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Name of Paper:
All you have to know before investing

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All you have to know before investing

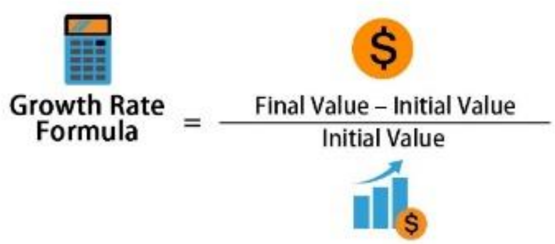
As a fellow investor, the first question that comes to your mind is how to figure out whether a company is a money-making investment. One of the best answers to this question is a quarterly report! Although they look impossible to read, you'll learn what those numbers mean with this paper. In this study, you'll learn how to analyze a company's financials and what it could mean for you! This piece will dig into CrowdStrike Holdings, Inc., an American cybersecurity technology company based in Austin, Texas. Let's see what the financials look like for this company! Here are the 3 main objectives of this paper!

Objective 1: How to determine the growth of a company?

To answer our first objective, let's talk about the 2 main growth rates we will use: Annual Growth Rate and Compound Annual Growth Rate. *Figure 1* is CrowdStrike's 4th quarter report for 2022 to help us understand and calculate these growth rates! For the Annual Growth rate, we will calculate the performance of the revenue of Crowdstrike. For the year-ended revenue, Crowdstrike's total revenue went from 874k in 2021 to 1.45 million in 2022. We can use these 2 values to calculate the company's revenue growth rate using the formula, *Figure 2*. By using this formula, we can see how fast Crowdstrike is growing. Once we plug in our values for the year-end of 2022 and 2021 from *Figure 1*, our growth rate is 577,156/874,438. Once this is calculated, the year growth rate is around 66%. This information is important, as it shows how much a company has grown in one year. Investors need to understand the value of their investments and how they have grown or depreciated.

	Three Months Ended January 31,		Year Ended January 31,	
	2022	2021	2022	2021
Revenue				
Subscription	$405,443	$244,662	$1,359,537	$804,670
Professional services	25,567	20,267	92,057	69,768
Total revenue	431,010	264,929	1,451,594	874,438

Figure 1

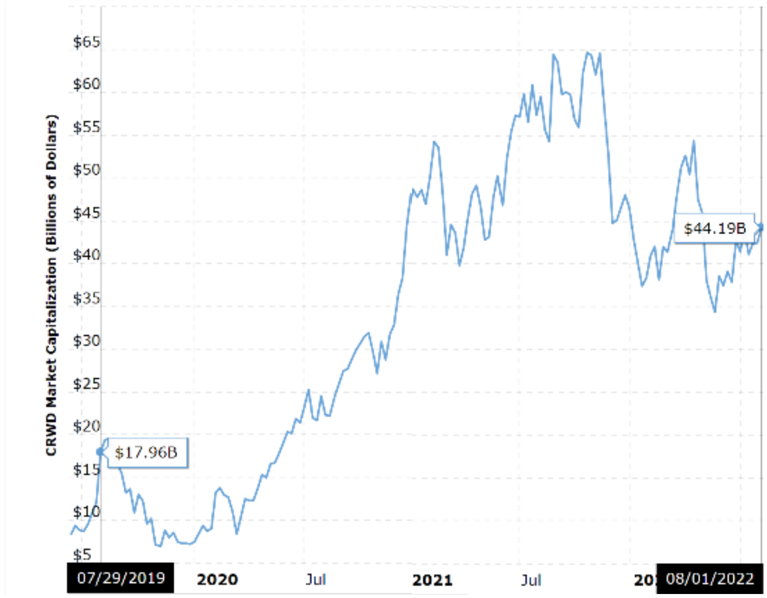


Formula 1

To calculate the Compound Annual Growth Rate (CAGR), you need the following metrics: Ending value, starting value, and the time between the metrics. As seen in *Formula 2*, the formula shows how CAGR is calculated. CAGR is calculated over time, so 1/NV represents the time between the 2 values. But for CAGR, NY cannot be 1 year, as the formula above, is for yearly growth. Time is very important and a differentiating value between CAGR and the first formula. Time gives us a more accurate perspective as to how long the company at hand took to grow. Let's look at an example from the market capitalization of Crowdstrike*, Graph 1*.

$$\textbf{CAGR Formula} = \left(\frac{EV}{BV}\right)^{\left(\frac{1}{NY}\right)} - 1$$

Formula 2



Graph 1

As you can see, these 2 dates are around 3 years apart, and that is our time value! Once we plug in our values (in billions): EV= 44.19, BV= 17.96, NY= 3, our equation would be ((44.19/17.96) ^(1/3)) -1 = CAGR. Once solved, we get CAGR=35%. This means that the overall valuation or market capitalization of Crowdstrike had a CAGR of 35% between August 2019 and 2022.

