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A Collection of Financial Accounting Case Studies

By
Madison Demus

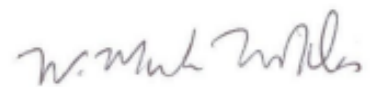
A thesis submitted to the faculty of the University of Mississippi in partial fulfillment of the requirements of the Sally McDonnell Barksdale Honors College.

Oxford, Mississippi
May 2023

Approved by:



Advisor: Dr. Victoria Dickinson



Reader: Dean W. Mark Wilder

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ABSTRACT

The following thesis presents a comprehensive examination of various accounting topics through compilation of case studies. These studies delve into a range of subjects, including an interview with a successful business professional and identifying financial and accounting solutions for Apple, Inc., among others. Dr. Victoria Dickinson supervised and instructed the completion of these studies as part of the curriculum for the Sally McDonnell Barksdale Honors College and Patterson School of Accountancy. Throughout this research, I have been able to explore several areas of interest in accounting, such as the role of financial accounting in decision-making and the implications of tax policies on multinational corporations. The research and work that I have completed within this thesis has certainly enhanced my knowledge and skills as both a student and a business professional.

CASE STUDY ONE

Minutes That Changed the Country

Madison Demus

September 14, 2021

Executive Summary

This case was based upon the documentary “102 Minutes That Changed America.” This documentary showed real-time videos of the events that took place on September 11, 2001. The video clips were taken directly from the citizens watching the attacks unfold in New York. Needless to say, the videos were often choppy and hard to see, but created a much larger impact than clips from a TV broadcasting would. The clips came from the phones and cameras of people on the streets, watching from their apartments, within the Twin Towers themselves, and even from across the bay in New Jersey. Watching a documentary filmed like this establishes a better sense of what the people who lived through this day were truly feeling. The confusion, shock, and panic could be seen and felt in real-time for the audience. The point of this case was to get a deeper understanding of the impact that the events of 9/11 had on America and to try to recognize how the images and videos made an impact on myself. The facts behind the attacks were extremely interesting to me and made me curious to pursue more information on the matter. On a basic level, I learned some of the logistics behind the attacks; for example, the terrorists chose planes flying from the East to West coast so that they would have the most fuel in the engines on impact. Additionally, the planes chosen were 757s, one of the largest models at the time. Previously in school, we only learned the most basic facts behind the attacks on the Twin Towers and the Pentagon. Watching this documentary and hearing about the finer details from Dr. D taught me more about what happened that day than any of my previous lessons in school. On a deeper level, I got to experience just a small portion of the heartbreak and suffering that so many Americans felt that day. Watching videos of the towers that came straight from the eyes of the people was extremely powerful and moving. In response, my curiosity led me to research more about how America changed after 9/11, quickly showing me the similarities between its

impact and the impacts of COVID-19 today. In this case I discuss how security protocols have changed in response to each event and the minority groups that suffered further consequences due to scapegoating and scaremongering.

Reflection

What does it mean to “never forget” for those of us who were born shortly before or after September 11, 2001? Most of the adults in our lives specifically remember the day that the Twin Towers were attacked and the emotions that ran through them at the time. I was not even two months old when this devastating attack occurred so the majority of my knowledge on this topic has come from basic history lessons throughout middle and high school. Never before had I seen firsthand footage of that day until watching the documentary, “102 Minutes That Changed America.” To me, “never forget” meant listening to a teacher lecture about the basic details that took place and how important it is that we honor those that were lost. After watching the documentary, “never forget” has taken on a whole new meaning to me.

Watching the events of 9/11, minute by minute, essentially through the eyes of those living in or near Manhattan at the time, gave me a deeper understanding of how this day made such a huge impact on the majority of Americans. I felt almost as if I was there with them, seeing and hearing the confusion and panic as the events unfolded. To think that it first was thought of as a freak accident shows how unexpected an attack of this scale was. The images that particularly moved me were those of people falling from the buildings, with no other option to escape from the fires burning within. A video showing a firefighter hopelessly watching as someone jumped from one of the towers was one of the most emotional recordings I have ever seen. This documentary inspired me to learn more about the impact 9/11 still has on Americans

even two decades later. In doing so, I started to analyze the likeness between the events that occurred on September 11, 2001 and the COVID-19 pandemic that is currently affecting our lives.

To begin, I started looking into the more surface level effects that 9/11 has brought upon America. The main effect that I have seen in my own life is the impact on airline travel and security. As can be expected, passenger travel and airline capacity dropped dramatically after the terrorist attack. An article from the *Bureau of Transportation Statistics* cited that it took a little under three years for the airline industry to “match and finally surpass the pre 9/11 levels.” Not only this, but security measures drastically changed in an attempt to prevent anything similar from ever happening again. No more are the days of easy-going travel, being able to show up 45 minutes prior to a flight and grab a cup of coffee before boarding. The safe option these days is to get to the airport two hours early and endure the extensive security screenings that are now commonplace.

Pre-9/11 security was kept to a minimum in the hopes that it would not become an impediment to travel. Airports were allowed to manage their screenings independently, with only a few federal rules to comply with. After the terrorist attacks, the Transportation Security Administration, a new federal agency, was established to look over all security operations. In some ways, these changes eventually made airports even more of a hub than they were before. With people expecting to be at the airport so early, other aspects of airports had to change to accommodate the large congregation of people waiting to board their flights. Restaurants and shops are now usually located after security since people do not want to risk waiting to go through security last minute. Free Wi-Fi is now the norm in most airports so that people can be

productive, or just pass the time, a bit more easily. The new standard of airports is almost entirely defined by the aftermath of 9/11 and the fear that it instilled in air travel.

While looking into how air travel has been affected by the long-lasting impact of 9/11, many of the articles I found compared these effects to the more recent effects of COVID-19. In fact, there are many editorials that discuss the comparisons between how 9/11 and COVID-19 each impacted America, and the world, in their aftermath. Although 9/11 is an event that the majority of Americans, age 30 and up, would list in their top five most impactful events in their lives, I would say that the newer generation's equivalent would be COVID-19. Just as 9/11 reshaped society's image of security back in 2001, COVID-19 is now currently reshaping the entire world's image of such.

The common denominator between how COVID-19 and 9/11 changed the way America views security is the military-centric solution that the government proposed in response to each event. 9/11 was immediately followed with emotions of resentment and hatred towards the Middle East and terrorism. This quickly led to US troops being sent to Afghanistan, marking the beginning of the "War on Terrorism." The Department of Defense was similarly targeted in response to COVID-19, as it had to take on the role of carrying out aid programs. In both cases, the response was met with conflicting opinions. No one solution could make everyone happy so the government decided, on its own, what the "best" approach was in each case. It can undoubtedly be agreed that the US's militaristic approach to impactful events, like 9/11 or the pandemic, is not supported by all Americans.

Going off of this, parallels between how feelings shifted towards minority groups in the aftermath of both COVID-19 and 9/11 can be observed. In the case of 9/11, anger was directed towards Muslims specifically, as the terrorist group in charge of the attacks followed an extreme

version of Islam. In times of chaos like this, many people feel the need to blame a specific group for the pain they are feeling. Similarly, one of the impacts that COVID-19 has had on Americans is the obvious increase in Sinophobic ideas, especially in the media, and a general prejudice towards those with Asian ethnicities. Americans of particular minorities often face a more intense impact of events as large as 9/11 and the pandemic. Not only do these minorities experience the original trauma of the crisis, but they must also face discrimination and harassment from their fellow Americans.

I spent some time looking into the ways that Muslim and Arab Americans were impacted as a result of 9/11. It seems that there were two main blows they had to take in the years following the terrorist attack. First, direct harassment and hate crimes from fellow Americans spiked. A *Voice of America* article, on the effects of 9/11 twenty years later, stated that, in the months following the attacks, Anti-Muslim hate crimes went from “30 or less in any given year, give or take, to 481 in 2001, mostly centered around the two weeks after the World Trade Center and Pentagon (attacks).” Many Muslim Americans experienced receiving death threats, demotions in their workplace, vandalism, and many other crimes backed by discrimination and fear. Second, almost all of the U.S. government’s “anti-terrorism” policies that were put in place ended up explicitly targeting Muslims and Arabs in the United States. For example, a policy created in 2002 required “all men from certain Arab and Muslim countries...to report back to the government to register and be fingerprinted (*Voice of America*).” Muslim owned businesses were put under surveillance and the Justice Department was quoted saying that it planned to randomly question about 5,000 people from Arab countries about their knowledge of terrorist activity in November 2001. Before 9/11, Muslim and Arab Americans were somewhat invisible as a minority group in America. Ever since the attacks, however, these Americans have had to face

intense monitoring by the government and acts of hate from fellow citizens due to the use of them as a scapegoat for what had happened.

Just as Muslim and Arab Americans were spotlighted in the months following the attack on the Twin Towers, Asian Americans felt a similar effect in the time following the start of the COVID-19 pandemic. Racist and xenophobic violence towards people of Asian descent has been at an all-time high since the first strain of COVID-19 was found in China. Again, people felt the need to use Asians and Asian Americans as a scapegoat for the outbreak of the pandemic, even though it was completely out of their control. In similar circumstances to that of 9/11, the government was partially to blame for this discrimination. The media frequently used derogatory language when speaking of Asians and people of Asian descent. Not only this, but politicians, including the president of the United States at the time, repeatedly used similar language while making statements about the pandemic. United States president, Donald Trump, often referred to COVID-19 as the “Chinese virus,” obviously encouraging prejudice towards Asians. This is an issue in many countries across the world, not just the United States. Certain political leaders are starting to see the severity of the discrimination towards Asians and are stepping up to try to prevent it.

There is an obvious closeness between the effects that both 9/11 and the COVID-19 pandemic had on America. Watching the documentary “102 Minutes That Changed America” gave me a deeper appreciation for the suffering that Americans felt and how impactful that day truly was. However, learning about the likeness between the aftermaths of 9/11 and COVID-19 is what really put 9/11’s impact into picture. COVID-19 has greatly impacted my life and is easily the most important event that has happened in my life since I have been alive. Although what I have experienced cannot be compared to the pain that people must have felt losing their loved

ones to the Twin Towers attacks, I know many people that have felt a similar loss after losing someone close to them to the virus. I understand now that events like these are truly never to be forgotten as their impacts reach so many people, so deep.

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“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this paper.”

Signed,

Madison Dorn

CASE STUDY TWO

Design Your Life

Madison Demus

October 6, 2021

The “Design Your Life” case study was meant to give us an opportunity to look into the finer details of where we may want to live in the future. We were divided into groups based on the area that we are hoping to live in in the future. From here, each group created a PowerPoint presentation including a large handful of information regarding the city we chose. This information included items such as the climate, prevalent industries in the area, transportation hubs, crime levels, and many other factors that one may want to consider when moving to a new place. Additionally, we were given the task of estimating a realistic budget based on a given starting salary. We needed to research rent, taxes, and other factors that are specific to the city. We chose and then decided how much we would likely spend each month based on these. My city of choice was Raleigh, North Carolina. The two classmates I was paired with chose Charlotte, North Carolina, only a couple hours from Raleigh, so we made the decision to do the presentation on Charlotte. I did not know a lot about the city of Charlotte going into the case study and I quickly realized that it is not a city I would want to live in later in life. The slide that solidified this opinion for me was the section on crime. The primary wish that my parents have asked of me when choosing where I want to go for an internship is that I choose somewhere safe. After reading into the crime statistics on Charlotte, I quickly came to the conclusion that I should probably look elsewhere for more safety. Additionally, Charlotte is about twice as large as Raleigh with a population of approximately 857,000 compared to Raleigh’s 464,000. I know that I prefer living in medium-size cities, so Raleigh is a better fit for me. Something else I learned from this case study was how expensive it is to live on your own. Since I was blessed enough as a child to have my parents cover most of my expenses, I did not realize how much things like utilities, food, insurance, and other basic items add up. It was also really interesting for me to see how much of my paychecks would be taken by various taxes and how that would

affect my budget for each month. Although I may have not found the city I want to live in for the rest of my life, this was a great opportunity for me to see what factors of a place are the most important to me and how I will need to handle my money in the future.

Charlotte, North Carolina

Geographical features



https://m.foolcdn.com/media/millionacres/original_images/charlotteNC.jpeg?crop=16:9,smart

- Located in the southwestern Piedmont region, Mecklenburg County
- 85 miles southeast of Appalachian Mountains and 180 miles southwest of Atlantic Ocean.



https://eastwood.nvc3.cdn.digitaloceanspaces.com/divisions/iStock-1130161854_web.jpg

Climate



Statistics

- 43 inches of rain annually (Oxford gets 54 on average)
- 2 inches of snow
- Approximately 218 sunny days per year



Summer and Winter are very similar to other places in the south

- Highs in 90s, lows in 70s during summer
- Highs in 40s-50s, lows in 20s-30s during winter

Hurricanes normal



Prevalent Industries

Top 5 most prevalent industries in Charlotte: 5 largest corporate headquarters:

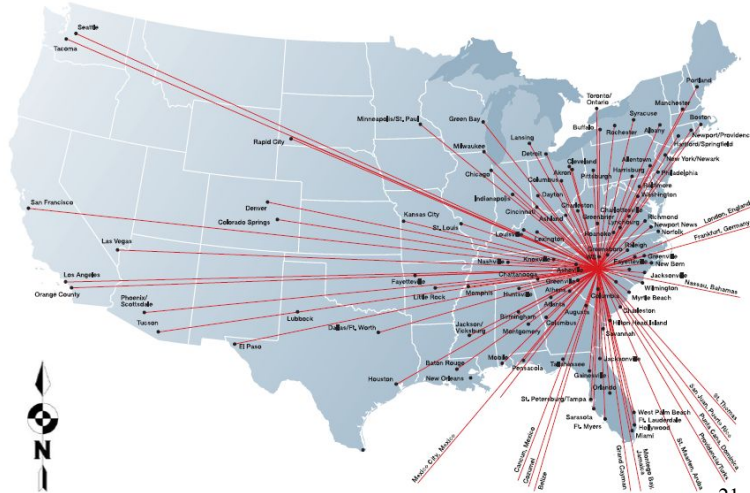
1. Banking
2. Financial Services
3. Manufacturing
4. Energy
5. Automotive

1. Bank of America (financial services)
2. Lowe's (home improvement)
3. Duke Energy (electrical and natural gas utility company)
4. Nucor (steel manufacturing)
5. Compass Group USA (commercial foodservice)

Transportation Hubs

Charlotte-Douglas International Airport (CLT)

- 1,600 flights a day, top ten in the world
- 178 nonstop flights around the world



Going home?

Edward

Hometown: Baton Rouge, LA

Mode of transport: Plane OR car

Length of trip: 2 hrs 15 mins OR 11 hrs, 45 mins

Cost: Plane tickets range from about \$200-300

Madison

Hometown: Boulder, CO

Mode of transport: Plane OR car

Length of trip: 3 hrs, 24 mins OR 23 hrs, 38 mins

Cost: Plane tickets range from about \$200-350

Bennett

Hometown: Pinehurst, NC

Mode of transport: Car

Length of trip: 2 hours

Cost: about 101 miles worth of gas

Commuting in Charlotte

- One-way commute takes on average 25.3 minutes (U.S average is 26.4 minutes)
- 76.6 percent drive their own car alone, 10.2 percent carpool with others commuting to work.
- CATS (Charlotte Area Transport System) has light rail train called Lynx that rides throughout downtown.



Civic/Religious/Charitable Organizations

Edward

- Coastal Conservation Association (CCA)
- Habitat for Humanity
- Catholic Charities, Diocese of Charlotte



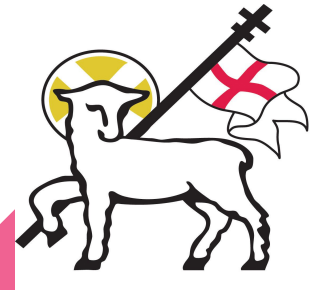
Madison

- Furnish For Good
- Humane Society of Charlotte
- RAIN, Inc



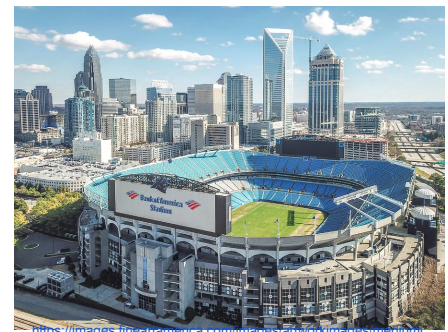
Bennett

- LAMB Foundation of NC
- Promise Youth Development Inc.
- Roof Above Inc.



