BACK ROW INVESTMENT

VALUATION: MICROSOFT 2005
April 25, 2005

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## Investment Recommendation: Overvalued

**April 25, 2005**

### Stock Ticker and Exchange

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>52 week price range</td>
<td>$23.82 - 30.20</td>
</tr>
<tr>
<td>Revenue (2004)</td>
<td>$38.47 Billion</td>
</tr>
<tr>
<td>Market Capitalization</td>
<td>$272.44 Billion</td>
</tr>
<tr>
<td>Shares Outstanding</td>
<td>10.88 Billion</td>
</tr>
<tr>
<td>Dividend Yield (1.26%)</td>
<td></td>
</tr>
<tr>
<td>3-month Avg daily trading volume</td>
<td>67,463,409</td>
</tr>
<tr>
<td>Percent Institutional Ownership</td>
<td>54.63%</td>
</tr>
<tr>
<td>BV per share (mrg)</td>
<td>4.341</td>
</tr>
<tr>
<td>ROE</td>
<td>25.98%</td>
</tr>
<tr>
<td>ROA</td>
<td>11.7%</td>
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### Cost of Capital Estimates

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ke Estimated</td>
<td>7.863%</td>
</tr>
<tr>
<td>5-year Beta</td>
<td>1.527</td>
</tr>
<tr>
<td>3-year Beta</td>
<td>1.067</td>
</tr>
<tr>
<td>2-year Beta</td>
<td>.9824</td>
</tr>
<tr>
<td>Published Beta</td>
<td>1.434</td>
</tr>
<tr>
<td>Kd</td>
<td>.63%</td>
</tr>
<tr>
<td>WACC (bt)</td>
<td>5.17%</td>
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</tbody>
</table>

### Debt Risk

<table>
<thead>
<tr>
<th>Description</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Altman Z-Score</td>
<td>4.3918</td>
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### EPS Forecast

<table>
<thead>
<tr>
<th>Fiscal Year (FYE)</th>
<th>2004</th>
<th>2005E</th>
<th>2006E</th>
<th>2007E</th>
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<tbody>
<tr>
<td>EPS</td>
<td>.92</td>
<td>.94</td>
<td>1.06</td>
<td>1.18</td>
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### Valuation ratio Comparison

<table>
<thead>
<tr>
<th></th>
<th>MSFT</th>
<th>Industry Avg.</th>
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</thead>
<tbody>
<tr>
<td>Trailing P/E</td>
<td>27.2</td>
<td>43.95</td>
</tr>
<tr>
<td>Forward P/E</td>
<td>17.64</td>
<td>24.61</td>
</tr>
<tr>
<td>Forward PEG</td>
<td>1.79</td>
<td>1.77</td>
</tr>
<tr>
<td>M/B</td>
<td>5.78</td>
<td>5.49</td>
</tr>
</tbody>
</table>

### Valuation Estimates

#### Actual Current Price

- $25.32

#### Ratio Based Valuations

- P/E Trailing: 27.20%
- P/E Forward: 17.69%
- PEG Forward: 1.79%
- Dividend Yield: 0.32%
- M/B: 5.78%

#### Intrinsic Valuations

- Discounted Dividends: 4.07
- Free Cash Flows: 40.86
- Residual Income: 17.02
- Abnormal Earning Growth: 17.01
- Long-Run Residual Income Perpetuity: 6.20
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1. Executive Summary

1.1 Recommendation – Overvalued Firm

Our recommendation on Microsoft securities is to sell since we have determined that it is an overvalued firm. This firm is a leader in its industry with innovation and brand name recognition driving its products. This is a volatile industry, and even so Microsoft maintains a low beta showing it is a stable company.

We expect Microsoft to decrease from its current price of $25.32, due to our evaluations of the company, industry and intrinsic valuations of the firm’s financial statements. Microsoft has a strong presence in the market where it is allowed to introduce new products and innovations quickly. It has expanded into many different areas of the industry and into new ones, showing it has the ability and foresight to continuously grow as a firm.

1.2 Company Strategy

Microsoft’s main strategy is to be the leader in innovation and in the technology industry that is the only way for a firm to stay ahead of the competition. It filed over 2,000 patents, just in 2004, on new technologies in an effort to push innovation and bring new products to the market.
Continuously working on new products and developments in old products to meet consumer’s needs enhances the value of the company and develops a strong customer base.

They are also expected to push into new markets overseas where they expect to increase the demand for their products. It took over 20 years for Microsoft to create a customer base of 600 million that use it’s software, but in only five years they expect that to grow to over one billion in 2010 (MSFT, 10k, 2004). Their plan for this all goes back to innovation and the push into new markets while at the same time strengthening their bonds with current customers to create value-added opportunities for the firm.

