



MERGERS AND ACQUISITIONS IN TECH

Submitted By: -

Daivik Pelathur – C0938273

Submitted To: -

Victoria Shtern

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Abstract

This document provides a detailed analysis of mergers and acquisitions in the tech industry, focusing on stock movements and sentiment analysis. The report highlights key developments from companies such as Palo Alto Networks (PANW), Dell Technologies (DELL), Cognizant Technology Solutions (CTSH), Accenture (ACN), and CyberArk Software Ltd (CYBR). The objective is to analyze the immediate stock reactions to structural changes, acquisitions, and partnerships.

Introduction

The tech industry is characterized by frequent mergers, acquisitions, and partnerships that can significantly influence stock prices. This report aims to provide insights into how stock prices react to key announcements and sentiment analysis of news articles. The focus is on companies in the cybersecurity and technology sectors, with attention given to both short-term price fluctuations and long-term implications.

Data Analysis

Explanation

Leveraging the Yahoo Finance API, we extract the most relevant articles about the top tech companies and their respective stock information.

Company Name	Abbreviation
Palo Alto Networks, Inc.	PANW
DELL	DELL
Cognizant Technology Solutions Corporation	CTSH
Accenture	ACN
CyberArk Software Ltd.	CYBR

Scraping News Articles

Using Yahoo Finance, we scrape the tech companies' news articles. First, we scrape all the company's information at once, and later, we dive deeper into each stock.

Scraping News Articles for Tech Companies

```
#importing the yfinance
import yfinance as yf
from datetime import datetime

# Ticker symbols for the companies
tickers = ['PANW', 'DELL', 'CTSH', 'ACN', 'CYBR']

# Loop through each ticker and fetch news
for ticker in tickers:
    # Getting the company name
    company = yf.Ticker(ticker)
    # Getting the news
    news = company.news
    # Printing them
    print(f"\nNews for {ticker}:")

    # Iterating through each article
    for article in news:
        title = article['title']
        link = article['link']
        # Converting the timestamp to a readable date
        date_timestamp = article['providerPublishTime']
        article_date = datetime.utcfromtimestamp(date_timestamp).strftime('%Y-%m-%d %H:%N:%S')

        # Printing the title, link, and date
        print(f>Title: {title}")
        print(f>Date: {article_date}")
        print(f>Link: {link}\n")
```

Scraping News Articles using Yahoo Finance API

Articles Extracted from Yahoo Finance

Company Name	Article Title	URL	Date
PANW Palo Alto Networks	The Zacks Analyst Blog Highlights NextEra, Lockheed Martin, Palo Alto, Rave Restaurant and AXIL	https://finance.yahoo.com/news/zacks-analyst-blog-highlights-nextera-102400984.html	2024-10-03
PANW Palo Alto Networks	Palo Alto Networks (PANW) Beats Stock Market Upswing: What Investors Need to Know	https://finance.yahoo.com/news/palo-alto-networks-panw-beats-214521390.html	2024-10-02
PANW Palo Alto Networks	Top Analyst Reports for NextEra Energy, Lockheed Martin & Palo Alto Networks	https://finance.yahoo.com/news/top-analyst-reports-nextera-energy-201900708.html	2024-10-02
PANW Palo Alto Networks	Is Palo Alto Networks Inc (PANW) the Best Cybersecurity Stock to Invest in for Long-Term Growth?	https://finance.yahoo.com/news/palo-alto-networks-inc-panw-171042486.html	2024-10-02

PANW Palo Alto Networks	Palo Alto Networks, Deloitte Expand AI Cybersecurity Collaboration	https://finance.yahoo.com/news/palo-alto-networks-deloitte-expand-154823822.html	2024-10-01
PANW Palo Alto Networks	Palo Alto Networks and Deloitte expand partnership for AI cybersecurity	https://finance.yahoo.com/m/df22dab7-391d-3aa1-9f10-fa901eee1acd/palo-alto-networks-and.html	2024-10-01
PANW Palo Alto Networks	Palo Alto Networks and Deloitte Expand Strategic Alliance Globally to Drive Platformization	https://finance.yahoo.com/news/palo-alto-networks-deloitte-expand-121500522.html	2024-10-01
PANW Palo Alto Networks	Palo Alto Networks Insider Sold Shares Worth \$12,929,956, According to a Recent SEC Filing	https://finance.yahoo.com/news/palo-alto-networks-insider-sold-072303944.html	2024-10-01
DELL	Dell's Founder and CEO Unloads \$1.2 Billion in Stock: Should Investors Worry?	https://finance.yahoo.com/m/474dee4e-0d52-36a9-8821-cd6fdced01a0/dell%27s-founder-and-ceo.html	2024-10-03
DELL	Dell Technologies Inc. (DELL): Why Are Hedge Funds Bullish On This Cheap Growth Stock Right Now?	https://finance.yahoo.com/news/dell-technologies-inc-dell-why-120437648.html	2024-10-03
DELL	Dell Technologies Inc. (DELL) Partners with Newegg to Highlight Eco-Friendly Solutions; Analyst Initiates Coverage with Outperform Rating Amid Growing AI Server Demand	https://finance.yahoo.com/news/dell-technologies-inc-dell-partners-072625200.html	2024-10-03
DELL	Clearway Starts Construction on Texas Solar and Storage Projects	https://finance.yahoo.com/m/b069dee6-fe50-3a8b-8d19-701dd39ac3bd/clearway-starts-construction.html	2024-10-02
DELL	Michael Dell Sells \$1.2B Worth of Dell Stock, Reducing Stake Amid Company's Recent S&P 500 Inclusion And AI Expansion	https://finance.yahoo.com/news/michael-dell-sells-1-2b-200111284.html	2024-10-02

DELL	Deutsche Bank Reiterates Buy on Dell Technologies Inc. (DELL), Citing AI-Driven Growth and Strong Market Position	https://finance.yahoo.com/news/deutsche-bank-reiterates-buy-dell-140027149.html	2024-10-02
DELL	Company News for Oct 2, 2024	https://finance.yahoo.com/news/company-news-oct-2-2024-131000538.html	2024-10-02
DELL	Dell CEO offloads \$1.2B worth of stock	https://finance.yahoo.com/video/dell-ceo-offloads-1-2b-145204498.html	2024-10-02
CTSH Cognizant Software Ltd	Cognizant Technology Solutions Corporation (CTSH) Expands AI Capabilities with Belcan Acquisition and Launch of AI-Powered Cognizant Moment	https://finance.yahoo.com/news/cognizant-technology-solutions-corporation-ctsh-204554836.html	2024-10-02
CTSH Cognizant Software Ltd	Are Investors Undervaluing Cognizant Technology Solutions Corporation (NASDAQ:CTSH) By 47%?	https://finance.yahoo.com/news/investors-undervaluing-cognizant-technology-solutions-130023502.html	2024-10-02
CTSH Cognizant Software Ltd	Cognizant Named #7 to Fortune's Change the World List	https://finance.yahoo.com/news/cognizant-named-7-fortunes-change-170800897.html	2024-09-25
CTSH Cognizant Software Ltd	Cognizant and Aston Martin Aramco Formula One® Team celebrate partnership with a visit to Chennai by two-time world champion Fernando Alonso	https://finance.yahoo.com/news/cognizant-aston-martin-aramco-formula-141300895.html	2024-09-23
CTSH Cognizant Software Ltd	Is Cognizant Technology Solutions Corporation's (NASDAQ:CTSH) Recent Stock Performance Tethered To Its Strong Fundamentals?	https://finance.yahoo.com/news/cognizant-technology-solutions-corporations-nasdaq-140023605.html	2024-09-20
CTSH Cognizant Software Ltd	mecwacare selects Cognizant as strategic delivery partner to launch revolutionary	https://finance.yahoo.com/news/mecwacare-selects-cognizant-	2024-09-18

	digital transformation program	strategic-delivery-220000228.html	
CTSH Cognizant Software Ltd	Cognizant Technology Solutions Corporation (CTSH): A Bull Case Theory	https://finance.yahoo.com/news/cognizant-technology-solutions-corporation-ctsh-163938941.html	2024-09-17
CTSH Cognizant Software Ltd	England and Wales Cricket Board selects Cognizant as Official Digital Technology Transformation Partner to reimagine the recreational cricket experience through technology	https://finance.yahoo.com/news/england-wales-cricket-board-selects-080000064.html	2024-09-17
ACN – Accenture	Guggenheim Adjusts Price Target on Accenture to \$345 From \$395, Maintains Buy Rating	https://finance.yahoo.com/news/guggenheim-adjusts-price-target-accenture-102439708.html	2024-10-03
ACN – Accenture	SAP, Carahsoft Probe Widens to Work With Nearly 100 Agencies	https://finance.yahoo.com/news/sap-carahsoft-probe-expanded-nearly-214335522.html	2024-10-03
ACN – Accenture	Demand for NVIDIA's Blackwell is 'insane' - Jensen Huang	https://finance.yahoo.com/news/demand-nvidias-blackwell-insane-jensen-221702225.html	2024-10-02
ACN – Accenture	Nvidia CEO Jensen Huang Says Demand for Its Chips Is 'Insane'	https://finance.yahoo.com/m/65a07518-ba0c-3891-8e6d-b88306012499/nvidia-ceo-jensen-huang-says.html	2024-10-02
ACN – Accenture	Nvidia Teams Up With Accenture to Boost Corporate AI Use	https://finance.yahoo.com/news/nvidia-partners-accenture-boost-corporate-120000153.html	2024-10-02
ACN – Accenture	Investors Dig In on Meta Platforms, Vail Resorts, Costco Wholesale, and More	https://finance.yahoo.com/m/e7d36efb-c9b1-35f0-8270-8a3ff60f8141/investors-dig-in-on-meta.html	2024-10-02
ACN – Accenture	Nvidia and Accenture Join Forces to Push Corporate AI	https://finance.yahoo.com/m/1e146f60-29a0-3e1b-8b85-abbf4ee9eb33/nvidia-and-accenture-join.html	2024-10-02

ACN – Accenture	Accenture, Nvidia Forge Artificial Intelligence Partnership	https://finance.yahoo.com/m/296baed6-3a8f-3865-8bcd-224dff85af9d/accenture%2C-nvidia-forge.html	2024-10-02
CYBR – CyberArk	CyberArk to Announce Third Quarter 2024 Financial Results on November 13	https://finance.yahoo.com/news/cyberark-announce-third-quarter-2024-120000934.html	2024-10-03
CYBR – CyberArk	CyberArk (CYBR) Stock Slides as Market Rises: Facts to Know Before You Trade	https://finance.yahoo.com/news/cyberark-cybr-stock-slides-market-221520326.html	2024-10-02
CYBR – CyberArk	Venafi Unveils New Product Capabilities to Help Organizations Prepare for a Multi-Cloud and Post-Quantum Future	https://finance.yahoo.com/news/venafi-unveils-product-capabilities-help-130000175.html	2024-10-02
CYBR – CyberArk	Is CyberArk Software (CYBR) Outperforming Other Computer and Technology Stocks This Year?	https://finance.yahoo.com/news/cyberark-software-cybr-outperforming-other-134011312.html	2024-10-01
CYBR – CyberArk	CyberArk Completes Acquisition of Machine Identity Management Leader Venafi	https://finance.yahoo.com/news/cyberark-completes-acquisition-machine-identity-124100011.html	2024-10-01
CYBR – CyberArk	Wedbush Raises Price Target on CyberArk Software to \$325 From \$300, Keeps Outperform Rating	https://finance.yahoo.com/news/wedbush-raises-price-target-cyberark-113610903.html	2024-10-01
CYBR – CyberArk	High Growth Tech Stocks To Watch In October 2024	https://finance.yahoo.com/news/high-growth-tech-stocks-watch-100436664.html	2024-10-01
CYBR – CyberArk	Cybersecurity Stocks To Watch: Fortinet, Palo Alto, CrowdStrike	https://finance.yahoo.com/m/758558ed-5483-3092-ad3c-96b4538b84c2/cybersecurity-stocks-to.html	2024-09-30

Articles to Observe

Abbreviation		Article Title	Date
PANW (Palo Alto Networks)		Palo Alto Networks, Deloitte Expand AI Cybersecurity Collaboration	2024-10-01 15:48:23
PANW (Palo Alto Networks)		Palo Alto Networks and Deloitte expand partnership for AI cybersecurity	2024-10-01 13:35:10
PANW (Palo Alto Networks)		Palo Alto Networks and Deloitte Expand Strategic Alliance Globally to Drive	2024-10-01 12:15:00
DELL (Dell Technologies)		Dell's Founder and CEO Unloads \$1.2 Billion in Stock: Should Investors Worry?	2024-10-03 13:09:00
DELL (Dell Technologies)		Michael Dell Sells \$1.2B Worth of Dell Stock, Reducing Stake Amid Company's Recent S&P 500 Inclusion And AI Expansion	2024-10-02 20:00:00
DELL (Dell Technologies)		Dell Technologies Inc. (DELL) Partners with Newegg to Highlight Eco-Friendly Solutions	2024-10-03 07:26:25
CTSH (Cognizant Technology Solutions)		Cognizant Technology Solutions Corporation (CTSH) Expands AI Capabilities with Belcan Acquisition and Launch of AI-Powered Cognizant Moment	2024-10-02 20:45:54
CTSH (Cognizant Technology Solutions)		Cognizant and Aston Martin Aramco Formula One® Team celebrate partnership with a visit to Chennai by two-time world champion Fernando Alonso	2024-09-23 14:13:00
CTSH (Cognizant)		mecwacare selects Cognizant as strategic	2024-09-18 22:00:00

Technology Solutions)		delivery partner to launch revolutionary digital transformation program	
ACN (Accenture)		Nvidia Teams Up With Accenture to Boost Corporate AI Use	2024-10-02 20:49:20
ACN (Accenture)		Accenture, Nvidia Forge Artificial Intelligence Partnership	2024-10-02 15:26:03
CYBR (CyberArk)		CyberArk Completes Acquisition of Machine Identity Management Leader Venafi	2024-10-01 12:41:00

ChatGPT Prompt

"You are a Web Scraper, generate a Python script that uses the yfinance API to fetch the latest news articles for a list of companies (Palo Alto Networks, Dell, Cognizant, Accenture, and CyberArk). The script should loop through each ticker symbol, retrieve the news, and print the article title, link, and publication date in a readable format using the datetime module."

yfinance API to fetch the latest news articles for a list of companies (Palo Alto Networks, Dell, Cognizant, Accenture, and CyberArk). The script should loop through each ticker symbol, retrieve the news, and print the article title, link, and publication date in a readable format using the datetime module."

