

Stock Market Simulation

An Interactive Qualifying Project Report

submitted to the Faculty

of the

WORCESTER POLYTECHNIC INSTITUTE

in partial fulfillment of the requirements for the

Degree of Bachelor of Science

by

Matthew Harrison

Date: _____

Approved by:

Professor Dalin Tang, Advisor

Abstract

In this project, a stock market simulation was conducted to gain experience of investing in the market. This was backed up by research of the stocks involved and the market itself. Detailed results were reported showing my successes and failures during the simulation and discuss trading techniques which I used to make a profit. The knowledge learned in the project will be useful in potential future investments.

Table of Contents

ABSTRACT	2
CHAPTER 1: INTRODUCTION	4
1.1 OVERVIEW	4
1.2 GOAL	4
1.3 PLAN	5
1.4 ROADMAP	5
CHAPTER 2: BACKGROUND	6
2.1 STOCK MARKET INFORMATION	6
CHAPTER 3: STOCK INFORMATION.....	8
3.1 STOCKS	8
3.2 STARTING POINTS	9
3.3 COMPANY RESEARCH AND PROFILES	10
3.3.1 Best Buy Co. Inc. (BBY)	10
3.3.2 Electronic Arts Inc. (ERTS)	12
3.3.3 Fairchild Semiconductor International Inc. (FCS).....	14
3.3.4 General Electric Co. (GE).....	16
3.3.5 McDonald's Corp. (MCD)	18
3.3.6 Marvell Technology Group Ltd. (MRVL)	19
3.3.7 Rite Aid Corp. (RAD).....	21
3.3.8 United Technologies Corp. (UTX).....	23
3.3.9 Yahoo! Inc. (YHOO).....	26
3.3.10 TVIA Inc. (TVIA).....	28
3.3.11 Microsoft Corp. (MSFT).....	30
3.3.12 AT&T Inc. (T)	32
CHAPTER 4: MARKET SIMULATION	34
4.1 SIMULATION CHART	34
4.2 SIMULATION DETAILS	35
4.3 ANALYSIS OF SIMULATION RESULTS AND SUMMARY	38
CHAPTER 5: CONCLUSIONS.....	41
5.1 SUMMARY	41
5.2 CONCLUSION	42
REFERENCES	43

Chapter 1: Introduction

1.1 Overview

This Interactive Qualifying Project is that of a stock market simulation. This report details what I have learned about the stock market while doing this simulation. It shows the success and failures I have had while attempting to trade in the open market. Included is information about the stock market itself to give a background on what the stock market actually is. There is information about all of the stocks which were used during this simulation. This includes company profile, price target summaries, and charts. With this, I talk about the reasons for which I chose each stock. While doing the simulation, I have logged all of the specific trades I made in a table. Along with this, I have included a journal where I talk about the trades I made for each week.

1.2 Goal

The goal of this project is to learn as much as I can about the stock market. The primary focus will be on short-term trading, that is trading stocks and not keeping them for a very long time attempting to earn a quick profit. In order to accomplish this, a stock market simulation will be completed to understand how this strategy works in real life. I will research individual stocks and keep track of the trades that I make during the simulation. As a result of this project, I hope to become more familiar with the workings of the stock market, and learn good trading techniques.

1.3 Plan

In order to accomplish this goal over the next weeks, I need to research multiple stocks which I will follow during the duration of the project. I am starting the simulation with a cash balance of \$10,000. With this money I will be able to purchase stocks which I hope to profit from. A simulation of buying and selling the stocks will be conducted with an attempt to earn money. In order to improve my success, I will keep track of the trends associated with each stock, such as how often they rise and fall. I will be watching the daily headlines to determine what stocks will do and potentially find new stocks that will be good investments to make. I will attempt to trade stocks every day or every few days depending on how the market is doing. A table will be made to all transactions so I that am able to track the profit and loss that I incurred from each trade. Along with this, I will be discuss each week's transactions so that a more detailed report of what happened with each trade can be found.

1.4 Roadmap

The following chapters contain the details of the work of this project. Chapter 2 covers the background information of the project. I discuss information about the stock market in general. Chapter 3 lists the stocks I am following for the project. I give details about the simulation I am doing and what I am starting the simulation with. I talk about my reasons for choosing each stock and give company information about the stocks. In chapter 4 I give details about the simulation. I have a table detailing all of my trading over the simulation and I discuss the details of the trades I have made during the simulation. Finally, I go over my results and give conclusions of the project in chapter 5.

Chapter 2: Background

2.1 Stock Market Information

The stock market is the mechanism that enables the trading of company stocks. In the United States, the stock market includes the trading of stocks listed on the NYSE, NASDAQ, and Amex, and also on the OTCBB and Pink Sheets [1]. The New York Stock Exchange (NYSE) is by far the largest stock exchange in the world in dollar volume and second largest by number of companies listed [3]. NASDAQ, originally an acronym for National Association of Securities Dealers Automated Quotations, is the largest electronic stock exchange in the United States [4]. The American Stock Exchange (AMEX) is an American stock exchange situated in New York. AMEX is a mutual organization, owned by its members [5]. The OTC Bulletin Board is a regulated quotation service in the United States for stocks which are not listed on one of the major U.S. stock exchanges. Pink Sheets is an electronic system used to display bid and ask quotation prices. The name "Pink Sheets" comes from an earlier paper-based system, which was printed on pink paper [3].

Participants in the stock market range from small individual stock investors to large hedge fund traders. Most stocks are traded on exchanges, which are places where buyers and sellers meet and decide on a price. Some exchanges are physical locations where transactions are carried out on a trading floor, by a method known as open outcry. The other type of exchange is the virtual exchange where stocks are traded using a network of computers. Trades are based on an auction market paradigm, where the buyer and seller will both place a bid, and when the bids match each other the transaction will

take place on a first come first serve basis. The purpose of a stock exchange is to facilitate the exchange of securities between buyers and sellers [2].

The purpose behind the stock market is not to simply trade and make money, but it is to invest money in a company. The stock market is one of the most important sources for companies to raise money. This money in turn helps their company grow, which potentially creates a rise in the cost of their shares and the investors can then make money themselves. The economy as it is today has the stock market at its backbone. The state of the current economy depends heavily on how the stock market is doing.

The market's prices are not only affected by the individual financial results. Hype has a large effect on it as well. Excessive optimism may drive prices high or excessive pessimism may drive prices low when it should not have happened. Over reactions from the people have caused share prices to shift a great deal from the expected many times in the past. This makes the market very unpredictable, but predictable in another way, as you can expect the population to overreact in certain cases [1].

Chapter 3: Stock Information

3.1 Stocks

The stocks followed during this simulation are:

- General Electric (GE)
- AT&T (T)
- McDonalds (MCD)
- Yahoo! (YHOO)
- Best Buy (BBY)
- Microsoft (MSFT)
- Electronic Arts (ERTS)
- Fairchild Semiconductor (FCS)
- Rite Aid (RAD)
- United Technologies Corporation (UTX)
- Marvell Technology Group Ltd. (MRVL)
- TVIA Inc. (TVIA)

These stocks were chosen from a variety of sources. Some of them are companies that I am familiar with and would be interested in following them during the simulation. Others I was able to find by reading the latest news on the finance page looking for stocks which may change a great deal day to day.

