Formulation Advances, Inc.: Revenue recognition issues in the pharmaceutical industry

Jane Baird
University of North Carolina at Pembroke

Steven Johnson
Minnesota State University, Mankato

Byron Pike
Minnesota State University, Mankato

ABSTRACT

In this case, Joe Enterpriser, a recent accounting graduate, is asked by his supervisor to research some financial issues related to Formulation Advances, Incorporated's year-end reporting and upcoming financial statement audit. Issues include revenue recognition of license fees, royalties, and milestone payments in multiple stage contracts, and determination of criteria for discontinued operations. This case illustrates that financial accountants often need to research the proper treatment of complex transactions and formulate professional judgments in recording many transactions. By completing this case, students are exposed to this process in a way that fosters the development of critical thinking, research, and professional writing skills. This case is designed for upper division or graduate level financial accounting courses, or in a capstone accounting course.

Keywords: FASB Codification, revenue recognition, discontinued operations, performance obligations, royalty income

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INTRODUCTION

In this case, you will be asked to assume the role of Joe Enterpriser, a new accountant working for Formulation Advances, Inc. You will be required to research financial accounting issues related to revenue recognition standards and discontinued operations. This case is designed to help you learn professional research skills, as well as to improve your critical thinking and professional communication skills.

THE CASE

As Joe Enterpriser arrived at work on Monday morning, he was excited about his new job. He had only been with the company for a few months, and so far, it was everything he had hoped it would be. He took a risk with a struggling company, hoping to get in on the ground level in an organization with a potential for growth and a mission that he admires. Formulation Advances, Inc. (FAI) is a small publicly traded corporation that specializes in innovative technologies that reformulate existing drugs. Joe feels like the company's products have the potential to change people's lives. Joe's dad suffers from chronic pain, so for Joe this is personal. If he can be a part of a company that could possibly help make life easier for people like his dad, and get some great work experience along the way, it was worth taking a chance even though the company's future was in question. As a financial accountant in a company with a small accounting staff, Joe had already been exposed to some challenging and complex transactions that he was sure he would not have been allowed to work on in a larger organization. Joe put his bag on his desk and walked down the hall to get a cup of coffee. As he was walking back to his office, he met his boss, Stan Overseer, in the hallway.

"Good morning, Joe," Stan said with a grin. "How was your weekend?'

"It was good, thanks," Joe responded. "But I did spend most of last night thinking about the research you mentioned you want me to do. Last week you told me there were some 'interesting issues' that we'd need to sort through, which made me a little nervous. I did a little research in my Accounting program, but I don't feel confident about my skills in that area."

Stan smiled as he took a sip of coffee. "No need to be nervous, I just want to get a jumpstart on these issues before the auditors arrive. It's two months before our year-end, so I'm hoping we can get out ahead of some of these issues and book any necessary adjustments before the audit to help keep our fees down on the audit. Every time the auditors find adjustments, it takes them more time which ends up costing us more money. As you know, money is tight here and I need to reduce costs as much as I can."

"And what are these 'interesting issues' you mentioned?"

"There are a few of them, but they mainly focus on revenue recognition. I am sure you studied the revenue standards in school but applying them in practice can sometimes be a little more involved than the examples you see in textbooks," Stan explained. "I'd like you to research each of the issues, using the FASB Accounting Standards Codification, and provide recommendations and analysis for them. Let's head back to my office and I'll give you the details."

After meeting with Stan for about 30 minutes, Joe's head was spinning. As he walked back to his desk, he was already feeling a bit overwhelmed. Although Joe had only been out of college and with the company for a few months, he knew that being successful on this project could have a major impact on a promotion in the future. He wanted to make sure that he impressed Stan by doing an excellent job with the research. As Joe started looking through the file, several thoughts went through his mind. Could he write a memo that made a positive impression on Stan? Would he be able to provide solid recommendations for all the issues? Did he have all the resources he needed? Joe took another sip of coffee and began reviewing the information that Stan had given him.

COMPANY BACKGROUND

The pharmaceutical industry's success is heavily dependent on the success of its research and development activities. Increasingly, the largest of these companies are relying more on smaller companies to provide them with innovative new drugs to bring to market. FAI is one such company. While the company began operations in 1997, it has just recently begun producing revenues. To date, FAI's research and development activities have taken place at its headquarters in Midland, Michigan, but its sales have been primarily in Canada and Mexico.

FAI is led by an impressive top management team, each bringing a unique skillset to the company. FAI's president and Chief Executive Officer is Lee Michaels, the company's founder. Although Mr. Michaels does not have a medical background, he has worked more than 15 years in corporate finance and high technology development applications. Mr. Michaels has taken the lead in directing the company's business strategies and finding strategic business partners. He and his Chief Financial Officer also devote considerable time to obtaining investment capital and debt arrangements to finance the company's research efforts.

The company's Chief Financial Officer, Marsha Urbans, is a Certified Public Accountant. Before joining FAI, she held a variety of positions including Senior Manager at a "Big Four" accounting firm, Vice President of Finance of a technology firm, and Vice President of a financing corporation. Stan Overseer supervises the small accounting staff and reports directly to Marsha.

The heart of FAI's business centers around its research team. The team is headed jointly by its Chief Scientist, Dr. Joseph Smith, and its Chief Medical Scientist, Dr. Michael Weisman. Dr. Smith has an impressive research record, having published over 50 articles in top science and medical journals and developed more than 20 documented patents. Dr. Weisman has both a medical degree and a PhD. He has published extensively in the areas of immunopharmacology, cancer research, neuroscience, and experimental pharmacology. Dr. Weisman has held several significant, high-profile research positions over his 20-year career. The company's future depends on the success of its research efforts. The research team is responsible for developing the products and getting them through the Federal Drug Administration (FDA) approval process. Without approval, the products cannot be sold in the United States, and FAI's profits are nonexistent.

