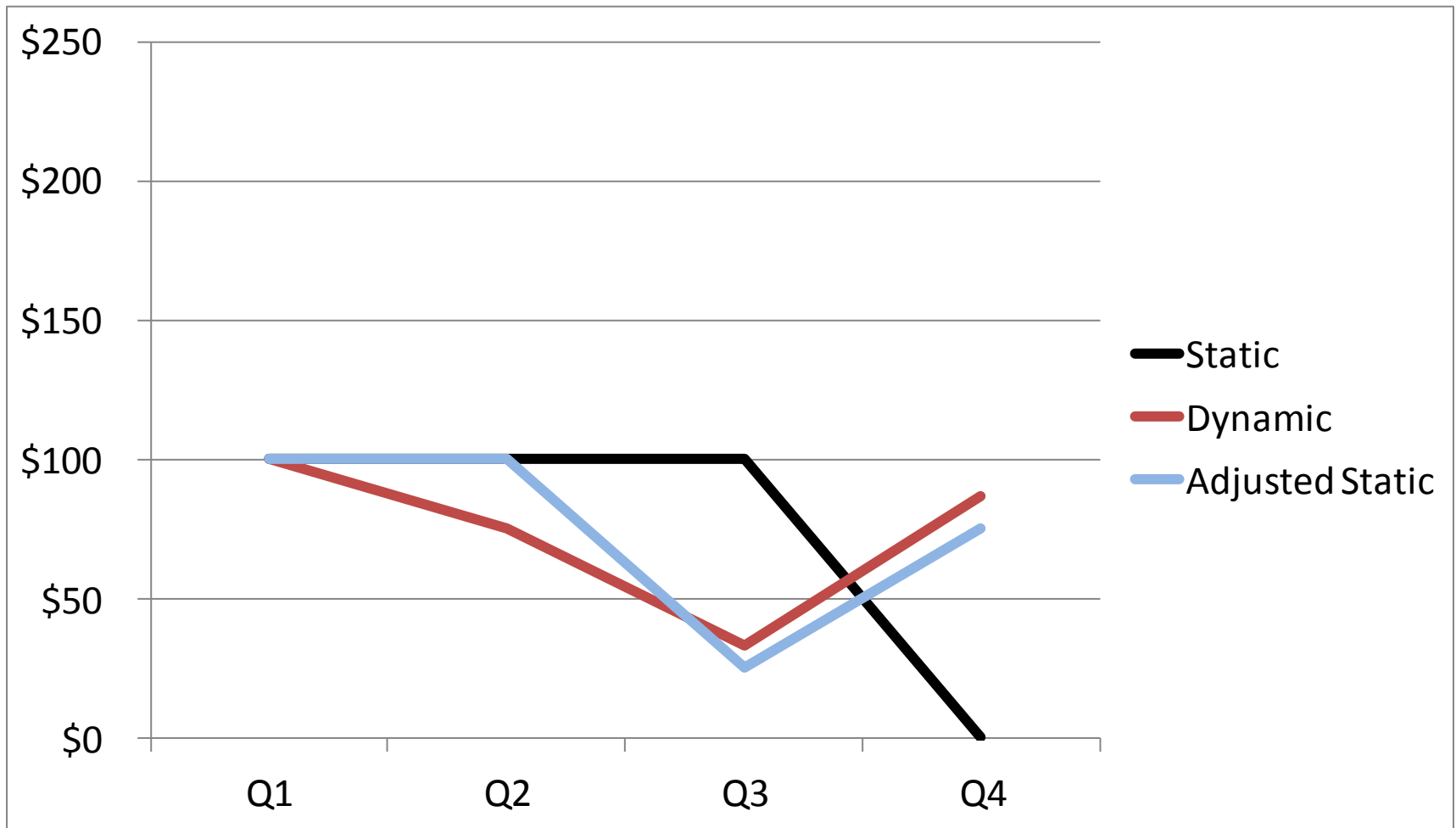
# Static vs. Dynamic: Accurate Rates



# Static vs. Dynamic: Rate Too High



# Static vs. Dynamic: Rate Too Low



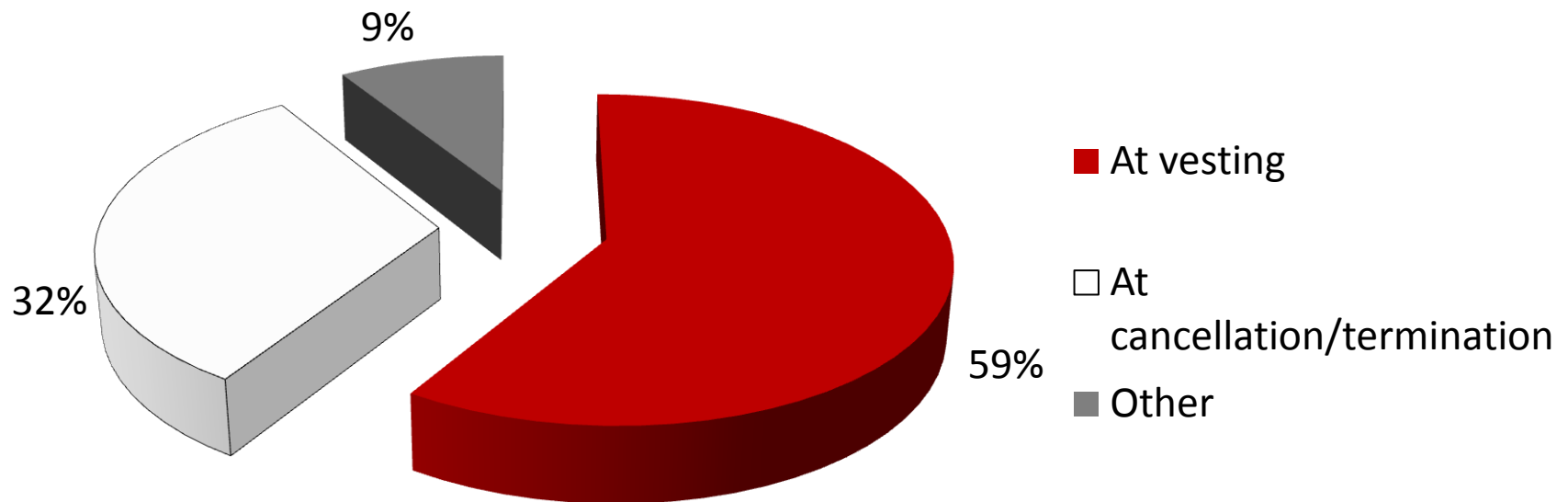
# Pros & Cons

	Pros	Cons
Static	<ul style="list-style-type: none"><li>• Perfectly even accrual <i>if forfeiture perfectly accurate</i></li><li>• Examples in the standard use this method</li></ul>	<ul style="list-style-type: none"><li>• Not intuitive – forfeited grants remain “in pool” / on reports</li><li>• Large company events must be included in estimated rate (execs leaving, RIFs, etc.) – Ongoing adjustments to rate required</li></ul>
Dynamic	<ul style="list-style-type: none"><li>• Less dramatic swings in expense <i>if estimate not accurate</i></li><li>• Takes time into account</li><li>• More intuitive?</li><li>• Some Big 4 firms call “best practice”</li></ul>	<ul style="list-style-type: none"><li>• No documentation – not in standard, etc.</li><li>• Contradicts examples in standard</li><li>• Difficult to perform calculations in a spreadsheet</li></ul>

\*Combining methods of application can result in large true ups in expense.

# Survey Data

**At what point in the life cycle of an award do you true up estimated forfeitures to actual outcome?**



\*SOS Survey Data

# Static vs. Dynamic

- Neither method is incorrect under 123R/Topic 718
- Both methodologies work, as long as they:
  - Adhere to the rules of 718, and
  - Don't combine parts of each method (double-counting)
    - Don't drop forfeited grants off the report (dynamic) AND
    - Apply forfeiture rates using full service period (static)
- Which is better for YOUR company?
  - How even is your expense accrual over time?
  - Do you have large swings in expense quarter-to-quarter?
  - Are you auditors comfortable with the method you're using now? Or do they continue to question it?