Now you might be wondering what this 35% means. CAGR is the compound average annual growth rate over a period longer than 1 year. It's one of the most accurate ways to calculate the growth of an investment, portfolio, and more. Using these 2 formulas, we can calculate and model how a company's revenue and valuation increase or decrease over a specific period. So, CAGR is used for calculating the performance of investment/s longer than 1 year. The annual growth rate is used to measure a value or investment in one year.

$$CAGR = \left(\frac{End\ Value}{Start\ Value}\right)^{\left(\frac{365}{Days}\right)} - 1$$

Formula 3

Objective 2: How to determine if a company is a good investment?

Now onto our next objective, how to determine whether a company is worth investing in. The two main things you'll need are information about the company itself and quarterly reports. Let's start with what we need from the quarterly reports. These reports might seem like a long document of jargon, but some of these very useful metrics will give you a better understanding of the company. Here are the metrics we will talk about: PE ratio, gross sales, net sales, and EPS! Things that are essential to know about the company are the company's business model, CEO, past trends, and advantages in its industry.

First off, the Price to earnings ratio (P/E ratio), is one of the most popular and useful metrics for investors! The P/E ratio shows whether the company is over/undervalued and how its valuation compares to its industry. This metric shows what the market is willing to pay for a stock. A higher PE ratio means the stock is overvalued and vice versa. However, companies that grow faster than average typically have higher P/Es, such as technology companies. A higher P/E ratio shows that investors are willing to pay a higher share price today because of growth expectations in the future. The average P/E for the S&P 500 has historically ranged from 13 to 15. The EPS, which is needed to calculate the PE ratio, is the company's net income minus the preferred stock dividends, divided by shares outstanding. The EPS, *Formula 4*, shows how much a company earns for each share.

$$\text{EPS} = \frac{\text{Net Income} - \text{Preferred Stock Dividends}}{\text{Average Outstanding Shares}}$$

Formula 4

Next, Gross sales and net sales go hand in hand. Gross sales are the amount of all business sales transactions without deductions while net sales are calculated after deducting allowances, discounts, and returns. Allowances are deductions that happen when a customer pays for a product with a minor but noticeable defect, so they request a discount. Sales discounts are reductions discounts given to customers when they urgently need cash, so they give a discount for the buyer to pay off an invoice faster. A sales return occurs when a customer returns a product for a refund. After these three deductions are taken from the gross profit, we get the net profit. Net sales are generally more accurate and better to use when analyzing a company because this metric reflects the efficacy of the company's sales. The difference between gross sales and net sales can also be a valuable indicator of the quality of a company's product or service.

Figure 1

Now understanding a company's business model is very important, as it tells you how the company functions and how it makes money. Some companies have a combination of business models, which means they could sell to both other businesses and consumers. There are 4 main types of business models that companies implement:

- The first is a business-to-business model where transactions take place between two companies. Some popular companies that use this model are Datadog, Unity Tech, and GE.

- The second is a business-to-consumer model, where a business sells its services and products to consumers directly. Some examples are Amazon, Google, and Walmart!

COMPARE FALCON ENDPOINT PROTECTION SOLUTIONS

MODULE & DESCRIPTION	FALCON PRO	FALCON ENTERPRISE	FALCON PREMIUM	FALCON COMPLETE
FALCON PREVENT™ Next-Generation Antivirus	✓	✓	✓	FULLY MANAGED ENDPOINT PROTECTION DELIVERED AS A SERVICE BY CROWDSTRIKE EXPERTS
FALCON X™ Integrated Threat Intelligence	✓	✓	✓	
FALCON INSIGHT™ Endpoint Detection & Response		✓	✓	
FALCON DEVICE CONTROL™ USB Device Control	✓	✓	✓	
FALCON FIREWALL MANAGEMENT™ Firewall	✓	✓	✓	
FALCON OVERWATCH™ Managed Threat Hunting		✓	✓	
FALCON DISCOVER™ IT Hygiene		OPTIONAL	✓	

Crowdstrike Business Model

- The third is a subscription-based business model, which is self-explanatory. Some examples of companies using this model are Netflix and Microsoft. Crowdstrike also uses this business model.

- Finally, an on-demand business model where a company is prepared to answer all questions with a click of a button for customers. One example is Nike, where u can place orders online.

But why is knowing a company's business model important? Understanding a company's business model gives us, investors information about the company's edge in the industry. We can discover its unique factor and how the company works. Understanding a company's business model helps investors analyze the company's financial data. Knowing a company's strengths and weaknesses are also essential to see how valuable or how risky an investment is.

You might wonder why learning about a company's CEO is important. But the CEO of a company is one of the most important people in a company's leadership. They are the people that determine the growth of the company. What to look for in a CEO? If a company's CEO is capable and experienced with the proper leadership qualities, then that company is most likely to grow. They should have a record of savvy business moves and a history of building a successful company! One of the best ways to find this information is by exploring their LinkedIn profile or their company's website. To also have a better idea of his profile, find news on them, find articles about what he has done with his company, etc. Looking at past patterns in a company is also crucial to understanding how a company reacted to market environments.

Objective 3: Understanding financial forecasting and financial modeling?