FAI's unaudited reports show a retained deficit of $14,534,237. The company reported a cash balance of $987,753 at year-end, but its current liabilities exceeded its current assets by $176,129. The price of the company's stock has been volatile. The stock is considered a "penny stock" by the Securities and Exchange Commission because it is selling for less than $5 per share. Because of the company's deficit and its continuing needs for additional capital to support its research and development agenda, it has undertaken several creative strategies to minimize cash outlays, such as issuing stock to consultants in lieu of paying cash for their services. Management believes that the company's ability to stay in business hinges on its ability to attract more business partners and investors, and the market success of one of its products would greatly enhance the possibility of obtaining new investors or collaborators.

FAI's PRODUCTS

The company's greatest success stems from its development of a topical formulation of an anti-inflammatory drug. FAI hopes that this drug, called Flexagel, will capture the market once held by drugs such as Vioxx, which was pulled from the market because of dangerous side effects that were thought to cause cardiovascular problems. One significant advantage to FAI's formulation of the drug is that the topical formulation absorbs into the desired tissues without being significantly absorbed into the blood stream. This allows for increased effectiveness without the dangerous side effects experienced with the pill formulation of the drug. In fact, early tests have shown Flexagel to be 80 percent effective, as compared to an effective rate of 25 percent for the drug in pill form. Additionally, many individuals are more likely to use a topical application than to take pills because of the ease of use, improved effectiveness, and reduced side effects.

The company expects to begin the third phase of human trials for this drug later this year, an important step in gaining approval by the Food and Drug Administration (FDA) in the United States (U.S.). This phase is expected to last approximately one year. Drug trials go through several phases in the quest for FDA approval. Phase 0 utilizes a very small group of people and initially small doses of the medication to try to ensure the company does not move ahead with a drug that has harmful side effects. Phase 1 then uses a larger group of healthy participants and serves to determine the highest dosage that can be safely administered, to determine the ideal dosage, and to learn more about the effects of the drug (Seladi-Schulman, 2019). FDA statistics indicate that roughly 70 percent of trials will pass phase 1 and move to phase 2. In phase 2, the size of the participant group is greatly expanded from phase 1 and utilizes participants who have conditions that the drug is attempting to treat. Of the drugs that make it into phase 2, only roughly 33 percent successfully complete that phase and move to phase 3. Phase 3 involves even more participants, all of whom have the condition the drug is supposed to treat. In phase 3, the goal is to determine if the drug works at least as well as existing formulations to treat the condition and is as safe or safer than the existing medications. There is a success rate of approximately 25 to 30 percent in phase 3 with the drugs receiving FDA approval. Phase 4 is the final phase, completed after FDA approval, with the purpose of learning more about the effects of the drug (Seladi-Schulman, 2019). If all goes well for FAI, FDA approval of Flexagel for sale in the U.S. could be achieved within two years, but as the statistics show, the likelihood of any formulation reaching that final approval milestone is well below 50 percent. If approved, it will only be for treatment of knee arthritis. Approval is often easier to obtain in countries outside of the U.S., so FAI has already begun international marketing of the product. Last year, FAI obtained approval to sell the drug in Mexico for use with a wide variety of inflammatory conditions. Because phase 2 trials are almost complete, FAI does not expect any further modifications to the Flexagel formulation or dosage recommendations.

FAI currently has nine other drug formulations at various stages in its product pipeline. Two of these drugs have been approved for over-the-counter (nonprescription) use in Canada: a weaker version of Flexagel used as a topical analgesic and a nutritional supplement product. In addition, the company has three other topical formulations set to begin the first phase of human trials this year (one for treatment of eye infections, one for treatment of eye inflammations, and one for treatment of cataracts). FAI is also set to begin human trials this year for an intravenous sepsis drug, an intravenous pneumonia treatment, and an inhaled tuberculosis drug. The ninth drug is an alternative formulation of Flexagel that will be marketed through a new joint venture.

FINANCIAL REPORTING ISSUES

Stan had given Joe a great deal of background information on issues that needed researched. This year had been a busy one for FAI. The company signed an agreement with a privately-held company, Pharmaceuticals Management Inc (PMI), giving PMI exclusive rights to Flexagel and any variations of that product developed in the future, in all countries outside of Mexico and Asia, with FAI continuing to conduct clinical trials for Flexagel with the goal of achieving Federal Drug Administration (FDA) approval for the drug in the United States. This licensing arrangement provided FAI with a nonrefundable $1,000,000 payment at the start of the license agreement, as well as provisions for milestone payments totaling approximately $116 million dollars for conducting the clinical trials and obtaining the FDA approval, if those milestones are achieved. FAI will also receive royalty income of 12 percent of all the gross product sales. FAI had similar offers from other companies but felt that PMI was the most financially sound and showed the most promise for generating future royalties for FAI.

Milestone payments are common in the pharmaceutical research arena. They are payments set to be paid when significant research stages (milestones) are achieved. This agreement with PMI calls for a $3 million payment when phase two trials are completed, which is expected later this year. Another milestone payment of $40 million is to be paid after completion of the third phase of trials, and the remaining $73 million payment is to be made upon FDA approval (payable only if approval is obtained). Because the license grants PMI the rights to Flexagel in other countries besides the United States, their ability to generate profits from the sale of Flexagel is not totally dependent on obtaining approval in the U.S. PMI has strong financial backing and a record of success in marketing various medicinal drugs, so FAI is confident that all future payments due will be collectible. So far, the $1,000,000 has been received and has been recorded as income. The first milestone payment of $3,000,000 is still pending, but if phase two trials are completed before year-end, as expected, then the money will be received by FAI before year-end. The achievement of the other milestones is much less certain, given the relatively high number of drug formulations that do not make it successfully out of phase three trials. In addition, the contract gives PMI the right to cancel the contract upon 90-days' notice. If the contract is cancelled, all rights to the license revert to FAI and any amount paid to FAI before cancellation are not refundable, but no other compensation will be paid to FAI since it can continue the trials to its own benefit and license the product to another company. Stan is uncertain about how the upfront payment and the first milestone payment should be treated under the FASB's new revenue recognition rules.