1.3 Strong Financial Position

Microsoft’s financial position has become a major value to the company. The firm has very low debt and a safe Altman Z-score with a 4.3918. It has not distributed dividends in the past, focusing instead on pumping that money back into the company to increase the stock value for shareholders. It has changed slightly, issuing small dividends the last few years and even recently announced over $75 million dollars going to shareholders through increased dividends, stock buybacks, and special dividends over the next four years (MSFT, 10k).
Through its increased dividend payout, Microsoft will attract new investors that focus on income rather than growth investments. This will also increase the already large percentage, 54.63%, of institutional ownership of the company which shows that large companies have faith in the firm. This firm has continued to grow, increasing revenue each year and simultaneously cutting costs in order to maintain its strong financial position.

1.4 Forecasting and Methodology

In order for us to come up with an intrinsic value for Microsoft to determine the true value of the stock we used forecasting and estimated financial statements out to 2014. We used historical data from 2000 to 2004 to come up with forecasts for their balance sheet, income statement, and statement of cash flows. From these forecasted financial statements we used the discounted dividends, free cash flows, residual income, and abnormal earnings growth valuation models to determine what we felt was an accurate value for the stock.

As with all forecasts it is hard to estimate with accuracy ten years in the future but we feel our estimates are feasible for Microsoft and will be met in the future. We did not value the discounted dividends valuation as much as
the other valuations since Microsoft just began issuing dividends in 2003 and we did not have accurate forecasting data. We feel that our best valuation models were the free cash flows, residual income, and the abnormal earnings growth.

**1.5 Market Valuation**

Throughout the recent economic decline, Microsoft has managed to maintain profitability and a reasonable amount of cash flow. Microsoft’s stock is currently at $25.04 which is 20.6% lower than what it was five months ago. In the last year the stock has been very unpredictable ranging from a low of $23.82 to the high of $30.20.

Microsoft was not alone in volatile stock performance, there two main competitors also had significant changes in price. IBM had a high of $99.10 and a low of $81.90 within the last year. The return on stock price is -21% and is currently trading at $84.57. Apple Inc. probably had the best stock performance of all. Within the last year they have gone from $12.75 all the way up to $45.44 meaning a return of +356% which is amazing compared to other competitors. Apple is currently trading at $41.04.
1.6 Risk

The major challenge Microsoft faces is the ability to remain the industry leader. As technology advances more and more companies are closing in on Microsoft and challenging their revenues. To remain at the top of the software industry they will have to rely heavily on research and development. Microsoft interest and money invested in R&D has significantly increased over the last four years. This trend will need to continue if they are to remain on top.

There is also always the possibility that the US economy will fall into a recession and sales will decrease dramatically as well as a downturn in foreign markets.

2. Business and Industry Analysis

2.1 Company Overview

Microsoft Corporation (Nasdaq “MSFT”) was founded in 1975 by Bill Gates and Paul Allen when they created a BASIC computer language for the Altair 8800. Since then they were incorporated in 1981 and have become the worldwide leader in “developing, manufacturing, licensing, and supporting a
wide range of software products for various computing devices. The company’s software products include scalable operating systems for servers, personal computers (PC’s), and intelligent devices.”

(www.finance.yahoo.com)

“For the six months ended December 31, 2004, revenues rose 9% to $20.01 Billion and Net Income rose 44% to $5.99 Billion. This was accomplished by ongoing improvements in overall IT spending and lower research and development costs.” (www.reuters.com) Microsoft is made up of seven product segments: Client, Server and Tools, Information Worker, Microsoft Business Solutions, MSN, Mobile and Embedded Devices, and Home and Entertainment which accounted for respectively “5%, 18%, 3%, 0%, 8%, 44%, and 11% of the company’s total revenue for the second fiscal quarter ending January 27, 2005.”(www.microsoft.com)

The Client segment is in charge of getting the product to its destination, engineering and the technical architecture for the Microsoft Windows operating system and new media technology. This segment also maintains the company’s relations with PC manufacturers locally and globally.
Microsoft’s client segment competitors include IBM, Hewlett-Packard, Apple Computers, and Sun Microsystems.

The Server and Tools segment is in charge of integrating product development and marketing of the Windows Server operating systems and other software developer tools. Window’s Server enables united programs and different types and sizes of networks ranging from small in office networks to networks as large as the internet, to relay information from the work group to the main data center. Oracle, Computer Associates, IBM, Hewlett-Packard, and Sun Microsystems are competitors of Microsoft’s Server and Tools segment.

The Information Worker segment develops and delivers the Microsoft Office Software programs that include Microsoft Word, Excel, PowerPoint, Outlook, Access and many other programs depending on which version is being used. This segment competes with Corel, Sun Microsystems, Apple, IBM, and Oracle.

Microsoft Business Solutions is the segment that develops and markets business software programs and services that are intended to assist small to
medium sized businesses obtain success by uniting them with their customers, employees, suppliers, and partners. PeopleSoft and Oracle are two of Microsoft’s main competitors within this segment.

The MSN segment is made up of online services that include MSN subscriptions and MSN network services. MSN has also joined with other companies like NBC forming MSNBC.com, as well as Foxsports.com, Expedia.com, and Match.com. Yahoo!, Google, Earthlink, AOL-Time Warner, and The First Data Corp compete with MSN for the market share of the computer services industry.