Last but not least, let's figure out the difference between financial modeling and forecasting. These two functions are often thought of as the same, but they have some differences. Financial forecasting is projecting how a company will perform in the future. Financial Modeling is the process where a company makes its financial position. Both financial models and forecasts are essential to deciding on an investment. Financial forecasting is an investor's best friend, as it will help them decide if a company will grow or not! The main components of financial forecasting are projected income statements, projected balance sheets, cash budgets, projected sources, and uses of funds. Some of the main metrics needed as well are Average revenue per customer, Customer acquisition cost, Cost per unit sold, and Average wages. Using these variables and components, analysts create financial forecasts to project a company's revenue, expenses, and future.

There are 4 main methods of financial forecasting:

- The first and one of the easiest is the Straight-Line Method. This method uses historical figures and trends to estimate revenue growth. This method renders growth predictions but is mostly used when a company has a constant growth rate.

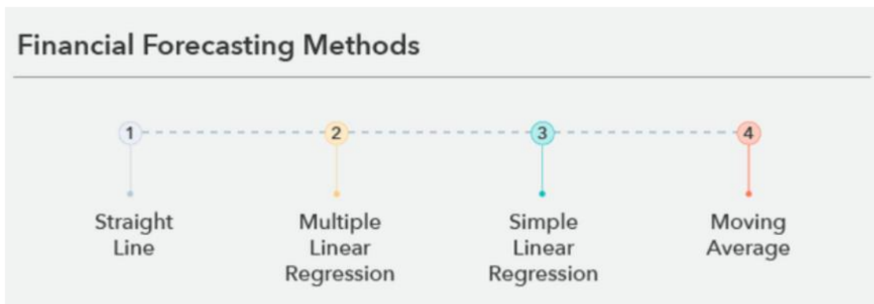


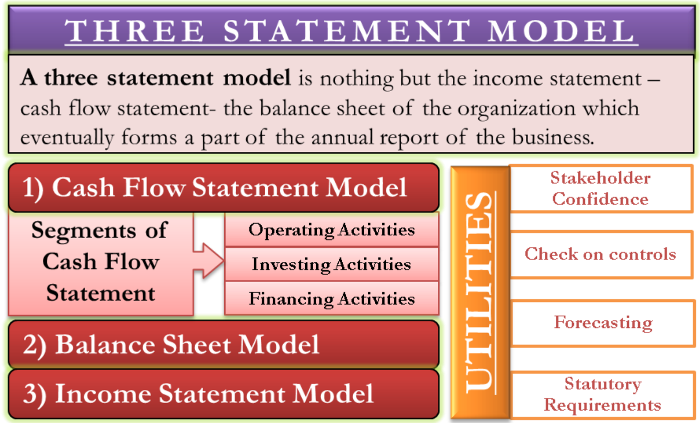
Figure 2

- The next method is called Moving Average Forecasting. This method is mostly used for shorter periods, such as days, months, or quarters. This strategy is used to make constantly updated values with volatility, like stock prices.

- The third method, Simple Linear Regression Forecasting, is used to graph a trend between a dependent and independent variable. This type of forecasting shows how the dependent variable changed based on the independent variable. The correlation between the dependent and independent variable makes a line, indicating a trend!

- Finally, the last method of forecasting is Multiple Linear Regression Forecasting (MLR). This strategy uses multiple independent variables to make a forecast. Essentially, MLR shows the relationship between the independent variables and the dependent outcome variable.

The important metrics for financial models are the Payback period, Churn rate, Cash burn rate, Cost of Acquiring new customers, and more. Using these metrics, models are made that let analysts use forecasts to assess potential scenarios for a company. Financial modeling helps assess the risk of decisions that may be made in the company in both the short and long term. One type of financial model, the three-statement model, is very helpful. This model includes 3 financial statements: An income statement, a balance sheet, and a cash flow statement. Although making one is quite complex, using these three reports, you can create what is known as a three-statement model. Any change to the model affects the three statements. Other popular models include the discounted cash flow (DCF) model, merger and acquisition model, consolidation model, budget model, forecasting model, and pricing model. Building financial models are very important when considering an investment or when making big decisions with your money.



Three Statemen Model

In this paper Crowdstrike was used as an example to show the metrics needed, to determine if a company is work investing in, and calculate the growth of a company. We also learned about the different types of financial models and when you would use them. But based on our 3 objectives, is Crowdstrike a good investment? As we calculated above, Crowdstrike had an annual growth rate from 2021-22 of 66% and a CAGR of 35% over the last 3 years. Most large cap companies have a CAGR around 10%, which means Crowdstrike has overperformed drastically. Crowdstrike has also many positive quarters and consistently had strong sales. Finally, with positive financials for the last few years, Crowdstrike has proven to be a quality company!

After interning in a company for the last 2 months, I have really understood the different departments that go into making the company function. The numerous technical and soft skills, such as office etiquette and proper article formatting, helped me make this paper! Hope the information we covered in this video helps you in the future when deciding on an investment! For more content like this make sure to visit the FLC website!

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