

# ***Application of Value Investing and Market Strategy Analysis in ORCL, ADBE, CRM, PANW and MSFT***

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**Abstract:** Technology, a new star rising, changes people's lives dramatically through continuous innovation and support from all areas of society. Technology companies undoubtedly become the major storm of the stock market. The findings of this study aim to help stakeholders invest in a stock with good future prospects and the most significant potential to earn money through tons of technology stocks in the market. The methodologies that are applied in this research include P/E ratio, growth rates, and profitability ratios. All the methods help analyze which stock is better than the others from a comprehensive point of view. This research also includes non-numerical analysis, providing a more thoughtful conclusion for stakeholders to make investing decisions. The results point out that Microsoft is a wise investment company based on its top growth rates, growing and stable profitability, and relatively low p/e ratio. This research helps shareholders to identify their target when making technology investments.

**Keywords:** investment, stakeholder, methodology, technology

## **1. Introduction**

Stock is one of the most noticeable terms in the financial market. Earnings drive motives. As global capital markets become more integrated, firms can more easily access foreign capital markets by listing their shares on an exchange outside their home market, and investors can participate in initial public offerings abroad and trade shares across the border [1]. Stocks become more and more easily tradable and profitable. Many more people rush into the stock market, hoping to make money through stock trading and dividends generated by stocks. Among numerous listed companies in the stock market, technology companies have dominated a greater amount since 2000.

Internet and market strategy are significant and remarkable terms of the recent era. Technology changes how people live, and market strategy changes how products are produced and sold. People cannot live without technology, the same as fish cannot live without water. According to Timur Turlov, the way digital technologies change businesses has gotten faster because of the pandemic [1]. As a global trend, digitalization changes entire industries. The technology company that produces technology has widely and sharply increased in recent 20 years. Technology companies continuously dominated the stock market from the agricultural to the information era.

It is worth noticing the performance of technology companies and choosing one stock that has performed well in the most recent five years. In this paper, by analyzing the indexes representing company performance and market strategies companies use, one technology company stock is

recommended. What is more, a relationship between market strategy and company performance is found by looking at the market strategy and profitability, growth, and value of the stock.

## 2. Data

The data used to analyze stocks is from Electronic Data Gathering, Analysis, and Retrieval system from the U.S. Securities and Exchange Commission. There are a total of 5000 companies in the U.S stock market in the data set, and Jan 1st, 2015, to Dec 31st, 2021, data is included in the data set. Categories of companies vary from this data set, including technology companies, financial institutions, satellite communications companies, energy companies, and so on. In this paper, technology companies are in the main interest. Technology is synonymous with our time. Picking several big companies representing technology these days, through comparison of data, recommendations are made to investors.

Technology has been spreadly used in our daily lives. Without it, life would be extremely difficult since the convenience and effectiveness of technology deeply engrave on people's lives. Phones, computers, and 3D printing used in mask manufacturing are good examples of the changes [2]. Among countless technology companies, there are few of them that stand out. Microsoft, an American multinational technology corporation that produces computer software, consumer electronics, personal computers, and related services, is one of the stocks of the parison. Adobe (a multinational computer software company), Oracle Corporation (a multinational computer software company), Salesforce INC (an American cloud-based software company), and Palo Alto Networks INC (an American multinational cybersecurity company) are among the comparison lists.

## 3. Method

In this paper, there are several ratios that are being used, including P/E ratio, revenue growth ratio, eps growth rate, EBITDA growth rate, and profitability ratio. Each of these ratios has different functions. These ratios are used to analyze the companies' stock price tendency, company performance, and potentiality. Synthesizing these ratios, recommendations are made for investors. Synthesizing P/E ratio, growth rates and profitability ratio gives a comprehensive picture of a company's performances over years. So, my analysis method does not just focus on one ratio and determine future stock movements.