The Mobile and Embedded Devices segment makes the Windows Operating Platform compatible with mobile and other types of non computing devices such as the Windows Powered Pocket PC and Smartphone, Digital Televisions, the Mobile Explorer microbrowser and many more. Companies such as Palm Source, Nokia, QUALCOMM, Wind River, and Linux are some of Microsoft’s competitors within this segment.

The Home and Entertainment segment further builds on the Windows Platform by offering consumers devices as well as a wide range of
applications for the devices in the home. Microsoft X-Box gaming system, games, controllers, and extra components, PC games, and educational software such as the Encarta Encyclopedias are some of the products included in Microsoft’s Home and Entertainment Segment. The Home and Entertainment Segment of Microsoft competes with other gaming system and game manufacturers like Atari, Electronic Arts, Sega, Sony, and Nintendo.

2.2 Industry Overview

The software and programming industry is one of the most considerable and important parts of the global economy with revenues of around $75 Billion a year. This is largely caused by the companies that are in highly competitive and/or global markets, which must invest more and more money in information technology (IT) to be more efficient than their competitors.

Recent government acts such as the Sarbanes-Oxley Act of 2002 which requires companies to disclose real-time situations that may affect their financial status and keep track of inter-company emails and instant messages create a demand for a new type of software. Other Acts that create a demand for industry growth include the U.S. Patriot Act and the Health Insurance Portability and Accountability Act. Despite the huge demand for IT, there
are signs that the software industry overall is maturing and growth is slowing.

The large, global software companies remain profitable while the smaller, more specialized companies are being forced out of this competitive industry because the slowing growth of industry revenue can not support the smaller growing companies. Another reason smaller, specialized companies are being forced out is because the larger companies are broadening their software lines allowing them to provide the users with software that is similar to that of the smaller more specialized companies at a lower cost. A few of the larger companies in the software and programming industry have showed signs of consolidation within the industry by acquiring smaller companies. For example: “Oracle acquired PeopleSoft for $10.3 Billion and Microsoft and IBM have made acquisitions worth over $1 Billion.”

Another trend is that software companies have been hiring developers from other countries, reducing their development costs.

2.3 Five Forces

2.3.1 Current Competitors

There is some rivalry in the industries that Microsoft conducts business in. In the computer software industry there has been relative strong growth in
the past and it has started to slow in the last few years. This has developed a competitive market where price leads to market share in the industry.

The market is not concentrated with only a few competitors like IBM, Hewlett-Packard and Sun Microsystems which all offer a form of Unix on their software. This allows the different firms to compete in their industry without necessarily having to always have the lowest price to compete. In the video game industry they find themselves up against Nintendo, Sony, and Capcom. Their system, Xbox, has held its own against these other systems but with such room in that industry it is not necessarily one system or another that a consumer chooses from.

In this industry there is a great deal of differentiation where each software or hardware provides the user with different options and interfaces that allow the consumer or user different options that make it more or less of a value to him or her. Each company focuses on what is easiest to use and will allow the user or company the most for their money.

2.3.2 New Entrants

Microsoft is in an industry that does not have a high threat of new entrants. The industry is very costly to enter and with an ever changing technology as
its basis it is hard for a new company to get into the market or even be able to compete with the already competing firms. The mere size and cost of running an operation like Microsoft or its competitor IBM requires too much capital for a small start up company to be able to get its foot in the door.

In these industries customers are key and even new entrants that could afford to get into the market would find it hard to find customers that were willing to switch over to a whole new system of computer software or hardware systems. Microsoft focuses a great deal on customer service and providing its clients of hardware and servers with the best of resources in troubleshooting and training if they do incur problems.

Another reason for the low threat of new entrants is the legal barriers that would have to be overcome to enter the market. Microsoft alone has applied for over 2,000 patents in 2004 alone and a new company would not have the resources to race and compete for the newest technology that will be necessary to compete in this market now and in the future.

2.3.3 Alternative Products

The threat of substitutes for Microsoft is very high and that is why the company spends a great deal of resources on treating its customer’s right. It
focuses on making sure companies that purchase its systems know how to train their employees and that customers are satisfied with their software. With such big names as IBM and Hewlett-Packard producing the same products there is a great deal of competition for business in the corporate world and for the everyday consumer.

Even in their pursuit in the gaming market, with Xbox, Microsoft has to provide its customers with advantages to buying their system over a Playstation 2 or Game Cube. In most cases the differences between the systems is negligible and comes down to marketing and game selection.

### 2.3.4 Customer Bargaining Power

Microsoft luckily finds itself in a very good position with its buyers. It finds itself in an industry where it can demand high dollar and customers will pay it, because of a lack of cheaper alternatives with the same quality. Microsoft and other software providers all charge about the same price for their products and there is such a huge market for these products that it does not have to drop prices to compete.

It does however bargain a little with large corporate hardware consumers. Entire corporations that want to have Microsoft systems and software in
their systems do not have to buy it at the everyday consumer price, they are offered bundle deals. But this is to be expected when dealing with multi-million dollar deals that could lead to years of repeat business.

