

00A001I

00A001I

Project number: 49-DZT-0002

STOCK MARKET SIMULATION

An Interactive Qualifying Project

Submitted to the Faculty

Of the

Worcester Polytechnic Institute

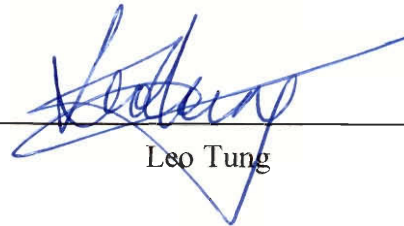
In partial fulfillment of the requirements for the

Degree of Bachelor of Science

By



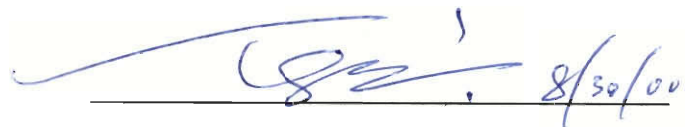
Ronald Kok



Leo Tung

Date: August 29, 2000

Approved:



Advisor: Professor Dalin Tang

Abstract

In this Interactive Qualifying Project, a stock portfolio was simulated for four weeks. Eight different stocks were invested in and researched throughout the project. The total start value invested was 2 million dollars. Also, a comprehensive background on the history and workings of the stock market was created. In addition, a guide to investment sites on the World Wide Web and the introduction of Online brokers are included in this project.

Acknowledgements

The writers of this project would like to thank our advisor, Professor Dalin Tang, for his immeasurable support and guidance in this endeavor. We would also like to thank our friends Patrick Tam and Carrie Chen for lending their computer to us.

Stock Quote Generator

What is it?

In this project, Ronald and I have agreed on developing our personal Stock Quote machine in order to facilitate our Stock analysis and Graph plotting mechanism.

This program is basically developed from Visual Basic 6.0 with Microsoft Access for database storage and Microsoft Excel for Graph plotting mechanism.

What we choose?

As the expensive buying the Stock data from NASDAQ and NYSE, we have utilized some current real-time Stock quote program to retrieve our purchased Stock companies.

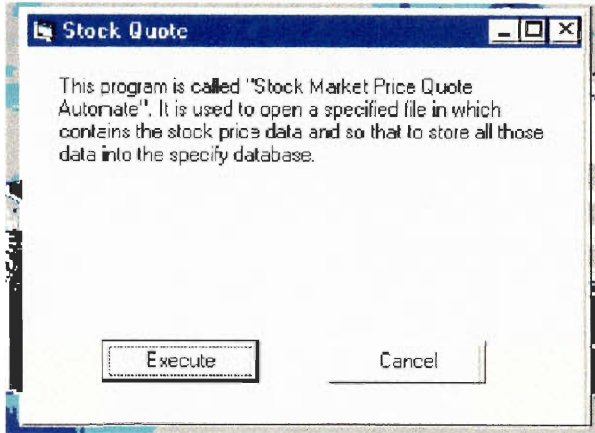
There are few companies we have searched – Yahoo Messenger, AOL Instant Messenger, and Datek Streamer etc. At the end, we pick AOL Instant Messenger for the Stock quote.

How does Stock Quote Generator work?

Basically, it is a simple data-retrieving program from AOL Instant Messenger's Stock Detail Window, which generated text file contains Quote values. The program truncates all necessary information for our simulation and analysis, such as 'Last Price', 'Change', 'High', 'Low Open', 'Previous Close', 'Volume', 'Year High', 'Year Low', 'Date' and 'Time'. This information helps us to plot accurate graph of the every stock company we bought. In the meantime, it stores all data into the Access and automatically generates the Graph from Excel. So what we have to do is to analyze the performance of the day and give the brief explanation on it.

The following picture is the screen shot of the machine.

Figure A1.



The following picture is the retrieved data stored in the Access database format

Figure A2.

Name	LastPrice	Change	High	Low	Open	PreviousClose	Volume	YearHigh	YearLow	myDate	myTime
AMERICA ONLINE	56.00	1.00	56.00	55.00	55.00	55.00	3,641,600.00	96.00	38.00	6/6/00	12:31:58
COMPAQ COMPUTER	28.00	1.00	28.00	27.00	27.00	27.00	7,036,000.00	34.00	18.00	6/6/00	12:31:58
CISCO SYSTEMS	63.00	0.00	64.00	62.00	63.00	63.00	13,487,000.00	82.00	26.00	6/6/00	12:31:58
DAIMLERCHRYSLER AG	57.00	1.00	58.00	57.00	58.00	58.00	553,700.00	92.00	53.00	6/6/00	12:31:58
INTEL CORP	134.00	2.00	135.00	130.00	131.00	131.00	11,371,300.00	145.00	50.00	6/6/00	12:31:58
MICROSOFT CORP	69.00	2.00	70.00	68.00	68.00	68.00	21,613,700.00	120.00	60.00	6/6/00	12:31:58
ORACLE CORP	79.00	-2.00	82.00	78.00	80.00	80.00	8,476,700.00	90.00	12.00	6/6/00	12:31:58
AT&T CORP	37.00	0.00	38.00	36.00	36.00	36.00	9,470,200.00	61.00	34.00	6/6/00	12:31:58
AMERICA ONLINE	56.00	1.00	57.00	55.00	55.00	55.00	5,024,100.00	96.00	38.00	6/6/00	2:12:34
COMPAQ COMPUTER	28.00	1.00	28.00	27.00	27.00	27.00	12,480,500.00	34.00	18.00	6/6/00	2:12:34
CISCO SYSTEMS	63.00	0.00	64.00	62.00	63.00	63.00	18,095,300.00	82.00	26.00	6/6/00	2:12:34
DAIMLERCHRYSLER AG	57.00	1.00	58.00	57.00	58.00	58.00	642,700.00	92.00	53.00	6/6/00	2:12:34
INTEL CORP	135.00	2.00	135.00	130.00	131.00	131.00	14,096,700.00	145.00	50.00	6/6/00	2:12:34
MICROSOFT CORP	69.00	2.00	70.00	68.00	68.00	68.00	31,599,500.00	120.00	60.00	6/6/00	2:12:34
ORACLE CORP	79.00	-2.00	82.00	78.00	80.00	80.00	11,456,300.00	90.00	12.00	6/6/00	2:12:34
AT&T CORP	37.00	0.00	38.00	36.00	36.00	36.00	11,233,800.00	61.00	34.00	6/6/00	2:12:34
AMERICA ONLINE	56.00	1.00	57.00	55.00	55.00	55.00	6,749,500.00	96.00	38.00	6/6/00	3:37:48
COMPAQ COMPUTER	27.00	0.00	28.00	27.00	27.00	27.00	14,587,700.00	34.00	18.00	6/6/00	3:37:48
CISCO SYSTEMS	62.00	-2.00	64.00	62.00	63.00	63.00	24,435,000.00	82.00	26.00	6/6/00	3:37:48
DAIMLERCHRYSLER AG	57.00	0.00	58.00	57.00	58.00	58.00	824,000.00	92.00	53.00	6/6/00	3:37:48
INTEL CORP	132.00	-1.00	135.00	130.00	131.00	131.00	18,918,200.00	145.00	50.00	6/6/00	3:37:48
MICROSOFT CORP	69.00	2.00	70.00	68.00	68.00	68.00	40,287,800.00	120.00	60.00	6/6/00	3:37:48
ORACLE CORP	77.00	-4.00	82.00	77.00	80.00	80.00	14,970,500.00	90.00	12.00	6/6/00	3:37:48
AT&T CORP	36.00	0.00	38.00	36.00	36.00	36.00	14,425,800.00	61.00	34.00	6/6/00	3:37:48
AMERICA ONLINE	56.00	1.00	57.00	55.00	55.00	55.00	7,448,900.00	96.00	38.00	6/6/00	4:01:42
COMPAQ COMPUTER	27.00	1.00	28.00	27.00	27.00	27.00	15,047,200.00	34.00	18.00	6/6/00	4:01:42
CISCO SYSTEMS	62.00	-2.00	64.00	62.00	63.00	63.00	26,950,000.00	82.00	26.00	6/6/00	4:01:42
DAIMLERCHRYSLER AG	56.00	0.00	58.00	56.00	58.00	58.00	974,800.00	92.00	53.00	6/6/00	4:01:42
INTEL CORP	131.00	-1.00	135.00	130.00	131.00	131.00	20,477,400.00	145.00	50.00	6/6/00	4:01:42
MICROSOFT CORP	70.00	3.00	70.00	68.00	68.00	68.00	43,792,800.00	120.00	60.00	6/6/00	4:01:42
ORACLE CORP	77.00	-4.00	82.00	76.00	80.00	80.00	17,572,700.00	90.00	12.00	6/6/00	4:01:42
AT&T CORP	36.00	0.00	38.00	36.00	36.00	36.00	15,076,200.00	61.00	34.00	6/6/00	4:01:42
AMERICA ONLINE	56.00	0.00	56.00	55.00	55.00	55.00	898,900.00	96.00	38.00	6/7/00	10:18:36
COMPAQ COMPUTER	27.00	-1.00	27.00	27.00	27.00	27.00	1,398,900.00	34.00	18.00	6/7/00	10:18:36
CISCO SYSTEMS	62.00	1.00	63.00	61.00	62.00	62.00	4,333,500.00	82.00	26.00	6/7/00	10:18:36
DAIMLERCHRYSLER AG	58.00	1.00	58.00	58.00	58.00	58.00	109,000.00	92.00	53.00	6/7/00	10:18:36
INTEL CORP	128.00	-2.00	129.00	127.00	129.00	129.00	3,125,200.00	145.00	50.00	6/7/00	10:18:36
MICROSOFT CORP	69.00	-1.00	70.00	68.00	69.00	69.00	4,325,100.00	120.00	60.00	6/7/00	10:18:36
ORACLE CORP	77.00	0.00	78.00	76.00	77.00	77.00	2,139,800.00	90.00	12.00	6/7/00	10:18:36
AT&T CORP	37.00	1.00	37.00	36.00	37.00	37.00	2,564,800.00	61.00	34.00	6/7/00	11:02:52
AMERICA ONLINE	55.00	0.00	56.00	55.00	55.00	55.00	1,991,300.00	96.00	38.00	6/7/00	11:02:52
COMPAQ COMPUTER	27.00	-1.00	27.00	27.00	27.00	27.00	2,769,100.00	34.00	18.00	6/7/00	11:02:52
CISCO SYSTEMS	62.00	1.00	63.00	61.00	62.00	62.00	8,790,600.00	82.00	26.00	6/7/00	11:02:52
DAIMLERCHRYSLER AG	58.00	1.00	58.00	58.00	58.00	58.00	229,300.00	92.00	53.00	6/7/00	11:02:52
INTEL CORP	127.00	-3.00	129.00	126.00	129.00	129.00	7,429,800.00	145.00	50.00	6/7/00	11:02:52
MICROSOFT CORP	69.00	-1.00	69.00	67.00	69.00	69.00	8,876,000.00	120.00	60.00	6/7/00	11:02:52
ORACLE CORP	78.00	1.00	78.00	76.00	77.00	77.00	5,294,700.00	90.00	12.00	6/7/00	11:02:52
AT&T CORP	37.00	1.00	37.00	36.00	37.00	37.00	6,492,000.00	61.00	34.00	6/7/00	11:02:52
AMERICA ONLINE	55.00	-1.00	56.00	55.00	55.00	55.00	4,182,100.00	96.00	38.00	6/7/00	12:53:14
COMPAQ COMPUTER	27.00	-1.00	27.00	27.00	27.00	27.00	4,810,500.00	34.00	18.00	6/7/00	12:53:14
CISCO SYSTEMS	63.00	1.00	63.00	61.00	62.00	62.00	15,426,000.00	82.00	26.00	6/7/00	12:53:14

Table of Contents

	<u>Page</u>
Abstract	i
Acknowledgments	ii
Stock Quote Generator	iii - iv
Chapter 1: Introduction	1
1.1 Objective and Goal Statement	1
1.2 Methodology	2
1.3 Background Information	3
1.3.1 What are Stocks?	3
1.3.2 Why Do Companies Sell Stocks?	5
1.3.3 The Stock Market	5
1.3.4 Major Stock Exchanges in the United States	7
1.3.5 Significance of the Stock Exchange	10
1.3.6 Stand Functions of the Stock Exchange	10
1.4 The Structure of the Report	13
Chapter 2: Web Site Ranking	15
2.1 Introduction	15
2.2 Analysis of Individual Sites	15
2.3 Internet Stock Broker Introduction and Analysis	22
2.3.1 Background	22
2.3.2 Services	24
Chapter 3: Stock Selection Process, Company Backgrounds and Financial Summaries	29
3.1 Diversification	29
3.2 Selection Process, Company Backgrounds and Financial Summaries for Individual Stocks	
3.2.1 Microsoft Corporation (NASDAQ: MSFT)	29
3.2.2 Cisco Systems, Inc. (NASDAQ: CSCO)	30
3.2.3 Oracle Corporation (NASDAQ: ORCL)	31
3.2.4 Intel Corporation (NASDAQ: INTC)	32
3.2.5 DaimlerChrysler AG (NYSE: DCX)	34
3.2.6 American Online (NYSE: AOL)	35
3.2.7 Compaq Computer Corporation (NYSE: CPQ)	37
3.2.8 AT&T (NYSE: T)	38

Chapter 4: Analysis of Results	40
4.1 Introduction	40
4.2 Analysis of Individual Stocks	41
4.2.1 Microsoft Corporation (NASDAQ: MSFT)	43
4.2.2 Cisco Systems, Inc. (NASDAQ: CSCO)	44
4.2.3 Oracle Corporation (NASDAQ: ORCL)	45
4.2.4 Intel Corporation (NASDAQ: INTC)	46
4.2.5 DaimlerChrysler AG (NYSE: DCX)	47
4.2.6 American Online (NYSE: AOL)	48
4.2.7 Compaq Computer Corporation (NYSE: CPQ)	48
4.2.8 AT&T (NYSE: T)	49
Chapter 5: Conclusion	51
5.1 Diversification	51
5.2 What We Have Learn	52
5.2.1 Few comments on investing in the Stock Market	53
5.3 Final Thoughts	54
Charts, Graphs and Tables	56
Table 2.1 Stock Service programs	24
Table 2.2 Company Web site URL	26
Table 2.3 Pricing of Different Internet Stock Brokers	27
Table 4.1 Stock Price of the Companies in Our Portfolio on June 1, 1999	41
Table 4.2 Stock Price of the Companies in Our Portfolio on June 29, 2000	42
Table 4.3 Investment Summary of Microsoft Corporation	43
Table 4.4 Investment Summary of Cisco Systems, Inc.	44
Table 4.5 Investment Summary of Oracle Corporation	45
Table 4.6 Investment Summary of Intel Corporation	46
Table 4.7 Investment Summary of DaimlerChrysler AG	47
Table 4.8 Investment Summary of American Online	48
Table 4.9 Investment Summary of Compaq Computer Corporation	48
Table 4.10 Investment Summary of AT&T	49
Figure A1 Stock Quote Generator screenshot	iv
Figure A2 Access Database Format	iv
Stocks Daily Performance Charts	57-90
Company Monthly Report	91-98
NASDAQ Compsite Index Chart	99
NYSE Composite Index Chart	100
Bibliography	101

Chapter 1: Introduction

1.1: Goal and Purpose

The objective of this project is to learn how to trade the stock market and gain insight into the stock market by doing a stock market portfolio simulation. We will simulate a real stock market portfolio by collecting data from a variety of different companies from different portions of the market over a period of four weeks. Initial capital of two hundred thousand dollars will be portioned out amongst eight stocks, with taxed and brokerage fees ignored. The main goal is to obtain the largest possible percentage increase at the end of the four weeks.

The purpose of the project is to serve as an educational tool for those who wish to gain further knowledge of the stock market and how it functions. Although not even professional stockbrokers claim to know everything about the market, it is our intent to answer questions that the beginning investor might have.

Following is a list of goal statements we would like to archive in this project:

1. To make money

- To realize at least a 5% overall gain

2. Learn about the stock market

- How simple transactions are carried out

- Different types of investments (long-term vs. short-term)

- Historical background on the stock market

Strategies for investing

3. Create a guide for new investors

Create a handbook for online research on stocks and investing

Review the top five stocks investing sites on the Internet

Review the top five online stockbroker on the Internet

To provide the read with a feel for each site

1.2: Methodology

To aid in the simulation process a self-developed program written by Visual Basic 6.0™ will be used to record the data of the stock portfolio. This program is running together with the stock details windows in the American Online Instant Messenger which will record the stock prices, change, high, low, open, etc; for the stocks we chosen in every 15 minutes. Moreover, to minimal our effort in the simulation, we used the Yahoo! Finance page, <http://finance.yahoo.com> to research the background of the stock we chosen, gets information like the latest market news and stock performance. In order to gain access to some more advanced graph options hand generated data will be used in Microsoft Excel and Access.

To select which stocks we would purchase, firstly we determine which market we are going to trade. We decided to trade the New York Stock Exchange and NASDAQ because most of the well-known technology companies are in these two markets. We have six out of eight stocks in our portfolio are computer or high-tech firms since we think they have the most tendency to rise in a short period of time. Since the purpose of

the project is to serve as an educational tool, we selected one telecommunication company (AT&T) and one heavy industry company (DaimlerChrysler) and would like to see the performances for these non information technologies companies in the market. The methods for generating this report will be explained in further detail in those sections.

1.3: Background Information

What are stocks? Why do companies sell shares? These are very common curious for those people who considering to invest their money into the stock market. In order to do this project successfully, it is necessary to have some preliminary background information on the stock market itself and how it operates. Moreover, historical information is relevant to understand how the economy works and functions. These will be discussed in detail in the following sections.

1.3.1: What are Stocks?

Stock is ownership, simple as that. For example, Mr. Bailey buy a share of IBM, what it means is he acquires a tiny sliver of IBM. In the most literal sense: he gets a piece of every desk, contract and trademark in the place. Also, he owns a slice of every dollar of profit that comes through the door. The more shares he buys, the bigger his stake becomes.

Moreover, along with ownership, a share of stock gives Mr. Bailey right to vote on management issues in IBM. IBM's executives work at the behest of shareholders, who are represented by an elected board of directors. By law, the goal of management is to increase the value of the corporation's equity. To the extent this does not happen, shareholders can vote to have management removed. However, the ability to exert any substantial influence over IBM is still left to groups of company insiders because individual investors like Mr. Bailey rarely amass enough stock to be able to attend to the general shareholders meeting.

The stock market itself is basically a daily referendum on the value of the companies that trade there, and stock exchange is a methodical and organized system of trading which the value of a stock is set purely by rule of supply and demand in an auction setting. What affect this supply and demand of a stock highly depends on the daily news, which the specialist will analysis these news to find out if the news help the companies make money in the future, or will it prevent them from doing so.

Surely there is no always winning in the stock market. The worst-case scenario is that a company goes bankrupt and the value of the buyers' investment evaporates altogether. Luckily this does not always happens because right now a lot of rules and regulations from the government will prevents a company goes bankrupt easily. More often, a company will run into short-term problems that depress the price of its stock for what seems an agonizingly long period of time.

1.3.2 Why Do Companies Sell Stocks?

It requires a huge amount of capital when a company wants to expand its business. There are two methods the company can collect the money. The first way is going to the bank and asks for a big loan, but there will be some problems coming up. For example, banks charge interest and have the ability to foreclose the loan if the company falls behind on payments. These could seriously drain on the cash flow and eventually affect the expansion stage of the business.

The second way is to raise funds from people outside the company and ask them to invest in the business. The owner of the company can offer shares of his/her company for sale to the public, in the form of stock that trades on a stock exchange. In return for the shareholders' investment, the owner of the company is willing to give them a piece of his/her company. The benefit of selling shares is to collect a huge amount of money in a very short period of time without paying any interest. Also, it does not require the owner of the company to take a lot of money in one time.

1.3.3 The Stock Market

The stock market is a market for trading monetary instruments, such as stocks, mutual funds, bonds, options and futures. Stocks are usually traded on a stock exchange. As discussed in the above section, because the availability of stocks is ruled by an auction setting, specialists (called brokers) handle the actual transactions by matching the buyers and sellers, and sold the shares to the highest bidder. The latest way to trade stocks is

using the Internet, like NASDAQ we going to discuss later. It is a brokers-free stock trading method and there is no people involve in matching the buyers and sellers.

Mutual fund is a single portfolio of stocks, bonds, and/or cash managed by an investment company on behalf of many investors. The investment company is responsible for the management of the fund, and it sells shares in the fund to individual investors. When someone invests in a mutual fund, he or she becomes a part owner of a large investment portfolio, along with all the other shareholders of the fund. When someone purchase shares, the fund manager invests his or her funds, along with the money contributed by the other shareholders. Because of that, mutual funds are an easy way to own stocks without worrying about choosing individual stocks

Bonds allow companies to temporarily borrow money from the U.S. government, a state, a local municipality, and some big companies or from the public. By loaning companies money for a certain period of time, an individual or investing corporation is able to gain yearly interest payments from the company. A key difference between stocks and bonds is that stocks make no promises about dividends or returns. The benefit of bond is the company guarantees to pay back your principal plus interest.

Options provide another method for trading stocks. Call options allow investors to buy a predetermined number of stocks at locked in prices over a specific period of time. Similarly, options allow investors to sell their stocks at fixed prices. Futures are similar to options. However, they are usually offered only in exchanges that deal in textiles, food, and other commodities. They are similar to options in that the buyers and sellers agree to fixed prices on fixed dates, but differ because once an agreement has been made the choice to buy or sell is no longer optional.

Stocks traded can be classified in two special and different categories: penny stocks and blue chip stocks. A penny stock is one usually worth under \$1 and it is not traded on any of the major exchanges. These stocks are highly speculative and extremely risky, but their advantage is once they rise, the revenue will be huge. Blue chip stocks are generally considered to be stocks of well-established, large companies. They are considered to be less risky than most other stocks.

1.3.4: Major Stock Exchanges in the United States

There are special markets where the buyers and sellers are brought together to trade stocks, and these markets were known as a stock exchange. The best know stock exchanges in U.S. are the New York Stock Exchange (NYSE) and the American Stock Exchange (AMEX).

Besides these two national exchanges, there are many smaller regional stock exchanges, such as the Pacific in Los Angeles, the Philadelphia, the Boston, the Cincinnati, and the Chicago. Some small companies are listed only on a regional exchange, while some NYSE and AMEX companies are listed on these smaller exchanges, as well, to help trades happen faster and cheaper for investors.

New York Stock Exchange also knows as the Big-Board or The Exchange; is America's biggest, oldest and most important securities exchange. NYSE was begun from the brokers in New York gathered daily in a park downtown to discuss financial matters and trade stocks and bonds. Later the exchange had gathered interest and moved to Tontine CoffeeHouse where it remained until 1817. The NYSE registered as national

securities exchange with the U.S. Securities and Exchange Commission on October 1, 1934 and origins a founding agreement in 1792.

Today, NYSE located on Wall Street in New York City and listed more than 2900 corporations with asset totaling over \$8 trillion. It is the exchange with the most stringent requirements for being listed, and it is where most of the nation's largest and best-established companies are listed. Even though computers are used for trading, the most notable thing in NYSE is it remains the old-fashioned in those buyers and sellers shout orders at one another face to face and specialists will assist to find the highest bidders.

As the nation's second largest floor-based exchange, the American Stock Exchange has a significant presence in common stocks, index shares and equity derivative securities. AMEX originated in New York City through the efforts of individual brokers. In 1908, a formal organization was founded and named the New York Curb Agency. It was affectionately known as the "curb". Meetings were conducted outdoors for many years until 1921 when offices were established in Trinity Place. By this time, the exchange had undergone a name change to "The New York Curb Market Association". Finally in 1953 the exchange took on its current title. Initially the market's reputation was considered below that of the NYSE, trading mostly trades mostly in small-to medium-sized companies.

On the AMEX, trading is conducted through an advanced centralized Specialist system combining the speed of computer delivered orders with the liquidity of customer driven markets. Today, AMEX is on the leading edge of exchanges worldwide in developing successful new investment products and innovative services for companies

and investors. In 1996 the AMEX listed 750 corporations with assets totaling over \$135 billion.

Not all markets are physical; thousands of companies do not list their stocks on exchanges. These companies often choose to place themselves on an over-the-counter (OTC) market. The National Association of Securities Dealers Automated Quotation system, or NASDAQ, is one of the largest and most famous of the OTC markets.

In an effort to improve overall regulation security markets, by 1963, the U.S. Securities and Exchange Commission proposed a solution with introducing the NASDAQ system. NASDAQ is the first electronic stock market in the world. Since its inception in 1971, NASDAQ long ago set a precedent for technological trading innovation that is unrivaled. It is America's fastest growing stock market and a leader in trading foreign securities and technology shares as well. In contrast to traditional floor-based stock markets, NASDAQ relies entirely on a computerized trading system that enables dealers, regardless of location, to bid on orders. Therefore, theoretically this is the most efficient possible market. The market structure of NASDAQ allows multiple market participants to trade stock through a sophisticated computer network linking buyers and sellers from around the world. Together, these participants help ensure transparency and liquidity for a company's stock while maintaining an orderly market and functioning under tight regulatory controls. Today, many leading companies are listed in NASDAQ. For instance, Intel, Microsoft, MCI and Northwest Airlines.

1.3.5: Significance of the Stock Exchange

The importance of the stock exchange in national economies is multi-faceted. Mostly, the stock exchange encourages investment on a personal level, for people who wish to make money. Also, on a corporate level, extra capital is gained which can be used to expand the business, providing more jobs and products for the economy.

In addition, the strictly regulated stock markets protect investors by ensuring they get exactly what they paid for. They can only lose the amount of money that they risked. The stock exchanges in the USA are regulated by the Securities and Exchange Commission (SEC). The SEC is a regulatory body that administers federal securities laws. In addition, it regulates investment companies, people who provide investment advice and firms which engage in the purchase and sale of financial instruments.

1.3.6: Standard Functions of the Stock Exchange

In addition to a general overview of the stock market and its importance, it is necessary to have an understanding of how the specific transactions occur when investing. The stock market may seem complicated and imposing at first, but breaking down the process of trading stocks into simpler functions makes it much easier to understand.

Individual investors cannot place transactions within the stock exchange. Instead, all dealings must go through a stockbroker. A stockbroker is the individual or

organization authorized to execute transactions at the stock exchange. In exchange for this service, the broker charges a percentage or flat fee known as a commission. You must set up an account with the broker or brokerage firm before you begin to trade.

In order to state a portfolio in the market, stocks must be purchased. The standard form of this purchase process is called a buy or long buy. What this means is that you are buying a stock, or portion of the company. You need several things in order to do this:

Every stock is traded on a specific stock exchange. You must know which exchange your stock is listed on. Also, every stock has a ticker symbol, which is a shorthand way of representing the stock you wish to purchase. You will need to know the ticker symbol of your chosen stock to tell to the broker. You will need to know how many shares of the stock you wish to purchase. This is also known as the volume of your order. A share of stock is the unit of ownership in a company. Variations of the above example do exist in the market. For example, there are limit orders. Limit orders are when you agree to buy the share at a given price or lower.

A sell order is the reverse of the buy order. Once again, you must know the market your stock is traded on and the ticker symbol. You must tell your broker the volume of shares that you wish to sell. Limit orders come into place with the sell order as well. In this case, a limit order is when you tell your broker you wish to sell your stock at a given price or higher. In the case of limit orders, the stock may not be purchased or sold for a number of hours or even days, until the price reaches its threshold.

Everything does not usually go as smoothly as planned in reality. Orders may only be partially filled because of the limited amount of buyers or sellers. In some cases, an order cannot be executed at all because of these limits.

There are many riskier forms of trading. One of these is that short sell. This allows a user to "borrow" stock from their broker and sell that stock. You are now "short" the stock and must replace it at a later date. This is usually done when you expect the price of a stock to decline. An investor can sell the stock at a high price and then buy it back at a low price, thus making a profit. For example, if you sell a short stock at \$70 a share and then buy it back at \$40, you have made \$30 per share. On the other hand, if you sell it short at \$80, and are later forced to buy it back at \$100, you lose \$20 per share.

A real-life example of this buy and sell process is found here: Mr. Joseph wishes to begin investing in the stock market. He setups a computer and Internet at home in order to do the online stock trading with current online brokerages. He picks e-trade to be the middleman. The trading policy of e-trade is that every buy and sell, they will charge their customers \$20.00 no matter the volumes for the commission. He wishes to invest in the Microsoft corp.

Mr. Joseph researches the Microsoft Corp. and finds out that the market it is traded on is the NASDAQ. Further research lets him find that the ticket symbol for Microsoft Corps is MSFT. Mr. Joseph decides that he wants to purchase 100 shares of this stock at a maximum of \$66 per share. 100 shares at a maximum \$66 apiece would be maximum investment of \$6600. Then he presses a button to buy \$100 shares of Microsoft through e-trade.com. Since the Federal government has announced a good

new of the US employment market as the IT companies have gained high revenues of this year, he decides to keep the order active for a time limit of 3 days.

Mr. Joseph receives conformation of his broker within a minute by email. The confirmation printed that Mr. Joseph has purchased 100 shares of MSFT at \$66 per share for a total investment of \$6600. In addition, Mr. Joseph is charged commission by e-trade.com, \$20. Mr. Joseph holds his stock until the share value rises until \$70. At this point, he decides to sell all of his shares at market value.

Then he does the sell transaction through e-trade.com for \$70, the current market value at the time Mr. Joseph placed his sell order. The e-trade.com receives another \$20 commission. Mr. Joseph makes a net profit of $\$7000 - \$6600 = \$400$. With commission subtracted, Mr. Joseph has a 5.4% gain on his investment.

1.4: The structure of Our Report

This report is divided into five chapters, an appendix for all the charts, and a list of sources. Chapter 1 is an introduction to the report and it states our goals and purpose. It also contains history of the market and how it operates. Chapter 2 contains a web site and Internet stockbroker reviewing. This guide will help investors to choose a site that suits for their needs. Chapter 3 is the individual company background and their financial summaries about the stocks we chosen. Moreover it includes the selection process for our stocks portfolio. Chapter 5 is the analysis of our results, which the charts can be found in the appendix. Chapter 6 contains our conclusions and what we learned from this project. Appendix A contains charts and tables of the data we recorded over our 4-week

simulation. At the very end of this project there is the bibliography, listing books and other sources we used for information, including web pages, previous IQP reports, and books.

Chapter 2: Web Site Ranking

2.1 Introduction

We primarily use the World Wide Web as our source of information for our simulation and data collection. These web sites help us for research and as a stock-tracking tool. There are a variety of web sites that provided different services while offered different information, tools, formats, etc. Many of those sites made our simulation easier and gave us access to information we that is difficult to find. Since we explored so many sites and became familiar with the content of them, we wanted to create a guide that could help other investors find the right site for their needs.