The company also has an existing licensing agreement with Farmacéuticos Nuevos (FN), a Mexican company, for the manufacture and distribution of Flexagel in Mexico. The agreement is set at five years with a renewal option. Flexagel is currently approved in Mexico as a general anti-inflammatory pain medication. FN has just recently begun marketing the product, generating almost $25,000 in royalty income for FAI this year. The agreement calls for FAI to receive royalties of 15 percent of gross product sales in Mexico. The product has a lot of potential in Mexico, where the market for analgesic creams is roughly $80 million dollars per year. In addition, this year FN received approval in Mexico for the fourth phase of clinical trials to establish Flexagel as a proven treatment for osteoarthritis. If final approval is obtained, it could generate extensive profits for FN and a healthy flow of royalties for FAI. Approval could be obtained as quickly as later this year or early next year.

FAI also entered into a license agreement with another company, Advanced Innovations, Inc. (AII) for the exclusive rights to Flexagel in all of Asia. FAI will receive 5 percent royalties on AII's gross Flexagel sales revenues under the licensing agreement. This year, AII received approval to market the products throughout Asia. AII reported Flexagel sales of $690,000 during the year, but the associated royalties have not yet been paid to FAI. To date, no royalty income has been recorded on FAI's books, since no cash has been received. Stan wants Joe to research the revenue standards, again, to determine the proper timing of the revenue recognition for these license royalty fees for both the FN and AII agreements.

FAI's agreements with PMI, FN, and AII are all written and approved by FAI's legal team to ensure they clearly identify the rights of both parties, are properly approved by both parties, and that payment terms are clearly specified. In addition, FAI carefully screened the other companies to ensure they have the financial resources to pay FAI any amounts that come due under the contracts in order to avoid any collection issues.

In addition to establishing strategic licensing arrangements, FAI made a significant shift in business focus during the year. The company's management determined that FAI's strategic strengths, and therefore its priorities, should be in the development of innovative products, not in the marketing and sales of those products. As a result, another significant occurrence during the year was FAI's decision to discontinue the direct marketing and sale of all its products, including Flexagel. Instead, products will be promoted and sold to end users through third parties, such as PMI and AII described previously. FAI's marketing and sales costs were putting too much of a strain on the company's resources and represented a significant portion of the company's operations. Therefore, FAI abandoned this department, which was separately tracked and evaluated by management prior to its dissolution. The company will focus exclusively on its research and development activities and achieve its revenues through licensing and royalty arrangements with other parties who will market and sell the products. FAI will have little to no involvement in the direct sales and marketing of products going forward. Stan is wondering whether this would qualify for discontinued operations treatment on the income statement.

Stan provided Joe with the latest copy of FAI's income statements as shown in Table 1 in Appendix A. The company continues to show losses, but with the additional income streams this year the situation has improved. The licensing revenue reported in the income statement is the upfront payment from the PMI agreement. The royalty revenue represents the cash received for royalties on the sales in Mexico. Since cash was not yet received from AII, no royalties have been recognized from those sales. All the sales revenue and cost of sales for both years were derived from the direct sales of Flexagel that have now been discontinued. Other general and administrative expenses directly attributable to the direct Flexagel sales, included in the Table 1 amounts, were $162,842 in the current year and $200,345 in the prior year. Sales and marketing expenses related to direct Flexagel sales were $34,251 in the current year and $640,538 in the prior year. These costs are also included in the Table 1 amounts.

Stan has asked Joe to research and document the following issues. Put yourself in Joe's place and write a memorandum to Stan documenting your research and recommendations. Your memorandum should be formatted with the following sections for each issue:

1. Issue Statement. The issue statement should be a clear, concise, very specific question being researched.
2. Conclusion. This section should state very clearly what the company should do.
3. Analysis. This section should contain citations of standards pertaining to the issue being researched and analysis of how those rules apply to the facts in FAI's specific situation.

REQUIRED QUESTIONS

1. Has FAI properly recognized revenues in the appropriate period from the PMI agreement? Document your answer with appropriate references to the FASB Codification. Based on the information you have, what, if any, journal entries would you propose that the company make before year-end? Address the appropriate timing for recognizing the revenue from:
    a. The PMI agreement $1,000,000 nonrefundable payment (currently included in the unaudited income)
    b. The PMI agreement milestone payments (currently not included in the unaudited income)

2. Has FAI properly recognized revenues from the licensing agreements for royalty income? Document your answer with appropriate references to the FASB Codification. Address the appropriate timing for recognizing the revenue from:
    a. The FN licensing agreement royalty income (currently included in income to the extent cash was received)
    b. The AII royalty income (currently **not** included in income because cash has not been received)

3. Has the company properly accounted for the direct product sales and marketing activities, or should these be considered discontinued operations? Document your rationale, referencing the FASB Codification. If you believe they qualify as discontinued operations, what adjustments or reclassifications would need to be made to the income statement for it to be in compliance with Generally Accepted Accounting Principles (GAAP) in the U.S.?

INSTRUCTOR'S MANUAL

In this case, Joe Enterpriser, a recent accounting graduate, is asked by his supervisor to research some financial issues related to Formulation Advances, Incorporated's year-end reporting and upcoming financial statement audit. Issues include revenue recognition of license fees, royalties, and milestone payments in multiple stage contracts, and determination of criteria for discontinued operations. This case illustrates that financial accountants often need to research the proper treatment of complex transactions and formulate professional judgments in recording many transactions. By completing this case, students are exposed to this process in a way that fosters the development of critical thinking, research, and professional writing skills.

Case Overview

This case was inspired by historical financial reports of AlphaRx Inc. (AlphaRX Inc., 2006), going back to its fiscal year-ended September 30, 2006. This timeframe was chosen because of the complex and interesting issues reported in the company's financial statements at that time. However, the case narrative, characters, and facts are fictional as they were created to suit the instructional objectives of the case.

This case is designed to be used in an upper division or graduate level financial accounting course, or in a capstone accounting course. Because the case involves research into professional standards, students must have access to the FASB Codification. If students have not had prior exposure to the FASB Codification, it is suggested that some class time be devoted to showing students how to use the system and how to cite the standards. Instructors should avoid providing the students with too much direction in terms of exactly where to look in the standards for guidance in formulating their answers. It is important for students to learn to generate useful search terms and some learning by trial and error can help them hone their research skills. It is also the recommendation that instructors assign this case as a team project so that students can help each other navigate the research portion of the case and so that they can enhance their learning by engaging in discussions of the topics in order to formulate their opinions as to the proper conclusions they should form for this company's financial statements.