Stock	Price
GE	34.16
T	25.28
MCD	34.15
YHOO	29.53
BBY	53.95
MSFT	22.56
ERTS	42.52
FCS	18.73
RAD	4.50
UTX	62.70
MRVL	56.22

Figure 3.1 Stock starting prices

3.2 Starting Points

I am beginning trading on Monday, May 22nd. The current rates of the stocks I will be looking into as of May 19th are in the Fig. 3.1. I will be investing \$10,000 divided among the stocks depending on how well I think they are going to do before I can sell them again. So far, I have run into a few points where I think a stock might be dropping soon, so I have sold it quickly for a slight loss. These small loses are a prevention of a potential large loss and can be made up easily with other stocks. For each trade, I am adding a \$7.00 commission to each one, as that seems to be a standard rate for commissions when trading online.

3.3 Company Research and Profiles

3.3.1 Best Buy Co. Inc. (BBY)

I chose Best Buy as one of my stocks to trade because I felt that a good reliable department store would create a stable stock to fallback on. This stock I do not expect to change much, but it may be interesting to watch to see if anything changes.

Company Profile

Best Buy Co., Inc. operates as a specialty retailer of consumer electronics, home-office products, entertainment software, appliances, and related services. It operates retail stores and commercial Web sites under the brand names Best Buy, Future Shop, Magnolia Audio Video, and Geek Squad. The company offers video products that include televisions, digital cameras, DVD players, digital camcorders, and digital broadcast satellite systems; audio products, including MP3 players, home theater audio systems, mobile electronics, and accessories; home-office products comprising desktop and notebook computers, telephones, networking, and accessories; entertainment software products, including DVDs, video game hardware and software, compact discs, computer software, and subscriptions; and appliances, such as vacuums, small electrics, and house wares. It also provides computer set-up, repair, and software installation services; and installation of mobile electronics services, as well as delivery and installation of appliances and home theater systems. As of May 10, 2006, the company operated approximately 930 retail stores in the United States and in Canada. The company was founded by Richard M. Schulze in 1966. It was formerly known as Sound of Music, Inc.

and changed its name to Best Buy Co., Inc. in 1983. Best Buy Co. is based in Richfield, Minnesota [6].

PRICE TARGET SUMMARY	
Mean Target:	62.25
Median Target:	63.00
High Target:	75.00
Low Target:	51.00
No. of Brokers:	20

Figure 3.2 Price Target Summary for Best Buy Co.



Figure 3.3 Chart for Best Buy Co. Inc. April - June

3.3.2 Electronic Arts Inc. (ERTS)

Electronic Arts I expect to be a big money maker for me. The company is always creating new products, so they are constantly getting hyped in the media. Another big thing is that so far in 2006 they have remained right about \$55 per share steadily, until right in the beginning of May where they dropped down to near \$40. I expect them to rise once again soon, so trading in the bubbling as they are on the rise could potentially turn out well.

Company Profile

Electronic Arts, Inc. engages in the development, publishing, and distribution of interactive software games that are playable by consumers on in-home video game players, personal computers, mobile video game players, and the Internet, worldwide. It publishes products in various categories, such as sports, action, strategy, simulations, role playing, and adventure. The company develops games internally, and also engages third-parties to develop games on its behalf at its development and production studios located near San Francisco, Los Angeles, Orlando, Chicago, Vancouver, Montreal, London, and Tokyo. Electronic Arts also teams with other game developers who develop their own interactive software games with the company's assistance, which it then publishes, markets, and distributes. Further, the company distributes interactive software games that are developed by other companies. Its products, designed to play on consoles and handhelds, are published under license from the manufacturers. Electronic Arts offers free games on its Web site under four brands: Pogo, EA GAMES, EA SPORTS, and EA

SPORTS BIG. The company was founded in 1982 and is headquartered in Redwood City, California [7].

PRICE TARGET SUMMARY	
Mean Target:	57.76
Median Target:	60.00
High Target:	72.00
Low Target:	40.00
No. of Brokers:	18

Figure 3.4 Price Target Summary for Electronic Arts Inc.

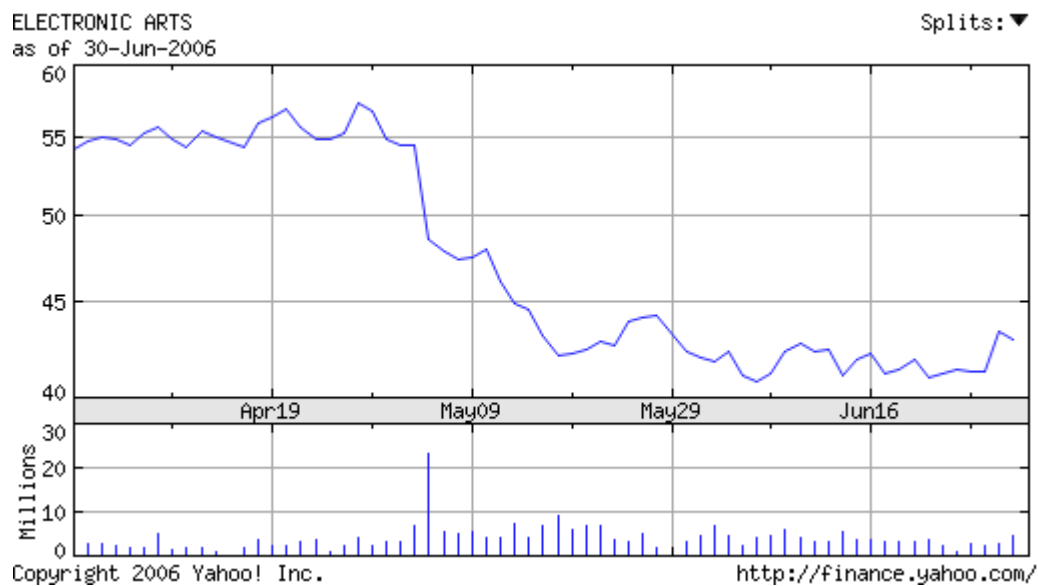


Figure 3.5 Chart for Electronic Arts Inc. April - June

3.3.3 Fairchild Semiconductor International Inc. (FCS)

With Fairchild, I do not have much faith in making much money here, but during the summer and fall of 2005 I did a co-op job with them, so I know the company pretty well. I decided I would like to watch to see how their stock is doing for this project.

