

# JP Morgan and the Case of Synthetic Data

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## ABSTRACT

*This case is based on a real-world example of how synthetic data was used by a company to commit an alleged fraud during the due diligence phase of merger negotiations and the subsequent coverup of the initial fraud. JP Morgan Chase (JPMC) acquired the Frank Company, a startup fintech company for \$175 million in 2021. The main asset of Frank was its Customer List that allegedly included the contact information for over 4.25 million college-age students. JPMC wanted to increase its customer base in that demographic, which made the acquisition very attractive. By 2023 Jamie Dimon, the CEO of JPMC, described the acquisition as a “huge mistake” (Reuters, 2023A). The case details the alleged scheme to manufacture synthetic data during the due diligence phase of the merger, and the subsequent coverup of the initial alleged fraud after the acquisition was completed. Case questions cover the fraud, ethical issues and the inherent problems of verifying synthetic data. Intangible asset valuation and alternative management growth strategies are also explored. The case is appropriate for undergraduate and graduate courses in Accounting, Auditing, Ethics, Strategic Management and Information Systems and contributes to the literature regarding fraud, ethics, intangible assets, the use of synthetic data, and management growth strategies.*

**Keywords:** synthetic data, intangible assets, customer lists, due diligence, management growth strategies, fraud

## Introduction

In 2021 JP Morgan Chase (JPMC) acquired the Frank Company. The Frank Company was a tech startup that provided financial planning for college bound students. JPMC was interested in increasing its customer base for financial products to the college age population. The Frank Company's value was in its Customer List of potential students needing financial aid. These clients were a potential future source of revenue for JPMC because of their need to finance their educations with student loans and, also, as potential clients for financial planning and other services provided by JPMC.

The Frank Company was founded by the then 29-year-old, Charlie Javice in 2017. Charlie Javice was listed in Forbes as a “30 under 30” honoree in 2019. Frank’s signature product was the “Easy FAFSA”, a tool designed to “streamline and simplify the Department of Education’s Free Application for Federal Student Aid” (FAFSA) (ABC, 2023). The Company’s website also provided free information on financing a college education and various other resources. Many students utilized the website for the free available resources as well as the “Easy FAFSA” (Owen and Siversten, 2023).

The acquisition of Frank Company fit into JPMC’s growth strategy of expanding its market share of college-age students (Fortune, 2023). Therefore, in 2021 one of the Company’s major investors sent an email to JPMC’s Corporate & Investment Bank suggesting that they “should have a look” at the company as there were already several potential buyers interested in the company (Beltran, 2023A).

JP Morgan subsequently acquired Frank Company for \$175 million. The main asset of Frank Company was its Customer List of 4.25 million students who allegedly had opened an account with the Company. The names were listed on a Spreadsheet with a column titled “FAFSA in Process” provided by Frank to JPMC (Owen and Siversten, 2023).

After the acquisition, Javice was hired as managing director of Frank but was fired in November 2022 as it became apparent that emails of purported Frank users were bogus. In December JPMC filed a lawsuit claiming fraud and Javice filed a counter lawsuit claiming wrongful termination. Charlie Javice claimed she merely stated that her platform “had engaged with at least 4.25 million students” and there was no misrepresentation of user data. (Owen and Siversten, 2023). Javice also denied manufacturing fake customers and alleges that during the negotiations the Frank Company had available financial data that provided information about the value of the company. Javice contends that the lawsuit was an attempt to redirect the blame for a failed acquisition from JPMC executives to her (Katersky, 2023).

Subsequently, the Department of Justice (DOJ) and the Securities and Exchange Commission (SEC) filed charges against Charlie Javice. On April 4, 2023 the SEC charged Charlie Javice for “violating the antifraud provisions of the Securities Act of 1933 and Securities Exchange Act of 1934” (SEC, 2023A).

Also, on April 4, 2023 the DOJ filed charges against Charlie Javice for Conspiracy to Commit Wire Fraud, Bank Fraud, and Securities Fraud (DOJ,2023A). Furthermore, on July 12, Olivier Amar, Frank’s Chief Growth Officer, was charged with wire fraud, bank fraud, and securities fraud and conspiracy (Cohen,2023A).

### **Description of the Fraud: Part 1**

In the DOJ (2023B) and the SEC (2023B) filings the steps leading to the fraud are explained as an elaborate scheme to manufacture synthetic data of student users.

In January 2021, Frank company entered into an exclusive agreement with an investment bank. According to the agreement, the Investment Bank was to manage all transactions related to a possible merger or acquisition of Frank. The agreement stated that Frank would be “solely responsible” for the accuracy of the information provided to potential acquirers and that the material would not contain any “untrue statement of a material fact...” (SEC, 2023B, pg. 8). Javice worked with the Investment Banker to create pitch decks to explain the company’s financial position, user base, existing market, and potential growth for new products and users.

