

Understanding and using Options for Investing

Documentation

Tim Boileau

CIS 6110

April 19, 2004

Problem Identification

Options trading is an investment strategy that has been around for over twenty years. Novice investors perceive the risks, but often fail to recognize the benefit of including options when developing their overall investment strategy. Since it is true that the decision to trade options is in direct proportion to the investor's tolerance for risk, options may not be for everyone. However, investing the time to learn about options can offer many ways to profit, providing the investor with a substantial edge in a volatile market.

As investors assume greater responsibility for self-management of their investment portfolio, it is important to understand what options are and how they fit in to an investment strategy. There are two key aspects of an options strategy:

1. Options trading can help create wealth by leveraging securities to generate income, and
2. Options provide a way to hedge against risk by 'insuring' the value of stocks in bear and bull markets.

To use an analogy for the concept of leveraging securities, think of when a farmer borrows against his future harvest, to produce income to cover expenses using the present and future value of his land and ability to produce crops. The principle of using options to protect one's investment in stock is the same as buying fire insurance to protect an investment in one's home. This instructional unit is designed to teach an investor the basics for trading options by introducing strategies using options to create leverage and provide income protection for investments in any market.

Goal Analysis

Aim

Provide the learner with an overall understanding of options as an investment strategy and as a tool for generating income.

Set Goals

- Identify facts and myths associated with stock options.
- Describe the difference between an employee stock option and publicly traded options.
- Identify the strategy for Puts and Calls and when to use each.
- Master the terminology of the highly specialized options market.
- Choose the right stocks.
- Observe the market and identify timing cues to get in and out of options.
- Set a standard of risk for your personal investment strategy.
- Use options to hedge against the risk of owning stocks.
- Perform objective evaluation of stocks for option trading.
- Buying Puts and Calls.
- Selling Puts and Calls.
- Develop strategies for options in volatile markets.
- Set up an options trading account with a broker.

Refine Goals

- Understand the basics/debunk the myths.
- Identify when to use Calls and Puts.

- Buying Calls and Puts.
- Selling Calls and Puts.
- Open an account to trade options.
- Develop strategy for market forecasting and picking stocks.
- Create an exit strategy.
- Combine all of the techniques.

Rank Goals

1. Open an account to trade options.
2. Understand the basics/debunk the myths of options.
3. Identify when to use Calls and Puts.
4. Develop strategy for market forecasting and picking stocks.
5. Buying Calls and Puts.
6. Selling Calls and Puts.
7. Create an exit strategy.
8. Combine all of the techniques.

Refine Goals Again

Goal 2 was combined with Goal 3.

Goal 7 was combined with Goal 8.

Final Goals Ranking

1. Open an account to trade options.
2. Describe the basics: Calls and Puts.
3. Develop strategy for market forecasting and picking stocks.

4. Buying Calls and Puts.
5. Selling Calls and Puts.
6. Apply all of the techniques.

Learner Analysis

Audience Definition

General Characteristics

Options traders represent a subgroup of investors who have typically been buying and selling stocks and shares in mutual funds for a period of at least 1 to 2 years, and are familiar with basic stock market indicators. Accordingly, the primary audience may be male or female, young or old, working or retired. There are, however, two clear distinctions that set the primary audience apart from the general population:

1. They have an interest in investing and analyzing investment strategy, and
2. They are adult learners, presumably over 18 years old

Specific Characteristics

Physical – because options today are typically researched and traded over the Internet, a physical requirement is that the learner be able to use a computer.

Socioeconomic – options are decaying assets with a risk of 100% loss of the investment, given the fact that they become valueless on expiration. Therefore, the audience should have money set aside for investing that they can afford to lose.

Educational – while there are no specific formal educational requirements, the audience should have either completed a basic course in investing in stocks or have 1 to 2 years of experience managing their own investments.

Psychological – the audience should have a high tolerance for risk, as option holders run the risk of losing the entire amount paid for an option in a relatively short period of time.

Contextual Analysis

Orienting Context

Investors are motivated by two things: to create wealth, and to keep it. The orienting context, therefore, focuses on the ‘what’s in it for me’ factor by showing how options can become a valuable investment strategy.

Instructional Context

The instructional materials are paper-based, intended for self-paced individual learning. Supporting materials may be newspapers (e.g., Wall Street Journal, Investor’s Business Daily) or Internet tools for obtaining price quotes. The materials are suitably flexible to be used in a facilitated or workshop environment. In all cases, the environment should be free from distraction, frequent interruption, and noise in order for transfer of learning to occur.