Learning Objectives

This case is designed to add a professional research dimension to an upper-level financial accounting course or graduate level accounting course. The learning objectives are for the students to be able to (Bloom's Taxonomy categories are provided in parentheses):

1. Apply professional research skills by successfully researching topics in the FASB Codification (Understanding, Applying)

2. Think critically in analyzing and evaluating issues that require judgment in evaluating facts and interpreting professional standards (Analyzing, Evaluating)

3. Demonstrate knowledge of financial reporting standards related to revenue recognition and discontinued operations (Understanding, Applying)

4. Demonstrate professional writing skills by creating a professional memorandum (Creating)

Discussion

Instructors who wish to incorporate presentation skills into the assignment can have the student teams present their results to the class. To shorten the assignment, the teams could each just present their results for one or two of the questions, with the questions being assigned so that each question solution is presented at least once in the class and the entire class can then discuss the solutions. It is recommended that written reports be required, though, in addition to presentations, rather than using the presentations as a substitute for the written analysis. A suggested rubric for the written memorandum requirement is included in Table 2 of Appendix B.

Case Efficacy

This case was initially used in an undergraduate capstone (advanced topics) accounting course and then was revised and used by two other professors in two different graduate level accounting courses: a capstone (controllership) course and an accounting theory course. The undergraduate students had already completed the Intermediate Accounting courses as well as one Accounting Information Systems course and one Auditing course. In addition to completing the memorandums, the students were required to present their results to the class. Students were asked to provide feedback on the case after the assignment was completed. The results of the survey are summarized in Table 3 in Appendix B. Overall, the feedback was quite positive, despite the students being pushed out of their “comfort zones” in doing the research and making judgments. Some students commented that they scored the questions about learning specific topics lower because they did not work on those particular questions—their teammates did. Some teams, rather than truly working as a team, divided the work by assigning one question to each team member. Those teams tended to have much less robust analysis than the teams that worked on all the research together and discussed the solutions as a group. Instructors should emphasize to students, when the case is assigned, the benefits of working as a team and ensuring all team members are involved in the entire case.

As a result of the student feedback from the three courses, two issues that were included in the case (stock warrants and a joint venture) have been deleted in this final version in order to make the case less onerous and less time consuming.

Those students who expressed some frustration with the case commented that it was difficult and time consuming. However, most students acknowledged that the challenging aspects of the case were a useful learning experience. For example, one student commented that “This case was very challenging, but I felt like it was beneficial in learning more about real-life accounting problems that I may encounter in the future.” Another student remarked “Overall I really like this case. At first it was really challenging because I didn’t know which rule applies to the situation. But after I read the rules thoroughly it made sense.” Other students echoed similar sentiments:

“That was not easy to get right answers, but it helped me to get into the real world.”

“I thought that this case was a good case because it was challenging in all aspects, but yet wasn’t unbearable.”

"The case was interesting to read about, and it was a bit challenging to dig up all the code sections since some of the code sections were so long."

"It was somewhat difficult to find the information I was looking for, but the case provided a lot of information about each respective topic making it quite beneficial to me as an accounting student."

Some students stated that they felt uncomfortable being required to make judgments where there were not cut and dried solutions. For example, one student wrote:

"I disliked the magnitude of this case. It felt to me like our group was overwhelmed with:

(a) Trouble finding an answer we could feel confident in, and
(b) Difficulty finding support from the code that was understandable enough to boost our confidence."

In addition to the student evaluations, the instructor performed a direct assessment of the student projects for each of the case learning objectives, using the rubric shown in Table 4 in Appendix B.

The results of the direct assessment of the undergraduates in achievement of the case learning objectives are summarized in Table 5 in Appendix B. This case was assigned early in the semester and students had only done one previous assignment involving research in the Codification. The assignment was a team assignment, with four students in each team, so the assessment is made at the team level.

Students were given some class time to meet with their teams. While most teams were able to find most of the correct sources, several of them had difficulty documenting a detailed analysis of how FAI's situation related to the standards in order to formulate their conclusions. In some cases, it was difficult to discern whether the true weakness was in the actual analysis or if it was more of a problem with them not understanding the level of detail and analysis that should be included in their documentation. It was a learning process for them. They were given similar assignments later in the semester and continued to improve their analysis and documentation with each assignment. Therefore, while this case provides a very worthwhile learning activity for students at the undergraduate level, faculty should expect to provide a good deal of guidance to the students regarding expectations if the students have not done research assignments before. Assigning the case as a team project gives the students an opportunity to debate the issues in their teams, provided that the teams do not just divide up the work. Allowing some class time for the teams to work with the instructor present helped to foster teamwork.

The case was also given in two different graduate level courses. The first course was the Capstone course of a Master of Accounting program, where nine students completed the case individually. Students in this course would have already had exposure to research techniques and various case-based pedagogical approaches. The second course was Accounting Theory, also in a Master of Accounting program. Most students in this course are in the first semester of their Master of Accounting program and, therefore, did not have as much background in professional research.

Overall, the graduate students in the capstone course appeared to get the most value from the case, most likely because most of them had already been exposed to research projects and all had previously taken advanced financial accounting courses. Using the same evaluation instrument, these graduate students provided the feedback, shown in Table 6 in Appendix B.

The average time for the graduate students to complete the assignment was approximately six hours. Graduate students' feedback included the following:

"I like the different areas that the case covered."

"I believe this case was really challenging and it covered a range of accounting issues. I did find it interesting; however, some scenarios were not easy to research."

"I liked how everything was laid out for the students and that the purpose of the case was not on trying to find the issues, rather the point was to try and improve our ability of solving certain issues."