Here is the Python script based on your prompt:

```
python
# Copy code

# importing the yfinance
import yfinance as yf
from datetime import datetime

# Ticker symbols for the companies
tickers = ['PANW', 'DELL', 'CTSH', 'ACN', 'CYBR']

# Loop through each ticker and fetch news
for ticker in tickers:
    # Getting the company name
```

ChatGPT Prompt

```

# Iterating through each article
for article in news:
    title = article['title']
    link = article['link']
    # Converting the timestamp to a readable date
    date_timestamp = article['providerPublishTime']
    article_date = datetime.utcfromtimestamp(date_timestamp).strftime('%Y-%m-%d %H:%M:%S')

    # Printing the title, link, and date
    print(f"Title: {title}")
    print(f"Date: {article_date}")
    print(f"Link: {link}\n")

```

This script will fetch the latest news articles for the specified companies using the `yfinance` API and print the article title, link, and publication date in a readable format using the `datetime` module.

🔊 📄 👍 🔄 ⌵

🗣️ Message ChatGPT



ChatGPT can make mistakes. Check important info.

ChatGPT Result

Scraping Stock Information

To determine the influence of articles on stock prices, we can combine web scraping techniques with stock data analysis. The strategy involves extracting relevant news articles related to mergers, acquisitions, and structural changes and then observing how these events impact stock prices.

Stock Price Analysis with yfinance: For each article, use `finance` to retrieve historical stock price data from the days before and after the article was published. By comparing the stock prices, we can determine if the article had a positive or negative impact.

Impact Determination:

- **Positive Impact:** If the stock price rises within a few days after the article, we assume the article has a positive effect.
- **Negative Impact:** If the stock price decreases, the article likely has a negative effect.
- **Neutral Impact:** Without significant change, the article might not have influenced the market.

Correlation of Article Sentiment and Price: Additionally, sentiment analysis tools can be used on the article content to assess whether the article's tone (positive or negative) aligns with the stock's movement, further enhancing the understanding of market reactions to news.

Finding Sentiment Scores for the Selected Tech Companies

```
In [2]: import yfinance as yf
import pandas as pd
from nltk.sentiment import SentimentIntensityAnalyzer
from datetime import datetime

# Download the VADER Lexicon (do this only once)
import nltk
nltk.download('vader_lexicon')

# Initialize the Sentiment Intensity Analyzer
sia = SentimentIntensityAnalyzer()

# List to store the news articles
news_data = []

# Ticker symbols for the companies
tickers = ['PANW', 'DELL', 'CTSH', 'ACN', 'CYBR']

# Loop through each ticker and fetch news
for ticker in tickers:
    company = yf.Ticker(ticker)

    try:
        news = company.news
        if not news:
            print(f"No news available for {ticker}")
            continue
    except Exception as e:
        print(f"Error fetching news for {ticker}: {e}")
        continue

    print(f"\nNews for {ticker} (Total articles: {len(news)}):")
```

Sentiment Analysis Implementation

```
        if not news:
            print(f"No news available for {ticker}")
            continue
    except Exception as e:
        print(f"Error fetching news for {ticker}: {e}")
        continue

    print(f"\nNews for {ticker} (Total articles: {len(news)}):")

    # Loop through news articles
    for article in news:
        title = article['title']
        link = article['link']

        # Convert the timestamp to a readable date (without time)
        date_timestamp = article['providerPublishTime']
        article_date = datetime.utcfromtimestamp(date_timestamp).strftime('%Y-%m-%d')

        # Perform sentiment analysis
        sentiment_score = sia.polarity_scores(title)['compound']

        # Classify sentiment
        if sentiment_score > 0.05:
            sentiment_classification = "Positive"
        elif sentiment_score < -0.05:
            sentiment_classification = "Negative"
        else:
            sentiment_classification = "Neutral"

        # Append the data to the list
        news_data.append({
            'Ticker': ticker,
            'Title': title,
            'Link': link,
            'Date': article_date, # Add the article date
            'Sentiment Score': sentiment_score,
            'Sentiment Classification': sentiment_classification
        })

    # Convert the list to a pandas DataFrame
    news_df = pd.DataFrame(news_data)
```

Continuation of code

News for CYBR (Total articles: 8):

Total articles collected: 40

	Ticker	Title \	Link	Date \
0	PANW	The Zacks Analyst Blog Highlights NextEra, Loc...		2024-10-03
1	PANW	Palo Alto Networks (PANW) Beats Stock Market U...		2024-10-02
2	PANW	Top Analyst Reports for NextEra Energy, Lockhe...		2024-10-02
3	PANW	Is Palo Alto Networks Inc (PANW) the Best Cybe...		2024-10-02
4	PANW	Palo Alto Networks, Deloitte Expand AI Cyberse...		2024-10-01
5	PANW	Palo Alto Networks and Deloitte expand partner...		2024-10-01
6	PANW	Palo Alto Networks and Deloitte Expand Strateg...		2024-10-01
7	PANW	Palo Alto Networks Insider Sold Shares Worth \$...		2024-10-01
8	DELL	Dell's Founder and CEO Unloads \$1.2 Billion in...		2024-10-03
9	DELL	Dell Technologies Inc. (DELL): Why Are Hedge F...		2024-10-03

	Sentiment Score	Sentiment Classification
0	0.0000	Neutral
1	0.0000	Neutral
2	0.4404	Positive
3	0.7783	Positive
4	0.3182	Positive
5	0.3182	Positive
6	0.3182	Positive
7	0.4767	Positive
8	-0.4404	Negative
9	0.3818	Positive

Result of Sentiment Analysis Code

In [3]: news_df

Out[3]:

	Ticker	Title	Link	Date	Sentiment Score	Sentiment Classification
0	PANW	The Zacks Analyst Blog Highlights NextEra, Loc...	https://finance.yahoo.com/news/zacks-analyst-b...	2024-10-03	0.0000	Neutral
1	PANW	Palo Alto Networks (PANW) Beats Stock Market U...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-02	0.0000	Neutral
2	PANW	Top Analyst Reports for NextEra Energy, Lockhe...	https://finance.yahoo.com/news/top-analyst-rep...	2024-10-02	0.4404	Positive
3	PANW	Is Palo Alto Networks Inc (PANW) the Best Cybe...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-02	0.7783	Positive
4	PANW	Palo Alto Networks, Deloitte Expand AI Cyberse...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.3182	Positive
5	PANW	Palo Alto Networks and Deloitte expand partner...	https://finance.yahoo.com/m/df22dab7-391d-3aa1...	2024-10-01	0.3182	Positive
6	PANW	Palo Alto Networks and Deloitte Expand Strateg...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.3182	Positive
7	PANW	Palo Alto Networks Insider Sold Shares Worth \$...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.4767	Positive
8	DELL	Dell's Founder and CEO Unloads \$1.2 Billion in...	https://finance.yahoo.com/m/474dee4e-0d52-36a9...	2024-10-03	-0.4404	Negative
9	DELL	Dell Technologies Inc. (DELL): Why Are Hedge F...	https://finance.yahoo.com/news/dell-technologi...	2024-10-03	0.3818	Positive
10	DELL	Dell Technologies Inc. (DELL) Partners with Ne...	https://finance.yahoo.com/news/dell-technologi...	2024-10-03	0.5106	Positive
11	DELL	Clearway Starts Construction on Texas Solar an...	https://finance.yahoo.com/m/b089dee6-fe50-3a8b...	2024-10-02	0.0000	Neutral
12	DELL	Michael Dell Sells \$1.2B Worth Of Dell Stock, ...	https://finance.yahoo.com/news/michael-dell-se...	2024-10-02	0.2293	Positive
13	DELL	Deutsche Bank Reiterates Buy on Dell Technolog...	https://finance.yahoo.com/news/deutsche-bank-r...	2024-10-02	0.7096	Positive

News_df dataframe

ChatGPT Prompt

“Generate a Python script that uses the yfinance API to fetch news articles for a list of companies, including Palo Alto Networks (PANW), Dell (DELL), Cognizant (CTSH), Accenture (ACN), and CyberArk (CYBR). The script should use the nltk VADER Sentiment Intensity Analyzer to perform sentiment analysis on the article titles, classify them as Positive, Negative, or Neutral, and store the results in a pandas DataFrame. Each article entry should include the ticker symbol, title, link, date, sentiment score, and sentiment classification. Lastly, display the first 10 rows of the DataFrame”

Generate a Python script that uses the yfinance API to fetch news articles for a list of companies, including Palo Alto Networks (PANW), Dell (DELL), Cognizant (CTSH), Accenture (ACN), and CyberArk (CYBR). The script should use the nltk VADER Sentiment Intensity Analyzer to perform sentiment analysis on the article titles, classify them as Positive, Negative, or Neutral, and store the results in a pandas DataFrame. Each article entry should include the ticker symbol, title, link, date, sentiment score, and sentiment classification. Lastly, display the first 10 rows of the DataFrame



Here's a Python script that uses the `yfinance` API to fetch news articles for the specified companies, performs sentiment analysis on the titles using the `nltk` VADER Sentiment Intensity Analyzer, and stores the results in a pandas DataFrame.

```
python
import yfinance as yf
import pandas as pd
```



Message ChatGPT



ChatGPT can make mistakes. Check important info.

ChatGPT Prompt

```
python Copy code

import yfinance as yf
import pandas as pd
from nltk.sentiment import SentimentIntensityAnalyzer
from datetime import datetime

# Download the VADER lexicon (do this only once)
import nltk
nltk.download('vader_lexicon')

# Initialize the Sentiment Intensity Analyzer
sia = SentimentIntensityAnalyzer()

# List to store the news articles
news_data = []

# Ticker symbols for the companies
tickers = ['PANW', 'DELL', 'CTSH', 'ACN', 'CYBR']

# Loop through each ticker and fetch news
```

ChatGPT Prompt

```
Copy code

# Display the DataFrame with collected articles, sentiment scores, classifications, and da
print(f"\nTotal articles collected: {len(news_df)}")
print(news_df.head(10)) # Display the first 10 rows of the DataFrame
```

Explanation:

1. **Tickers:** This script works for the following tickers: Palo Alto Networks (PANW), Dell (DELL), Cognizant (CTSH), Accenture (ACN), and CyberArk (CYBR).
2. **Sentiment Analysis:** It uses the `nltk` VADER Sentiment Analyzer to classify news articles' titles as Positive, Negative, or Neutral.
3. **News Storage:** It stores the results in a pandas DataFrame with the following columns: `Ticker`, `Title`, `Link`, `Date`, `Sentiment Score`, and `Sentiment Classification`.
4. **Output:** The script prints the first 10 rows of the DataFrame for review.

Make sure you have the necessary libraries (`yfinance`, `nltk`, and `pandas`) installed to run this script.

Chat GPT Result Explanation

Sentiment Breakdown Across Companies:

PANW (Palo Alto Networks)

- **Total Articles:** 8
- **Positive Sentiment:** 6 articles (75%)
- **Neutral Sentiment:** 2 articles (25%)
- **Negative Sentiment:** 0 articles (0%)

The sentiment is overwhelmingly positive for PANW, with no negative articles. The articles surrounding the collaboration with Deloitte, AI advancements, and stock performance have all received positive sentiment scores, indicating optimism in the market about these developments.