### 2.3.5 Supplier Bargaining Power

The suppliers have absolutely no bargaining power over Microsoft. Even in its 10k report it boasts it has absolutely no reliance on any one supplier. It is able to get resources from a number of places and does not rely heavily on any one supplier for too much of one resource. This enables it to keep the bargaining power on its side and let it get the best deals.

Microsoft also has bargaining power with the third parties that manufacture its product, because it does not do it itself. Microsoft has many manufacturers competing for its business which gives it the lowest price every time for getting its product to market. With such a large business, that produces such large volumes of product any manufacturer wants to produce Microsoft products.

The only noted exception to this is the CPU for the Xbox which is only provided to Microsoft from Intel. For a company that produces so much and offers so many services it relies on one company solely for just one part of
one part of its business. This is an amazing feat and has allowed Microsoft to have absolute bargaining power with its suppliers.

2.4 Key Success Factors

Microsoft’s key success factors are innovation and market recognition. It provides a variety of software products, including its Windows operating systems and Office software suite. It has also expanded into other markets, including video games, internet access, and cable news.

2.4.1 Innovation

Microsoft prides itself as a leader in technological innovation, and it relies on its product innovation to stay ahead of its competitors in the software industry. Each successive version of its Windows operating system is touted as being much more powerful and more user friendly than the one before it, and consumers rush out to be among the first to own the latest version Microsoft has to offer. This has led to over 250 million copies of Windows XP sold since it was introduced in 2001. Microsoft’s founder and chief software architect, Bill Gates, has stated that Longhorn (the code name of the successor to XP, set for release sometime in 2006,) is not merely an upgrade, but the biggest advance of Windows since Windows 95. It features three major upgrades - a new graphics and presentation engine known as
Avalon, a new communications architecture called Indigo and a new file
search and retrieval system known as WinFS.

2.4.2 Name Recognition

Microsoft’s success is also due in large part to its penetration into the social
consciousness. As personal computers become cheaper and more powerful,
more and more people own one, and most computers run on some version of
Microsoft’s Windows software. The term Wintel refers to the fact that most
computers running Microsoft Windows run on microprocessors
manufactured by Intel. Microsoft and Intel are two dominant forces in the
personal computer industry, and consumers expect high quality and gain a
sense of comfort when they buy products with the Microsoft and Intel logos.
People who own Windows computers also get other software that comes
packaged with them, such as Internet Explorer and Windows Media Player.
This kind of recognition and familiarity with its various software products
makes it difficult for competitors to promote their products and convince
consumers of their superior quality. Consumers, especially those who are
not computer savvy, are hesitant to switch to a new program or software
package once they have gotten used to another one. In addition, Microsoft
Office, a software suite featuring a word processor, spreadsheet program,
and other software, is taught in computer classes across the country. This
creates a familiarity with programs such as Word and Excel and keeps consumers buying these products.

2.5 Company and Industry Conclusions

Microsoft maintains a firm presence in the market with a market capitalization of $272 billion. IBM is second in the industry and only has a $123 billion market capitalization. (Yahoo.finance.com) Microsoft leads the industry in revenue growth and has a strong hold on the PC market with its software.

Apple, with its introduction of the IPOD, has shown great gains recently, but in such a volatile industry this is to be expected. New innovations bring great gains while a failed attempt at a new product results in great loss and a step behind the competition. Microsoft is soon to announce the release date of its new XBOX which will help boost Microsoft stock. A successful release date along with the popularity and acceptance of the new XBOX would boost the value of Microsoft stock tremendously.
3. **Accounting Analysis**

3.1 **Key Accounting Policies**

Microsoft’s financial statements were prepared in accordance to the US Generally Accepted Accounting Principles (GAAP). Microsoft’s key accounting policies include revenue recognition, impairment of goodwill, inventories, property and equipment, accounting for research and development costs, accounting for legal contingencies, and accounting for income taxes.

Revenue is recognized when “persuasive evidence of an arrangement exists, delivery has occurred, the fee is fixed or determinable, and collectibility is probable.” There are three other ways revenue is recognized, the first being for retail packaged products, products licensed to original equipment manufacturers, and perpetual licenses for current products under our Open and Select volume licensing programs generally is recognized as products are shipped. Revenue from multi-year licensing arrangements are accounted for as subscriptions, with billings recorded as unearned revenue and recognized as revenue ratably over the billing coverage period. Revenue related to our X-box game console is recognized upon shipment of the product to retailers. Revenue related to games published by us is recognized
when those games have been delivered to retailers net of allowances for returns and price concessions. (MSFT)

Impairment on goodwill is tested for on an annual basis every July 1st. Also between tests if any signs of impairment exist. Inventories are stated at the lower of cost or market using the average cost method. Cost includes materials, labor, and manufacturing overhead related to the purchase and production of inventories. Property and equipment is stated at cost. Microsoft uses straight-line depreciation method over the estimated life of the asset or the lease term ranging from one to 15 years. Computer software developed or obtained for internal use is depreciated using the straight-line method over the estimated useful life of the software, generally three years or less. (10K)