Transfer Context

The goal of the instruction is the continual application of the knowledge and skills. For that reason, anyone completing the unit that is interested in trading options should have a brokerage account established that is approved for options trading. Learners must be self-motivated to apply the analysis, complete trades, and evaluate the results. The knowledge is obtained by researching and analyzing the data, while skill is acquired through practice.

Task Analysis

Overview

The *Topic Analysis* technique has been selected because much of this instructional unit relies on defining and developing cognitive knowledge. The *Procedural Analysis* technique is less appropriate for this instruction since the required skills for options trading focus on analytics using a variety of inputs in order to make investment decisions, and less on the mechanics of executing a trade. *Critical Incident* analysis could potentially be applied to develop insights as to why some trades are profitable while others are not, however, that level of instruction is beyond the scope of the solution domain.

The Topic Analysis has been supplemented with an applied cognitive task analysis (ACTA) for eliciting critical cognitive elements from the SME's, consistent with the goals that have been identified. There are three component interview techniques used in concert to identify different aspects of cognitive skill according to Militello and Hutton (1998).

1. *Task Diagram* – used to provide an overview of the task by identifying the difficult cognitive elements, at a fairly high level of abstraction.
2. *Knowledge Audit* – identifies the ways in which the expertise is used and provides examples based on actual experience, using a set of pre-defined knowledge probes for the domain. The output of the knowledge audit is a summary table containing an inventory of required areas of expertise, cues and strategies, and an explanation of why the skill may be difficult or challenging to a novice.
3. *Simulation Interview* – can be used to deepen understanding by presenting a challenging scenario to the SME and documenting how they go about solving it. In trading stock options, the success measure is in being able to read the market to make an informed investment decision based on the information available and the experience of the trader. Examples will be provided in the instructional unit,

however, individual strategies based upon investor experience are outside of the scope. Hence, the simulation interview technique has not been utilized for this project.

The knowledge audit table is used for validating the goals for the unit and formulating the instructional objectives.

Topic Analysis

The topic analysis follows a scheme for classifying information into six discreet categories: facts, concepts, principles/rules/procedures, interpersonal skills, and attitudes (Reigeluth, 1983).

- I. Stock – tangible, part ownership in a company
 - A. Equity shares in a company
 - B. Profit or loss is realized when you sell the stock or receive a dividend
 - C. Value as an asset
- II. Option – intangible, control over a block of shares of in stock in a company
 - A. A Contract for an option is written for 100 shares of the stock
 - B. Call – right to purchase 100 shares of stock
 - C. Put – right to sell 100 shares of stock
 - D. When you purchase and option, you do not own the stock unless the option is ‘exercised’
 - E. Strike price is the agreed upon purchase (Call) or sell (Put) price at which the option can be exercised prior to the expiration date
 - F. Expiration date is the third Saturday of the expiration month; defines the period during which an option may be exercised or traded
 1. General rule is that trade has to be executed before the close of business on Friday immediately before the Saturday of expiration
 - G. Premium is the price that is paid to the seller to enter the contract

1. The premium is quoted as the price per share
2. Option's value is set by time and the market value of the stock

H. Valuation of an option

1. At the money is when the strike price is the same as the current price
2. In the money is when the option has intrinsic value (the strike price is below the market value for a call); if exercised, it will have some value
3. Out of the money is when the option has no intrinsic value (the strike price is above the market value for a call); the option has no value if exercised
4. Value = Time Value + Intrinsic Value
 - a. Time value is the portion of an option's current value, above intrinsic value; greatest when the expiration date is furthest away and declines as expiration approaches
 - b. Intrinsic value reflects the price difference between the stock's current market value and the strike price for the option

III. Reading the market for options

A. Forecast overall market direction

1. Dow Jones Industrial index of blue chip stocks
2. NASDAQ index of technical stocks
3. Volatility Indexes from BusinessWeek Investors Toolbox measure risk based on the standard deviation of the asset return—basically an indicator of investor fear

- a. (VIX.X) Volatility Index for S&P 500 at the Chicago Board Options Exchange
 - b. (VIXN.X) Volatility Index for the NASDAQ
 - c. Tied to investor fear and uncertainty
 - i. When the VIX/VIXN is high, it's time to buy
 - ii. When the VIX/VIXN is low, it's time to go
 - d. Volatility index is a contrarians indicator
4. Put-Call Ratio from Investors Business Daily
- a. Number puts vs. number of covered calls bought by options traders
 - i. When options trader buys a put on a stock, he's betting price of stock will go down
 - ii. When options trader buys a covered call, he's betting price of stock will go up
 - b. When ratio is 1.0 or higher, it indicates 'bearish' sentiment, less than 1.0 indicates more 'bullish' sentiment