2.2 Analysis of Individual Sites

1. Yahoo! Finance

<http://finance.yahoo.com>

Yahoo! Finance page is one of the best pages that we found on the Internet. The key features that we like the most about this site are easy to use and uncomplicated format. It also provides above average help, content, and research tools.

Similar to the format of the popular Yahoo! Search engine, this site provides quick links to relevant information using a bare bones structure that makes finding what you need easy and simply. The layout seem rather boring and plain at first, but the ingenious and quick way you find information makes the dullness of the layout seem irrelevant. Yahoo! Finance makes information easy to find by using a bolts and nuts approach to their site layout.

Like other site we are going to discuss later, Yahoo! Finance provides stock tracking portfolio setup services for those register users. Moreover, a special feature from this site is a game called “The Investment Challenge”. This game is for those register users to trade the stock market using the “virtual money” defined by the game’s rules. By the end of each month the player will determine winners with highest net worth. This game is highly recommended for those first time buyers before they put their real money into the stock market.

Another feature we like about Yahoo! Finance is this site provides a variety of information like IPOs events, very updated market and financial news in U.S. and worldwide, and major world index that we cannot found from any other web site. Also, the “Research” section in this site is a very useful tools for users from any levels which provides a historical quotes that can shows the stock price (includes Open, High, Low, Close, etc.) for any day period specify from the user. People can find the latest annual report in the “Research” section too.

The most powerful tool we found in Yahoo! Finance site is its “Reference” section. This section provides a huge glossary provided links within definitions to definitions of other financial terms, which makes this feature a great asset to this site.

Moreover, this site has a new feature called “Education Center” which we cannot find at other site that teaching beginner how to invest. This is highly recommended for those first time buyers too.

2. Microsoft Money Central

<http://moneycentral.msn.com>

Microsoft once again proves why it is one of the strongest presences on the World Wide Web with its terrific finance homepage. The reason why Microsoft’s page is so excellent is that it offers a wealth of information in a relatively easy to use interface. Any one from a novice investor, to a professional broker would find this web site to be an excellent resource.

The main Money Central page loads with a task bar that provides easy access to key features such as their phenomenal research wizard, simple stock quotes, and portfolio tracking, just to name a few. The main page also has links to headlines from current articles pertaining to the stock market, investment strategies, alternative investing, etc. This page is laid out with the user in mind. The sections are clear and well defined, making it simple to find what you are looking for.

In this site, research and content go hand in hand. When you type in a stock ticker symbol, not only does it bring up a quote with relevant information, but it also provides a link to research on that particular company. Standard tools are included in easy to locate areas, such as charts, SEC filings, and quarterly report. In addition, Microsoft provides a tool known as the research wizard. This is by far the most

innovative tool provided on any sites that we have searched. It starts by prompting the user for a ticker symbol. This site then loads a detailed analytical report, which provides information that only experienced user would understand. However, in depth explanations of technical terms and values are provided along with the information. Also, simple graphs and charts help to explain key concepts. Overall, the research wizard provides the user with a general feel for how the company is performing and concludes with advice on whether or not to invest at this time.

Of the entire portfolio tracking software that we have found on the Internet, Microsoft provided the best. The online software not only tracks stocks, gives warnings when relevant information becomes available, but it was one of the only programs to offer a multi-portfolio option. The graphs generated from this allowed the user to see at a glance the performance of the individual stocks as well as the total portfolio value.

Another feature that makes MSN Investor stand out from the pack is its excellent online help. It provides help tips on not only how to use the site but also key concepts of investing. This site also has one of the best glossaries that we have found. Almost any definition can be found here in laymen's terms.

3. Lycos Investing

<http://investing.lycos.com>

Lycos, another top Internet search engine, has created a colorful, friendly site about investing. The best part of this site is its interface, which is cute and fairly easy to

use. The content of this site is above average. What this site lacks is a decent section on help and more and better research tools should be added.

The main page of Lycos Investing has a colorful navigation bar at the top, a field to enter a ticker symbol and other links typical to web pages concerning investing. Different sections are well defined and easy to find. This is the best feature of Lycos Investing.

This site provides more than the standard amount of information per stock. It offers statistical information, charts, and headlines from recent articles. As for the charts, the user cannot change the data range shown, or access charts of historical data without backing up to the main page. This is not as convenient as the above two sites we have discussed.

Help and research tools were present on this site, but they were not very good. We found that the “Investor education Center” provided by Lycos was simply a link to Quote.com’s help page. Clicking on the research tab prompts the user for a ticker symbol, and then takes them to a mostly incoherent page consisting of a brief company background and statistical data regarding that company. The statistical data provided would probably not mean much to the average investor, since no explanation of the values, such things as “Float” and “Dividends Yield %” is provided.

To sum up, we found that Lycos Investing had a good, colorful interface, but not enough strong content and research tools to back it up.

4. Excite Money and Investing

<http://quicken.excite.com>

Excite and Quicken have teamed up to provide one of the best all around investment sites online. It combines ease of use with excellent content and research tools. The site loaded with two sidebars, one displaying indices and the other top performers. The center of the pages has headlines concerning key happenings in the market.

By inputting a ticker symbol, the site displays detailed stocks information as well as links to research on the company such as charts, historical data, and pertinent articles. The format is incredibly easy to use and the links actually do what they say they will unlike some of the other sites we examined.

Research tools on Excite Money and Investing are exceptionally easy to use and understand. The site provides the standard access to quarterly reports and company history, but also provides suggestion from market experts and their analysis. The content of the site is also excellent. Almost every area that is selected provides the user with a wealth of information in an easy to understand manner.

The help feature also carried Excite Money and Investing to the top of our ratings. One of the more interesting features is the “quick answers” utility. It provides the user with answers to common sense questions concerning different types of investments. Also, there is a more generic help section that provides an overview of the site and answers to investing questions. Along with this is one of the best and by far the easiest to use glossaries on the Internet.

5. Go Money

<http://money.go.com>

The Go network has steadily grown to one of the largest and influential forces on the Internet. It would not have been able to do this without providing excellence in all areas; the financial area is no exception. Go Money provided us with one of the easiest interfaces after we explored different web sites. The main page loads up and displayed in a concise format. News headlines affecting the market and key tocks are displayed prominently on the screen. Like most sites it also contains a field for searching stocks by ticker symbol. The site also allows the user to input and track their stock portfolios. Unfortunately the site's categories model those of other sites and it can be confusing if users are not accustoming to them.

Adding to the site's appeal is the helpful research tools that it possesses. By entering a specific stock the user is presented with a wealth of information ranging from historical charts to recent news report concerning the company. With a few clicks, quarterly and other financial report can be obtained. The casual user can also see what market experts say about the stocks' performance.

The content of the site was well above average. It contains much of the information that the common trader would be looking for. Reports about companies can be found, graphs generated, and their detailed reports contain almost all information concerning the company.

What hurts the site most is its lack of a decent help section. Almost anything can be found on this site, it just becomes a little overwhelming for the casual user. Categories are often vague and there is no way of finding out what is contained in them other than by

clicking on them. What makes matters worse is that the user cannot find information about common market terms or how common transactions are carried out. The site is more geared towards intermediate users. Those just starting off might want to view something with a higher help rating.

2.3 Internet Stock Broker Introduction and Analysis

In an advance well-developed society, technology improves the pace of people. Easy, Convenient and Efficiency are the main concerning factor in a highly pace society. In the traditional stock trading, clients have to call their broker in order to do the stock transaction. While entering 21st century, online brokers have been emerged for providing a faster and convenient stock trading service to their clients. Clients just need to use their computer, to access the World Wide Web and to click on their favor stock. The whole transaction is just taken within 1 or 2 seconds. There is no delay connection or noise problem as the phone does. In the following paragraphs, we are going to follow the backgrounds and services to analyze this new emerged business. They are E-trade Group, Datek, Ameritrade and Suretrade.

2.3.1 Background

*E*Trade Group, Inc., NasdaqNM: EGRP*, is a provider of online investing services, which include portfolio tracking, Java-based charting and quote applications, real-time market commentary and analysis, news and other information services. For the

6 months-ended 3/00, revenues totaled \$675.1M, up from \$281.2M. Net loss applicable to Common before acct. change totaled \$28M, up from \$2M. Results reflect higher trading volume, offset by higher a \$30.4M merger related charge. The price per stock of E*Trade is around \$16 and \$17.

Datek online located on the World Wide Web at www.datek.com, is one of the nation's largest online brokerage firms. Since its launch in 1996, Datek Online has grown to more than 500,000 active customer accounts and currently executes over 80,000 trades per day. This company is not in private.

Ameritrade, NasdaqNM: AMTD, provides discount securities brokerage and clearing execution services and related financial services, including electronic trading and market data and research services. For the 6 months-ended 3/00, revenues totaled \$325.3M, up from \$135.9M. Net loss totaled \$18.5M vs. an income of \$11.8M. Revenues reflect a higher number of securities transactions processed and increased interest revenues. Net loss reflects increased staff & advertising. The price per stock of Ameritrade is around \$10 - \$12.

SURETRADE, Inc., NYSE: FBF, founded in November 1997, a subsidiary of FleetBoston Financial is a member NASD, member SIPC broker / dealer. Clearing all securities transactions through U.S. Clearing, a Division of Fleet Securities, Inc. Since its launch in 1997 SURETRADE has grown to over 550,000 customer accounts and over \$2 billion in customer assets and is a leading participant in the continued rapid growth of online trading.

2.3.2 Services

Basically, we have listed some criteria on evaluating these online stock agencies. Based on this information, we would like to give readers the basic idea on these agencies about their web site information, stock service program and pricing etc. In figure 1.1 and 1.3, it listed out the details on every service and pricing respectively.

Table 2.1 Stock Service programs

Company	E-trade	Datek	Ameritrade	SureTrade
Criterion				
Fundamental stock market knowledge?	Yes	No	Yes	No
Teach how to trade? in detail?	Yes	No	Yes	Only teach how to trade using their web site
Suitable for 1 st time buyer?	Yes	No	Yes	Fair; not sure
FREE REAL TIME QUOTE? UNLIMITED USE?	Yes; Yes	Free; Unlimited	Not specify	Yes
Latest market news? Always update?	Fair	Yes; fair	Yes; not sure	Fair
Trading strategy?	Yes	Yes	Yes	Not specify
Interface user-friendly? Easy to read & use?	Yes	Yes	Fair	Yes

24 hours customer service? Online or on phone?	Yes; both online and on phone	No	Yes; both online and one phone	Fair
IPO info?	Yes	No	No	No
*Loading speed?	Good	Fair	Good	
Discussion group for people writing comments?	Yes	No	No	

- ❖ Three level on evaluating the loading speed. Bad – no response or even the connection die. Good – Connection is stable, fair connection which means if using the modem connection, the usual downloading speed should be above 3.5kbps; if using the cable connection, the usual speed should be higher than 3.5kbps. Excellent – response quick, no delay time.

On the other hands, these online stock agencies have offered “Telephone trading” service for customers who would like to use the traditional way to do the stock transactions. In order to get a deep looking on this service, each company has a web page about it.

Table 2.2 Company Web site URL

Company	Links	Description
E-Trade	http://www.etrade.com/cgi-bin/gx.cgi/AppLogic+About?gxml=hpc_disc_tools_c.html&lv =about	Telephone Trading
Datek	http://www.datek.com/	<p>Telephone trade (placed with a registered representative for \$25 per trade).</p> <p>EXTENDED-HOURS TRADING – people can trade Nasdaq stocks before and after the market closes - 8:00 AM to 9:30 AM ET and 4:00PM to 8:00 ET each business day. During this time only limit orders are accepted.</p>
<u>AmeriTrade</u>	http://www.ameritrade.com/	Trade by Interactive Voice Response (IVR) telephone system, through a broker, or on a wireless phone or PDA.
<u>SureTrade</u>	http://www.suretrade.com/	Not specify

Table 2.3 Pricing of Different Internet Stock Brokers

Company	E-trade	Datek	AmeriTrade	SureTrade
Price Info.				
Listed Stocks				
• 29 trades per quarter	\$14.95	\$9.99 (up to 5,000 share)	Stop or limit orders are \$5 more. • \$8 online • \$12 IVR telephone system • \$18 broker	\$7.95
• 30-74 trades per quarter	\$9.95			
• 75+ trades per quarter	\$4.95			
Nasdaq Stocks				
• 29 trades per quarter	\$19.95	N/A	N/A	N/A
• 30-74 trades per quarter	\$14.95	N/A	N/A	N/A
• 75+ trades per quarter	\$9.95	N/A	N/A	N/A
Limit & Stop Orders				
• 29 trades per quarter	\$19.95	N/A	N/A	\$9.95

• 30-74 trades per quarter	\$14.95	N/A	N/A	
• 75+ trades per quarter	\$9.95	N/A	N/A	
• Minimum amount to open an account	\$1,000 \$2,000(for margin account)	Not specific, but need at least \$2,000 to start trading	\$2,000	N/A
• Recent price recorded on 7/5	16 ⁵/₁₆	N/A	11 ⁵/₈	36 ⁷/₁₆

Chapter 3: Stock Selection Process, Company Backgrounds and Financial Summaries

3.1 Diversification

Referring to the introduction, one of our goals in this project is to make 5% gain in our stock portfolio. Because we are trading in a very short period of time, stock selection process needs to be very careful. There will be total eight stocks in the portfolio, where six of them are information technologies related companies since they are the hottest stocks in the market nowadays. The reason we choose two non-IT stocks because we do not want to put all eggs into one basket. On the other hand, this stock portfolio will be serve as an educational tool; it would be beneficial to include different industries in the market.

3.2.1 Microsoft Corporation (NASDAQ: MSFT)

Business Summary

Microsoft Corporation (NASDAQ: MSFT) develops, manufactures, licenses and supports a wide range of software products for different types of computing devices. Microsoft software includes operating systems for intelligent devices, personal computers and servers; server applications for client/server environments; knowledge worker productivity application and software development tools. On the internet-side efforts,

MSN network of Internet products and services; e-commerce platforms; and alliances with companies involved with broadband access and various forms of digital interactivity. Also Microsoft licenses consumer software programs sell PC input devices; trains and certifies system integrators; and researches and develops advanced technologies for future software products.

Financial Summary

For the 9 months ended 3/31/00, its revenue rose 23% to \$17.15B. Net income applicable to Common rose 26% to \$7B. This result reflects increased revenues from Microsoft Office integrated suites and increased investment income.

Selection Process

The reason for selecting MSN is obvious. Microsoft is the largest and most famous software, Internet provider in the world. Also looking at their financial summary, they have a revenue rose for 23%, which is a pretty good scene. The only thing we consider is the up coming lawsuit and do not know if it have a big affects to MSN.

3.2.2 Cisco Systems, Inc. (NASDAQ: CSCO)

Business Summary

Cisco Systems, Inc. (NASDAQ: CSCO) provides networking technology and services in software and hardware solution for the computer industry. ITs manufactured software and hardware solutions that link computer networks so that people have easy access to information without regard to difference in time, place or type of computer

system. The Company's product offerings enables customizable features to meet customer requirements, and its portfolio offers end-to-end networking product and services. The Company is now supporting and delivering video and voice capabilities in its products, allowing customers to transition their data networks to a single multi-service data, voice and video network.

Financial Summary

For the 26 weeks ended 1/29/00, net sales rose 52% to \$8.26B. Net income totaled \$1.25B, up from \$791M. This result reflects increased unit sales of LAN switching products, access servers, add-on boards, and maintenance service contracts.

Selection Process

We like Cisco because they provide a wide variety of computer and networking services. Since there are more and more companies are computerized, huge necessities of networking services are coming up. Cisco is one of the famous and oldest companies in this field and has a very good net income, and that is the reason we select it.

3.2.3 Oracle Corporation (NASDAQ: ORCL)

Business Summary

Oracle Corporation (NASDAQ: ORCL) is a leading supplier of software for information management. It develops, manufactures, markets and distributes database software that helps corporations manage and grow their businesses, including systems

software and business application software. System software is a complete Internet platform to develop and deploy applications for computing on the Internet and corporate Intranets. Business applications software automates the performance of specific business data processing functions for customer relationship management, supply chain management, financial management, procurement, project management and human resources management.

Financial Summary

For the 9 months ended 2/00, revenues rose 15% to 6.78B. Net income increased 82% to \$1.38B. This result reflects increases in both license and service revenues. Earning benefited from efficiencies and controls over headcount.

Selection Process

We choose Oracle because they grow rapidly in the last couple years. They have a lot of commercials activities made them being famous in this half year. We think since this company being more and more well known they will have a tendency to rise within a short period of time.

3.2.4 Intel Corporation (NASDAQ: INTC)

Business Summary

Intel Corporation (NASDAQ: INTC), a semiconductor maker, supplies the computing and communications industries with chips, boards, systems and software that

are integral in computers, servers, and networking and communications products. The Company's major business is on hardware manufacturing, which includes microprocessors, chipsets, flash memory products, networking and communications products, embedded processors and micro-controllers, and digital imaging and other PC-peripheral products. Intel sells its products to original equipment manufacturers, PC and computing appliance users, industrial and communications equipment manufacturers, and businesses, schools and state and local governments. The Company also provides data center services to businesses needing e-Commerce services.

Financial Summary

For the 13 weeks ended 4/1/00, revenues rose 13% to \$7.99B. Net income increased 35% to \$2.70B. Revenues reflect higher unit volumes of microprocessors. Net income reflects higher realized gains on sales of equity investments.

Selection Process

The reason behind for selection:

- 1) Y2k problem. Last year most IT companies invest a lot of money on installing a new system in protecting their company's operation and data-flow. At that time, this is a good news to any stock investors that there will not have any big problems occurred by y2k bug which affect the IT industry. Investing money to stock market was a genius choice for any business or investors. However for the 5 ended 4/31/00, a lot of people were thinking that the IT industry was too hot, over-valued. Suddenly, the largest Stock Market index - Dow Jones Industrials dropped over 500 points. Plus, the

Federal government announced that the economy condition of United States was over-heated. Results reflect which companies still have strong values after the big impact. That is important to any investors.

- 2) Investment potential: big company, a lot of projects, a lot of agreement, enough funds.

Those are two big factors for us selecting the IT companies in NASDAQ index.

3.2.5 DaimlerChrysler AG (NYSE: DCX)

Business Summary

DaimlerChrysler is ideally positioned to emerge as the worlds' leading automotive, transportation and services company – shaping the future of its industries. The company is considered a world leader in the manufacture of passenger cars, light trucks and commercial vehicles as well as civil helicopters, satellites, commercial and military aircraft, rail systems. The company also produces electronics and diesel engines, manages telecommunications, and offers financial services for its customers and dealers.

The DaimlerChrysler Group operates in six business segments: Mercedes-Benz Passengers Cars and smart, Chrysler Group, Commercial Vehicles, Services, Aerospace and others. The DaimlerChrysler Group is active primarily in Europe, the United States, Canada and Mexico, commonly referred to as the North American Free Trade Agreement (NAFTA) region. It is also a leading commercial vehicle manufacturer in South America.

Financial Summary

For the 3 months ended 3/31/00, DaimlerChrysler AG rose 17% to EUR40.96 billion (which is \$43.704 billion). Net income before extraordinary item and acct. change rose 62% to \$1.69 billion. Results reflect increased unit sales and a lower effective tax rate.

Selection Process

We choose DaimlerChrysler AG because we wanted to see how the car industry would perform within the market. The company's major competitor in automotive market in US is General Motor Corp. (NYSE: GM). By comparing the revenues rose by two companies, GM rose 10% to \$46.86 billion for the three months ended 3/31/00, while DaimlerChrysler rose 17% to \$43.704 billion in the same period. Although GM has higher revenues than DaimlerChrysler; however, we choose DaimlerChrysler from various analyzes. First, DaimlerChrysler is combined by Chrysler and Mercedes-Benz; which Chrysler is a well-known luxury car manufacturer in US and Mercedes-Benz is the most famous car brand worldwide. This gives a big confidence to attract the buyers. Secondly, DaimlerChrysler has the lower stock price and a higher year high than GM recently. Therefore, we feel that DaimlerChrysler has more potential than GM.

3.2.6 America Online (NYSE: AOL)

Business Summary

American online Inc., founded in 1985 and based in Dulles, Virginia, is the world's leader in interactive services, Web brands, Internet technologies and e-commerce

services. America Online, Inc. operates two worldwide Internet services, America Online, with more than 22 million members, and CompuServ, with more than 2.7 million members. AOL also operates several leading Internet brands including ICQ, AOL Instant Messenger and Digital City, Inc., the Netscape Netcenter and AOL.COM portals, the Netscape Navigator and Communicator browsers, AOL MovieFone, the nation's leading movie listing guide and ticketing service, and Spinner Networks and NullSoft, Inc., leaders in Internet music. Through its strategic alliance with Sun Microsystems, the Company develops and offers easy-to-deploy, end-to-end e-commerce and enterprise solutions for companies operating in the Net Economy.

To become a leader in the marketplace, AOL is a partner with some of the world's best-known companies and organizations to provide the most complete service. For example, American Airline, eToys, Amazon.com.

Financial Summary

For the 9 months-ended 3/00, revenues increased 45% to \$4.92 billion. Net income rose 51% to \$910 million. Revenues reflect growth in the number of subscribers and an increase in commerce fees. Earnings reflect decrease in hourly network costs.

Selection Process

We chose to invest AOL because we want to compare it with Microsoft Corporation (NASDAQ: MSFT) to study if they have any relation in the stock market. Although there is a lot of Internet service provider nationwide, we find that AOL has the user-friendly interface and provides the most information than other competitors, we think these would be a major selling point to attract the users. On the other hand, AOL

52-week high and low are \$95.813 and \$38.369 respectively. Recently their stock price is around \$53, we feel that it is a tendency of their stock to rise.

3.2.7 Compaq Computer Corporation (NYSE: CPQ)

Business Summary

Compaq Computer Corporation (Compaq) is a global computer company which designs, develops, manufactures and markets hardware, software, solutions and services, including industry-leading enterprise computing solutions, fault-tolerant business-critical solutions, networking and communication products, commercial desktop and portable products and consumer PCs for the nonstop Internet world.

Compaq products and services are sold in more than 200 countries directly to businesses, through a network of authorized Compaq marketing partners, and directly to businesses and consumers via Compaq's e-commerce Web site. Their worldwide presence includes Asia Pacific, Europe, Middle East, Africa, China, Japan, Latin American and North American. Compaq markets its products and services primarily to customers from the business, home, government and education sectors.

Financial Summary

For the three months ended 3/31/00, sales increased 1% to \$9.51 billion. Net income increased 16% to \$325 million. Revenues reflect string unit growth in the Consumer segment. Net income also reflects decreased operating expenses due to restructuring actions and cost reductions.

Selection Process

We chose Compaq because computer becoming a “standard” equipment for families nowadays. Also, a lot of new started companies are doing web application, e-commerce or internet related businesses. They need a lot of computer hardware and software support. We like Compaq because the prices of their products are reasonable. We felt that Compaq has a good marketing strategy because we can see their commercial and computers easily. Therefore Compaq is a good IT company to invest.

3.2.8 AT&T (NYSE: T)

Business Summary

AT&T is among the world’s premier voice and data communications companies, serving more than 80 million customers, including consumers, businesses, and government. With annual revenues of more than \$64 billion and 151,000 employees, AT&T provides services to customers worldwide. AT&T and its subsidiaries furnish regional, domestic, international, and local communication services. The Company also provides billing, directory and calling card services, and provides online and Internet accesses services. AT&T’s communication and information services business provides regular and custom long distance communications services, data transmission services, 500 services, 800 and 888 (too-free) services, 900 services, private line services, software defined network services and digital network technology based services.

AT&T runs the world’s largest, most sophisticated communications network and has one of the largest digital wireless networks in North America. Services provides by AT&T Wireless include cellular, voice and data, messaging and air-to-ground

communications. AT&T also offers one-way messaging systems such as paging services. The company is a leading supplier of data and Internet services for business and offers outsourcing, consulting and networking-integration to large businesses. It is also the nation's largest direct Internet access service for consumers.

Through its recent acquisitions, AT&T will bring its bundle of broadband video, voice and data services to customers throughout the United States. Internationally, the AT&T/BT Global Venture – recently named Concert – will serve the communications needs of multinational companies and international carriers worldwide.

Financial Summary

For the three months-ended 3/00, revenues rose 12% to \$15.84 billion. Net income totals \$2.68 billion, up from \$1.02 billion. Results reflect acquisitions, lower connection expenses, and \$942 million in earnings from LMG, Inc vs. a loss in 1999.

Selection Process

We chose AT&T because they provide the most complete telecommunication service in US. Their business fulfills difference necessities from difference users from different stratum. Also, AT&T is expanding its business by developing their cable system, since more and more business and home users seeking an alternative to the slow pace of modems, DSL (direct service line) and broadband will become a main steam in the future. Moreover, AT&T's stock price fell from April until the end of May and AT&T recent stock price is very close to its 52-week low (\$33.625). We felt that there is no discourage news that would stimulate AT&T's stock price to break its 52-week low. We believe the reasons above will allow their stock to rise.

Chapter 4: Analysis of Results

4.1: Introduction

We analyzed our results for our stock portfolio from several aspects, from past historical data of our stocks, the moving averages and money we gain/loss, also the US and international indices within the four-week simulation period.

Firstly, we wanted to compare our stocks' performances with their performances in the past. Therefore, we looked at our stock's values one year previous to our simulation to see how they performed in the pass year.

The moving average is a good way to analyze the performance of our stocks at a glance. Moving averages are the arithmetic means of the time series over a specific number of proceeding periods. Since the time over which we invested our stocks was so short, we used a moving average with a period of 5 days to analyze our total portfolio value.

Moreover, we looked into what was going on with those specific companies we invested in to see what could affected their stocks' performances. We wanted to see if new products, rumors, lawsuit, changes within the company and other such things affected stock value. Since this type of analysis was not possible for every company we invested in, we will note where we found this type of behavior occurring.

4.2: Analysis of Individual Stocks

Before we calculate the results of our investment, firstly we looked at the historical stock values' in the pass year. The following tables listed the stock price of those companies in our portfolio on June 1, 1999 and June 29, 2000.

Table 4.1 Stock Price of the Companies in Our Portfolio on June 1, 1999

<i>Company (ticket symbol)</i>	<i>Open</i>	<i>High</i>	<i>Low</i>	<i>Close</i>	<i>Volume</i>
MSFT	87.75	90.25	86.75	90.1875	28,805,100
CSCO	109.0625	109.375	106.375	107.0625	9,485,000
ORCL	24.9375	26	24.875	25.50	14,800,400
INTC	53.8125	53.875	50.125	50.6875	28,529,300
DCX	86.75	86.75	85.375	86.1875	503,900
AOL	119.25	119.25	112	113.125	17,456,700
CPQ	23.875	24.125	23	23.0625	9,018,200
T	56	56	54.6875	55.0625	9,856,600

Table 4.2 Stock Price of the Companies in Our Portfolio on June 29, 2000

<i>Company (ticket symbol)</i>	<i>Open</i>	<i>High</i>	<i>Low</i>	<i>Close</i>	<i>Volume</i>
MSFT	78.25	78.9375	77.0625	77.1875	19,224,500
CSCO	62.6875	63.5156	60.50	61.1875	36,168,100
ORCL	82.0625	83.125	79.5625	80.875	17,875,500
INTC	131.0625	134.375	130.50	131.75	23,568,100
DCX	52.875	52.125	52.375	52.75	386,200
AOL	50.875	52.6875	50.625	51.75	11,932,600
CPQ	28.125	28.3125	23.4375	25.6875	41,822,500
T	32.25	32.8125	31.8125	32.25	18,008,000

From looking at the above tables, six out for the eight stocks we chosen fell from mid 1999 to mid 2000. The most depreciation was AOL, it price was went down by 54%. The only two stocks rises up are Oracle Corporation and Intel Corporation. The best performance is Oracle, which its value was up by almost 65% in the pass year.

4.2.1 Microsoft Corporation

(See figure Microsoft Monthly Report)

Table 4.3 Investment Summary of Microsoft Corporation

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
2000	66.8750	77.1875	133,750	154,375

Over the course of our four-week simulation, our holdings in Microsoft Corporation gained 15 percent. Our initial investment was 2000 shares at about 66.875 dollars per share. We sold our holdings at 77.1875 dollars per share. During this time, Microsoft Corporation peaked at 80.6875 dollars per share and bottomed out at 66.875 dollars per share.

Due to the lawsuit problem in the first quarter year, Microsoft's stock value was from \$110+ to \$66- recorded by 6/29/00. Otherwise, this stock is valuable to be held for a long term. But still the period of our transaction, the price was stable and climbing a bit. Since the Microsoft was announced the new version of operating system to their product CE to compete the Palm Pilot company. The market shares gained $1 \frac{7}{8}$ or 2.7%.

4.2.2 Cisco Systems, Inc.

(See figure Cisco Monthly Report)

Table 4.4 Investment Summary of Cisco Systems, Inc.

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
5000	63.2500	64.5625	316,250	322,812.5

Over the course of our four-week simulation, our holdings in Cisco Systems, Inc. gained 2 percent. Our initial investment was 5000 shares at about 63.25 dollars per share. We sold our holdings at 64.5625 dollars per share. During this time, Cisco Systems, Inc. peaked at 68.9375 dollars per share and bottomed out at 61.1875 dollars per share.

The stock value of Cisco was stable and potential increasing. On 23 Mar, 00 this stock was 2:1 split before the market start; the range of the price was between \$60 and \$70+, which was a good performance. For long-term investment investors, this stock is a good choice to consider, as there were many good reason coming out, such as IT companies increased the amount of investment into web technology. The leader of network – Cisco will have a lot of partnership with various types of business companies and thus increase their profit margin.

4.2.3 Oracle Corporation

(See figure Oracle Monthly Report)

Table 4.5 Investment Summary of Oracle Corporation

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
2000	80.9375	80.8750	161,875	161,750

Over the course of our four-week simulation, our holdings in Oracle Corporation lost .077 percent. Our initial investment was 2000 shares at about 80.9375 dollars per share. We sold our holdings at 80.875 dollars per share. During this time, Oracle Corporation peaked at 86.1875 dollars per share and bottomed out at 77.0625 dollars per share.

The overall performance of Oracle was not significant. At the end, we cannot gain any profit from it. But the price level was relatively high and stable. As it mentioned that the highest price was 86.1875, as we expected this stock can up to \$90 during our simulation time. We overlooked it and missed the chance of selling it. So we lost money at last.

4.2.4 Intel Corporation

(See Figure Intel Monthly Report)

Table 4.6 Investment Summary of Intel Corporation

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
5000	127.8125	133.0000	639,062.5	665,000

Over the course of our four-week simulation, our holdings in Intel Corporation gained 4 percent. Our initial investment was 5000 shares at about 128 dollars per share. We sold our holdings at 133 dollars per share. During this time, Intel Corporation peaked at 138.3125 dollars per share and bottomed out at 125.0625 dollars per share.