# When To Consider Switching

- Example of a company for whom True UP at Vest is NOT working
  - Review a set of grants that vest in Q4
  - Don't include new grants (keep "the pool" the same)
  - Vesting event occurs in Q4 – True Up will occur in Q4
  - Materiality is specific to a company
  - Moving EPS at all... \$.01?

Q1	Q2	Q3	Q4
\$5M	\$5M	\$5M	\$9M
\$9M	\$9M	\$9M	\$5M



# Changing Methods

- Why change?
  - Your audit firm continue to question the method you use
  - Dynamic thought to be “best practice” by some
  - Inaccurate forfeiture rates – less *dramatic* true ups in a single quarter each year
  - Ongoing manual adjustments / spreadsheet calcs necessary
  - Different systems use different methods
- How to change
  - Calculate expense “To Date” – through end of current reporting period both ways
    - From the time you adopted 123R/Topic 718 to date
    - Match expense grant by grant
  - Change in ESTIMATE, not change in accounting policy
    - Generally a one-time true up in the quarter in which the change is made

# WAYS SOS CAN HELP

# Ways SOS Can Help: Training

- Training on forfeiture rates under ASC 718
  - Theory and application
  - Software training
    - (not available for all systems)
    - How to audit the application of forfeiture rates
    - How to calculate and enter forfeiture rates
  - Customized to your needs
    - Your instruments, your plans
    - Don't waste time learning things you don't need to know (right now)
  - On site or Remote (via webex)
    - If remote, can be recorded for future reference!

# Sample Syllabus

## Stock & Option Solutions: Accounting for Equity Compensation Training

Amount of time for each topic depends on a number of factors including the amount of exposure the student has had to accounting for equity compensation in the past. Training is charges for on an hourly basis and tailored to the company and student needs.

Topic	Estimated Hours		Notes
	Low	High	
1. Fair Value <ul style="list-style-type: none"> <li>a. Measurement Date</li> <li>b. Option-pricing models</li> <li>c. Black-Scholes Inputs               <ul style="list-style-type: none"> <li>i. Expected term</li> <li>ii. Volatility</li> </ul> </li> </ul>	1	3	Includes the basics on the most common types of grants. Performance grants, non-employee grants, grants that

Topic	Estimated Hours		Notes
	Low	High	
2. Accrual <ul style="list-style-type: none"> <li>a. Straight-line               <ul style="list-style-type: none"> <li>i. Ratable</li> <li>ii. Service Period Begins before C</li> </ul> </li> <li>b. Tranche-by-Tranche</li> <li>c. Forfeitures</li> <li>d. Expirations</li> </ul>			
3. Forfeiture Rates <ul style="list-style-type: none"> <li>a. Estimating</li> <li>b. Applying               <ul style="list-style-type: none"> <li>i. Static</li> <li>ii. Dynamic</li> </ul> </li> <li>c. Truing Up</li> </ul>			
4. Disclosures (A240 & A241)			
5. Tax Accounting (FAP 109) <ul style="list-style-type: none"> <li>a. APIC Pool               <ul style="list-style-type: none"> <li>i. Beginning Balance</li> <li>ii. Shortcut vs. Long Form</li> </ul> </li> <li>b. Booking DTA</li> <li>c. True Up at Settlement (APIC Impact)</li> <li>d. ISOs and ESPPs</li> </ul>	1	3	
6. EPS Calculations <ul style="list-style-type: none"> <li>a. Basic</li> <li>b. Diluted               <ul style="list-style-type: none"> <li>i. Weighting</li> <li>ii. Assumed Proceeds                   <ul style="list-style-type: none"> <li>1. Exercise Price</li> <li>2. Tax Benefit (or deficiency)</li> <li>3. Average Unamortized Expense</li> </ul> </li> <li>iii. Dilutive vs. Anti-dilutive                   <ul style="list-style-type: none"> <li>1. Subtracting Negative Dilutive</li> <li>2. Tying out totals</li> </ul> </li> </ul> </li> </ul>	2	6	
7. Modification Accounting <ul style="list-style-type: none"> <li>a. Types               <ul style="list-style-type: none"> <li>i. Modifications at termination                   <ul style="list-style-type: none"> <li>1. Extensions of term</li> <li>2. Acceleration of vesting</li> </ul> </li> </ul> </li> <li>b. Incremental Expense</li> <li>c. Accrual</li> <li>d. True Up</li> </ul>	2	4	