"I really liked the ability to apply accounting rules and concepts to a case. I think it was an exciting way to learn about the standards. The only opportunity for improvement I could think of was to offer more supporting information related to the issues. It was difficult to make judgments based on the information given." This is one of the goals of this case—to introduce the students to "real world" problems that do not have easy answers. It is important for instructors to explain to students upfront that there will be judgment involved in coming to their conclusions. It is equally important to stress to them how critical good research and documentation is in supporting their conclusions. However, the case has been amended to include more details regarding the PMI contract in order to reduce ambiguity in regard to the revenue recognition process.

Table 7 in Appendix B shows the direct assessment for the graduate level students using the same assessment rubric as used for the undergraduate students (n=9). Overall, graduate students did well with the case. For the most part, they were able to find the appropriate topics in the FASB Codification, interpret them, and apply them correctly to the case. One student struggled with this process, failing to adequately identify the issues, as well as the appropriate research topics. The individuals who exceeded expectations did so in several areas. First, they identified all areas of the Codification that related to the research topics, not just the primary topic area. Instead, they specifically identified and discussed multiple areas of the Codification that were relevant to the case. Second, they used critical thinking skills to discuss the application of the Codification to the case by identifying how the result might change given a different set of circumstances. In addition, they were able to effectively walk the reader through their argument to a conclusion, using their research as support for each issue. Those "meeting expectations" did the same, but with less consistency and/or thoroughness.

The students in the second graduate level course (Accounting Theory) provided feedback as well, which is shown in Table 8 in Appendix B.

Some of the comments from students include the following:

"Need better hand holding on understanding the codification system. To a novice it still seems pretty misleading and severely unclear. Meaning the results that were found were also far from clear if they were the proper interpretation."

"I liked the variety of accounting issues the case presented. Having use the Codification only a few times, the case was a great opportunity to search and familiarize myself with the various sections within the Codification. I agree this case would be ideal for an advanced financial accounting course or a Masters of Accounting course."

"Overall, the case was very interesting and brought up good points that I enjoyed researching. Some points where hard to find and understand through the codification so maybe teaching how to efficiently look through the codification. I like that in part 1 the main question was broken down into different parts of the revenue recognition. It also made me understand concepts more in depth to be able to describe if I thought the company was accounting for them correctly."

“I liked how there was a lot of different situations affecting the company. This allowed us more practice in searching through the codification, but also to get a better understanding on these situations that a large business could actually face.”

“Overall, the case was interesting and brought up very unique topics. When it comes to researching the topic, it seemed as if each topic took you from one paragraph to the next to get more detail for each specific situation. While I have not been exposed to much accounting research, perhaps this is what it is like in real world scenarios. However, I appreciated that it brought the research aspect into the case and forced me to explore the codification. An improvement that I initially thought of was the unnecessary reading at the beginning of the case. To answer the questions, in my opinion, a lot of the background information is not needed.”

“The information, questions, and requirements were clearly stated and easy to understand. However, researching the answers in the FASB ASC was very challenging.”

“I thought it was interesting because it helped connect what we learned to real life application. It also helped me work on my research skills because this isn't something I have a lot of knowledge on.”

Table 9 in Appendix B provides the direct assessment of the second graduate level course. Given the assessments and the feedback for both graduate courses, it is apparent that students’ exposure to GAAP research in previous courses significantly impacts their comfort level with this case. In the Accounting Theory graduate course, many students commented on the fact that this is one of their first substantial research projects, while in the capstone graduate course, students have already been exposed to GAAP research in several courses. Instructors may wish to give more direction to the students in regard to research techniques and key words for researching when students have not had prior experience with this.

Suggested Solutions to Case Questions

The following discussion provides suggested solutions to each of the questions. These solutions provide guidelines as to the content that should be included in the student memos.

Question One

Has FAI properly recognized revenues in the appropriate period from the PMI agreement? Document your answer with appropriate references to the FASB Codification. Based on the information you have, what, if any, journal entries would you propose that the company make before year-end? Address the appropriate timing for recognizing the revenue from:

a. The PMI agreement $1,000,000 nonrefundable payment (currently included in the unaudited income)

b. The PMI agreement milestone payments (currently not included in the unaudited income)

Question One Answer

PMI has improperly recognized the $1,000,000 upfront payment for the Flexagel license. The amount that should be recognized in the current year is $34,188. Upon receipt of the first milestone payment at the end of phase 2 of the trials, the entire amount would be recorded as deferred revenue until the completion of the trials or termination of the contract.

Analysis

Revenue recognition for these types of contracts involves a lot of judgment, and as such, we suggest students be graded partially on their successful documentation of the appropriate citations and their application of critical thinking in drawing their conclusions, rather than judging them only on a predetermined conclusion.

FASB (2021) ASC 606 requires the application of a five-step process for revenue recognition arising from contracts:

1. identification of the contract with the customer. The contract must impose legally enforceable rights and obligations on the two parties.
2. identify of performance obligations required under the contract.
3. determination of the transaction price, which may include both fixed and variable components.
4. allocation of the contract price to the identified performance obligations.
5. recognition of the revenue upon satisfaction of a performance obligation.

Step 1. FASB (2021) ASC 606-10-25-1 specifies five conditions that must be met before a contract can be accounted for in order to meet the requirements of step one in the revenue recognition process. The first requirement is the approval of the contract by all contract parties and the commitment of the parties to complete their obligations under the contract. As stated in the case, FAI and PMI both approved a written agreement, thus meeting this first requirement. The second requirement is that the entity can identify the rights of both parties. The case specifically states that the company's attorneys ensured the contract identified these rights, so that requirement is met. The third requirement is that payment terms are identified. In this contract, the payment structure is clearly identified, with the upfront payment and requirements for receiving each of the milestone payments. The fourth requirement is that the contract has economic substance. Because FAI has received one significant payment already and will likely receive at least the second payment, its cash flows will be materially altered by the contract, thus giving it economic substance. The last requirement is that it is probable that FAI will be able to collect the amounts it is due. According to FASB ASC 606-10-25-1, the only concern is whether, when a payment is due, the other party would have the ability to pay it. Therefore, the fact that FAI may never reach the final milestone would not negate the fact that, if it does reach that milestone, PMI would have the ability to pay the amount due. The case specifically states that PMI has the financial ability to pay any amounts due. Therefore, the five requirements are met to recognize this contract.

