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INNOVATE ONLINETRADING BY ADDING SOFTWARE BRIDGE  
IDEA AND IMPLEMENTATION

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## INNOVATE ONLINE TRADING BY ADDING SOFTWARE BRIDGE

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This thesis was focused on how to make improvement in current automated trading systems. We will share our research on the issues found in current automated trading systems along with possible solution. The whole idea was to innovate current automated trading without replacing existing system and how to implement the solution in real life. This part of thesis will focus on idea and implementation while the other part will focus on marketing and pricing.

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## 1 INTRODUCTION

Online trading is one type of trading that is done online with the help of software while automated trading is the concept of online trade with the help automatic scripts also called expert advisers. In automated trading all decisions are made by artificial intelligence that is based on algorithms written by experts. Terms like "automated trading scripts" and "Expert advisers" and "Robots" are the same concept of an artificial intelligence, these scripts helps trader by taking care of his open trades when he is away from computer.

In this research focus was how automatic decision making can be improved when an artificial intelligence combines with human supervision and trading strategies can be dynamically updated. In result with the improvement in artificial intelligence we can monitor price more accurately and automatic trades can be done more efficiently.

Research is done on how to make an automated trading more innovative, as we believe there is always room for improvement. Our main focuses are, how to handle current automated trading in case of sudden price change, and improve other issues that require quick decision making. Quick and accurate decision making is hardest thing which an artificial intelligence can ever perform. Our research will focus on the improvement of artificial intelligence with the help of middle level software that will act as bridge between trading platform and trader and helps the computer program in making accurate decisions..

Based on research we came up with possible solution to bring together traders of different skills on single forum so they can share their expertise. Our solution was in the form of software product and before introducing new product into market we need to make it different from other available similar products. We will also discuss on feedback as we know that users opinion is always important on any stage of software development and if we get some valuable feedback from possible customers

while product is still in developing stages then it is easy to add new features. We used different method to collect users feedback and will share what has been collected.

Our discussion will move around "Online Trading" in general and we will not discuss different instruments inside online trading systems such as Forex Trading, Stock Trading or other type of Tradings. Our focus is "Automated trading" which can handle your trades regardless of what instrument you were using. Automated trading system is the replacement of human when he is not available such as in case he needs to sleep or when he leaves his computer for a while. Before going in detail of automated trading, it is important to understand what online trading is and how it functions after this understanding next is the automated trading systems before ending this discussion on solution. Important part of our discussion is how to implement the solution and what practical steps are necessary.

## 1.1 Online trading

Trading is the process of buying one item while selling other, in modern days trading is to buy an items while spending money. Further enhancement was made in trading by introducing brokerage firms to support huge volume of trade, and provide facility of buying and selling from a single place. Traders can buy any amount of commodities whenever they want, just by calling to brokerage firm and placing an order, they can also sell it the same way. One pre requirement for this type of trading is that trader must have enough balance in bank account with particular brokerage firm so that broker can deduct money from trader account and reserve item for him at the time of placing an order.

With the invention of Internet, this trading process became more enhanced and new concept of trading emerged which works parallel to traditional way of trading system. This new type of trading sometime refers to E-trading or online trading, which is concept of buying goods by using new techniques such as Internet, mobiles and other communication methods. Internet makes whole process not only fast, but also eliminate the traditional role of broker from trading system, as trader can buy or sell with the help of software instead of calling up to brokerage firm, also it is more secure now and has been expended as more goods are there to trade.

Many items which were not available to trade are now possible to trade along with commodities (Oil, Gold, Silver, etc. ) as well as stocks and other currencies. In modern day online trading which is done by using software, you can not only trade commodities and stocks ( buying and selling shares of know international corporations) but you can also trade one currency into other currency. Trade of one currency with other is also refers as Forex Trading or FX trading (Michael Griffis & Lita Epstein, 2009,pp.20-23).

## 1.2 Background

Online trading is done with the help of a software normally known as trading platforms, there are many trading platforms and the main purpose of each software is to provide access to the trading market where trader can sell and buy different items. All these sell and buy is similar to traditional way of trading only one exception is that you do not need to call your broker to place an order and instead you do it yourself by clicking on buy or sell button of software (Michael Griffis & Lita Epstein, 2009, p.9). This chapter is introduction of online trading to get the idea of process and how it works, I will also share my personal experience and common issues that most of the time new trader will face.

In 2006 during temporary job as network assistance we start developing computer wireless network for a company called "TradeSi", it is small trading company located in small city of Pakistan near the capital area and their business was service based. Business was to help oil traders with training and provided facilities. At that time fast Internet access was not available for home users and thus most of the traders had to go to somewhere where they can find fast Internet connection, and this company was doing good business because they provide access to fast Internet and also their experts with free trading guideline are always there to help, we were there to convert their computer network into wireless network so traders can use their laptops as well.

During those few weeks while we were installing Network equipment I was paying attention to outcome of trading and my focus was to find out how much profit average trader was making, I noticed that most of the traders around me actually lose their money almost every time, one official from trading company tried to convince me that they will make profit in future after getting some experience. But it was hard to get convinced because one very common reason of their failure was sudden change in price while trader is away from computer. Price was moving suddenly in one direction at any time in a day and when this sudden change in price occurred nobody was on the computer to handle their current trades or automated trading system got fail to make right decision at right time.

Most of the time trading is done with leverage amount that is why small unexpected change in price can cause a huge damage to traders account. Most of the time trader use automated trading system to handle their trades when they are not available, but most of these automated trading software are also full of issues. It is hard to find system that can understand trading and have ability to make right decision and follow the proper market strategy because an artificial intelligence cannot work equal to human brains and there is also other reason that every trader have his own individual way of trading and have his own strategy to follow and it is hard for a software to understand it.

Online trading is available 24 hours around the clock and it is very hard to sit in front of computer and watch the trend of price movement. It becomes even harder when you know that most part of the day market will move very slow and during that slow movements it is impossible to trade and get any useful profit. This is because of the nature of online trading. You start trade by clicking button and instantly get your position opened, but that trading position always opened with a slight difference no matter you buy or sell your position will always open on the price that is called pip difference(Michael Griffis & Lita Epstein,2009,p.307). That pip is the amount you have to give to broker before you even start making profit because of that pip difference every trade always start with a little loss and first few movement in price will just cover that initial loss, trader can only make profit if price still move along their predicted way. Because of this particular reason traders prefer to make profit in fast movement of price when they can easily buy or sell along the price trend.

Professionals who practice this type of trading are called "day traders" they spend their entire workday monitoring every change of price and take advantage of the minimum fluctuations to make money. This is how traders must sell at just the right minute to make good returns(Michael Griffis & Lita Epstein,2009,p.273). It is a very stressful way to make money from online market, but it can lead to good returns in just a matter of few hours, better than other professional who earn same amount during a full week. Trader actually gamble on price movement of commodities, currencies or stocks to get some quick pips. Pips are the smallest incremental price movement permitted in the currency market. Although most transactions deal in

thousands or millions of dollars, euro, or other currencies, most currency price quotes nevertheless are extended out four decimals (1.5432, for example). Many times traders quote only the last two digits(Michael Griffis & Lita Epstein,2009,p.307).

This was my experience with online trading, and during my study period while doing final IBS module IBS0907, which was about case study of company called Bolidien. This module helps me better understanding why companies sell commodities as a fixed term contract, as Bolidien being a major copper producer in Europe also use paper trading in London Metal Exchange. That understanding also helps me improving my previous knowledge and I can better understand why companies like Bolidien had to invest huge amount of money to hedge their own production to lock the current price. During the research on this topic I also learn the reasons of price movements and how online trader can be beneficiary of price fluctuations by following good trading strategies.