Recreational Activities

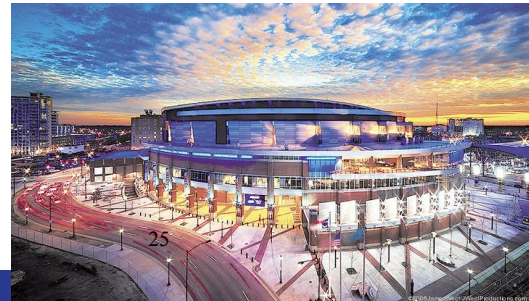
- Carolina Panthers- Bank of America Stadium (NFL)
- Charlotte Hornets- Spectrum Center (NBA)
- Nascar- 85 percent of teams located in the region, Nascar Motor Speedway and Nascar Hall of Fame
- Charlotte FC- MLS' 30th franchise
- U.S National Whitewater Center
- Lake Norman- largest man-made body of freshwater in NC
- Charlotte Metro Credit Union Amphitheatre



<https://images.fineartamerica.com/images-at-work/images/medium-large/2/panthers-stadium-scott-brotherton.jpg>



<https://d28c2q219b78.cloudfront.net/uploads/us-national-whitewater-center/View-from-the-tower-4.jpg>



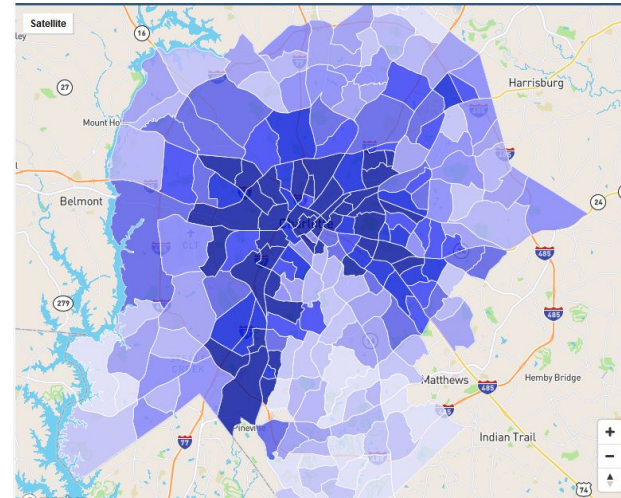
Crime in Charlotte

- Crime rates in Charlotte are 87% higher than the national average
- Safer than 5% of the cities in the US
- 1 in 22 chance of becoming a victim of crime
- Year over year crime in Charlotte has increased by 6%
- Violent Crimes in Charlotte are 95% higher than the national average

(all based on 2019 calendar year reported in September, 2020)

Most dangerous areas in Charlotte:

- ❖ Pinecrest
- ❖ Lincoln Heights
- ❖ Tryon Hills
- ❖ Grier Heights
- ❖ Seversville



Crime Statistics

Date & Last Updated: This data reflects the 2019 calendar year and was released from the [FBI](#) in September, 2020; this is the most current data available.

Statistic	Reported incidents	Charlotte /100k people	North Carolina /100k people	National /100k people
Total crime	44,052	4,665	2,729	2,489
Murder	103	10.9	6.0	5.0
Rape	317	33.6	31.0	42.6
Robbery	1,975	209.2	72.5	81.6
Assault	4,587	485.8	262.4	250.2
Violent crime	6,982	739	372	379
Burglary	5,426	574.6	519.1	340.5
Theft	28,304	2,997.5	1,666.0	1,549.5
Vehicle theft	3,340	353.7	172.2	219.9
Property crime	37,070	3,926	2,357	2,110

Quality of Healthcare

- North Carolina ranked 47 out of 51 for quality of health care systems (2021)
 - 48th in 2020
 - 50th in 2019
- Carolinas Medical Center: hospital located in Charlotte, ranked in top 4 of North Carolina and among the top hospitals for the entire nation

School System

Charlotte-Mecklenburg Schools (CMS)

- Have received widespread national recognition for academics; B+ ranking according to Niche.com
- Myers Park, Providence, Pine Lake some of the highest rated high schools

Private Schools

- Charlotte Catholic High School: highly rated school
- About \$13,000 a year to send child to private school; receive discounts for every extra child sent

Where to Live?

Option 1: Crest Gateway Apartments - Uptown Charlotte, NC



Crest Gateway Apartments

3 Bedroom 2 Bath

1300 Square Feet

Rent: \$2,175

Amenities: Private patio, stainless steel appliances, 9 ft ceilings, washer and dryer, pet stations, walking distance to Uptown Charlotte, controlled access breezeways

Parking: surface lot parking - \$50/mo, assigned covered parking - \$50/mo, street parking - free

Birchside Dr. Townhomes

(Oakhurst): \$2400/month

- 3 bedroom, 2.5 bath, two-car garage
- 1985 sq.ft.
- 13 miles from CLT Douglas International Airport



https://images.marketleader.com/HouseImages/CAROLINA/MLS/159/f_3781159_08.jpg



Everyday Life

Conveniences

- Great public transportation: busses, trains, ride-sharing; close to downtown, nightlife, plenty restaurants
- Washer/Dryer included in apartment, pet friendly if we have one
- 7 minute drive to Walmart, 6 minute drive to Whole Foods, 10 minutes to Publix

Inconveniences

- Traffic, especially 7-9 AM and 3-5 PM

Tax Considerations

Federal income tax bracket (assuming income of \$55,000): 22%

North carolina state income tax: 5.25%

Average local property tax (Mecklenburg County): 1.05% (national avg: 1.07%)

Local sales tax: 7.25%

Budget (\$60,000 annual salary)

1. Federal income tax - \$6,188, \$516/month
2. State income tax - \$2,635, \$197/month
3. Social security tax - \$3,720, \$310/month
4. Medicare tax - \$870, \$72.50/month
5. Rent - \$800
6. Utilities - \$58
7. Internet - \$20
8. Cell phone plan - \$40
9. Car payment - \$500
10. Car insurance premium: \$124.50
11. Transportation - LYNX Blue Line Light (\$2.20 per ride), CityLYNX Gold Line (free), gas (\$2.64/gallon) - approximately \$150
12. Groceries - \$250/person
13. Entertainment (going out): \$400
14. Parking uptown: \$50
15. Savings: 500

Left over each month: \$1,012

“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this paper.”

Signed,

Madison Dorn

CASE STUDY THREE

Financial Impact of COVID-19 on Pfizer

Madison Demus, Aubrey Christian, Molly Medling

November 8, 2021

Executive Summary

The purpose of this case study is to evaluate the economic impact that the COVID-19 pandemic has had on the pharmaceutical industry, specifically Pfizer. We researched various topics relating to this impact including the initial impacts of the pandemic on Pfizer's financial statements, home remedies for COVID and Pfizer's response to them, how lobbying has changed since the beginning of the pandemic, and the executive order issued by President Biden on September 9th, 2021. Each of these topics gave us a clear picture of the internal condition of Pfizer and the sustainability of its success. It also lends to a useful discussion on how businesses have benefited and suffered because of the pandemic.

Throughout the case, we used Google, DuckDuckGo, and Bing search engines to find related articles. We noticed Google results were heavy with government sources; the top three to five results were almost always government websites. Bing tended to side with news agencies, as most of the articles were from one of the major news media companies. DuckDuckGo results were heavy in journals and studies. The question that led to the biggest differences in results seemed to be what therapeutics are recommended for COVID-19? Google led to mainly professional medical websites who recommended only to treat symptoms when possible and listen to doctor's instructions. The other search engines, however, resulted in various strange and questionable home remedy recommendations. Overall, similar articles could be found across the search engines, but there was a clear distinction between the majority results of each.

Some of the most important things we learned from this case were how to interpret 10-Ks and how to quickly dissect business articles. Both of these also contributed to a greater understanding of the need for a holistic research approach to contentious topics, like vaccine distribution. For instance, if we had only looked at the financial statements from Pfizer, we

would have had a completely different understanding of the company. It is clear that companies are going to report information that is the most beneficial to them, even though there are plenty of other considerations to be taken into account when looking at something as broad as “how has the COVID-19 pandemic affected Pfizer economically?”

1. How has Pfizer been affected by the pandemic according to their 2020 10-K?

Pfizer says the COVID-19 pandemic caused an “unfavorable impact of approximately \$700 million, or two percent” (24). The majority of this impact was from low demand for Pfizer goods in China and the large decline of in-person wellness visits to doctors. The pandemic greatly affected the business and operations of Pfizer across the board. Pfizer salespersons still do not have full access to healthcare professionals because of restrictions on in-person meetings (27). Many of the medications Pfizer produces require a doctor visit before a prescription can be made. Due to the inability to contact people face to face, it was much more difficult for patients to obtain the prescriptions for these medications, thus creating a reduction in demand for Pfizer. Additionally, any medications that are physician-administered (like vaccines) were affected by the decline in doctor visits (27). Pfizer also recognizes that there have been risks and difficulties associated with the pandemic for their internal operations. For instance, they speak of challenges in reallocating R&D, supply chain management, and “potential delays and disruptions related to regulatory approvals” (18). Hospital revenues for Pfizer went up in the U.S. three percent from 2019 due to the ongoing treatment of COVID-19 patients on respirators (33). Pfizer later saw a large increase in revenues, approximately \$154 million, due to governments rolling out the

COVID-19 vaccine in large quantities. The company also has over \$8 billion dollars in short-term assets owned by the US and foreign governments.

2. What do different search engines yield in research on Pfizer's financial condition in the pandemic?

Researching the impacts of COVID-19 on Pfizer across three different search engines (DuckDuckGo, Bing, and Google) produced various results. CNBC reports that Pfizer sold \$7.8 billion in Covid-19 vaccines in the second quarter of 2021². Additionally, they raised their sales forecast based on Covid-19 vaccines from \$26 billion to \$33.5 billion. A different article, by European Pharmaceutical Review, states that Pfizer reported revenues from the second quarter of 2021 as \$19 billion⁶. Pharmaceutical Technology compares Pfizer's approach to the vaccine to other companies¹. Reportedly, 2 doses of the Pfizer vaccine go for a total of \$39 dollars while two doses from another company, AstraZeneca, are priced from \$4.30 to \$10. Pharmaceutical Technology comments on the profit-based approach Pfizer seems to be taking in regard to the COVID-19 shot. The profit-based approach has led Pfizer to expect \$33.5 billion in coronavirus vaccines⁵. While this is a large figure, it does not come without expense. Revenues grew by 68 percent in the first two quarters of 2021, but expenses rose by 69 percent⁴. The expected EPS is \$4.11 per share, an 85 percent increase over 2020, and they ended the second quarter with \$11 billion in free cash flow. They have already started working on making a pill to prevent COVID, which could have great upsides as the discussion of yearly COVID vaccines increases. According to Nasdaq, Pfizer definitely won during the pandemic after having the first authorized Covid-19 vaccine and a large stock increase over the past year³. However, with vaccination

numbers decreasing, Pfizer is experiencing lower returns for new breakthroughs. For instance, after releasing their Phase 3 study showing vaccine efficacy of 95.6 percent, stock price only increased by a tenth of a percent. Pfizer has also been affected by steep costs to sustain their growth over the pandemic, with costs increasing just as fast as revenues in the first half of the pandemic. This has been mitigated by impressive gains in revenues over the past few months. According to Nasdaq, “Pfizer was strong before Covid-19 hit, but now it’s on steroids,” implying that the pandemic, while it has brought issues for the company, has mostly positively impacted the company³.

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3. Best therapeutics for COVID-19?

Home remedies for COVID-19 have been argued over since the pandemic began. Various organizations and articles have been giving out therapeutic ideas for treating the Coronavirus. Mayo Clinic mainly recommends being aware of warning signs and following doctor's instructions. Many of the top results give similar recommendations such as drinking plenty of water, getting lots of rest, and staying away from others. Numerous sources recommend home remedies to treat the symptoms of COVID-19, rather than the virus itself. Recommendations for the cough commonly associated with Covid include drinking warm beverages, gargling salt water, eating frozen foods, breathing in steam, and using cough drops. A few articles mention testing out meditation/relaxation techniques in order to deal with shortness of breath and the stress that comes from the idea of the pandemic¹. Other articles recommend more radical approaches to treating the virus at home. For example, Healthline reported Chinese officials recommending licorice as a remedy for COVID-19. Supposedly, licorice paste can prevent the Herpes virus from replicating and some believe it could do the same for Covid². While these recommendations are becoming more popular, organizations like the WHO are saying hydroxychloroquine is not recommended as a treatment for COVID-19. It also stopped clinical trials considering the efficacy of hydroxychloroquine to combat COVID-19.

An observational study published by medRxiv concluded the combined usage of hydroxychloroquine and zinc could increase survival rates up to 200 percent for patients on ventilators³. According to a study performed by C. Prodromos and T. Rumschlag, out of 43 reports studying Hydroxychloroquine treatment, 25 showed positive clinical efficacy, 15 showed no improvement, and 3 showed negative effects⁴. In relation to this topic, a survey from Jackson

& Coker reported that over half of American physicians would prescribe hydroxychloroquine to treat Covid-19⁵.

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4. What is Pfizer's opinion on alternative treatments to Covid-19?

While there is not much information on Pfizer's viewpoint, it is in their interest to discredit alternative Covid-19 treatments. Any company making a revenue off of their medication would recommend against any alternatives, especially home remedies. If people turn to other options to treat the problem, the company would see great decreases in revenue. Avoiding situations like this are becoming more and more important as income due to Covid-19 is rapidly becoming one of Pfizer's biggest cash cows. As larger segments of the population are getting vaccinated, it is becoming clear that there is a significant group that is against the

vaccine. This desire could be part of the reason Pfizer has started working on an oral remedy for COVID. We did find some responses from Pfizer and former employees on alternative treatments. Pfizer has researched alternative treatments to their vaccine, including azithromycin (Zithromax) and hydroxychloroquine. According to their trial, efficacy was highest in patients who were administered both drugs. Pfizer also recommended this for malaria treatment in Africa¹. However, Former Pfizer Vice President Dr. Michael Yeadon said in conversation with Steve Bannon in regard to vaccines, “In absolute honesty, I don’t think they’re even necessary. Why are they not necessary? Well that’s because there are at least four or five safe and effective medicines and their presence has been suppressed and hidden from the public, so they’re not really necessary”².

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5. How has Pfizer lobbied in the pre- and post-Covid period?

Lobbying activity has varied greatly from before the pandemic to after, particularly for pharmaceutical companies. As can be expected, pharmaceutical companies, such as Pfizer, put a great deal of money into influencing the Biden administration. With the support of the president pushing for vaccines to be rolled out, Pfizer is expected to see revenues increase in relation to

their COVID-19 vaccine. Additionally, companies with COVID-19 vaccines are lobbying very hard against waiving intellectual property rights for the vaccines. Eliminating intellectual property rights for vaccines would allow any company to produce them. Obviously, companies like Pfizer would greatly dislike this. The pharmaceutical industry was reported to have increased lobbying spending by six point three (6.3) percent in the first quarter of 2021 compared to that of 2020¹. Pfizer was said to be the largest spender of any individual drug company in regard to lobbying. Pfizer also has a political action committee, which they define as “an employee-run organization with a steering committee made up of Pfizer employees from around the country”². This PAC accepts contributions and disburses them to political candidates who match the values of Pfizer. In recent months, Pfizer has focused on growing their lobbying efforts. Last year’s spending was the highest since 2010 at right over \$13 million dollars. The majority of the new hires have close ties with the Biden administration³.

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6. 9/9 Executive Order: What is it and why was there a change in policy?

The executive order made on September 9th, 2021 requires federal contractors to implement “COVID-19 safety protocols.” This includes mandating COVID-19 vaccines for federal workers with certain exceptions for medical conditions and religious beliefs¹. It is still somewhat vague what the exact specifications of the “COVID-19 safety protocols” entail and to whom they apply to. Of course, this executive order came with plenty of backlash from various parties. This was partially due to the fact that the Biden administration had made multiple previous statements reassuring that there would be no mask or vaccine mandate for the U.S. NPR makes the argument that the Biden administration changed its approach to vaccine mandates because of the decline in vaccination rates. After months of trying to persuade those reluctant to get vaccinated, Biden released the executive order requiring government contractors to get vaccinated.

