FASB Revenue Recognition ASU 2014-09: Impact on the Software Industry

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Abstract

Revenue recognition standard ASU 2014-09 was issued by FASB to provide clearer guidance and improve how revenue is reported on financial statements. This has significantly impacted several industries, especially the software industry. It is discussed what FASB sought to change by issuing ASU 2014-09, and why ASU 2014-09 was issued. Software companies face significant challenges regarding revenue, so the new standard significantly impacted them. In addition, there was an analysis done regarding whether the standard helped provide better quality information for users of software companies' financial statements. Both professional research and the financial statements of two software companies were analyzed to determine this information. It was discovered ASU 2014-09 has ultimately improved the recognition of revenue for software companies by providing better quality information for users of financial statements, as the benefits of a consistent framework for revenue recognition outweigh the drawbacks of the potential for more aggressive revenue recognition.

Introduction

Revenue is an item of significant importance in a company's financial statements, and for many years inconsistencies across industries in accounting for revenue posed potential challenges to users of financial statements, with regards to comparability. When FASB published Accounting Standards Update 2014-09 relating to the recognition of revenue, it was designed to improve the quality of revenue recognition in order to provide more useful information to the users of financial statements. The IASB (International Accounting Standards Board) issued an update following the same principles as ASU 2014-09, IFRS 15. In addition to improving the general clarity of revenue recognition, it was also part of a joint effort by FASB and IASB to bring GAAP and IFRS standards more in line with each other. One of the major industries impacted by ASU 2014-09 is the software industry, due to complications faced with regards to accounting for revenue because of the nature of software itself. So, the research question to be answered is: "How has ASU 2014-09 affected how revenue is reported in software companies, and has the new revenue recognition standard accomplished what FASB sought to improve by issuing the standard?"

This research investigated what FASB and IASB sought to accomplish by issuing ASU 2014-09 and IFRS 15 regarding revenue recognition. Then, it examined challenges faced by software companies in determining how and when to recognize revenue. Next, existing professional research regarding the impact of ASU 2014-09 in the software industry will be summarized to understand the expected impact of the standard. Quantitative information will also be analyzed from specific software companies' financial statements impacted by ASU 2014-09. Finally, it will be determined if the implementation of ASU 2014-09 by software companies resulted in the improvement of revenue recognition, and what other significant changes occurred.

Methods

In order to discover this information, professional research was analyzed to determine the exact reasons why FASB issued ASU 2014-09 and what objectives FASB sought to accomplish by issuing the standard. Next, professional research was analyzed in order to determine the impact ASU 2014-09 was expected to have on software companies, in addition to outlining potential concerns regarding the impact of the new standard. Then, the financial statements of two publicly traded software companies were examined in order to determine the actual quantitative impact ASU 2014-09 had on the presentation of revenue, as well as what other significant qualitative information was disclosed. This showed how the adoption of ASU 2014-09 impacted the economic position of publicly traded software companies. All of this information was synthesized in order to determine if the adoption of ASU 2014-09 led to an improvement in revenue recognition in the software industry.

Background of FASB and IASB

Both the Financial Accounting Standards Board (FASB) and the International Accounting Standards Board (IASB) are organizations that attempt to ensure that publicly traded companies issue financial statements in accordance with their economic position. FASB and IASB are quasi-governmental agencies in the US and outside of US, respectively, that were given authority for standard setting due to the financial reporting requirements imposed by public companies by the government. The standards set by both reporting agencies are to ensure there is accountability between the managers of corporations and the public, which can own shares of the company through stocks. Technical accounting standards are developed by both agencies in order to provide assurance public companies are providing financial information in alignment with their economic position.

In the United States, the Securities and Exchange Commission, a federal agency responsible for overseeing the establishment of accounting standards, delegates the formation of public accounting standards to FASB, the Financial Accounting Standards Board, formed in 1973. FASB receives its authority from the SEC. Its mission "is to establish and improve financial accounting and reporting standards to provide useful information to investors and other users of financial reports and educate stakeholders on how to most effectively understand and implement those standards" (About the FASB, 2021). In alignment with this mission, FASB has developed GAAP (Generally Accepted Accounting Principles) which contain the codification for the rules of accounting standards. Periodically, FASB issues Accounting Standard Updates (ASU's) which are designed to reflect solutions to resolve potential financial accounting issues within the codification.

