

How Could a Type I Modification Have No Incremental Expense?

It is not uncommon for a company to accelerate vesting on a stock option when a senior member of management leaves the company. This is a Type III modification (Improbable to Probable) because the participant is receiving shares they wouldn't normally receive under the original terms of the grant. However, when shares are accelerated but the participant is not leaving the company, it is a Type I modification (Probable to Probable) because the assumption is that the participant would have received the shares over the normal course of time.

With a Type I modification, you need to determine if the modification results in any incremental expense. To do this, a Black-Scholes fair value calculation is done just prior to (i.e., BEFORE) the modification and another is done immediately AFTER the modification. If there is any positive incremental value, you need to recognize it over the remaining service period of the modified option.

While it may seem counter-intuitive, the acceleration of vesting (that is, the participant is now going to be able to exercise shares sooner) does not always result in additional value or incremental expense. To understand why, we need to understand how changes to the input values of the Black-Scholes model impact the fair value calculation.

With this type of modification, the values of both the Exercise Price and the Fair Market Value do not change BEFORE and AFTER the modification. What is really changing is the Expected Term value. Because Expected Term is based on when the shares are vesting, the AFTER Expected Term value is now shorter/less than the BEFORE Expected Term value. As you can see below, a decrease in the Expected Term value will decrease the AFTER fair value.

Input	Action	Impact on Fair Value (at the money option)
Exercise Price	Decrease	Decreases
Fair Market Value	Decrease	Decreases
Expected Term	Decrease	Decreases
Volatility	Decrease	Decreases
Dividend Yield	Decrease	Increases
Risk-Free Interest Rate	Decrease	Decreases

The Expected Term drives the values of the remaining three inputs (Volatility, Dividend Yield and Risk-Free Interest Rate). While each company's stock price is impacted by internal/external events, it is not uncommon for a company stock price to be more volatile when you look at the values over a longer period of time. Under this assumption, reducing the Expected Term would result in less Volatility and, thus, decrease the AFTER fair value. The same is true for Risk-Free Interest Rates; the shorter the Expected Term, the lower the Risk-Free Interest Rate (see below actual example).

	1 year	2 year	3 year	4 year	5 year
6/30/2017	1.24	1.38	1.55	1.72	1.89

Accelerating the vesting on shares decreases the Expected Term which often results in less Volatility and a lower Risk-Free Interest Rate. Based on these factors, the AFTER fair value may very well be less than

the BEFORE fair value. So, don't be surprised or think you must have done something wrong if you calculate incremental expense in this type of situation and find that there isn't any.

Questions or comments? Please email us at xtra@sos-team.com

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