### 1.3 Trading concept

From my personal trading experience while during my work I learn and realize that trader must have proper protection from losing money in case price suddenly moves away. Some sort of automatic exit strategy must be there that would help when trader is not in front of computer and there is no one else who can immediately handle this situation. If price keep going against his open trade and he could not stop it, this will certainly empty his account balance at some point. It can also happen during when everybody is sleeping as market works 24 hours a day(Michael Griffis & Lita Epstein,2009,p.304).

Geological location and time difference is also important because when Asian market is closing American and Canadian market is just opening(Michael Griffis & Lita Epstein,2009,p.304), and price fluctuation in any market can happen at any time and will influence globally, and it increases the importance of automated trading system which will help you in case you are not in front of your computer, there are tons of automatic script are available in market they do trade on base of algorithms and can

some time very helpful, but still these systems do not provide enough artificial intelligence that can be compared with human decision making(Algorithmic Trading,2014). Their decision making is very limited and in some cases even worse at the time when you need some sort of quick decision. We need some advance trading system which can make it possible to trade with intelligence and can handle situation caused by other side of globe or from the market in other time zone and can analyze any news and other related events.

Few advantages also come with automated trading systems, one of them is that these systems will save your time while you are busy in other important things. Automated trading will eliminate the cause of poor decisions by reducing the bad impact of some human natural emotions such as greed and fear as these scripts are just computer program and do not carry human emotional character. It is possible to make wrong decision under the influence of sadness or happiness or even in some cases trader may feel fear of losing money and get scare to make right decision and, it is also possible that under the emotions of greed he may make a wrong decision in a hope of getting easy money. These scripts can work also forever without getting tired while on the other hand human body and brain both need some rest.

Problem with current automated trading system is that it is based on scripts that was written at the time of selling the software and there is no possible way to update those scripts once they are sold unless you apply update patch or install new release. These sellers are selling their own trading strategies that was written on a specific time and with passage of time those strategies may get expire when global financial climate has changed. This makes it impossible for these scripts to handle current financial situations such as during the events of breaking news. It is very hard to make effective and intelligence decision in complex financial situation when all your decisions making is based on old strategy written few months or weeks earlier.

## 2 TRADING AND STRATEGIES

Opening and closing of a trading position at specific price level is trading strategy. It is similar to a kind of making up plan for buying or selling of any tradeable item such as, buy or sell of tradeable item when price reaches at certain price level. Tradeable items are numbers of commodities, stocks and other currencies which is a list of available items to trade online and this list is provided by brokerage firm. Buying or selling plan can depend on political and regional issues as well as individual experiences. As Michael Griffis explained in his book that you should not follow the strategy made by other people instead develop and test your own strategy (Michael Griffis & Lita Epstein, 2009, chapter 21, p.339), here is an example of a trading strategy.

During recent middle east crisis (Syria civil war issues in mid 2013), crude oil price was going high every day, it was started to rise from price level of 92 USD until it reaches to 110 USD per barrel, during that time of civil crisis nobody was expecting that this issue will settle down very soon, and traders were focusing on buying crude oil as much as possible because price was going upward each day. Selling at the time when price keep going high is not more than burning your money. But soon after Russian and Chinese involvement in this issue price start moving down even before that issue was fully settle down, crude oil price jumped back.

Figure 1.1 shows how political issue caused unidirectional impact one crude oil price. That issue also became strong reason in changing individual trading strategy such as in the crises time everyone was buying crude oil because the price was moving high every night while on the other hand traders priority was to sell crude oil at the time when situation was settled down because price was moving back now.

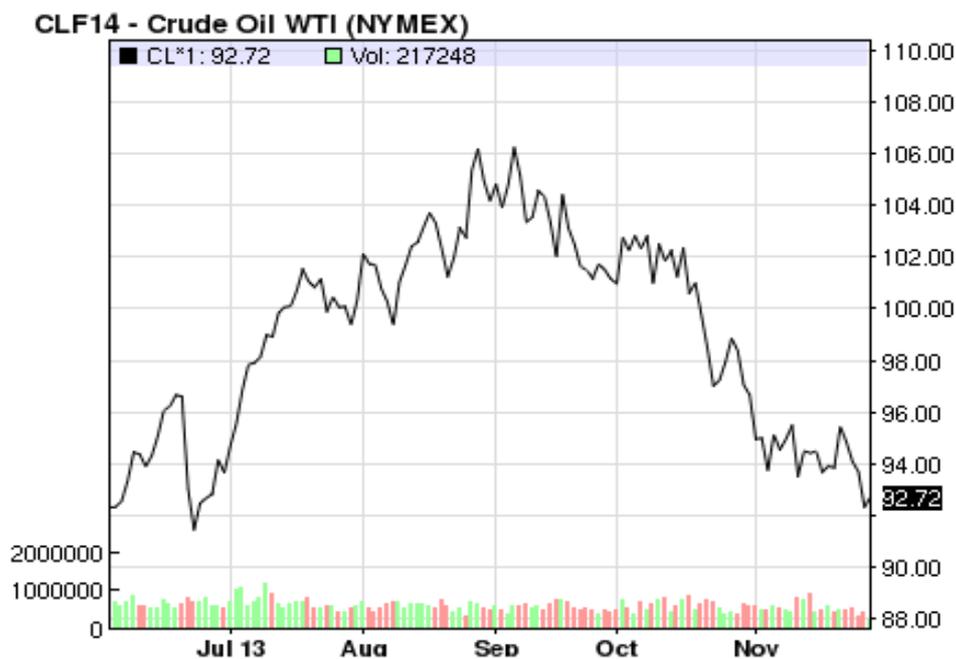


Figure: 1.1: Crude oil price chart, June to Dec 2013

Sometime trader have to decide the movement of price when multiple political and geological issues present at the same time. Apart from regional issues trading strategies also depends on personal experiences, such as many experienced traders based on their previous knowledge can predict future movement of commodities or currencies price. A lot of money managers do this job by handling investment in stock market and try to minimize risk by using their own strategies which they build over time under their experiences and bench markings(Michael Griffis & Lita Epstein,2009,chapter 15,pp.239-255).

Trading strategies can also depend on risk factor, how much risk any trader can afford to take, sometime risk takers can earn more than the normal trader who always trade along the trend. This type of trading done by doing hedge the current price and get more profit when price goes on against traders. Risk traders trade reverse to current price movement.

Another way of trading is by using fundamental analysis, which is the classic way of trading. In his book Michael Griffis discuss "Using Fundamental and Technical Analyses for Optimum Strategy" in chapter 13(Michael Griffis & Lita Epstein,2009,pp.203-218). Fundamental analysis is based on theory that even for a

moment price may get change, but at the end of a day trend must follow the economic numbers such as interest rates and economic reports(Michael Griffis & Lita Epstein,2009,p.176). Traders who are depending on fundamental analysis will always focus on news to get informed on latest financial numbers. This type of trading strategies are very common and profitable, only problem is that this strategy require more human decision making and intention than any other trading strategy.

In short trading strategies depends on many individual and global issues, humans think differently so the trading strategies are also different with each other. It is more effective to combine more than one working strategy and share with friends and experts because sharing will give us better idea which strategy works best in particular environment and doing work as a group on successful trading strategies will further improve many errors that individual trader may do under the influence of natural desires, tiredness, greed or fear. Working as a team can also make whole trading experiences more innovative. Successful traders and expert money managers can also share their own experiences to other novice traders.