IASB (International Accounting Standards Board) is the international counterpart to FASB, which establishes the accounting standards primarily recognized outside of the United States, and was founded in 2001. It derives its authority from the IFRS foundation, and its purpose "is to provide investors with transparent and reliable information about a company's financial position and performance" (International Accounting Standards Board, 2021). To accomplish this, the IASB is responsible for setting the IFRS Accounting Standards and approving interpretations of the IFRS Accounting Standards. FASB and IASB have overall similar accounting standards, but significant differences do exist. Over the years, joint efforts have been conducted by FASB and IASB to work together to bring the standards closer together, including revenue recognition.

Issuance of ASU 2014-09 and IFRS 15

In October of 2002, FASB and IASB announced their convergence project of converging the US and international accounting standards, under the Norwalk Agreement. The goal of this project was to make existing financial reporting compatible and coordinate future plans to ensure capability (FASB, Memorandum of Understanding, 2006).

As part of this agreement, FASB and IASB conducted a joint project to address revenue recognition. The goal of the joint IFRS and FASB task force was to develop a more comprehensive and consistent framework for revenue recognition and increase the comparability of revenue across entities, countries, and industries (Streaser et al., 2014). FASB and IASB worked together to clarify the principles for recognizing revenue and to develop a common revenue standard for GAAP and IFRS. After working together for nearly ten years, the first exposure draft was submitted for review in 2010 for feedback and the final draft was released on May 28th, 2014 for ASU 2014-09.

Part of the reason it took so long to issue the updated standard was that revenue recognition under both GAAP and IFRS standards had significant issues that needed to be updated. Prior to 2014, revenue under GAAP standards was recognized under different requirements for specific industries and transactions, which resulted in similar economic transactions being accounted for differently. Revenue under IFRS standards IAS and IAS 11, the original IFRS standards for revenue recognition, were difficult to apply to complex transactions, and both standards lacked requirements for significant disclosures about revenue (FASB, ASU 2014-09). Consequently, both standards were in need of improvements, which ASU 2014-09 and IFRS 15 sought to solve. Both the overall resulting guidelines issued by FASB and IASB follow the same following general principles, although the discussion below focuses on ASU 2014-09.

Framework for Revenue Recognition Under ASU 2014-09

FASB sought to accomplish five goals by issuing ASU 2014-09. These goals, as outlined by FASB were to: remove inconsistencies and weaknesses in revenue requirements, provide a more robust framework for addressing revenue issues, improve comparability of revenue recognition practices across entities, industries, jurisdictions, and capital markets, provide more useful information to users of financial statements through improved disclosure requirements, and simplify the preparation of financial statements by reducing the number of requirements to which an entity must refer. The new requirements by ASU 2014-09 affected all entities, including nonpublic companies which had lacked any guidance under previous guidance. The effective period of ASU 2014-09 was initially Dec. 31, 2016, but changed to Dec. 31, 2017, making 2018 the first year the standard took effect.

The former revenue recognition approach was based on risk and reward: when the seller had transferred the risk and reward of the good or service to a buyer, then the seller had relinquished control and would record revenue. In addition, there were different revenue recognition guidelines for different industries, meaning that economically similar transactions could be treated differently due to the different accounting rules. Now, the focus of revenue recognition is when the buyer has assumed control of the good or service (Streaser et al., 2014). The core principle of ASU 2014-09 "is that an entity should recognize revenue to depict the transfer of promised goods or services to customers in an amount that reflects the consideration to which the entity expects to be entitled in exchange for goods or services (FASB, ASU 2014-09)". This core principle is achieved through five general steps:

1. Identify the contract(s) with a customer.
2. Identify the performance obligations in the contract.

3. Determine the transaction price.
4. Allocate the transaction price to the performance obligations in the contract.
5. Recognize revenue when (or as) the entity satisfies a performance obligation.