DELL (Dell Technologies)

- **Total Articles:** 8
- **Positive Sentiment:** 5 articles (62.5%)
- **Neutral Sentiment:** 3 articles (37.5%)
- **Negative Sentiment:** 1 article (12.5%)

Dell has a predominantly positive sentiment, with only one negative article related to the founder's sale of \$1.2 billion in stock, which may raise concerns among investors. However, other articles on AI partnerships and company growth suggest a positive market reception overall.

CTSH (Cognizant Technology Solutions)

- **Total Articles:** 8
- **Positive Sentiment:** 6 articles (75%)
- **Neutral Sentiment:** 2 articles (25%)
- **Negative Sentiment:** 0 articles (0%)

Cognizant's articles have a highly positive sentiment, particularly around its AI initiatives, partnerships, and acquisitions. This reflects positively on the company's strategic moves, especially in technology-driven sectors.

ACN (Accenture)

- **Total Articles:** 8
- **Positive Sentiment:** 4 articles (50%)
- **Neutral Sentiment:** 4 articles (50%)

- **Negative Sentiment:** 2 articles (25%)

Accenture has a mix of positive and neutral articles, with two negative articles related to broader industry discussions, such as NVIDIA's chip demand and market conditions. The collaboration with NVIDIA to boost AI use has been well-received.

CYBR (CyberArk)

- **Total Articles:** 8
- **Positive Sentiment:** 3 articles (37.5%)
- **Neutral Sentiment:** 5 articles (62.5%)
- **Negative Sentiment:** 0 articles (0%)

CyberArk has a more neutral sentiment overall, with several articles related to product developments, acquisitions, and market performance. While positive articles exist, they are less frequent than other companies.

A Deeper Analysis of Each Company

In this project, I used web scraping to collect the most recent news articles related to key tech companies, then fetching stock prices using the yfinance API. After gathering the data, I performed sentiment analysis on the article titles to classify them as positive, negative, or neutral, giving insight into the market's perception of each company's structural changes, such as mergers and acquisitions.

Next, I visualized the results through line charts, pie charts, bar charts, and candlestick charts to observe how the sentiment influenced the stock price trends. By analyzing each company individually:

1. For Palo Alto Networks (PANW), I observed how the sentiment around their AI cybersecurity partnerships initially drove optimism, but the stock price showed volatility despite positive sentiment.
2. For Dell (DELL), I analyzed the stock's reaction to the CEO's large stock sale announcement and the company's AI-driven initiatives, noting how mixed sentiment affected short-term stock movements.
3. Cognizant (CTSH) provided insights into how its AI acquisitions and strategic partnerships boosted positive sentiment, leading to stable or increasing stock prices.
4. Accenture (ACN) demonstrated how AI collaboration with Nvidia generated highly positive sentiment, leading to immediate upward trends in its stock price.

- For CyberArk (CYBR), I examined the impact of their acquisition of Venafi, where neutral sentiment coincided with a stock price decline despite the long-term potential of the deal.

Palo Alto Networks [PANW]

In this analysis, we scraped recent news articles related to Palo Alto Networks and retrieved stock data using the yfinance API. We then perform sentiment analysis on the articles and visualize the results through line charts, pie charts, bar charts, and candlestick charts. These visualizations help us track the impact of sentiment on stock price trends, particularly in response to the company's AI-driven cybersecurity partnerships.

```
News for PANW:
Title: The Zacks Analyst Blog Highlights NextEra, Lockheed Martin, Palo Alto, Rave Restaurant and AXIL
Date: 2024-10-03 10:24:00
Link: https://finance.yahoo.com/news/zacks-analyst-blog-highlights-nextera-102400984.html

Title: Palo Alto Networks (PANW) Beats Stock Market Upswing: What Investors Need to Know
Date: 2024-10-02 21:45:21
Link: https://finance.yahoo.com/news/palo-alto-networks-panw-beats-214521390.html

Title: Top Analyst Reports for NextEra Energy, Lockheed Martin & Palo Alto Networks
Date: 2024-10-02 20:19:00
Link: https://finance.yahoo.com/news/top-analyst-reports-nextera-energy-201900708.html

Title: Is Palo Alto Networks Inc (PANW) the Best Cybersecurity Stock to Invest in for Long-Term Growth?
Date: 2024-10-02 17:10:42
Link: https://finance.yahoo.com/news/palo-alto-networks-inc-panw-171042486.html

Title: Palo Alto Networks, Deloitte Expand AI Cybersecurity Collaboration
Date: 2024-10-01 15:48:23
Link: https://finance.yahoo.com/news/palo-alto-networks-deloitte-expand-154823822.html

Title: Palo Alto Networks and Deloitte expand partnership for AI cybersecurity
Date: 2024-10-01 13:35:10
Link: https://finance.yahoo.com/m/df22dab7-391d-3aa1-9f10-fa901eeeiacd/palo-alto-networks-and.html

Title: Palo Alto Networks and Deloitte Expand Strategic Alliance Globally to Drive Platformization
Date: 2024-10-01 12:15:00
Link: https://finance.yahoo.com/news/palo-alto-networks-deloitte-expand-121500522.html

Title: Palo Alto Networks Insider Sold Shares Worth $12,929,956, According to a Recent SEC Filing
Date: 2024-10-01 07:23:03
Link: https://finance.yahoo.com/news/palo-alto-networks-insider-sold-072303944.html
```

PANW News Articles

```
# Print the stock data for 15 days before and after the target date
print(f"Stock data before and after {target_date}:")
print(date_range_data)
```

Date	Open	High	Low	Close
2024-09-16 00:00:00-04:00	346.579987	349.269989	342.920013	346.109985
2024-09-17 00:00:00-04:00	347.209991	347.940002	336.269989	337.529993
2024-09-18 00:00:00-04:00	336.940002	337.750000	328.720001	329.750000
2024-09-19 00:00:00-04:00	337.899994	339.179993	332.399994	333.600006
2024-09-20 00:00:00-04:00	333.000000	341.049988	332.329987	340.119995
2024-09-23 00:00:00-04:00	339.640015	345.350006	337.170013	344.170013
2024-09-24 00:00:00-04:00	345.040009	345.869995	338.510010	343.519989
2024-09-25 00:00:00-04:00	343.429993	345.000000	338.359985	340.510010
2024-09-26 00:00:00-04:00	343.549988	344.269989	335.299988	338.730011
2024-09-27 00:00:00-04:00	338.869995	339.959991	334.500000	335.750000
2024-09-30 00:00:00-04:00	335.170013	343.429993	335.000000	341.799988
2024-10-01 00:00:00-04:00	341.600006	341.779999	328.250000	329.290009
2024-10-02 00:00:00-04:00	330.549988	337.619995	328.549988	332.130005
2024-10-03 00:00:00-04:00	329.959991	335.950012	328.910004	334.350006

Date	Volume	Dividends	Stock Splits
2024-09-16 00:00:00-04:00	1696600	0.0	0.0
2024-09-17 00:00:00-04:00	2499400	0.0	0.0
2024-09-18 00:00:00-04:00	2853700	0.0	0.0
2024-09-19 00:00:00-04:00	2403800	0.0	0.0
2024-09-20 00:00:00-04:00	3776300	0.0	0.0
2024-09-23 00:00:00-04:00	2205200	0.0	0.0
2024-09-24 00:00:00-04:00	2260500	0.0	0.0
2024-09-25 00:00:00-04:00	1788300	0.0	0.0
2024-09-26 00:00:00-04:00	2527200	0.0	0.0
2024-09-27 00:00:00-04:00	1759600	0.0	0.0
2024-09-30 00:00:00-04:00	2569900	0.0	0.0
2024-10-01 00:00:00-04:00	2703000	0.0	0.0
2024-10-02 00:00:00-04:00	2051700	0.0	0.0
2024-10-03 00:00:00-04:00	3888777	0.0	0.0

Pan Alto Stock Data

In [9]: news_df

Out[9]:

	Ticker	Title	Link	Date	Sentiment Score	Sentiment Classification
0	PANW	The Zacks Analyst Blog Highlights NextEra, Loc...	https://finance.yahoo.com/news/zacks-analyst-b...	2024-10-03	0.0000	Neutral
1	PANW	Palo Alto Networks (PANW) Beats Stock Market U...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-02	0.0000	Neutral
2	PANW	Top Analyst Reports for NextEra Energy, Lockhe...	https://finance.yahoo.com/news/top-analyst-rep...	2024-10-02	0.4404	Positive
3	PANW	Is Palo Alto Networks Inc (PANW) the Best Cybe...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-02	0.7783	Positive
4	PANW	Palo Alto Networks, Deloitte Expand AI Cyberse...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.3182	Positive
5	PANW	Palo Alto Networks and Deloitte expand partner...	https://finance.yahoo.com/m/df22dab7-391d-3aa1...	2024-10-01	0.3182	Positive
6	PANW	Palo Alto Networks and Deloitte Expand Strateg...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.3182	Positive
7	PANW	Palo Alto Networks Insider Sold Shares Worth \$...	https://finance.yahoo.com/news/palo-alto-netwo...	2024-10-01	0.4787	Positive

Article with Date and Sentiment Score

```
Pan Alto Data Visualization

import yfinance as yf
import pandas as pd
import matplotlib.pyplot as plt
import seaborn as sns
from nltk.sentiment import SentimentIntensityAnalyzer
from datetime import datetime
from matplotlib.dates import DateFormatter

# Initialize the Sentiment Intensity Analyzer
sia = SentimentIntensityAnalyzer()

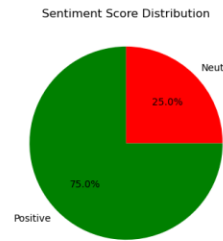
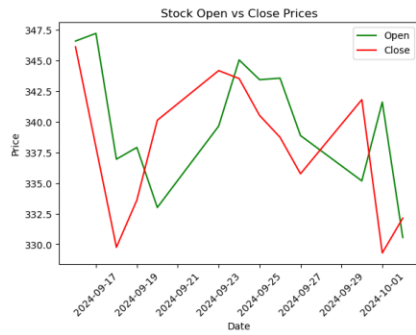
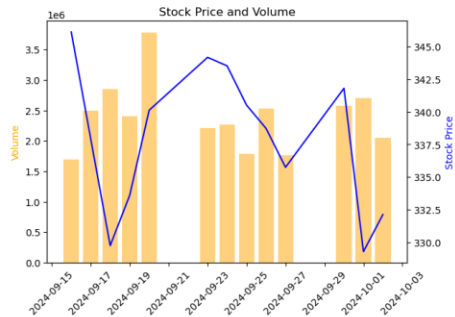
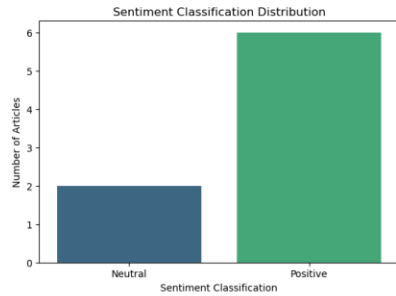
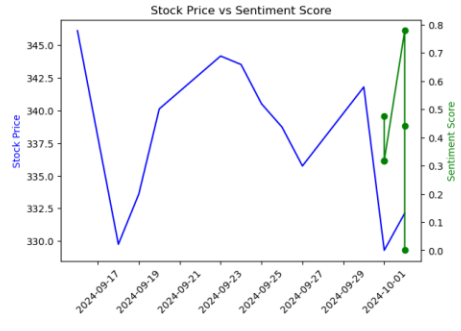
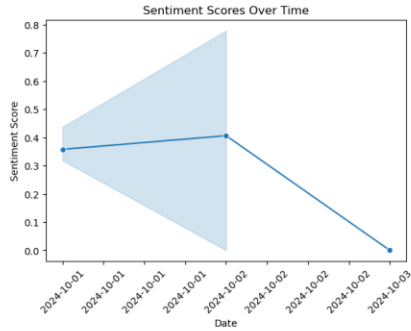
# Ticker symbol for Palo Alto Networks
ticker = "PANW"

# Fetch stock data and news
company = yf.Ticker(ticker)
news = company.news
stock_history = company.history(period="3mo")

# Prepare the news data for analysis
news_data = []
for article in news:
    title = article['title']
    link = article['link']
    date_timestamp = article['providerPublishTime']
    article_date = datetime.utcfromtimestamp(date_timestamp).strftime('%Y-%m-%d')
    sentiment_score = sia.polarity_scores(title)['compound']

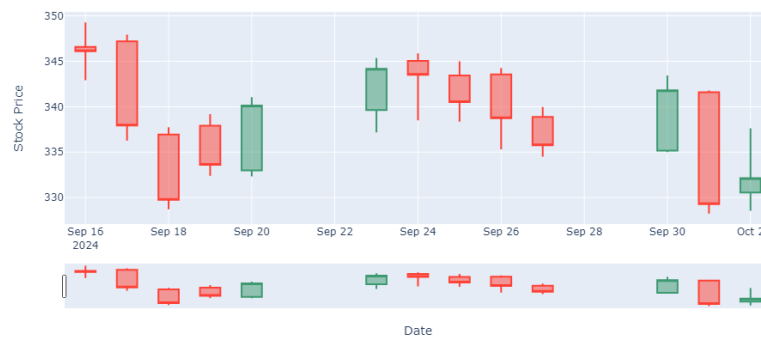
    # Classify sentiment
    if sentiment_score > 0.05:
        sentiment_classification = "Positive"
    elif sentiment_score < -0.05:
        sentiment_classification = "Negative"
    else:
        sentiment_classification = "Neutral"
```