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“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this paper.”

Signed,

 Avery Coates
 Molly Medley
 Ma Dorn

CASE STUDY FOUR

Interview Case Study

Madison Demus

November 19, 2021

Executive Summary

This case required us to interview someone in the business community, over the age of 35, about their work experiences as well as much more. We were given a list of 11 questions to ask during the interview with this person. The person we chose to interview was supposed to be someone who we may not be the most comfortable with or even feel a bit intimidated by. From the information we gathered, we were given the task of creating a sort of biography for the chosen person.

I chose to interview one of my mother's coworkers, Shelley Campbell, whom I have met a handful of times, but have always been a bit intimidated by. Every time I have seen her, she had a bit of a stand-offish persona and it has been hard for me to talk with her for longer than a bit of small talk. Having the opportunity to interview Shelley has shown me just how little I knew about her. By the end of the interview, I felt a lot closer and more comfortable with her and ended up learning a lot about my own life. The variety of questions we were given allowed me to touch on nearly every aspect of Shelley's life.

After talking with her through each question, I decided to talk to my parents about many of the same things. The most fascinating part of this case was realizing how elaborate and unique every single person's life really is. It is really easy to get caught up in your own life, and it often seems like everyone else is just playing a little part in your movie. I believe that it is rare for people to take a step back and try to understand that everyone has something going on in their lives, good or bad, and it can be really beneficial to try and learn about them. Although I did not include this information in the biography, Shelley and I talked a bit about mental health and how little society emphasizes its importance. This goes hand in hand with my previous realization that literally every single person has something going on inside that we rarely take the time to ask

about or understand. From now on, I am going to make it a point to try to reach out to those close to me and continuously check in on how they are doing. I know that I would really appreciate others doing this for me and I want to make even just a small difference for the mental health of others.

Biography

Shelley Campbell has had a very eventful life. Talking to her about each portion of her life was extremely fascinating and taught me a lot about my own life. We started at her childhood, where she grew up in the suburbs of Chicago, Illinois. She had two brothers and two sisters, all a year and a half apart other than the last sister who was born eight years after Shelley. Both of her parents were always working as they were a very Catholic family and wanted to send all five of their children to private Catholic schools. Because of this, Shelley grew up in a pretty poor household and her and her siblings were left on their own most of the time. Her dad had a job in the postal service which required him to travel about 90 percent of the year. He would only ever usually come home on the weekends so her mom was in charge of most everything. For much of Shelley's childhood, her mom worked at a hospital as a switchboard operator. The closeness in age between Shelley and her three siblings caused them to fight constantly and her mom would have to juggle resolving their conflicts over the phone while still working on switchboards. Shelley told me that most days, other than when they went to school, they would just disappear to do as they wished until their mom would ring a dinner bell outside the front door. Usually, they would be hanging out with their friends that lived in their neighborhood and would only come home at the sound of the bell. Shelley kept reflecting on how different

parenting is nowadays. She said that they would almost never tell their parents where they were going and their parents would never ask. Additionally, the only times they were allowed to miss school was if they were basically on the verge of death. When Shelley's last sister was born many years later, the other siblings had to basically raise her. They would alternate babysitting her, even though they were still kids themselves and had other things they would rather do. All in all, Shelley described her childhood as very chaotic, but fun all the same.

Her transition to college was a lot different than most. Across her time in elementary and middle school, Shelley ended up skipping two grades. By her senior year of high school she was only 16 and felt very isolated because of it. A personal event happened that caused her to drop out of high school and pursue something else for a while. Without telling her parents, she went off into the mountains of Colorado and worked on a dude ranch for about six months. Eventually, she decided that it was probably time for her to continue her schooling, but she did not want to finish high school or take the GED. She somehow found a college in Oregon that did not require a high school diploma and would take her at 16 years old. Without telling her parents, yet again, she took a train to Oregon and began college. However, her motivation was still lacking and she ended up spending about two months there playing ping pong with other students in her dorm nearly everyday. The school started calling her parents about her constant absences and they bribed her to come home with the promise of a very old, bright yellow Hornet. Although it was not the nicest car, this meant a new sense of freedom for Shelley and she agreed to go back home. Soon after, her parents convinced her to take the GED which she passed with flying colors. By this point, her parents had moved to Colorado so she eventually enrolled at the University of Colorado Boulder.

Since her family was quite poor and had five kids to pay for, four of which were in college at about the same time, she got a lot of financial aid for tuition, but still had to work throughout her four years there. Shelley told me that she absolutely loved her college years and her job during them. She worked in the Financial Aid Office for CU and loved what she did. Shelley's best friend in college was a married woman 15 years older than her. She had a daughter when she was only 15 years old so, because of this, Shelley was very close with both of them. She said that they did everything together; went on trips, played volleyball, went out on the lake many weekends, and much more. Despite her amazing time in college, Shelley ended up dropping out of college just an elective short of graduating. About two years later, she took one last course and graduated with a degree in History.

Going into college, Shelley basically had no idea what she wanted to do in the future. She mentioned that, although CU Boulder had many advisors, the students were not required to meet with them so Shelley did not receive a lot of direction of where to go from there. Early on, she had enrolled in a German history class and ended up absolutely loving the professor. She said that he was absolutely hilarious and that his class was so enjoyable she ended up enrolling in nearly every class he taught. At some point she had so many history classes on her transcript that the only reasonable major to get was History. Years after she got this degree, however, Shelley decided that she wanted to be a teacher. She left the job that she was working at to go back to school at Colorado State University. The last semester of her education required her to student teach at a high school in Denver. Right before she began, the job she had left not long before offered a higher paid position if she were to return. Shelley concluded that she did not like teaching enough to finish out the program and went back to work. In the end, Shelley had majors

in both History and English, two areas of study that she “hates.” Needless to say, Shelley’s college years were different from a typical experience, but she still ended up at a job she enjoyed.

Shelley worked many jobs in her younger years, as most of her siblings had to do in order to buy clothes, go out to eat, or hang out with friends. She took her first job at the age of 13, detasseling corn during the summer. She said it was an extremely draining job and they were given dirty water and forced to go to the bathroom somewhere in the fields. Even so, she did this for two summers in a row until she was old enough to get better jobs. She told me that, at this point in her life, she rarely held onto jobs for longer than a couple months, if that. She would babysit various kids in her neighborhood and had a variety of restaurant jobs. She worked at a few pizza places, a fondue restaurant, and others for very short periods of time. She told me that the shortest amount of time she spent at a job was about an hour and a half working in the kitchen of a nursing home. All this being said, her parents were quite worried that she would not be able to hold on to a job long in the future. After dropping out of CU Boulder one credit short, she went to work at NeoData, a magazine fulfillment company, as an Order Entry Analyst. She stayed there for about four years before finishing her History degree and pursuing an education in teaching at CSU. During the last semester at Colorado State, NeoData offered her a position as an Audit Liaison. After taking the job she ended up staying at the company for 13 more years in a variety of different positions. These included various management positions such as Circulation Accounting Manager, Agency Department Manager, and List Services Manager, all of which had her managing about 60 employees.

Her experience there showed her how much harder lower paid manual labor jobs are than the clerical jobs that offer a higher salary. Although NeoData was not her favorite company to work for, she loved the ability to constantly change positions as she felt constantly challenged

and never got bored of her work. On the other hand, she hated the side of management that required her to lay off many employees when NeoData was struggling to stay afloat. After a total of 17 years at the company, Shelley decided to find work elsewhere when NeoData moved their offices to Florida. She ended up getting the position of Data Technician Acquisition at Abacus, the largest cooperative database company in the US. She is now a Senior Lead in the same department and has been with the company for over 15 years.

Shelley really enjoys the people she works with at Abacus, but does wish that she had more opportunity to change departments and keep the work exciting. Recently, the company was bought by a company called Publicis, based out of France. Since the recent change of management, Shelley has been faced with one of the most challenging aspects of her job: outsourcing. Publicis made the executive decision to move many of the job opportunities in the company to India and Argentina. Since labor is much cheaper in these countries, Publicis is obviously saving money by doing so. Shelley told me that it has been really heartbreaking and frustrating to see so many of the coworkers she has worked with for years getting laid off and replaced by much less experienced employees. Additionally, her department was given the task of training many of the new employees from Argentina. Although she says that everyone she has trained has been super friendly and enjoyable to talk to, she still finds it difficult knowing that the better she trains them, the more likely they are to take the job of one of her close colleagues. Even so, she has really enjoyed learning about the culture and lives of the Argentinians and is trying to look on the bright side of the situation.

I asked Shelley how her life looked outside of the workplace and she showed me just how different each stage of life can look. To begin, she spent the majority of her 20s with the auditors she worked with who were all around the same age. They would frequently go out to dinners,

bars, movies, and many other activities after they would clock out. She also traveled frequently with them and other friends in her life. In her 30s, she got married to her husband of 22 years and ended up having two kids, three years apart. Shelley told me that the majority of her thirties was spent being pregnant, changing diapers, and driving to and from daycare. She told me that having young kids basically consumed her whole life until they were old enough to start going to school and finding their own hobbies. In her 40s, her son and daughter did just so and picked up karate and ballet, respectively. She reflected that these years were slightly less enjoyable as her and her husband were essentially chauffeurs until her son turned 16 and could take on some of the driving responsibilities. This being said, she still enjoyed these years as she loved being able to see her kids experience new things and find things they were passionate about. Shelley told me that her 50s have been quite interesting as her kids left for college. After so many years of children dominating her life, she and her husband had to find other things to keep them occupied. For the first couple years of both of their kids being away at school, they spent a lot of time doing home renovations. Soon enough, the pandemic hit and life was turned upside down for everybody. Her son had to return home and finish off his masters degree from the basement. Her daughter spent a few extra months at home than a typical summer but was still able to return to school the following year. Being forced to work from home and repeat what felt like the same day a countless number of times had Shelley going crazy from boredom. She decided to pick up an easy job at Kroger on the side, simply to give her something new and interesting to do. After finishing his masters degree, Shelley's son moved out to Arizona with his girlfriend to start a new job. With an extra chunk of change in her pocket from the job at Kroger, Shelley started traveling more as she used to love so much in her twenties.

Shelley talked a lot about her passion for traveling. In her 20s she had a boyfriend that traveled to extravagant places for his job and she would almost always go with him. She has always enjoyed the outdoors and hiking, which is why she has stayed in Colorado so long. When asked what her favorite vacation was, Shelley told me about her honeymoon trip to New Zealand. Her and her husband went on a long hiking trip in the mountains with a small group of other travelers. They went on the Akaroa and Route Burn Great walks which were guided tours that stopped at little huts along the way. The huts had warm water and food, but she told me that being there felt like a scene out of The Hobbit. The bathtubs had firewood burning underneath them to keep them warm and there was moss clinging to every square inch of the huts. Along the way they saw seals and penguins, along with many other once-in-a-lifetime sights. Even after enjoying all of the amazing places she has been to, she is still hoping to go to Iceland one day. Although she has had the opportunity to go, she wants to wait to “do it right.” This summer, her daughter is interning in Lisbon, Portugal so Shelley is hoping to make a trip to Iceland when visiting.

I asked Shelley if she had any advice that she would give to somebody my age and she replied, “enjoy the journey rather than always focusing on an end goal.” As much as it is important to set goals for yourself, it is more important to live in the present and enjoy what you have, while you have it. She also told me that, although having kids is a huge responsibility and can be a bit difficult sometimes, starting a family is so fulfilling and something she would never change for the world. With this in mind, Shelley said that her kids are by far her proudest accomplishment and she feels very blessed to be able to watch them grow up into amazing young adults. On the work side of things, Shelley told me that it is really important to continuously change positions, departments, etc in order to stay excited with work. Although she loves the

company she works for now, she does wish that she had made more of an effort to switch things up as her job has felt more tedious in recent years.

My parting question to Shelley was what worried her most about mine and her own generations. Although she is on the cusp of the “baby boomer” generation, she is quite concerned about what is going to happen with Social Security in the near future. Supposedly it is an underfunded program and she is worried that the huge influx of people retiring and moving into nursing homes at the same time is going to put a lot of people in a bad place financially. Many people rely on Social Security for their retired years and there is now the possibility that it will not be available to everyone. For my generation, she is worried about how quickly global warming is progressing and how it will affect her kids and grandchildren. Although this is a worry, Shelley tries to look on the bright side of things and hopes that we will be the generation to find some sort of solution for this problem. All things considered, Shelley has had a bit of a rollercoaster of a life and has come out the other side with an extremely enthusiastic, vibrant outlook on what is to come.

“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this paper.”

Signed,

Madison Dorn

CASE STUDY FIVE

Apple, Inc. Case Studies: Overview

Madison Demus, Logan Moll, Edward Francis, Ellen Popple, Alec White

February 9, 2022

This week we were given the task of doing a deep dive into everything and anything Apple, Inc. Last week, the five of us were put into a group and asked to pick a publicly traded company in the United States. We chose Apple because it is a large, popular company with a multitude of information on the Internet. We will eventually be looking into specifics regarding the accounting behind the company and how things could be improved. This week, however, we began by obtaining a general overview of our company, the actions it has taken in the past 12 months, and its financial security. To do this, we read through any reliable news articles or information we could find. We searched through various websites, databases, and blogs to get a picture of what Apple is trying to accomplish as a business and how it is doing so. Specifically, we needed to focus on how the company was structured and what the greatest threats to its operations were. While doing so, we needed to create an organizational chart to display the structure of the company. Although broad, this general overview was a good way to start our research on the company that we will continue to follow for the remainder of the semester.

While looking through a wide variety of different news articles and databases, we found a recurring topic regarding the specific business segments of Apple and how management intends to grow them. Apple has broken up its undertakings into two main categories; Products and Services. Multiple sources, including the 10-K and Mergent Online database, list four items under the Products category. These items include iPhone, MacBook, iPad, and Wearables, Home and Accessories. The first three items are fixed as they only include different upgrades/sizes/versions of that specific product. The item 'Wearables, Home and Accessories' includes a variety of different products, including AirPods, Apple TV, Apple Watch, and even Beats products. Under the Service category, Apple offers five items: Advertising, AppleCare, Cloud Services, Digital Content, and Payment Services. Apple is known for its innovative and

constantly evolving technology which reflects in many recently published news articles. On February 2, 2022, four different news articles were published detailing Apple's issuance of new patents. These four patents include user interfaces for peer-to-peer transfers, capacitive touch panel for sensing mechanical inputs into a divide, camera with image sensor shifting, and displays with direct-lit backlight units and color conversion layers. The fact that one day of news articles covers the development of four new patents created by Apple, exemplifies how the company's brand message "Think Different" is put into play every single day.

Apple's 2021 Management Discussion and Analysis gave our group a lot of insight and clarity surrounding the performance of the company over the past year. Unsurprisingly, Apple had record highs in almost every category mentioned in this section. We found it relevant that for just the fourth quarter, Apple recorded its highest revenue, net income, and earnings per share at \$123.9 billion, \$34.63 billion, and \$2.11 respectively. On a slightly less desirable note, the company also incurred their highest reported expenses. Furthermore, component suppliers and logistical service providers experienced disturbances leading to supply shortages and loss of sales for Apple. Management noted that similar disruptions are contingent to the development of COVID-19 and anticipated going forward. As stated in the 10-K, Ernst & Young has completed the company's audit since 2009, replacing KPMG. Apple's MD&As do not have many instances proclaiming predictions or plans, so it does make it more difficult for users to conclude if Apple's forecast materialized the following year. Regardless, the 10-K clearly presented the company's success in 2021.¹

As the world continues to deal with COVID-19, Apple faces many challenges of its own. The biggest threat facing Apple today is rising labor prices and issues within its supply chain. Computer chips are one of the main issues within Apple's supply chain problems. Since the

¹ <https://www-mergentonline-com.umiss.idm.oclc.org/companydetail.php?compnumber=12161&>

beginning of the pandemic, consumer demand for technology has increased drastically and Apple has struggled to keep up with the high demand for computer chips. Due to this ongoing shortage, Apple lost \$6 billion in sales, which leads them to believe that it is necessary to rethink their semiconducting technology. The combination of rising prices and labor shortages makes it difficult for Apple to find employees and manufacture their products in the most efficient way. Another major problem facing Apple is its overreliance on the sales of iPhones. With the increasing number of corporations entering the smartphone industry, Apple's massive control over the market faces the possibility of a decline in sales and daily active users. While COVID-19 has increased humans' reliance on technology, it has also decreased the average consumer's willingness to spend money on Apple's products.