These general guidelines are consistent across all industries, and IFRS 15 outlines these same general principles. These new standards place more emphasis on management judgment and application of the principle, which means more extensive disclosures are necessary. The disclosures required to be provided are:

Exhibit 1

1. Disaggregation of revenue into categories that can describe how the nature, amount, timing, and uncertainty of revenue and cash flows are affected by economic factors
2. Information about contract balances
3. Assets recognized from the costs incurred to obtain or fulfill a contract
4. Information about performance obligations
5. Description of significant judgments used in recording revenue
6. Determining the timing of satisfaction of performance obligations
7. Transaction price allocation methods and assumptions

The focus on following general principles under ASU 2014-09 was a significant change from prior standards, meaning that public companies in some industries would be significantly impacted by the new standard and face major changes. How revenue was recognized for software companies according to the principles differed under the new guidelines. For example, under ASU 2014-09, more performance obligations are likely to be recognized, meaning that revenue will be recognized at different points in time, and costs incurred to obtain software contracts with customers may be capitalized instead of expensed (Peterson, 2019). These differences occurred due to the new steps to be followed when recognizing revenue.

Several significant changes were implemented relating to separating performance obligations, transaction price allocations, and recognizing revenue when a performance obligation is satisfied. Due to the complexity of different software arrangements, these aspects of revenue recognition can be challenging in the software industry. In fact, due to this complexity, additional guidance was issued by FASB specifically regarding the application of revenue standards in the software industry, ASU 2015-05. This update was issued to provide guidance related to cloud computing arrangements, including software as a service (SAAS). Prior guidance stated that organizations could capitalize the cost of software license and implementation costs, but provided little guidance for service only software contracts, and since contracts are often purchased as services, generally organizations would have to treat all costs as expensed as incurred (FASB, ASU 2015-05). So instead, organizations would choose to purchase perpetual license software, because these costs could be capitalized, a beneficial accounting treatment, while ignoring the non-accounting benefits of SAAS software, which FASB recognized and sought to rectify by the issuance of ASU 2015-05 (FASB, ASU 2015-05). This was to prevent the disparate accounting treatment of transactions that provided similar economic benefits to companies. ASU 2015-05 also clarifies what aspects of a cloud computing agreement are capitalizable in both software licenses, service contracts, and hosting arrangements. Further details of the different types of software licenses and the accounting treatment applied to them are outlined below.

Overview of Software Models

In order to better understand the challenges of revenue recognition in the software industry, first three different types of software models sold by software companies must be understood: perpetual licenses, software as a service (SAAS), and hosting arrangements. Most software products and services that software companies sell can be categorized into these three categories. A perpetual license of software is selling a permanent license to the software itself. It is a one time sale, and may not include future enhancements. From an accounting standpoint, it is a capitalizable asset for the purchasing company, and revenue is recognized upfront for the selling company, once the customer has control of the software. Software as a subscription (SAAS), is when a software company sells a license to software on a recurring basis for a period of time. This is considered a service contract, with revenue and expenses recognized over time for the selling and purchasing company respectively. The purchasing company does not own the software: they only pay for the license to use it. Therefore, revenue and expenses must be recognized over the period of the contract. The third method of selling software is in a cloud computing or hosting arrangement, which is the most common way software companies sell software. A hosting arrangement is defined as "an arrangement in which an end user of the software does not take possession of the software, but resides on the vendor or third party's hardware, and the customer accesses and uses the software on an as-needed basis over the internet" (FASB, ASU 2015-05). In this arrangement, there is a license for some element of the software, while the software service is provided over the internet. Depending on the details of the contract, these sales may be capitalized or expensed by the purchasing company, and the software company may recognize revenue upfront or overtime. The various components and services included in the software bundle sold mean that revenue recognition can be complex and require significant judgment to record accordingly.