Company Profile

Fairchild Semiconductor International, Inc., through its subsidiary, engages in the design, development, manufacture, marketing, and sale of power analog, power discrete, and nonpower semiconductor solutions. Its products are used in consumer, communications, computer, industrial, and automotive applications. The company operates in three segments: Power Analog, Power Discrete, and Standard Products. The Power Analog segment designs, manufactures, and markets analog and mixed signal integrated circuits that monitor, interpret, and control continuously variable functions, such as light, color, sound, and energy. These products are used in computing, consumer, communications, industrial, and automotive applications. The Power Discrete segment designs, manufactures, and markets power discrete semiconductors, such as Power MOSFETs, isolated-gate bipolar transistors, rectifiers, and radio frequency products that perform power switching, power conditioning, and signal amplification functions in electronic circuits for computing, communications, industrial, and automotive applications. The Standard Products segment designs, develops, manufactures, and markets standard logic devices, standard diode and transistor products, optoelectronic products, optocouplers infrared products, LED lamps and displays, and standard linear products. The company operates in the United States, other Americas, Europe, China,

Taiwan, Korea, and Asia/Pacific. Fairchild Semiconductor International was founded in 1959 and is headquartered in South Portland, Maine [8].

PRICE TARGET SUMMARY	
Mean Target:	22.00
Median Target:	22.00
High Target:	30.00
Low Target:	16.00
No. of Brokers:	13

Figure 3.6 Price Target Summary for Fairchild Semiconductor International Inc.

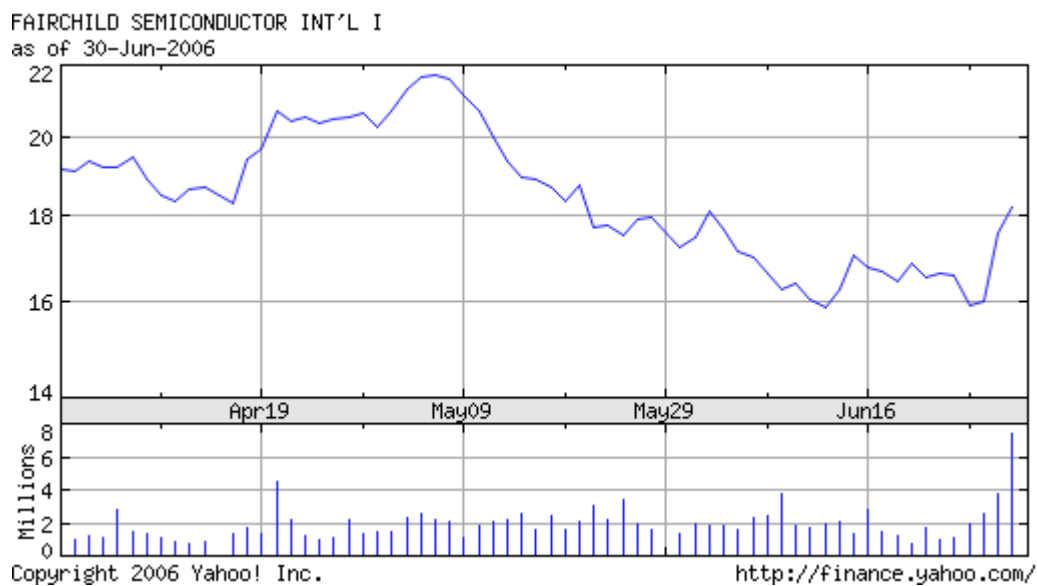


Figure 3.7 Chart for Fairchild Semiconductor International Inc. April - June

3.3.4 General Electric Co. (GE)

General Electric's past shows that they seem to go up for about three months and then maintain before dropping and then about three months later they will go back to where they were for another few month. I hope that by following GE with this project that I can catch them on their way up.

Company Profile

General Electric Company engages in the development, manufacture, and marketing of various products for the generation, transmission, distribution, control, and utilization of electricity. Its products include various appliances, such as lighting products; industrial automation products; medical diagnostic imaging systems; bioscience assays and separation technology products; electrical distribution and control equipment; locomotives; power generation and delivery products; nuclear power support services and fuel assemblies; commercial and military aircraft jet engines; chemicals and equipment for treatment of water and process systems; security equipment and systems; and engineered materials, such as plastics and silicones. The company's services include product services; electrical product supply houses; electrical apparatus installation, engineering, and repair and rebuilding services. Through its affiliate, NBC Universal, Inc., General Electric produces and delivers network television services and motion pictures, as well as operates television stations, cable/satellite networks, theme parks, and program activities in multimedia and the Internet. Through another affiliate, General Electric Capital Services, Inc., it offers an array of financial and other services, including consumer financing, commercial and industrial financing, real estate financing, asset

management and leasing, mortgage services, consumer savings and insurance services, and reinsurance. The company has operations in North America, Europe, Asia, and South America. General Electric was founded in 1892 and is based in Fairfield, Connecticut [9].

PRICE TARGET SUMMARY	
Mean Target:	40.58
Median Target:	40.00
High Target:	45.00
Low Target:	37.00
No. of Brokers:	16

Figure 3.8 Price Target Summary for General Electric Co.

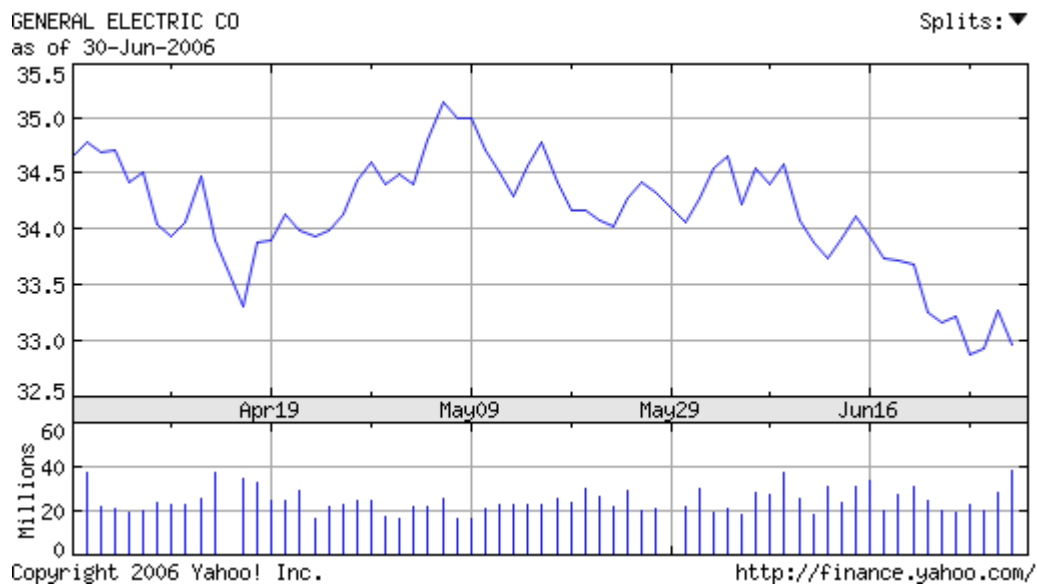


Figure 3.9 Chart for General Electric Co. April - June

3.3.5 McDonald's Corp. (MCD)

With McDonald's recently introducing the Iced Coffee, they are beginning to outsell Dunkin Donuts. I think that with these new products they now have it will affect their stock in a good way and it will go up even more as their competition suffers.