Apple's biggest competition as a smartphone manufacturer is Samsung. While Apple continues to dominate the market within America, Samsung holds a six percent lead in the global market share. Since Samsung is South Korea's biggest company, it makes it easier for them and their Samsung Galaxy and Note series to dominate Apple in foreign countries. As a computer manufacturer, Apple competes mainly with Lenovo, HP, Microsoft, Google, and Dell for a majority share of the market. Apple has struggled as of late because Chromebooks have recently overtaken MacBooks in the market share for the first time. COVID-19 seems to be the driving factor behind Chromebook's increase in popularity, as it is cheaper and easier to mass-produce during the pandemic.² Chromebook's are more appealing for schools and companies that needed to buy large quantities of computers, which led to a decline in MacBook sales.

Although Apple owns hundreds of subsidiaries, they only list 17 in their 10-K report. In a footnote of the 10-K, Apple states that the other subsidiaries are omitted since "they do not

² <https://www.investopedia.com/ask/answers/120314/who-are-apples-aapl-main-competitors.asp>

constitute a significant subsidiary as of the end of the year.”³ Seen below, the organizational chart of Apple’s structure features 10 of the main subsidiaries as well as a few of the minor subsidiaries not listed in the 10-K report. Since many of these subsidiaries are located overseas, Apple is required to pay taxes in the United States and in foreign jurisdictions. However, some of these subsidiaries lack a physical presence and employees, which allows them to avoid taxes. For example, the main subsidiary, Apple Operations International Limited Inc., is incorporated in Ireland and avoids taxes since it has never had employees. The company is used as a holding company which receives dividends from the other subsidiaries.⁴ Many of the other main subsidiaries, such as Apple Distribution Limited, Apple Sales International Limited, and Apple Operations Limited, are also located in Ireland.

As part of Apple’s strategy to avoid taxes, Apple Sales International Limited contracted with manufacturers in China to produce Apple’s electronic devices before selling them to Apple Distribution International Limited. Also, profits made through sales in Europe were transferred to subsidiaries located in Ireland, resulting in a lower tax rate than the country where the sales occurred.⁵ In doing so, Apple avoids paying taxes on some of its revenue by selling products and distributing dividends between its major subsidiaries.

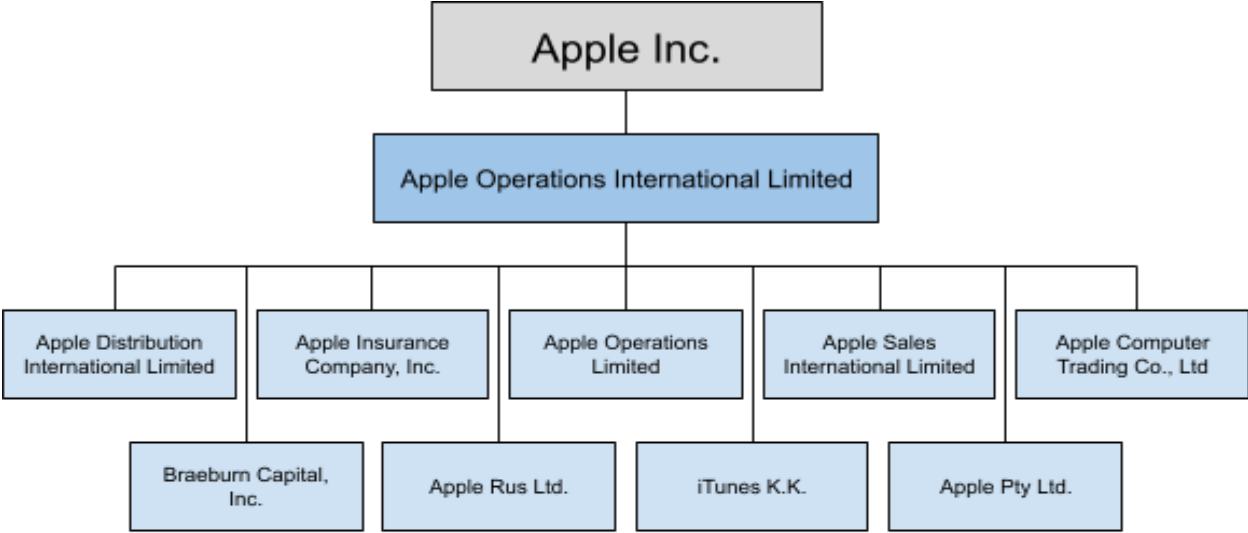
In addition to the foreign subsidiaries, Apple also controls many subsidiaries in the United States that do not make up a large portion of the company’s revenues. Therefore, a few small subsidiaries are listed beneath the organizational chart. Many of these companies were acquired to research and develop new applications or improve existing features. For example, Apple acquired Beddit in 2017, which sold sleep-tracking devices and a sleep-tracking app to monitor a user’s sleep patterns. Apple has used the acquisition to improve its sleep-tracking

³ [https://s2.q4cdn.com/470004039/files/doc_financials/2021/q4/_10-K-2021-\(As-Filed\).pdf](https://s2.q4cdn.com/470004039/files/doc_financials/2021/q4/_10-K-2021-(As-Filed).pdf)

⁴ <https://archive.nytimes.com/www.nytimes.com/interactive/2013/05/21/business/apples-internat>

⁵ <https://www.fairobserver.com/economics/hans-georg-betz-apple-tax-avoidance-verdict-ireland>

technology and plans to implement the feature into Apple Watches.⁶ Another popular subsidiary of Apple, Beats Electronics, is a company that produces a range of audio products sold within Apple stores. The company produces headphones and speakers, but also developed a music subscription-based streaming service called Beats Music before Apple acquired the company. Shortly after its acquisition, Apple discontinued Beats Music and introduced its own service, Apple Music. Although these smaller subsidiaries do not account for a large portion of Apple’s total revenue, they are crucial to the success of their parent company.⁶



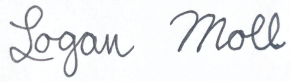
- *List of Non-Significant Subsidiaries
- Shazam Entertainment
 - Beats Electronics
 - AuthenTec
 - PrimeSense
 - Dark Sky
 - Beddit
 - etc.

⁶ <https://theorg.com/insights/5-apple-subsiaries-that-are-crucial-to-the-tech-titans-success>

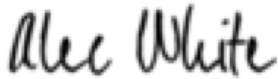
Over the course of the last week, we gathered a wealth of information about Apple, Inc. and its subsidiaries. It was fascinating to learn about the complex structure of a multibillion-dollar company. Apple continues to be one of the most well recognized brands in the national and global market, and future projections indicate that its financial success will continue. The COVID-19 pandemic took a toll on every company in the world, but Apple rebounded and posted record numbers in the fourth quarter of 2021. However, continued supply chain and labor issues that linger from the height of the pandemic are causing problems with sustaining high levels of output. There may be a silver lining to this cloud, as Apple is attempting to cut back its overreliance on iPhone sales. Additionally, the corporation is increasing its presence in the wearables and health industry. The Apple Watch is growing in popularity and acquisitions of subsidiaries, like Beddit, have improved its technology.

Every corporation has one main goal: to make the most amount of money. Apple is no different. Through the use of holding companies and subsidiaries, Apple can share dividends and avoid taxes that a single company would face. They also take advantage of lenient tax laws in foreign countries like Ireland, where many of their subsidiaries are based. While this is a controversial subject, Apple shareholders seem to be happy with these higher profits. Overall, Apple is a sophisticated, multinational behemoth that has dominated the electronics market for more than a decade. Its past success can be expected to continue.

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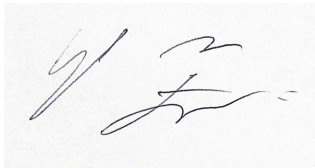
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CASE STUDY SIX

Apple, Inc. Case Studies: Audit

Madison Demus, Logan Moll, Edward Francis, Ellen Popple, Alec White

February 16, 2022

This week, our group was tasked with choosing three accounts from either the balance sheet or income statement that could be considered as potentially risky accounts. While reading through Apple, Inc.'s financial statements in the 10-K, we determined that the accounts revenue, inventory, and research and development expenses were three of the riskiest accounts for our company.¹ After choosing the accounts, we had to dictate why each of the accounts were a risk to Apple and how misstatements of these accounts could affect other aspects of the company's finances. Additionally, we established some internal controls for each account to mitigate the risk of misstatement and brainstormed some specific substantive tests that could be performed during an audit to confirm that the accounts were accurately recorded. Lastly, we were told to consider some ways that data analytics could be used to make the substantive tests more accurate and quicker to perform. Altogether, we were essentially tasked to create an audit plan that would help lessen the risk for three of Apple's most speculative accounts.

It is crucial that revenue is not overstated on Apple's financial statements. The revenue account needs to be accurately reflected so that investors are not misled about Apple's true earnings per share. It can be beneficial for a company to overinflate its revenue because it will increase its net income, which can make their company's stock more attractive to current and future investors. As an auditor, it is necessary to verify that revenues are correct because of all the potential risks that can come from this error. The biggest risk associated with misstating revenue is the potential for fraud. One example of inflating the company's earnings was Enron, which resulted in losing shareholders over \$74 billion and the bankruptcy of Enron in 2001.² Therefore, the potential risk of fraud can lead to the possible downfall of a company.

¹ <https://www.sec.gov/Archives/edgar/data/320193/000032019318000145/a10-k20189292018.htm>

² <https://www.britannica.com/event/Enron-scandal/Downfall-and-bankruptcy>

Since there can be several incentives for overstating revenue, such as management compensation for reaching a certain sales goal, it is important to implement strong internal controls. In addition to incentives for management, overstating revenue leads to an overstatement of net income, making the company look more profitable than it is. To prevent this, Apple can segregate duties to ensure accurate entries. Segregating duties would require at least two people to complete different parts of the same task. For example, when Apple's warehouse receives inventory, one employee should count and document the shipping quantities and products received while another person enters that data into the computer system. By doing this, the employee that counted the shipping quantities cannot manipulate the numbers received in the system. If the internal control were not in place, an employee might understate the quantities received and steal the products. For the revenue process, Apple can utilize this internal control by separating the sales department from the billing department. Therefore, Apple employees or managers would not be able to create fictitious sales to reach a sales goal. Another important internal control for the revenue account is documentation. This requires a paper trail which is useful for verifying proper data entries. In addition, documentation specifies what information needs to be included in reports and who is responsible for preparing the reports. Segregation of duties and documentation work together as internal controls to prevent fraud and other misstatements to the revenue account.

Although strong internal controls should prevent most errors, it is an auditor's job to run a test of transactions to verify the correct numbers. For an account like revenue, auditors would likely review contracts, trace transactions through processing, and recalculate numbers. By selecting transactions and tracing them through processing, auditors review random transactions starting with the initial sales order and verifying the journal entry. In doing so, they will also

recalculate numbers to verify correct calculations. When reviewing contracts, auditors look for appropriate documentation for recording the receipts as well as to verify the segregation of duties for filling, shipping, and recording sales orders.

Data analytics can simplify the auditing process for Apple's revenue account. The use of data analytics can discover and analyze patterns as well as alert possible inconsistencies in the reporting. With Apple being a Fortune 500 company, it is extremely beneficial for auditors to be able to streamline the process of calculating revenues for the large number of transactions that occur. Documentation from analytics can provide the auditors with past transactions, which can help them determine if the numbers being reported are accurate and help discover any potential foul play from people involved in the process. Also, to help streamline this process, analytics can match purchase orders to payments to help auditors in verifying each transaction. Data analytics should be used by auditors looking to simplify the process of auditing risky accounts.³

Inventory is also an important account because a manufacturer like Apple relies on maintaining efficient levels to sustain sales volume. However, misstatement of the inventory account harms current and potential shareholders because it can inflate total assets and cost of goods sold. Therefore, certain ratios will be overstated. Additionally, having higher expenses allows a company to avoid a certain amount of income tax which results in higher net income. Understating inventory, on the other hand, will lead to understated assets which in turn would impact the company in its market evaluation and overstate its liquidity.

Because inventory is such an important account to verify for accuracy, there are various internal controls and substantive tests that could be performed to prevent and check for

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<https://www.accaglobal.com/in/en/student/exam-support-resources/professional-exams-study-resources/p7/technical-articles/data-analytics.html>

misstatement of the asset. A range of internal controls, such as physical controls to safeguard inventory, could be used to prevent fraud or misstatement. Physical controls, like using locked doors, prevent unauthorized employees from accessing inventory. Other internal controls include documenting orders and using field checks in systems like SAP to prevent fictitious sales.

For substantive testing, the most obvious test would be to take a physical count of the inventory and compare the results to the numbers previously recorded. It would also be important to take a physical count like this at multiple stores that are holding Apple products on consignment. One of the easiest ways for inventory numbers to be incorrect is if products out on consignment are not properly accounted for. This type of situation would also fall under the substantive test ‘confirmation of balances with outside parties.’ Whether this be an actual physical count or just reaching out to stores that sell Apple products to compare how their inventory numbers are reflected in Apple’s accounts, this is a simple test that would effectively check the inventory account. Another test would be to review cash receipts related to the purchase and sale of inventory and to compare this to the journal entries made throughout the year. As data analytics becomes more and more popular in the accounting world, this would be a perfect circumstance to use its advantages for efficiency. While reading each individual receipt and comparing it to journal entries by hand would be extremely tedious, data analytics could be used instead to streamline this audit process. A program could be made to automatically compare receipts to journal entries as well as check for other potentially important information, such as any unusual transactions, numerical outliers, and missing documentation. While a physical count must be done by hand, many other substantive tests regarding inventory could be done faster and more efficiently with the help of data analytics.

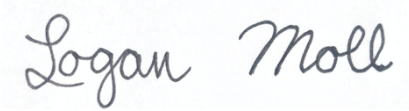
For a technology company like Apple, research and development (R&D) costs are bound to be large. Apple focuses much of its business and reputation on creating innovative products and improvements to existing inventory lines. The accounting standards mandate that R&D costs should be expensed as they are incurred. This firm rule does not show in the reports how likely the money spent under this umbrella is to provide returns. Money put into a project that will most likely provide the company with high returns are not differentiated from money put into research that does not provide returns. This gives the company room to manipulate the appearance of costs by making R&D expenditures seem more valuable than they may be. Additionally, Apple has the incentive to bulk up this line item on their statements because users may view the company in a more impressive light when they see how much they are investing into future innovations. To the same point, Apple would not want to report an R&D cost lower than their competitors. To prevent any speculation around this figure, the company should use internal controls and ensure they have proper documentation to show how much they spent on each project. Another control that would be beneficial to implement is proper authorization. Only researchers involved with projects should oversee purchasing, rather than a manager who may try to inflate the number to make the company look better.

There are a few ways that auditors can ensure R&D is reported faithfully through substantive testing. First, auditor should look through the records to search for any unusual transactions. Purchases that seem to add no value to research or additional purchases taking place near year end may be the company's attempt to inflate the R&D expense. Then, auditors should review the budget variance to see if the company deviated from their expectations. Finally, if a transaction looks odd, the auditor should review payments to vendors to verify that transactions were not distorted. Another red flag would be if the purchase were shipped to a location that does

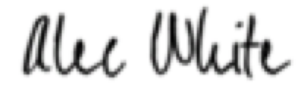
not conduct research or testing. On the data analytics side, Apple could create a program that would connect every expense with a project to see if the money invested into R&D materializes into economic benefit. This would be mutually beneficial to the audit team and the company because the auditors would be able to view how every dollar of R&D is being used, and the company would see exactly when ideas flourish and which purchases were integral to the success or failure of a research project. Overall, a company as revolutionary as Apple carries inherent risk surrounding a broad account like research and development.