Revenue Recognition for Software Companies

The different ways software can be sold are relevant when a software company enters in a contract to provide software to a customer. After the contract is identified with the customer, the second step in recognizing revenue for a software company is to determine whether there is a distinct license separate from services provided in the contract, fulfilling the step of identifying performance obligations (a promise to transfer a good or service). Separate performance obligations are goods and services that are considered distinct and not dependent on each other to be provided to the customer. The types of performance obligations will depend on whether it is a perpetual license model, SAAS, or hosting arrangement. If there are multiple performance obligations within the contract, implying that revenue must be recognized separately for each component. After the separate performance obligations are identified, the overall transaction price must be determined. Then, for each component of software recognized, selling prices must be determined or estimated for each element. These components include options to purchase additional software, other performance obligations such as post contract customer service, and all other goods and services included. The final step is to determine when control is transferred from the software company to the customer licensing the software, which then determines when revenue can be recognized for the company.

These steps are straightforward, but can be very complicated for software companies to determine due to the interaction between the different components of the contract. First a company must determine if it is offering a perpetual license, SAAS, or hosting arrangement. According to professional guidance,“SAAS arrangements typically do not meet the qualifications to be considered distinct because licensees do not obtain the right to use the software code on their own servers, thus these arrangements will result in revenue recognized over time in accordance with the criteria in ASC 2014-09” (Driscoll et al., 2021). Under these guidelines, SAAS revenues are recognized over time as they are not found to contain distinct licenses. However, under a perpetual license, all revenue is recognized upfront because it is a license for all portions of the software, giving customers complete control with the contract. Hosting arrangements, which contain elements of services to software licensed over time and potentially a license to software, present more complications. In a hosting arrangement, the entity should analyze the interdependence of the software and services, in order to determine how to account for the arrangement (Driscoll et al., 2021). If a license is involved in the service arrangement, it must be determined whether it is a distinct performance obligation (meaning it can provide benefits independent of other products within the contract), which means that some sort of hosting arrangement exists. The second step is that if it has been determined that a distinct license exists in the contract, implying it is a hosted arrangement, it then must be determined if the license is identifiable separately from other goods and services in the contract, by considering the following factors:

1. The extent to which the licensor performs significant integration services on the goods or services before the customer receives the goods or services
2. The effect two or more promised goods or services have on each other
3. The utility the customer can derive from each individual promised good or service.

The more interaction and dependency the services have on each other in a hosting contract the more likely the revenue will be recognized over time for the whole contract. However, if elements are found to be separate and distinct, it is likely that the license portion will be accounted for separately from the services provided. If a license is found to be contained within the contract, revenues should be allocated to the portion that is the license and the portion that is attributable to the services, and recognized at separate times.

After separate elements of the contract are determined, revenues are allocated based on the relative fair value of the contract elements: the price management would use for a deliverable if sold separately, consistent with company selling practices, even if the element is not normally be sold separately. This requires significant judgment, which has led to concerns over expected aggressive revenue recognition, because of the potential for higher fair values to be allocated to revenue recognized upfront. The required fair value allocation step means that significant judgment is required in determining the fair value of the separate components of a software contract in order to allocate the transaction price to different performance obligations.

Another concern about more aggressive revenue recognition was the switch from VSOE (vendor specific objective evidence) based selling prices to relative selling price method to determine relative selling prices. Prior to ASU 2014-09, software element prices were allocated between software and non-software components based on VSOE to provide their selling prices. A VSOE is the price of a deliverable when sold on the market, which requires ensuring enough sales are accumulated to prove the price is fair. In addition, the component must be sold separately in order to determine the VSOE. If it was not sold separately or not enough evidence existed, the price would be allocated based on the residual method. Under guidelines provided by ASU 2014-09, the relative selling price method is used, which is the price management would use for a deliverable if sold separately. While it has to be consistent with company selling practices, the component does not actually have to be sold separately, meaning that significant judgment is required in order for management to allocate a price to it (Munter 2018). Due to the less stringent requirements of using VSOE to establish relative standalone prices in determining prices, this leaves room for more aggressive revenue recognition as management determines the selling prices for components of the contract (Rick et al., 2016).

