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# Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles

Kevin M. Wargo

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**Accounting for Change:  
Assessing Top-line Implications  
of New Revenue Recognition  
Principles**



Honors Thesis

Kevin M. Wargo

Department: Accounting

Advisor: Marsha Keune, Ph.D.

April 2017

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## Abstract

The impending implementation of new FASB guidance regarding the practice of revenue recognition will presumably alter the periodic presentation of top-line business performance. In anticipation of these impacts, this study seeks to isolate contractual business relationships within the automotive supply chain industry in order to illuminate certain changes and make financial statement users aware that corresponding adjustments may have to be made to their perception of revenue results. By outlining the differences between new and historical U.S. GAAP, and applying the anticipated quantitative effects of such shifts within a propositional study, I seek to produce conclusions that investors and analysts can use to better interpret current and future revenue data. Using historical company figures as a basis, incremental influences are applied to disaggregated portions of contract revenue, and final revenue figures are reconstructed to reflect the implications of new accounting guidance. This study displays the potential relative movement of these periodic revenue results as businesses transition away from their established accounting practices and into a new recognition model.





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## **Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles**

### **I. INTRODUCTION**

The financial accounting environment has historically been shaped by long sequences of detailed standards and prescriptive, industry-specific guidance. In fact, the current primary source of this guidance, the *Accounting Standards Codification* (the Codification), required five years of construction by an army of over 200 people before becoming effective in September 2009. This comprehensive collection of rules and procedures is authorized and produced by the Financial Accounting Standards Board (FASB or the Board), the broadly-recognized organization responsible for standard setting within the accounting profession. As a private, independent entity, the FASB strives to objectively promote financial reporting from public, private, and not-for-profit companies that is appropriate and useful for all users of financial information. The Board is comprised of seven members, all of which are required to sever ties with any conflicting interests while serving their five- to ten-year terms. Bringing background knowledge that ranges from public accounting to academic accounting education, the Board members supply diverse perspectives in their roles as standard setters.

By complying with the ultimate oversight of the Financial Accounting Foundation (FAF), accepting the counsel of multiple underlying advisory groups, and collaborating with the businesses that it guides, the FASB maintains the *Codification* with a large emphasis on transparency and inclusivity. It is through this lens that the FASB recognizes the dynamic nature of business and corresponding financial reporting practices. Accordingly, the Board appropriately revisits and periodically alters some of

the complexities within its guidance. As the accounting profession modernizes and managerial decision making becomes increasingly subjective, recent amendments have reflected a movement from stringency to flexibility.

One of these amendments appeared in September 2014 with the publication of FASB ASU 2014-09, Topic 606: *Revenue from Contracts with Customers* (Topic 606). Establishing new guidance for businesses pertaining to the practices of recognizing the fundamental figure of revenue, Topic 606 is a prime example of the aforementioned modification of Generally Accepted Accounting Principles (GAAP) from a strict, rules-based structure to an interpretive, principles-based system. In doing so, the FASB hopes to alleviate inter-industry gaps that have yielded inconsistencies between accounting practices for events that were essentially identical in economic nature. By publishing universally applicable procedures such as Topic 606, it hopes to strike a balance between freedom and consistency that makes the financial reporting environment more useful for stakeholders.

This particular publication regarding revenue recognition will be revisited and studied as the central focus of this project, as it is not only a leading representation of the evolution of the current financial reporting environment, but it is actually yet to be fully implemented in practice. Being in its infancy, Topic 606 can be studied and evaluated in its purest, most literal form. As previously mentioned, the increasing amounts of flexibility and interpretation within accounting practices tend to blur the connection between the foundational language of the Codification and the observable outcomes in practice. Although this environment of interest appears to be taking on a more interpretive character, the propositions of this project will indeed be guided “by the

book”. Approaching such an evaluation in this manner will presumably allow for the formulation of original conclusions regarding the impacts of just the FASB actions themselves. The principles applied in this study will therefore be unadulterated by any commonplace industry applications or incidental assumptions that may skew the analysis of the standard’s fundamentals.

With this confidence intact, the study is guided by the motivation of preserving the foundational responsibility of the FASB itself – maintaining transparency for users of financial statements. In order to illuminate the indirect connection between standard-setting authorities and eventual users of financial information, it is important to outline the actual economic impacts of broad, attitudinal changes in the regulatory environment. Such paradigm shifts are effectively concentrated in the terms of the updated FASB guidance publications. The manifestation and corresponding financial impacts of said terms can be illustrated via in-depth study and quantitative analysis of business results. Therefore, this project seeks to evaluate apparent shifts in authoritative strategy by concentrating the facets of new revenue recognition guidance, as presented in ASC Topic 606, down to observable changes in the financial performance of a business. By revealing the quantifiable effects of conceptual changes, conclusions of this project will hopefully expose the importance of new GAAP stipulations for businesses, their respective shareholding populations, and prospective investors who require accurate financial insight.

As a consistent staple within periodic financial reports, the revenue figure proves to be a viable key performance indicator. Regularly reported at the beginning of a company’s income statement, revenue is often referred to as a business’ “top-line” result



and represents all monetary inflows resulting from business activities. Revenue is not only an indication of performance in and of itself, but is also the foundation of a company's ultimate earnings calculation. This figure is tremendously important to company management and serves as a statistical driver of company policy, strategy, and overall decision-making. However, the major motivation behind this project lies not within inter-company reliance on revenue results, but rather the sentiment that periodic performance releases such as this can evoke within the community of investors and analysts that make-up the proverbial "street". Just as corporate management will have to work diligently to update current accounting procedures in order to coincide with new FASB guidance (a process that has reportedly been extremely costly and time-consuming to date), financial analysts tasked with covering said companies will similarly have to adjust their financial outlook to account for newly-imparted economic impacts on the top-line. Accurate understanding and perception of the financial reporting environment, especially during the periods immediately following substantial changes to GAAP, will be vital in the development of quantitative performance forecasts and estimates that so often guide investor expectations.

With shareholder sentiment strung so tightly to these estimates, market volatility can be spurred by even the smallest discrepancy between forecasts and reality. These phenomena, known as "earnings surprises", can materialize in stock price swings of many percentage points and therefore represent the potential dangers that lie within information that is not properly adjusted upon the implementation of new financial reporting guidance. Additionally, an understanding of the underlying influences on figures such as revenue could protect against situations in which simple accounting

adjustments could be mistaken for changes in actual company performance trends.

Whatever the source, this study is motivated by the perspective that the potential for misinterpretation and volatility in the wake of new guidance should be approached with serious concern.

Furthermore, the current adoption timeline pertaining to Topic 606 makes the timing of this project advantageous for targeted audiences. The period for new guidance implementation does not officially start until year-end 2017, with early adoption occurring throughout 2017 fiscal periods. Therefore, projects such as this may raise awareness among financial statement users before they could become susceptible to surprises attributable to this regulatory shift and corresponding economic influences.

Finally, since the quantifiable impacts of new GAAP on business results require significant analysis and professional calculation, the purpose of this study is not to try and directly forecast such changes. Rather, this research is intended to serve as an informational tool for the street as it digests the implementation of new revenue recognition practices within the business landscape. The increased amount of managerial flexibility inherent in new principles lends itself to a propositional study that reflects a range of potential outcomes. For illustrative purposes, potential changes and hypotheses will be concentrated within a singular industry, and more specifically, a singular business. However, the procedures of this study are highly-presumptive and are intended to be merely representative of general financial impacts as referred to in the motivations of the project.

## II. BACKGROUND AND DEVELOPMENT OF PROPOSITION

### *New Principles of Revenue Recognition*

In order to further illustrate the FASB's recent regulatory approach, this study applies focus to a singular piece of new guidance, issued in 2014, titled *Revenue from Contracts with Customers*. As previously referenced, this publication is indexed in the *Codification* under the number 606, and is therefore referred to as Topic 606 (FASB, Financial Accounting Standards Board. (n.d.)). The stipulations of these new accounting standards illustrate the modern tendency of the Board towards principle-based direction that can be more easily applied across the business spectrum. In developing the details of this topic, the FASB actually worked closely with the International Accounting Standards Board (IASB) to ensure that new practices of recognizing revenue would be consistent on a global level. By converging with this international standard-setting body, the FASB further showed its willingness to improve upon overly-specific standards that would have proven difficult to maintain as industries follow the trends of globalization. This project was years in the making before finally being published in September 2014. Topic 606 adds another dimension to the modern, increasingly-interpretive financial reporting landscape to which companies must start to assimilate. Managers will have until the first fiscal periods of 2018 to fully implement new practices.

The most vivid representation of the "interpretive" nature of this new Topic 606 can be seen in the simplicity of the intentions behind it and the subjectivity of the five-step model that it proposes regarding revenue recognition practices. The objectives of the FASB and IASB (the Boards) in taking on this project included establishing the principles necessary for the promotion of useful financial information for financial

statement users, especially as it pertains to the nature, timing, and uncertainty of revenue from contracts with customers. Although this focus may appear broad and generalized, the Boards believe that their new standard will provide a more robust framework for evaluating revenue issues, increase comparability between companies, industries, and markets, and finally, require more informative disclosures in the financial statements regarding the economics of contract revenue (FASB, Financial Accounting Standards Board. (n.d.)). Falling in-line with the principles-based focus of modern regulation, the FASB believes that all of these intentions can be summarized in one central principle – to recognize revenue in a manner that appropriately and transparently depicts the transfer of goods or services to a customer in an amount that reflects the consideration to which the entity expects to be entitled in exchange for those goods or services (ASC 606-10-10-2). To achieve this simple principle, companies will implement five-steps in their revenue recognition approach and interpret each facet in a manner that they see as most transparent and truly representative of the economic happenings within contracts with customers. These five steps include (ASC 606-10-05-4):

- 1) Identifying the contract
- 2) Identifying performance obligations<sup>1</sup> in the contract
- 3) Determining the transaction price
- 4) Allocating the transaction price to performance obligations
- 5) Recognizing revenue when the company satisfies performance obligations

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<sup>1</sup> A performance obligation is a promise in a contract with a customer to transfer an asset (such as a good or a service) to that customer.

While the determinations inherent in this model are discretionary at the company level, the FASB has published guidance that promotes consistent implementation and, therefore, comparability among company financial reports. This guidance, along with supplementary publications from professional organizations eases the initial digestion of the standard and supports proper industry application (KPMG, PwC).

### *Identifying the Contract*

A contract is defined as an agreement between two or more parties in which there exists enforceable rights and obligations. This definition effectively permeates the rest of Topic 606 as the stipulations of the model apply only to contractual dealings with customers that meet specified criteria. This facet may require further interpretation regarding the combination or modification of contracts. FASB literature includes the requirements relating to such actions in order to promote the proper identification of accounting units within a contract, and, therefore, the accurate application of the revenue recognition model as a whole (ASC 606-10-05-4a).

### *Identifying Performance Obligations*

The second step of the model outlines the determination of contractual promises. If each of these undertakings includes the transfer of distinct goods or services, they are to be accounted for separately throughout the life of the contract. A good or service is deemed to be distinct if the customer can obtain substantial benefit from the product in and of itself or in combination with other readily available resources. Additionally, the supplying party's promise to deliver such products must be separately identifiable<sup>2</sup> from

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<sup>2</sup> Goods or services are to be considered separately identifiable if the context of the contract stipulates the transfer of such products as individual outputs. In other words, the goods or services are not merely used as

other portions of the contract. Once determined to be possessing these characteristics, contractual obligations and the corresponding revenue amounts attributable to them can be recognized either instantaneously upon satisfaction or over time if further criteria are met (ASC 606-10-05-4b).