Overall, it is important for companies to prevent the misstatement of account balances to give future and current stockholders an accurate picture of the company's financials. For a manufacturer and retailer like Apple, the inventory, revenue, and research and development expense accounts have the highest risk for misstatement. To prevent this, Apple should implement internal controls and auditors should use substantive testing to verify the accuracy of the account balances. Furthermore, auditors should use data analytics to streamline the audit process for those accounts. If a company were to report incorrect balances on their financial statements, it could lead to the overstatement of net income. This may lead to an increase in investors since the company looks more profitable than it really is. Ultimately, Apple needs to verify its risky accounts to provide users with accurate financial statements.

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CASE STUDY SEVEN

Apple, Inc. Case Studies: Tax

Madison Demus, Logan Moll, Edward Francis, Ellen Popple, Alec White

March 2, 2022

For this week's case study, we switched perspectives regarding our company, Apple Co., and looked at it from a tax standpoint. Our job was to research corporate tax credits and strategies regarding its industry. From here, we used this information to prepare two tax strategies that would help minimize our company's legal cash tax payments. After doing extensive research on this topic, our group decided on restructuring the way that research & development costs are accounted for in financial statements and relocating a foreign subsidiary to a different country to fall under a lower tax rate. The following case study will outline how the strategies we chose could affect Apple's tax payments in the future and includes some numerical examples to give a visual representation of the strategies' savings.

One tax strategy recommendation for Apple is to restructure its operations by relocating one of its foreign subsidiaries to a country with a lower corporate tax rate. Apple has already located many of its major subsidiaries in Ireland, where it avoids paying millions of dollars in taxes per year. Based on this, we would recommend that Apple relocates its subsidiary, Apple Europe Limited, from the United Kingdom to Ireland. Since the two countries are close in location, the change would not be as difficult as relocating across the globe. By relocating to Ireland, Apple Europe Limited would reduce its corporate tax rate from 19 percent in the UK, to 12.5 percent in Ireland.¹ Therefore, it will help minimize Apple's corporate tax liabilities by six and a half percent. In addition, it makes sense for Apple to consolidate many of its foreign subsidiaries to the same country for logistical reasons.

This relocation would not be difficult and potential tax savings would heavily outweigh the costs to implement. This recommendation would provide Apple with a long-term solution to lower its yearly tax payments and keep a larger portion of revenues. Even though Ireland is

¹ <https://tradingeconomics.com/country-list/corporate-tax-rate?continent=europe>

planning to raise its corporate tax rate, it would still be lower than the tax rate in the United Kingdom. Recent news articles suggest that Ireland may raise its corporate tax rate to 15 percent in 2023.² In comparison, the UK will raise its corporate rate to 25 percent in 2023. Therefore, relocating to Ireland would save Apple Europe Limited six and a half to 10 percent on taxes per year. To put this in perspective, Apple Europe Limited reported roughly \$11.12 million in corporate tax charges for the year ending September 2020. This amount could be reduced to \$7.31 million by relocating the subsidiary to Ireland. These figures are based on Apple UK's reported profit on ordinary activities for 2020.³

Potential issues that could arise are inquiries into the legality of tax breaks received by corporations in so-called “tax havens” like Ireland. In 2016, Apple was ordered to pay \$15.44 billion in back taxes to the Irish government.⁴ While this ruling was eventually overturned in 2020, there has been an increased effort from groups like the Organization for Economic Cooperation and Development (OECD) to ensure multinational corporations are paying their fair share of taxes. The OECD has been working since 2013 to combat an issue called Base Erosion and Profit Sharing (BEPS), which occurs when corporations like Apple shift earnings to tax havens where they pay little to no taxes on profits.⁵ Almost 150 countries nationwide, including Ireland and the US, have collaborated to implement the OECDs framework to combat BEPS.

Conversely, there are ways for Apple to receive tax benefits by increasing their presence in the United Kingdom. Last year, the UK introduced the Finance Act of 2021 which included a so-called “super deduction” for companies investing in plants and machinery within the country. According to the act, corporations can deduct up to 130 percent of their investments from their

² <https://www.bbc.com/news/world-europe-58832429>

³ <https://find-and-update.company-information.service.gov.uk/company/01591116>

⁴ <https://www.bbc.com/news/business-53416206>

⁵ <https://www.oecd.org/tax/beps/about/>

taxes. The United Kingdom’s official website states that “most tangible assets used in the course of a business are considered plant and machinery for the purposes of claiming capital allowances... There is not an exhaustive list of plant and machinery assets.”⁶

However, there is a drawback to this option. The last day to take advantage of the deduction is March 31, 2023. That same day, the corporate tax rate in the UK will increase to 25 percent. However, companies can take advantage of a loss carryforward or three-year carryback. Corporations can move their tax losses to future years to offset profits, thus lowering taxes after the corporate rate increases.

According to Business Insider, it costs Apple between \$8.5 and \$10 million to build a new facility.⁷ This means that they would receive a tax saving of up to \$2.5 million if they invested in a new location. This number was reached by multiplying the cost of the new building times 130 percent and multiplying that number by 19 percent.

Since Apple specializes in consumer electronics, software, and online services, it spends a lot of money each year on research and development (R&D) expenses. To lower its overall tax liability, Apple can take advantage of a R&D tax credit that is a percentage of the excess of qualified spending over a base amount.⁸ This gives Apple the incentive to increase R&D expenses to claim a credit on a certain percentage of those expenses. Apple’s investment in R&D increased from \$18 billion in 2020 to \$21 billion in 2021.⁹ The year-over-year growth in R&D expense in 2021 was driven primarily by increases in headcount-related expenses, R&D related professional services, and infrastructure-related costs. The company believes that focused

⁶ <https://assets.publishing.service.gov.uk>

⁷ <https://www.businessinsider.com/guess-how-much-each-apple-store-costs-2011-10>

⁸ <https://www.bdo.com/insights/tax/r-d-tax/r-d-tax-credit-faqs-for-large-and-small-businesses>

⁹ [https://s2.q4cdn.com/470004039/files/doc_financials/2021/q4/_10-K-2021-\(As-Filed\).pdf](https://s2.q4cdn.com/470004039/files/doc_financials/2021/q4/_10-K-2021-(As-Filed).pdf)

investments in R&D are critical to its future growth, competitive position in the marketplace, and the development of new products and services.

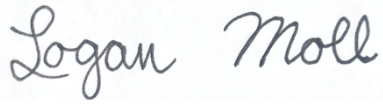
Taking full advantage of claiming R&D tax credit would be beneficial for Apple as a technology powerhouse because they easily meet the requirements and would incur many expected returns. The benefits of this tax credit include increased cash flow, earnings per share and return on investment paired with reduced tax liability and effective tax rate. Utilizing this credit provides the company with dollar-for-dollar cash savings that can be reinvested into operations through additional expansion throughout the business. Since there is no limit on the R&D tax credit, Apple would benefit by using the money saved to reinvest in more research and development.

Considering that Apple has continually increased R&D expenditures in recent years, it is safe to assume that the trend will continue in the future. Therefore, as Apple continues to increase its R&D expenditures, it will be able to claim more tax credits each year. This plan would be a long-term solution to lowering their tax liability as they would continue to claim credits every year from their R&D expenditures. While it is difficult to gauge exactly how much they would save each year from the tax credits, it should be in the hundreds of millions of dollars and will increase each year as Apple increases R&D expenses.

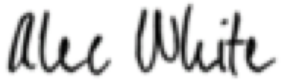
Overall, this case study gave us the opportunity to dive deeper into tax accounting than we ever have before. Although this case study was one of the most challenging thus far, it was the one that allowed us to learn the most. Not only did the research for this case study give us the knowledge to apply tax strategy advice to a real-world scenario, but it also gave us the resources to learn about the different strategies public accounting firms use to advise their clients as new

legislation is passed regarding tax laws. All in all, this week's case study gave us our first real look into tax accounting and its importance to our potential future clients.

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CASE STUDY EIGHT

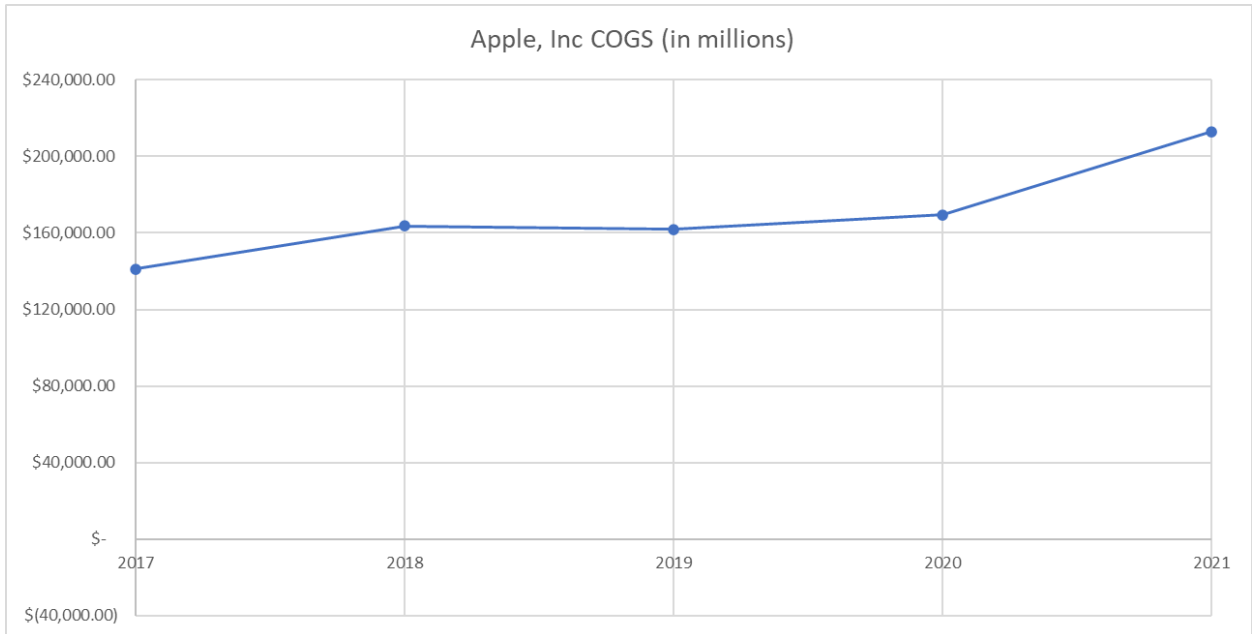
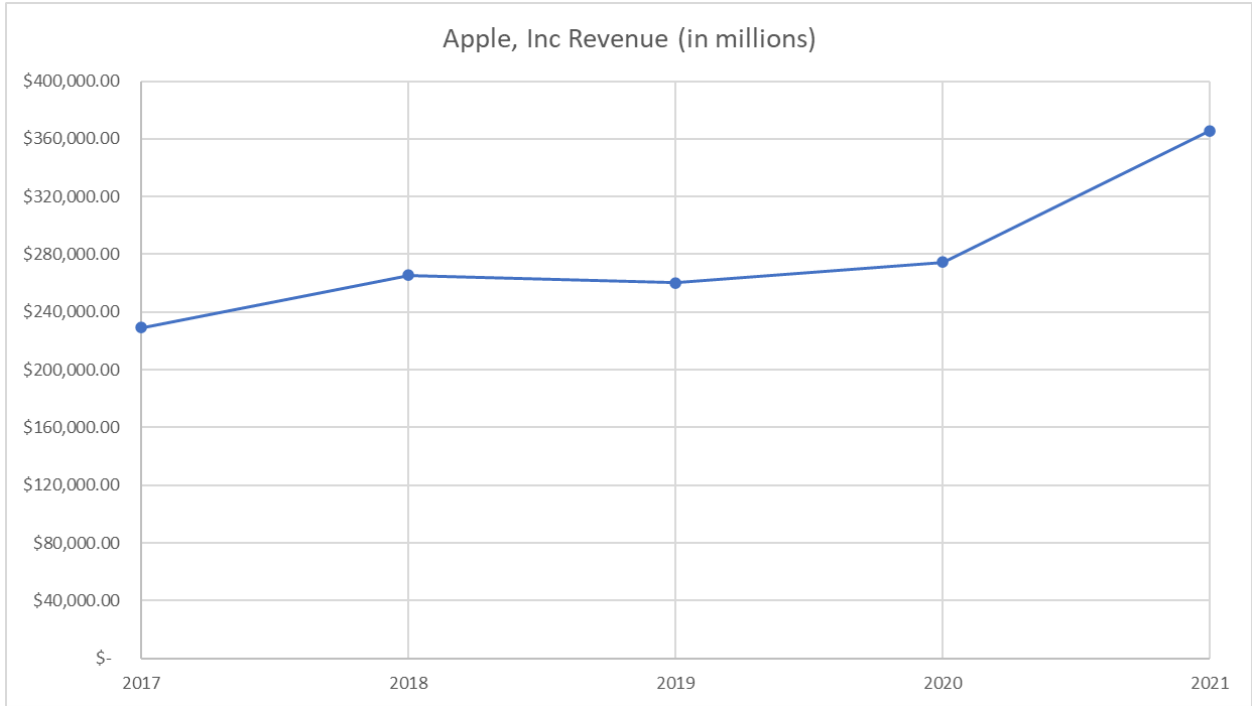
Apple, Inc. Case Studies: Advisory

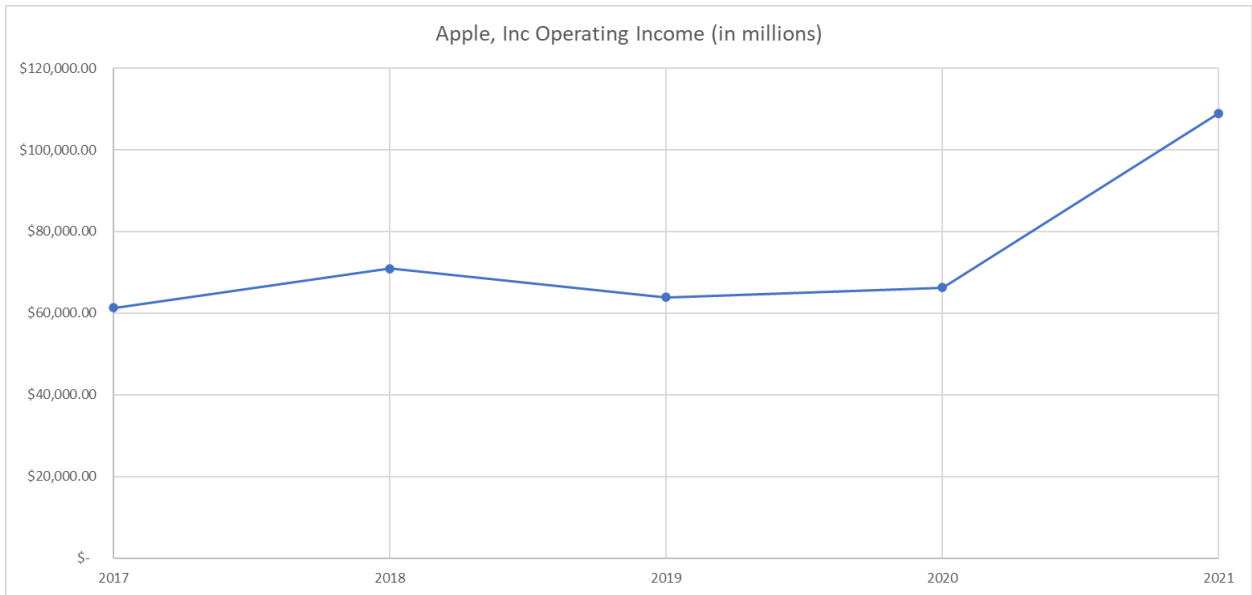
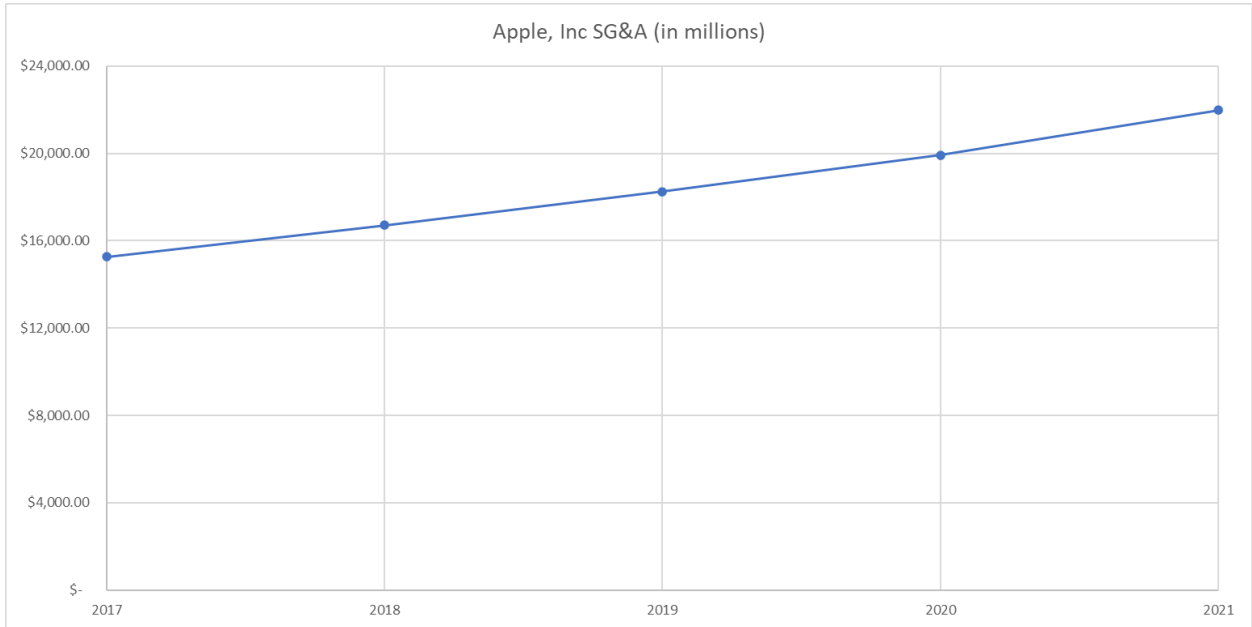
Madison Demus, Logan Moll, Edward Francis, Ellen Popple, Alec White