Research and development is one of the key competitive advantages for Microsoft. Research and development expenses include payroll, employee benefits, equity compensation and all other costs associated with product development. These costs are expensed when incurred until technological feasibility has been established. Once this happens all software costs should be capitalized until the product is available for general release to customers.
Legal Contingencies should be accrued by a charge to income if it is probable that an asset has been impaired or a liability has been incurred and the amount of the loss can be reasonably estimated. Accounting for Income Taxes is designed to recognize the amount of taxes payable or refundable for the current year and deferred tax liabilities and assets for the future tax consequences of events that have been recognized in an entity’s financial statements or tax returns. For Microsoft this includes U.S. and international income taxes. (10K)

All these accounting policies are not as equally important. For Microsoft the most important are probably revenue recognition and research and development. Microsoft is one of the biggest companies in the world and has a massive amount of revenue to recognize so this policy is key to their success. Microsoft is in the software and technology industry which means everything is being updated and assets quickly become outdated. Research and development is an essential part of Microsoft as they strive to be the first to release all new software and any new concepts.
3.2 Accounting Flexibility

Microsoft is involved in many different sectors of business which involves different forms of accounting for each sector. Some business’ they are involved in are very straightforward and have limited flexibility, while others have a great deal of flexibility. Their main sectors of business, the computer software and gaming sections, are more flexible in how they have to perform and report their accounting.

Microsoft is highly looked at by other businesses and investors due to its enormous size and almost monopolistic hold on many sectors of the industry. Due to this high profile Microsoft is very open and follows U.S. GAAP, Statements of Position, and Staff Accounting Bulletins. Even though they follow the accounting rules and guidelines there is still room for flexibility in their accounting and disclosure statements. Even though this could be used for manipulation of numbers to make their company look better it is more likely used to give a fair evaluation of how revenues, expenses, liabilities and assets are reported.

One of the areas for accounting flexibility is in their software revenue recognition and addressed in their 10k report. Microsoft follows the
American Institute of Certified Public Accountants Statement of Position on this matter (10k, 29). In many instances Microsoft gives customers products over an extended period of time as part of a package deal. In these deals customers get service before they actually pay for the products and for an extended period after they pay for the product.

The judgment used to value these services and the value of product distributed in the future is where flexibility comes into play. As cited in their 10k report: “Changes to the elements in a software arrangement,…the fair value of the respective elements, and changes to a product’s estimated life cycle could materially impact the amount of earned and unearned revenue(10k, 29). The judgment used can only be estimated from past history and knowledge so as always it can not always be expected to be accurate. These judgment calls also play a part in determining whether releases of new software should be determined upgrades of existing software or an entirely new product. How these new products are classified changes how their expenses and revenue must be recognized.

Another area of accounting that has flexibility for Microsoft is in their investments in debt and equity securities. As with all securities market
performance determines value at any particular time so flexibility comes into play when valuing these securities as assets. It is up to the company how to value these securities either at the expected value when purchased or at actual value if the market takes a turn for the worse.

Goodwill and intangible assets are also where accounting flexibility can occur. Microsoft evaluates their goodwill every year and sometimes between those evaluations if an event occurs that would affect the value of goodwill (10k, 29). In the determining of goodwill value it is necessary to assign value to assets and liabilities which require determining cash flows using a discounted cash flow method. This method is formed from internal forecasts, the estimated growth of the business, useful life, and the average weighted cost of capital (10k, p29).

This method of determining future cash flows and assigning assets value on expected income is all basically a judgment call that could be manipulated in a number of ways and still seen as correct accounting. The only way to see if they are pushing or pulling the numbers around is to compare their estimates with others in the industry. Things like useful life and growth
expectations are usually pretty similar in competing businesses in an industry and can be used to compare accounting numbers.

Also looked at for its ability to have accounting flexibility is when research and development are a large factor part of a company. How this is expensed is very important in determining how much flexibility a company is taking and how they are accounting for the research and development of their products. Software firms are one of the major businesses that incur large research and development cost in developing their products. Similar to drug companies, software companies spend a great deal of their money trying to develop the next great innovation or product. How they account for the great expense that goes into this research and development of these products is of great importance.

Microsoft determines how research and development are expensed based on the technological feasibility of the product. They determined that a product is technologically feasible shortly before it is released to manufacturing (10k, p30). All expenses incurred before this point are charged to expense and after this point they are capitalized until they are available for release to customers. Determining this point of technological feasibility gives
Microsoft flexibility in charging off research and development expenses. As with other areas of flexibility the best way to see if these areas are being abused is with industry comparisons.

3.3 Accounting Strategy

Microsoft’s accounting strategy involves large expenditures in research and development to have the most innovative product and software design, as well as to improve existing products, in the market. Of their 57,000 U.S. employees, 24,000 of them worked in research and development. Most of the products and software are developed internally giving Microsoft a better sense of control in the decision making process and in the product design which may need to be changed before its release because of changing usage pattern or hardware advances in the market. They are working on ways to further reduce these expenses and decrease the time to develop and distribute new products.