# Quotes from Clients re: Accounting Training

*“I'd highly recommend SOS to anyone considering training on stock plan accounting. The training my company received was clear, concise and on point at all times. SOS tailored our training to meet the specific needs of our company which was priceless when considering the knowledge obtained from the course.”*

*“The SOS team was phenomenal. I felt like I received the best training possible. They were timely, accurate and very pleasant. They are experts in stock plan accounting, and I knew that I could rely on the information that was being provided to me.”*

# Ways SOS Can Help: System “Support”

- Sample questions
  - “Why does it do that?”
  - “How does it do that?”
  - “Is it doing that right?”
  - “How do I get it to...?”
- Phone/email access to knowledgeable personnel
- Quote:
  - *“Thorough analysis of our reporting problem done by the SOS consultant, her ability to calculate the expense correctly and explain the report and calculations to me and others in our forecasting group.”*

# Ways SOS Can Help: Process Review

- Review your forfeiture rates process to look for issues and automation opportunities
  - Software tips and tricks (better exports)
  - Spreadsheet tips and tricks
    - Vlookup()
    - Sumif()
    - Sumifs()
  - Custom reports in Crystal or MS Access
    - Automate and streamline your forfeiture rate process
    - Reduce time spent, reduce risk of error
    - Add fields to report – reduce # of vlookups
    - Cleaner exports, less reformatting
  - Make case to move away from manual calculations to system calculations!!

# Custom Report Quotes

- *“I just had to stop to tell you I am almost gleaming while booking Q3 stock comp. I used to dread it, but now with the new custom report - it is a piece of cake. I feel in charge and in control of the report and numbers now, rather than just assuming my software is doing everything correctly. I am just about done with the analysis for the quarter, and only spent a couple hours on it.”*
- *“I received a quality product prepared by a knowledgeable and trusted source. The documentation that accompanied the custom report was extremely useful.”*



# Ways SOS Can Help: Audit support / Memos

- Explaining your estimated forfeiture rate and/or your system's calculations to your audit firm
- Accounting memos explaining forfeiture rate calculations and application
  - Especially key when changing methods

<b>Date:</b> [REDACTED]
<b>To:</b> [REDACTED]
<b>By:</b> [REDACTED] Consultant, Stock & Option Solutions
<b>Re:</b> [REDACTED] Forfeiture Rate Calculation

**Purpose:**  
To document and explain the revised approach for calculating estimated forfeiture rates as required for the accrual of expense for share-based compensation under ASC Topic 718.

**Estimated Forfeiture Rates - Background**  
Since 2006, the company has engaged Ernst & Young (EY) to perform an analysis and determine recommended "Departure Rates" to be used for the reduction of expense accrual under ASC Topic 718.

Per ASC Topic 718-10-35-3:  
The total amount of compensation cost recognized at the end of the requisite service period for an award of share-based compensation shall be based on the number of instruments for which the requisite service has been rendered (that is, for which the requisite service period has been completed). An entity shall base initial accruals of compensation cost on the estimated number of instruments for which the requisite service is expected to be rendered.

# More Ways SOS Can Help:

- Changing forfeiture rates applications from True Up at Vest to True Up at Forfeiture (or vice versa)
- Custom accounting applications for forfeiture rate application

# Contact Information



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