P/E ratio is one of the most important ratios when analyzing one company stock's price whether to be overvalued or undervalued. P/E ratio is calculated through dividing stock price to earnings per share. It is also a good indicator to analyze a company stock price's tendency. That is to be said, whether the stock price fluctuated dramatically over years or fluently increased over time. A fluctuated P/E value indicates that the stock price is highly unstable. A stock that has stable and growing P/E value is the targeted stock which can be added to an investing portfolio.

$$P/E = \text{Share Price} / \text{Earning per Share} \quad (1)$$

Revenue growth rate, eps growth rate, and EBITDA growth rate are indicators of measuring the potentiality of a company whether increasing or decreasing its company value. No matter in terms of long-term investment or short-term investment, growth rates are perfect references to take into account when analyzing a company's future. Revenue growth rate is defined as the difference between next year's revenue and revenue in the base year divided by the revenue of the base year. Using revenue growth rate helps to get one most potential company that predictably growing in the next year out of a brunch of companies. Eps growth rate and EBITDA growth rate are calculated the same logic as revenue growth rate but change the calculated unit from revenue to eps and EBITDA.

Summarizing these growth rates gives a comprehensive analysis of which company has the greatest potential in a series of companies.

$$\text{Revenue growth rate} = (\text{Revenue2} - \text{Revenue1})/\text{Revenue1} \quad (2)$$

$$\text{Eps growth rate} = (\text{Eps2} - \text{Eps1})/\text{Eps1} \quad (3)$$

$$\text{EBITDA growth rate} = (\text{EBITDA2} - \text{EBITDA1})/\text{EBITDA1} \quad (4)$$

Profitability is calculated by gross profit divided by assets. Gross profit, a good indicator for analyzing a company's profitability ability, is defined as the profit before tax [3]. Gross to asset ratio is also defined as the asset turnover ratio multiplied by gross margins. So, when referring to gross to asset ratio can also estimate a company's efficiency of generating sales with assets.

$$\text{Profitability} = \text{Gross Profit}/\text{Sales} \quad (5)$$

Market capitalization is calculated by stock price times total shares of stocks. Market capitalization helps shareholders to extrapolate a publicly traded company's value [4-5]. By looking at the market capitalization, investors can also have an idea of the size of the company, whether it is a large capitalization company or medium capitalization company or small capitalization. Usually, many factors affect market capitalization, such as profitability, marketing strategy, consumer categories (the young, the old or children) and so on.

A well-considered conclusion usually does not take one index into consideration. By analyzing various different indexes, investors can get a more accurate picture of what stock should be in the portfolio.

$$\text{Market Capitalization} = \text{Stock Price} \times \text{Total Shares of Stocks} \quad (6)$$

#### 4. Result

This section gives an analysis of the five companies' stock performance and company operating performances from 2015 to 2021. At the start, looking at each company's market value, it is not hard to differentiate those five companies by market capitalization. According to Market beat's statistics, Microsoft is the top company coming in sight. With 1.83 trillion dollars in capitalization, Microsoft stays higher than other companies. Oracle Corporation (185.54 billion dollars) remains at the second ranking. Salesforce (151.51 billion dollars) is the third highest company. Adobe (140.17 billion dollars) and Palo Alto Networks (52.09 billion dollars) are the fourth and fifth companies.

Marketing strategies vary from company to company. The five companies provide different services and products for their consumers to make profits. The value proposition is a market strategy that a company uses to make customers trust its brand as well as its products [6]. In Microsoft, hardware and software are both sold on the market. Salesforce offers a platform for companies to reach their customers' data. Analytic data is provided for companies in salesforce. Adobe offers multimedia and creativity software. Among them, the most well-known ones are photoshop, adobe illustrator, substance 3D stager, Adobe XD. Adobe offers their creativity products for designers to build up anything they come up in mind. Oracle Corporation offers a brunch of computer services, including data storage, java (a programming language), operating systems (Linux), and network virtualization. Palo Alto networks mainly provide fireworks to prevent customers' information from hackers on the internet. It provides network security, cloud security, endpoint protection, and various cloud-delivered security services.