Management has an incentive to choose higher fair values of performance obligations to increase earnings early on, leading to potentially more aggressive revenue recognition, due to the benefits for management of recording more revenue earlier rather than later because of the variety of financial performance-based compensation provided to management. There have been concerns regarding this well before ASU 2014-09 was issued, and this has been a concern ever since the first exposure draft of ASU 2014-09 was published in 2010. According to Zhang: ““Firms have a natural tendency to recognize revenue early whenever possible, and research has found that early recognition makes reported revenue less reliable and less predictable” (Colson 2010). Specifically, ever since the rise of the internet, concerns have been brought up regarding aggressive revenue recognition and internet firms: “Moreover, Bowen et al. (2002) found evidence that Internet firms are more likely to use aggressive revenue reporting practices” (Colson 2010). Concerns regarding the potential to manipulate the recognition of revenue were addressed by an in-depth analysis of the financial statements of two software companies in order to determine what changes to revenue occurred when financial statements were retrospectively restated when ASU 2014-09 was implemented by software companies.

Analysis

In order to determine the impact ASU 2014-09 has had on public software companies, the financial statements of two software companies were examined from 2018 in order to determine the quantitative and qualitative effect of the new guidelines. The standard was to be applied retrospectively, meaning that past financial information presented needed to be adjusted to reflect the new accounting principle. This requires that the difference to retained earnings under the application of the new standard must be determined, and that new financial statements must be presented for the years after retained earnings is adjusted. In the case of revenue, revenue being recognized under multi-period contracts had to be analyzed to determine if it should be recognized upfront or over time, depending on elements of the contract. This means the quantitative impact to revenue can be determined from observing changes in the income statement and the balance sheet. In addition, significant disclosures management made about the impact of the standard, methods and judgements used, were examined as well.

The first financial statements analyzed were from Microsoft. Microsoft, one of the largest public software companies, is “a technology company whose mission is to empower every person and every organization on the planet to achieve more” (Microsoft Corporation, 2018 Annual Report). Microsoft generates revenue by licensing and supporting an array of software products, offering a wide range of cloud-based and other services to people and businesses, in addition to designing, manufacturing, and selling devices. These software products include Microsoft Office 365 and Microsoft Azure, among others. Microsoft’s most significant expenses are related to employee compensation, designing, manufacturing, marketing and selling products, data center costs, and income taxes. Microsoft’s net assets in 2018 totaled $258.8 billion.

The Management’s Discussion and Analysis of Financial Condition and Results of Operations section of Microsoft’s Annual Report, which provides information management feels is significant to disclose about their business, reveals several important items about revenue generated by the company. It states management adopted the new revenue standard on July 1st, 2017, and also found the new revenue standard had a material impact on the financial statements. Microsoft used the full retrospective method, restating each prior reporting period, showing the changes in revenue that occurred under the new standard. They state that starting in 2018, their financial statements reflect the new standards and have restated prior periods accordingly.

Under the Application of Significant Accounting Policies Section in the Management Discussion section, Microsoft states in its financial statements that “contracts with customers contain promises to transfer multiple products and services to a customer... determining whether products and services are considered distinct performance obligations that should be accounted for separately versus together may require significant judgment” (Microsoft Corporation Annual Report 2018). Microsoft goes on to explain that significant judgment must be used to determine performance obligations when cloud based services contain a license and cloud services, depending on the integration of the product, and also uses significant judgment when determining the standalone selling price when separate performance obligations are determined to exist in a contract. The use of significant judgment in determining performance obligations is a challenge that was expected to be faced by software companies when applying the standard, and this was a challenge that Microsoft revealed that it did indeed have.

Note 1- Accounting Policies in the financial statements contains several significant disclosures regarding the adoption of ASU 2014-09 and the recording of revenue, as presented in exhibit 1. Revenue is recognized upon transfer of control of promised products or services, and Microsoft enters into contracts that include various combinations of products and services, generally capable of being distinct and accounted for as separate service obligations (Microsoft Corporation Annual Report 2018). It reiterates the use of judgment in determining performance and SSP. Microsoft details changes to the recognition of revenue for categories of software, which can be categorized as perpetual license software, cloud-based/hosting arrangement software, and software as a service.