Microsoft strives to provide stockholders and potential investors with accurate, easily available financial reports that comply with GAAP standards. They also have an internal financial committee charter that enforces the Microsoft Finance Mission that provides standards and expectations for all employees of the firm. Internally, Microsoft uses a
financial reporting system that is not in compliance with GAAP. The internal accounting reports differ from GAAP in terms of revenue recognition, income statement classification, quarter end cut-off timing, accelerated amortization for depreciation, stock awards, and performance-based stock awards. Another difference is that certain revenue and expenses are excluded from these internal reports or are included in corporate level actions including certain legal settlements and legal contingent liabilities. These internal methods of accounting are used to assist in internal decision making such as the assignment of management responsibility and the allocation of resources.

Trying to attract new, hard to find employees and keep current ones, Microsoft recently switched from a stock-option employee benefit plan to stock award compensation plan, rewarding them with stock instead of the option to buy it. Along with this new plan, employees were allowed to trade in their existing options with a “strike” price of $33 or higher could be sold to J.P. Morgan bank for a fair price. To make this stock option to benefit transformation comply with SFAS rules, Microsoft began using the fair value recognition provision which basically states that a stock-based reward’s cost is measured at the reward date based on the price of the award and is recognized as an expenditure over the vesting period. The
implementation of this SFAS provision caused an increase in common stock and paid-in capital, a decrease in retained earnings, and an increase in deferred income taxes. It may seem like this was a bad management choice because it lowered retained earnings and income, but actually this is a great strategy for Microsoft because in the software market, companies must be compete for programmers and developers. Since going public in 1986, Microsoft’s management has strategically split MSFT stock nine times helping its value steadily increase in value overtime.

As of June 30, 2004, Microsoft’s cash and short-term investment portfolio totaled over $60 billion and their equity and other investment portfolio was valued over $12 billion. The reason for the $48 billion difference is because they are minimizing interest rate risk and are able to assist themselves by having cash ready to use in the rapidly changing software market environment by having their assets in fairly liquid, short term investments.

Another one of Microsoft’s accounting strategies is to have no material, long-term debt. As of the company’s last 10-K report for 2004, stockholder’s equity totaled $74.8 billion. Microsoft plans to continue as previous years to invest in sales and marketing, product support, and present
and future technologies. They also plan to add on to existing properties and equipment and have commitments of $129 million to add new facilities and computer systems for research and development and sales and marketing. For Most of Microsoft’s U.S. offices, some of their international offices, and certain equipment, they use operating leases. The company has large rental expenses and on some of the leased property they have residual value guarantees totaling $271 billion. The guarantees state that if Microsoft does not buy the property after the lease has ended, Microsoft is liable for the difference between the future selling price and an agreed upon amount. Microsoft believes that the profits from the sales of the properties under operating leases will total more than the amount specified in the residual value guarantees. With this belief, no liabilities exist because of the operating leases.

3.4 Quality of Disclosure

Microsoft uses its annual report to the SEC to explain its accounting policies, financial condition, and future growth expectations to its shareholders. In the section titled Management’s Discussion and Analysis of Financial Condition and Results of Operations, Microsoft includes forward-looking statements that do an excellent job of explaining the company’s past performance and looking at what the future holds for Microsoft.
Management’s Discussion and Analysis (MD&A) also delves into market opportunities that will help expand different product markets and continue the company’s growth into the future. For example, in addition to meeting the needs of a growing worldwide base of PC users, Microsoft plans to expand into non-PC consumer electronics such as handheld devices, cellular phones, and home entertainment. They have already reached into the video game console market with the XBOX, and hope to catch up to and possibly surpass - Sony as the console leader with the upcoming release of the XBOX 360 later this year.

Microsoft also uses its MD&A and footnotes to explain certain items in the financial statements and key accounting policies, such as revenue recognition, investments, and goodwill. The footnotes go into a great amount of detail regarding key accounting policies such as how they account for unearned revenue and inventories, as well as foreign currency recognition, since Microsoft is a global business with offices and clients all over the world. They thoroughly discuss and explain segment information, and provide adequate income and loss figures for each segment of the business, such as Microsoft Business Solutions, MSN, Server and Tools, and
Home and Entertainment. Explanations for what products each segment covers are also provided.

All in all, Microsoft provides an abundance of information about their business both in their financial statements as well as the supplements to the financial statements, such as Management’s Discussion and Analysis and footnotes. It is safe to say that Microsoft’s annual report includes information necessary for all investors and shareholders to adequately assess the company’s performance, and also discloses management’s plans for the future of Microsoft.

3.5 Potential “Red Flags”

Microsoft Corporation is a company without many red flags. There were no fourth quarter adjustments that stood out in the 10Q. Microsoft did not have any certain relationships and related transactions. They did have $120 million in write offs in 2004 which was more than 2003 which was $85 million. But the balance for allowance for doubtful accounts was $166 million compared to 2003 at $242 million. Even though they did write off more in 2004 they brought down their allowance for doubtful accounts ending balance. In the end Microsoft had hardly any red flags that would make you question their accounting quality.
4. **Ratio Analysis and Forecast**

4.1 **Analysis and Forecasting Overview**

The value of a firm is determined by its profitability and growth. The purpose of analyzing and forecasting ratios is to determine the value and the success of your company. To do this there are four areas of ratios which are liquidity analysis, operating efficiency, profit ratios and capital structure. Information is taken from the balance sheet, income statement and statement of cash flows.