According to the DOJ and SEC filings, during the negotiations Javice stated that Frank had a customer base of 4.25 million “users” that included customer names, emails, and phone numbers. She also stated that the company had in excess of 35 million “visitors” to the website not included in the 4.25 million user base. Javice defined “users” as clients who had created an account by providing name, email address and phone number. “Visitors” were defined as people who had visited the website but had not opened an account meaning they had not provided a name, email address or phone number. However, in reality Frank had an existing user database of less than 300,000 users (SEC, 2023B).

During the due diligence JPMC requested the 4.25 million customer database. In response to the request for the customer data, Javice and Amar claimed they could not provide the information to JPMC because of privacy concerns. In order to satisfy JPMC’s request for verification of the user database and Frank’s claim of client privacy they agreed to hire an independent third party to verify the data.

Meanwhile Javice approached the Engineering Director at Frank to supplement their approximately 142,000 users who had FAFSA applications with synthetic data based on 293,192 records of users who had “visited” the website but had no application or identifying characteristics. Synthetic data is manufactured data that companies use when large data sets are needed. The needed data sets may not exist or there may be privacy concerns so synthetic data is an alternative. Because synthetic data mimics real data, quality manufactured data is hard to detect. (Eastman, 2023).

After the engineer declined to cooperate due to legal concerns, Javice and Amar hired a Data Science Professor from a local university to manufacture synthetic data. Javice provided the Professor with approximately 300,000 users and requested synthetic data of over 4.25 million users. The data set was to include first and last names, emails (provided as a Unique ID), phone numbers along with various other identifying characteristics. For this project Javice paid the Data Science Professor \$18,000 and requested a revised invoice listing services for “data analysis.” They now had a database of “users” of over 4.25 million fake customers. The database was reviewed by the Validator, Acxiom, a company listed on the Nasdaq that describes itself on its company website as “A leader in identity, customer data management and the ethical use of data” (Acxiom, 2024). Acxiom reported to JPMC Morgan that “100 percent of the 4,265,085 entries had data in the first name, last name, email address and phone fields” (SEC, 2023B, pg. 14-15). After the validation and approval by JPMC the list was deleted at the request of Javice and Amar once again citing privacy concerns.

## **Description of the Fraud Part 2: The Coverup**

JPMC and Frank entered into a merger agreement on August 8, 2021, and closed on September 14. Now Javice and Amar needed to produce a database of approximately 4.25 million users to furnish to JPMC after the merger. They realized that they could not provide the synthetic data as it was all fake customers. While Javice had been working on the synthetic data with the Data Science Professor, Amar had purchased a database of 4.5 million college students from ASL Marketing for \$105,000. The data lists were of students with no previous connection to Frank. The database arrived too late for the fabrication of the synthetic data. This data was ultimately combined with data purchased from Enformion LLC for \$75,000 to produce a database of 4.5 million “users.” The Data Science Professor assisted on this project.

## **Discovery of The Fraud**

In January, 2022, JPMC employees requested the database of users from a Frank executive who was working at the Frank company as an employee of JPMC. Javice and Amar directed an engineer to forward the data to the marketing department of JPMC. This first set of data was the data purchased from ASL. Later in February, 2022, Javice sent the marketing department the combined database from ASL and Enformion. In July 2022, JPMC sampled 400,000 names and discovered that only 28% of the users had operational emails and only 1.1% of the emails were opened. These results were significantly below typical sampling results.

JPMC conducted an internal investigation to explain the poor results. As part of the investigation JPMC reviewed the emails of the Frank Company from previous years. JPMC had access to the emails because they were transferred to JPMC as a result of the merger. JPMC uncovered the emails between Javice and the Data Science Professor regarding the manufacturing of synthetic data. This discovery triggered the resulting alleged fraud charges regarding the synthetic data.

## **The Aftermath**

In December 2022 JPMC filed a lawsuit claiming Charlie Javice had committed fraud. Javice counter-sued, claiming wrongful termination. On April 4, 2023, the DOJ charged Javice with conspiracy to commit wire and bank fraud, wire fraud, bank fraud, and securities fraud. Javice entered a plea of not guilty and was released on a \$2 million bond. The maximum penalty is 30 years in prison for one count. A 2024 trial date has been set (Atkins, 2023).

The SEC also filed charges on April 4, 2023. Javice is accused of violating Sections of the Securities Act of 1933 and the Securities Act of 1934. The SEC asked the court to order Javice to relinquish any profit from the illegal activity with interest. The SEC also asked the court to order Javice to pay civil penalties and to permanently prohibit her from being an office holder or director of any public company (SEC, 2023B).