Company Profile

McDonald's Corporation operates as a foodservice retailer worldwide. It operates and franchises McDonald's restaurants, which offer various food items, and soft drinks and other beverages. The company also operates Boston Market and Chipotle Mexican Grill concept restaurants, as well as owns a minority interest in U.K.-based Pret A Manger, a quick-service food concept. As of December 31, 2005, its systemwide restaurants comprised 31,886 restaurants, including 9,283 company-operated restaurants, 18,334 franchised restaurants, and 4,269 affiliated restaurants in approximately 100 countries. McDonald's was founded in 1948 and is based in Oak Brook, Illinois [10].

PRICE TARGET SUMMARY	
Mean Target:	40.67
Median Target:	40.00
High Target:	46.00
Low Target:	37.00
No. of Brokers:	12

Figure 3.10 Price Target Summary for McDonald's Corp.



Figure 3.11 Chart for McDonald's Corp. April - June

3.3.6 Marvell Technology Group Ltd. (MRVL)

I did not know anything about Marvell prior to spotting them on Yahoo. When I was looking for stocks to choose, Marvell popped out at me as a company whose stock had just fallen and I hope I can buy in and see it rise back to where it was before. I will not be focusing on this one as much as many others, because it can just as easily continue to fall from where it had gotten to.

Company Profile

Marvell Technology Group, Ltd. provides semiconductors of analog, mixed-signal, digital signal processing, and embedded microprocessor integrated circuits worldwide. Its product portfolio comprises switching, transceiver, wireless, PC connectivity, gateways, communications controller, storage, and power management solutions that serve various applications used in business enterprise, consumer

electronics, and emerging markets. The company's storage products are used for hard disk drive and tape drive electronics, and storage interconnect technology. Its switching solutions are used for the enterprise networking, carrier access, and small office/home office (SOHO)/residential networking markets that enable voice, video, and data traffic carried through the network. The company's physical layer transceiver solutions are used for demanding networking applications in the enterprise and storage networking markets. Its wireless products include Libertas family of chipsets, a solution for the SOHO/residential, enterprise networking, and consumer electronics markets. Marvell Technology's VoIP products are used for ultra-low power Voice over WLAN handsets with other members of our WLAN solutions targeted at VoIP residential gateways. The company's Orion products are used to enable media vault platforms that allow users to access multimedia and data content throughout the home. Its PC connectivity products consist of the Yukon Gigabit Ethernet controllers for volume deployment of Gigabit PC connections. Its integrated gateway router devices are used for business, SOHO, and residential gateway solutions. The company's communications controller products are used in a various applications, including routers, switches, digital subscriber line access multiplexers, access concentrators, wireless base stations, VoIP gateways, and storage area networks. Marvell Technology Group was incorporated in 1995 and is headquartered in Hamilton, Bermuda [11].

PRICE TARGET SUMMARY	
Mean Target:	63.74
Median Target:	63.00
High Target:	80.00
Low Target:	48.00
No. of Brokers:	21

Figure 3.12 Price Target Summary for Marvell Technology Group Ltd.

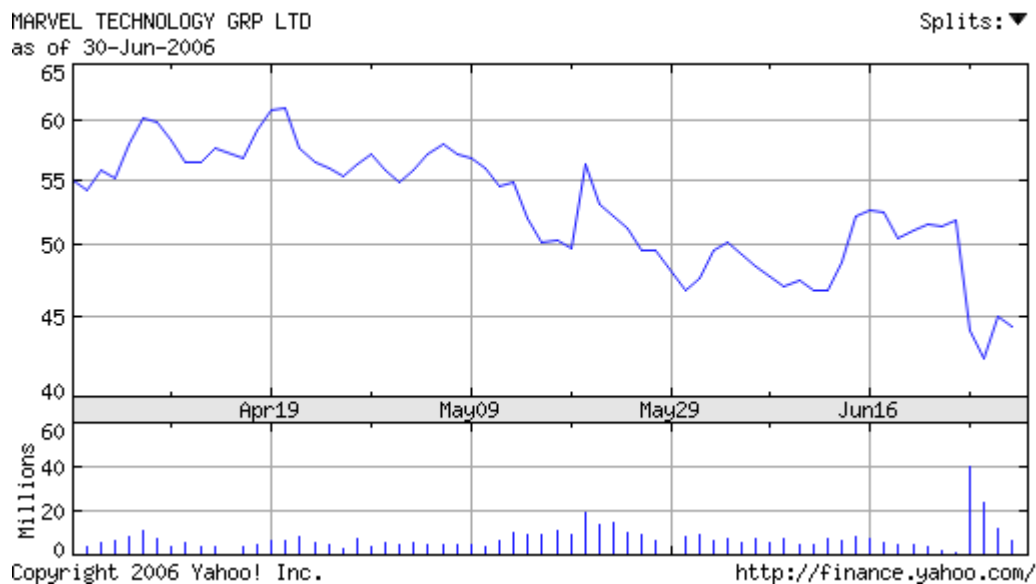


Figure 3.13 Chart for Marvell Technology Group Ltd. April - June

3.3.7 Rite Aid Corp. (RAD)

I chose Rite Aid as it is a company I knew of, as I have often needed to shop at one from time to time. After looking up the prices, I decided to go with Rite Aid as it was a low price stock in the \$4 range. I wanted at least one low one, as all of the other stocks I planned on trading were higher priced.

Company Profile

Rite Aid Corporation, through its subsidiaries, operates a chain of retail drugstores in the United States, which primarily provide pharmacy services. The company sells prescription drugs and other merchandise called as front-end products. It offers approximately 25,000 front-end products, including over-the-counter medications, health and beauty aids, personal care items, cosmetics, household items, beverages, convenience foods, greeting cards, seasonal merchandise, and various other everyday and convenience products, as well as photo processing. The company serves customers covered by health plan contracts, which contract with third parties payors, such as insurance companies, prescription benefit management companies, governmental agencies, private employers, health maintenance organizations, and other managed care providers. It has a strategic alliance with General Nutrition Companies, Inc. (GNC) to operate GNC stores-within-Rite Aid-stores. As of March 4, 2006, the company operated 3,323 retail drugstores in 27 states across the country and in the District of Columbia. Rite Aid Corporation was founded in 1927 and is headquartered in Camp Hill, Pennsylvania [12].

PRICE TARGET SUMMARY	
Mean Target:	4.70
Median Target:	4.50
High Target:	5.52
Low Target:	3.80
No. of Brokers:	5

Figure 3.14 Price Target Summary for Rite Aid Corp.