B. Market Posture

1. Trends of major market indexes

C. Technical Analysis

1. Check the trend and choose a strategy that takes advantage of current trend
2. Check the indicators to confirm the breakout or breakdown
3. Check for support and resistance
4. Confirm there is volume to support a breakout

IV. Options Trading

A. An Account with a Brokerage firm is required

1. Provides investor account with options trading privileges
2. Option trading account is subject to a different set of requirements than for stock trading

B. Options Clearing Corporation

1. Responsible for settlement of option contracts

C. There is always a ready market for the option at the current market price

V. Pricing Options using Options Table

A. Option Quotes Table

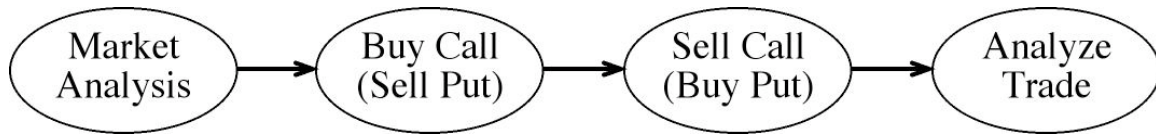
1. Option Root
2. Expiration Month
3. Strike Price
4. Option Trading Symbols

B. Free Daily Options Quotes

1. Harris*direct* at <http://www.csfbdirect.com>
2. Schwab at <http://www.schwab.com>

Applied Cognitive Task Analysis (ACTA)

Task Diagram



At a high level, each options trade always consists of two parts—buy and sell. There are only three possibilities for an option and they are:

- Trade
- Exercise
- Let it expire

Knowledge Audit

Knowledge Audit Probes – Questions posed to SME

◆ Diagnosing and Application

What are the types of situations where investors should look to options and what special skills should they possess?

◆ Market Awareness

What are the key indicators for reading the market in general for option investment opportunities, and how do you pick a stock to take out an option on?

◆ Perceptual Skills

Taking a look at the range of options that may be available for a stock, what are the cues to look for when evaluating an option, based on the individual's risk tolerance and investment goals?

◆ Tools and Techniques

Do you use any guides or pre-determined criteria to know when to take your profit or cut your losses on an option trade...do you have any tools to assist with this?

◆ Monitoring

Once you're in an option trade, how often do you need to check on the option and underlying stock (e.g., hourly, daily, weekly, etc.) to ensure that performance is in-line with expectations?

Knowledge Audit Table – Completed working with SME

Aspects of Expertise	Cues and Strategies	Why difficult?
<p><i>Diagnosing and Application</i></p> <p>Begin with the recognition that options are not for every investor and can serve different needs depending on the circumstances—the place to start is with creating a strategy.</p>	<p>Use options (calls) to create leverage by increasing profit margins with a smaller investment.</p> <p>Use options (puts) to provide insurance against loss on stocks you own.</p> <p>Use options (covered calls) to generate additional revenue on stocks you own.</p>	<p>Novice needs to understand investing basics with special attention paid to options (<i>Characteristics and Risks of Standardized Options</i>).</p> <p>A broker for options trading must approve investors, requires an amended agreement, since options carry a risk of 100% loss on an investment.</p>
<p><i>Market Awareness</i></p> <p>Options provide a short-term investment strategy that is effective in Bull and Bear markets.</p>	<p>Look at the trend to see where the major market indexes are headed short-term, intermediate, and long-term.</p>	<p>Novices look at an individual stock but miss the big picture...stocks tend to follow the major market indexes.</p> <p>The trend affects the types of plays likely to be successful. Remember, “the trend is your friend”, don’t try to buck the trend.</p>
<p><i>Perceptual Skills</i></p> <p>In the steps below, the key elements to consider with an option (puts and calls) are the strike price and the expiration date, which determine the premium.</p>	<p>A conservative or novice investor might go one contract above the in-the-money strike price, while a more aggressive investor may go one contract lower.</p>	<p>It’s importance to recognize that the option premium consists of time value as well as intrinsic value. For a buyer, time value tends to work against them.</p>
<p><i>Tools and Techniques</i></p> <p>A systemic approach can be applied for purchasing either a call or a put.</p>	<p>Steps for Buying an Option:</p> <ol style="list-style-type: none"> 1) Pick a stock to play 2) Check the stock chart 3) Choose an expiration date 4) Choose a strike price 5) Plan your exit 6) Place your order 7) Monitor your position 	<p>The biggest problem faced by novices is they don’t have good stocks to begin with.</p>
<p><i>Monitoring</i></p> <p>Options are by nature very dynamic, and can change dramatically over the span of just a few hours. Before entering an order to buy an option, you need to first determine when to exit.</p>	<p>Determine a price target for the stock by looking at the chart.</p> <p>Exits should be tied to overhead resistance or underlying support.</p> <p>Pick a percentage gain on the option as an exit target.</p>	<p>Novices tend to react to good news, or bad, with emotion. When a position is losing money, emotions often cloud your judgment and lead to a bad decision.</p>