On July 12, 2023, the DOJ charged Olivier Amar with wire fraud, bank fraud, securities fraud and conspiracy (Cohen, 2023A). In an amended complaint on July 12, 2023, the SEC charged

Amar with similar charges. JPMC has also filed a lawsuit against Amar in federal court in Delaware. Amar has pleaded not guilty to all charges (Cohen, 2023B).

### **Case Questions:**

#### **Background & Alleged Fraud**

1. Explain the alleged fraud committed by Javice and Amar during the negotiation phase of the merger (Part 1).
2. How was Part 1 of the fraud uncovered?
3. Describe the second phase of the fraud (Part 2), occurring after the Frank Company merged with JPMC.
4. How was Part 2 of the fraud uncovered?
5. Explain what the fraud triangle is and how it applied here. List some of the financial pressures, rationalizations and opportunities that allowed the alleged fraud to occur.
6. Aside from Javice and Amar, list some of the other stakeholders involved in the case and explain their roles.
7. Do you think any other stakeholders are guilty of fraud? What about the firm that validated the synthetic data?
8. Explain how JPMC could have prevented this fraud, or detected it earlier in the merger-process.

#### **Ethics**

9. What ethical issues can you identify in the case, and what stakeholders are harmed? Keep in mind that unethical behavior is not necessarily the same thing as illegal behavior.
10. The exaggeration of the student user-list (claiming 4.25 million when there was only data for about 300,000) was well known among the leadership at Frank.
  - a. Why might an executive participate in this type of fraud?
  - b. How might an executive encourage others to go along with this type of scheme?
11. Before the merger, Frank's Engineering Director refused to comply with Javice's request to create a database of 4.265 million visitors using synthetic data.
  - a. Why do you think he refused this request?
  - b. Should he have reported this request to JPMC?
12. Explain the role of the data science professor. Was the behavior of the professor illegal, unethical, neither or both?

#### **Intangible Assets**

13. What is synthetic data?
14. How is synthetic data created and what are some of its legitimate uses?
15. What is an Intangible Asset and how is this relevant to the case? (Hint: ASC 350 provides guidance on Intangibles).
16. Intangible assets are an increasingly important economic resource for many companies. Explain why they are more difficult to verify and value than Tangible Assets.

## Growth Strategies

17. What was the main reason that Frank Company was valuable to JPMC? What other options were available to JPMC to increase its customer base of college age clients?
18. What are some benefits and costs of alternative growth strategies?
19. What other areas might JPMC look to for growth? Do these areas use resources that JPMC already has or would they need to develop or acquire the resources?

## Suggested Case Question Solutions

### Background & Alleged Fraud

1. Explain the alleged fraud committed by Javice and Amar during the negotiation phase of the merger (Part 1).

Javice and Amar presented the Frank Company as a fintech company whose main asset was a Customer List of 4.25 million users of their signature product the “Easy FAFSA”. These 4.25 million users had allegedly provided names, emails and phone numbers when they opened an account with the company. The names were listed on a Spreadsheet provided by Frank to JPMC with a column titled “FAFSA in Process”. Javice had also stated that the company had in excess of 35 million “visitors” to the website not included in the 4.25 million user database.

When JPMC requested a list of the database during the due diligence phase of the negotiations Javice and Amar contracted with a Data Science Professor to manufacture a “synthetic database” in place of the nonexistent Customer List.

2. How was Part 1 of the fraud uncovered?

The manufacture of synthetic data was discovered through the emails of the Frank Company that were transferred as part of the merger of Frank with JPMC. When it became apparent that there was a problem with the Customer List an internal investigation by JPMC uncovered the emails between Javice and the Data Science Professor. There may also have been correspondence with the Engineering Director within the Frank Company who refused to cooperate with the manufacture of a fake Customer List. Apparently Javice and Amar neglected to cover their tracks and did not delete incriminating emails when Frank was acquired.

3. Describe the second phase of the fraud (Part 2), occurring after the Frank Company merged with JPMC.

Once the Frank Company was acquired by JPMC, Javice and Amar developed a database of 4.5 million college students by combining two purchased databases. These “users” had no connection with the Frank Company. The Data Science Professor that had developed the synthetic data also worked on this project.

4. How was Part 2 of the fraud uncovered?

The second part of the fraud was discovered when JPMC used a sample of the database for a marketing campaign. The response rates were so low it triggered an internal investigation which uncovered the initial fraud involving synthetic data and the subsequent database of bogus customers.

5. Explain what the fraud triangle is and how it applied here. List some of the financial pressures, rationalizations and opportunities that allowed the alleged fraud to occur.