Figure 3.15 Chart for Rite Aid Corp. April – June

3.3.8 United Technologies Corp. (UTX)

United Technologies I heard of as being the parent company of Pratt and Whitney. They tend to be a good company, and seem to always make a good profit. By looking at their stock chart, the price seems to constantly be going up and up. They seem to be a good long-term investment company.

Company Profile

United Technologies Corporation (UTC) provides technology products and services to the building systems and aerospace industries worldwide. It operates through six segments: Otis, Carrier, UTC Fire and Security, Pratt and Whitney, Hamilton Sundstrand, and Sikorsky. The Otis segment offers elevators, escalators, moving walkways, and service. The Carrier segment offers commercial, residential, and industrial

heating, ventilating, and air conditioning systems; commercial and transport refrigeration; food service equipment; building automation and controls; energy management and air quality systems; and aftermarket service and components. The UTC Fire and Security segment offers electronic security, monitoring, and rapid response systems and service; security personnel services; fire detection, protection, and suppression systems; and fire fighting equipment. The Pratt and Whitney segment offers commercial, general aviation, and military aircraft engines; parts and service; industrial gas turbines; and space propulsion. The Hamilton Sundstrand segment offers aerospace products, including power generation; management and distribution systems; flight, engine, fire protection, and detection; and environmental control systems; auxiliary power units and propeller systems; and industrial products, including air compressors, metering pumps, and fluid handling equipment. The Sikorsky segment offers commercial and military helicopters, and aftermarket helicopter and aircraft parts and service. The company also engages in the development and marketing of distributed power generation systems, including stationary fuel cells and combined cooling, heating and power systems, for the on-site power market. In addition, UTC also engages in fuel cell production and development for commercial, transportation, and space applications. The company was incorporated in 1934 and is headquartered in Hartford, Connecticut [13].

PRICE TARGET SUMMARY	
Mean Target:	69.93
Median Target:	70.00
High Target:	75.00
Low Target:	63.00
No. of Brokers:	15

Figure 3.16 Price Target Summary for United Technologies Corp.



Figure 3.17 Chart for United Technologies Corp. April - June

3.3.9 Yahoo! Inc. (YHOO)

I chose Yahoo, simply because I am using Yahoo to get my stock quotes. I thought I should at least trade their stock for this project while I was using their financial features of their website.

Company Profile

Yahoo! Inc. and its subsidiaries provide Internet services to users and businesses worldwide. It offers online properties and services to users; and a range of tools and marketing solutions to businesses. The company's search products include Yahoo! Search; Yahoo! Desktop Search; Yahoo! Toolbar; and Yahoo! Search on Mobile to navigate the Internet and searching for information; and local offerings comprise Yahoo! Local; Yahoo! Yellow Pages; and Yahoo! Maps. Its Marketplace product include Yahoo! Shopping; Kelkoo; Yahoo! Auctions; Yahoo! Real Estate; Yahoo! Travel; Yahoo! Autos; Yahoo! Personals; Yahoo! Personals Premier; Yahoo! HotJobs; and Yahoo! Small Business for users seeking to purchase products and services on the Internet. Yahoo! also offers information products, such as Yahoo! Front Page; My Yahoo!; Yahoo! News; Yahoo! Finance ; Yahoo! Health; and Yahoo! Education, as well as entertainment products, including Yahoo! Sports; Yahoo! Music; Yahoo! Movies; Yahoo! TV; Yahoo! Games; and Yahoo!igans!. In addition, the company offers communications and connected life products that provide a range of communication and content services to users and small businesses. Its communications products include Yahoo! Mail; Yahoo! Messenger with Voice; Yahoo! Photos; and Yahoo! Communities; and connected life products comprise Broadband; Yahoo! Mobile; and Yahoo! Go. Yahoo! has strategic

alliances with Alibaba.com Corporation, AT&T Corp, BT Group plc, Rogers Cable Inc., and Verizon Communications, Inc. Yahoo! was founded by David Filo and Jerry Yang in 1994 and is headquartered in Sunnyvale, California [14].

PRICE TARGET SUMMARY	
Mean Target:	29.43
Median Target:	29.00
High Target:	35.00
Low Target:	26.00
No. of Brokers:	21

Figure 3.18 Price Target Summary for Yahoo! Inc.

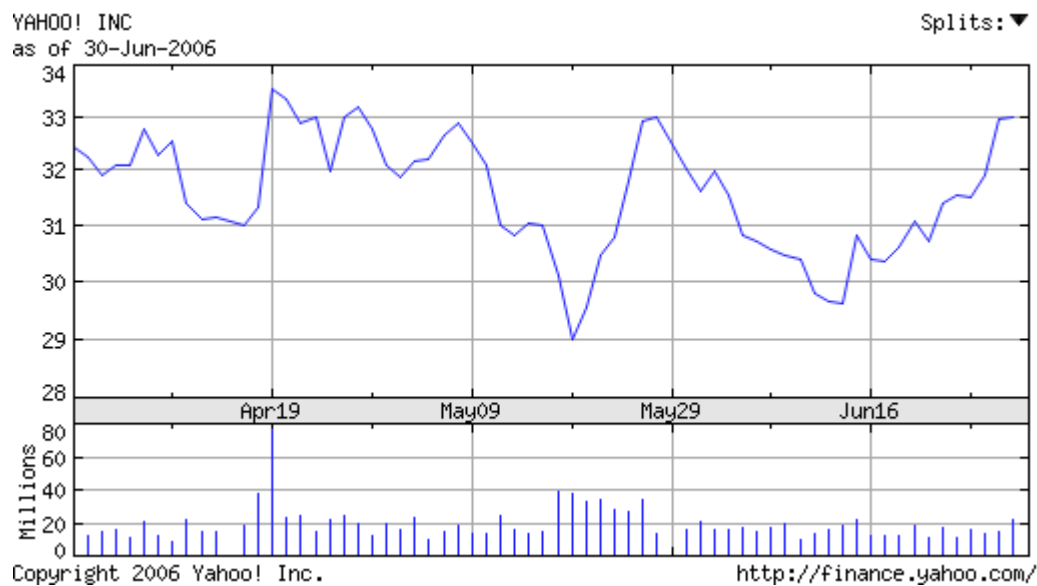


Figure 3.19 Chart for Yahoo! Inc. April - June

3.3.10 TVIA Inc. (TVIA)

I didn't start out with TVIA, but I spotted them on Yahoo's high gainers chart and figured I'd give them a try. They have a very cheap stock at about \$3 per share and based on their chart are constantly going up and down. By buying and selling a large quantity of their stock regularly I hope to jump in on some fast pace gains.