Our holdings in Intel were fairly in the high value if compared with other IT company. The price range was between \$127 to \$138, which is a strong valued stock. There were many beneficial factors supporting this stock kept in high value. There were [“U.S. Stocks in London: Technology Shares Give Back Some Gains”](#) or [“Semiconductor industry is healthy”](#) etc created a good news to investors that one of the largest semiconductor manufacture will have a good benefits on their market sharing. It is a wise investment for those seeking a low risk investment with a decent long-term gain.

4.2.5 DaimlerChrysler AG

(See figure DaimlerChrysler AG monthly Report)

Table 4.7 Investment Summary of DaimlerChrysler AG

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
2000	56.4375	53.4375	112,875	106,875

Over the course of our four-week simulation, our holdings in DaimlerChrysler AG lost 5.316 percent. Our initial investment was 2000 shares at about 56.4375 dollars per share. We sold our holdings at 53.4375 dollars per share. During this time, DaimlerChrysler AG peaked at 57.375 dollars per share and bottomed out at 52.75 dollars per share.

The performance of DaimlerChrysler is not very good in this month. However, we thought the recent price for one of the biggest car manufacturer is acceptable. The reason we cannot make money in this investment because we trade this stock in a short period of time. Since DaimlerChrysler is a heavy industry company, there would not be a lot of breaking news to simulate the market like those IT companies we chosen. In conclusion, we decided that a long-term investment in this company is highly preferable.

4.2.6 America Online

(See figure America Online Monthly Report)

Table 4.8 Investment Summary of American Online

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
5000	55.000	53.500	275,000	267,500

Over the course of our four-week simulation, our holdings in America Online lost 2.73 percent. Our initial investment was 5000 shares at 55 dollars per share. We sold our holdings at 53.5 dollars per share. During this time, America Online peaked at 57.875 dollars per share and bottomed out at 51 dollars per share.

This stock performance is relatively low over the first and second quarters. There was not any good news to stimulate the price raising.

4.2.7 Compaq Computer Corporation

(See figure Compaq Monthly Report)

Table 4.9 Investment Summary of Compaq Computer Corporation

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
5000	26.8750	27.8750	53,750	55,750

Over the course of our four-week simulation, our holdings Compaq Computer Corporation gain almost 3.6 percent. Our initial investment was 5000 shares at about 26.875 dollars per share. We sold our holdings at 27.875 dollars per share. During this time, Compaq Computer Corporation peaked at 28.0625 dollars per share and bottomed out at 25.6875 dollars per share.

The overall performance is stable and does not have any big changes. This price value is kind of low as we expected. Because at the beginning of our investment, we expect there is a space for Compaq to rise as the price we purchase was closed to its 52 week low. Moreover, Compaq is one of the biggest of computer hardware manufacturers and have a pretty good commercial appearance in the beginning of the year. In conclusion, one of the probability is there is no good news to stimulate the investors to have a great expectation on profit. The second probability we though is the company does not have any new products to the market during this month.

4.2.8 AT&T

(See figure AT&T Monthly Report)

Table 4.10 Investment Summary of AT&T

Number of Shares	Start Value Per Share (\$)	End Value Per Share (\$)	Total Start Value (\$)	Total End Value (\$)
2000	36.7500	33.5000	73,500	67,000

Over the course of our four-week simulation, our holdings in AT&T lost 8.84 percent. Our initial investment was 2000 shares at about 36.75 dollars per share. We sold our holdings at 33.5 dollars per share. During this time, AT&T peaked at 36.75 dollars per share and bottomed out at 32.25 dollars per share.

By examining our graph it is easy to see that the value of the stock fluctuated greatly. At the end, we lost 8.84% in this unstable situation. It is hard to forecast its trend and where it will stay. Moreover, the stock price is fairly low for one of the biggest Telecom Company. It would give us the notice that this stock is not easily to handle in any period of time.

In conclusion, the stock market in this month is very quiet, it does not have any big buy or big sell. We think that is because of the FOMC Announcement at the end of June which every company will summarize their revenue for that quarter. From this experience we suggest people not to step into the stock market by the end of every quarter.

Chapter 5: Conclusion

5.1: Diversification

Referring to Chapter 1, one of our initial goals in this project is to make money in our stock portfolio. To summarize our investment, we spent a total amount of \$1,766,062.5 and we have a total end value of \$1801065.5, which is a 1.94% revenue. Although we cannot reach our goal to make a 5% gain, but we know that it is very difficult to earn money for the first time buyers. Besides of good luck, we believe we choose a right strategy that we select a bigger percentage in those IT companies in our stock portfolio. In addition, from the basic rule of economic: “Don’t put all eggs in one basket”, we have a stronger feel to separate our investment to different sectors of the market to have a more comprehensive and less risky approach. Even though we lose money in DaimlerChrysler and AT&T, but we already analysis in the above chapter that these kind of non-IT stocks should be trade for long-term instead of short-term period.

Instead of using the portfolio diversification method, we instead chose a sector of the market that was on the rise and chose stocks that were diverse within that sector. Our new goal was to employ two different methods of portfolio management. We wanted to both diversify our portfolio and follow market trends. For that reason, we chose the computer industry as that sector. We diversified within that sector, choosing such categories as software, hardware, information management, entertainment, Internet, and others.

5.2: What We Have Learned

By doing this project, we have learnt many things about the stock market and strategies for investment. We also knew very in depth about the history of the market, how it works and how to trade stock in alternative methods, and different ways to approach investing in the stock market.

An overall understanding of the market is necessary for intelligent and informed investment. The more one knows about the market, the more likely he/she will make good investment choices. However random the stock market may appear to be to the uninformed viewer, it is unlike gambling in that you can actually improve your chances for success the more information and experience you have.

Different strategies are employed based upon the current standing of the market and the goal of the investor. Whether the goal of the investor is short-term or long-term is very important in determining what strategies should be used. From our experience and research, we found that the two most successful investment strategies were following market trends and portfolio diversification. For the short-term investor, following a market trend is riskier but is more likely to yield a greater gain. Long-term investment is usually less risky and therefore it's important to have a balanced portfolio, with stocks from several different sectors of the market. In either case it is important to choose wisely and to monitor stock performance on a daily or at least weekly basis. In order to take advantage of trends in the market it is important to track a list of stocks that you are considering investing in. This allows the investor to switch investments carefully and with a great deal of forethought.

5.2.1: Few comments on investing in the Stock Market

One of the goals of this project was to help novice users become more knowledgeable about the stock market and to give them some insight into good investment techniques. From our experience, we found that the following can be quite useful.

- Make sure you have an overall understanding of how the market works.
- Set goals for your portfolio, not just monetary goals but goals for the strategy that you are employing.
- Remember 3'Rs. Research, research, research! This includes reviewing past historical data, reading the company's prospectus and comparing it with its competitors in the same business.
- Keep on top of your investments. Watch them daily. Look for trends, cycles, anything that could clue you into the stock's future performance. Also keep an eye on press releases and articles on your stocks.
- Keep an active list of stocks you haven't invested in yet but are interested in and keep track of their performance. This allows you to have alternatives if one of your stock's performing poorly.
- Buy low, sell high.
- Choose your broker carefully. Beware of deals that seem too good, especially the low transaction fee for certain online brokers.
- Take advantage of all of the information available on the World Wide Web.

- Read the world major index, sometimes index world wide will affect the US index and the stock price
- Beware of international news, like war, fuel shortage, agreement between governments would have effects to the stock market
- Notice the day of any economical events, for example, the FOMC Announcement

On the other hand, there are certain points to be cautious:

- Do not invest on whims or hunches. Also be ware of rumors.
- Do not put all your eggs in one basket. That is, do not invest all of your money in one company that you think is going to do well.
- Do not invest more than you can afford, i.e. Never Short stock. The market can seem very tempting and an easy way to get rich quick.
- Do not be intimidated. If the market scares you at first, choose low-risk investments such as mutual funds or bonds until you feel more comfortable.

5.3: Final Thoughts

We found this experience to be a worthwhile, educational endeavor. Since we were novice investors, we managed to glean a wealth of information from our short simulation and research. The skills and knowledge we gained during this time will be useful to us for many years to come.

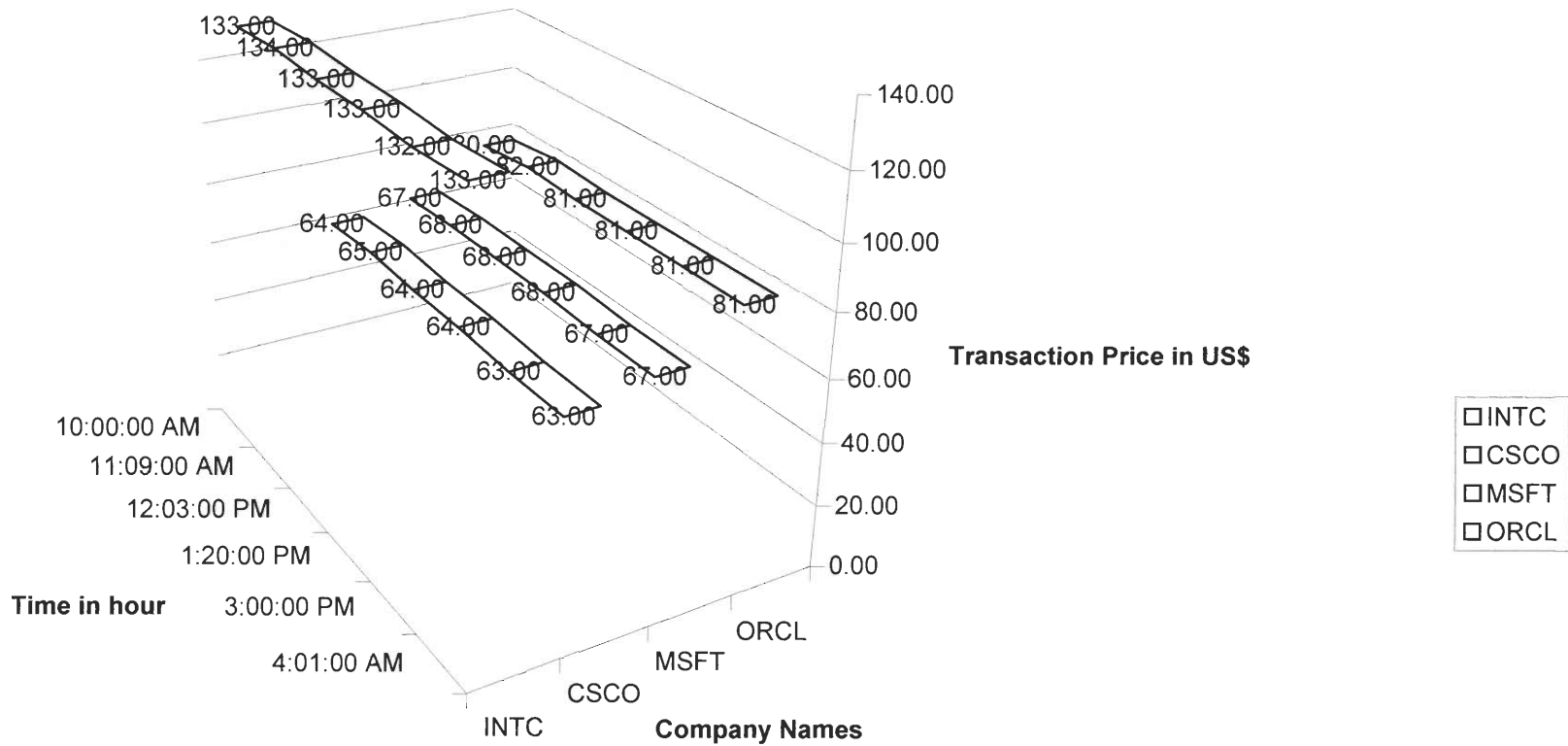
We hope that the readers of this report find it to be a useful resource for investing in the stock market. We especially directed most of our writing toward new investors such as ourselves so that they could learn from what we did right and wrong.

We hope that the readers of this report find it to be a useful resource for investing in the stock market. We especially directed most of our writing toward new investors such as ourselves so that they could learn from what we did right and wrong.

One of the most useful things that we did for this project was the chapter we wrote on World Wide Web sites that focus on investment in the stock market. We ranked and rated many web sites. These sites make excellent starting points for anyone new to the market since they provide a great deal of information in an easily obtainable and understandable way. Combined with our lists of last sections, the novice investors in well on their way to being successful in the market. We hope that the reader will gain some insight into the market from our report, and we wish the best of luck in future endeavors.

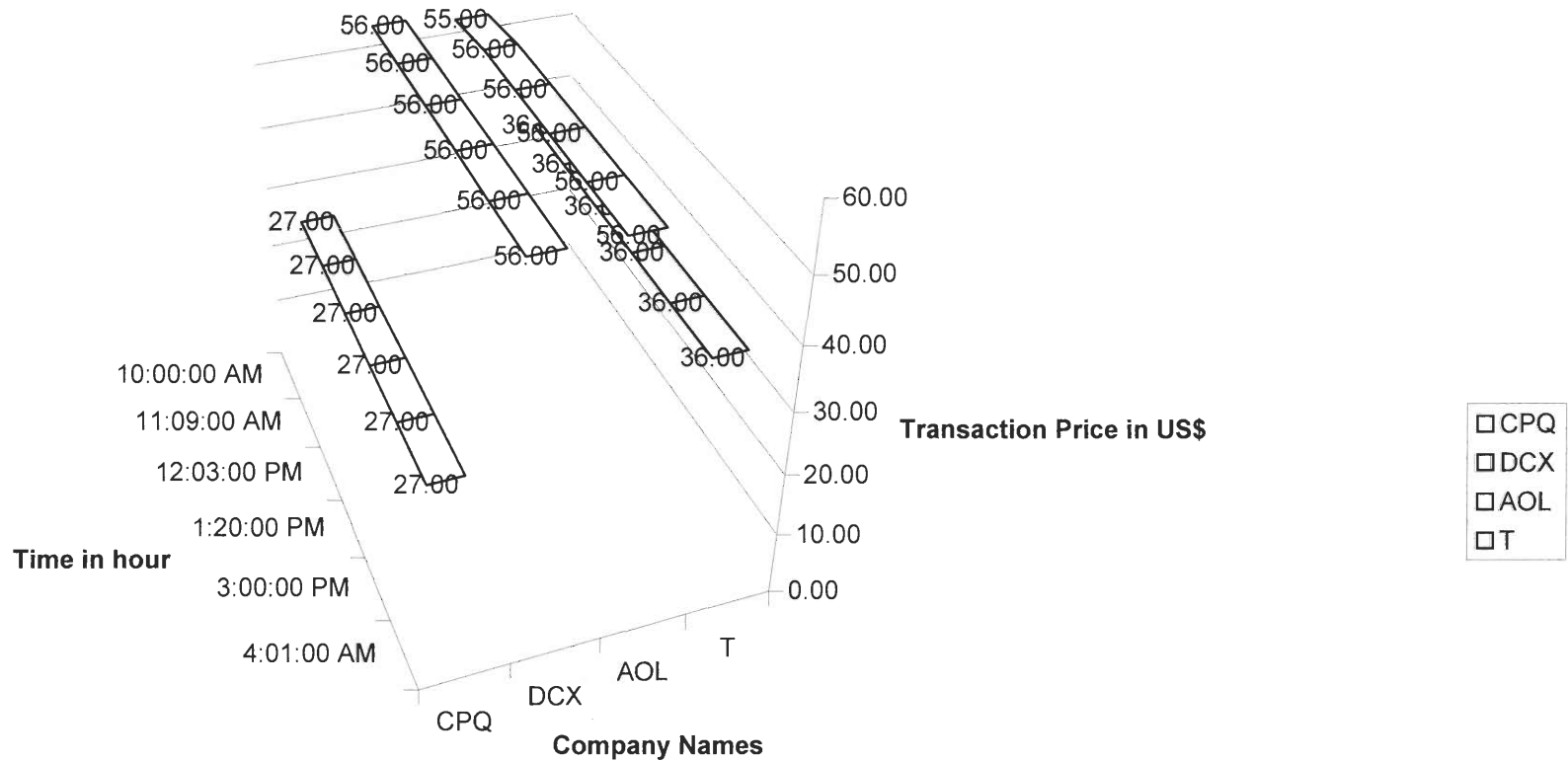
Charts, Graphs, and Tables

Stock Trend on 6/5/00



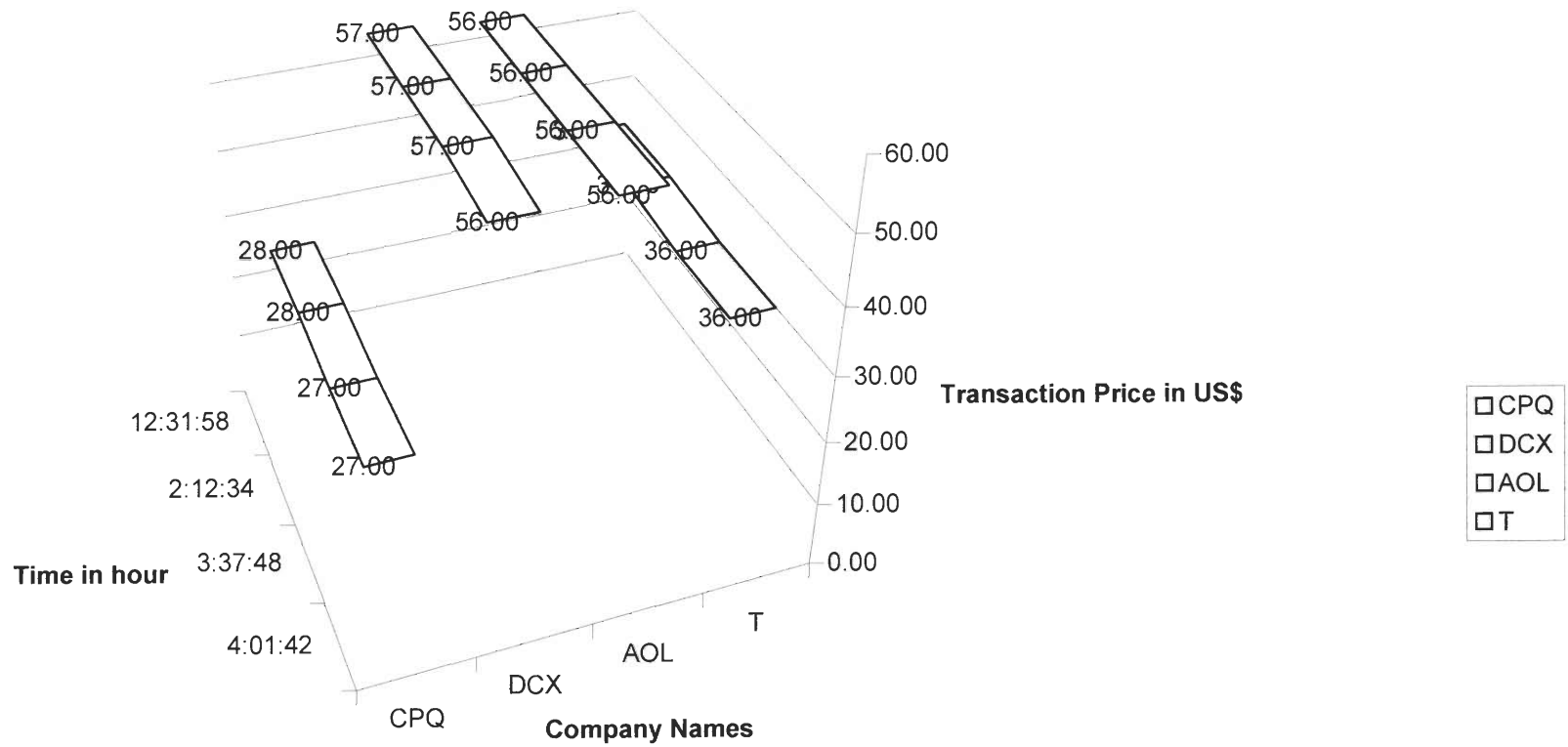
	10:00:00 AM	11:09:00 AM	12:03:00 PM	1:20:00 PM	3:00:00 PM	4:01:00 AM
□ INTC	133.00	134.00	133.00	133.00	132.00	133.00
□ CSCO	64.00	65.00	64.00	64.00	63.00	63.00
□ MSFT	67.00	68.00	68.00	68.00	67.00	67.00
□ ORCL	80.00	82.00	81.00	81.00	81.00	81.00

Stock Trend on 6/5/00



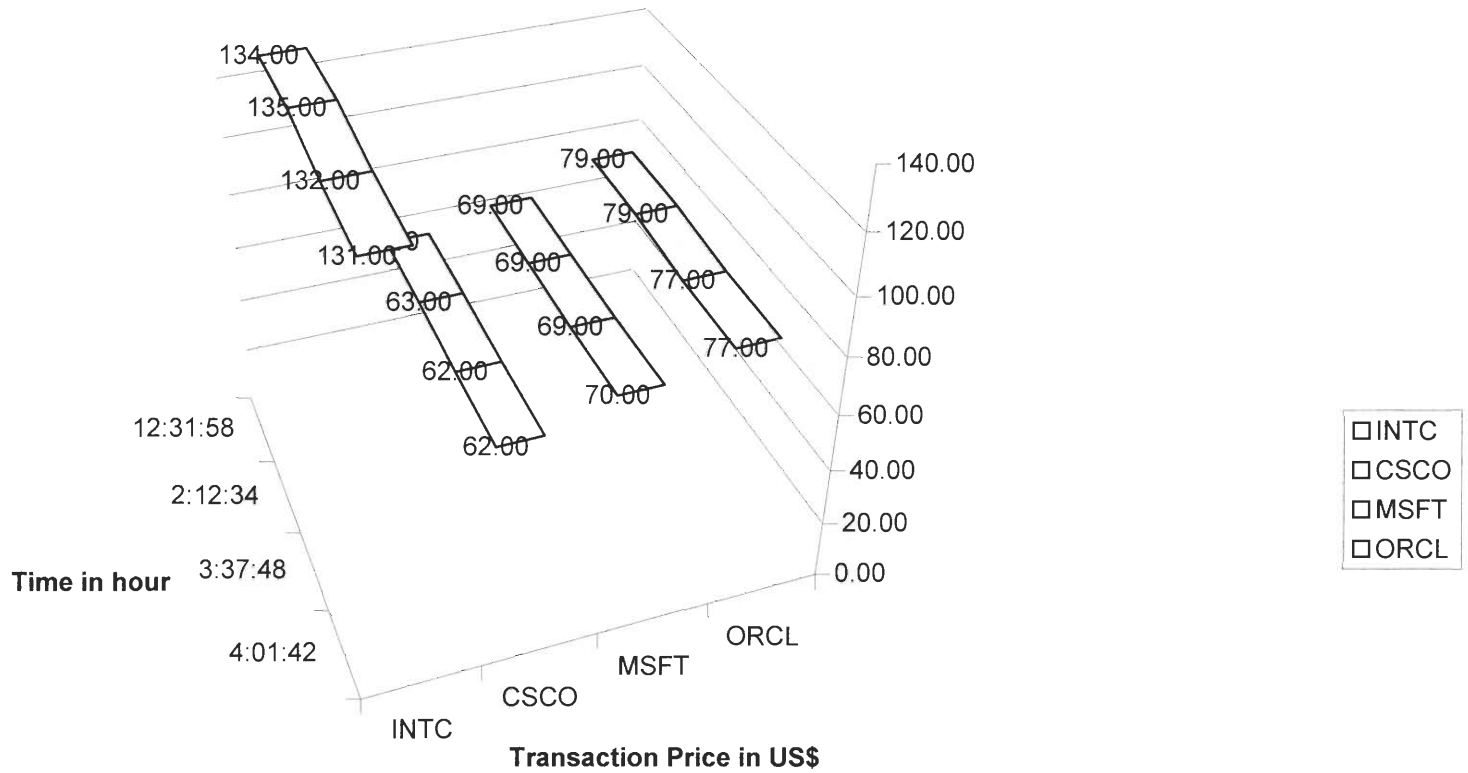
	10:00:00 AM	11:09:00 AM	12:03:00 PM	1:20:00 PM	3:00:00 PM	4:01:00 AM
□ CPQ	27.00	27.00	27.00	27.00	27.00	27.00
□ DCX	56.00	56.00	56.00	56.00	56.00	56.00
□ AOL	55.00	56.00	56.00	56.00	56.00	56.00
□ T	36.00	36.00	36.00	36.00	36.00	36.00

Stock Trend on 6/6/00



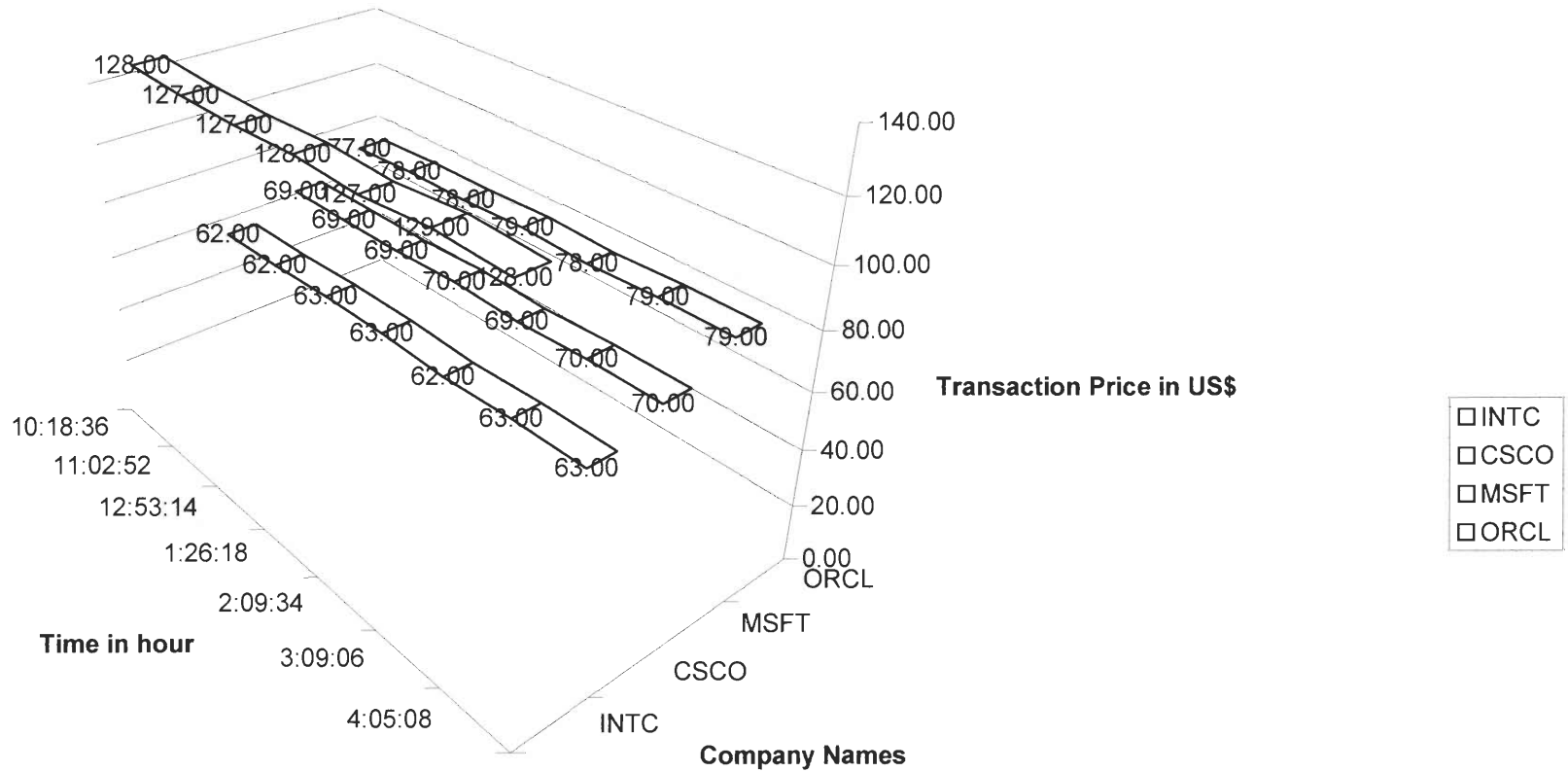
	12:31:58	2:12:34	3:37:48	4:01:42
□ CPQ	28.00	28.00	27.00	27.00
□ DCX	57.00	57.00	57.00	56.00
□ AOL	56.00	56.00	56.00	56.00
□ T	37.00	37.00	36.00	36.00