The fraud triangle is the most widely accepted explanation for why some people commit fraud, and hypothesizes that if all three components are present, then a person is likely to commit fraud (ACFE, 2024). The three components are financial pressure, rationalization and opportunity. Potential examples from the case:

Financial pressures: personal debt, student loan debt, desire to live the high life, desire to maximize financial gain from merger, need to meet certain student-user list quotas (expand user Frank's user base from 4.25 million to 10 million over the next three years), desire to maintain executive role in the company post-merger.

Rationalization: Javice and Amar work hard and “deserve” the financial windfall, it’s only a small amount of money to a large company like JPMC, there are no “real” victims losing money.

Opportunity: Limited oversight of Frank by any regulatory body before the merger, JPMC had limited access to the student user list pre-merger, due to “privacy issues”, the difficult nature of valuing intangible assets.

6. Aside from Javice and Amar, list some of the other stakeholders involved in the case and explain their roles.

- JPMC - acquired Frank for \$175 million. Was presented with false numbers repeatedly in multiple due diligence meetings and calls.
- Acxiom - Third Party Validator hired to validate the existence of the student user list and how many unique customer accounts existed.
- Frank Engineering Director - was asked to create synthetic data for 4.25 million users and refused the request, uncomfortable with the possibility of the synthetic data being used to attract investors.
- Data science Professor - was provided a list of 300,000 real users from Frank and paid to use synthetic data to create a list of 4,265,085 fake user accounts. Professor warned that if the information was audited it would “look fishy” due to the use of real names of “students” and street names located in the state matching each address. The professor was also paid after the merger to “augmented” student records with fake phone numbers

- Data Compiler 1 - marketing company paid \$105,000 for a user list of 4.5 million students. Student information was limited to names - fewer than 3 million email addresses were provided, and no telephone numbers.
7. Do you think any other stakeholders are guilty of fraud? What about the firm that validated the synthetic data?

This is a difficult question to answer. At this time, it appears that no one else has been charged with fraud. The Data Science Professor may not have known the purpose of the synthetic data. Synthetic data is legitimately used for many reasons. The Validator, Acxiom, appears to be a reputable company. Acxiom validated the existence of the data but apparently did not have the responsibility of validating the legitimacy of the data. For these reasons, it appears that other participants may not have been guilty of fraud.

8. Explain how JPMC could have prevented this fraud, or detected it earlier in the merger-process.

JPMC's due diligence comes under scrutiny as a result of this fraud. JPMC is the largest bank in the United States and the world's largest bank by market capitalization as of 2023, and as such, had the resources, technology and manpower to discover this fraud before the merger. The Office of the Comptroller of the Currency scheduled a specific audit of JPMC's due diligence in recent acquisitions, as it has acquired dozens of small companies over the past few years (Reuters 2023B).

Given the difficulty in verifying the student user list, JPMC should have tested a small sample of actual names from the list pre-merger, regardless of the alleged privacy concerns, in order to determine if the email addresses were accurate and active. There are ways to navigate and alleviate privacy concerns in data and these were not explored.

JPMC should have also performed more testing to make sure the customers in the list were actual customers of Frank, set up in Frank's system, and reviewed the activity logs for those customer accounts. Relying on a third party to validate only the existence of the student user list was not enough.

Another area that JPMC should have noticed during due diligence was Frank's small marketing budget, around \$2.25 million. This was mentioned in the due diligence and filed documents as well as on the balance sheet. Frank repeatedly indicated to the bank that the cost of acquiring a registered user was about \$5, so if Frank had 4.25 million users, then its marketing spend should have been closer to \$21 million, almost ten times its current number (Beltran, 2023A).

Another potential red flag was the relatively small price JPMC paid to purchase Frank. At the time, Frank was a popular Fintech startup that had raised more than \$20 million in funding and had some big name investors. They also claimed to have about one quarter of the student market. At the time, comparable companies were trading at higher valuations

for example, Chegg, which claims to have 36% of the student market, had a \$10.9 billion market cap in September 2021 (Beltran 2023B)).

Additionally, the completion of the merger was rushed, as JPMC wanted to finish it before the college application season began, as part of its larger goal to attract a younger demographic of users. Frank pitched to JPMC in early July 2021, and the deal was closed in September 2021, leaving very little time for due diligence.