Company Profile

Tvia, Inc. engages in the design, development, and marketing of display processors for the interactive-television market worldwide. It also offers a family of display processors for manufacturers creating digital LCD, HD, and progressive-scan televisions. The company's products primarily comprise TrueView 5700, CyberPro 5600, CyberPro 5202, CyberPro 5300, and the CyberPro 5000. TrueView 5700 family is an integrated digital video image display processor to design ED progressive scan CRT television. TrueView 5600 family is used in HD LCD television market and other LCD-based applications, such as multimedia displays, Web-pads, in-flight entertainment systems, and info-tainment system displays. CyberPro 5202 is used for displays to multiple devices, such as traditional cathode ray tube televisions, advanced televisions, panel displays, emerging interactive displays, and LCD products. CyberPro 5300 is used in broadband set-top boxes that require 3D animation, 3D effects, or 3D graphics processing capability. CyberPro 5000 is used in broadband digital set-top boxes and advanced televisions. Tvia sells its products through its direct sales force, sales representatives, and distributors primarily to the original equipment manufacturers. The company was co-founded by Jhi-Chung Kuo. Tvia was incorporated in 1993 under the

name Intergraphics Systems, Inc. and changed its name to IGS technologies in 1997. Further, it changed its name to Tvia, Inc. in 2000. The company is headquartered in Santa Clara, California [15].

PRICE TARGET SUMMARY	
Mean Target:	5.00
Median Target:	5.00
High Target:	5.00
Low Target:	5.00
No. of Brokers:	1

Figure 3.20 Price Target Summary for TVIA.



Figure 3.21 Chart for TVIA Inc. April - June

3.3.11 Microsoft Corp. (MSFT)

Being a computer science major, I could not pass up trading the software giant. I have no idea if they will do good or bad, but I hope that they are at least interesting to follow.

Company Profile

Microsoft Corporation engages in the development, manufacture, license, and support of software products for various computing devices worldwide. Its Client segment offers operating systems for servers, personal computers (PCs), and intelligent devices. The company's Server and Tools segment provides server applications and developer tools, as well as training and certification services. Its products provide messaging and collaboration, database management, e-commerce, and mobile information access capabilities. It also offers consulting services. Microsoft's Information Worker segment offers business and personal productivity software applications, including collaboration tools and document management and messaging applications for personal computers. Its Microsoft Business Solutions segment offers software solutions to manage financial, customer relationship, and supply chain management functions. Its products consist of business solutions, customer relationship management software, retail solutions, and related services. The company's MSN segment provides online communication and information services, including email and instant messaging, and online search and premium content. It also provides Internet access, and Web and mobile services. Its Mobile and Embedded Devices segment offers mobile software platform; embedded device software platforms used in consumer electronics devices and enterprise

devices; a hosted programmable XML Web service; and software platform to create telematics solutions for vehicles. Microsoft's Home and Entertainment segment offers the Xbox video game system; PC software games, online games, and console games; television platform products for the interactive television industry; and consumer software and hardware products, such as learning products and services, application software for Macintosh computers, and PC peripherals. Microsoft was founded in 1975 by William H. Gates III. The company is headquartered in Redmond, Washington [16].

PRICE TARGET SUMMARY	
Mean Target:	29.17
Median Target:	30.00
High Target:	33.00
Low Target:	20.00
No. of Brokers:	18

Figure 3.22 Price Target Summary for Microsoft Corp.



Figure 3.23 Chart for Microsoft Corp. April – June

3.3.12 AT&T Inc. (T)

I chose AT&T because it is a well know company that has been around for many years. It has always been a stable company in my mind.

Company Profile

AT&T, Inc. provides telecommunication services in the United States and internationally. It offers various landline telecommunications services, including local, long-distance voice, switched access, data, and messaging services, as well as satellite television services. The company also provides wireless voice and data communications services in the United States. AT&T sells its voice, data, long-distance, outsourcing, managed Web hosting, security services, and network integration services on both retail and wholesale basis to large business and governmental customers, as well as to small- and mid-sized businesses, and residential consumers. Further, it provides advertising, Yellow and White Pages directories, and electronic directory publishing. The company was incorporated in 1983. It was formerly known as SBC Communications, Inc. and changed its name to AT&T, Inc. in 2005. The company is headquartered in San Antonio, Texas [17].

PRICE TARGET SUMMARY	
Mean Target:	29.43
Median Target:	29.00
High Target:	35.00
Low Target:	26.00
No. of Brokers:	21

Figure 3.24 Price Target Summary for AT&T Inc.



Figure 3.25 Chart for AT&T Inc. April – June

Chapter 4: Market Simulation

4.1 Simulation Chart

Date	Type	SymI	Share	Price	Cost/ Proceeds	Profit /Loss	Total Cash	Total Assets
5/21/2006	Cash In				\$10,000.00		\$10,000.00	\$10,000.00
5/22/2006	Buy	GE	20	\$34.23	\$684.60		\$9,308.40	\$9,993.00
5/22/2006	Buy	T	50	\$25.30	\$1,265.10		\$8,036.30	\$9,986.00
5/22/2006	Buy	MCD	20	\$33.78	\$675.60		\$7,353.70	\$9,979.00
5/22/2006	Buy	YHOO	50	\$30.22	\$1,511.00		\$5,835.70	\$9,972.00
5/22/2006	Buy	BBY	15	\$52.08	\$781.20		\$5,047.50	\$9,965.00
5/22/2006	Buy	MSFT	50	\$22.77	\$1,138.50		\$3,902.00	\$9,958.00
5/22/2006	Buy	ERTS	20	\$43.12	\$862.40		\$3,032.60	\$9,951.00
5/22/2006	Buy	FCS	50	\$17.56	\$878.00		\$2,147.60	\$9,944.00
5/22/2006	Buy	RAD	50	\$4.43	\$221.50		\$1,919.10	\$9,937.00
5/22/2006	Buy	UTX	10	\$62.60	\$626.00		\$1,286.10	\$9,930.00
5/22/2006	Buy	MRVL	20	\$53.37	\$1,067.40		\$211.70	\$9,923.00
5/23/2006	Sell	FCS	30	\$17.74	\$532.20	\$5.40	\$736.90	\$9,921.40
5/23/2006	Sell	MRVL	19	\$52.18	\$991.42	(\$22.61)	\$1,721.32	\$9,891.79
5/23/2006	Buy	MSFT	40	\$22.79	\$911.60		\$802.72	\$9,884.79
5/23/2006	Buy	ERTS	18	\$42.69	\$768.42		\$27.30	\$9,877.79
5/24/2006	Sell	T	50	\$25.46	\$1,273.00	\$7.90	\$1,293.30	\$9,878.69
5/24/2006	Buy	TVIA	200	\$3.20	\$640.00		\$646.30	\$9,871.69
5/24/2006	Buy	YHOO	19	\$31.79	\$604.01		\$35.29	\$9,864.69
5/25/2006	Sell	MSFT	90	\$23.87	\$2,148.30	\$98.20	\$2,176.59	\$9,955.89
5/25/2006	Buy	TVIA	500	\$3.25	\$1,625.00		\$544.59	\$9,948.89
5/26/2006	Sell	TVIA	700	\$3.63	\$2,541.00	\$276.00	\$3,078.59	\$10,217.89
5/26/2006	Buy	MCD	40	\$32.92	\$1,316.80		\$1,754.79	\$10,210.89
5/30/2006	Sell	YHOO	69	\$32.89	\$2,269.41	\$154.40	\$4,017.20	\$10,358.29
6/1/2006	Buy	ERTS	40	\$41.24	\$1,649.60		\$2,360.60	\$10,351.29
6/6/2006	Buy	ERTS	50	\$40.25	\$2,012.50		\$341.10	\$10,344.29
6/9/2006	Sell	ERTS	128	\$43.25	\$5,536.00	\$243.08	\$7,889.60	\$10,580.37
6/12/2006	Buy	MRVL	40	\$46.81	\$1,872.40		\$3,990.70	\$10,573.37
6/13/2006	Buy	MCD	100	\$31.73	\$3,173.00		\$810.70	\$10,566.37
6/15/2006	Sell	MCD	160	\$33.48	\$5,356.80	\$191.40	\$6,160.50	\$10,750.77
6/15/2006	Buy	ERTS	120	\$41.80	\$5,016.00		\$1,137.50	\$10,743.77
6/16/2006	Sell	BBY	15	\$52.84	\$792.60	\$11.40	\$1,923.10	\$10,748.17
6/19/2006	Sell	ERTS	120	\$42.40	\$5,088.00	\$72.00	\$7,004.10	\$10,813.17
6/19/2006	Sell	MRVL	41	\$53.19	\$2,180.79	\$255.02	\$9,177.89	\$11,061.19
6/22/2006	Buy	ERTS	150	\$40.98	\$6,147.00		\$3,023.89	\$11,054.19
6/28/2006	Sell	GE	20	\$33.01	\$660.20	(\$24.40)	\$3,677.09	\$11,022.79
6/29/2006	Sell	ERTS	150	\$43.50	\$6,525.00	\$378.00	\$10,195.09	\$11,393.79
6/30/2006	Sell	FCS	20	\$18.15	\$363.00	\$11.80	\$10,551.09	\$11,398.59
6/30/2006	Sell	RAD	50	\$4.21	\$210.50	(\$11.00)	\$10,754.59	\$11,380.59
6/30/2006	Sell	UTX	10	\$63.50	\$635.00	\$9.00	\$11,382.59	\$11,382.59