Idea of sharing individual trading strategies among different traders is that one trader can handle trade in case of absence of other trader. This idea is not very commonly used because traders do not follow each other in trading strategies however, trader trust on offline trading strategies such as expert advisers while they are away from computers. These expert advisers are trading plan that is written by some experienced traders (this is why these scripts are called expert advisers), these trading strategies are offline and needs to be update every now and then. It is hard to trust on these script in every financial situation because in one particular moment these strategies may work well, but on other time result can be very damaging. Everyone knows that offline script cannot compete with live trading experiences.

Online Trading is growing business and is not just about commodities trading, it also includes currencies exchange where trader can buy or sell currencies and trading of stocks is also part of online trading business, so in short online trading includes commodities and stocks as well as currency exchange. Online trading is done using software called trading platforms. Trading platforms are those applications which

trader will install on his computer and this application will give him access to online market where he can trade. All these applications are different in outlook appearances, but these all software have almost similar functionality. Our focus will be on one of these trading platforms which is very common and mostly used, this platform is “Metatrader ” version 4 is also known as MT4.

## 2.1 Trading software

Metatrader is made by the MetaQuotes (Software Company) in 2002. It is an independent trading software, this platform was developed for online trading and used to trade commodities, currencies and it is also used to trade stocks. What makes this platform more popular and widely accepted is the only reason that it is one of the first fully programmable trading platforms that came with its own programming language, programmable language means that you can make this program work for you fully automatic when you are not available in front of computer, this software gives you programming tools that you can write your own trading strategies into script and whole trading will work as according to the instructions given by that script, this whole environment make it suitable birthplace for automated trading systems. One fact to remember that this software is independent of any brokerage firm or even commodities, stocks or currency providers (Metaquotes,2013).

Online market is a big place and only trading platform cannot give you access to this market. To access that market you need brokerage firm that will give you access to online market so that you can start trading. Different brokerage firms will use this software to deliver services and facilitate traders. When traders want to do business with any of brokerage firm he will download this software and setup server IP address. IP address is numeric number of few decimal digits, which is information for Metatrader software to locate brokerage server on the Internet. Broker will provide all configuration details including IP address and other log on information on successfully opening of trading account, next step is deposit funds to your trading account and start trading. Some broker also package their own versions, but the back

end software is always same. After first time configuration trader can now log-on using their username and password provided by broker (Metaquotes, 2013).

Any automatic scripts written for one broker and his version of Meta Trader will also work with any other broker using same version of software. This software is mostly known for its ability to run expert advisers, sometime refer as Forex Robots. Perhaps it is only reason why most brokerage firms prefer to do business using Meta Trader platform. Most common version is "Meta Trader 4" although version 5 also available in market, but this MT4 still works since 2005 and many financial gurus believe it will keep dominating trading platforms for few more years (Metaquotes, 2013).

We must know that Metatrader or any trading platform do not have direct access to online trading market unless there is some intermediary present that is also known as broker. Broker will give access to trading market on its terms and conditions such as how much commission he will charge on each trade and list of available items to trade as well as what are deposit and withdraw methods for account funding (Michael Griffis & Lita Epstein, 2009, p.33).

## 2.2 Role of brokers

Brokerage firm and its role in trading business is very important. A broker is an intermediary agent of brokerage firm who is always stay between you and the Interbank, and will process your trades. In his book Michael Griffis explained details on understanding the types of brokerage accounts in Chapter:3, "Going for Broke", including different types of brokers and what to choose (Michael Griffis & Lita Epstein, 2009, pp.33-43).

Interbank operate very similar way to the Internet. As in case with Internet which is a reference used to describe one big network operation when different small networks combine together and share information. Sharing and exchange of information from one network to other will keep the Internet alive and, while all small networks inside the Internet always operate independently. Our computer may connect to one of these

small networks and download information to our computer from any other network. Similar is the operation of Interbank in online trading market instead of downloading information we download latest price quote of different tradeable items that can be commodities or stocks(ECNforex,2013).

Interbank is a term that refers to networks of banks that trade with each other all the time during working hours, every brokerage firm is one of their subscriber who will receive recent price quote or currency exchange price and provide this to their clients, these clients are most probably a trader like you and me. When any broker quote latest price from the bank that he has his relationship, at the same time some other brokers who have multiple banks as their back-end servers maybe offer slight different quote. In case with Internet communication subscriber always prefer to join with internet service provider who have fast access to other networks similarly in case with online trading we prefer to open trading account with broker who provide us with good price quotes. In his book Michael Griffis discuss about direct price quote, which is when brokerage bank need specific currency such as, US dollar or euro, he can offer lower exchange rate on these specific currencies, this kind of indirect offers happens all the day(Michael Griffis & Lita Epstein,2009,p307)

One thing to remember, the best offered price from one broker from his bank and worse offered price from another broker will have slight difference and almost in next second all prices are synchronized because banks also linked to each other so they maintain price all the time(ECNforex,2013). This is the reason all brokers will offer almost the same price quote. It depends on individual trader to accept quote and start trade or wait for new price quote.

Another facility provided by broker is called leverage. It is extra amount of money given by traders as a loan as long as you are holding your position. This amount depends on brokerage firm, some broker offer 1:10 while other can offer 1:100. A 1:10 leverage means that for each 1USD balance in your trading account, you can use 10USD to trade(Michael Griffis & Lita Epstein,2009,p313). This can be sometime good as well as bad, you can make huge profits and also can suffer from huge loss because of leverage.

### 2.3 Concept of leverage

It is important to understand leverage to know why most of traders get huge loss with slight change of price. And why it is necessary to focus on current price changes when you are using leverage in your trades? Answer is that you may lose many times more than you would normally do. On the other hand, with every slight change in price movement you may also get good profit in return. It is important to sit in front of computer and keep watch every price change when you are doing leverage trading.

As mentioned before leverage is an extra amount of money that trader will get from broker. Leverage can be from 1:2 to 1:1000 depending on a broker and what he offers, 1:2 leverage means that you will get twice the amount of your actual money and 1:100 means you will get 100 time extra amount of your actual money. Leverage, which means borrowing money to trade is type loan amount can be used only for trading purpose and cannot be withdraw, sometime leverage also depends on what your current trading account balance is and it changes along with the current balance in your trading account(Michael Griffis & Lita Epstein,2009,p313).

Here is an example of a trader, he has 1000 USD in his trading account balance, broker offer him 1:10 leverage and with this leverage now he can trade any currency or commodities worth of 10000 USD, he can hold his trading position while price moves. He will close this position and earns 10 times profit on his trade while on the other hand if his trade is in loss he will suffer 10 times more loss because of holding huge volume of trade. It is possible to trade huge volume of commodities by using leverage. What if trader's current loss is exceeding his balance amount, can he also consume his leverage money as well? Answer is very simple it never happens if you know how all process works, here is another example below.