There is a total of fourteen ratios to help view how the company is performing. The overall analysis of these ratios should tell the company and the investors, how Microsoft is doing and assists in making investing decisions. It will tell an investor if the company’s financing activities and patterns are too risky or if they are being performed correctly.

Of Microsoft’s competitors, Apple and IBM were chosen as a representation of the market. These two companies share similar traits to Microsoft and have been in the market for over ten years. We decided not to include Sony or Nintendo for the video game side of the market as we are looking at
Microsoft as a whole. The information gained from analyzing the financial ratios are also valuable in forecasting the future of the company and how it will perform one to ten years from now.

4.2 Financial Ratio Analysis

The liquidity, profitability, and capital structure ratios discussed below are used in analyzing Microsoft by itself and used to analyze and compare with some of their direct competitors within their industry. IBM and Apple are used as a market representative of Microsoft’s market. These are the most similar companies to Microsoft in the industry. All three companies are within the computer software industry and operate internationally. Along with the ratios used in the liquidity and profitability analyses, a capital structure analysis was also used to determine and compare Microsoft’s Debt to Equity Ratio, Times Interest Earned, and Debt Service Margin with their competitors. The information found in this analysis can be used to get an overview of the entire software and technology industry and to see how Microsoft compares with the industry average.

4.2.1 Time Series Analysis

Over the past five years, Microsoft’s gross profit has steadily increased at an increasing rate (10-14%), and its gross profit margin has remained fairly
constant at about 82%. However, both Microsoft’s operating income as well as its operating income as a percentage of sales have declined from 2000 to 2004, with operating income as a percentage of sales dropping from about 48% in 2000 to 25% in 2004. This is a result of Microsoft increasing operating expenses, including sales and marketing as well as research and development, from nine billion dollars in 2000 to over twenty-one billion dollars in 2004, a 233% increase.

Microsoft’s increased focus on operating expenses can be attributed to its expansion into new markets, including internet service, handheld devices, and video game hardware, which requires a significant investment in research and development as well as substantial marketing expenses. Microsoft works in a highly competitive industry, and it no longer enjoys the market share it had in the nineties, as personal computers and other electronic devices have almost become commodities.

Microsoft’s liquidity ratios show that inventory turnover decreased significantly from 2000-2002, which is a problem for a company in a fast-moving industry such as Microsoft, where a new product on hand today might not be as cutting-edge and sought-after in six months, especially if a
competitor releases an updated or cheaper alternative. Inventory turnover has improved since its low in 2002, however.

4.2.2 Cross-Sectional Analysis

Both Microsoft’s current ratio and its quick asset ratio are consistently higher than the industry average, and both ratios increase every year, while the competitors’ ratios stay relatively constant. Gross profit margin is also higher than the industry average. This signifies that Microsoft’s sales far exceed its costs in producing those goods sold, which is expected, since most of Microsoft’s products are software.

The closest comparable competitor to Microsoft in terms of software is Apple, whose gross profit margin and return on equity are far below those of Microsoft, signifying efficient management policies at Microsoft compared to its competitors. The software industry as a whole is exhibiting positive growth, although firms will find it tougher and tougher to stay ahead of the competition in terms of technological development and market share, especially with the industry getting so crowded. Microsoft still leads the pack, however, and it appears its position as an industry leader and innovator won’t be challenged anytime soon.
4.3 Financial Statement Forecasting: Methods and Assumptions

In order to calculate the forecasted financial information for Microsoft we look at past years data starting in 2000 and ending in 2004. We then decided on a percentage to use for our forecasts over the next ten years. For example in the balance sheet we found assets to be steadily increasing over the past four years and will continue at around 75%. For liabilities the percentage between 2000 and 2001 fell 10%, but since then has steadily increased and therefore we assume it will continue at 83.5%. Accounts receivable is forecasted to remain at 6.5% and accounts payable at 10%.

On the income statement we found the cost of revenue to be 18% of sales and forecast the gross profit margin continue at 82%. Research and development as well as sales and marketing remain very important to Microsoft as technology is always changing and a new design is always coming out. Therefore with the inclusion of general and administrative, operating expenses will continue at 47%. Operating Income has surprisingly decreased over the last five years but we expect it to continue at 35%. After calculating all this we estimate that Net Income will be around 29%.
The percentage change forecasts operate under the following two assumptions: First that the economy will continue to recover and second that the computer industry’s sales will continue to grow. The timeframe we choose for our forecasts was ten years. Microsoft is in the software and technology industry so this means everything is constantly being updated. Therefore the time period ending 2014 would be sufficient enough to incorporate any changes or new additions in the industry.