Objectives

Objective 1 (Stocks vs. Options)

After reviewing the characteristics for each, the learner will correctly distinguish between owning a stock and owning an option on a stock, with 100% accuracy.

Concept-Application

Initial Presentation

Learner is given name, definition and best example for each of the two concepts.

Generative Strategy

The learner will list the characteristics of an option and compare owning an option to owning a stock.

Test Item

Using the space on the left of each statement, indicate whether it applies to a Stock (**S**), an Option (**O**), or Both (**B**) by writing in the correct letter.

_____ Security which is traded on SEC regulated exchanges.

_____ Represents an equity share or part-ownership in a company.

_____ A contract granting you control over 100 shares of stock.

_____ Becomes worthless upon expiration.

_____ Allows for trade of unlimited shares of underlying stock.

_____ May pay dividends upon approval of the board of directors.

_____ Represents value as an owned asset.

_____ Suited for short-term investment strategy

Objective 2 (Option Components)

Given a list of option components (i.e., strike price, expiration date, premium, intrinsic value, time value), the learner will recall the correct definition for each in a short answer format with 80% accuracy.

Fact-Recall

Initial Presentation

Show a partial options pricing table identifying the concrete values (strike price, expiration date, premium) and explaining how abstract values (intrinsic value and time value) are calculated.

Generative Strategy

Student will covertly rehearse in their head, and overtly practice recalling the terms by writing them down using a simple mnemonic device, SPITE (for Strike price, Premium, Intrinsic value, Time value, and Expiration date). This also fits within short-term memory rule or 5 plus or minus 2 items, which can be retained at one time.

Test Item

For each of the definitions on the left, select the letter for the correct option component, from the list on the right, in the space provided.

- | | |
|--|--------------------|
| ___ Price paid for an option | a. Strike Price |
| ___ Date an option becomes worthless | b. Commission |
| ___ Portion of an option's current value above intrinsic value | c. Dividend |
| ___ Share price of stock if option is exercised | d. Premium |
| ___ Portion of an option's current value equal to the amount that the option is in-the-money | e. Time Value |
| | f. Expiration Date |
| | g. Intrinsic Value |

Objective 3 (Basic Option Strategy)

When presented with a scenario of market indicators, the learner will choose the correct strategy to buy either a call or a put option, at least 80% of the time.

Rule-Application

Initial Presentation

Eg-Rule approach is used to identify key positive indicators for overall market and underlying stock for the option, and then apply the rule for up-trending and down-trending markets.

Generative Strategy

The learner is shown three different stock charts and asked to explain the appropriate option strategy for each.

Test Item

In your own words, describe the basic strategy you would use in buying a call or put option, and the indicators for each.

Objective 4 (Synthesis of Option Trading Strategy)

At the completion of this unit, the learner will demonstrate each of the seven steps identified with the technique for trading options.

Procedure-Application

Initial Presentation

Learner is presented with a worked example, using a stock chart and the related options pricing table, that illustrates each of the seven steps in selecting, evaluating, purchasing, and monitoring an option.

Generative Strategy

Learner is asked to paraphrase the steps by creating a checklist that they may then use as a job aid for practice.

Using the checklist as a guide, the learner will practice by completing each of the steps, given an example options table and stock chart.

Test Item

Using the information provided and the checklist that you created in the lesson, complete the seven steps to buy a call option, by filling in your own criteria for each:

Option Trading Step	Evaluation Criteria
1) Pick a stock to play	
2) Check the stock chart	
3) Choose an expiration date	
4) Choose a strike price	
5) Plan your exit	
6) Place your order	
7) Monitor your position	

Preinstructional Strategy – Advance Organizer

Most people are familiar with two forms of securities investment: equity and debt. An equity investment provides a form of part ownership in a company, generally through the purchase of shares of stock. A debt investment is an investment in the form of a loan that is made to earn interest, such as in the purchase of a bond.