Our example trader is interested in Buying of Crude Oil, current price of Oil is 94 USD per barrel, as he placed an order for 10 barrel, Broker will process his order and now he is holding 10 barrel of Crude Oil that is worth 940USD. We know that 60USD left in his account balance now, but his account balance will show nearly 1000USD. The reason is that he left 60USD in his because, but the value of what he is holding (10 Crude Oil barrels) and remaining money (60USD) in his account are summed up to 1000USD, if he sells his Crude Oil he will get back all his money because price has not changed now. Let's suppose price of oil moves down and oil is now 93USD per barrel, current worth of 10 barrel he is holding is 930USD and, with his remaining 60USD now his total account balance is 990 USD, he will lose 10 USD if he closes his position at current price by selling 10 barrel of Oil. He decides to wait and after a week oil price reaches to 95 USD and his balance increase to 1010USD now. At this moment if trader sell his 10 barrel of Crude Oil he will get profit of 10USD. He can sell it or wait for more price gain. (price quote in this example is from NASDAQ\_OIL,2013).

In the example given above trader can also use leverage and instead of buying 10 barrels of Crude Oil he can buy 100 barrels that may worthy of 9400 on current price, without leverage he cannot buy it with 1000 USD in his hand. It was made possible with the help of leverage money provided by broker. After he becomes owner of 100 barrels of Crude Oil, he can hold it in his account as long as he can bear loss or get some profit on it. When trading huge amount of volume, possible profit will be huge as well as possible loss. He can close his position if he gets some profit or wait for more profit gain while in case of his loss he has both options either close his position in loss to save more loss or wait until position reaches to profit again. In the worst condition if his total loss is nearly his current account balance, at that exact moment trade will close automatically leaving behind zero balance in his account, this automatic close will make sure that leverage amount cannot be consumed by trader.

In Meta Trader there are two balances are displayed, one is your actual balance which normally called Balance and it do not include value of your open trades. Your other balance, which normally refers as equity is the amount balance that you would

have if you closed all your trades at current moment. That second balance continuously updated with every slight movement in price change(Metaquotes,2013). Leverage is provided by major banks while brokerage firm only play role as intermediary agent. These banks also control current price of commodities and exchange rates of currencies. After understanding the role of broker and leverage, next is to understand the importance of banks in trading.

#### 2.4 Online trading and banks

Example of an old time when Vikings from Northern Europe used to travel towards China and bring back with them some silk and sell this silk to local market, this process of buying silk from far east and then sell into local market gives them legally authority to fix current price. That silk price includes profit margin as well as all productions and variable costs including travel and man power consumed, if other traders can afford they may compete in price by offering lower price than current price.

In every culture concept of trading circulate around traders who used to travel to far lands and bring some goods to their own cities and sell these goods to local buyers. These traders are actually controlling the price of commodities, and fix the price for any commodities and currency exchange rates. In modern time price is set by banks who will buy commodities even before its production is ready, banks also play important role in setting commodities price as well as setting exchange rate of currencies. Banks also provide money to brokers so they can offer leverage to their traders because it is impossible for a broker to offer huge amount of leverage to every trader while it is very common practice in online trading is to use leverage and buy for a short period of time and sell it as soon as you get a small amount of profit. These are few reasons that increase the importance of banks in modern online trading systems such as where money is provided for a short period of time.

#### 2.4.1 Banks in commodities trading

In modern time price for commodities is set by brokers, shifting of price control from traders and manufacture to a modern time broker is the beginning of banks monopoly in trading business, which further enhanced by using the latest techniques of time such as Interbank price quotation. All major commodities and currencies pairs are traded under the quotes provided by different banks. One main reason why banks have authority to set price of different commodities is that they actually own future production of particular commodities. After default ownership, these banks can manipulate prices in trading market that chain of banking system is known as Interbank (ECNforex,2013).

Boliden is one of Copper producer in Europe, company want to sell part of its future production by doing agreement with buyer, agreement says that company will produce 25,000 kg of copper by the end of November 2013 and both parties agree on a price that is higher than current price let's say it is 7.055 US cent/kg while current price is 7.033 US cents/kg (Price Quotes from NASDQ\_Copper,2013).

Boliden will get money before they produce anything. On the other side bank is now being a de-facto owner of that future production can bring this agreement to LME and put it for sale under new price of 7.099 US cents/kg, and wait as long as some other bank is interested in buying this contract. These chain of trading of future contract will set the price of actual commodity in market. When hundreds of these similar contract are sold at the same time, price of commodity will go down immediately on the other hand it may also result in huge price increase. Regardless of the knowledge that this price change of Copper will have actual impact on human life, these banks are more interested in gambling on price for their daily profit. On the other hand, this price fluctuation in trading market cause instability and during that uncertain price movement any leverage trader will suffer from loss if he cannot hold his current price position for long. While at the same time this price fluctuation

brings new opportunities for day traders to get profit from small movements of price, proper strategy plan or any good automated trading system will be the beneficiary too.

In order to get rid of every day price changes and lock the current price every commodity manufacture such as Boliden will invest huge amount in these future contracts. Companies do this so that in case current price of copper go very low by the time when their production is ready to ship they can cover their loss with profit from paper production by hedging their own production. This situation always goes in the favor of banks and they want that price always fluctuate so companies like Boliden keep investing in order to lock current price.

There is another group of people who just trade these contract to gamble on price movement. These are ordinary people, but the problem is that people do not have enough money to buy contract worth of thousands of USD in stock market so they trade it with the help of leverage. This is risky business as it can result in huge profit with small movement of price, but on the other hand it may erase all of your money in your account. One fact that broker will not share any lose instead he will get profit from every trade regardless of you are making profit or loss, only leverage trader will bear all losses. Trader needs to keep an eye on price fluctuation and he also needs some kinds of automatic system that keep an eye on price movement while he is away.

Banks provide huge amount money which is also called liquidity into market at any time especially during the time of day when most banks are involved in online trading(Michael Griffis & Lita Epstein,2009,p281). That create real uncertainty in price movements. The fact that price of one commodity can also change the price of other currencies or commodities make it more uncertain. This situation is very damaging to leverage trader and sometime trader make very poor decision under human emotions such as greed, fear or tiredness. As trading market is 24 hours a day, and it is nearly impossible to keep an eye on price movements all the time. Trader will either close his trades in loss or just trust on some sort of automated trading system when he need to leave his computer.

### 2.4.2 Banks in currency trading

An example to understand currency trading, in this example we are holding some amount of USDollar that is worth 1000 Euro at current price. It means if we go to market and want to exchange these USDollar with Euro of equal worth on the current price, all we will get is amount of 1000 Euro back, but if we do not want to do it now and wait until next week and try again, most probably we will get different amount of Euro because exchange rate of currencies are continuously changing all the time and the amount of Euro that we will get next week will depends on new exchange price.

Similar is the concept of online currency trading, you click and purchase one currency or convert it into other currency and keep watching the price until you think you will get extra money by converting it back to your own currency. Trade in currencies will give you some profit because currency exchange rate do not stay same, devalue of one currency gives you some extra amount in shape of profit. Trading one currency into other is also refers as Fx trading or Forex trading.

Multinational manufactures need to invest huge amount of money into Forex market just to hedge and lock current currency exchange rate when manufactures do business in second currency. If manufacturing firm do not invest in Forex market, most probably by the time after their production is sold in second currency and second currency was devalued, company will not get enough profit even they would increase price of goods.

Banks are the authority who sets exchange rate of currencies, exchange rate is affected by some political activity or breaking news and some high-level government decisions of particular country. For example, price in USD may depend on interest rate set by Federal Reserve Bank and Euro will get interest rate set by European Central Bank. Many other related events can also affect exchange rate such as governments policies of European union such as unemployment rate has changed.