#### *Determining the Transaction Price*

The transaction price represents the amount of consideration that the supplying party expects in return for transferring the promised goods or services. This final amount can be influenced by multiple factors including variable amounts and/or natures of consideration, as well as the time value of money for contracts possessing significant financing terms. Variability regarding customer consideration stems from the existence of payment forms other than cash or, more prominently, the inclusion of supplemental payment or discount contingencies. These variable amounts are to be included in the original transaction price to the extent that they are judged to be probable and estimable<sup>3</sup> (ASC 606-10-05-4c).

#### *Allocating the Transaction Price*

After satisfying the preceding steps, entities are required to allocate the total selling price to the individual performance obligations that make up the contract. This allocation is made on a proportional basis according to the relative standalone selling prices of each distinct obligation. This standalone price may be directly observed and applied or simply estimated by entities. In regards to variable amounts described in the

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inputs in integration, modification, customization, or other interrelated activities with other inputs to produce and deliver the ultimate output expected by the customer. (ASC 606-10-65-1)

<sup>3</sup> Entities are called to estimate amounts of variable consideration via an expected summation of probability-weighted amounts or a singular determination of the most likely outcome.

previous section, they may be applied to one or more, but not all, obligations only if said obligations meet certain criteria regarding their standalone nature (ASC 606-10-05-4d).

### *Recognizing Revenue*

The amount allocated to performance obligations is recognized as revenue when an entity satisfies the promise at a point in time or as the entity satisfies the promise over time. Satisfaction of an obligation is defined as the transfer of control of a good or service to the customer. That is, the customer obtains the exclusive ability to direct the use and reap the remaining benefits of said good or service. This determination of control is paramount in properly accounting for obligation satisfaction and constructing the resultant revenue recognition timeline (ASC 606-10-05-4e).

### ***Isolating and Observing Industry Applications***

While the structure of this new standard is intended to simplify overall revenue recognition guidance and support the comparability of financial statements between industries, some entities may face challenges when implementing this new treatment of customer contracts. Namely, the construction, software, and automotive industries will be expected to execute extensive decision making and effective management surrounding the implementation of Topic 606 (KPMG). Analysis of the FASB language and the included revenue recognition model will be necessary for a smooth transition into actual industry application of the principles. In correlation with the stated motivations of this project, one industry, and more specifically, one company, will be isolated for study in order to gauge and illustrate the potential impacts of new revenue recognition practices on top-line financial results.

The automotive supply industry will serve as the focus of this study due to the typical existence of contractual relationships between the two parties of the industry – suppliers and original equipment manufacturers (OEMs). Suppliers serve as the initial manufacturing entities in the automotive supply chain, designing and building parts to be included in the follow-on assembly of a vehicle. OEMs include the recognizable automotive companies such as Ford or General Motors that purchase parts from suppliers in order to construct the final vehicle. Therefore, the revenue recipient party in this relationship, and consequential subject of any new revenue recognition impacts, is the supplier entity. Sevcon Inc. (Sevcon or the Company) will serve as the specific supplying entity focus for this study. Sevcon is a public electrical engineering company (NASDAQ Ticker: SEV) that supplies innovative technology for electric vehicle manufacturers. The company's historical financial statements and current business proceedings will be observed and used as the basis for an analysis of the impending five-step model.

Sevcon proves to be an appropriate company for observation due to its size, product-orientation, and transparency regarding contract engagements (Sevcon, Inc.). Under the Sevcon name, the company designs and sells motor controllers for zero-emission electric and hybrid vehicles (EVs). The controls are used to vary the speed and movement of vehicles, to integrate specialized functions, and to optimize the energy consumption of the vehicle's power source. Sevcon's customers include manufacturers of both on and off-road vehicles, but most of the company's current growth catalysts exist within the on-road automotive sector where they continue to sign new business via contractual agreements.



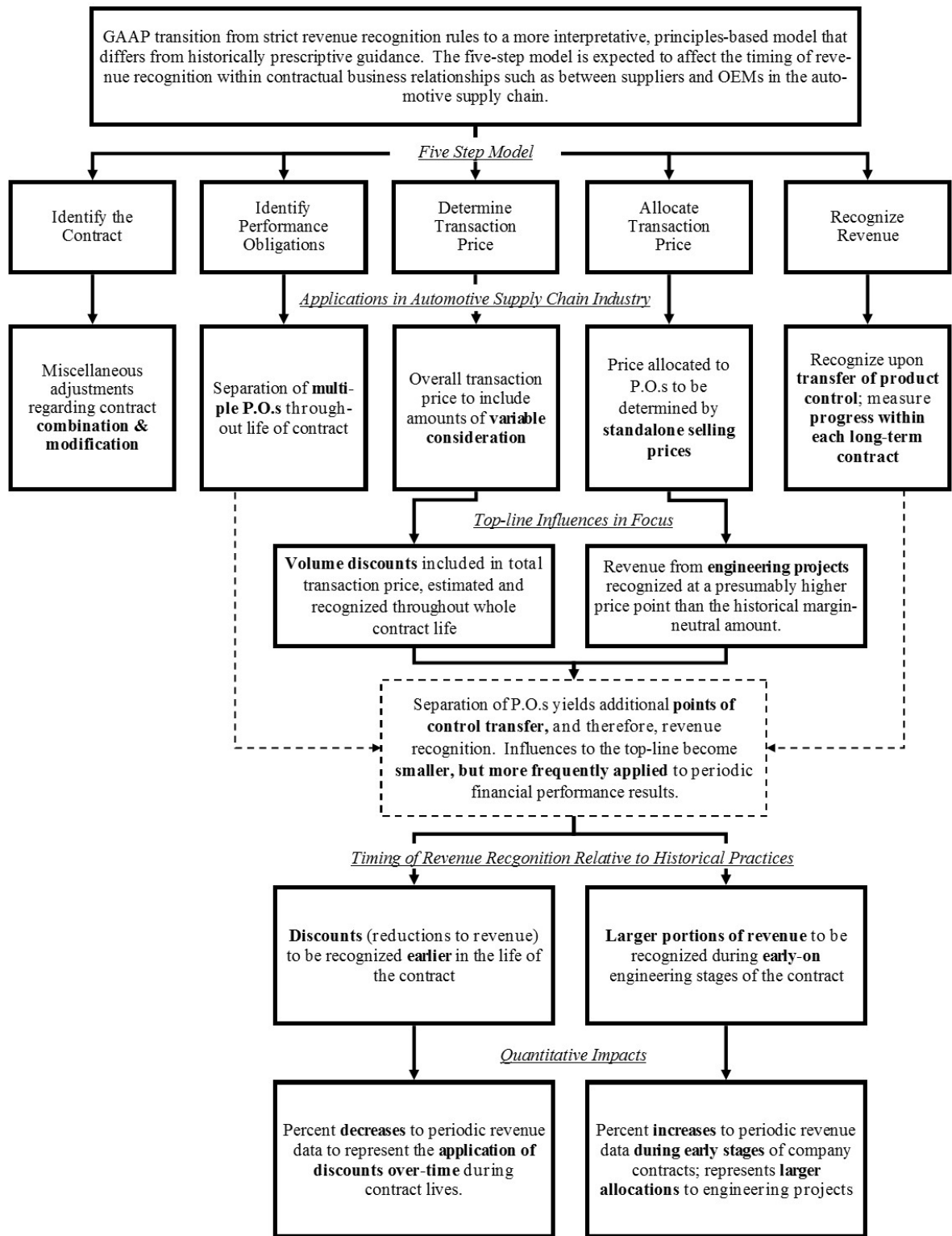
In regards to the company's size profile, Sevcon, Inc. currently operates at a market capitalization of approximately \$45 million, classifying it as a small, "Nano Cap" stock. When considering a small corporation such as this, the magnitude of its periodic revenue figures, and any volatility therein, quickly come into focus. With average quarterly revenue of about \$9.5 million, Sevcon possesses a financial profile that will pronounce any fluctuations caused by just one or two influences on recognized quarterly revenue. In addition, a relatively small number of booked contracts represents a large portion of aggregate revenue amounts. Therefore, this corporation will serve as a great subject of study as opposed to a larger, more diversified company where individual contracts (and the effects of new standards) become heavily diluted within the overall revenue figures on the financial statements.

The final technical characteristic that supports Sevcon as a suitable subject company lies within the specialized nature of the products that the company produces. Since the controller products that Sevcon produces are usually customized for specific vehicles, such products may not possess a significant potential for standalone sales. According to the Topic 606 literature, if the distinct goods or services delivered under contracts are not regularly sold on a standalone basis, any variable consideration (i.e. discounts) applied to the transaction price must be allocated to all performance obligations, rather than to one or two that are specific to the good or service (ASC 606-10-55-1a). Assuming Sevcon management applies a similar interpretation of this portion of the standard, discounts applied to the transaction price will be allocated to all performance obligations and, therefore, will impact all revenue recognitions throughout the life of the contract. This specialized product profile, and the resulting accounting

approach, potentially makes a company like Sevcon more susceptible to changes within new principles regarding variable consideration. This, among other influences, will form the foundation of the propositional study that will present quantifiable impacts that could be useful for financial statement users.

**Project Map**

Upon the establishment of background material and context in regards to the new standard, this project directly explores the possible implications of Topic 606 that may be observable within the Company's financial statements. This propositional stage of the project is centered on the five-step revenue recognition model and focuses on two provisions that could significantly influence periodic topline results for a public company such as Sevcon. To illustrate this portion of the study and provide a referable outline of project organization, the following graphic has been constructed.



**Top-line Influences in Focus: Variable Consideration**

Within a long-term automotive supply contract between a supplier and an OEM, the concept of variable consideration can materialize in multiple ways that will ultimately affect the overall transaction price to be allocated over the life of the contract. For Sevcon and other suppliers, customer incentives, such as volume discounts, can be triggered within contractual deals and result in an essential reduction to the total price. Topic 606 will require that conditions such as these, which are expected to manifest over the contract period, will have to be reflected in the original estimation of compensation. Rather than account for said discounts as they are accepted by customers during the contracted project, supplying entities will have to include them upfront. Therefore, the entire timeline of performance obligations, and corresponding revenue recognitions, may inherently reflect a portion of any volume discounts that were estimated as part of the transaction price. Compared with current GAAP, which delays the recognition of discounts until actual qualification by the customer, this adjusted practice will most likely result in an overall earlier reflection of discounts within financial results. Further understanding the details of this fundamental change may help investors and analysts to clearly and consistently identify possible reductions to the top line caused by the blanket allocation of variable consideration.

When the promised consideration of a contract includes a variable amount due to the presence of volume discounts or other reductions to full-price compensation, the selling entity needs to estimate the net amount to which it will be entitled upon the transfer of goods or services to the customer. Any variability present in the overall consideration tied to the contract may be stated outright in the contract literature or will

be considered inherent to the contract if the customer carries a valid expectation that the supplier will accept consideration amounting to less than the fully-stated price due to customary business practice, published policies, or specific statements (ASC 606-10-32-7). Once it has been established that the supplying entity will offer a price concession of some sort when certain conditions are met, it is its responsibility to estimate the amount of such a concession that will then be included in the overall estimate of the contract price.

There are two methods by which an entity can estimate variable consideration for the purposes of including it in the transaction price. Depending on which method is deemed to be more properly reflective of the expected consideration entitlement, entities will employ either an “expected value” method or a “most likely amount” method. The expected value method entails a summation of probability-weighted amounts stemming from a range of variable consideration amounts that entity has determined to be possible. This method may be most applicable in a volume discount situation where the total amount of price concession will vary based on certain thresholds that the customer can meet. The alternative, the most likely amount method, reflects the single most likely amount of consideration that for which the customer will qualify during the contract period. This strategy may be more appropriate for a variable arrangement with two mutually exclusive outcomes, such as qualifying for a rebate or not qualifying. After a supplier has adequately estimated the amount of variable consideration present in the contract agreement, this amount is included in the total transaction price, which will serve as the basis for revenue allocation over the contract’s life.