Stock Trend on 6/6/00



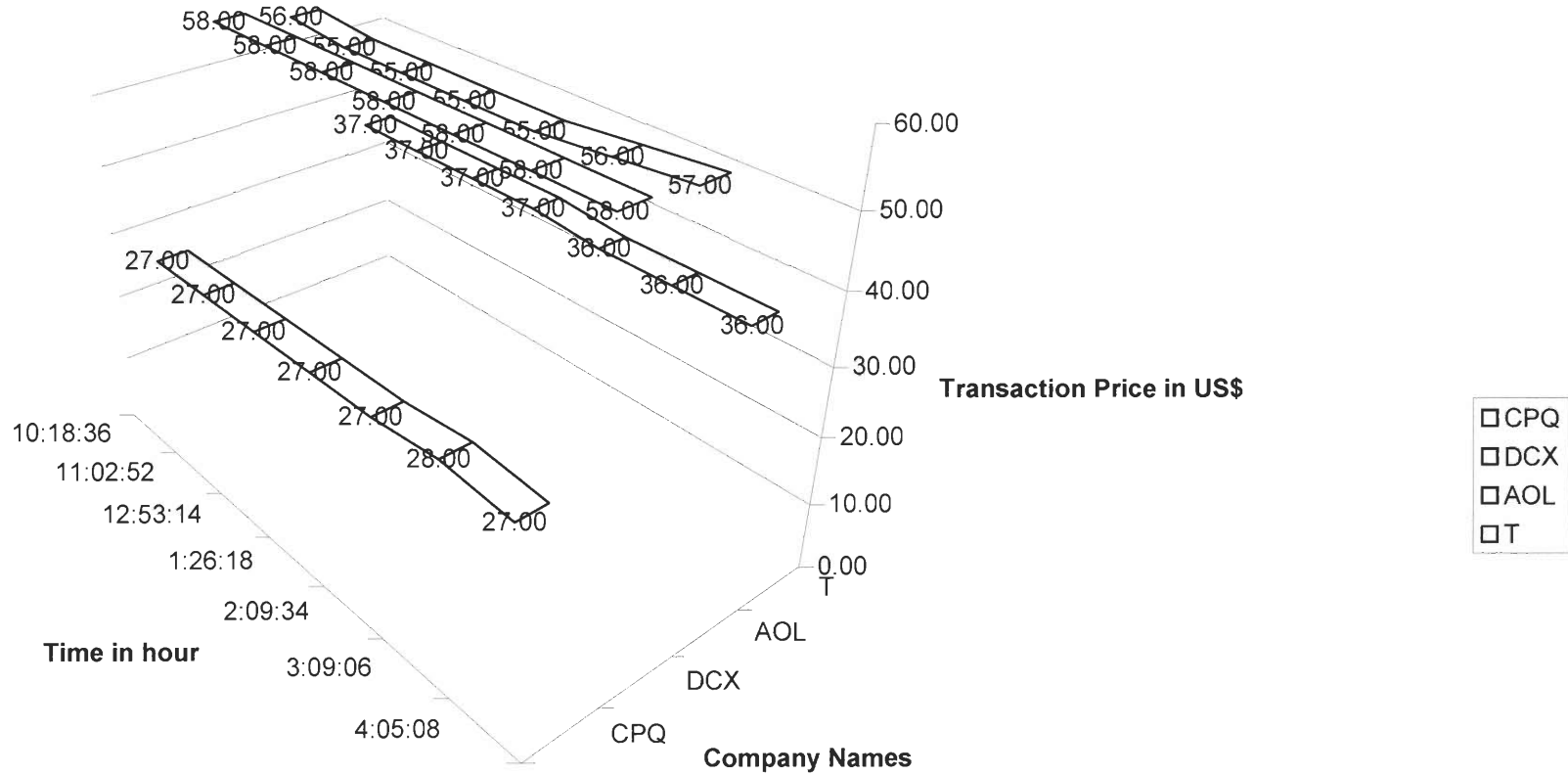
	12:31:58	2:12:34	3:37:48	4:01:42
□INTC	134.00	135.00	132.00	131.00
□CSCO	63.00	63.00	62.00	62.00
□MSFT	69.00	69.00	69.00	70.00
□ORCL	79.00	79.00	77.00	77.00

Stock Trend on 6/7/00



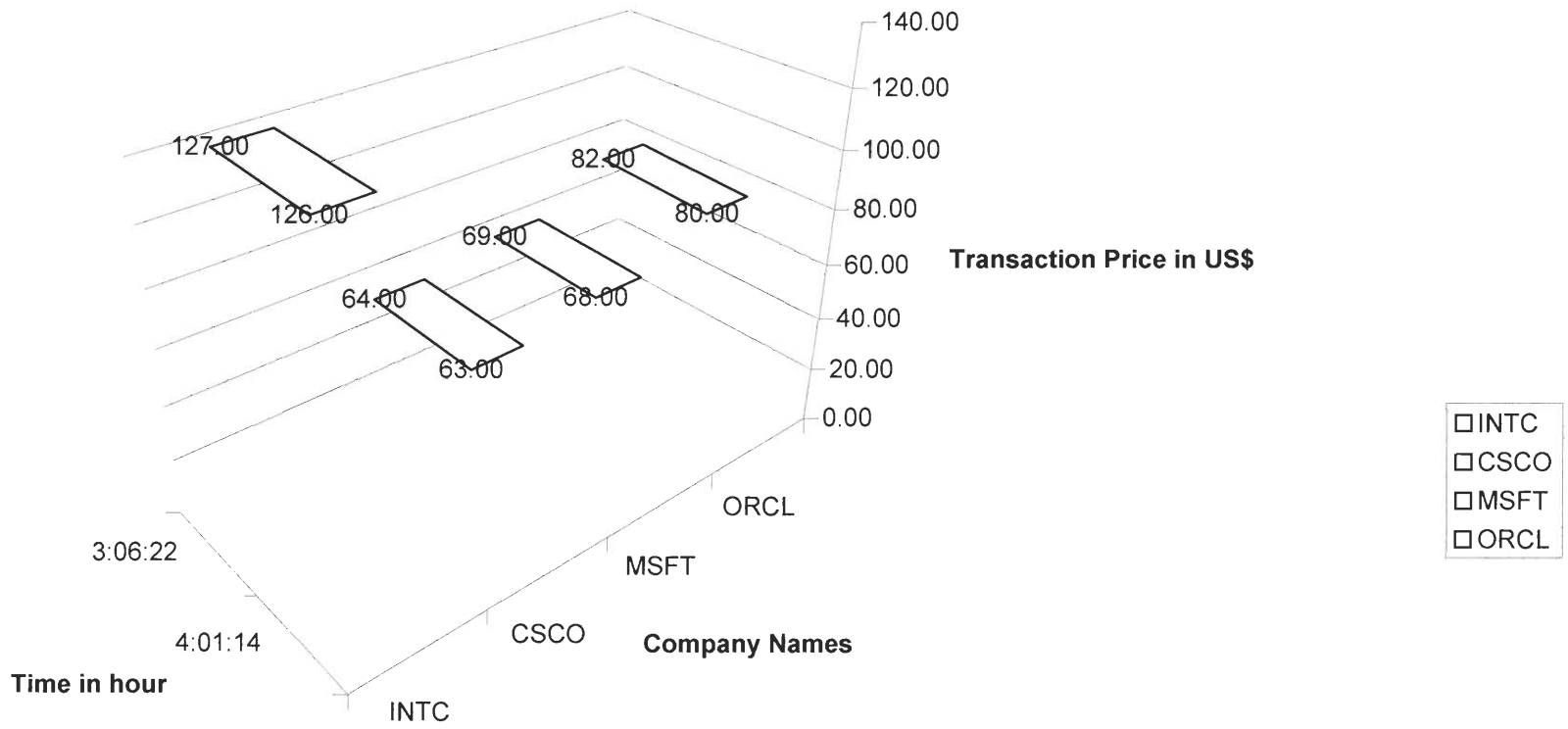
	10:18:36	11:02:52	12:53:14	1:26:18	2:09:34	3:09:06	4:05:08
□ INTC	128.00	127.00	127.00	128.00	127.00	129.00	128.00
□ CSCO	62.00	62.00	63.00	63.00	62.00	63.00	63.00
□ MSFT	69.00	69.00	69.00	70.00	69.00	70.00	70.00
□ ORCL	77.00	78.00	78.00	79.00	78.00	79.00	79.00

Stock Trend on 6/7/00



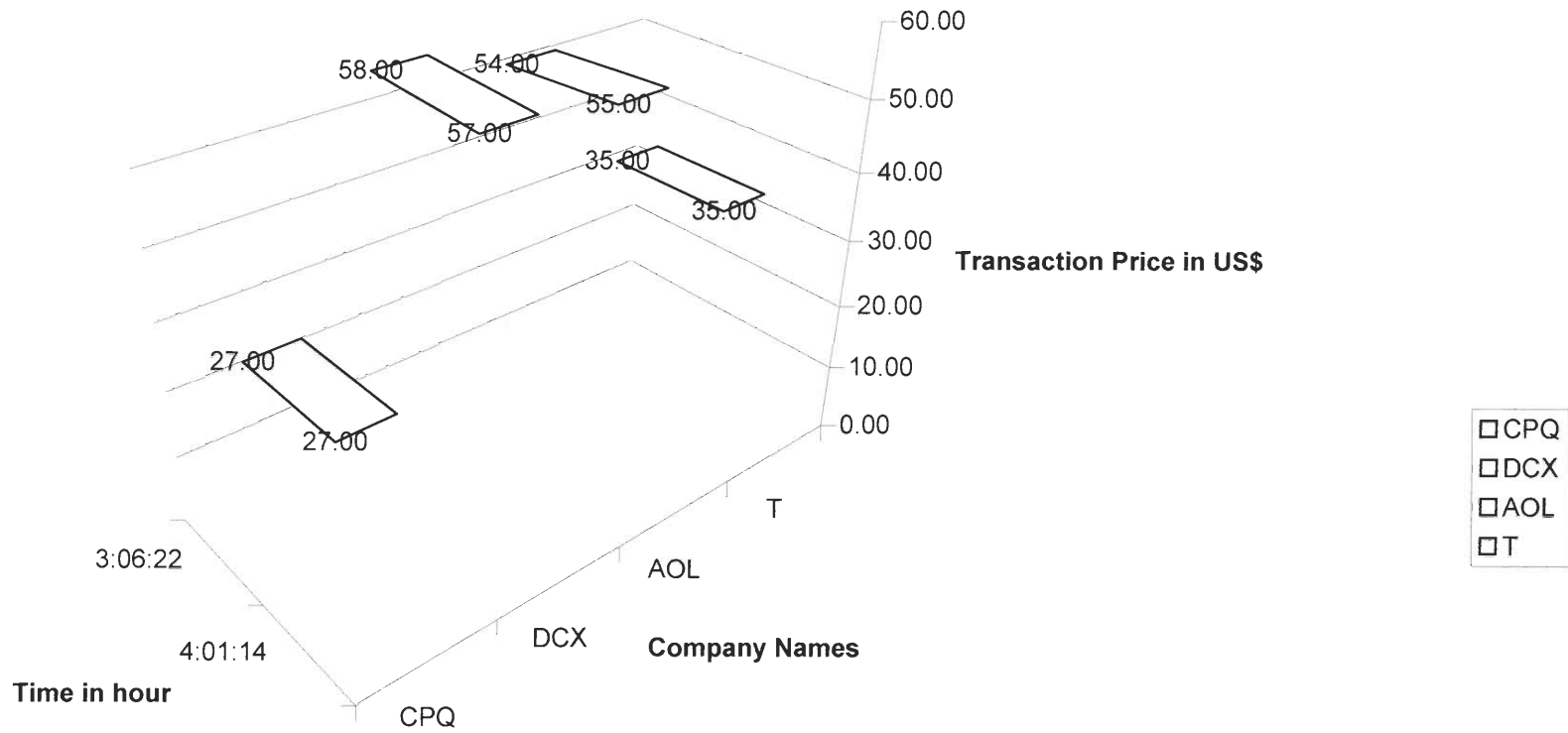
	10:18:36	11:02:52	12:53:14	1:26:18	2:09:34	3:09:06	4:05:08
□ CPQ	27.00	27.00	27.00	27.00	27.00	28.00	27.00
□ DCX	58.00	58.00	58.00	58.00	58.00	58.00	58.00
□ AOL	56.00	55.00	55.00	55.00	55.00	56.00	57.00
□ T	37.00	37.00	37.00	37.00	36.00	36.00	36.00

Stock Trend on 6/8/00



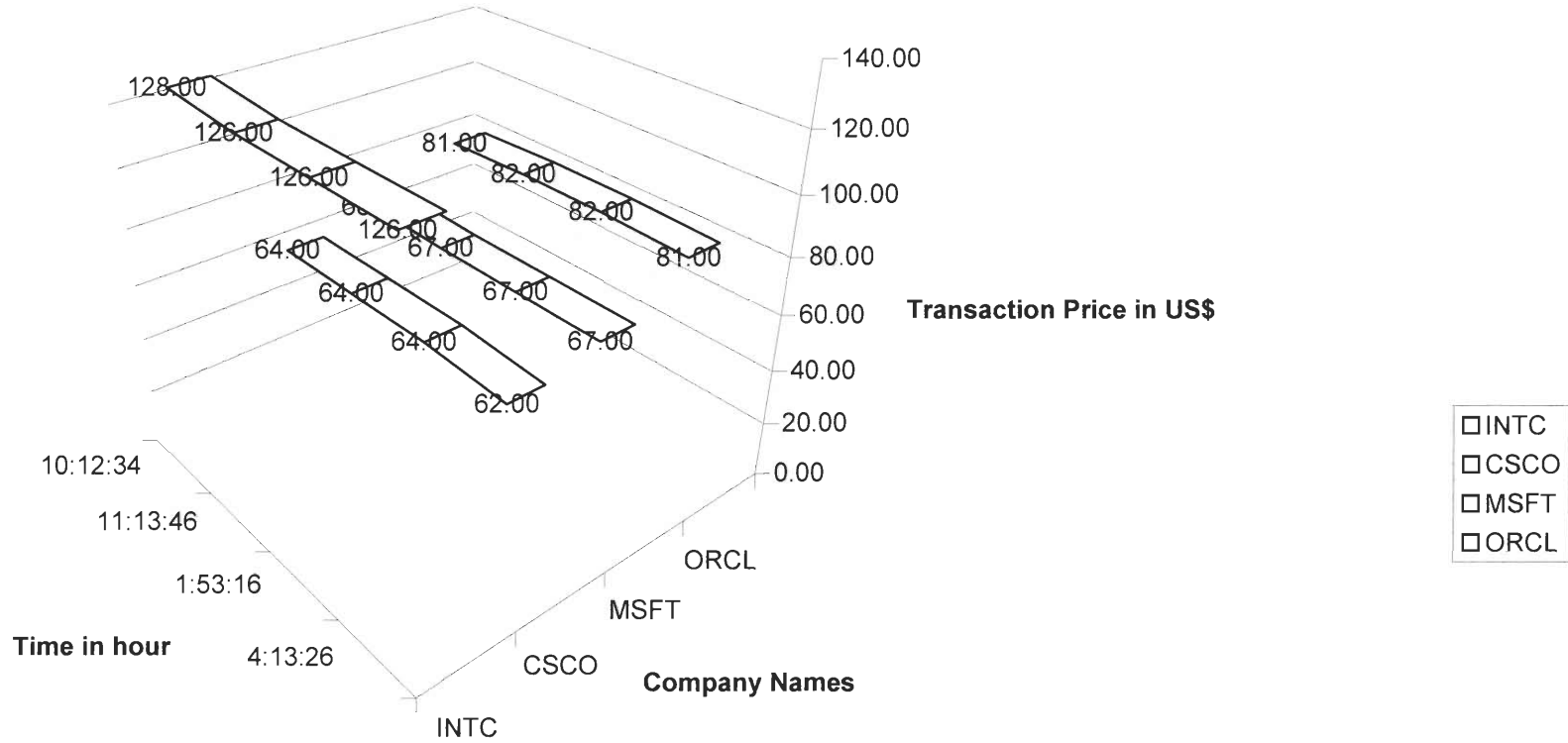
	3:06:22	4:01:14
□INTC	127.00	126.00
□CSCO	64.00	63.00
□MSFT	69.00	68.00
□ORCL	82.00	80.00

Stock Trend on 6/8/00



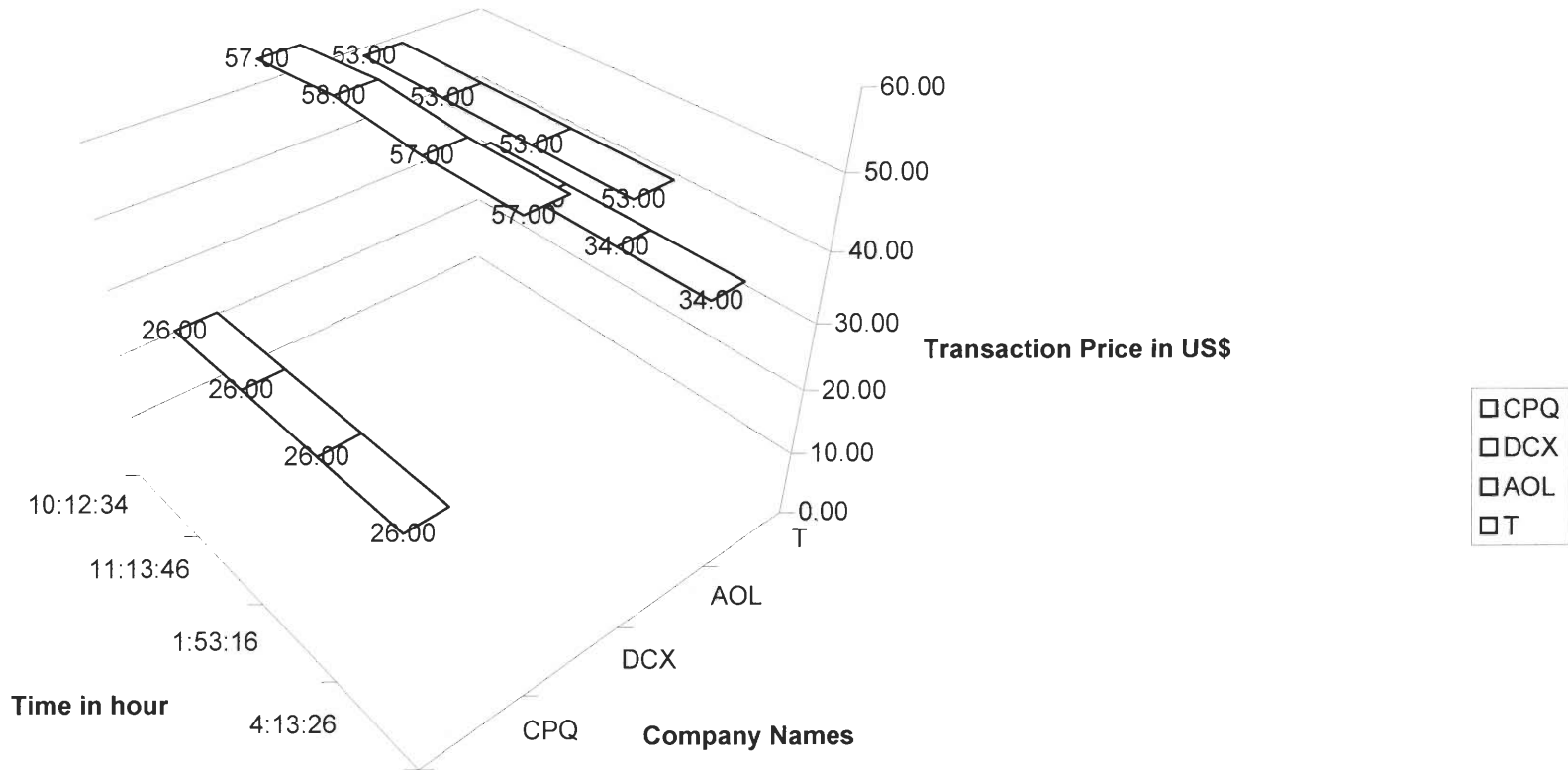
	3:06:22	4:01:14
□ CPQ	27.00	27.00
□ DCX	58.00	57.00
□ AOL	54.00	55.00
□ T	35.00	35.00

Stock Trend on 6/12/00



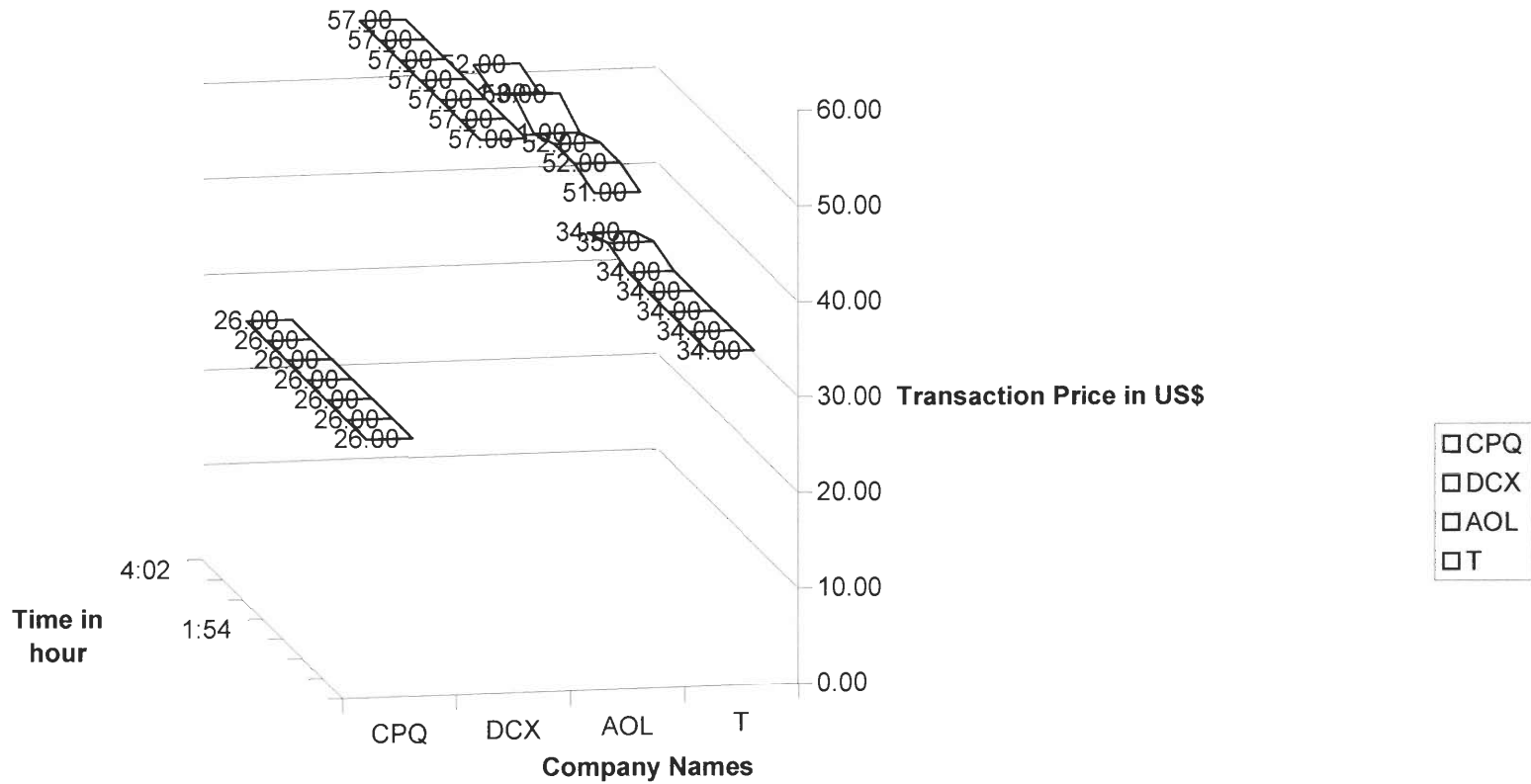
	10:12:34	11:13:46	1:53:16	4:13:26
□ INTC	128.00	126.00	126.00	126.00
□ CSCO	64.00	64.00	64.00	62.00
□ MSFT	68.00	67.00	67.00	67.00
□ ORCL	81.00	82.00	82.00	81.00

Stock Trend on 6/12/00



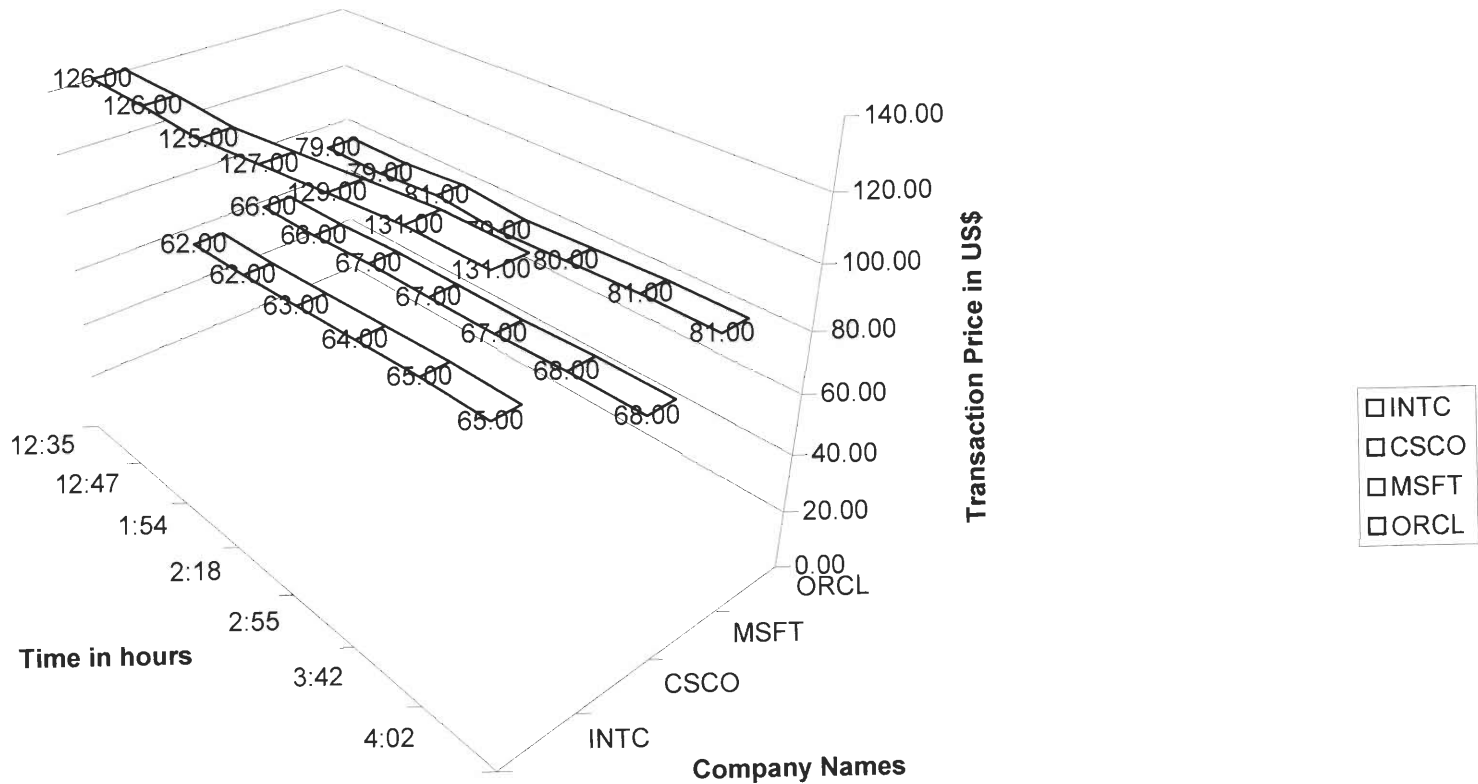
	10:12:34	11:13:46	1:53:16	4:13:26
□ CPQ	26.00	26.00	26.00	26.00
□ DCX	57.00	58.00	57.00	57.00
□ AOL	53.00	53.00	53.00	53.00
□ T	34.00	34.00	34.00	34.00

Stock Trend on 6/13/00



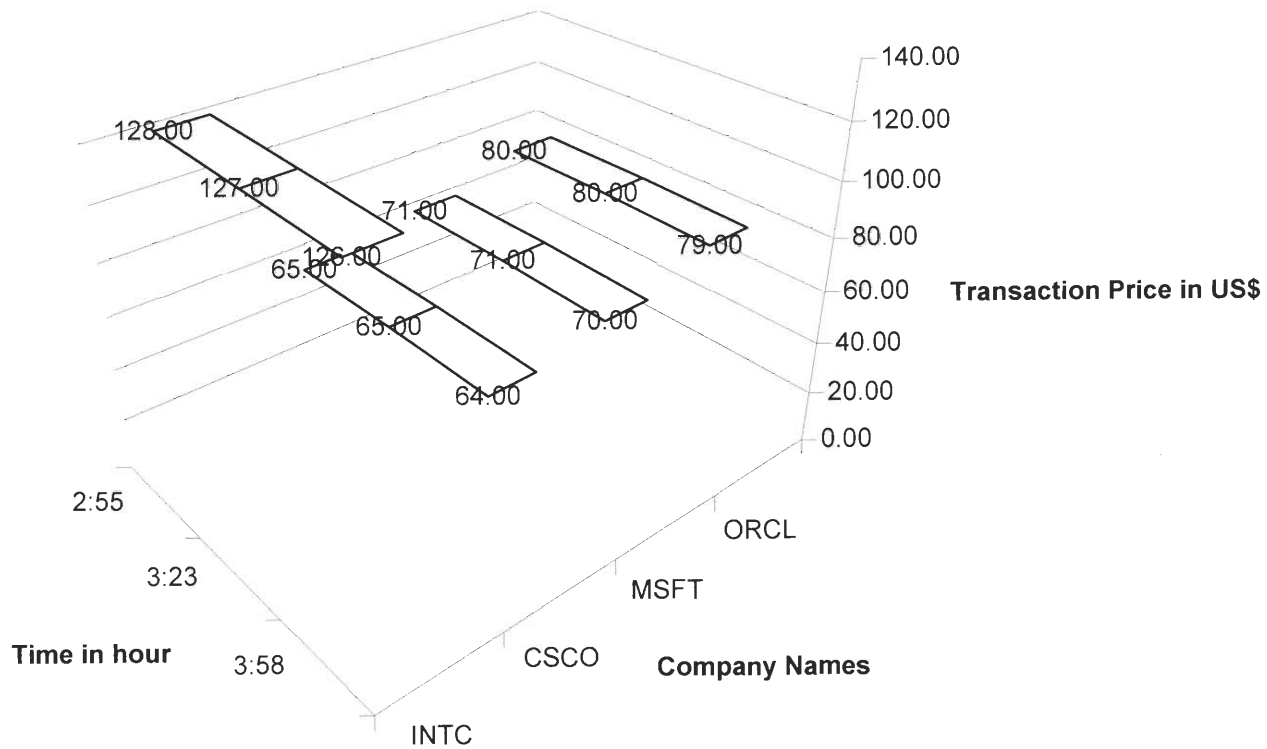
	4:02	2:55	2:18	1:54	12:47	12:35	
□ CPQ	26.00	26.00	26.00	26.00	26.00	26.00	26.00
□ DCX	57.00	57.00	57.00	57.00	57.00	57.00	57.00
□ AOL	52.00	51.00	53.00	51.00	52.00	52.00	51.00
□ T	34.00	35.00	34.00	34.00	34.00	34.00	34.00