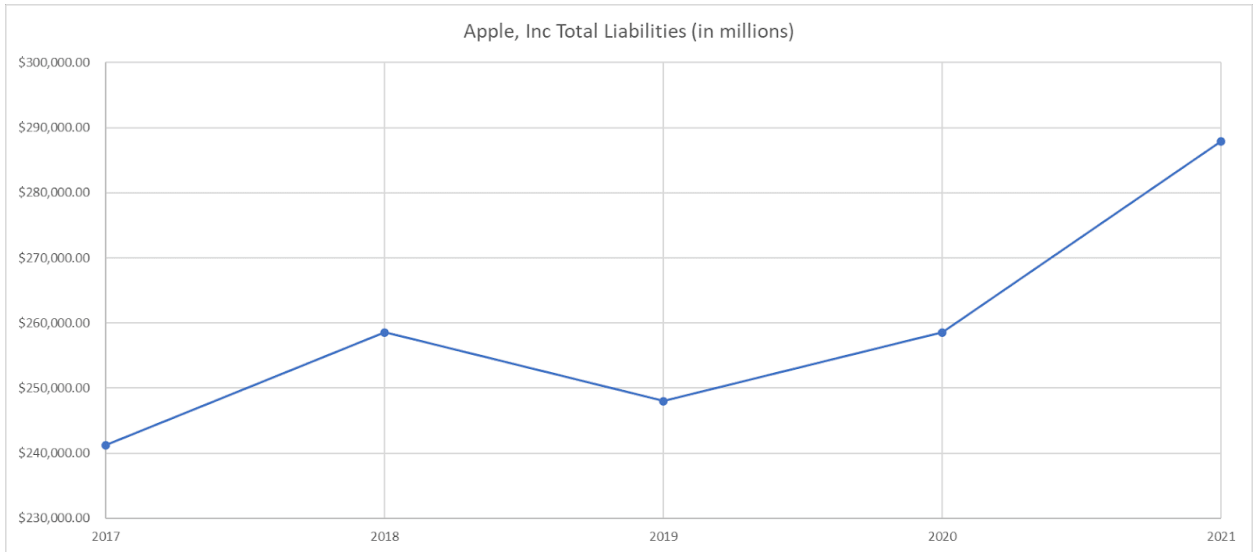
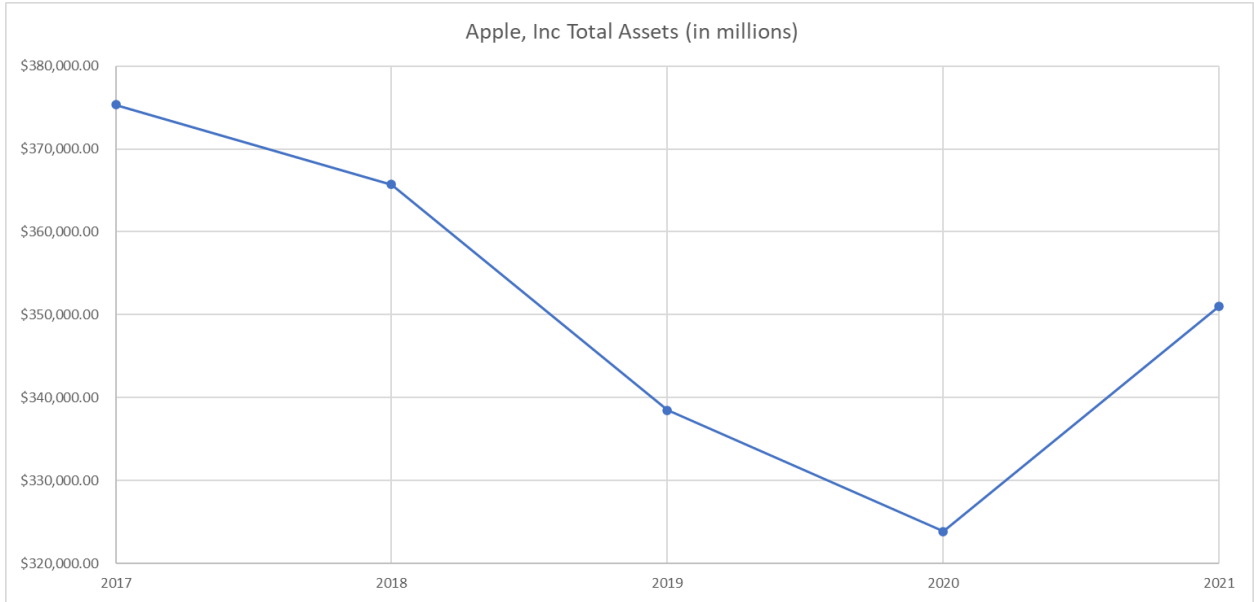
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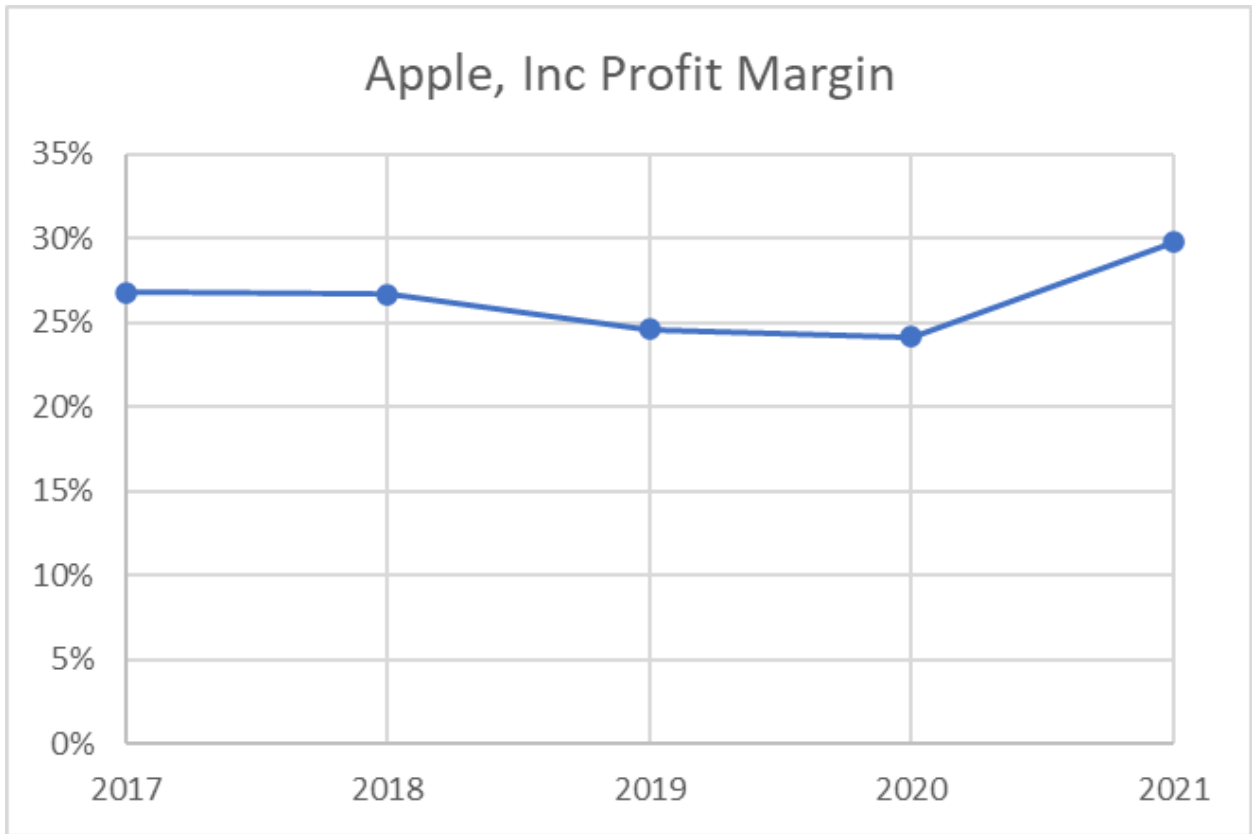
This week we were tasked with identifying Apple's strategy, whether its cost leadership, product differentiation, or something else. We were required to create a chart displaying the changes over the past five years in several of their main account balances, such as revenue, cost of goods sold, operating income, assets, and liabilities. We created these charts to show how their profit margin or asset turnover coincided with the company's strategy. From there, we mentioned two of Apple's largest threats and gave a detailed plan of two strategies to counteract the threats. After formulating the strategies, we then displayed the impact these strategies would have on Apple's financials in future years. The strategies ultimately led to an improvement in Apple's ratios mentioned earlier, proving that they would benefit the company and align with its strategies.

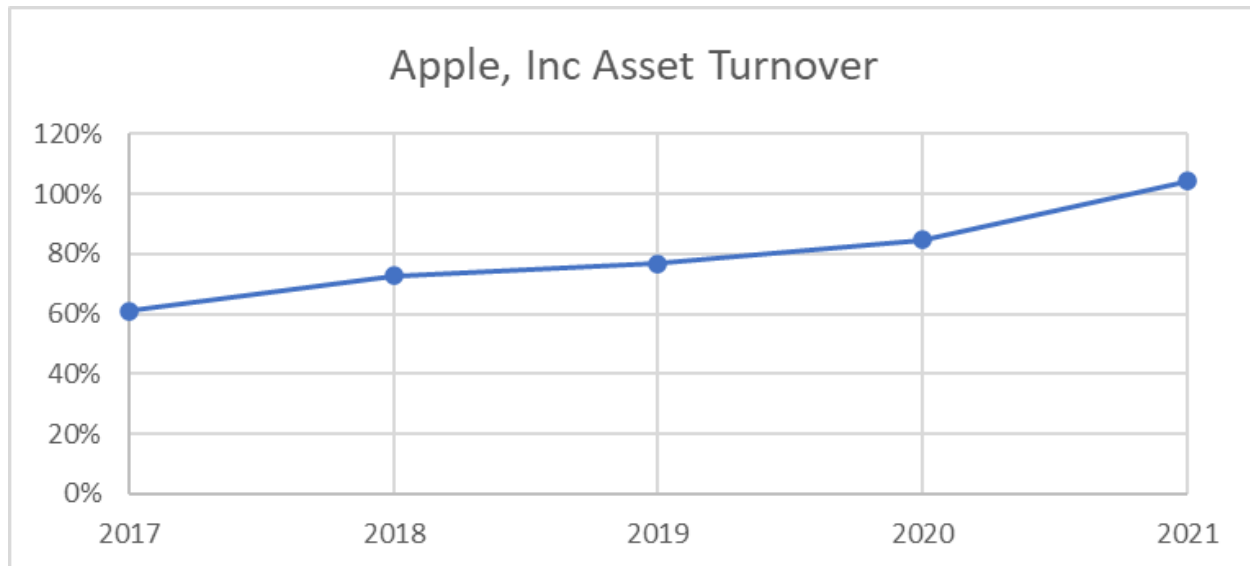
Due to Apple's wide variety of products and prestigious company image, they pursue the product differentiation strategy. We think Apple pursues this strategy since it creates unique products and offerings to set itself apart from the competition to gain a competitive advantage. In fact, this can be proven by looking at Apple's profit margin. As seen in the charts below, Apple has recorded a profit margin between 25 to 30 percent in the past five years. A 20 percent profit margin is considered high in the cell phone and electronics industry, and Apple surpasses it by nearly five to ten percent each year. Since product differentiators promote high profit margins, our assumed strategy matches the analysis of Apple's financials.











Along with most other companies, Apple suffered from supply chain issues caused by the COVID-19 pandemic. The higher demand for electronics and other work-from-home products that require semiconductor chips and a decline in production from lockdowns has been the leading cause of the global chip shortage. Even a company of Apple’s magnitude has felt the shockwave resulting from the chip shortage. In the fourth quarter of 2021, Apple lost \$6 billion in revenues due to the shortage.¹ Apple’s CEO blamed the lost revenue on the supply chain issues and expects the problem to continue into the next quarters. In addition, Russia recently invaded Ukraine, which could pose another threat to Apple’s supply chain. With many countries placing sanctions on Russia’s exports, Apple could see a disruption to their supply chain since Russia is a major exporter in raw materials often used in the tech industry. One of these raw materials is palladium, which is used in sensors and memory cards. The United States imports more than one third of its palladium supply from Russia, so it would see a major decline in available palladium. In addition, Apple has 10 Russian-based smelters and refiners in its supply

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<https://www.businessinsider.in/tech/news/apple-lost-6-billion-to-chip-shortages-expects-bigger-losses-this-quarter/articleshow/87359867.cms>

chain that produce other materials, such as tungsten, tantalum, and gold.² Therefore, if the Russia-Ukraine war continues and sanctions prevent Russian imports of the raw materials, Apple would face additional supply change issues.