By including the estimated amount of variable consideration in the total transaction price, suppliers will effectively bear these price concessions over a more elongated timeline under new revenue recognition guidance. Consistent with the five-step model included in Topic 606, the transaction price (including variable consideration) shall be allocated to performance obligations and recognized as these obligations are satisfied, whether over time or at specific times. Compared to historical recognition strategies that involved recording volume discounts and other such concessions at the point in time when customers qualified for them, new principles call for a longer-term recognition strategy by which a fractional portion of the overall estimated discount amount will be applied whenever positive revenue is recognized. As mentioned in previous detail, when studying companies such as Sevcon in this context, a broad allocation is applicable to all performance obligations due to the specialized nature of its products. Furthermore, the establishment of a potentially large number of performance obligations within contracts, and even multiple stages of “over-time” completion within each of these obligations, points to an accounting pattern that includes more frequent recognition of allocated revenue, and therefore, variable consideration.

Considering the net timing impact of this allocation effect, it appears most likely that variable consideration amounts will essentially be recognized earlier in the contract period than if they were reserved until customer activity triggered such concessions to be included in revenue figures. Supply contracts often include multiple stages and sets of performance obligations that are satisfied long before control of the final product is actually transferred to the customer and volumes reach any traditional threshold for recognition of discounts. For this reason, one can make the assumption that the presence

of variable consideration amounts in each and every occurrence of revenue recognition from contract commencement to project completion will produce a net effect that accelerates the recognition of price concessions within the contract timeline. This shift in timing is a top-line influence that financial statement users need to correctly anticipate if they are to completely understand the revenue profiles of a company such as Sevcon.

**Top-line Influences in Focus: Engineering Allocation**

The early stages of contractual automotive supply projects that occur before product delivery often involve an array of pre-production activities. These activities may include the construction of prototypes, the design of future production processes, or the molding of certain parts and tools necessary for follow-on production. Revenue for these essential activities, usually referred to as “tooling” or “engineering” arrangements, has historically been recognized separately from any succeeding manufacturing work. Compensation for this initial work is typically conveyed to suppliers via separately-stated payments or as a portion of the ensuing part production contract price. Under the new five-step model and corresponding performance obligation structure, what may have been historically accounted for as a separate engineering contract with its own unique payment schedule will now effectively be combined with follow-on production contracts, each facet becoming performance obligations under the umbrella of a single, comprehensive agreement. Furthermore, even revenue recognition for those arrangements that include engineering compensation as part of succeeding production contract prices will be altered due to changes in the amount of compensation allocated to pre-production stages. This adjustment stems from the spread between supplier’s cost for said project stages and the actual standalone selling prices of such services. The completion of engineering phases

will likely be a separate performance obligation (triggering revenue recognition), and any related increase in the amount of transaction price allocated to this phase could shift revenue recognition earlier in the timeline.

As evidenced in the analysis of the five-step model, standalone selling prices serve as the basis for proportional transaction price allocation. This price is defined as the price at which an entity would separately sell a promised good or service to a customer (ASC 606-10-20). The definition points to the interpretive approach that the FASB seeks to promote with these new principles. For example, while the stipulation regarding price allocation and standalone prices does indeed exist as a directive, the determination of prices and, therefore, the application of the principle requires the discretion and decision-making capacity of corporate management. This portrays how accounting authorities seek to strike a balance between substantial guidelines that promote comparability among financial statements and newfound flexibility that serves to alleviate the historically strict, prescriptive nature of the accounting landscape.

Moreover, relative standalone selling prices of goods and services involved in a supply contract create the foundation of the price allocation structure under the new five-step model, and use of these prices when allocating the transaction price to pre-production obligations creates some significant change in revenue recognition. When stated as separate contracts, or even when included as part of succeeding production contracts, these pre-production activities are historically allocated revenue equal to cost for the supplier. Pricing these projects at cost made these phases margin-neutral for suppliers, meaning that they did not realize any profit from the pre-production activities. As market prices are presumably above the cost basis, the practice of allocating total



transaction price based on relative standalone selling prices will effectively elevate the amount of revenue attributable to these engineering phases. Under the new model, engineering activities will realize some margin equal to the spread between the service's standalone price and the supplier's cost. The broader impact of this adjustment is a transfer of margin away from the later production stages of a contract and towards the earlier engineering obligations.

Similar to the previously discussed influences stemming from variable consideration treatments, the impact of a new pre-production revenue recognition structure is amplified by the other provisions of the five-step model that call for the establishment of multiple performance obligations and a recognition of revenue upon any transfer of product/service control within each obligation. An increased number of performance obligations and corresponding points of revenue recognition produce an accelerated revenue timeline for suppliers in which periodic top-line results could reflect portions of contract revenue earlier than they have under historical GAAP (see, *Project Map*, p. 15). Shifting price allocations earlier in the contract timeline could have a material impact on revenue in a multiple customer engagement context.

When considering companies such as Sevcon, financial statement users should not only be aware of influences related to the identification of performance obligations and allocation of transaction price to these obligations, but also the aggregate effects on company results when accelerated revenue recognitions are possibly offset by other changes such as the accelerated price concessions that were previously detailed. With the technical context of the key influences of the five-step model established, these possible influences can be examined at varying degrees on a company-specific level. Upon

executing this examination, this study will provide a quantified indication of possible top-line fluctuations created by underlying changes in accounting practice.

#### *Proposition Statement*

The combination of changes to the revenue recognition landscape, some of which have been presented in detail in this study, have the potential to significantly influence the periodic top-line financial results of supplier companies in the automotive supply-chain industry. Depending on certain judgments and determinations of company management, as well as the extent to which the stipulations of the five-step model are situationally applicable, said changes could increase or decrease periodic revenue figures relative to the same figures calculated following historical accounting guidance. Varying degrees of change within the quantitative portion of this study will represent the possible spectrum of impacts that changes to contract revenue timelines driven by Topic 606 could have on aggregate top-line results.

### **III. PROPOSITIONAL STUDY METHOD AND ANALYSIS – SEVCON, INC.**

#### **Foundational Data**

To appropriately and logically assess the impact of five-step influences on Sevcon's periodic revenue figures, the first step of this study was to identify a single work contract, and use its inherent stipulations as the basis for quantitative manipulation. Sevcon's recent business agreements were compiled and outlined according to the data present in 10-Q and 10-K Securities and Exchange Commission (SEC) filings from the 2015 and 2016 fiscal years. From this list, a particular contract signed in the second quarter (Q2) of 2016 was selected as an exemplary piece of ongoing business for the

company. This agreement entails nine years of contracted work and carries a transaction price of approximately \$41 million. The contract outlines four years of engineering work, succeeded by five years of follow-on production of drive system electrification products. For the duration of this description, this representative contract will be referred to as the “sample contract”.

The next step in the foundational data compilation process pertained to the historical business revenue results that would serve as the basis for comparison after the application of various potential influencers and the re-aggregation of hypothetical revenue figures. In order to capture a sufficient sample of actual top-line results and create an adequate timeline for the hypothetical execution of the sample contract, three years of revenue data were gathered, which resulted in a study period beginning in the third quarter (Q3) of 2013 and terminating in Q2 of 2016. Data was accessed via Bloomberg software and accurately represents company results as presented in official quarterly SEC filings.

The final preliminary step of the study was to appropriately align the monetary characteristics of the sample contract with that of the established series of historical revenue results. In other words, the transaction price of the sample contract needed to be discounted to reflect its hypothetical inception in the initial Q3 2013 time period. In order to accurately execute this adjustment, historical U.S. inflation rates were compiled for the study time, and an average monthly inflation rate was calculated, amounting to approximately 0.08% (U.S. Bureau of Labor Statistics). The \$41 million transaction price attached to the sample contract was discounted at this rate over 36 periods, representing three years of retrospection. This converted the \$41 million contract signed

in Q2 2016 to a \$39.801 million transaction price for the sample contract beginning in Q3 2013. With these preliminary measures executed, the study progressed into the targeted application of the two previously-outlined potential revenue influencers, guided by several important assumptions.

**Assumptions: General**

In order to sufficiently isolate and illustrate the impacts of top-line influencers, this study follows an ongoing assumption that creates a timeline for the sample contract and portrays one instance of revenue recognition per fiscal quarter. With this practice in place, the potential top-line impacts in focus can be consistently observed over the twelve time periods that make up the isolated revenue timeline. As a result, the stipulation of the five-step revenue recognition model pertaining to the frequency of revenue recognitions is not fully represented in this study. However, this consistent, straight-line pattern of recognition was implemented with the intention of promoting a clearer series of results that would be both observable and understandable. In regards to the actual magnitude of these instances of revenue recognition, an allocation method that reflected a percent-of-completion<sup>4</sup> strategy was employed when calculating periodic revenue figures. The application of this method is one of many additional assumptions applied to the first in-depth portion of the study – isolating the engineering project phase and the revenue allocation adjustments therein.

**Assumptions: Engineering Allocation**

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<sup>4</sup> “A method of recognizing profit for time-sharing transactions under which the amount of revenue recognized (based on the sales value) at the time a sale is recognized is measured by the relationship of costs already incurred to the total of costs already incurred and future costs expected to be incurred” (ASC Master Glossary).

The initial assumption involved in this portion of the study stems from the original terms of the sample contract. Since the contract outlines four years of anticipated engineering work, and the isolated time period for revenue comparison extends over three years, it is assumed that all periods observed as part of this study will be in the engineering phase of the overall sample contract and will therefore reflect revenue allocations based on the amount of the sample contract transaction price attributable to engineering.

The portion of total contract price attributable to the engineering phase in focus is governed by another assumption, which was adopted based on commentary in a Sevcon 10-Q filing for the quarter ended July 2, 2016. In this document, the company stated that the engineering services segment of the electrification controls sector (in which the sample contract is situated) accounted for 4% of total sales in Q2 2016. This 4% figure was embraced as a quintessential financial result, and was therefore assumed to be the foundational percentage of revenue attributable to engineering work. This basis serves great purpose throughout the study as the variable of interest in the eventual quantitative manipulations pertaining to engineering allocation, as well as a key metric in the later calculation of variable consideration influences.

The paramount assumption included in this portion of the study that isolates the engineering allocation influence on the top-line is the application of a front-loaded profile of engineering project work, and the corresponding profile of revenue recognition instances as guided by percentage-of-completion principles. Upon examination of additional company commentary in the 10-Q for the quarter ended July 2, 2016, it became apparent that multi-year projects such as an engineering engagements are very

“intense” for the first four quarters of work. The remainder of the engineering project period is spent fine-tuning and preparing tools for the eventual production process. Accordingly, the engineering project timeline presented in this study reflects a quarterly percentage of engineering work that is relatively heavy throughout the first four quarters of the timeline and trends downward towards the completion of the phase. Beginning in the second year of engineering activity, a decreasing linear trend was applied to these percentages, reflecting a final project period that accounts for only 2% of total engineering work – a presumably minimal figure that still represents significant refinement and finalization activities. Accepting the outputs of this linear trend, and applying an equally “intense” work percentage to the first four quarters of the overall timeline, resulted in a relatively heavy work allocation of 9.16% to each of those initial periods.

This pattern of work allocation ultimately guides the magnitude of periodic revenue recognitions because, assuming one instance of recognition per quarter, the percentage-of-completion strategy produces a periodic revenue calculation that is a function of the total transaction price attributable to engineering and the percentage of project work completed in that period. Therefore, the front-loaded work profile applied within the sample contract revenue timeline is a vital assumption. Accordingly, the profile was constructed in-line with company commentary while maintaining a conservative overall trend as not to unintentionally promote any extreme, unrealistic movement in revenue figures.