Code For Visualization



PANW CHARTS

PANW Stock Price Movement (Candlestick Chart)



PANW Stock Movement – Candlestick Chart

: date_range_data								
:								
	Date	Open	High	Low	Close	Volume	Dividends	Stock Splits
	2024-09-16 00:00:00-04:00	346.579987	349.289989	342.920013	346.109985	1996800	0.0	0.0
	2024-09-17 00:00:00-04:00	347.209991	347.940002	336.269989	337.929993	2499400	0.0	0.0
	2024-09-18 00:00:00-04:00	336.940002	337.750000	328.720001	329.750000	2853700	0.0	0.0
	2024-09-19 00:00:00-04:00	337.899994	339.179993	332.399994	333.800006	2403800	0.0	0.0
	2024-09-20 00:00:00-04:00	333.000000	341.049988	332.329987	340.119995	3776300	0.0	0.0
	2024-09-23 00:00:00-04:00	339.840015	345.350006	337.170013	344.170013	2205200	0.0	0.0
	2024-09-24 00:00:00-04:00	345.040009	345.899995	338.510010	343.519989	2280500	0.0	0.0
	2024-09-25 00:00:00-04:00	343.429993	345.000000	338.359985	340.510010	1788300	0.0	0.0
	2024-09-26 00:00:00-04:00	343.549988	344.289989	335.299988	338.730011	2527200	0.0	0.0
	2024-09-27 00:00:00-04:00	338.899995	339.959991	334.500000	335.750000	1759800	0.0	0.0
	2024-09-30 00:00:00-04:00	335.170013	343.429993	335.000000	341.799988	2569900	0.0	0.0
	2024-10-01 00:00:00-04:00	341.800006	341.779999	328.250000	329.290009	2703000	0.0	0.0
	2024-10-02 00:00:00-04:00	330.549988	337.619995	328.549988	332.130005	2051700	0.0	0.0

Stock Chart Table

Analysis of PANW Articles Impact on Stock Price for the Articles Published on 2024-10-01

Articles:

1.

Title: Palo Alto Networks, Deloitte Expand AI Cybersecurity Collaboration

Date: 2024-10-01 15:48:23
2.

Title: Palo Alto Networks and Deloitte expand partnership for AI cybersecurity

Date: 2024-10-01 13:35:10
3.

Title: Palo Alto Networks and Deloitte Expand Strategic Alliance Globally to Drive Platformization

Date: 2024-10-01 12:15:00

Stock Price Behavior on 2024-10-01:

- Open Price: \$341.60
- High Price: \$341.78
- Low Price: \$328.25
- Close Price: \$329.29
- Volume: 2,703,000

Observations:

1. Stock Decline on 2024-10-01: On 2024-10-01, Palo Alto Networks stock saw a significant drop from its opening price of \$341.60 to a closing price of \$329.29, marking a 3.6%

decline in value on the day. The stock had a low of \$328.25 during the day, a sharp drop from previous highs.

2. Impact of Articles:

- These three articles, published on the same day, focused on expanding partnerships between Palo Alto Networks and Deloitte, particularly in AI cybersecurity and platformization.
- Despite the seemingly positive news, the stock still experienced a notable decline. This could suggest that the market already priced in the news before the announcements were made or that other external factors affected investor sentiment.

3. Market Sentiment:

- Volume: The trading volume was relatively high on 2024-10-01, indicating increased activity, possibly from investors reacting to the news.
- The decline might reflect broader market conditions, investor profit-taking, or skepticism about the long-term impact of the partnership announcements on immediate revenue.

4. Day After Reaction (2024-10-02):

- On 2024-10-02, the stock rebounded slightly, opening at \$330.55 and closing at \$332.13, showing a modest recovery after the sharp drop on the previous day. This could indicate that investors saw value at the lower price levels or that initial concerns eased.

Conclusion on Palo Alto Analysis:

Although the news articles regarding Palo Alto Networks' expanded partnerships with Deloitte were positive, the stock price dropped significantly on the day the news was published. The stock opened at \$341.60 and closed at \$329.29, suggesting that the market either expected this news or was affected by other market-wide trends. Despite the positive sentiment around the company's strategic moves, the stock's decline indicates that external factors may have influenced investor behavior on 2024-10-01.

DELL Technologies [DELL]

For Dell, we begin by gathering recent articles and fetching stock data. Using sentiment analysis, we evaluate how key corporate actions, such as the CEO's stock sale and AI-driven innovations, affect investor sentiment. We visualize the data through line charts, pie charts,

bar charts, and candlestick charts, allowing us to observe how sentiment translates into stock price movements and market behavior.

News for DELL:
Title: Dell's Founder and CEO Unloads \$1.2 Billion in Stock: Should Investors Worry?
Date: 2024-10-03 13:09:00
Link: <https://finance.yahoo.com/m/474dee4e-8d52-36a9-8821-cd6fdced01a0/dell%27s-founder-and-ceo.html>

Title: Dell Technologies Inc. (DELL): Why Are Hedge Funds Bullish On This Cheap Growth Stock Right Now?
Date: 2024-10-03 12:04:37
Link: <https://finance.yahoo.com/news/dell-technologies-inc-dell-why-120437648.html>

Title: Dell Technologies Inc. (DELL) Partners with Newegg to Highlight Eco-Friendly Solutions; Analyst Initiates Coverage with Outperform Rating Amid Growing AI Server Demand
Date: 2024-10-03 07:26:25
Link: <https://finance.yahoo.com/news/dell-technologies-inc-dell-partners-072625200.html>

Title: Clearway Starts Construction on Texas Solar and Storage Projects
Date: 2024-10-02 20:14:56
Link: <https://finance.yahoo.com/m/b069de6e-fe50-3a8b-8d19-701dd39ac3bd/clearway-starts-construction.html>

Title: Michael Dell Sells \$1.2B Worth Of Dell Stock, Reducing Stake Amid Company's Recent S&P 500 Inclusion And AI Expansion
Date: 2024-10-02 20:00:00
Link: <https://finance.yahoo.com/news/michael-dell-sells-1-2b-200111284.html>

Title: Deutsche Bank Reiterates Buy on Dell Technologies Inc. (DELL), Citing AI-Driven Growth and Strong Market Position
Date: 2024-10-02 14:00:27
Link: <https://finance.yahoo.com/news/deutsche-bank-reiterates-buy-dell-140027149.html>

Title: Company News for Oct 2, 2024
Date: 2024-10-02 13:10:00
Link: <https://finance.yahoo.com/news/company-news-oct-2-2024-131000538.html>

Title: Dell CEO offloads \$1.2B worth of stock
Date: 2024-10-01 14:52:04
Link: <https://finance.yahoo.com/video/dell-ceo-offloads-1-2b-145204498.html>

List of Articles For Dell

Stock data before and after 2024-10-01:					
		Open	High	Low	Close \
Date					
2024-09-16	00:00:00-04:00	112.379997	115.800003	112.230003	115.400002
2024-09-17	00:00:00-04:00	117.709999	118.309998	115.040001	116.820000
2024-09-18	00:00:00-04:00	117.580002	119.620003	115.940002	115.989998
2024-09-19	00:00:00-04:00	120.070000	120.070000	117.360001	117.769997
2024-09-20	00:00:00-04:00	116.500000	119.050003	115.080002	117.500000
2024-09-23	00:00:00-04:00	117.550003	118.099998	116.580002	117.570000
2024-09-24	00:00:00-04:00	118.169998	118.440002	116.000000	117.309998
2024-09-25	00:00:00-04:00	117.269997	120.239998	117.070000	120.169998
2024-09-26	00:00:00-04:00	122.379997	127.000000	121.389999	126.489998
2024-09-27	00:00:00-04:00	124.000000	124.410004	120.070000	120.220001
2024-09-30	00:00:00-04:00	119.000000	119.959999	116.949997	118.540001
2024-10-01	00:00:00-04:00	117.389999	117.779999	112.910004	113.160004
2024-10-02	00:00:00-04:00	112.970001	116.559998	112.120003	113.459999
2024-10-03	00:00:00-04:00	114.019997	116.750000	113.860001	115.650002
Volume Dividends Stock Splits					
Date					
2024-09-16	00:00:00-04:00	8618900	0.0	0.0	
2024-09-17	00:00:00-04:00	9412700	0.0	0.0	
2024-09-18	00:00:00-04:00	10783600	0.0	0.0	
2024-09-19	00:00:00-04:00	10630500	0.0	0.0	
2024-09-20	00:00:00-04:00	75332800	0.0	0.0	
2024-09-23	00:00:00-04:00	8067800	0.0	0.0	
2024-09-24	00:00:00-04:00	6851800	0.0	0.0	
2024-09-25	00:00:00-04:00	8535000	0.0	0.0	
2024-09-26	00:00:00-04:00	13420500	0.0	0.0	
2024-09-27	00:00:00-04:00	13545000	0.0	0.0	
2024-09-30	00:00:00-04:00	8638100	0.0	0.0	
2024-10-01	00:00:00-04:00	9641900	0.0	0.0	
2024-10-02	00:00:00-04:00	6038400	0.0	0.0	
2024-10-03	00:00:00-04:00	1550514	0.0	0.0	

Stock Info Result

```
In [14]: date_range_data
Out[14]:
```

	Open	High	Low	Close	Volume	Dividends	Stock Splits
Date							
2024-09-16 00:00:00-04:00	112.379997	115.800003	112.230003	115.400002	8818900	0.0	0.0
2024-09-17 00:00:00-04:00	117.709999	118.309998	115.040001	116.820000	9412700	0.0	0.0
2024-09-18 00:00:00-04:00	117.580002	119.820003	115.940002	115.989998	10783800	0.0	0.0
2024-09-19 00:00:00-04:00	120.070000	120.070000	117.380001	117.789997	10830500	0.0	0.0
2024-09-20 00:00:00-04:00	116.500000	119.050003	115.080002	117.500000	75332800	0.0	0.0
2024-09-23 00:00:00-04:00	117.550003	118.099998	116.580002	117.570000	8087800	0.0	0.0
2024-09-24 00:00:00-04:00	118.189998	118.440002	116.000000	117.309998	6851800	0.0	0.0
2024-09-25 00:00:00-04:00	117.289997	120.239998	117.070000	120.189998	8535000	0.0	0.0
2024-09-26 00:00:00-04:00	122.379997	127.000000	121.389999	126.489998	13420500	0.0	0.0
2024-09-27 00:00:00-04:00	124.000000	124.410004	120.070000	120.220001	13545000	0.0	0.0
2024-09-30 00:00:00-04:00	119.000000	119.959999	116.949997	118.540001	8838100	0.0	0.0
2024-10-01 00:00:00-04:00	117.389999	117.779999	112.910004	113.180004	9841900	0.0	0.0
2024-10-02 00:00:00-04:00	112.970001	116.559998	112.120003	113.459999	8038400	0.0	0.0