Stock Trend on 6/13/00



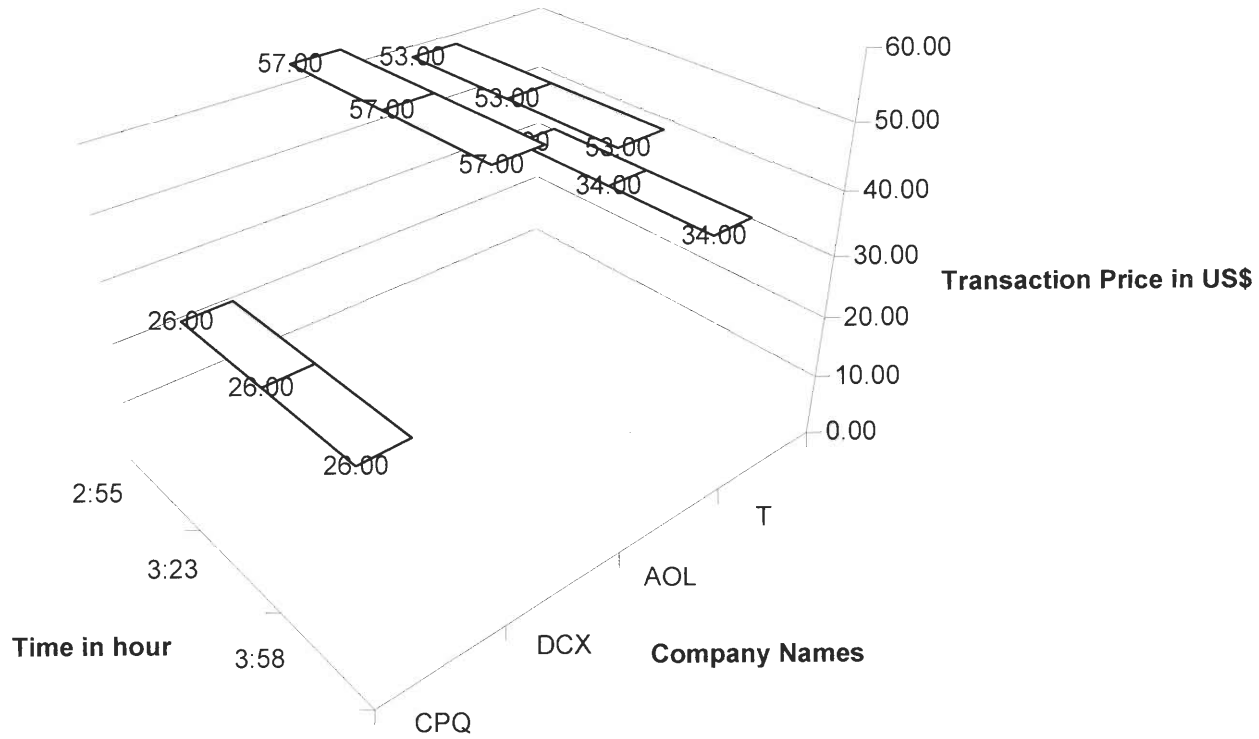
	12:35	12:47	1:54	2:18	2:55	3:42	4:02
□ INTC	126.00	126.00	125.00	127.00	129.00	131.00	131.00
□ CSCO	62.00	62.00	63.00	64.00	65.00	65.00	
□ MSFT	66.00	66.00	67.00	67.00	67.00	68.00	68.00
□ ORCL	79.00	79.00	81.00	79.00	80.00	81.00	81.00

Stock Trend on 6/14/00



	2:55	3:23	3:58
□ INTC	128.00	127.00	126.00
□ CSCO	65.00	65.00	64.00
□ MSFT	71.00	71.00	70.00
□ ORCL	80.00	80.00	79.00

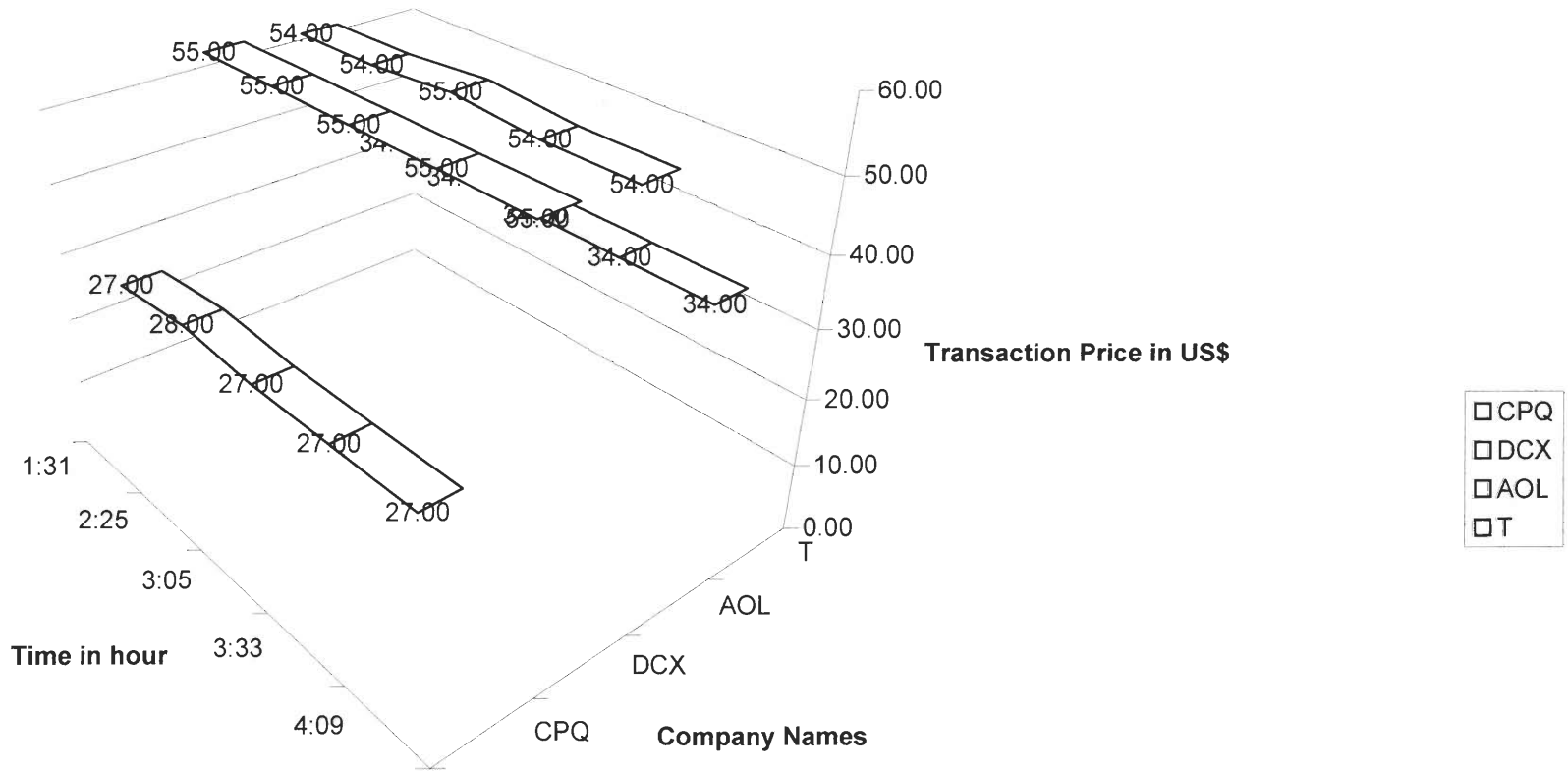
Stock Trend on 6/14/00



- CPQ
- DCX
- AOL
- T

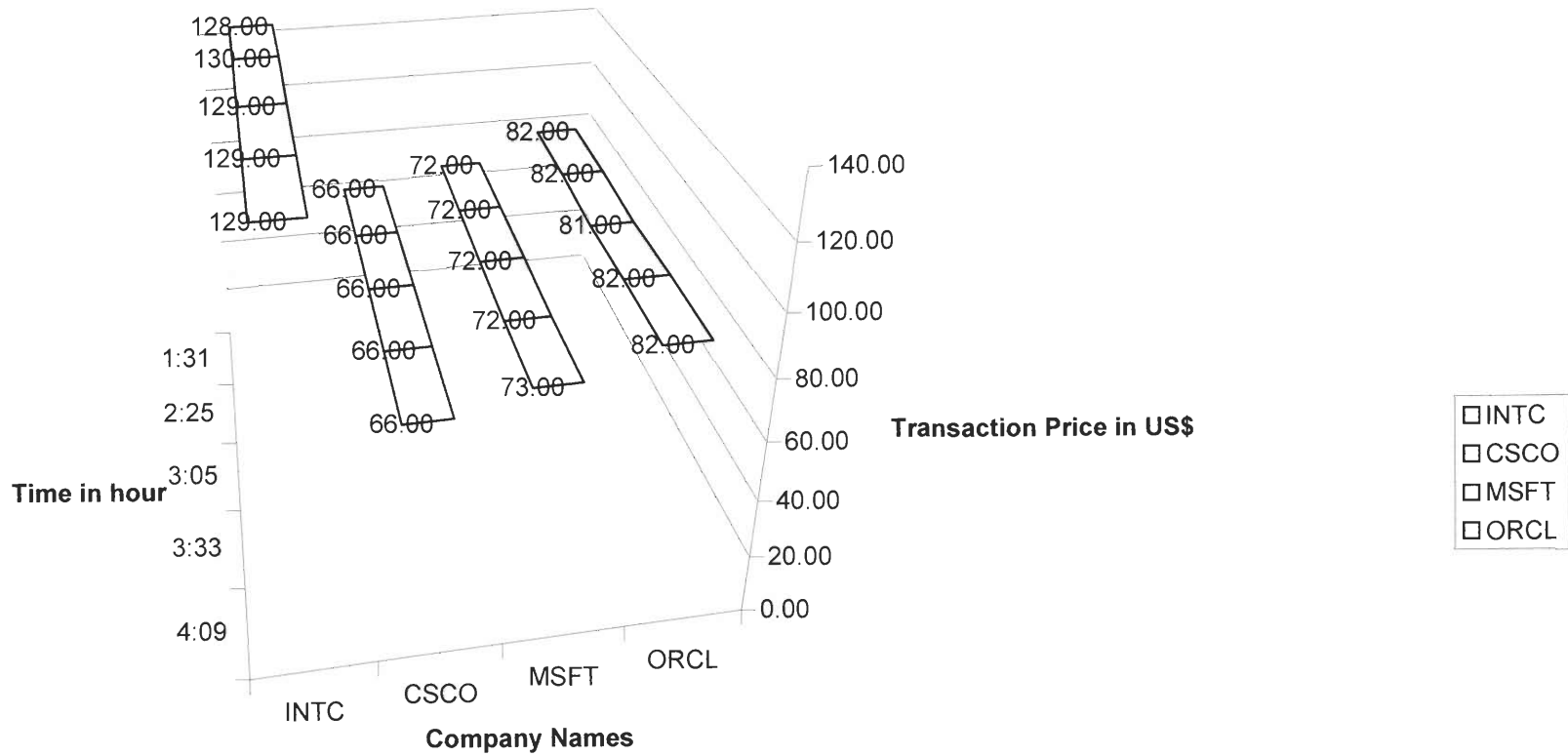
	2:55	3:23	3:58
□ CPQ	26.00	26.00	26.00
□ DCX	57.00	57.00	57.00
□ AOL	53.00	53.00	53.00
□ T	34.00	34.00	34.00

Stock Trend on 6/15/00



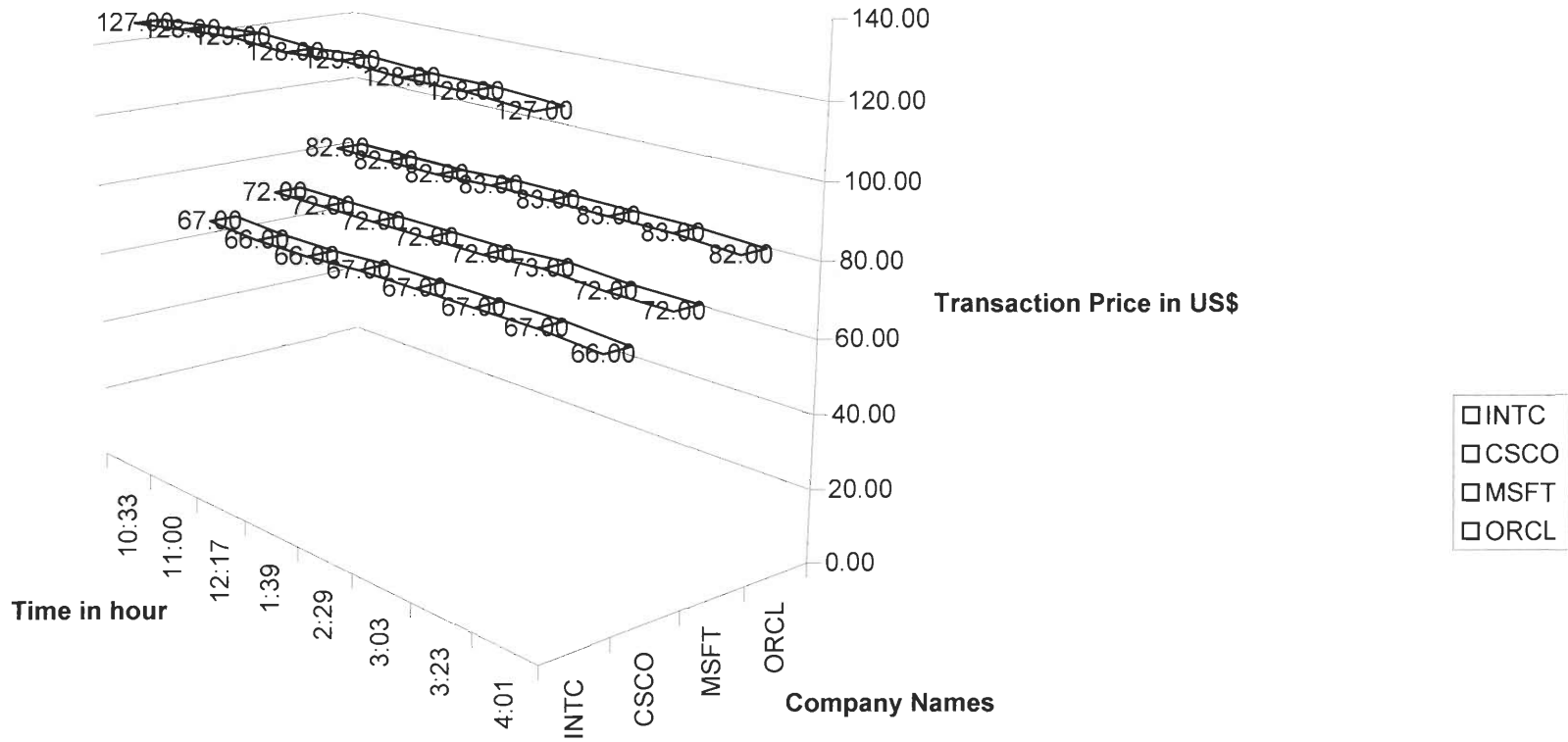
	1:31	2:25	3:05	3:33	4:09
□ CPQ	27.00	28.00	27.00	27.00	27.00
□ DCX	55.00	55.00	55.00	55.00	55.00
□ AOL	54.00	54.00	55.00	54.00	54.00
□ T	34.00	34.00	34.00	34.00	34.00

Stock Trend on 6/15/00



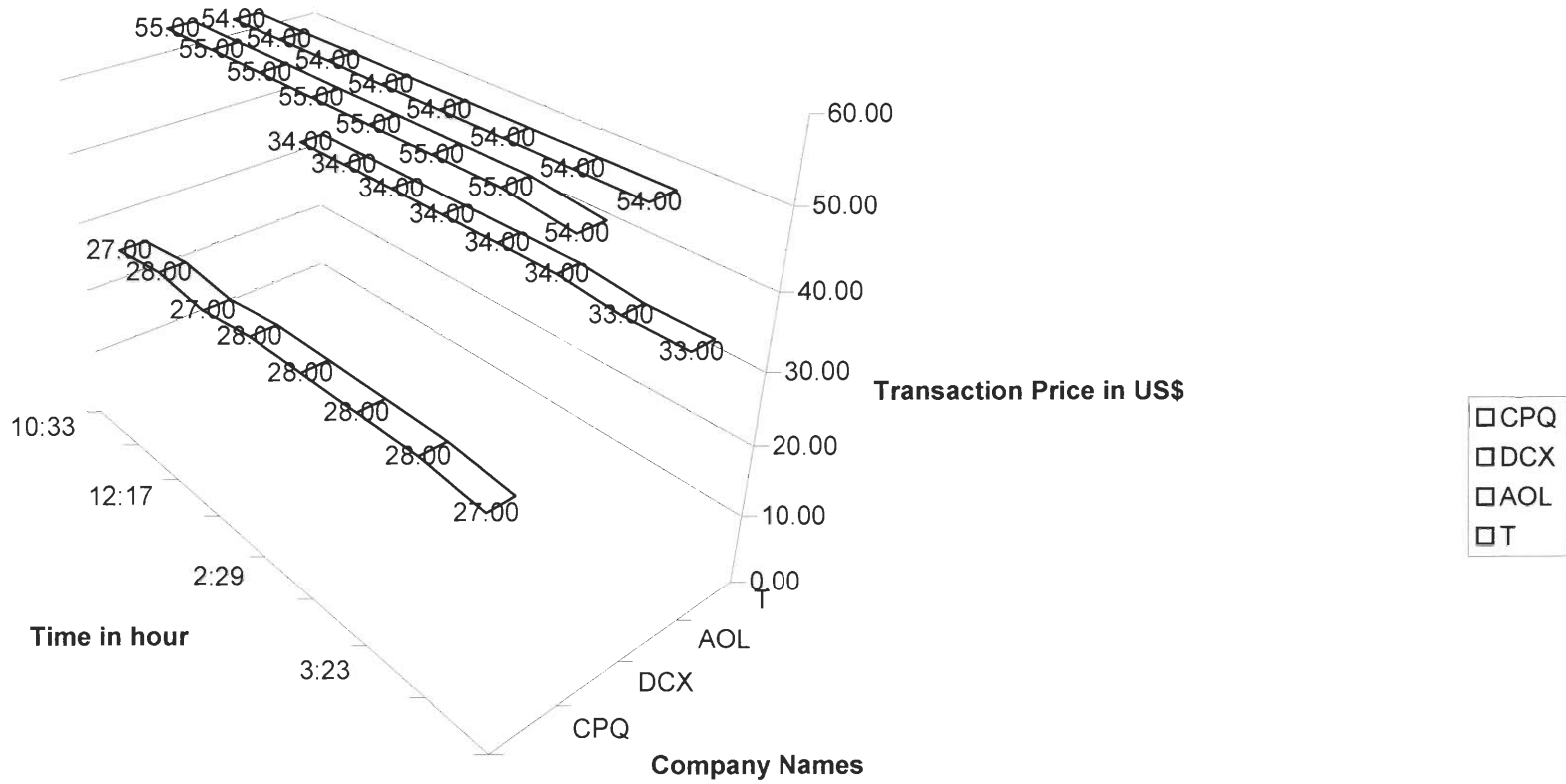
	1:31	2:25	3:05	3:33	4:09
□INTC	128.00	130.00	129.00	129.00	129.00
□CSCO	66.00	66.00	66.00	66.00	66.00
□MSFT	72.00	72.00	72.00	72.00	73.00
□ORCL	82.00	82.00	81.00	82.00	82.00

Stock Trend on 6/16/00



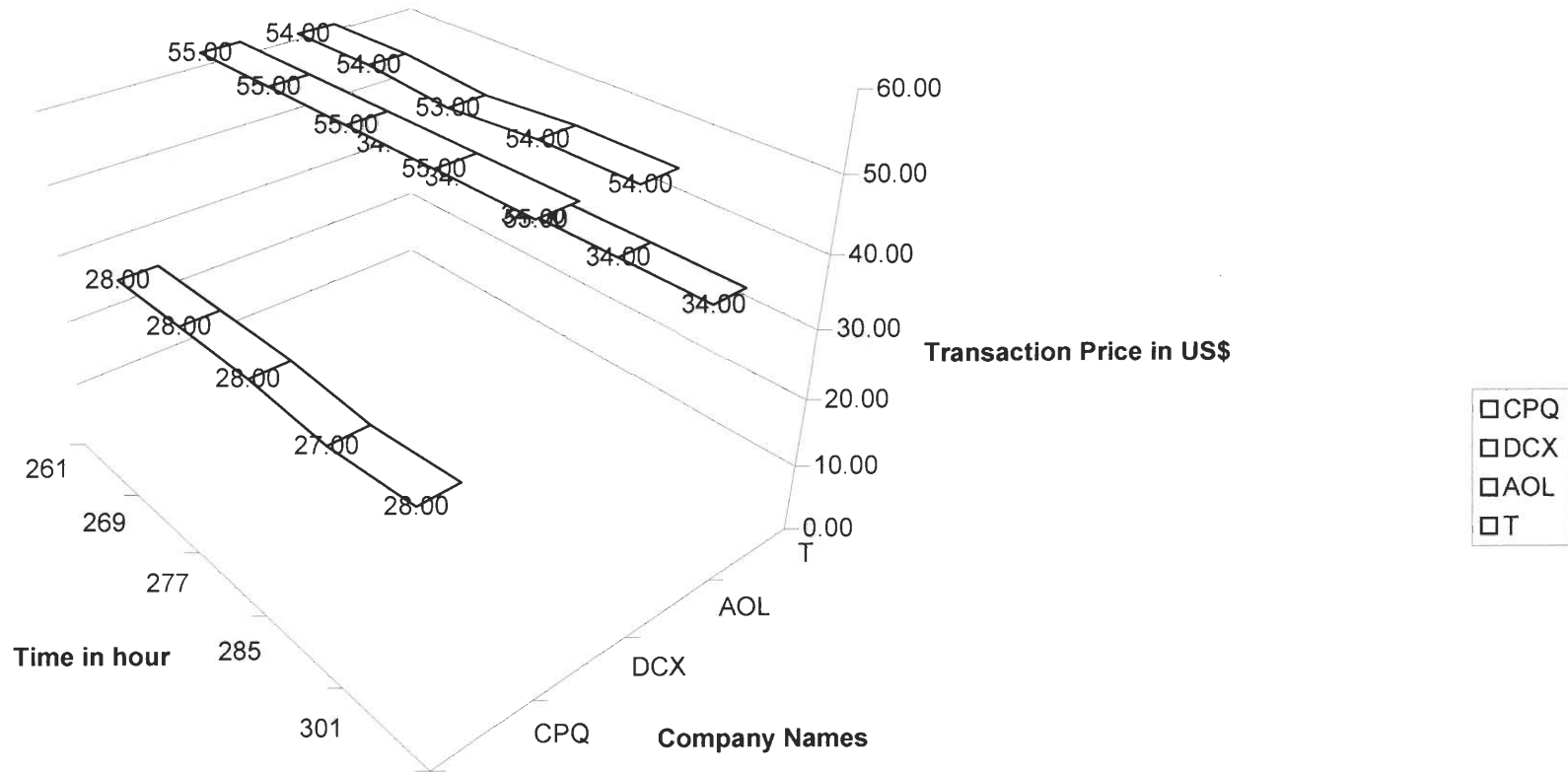
	10:33	11:00	12:17	1:39	2:29	3:03	3:23	4:01
□ INTC	127.00	128.00	129.00	128.00	129.00	128.00	128.00	127.00
□ CSCO	67.00	66.00	66.00	67.00	67.00	67.00	67.00	66.00
□ MSFT	72.00	72.00	72.00	72.00	72.00	73.00	72.00	72.00
□ ORCL	82.00	82.00	82.00	83.00	83.00	83.00	83.00	82.00

Stock Trend on 6/16/00



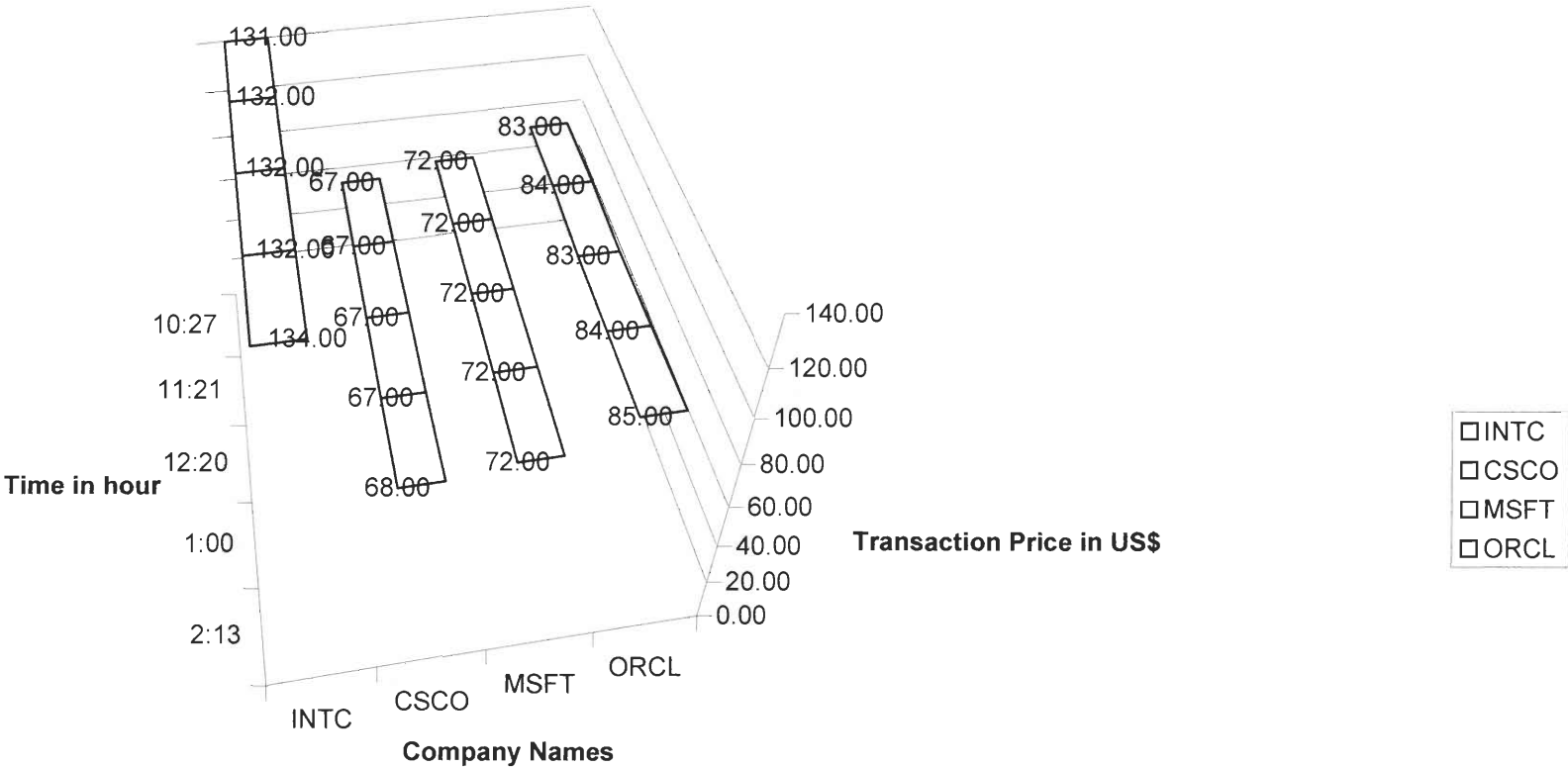
	10:33	11:00	12:17	1:39	2:29	3:03	3:23	4:01
□ CPQ	27.00	28.00	27.00	28.00	28.00	28.00	28.00	27.00
□ DCX	55.00	55.00	55.00	55.00	55.00	55.00	55.00	54.00
□ AOL	54.00	54.00	54.00	54.00	54.00	54.00	54.00	54.00
□ T	34.00	34.00	34.00	34.00	34.00	34.00	33.00	33.00

Stock Trend on 6/19/00



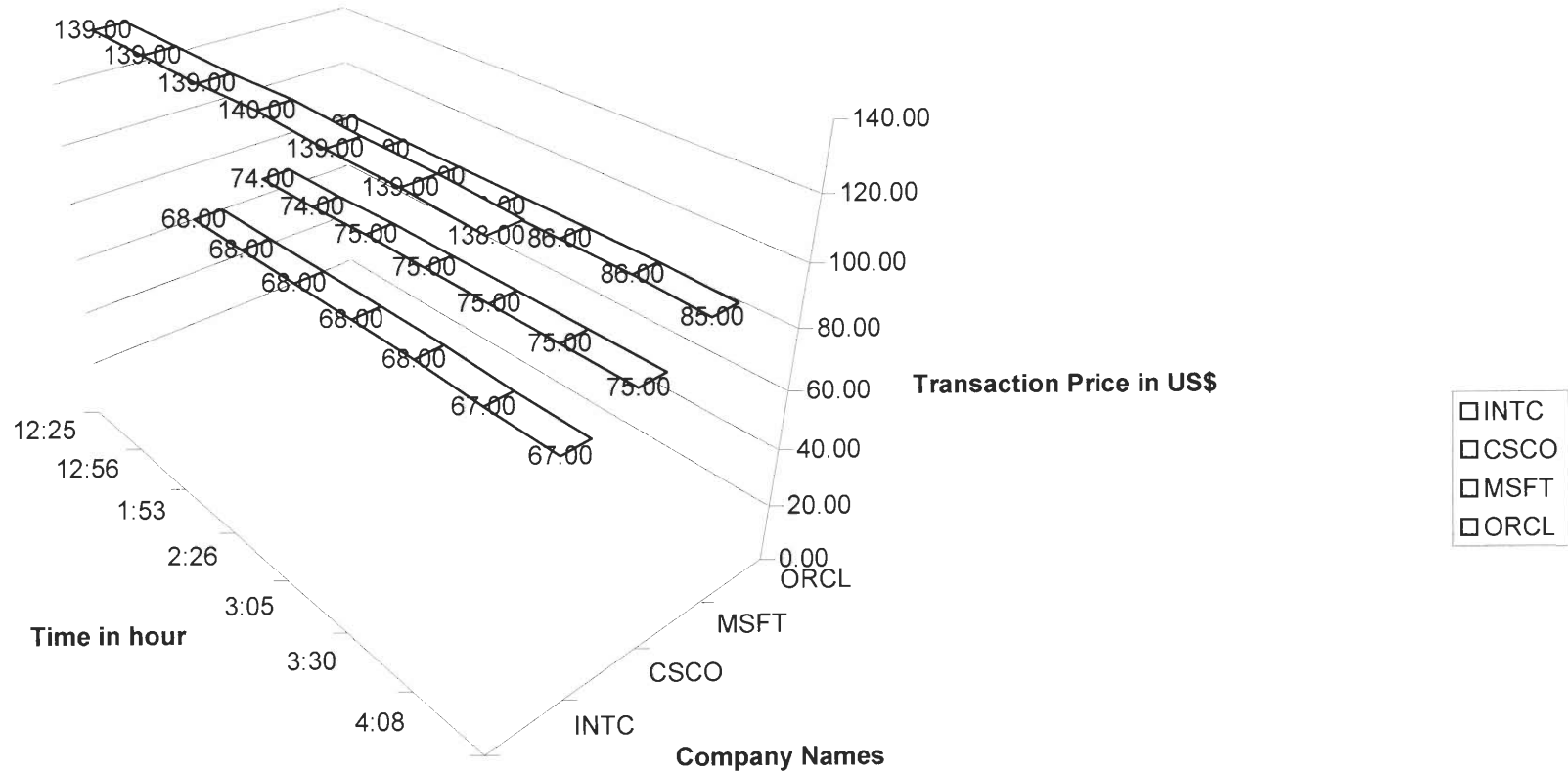
	261	269	277	285	301
□ CPQ	28.00	28.00	28.00	27.00	28.00
□ DCX	55.00	55.00	55.00	55.00	55.00
□ AOL	54.00	54.00	53.00	54.00	54.00
□ T	34.00	34.00	34.00	34.00	34.00