Growth rates can be divided into revenue growth rate, eps growth rate, and EBITDA growth rate. All these three growth rates are good indicators for investors to refer to when analyzing companies' performances. Observing growth rates gives people a sense of which companies keep growing or declining in specific years. As for revenue growth rate, in the recent three years, Microsoft has had stable growing revenue growth rates, which suggests that Microsoft's revenue keeps growing and grows faster year by year. As for eps growth rate, In the most recent two years (from 2019 to 2020), Microsoft's growth rate was growing, but for the rest of the four companies, the growth rate was declining. What is more, the eps growth rate for Oracle Corp, Salesforce INC, and Adobe is negative, indicating that the eps are declining for those three companies. In this case, the dividend generated for stakeholders also falls. For EBITDA growth rate, Microsoft also has the top EBITDA growth rate over other companies in the most recent three years. What's more, Microsoft is the only company whose growth rates have been positive in the most recent years. Microsoft is also the only company that has a positive peg ratio in 2020, in which companies other than Microsoft are losing money or are expected to have negative growth. Based on peg comparison, Microsoft is the best company to choose, considering performance. Stable revenue growth rates and positive and growing eps growth rates make Microsoft an investing potential company. (See Tables 1-3 and Figures 1-2, respectively).

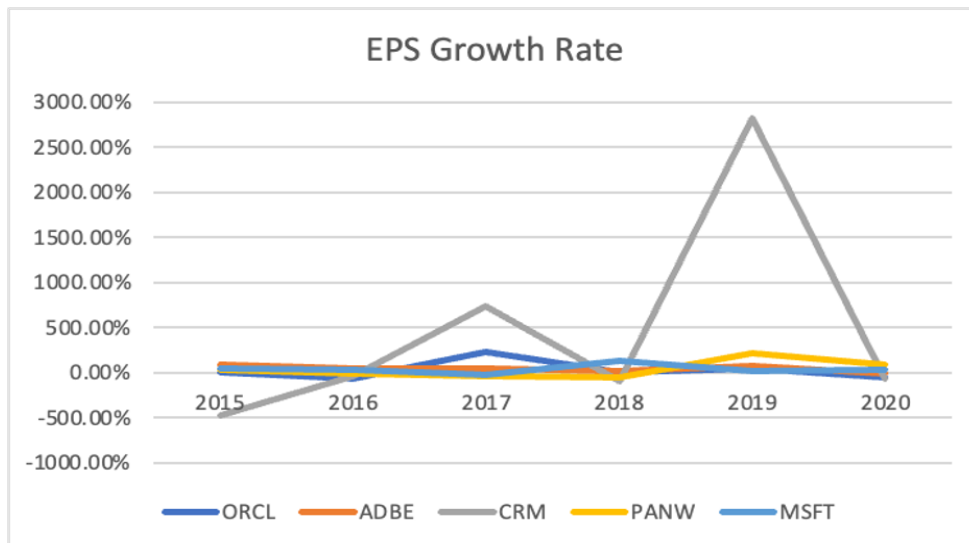


Figure 1: Line graph of Eps growth rates for selected companies.

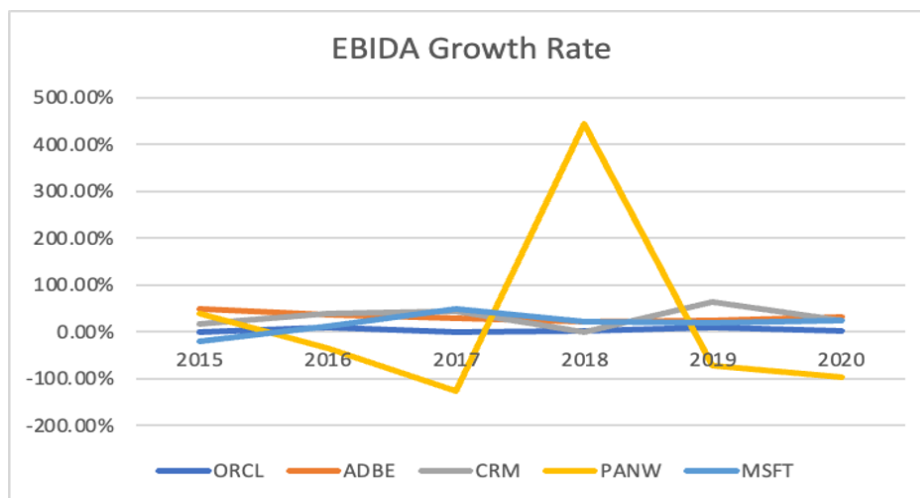


Figure 2: Line graph of EBITDA growth rates for selected companies.