**Assumptions: Variable Consideration**

The portion of the study that isolates the potential impacts of new accounting principles pertaining to variable consideration involves the calculation and application of volume discounts to the sample contract transaction price. The first assumption included in this process relates closely to the previous assumption regarding the standard percentage of contract revenue attributable to the engineering phase. After accounting for this allocation to engineering activities, the remainder of the sample contract transaction price would presumably be attributable to the production phase. When considering the practice of extending volume discounts to customers, it is appropriate to assume that any percentage-based discounts would only be applied to this production-related revenue, as engineering revenue would have already been earned and recognized prior to customers purchasing any final products and qualifying for said discounts. Therefore, the standard remaining percentage of total sample contract revenue would amount to 96% (100%, less the standard 4% portion attributable to engineering). This percentage of the total transaction price will serve as the basis for the subsequent calculation of nominal volume discounts at various percentage-based discount levels.

An additional assumption illustrated in this variable consideration study arises within the determination of the probability-weighted volume discount factors that are eventually applied to the revenue attributable to production as mentioned above. In order to gain a consensus estimate of these volume discount percentages, three separate example scenarios were obtained from supplementary guidance publications from leading public accounting firms (PwC, KPMG). The discounts and corresponding probabilities presented within these examples were compiled and extrapolated on a linear basis in order to obtain a comprehensive set of estimates according to the unique pattern of each

example. These three separate sets of estimates were averaged to produce a consensus range of volume discounts and their respective probabilities for inclusion in the study.

**Walkthrough: Engineering Allocation Manipulations**

Based on the assumptions outlined above, a propositional financial model was constructed to display the potential top-line effects of new revenue allocation and recognition practices. Such effects were studied in both an aggregate and isolated manner in regards to the two separate influences that have served as the foci throughout this project. First, the revenue allocation profile pertaining to the engineering project phase was outlined and projected over the sample contract period. Changes brought about by the implementation of new revenue recognition principles were imparted to this pattern of revenue in order to produce an isolated illustration of top-line implications.

The initial step in this modeling process involved mapping out a timeline for the completion of the sample contract engineering phase, given the front-loaded work assumption. The timeline, beginning with the previously-mentioned 9.16% quarterly completion percentage, ultimately guided the nominal amounts of periodic revenue hypothetically recognized as part of the sample contract. Accordingly, quarterly revenue recognitions were calculated by multiplying the assigned percentage of quarterly work completion (i.e., 9.16% in the first four quarters) and the portion of the transaction price attributable to this engineering portion of the total contract. This attributable portion was determined by multiplying the overall sample contract price, the inflation-adjusted \$39.801 million, by the standard percentage of contract revenue attributed to engineering work. Corresponding with the project assumptions, 4.0% served as this standard percentage, and the application of this figure resulted in a baseline series of revenue



recognitions over the engineering phase of the sample contract period (see *Exhibit 1a*). In order to represent the impact of new accounting principles on this timeline of recognitions, the model proceeds to illustrate manipulations to the standard 4.0% attribution percentage – indicating anticipated increases in the amount of total project profit margin applied to this initial stage in the contract.

This manipulation of engineering phase revenue attribution was executed in increments of 5 basis point increases off of the standard 4.0% figure. Given the revenue timeline construction that was previously described, this manipulation produced changes to the magnitude of revenue recognition in each period of the sample engineering phase. In order to capture the relative impacts of these changes, periodic revenue figures reflected in this engineering phase were measured as a percentage of historical company revenue within each quarter of contract execution. Recall, the sample contract has been situated with a Q3 2013 commencement date. Therefore, the relative measurements of periodic revenue recognitions resulting from the sample contract reflect a hypothetical situation in which this contract was part of regular Sevcon business between Q3 2013 and Q2 2016. The proportional amount of total business revenue represented by each instance of recognition in this sample contract, and the changes therein caused by manipulations of engineering phase attribution, sufficiently illustrate the overall top-line impacts of accounting principles changes within the context of a singular contract. Obviously, future shifts in accounting practices will impact revenue recognitions pertaining to all concurrent business contracts, but this isolated study in and of itself offers an example of top-line changes, which are indicated in the sample results provided in *Exhibit 2a*.

### **Walkthrough: Variable Consideration Manipulations**

The complimenting set of manipulations executed as part of this illustrative model pertained to the changes to the application of variable consideration within the timeline of revenue recognition for business contracts. In accordance with the analysis of new accounting principles included in this project, the model was built to represent the inclusion of expected-value estimates of variable consideration in the overall transaction price, with that price then being allocated to all instances of revenue recognition. In order to analyze this practice, a study of proportional periodic shifts in revenue was performed, similar to the process undertaken in the engineering allocation portion of the study. However, instead of manipulating the engineering attribution percentage, this standard 4.0% figure remained constant and the nominal transaction price was the variable of change. This strategy adequately reflects the impact of new accounting guidance, which promotes an inclusion of variable consideration estimates in the initial price of the contract.

In order to capture a sample of the expected-value discount estimates, the probability-weighted discount factor assumption was employed as outlined, and appropriately produced a series of volume discount estimates to be incorporated into the allocable transaction price. The analysis of exemplary discount arrangements, as included in the discount factor assumption, guides the construction of the initial model pertaining to the allocation of attributable revenue to the study period (Q3 2013 – Q2 2016) (see *Exhibit 1b*). However, this sample only reflects five possible expected-value conclusions resulting from the application of probability-weighted discount factors. Therefore, solutions within this portion of the project were drafted to reflect a full

spectrum of applicable volume discount factors, ranging from 0.0% to 20.0%. This presentation represents the realm of possibilities available to managers when selecting a probability-weighted discount factor to apply to contract prices in order to calculate the nominal amount of revenue that will then be allocable to episodes of revenue recognition.

This nominal amount of revenue equals the remaining transaction price after subtracting the expected-value of variable consideration. This calculation is executed through a series of steps. First, the amount of revenue attributable to the production phase of the sample contract must be isolated, as this will serve as the basis for the application of any expected volume discounts. This procedure replicates the reality that volume discounts can only be attained once a customer actually receives manufactured products. Therefore, the transaction price attributable to initial engineering phases (a standard 4.0%) will presumably be a sunk cost upon the eventual delivery of products. Accordingly, discount factors are only applied to the transaction price attributed to production in this model, a figure that equals 96% in this project portion that temporarily omits any manipulations to the engineering-production attribution profile.

Upon calculating this price attributable to production, the nominal volume discount amount was calculated by simply multiplying said price by the selected discount factor. Subsequently, this nominal discount amount was subtracted from the overall sample transaction price, the inflation-adjusted \$39.801 million, to reach a sample transaction price that includes an expected volume discount. From this point, the allocation of contract revenue follows an identical strategy to the one presented in the previous engineering allocation portion of the project, holding the 4% attribution stipulation constant. By manipulating the volume discount factor, the resulting nominal

discount and discounted transaction price affected the level of periodic revenue recognition for the sample contract timeline between Q3 2013 and Q2 2016 – a time period that was still considered part of the engineering phase, but was nevertheless impacted by the new incorporation of volume discounts into the total transition price of the contract. As previously mentioned, the model includes a range of volume discounts from 0.0% to 20.0%, representing a broad spectrum of top-line impacts that may result, depending on managerial decisions pertaining to the determination of probability-weighted discount factors (see *Exhibit 2b*).

### **Walkthrough: Aggregate Manipulations**

The final step in analyzing the impact of these two shifts in accounting practice was to incorporate both influences in a dynamic model that could present anticipated top-line changes when proportional revenue shifts were aggregated periodically. This strategy involved the manipulation of the percentage of total contract revenue attributable to the engineering phase, which, in turn, changed the amount of revenue attributable to the production phase – impacting the calculation of nominal volume discounts. Furthermore, the manipulation of the probability-weighted volume discount factor added a second dimension of change to this aggregate model that would ultimately produce shifts in proportional amounts of business revenue resulting from periodic recognitions on the sample contract work (see *Exhibit 3a*). Ultimately, this all-encompassing model succeeded in presenting relative periodic changes in top-line results as a function of probability-weighted discount factors and attribution percentages applied to the engineering phase of the sample contract. Please see *Exhibit 3b* for a sample table containing outputs of this model.

This comprehensive study of shifts in revenue was modeled by employing the following formulas:

[Sample Contract Transaction Price – (Nominal Volume Discount<sup>5</sup>)]

x Periodic Revenue Recognition Percentage, after discount<sup>6</sup>

- Periodic Revenue Recognition, prior to discount<sup>7</sup>

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= Nominal Change in Periodic Revenue

(Nominal Historical Periodic Revenue + Nominal Change in Periodic Revenue)

÷ Nominal Historical Periodic Revenue

- 1

---

= Relative Percent Change in Periodic Revenue

#### IV. EXPLANATION OF FINDINGS

In order to summarize and present the results of this aggregate study, nominal deviations produced through the manipulations were measured relative to total historical revenue amounts and presented as a percent change. Furthermore, the extent to which each influence was applied as part of the aggregate manipulation was divided into three separate tranches. Each of these tranches captured either conservative, moderate, or liberal levels of manipulation pertaining to each influence. Corresponding ranges of each periodic results table (*Exhibit 3b*) were isolated, and the median value of each range was

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<sup>5</sup> [Sample Contract Transaction Price \* (1 – Revenue % Attributable to Engineering)] \* Volume Disc. %

<sup>6</sup> Revenue % Attributable to Engineering \* Periodic % of Engineering Work Completed (front-loaded assumption)

<sup>7</sup> Nominal Revenue Attributable to Engineering (prior to discount) \* Periodic % of Engineering Work Completed (front-loaded assumption)

calculated to serve as a representative percent change resulting from that series of periodic changes to the company's overall top-line.

A series of graphs was constructed to illustrate the median percent changes calculated across the twelve sample quarters included in the study. As previously mentioned, all twelve of these periods fall into the engineering phase of the sample contract, and, therefore, most results display a trend that correlates with the front-loaded work profile employed in the projection of said contract phase. Further observation of these graphs reveals a predominantly positive percent change in revenue across quarters under most manipulation tranche combinations. Two-thirds of these hypothetical situations portray an aggregation of revenue influences that results in expansionary movement on the top-line during this segment of the contract (*Exhibit 3c*). Two situations illustrate contraction in overall revenue results (*Exhibit 3d*), and one situation does not produce any influence on the top-line (*Exhibit 3e*).

Indications of increasing periodic revenue were rather modest across the six separate situations that produced such a result. Not surprisingly, the largest of these projected increases occurred under the influence of liberal allocations of the overall transaction price to the engineering phase at hand and conservative applications of expected volume discounts. This combination suggested an increase to overall company revenue as large as 45 basis points (bps) during the initial period of the projected sample contract work. Conversely, some situations that reflected a more conservative reallocation of transaction price to engineering suggested a mere 2bp bump to overall top-line results in a given quarter.

Interestingly, whenever the projected situations included manipulations to reflect an application of expected volume discounts that was more aggressive than the allocation of the contract price to engineering, the influence on quarterly results was shown to be flat or negative. Conservative allocations to revenue matched with liberal applications of discounts produced a circumstance in which top-line results contracted as much as 16bps. Additionally, the median of the data range that represented moderate allocations to engineering and liberal applications of discounts did not indicate any relative revenue influence within any of the projected quarters – a noteworthy finding that represents a quasi-equilibrium that could result, under such levels of change brought about by new revenue recognition principles.

After analyzing these individual combinations of the separate manipulation tranches, all tranches, or situations, were averaged into an ultimate indication of expected top-line movement caused by revenue recognition adjustments on the contract level. This exhibit of averages, *Exhibit 3f*, suggests an overall increase in company revenue amounting to about 12bps during the first year of engineering work and trending downward to a meager 6bp boost by the end of the 3-year sample period. However, observers should recall that this study is an isolated example that is representative of potential top-line influences, which would presumably be integrated into all concurrent contractual business engagements. While the findings of this isolated study appear immaterial, such effects may indeed prove material and significant when viewed in the context of an entire business operation that includes many simultaneous contractual engagements.