Stock Trend on 6/19/00



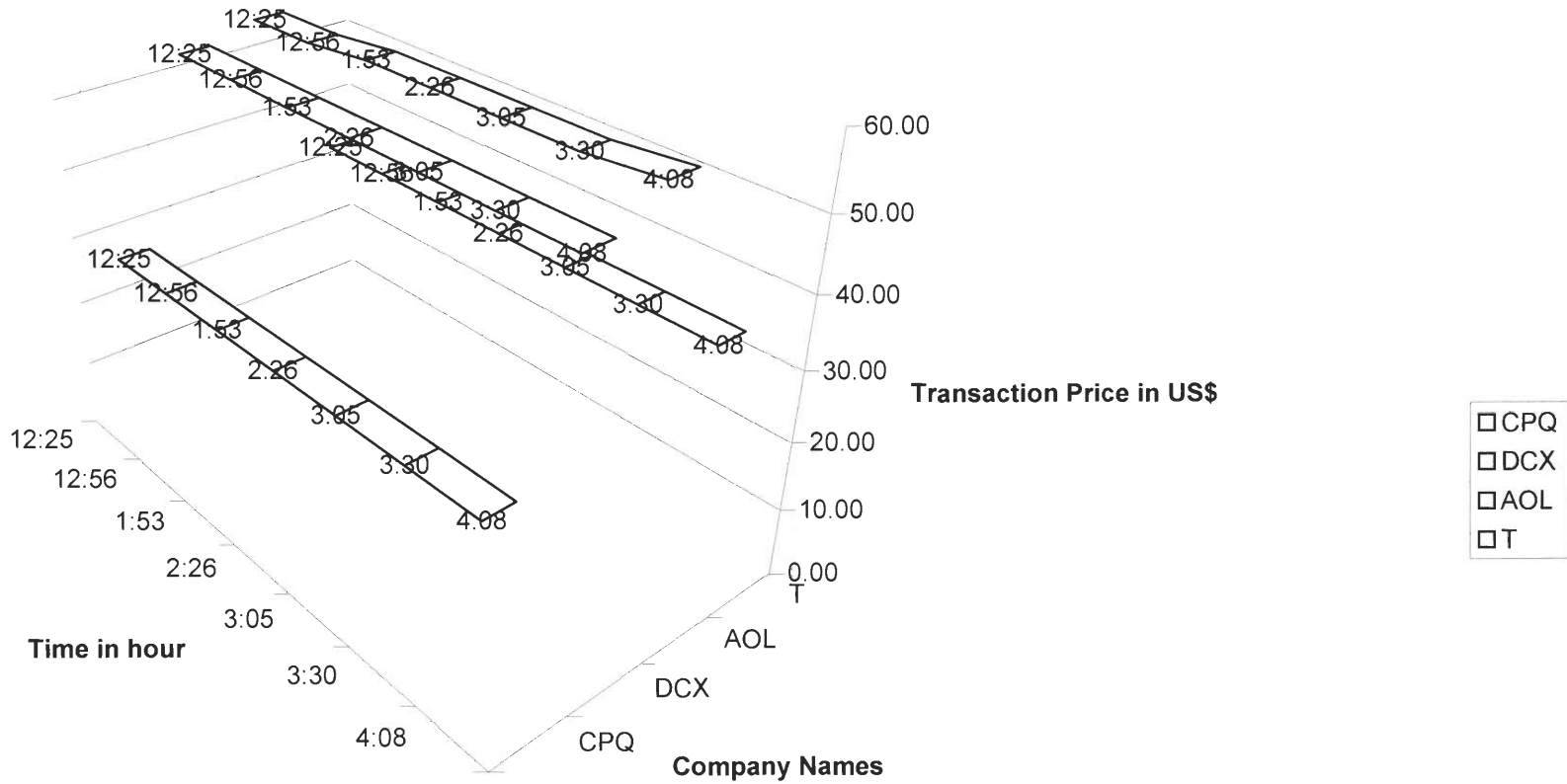
	10:27	11:21	12:20	1:00	2:13
□ INTC	131.00	132.00	132.00	132.00	134.00
□ CSCO	67.00	67.00	67.00	67.00	68.00
□ MSFT	72.00	72.00	72.00	72.00	72.00
□ ORCL	83.00	84.00	83.00	84.00	85.00

Stock Trend on 6/20/00



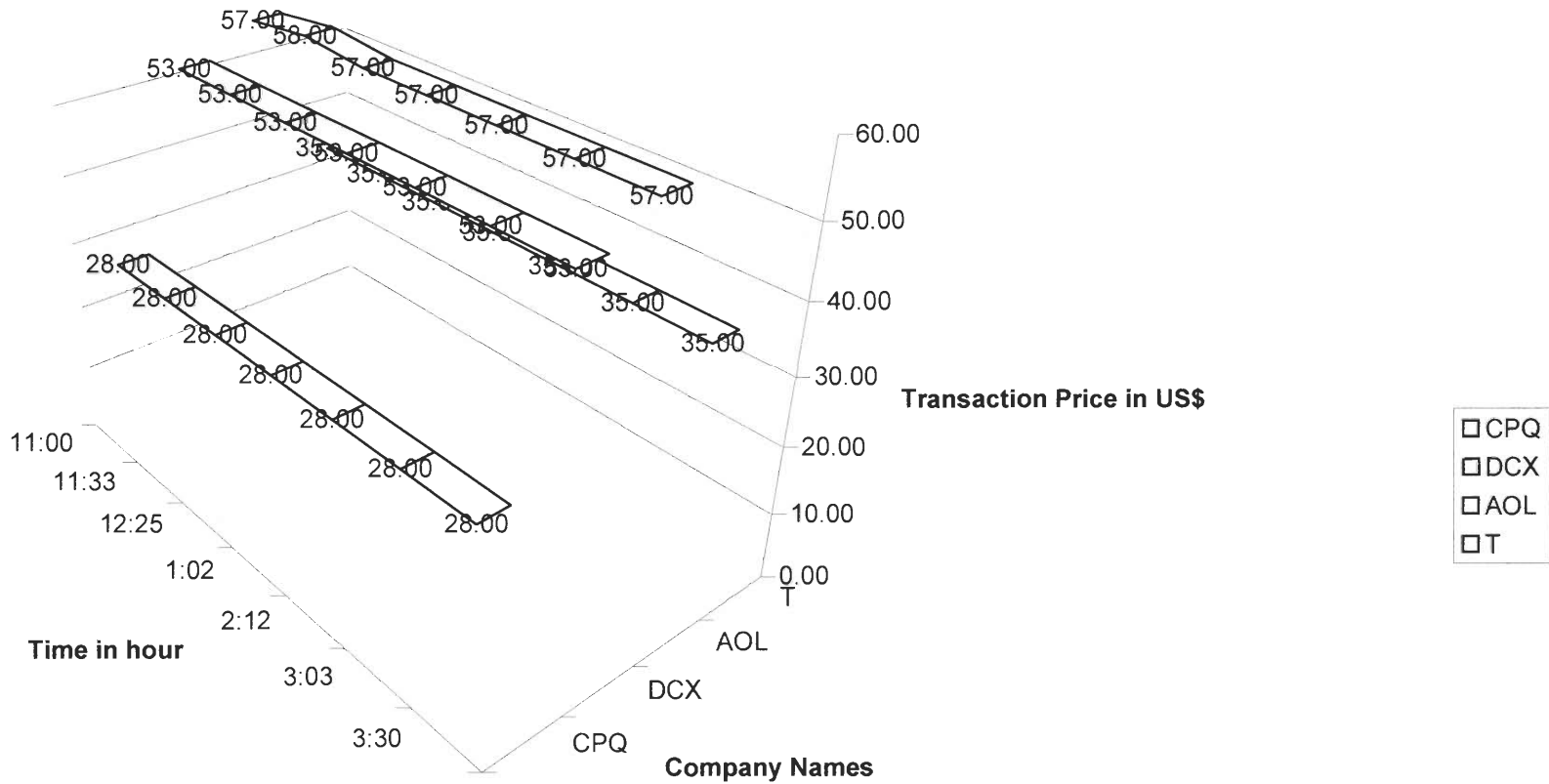
	12:25	12:56	1:53	2:26	3:05	3:30	4:08
□ INTC	139.00	139.00	139.00	140.00	139.00	139.00	138.00
□ CSCO	68.00	68.00	68.00	68.00	68.00	67.00	67.00
□ MSFT	74.00	74.00	75.00	75.00	75.00	75.00	75.00
□ ORCL	86.00	86.00	86.00	86.00	86.00	86.00	85.00

Stock Trend on 6/20/00



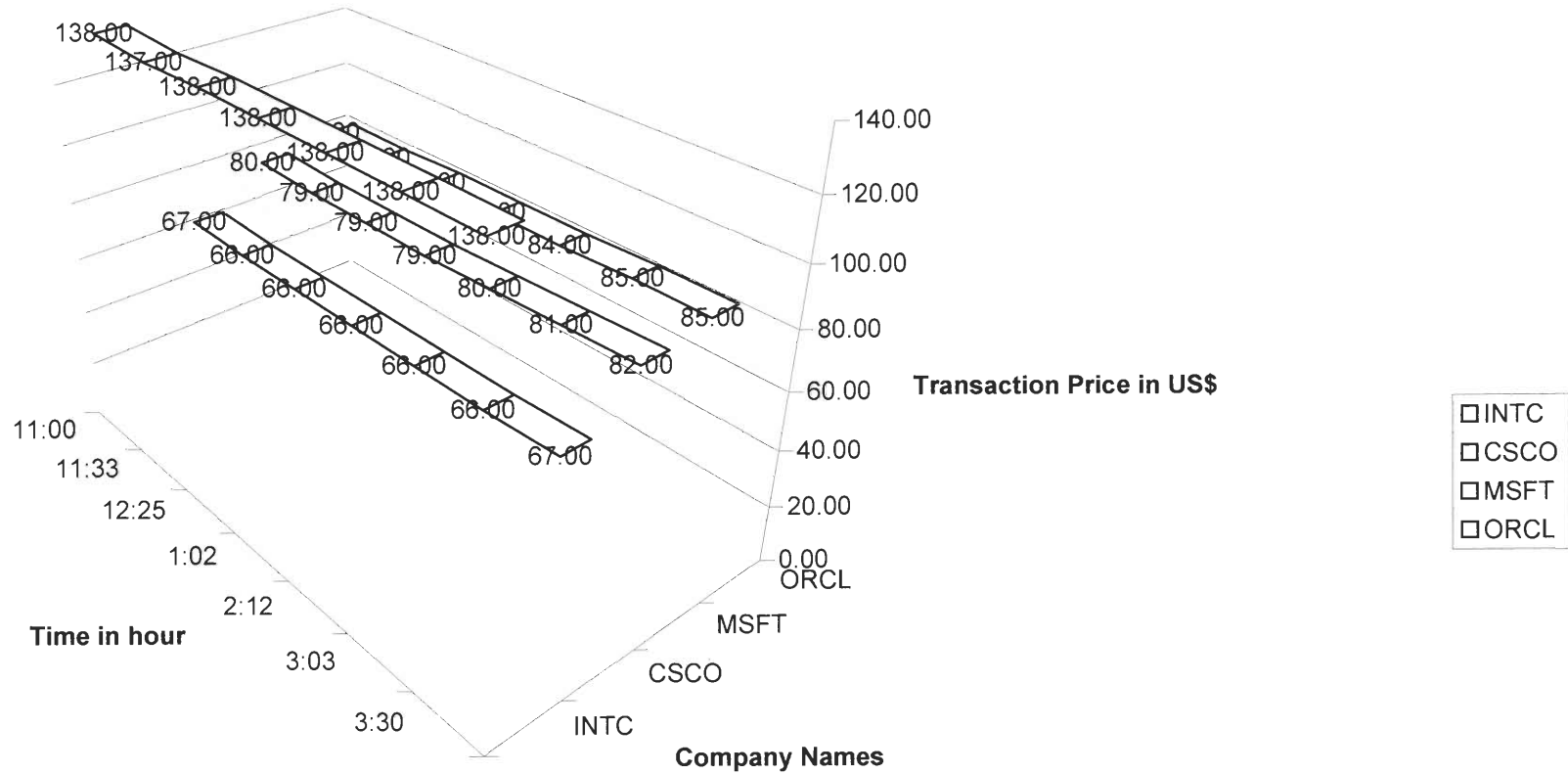
	12:25	12:56	1:53	2:26	3:05	3:30	4:08
□ CPQ	28.00	28.00	28.00	28.00	28.00	28.00	28.00
□ DCX	54.00	54.00	54.00	54.00	54.00	54.00	54.00
□ AOL	56.00	56.00	57.00	57.00	57.00	57.00	58.00
□ T	34.00	34.00	34.00	34.00	34.00	34.00	34.00

Stock Trend on 6/21/00



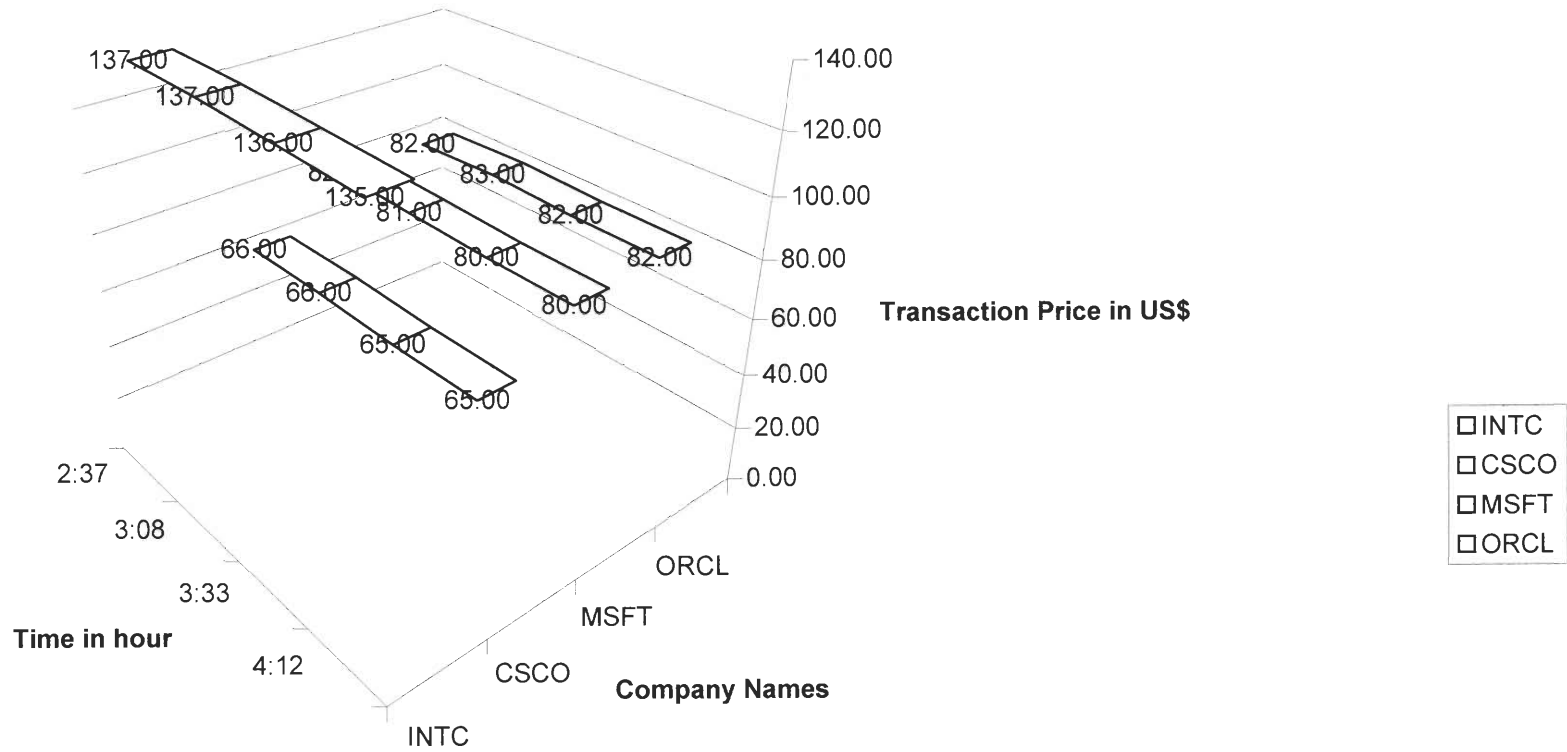
	11:00	11:33	12:25	1:02	2:12	3:03	3:30
□ CPQ	28.00	28.00	28.00	28.00	28.00	28.00	28.00
□ DCX	53.00	53.00	53.00	53.00	53.00	53.00	53.00
□ AOL	57.00	58.00	57.00	57.00	57.00	57.00	57.00
□ T	35.00	35.00	35.00	35.00	35.00	35.00	35.00

Stock Trend on 6/21/00



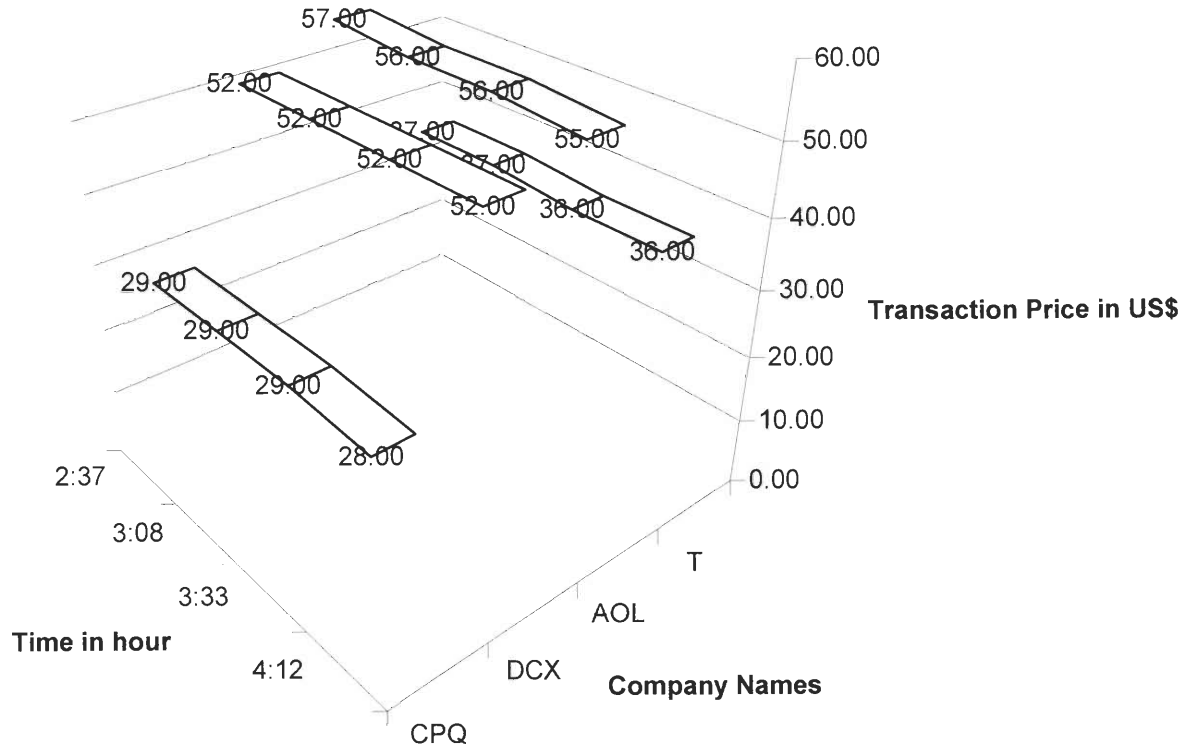
	11:00	11:33	12:25	1:02	2:12	3:03	3:30
□ INTC	138.00	137.00	138.00	138.00	138.00	138.00	138.00
□ CSCO	67.00	66.00	66.00	66.00	66.00	66.00	67.00
□ MSFT	80.00	79.00	79.00	79.00	80.00	81.00	82.00
□ ORCL	83.00	83.00	84.00	84.00	84.00	85.00	85.00

Stock Trend on 6/22/00



	2:37	3:08	3:33	4:12
□ INTC	137.00	137.00	136.00	135.00
□ CSCO	66.00	66.00	65.00	65.00
□ MSFT	82.00	81.00	80.00	80.00
□ ORCL	82.00	83.00	82.00	82.00

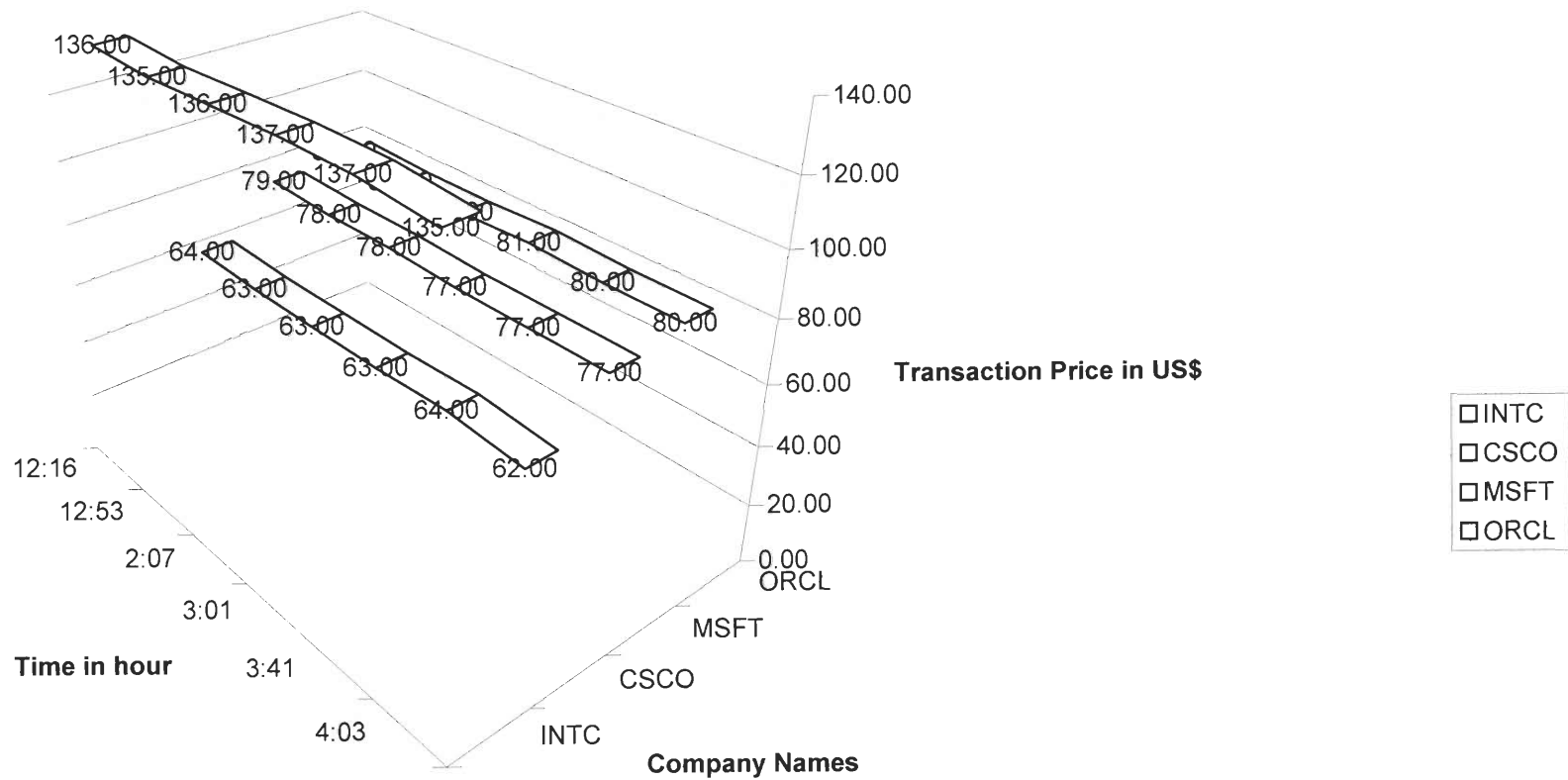
Stock Trend on 6/22/00



- CPQ
- DCX
- AOL
- T

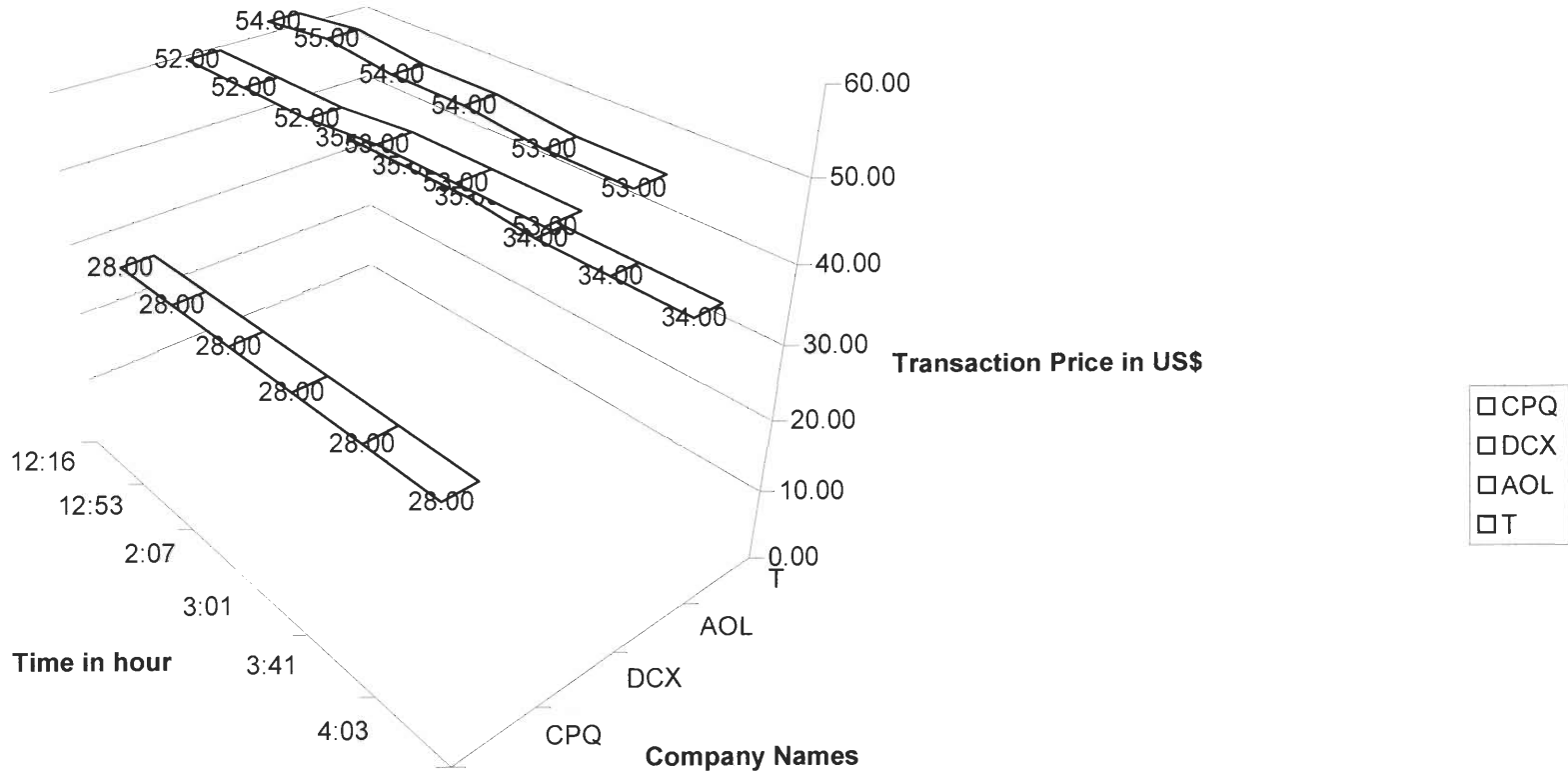
	2:37	3:08	3:33	4:12
□ CPQ	29.00	29.00	29.00	28.00
□ DCX	52.00	52.00	52.00	52.00
□ AOL	57.00	56.00	56.00	55.00
□ T	37.00	37.00	36.00	36.00

Stock Trend on 6/23/00



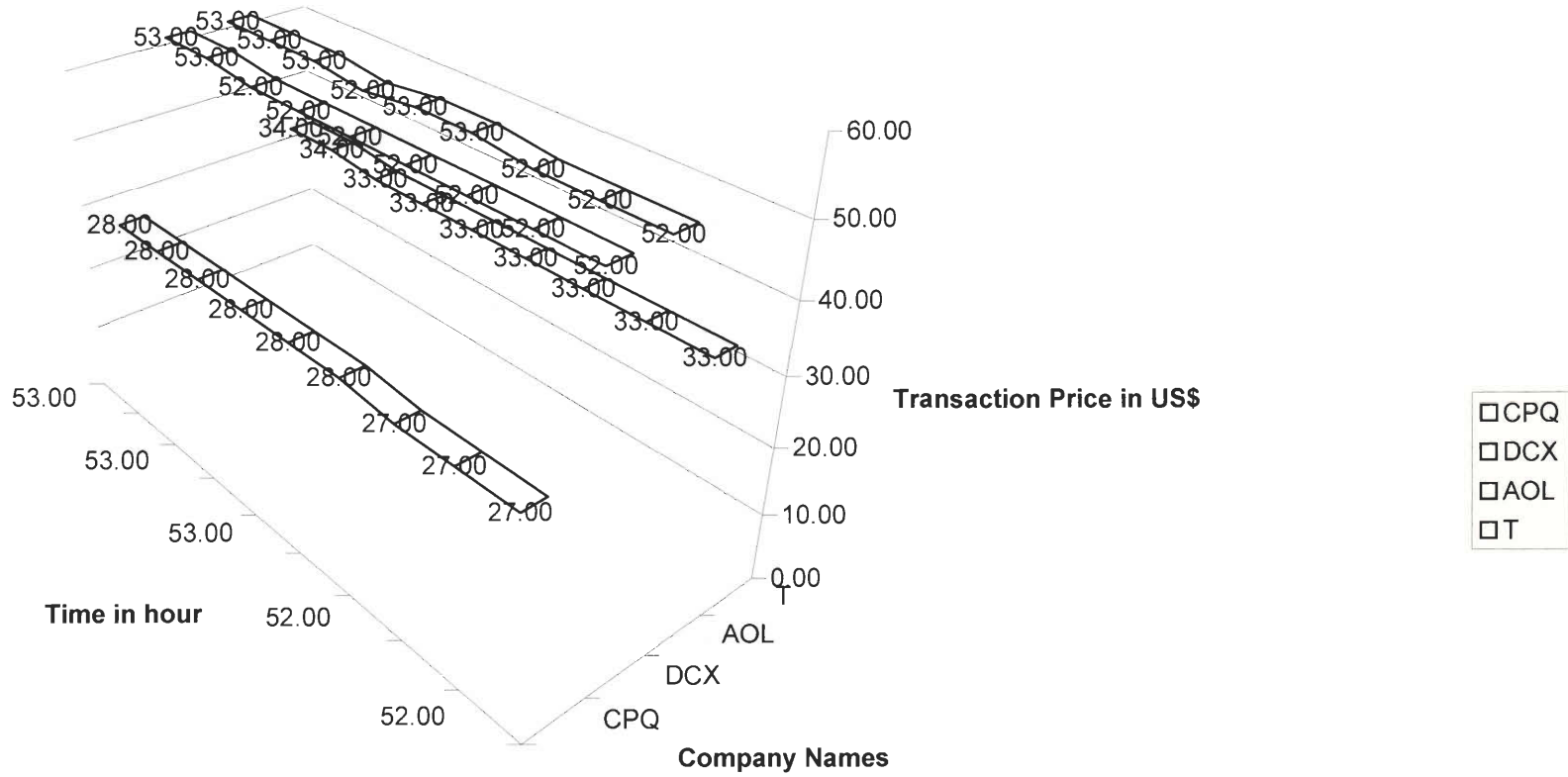
	12:16	12:53	2:07	3:01	3:41	4:03
□ INTC	136.00	135.00	136.00	137.00	137.00	135.00
□ CSCO	64.00	63.00	63.00	63.00	64.00	62.00
□ MSFT	79.00	78.00	78.00	77.00	77.00	77.00
□ ORCL	81.00	80.00	80.00	81.00	80.00	80.00