Table 1: Chart showing eps growth rates for selected companies.

Eps growth rate	Year	ORCL	ADBE	CRM	PANW	MSFT
	2015	6.76%	87.10%	-471.43%	28.22%	41.89%
	2016	-59.28%	45.69%	-34.62%	-7.72%	29.05%
	2017	230.00%	53.85%	741.18%	-32.64%	-21.40%
	2018	3.70%	15.38%	-89.51%	-45.96%	137.56%
	2019	47.73%	80.50%	2820.00%	217.24%	13.83%
	2020	-47.03%	-7.48%	-66.21%	87.68%	39.76%
	Mean	30.31%	45.84%	483.24%	41.14%	40.11%
	Standard Deviation	1.0530849	0.3670975	12.113202	0.9875428	0.5309633

Table 2: Chart showing ebitda growth rates for selected companies.

EBITDA growth rate	Year	ORCL	ADBE	CR M	PANW	MSFT
	2015	0.41%	48.27%	17.57	40.12	-19.07
	2016	9.18%	37.54	39.25	-34.28	12.01
	2017	-1.03%	28.30	43.85	-125.67	47.73
	2018	1.37%	20.86	-1.06	443.78	21.36
	2019	8.52%	24.78	64.98	-71.79	19.61
	2020	2.06%	32.67	24.25	-95.29	23.84
	Mean	3.42%	32.07	31.47	26.15	17.58
	Standard Deviation	0.0433905	0.0985383	0.2297922	2.1243644	0.2163789

Table 3: Revenue growth rates for selected companies.

Rev Growth	Year	ORCL	ADBE	CRM	PANW	MSFT
	2015	1.84	22.08	-25.38	48.54	-8.83
	2016	5.57	24.72	24.88	27.79	5.43
	2017	-0.82	23.67	-17.89	29.04	22.69
	2018	-1.11	23.71	-99.98	27.56	14.03
	2019	3.61	15.19	24.30	17.55	13.65
	2020	4.84	22.67	24.66	24.87	17.53
	Mean	2.32	22.01	-11.57	29.22	10.75
	Standard Deviation in recent 3 years	0.0314223	0.0464982	0.7185434	0.0518266	0.0214145

For profitability, Microsoft is the only company that has experienced growing profitability in the recent four years (See Table 4 and Figure 3). Moreover, Microsoft also has the top mean profitability among the five companies. With a 3.94% standard deviation of profitability, Microsoft is also the company with stable top profitability. Stable growth and the highest continuously growing profitability make Microsoft an attractive company to invest in.

Table 4: Profitability for selected companies.

Profitability	Year	ORCL	ADBE	CRM	PANW	MSFT
	2015	27.13	36.70	42.76	35.86	37.42
	2016	23.16	41.44	38.04	38.06	30.16
	2017	23.98	44.89	39.68	39.07	26.33
	2018	30.12	43.07	34.02	29.59	31.64
	2019	28.16	47.68	24.33	34.04	32.99
	2020	26.06	47.53	25.69	28.83	36.25
	2021	52.40	52.53	22.07	31.65	37.98
	Mean	30.14	44.83	32.37	33.87	33.25
	Standard Deviation	9.35	4.71	7.67	3.73	3.94