Step 2. Identifying the performance obligation(s) in this instance involves judgment, but details have been added to the case to help guide students to the proper conclusions. The contract involves both the granting of the license to the drug and the contracted services to complete the trials to achieve FDA approval, so the key question is: Are these two distinct performance obligations or one performance obligation? It is unlikely that each milestone payment would be considered a separate performance obligation because they are all part of the testing process with the goal of obtaining FDA approval. According to FASB ASC 606-10-25-19, two requirements must be met for a good or service provided under a contract to be considered a distinct performance obligation. The first requirement is that the customer can benefit from the good or service by itself or by making use of other resources at the customer's disposal. The second requirement is that the provision of that good or service is "separately identifiable" within the contract. Per FASB ASC 606-10-25-21, to determine whether the components are separately identifiable, one key factor is whether the nature of the contract objective is to individually transfer each good or service or to transfer a group of goods or services that are inputs to one package. The standard cites that one indication that contract components are not separately identifiable would be if the combined bundle of the license and trial completion is really what provides the customer the value that they ordered (FASB ASC 606-10-25-21-a). Another consideration is whether the license and the trials are "highly interdependent or highly interrelated (FASB ASC 606-10-25-21-c)."

The license to use the formulation might appear to be interdependent on the success of the trials in order to bring the product to sale, but only as it pertains to the United States. However, PMI could bring the drug to market in other countries and benefit from the license in that regard, independent of FDA approval. There is a stronger argument for these activities being non-distinct when the drug formulation is in a very early-stage trial because of the potential for the drug formulation to need. With Flexagel trials appearing to be close to completion of phase 2 trials, the two should be determined to be distinct. According to PWC (2021), when a contract includes the transfer of a license and work to complete clinical trials, it is more common to treat the two as distinct because, as in regard to Flexagel, the purpose of the trials at this point is to validate the effectiveness of the drug, not to further develop and alter the drug formulation. Additionally, the license could be used separately by PMI because they could hire another company to conduct the trials, or they could conduct the trials themselves, as long as they had the license. And they could also market the product in countries outside of the United States. Therefore, the license has stand-alone value. Accordingly, the two should likely be treated as distinct performance obligations under the requirements of FASB ASC 606-10-25-19.

Step 3. According to FASB ASC 606-10-32-2, the transaction price is the amount the company expects to receive in exchange for what it provides to the customer, and this amount may include both fixed and variable amounts. In this case, the upfront payment would be a fixed amount, and the milestone payments would be considered variable consideration. In FASB ASC 606-10-32-8, variable consideration should be estimated using one of two methods (whichever one better predicts what will be received):

1. The expected value: the total of the probability-weighted amounts from a range of possible payment amounts.
2. The most likely amount: the amount that is most likely to be received from the contract.

For the type of contract that FAI has with PMI, where the payments are earned by achieving milestones in the FDA approval process, the "most likely amount" option is deemed more appropriate since there is not a range of outcomes, but rather the company either achieves the milestone or does not. In determining the most likely amount, according to FASB ASC 606-10-32-11, amounts should only be included in the transaction price if it is probable that there would not be a significant reversal of recognized revenue when any uncertainties regarding the variable consideration are resolved. Again, judgment must be used here. The upfront payment has already been received and is nonrefundable, so that should definitely be included in the contract price. The first milestone payment of $3,000,000 is expected to be received before year-end when phase two trials are complete. There is no expectation that the phase two trials will not be completed. Therefore, the $3,000,000 should also be included in the contract price. The second milestone payment is more questionable, because statistically, a relatively low percentage of drug formulations make it to the end of phase 3, and whether or not the trials reach the completion of the third phase successfully could be affected largely by circumstances outside of management's control (see FASB ASC 606-10-32-12). Therefore, this third payment should likely not be included in the contract price initially. FAI does not have a long track record of successfully achieving FDA approval for drug formulations, and the industry as a whole involves a large percentage of experimental drugs that never make it to market. As the trials progress, if it appears likely that the third phase will be completed, that amount would be added into the contract price at that time. The final payment for FDA approval is the most unlikely to be received at this point in time but becomes more likely if the third phase is completed successfully. Following this logic, the total to be considered as the most likely contract price as of the current year should be $4,000,000 (the upfront payment plus the first milestone payment), to be allocated to the performance obligations.

Step 4. If the student argues there is just one performance obligation under this contract, then to be consistent, they should state that no allocation would be required. If they argue that there are two performance obligations, which we feel is the appropriate answer, then the total contract price of $4,000,000 should be allocated to the performance obligations based on their relative stand-alone prices. The case indicates that other parties were willing to pay similar prices for the license, so it is reasonable to assume the contract amounts represent the stand-alone prices. Therefore, the contract price could be allocated between the two performance obligations based on the relative fair values of the performance obligations. The license ($1,000,000) represents .85 percent of the total value, which would result in an allocation of $34,188 of the contract price. The trials ($116,000,000) represent 99.15 percent of the fair value resulting in an allocated contract price of $3,965,812.

Step 5. According to FASB ASC 606-10-25-23, revenue on this contract would be recognized when FAI satisfies a performance obligation. For the license of Flexagel, the standards differentiate between a “right to access” versus a “right to use” license. FAI’s license granted to PMI would likely be determined to be a “right to use” license. This is because the intellectual property (IP) licensed by FAI to PMI would be considered functional IP since it has significant standalone functionality, and it grants PMI the right to use of the formulation. According to FASB ASC 606-10-55-63, revenue for the license would then be recognized by FAI at the point in time when the right to use the IP is transferred to the customer (PMI) and the period has begun in which the customer can benefit from the IP. Since this right was granted to PMI at the license signing date, it is appropriate to recognize revenue at that date. Students may argue that the true benefit of the license is after FDA approval, but it is important to note that FDA approval is only required in the United States and that PMI could get approval for Flexagel sales in other countries, and the functionality of the formulation is not expected to change over the period of the license. Deloitte (2020) supports our conclusion, as they state, “As discussed in paragraph BC58 of ASU 2016-10, the FASB expected that at the time of issuance of ASU 2016-10, the criteria in ASC 606-10-55-62 ‘will be met only infrequently, if at all.’ Consequently, revenue from a license of drug compounds and formulas that represents a distinct performance obligation would generally represent a right to use an entity’s IP and would be recognized at the point in time when control of the license is transferred to the customer.” Therefore, FAI should recognize the portion of the contract price allocated to the license as income in the current year. FAI incorrectly recorded the entire upfront payment and failed to allocate the contract price according to the standards. Therefore, an adjustment is needed in the amount of $965,812 to reduce the recorded revenue and create a liability for the unearned portion of the upfront payment, as follows:

Licensing Revenue	$965,812	
Unearned Contract Revenue		$965,812

For the milestone payments, according to FASB ASC 606-10-25-24, FAI must determine whether the performance obligation is satisfied at a point in time or over a period of time. The standards identify three criteria that would result in the obligation being satisfied over time. Only one of the three criteria needs to be met for this treatment. If none of the criteria are met, then the obligation is treated as being fulfilled at a point in time. Per FASB ASC 606-10-25-27, the three criteria are:

a. the company has a right to be paid for any performance completed and that performance does not give rise to an asset that has an alternative use for the company,

b. the company's customer receives and simultaneously consumes the benefits from the company as the company performs its work under the contract, or

c. the company's work either enhances or creates an asset that is controlled by the customer.

Because PMI would not receive any benefits from the trials unless the final FDA approval is achieved, it does not simultaneously consume the benefits as the trials are performed, so criteria "b" is not met. Criteria "c" is not met, because the trials are not expected to result in any change to the product, and PMI does not really control the product but has only paid for the right to use it. Criteria "a" is not met, because the contract explicitly states that if it is cancelled by PMI with 90-days notice, the license reverts back to FAI but FAI will not be compensated for work to date (other than previous milestone payments already received). Since none of these criteria are met, the performance obligation will be treated as fulfilled at a point in time, which would be at the completion of the trials or termination of the contract.

Question Two

Has FAI properly recognized revenues from the licensing agreements for royalty income? Document your answer with appropriate references to the FASB Codification. Address the appropriate timing for recognizing the revenue from:

a. The FN licensing agreement royalty income (currently included in income to the extent cash was received)

b. The AII royalty income (currently **not** included in income because cash has not been received)

Question Two Answer

FAI has properly recognized the royalty income from FN. FAI has not properly recognized the revenue receivable from AII and, therefore, an adjusting entry is needed for the royalty income earned but not yet received.

Analysis

FASB (2021) ASC 606-10-55-65 provides additional guidance for royalties and states that royalty revenue should be recognized in exchange for a license of intellectual property at the later of two events:

a. The subsequent sale or usage occurs.
b. The performance obligation to which some or all of the sales-based or usage-based royalty has been allocated has been satisfied (or partially satisfied).

FASB ASC 606-10-55-65A and FASB ASC 606-10-55-65B describe the necessity of the license being the predominant item to which the royalty relates; otherwise, the royalty should be treated as variable consideration. Since the case states that the company believes the license is the predominant item to which the royalties relate for both FN and AII, FASB ASC 606-10-55-65 can be followed for both contracts.

For FN, the performance obligation has been satisfied, so any subsequent sales should be recognized immediately. Because FAI has already recognized the royalty income related to the FN agreement, no adjustment is necessary.

The same applies for AII; however, since the royalty income for AII has not yet been recorded, an adjusting entry would be necessary to recognize the royalty income. With $690,000 of sales and a five percent royalty rate, the royalties earned totaled $34,500. The proposed entry would be:

Royalties Receivable	$34,500	
Royalty Revenue		$34,500

Question Three

Has the company properly accounted for the direct product sales and marketing activities, or should these be considered to be discontinued operations? Document your rationale, referencing FASB Codification. If you believe they qualify as discontinued operations, what adjustments or reclassifications would need to be made to the income statement for it to be in compliance with Generally Accepted Accounting Principles (GAAP) in the U.S.?

Question Three Answer

The company has not correctly reported these activities. The direct product sales and marketing related costs should be treated as a discontinued operation.

Analysis

FASB ASC 205-20-45-1B states that the operational results from a component of a company’s business that has been or is being disposed of, should be reported as discontinued operations if the disposal of the component represents a “strategic shift that has (or will have) a major effect on an entity’s operations and financial results.

In addition, FASB ASC 205-20-45-1C provides examples of strategic shifts that qualify as discontinued operations and includes a major line of business. In FAI’s case, the costs, revenues, and cash flows of the sales function are significant, separately identifiable, and have been abandoned as a result of FAI no longer pursing the direct sales of a business line. FAI will continue to develop the products but will have little to no involvement in the sales function; it will only receive royalties from the sales. Therefore, the criteria for discontinued operations treatment have been met.

Per FASB ASC 205-20-45-3, treating the elimination of the direct product sales as a discontinued operation requires that the income statement be adjusted to remove the sales revenue from the revenue section, and the related expenses from the operating expenses section. The net income or loss from the disposed segment should be reported separately, net of tax, after income from continuing operations. In addition, any gain or loss on the disposal should also be reported separately, net of tax. In this case, it does not appear that FAI incurred any gain or loss to dispose of the sales function. This will not impact the net loss the company has reported; it is merely a classification issue.