4.2 Simulation Details

Week 1

I started out the simulation by buying some of all of my initial stocks to get an array of stocks to work with. As each day has been going I have been selling some stocks that have gone up a decent amount and buying either more of the ones I have that I think may go up soon or looking for new stocks to purchase. On May 24th I bought a large amount of TVIA stock. It was a stock listed on Yahoo's large gainers page. By looking at its chart, it looked like it was on a quick upward climb in price. After a slight jump on the 25th I decided to purchase more shares of it with the money I got from selling the Microsoft stocks I had at a profit. I figured that if it was still climbing, I might as well get as much as I can. Then on the 26th, TVIA did a large jump so I sold all of the shares that I had making a profit of \$276.00. I plan to continue to watch it to see if it will go up or down now and maybe buy in again at a later date.

Week 2

During week 2 I did very little trading, the market seemed to remain pretty steady, and only Yahoo that I had was worth selling at any point. They did move around some, but not enough to catch my attention to risk buying or selling any shares in them. Many stocks went down some points, but they did not enough for me to want to buy any more of them. At this point, it is hard to predict exactly what most of them will do. I have not been watching them long enough to get an idea of how the trends will be going. Hopefully next week turns out to be more promising.

Week 3

Week 3 seemed a bit more promising for me, although almost all of the stocks I have been watching either have been staying about the same all week or have been dropping, Electronic Arts has been very interesting this week. On Tuesday, the stock jumped down to right about \$40, so I bought up 50 more shares with most of the money I had left sitting around from the week before. On Friday Morning ERTS did what I was hoping it would and took another jump right back up to above \$43, I decided to sell all I had at \$43.25 making a good profit of \$243. After hitting its peak in the morning, the stock went back down and hovered in the \$42s where it had been the previous day. This quick jump can be seen in Figure 4.1. Right now I have a large amount of money sitting out of the marketing cash. I plan to put back in once I find some stock which looks good to me to be good investments at the beginning of next week.

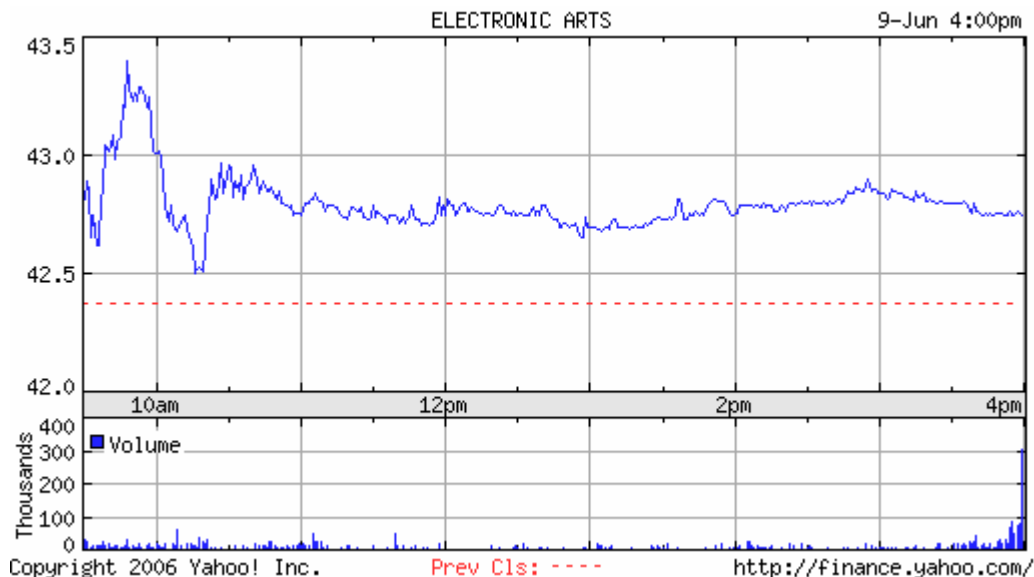


Figure 4.1 ERTS chart of Friday, June 9th 2006

Week 4

Week 4 proved to be a profitable week for me. I feel that as I am learning the stocks better, I am able to better predict what they are able to do. On Monday, I decided to buy back some of Marvel's stock as the price had dropped over \$6 since I had sold it. It is good that I sold it at only a minor loss before as this would have been a big loss with this large drop. My hope is that it may return close to where it was in the future. Tuesday showed a \$2 drop in McDonald's stock from where it had been staying for days. I bought 100 shares of it in hopes that it would raise right back where it was. It did just that on Thursday and I sold all the shares I had for a profit of \$191. I had lost some in it since my original purchase, but this made up for it and then some. I also saw that Electronic Arts went back down to right about where I had bought it the week before, so I bought 120 shares of it and maybe I will see a repeat of the same thing that happened last week. Friday, Best Buy increased a slight amount and I decided to drop it and sell off for about an even break before losing money on this one.