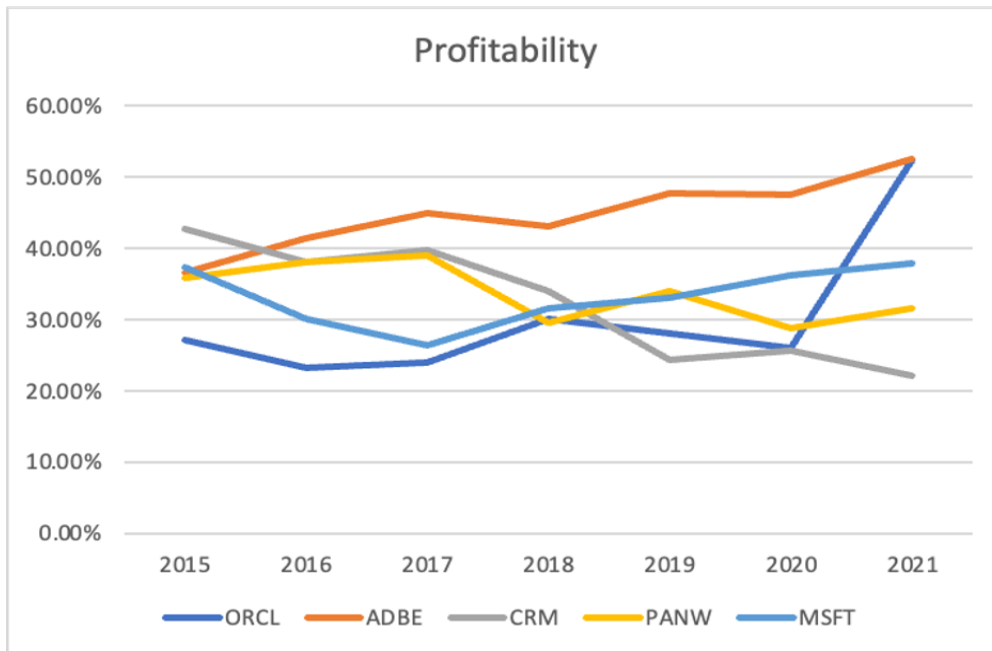


Figure 3: Line graph of profitability for selected companies.

Among the five stocks, Microsoft's p/e ratio maintains the second lowest ratio, indicating that Microsoft is a relatively cheaper stock in those five stocks. Also, the standard deviation of the p/e ratio for Microsoft is 7.679, which is the lowest standard deviation of the p/e ratio among all five stocks. In this case, Microsoft has had the most stable p/e ratio in the recent seven years. (See Table 5 and Figure 4).