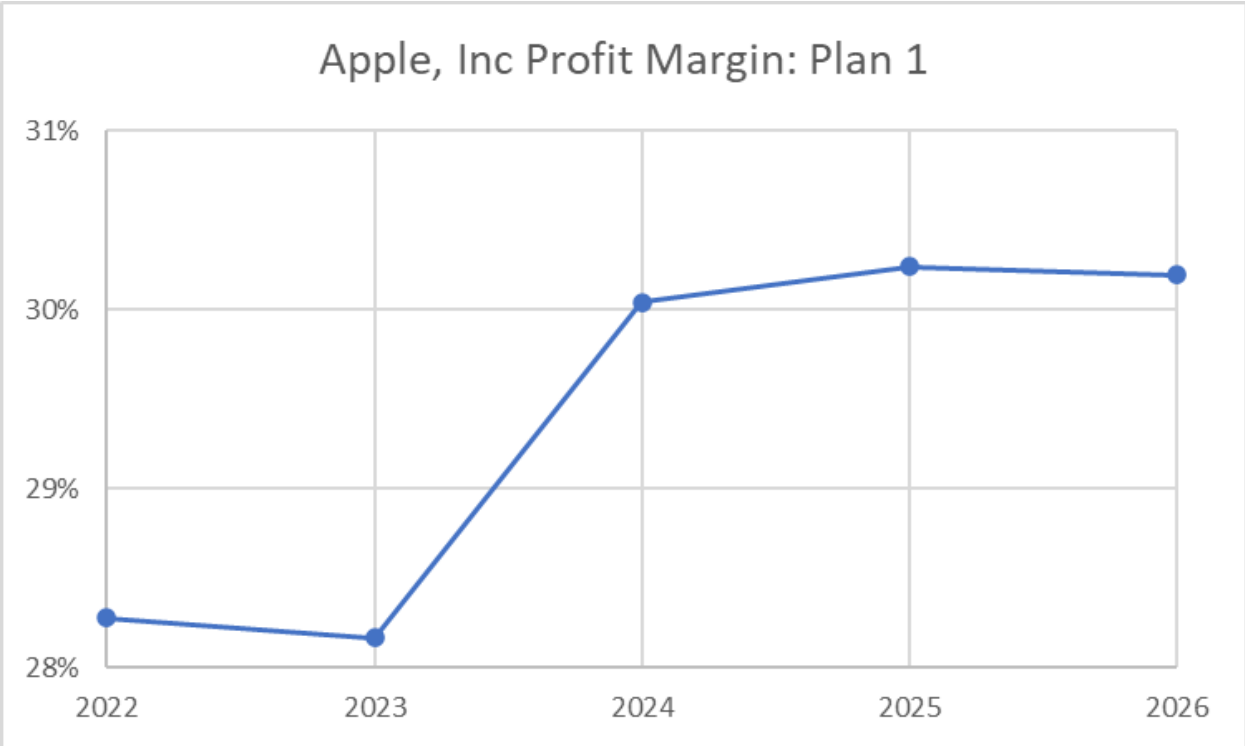
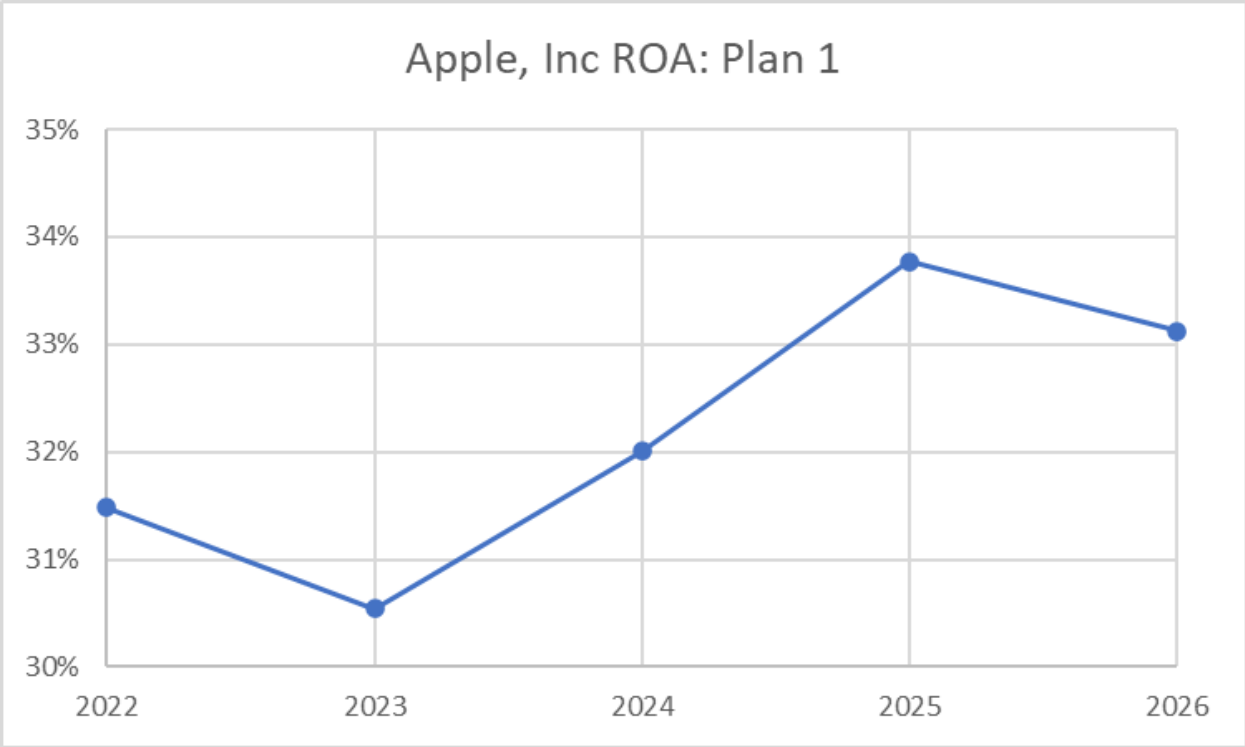
To combat these supply chain issues, our plan of action would be to encourage Apple to diversify its suppliers for semiconductor chips and other electronic components. By doing this, it will decrease its reliance on Russia if the sanctions persist. In addition, it would prevent supply chain issues caused by COVID-19 or any other unforeseen circumstance from happening again. Although Apple has more than one supplier of semiconductor chips, it still struggles to acquire enough to keep up with production. While Apple already contracts with TSMC, Qualcomm, Broadcom, and Micron Technology, they should look to expand their pool of suppliers with companies like ASE Technology, NVIDIA Corp., and NXP Semiconductors.³ In doing so, Apple would be able to acquire semiconductors from these new suppliers in addition to their current suppliers. This would lead to an increase in expenses as we recommend Apple to form contracts with the new suppliers while maintaining the contracts and purchases from their current suppliers. Although expenses would go up in future years, Apple would not face another supply chain disruption as we would recommend they purchase and keep more semiconductors in their safety stock in the future. In addition, one of Apple's current suppliers, TSMC, plans to expand production capacity with a \$100 billion investment over the next three years.⁴ With the increased capacity of TSMC and Apple's larger supplier pool, they should not face another chip shortage in the future. In fact, they would be able to increase production with the influx of semiconductor chips. This increase in production would then lead to an increase in revenue and ultimately net

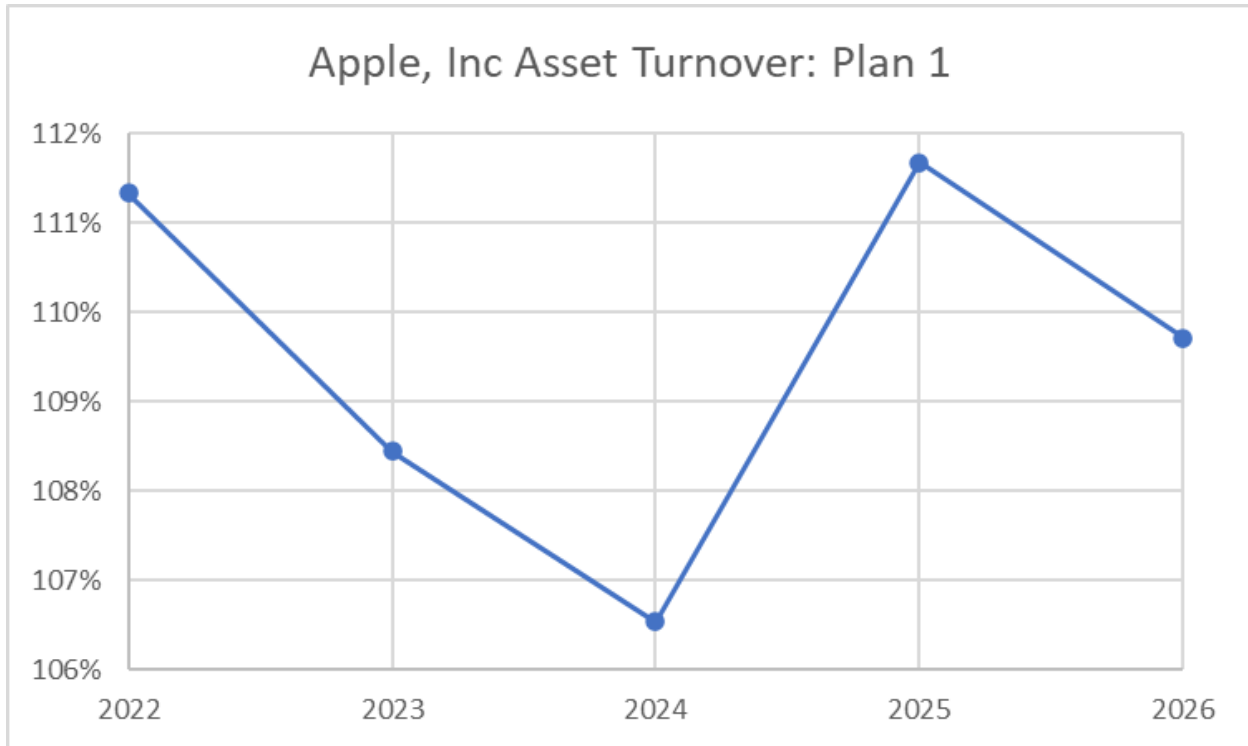
² <https://www.laptopmag.com/news/russia-and-ukraine-war-will-it-negatively-impact-apples-supply-chain>

³ <https://www.investopedia.com/articles/markets/012216/worlds-top-10-semiconductor-companies-tsmintc>.

⁴ <https://www.macrumors.com/2021/04/01/apple-supplier-tsmc-invest-100-billion/>

income. The charts included below show the effects of the plan on a few of Apple’s ratios in future years.





One of the largest threats that Apple is facing in today’s market is competition from a multitude of different competitors. Because Apple prides itself on product differentiation, it faces a greater threat of having its products fall short in comparison to those made by companies that focus on less products at a time. In recent years, Apple has been relying on its iPhone sales specifically to make up most of its revenues. As the younger generations of Millennials and Generation Z begin to take over America’s workforce, Apple has the perfect opportunity to revamp certain aspects of its products to attract the business of these new customers and continue to surpass its competitors.

To begin, this age group has grown up on Apple products. Now that these generations have reached the point where they are able to dominate the workforce and earn disposable income, it is a perfect time for Apple to target this demographic. If businesses are built upon a foundation of employees that use and prefer Apple products, they will be much more likely to

invest in Apple products and systems over its competitors. Of course, in the long run, Apple will make a profit off this increased business driven by brand loyalty even though it will have to initially expend some extra costs to recapture the attention of its growing professional target audience. Apple increasing promotional efforts and expenditures necessary to secure contractual agreements would benefit the company for far longer than the initial spike in sales because it would secure future revenues.

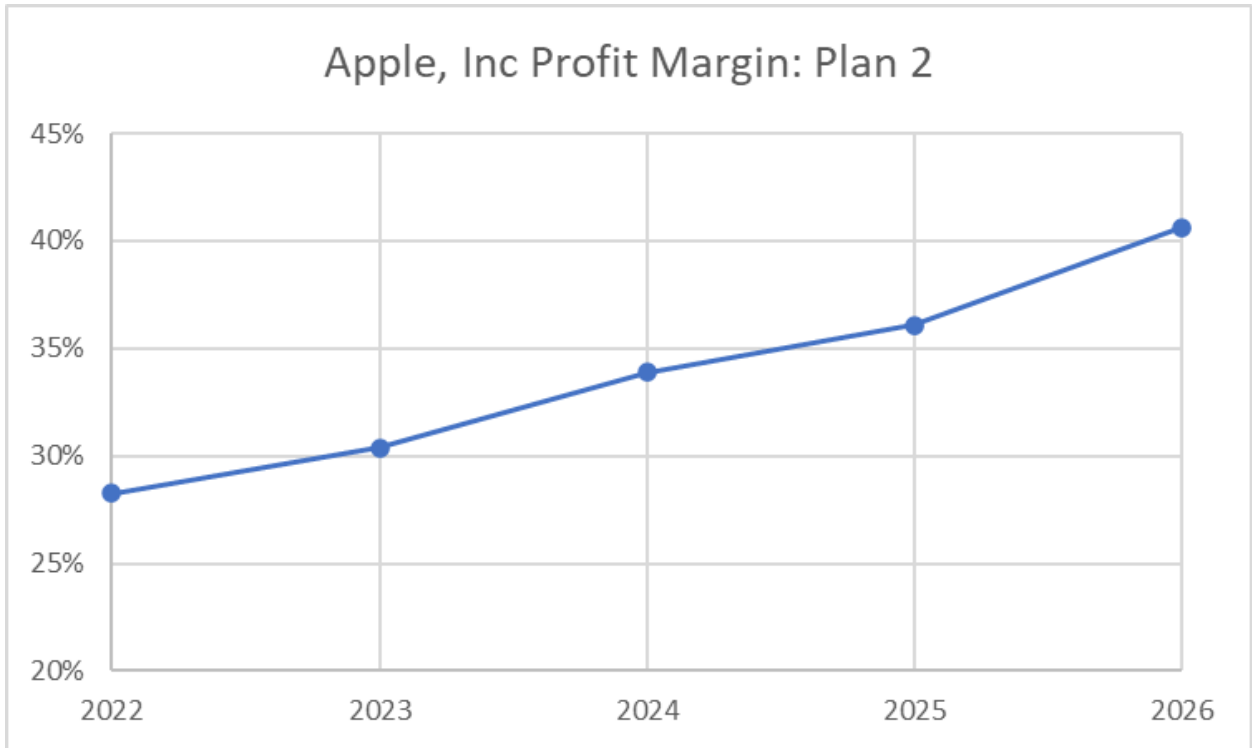
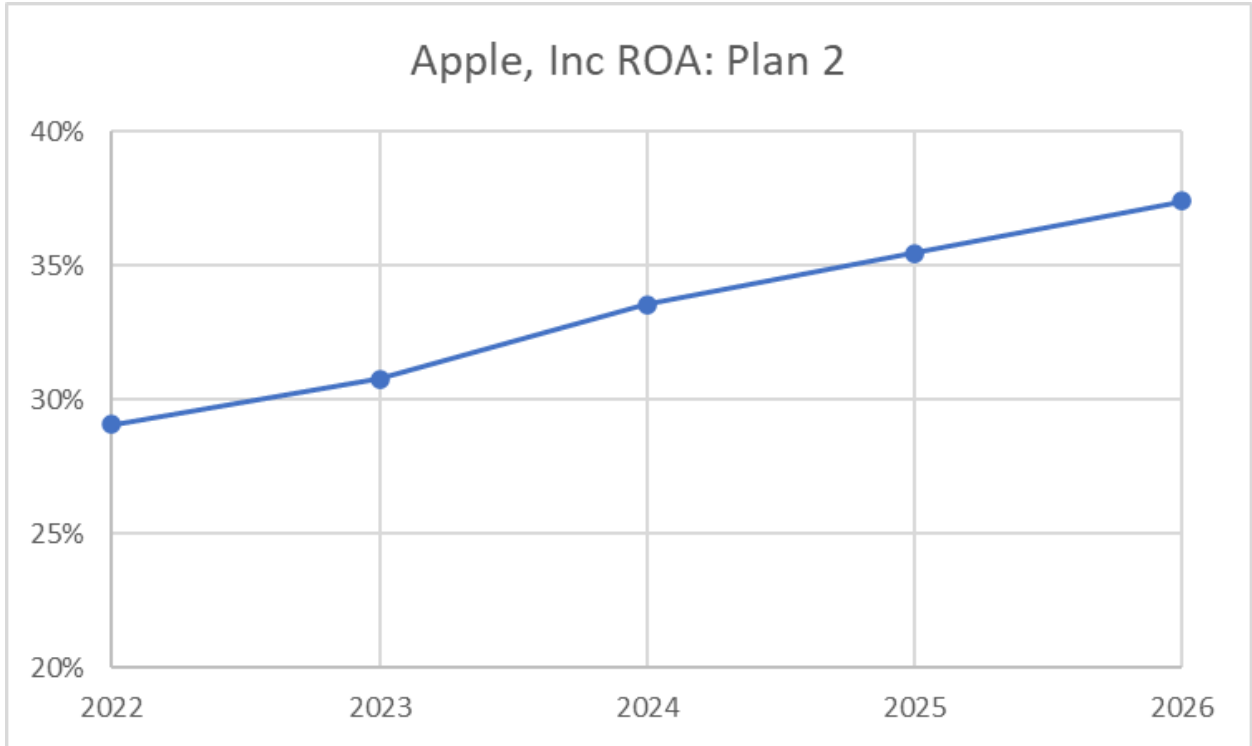
Another attractive reason to market to this age group is that they are building independent and financially stable homes. A focus on daily, personal use of Apple devices and services other than the iPhone has the potential to increase other products' revenue streams exponentially. For example, young people will be drawn to the name recognition and simplicity of the Apple TV product over a traditional and outdated satellite or network set up. Getting an assortment of Apple products sold and plugged into as many facets of professional and personal life as possible will strongly encourage consumers to refrain from moving to a competitor's product. The Apple ecosystem casts an expansive net capturing all the features a typical consumer looks for in a technology purchase but with the bonus of an appealing assortment of compatible products. Each Apple purchase innately provides subsequent value added to existing Apple devices owned when introduced and synced to the personalized collection. The product communication fosters further customer commitment to the brand and could be promoted to show the invaluable benefits adding ease and security in today's digital society.