Sometime breaking news will cause sudden rise in exchange rate of currencies (Federal Reserve Bank is American central bank which is called FED while European Central Banks is bank for all Eurozone countries, is called ECB). According to Michael Griffis, bankers, banks, and other financial institutions do the lion's share of trading. They make profits buying and selling currency to each other. Approximately two-thirds of all Forex transactions involve banks dealing directly with each other(Michael Griffis & Lita Epstein,2009,p.305).

Banks do not fear if currency exchange rates sets by banks are affected by other political and geological situations which are not in their control because banks always keep multiple currency accounts and it makes no difference if current exchange rate for one currency goes down against other banks will get same value of money back from other currency. Most of the time leverage traders are the only party who suffers loss especially in case of sudden price change as sudden price rise cannot be predicted especially during breaking news events. When trading currencies by using leverage it become a bit risky because you are about to take risk on somebody else's money to get more profit while on the other hand you will get some loss and will bear it all alone(Michael Griffis & Lita Epstein,2009,p.313).

### 3 AUTOMATED TRADING AND CURRENT ISSUS

Online trading is a 24 hours market of different geological markets such as Asian market, European market and American market. Price change can happen at any time and one market can affect price change in other market(Michael Griffis & Lita Epstein,2009,p.304). Leverage trader needs to watch and focus on each price moves, but for a human it is nearly impossible to be awake all the day. People need to leave computer for many reasons and it is not possible to close your trades in loss each

time you leave computer. Solution to this is some kinds of automated trading system that can work for you in your absence either for a short period of time or for a long period of time such as over a night when you go to sleep. With a well-programmed trading script you will be able to get some profit while you are sleeping and intelligent script is trading.

Quality of Meta Trader over other trading platforms is that it allows users to write their own strategies of trading into scripts and that programming is even portable to other installations of Meta Trader. There are many systems for sale on the Internet, these scripts which are called "Expert advisers" are based on trading strategies written by experts. These scripts can help individual traders, companies and other money managers and can provide information on important changes in price, these scripts can communicate with trader by using signals or email notifications. These scripts are good when you want to control natural human emotions such as fear and greed. Decision making is very important and must be done at the right moment, sometime fear of losing money or other time greed of making more money are few emotions that can change your decision at the last moment. These scripts do not have any problems of fear or greed, but still these scripts always lack some functionality that only humans can do such as making complex decisions.

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### 3.1 Importance of news

Forex market open from 5pm EST on Sunday until 4pm EST Friday. Economic data is one of the most important catalysts for any movements in exchange rates, all major commodities are traded in USD so any impact on currency exchange rate of USD will also change the current price of commodities.

Online market responds not only to news which are related to U.S. economic, but also news from around the world can make huge impact on market(Michael Griffis & Lita Epstein,2009,p.25,230,344),. There is always some news related to economic data, few of them are.

- Interest rate decision, Current Inflation and related numbers
- Unemployment status in country
- Retail sales, Industrial production
- Current Trade balance, Manufacturing numbers

Any change in current interest rate of one currency will lead to more purchasing of that particular currency and more purchase of that currency will lower the value of opposite currency. Interest rate is releases in numbers and if new numbers are lower it means new interest rate is low and if number is high it means that new interest rate is high. These values are set by particular banks once every month(Michael Griffis & Lita Epstein,2009,p.70). High Inflation will reduce worth of particular currency. Sometime we get financial numbers in news which show the unemployment rates in the country, this number is good as low as it can be because it will shows future promised jobs and is good economic indicator for any economy if it is lower than the previous number. Any news related to industrial production category will indicate current situation of GDP, (Gross domestic products) of the country, these numbers can lead to long-term gain of particular currency. News related to current trade

balance will have long-term impact on any currency and shows good indicator about industrial production(Investopedia,2013).

We often get financial news as a data stream of different numbers. Table 1.1 is an example of current trade balance, industrial production and manufacturing production numbers related to UK economy.

Trade Balance ( In Billions)	Current = -9.7	Previous = -10.1
Industrial Production %	Current = 0.4%	Previous= 0.9%
Manufacturing Production %	Current= 0.4%	Previous= 1.2%

Table 1.1: News release related to UK economy, Dec10. 2013

This news release has created strong impact on current exchange rate of Great Britain Pound is also known as GBP. After this new release, most currency trader will start purchasing GBP to secure their investments as well as in the hope of more growth in the future as current indication shows economic growth. This sudden demand of GBP causes the devaluation of opposite currency, which is USD in this case. Figure 1.2 shows how devaluation of USD against GBP also results in an increase of current price of crude oil, as crude oil is also traded in USD. These indirect impacts between currencies and commodities are very normal and one of the reasons for price fluctuations.

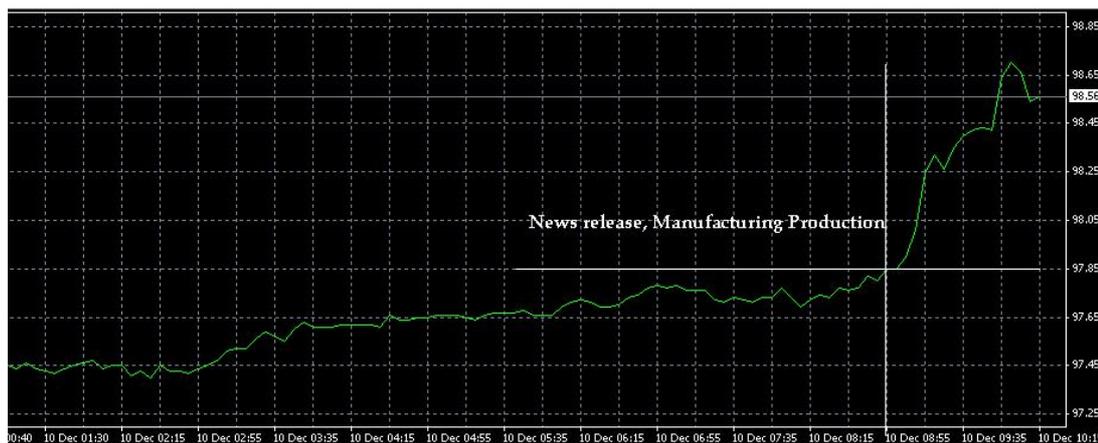


Figure 1.2: Chart show news release cause impact on crude oil price raise, Dec 10, 2013

News release are always in numbers so it is very easy to predict what will be future market position when previous release numbers are in hand and compare them with new numbers to get the idea of future numbers. On average there are about five news released each day. As soon as news is released there are always plenty of opportunities to make profit from instance price movement, all you need is good trading strategy.

Depending on current economic status of the country, some news releases may have more importance at particular time. For example, unemployment status may be more important this month while other important trade or interest rate decisions are not. This is because of election year or because of some related political issue. Therefore, it is important to understand what are political situation in country and where current public opinion stands at the moment. This complex kind of decision making cannot be done by any computer script, and it is the main issue for any automated trading platform to handle. Computer scripts cannot predict to more accuracy on any news release than any human brain, and it is not possible for computer scripts to compare different news with each other to find out which news is more important at the moment. Sometime last minutes news or breaking news are very volatile to price movements, and often more damaging to traders when they depend on automated trading. It is hard for expert adviser or robot to handle these "Breaking News" from financial TV channels while most of these numbers that appear in financial newspapers are not accurate.