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APPENDIX A

Table 1 Income Statement Data		
	Current Year Projected Unaudited Results	Prior Year Results (Audited)
Royalty Revenue	$ 24,774	$ 4,302
Licensing Revenue	1,000,000	-
Sales Revenue	27,176	64,247
Total Revenues	1,051,950	68,549
Less Expenses:		
Cost of Sales	9,092	29,108
Research and Development	1,417,700	1,337,503
Sales and Marketing	94,140	661,559
Depreciation	74,307	54,077
Stock Based Compensation Expense and Warrant Amortization	968,837	2,009,920
Other General and Admin	942,757	851,310
Operating Income (Loss)	(2,454,883)	(4,874,928)
Interest Income (Expense), net	(67,410)	22,804
Income Tax Expense	-	-
Net Income (Loss)	($2,522,293)	($4,852,124)

APPENDIX B

Table 2 Rubric for Memorandum	
Criteria	Percentage
Memo is formatted appropriately.	5
Research issues are adequately identified.	5
Sense of audience is demonstrated through form and language. Technical language appropriate to the audience.	10
Adequate and proper authoritative sources are cited.	25
Connects ideas within the report to the facts of the case with complete justification for conclusions.	25
Conclusions are appropriately stated and supported by the documentation	10
Writing is free of errors in grammar, punctuation, capitalization, and spelling. Uses active voice.	10
Paragraph construction is logical and organized.	10
Total	100

Table 3 Undergraduate Student Reactions to the Case (n=33) Scale: 1=strongly disagree, 7=strongly agree	
I found this case Interesting	5.03
I found this case challenging	5.58
I learned a lot from working on this case	5.36
This case helped me improve my ability to effectively use professional accounting resources to research and analyze accounting issues.	5.88
This case helped me improve my understanding of the interrelationship of accounting subjects (financial accounting, auditing) in regard to real-world situations.	5.45
Working on this case helped me improve my skills in effectively communicating my ideas and the results of my research in writing.	5.39
Working on this case increased my knowledge of revenue recognition criteria.	5.15

Table 4
Rubric for Direct Assessment of Case Project Results

Learning Objective	Does not Meet Expectations	Meets Expectations	Exceeds Expectations
Applied professional research skills by successfully researching topics in the FASB Codification	Failed to identify the appropriate FASB sources for most of the issues	Identified adequate appropriate FASB sources for most of the issues and appropriately cited those sources	Identified the appropriate FASB sources for all significant issues and appropriately cited those sources
Thought critically in analyzing and evaluating issues that require judgment in evaluating facts and interpreting them in regard to professional standards	Failed to link facts to the conclusions; failed to document relevant sources; conclusions did not follow logically from facts or professional standards; misinterpreted the standards	Analysis was logical and based on the facts at issue. Most conclusions were appropriately stated and supported by the documentation.	Connected ideas within the report to the facts of the case with complete justification for conclusions; Conclusions were appropriately stated and supported by the documentation
Demonstrated knowledge of professional accounting standards for revenue recognition, discontinued operations, joint ventures, and stock warrants	Applied the wrong professional standards or incorrectly interpreted the standards.	Applied and interpreted the professional standards correctly for most issues.	Professional standards were interpreted and applied correctly for all issues. All conclusions rationally followed the professional standards discussion.
Demonstrated professional writing skills by creating a professional memo	Memo was unorganized, contained grammatical errors, was not properly formatted	Memo was reasonably well organized, was appropriately formatted, and contained only minor grammatical errors.	Memo was well written, organized in a logical way, was appropriately formatted, and was free of grammatical error. Appropriate professional language was used.

Table 5 Direct Assessment of Undergraduate Student Case Projects n=36 students			
Learning Objective	Does not Meet Expectations	Meets Expectations	Exceeds Expectations
Applied professional research skills by successfully researching topics in the FASB Codification	11.1%	77.8%	11.1%
Thought critically in analyzing and evaluating issues that require judgment in evaluating facts and interpreting them in regard to professional standards	44.45%	44.45%	11.1%
Demonstrated knowledge of professional accounting standards	0.0%	88.9%	11.1%
Demonstrated professional writing skills by creating a professional memo	11.1%	77.8%	11.1%

Table 6 Graduate Student Reactions to the Case: MAcc Capstone Course (n=9) Scale: 1=strongly disagree, 7=strongly agree	
I found this case interesting	6.11
I found this case challenging	6.44
I learned a lot from working on this case	6.22
This case helped me improve my ability to effectively use professional accounting resources to research and analyze accounting issues.	6.33
This case helped me improve my understanding of the interrelationship of accounting subjects (financial accounting, auditing) in regard to real-world situations.	5.89
Working on this case helped me improve my skills in effectively communicating my ideas and the results of my research in writing.	5.89
Working on this case increased my knowledge of revenue recognition criteria.	6.11

Table 7 Direct Assessment of Graduate Student Case Projects: MAcc Capstone Course (n=9)			
Learning Objective	Does not Meet Expectations	Meets Expectations	Exceeds Expectations
Applied professional research skills by successfully researching topics in the FASB Codification	11.1%	55.6%	33.3%
Thought critically in analyzing and evaluating issues that require judgment in evaluating facts and interpreting them in regard to professional standards	11.1%	66.7%	22.2%
Demonstrated knowledge of professional accounting standards	11.1%	55.6%	33.3%
Demonstrated professional writing skills by creating a professional memo	00.0%	66.7%	33.3%

Table 8 Graduate Student Reactions to the Case: Accounting Theory Course (N=16) Scale: 1=strongly disagree, 7=strongly agree	
The case was interesting	5.81
The case was challenging	6.25
I learned a lot from working on the case	5.56
This case helped me improve my ability to effectively use professional accounting resources to research and analyze accounting issues.	5.69
This case helped me improve my understanding of the interrelationship of accounting subjects (financial accounting, auditing) in regard to real-world situations.	5.56
Working on this case helped me improve my skills in effectively communicating my ideas and the results of my research in writing.	5.69
Working on this case increased my knowledge of revenue recognition criteria.	5.63
Overall, I thought this was a valuable case	5.69

Table 9 Direct Assessment of Graduate Student Case Projects: Accounting Theory Course N=16 students			
Learning Objective	Does not Meet Expectations	Meets Expectations	Exceeds Expectations
Applied professional research skills by successfully researching topics in the FASB Codification	0.0%	57.1%	42.9%
Thought critically in analyzing and evaluating issues that require judgment in evaluating facts and interpreting them in regard to professional standards	14.3%	57.1%	28.6%
Demonstrated knowledge of professional accounting standards	14.3%	57.1%	28.6%
Demonstrated professional writing skills by creating a professional memo	14.3%	71.4%	14.3%