Stock Trend on 6/23/00



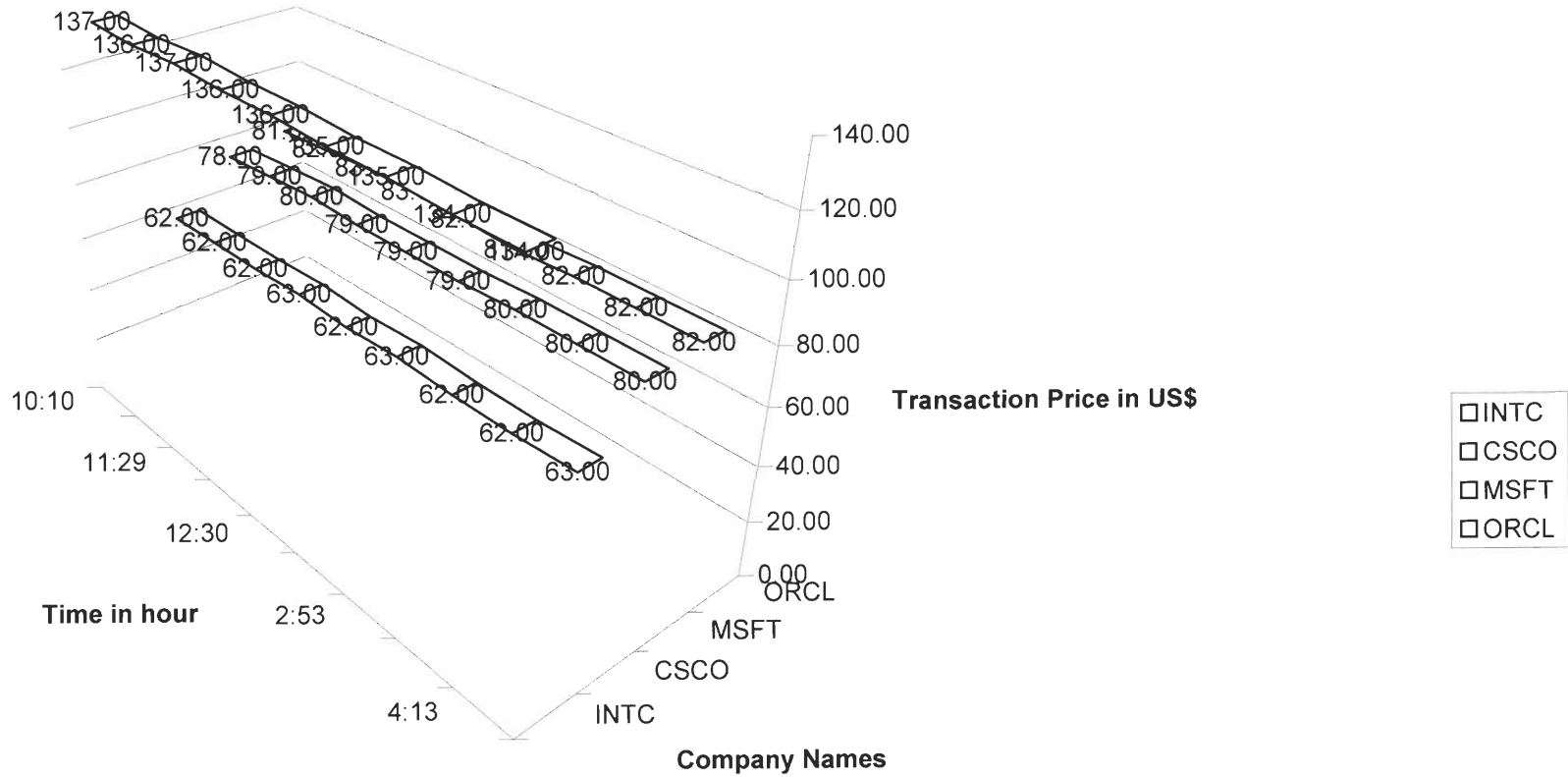
	12:16	12:53	2:07	3:01	3:41	4:03
□ CPQ	28.00	28.00	28.00	28.00	28.00	28.00
□ DCX	52.00	52.00	52.00	53.00	53.00	53.00
□ AOL	54.00	55.00	54.00	54.00	53.00	53.00
□ T	35.00	35.00	35.00	34.00	34.00	34.00

Stock Trend on 6/26/00



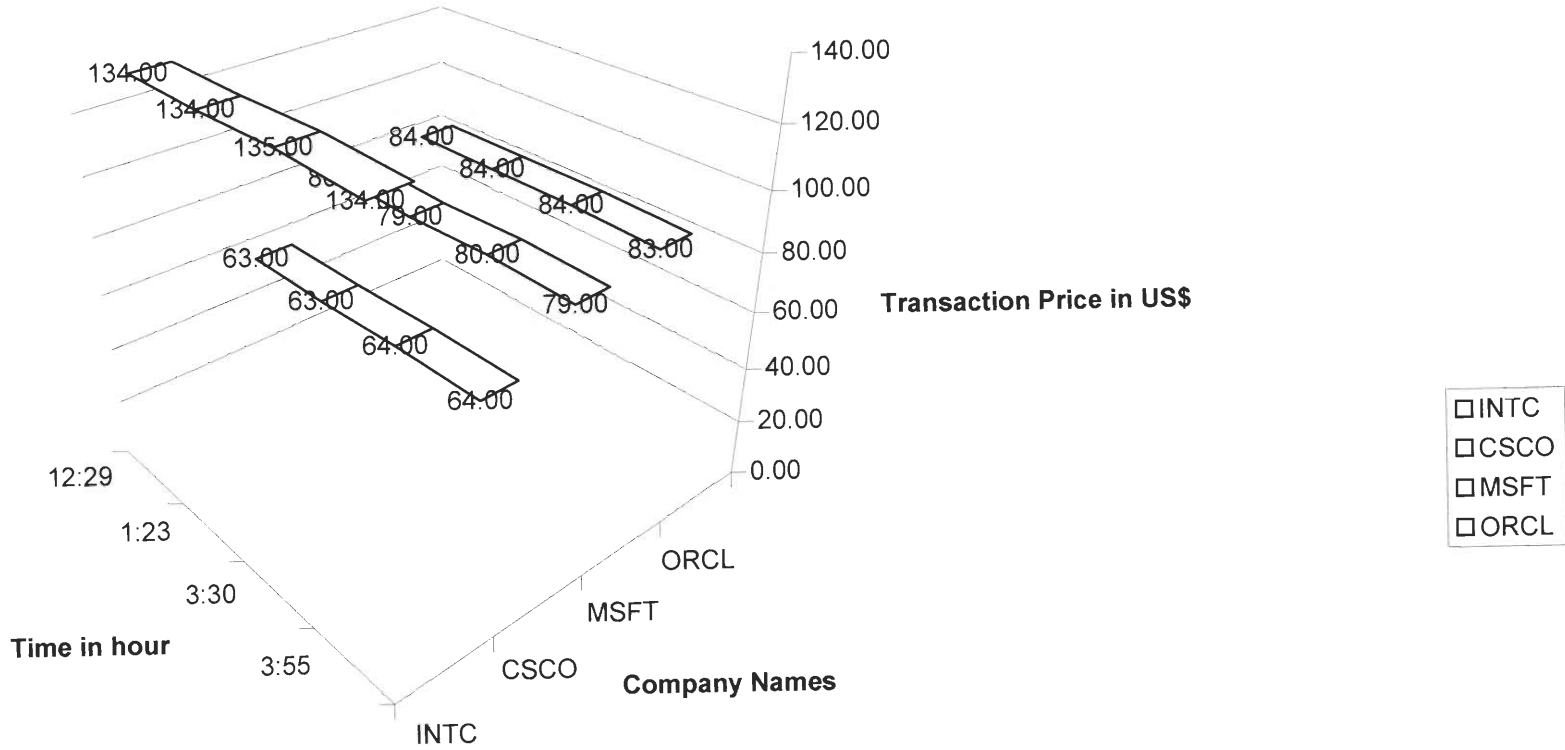
	53.00	53.00	53.00	52.00	53.00	53.00	52.00	52.00	52.00
□CPQ	28.00	28.00	28.00	28.00	28.00	28.00	27.00	27.00	27.00
□DCX	53.00	53.00	52.00	52.00	52.00	52.00	52.00	52.00	52.00
□AOL	53.00	53.00	53.00	52.00	53.00	53.00	52.00	52.00	52.00
□T	34.00	34.00	33.00	33.00	33.00	33.00	33.00	33.00	33.00

Stock Trend on 6/26/00



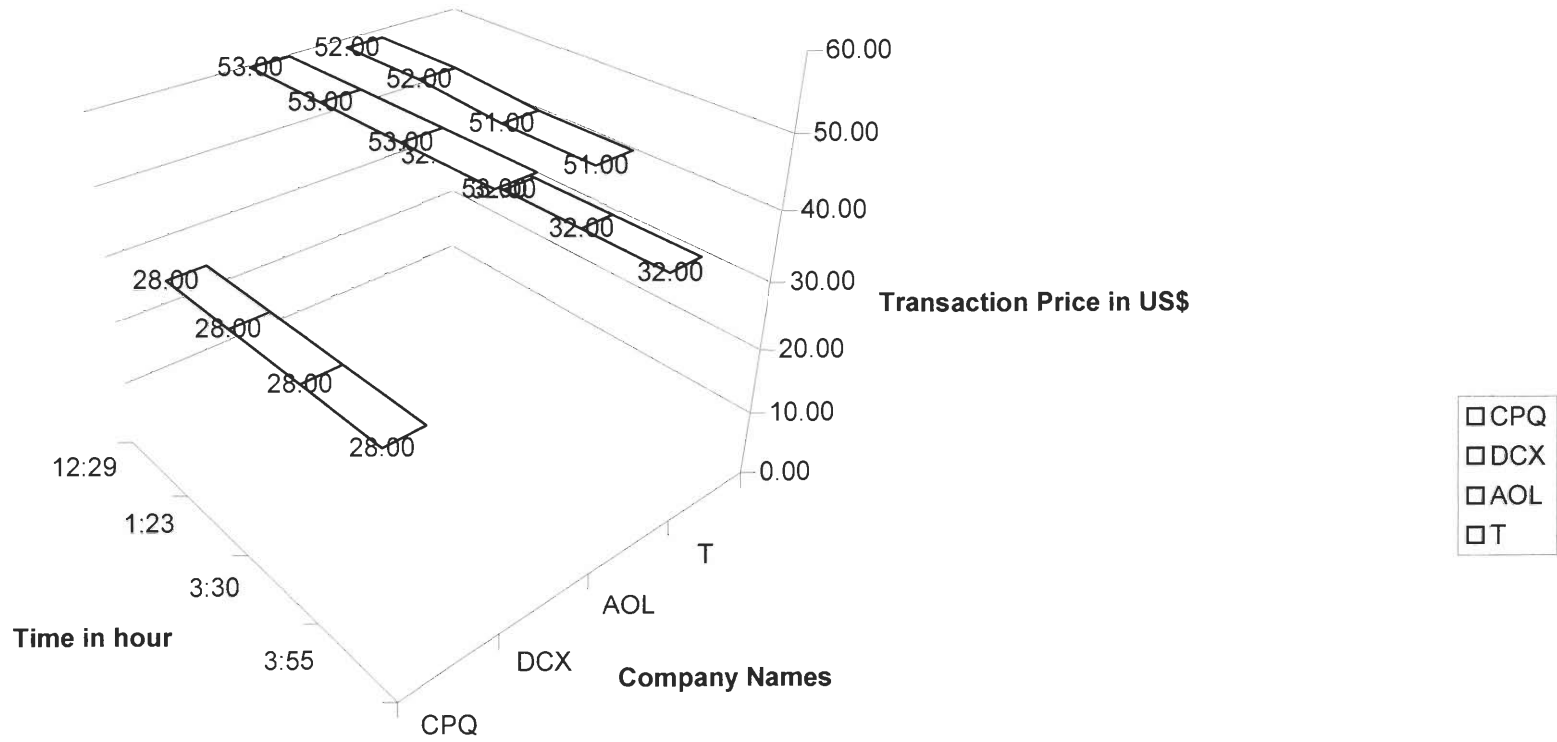
	10:10	10:40	11:29	12:03	12:30	1:25	2:53	3:40	4:13
□ INTC	137.00	136.00	137.00	136.00	136.00	135.00	135.00	134.00	134.00
□ CSCO	62.00	62.00	62.00	63.00	62.00	63.00	62.00	62.00	63.00
□ MSFT	78.00	79.00	80.00	79.00	79.00	79.00	80.00	80.00	80.00
□ ORCL	81.00	82.00	83.00	83.00	82.00	81.00	82.00	82.00	82.00

Stock Trend on 6/28/00



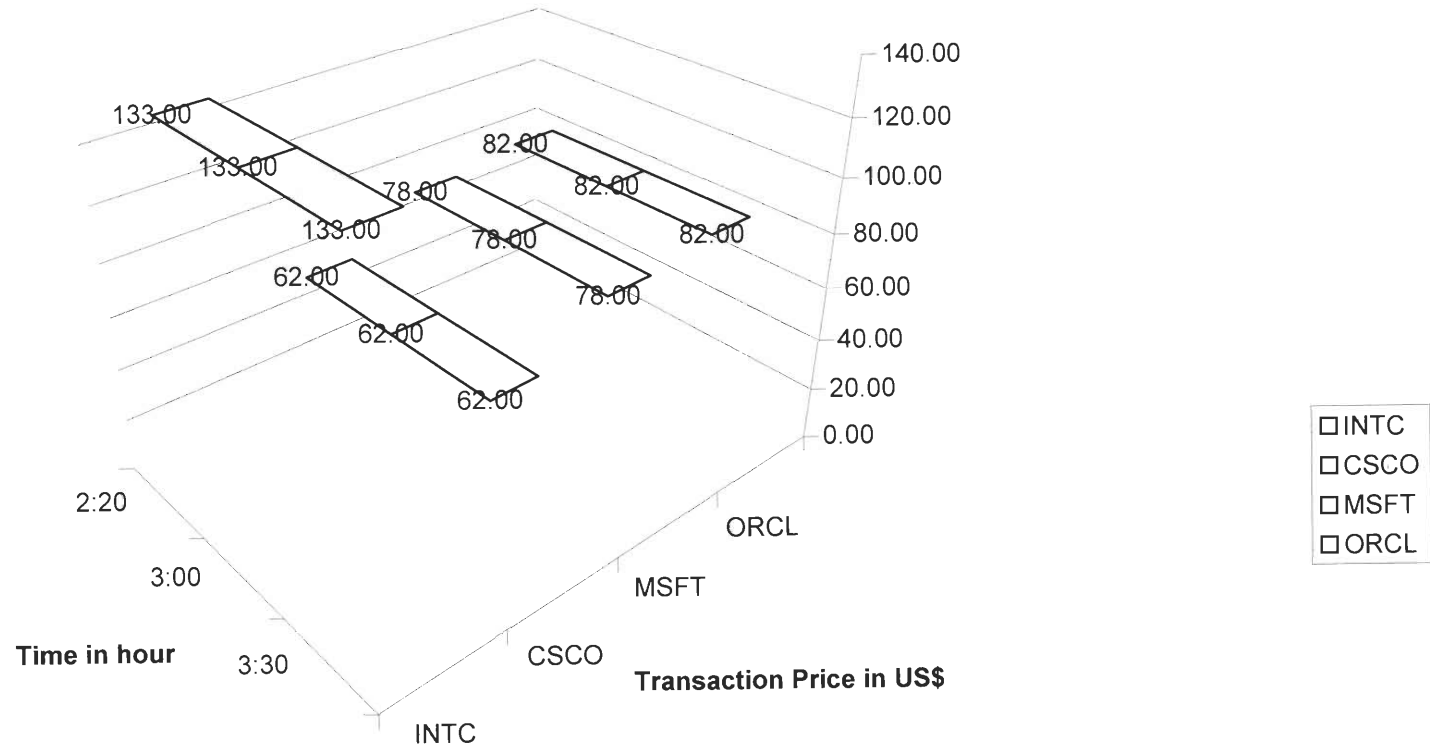
	12:29	1:23	3:30	3:55
□ INTC	134.00	134.00	135.00	134.00
□ CSCO	63.00	63.00	64.00	64.00
□ MSFT	80.00	79.00	80.00	79.00
□ ORCL	84.00	84.00	84.00	83.00

Stock Trend on 6/28/00



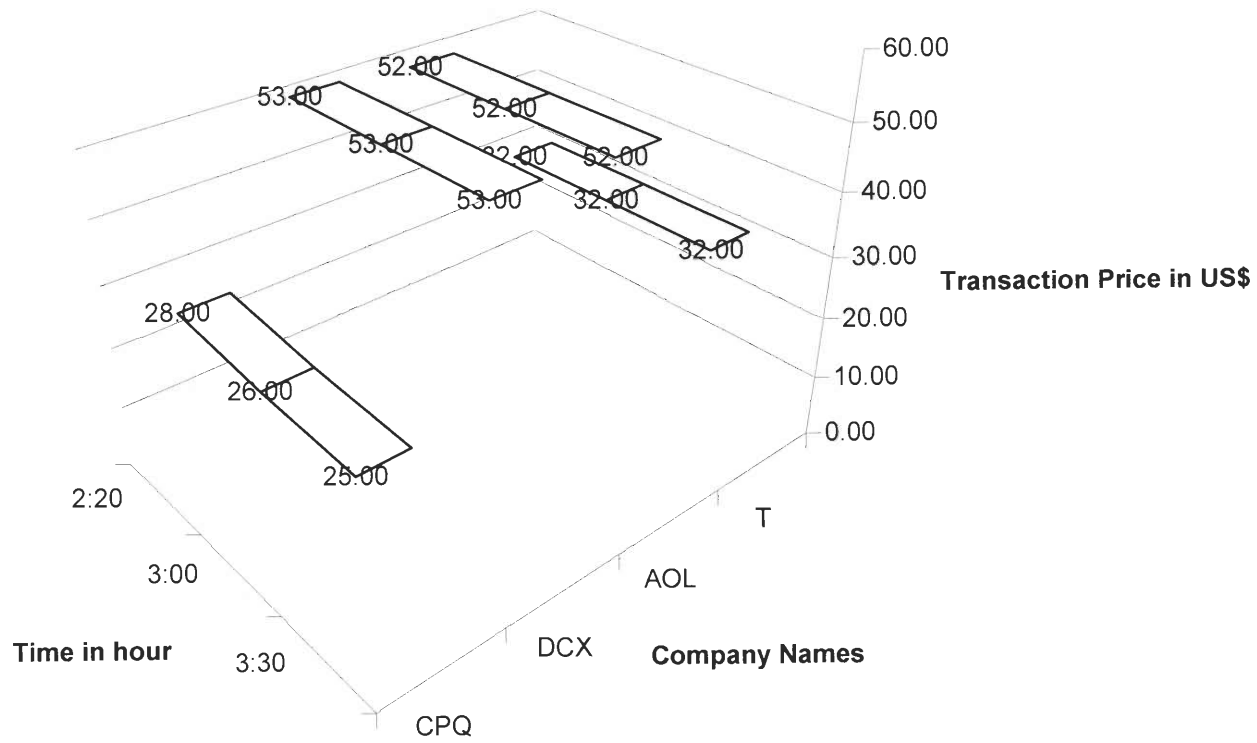
	12:29	1:23	3:30	3:55
□ CPQ	28.00	28.00	28.00	28.00
□ DCX	53.00	53.00	53.00	53.00
□ AOL	52.00	52.00	51.00	51.00
□ T	32.00	32.00	32.00	32.00

Stock Trend on 6/29/00



	2:20	3:00	3:30
□ INTC	133.00	133.00	133.00
□ CSCO	62.00	62.00	62.00
□ MSFT	78.00	78.00	78.00
□ ORCL	82.00	82.00	82.00

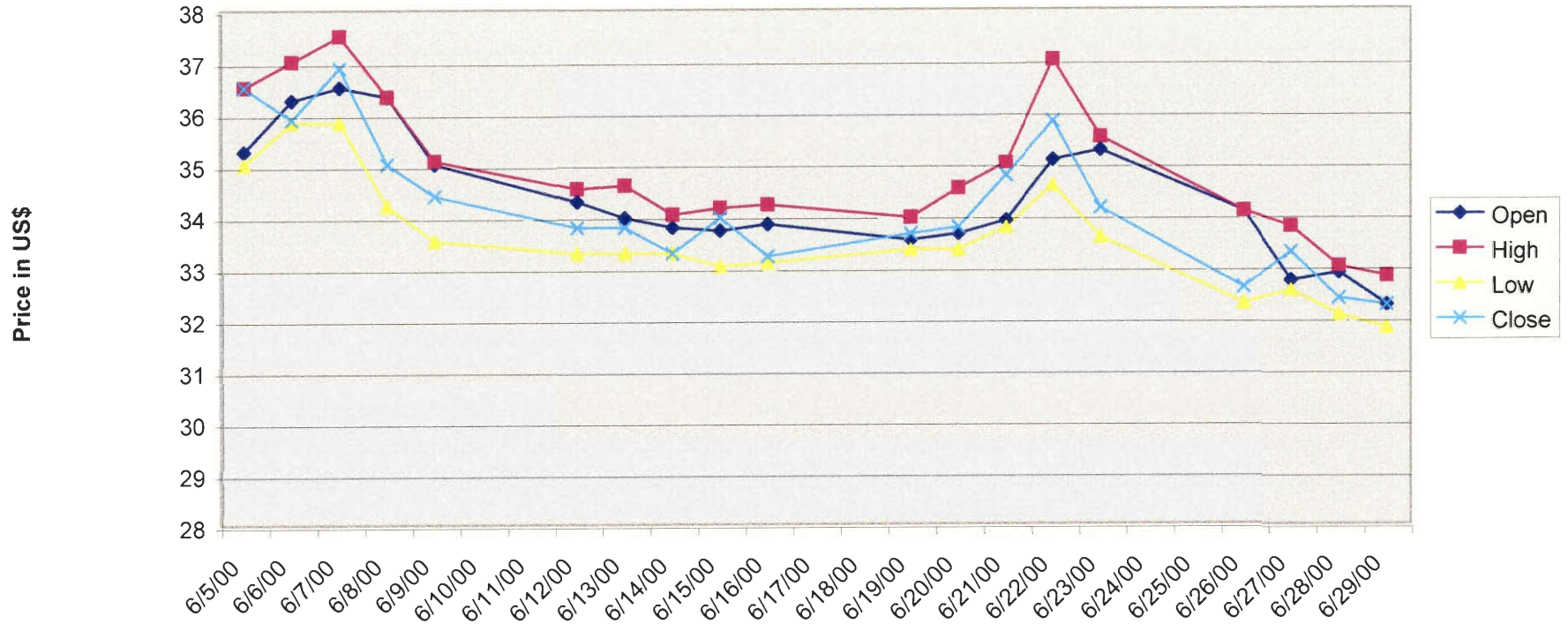
Stock Trend on 6/29/00



- CPQ
- DCX
- AOL
- T

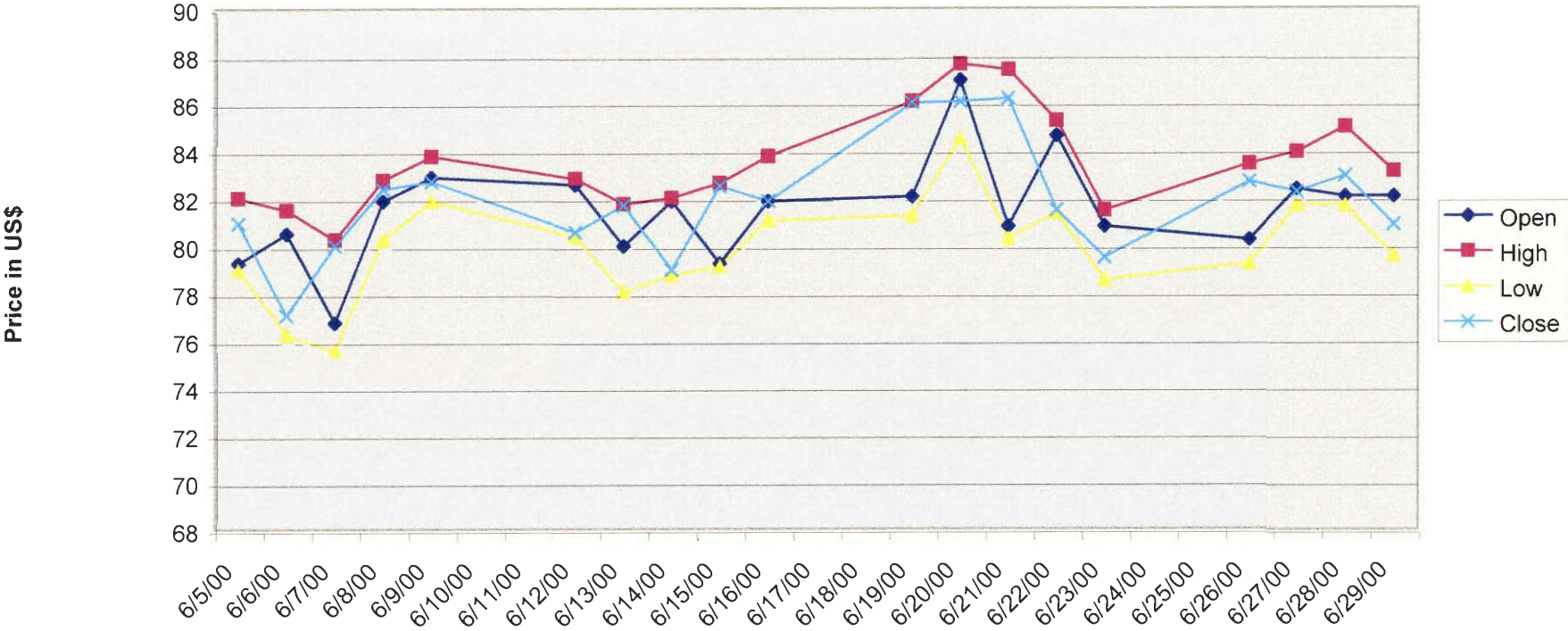
	2:20	3:00	3:30
□ CPQ	28.00	26.00	25.00
□ DCX	53.00	53.00	53.00
□ AOL	52.00	52.00	52.00
□ T	32.00	32.00	32.00

AT&T Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
◆ Open	32.25	32.88	32.72	35.27	35.08	33.9	33.65	33.53	33.71	33.78	33.96	34.27	35.02	36.32	36.26	35.27
■ High	32.81	33	33.78	35.52	37.01	35.02	34.52	33.96	34.15	34.03	34.58	34.52	35.08	36.32	37.01	36.51
▲ Low	31.81	32.06	32.53	33.59	34.58	33.78	33.34	33.34	33.03	33.28	33.28	33.28	33.53	34.21	35.83	35.02
× Close	32.25	32.38	33.28	34.15	35.83	34.77	33.78	33.65	33.96	33.28	33.78	33.78	34.4	35.02	35.89	36.51