#### 4 POSSIBLE SOLUTION

At this point after good understanding of how trading works and why we need automated trading, now is the time to move our discussion on issues in automated trading and try to find possible solution. Automatic scripts do not have enough intelligence to make decisions in complex financial situation while on the other hand human brain can make more complex decisions. There is another problem even if we replace automated trading system with human brain, still the issue is not solved as we see there are tons of traders who are losing even they do not use any automated trading systems, the reason behind their poor decision is that they lack expertise and knowledge. Good trading decision always depends on experience of years and practice.

Traders with less experience fail to make good decisions and repeat common mistakes such as blindly following financial numbers which are released by any news sources. As most of what is reported in the mainstream news is misinformed, sometime it is called "yellow journalism" or "financial propaganda". These numbers are not of assistance to any serious trader who wants to make profitable trading decisions while experience trader will sort out valuable news.

We know that current automated trading have its importance in online trading and it is hard to replace it with something new, but it can be improved and can be made

more innovative by adding some human intelligence that will work together with an artificial intelligence. We know that good decision in online trading require some trading experience and it is hard for everyone to find some expert willing to give some advice in everyday economical situation. On the other hand, if we can find such an expert it may not be affordable as we all know that money managers are very costly.

Our solution begins with the idea of bringing live human brain in the form of trading experts and automated trading together on single platform that place can be some sort of forum such as web site on the Internet.

We want to add more human intelligence input to artificial intelligence so that it could make complex decisions in any situation.

It seems a bit hard to replace entire system as many automated trading scripts are already in practice since a long time. So instead of replacing current automated trading system, similar trading script will be created, which will work like any other trading scripts available in market, also known as forex robots. Next step will be to write a software which will be installed on the same computer with Meta trader along with our trading script. This new script can update its own algorithms dynamically with the help of software while software is connected to online forum where most of the time some expert is available to handle every day financial situation. We do not want to replace existing system and with the presence of software whole system will work seamlessly and without changing in the current service environment and provide better control on current open trades.

Central web site forum can be a place where trader can find experts and they can subscribe to them, whole system will work like a social networking with only difference is that in social networking you broadcast your text message to family and friends while in this case you will broadcast sets of instructions to your subscribers. Subscribers on the other hand can pay you for the services or they can also have some trail periods. Subscriber is the normal trader who will leave his open trades behind in his absence and our automatic script will handle this open trades like any other script or robot, only difference is that this script will be updated by middle

software, which is also installed on the same computer. This time automatic script gets some live support from human brain that is most probably some trading expert guy and that he will update the instructions according to the current market situation.

Main trading instructions are three types, one is buy at specific price level, second is sell at the specific price and third is close at specific profit(Metaquotes,2013). Combinations of these three instructions make up whole trading strategy. Another thing to remember that trading system is to work on price quote received from brokers and it is very easy to handle many trade at the same time because price quotes are similar all over the world, handling multiple trade is like handling one trade.

Forum can be a central place for users to register as trader or experts, and provide equal opportunities for both traders and experts. For traders it is easy to find experts and at the same time profitable place for experts to find new clients. Web site will show the statistics of each account and his previous track record, from that statistic other traders can find out which expert is more beneficial for them. As there are always huge number of instruments to trade and for a trader such as, Gold, Copper, Silver and Oil. For a trader to choose some particular instrument it is important for him to know which expert have already traded the similar instrument which he is also willing to trade. Web statistics and profile rating of each expert can make it easy for traders to find particular expert of their interest.

It will also prevent every user to register as an expert because you need to be an expert trader in particular instrument and your statistics will show detail about the success rate in your previous trades. There are tons of other possibilities and services that can be offered such as sending message between users, blogs or other similar web based services, companies and other brokers can share their offers and contacts

## 5 IMPLEMENTATION

After getting the idea of how online trading works and why price moves, and the effects of these quick changes on a leverage trader now is the time to improve automated trading so it can handle all kinds of market situations especially new events as we know the importance of news in online trading. Idea here is middle software that can always present (probably some kinds of bridge) between open trades and trading experts. In the case trader needs to leave his computer, he can transfer control of current trades to that software, which is connected with forum of expert traders.

This will make sure that automatic trades are not carried out by some random algorithms rather by some live human brain and in most cases someone who have more trading experience than trader himself. This will save time for a trader and he can spend his valuable time in doing other business rather than sitting in front of computer screen. In this section, we will go through implementing parts and some practical thing we have done to implement the idea, and also share the result part and feedback.

### 5.1 Basic requirements

Software and forum both are basic need to implement the idea of sharing trading strategies among traders, forum will provide a place for traders and experts to meet, and software will give the access to ongoing trades. Expert will take control of the trading strategies of traders with the help of software. Software will also make sure that no critical financial information such as passwords and bank details are not shared between traders and only strategies are available for traders.

We also need central web site to act as a forum where traders can find the expert who are willing to sell their own strategies. Web site can provide all traders the require information to select right expert for them such as, previous trading record and

instrument of expertise along with the monthly charges of subscription. As we know that Every software setup start from some basic requirements such as naming a software, designing a logo and color scheme we will share our research on this topic under this section.

## 5.2 Software naming

In software products everything is the name of software that has been given to it. It is very hard to bringing up good sales benefits if the name has no relevance to the target market or if that name do not have good connection to what product actually offer. Software name will attract various people and if it is well explanatory than interested customers can find it in search engines,. Name is the first ever thing which introduce your product. It is recommended that you must think twice before naming your computer software product to save more costs with re-naming software on latter time (ConsumerPsychologist,2013).

In our case our business is online and it is also related to E-Commerce. It is important that our software name must have strong connections with domain name because it is not good to promote any software product if it's name do not match with it's web site. Le't start and name our product now as we know that services related to this target market is already offered by many software, and we also provide similar service to something already offered such as Forex robots or trading robots. To make our product self explanatory it is good that our product also include the text "robot" in its name so that this product can quickly make some space in existing market.

In our case it would be better if we match the product name with the web site. We made a list of some possible software names and tried to search for available domain names we found that most of the domain name are already taken, but after spending a good time in searching, we decided to name it as "Robot3x". There are few reasons to choose this name, one of them is availability on the Internet, and we know that we

have to setup forum along with the software, now both software and forum can work under same name.

When naming new product you always have to fight between give and take situation, something you have to leave and something you have to accept, in these days when the Internet is used in every business of life you will be lucky if you can find the name of your product that exactly match your domain name. As we know that some good name may already have taken on the Internet and on the other hand many available domain names are so weird that you cannot select them as your product name.

### 5.3 Logo and icon

After giving a name, we also need to design logo and icon for the software. Most prominent identity item for many businesses is the logo. It appears on all printed materials related to product(Msstate,2013). We knew that we must be very careful when designing logo for Robot3x (name that we have given to our software). We must focus on its appearance and color combinations and it should be readable, color scheme must also match original theme of software outlook as well as web site appearance. Main colors in our software theme are red and black along with the web page design. We want to follow the same theme in our logo to make it looks natural with overall color scheme of software and web site(Msstate,2013). Software is still in developing process, figure 2.1 shows the front interface of software to give an idea about overall color scheme of logo and icon which can also be seen in figure 2.0.

Once we have decided basic theme of logo, it is not hard to create it as we can do this using online tools called free logo maker by Graphicsprings. Along with logo we also need software icon that we will use with the software, icon is different from normal logo and is used in computer applications, we used graphicspring to create logo and icon that will work both with software and forum(GraphicSpring,2013).



Logo



Icon

Figure 2.0: Logo and Icon for Robot3x.