Revenue from licenses for perpetual license software, most significantly Windows 10, is recognized “at the time of billing and delivery to the customer, rather than over the life of the device" (Microsoft Corporation Annual Report 2018). This follows the process of revenue recognition for perpetual license type software. This was a change from how revenue was recognized previously, and was a significant change to how revenue was recorded for Microsoft under the new standard. Another change was to hosting arrangements, such as Office 365. For multi-year commercial subscription services that include a license and software assurance, perpetual licenses (referred to as on-prem by Microsoft) are considered distinct performance obligations when sold with software assurance, while software assurance revenue is recognized over time. Software assurance is a type of service that includes rights to new software and upgrades, and provides support, tools, and training to help customers use products more effectively (Microsoft Corporation Annual Report 2018). Revenue recognition for cloud services remained mostly unchanged, which include services that are provided on subscription basis, and that revenue is recognized over the contract period. When cloud services require significant integration and interdependence, individual components are not considered distinct, and all revenue is recognized over the period provided. One more important factor to note is that hardware sold by Microsoft is generally highly dependent on and interrelated with the underlying operating system, and cannot function without it; therefore hardware and software licenses are accounted for as a single performance obligation recognized when ownership is transferred (Microsoft Corporation 2018 Annual Report).

These changes to the recognition of revenue, for perpetual license type software and hosting arrangements, did result in more revenue recognized under ASU 2014-09 than prior guidance, which was expected. The main reason for this was because when a contract was determined to contain a separate performance obligation for the license portion, revenue for that portion was allowed to be recognized immediately, instead of gradually over time, increasing revenue recognized upfront. For Microsoft, this resulted in an increase of 6.6 billion to revenue in 2017, under the retrospective application of ASU 2014-09, which is 7.36% increase from 2017 revenue recognized under prior guidance. This contributed to a net income increase of 4 billion, leading to a change in diluted earnings per share of $0.54: from $2.71 to $3.25. In addition, accounts receivable also increased, driven by unbilled receivables resulting from the change to upfront revenue recognition. These increases were anticipated by professionals, and were quite significant quantitatively, as they had a material impact.

Other significant changes caused by the adoption of new recognition revenue standard included increased disclosures provided regarding revenue recognition. The categories of revenue from software and other services provided by Microsoft is due to the requirement under ASU 2014-09 to provide different categories of revenue recognition, which fulfills requirement 1 as seen in Exhibit 1. Microsoft disclosed more information regarding sales and allowances for contract balances and costs incurred to fulfill contracts, fulfilling requirements 2 and 3. Microsoft also described the different performance obligations regarding revenue, mentioned significant judgments used to record revenue, mentioned the timing of revenue obligations, and explained how prices were allocated, fulfilling requirements 4 through 7 in Exhibit 1. This increased information disclosed is significant to investors and users of financial statements, as more material information provided is beneficial when individuals are making decisions based on financial statements.

Before conclusions were drawn regarding if ASU 2014-09 was overall an improvement for software companies, another software company was analyzed as well, Commvault Systems Inc, a much smaller public software company compared to Microsoft. Commvault Systems is a provider of data protection and information software applications and related services. They had historically provided mainly perpetual software licenses to customers, but in 2018, began providing more software subscription services to customers (Commvault Systems Inc. 2018 Annual Report).

Regarding the accounting treatment of its software and services offered, Commvault concluded that it often provides software as a standalone intellectual property the customer can benefit from on its own, treating it as a perpetual license, and recognizing revenue when software is delivered/available to download. However, customer support revenue is recognized separately over the length of the customer support agreement. When contracts contain both customer support revenue and a perpetual license, Commvault must use judgment to allocate separate prices and record revenue. These challenges of determining whether a separate contract exists or not are issues that were expected to occur under ASU 2014-09. In addition, Commvault contains disclosures regarding allocating prices to multiple standalone performance obligations, and provides more information regarding the collection of revenue. It also discloses whether revenue is recognized on a residual or observable approach. These additional disclosures of information are significant and provide users of financial statements with more information regarding the determination and collection of revenues, which is helpful for users of financial statements.