Week 5

Week 5 started out quickly, on Monday I sold all the shares I had in both Electronic Arts and Marvel, which I had mentioned that I bought the week before, to make a good profit. Later, on Thursday, I used most of the money I had made in profits from the sales to reinvest in Electronic Arts. I have decided to continue almost primarily with ERTS as they have been consistently giving me good profits for the last few weeks

now. It seems that this trend may continue for next week as well. Next week is my last week of trading, so I will be selling off whatever remaining stocks I have left over.

Week 6

Week 6 of trading concluded my trading for this project. I did not end up seeing any good trades to make this week so I looked to see if any of the stocks would go up some that I still had and tried to sell them for the best I could manage. I made some decent profits with most of them. I made a slight profit in Fairchild Semiconductor, although I could have made more if I did not sell off most of the shares I had earlier in the simulation. At the time, I was guessing that it was going to go down even further, so I sold most of it then. This last week, it finally went up about a dollar above where I bought it, so I was able to sell the remaining shares I had for a small profit. Although, if you count the transaction fees I made to buy and sell this stock, I did end with a loss.

4.3 Analysis of Simulation Results and Summary

For this simulation, I started with \$10,000 to spend on stocks, and I ended with \$11,382.59. That is a total net profit of \$1,382.59 over the course of 6 weeks or roughly \$230 per week. I deem this to be an overall success for trying out the market. My big hitting stock was Electronic Arts. I was able to buy and sell it multiple times for a good profit each time. Along with this, Microsoft, Marvel, TVIA, and McDonalds all made me a profit at some point during the simulation.

Besides these five successes, the rest of the stocks that I chose for the simulation either resulted in a loss or roughly breaking even. They were defiantly not a waste of

time to track these. From these, I was able to learn that not all stocks do what you think they might. These ones were ones that went down when I thought that they were going to go up.

United Technologies was one stock that did exactly what I predicted, even if it barely earned any profit at all. What it did was rose constantly. This is not good for the short term trader like I was doing for this short 6 week simulation. In order to do short term trades you need the stocks to rise and fall quickly, usually within the week. I found that the times it worked the best was when a stock jumped a large amount or fell a large amount during the same week. Electronic Arts is an example of this, where I could buy it at one point in the week, and sell it at another point a few days later and make a large profit on it. With United Technologies, your best bet would be to put some money in it, and then let it sit for a couple years. They seem to be a pretty reliable company, and with that stock it is bound to continue to rise slowly over time. Although this is a less exciting investment, it would be a better one for the more cautious investor. Myself, I found I like the excitement of stocks where they will jump a large number of points up or down each day.

The way I found it worked best to find when to trade stocks was to watch them constantly. I kept a close eye on the fast moving stocks and when they would jump up a few points I would sell right away. When they would then jump back down a few points I bought it back when it go low enough for my taste. It is a game of luck to pick stocks that you will be able to constantly buy and sell at a quick rate. Of all the stocks I happened to pick, about half of them were flops. Most of the other ones did very little for me.

The money earned in this simulation proved that I was able to successfully play the game of the market. In order to play with great success you need to devote a large amount of time to it every day or you may miss many good trades. By watching the market day to day, I was able to find good times to do trades to earn a decent profit.

Chapter 5: Conclusions

5.1 Summary

The simulation turned out to be a success, as I was able to generate a profit in the short time that I had to trade in the market. Although, I am not sure if it was all good choices that I was able to earn a good profit or if it was primarily luck. I found many times that I was simply guessing whether the prices would rise or fall. Even after doing this, I can say that I am no expert at predicting the trends of the market, but I happened to be lucky in some cases to correctly judge how the market would go. I did become better at predicting patterns over the course of the simulation, but I do not think that anyone can predict everything that the market does. I suppose if they could, they would be making millions in the market every day.

I did accomplish my goal of learning as much as I can about the market. I have learned how the stock exchange works. I primarily explored the online aspect of trading, but in this time that is what the common user would be using to do their trading. During the simulation, I found myself constantly looking at charts to try and predict what every stock would do next. I could then determine when I should buy and sell each stock. I found that some stocks were more predictable than others. Some stocks have steady trends that they follow, and at least during the time I did the simulation they were reliable. Other stocks seemed to be less predictable and did not do as I suspected.

One of the downfalls that effected the results of the simulation is when I started I bought some of every stock that I chose in order to get a stake in the market. This turned out to not be the wisest of choices as some of them were at high peak when I happened to buy it, and then immediately dropped in price and never reached the original price.

5.2 Conclusion

In conclusion, the goal of this project was completed. I was able to do a simulation of trading in the stock market, and even was successful in earning a profit while doing so. With research and analysis of the market involved in doing this project I was able to gain factual knowledge and learn effective investment strategies to invest in the stock market. The knowledge learned in this IQP will be useful when making potential future investments.

References

- [1] Stock Market – Wikipedia < http://en.wikipedia.org/wiki/Stock_market >
- [2] Stock Exchange – Wikipedia < http://en.wikipedia.org/wiki/Stock_exchange >
- [3] New York Stock Exchange – Wikipedia
< http://en.wikipedia.org/wiki/New_York_Stock_Exchange >
- [4] NASDAQ – Wikipedia < <http://en.wikipedia.org/wiki/NASDAQ> >
- [5] American Stock Exchange – Wikipedia
< http://en.wikipedia.org/wiki/American_Stock_Exchange >
- [6] Best Buy Co. Inc. (BBY) - Profile, < <http://finance.yahoo.com/q/pr?s=BBY> >
- [7] Electronic Arts Inc. (ERTS) - Profile, < <http://finance.yahoo.com/q/pr?s=ERTS> >
- [8] Fairchild Semiconductor International Inc. (FCS) - Profile,
< <http://finance.yahoo.com/q/pr?s=FCS> >
- [9] General Electric Co. (GE) - Profile, < <http://finance.yahoo.com/q/pr?s=GE> >
- [10] McDonald's Corp. (MCD) - Profile, < <http://finance.yahoo.com/q/pr?s=MCD> >
- [11] Marvell Technology Group Ltd. (MRVL) – Profile,
< <http://finance.yahoo.com/q/pr?s=MRVL> >
- [12] Rite Aid Corp. (RAD) - Profile, < <http://finance.yahoo.com/q/pr?s=RAD> >
- [13] United Technologies Corp. (UTX) – Profile,
< <http://finance.yahoo.com/q/pr?s=UTX> >
- [14] Yahoo! Inc. (YHOO) - Profile, < <http://finance.yahoo.com/q/pr?s=YHOO> >
- [15] TVIA Inc. (TVIA) - Profile, < <http://finance.yahoo.com/q/pr?s=TVIA> >
- [16] Microsoft Corp. (MSFT) - Profile, < <http://finance.yahoo.com/q/pr?s=MSFT> >
- [17] AT&T (T) – Profile, < <http://finance.yahoo.com/q/pr?s=T> >