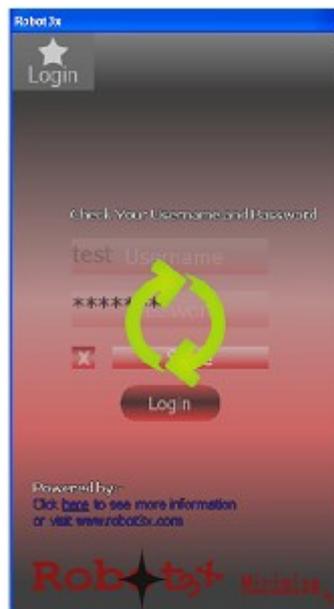


Figure 2.1: Interface for Robot3x software.

#### 5.4 Selecting a domain name

Domain name is the identity used to refer some particular web space on the internet. It is the same as any other name, but the difference is that it is unique name on the internet and once you register particular name you are the owner and no one else can register the same name again. People use domain names to promote their products because it is easy to sell product when you have some online identity which refer to your product and it is also easy for customers to reach you from that domain name. As mentioned earlier that think twice before you decide to name a software, especially in the case, when your plan is to promote it online. If you have no previous web site for your product it is important to have one.

It bound to the limitation of availability if you name your software earlier than registering domain name, and it is always good practice that you register online domain name of the new product at the same time you name it (ICANN).

#### 5.4.1 Availability and simplicity

We name our product as “Robot3x” because of the reason that domain name for this product was available. It is advised to go out and register domain name related to your product before you name it such as in our case we register “www.robot3x.com” and name our new product as “Robot3x”. Even that name do not explain the idea and purpose behind our new software and forum, but still we will use it because we need to build forum along with the software and it is not a good option if our forum have different name than our software.

Domain names which have more relevance with product or software names always get a bit higher ranks in search engines. As we know higher ranks in the search engines will drive more customers to your web site. Simplicity in the domain name is also very important because we know it is easy to remember simple name and also easy to type especially those names which do not include dashes or underscores.

Multiple domains related to same product and pointing each one of them to same page can also bring more sales in the future as different people may find through different domain names. For example, in our case we register “.com” and “.net” level

of domain names for our product, and we will point both to same version of our web page to get more traffic from both domain names. In future if we do not want to use both domain names at the same time we can sell one of them on later to get some instant profit.

#### 5.4.2 Spellings and keywords

Every day someone misspells a word and land on some different web page and most of the time he lands on web site with similar business. To avoid this situation, why not choose domain names which are full names in grammar and spellings so that it would be less possibility of misspelling in typing. If it is not possible to register domain name with good spellings and there is limited choice of selection, we can choose better name that is more closer to the standard of spelling and grammar, for example in our case as we could not find proper name for our future domain and at the end we select “robot3x” from some of available options such as, “rbt3x”, or “robot-booster” or “rbtthreeex” etc., our choice was made on the fact that this name includes full spelling that can be easily remember. It is better to choose name such as “yourcarforsale” rather than “urecar4sale” or yourcar4sale”.

sometime it is necessary to know about the behavior of people and their interest on the Internet, and it always helps when you know what other people are searching on the Internet related to your products. Here are two tools that can be used to find if your product can make its place in market, or is there worth potential and enough clients? These two products are "WordTracker" and "Overture's Inventory". We used these tools to find out about the keyword “Forex Robot” so we can get the idea of potential in our target market, in figure 2.2 below is the result of findings.

Related Keyword Overview			
Related (923)	Search Volume	Related	Search Volume
robot forex	90,500/mo	forex robot trading	14,800/mo
forex robots	33,100/mo	forex	7,480,000/mo
robot trading forex	14,800/mo	fx bot	9,900/mo
forex robotics	49,500/mo	forex trading system	60,500/mo
forex trading	673,000/mo	forex forum	110,000/mo
forex signals	90,500/mo	forex alerts	6,600/mo
forex trading software	27,100/mo	managed forex	27,100/mo
forex trading robots	5,400/mo	broker forex	165,000/mo
robot forex trading	14,800/mo	forex system trading	60,500/mo
forex trading robot	14,800/mo	automated forex trading	22,200/mo
			<a href="#">View More »</a>

Figure 2.2: result of keyword search result for “online trading”(Keyword search results).

## 5.5 Web administration

Web site is a document of text and images as well as other multimedia components such as video and audio. These all items are accessible from single document called home page, and that home page is further linked to other documents and all these documents are available on the Internet under unique name that you already registered (ICANN). Web administration includes writing home pages and other web pages as well as setup of web hosting (place where all document are stored). Web hosting includes securing of the server as well as setup of payment gateway and designing of shopping cart, in case if you want to provide facility for users to use their credit cards to buy product or service. We will take a quick look at some of important web administrative tasks.

## 5.6 Web security

Online purchase is done online with the exchanging of digital numbers instead of currency notes, this exchange between customers and buyers can enhance and speed up the whole commerce system, but on the other side the biggest issue is to protect digital theft. We need updated secure tools to conduct safe transactions for traders, protection from fraud, most common tools for this is the use of SSL.

#### 5.6.1 Using SSL

SSL stands for Secure Socket Layers Protocol which encrypts and decrypts messages transmitted over the Internet. We know communication on the Internet involves two sets of computers, one side that is software or browser and the other side is server side. When a browser or any software initiates SSL communication with the server on the other side while the server on the other side will send an SSL certificate which contains information for the browser to encrypt the message with SSL keys they will send along with the message. When the server receives information back from the client it will decrypt that message from its own key it sent earlier. This process makes it impossible for information to be read by a third party in case it is intercepted somewhere in the middle of transmission. We can use different encryption strengths such as 40, 128, and even 256-bit. This number indicates the length of the key it works like a password, more bits in a password means more it is hard to guess, same applies here more high the number more hard to break the key (Netcraft, 2013).

In case with our business we need secure web transactions for web users and secure integration for our software. Each time a user logs on using a browser or client software his information will pass over the Internet and must be encrypted by our SSL.

SSL certificates for every web site need to be unique and it will raise a problem if a certificate that is designed for one web site is used for another web site, so we need two separate certificates for “.com” and “.net” domains. SSL certificates are provided by some digital certificate authority that can be trusted by other internet clients. If a digital certificate is not from a recognized certifying authority then a serious problem can arise when we use that certificate on the Internet. To receive an SSL certificate that

we will install on our web server we need to subscribe to some certified authority, figure 2.3 shows few SSL certificate providers and their subscription plans.

Purchasing Information	DigiCert	Symantec	GeoTrust	Thawte
1-Year Price *	\$175 USD	\$399 USD	\$199 USD	\$199 USD
2-Year Price	\$315 USD	\$695 USD	\$348 USD	\$345 USD
3-Year Price	\$419 USD	\$995 USD	\$498 USD	\$495 USD

Figure 2.3: Price comparability in different SSL Certificate providers.

When we install any of the SSL certificate on server, it makes our server secure and web hosting becomes secure web hosting now. Another type of SSL certificate is using shared hosting where one web server is protected by some SSL certificate provider and many users will have their own folders on same server. All you need to do is just move some web pages over that shared hosting instead of making your own secure server. As we do not need to install SSL certificate with shared hosting so that type of SSL is far cheaper.

### 5.6.2 Shopping cart

After making web server secure we are ready to sell products online, but still we need web store, shopping cart and credit card processing so that customers can pay using their credit cards. There are many affordable E-Commerce providers for the small business, most of them are for new users. These pre-made shopping carts allow easily build or edit online shop and collect orders without any programming knowledge. These solutions are not suitable if you want full control over purchase and gateways.