### 4.4 Analysis and Forecasting Conclusions

In conclusion of the ratio analysis, Microsoft still proves to be the industry leader but will not continue to hold as much of the market share as before. According to the well above and growing liquidity ratios and the high gross profit margin Microsoft should continue to be profitable and dominate in the future.

In conclusion of the forecasts, Microsoft has recorded excellent performance over the past few years and remains the industry leader. Analysis of the company shows growth rates to be increasing steadily. Using a ratio analysis against their competitors, Apple and IBM, show that Microsoft is and will continue to perform at a higher standard. Finally I forecast that
Microsoft will continue to expand and be the dominant leader in their industry.

5. **Valuation Analysis**

5.1 **Valuation Overview**

Valuation is the process of converting a forecast into an estimate of the value of a firm. In the Valuation analysis we used four different methods to give us the most accurate estimate of Microsoft’s price per share. We first used the method of comparable valuations to look at the average ratios in the industry. Then the following intrinsic valuation methods were used. Free Cash Flows, Residual Income and Abnormal Earnings Growth all discounted were appropriate. By using these methods we should be able to come up with a single value for the price per share. Ultimately we want to decide if Microsoft’s share price is undervalued, overvalued or fairly valued. As of April 2005 Microsoft’s share price was $25.32.
5.2 Valuation of Microsoft

5.2.1 Method of Comparables Valuation

For this method we used the industry average of our two main rivals, IBM and Apple. We found that Apple had significantly higher ratios than IBM and this led to a higher industry average than Microsoft’s.

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<td>27.2</td>
<td>5.78</td>
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The difference in the ratios is because we only have two other companies in the industry. This means there is not a lot of variance reflected in the numbers. The $27.20 price-to-earnings trailing ratio comes closest to the April 2005 price of $25.32. We found the price-to-book ratio to be 5.78 which was extremely close to the industry average of 5.49. The price-to-sales ratio however was abnormally high at 7.1 compared to the industry average of 2.575.
5.2.2 Intrinsic Valuation Method

5.2.2.1 Calculations of Beta, Cost of Equity and Debt, and the Altman Z-score

The Free Cash Flow, Residual Income and Abnormal Earnings methods are to be used in this section to help value Microsoft. First we must calculate beta, cost of debt, cost of equity and weighted average cost of capital (WACC). We calculated the beta using past data from 2000 to 2005 and found that if you take out data from 2000 to 2002 Microsoft’s beta is much lower. If you use the five year beta or the published beta then it is much higher because it includes the time of the “tech bubble” and September 11. We give further details on our determination of these calculations in the appendices.

5.2.2.2 Discounted Free Cash Flows

Discounted free cash flow analysis is usually the best estimate of intrinsic value of a firm, but in this situation we are making the assumption that it is an outlier. We are making the assumption based on the fact that all our other valuations gave us prices below the current market price. We used a WACC_{bt} of 6.49% in our discounted free cash flow evaluation. We found a value of $40.86 which we think is way too high to completely rely on.
5.2.2.3 Discounted Residual Income

Our discounted residual income analysis gave us a more realistic valuation price of $17.02. We used $K_e$ at 7.86% and we determined that from our estimations and forecasts for Microsoft that this valuation is accurate for valuating the firm. The only problem with this valuation is that Microsoft has not paid out dividends before 2003 and they are expected to pay out more dividends in the future then they have before. This could effect the valuation of the residual income valuation making it a lower estimation if they start paying out more dividends each quarter.

5.2.2.4 Discounted Abnormal Earnings Growth

Discounted abnormal earnings growth valuation gave a very similar valuation of Microsoft with a price of $17.01. We again used a $K_e$ of 7.86% and this valuation is very close to our discounted residual income valuation, and it makes us more comfortable with accepting an overvaluation determination on Microsoft’s price. We must state again as we did with discounted free cash flows and discounted residual income that with the firm’s promise of higher future dividend payouts a higher valuation in the near future is more than likely.
5.2.2.5 Long-Run Average Residual Income Perpetuity

The long-run average residual income perpetuity was valued at $6.20. This also could be affected by the change in dividend payouts in the future of Microsoft. This is one area where increased dividend payout in the future would not affect the outcome as much as it would in our other valuations, due to the fact of taking the value back to 2005 dollars.

5.3 Microsoft Valuation Conclusions

Our conclusion on the value of Microsoft is an estimated price of $17.00, which falls well below the current price of $25.32. We chose this valuation because it had both discounted residual income and discounted abnormal earnings prices very close. The discounted dividends valuation method we didn’t consider because of the fact that dividends were not paid out before 2003 and that future dividends are unknown.

We expected to use the discounted free cash flows valuation method, but we felt its estimation of $40.86 was too far off from our other valuations to consider it in the valuation. Free cash flows method is usually very accurate and we think that it would be a better estimate of value in the future. Once dividends and the money they have put aside to pay out extra dividends and buy back common stock is used in the coming years the valuation of the
company would be very different and the free cash flows method would be a good indicator of the companies’ value.
APPENDICES
SOURCES

1. Microsoft 10k 2004, SEC filing
2. www.reuters.com
3. www.microsoft.com
4. www.finance.yahoo.com