## V. CONCLUSIONS

In anticipation of new FASB guidance pertaining to the practice of revenue recognition, this project outlines the stipulations of the new model, analyzes these provisions in the context of automotive supply contracts, and presents a propositional study that serves to quantify the possible impacts of new accounting principles and procedures. Such influences on the reportable revenue figures of public companies hold the potential to adversely affect the accuracy of professional financial analysis, and, likewise, the capacity to acutely surprise users of financial statements who have not familiarized themselves with the terms of the new revenue recognition environment. In order to inform this population and promote a more precise interpretation of business revenue under the standards of *Revenue from Contracts with Customers*, this project presents conclusions that could inform users during the impending transition and encourage future research on the eventual impact of new principles inherent to this publication.

Although isolated, and therefore minimally representative of the total business picture, the quantitative projections presented within this project support the validity of its foundational motivations and predictions. When tested on both an individual and aggregate basis, new and presumably influential changes to accounting guidance did indeed catalyze movement in top-line figures. Results indicate maximum quarterly upside and downside effects of +45bps and -16bps, respectively. These hypothetical changes reflect the periodic shifts in the reportable results of Sevcon, the specified subject company, had the stipulations of new revenue recognition guidance been applied to a sample contract during the company's historical periods of business. While the



findings of this isolated study may not reflect significant swings in company performance, a more comprehensive application of the influences entailed could drive pronounced movement within top-line results.

Although I consider these conclusions legitimate and defensible, the assumptions built into this study result in a certain level of subjectivity and possible imprecision. Such assumptions were determined through careful analysis of company practice and professional judgment, and, therefore, reflect a respectable level of permissibility and robustness. As the accounting standards discussed throughout this project are eventually implemented and assimilated into standard business practices, the basis for analysis will conceivably increase in accuracy and legitimacy - an advancement that will hopefully spur the extension and expansion of similar research projects.

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Exhibit 1b

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles

Data Manipulation  
Variable Consideration: Manipulations

USD in thousands, unless specified

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
3 Months Ending	09/30/2013	12/28/2013	03/29/2014	06/28/2014	09/30/2014	01/03/2015	04/04/2015	07/02/2015	09/30/2015	01/02/2016	04/02/2016	07/02/2016
Sales & Services Revenue	8,871	9,049	9,170	9,657	10,047	9,933	10,340	10,346	10,523	9,115	13,181	13,913

Number of Discount Offerings	3.12%
Average Volume Discount	39,801
Sample Contract Transaction Price	1,183
Volume Discount	38,608
Sample Transaction Price w/ Estimated Volume Disc.	Equivalent
Discount Allocation Profile	4.00%
Standard Allocation to Engineering Phase	1,644.32
Sample Transaction Price Attributable to Engineering	

To illustrate the allocation of variable consideration to the following periods of revenue recognition, please use the drop-down list to select a sample discount strategy (as outlined on "Discount\_VC" sheet) and corresponding percent volume discount.

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
Contract Revenue Before Discount (Eng.; 4% alloc.)	145.80	145.80	145.80	145.80	136.30	126.80	117.31	107.81	98.31	88.82	79.32	69.83
% engineering work	9.16%	9.16%	9.16%	9.16%	8.66%	7.96%	7.37%	6.77%	6.16%	5.62%	4.99%	4.32%
Contract Revenue w/ Estimated Volume Discount	141.43	141.43	141.43	141.43	132.22	123.00	113.79	104.58	95.37	86.16	76.94	67.73
Δ Revenue	4.37	4.37	4.37	4.37	4.08	3.80	3.52	3.23	2.95	2.68	2.38	2.09

Exhibit 2a

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Engineering Allocation: Manipulations

USD in thousands, unless specified

	Relative Increase in Total Periodic Revenue as a Function of Increased Revenue Recognized from Engineering Projects											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
+ 0.05%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%	0.01%
0.10%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.02%
0.15%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%	0.04%	0.04%	0.03%	0.03%
0.20%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.07%	0.07%	0.06%	0.06%	0.04%	0.04%
0.25%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.08%	0.08%	0.07%	0.06%	0.06%	0.05%
0.30%	0.12%	0.12%	0.12%	0.12%	0.12%	0.12%	0.11%	0.10%	0.08%	0.08%	0.07%	0.06%
0.35%	0.14%	0.14%	0.14%	0.14%	0.14%	0.13%	0.12%	0.11%	0.08%	0.08%	0.08%	0.07%
0.40%	0.16%	0.16%	0.16%	0.16%	0.16%	0.15%	0.13%	0.12%	0.11%	0.10%	0.08%	0.08%
0.45%	0.18%	0.18%	0.18%	0.18%	0.18%	0.17%	0.15%	0.14%	0.12%	0.11%	0.10%	0.08%
0.50%	0.21%	0.21%	0.21%	0.21%	0.21%	0.19%	0.17%	0.15%	0.13%	0.11%	0.10%	0.10%
0.55%	0.23%	0.23%	0.23%	0.23%	0.23%	0.21%	0.18%	0.17%	0.14%	0.14%	0.11%	0.11%
0.60%	0.25%	0.25%	0.25%	0.25%	0.25%	0.23%	0.20%	0.18%	0.15%	0.14%	0.12%	0.11%
0.65%	0.27%	0.27%	0.27%	0.27%	0.27%	0.25%	0.21%	0.20%	0.15%	0.15%	0.13%	0.12%
0.70%	0.29%	0.29%	0.29%	0.29%	0.29%	0.27%	0.23%	0.21%	0.16%	0.16%	0.15%	0.13%
0.75%	0.31%	0.31%	0.31%	0.31%	0.31%	0.28%	0.25%	0.23%	0.17%	0.18%	0.16%	0.14%
0.80%	0.33%	0.33%	0.33%	0.33%	0.33%	0.31%	0.26%	0.24%	0.18%	0.19%	0.17%	0.15%
0.85%	0.35%	0.35%	0.35%	0.35%	0.35%	0.33%	0.28%	0.26%	0.20%	0.20%	0.18%	0.16%
0.90%	0.37%	0.37%	0.37%	0.37%	0.37%	0.35%	0.30%	0.28%	0.21%	0.21%	0.19%	0.17%
0.95%	0.39%	0.39%	0.39%	0.39%	0.39%	0.36%	0.31%	0.29%	0.22%	0.23%	0.20%	0.18%
1.00%	0.41%	0.41%	0.41%	0.41%	0.41%	0.38%	0.33%	0.30%	0.24%	0.25%	0.22%	0.20%
1.05%	0.43%	0.43%	0.43%	0.43%	0.43%	0.40%	0.35%	0.32%	0.26%	0.27%	0.23%	0.21%
1.10%	0.45%	0.45%	0.45%	0.45%	0.45%	0.42%	0.37%	0.34%	0.28%	0.29%	0.25%	0.22%
1.15%	0.47%	0.47%	0.47%	0.47%	0.47%	0.44%	0.39%	0.36%	0.30%	0.31%	0.26%	0.23%
1.20%	0.49%	0.49%	0.49%	0.49%	0.49%	0.46%	0.41%	0.38%	0.32%	0.33%	0.28%	0.24%
1.25%	0.51%	0.51%	0.51%	0.51%	0.51%	0.48%	0.43%	0.40%	0.34%	0.35%	0.30%	0.26%
1.30%	0.53%	0.53%	0.53%	0.53%	0.53%	0.50%	0.45%	0.42%	0.36%	0.37%	0.32%	0.26%
1.35%	0.55%	0.55%	0.55%	0.55%	0.55%	0.52%	0.47%	0.44%	0.38%	0.39%	0.34%	0.27%
1.40%	0.58%	0.58%	0.58%	0.58%	0.58%	0.54%	0.50%	0.46%	0.41%	0.41%	0.36%	0.28%
1.45%	0.60%	0.60%	0.60%	0.60%	0.60%	0.56%	0.52%	0.48%	0.43%	0.43%	0.38%	0.29%
1.50%	0.62%	0.62%	0.62%	0.62%	0.62%	0.58%	0.54%	0.50%	0.44%	0.44%	0.39%	0.30%

3/13/2017

Sewcon, Inc. - Propositional Study

Honors Thesis - Kevin Wango

Exhibit 2b

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Variable Consideration: Manipulations

USD in thousands, unless specified

Volume Disc.	Relative Decreases in Periodic Revenue as a Function of Percent Volume Discounts											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
1.00%	(0.02%)	(0.02%)	(0.02%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.00%)
2.00%	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.02%)	(0.02%)	(0.02%)	(0.02%)	(0.01%)	(0.01%)
3.00%	(0.05%)	(0.05%)	(0.05%)	(0.04%)	(0.04%)	(0.04%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.02%)	(0.01%)
4.00%	(0.06%)	(0.06%)	(0.06%)	(0.06%)	(0.05%)	(0.05%)	(0.04%)	(0.04%)	(0.04%)	(0.04%)	(0.03%)	(0.02%)
5.00%	(0.08%)	(0.08%)	(0.08%)	(0.07%)	(0.07%)	(0.07%)	(0.05%)	(0.05%)	(0.04%)	(0.04%)	(0.03%)	(0.02%)
6.00%	(0.09%)	(0.09%)	(0.09%)	(0.08%)	(0.08%)	(0.08%)	(0.07%)	(0.07%)	(0.06%)	(0.06%)	(0.05%)	(0.03%)
7.00%	(0.11%)	(0.11%)	(0.11%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.08%)	(0.07%)	(0.07%)	(0.06%)	(0.04%)
8.00%	(0.13%)	(0.12%)	(0.12%)	(0.12%)	(0.10%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.07%)	(0.06%)	(0.04%)
9.00%	(0.14%)	(0.14%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.07%)	(0.05%)
10.00%	(0.16%)	(0.15%)	(0.15%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.06%)
11.00%	(0.17%)	(0.17%)	(0.17%)	(0.16%)	(0.14%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.09%)	(0.07%)
12.00%	(0.19%)	(0.19%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.08%)
13.00%	(0.21%)	(0.20%)	(0.20%)	(0.19%)	(0.17%)	(0.16%)	(0.15%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.09%)
14.00%	(0.22%)	(0.22%)	(0.21%)	(0.20%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.14%)	(0.13%)	(0.12%)	(0.10%)
15.00%	(0.24%)	(0.23%)	(0.23%)	(0.22%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.14%)	(0.12%)
16.00%	(0.25%)	(0.25%)	(0.24%)	(0.23%)	(0.21%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.13%)
17.00%	(0.27%)	(0.26%)	(0.26%)	(0.25%)	(0.22%)	(0.21%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.16%)	(0.14%)
18.00%	(0.28%)	(0.28%)	(0.27%)	(0.26%)	(0.23%)	(0.22%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.16%)	(0.14%)
19.00%	(0.30%)	(0.29%)	(0.29%)	(0.28%)	(0.25%)	(0.24%)	(0.21%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.15%)
20.00%	(0.32%)	(0.31%)	(0.31%)	(0.29%)	(0.26%)	(0.25%)	(0.22%)	(0.20%)	(0.19%)	(0.18%)	(0.17%)	(0.15%)