## Ethics

9. What ethical issues can you identify in the case, and what stakeholders are harmed? Keep in mind that unethical behavior is not necessarily the same thing as illegal behavior.
  - Frank founder Javice:
    - Lied to JPMC and the public about the success of Frank and the number of its student users. Her unethical behavior harmed JPMC and its shareholders, employees of Frank, and potential users of Frank who were seeking help with federal financial aid and other college funding opportunities. Frank was shut down and Javice was arrested and faces charges from the SEC and DOJ.
    - Purchased a list of 4.5 million student names from a marketing company and passed it off as Frank's list after the merger closed. Knowingly paid several parties to help populate this list with names, email addresses and phone numbers.
  - Chief growth officer Amar - lied to JPMC and the public about the success of Frank and the number of its student users. Amar was also indicted on fraud charges.
  - It's likely that other Frank employees knew what was going on, and no one blew the whistle on the fraud. Internal messages on slack and WhatsApp as well as emails revealed employees were doubtful about their customer count ahead of the acquisition.
10. The exaggeration of the student user-list (claiming 4.25 million when there was only data for about 300,000) was well known among the leadership at Frank.
  - a. Why might an executive participate in this type of fraud?  
Personal gain, desire for prestige, corporate employment position after the merger is complete, etc.
  - b. How might an executive encourage others to go along with this type of scheme?  
Higher pay or bonuses, threat of termination, unethical corporate culture, etc.
11. Before the merger, Frank's Engineering Director refused to comply with Javice's request to create a database of 4.265 million visitors using synthetic data.
  - a. Why do you think he refused this request?

It is likely that he knew or suspected what was happening with the user data and he didn't want to incriminate himself.

- b. Should he have reported this request to JPMC?

He had no legal obligation to report anything, but there is an ethical argument to be made that if he felt strongly enough to distance himself from what was happening that he should have reported it to JPMC. He could have done so anonymously through a whistleblower hotline.

12. Explain the role of the data science professor. Was the behavior of the professor illegal, unethical, neither or both?

The data science professor was paid to create the synthetic dataset and to augment the data that was later purchased from a marketing company. There is no evidence that the professor did anything illegal or even knew what the data was being used for, but there are some signs that it was not completely ethical. For example, Javice had a preexisting relationship with the professor, who she had met in college. The professor was paid a bonus for the fake dataset, but was instructed to invoice for a single line item, "data analysis." Additionally, Javice doubled the professor's hourly rate to \$600 an hour and made the professor sign a nondisclosure agreement. The Data Science Professor even warned Javice that the fake dataset would not stand up to the scrutiny of an audit.

## Intangible Assets

13. What is synthetic data?

Synthetic data is artificially generated data created to mimic real data. The demand for high quality data has grown significantly and high quality data is essential for decision making in our economy (Martineau, 2023). The concern for privacy or lack of available and affordable data are reasons why synthetic data rather than real data is used (Eastwood, 2023). Javice used the lack of privacy as the main reason that they did not want to provide the database of "users" to JPMC during the due diligence phase of the merger. Also, the second reason, lack of available data, was the main reason that Javice hired the Data Scientist to develop a synthetic database. The synthetic database was based on the properties of the smaller database of approximately 300,000 legitimate "users" that the Frank Company had at the time of the merger. The synthetic data was certainly affordable at a price of \$18,000.

Putting aside the ethical issues related to telling JPMC the synthetic database was made up of "real" students, there is evidence of technical challenges in supplementing a small database with synthetic data, as this could potentially augment any inherent biases in the original data and exacerbate the external validity of the model (Shanley et al. 2024). There is also no standardized legal or ethical framework in place to guide or regulate the use of synthetic data.

Synthetic data can take different forms. For example, synthetic data can be artificially generated text data used in natural language processing (NLP). Tabular data can be artificially generated to be used in statistical analysis and predictive models. Synthetic data can also be used to produce artificial video, image, or sound (Turing, 2023).

14. How is synthetic data created and what are some of its legitimate uses?

There are several ways to create synthetic data. A synthetic dataset can be generated from a known distribution of the real world dataset and knowledge of the desired properties of the synthetic data. Another possibility is to start with a best-fit distribution of the real dataset and then “based on the distribution parameters, it is possible to generate synthetic data points” (Datagen, 2023). A more advanced process is the use of neural networks techniques (Datagen, 2023). (See the report issued by The Royal Society (2024). The report covers the current state of synthetic data technologies).

Synthetic data is used for many reasons and by many different companies. Here are a few real-world examples of synthetic data. Amazon uses synthetic data in the training of Alexa. Companies use the data to develop self-driving cars. American Express uses synthetic financial data to help in fraud detection. Synthetic data is also used in clinical research and for predictive analytics (Devaux,2022).

15. What is an Intangible Asset and how is this relevant to the case? (Hint: ASC 350 provides guidance on Intangibles).

Intangible assets are future economic benefits that have no physical substance. Patents, copyrights, trademarks, customer lists, licenses and goodwill are examples of intangible assets. This case deals with one specific intangible asset, customer lists.