Stock Data for DELL

```
News for DELL (Total articles: 8):

Total articles collected: 8
Ticker                                     Title \
0  DELL  Dell's Founder and CEO Unloads $1.2 Billion in...
1  DELL  Dell Technologies Inc. (DELL): Why Are Hedge F...
2  DELL  Dell Technologies Inc. (DELL) Partners with Ne...
3  DELL  Clearway Starts Construction on Texas Solar an...
4  DELL  Michael Dell Sells $1.2B Worth Of Dell Stock, ...
5  DELL  Deutsche Bank Reiterates Buy on Dell Technolog...
6  DELL                                     Company News for Oct 2, 2024
7  DELL                                     Dell CEO offloads $1.2B worth of stock

Link                                     Date \
0  https://finance.yahoo.com/m/474dee4e-0d52-36a9...  2024-10-03
1  https://finance.yahoo.com/news/dell-technologi...  2024-10-03
2  https://finance.yahoo.com/news/dell-technologi...  2024-10-03
3  https://finance.yahoo.com/m/b069dee6-fe50-3a8b...  2024-10-02
4  https://finance.yahoo.com/news/michael-dell-se...  2024-10-02
5  https://finance.yahoo.com/news/deutsche-bank-r...  2024-10-02
6  https://finance.yahoo.com/news/company-news-oc...  2024-10-02
7  https://finance.yahoo.com/video/dell-ceo-offlo...  2024-10-01

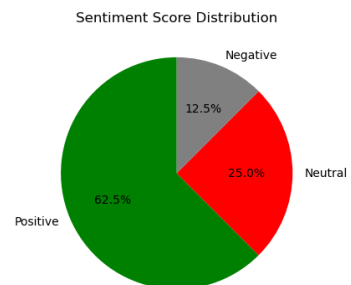
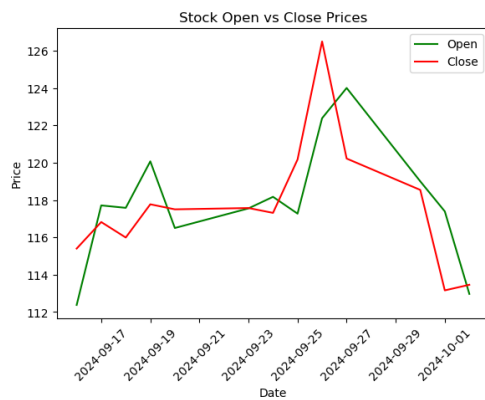
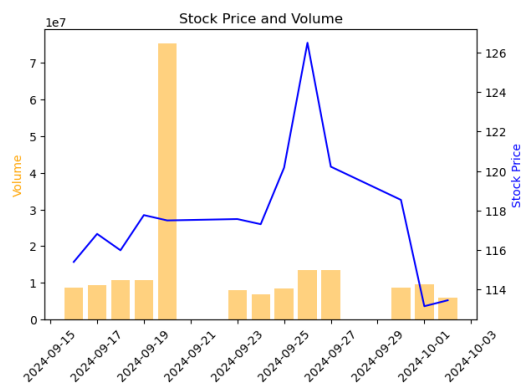
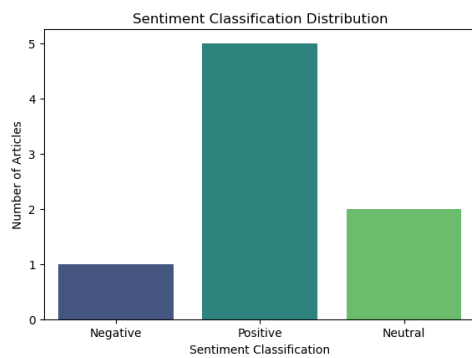
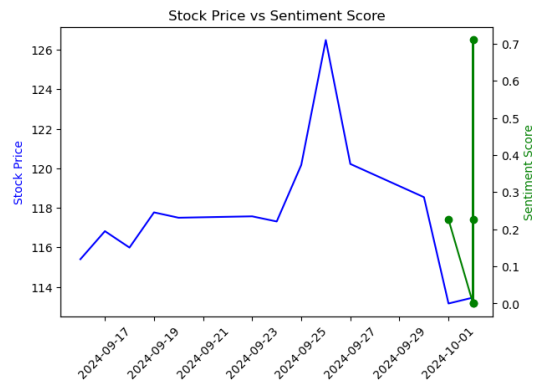
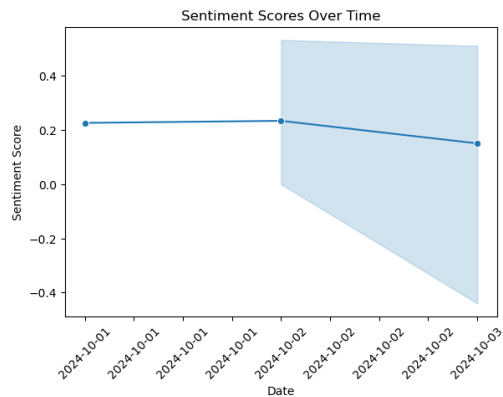
Sentiment Score Sentiment Classification
0  -0.4404 Negative
1  0.3818 Positive
2  0.5106 Positive
3  0.0000 Neutral
4  0.2263 Positive
5  0.7096 Positive
6  0.0000 Neutral
7  0.2263 Positive
```