Volusion is one of the solution, which is worth mentioning. It is very low price and come with 15 days free trial, current price at the moment is 19 USD per month, also include in this package is fraud protection for your customers, options for credit card processing and collection of web site templates to choose from. Basically this

package offers everything that new business needs to sell online and it comes with free test period(Volusion,2013).

For our product we cannot use any pre-designed shopping cart because we need to sell subscription and need more control over credit card processing. We need to design our own shopping cart so we can add more payment gateways because these all package comes with fix gateways, to setup our own shopping cart we need.

1. Opening of a merchant account with any suitable merchant
2. Design of web page which accept subscriptions from users
3. Arrangement for credit card processing from third party
4. Set up a payment gateway to use with credit card processing
5. Connecting them all together.

## 6 FEEDBACK

The term “feedback” is taken from branch of engineering concerned with self-regulating systems. In its simplest form, feedback is a self-stabilizing control system such as the Watt steam governor, which regulates the speed of a steam engine or a thermostat that controls the temperature of a room or oven. In the communication process, feedback refers to a response from the receiver which gives the communicator an idea.

Strictly speaking, negative feedback does not imply 'bad,' and positive feedback 'good.' Negative feedback indicates that you should do less of what you are doing and positive feedback encourages you to increase what you are doing. If you are crying, feedback from those around may cause you to dry your eyes and put on a brave face (if feedback is negative) or weep unashamedly (if feedback is positive). (David Gill and Bridget Adams,2002).

## 6.1 Our feedback experience

Our solution seems like some kinds of forum where we will gather all experts who want to share trading expertise, this forum can be used as a place where traders can work as a team while living in different geographical locations. Forum is secure place and traders can pay without worries, new traders can subscribe to the experts and use their experience to improve their own experience. New trader can choose best among available traders according to his needs and budgets.

Main part of the solution is software which will work as a bridge between traders and forum, this software will update automated trading script and make it more dynamic and innovative. This new system have ability to have good care of open trades in the absence of trader. Launching any software always require some pre launch phase of marketing and some research on customer's opinion. We went through this process and we will share our result of feedback that we collect from different users.

Our product is the robot script, which is backed up by our software, but the software part is not very much visible and it makes the whole new system similar to other trading scripts in its service environment and functionality. Our research was focused to find out what are the things that other similar trading scripts actually lacks, and the reasons why most of the trading script actually fail.

All discussion in this thesis is done in the light of feedback we get from spam Emails, some personal experience of trading, readings from internet and opinions from few friends who are day-traders. We decided to use spam email in order to collect users feed back. First step was to search for the list of email address of target customers, we find few web forums with related business where all discussion is about trading and automated trading systems, but all of these forum sell the list of their subscribers which was very costly and it was not affordable. We went to find some alternative and at last got help from one friend who arranged email list of people interested in online money making software. That list was about three thousand email address, but after sorting out useless email address we came up with list of about one thousand valid emails (we used Email verify software called "AB

Bulk mailer". After sorting out valid email address, we came up with the short list of around thousand Emailaddress.

Email message was simple and includes single form, we also include one web link in that email for those email servers who do not display java forms inside email message. In the figure 3.1 we can see the form that we used in spam email. We start spamming different time in a month, first time we used one list of emails with around 600 valid email address and second time we used other list contains nearly 450 valid email address. We got response from 133 users and unfortunately most of them was including advertisement while some email was useless responses. From this 12.6 % feedback we can consider worth readable were about 24 and from this just three emails responses were relevant.

Email sent	Response received	Useless Responses	Good Responses	Feed back
1050	133	130.00%	3	12.60%

Table 1.2: Feedback response

Table 1.2 shows the results of feedback, in spamming of email this result not considered very bad, but still this could be improved because there were few reasons for lower feed back return, one is that target customers were the people interested in money making software and probably that is why most of them were not interested in fill in the feedback form.

Other reason is that many email provider just filter emails to spam folder and nobody want to open that folder to see what is inside there. Another reason could be that web site is not ready and software is not available for users to try to compare it with other software before they can comment on the issues.

Our basic idea was to get the feedback from users to find out issues that they are frequently facing so that in new system we can fix it. Also, we want to see the possible improvements in current automated trading scripts. However, these information after some search from the Internet added with opinions from some of

my friends and my own personal trading experience all together helped me to understand the issues in current trading system. Here is the summary of the feedback.

#### 6.1.1 Easiness

Current automated trading system are sold in the form of scripts that every trader will install on his system by copying that script to software installation folder. It is simple process however, many traders are not very familiar with computer systems because most of the time traders are some investors who are interested in making some profit. Installation of trading script seems very simple, but some trading scripts requires the first time configuration setup, and for some traders it is not as easy as our solution can be, our software will take care of all configuration and install trading script with single click. Software itself can be installed just like any other software installation. People want easiness which current system do not provide, but our software can offer to attract customers.

#### 6.1.2 Flexibility and security

Our solution include regular software and we can be offered for different operating systems and platforms such as mobiles. It makes our solution more flexible and portable. Many traders are complaining about the bugs in current scripts when they want to port it to other software version of different brokerage firm while in our case this our software will take care of all the portability from one broker to other.

Security is something which every trader always concern about, and if we compare our solution with the current available systems we can see our system is more secure than manual scripts as our software do not collect any personal or financial information and all communication is carried out using SSL. Traders do not have access to financial information of any other trader, experts cannot access to any information that trader do not want to share. Traders who will act as experts will only

focus on the current situation and will share their own trading strategies with other traders and none of them will share any financial information with each other because our focus is to share the trading strategy not the financial information.

### 6.1.3 Fresh algorithms

According to wikipedia problem with current automated trading system is that it is based on scripts that was written at the time of selling the software and there is no possible way to update those scripts once they are sold unless you apply update patch or install new release. These sellers are selling their own trading strategies that was written on a specific time and with passage of time those strategies may get expire when global financial climate has changed. This makes it impossible for these scripts to handle current financial situations such as during the events of breaking news. It is very hard to make effective and intelligence decision in complex financial situation when all your decisions making is based on old strategy written few months or weeks earlier. Current automatic systems cannot handle news events while our system can handle it very perfectly because the design of our solution is based on human brain rather than some random algorithms(Algorithmic Trading,2014).

Feedback helped understand the problems in current automated trading system so we can find the way of improvements, as said earlier there is always room for improvement and ways to make things work better.

## 7 CONCLUSION

During my research on this topic I found that there are two main reasons of failure for leverage trader, one of them is that trader do not have enough experience to understand market sentiments and other is performance of poor automated trading system. I discussed and highlight them in this thesis, main goal was to find the possible improvement that can help current automated trading system and share the idea that can innovate current automated trading system. We came to conclusion that an artificial intelligence cannot handle the complex financial situations not even human brain if you are new in trading business unless you have years of experience.

Solution was to bring experts and traders on the same platform so that experts can sell their experience in shape of trading strategies. Idea is very basis and needs to be enhance to further extant, in future this simple software idea can be converted into fully functional automated trading platform, but it still needs huge amount of improvements, on practical scale still there are many things which are missing such as E-commerce and software development on bigger scale.

Some parts of this theory including web site forum and software designing are in progress and will launch someday in future converting this idea into profitable business. Focus on first part of research, which is about the "idea and implementation" is ending now but the other part will continue the discussion on "marketing and pricing" for this new expert adviser.

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