Intangible assets can be either identifiable or unidentifiable. Identifiable intangible assets are assets that can be separable from other assets and could potentially be sold by a company. A customer list is an example of an identifiable intangible asset. Unidentifiable intangible assets cannot be separated from the company. An example of an unidentified intangible asset is goodwill. Goodwill can only be recognized as an asset as a result of an acquisition with a purchase price greater than the fair market value of the identifiable net assets. The difference is goodwill. Intangible assets that have a useful life are amortized and those with indefinite lives are tested for impairment.

An interesting recent Accounting Standard Update, (ASU) deals with intangible assets and crypto assets specifically. ASU 2023-08 *Intangibles - Goodwill and Other - Crypto Assets* (Subtopic 350-60) (FASB,2023) reinforces the classification of some cryptocurrencies as intangibles. The update moves from the historical cost model to a fair value model for bitcoin and other cryptocurrencies. The update requires the valuation of certain crypto assets at fair value affecting the income statement and balance sheet similar to the fair value adjustments of financial assets.

16. Intangible assets are an increasingly important economic resource for many companies. Explain why they are more difficult to verify and value than Tangible Assets.

Because intangible assets have no shape or form, they are more challenging to value than tangible assets. Intangible assets are increasingly critical to corporate valuations, but the current accounting standards can create an information gap in their valuations. Prior valuation methods and accounting metrics from corporate financial statements aren't enough to capture the value of many of these new types of intangible assets (for example, cryptocurrency, internal-use software or website development costs).

Furthermore, advances in technology have removed many of the technical, financial and other resource-related obstacles necessary for large-scale data collection, manipulation and storage. This has created opportunities for many companies, like Frank, to utilize data assets to increase their business value in various ways, such as e-commerce, targeted marketing, enlarging user bases or improving decision making (Janssen et al. 2017). Frank's customer data was the key driver in the acquisition deal.

During due diligence JPMC requested access to a list of the 4.25 million customer database. As an asset with no physical presence, exchangeability between parties and variability to change (over time, with use conditions, with macro conditions, etc.) the customer database is characterized as an intangible asset (Xiong et al. 2016). As noted above, intangible assets are an increasingly common component of the assets of modern firms and include knowledge assets (acquired through research and development), human capital internally developed by employees, the value of established supply chains and product distribution systems, brands, software, etc.

Evidence suggests that tangible assets (property, plant and equipment, etc.) have declined from 16% to 10% of value added from 1977 to 2016 while intangible assets have almost doubled in value from 8% to 15% of value added (Lev, 2019). Interestingly, intangible assets generated internally are expensed immediately (unless acquired) and the tangible assets are capitalized. Therefore, despite their prominence, few of these intangible assets actually appear on the balance sheet and the proper accounting valuation and treatment has not been established by the Financial Accounting Standards Board (Barker et al. 2022).

Intangible assets are typically valued using one of three models: the income approach, the market approach or the cost method. The income approach uses the present value of future cash flows attributed to the intangible. The difficulty with the income approach is determining the future earnings of the intangible asset. The market approach compares the intangible asset to similar intangibles in observable market transactions. Intangibles assets are difficult to value using the market approach because of the unique characteristics of most intangibles. The cost method uses replacement cost to value the intangible. The income approach is most widely used to value intangible assets and there are several options with that approach (Consultancy, 2022).

In addition to being more difficult to value than tangible assets, intangible assets are more

difficult to audit, as evidenced by higher audit fees from external auditors due to increased audit risk, time as well as auditor effort (Prabhawa and Nasih 2021). Datta et al. (2019) show that business risk is generally higher for firms with higher intangible assets, and that these firms also have increased litigation risk that manifests in a higher audit fee.

## Growth Strategies

17. What was the main reason that Frank Company was valuable to JPMC? What other options were available to JPMC to increase its customer base of college age clients?

The Frank Company had the potential to provide JPMC with access to new customers through their customer lists. These customers fit the profile that JPMC was trying to reach. They were college students who were filing FAFSA applications. In order for organizations, such as JPMC to grow, they need access to new customers. There are several options available to organizations when they are trying to grow. Once they have identified an area of potential growth, they can “build, borrow, or buy” the needed resources to grow in this area (Rothaermel, 2024). As outlined by Rothaermel (2024), the Build-Borrow-Buy framework (Capron and Mitchell, 2012) suggests that they should consider the relevancy, tradability, closeness and potential for integration with the firm’s existing resources. In this case, JPMC chose to “buy” the resources. However, JPMC could have formed an alliance (a formal cooperative agreement) with a company that had access to college age clients. For example, they could have attempted to work with college bookstores or other organizations that routinely market and sell to this customer base. Another option would be to build the resources through internal development. JPMC could have created an internal team to connect with this customer base. The team could have provided outreach on college campuses and offered financial products that would be attractive to these customers.