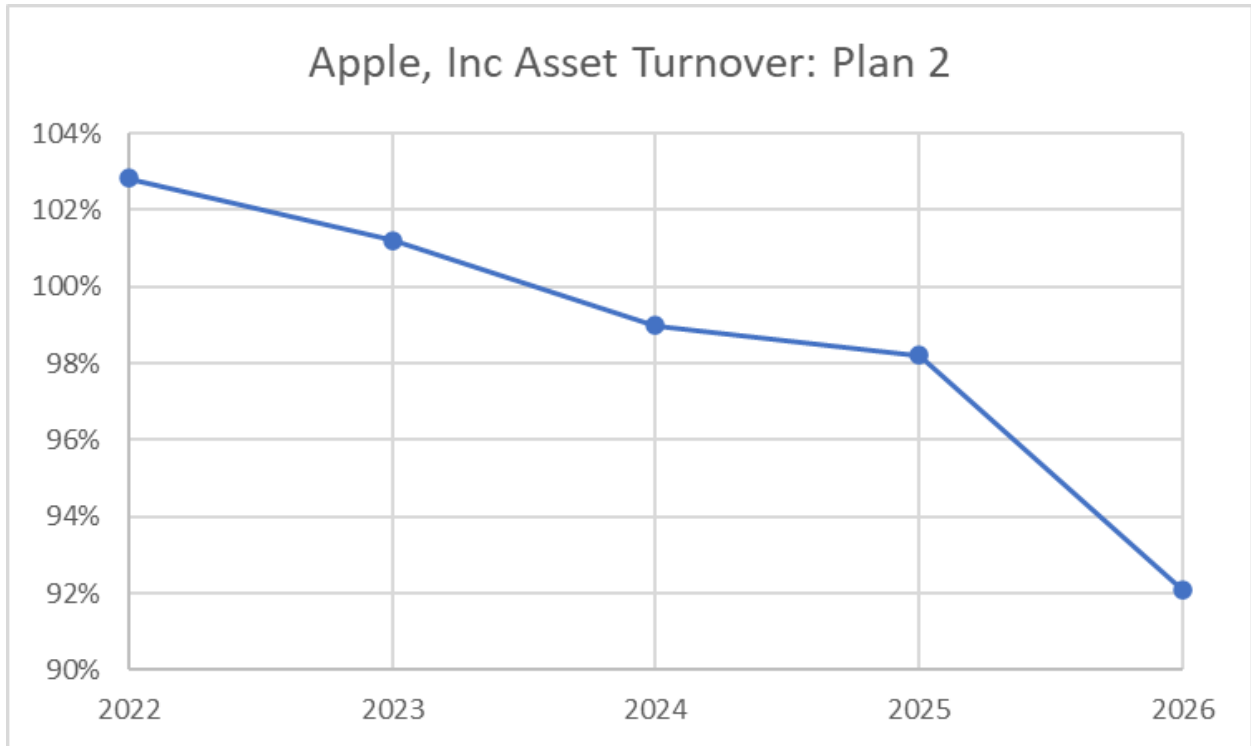
Apple has more than earned its reputation as one of the most influential hardware and software companies in the world but has yet to take off in the content creation industry they entered in 2019. Over the course of the pandemic, nearly every major streaming service has developed a series or movie that has received large amounts of publicity, such as Squid Game

(Netflix) and Euphoria (HBO Max), leading to massive revenues. The Apple TV streaming service, Apple TV+, has not put out original content that even holds a candle to the caliber of what other media powerhouses have released to catch the attention of the masses. If they were to utilize their talent and resources, Apple TV+ could put together a hit that would inspire consumers to subscribe to the streaming service over, or in conjunction, with competing platforms. This would come with associated costs, but because Apple TV+ already only features original content, producing captivating media would be a smooth transition because the groundwork for filmmaking has been in place for years. Allocating additional capital into upscaling this sector of the company would be wise because the initial investments necessary were made years ago, and consumers have proven their willingness to pay for captivating content to an extreme degree over the past few years.

Additionally, Apple TV+ should be readily available to users of any streaming device, such as Roku TV, Amazon Fire, etc., rather than only those who own an Apple TV. Although the limited availability may encourage customers to buy an Apple TV, it is likely to discourage many from using Apple TV+ since streaming devices are not commonly replaced once purchased. To the same tune of keeping up with trends of users and competitors, Apple Music should consider signing contracts with well-known podcast hosts. Spotify has negotiated many of these agreements, and with the surge in popularity of podcasts, exclusive content would draw listeners to the platform. Since Spotify is currently Apple's largest competitor regarding audio streaming services, it is imperative that Apple learns from Spotify's successes and weaknesses to modify its own service using this newfound knowledge. To accomplish the reinforcement of the Apple ecosystem, Apple must strengthen the weaker and underrepresented aspects of its goods and services.

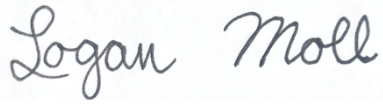
If Apple were to try to implement any, or all, of these potential action plans to thwart away competition, the accounts mentioned in the table below would be affected differently across upcoming years. First off, as generations of consumers who are already receptive to Apple products become the leading decision makers sign contracts and progress their businesses using Apple products, revenue will be reflected with an initial take off followed by an extended period of increase. Second, revenue would likely increase for several years as Apple TV+ and Apple Music become more popular and gain more users. Once word spreads that these Apple services are newly revamped and “better than ever,” the younger generations will jump at the opportunity to see what is offered, which has been a trend throughout Apple’s history. Cost of goods sold would potentially increase slightly if more people were to buy Apple TVs, but the wider availability of Apple TV+ would limit how much this account grows. Total selling and operational expenses and liabilities would certainly increase for the first couple of years that these new action plans are being implemented, but revenues will rapidly overcome the initial expenses and Apple’s profit margin would grow largely. The charts included below show the effects of the plan on a few of Apple’s ratios in future years.



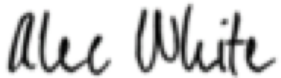


Ultimately, Apple can look to improve its product differentiation strategy by pursuing our plans mentioned above. In doing so, they would increase expenses in the coming years, but the increase in revenue would outweigh those outlays. Additionally, Apple would be able to increase its profit margin by following these plans. Since product differentiators pursue high profit margins, this would set Apple even farther apart from its competitors.

“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this assignment.”



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CASE STUDY NINE

Apple, Inc. Case Studies: Risk Advisory and Data Security

Madison Demus, Logan Moll, Edward Francis, Ellen Popple, Alec White

March 30, 2022

In this week's case, we took a deeper look into Apple's risks as a company. In addition, we looked at Apple's data security and researched some possible ways to mitigate these risks. We first needed to research Apple's greatest operational risks and recommend ways to prevent these risks. In doing this, we found Apple's greatest threats in the current day. Next, we needed to research Apple's greatest macroeconomic risks. The macroeconomic risks looked at Apple's threats outside of just the United States. We were responsible for recommending mitigation measures for these risks. Lastly, we transitioned to Apple's cybersecurity risks. Since hacking and internet scammers have become more people in the past decade, it was important to consider Apple's cybersecurity risks and how they could prevent vulnerabilities.

To think that it has been nearly two years since the COVID-19 pandemic swept through the world and uprooted billions of lives in its wake is difficult to comprehend. It is similarly difficult to understand the extent to which businesses are still feeling the effects of the pandemic today. Supply chains across all industries have been tested in a handful of different ways since the pandemic began. It is no surprise that the shelves in our supermarkets have been sparse throughout the past two years as supply and demand have varied greatly.¹ Apple, along with other electronics companies, has experienced supply chain disruptions particularly regarding semiconductor chips. In the time of lockdowns and restrictions, electronics were relied on more and more for entertainment while car sales dropped dramatically. Suppliers of chips started redirecting their products towards manufacturers of small electronic goods rather than towards car manufacturers (modern cars sometimes require up to 3,000 chips). When restrictions were relaxed and car sales gradually increased, the semiconductor chip shortage became a serious problem for both industries. Some car manufacturers started to hoard chips, making the shortage an even bigger problem for companies like Apple. Other problems related to the ongoing supply

¹ <https://www.fastcompany.com/90711792/supply-chain-issues-will-continue-well-into-2022-with-a-twist>

chain issue, such as worker shortages and shipping delays, have also added to Apple's greatest operational risk in the current day.

To mitigate this risk, Apple should have their suppliers sign contractual obligations to make complete deliveries on time to avoid compensation penalties such as credit on Apple's account or payments towards covering the loss of revenue from the delay. Apple both operates and is recognized on such a large scale, so the company can bring an intimidating amount of bargaining power to these negotiations. It would be wise of them to invest into a legal team that adds both value and security into these agreements given the current climate and resulting business hurdles. There is a motivating amount of mutually assured destruction or benefit for all the participants by creating and notarizing a contract. Apple has invested into this legal document to avoid the sacrifice of revenue loss and PR positivity, and suppliers get to work closely with an extremely profitable powerhouse technology company without repercussions if their end is upheld.

Additionally, Apple should diversify their range of supplier relations where applicable. Of course, not all of Apple's purchases could be made elsewhere, but the things that can should be explored because over the past two years so many companies have suddenly and severely been plagued with major supply chain issues. Investing into building relationships as a potential client with other companies now in case an urgent need arises would be another safeguard surrounding income. Even if for certain materials this has not been a company practice historically, Apple would come up with a way to approach this control respectfully enough not to compromise established working relationships. Having a backup is common practice amongst many industries requiring large levels of production and would protect Apple in a bind.

One of Apple's greatest macroeconomic risks today relates to the war in Ukraine. An immediate effect of the war was Apple cutting off sales to citizens of Russia. Apple cited the need to do this over "standing with all of the people who are suffering as a result of the violence." This action has caused Apple to lose \$3 million a day from iPhone sales alone, which will be over \$1 billion for the year from all products if current losses continue. Apple plans to make 20 percent fewer iPhones in the coming year and plans to see a drastic drop from 76.8 million units of AirPods shipped in 2021.² Some of the sanctions placed on Russia will increase the price of materials Apple needs to buy. As a result, Apple Insider surmised that the Ukraine and Russia war could increase material prices for Apple. In fact, according to Reuters, the price of aluminum already surged to record highs after several nations placed sanctions on Russia (a major producer of aluminum).³ In addition, Russia supplies the United States with one third of its palladium supply.⁴ If the war continues and sanctions persist, Apple will see increased costs and will have to raise prices on their products. The war will also have a significant impact on Apple's stock. On top of the Russia conflict, increasing inflation rates pose another macroeconomic risk. Inflation rates that continue to rise will cause investors to have less money to spend on potential products and stocks, which will result in a bearish market.

To lessen this risk and avoid increasing prices for consumers, Apple should find suppliers outside of Russia. As the Russia-Ukraine war continues, Apple cannot rely on Russian imports of raw materials for iPhones and other products. Therefore, to avoid increasing costs, they should expand their supplier pool. This increased supplier pool would also help manage the supply chain issue. With more suppliers, Apple would be less likely to run short on raw materials for production and would not lose sales. In addition, if Apple were to increase their suppliers and the

² <https://asia.nikkei.com/Spotlight/Supply-Chain/Apple-to-cut-iPhone-AirPods-output-amid-Ukraine-war->

³ <https://www.reuters.com/markets/europe/lme-aluminium-nickel-gain-russian-supply-worries-intensify-2022-02-28/>

⁴ <https://www.laptopmag.com/news/russia-and-ukraine-war-will-it-negatively-impact-apples-supply-chain>

Russia-Ukraine conflict and sanctions come to an end, Apple would be able to end their contracts with the new suppliers or keep them and increase their production. To combat inflation, Apple should assess their operating expenses and find areas to create savings. In doing this, Apple would be able to absorb the impact of inflation and not pass the effects of inflation onto the consumers and the price of their products. One area to possibly lower expenses is sourcing raw materials for a better deal. If Apple were able to find new suppliers and create a cheaper contract for their raw materials, they would be able to counteract the effects of the Russia-Ukraine crisis and inflation at the same time.

Modern corporations are especially susceptible to hacking and other forms of malicious cyberattacks. There are many different forms. Sometimes, a group of hackers will break into a company and implement ransomware, which only allows the company back into its system after paying a heavy fee. Perhaps the most infamous ransomware attack came last year when Colonial Pipeline Company's network was hacked and a major fuel pipeline was shut down, crippling the United States fuel supply, and raising gas prices all over the country.⁵ More recently, our government has detected shady behavior from abroad, specifically China and Russia. CNN reported on March 23rd that "hackers associated with Russian internet addresses have been scanning the networks of five US energy companies in a possible prelude to hacking attempts."⁶ Just weeks before that, Chinese hackers infiltrated the networks of six United States state governments.⁷ Every day, government employees and members of the private sector who are contracted by corporations fight off millions of attempts to breach private networks. Since Apple is one of the largest corporations in the world, it is extremely susceptible to attacks and must defend itself.

⁵ <https://www.bloomberg.com/news/articles/2021-06-04/hackers-breached-colonial-pipeline-using-compromised->

⁶ <https://www.cnn.com/2022/03/22/politics/fbi-energy-hacking-warning/index.html>

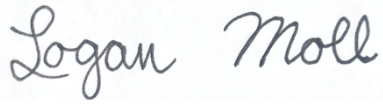
⁷ <https://www.cnbc.com/2022/03/09/china-state-backed-hackers-compromised-6-us-state-governments-report.html>

We recommend that Apple take multiple steps to ensure that vital customer and company information is not leaked. First and foremost, it is essential that Apple cultivate an effective internal tech team. These workers will know the most about Apple software and networks and will be able to diagnose problems quickly. However, to be cost effective, Apple must also outsource some of its security work. A healthy dose of internal and external surveillance should be required so that the company can quickly diagnose and combat any potential threats. Additionally, we recommend that Apple be compliant with the United States government and other nations in which it has offices. It is important that Apple reports any attempt to illegally access their system so that the perpetrators can be prosecuted. Additionally, this may lead to further investigation against countries like Russia and China that sponsor hackers and pay them to break into networks. Lastly and most simply, it is recommended that Apple design its network to force employees to change their passwords every few weeks. While it sounds trivial, many people use the same password for multiple sites. Once one database gets hacked, criminals can use the leaked passwords to try and access other information. By requiring people to change passwords and giving them basic education about the constant threat of hacking, Apple can greatly reduce its risk.

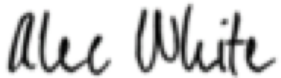
Ultimately, Apple faces risks in multiple areas and must address those risks to remain a top provider of electronics. Considering operational risks, Apple should diversify their suppliers and enter into contractual agreements so that they are required to provide enough raw materials for Apple. In a similar manner, Apple should find other suppliers outside of Russia to deal with its macroeconomic risks. In doing so, Apple will not need to worry if Russian sanctions persist, and they are not able to import necessary raw materials. Also, Apple might be able to create better contracts with suppliers to reduce expenses and prevent the effect of inflation on product

pricing. Lastly, Apple must stay vigilant with its cybersecurity protocols since the iPhones and other devices collect private information on consumers. All in all, Apple must identify and respond to operational risks, macroeconomic risks, cybersecurity risks, and more to prevent increasing costs or the downfall of the company.

“On my honor, I pledge that I have neither given, received, nor witnessed any unauthorized help on this assignment.”

Handwritten signature of Logan Moll in black ink on a light gray background.

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Handwritten signature of Alec White in black ink on a light gray background.

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Handwritten signature of Madison Demus in black ink on a light gray background.

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Handwritten signature of Eleny Popple in black ink on a light gray background.

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