There is actually a third type of investment that you will learn about in this unit, which is an option. Both equity and debt investments contain a tangible value that we can grasp and visualize either as part ownership in a company or the contractual right for repayment. An option is a contract that gives you the right to buy or to sell 100 shares of stock at a specified, fixed price and by a specified date in the future. Unlike stocks and bonds, options do not have any tangible value and become worthless if they are not exercised or sold prior to their expiration date.

To understand how an option works, consider an example of purchasing an option on a house. You find a house that you would like to buy and negotiate a price of \$100,000 to purchase it within a year. In exchange for the right to purchase the house at a set price within a set time frame, you pay the seller a premium of \$5000. In essence, the price of the house one year in the future has now been set at \$105,000. In six months time, you decide you are no longer interested in purchasing the house, but the value has increased to \$130,000. At this point, you could exercise the option to purchase the house for \$100,000 and turn around and sell it for \$130,000, realizing a \$25,000 profit ($\$130,000 - \$100,000 - \$5000$ premium). As an alternative, you could sell the option to another buyer for \$30,000 and make the same profit, without having to purchase the home. This represents a \$25,000 or 500% profit on the option contract from a \$5000 investment! Had you purchased the house for a \$100,000 investment, and then sold it for \$130,000 six months later, the profit would have only been 30%. This unit introduces you to the strategies for using options to leverage your investments.

Preinstructional Strategy – Rationale

Advance Organizer – strategy was selected because options trading represent an advanced investment strategy that builds on the foundations used for buying and selling stocks and exchange traded funds. Therefore, a comparative organizer is used present factual information about options using the conceptual framework for stocks and bonds. An expository organizer is used in the example of buying an option to purchase a house, since most of the targeted learners have had the experience of buying and selling a home regardless of whether they have ever invested in stocks.

Pretests – strategy was not selected because the content deals with fairly abstract concepts. There are specific attributes in the way of key terms and definitions that the learner must grasp, but these are supporting facts, and not key ideas.

Behavioral Objectives – strategy was not selected because the content is not presented using traditional means for memorizing facts and information for later recall.

Overview – strategy could have been used, but was not selected because an advance organizer is more specific for developing the conceptual framework and context for the instructional content.

Sequencing Strategy

The sequencing strategy selected for the instructional unit is Learning-related, by order of difficulty. The content relies on the ability to relate different concepts together to make research-driven decisions on optionable stocks, and then formulate entry and exit strategies based on market conditions. By beginning with easier topics first, the learner will develop a conceptual framework for building and evaluating more complex cognitive models.

At the topic level, a temporal sequence strategy will be used for sequenced tasks (e.g., buying a call option). Concept-related sequencing by sophistication will be used for linking different concepts together so that it makes sense to the learner (e.g., developing appropriate option plays for bullish and bearish market conditions.)

Formative Evaluation

SME Review

The design document has been created from the task analysis and learner analysis, in order to produce the objectives, instructional strategies, and post assessment. This document will be reviewed by the subject matter experts (SME's), for accuracy and completeness. The review will take place in a group meeting, facilitated by the training manager. Feedback will be captured and collected in the margins of the document copies, which will be collected at the end of the review session. All feedback will then be consolidated into a single change report for prioritization and stakeholder approval of all changes to the design document, prior to drafting the instructional unit.

Learner Review

A preliminary draft of the instructional unit will be reviewed by a select group of users during beta test. Learners will go through the entire unit to evaluate the content, examples, illustrations, and test items for consistency, readability, and applicability. Feedback will be collected via a questionnaire. Contextual feedback may also be provided in the unit materials themselves, which will be reviewed, prioritized and approved by the stakeholders for final release.

Beta Test Feedback Instrument

Please circle the number corresponding to feelings and attitude concerning the materials provided for the course based upon the following:

- 1 Strongly Agree**
- 2 Agree**
- 3 Neutral**
- 4 Disagree**
- 5 Strongly Disagree**

The material was clearly written at the appropriate level	1	2	3	4	5
Directions were clear and easy to understand	1	2	3	4	5
Examples were easy to follow and aided in understanding	1	2	3	4	5
Graphics and illustrations were appropriate to instruction and aided understanding	1	2	3	4	5

Please provide any other suggestions you may have to improve the course, using the space below (feel free to provide any attachments).