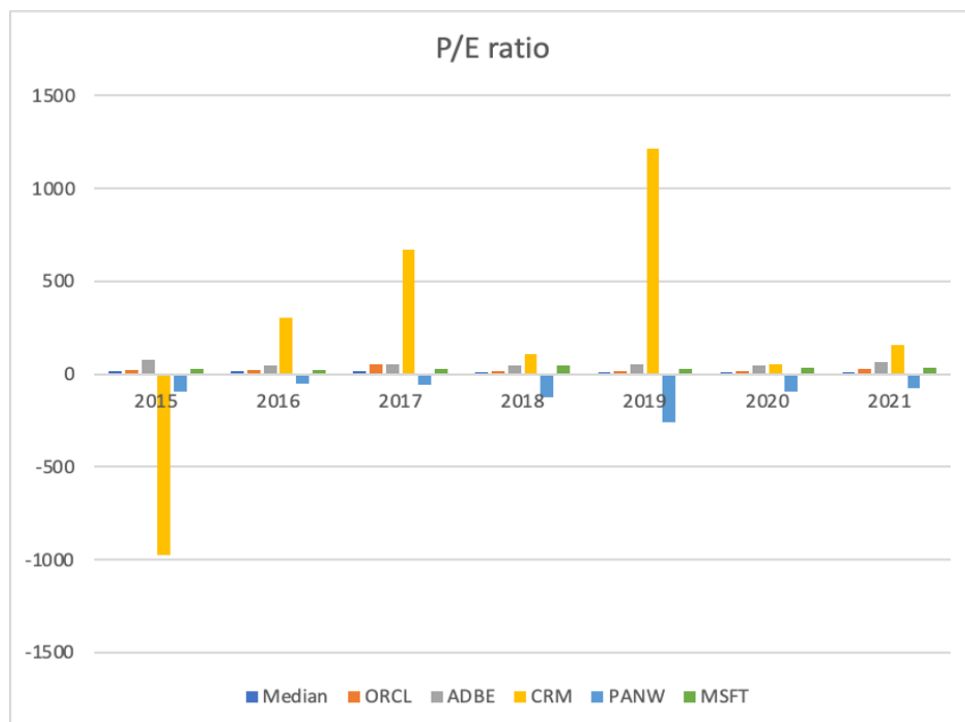


Figure 4: Line graph of P/E ratio for selected companies.

Table 5: Chart showing the P/E ratio for selected companies.

P/E	Year	ORCL	ADBE	CRM	PANW	MSFT
	2015	19.42029	73.758065	-972.28571	-91.99505	29.831081
	2016	20.538462	44.314655	304.23077	-50.53668	24.36667
	2017	51.9111	53.689349	670.05882	-55.138075	25.435424
	2018	17.037037	48.248077	106.27273	-123.14286	46.295775
	2019	17.457792	51.588333	1215.4	-260.3908	26.474308
	2020	17.305495	44.180055	51.497717	-92.724638	35.331597
	2021	29.842324	66.851297	157.18243	-77.03668	33.652174
	Mean	24.787501	54.661405	218.90811	-107.28068	31.626718
	Standard Deviation	12.766346	11.41424	666.74317	71.871736	7.6792135

## 5. Discussion and Conclusion

There is a tied relationship between company performance and market strategy. According to existing investigation, a profitable technology company is associated with sustained innovation and a product-oriented market strategy [7]. Microsoft is the kind of company that fully uses its market advantage to sustain its growth and profitability. It is undeniable that a good market strategy helps one company stay profitable and growing. Innovation and containing multiple areas of products are extremely important criteria when analyzing a technology company's stock. Owning multifold producing lines and products allows a technology company to take any risk considering the big environment. For example, under the 2020 pandemic, lots of industrial companies that produce real products are hurt and encounter a great amount of decline in sales and profits. Making software reduces the amount of shrinkage and helps companies to maintain sales and profits.

When looking at the five companies, Microsoft has the most variable services and products, including software-operating system, data storage, office software- and hardware- computers, and consumer electronics. In this case, bundling strategy in base supplemental goods and services is used in Microsoft. A bundling strategy is a marketing strategy where companies sell several products or services together as a single combined unit. That is to be said, markets that fit this base-supplemental goods description include hardware – software, operating system - application software, and local phone - long distance service [8-10]. Microsoft sells its computer to customers and customers need to buy its operating system-windows- to use the computer. After buying the operating system, softwares needs to be installed and customers need to purchase the software in its initialized software center. Then VIPs also need to be bought for using the software. These cycling purchases become a loop that keeps making profit for the company. Microsoft cleverly uses product-oriented strategy and innovation to maintain a great amount of consumers buying their products.

Some may disagree that under the same selling price, software can make more money than hardware since, without a bunch of fees such as materials, delivering fees, machines, maintenance fees and so on, a company focusing on software should be more profitable and have more growth than a company using bundling strategy. However, there is one factor that people who object do not



take into consideration. Customers are product oriented. Customers prefer good and useful products. One good product can trigger to let customers find other products on sale. All the five companies selected are undoubtedly good companies with good products, since they are all large capitalization companies indicating the size of those five companies is larger than most listed companies. However, companies other than Microsoft only sell separate software products. From graphs in the result part, indexes for companies other than Microsoft fluctuate heavily in the recent seven years. What's more, all positive growth rates in recent three years, third and barely fluctuating profitability and the second lowest p/e ratio indicate that Microsoft is a good performance and stable company.

All in all, no matter the market strategy or index perspective, Microsoft is the top company that shareholders should consider. With top profit and price stability, Microsoft is also stock for investors considering long-term investing.

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