3/13/2017

Sevcon, Inc. - Propositional Study

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Exhibit 3b

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q3 2013											
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.03%)	(0.06%)	(0.09%)	(0.11%)	(0.14%)	(0.16%)	(0.18%)	(0.21%)	(0.25%)	(0.28%)
4.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.08%)	(0.12%)	(0.15%)	(0.17%)	(0.20%)	(0.25%)	(0.28%)
4.10%	0.04%	0.01%	(0.02%)	(0.05%)	(0.06%)	(0.11%)	(0.13%)	(0.16%)	(0.18%)	(0.24%)	(0.28%)
4.15%	0.06%	0.03%	0.00%	(0.03%)	(0.04%)	(0.09%)	(0.12%)	(0.14%)	(0.17%)	(0.23%)	(0.28%)
4.20%	0.08%	0.05%	0.02%	(0.02%)	(0.03%)	(0.07%)	(0.10%)	(0.13%)	(0.15%)	(0.21%)	(0.27%)
4.25%	0.10%	0.07%	0.03%	0.00%	(0.03%)	(0.06%)	(0.08%)	(0.11%)	(0.14%)	(0.19%)	(0.26%)
4.30%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.10%)	(0.12%)	(0.18%)	(0.24%)
4.35%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.16%)	(0.23%)
4.40%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.14%)	(0.22%)
4.45%	0.18%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.13%)	(0.19%)
4.50%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.06%)	(0.10%)	(0.17%)
4.55%	0.23%	0.19%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.15%)
4.60%	0.25%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.08%)	(0.14%)
4.65%	0.27%	0.23%	0.19%	0.14%	0.11%	0.08%	0.04%	0.01%	(0.02%)	(0.06%)	(0.11%)
4.70%	0.29%	0.25%	0.21%	0.16%	0.12%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.08%)
4.75%	0.31%	0.27%	0.23%	0.18%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.03%)	(0.06%)
4.80%	0.33%	0.29%	0.25%	0.20%	0.16%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)
4.85%	0.35%	0.31%	0.26%	0.22%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)
4.90%	0.37%	0.32%	0.28%	0.23%	0.19%	0.16%	0.12%	0.09%	0.05%	0.02%	(0.01%)
4.95%	0.39%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.00%
5.00%	0.41%	0.36%	0.32%	0.27%	0.22%	0.19%	0.15%	0.12%	0.08%	0.05%	0.01%
5.05%	0.43%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.13%	0.10%	0.07%	0.03%
5.10%	0.45%	0.40%	0.36%	0.31%	0.26%	0.23%	0.18%	0.15%	0.11%	0.08%	0.04%
5.15%	0.47%	0.42%	0.38%	0.32%	0.28%	0.24%	0.20%	0.16%	0.13%	0.11%	0.05%
5.20%	0.49%	0.44%	0.40%	0.34%	0.29%	0.26%	0.21%	0.18%	0.14%	0.13%	0.06%
5.25%	0.51%	0.46%	0.42%	0.36%	0.31%	0.28%	0.23%	0.20%	0.16%	0.14%	0.07%
5.30%	0.53%	0.48%	0.44%	0.38%	0.33%	0.29%	0.25%	0.21%	0.17%	0.16%	0.08%
5.35%	0.55%	0.50%	0.46%	0.39%	0.34%	0.31%	0.26%	0.23%	0.19%	0.18%	0.08%
5.40%	0.58%	0.52%	0.48%	0.41%	0.36%	0.33%	0.28%	0.24%	0.20%	0.19%	0.10%
5.45%	0.60%	0.54%	0.49%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.21%	0.12%
5.50%	0.62%	0.56%	0.51%	0.45%	0.39%	0.36%	0.31%	0.27%	0.23%	0.23%	0.13%

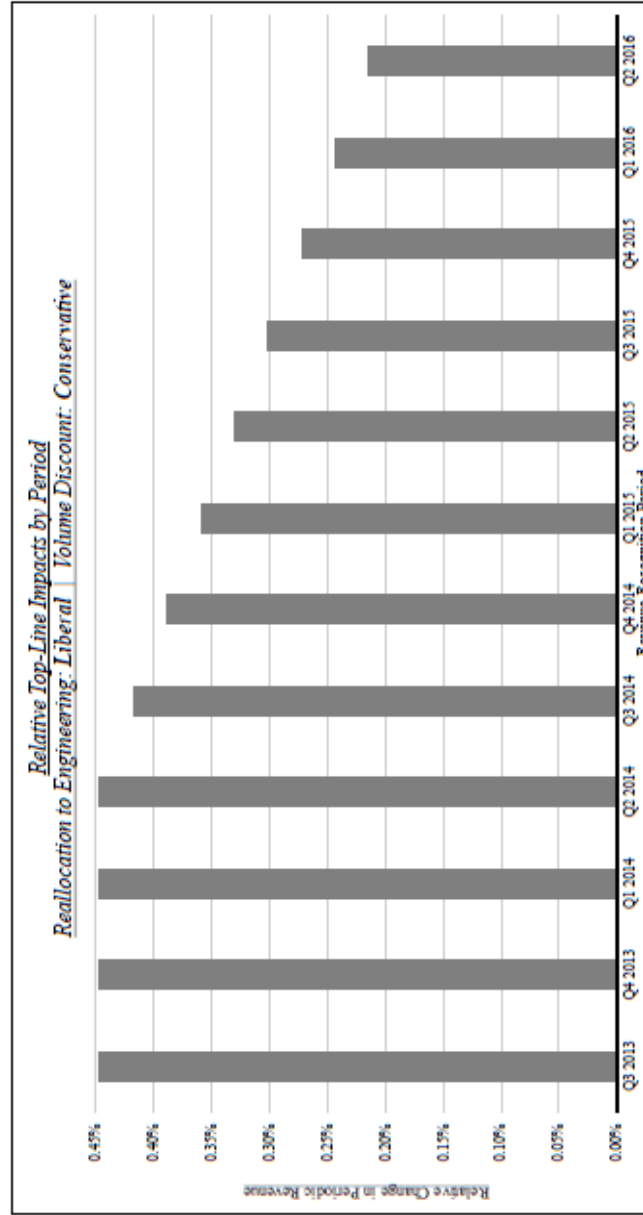
Margin Transfer	Legend
Conservative	Conservative
Medial	Medial
Liberal	Liberal
Volume Discount	Conservative
Medial	Medial
Liberal	Liberal

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.039%	0.042%
Medial	Medial	(0.06%)	(0.06%)
Liberal	Liberal	(0.16%)	(0.16%)
Conservative	Conservative	0.25%	0.25%
Medial	Medial	0.11%	0.11%
Liberal	Liberal	(0.00%)	0.00%
Conservative	Conservative	0.45%	0.45%
Medial	Medial	0.28%	0.28%
Liberal	Liberal	0.15%	0.15%

Exhibit 3c

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Accounting for Changes - Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



4/5/2017

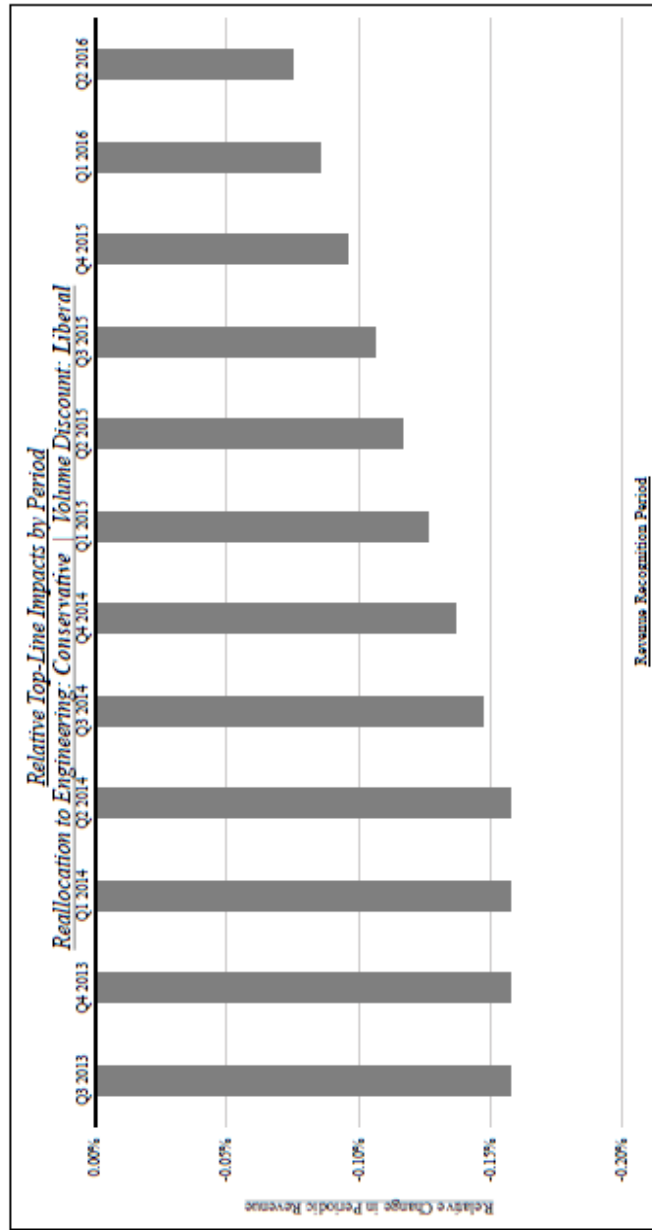
Sevcon, Inc. - Propositional Study

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Exhibit 3d

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Accounting for Changes: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



4/5/2017

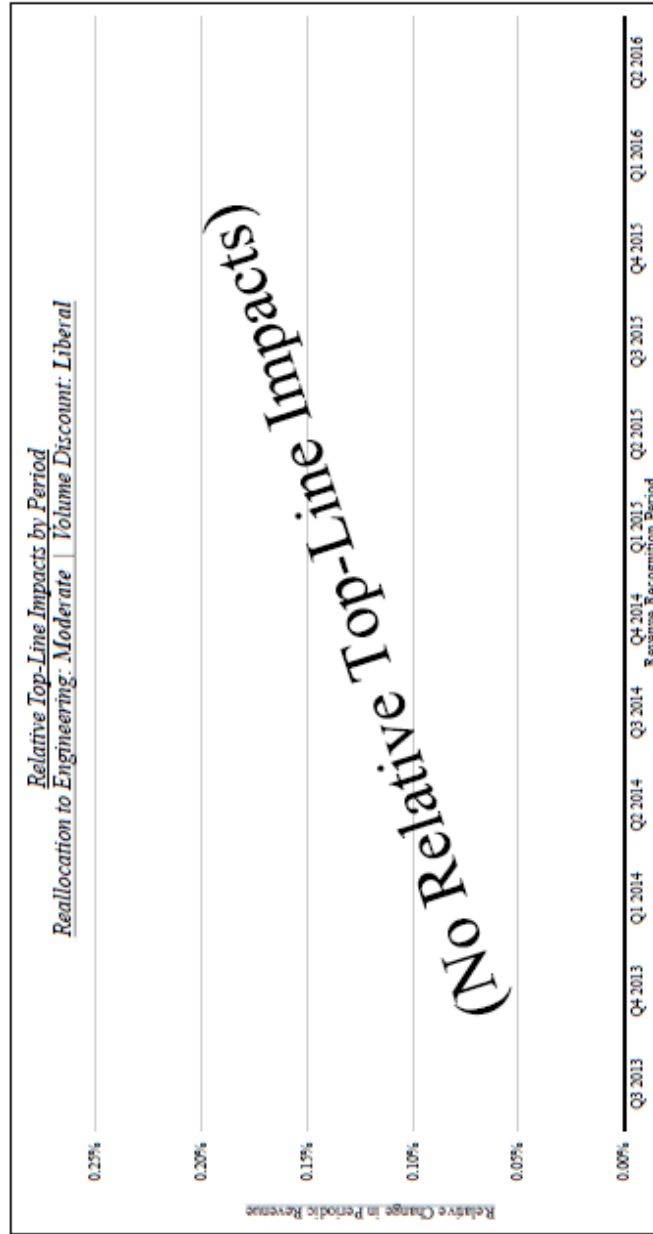
Sevcon, Inc. - Propositional Study

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Exhibit 3e

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Accounting for Changes: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