In Note 3 to the financial statements, it is disclosed that the retrospective application of ASU 2014-09 resulted in a decrease to revenue 2017 of 5.75 million when restated, a decrease of 1.94%. This decrease, coupled with an increase in operating expenses, led to net income of $540,000 turning into a loss of $508,000. This decrease in revenue is the opposite of what was expected to occur to financial statements, showing that even if the standard makes it possible for more aggressive revenue recognition to occur, it may not happen due to the specific nature of some software companies. The most significant change to the financial statements due to ASU

2014-09 occurred to commission costs: these were now recognized as an asset and expensed over the time period of the contract, because the cost of obtaining the service contract is considered incremental and recoverable (Commvault Annual Report 2018). The addition of deferred commission costs on the 2017 balance sheet contributed to an increase of 30 million to net assets. While not explicitly stated by Commvault why revenue decreased in the disclosures, it can be inferred that one reason was that due to more revenue being allocated to service obligations and recognized over time, instead of allocated to contracts upfront, total revenue recognized was decreased as a result when restated.

Now that the financial statements of software companies and the effects of ASU 2014-09 on revenue recognition have been analyzed, it can be determined if revenue recognition improved under the new standard. The key determinant of whether revenue recognition has improved under the new standard for software companies is if the quantitative and qualitative information provided is more useful for decision making for users of financial statements. On a positive side, the consistent application of the principles of revenue recognition throughout the software industry and other industries improve comparability between financial information disclosed, which is a very important element of analyzing and comparing a company's financial statements. Also, the additional information disclosed regarding information about revenue is useful for investors as well, as they are better able to understand the different judgments and obligations regarding revenue.

One potential downside that occurred in the case of Microsoft was the increase to revenue resulting from the new standard, representative of how adoption of ASU 2014-09 may give software companies the ability to more aggressively recognize revenue. Based on the increase in revenue that occurred in Microsoft's financial statements, it is possible the standard has led to overall higher revenue recognition across software companies, although further research and analysis of companies financial statements would need to be conducted to determine the full impact. However, even though the standard did result in an increase to revenue for Microsoft, this will not negatively impact decision making for users of financial statements because the impact is expected to occur across all major software companies. In addition, there are cases like Commvault, where less revenue may be recognized, contrary to expectations of aggressive revenue recognition. Since the retrospective approach must be implemented by companies, investors can see the quantitative changes in revenue and other relevant accounts for themselves. Because it can easily be observed how software companies' financial statements are impacted quantitatively under the new guidelines, users of financial statements still have all the necessary information in order to make decisions regarding investing in the company. Ultimately, the standard is an improvement because it improves compatibility for software companies both inside and outside of the industry. Since all industries have to follow the same principles and similar transactions now will have the same accounting presentation and economic impact, it is a significant improvement compared to how revenue was recognized under the old standard.

Conclusion

In conclusion, the purpose of ASU 2014-09 was to improve the quality and consistency of information regarding revenue presented, which it has achieved. In spite of concerns regarding aggressive revenue recognition, the standard has overall resulted in increased disclosures presented regarding revenue recognition and provided a set of consistent principles that has led to an improvement in the comparability of financial information across industries. The case of Microsofts represents that aggressive revenue recognition could occur, but the case of

Commvault demonstrates this may not always be the case. A further, more detailed analysis of changes that occurred to revenue in a larger number of software companies under ASU 2014-09 would need to be conducted in order to provide more conclusive evidence regarding the likelihood of more aggressive revenue recognition. Even though revenue has the potential to be recognized more aggressively under the new standard, it does not overall impact the ability of users of financial statements to make decisions based on the information provided, and this potential downside is outweighed by the benefits of a comprehensive, consistent framework. Investors and users of financial statements receive improved quantitative and qualitative information because of ASU 2014-09, which was exactly what FASB sought to accomplish by issuing the standard, making it a significant overall improvement.

Acknowledgements

My goal with this project was to contribute to existing professional accounting research by adding to information available regarding the impact of ASU 2014-09 in the software industry. I believe that my increased understanding of the impact of ASU 2014-09 and the different types of software contracts will benefit me throughout graduate school and my professional career, and I hope the information provided in this thesis will benefit other interested parties as well.