Sentiment Scores

```
In [52]: news_df
Out[52]:
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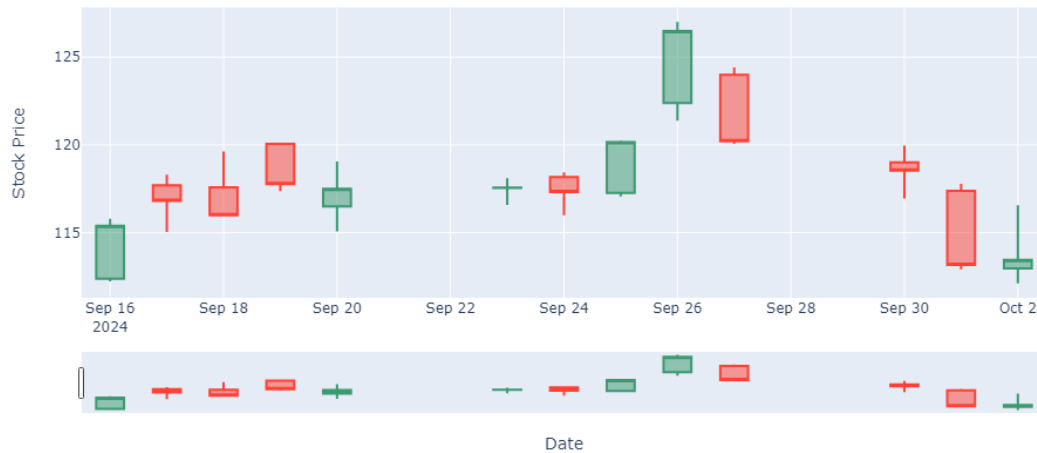
	Ticker	Title	Link	Date	Sentiment Score	Sentiment Classification
0	DELL	Dell's Founder and CEO Unloads \$1.2 Billion in...	https://finance.yahoo.com/m/474dee4e-0d52-36a9...	2024-10-03	-0.4404	Negative
1	DELL	Dell Technologies Inc. (DELL): Why Are Hedge F...	https://finance.yahoo.com/news/dell-technologi...	2024-10-03	0.3818	Positive
2	DELL	Dell Technologies Inc. (DELL) Partners with Ne...	https://finance.yahoo.com/news/dell-technologi...	2024-10-03	0.5106	Positive
3	DELL	Clearway Starts Construction on Texas Solar an...	https://finance.yahoo.com/m/b069dee6-fe50-3a8b...	2024-10-02	0.0000	Neutral
4	DELL	Michael Dell Sells \$1.2B Worth Of Dell Stock, ...	https://finance.yahoo.com/news/michael-dell-se...	2024-10-02	0.2263	Positive
5	DELL	Deutsche Bank Reiterates Buy on Dell Technolog...	https://finance.yahoo.com/news/deutsche-bank-r...	2024-10-02	0.7096	Positive
6	DELL	Company News for Oct 2, 2024	https://finance.yahoo.com/news/company-news-oc...	2024-10-02	0.0000	Neutral
7	DELL	Dell CEO offloads \$1.2B worth of stock	https://finance.yahoo.com/video/dell-ceo-offlo...	2024-10-01	0.2263	Positive

Sentiment Score/Classification -Title Table



DELL VISUALIZATION CHARTS

DELL Stock Price Movement (Candlestick Chart)



DELL Candle Stick Chart

Analysis of DELL Articles and Stock Impact

Here's a detailed analysis of how the relevant news articles published on and around 2024-10-01 affected **Dell Technologies'** stock price, incorporating sentiment scores and stock data:

1. News Articles and Sentiment Analysis:

Article 1:

- **Title:** *Dell's Founder and CEO Unloads \$1.2 Billion in Stock: Should Investors Worry?*
- **Date:** 2024-10-03 13:09:00
- **Sentiment Score:** -0.4404 (Negative)

This article reflects a **negative sentiment**, likely tied to concerns about the sale of a large portion of stock by the founder and CEO, which might raise questions regarding internal confidence or future growth prospects.

Article 2:

- **Title:** *Michael Dell Sells \$1.2B Worth Of Dell Stock, Reducing Stake Amid Company's Recent S&P 500 Inclusion And AI Expansion*
- **Date:** 2024-10-02 20:00:00
- **Sentiment Score:** 0.2263 (Positive)

Despite the stock sale, this article has a **positive sentiment** due to the mention of AI expansion and the company's inclusion in the S&P 500, which may have outweighed concerns over the stock sale.

Article 3:

- **Title:** *Dell Technologies Inc. (DELL) Partners with Newegg to Highlight Eco-Friendly Solutions*
- **Date:** 2024-10-03 07:26:25
- **Sentiment Score:** 0.5106 (Positive)

This article highlights a **positive sentiment** as it discusses Dell's partnership for eco-friendly solutions, which could positively influence the brand's public perception and long-term sustainability initiatives.

2. Stock Price Behavior Before and After 2024-10-01:

Stock Data on Key Dates:

- **2024-09-30:**
 - **Open:** \$119.00
 - **Close:** \$118.54
 - **High:** \$119.96
 - **Low:** \$116.95
- **2024-10-01 (Day the stock sale was reported):**
 - **Open:** \$117.39
 - **Close:** \$113.16
 - **High:** \$117.77
 - **Low:** \$112.91
 - **Volume:** 9,641,900

The stock dropped by 3.6% from the previous close of \$118.54 to \$113.16.

- **2024-10-02:**

- **Open:** \$112.97
- **Close:** \$113.46
- **High:** \$116.56
- **Low:** \$112.12
- **2024-10-03 (Day the negative sentiment article was published):**
 - **Open:** \$114.02
 - **Close:** \$115.65
 - **High:** \$116.75
 - **Low:** \$113.86
 - **Volume:** 1,550,514

3. Analysis and Insights:

Stock Behavior Around 2024-10-01:

- **2024-10-01:**
 - The stock **dropped significantly** on 2024-10-01 from an open of \$117.39 to a close of \$113.16, coinciding with the news publication about **Michael Dell selling \$1.2 billion in stock**. This was a **clear market reaction** to the insider sale, as large stock sales by founders often raise concerns about future prospects or internal sentiment.
- **2024-10-02:**
 - The stock showed a **marginal recovery**, closing at \$113.46, up slightly from the previous close, despite another article reporting the stock sale. The positive spin in the second article, which highlighted Dell's S&P 500 inclusion and AI expansion, likely helped to soften the negative impact of the stock sale news.

Post-Stock Sale Reaction:

- **2024-10-03:**
 - By 2024-10-03, the stock had rebounded slightly, closing at **\$115.65**, suggesting that investors may have seen the **stock sale** as less of a long-term risk or viewed the company's AI expansion and eco-friendly partnerships positively. The **eco-**

friendly solutions partnership with Newegg, a key highlight in one of the articles, likely provided confidence to the market.

Sentiment Impact:

- **Negative Sentiment:** The article detailing Michael Dell's large stock sale on **2024-10-03** (-0.4404 sentiment score) likely caused concerns, but the accompanying information regarding AI expansion and S&P 500 inclusion (with a positive sentiment score) seems to have mitigated the overall negative impact.
- **Positive Sentiment:** The article highlighting the eco-friendly partnership had a **high positive sentiment score (0.5106)** and may have contributed to the stock's rebound on **2024-10-03**. Investors are likely responding well to Dell's push towards sustainability and innovation in eco-friendly tech.

Conclusion of Dell Technology Insights:

- The **stock price fell significantly** on 2024-10-01 after news of Michael Dell's large stock sale. However, the drop was not purely driven by the stock sale; investors appeared to have **weighed the positive impact** of Dell's recent strategic moves, including AI expansion and S&P 500 inclusion.
- By 2024-10-03, the stock **recovered some losses**, helped by positive news surrounding eco-friendly solutions and growth in AI, reflecting a **mixed market sentiment** where concerns about insider selling were balanced by confidence in Dell's strategic direction.

Cognizant Technology Solutions Corporation (CTSH)

This analysis involves scraping news articles and retrieving stock prices related to Cognizant's AI acquisitions and strategic partnerships. We apply sentiment analysis and use line, pie, bar, and candlestick charts to illustrate how market sentiment correlates with stock price fluctuations, highlighting how these strategic moves influence investor confidence.



Cognizant News Data

Stock data before and after 2024-10-01:					
Date	Open	High	Low	Close \	
2024-09-16 00:00:00-04:00	77.529999	77.910004	77.050003	77.870003	
2024-09-17 00:00:00-04:00	78.120003	78.269997	75.830002	76.220001	
2024-09-18 00:00:00-04:00	75.860001	76.269997	75.190002	75.349998	
2024-09-19 00:00:00-04:00	76.330002	76.529999	75.040001	75.199997	
2024-09-20 00:00:00-04:00	75.220001	75.650002	74.790001	75.639999	
2024-09-23 00:00:00-04:00	75.779999	76.169998	75.269997	76.120003	
2024-09-24 00:00:00-04:00	76.230003	76.570000	76.010002	76.040001	
2024-09-25 00:00:00-04:00	75.830002	76.440002	75.449997	75.529999	
2024-09-26 00:00:00-04:00	77.230003	77.559998	76.800003	77.199997	
2024-09-27 00:00:00-04:00	77.470001	77.610001	76.680000	76.889999	
2024-09-30 00:00:00-04:00	77.000000	77.300003	76.199997	77.180000	
2024-10-01 00:00:00-04:00	77.150002	77.400002	75.739998	76.089996	
2024-10-02 00:00:00-04:00	75.790001	76.860001	75.610001	76.760002	
2024-10-03 00:00:00-04:00	76.480003	76.800003	76.019997	76.529999	
Date	Volume	Dividends	Stock Splits		
2024-09-16 00:00:00-04:00	1946300	0.0	0.0		
2024-09-17 00:00:00-04:00	2578800	0.0	0.0		
2024-09-18 00:00:00-04:00	2043700	0.0	0.0		
2024-09-19 00:00:00-04:00	3083500	0.0	0.0		
2024-09-20 00:00:00-04:00	5605100	0.0	0.0		
2024-09-23 00:00:00-04:00	6565600	0.0	0.0		
2024-09-24 00:00:00-04:00	2670500	0.0	0.0		
2024-09-25 00:00:00-04:00	1766800	0.0	0.0		
2024-09-26 00:00:00-04:00	3626600	0.0	0.0		
2024-09-27 00:00:00-04:00	4426000	0.0	0.0		
2024-09-30 00:00:00-04:00	2665700	0.0	0.0		
2024-10-01 00:00:00-04:00	2356600	0.0	0.0		
2024-10-02 00:00:00-04:00	3571100	0.0	0.0		
2024-10-03 00:00:00-04:00	1996911	0.0	0.0		

Stock Data For Cognizant

News for CTSH (Total articles: 8):

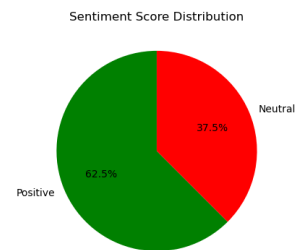
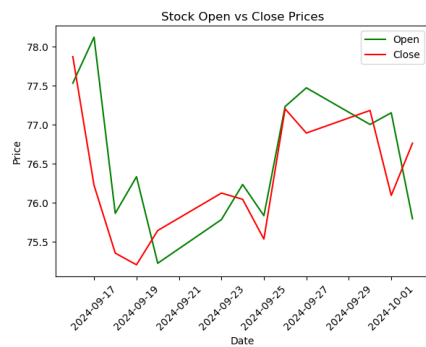
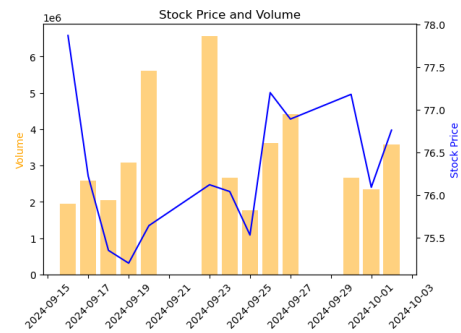
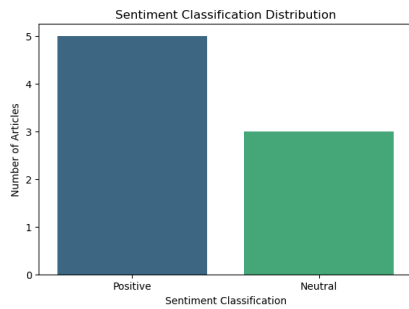
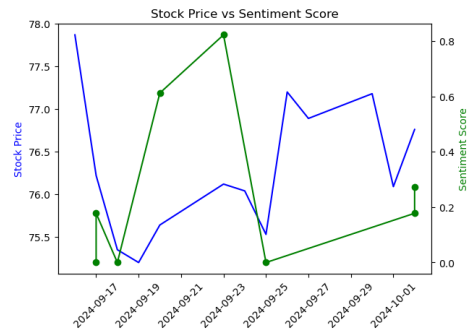
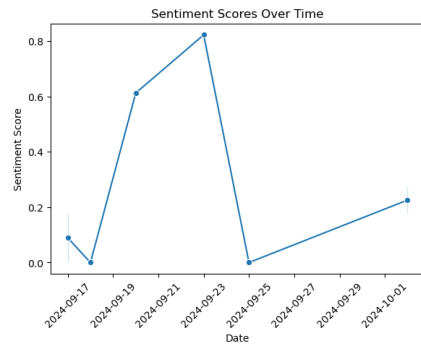
Total articles collected: 8

Ticker	Title \
0 CTSH	Cognizant Technology Solutions Corporation (CT...
1 CTSH	Are Investors Undervaluing Cognizant Technolog...
2 CTSH	Cognizant Named #7 to Fortune's Change the Wor...
3 CTSH	Cognizant and Aston Martin Aramco Formula One®...
4 CTSH	Is Cognizant Technology Solutions Corporation'...
5 CTSH	mecwacare selects Cognizant as strategic deliv...
6 CTSH	Cognizant Technology Solutions Corporation (CT...
7 CTSH	England and Wales Cricket Board selects Cogniz...

	Link	Date \
0	https://finance.yahoo.com/news/cognizant-techn...	2024-10-02
1	https://finance.yahoo.com/news/investors-under...	2024-10-02
2	https://finance.yahoo.com/news/cognizant-named...	2024-09-25
3	https://finance.yahoo.com/news/cognizant-aston...	2024-09-23
4	https://finance.yahoo.com/news/cognizant-techn...	2024-09-20
5	https://finance.yahoo.com/news/mecwacare-selec...	2024-09-18
6	https://finance.yahoo.com/news/cognizant-techn...	2024-09-17
7	https://finance.yahoo.com/news/england-wales-c...	2024-09-17

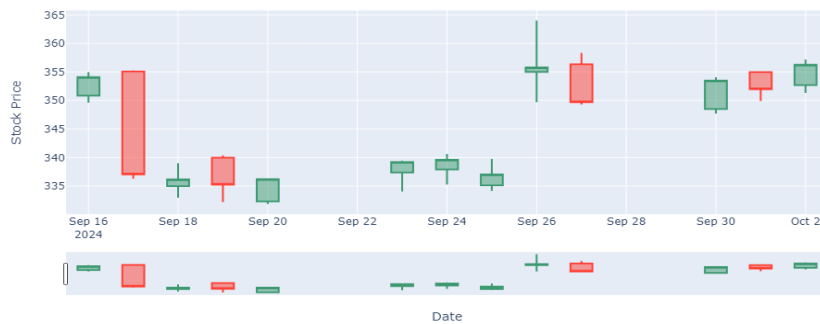
Sentiment Score	Sentiment Classification
0 0.2732	Positive
1 0.1779	Positive
2 0.0000	Neutral
3 0.8225	Positive
4 0.6124	Positive
5 0.0000	Neutral
6 0.1779	Positive
7 0.0000	Neutral

Sentiment Scores for Cognizant



Visualization Charts for Cognizant

Cognizant Stock Price Movement (Candlestick Chart)



Candlestick Chart

Great for these 3 Articles, analyze the stock data and sentiment scores I previously provided for COGNIZANT and give your analysis per article, and thier impact on the stock price and sentment



Analysis of Cognizant (CTSH) Articles, Sentiment Scores, and Stock Data for the 3 Remembered Articles

Here's a detailed analysis of how each remembered Cognizant article impacted its stock price, based on the sentiment scores and stock data you provided.



Message ChatGPT



ChatGPT can make mistakes. Check important info.

ChatGPT Prompt to get Analysis

Analysis of Cognizant (CTSH) Articles, Sentiment Scores, and Stock Data

Here's a detailed analysis of how each remembered Cognizant article impacted its stock price based on your sentiment scores and stock data.

1. Article: Cognizant Technology Solutions Corporation (CTSH) Expands AI Capabilities with Belcan Acquisition

- **Date:** October 2, 2024
- **Sentiment Score:** 0.2732 (Positive)
- **Link:** [Read More](#)

Stock Data on October 2, 2024:

- **Open:** \$75.79
- **High:** \$76.86
- **Low:** \$75.61
- **Close:** \$76.76
- **Volume:** 3,571,100

Analysis:

- **Positive Sentiment:** The sentiment score of **0.2732** suggests a **moderately positive reaction** to the acquisition news, which aligns with the market's view of the move as a strategic expansion of Cognizant's AI capabilities.
- **Stock Reaction:** The stock **increased slightly** on October 2, 2024, closing at **\$76.76**, up from the previous day's close of **\$76.09**. This indicates that investors viewed the **Belcan acquisition** as a positive step toward strengthening Cognizant's competitive position in AI.
- **Volume Spike:** Trading volume was higher than the previous day, reflecting increased investor interest following the announcement. The acquisition likely boosted investor confidence, as reflected in the stock's performance and trading activity.

2. Article: Cognizant and Aston Martin Aramco Formula One® Team Celebrate Partnership

- **Date:** September 23, 2024
- **Sentiment Score:** 0.8225 (Highly Positive)
- **Link:** [Read More](#)

Stock Data on September 23, 2024:

- **Open:** \$75.78
- **High:** \$76.17
- **Low:** \$75.27
- **Close:** \$76.12
- **Volume:** 6,565,600

Analysis:

- **Highly Positive Sentiment:** With a **sentiment score of 0.8225**, this article reflects a **strong positive reaction** to Cognizant's partnership with the **Aston Martin Aramco Formula One® Team**. This partnership likely elevated Cognizant's brand presence and global reach, leading to increased investor optimism.
- **Stock Reaction:** The stock showed a modest increase, closing at **\$76.12**, up from the previous close of **\$75.64**. While the price change was not dramatic, it indicates a **positive reception** to the news.
- **Volume Surge:** A notable **increase in volume to 6.56 million** shares suggests that investors reacted strongly to this partnership. The high trading volume combined with

the positive sentiment score indicates that this partnership was seen as a valuable strategic move.

3. Article: mecwacare selects Cognizant as strategic delivery partner

- **Date:** September 18, 2024
- **Sentiment Score:** 0.0000 (Neutral)
- **Link:** [Read More](#)

Stock Data on September 18, 2024:

- **Open:** \$75.86
- **High:** \$76.27
- **Low:** \$75.19
- **Close:** \$75.35
- **Volume:** 2,043,700

Analysis:

- **Neutral Sentiment:** The **sentiment score of 0.0000** indicates a **neutral reaction** to this news. While the selection of Cognizant as a strategic partner for **mecwacare** is positive for long-term prospects, it may not have been viewed as immediately impactful in terms of revenue or market positioning.
- **Stock Reaction:** The stock **slightly declined**, closing at **\$75.35**, down from the previous close of **\$75.64**. The decline suggests that the market did not see this partnership as a significant event, likely due to the regional or niche focus of mecwacare.
- **Low Volume:** The **trading volume** was also lower on this day compared to other high-impact announcements, further supporting the idea that this news did not trigger much investor action.

Summary of Impact

1. **Cognizant Technology Solutions Corporation (CTSH) Expands AI Capabilities with Belcan Acquisition (October 2, 2024):**

- **Positive sentiment** and **higher volume** indicate that the market saw this acquisition as a valuable strategic move to expand AI capabilities. The stock saw a modest price increase, reflecting investor confidence in the long-term benefits of the acquisition.
2. **Cognizant and Aston Martin Aramco Formula One® Team Celebrate Partnership (September 23, 2024):**
- The **highly positive sentiment** and **significant increase in trading volume** indicate that investors responded enthusiastically to this high-profile partnership, despite modest stock price increase.
3. **mecwacare selects Cognizant as strategic delivery partner (September 18, 2024):**
- The **neutral sentiment** and **slightly lower stock price** reflect this announcement's lack of significant market impact. The relatively low trading volume suggests that investors did not see this partnership as a major driver for immediate growth.

Conclusion on Cognizant Analysis:

Cognizant's strategic moves, such as the **Belcan acquisition** and the **Aston Martin partnership**, were well-received by the market, with both announcements generating positive sentiment and higher trading activity. These events highlight the company's focus on expanding its AI capabilities and enhancing its global presence, which were viewed favorably by investors. On the other hand, the **mecwacare partnership** had a neutral impact, suggesting that while the news was positive, it did not significantly affect investor confidence or stock performance in the short term.

Accenture [ACN]

We analyze Accenture by gathering recent news articles and retrieving stock prices, focusing on its AI partnership with Nvidia. Through sentiment analysis and comprehensive visualizations, including line charts, pie charts, bar charts, and candlestick charts, we explore how the market responds to these strategic collaborations and how sentiment impacts stock price performance.

News for ACN:
Title: Guggenheim Adjusts Price Target on Accenture to \$345 From \$395, Maintains Buy Rating
Date: 2024-10-03 10:24:39
Link: <https://finance.yahoo.com/news/guggenheim-adjusts-price-target-accenture-102439700.html>

Title: SAP, Carahsoft Probe Widens to Work With Nearly 100 Agencies
Date: 2024-10-03 00:05:39
Link: <https://finance.yahoo.com/news/sap-carahsoft-probe-expanded-nearly-214335522.html>

Title: Demand for NVIDIA's Blackwell is 'insane' - Jensen Huang
Date: 2024-10-02 22:17:02
Link: <https://finance.yahoo.com/news/demand-nvidias-blackwell-insane-jensen-221702225.html>

Title: Nvidia CEO Jensen Huang Says Demand for Its Chips Is 'Insane'
Date: 2024-10-02 21:42:14
Link: <https://finance.yahoo.com/m/65a07518-ba0c-3891-8e6d-b88306012499/nvidia-ceo-jensen-huang-says.html>

Title: Nvidia Teams Up With Accenture to Boost Corporate AI Use
Date: 2024-10-02 20:49:20
Link: <https://finance.yahoo.com/news/nvidia-partners-accenture-boost-corporate-120000153.html>

Title: Investors Dig In on Meta Platforms, Vail Resorts, Costco Wholesale, and More
Date: 2024-10-02 17:55:00
Link: <https://finance.yahoo.com/m/e7d3eefb-c9b1-35f0-8270-8a3ff60f8141/investors-dig-in-on-meta.html>

Title: Nvidia and Accenture Join Forces to Push Corporate AI
Date: 2024-10-02 16:23:17
Link: <https://finance.yahoo.com/m/1e146f60-29a0-3e1b-8b85-abbf4ee9eb33/nvidia-and-accenture-join.html>

Title: Accenture, Nvidia Forge Artificial Intelligence Partnership
Date: 2024-10-02 15:26:03
Link: <https://finance.yahoo.com/m/296baed6-3a0f-3865-0bcd-224dff8af9d/accenture52c-nvidia-forge.html>

Accenture News Articles

Stock data before and after 2024-10-01:				
Date	Open	High	Low	Close \
2024-09-16 00:00:00-04:00	350.839996	354.980011	349.630005	354.119995
2024-09-17 00:00:00-04:00	355.100006	355.279999	336.309998	337.040009
2024-09-18 00:00:00-04:00	335.000000	339.000000	332.959991	336.179993
2024-09-19 00:00:00-04:00	340.000000	340.380005	332.230011	335.239990
2024-09-20 00:00:00-04:00	332.320007	336.350006	331.869995	336.220001
2024-09-23 00:00:00-04:00	337.380005	339.440002	334.049988	339.209991
2024-09-24 00:00:00-04:00	337.940002	340.619995	335.279999	339.619995
2024-09-25 00:00:00-04:00	335.140015	339.750000	334.160004	337.049988
2024-09-26 00:00:00-04:00	355.010010	363.989990	349.700012	355.809998
2024-09-27 00:00:00-04:00	356.329987	358.339996	349.299988	349.700012
2024-09-30 00:00:00-04:00	348.500000	354.059998	347.720001	353.480011
2024-10-01 00:00:00-04:00	354.989990	354.989990	349.899994	351.980011
2024-10-02 00:00:00-04:00	352.709991	357.190002	351.339996	356.290009
2024-10-03 00:00:00-04:00	359.549988	362.100006	359.325012	361.640015

Volume Dividends stock Splits			
Date	Volume	Dividends	stock Splits
2024-09-16 00:00:00-04:00	2536400	0.0	0.0
2024-09-17 00:00:00-04:00	4528800	0.0	0.0
2024-09-18 00:00:00-04:00	2150800	0.0	0.0
2024-09-19 00:00:00-04:00	2645700	0.0	0.0
2024-09-20 00:00:00-04:00	5231000	0.0	0.0
2024-09-23 00:00:00-04:00	1998500	0.0	0.0
2024-09-24 00:00:00-04:00	2842900	0.0	0.0
2024-09-25 00:00:00-04:00	3552700	0.0	0.0
2024-09-26 00:00:00-04:00	4454800	0.0	0.0
2024-09-27 00:00:00-04:00	2575200	0.0	0.0
2024-09-30 00:00:00-04:00	2424900	0.0	0.0
2024-10-01 00:00:00-04:00	1827300	0.0	0.0
2024-10-02 00:00:00-04:00	2416600	0.0	0.0
2024-10-03 00:00:00-04:00	757170	0.0	0.0

Stock Data of Accenture

News for ACN (Total articles: 8):

Total articles collected: 8

Ticker	Title \	Link	Date \
0	ACN Guggenheim Adjusts Price Target on Accenture t...	https://finance.yahoo.com/news/guggenheim-adju...	2024-10-03
1	ACN SAP, Carahsoft Probe Widens to Work With Nearl...	https://finance.yahoo.com/news/sap-carahsoft-p...	2024-10-03
2	ACN Demand for NVIDIA's Blackwell is 'insane' - Je...	https://finance.yahoo.com/news/demand-nvidias-...	2024-10-02
3	ACN Nvidia CEO Jensen Huang Says Demand for Its Ch...	https://finance.yahoo.com/m/65a07518-ba0c-3891...	2024-10-02
4	ACN Nvidia Teams Up With Accenture to Boost Corpor...	https://finance.yahoo.com/news/nvidia-partners...	2024-10-02
5	ACN Investors Dig In on Meta Platforms, Vail Resor...	https://finance.yahoo.com/m/e7d36efb-c9b1-35f0...	2024-10-02
6	ACN Nvidia and Accenture Join Forces to Push Corpo...	https://finance.yahoo.com/m/1e146f60-29a0-3e1b...	2024-10-02
7	ACN Accenture, Nvidia Forge Artificial Intelligenc...	https://finance.yahoo.com/m/296baed6-3a8f-3865...	2024-10-02

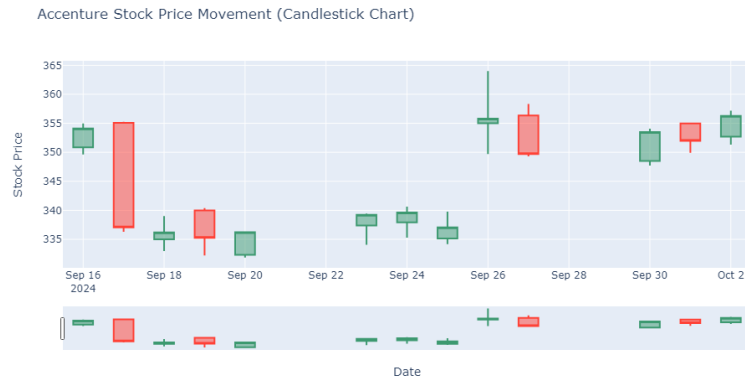
	Sentiment Score	Sentiment Classification
0	0.0000	Neutral
1	0.0000	Neutral
2	-0.1280	Negative
3	-0.1280	Negative
4	0.4019	Positive
5	0.0000	Neutral
6	0.2960	Positive
7	0.4767	Positive

Sentiment Score



Accenture Visualizations

DCa



Candle Stick Chart

Analysis of Accenture (ACN) Articles, Sentiment Scores, and Stock Data

Below is the analysis of Accenture's stock performance in relation to the relevant articles, sentiment scores, and stock data provided for the period around **October 2, 2024**.

1. Article: Nvidia Teams Up With Accenture to Boost Corporate AI Use

- **Date:** October 2, 2024, 20:49:20
- **Sentiment Score:** 0.4019 (Positive)
- **Link:** [Read More](#)

Stock Data on October 2, 2024:

- **Open:** \$352.71
- **High:** \$357.19
- **Low:** \$351.34
- **Close:** \$356.29
- **Volume:** 2,416,600

Analysis:

- **Positive Sentiment:** With a sentiment score of **0.4019**, the market responded positively to the news of Accenture teaming up with **Nvidia** to boost corporate AI use. This partnership likely indicated strong growth potential in AI-driven solutions, driving positive investor sentiment.
- **Stock Reaction:** The stock saw a moderate **increase in price** on October 2, closing at **\$356.29**, up from the previous day's close of **\$351.98**. The announcement of the partnership with Nvidia appears to have had a **positive impact** on Accenture's stock, reflecting investor optimism about Accenture's growing role in the AI sector.
- **Increased Volume:** The trading volume on October 2 increased compared to the previous day, showing heightened investor activity. Investors likely viewed the partnership as a major strategic move that could strengthen Accenture's AI service offerings and provide long-term benefits.

2. Article: Accenture, Nvidia Forge Artificial Intelligence Partnership

- **Date:** October 2, 2024, 15:26:03
- **Sentiment Score:** 0.4767 (Positive)
- **Link:** [Read More](#)

Stock Data on October 2, 2024:

- **Open:** \$352.71
- **High:** \$357.19
- **Low:** \$351.34
- **Close:** \$356.29
- **Volume:** 2,416,600

Analysis:

- **Highly Positive Sentiment:** The sentiment score of **0.4767** reflects a strong positive market reaction to the **Accenture-Nvidia AI partnership**. This partnership further solidifies Accenture's position as a leader in AI-driven corporate solutions.
- **Stock Reaction:** Similar to the previous article, the stock's closing price of **\$356.29** reflects the positive market sentiment. The **combined effect** of these announcements, made within a few hours of each other, led to a **consistent upward movement** in the stock price throughout the day.

- **Consistent Volume:** The volume remained higher than the previous day, signaling sustained investor interest in Accenture's strategic direction. This positive partnership news is likely responsible for the stock's **steady increase** on October 2.

3. Stock Data Before and After the Articles (2024-10-01 to 2024-10-03):

Key Stock Data:

- **2024-10-01:**
 - **Open:** \$354.99
 - **Close:** \$351.98
 - **High:** \$354.99
 - **Low:** \$349.90
 - **Volume:** 1,827,300
- **2024-10-02:**
 - **Open:** \$352.71
 - **Close:** \$356.29
 - **High:** \$357.19
 - **Low:** \$351.34
 - **Volume:** 2,416,600
- **2024-10-03:**
 - **Open:** \$359.55
 - **Close:** \$361.64
 - **High:** \$362.10
 - **Low:** \$359.33
 - **Volume:** 757,170

Summary of Stock and Sentiment Analysis

1. **Nvidia Teams Up with Accenture to Boost Corporate AI Use (October 2, 2024, 20:49:20):**
 - **Positive sentiment** with a score of **0.4019**, reflecting market optimism about the Accenture-Nvidia partnership and its potential to boost corporate AI services. The stock price increased steadily, closing at **\$356.29**, with higher trading volume.
2. **Accenture, Nvidia Forge Artificial Intelligence Partnership (October 2, 2024, 15:26:03):**
 - **Highly positive sentiment** with a score of **0.4767**, showing strong confidence in Accenture's strategic AI partnership. The stock saw a consistent increase in price on October 2, maintaining a positive momentum with sustained volume, indicating strong investor interest in the partnership.

Conclusion on Accenture Analysis:

The two articles published on **October 2, 2024**, regarding Accenture's collaboration with **Nvidia** to drive AI use in corporate settings clearly impacted the stock price. The **closing price** increased from **\$351.98** on October 1 to **\$356.29** on October 2, further increasing to **\$361.64** by October 3. The **positive sentiment** from both articles likely encouraged investors to view the partnership as a strategic move that would drive growth in Accenture's AI services, leading to **increased trading activity** and **stock price appreciation**.

CyberArk Software Ltd [CYBR]

For CyberArk, we scrape news articles about the company's acquisition of Venafi and gather stock data to assess the market's reaction. After conducting sentiment analysis, we present the findings through line, pie, bar, and candlestick charts. This enables a clear understanding of how the acquisition has influenced investor sentiment and stock price trends.