18. What are some benefits and costs of alternative growth strategies?

If JPMC had decided to build the customer base themselves there are a number of advantages. One major advantage is that they would be able to ensure the quality of their data. Additionally, they would have the opportunity to collect more data on potential customers that were closely aligned with their strategies. For example, they might be able to collect data on customers in certain geographical areas or on particular career paths. However, there are also a number of costs associated with this strategy. An internal project would require a significant investment. Internal resources would have to be focused on this area and they would have to either hire or reorganize existing people to work on this project. This assumes that they would have access to people with the skills needed to work on this project. Furthermore, this project would take time to accomplish.

If JPMC decided to partner with another organization to reach this customer base, their partner might have existing resources to develop a customer list. However, a potential cost would be the increased coordination costs and the potential for misalignment between the partners’ strategic motives.

19. What other areas might JPMC look to for growth? Do these areas use resources that JPMC already has or would they need to develop or acquire the resources?

JPMC could focus on a different customer group for growth. They could try to attract potential customers in a different market segment. For example, they could attempt to provide products to potential customers who have been out of college for ten or more years. Hamel and Prahalad's "Core Competence-Market Matrix" could help them evaluate which areas they might move into and how these areas align with their existing resources (Rothaermel, 2024). In order to use the Core Competence-Market Matrix an organization begins by evaluating their existing core competences and current market positions. Then they consider four options for expanding: using existing competences in current markets, using existing competences in new markets, building new competences for existing markets, or building new competences for new markets. Each of these diversification strategies presents challenges (some more than others), however, they also present significant opportunities for growth. This framework builds on the idea that an organization's core competence is central to its strategic advantage (Prahalad and Hamel, 1990). For a more detailed explanation of the Core Competence-Market Matrix and its potential to guide diversification decisions see Rothaermel (2024) or Prahalad and Hamel (1994).

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## Case Overview and Learning Objectives

The case contributes to the literature regarding fraud, ethics, synthetic data, intangible assets and management growth strategies. It provides a real-world example of an alleged fraud highlighting an intangible asset (customer list) as well as the concept of synthetic data. Six learning objectives are emphasized in the case and mapped to the discussion questions in Table 1. There is a grading rubric for the case questions in the Appendix.

First, students will explain the alleged fraud committed by Frank and how it was uncovered.

Second, students will describe how the initial fraud was covered up by Frank employees, and how that coverup was ultimately discovered.

Third, students will identify ethical issues arising from the alleged fraud, and explain how different stakeholders were affected.

Fourth, students will define synthetic data and explain how it was used to commit the alleged fraud. Many have had little exposure to the concept or use of synthetic data, so they will explain what it is and how it is relevant to the case. Students will explain the difficulty of verifying synthetic data versus real data during the due diligence stage of merger negotiations. The use of synthetic data is becoming more accepted in the business environment and there are legitimate, acceptable uses for it.

Fifth, students will explain the difficulty of verifying and valuing intangible assets such as customer lists. This case highlights an important issue regarding intangible assets, specifically

the difficulty of valuation and verification of intangible assets such as Customer Lists because of the inherent absence of physical substance. Furthermore, the percentage of intangible assets relative to physical assets in a company can be quite large and can be a substantial part of an acquisition negotiation. This measurement difficulty makes intangible assets a susceptible area for fraudulent transactions.

Sixth, students will describe management growth strategies and the cost/benefits of each strategy. Growth management strategies are an important aspect of strategic planning. This case underscores the importance of due diligence during the negotiation phase of an acquisition. The potential pitfalls of acquiring a company rather than growing from within are discussed. The case questions explore different ways to expand a market and the cost/benefit of choosing different growth strategies.

The case is appropriate for a variety of undergraduate accounting courses, including Introductory Financial Reporting, Audit, Business Ethics, Information Systems and Strategic Management courses. The level of difficulty can be tailored to the appropriate course by including fewer learning objectives. For example, learning objectives 1-3 are more general, relating to fraud and ethics, while learning objectives 4-6 are more advanced and target upper-level accounting concepts.

**Table 1: Learning Objectives Mapped to Discussion Questions**

Learning Objectives	Discussion Questions
(1) Students will describe the alleged fraud and how it was discovered.	Q(1), Q(2), Q(5), Q(8)
(2) Students will explain the coverup of the initial fraud and how this coverup was discovered.	Q(3), Q(4)
(3) Students will identify ethical issues arising in the case and the impact on various stakeholders.	Q(6), Q(7), Q(9), Q(10), Q(11), Q(12)
(4) Students will define synthetic data and explain how it was used to commit the fraud.	Q(13), Q(14)
(5) Students will explain the difficulty of verifying and valuing intangible assets such as customer lists.	Q(15), Q(16)
(6) Students will describe management growth strategies and the cost/benefits of each strategy.	Q(17); Q(18); Q(19)

## **Implementation Guidance**

This case can be used in an undergraduate course in Financial Accounting, Auditing, Business Ethics, Information Systems, and Strategic Management. Different aspects of the case and different levels of difficulty can be adapted to the individual course.