I would like to thank my mentor in this project, Professor Donna Free, whose guidance helped me properly select my topic and provided with me invaluable feedback regarding any questions I had in my research. Her enthusiasm for accounting and its challenges was inspiring, and I appreciate her mentorship throughout my work on this thesis.

Appendix

Exhibit 2: Microsoft- Impacts to Previously Reported Results

Impacts to Previously Reported Results

Adoption of the standards related to revenue recognition and leases impacted our previously reported results as follows:

(In millions, except per share amounts)	As Previously Reported	New Revenue Standard Adjustment	As Restated
Income Statements			
Year Ended June 30, 2017			
Revenue	$ 89,950	$ 6,621	$ 96,571
Provision for income taxes	1,945	2,467	4,412
Net income	21,204	4,285	25,489
Diluted earnings per share	2.71	0.54	3.25
Year Ended June 30, 2016			
Revenue	$ 85,320	$ 5,834	$ 91,154
Provision for income taxes	2,953	2,147	5,100
Net income	16,798	3,741	20,539
Diluted earnings per share	2.10	0.46	2.56

(In millions)	As Previously Reported	New Revenue Standard Adjustment	New Lease Standard Adjustment	As Restated
Balance Sheets				
June 30, 2017				
Accounts receivable, net of allowance for doubtful accounts	$ 19,792	$ 2,639	$ 0	$ 22,431
Operating lease right-of-use assets	0	0	6,555	6,555
Other current and long-term assets	11,147	32	0	11,179
Unearned revenue	44,479	(17,823)	0	26,656
Deferred income taxes	531	5,203	0	5,734
Operating lease liabilities	0	0	5,372	5,372
Other current and long-term liabilities	23,464	(26)	1,183	24,621
Stockholders' equity	72,394	15,317	0	87,711

Adoption of the standards related to revenue recognition and leases had no impact to cash from or used in operating, financing, or investing in our consolidated cash flows statements.

Exhibit 3: Commvault Note 3- Disclosures Regarding Revenue

Commvault Systems, Inc.
Notes to Consolidated Financial Statements — (Continued)
(In thousands, except per share data)

	Year Ended March 31, 2017		
	As Reported	Adjustments	Recast for Adoption of ASC 606
Revenues:			
Software and products	$ 296,421	$ (5,753)	$ 290,668
Services	354,097	240	354,337
Total revenues	650,518	(5,513)	645,005
Total cost of revenues	85,192	—	85,192
Gross margin	565,326	(5,513)	559,813
Total operating expenses	565,097	(4,042)	561,055
Income (loss) from operations	229	(1,471)	(1,242)
Interest expense	(957)	—	(957)
Interest income	1,163	—	1,163
Equity in loss of affiliate	(958)	—	(958)
Loss before income taxes	(523)	(1,471)	(1,994)
Income tax benefit	(1,063)	(423)	(1,486)
Net income (loss)	$ 540	$ (1,048)	$ (508)

	March 31, 2017		
	Balance Sheet Data		
	As Reported	Adjustments	Recast for Adoption of ASC 606
Current assets:			
Trade accounts receivable	$ 132,761	$ 7,323	$ 140,084
Total current assets	$ 598,736	$ 7,323	$ 606,059
Deferred tax assets, net	$ 61,018	$ (10,790)	$ 50,228
Deferred commissions	$ —	$ 30,378	$ 30,378
Total assets	$ 802,967	$ 26,911	$ 829,878
Current Liabilities:			
Deferred revenue	$ 206,777	$ 2,322	$ 209,099
Total current liabilities	$ 285,595	$ 2,322	$ 287,917
Other liabilities	$ 3,934	$ 292	$ 4,226
Accumulated deficit	$ (239,974)	$ 24,297	$ (215,677)
Total stockholders' equity	$ 442,635	$ 24,297	$ 466,932
Total liabilities and stockholders' equity	$ 802,967	$ 26,911	$ 829,878

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