```
News for CYBR:
Title: CyberArk to Announce Third Quarter 2024 Financial Results on November 13
Date: 2024-10-03 12:00:00
Link: https://finance.yahoo.com/news/cyberark-announce-third-quarter-2024-120000934.html

Title: CyberArk (CYBR) Stock Slides as Market Rises: Facts to Know Before You Trade
Date: 2024-10-02 22:15:20
Link: https://finance.yahoo.com/news/cyberark-cybr-stock-slides-market-221520326.html

Title: Venafi Unveils New Product Capabilities to Help Organizations Prepare for a Multi-Cloud and Post-Quantum Future
Date: 2024-10-02 13:00:00
Link: https://finance.yahoo.com/news/venafi-unveils-product-capabilities-help-130000175.html

Title: Is CyberArk Software (CYBR) Outperforming Other Computer and Technology Stocks This Year?
Date: 2024-10-01 13:40:11
Link: https://finance.yahoo.com/news/cyberark-software-cybr-outperforming-other-134011312.html

Title: CyberArk Completes Acquisition of Machine Identity Management Leader Venafi
Date: 2024-10-01 12:41:00
Link: https://finance.yahoo.com/news/cyberark-completes-acquisition-machine-identity-124100011.html

Title: Wedbush Raises Price Target on CyberArk Software to $325 From $300, Keeps Outperform Rating
Date: 2024-10-01 11:36:10
Link: https://finance.yahoo.com/news/wedbush-raises-price-target-cyberark-113610903.html