For example, an Introductory Accounting course can cover the timeline of the initial fraud and the coverup. The ethical issues regarding Javice and Amar's behavior in committing the alleged fraud can be covered and also the ethical behavior of the data analyst employed by Frank. Some time can also be taken to cover intangible assets in general and customer lists, specifically.

An Auditing class can concentrate on the due diligence process and the verification and valuation of intangible assets in potential acquisitions. Synthetic data may also be covered. Internal control procedures to guard against this type of fraud would be warranted as well.

In an Information Systems class synthetic data can be explained in depth. What it is and how it is produced would be appropriate. Strategic management can discuss the growth strategies of companies and a cost/benefits analysis of different strategies as well as the ethical issues of the case.

After the case is assigned, we suggest spending 30 to 60 minutes of class time discussing the main aspects of the alleged fraud and allowing students to ask questions or clarify any facts of the case. Due to the in-depth analysis required, it is recommended that students be placed in small groups to complete the discussion questions. The case should take about 90-120 minutes for students to complete outside of class.

On the due date, the entire class period (60-90 minutes) should be used to discuss the case solutions. Depending on the focus of the course (financial accounting, info systems, audit, etc.) more time can be spent emphasizing different elements of the case. Instructors may also choose to provide students with additional resources about synthetic data, intangible assets, or other topics of interest.

## **Case Contribution**

This real-world case study contributes to the body of knowledge that helps instruct future accountants and executives regarding fraudulent behavior of company executives, as well as emphasizing an area of accounting highly susceptible to manipulation. It provides an example of an alleged fraud committed against a large company most students are familiar with, carried out by way of intangible assets and synthetic data, concepts that may be new to students. Importantly, the case also illustrates the consequences of fraudulent behavior. The case also contributes to the body of knowledge that addresses growth strategy and the increasing role of Intangible Assets in acquisition negotiations. This is valuable information for all stakeholders involved in potential acquisition activity.

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## APPENDIX

### Rubric for Discussion Questions

	Exceeds Expectations (4)	Meets Expectations (3)	Basic (2)	Below Expectations (1)	Score
Ability to answer the questions	Provides comprehensive answers to all case questions demonstrating a thorough understanding of all case issues. Responses include only relevant information directly related to the question.	Provides reasonable answers to all case questions demonstrating a high level of understanding of the case issues. Responses include mostly relevant information directly related to the question.	Provides answers that address most of the case questions demonstrating a basic understanding of the case issues. Responses may include some information not directly related to the question.	Provides answers that do not address the majority of the case questions demonstrating little or no understanding of the case issues. Responses include information not related to the question.	
Depth of analysis	Provides significant, insightful, and in-depth analysis of all case issues demonstrating an excellent command of the major case points and implications.	Provides a good analysis, demonstrating a solid understanding of the major points in the case.	Provides some analysis, but the analysis lacks depth and does not demonstrate a comprehensive understanding of the major points in the case.	Provides little or no analysis demonstrating little or no understanding of the major points in the case.	
Use of relevant outside references	Provides significant high quality outside references to justify case analysis. Sources are relevant and provide additional support for case responses.	Provides reasonable outside references. Sources are relevant and provide some support for the case responses.	Provides a few outside references. Sources provide only limited support for the case responses.	Provides limited or no outside references. Sources do not support the case responses.	
Organization / Writing mechanics	Answers are extremely well organized. The flow of the	Answers are well organized. The flow of the responses is	Answers are organized but the flow of responses is not	Answers are not well organized. There is little	

	<p>responses is well integrated and logically consistent throughout. Answers are direct, concise and easily understood. Responses contain only relevant material. There are no grammatical errors.</p>	<p>integrated and logically consistent throughout most of the paper. Answers are direct, concise, and easily understood. Responses contain mostly relevant material. There are no grammatical errors.</p>	<p>well integrated and/or logically consistent at times. Answers are for the most part direct, concise and understandable. Responses contain some irrelevant material. Grammatical errors are limited.</p>	<p>or no logically consistent discussion and answers are difficult to understand. Responses contain irrelevant material. There are significant grammatical errors.</p>	
Overall quality	All responses are outstanding and are extremely effective in communicating the major issues in the case.	All responses are good and communicate the major issues in the case.	Most responses are acceptable and communicate some of the major issues in the case.	Responses do not address the major issues in the case.	