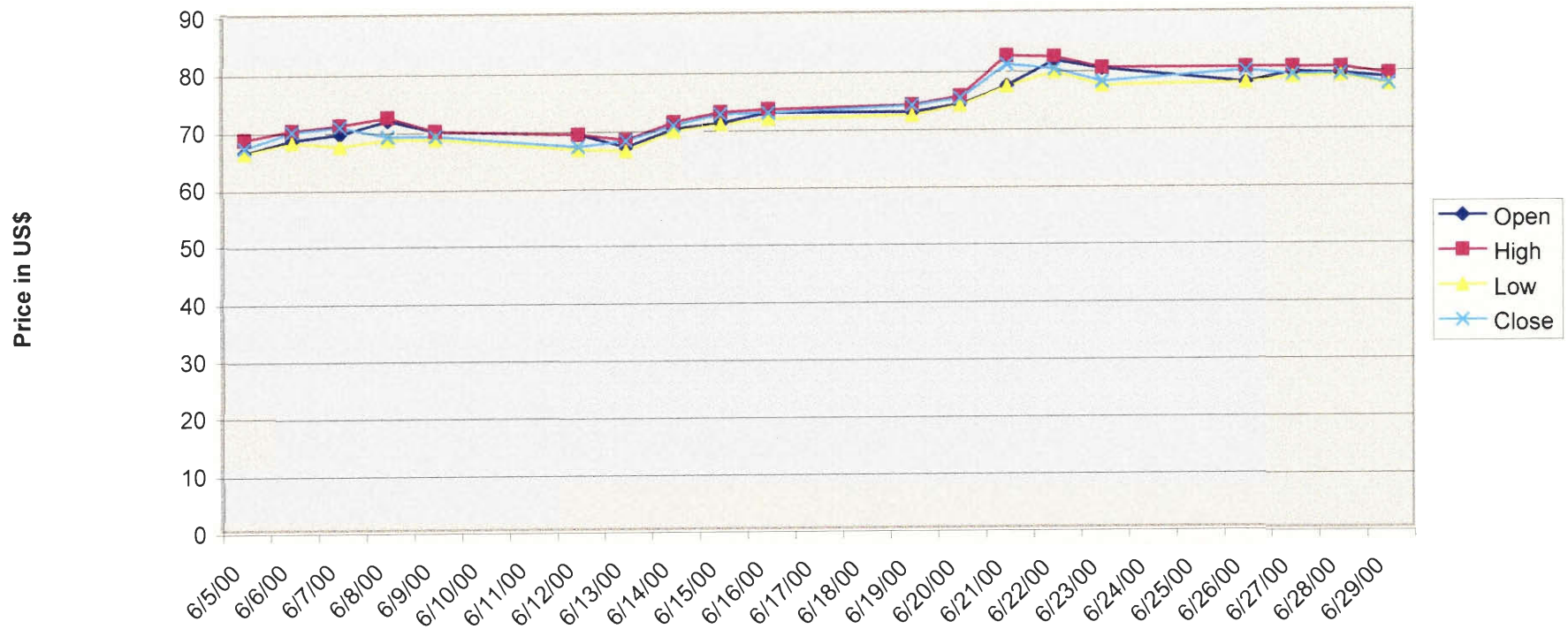
Oracle Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	82.06	82.06	82.38	80.81	84.63	80.81	86.94	82.06	79.25	81.88	79.98	82.56	82.88	81.88	80.5	79.25
High	83.13	85	83.94	81.48	85.25	87.38	87.63	86.06	82.63	82	81.75	82.81	83.75	82.75	81.5	82
Low	79.56	81.69	81.69	78.56	81.38	80.31	84.5	81.25	79.13	78.75	78.06	80.38	81.88	80.25	76.25	79
Close	80.88	82.94	82.25	79.5	81.5	86.19	86.05	86	82.5	79	81.69	80.56	82.69	82.38	77.06	80.94

Date

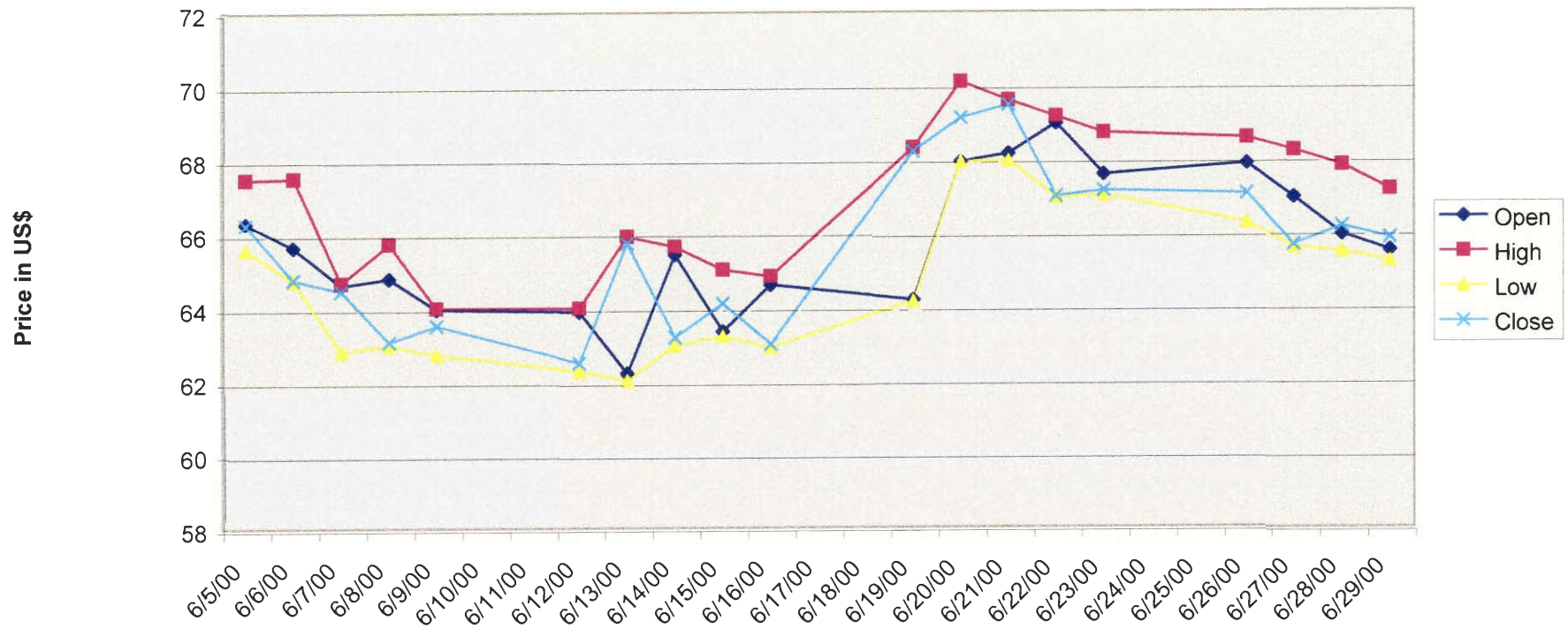
Microsoft Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	78.25	79	79.25	79.94	81.38	77	73.88	72.56	70.81	69.81	66.75	69	69.63	71.56	68.19	66.02
High	78.94	80.06	80.13	80.06	82	82.19	75.25	73.81	72.69	71	68	69	69.69	72.13	69.88	68.38
Low	77.06	78.63	78.38	77	79.31	76.94	73.75	72	70.63	69.5	66.13	66.38	68.31	68.25	67.81	66
Close	77.19	78.94	78.81	77.69	79.88	80.69	74.94	73.69	72.38	70.5	67.88	66.88	68.81	68.81	69.63	66.88

Date

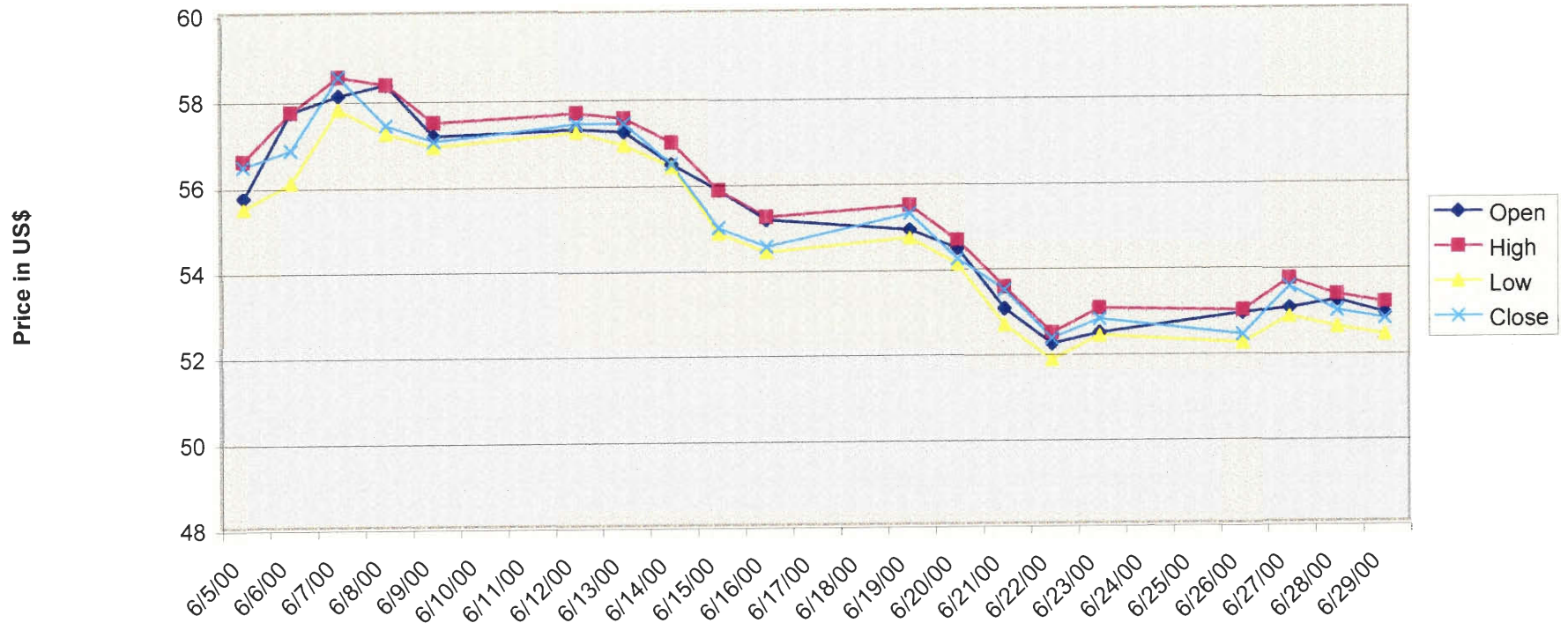
Intel Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
◆ Open	65.51	65.95	66.95	67.6	68.98	68.17	67.95	64.2	63.35	65.42	62.23	63.89	63.95	64.79	65.64	66.29
■ High	67.17	67.82	68.23	68.73	69.17	69.6	70.1	68.32	65.01	65.64	65.91	63.98	63.98	65.73	67.51	67.48
▲ Low	65.23	65.48	65.6	67.04	66.98	67.98	67.95	64.17	63.23	62.98	62.04	62.29	62.73	62.98	64.73	65.57
× Close	65.85	66.17	65.67	67.17	67.01	69.48	69.13	68.23	64.1	63.2	65.73	62.51	63.51	63.07	64.76	66.26

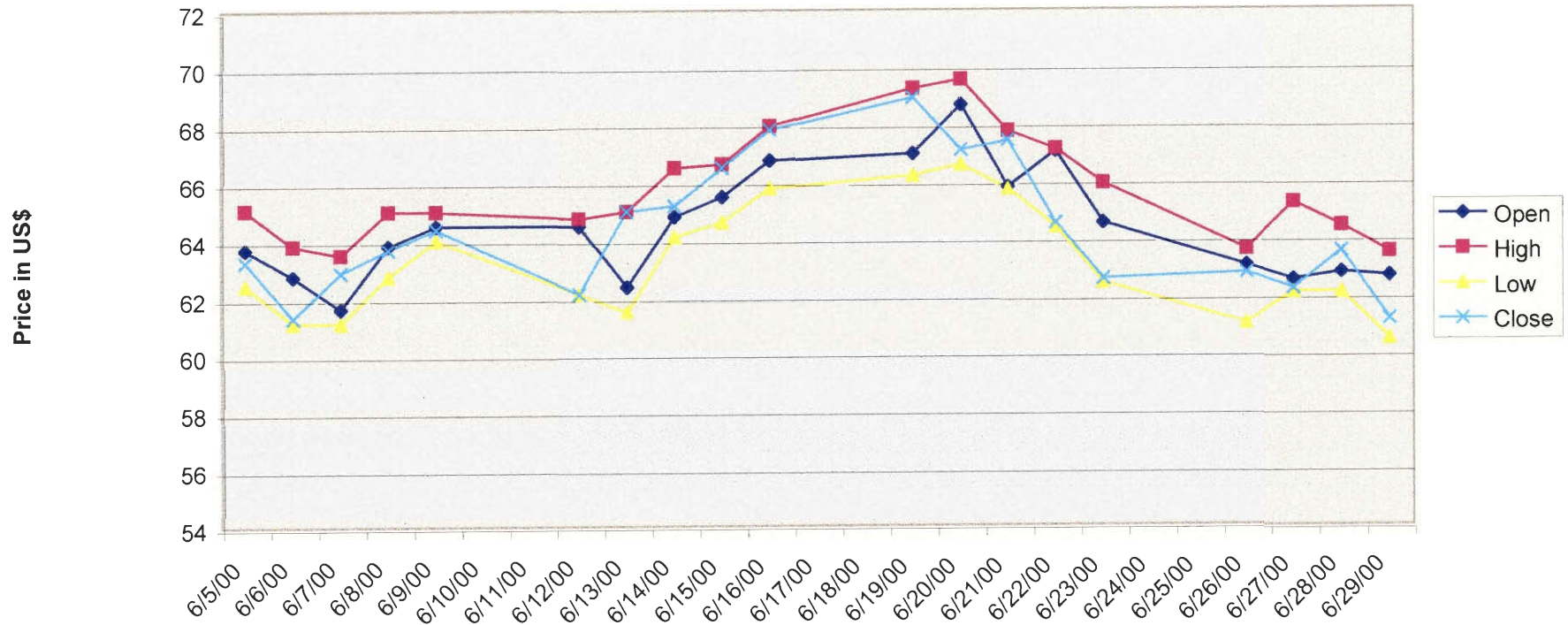
Date

DaimlerChrysler AG Monthly Report



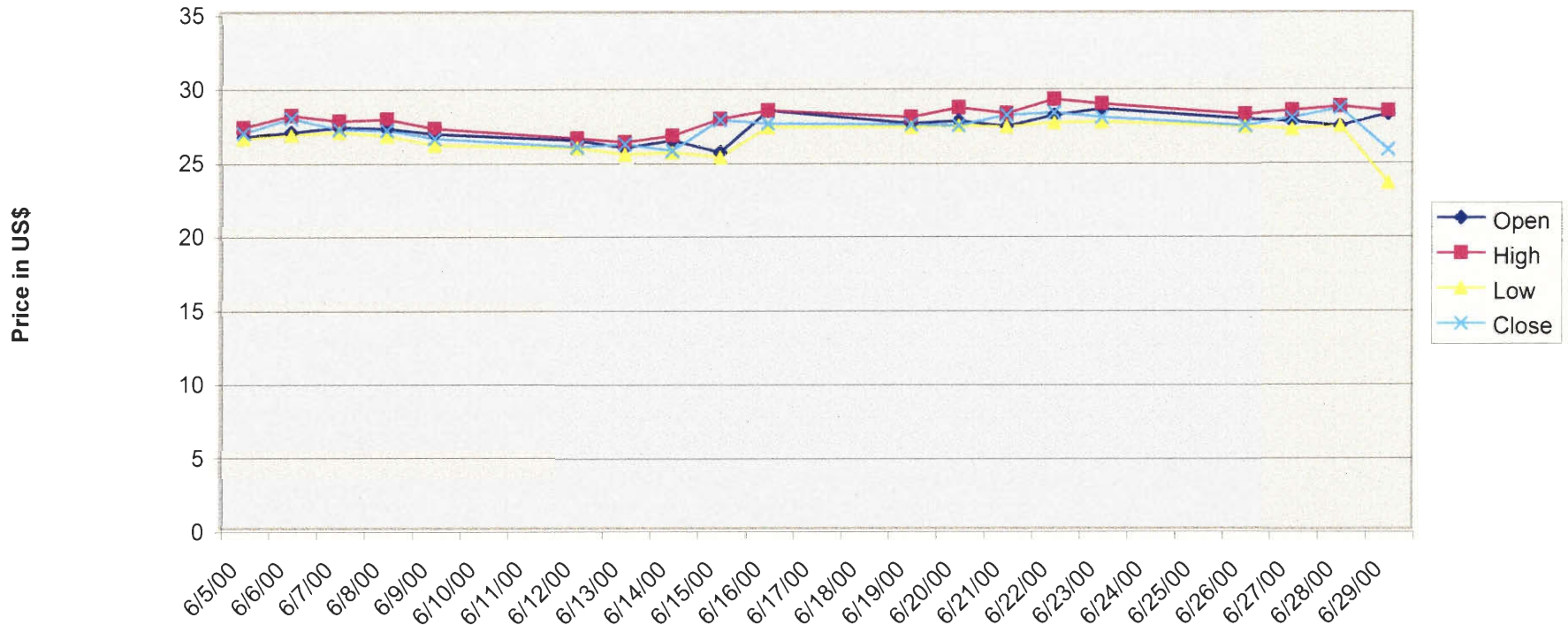
	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	52.88	53.19	53	52.44	52.19	53	54.44	54.88	55.81	56.44	57.19	57.25	57.13	58.31	57.69	55.69
High	53.13	53.31	53.69	53	52.44	53.5	54.63	55.44	55.81	56.94	57.5	57.63	57.44	58.31	57.69	56.56
Low	52.38	52.56	52.81	52.38	51.81	52.63	54.06	54.69	54.81	56.38	56.88	57.19	56.88	57.19	56.06	55.44
Close	52.75	52.94	53.5	52.75	52.31	53.44	54.19	55.25	54.94	56.44	57.38	57.38	57	57.38	56.81	56.44

Cisco Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
◆ Open	62.69	62.81	62.56	64.56	67.06	65.81	68.69	67	65.5	64.81	62.38	64.5	64.5	63.81	62.75	63.69
■ High	63.52	64.44	65.25	65.94	67.13	67.75	69.56	69.25	66.63	66.5	65	64.75	65	65	63.81	65.06
▲ Low	60.5	62.13	62.13	62.5	64.44	65.75	66.63	66.25	64.63	64.13	61.5	62.13	64	62.75	61.13	62.44
× Close	61.19	63.56	62.25	62.63	64.56	67.44	67.13	68.94	66.5	65.19	65	62.13	64.38	63.69	61.31	63.25

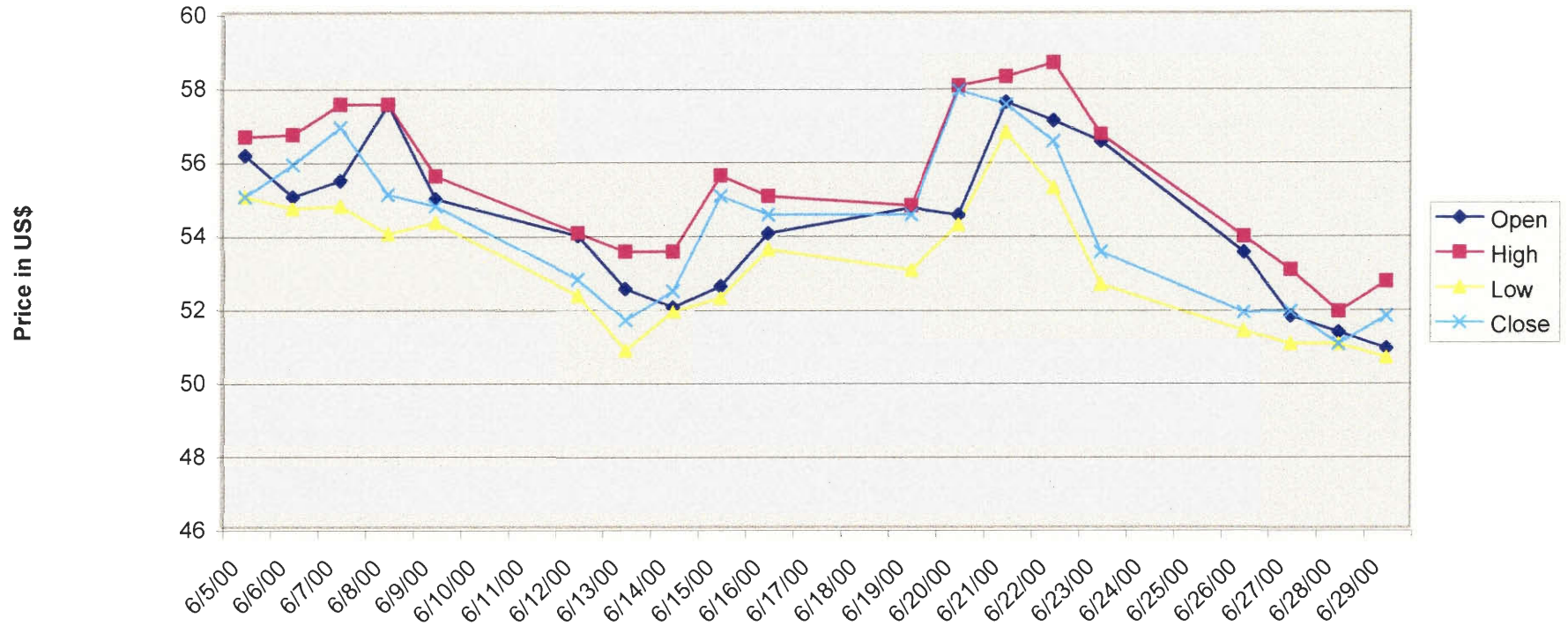
Compaq monthly report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	28.13	27.31	27.6	28.47	28.04	27.29	27.66	27.48	25.54	26.35	25.85	26.35	26.79	27.16	26.91	26.6
High	28.31	28.63	28.35	28.79	29.1	28.16	28.54	27.91	27.79	26.66	26.23	26.48	27.16	27.79	28.04	27.23
Low	23.44	27.31	27.1	27.6	27.54	27.29	27.35	27.23	25.23	25.54	25.41	25.85	26.04	26.66	26.73	26.48
Close	25.69	28.5	27.85	27.91	28.22	28.04	27.35	27.41	27.73	25.66	26.1	25.91	26.48	27.04	27.85	26.85

Date

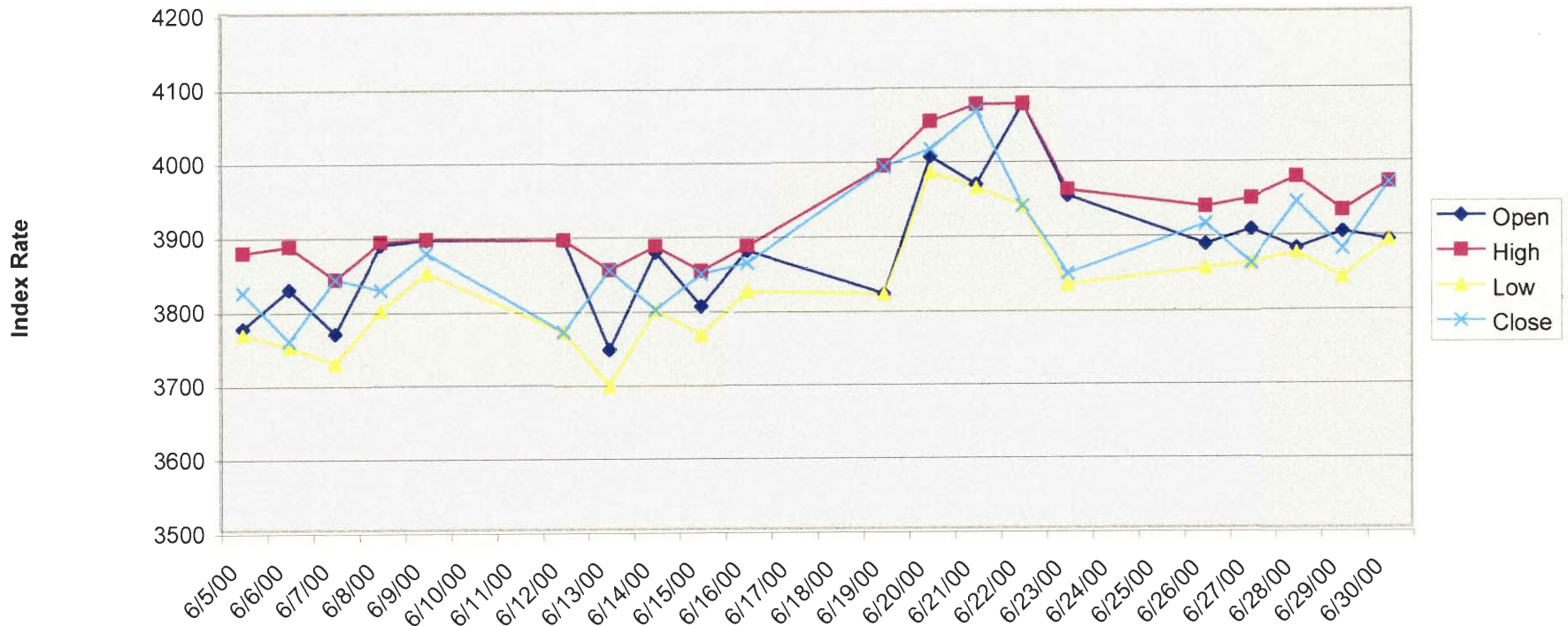
America Online Monthly Report



	29-Jun-00	28-Jun-00	27-Jun-00	23-Jun-00	22-Jun-00	21-Jun-00	20-Jun-00	19-Jun-00	15-Jun-00	14-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	50.88	51.31	51.75	56.5	57.06	57.56	54.5	54.69	52.56	52	52.5	53.94	54.94	57.5	55	56.13
High	52.69	51.88	53	56.69	58.63	58.25	58	54.75	55.56	53.5	53.5	54	55.56	57.5	56.69	56.63
Low	50.63	51	51	52.63	55.25	56.75	54.25	53	52.25	51.88	50.81	52.31	54.31	54	54.69	55
Close	51.75	51	51.88	53.5	56.5	57.5	57.88	54.5	55	52.44	51.63	52.75	54.75	55.06	55.88	55

Date

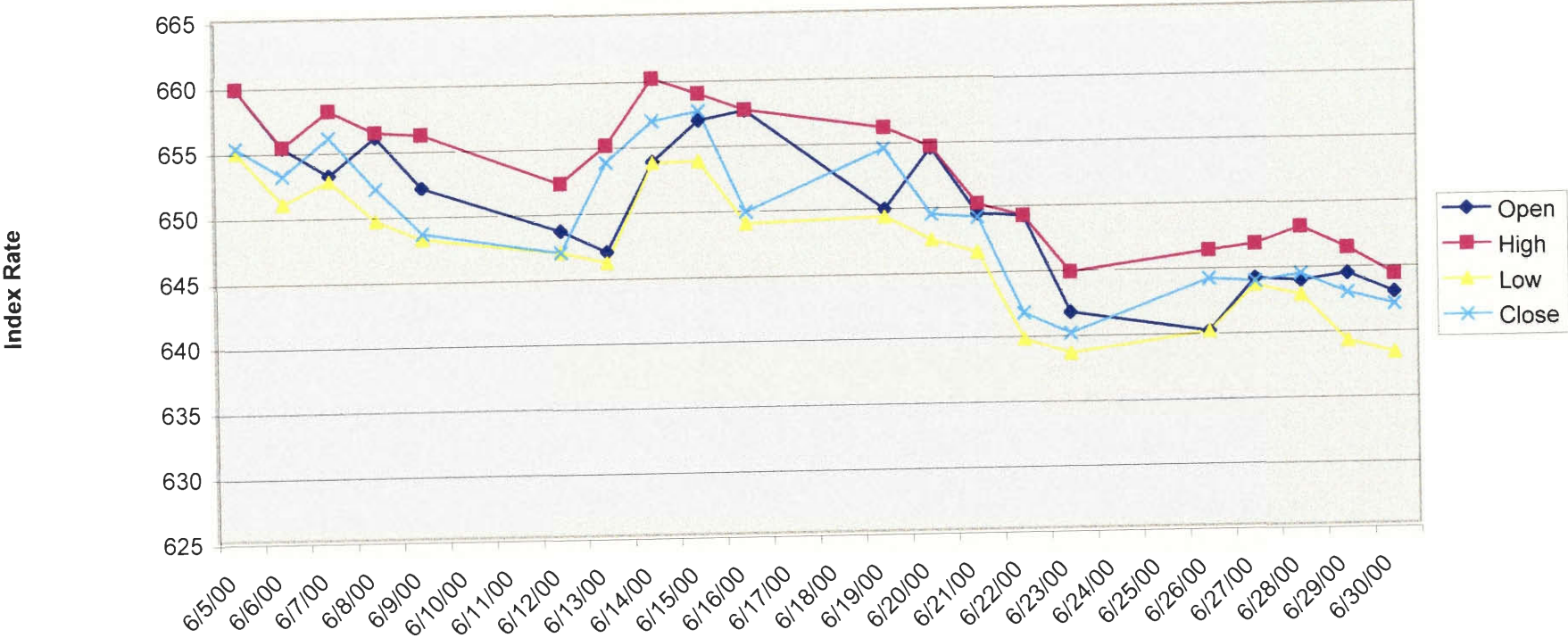
NAS/NMS Composite(NasdaqSC:^IXIC)



	30-Jun-00	29-Jun-00	27-Jun-00	26-Jun-00	23-Jun-00	22-Jun-00	20-Jun-00	19-Jun-00	16-Jun-00	15-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
Open	3890	3900	3904	3885	3950	4074	4003	3819	3877	3802	3744	3892	3893	3886	3826	3773
High	3967	3929	3946	3935	3958	4074	4051	3991	3883	3850	3851	3892	3894	3890	3884	3876
Low	3889	3839	3859	3852	3830	3937	3982	3819	3822	3764	3695	3768	3848	3797	3749	3766
Close	3966	3877	3859	3912	3845	3937	4013	3990	3861	3846	3851	3768	3875	3826	3756	3822

Date

NYSE COMPOSITE (NYSE:^NYA)



	30-Jun-00	29-Jun-00	27-Jun-00	26-Jun-00	23-Jun-00	22-Jun-00	20-Jun-00	19-Jun-00	16-Jun-00	15-Jun-00	13-Jun-00	12-Jun-00	9-Jun-00	8-Jun-00	6-Jun-00	5-Jun-00
◆ Open	642.8	644.2	643.9	640	641.5	649	654.4	649.7	657.4	656.7	646.8	648.4	651.9	655.9	655.2	659.7
■ High	644.1	646.2	646.6	646.1	644.6	649	654.4	655.9	657.5	658.8	654.9	652.1	656	656.2	655.2	659.7
▲ Low	638.1	639.1	643.4	640	638.4	639.6	647.3	649.1	648.8	653.6	646	646.8	648	649.5	650.9	654.8
✕ Close	641.8	642.8	643.7	643.9	640	641.5	649.3	654.4	649.7	657.4	653.6	646.8	648.4	651.9	653	655.2

Date

Bibliography

1. Microsoft MoneyCentral Investor:
<http://moneycentral.msn.com/investor/help/gscqd.asp>
2. Yahoo Finance: <http://finance.yahoo.com/>
3. Go2Net homepage: <http://www.go2net.com/>
4. Nasdaq homepage: <http://www.nasdaq.com/>
5. NYSE homepage: <http://www.nyse.com/>
6. E-trade homepage: <http://www.etrade.com/>
7. Datek homepage: <http://www.datek.com/>
8. Ameritrade homepage: <http://www.ameritrade.com/>
9. SureTrade homepage: <http://www.suretrade.com/>
10. Lycos Investing: <http://investing.lycos.com/>
11. Money.com Financial Strategy Center: <http://www.money.com/>
12. Quote.com: <http://www.quote.com/>
13. ZDNet [Inter@active](http://www.zdii.com/) Advisor: <http://www.zdii.com/>
14. Andrea Ruth Sereny; David Gerald Terry. "Stock Market Simulation" Worcester Polytechnic Institute: IQP # 49-DZT-9901
15. Briefing.com: <http://www.briefing.com/>