Title: High Growth Tech Stocks To Watch In October 2024
Date: 2024-10-01 10:04:36
Link: https://finance.yahoo.com/news/high-growth-tech-stocks-watch-100436664.html
```

CyberArk News Articles

Stock data before and after 2024-10-01:					
Date	Open	High	Low	Close	\
2024-09-16 00:00:00-04:00	271.529999	273.989990	266.640015	273.399994	
2024-09-17 00:00:00-04:00	273.500000	275.960999	271.429993	272.920013	
2024-09-18 00:00:00-04:00	272.570007	273.209991	267.179993	268.040009	
2024-09-19 00:00:00-04:00	273.519989	275.434998	270.316986	271.230011	
2024-09-20 00:00:00-04:00	273.380005	281.309998	272.790009	280.619995	
2024-09-23 00:00:00-04:00	281.000000	287.510010	281.000000	284.190002	
2024-09-24 00:00:00-04:00	286.000000	286.859985	278.519989	284.510010	
2024-09-25 00:00:00-04:00	284.140015	285.529999	282.359985	283.730011	
2024-09-26 00:00:00-04:00	287.000000	288.420013	281.279999	287.380005	
2024-09-27 00:00:00-04:00	287.239990	287.640015	280.640015	282.890015	
2024-09-30 00:00:00-04:00	282.880005	291.760010	282.339996	291.609985	
2024-10-01 00:00:00-04:00	294.549988	294.890015	272.190002	279.700012	
2024-10-02 00:00:00-04:00	278.350006	281.980011	273.970001	274.359985	
2024-10-03 00:00:00-04:00	274.000000	274.000000	269.000000	271.904999	
Date	Volume	Dividends	Stock Splits		
2024-09-16 00:00:00-04:00	660400	0.0	0.0		
2024-09-17 00:00:00-04:00	229700	0.0	0.0		
2024-09-18 00:00:00-04:00	389800	0.0	0.0		
2024-09-19 00:00:00-04:00	424900	0.0	0.0		
2024-09-20 00:00:00-04:00	543800	0.0	0.0		
2024-09-23 00:00:00-04:00	374500	0.0	0.0		
2024-09-24 00:00:00-04:00	847100	0.0	0.0		
2024-09-25 00:00:00-04:00	182000	0.0	0.0		
2024-09-26 00:00:00-04:00	157700	0.0	0.0		

Stock Data

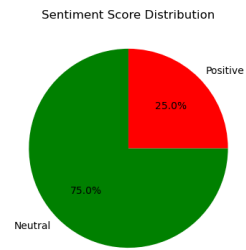
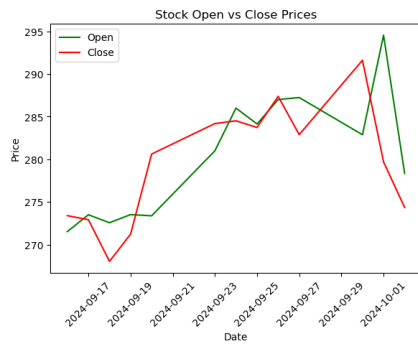
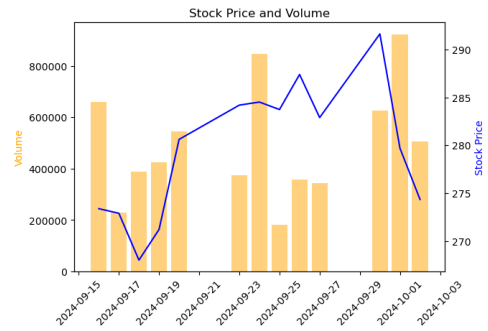
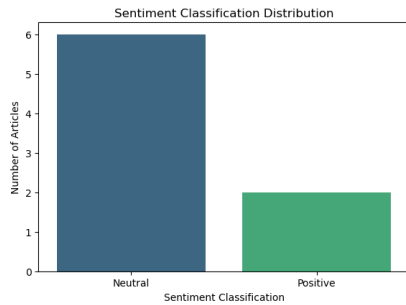
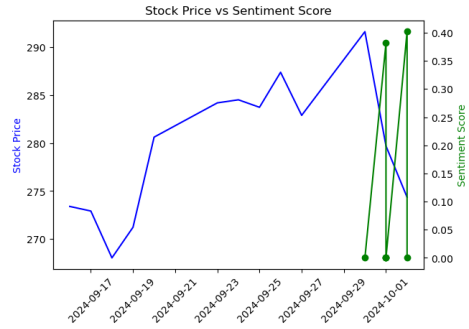
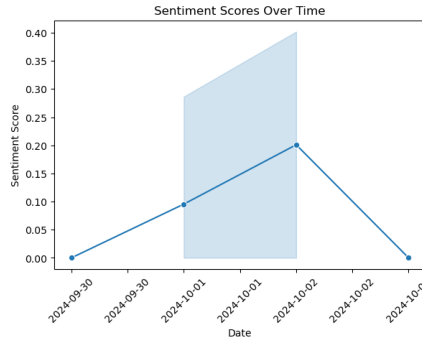
News for CYBR (Total articles: 8):

Total articles collected: 8

Ticker	Title \	
0	CYBR	CyberArk to Announce Third Quarter 2024 Financ...
1	CYBR	CyberArk (CYBR) Stock Slides as Market Rises: ...
2	CYBR	Venafi Unveils New Product Capabilities to Hel...
3	CYBR	Is CyberArk Software (CYBR) Outperforming Othe...
4	CYBR	CyberArk Completes Acquisition of Machine Iden...
5	CYBR	Wedbush Raises Price Target on CyberArk Softwa...
6	CYBR	High Growth Tech Stocks To Watch In October 2024
7	CYBR	Cybersecurity Stocks To Watch: Fortinet, Palo ...
	Link	Date \
0	https://finance.yahoo.com/news/cyberark-announ...	2024-10-03
1	https://finance.yahoo.com/news/cyberark-cybr-s...	2024-10-02
2	https://finance.yahoo.com/news/venafi-unveils-...	2024-10-02
3	https://finance.yahoo.com/news/cyberark-softwa...	2024-10-01
4	https://finance.yahoo.com/news/cyberark-comple...	2024-10-01
5	https://finance.yahoo.com/news/wedbush-raises-...	2024-10-01
6	https://finance.yahoo.com/news/high-growth-tec...	2024-10-01
7	https://finance.yahoo.com/m/758558ed-5483-3092...	2024-09-30

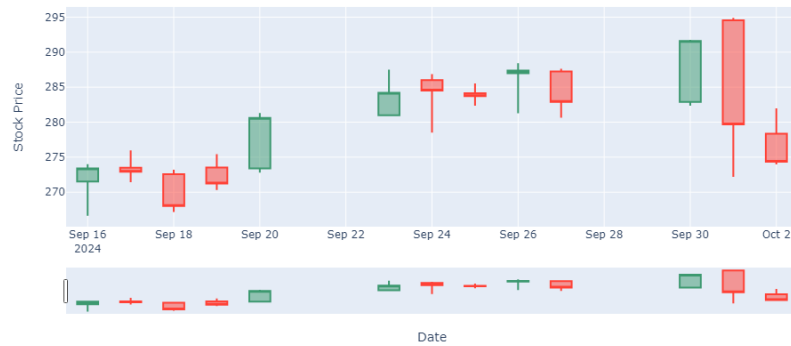
	Sentiment Score	Sentiment Classification
0	0.0000	Neutral
1	0.0000	Neutral
2	0.4019	Positive
3	0.0000	Neutral
4	0.0000	Neutral
5	0.0000	Neutral
6	0.3818	Positive
7	0.0000	Neutral

Sentiment Scores



Visualization Charts for CYBR

CyberArk Software Ltd Stock Price Movement (Candlestick Chart)



Candle Stick Chart

Analysis of CyberArk (CYBR) Articles, Sentiment Scores, and Stock Data

Below is the analysis of CyberArk's stock performance based on the article published on **October 1, 2024**, which discussed the **acquisition of Venafi**, along with relevant stock data and sentiment scores.

1. Article: CyberArk Completes Acquisition of Machine Identity Management Leader Venafi

- **Date:** October 1, 2024, 12:41:00
- **Sentiment Score:** 0.0000 (Neutral)
- **Link:** [Read More](#)

Stock Data on October 1, 2024:

- **Open:** \$294.55
- **High:** \$294.89
- **Low:** \$272.19
- **Close:** \$279.70
- **Volume:** 922,600

Analysis:

- **Neutral Sentiment:** Despite the **neutral sentiment score** of **0.0000**, the acquisition of **Venafi**, a leader in machine identity management, was strategically important for CyberArk. However, the stock's price did not reflect immediate positive investor sentiment.
- **Stock Reaction:** The stock **fell sharply** on October 1, closing at **\$279.70**, down from **\$291.60** the previous day. The drop in price despite the acquisition news suggests that the market may have been uncertain about the short-term impact of the acquisition on CyberArk's profitability.
- **Increased Volume:** The trading volume saw a significant spike to **922,600**, indicating heightened market activity as investors reacted to the acquisition. The volume spike, combined with the price drop, suggests that investors may have been selling on the news, reflecting either profit-taking or concerns about the integration of Venafi into CyberArk's operations.

2. Stock Data After the Acquisition (October 2-3, 2024):

October 2, 2024:

- **Open:** \$278.35
- **Close:** \$274.36
- **High:** \$281.98
- **Low:** \$273.97
- **Volume:** 506,400

On **October 2**, the stock continued to **decline**, closing at **\$274.36**, indicating that investor sentiment remained cautious the day after the acquisition. Despite a positive article about **Venafi's new product capabilities** published on this day (with a **positive sentiment score of 0.4019**), the stock price still fell, suggesting that the market had not fully digested the potential long-term benefits of the acquisition.

October 3, 2024:

- **Open:** \$274.00
- **Close:** \$271.90
- **High:** \$274.00
- **Low:** \$269.00
- **Volume:** 44,696

On **October 3**, the stock declined slightly, closing at **\$271.90**, marking a **steep decline** from the pre-acquisition price of **\$291.60** on September 30. The trading volume also dropped significantly, indicating that the initial market activity following the acquisition announcement had subsided.

Summary of Stock and Sentiment Analysis

1. CyberArk Completes Acquisition of Machine Identity Management Leader Venafi (October 1, 2024, 12:41:00):

- The acquisition of **Venafi** generated **neutral sentiment** (0.0000) but caused a **sharp drop** in the stock price, closing at **\$279.70** from an opening price of **\$294.55**. This suggests that investors were either taking profits or cautious about the acquisition's short-term impact on CyberArk's financials.

2. Venafi Unveils New Product Capabilities (October 2, 2024):

- The article regarding Venafi's product capabilities carried **positive sentiment** (0.4019), but it did not prevent the stock from continuing its decline, closing at **\$274.36** on October 2. The disconnect between positive sentiment and falling stock price may reflect concerns about the broader market environment or uncertainty regarding CyberArk's ability to integrate Venafi effectively.

3. Overall Stock Performance:

- The stock dropped from **\$291.60** on September 30 to **\$271.90** on October 3, despite the acquisition news and positive sentiment surrounding Venafi's product developments. The market's reaction indicates **short-term skepticism** about the acquisition's immediate impact on profitability.

Conclusion on CyberArk Analysis:

The acquisition of Venafi by CyberArk did not result in an immediate positive reaction in the stock market. Despite the **neutral sentiment** surrounding the acquisition and **positive sentiment** related to Venafi's product capabilities, the stock price dropped significantly in the days following the announcement. This suggests that investors were cautious about CyberArk's ability to leverage the acquisition for short-term gains, even though the long-term prospects for integrating machine identity management solutions into its offerings may be positive. The **increased trading volume** on October 1 indicates that investors were actively reacting to the news—however, the overall decline in stock price points to **uncertainty** or **profit-taking** in the short term.

Reflection:

This assignment gave me valuable insights into **web scraping** and working with the **yfinance API** to gather stock data and news articles. I also developed a deeper understanding of **stocks** and how external factors, such as news and sentiment, can impact their performance. Observing the correlation between **sentiment scores** and **stock price fluctuations** highlighted how news articles and major corporate decisions—like mergers, acquisitions, and partnerships—can influence market behavior. This project enhanced my technical skills and broadened my understanding of the financial market's dynamics.

Conclusion

The analysis of key mergers, acquisitions, and partnerships in the technology sector reveals significant short-term and long-term market impacts. Positive sentiment surrounding strategic moves such as **Palo Alto Networks' (PANW)** expansion of AI cybersecurity capabilities, **Dell's (DELL)** AI and eco-friendly initiatives, **Cognizant's (CTSH)** AI acquisition and partnerships, **Accenture's (ACN)** AI-driven collaboration with Nvidia, and **CyberArk's (CYBR)** acquisition of Venafi has shaped investor sentiment and stock performance.

While most companies experienced positive market sentiment following major announcements, the immediate stock price reactions varied. **Palo Alto Networks** and **CyberArk** saw stock declines despite positive news, possibly due to external market factors or pre-existing investor expectations. On the other hand, **Dell**, **Cognizant**, and **Accenture** benefited from their announcements, with stock prices stabilizing or rebounding as investors responded positively to growth-oriented strategies.

In conclusion, while mergers and acquisitions tend to generate positive sentiment, the immediate stock market reaction can be influenced by various factors, including investor expectations, broader market conditions, and the perceived long-term impact of these structural changes. This highlights the complexity of predicting stock performance solely based on positive corporate news, reinforcing the need for a comprehensive analysis of sentiment and market trends.