4/15/2017

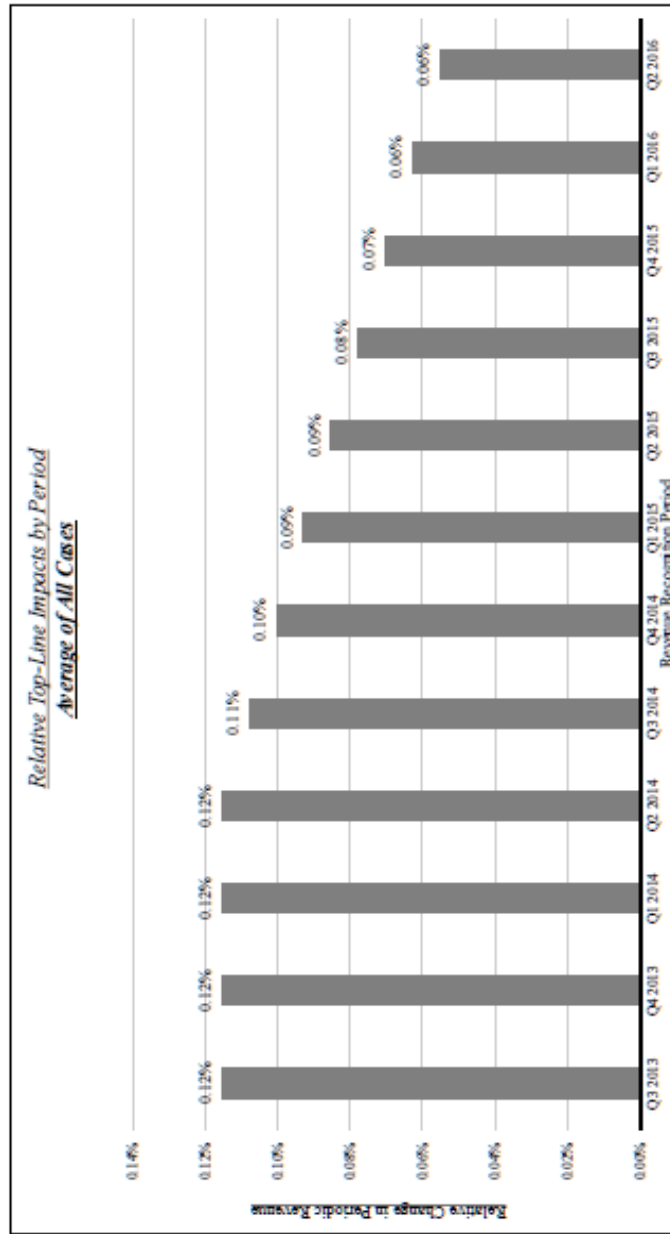
Sevcon, Inc. - Propositional Study

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Exhibit 3f

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Average Relative Periodic Changes of All Levels of Manipulation



45/2017

*Exhibit 4: Full Schedule of Calculations (and accompanying inputs)*

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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
Administrative  
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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Administrative  
 General Inputs

Inputs	
Project Title	Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles
Name	Kevin Wargo
Project Sponsor	University of Dayton Department of Accounting
Project Advisor	Dr. Marsha Keupe, CPA
Date of Last Edit	4/5/2017
Page Label	Honors Thesis - Kevin Wargo
Subject Company	Sevco, Inc.
Study Title	Propositional Study
Date of Market Data	4/5/2017
Data Scale	USD in thousands, unless specified

Color Palette		
Color	Use	Example
Black	Calculations/Formulas	
Blue	User Inputs	
Green	Imported Data	

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Historical Data  
 Reported Quarterly Revenue

USD in thousands, unless specified

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
	09/30/2013	12/28/2013	03/29/2014	06/28/2014	09/30/2014	01/03/2015	04/04/2015	07/02/2015	09/30/2015	01/02/2016	04/02/2016	07/02/2016
3 Months Ending												
Sales & Services Revenue	8,871	9,049	9,170	9,657	10,047	9,933	10,340	10,346	10,523	9,115	13,181	13,913



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Historical Data  
 Reported Contract Agreements

USD in thousands, unless specified

Date of Agreement	Nature of Agreement	Estimated Contractual Revenue	Duration of Contractual Project	Specified Allocations
Q2 2018	Controllers - drive system electrification		4 years	Engineering and materials
Q2 2018	Controllers - drive system electrification	41,000 (anticipated total)	5 years (expected start in 2020)	Follow-on production
Q1 2018	Electrification (controls division)- on/off road OEMs	211 (recognized)	N/A	Non-recurring engineering services
Q1 2018	Electrification (controls division)- on/off road OEMs	451 (recognized)	N/A	Non-recurring engineering services
Q1 2018	Deferred development costs (pre-closing)	410 (deferred)	N/A	To be recognized in COGS

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Inputs & Assumptions  
 Engineering Allocation: Inputs

USD in thousands, unless specified

Historical Revenue, Initial Period	Q3, 2013	
Historical Revenue, Terminal Period	Q2, 2016	
Sample Contract Transaction Price	39,801	>>> Represents sample contract signed in Q2 2016; \$41mm transaction price discounted for inflation as if contract was initiated beg. Q3 2013 From <a href="#">Sevcoop, Inc. 10-Q FQE 07/02/16</a> : "The contract covers engineering and materials and is likely to last four years. The customer has provided a follow-on, non-binding production forecast that contemplates up to \$41 million in product purchases over a five-year period..."
Standard Percentage of Revenue Attributable to Engineering Phase	4.00%	>>> Expressed in recent company filings as percentage of revenue attributable to engineering projects, remember, this is at cost From <a href="#">Sevcoop, Inc. 10-Q FQE 07/02/16</a> : "[An] element of our revenue in our controls segment comes from engineering services, which represented 4% of sales in the quarter."
Standard Execution Period of Engineering Phase	4yrs	>>> Refer to 10-Q filing FQE 07/02/16 (from above)
Selected Engineering Phase Recognition Profile	Front-loaded	>>> Use drop-down to select to employ the following stipulations regarding the engineering work timeline or maintain a straight-line work profile
Front-loading: Portion of Engineering Work Completed in First 4 Quarters	9.16%	>>> The resulting quarterly percentage of work for first 12 mos. when 4 year timeline is linearly trended (starting in year 2) down to a minimum percentage of project work in the last period of the project. From <a href="#">Sevcoop, Inc. 10-Q FQE 07/02/16</a> : "A multi-year project is very intense in terms of hours worked [i.e. performance obligations satisfied] for the first 12 months as we develop the product. Subsequent time is spent on the refinement of the initial development, product testing, [etc.]..."
Front-loading: Minimum Portion of Engineering Work (completed in final period of	2.00%	>>> User Input





Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Inputs & Assumptions  
 Variable Consideration: Inputs

USD in thousands, unless specified

Historical Revenue, Initial Period	Q3, 2013	
Historical Revenue, Terminal Period	Q2, 2018	
Sample Contract Transaction Price	39,801	>>> Represents sample contract signed in Q2 2018; \$41mm transaction price discounted for inflation as if contract was initiated beg. Q3 2013 From <a href="#">Seawood, Inc. 10-Q FQE 07/02/16</a> : "The contract covers engineering and materials and is likely to last four years. The customer has provided a follow-on, non-binding production forecast that contemplates up to \$41 million in product purchases over a five-year period..."
Standard Percentage of Revenue Attributable to Engineering Phase	4.00%	>>> Expressed in recent company filings as percentage of revenue attributable to engineering projects; remember, this is at cost From <a href="#">Seawood, Inc. 10-Q FQE 07/02/16</a> : "[A.] element of our revenue in our controls segment comes from engineering services, which represented 4% of sales in the quarter."
Standard Percentage of Revenue Attributable to Production Phase	96.00%	>>> Remainder of contract revenue after completion of engineering phase
Consensus Volume Discounts & Probabilities: (sourced from <a href="#">PopTrends</a> worksheet)		>>> User input; Derived from studying several volume discount examples provided within professional Topic 606 guidance supplements
	Discount	Probability
	0%	60%
	5%	8%
	10%	17%
	15%	30%
	20%	10%
	25%	21%
		From PwC:
		60%
		8%
		17%
		30%
		10%
		21%
		From EY:
		30%
		0%
		60%
		25%
		10%
		30%
		From KPMG:
		70%
		0%
		20%
		10%
		20%
Discount Allocation Profile	Equivalent	>>> To isolate and illustrate the impact of variable consideration only, performance obligation completion (and subsequent revenue recognition) will be executed on a straight-line basis, one obligation per quarter over the 38-quarter life of the contract.

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Inputs & Assumptions  
 Variable Consideration: Discount Profiles

USD in thousands, unless specified

Sample Contract (Total)	39,801	Number of Discount Offerings	Average Discount Factor
Standard % Attributed to Engineering	4.00%	1	3.1%
Standard % Attributed to Products	96.00%	2	6.2%
		3	9.4%
Revenue Attributed to Products	38,209	4	13.2%
		5	15.6%

Probability-Weighted Discount Factors Applied to Product Revenue

Discount	Probability	One Discount Offering	Two Discount Offerings	Three Discount Offerings	Four Discount Offerings	Average Discount Factor
0%	64.0%	0%	0%	0%	0%	0%
1%	81.7%	5%	5%	5%	5%	5%
2%	59.3%	2.6%	10%	10%	10%	10%
3%	56.9%	3.1%	4.0%	4.0%	4.0%	4.3%
4%	54.6%					
5%	52.2%					
6%	49.9%					
7%	47.5%					
8%	45.2%					
9%	42.8%					
10%	40.4%					
11%	38.1%					
12%	35.7%					
13%	33.4%					
14%	31.0%					
15%	28.7%					
16%	26.3%					
17%	24.0%					
18%	21.6%					
19%	19.2%					
20%	16.8%					
21%	14.5%					
22%	12.2%					
23%	9.8%					
24%	7.5%					
25%	5.1%					
26%	2.7%					
27%	0.4%					

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Inputs & Assumptions  
 Variable Consideration: Discount Profiles

USD in thousands, unless specified

Three Discount Offerings		0%		5%		10%		15%		20%		25%		30%		35%	
Disc. Factor	64%	64%	52%	40%	28%	17%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Avg. Disc. Factor	9%	9%	12%	17%	25%	35%	45%	55%	65%	75%	85%	95%	105%	115%	125%	135%	145%

Four Discount Offerings		0%		5%		10%		15%		20%		25%		30%		35%	
Disc. Factor	64%	64%	52%	40%	28%	17%	11%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Avg. Disc. Factor	13%	13%	17%	25%	35%	45%	55%	65%	75%	85%	95%	105%	115%	125%	135%	145%	155%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Inputs & Assumptions  
 Variable Consideration: Revenue Summary

USD in thousands, unless specified

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
	09/30/2013	12/31/2013	03/29/2014	06/28/2014	09/30/2014	01/03/2015	04/04/2015	07/02/2015	09/30/2015	01/02/2016	04/02/2016	07/02/2016
Sales & Services Revenue	8,871	8,049	8,170	9,667	10,047	8,933	10,340	10,346	10,523	9,115	13,181	13,813
Number of Discount Offerings			<sup>3</sup>									
Average Volume Discount			9.37%									
Sample Contract Transaction Price			39,801									
Volume Discount			3,578									
Transaction Price w/ Estimated Volume Discount			36,222									
Discount Allocation Profile			Equivalent									
Standard Allocation to Engineering Phase			4.00%									
Transaction Price Attributable to Engineering			1,448.89									
Contract Revenue Before Discount (Eng.: 4% alloc.)	145.80	145.80	145.80	145.80	136.30	128.80	117.31	107.81	98.31	88.82	79.32	69.83
Contract Revenue w/ Estimated Volume Discount	132.69	132.69	132.69	132.69	124.05	115.40	106.76	98.12	89.48	80.83	72.19	63.55
Revenue Reduction	13.11	13.11	13.11	13.11	12.25	11.40	10.55	9.69	8.84	7.99	7.13	6.28





Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Engineering Allocation: Manipulations

USD in thousands, unless specified

% of Price	Periodic Engineering Revenue as a Function of Transaction Price Percentage Attributed to Engineering											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
4.00%	145.80	145.80	145.80	145.80	136.30	128.80	117.31	107.81	98.31	88.82	79.32	68.83
4.05%	147.62	147.62	147.62	147.62	138.00	128.99	118.77	109.16	99.64	89.93	80.31	70.70
4.10%	149.44	149.44	149.44	149.44	139.71	129.97	120.24	110.51	100.77	91.04	81.31	71.57
4.15%	151.26	151.26	151.26	151.26	141.41	131.66	121.71	111.95	102.00	92.15	82.30	72.44
4.20%	153.09	153.09	153.09	153.09	143.12	133.14	123.17	113.20	103.23	93.26	83.29	73.32
4.25%	154.91	154.91	154.91	154.91	144.82	134.73	124.64	114.55	104.48	94.37	84.28	74.19
4.30%	156.73	156.73	156.73	156.73	146.52	136.31	126.11	115.90	105.69	95.48	85.27	75.06
4.35%	158.55	158.55	158.55	158.55	148.23	137.90	127.57	117.24	106.92	96.59	86.26	75.94
4.40%	160.38	160.38	160.38	160.38	149.93	139.48	129.04	118.59	108.15	97.70	87.25	76.81
4.45%	162.20	162.20	162.20	162.20	151.63	141.07	130.50	119.94	109.38	98.81	88.25	77.68
4.50%	164.02	164.02	164.02	164.02	153.34	142.65	131.97	121.29	110.60	99.92	89.24	78.55
4.55%	165.84	165.84	165.84	165.84	155.04	144.24	133.44	122.84	111.83	101.03	90.23	79.43
4.60%	167.67	167.67	167.67	167.67	156.75	145.82	134.90	123.88	113.06	102.14	91.22	80.30
4.65%	169.49	169.49	169.49	169.49	158.45	147.41	136.37	125.33	114.29	103.25	92.21	81.17
4.70%	171.31	171.31	171.31	171.31	160.15	148.99	137.84	126.83	115.52	104.36	93.20	82.05
4.75%	173.13	173.13	173.13	173.13	161.86	150.58	139.30	128.03	116.75	105.47	94.20	82.92
4.80%	174.96	174.96	174.96	174.96	163.56	152.16	140.77	129.37	117.98	106.58	95.19	83.79
4.85%	176.78	176.78	176.78	176.78	165.26	153.75	142.24	130.72	119.21	107.69	96.18	84.66
4.90%	178.60	178.60	178.60	178.60	166.97	155.33	143.70	132.07	120.44	108.80	97.17	85.54
4.95%	180.42	180.42	180.42	180.42	168.67	156.92	145.17	133.42	121.66	109.91	98.16	86.41
5.00%	182.25	182.25	182.25	182.25	170.38	158.50	146.63	134.76	122.89	111.02	99.15	87.28
5.05%	184.07	184.07	184.07	184.07	172.08	160.09	148.10	136.11	124.12	112.13	100.14	88.16
5.10%	185.89	185.89	185.89	185.89	173.78	161.67	149.57	137.48	125.35	113.24	101.14	89.03
5.15%	187.71	187.71	187.71	187.71	175.49	163.26	151.03	138.81	126.58	114.35	102.13	89.90
5.20%	189.54	189.54	189.54	189.54	177.19	164.84	152.50	140.15	127.81	115.46	103.12	90.77
5.25%	191.36	191.36	191.36	191.36	178.89	166.43	153.97	141.50	129.04	116.57	104.11	91.65
5.30%	193.18	193.18	193.18	193.18	180.60	168.02	155.43	142.85	130.27	117.68	105.10	92.52
5.35%	195.00	195.00	195.00	195.00	182.30	169.60	156.90	144.20	131.50	118.79	106.09	93.39
5.40%	196.83	196.83	196.83	196.83	184.01	171.19	158.37	145.55	132.73	119.90	107.08	94.26
5.45%	198.65	198.65	198.65	198.65	185.71	172.77	159.83	146.89	133.95	121.02	108.08	95.14
5.50%	200.47	200.47	200.47	200.47	187.41	174.36	161.30	148.24	135.18	122.13	109.07	96.01

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Engineering Allocation: Manipulations

USD in thousands, unless specified

	Nominal Increase in Periodic Revenue Resulting as a Function of Increased Revenue Recognized from Engineering Projects											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
+0.05%	1.82	1.82	1.82	1.82	1.70	1.59	1.47	1.35	1.23	1.11	0.99	0.87
0.10%	3.64	3.64	3.64	3.64	3.41	3.17	2.93	2.70	2.46	2.22	1.98	1.75
0.15%	5.47	5.47	5.47	5.47	5.11	4.76	4.40	4.04	3.69	3.33	2.97	2.62
0.20%	7.29	7.29	7.29	7.29	6.82	6.34	5.87	5.39	4.92	4.44	3.97	3.49
0.25%	9.11	9.11	9.11	9.11	8.52	7.93	7.33	6.74	6.14	5.55	4.96	4.36
0.30%	10.93	10.93	10.93	10.93	10.22	9.51	8.80	8.09	7.37	6.66	5.95	5.24
0.35%	12.76	12.76	12.76	12.76	11.83	11.10	10.26	9.43	8.60	7.77	6.94	6.11
0.40%	14.58	14.58	14.58	14.58	13.63	12.68	11.73	10.78	9.83	8.88	7.93	6.98
0.45%	16.40	16.40	16.40	16.40	15.33	14.27	13.20	12.13	11.06	9.99	8.92	7.86
0.50%	18.22	18.22	18.22	18.22	17.04	15.85	14.66	13.48	12.29	11.10	9.92	8.73
0.55%	20.05	20.05	20.05	20.05	18.74	17.44	16.13	14.82	13.52	12.21	10.91	9.60
0.60%	21.87	21.87	21.87	21.87	20.45	19.02	17.60	16.17	14.75	13.32	11.90	10.47
0.65%	23.69	23.69	23.69	23.69	22.15	20.61	19.06	17.52	15.98	14.43	12.89	11.35
0.70%	25.51	25.51	25.51	25.51	23.85	22.19	20.53	18.87	17.21	15.54	13.88	12.22
0.75%	27.34	27.34	27.34	27.34	25.56	23.78	22.00	20.21	18.43	16.65	14.87	13.09
0.80%	29.16	29.16	29.16	29.16	27.26	25.36	23.46	21.56	19.68	17.76	15.86	13.97
0.85%	30.98	30.98	30.98	30.98	28.96	26.85	24.93	22.81	20.89	18.87	16.86	14.84
0.90%	32.80	32.80	32.80	32.80	30.67	28.53	26.39	24.26	22.12	19.98	17.85	15.71
0.95%	34.63	34.63	34.63	34.63	32.37	30.12	27.86	25.61	23.35	21.09	18.84	16.58
1.00%	36.45	36.45	36.45	36.45	34.08	31.70	29.33	26.95	24.58	22.20	19.83	17.46
1.05%	38.27	38.27	38.27	38.27	35.78	33.29	30.79	28.30	25.81	23.31	20.82	18.33
1.10%	40.09	40.09	40.09	40.09	37.48	34.87	32.26	29.65	27.04	24.43	21.81	19.20
1.15%	41.92	41.92	41.92	41.92	39.19	36.46	33.73	31.00	28.27	25.54	22.81	20.07
1.20%	43.74	43.74	43.74	43.74	40.89	38.04	35.19	32.34	29.49	26.65	23.80	20.95
1.25%	45.56	45.56	45.56	45.56	42.59	39.63	36.66	33.69	30.72	27.76	24.79	21.82
1.30%	47.38	47.38	47.38	47.38	44.30	41.21	38.12	35.04	31.95	28.87	25.78	22.69
1.35%	49.21	49.21	49.21	49.21	46.00	42.80	39.59	36.39	33.16	29.88	26.77	23.57
1.40%	51.03	51.03	51.03	51.03	47.71	44.38	41.06	37.73	34.41	31.09	27.76	24.44
1.45%	52.85	52.85	52.85	52.85	49.41	45.97	42.52	39.03	35.64	32.20	28.75	25.31
1.50%	54.67	54.67	54.67	54.67	51.11	47.55	43.99	40.43	36.87	33.31	29.75	26.18

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Engineering Allocation: Manipulations

USD in thousands, unless specified

	Relative Increase in Total Periodic Revenue as a Function of Increased Revenue Recognized from Engineering Projects											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
+ 0.05%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.02%	0.01%	0.01%	0.01%
0.10%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.04%	0.03%	0.03%	0.03%	0.02%	0.02%
0.15%	0.06%	0.06%	0.06%	0.06%	0.06%	0.06%	0.05%	0.05%	0.04%	0.04%	0.03%	0.03%
0.20%	0.08%	0.08%	0.08%	0.08%	0.08%	0.08%	0.07%	0.06%	0.06%	0.06%	0.04%	0.04%
0.25%	0.10%	0.10%	0.10%	0.10%	0.10%	0.09%	0.08%	0.08%	0.07%	0.06%	0.06%	0.06%
0.30%	0.12%	0.12%	0.12%	0.12%	0.12%	0.11%	0.10%	0.08%	0.08%	0.07%	0.07%	0.06%
0.35%	0.14%	0.14%	0.14%	0.14%	0.13%	0.13%	0.12%	0.11%	0.10%	0.09%	0.08%	0.07%
0.40%	0.16%	0.16%	0.16%	0.16%	0.15%	0.14%	0.13%	0.12%	0.11%	0.10%	0.09%	0.08%
0.45%	0.18%	0.18%	0.18%	0.18%	0.17%	0.17%	0.15%	0.14%	0.12%	0.11%	0.10%	0.09%
0.50%	0.21%	0.21%	0.21%	0.21%	0.19%	0.18%	0.17%	0.15%	0.14%	0.13%	0.11%	0.10%
0.55%	0.23%	0.23%	0.23%	0.23%	0.21%	0.20%	0.18%	0.17%	0.15%	0.14%	0.12%	0.11%
0.60%	0.25%	0.25%	0.25%	0.25%	0.23%	0.21%	0.20%	0.18%	0.17%	0.15%	0.13%	0.12%
0.65%	0.27%	0.27%	0.27%	0.27%	0.25%	0.23%	0.21%	0.20%	0.18%	0.16%	0.15%	0.13%
0.70%	0.28%	0.28%	0.28%	0.28%	0.27%	0.25%	0.23%	0.21%	0.19%	0.18%	0.16%	0.14%
0.75%	0.31%	0.31%	0.31%	0.31%	0.29%	0.27%	0.25%	0.23%	0.21%	0.19%	0.17%	0.15%
0.80%	0.33%	0.33%	0.33%	0.33%	0.31%	0.29%	0.26%	0.24%	0.22%	0.20%	0.18%	0.16%
0.85%	0.35%	0.35%	0.35%	0.35%	0.33%	0.30%	0.28%	0.26%	0.24%	0.21%	0.19%	0.17%
0.90%	0.37%	0.37%	0.37%	0.37%	0.35%	0.32%	0.30%	0.27%	0.25%	0.23%	0.20%	0.18%
0.95%	0.39%	0.39%	0.39%	0.39%	0.36%	0.34%	0.31%	0.29%	0.26%	0.24%	0.21%	0.19%
1.00%	0.41%	0.41%	0.41%	0.41%	0.38%	0.36%	0.33%	0.30%	0.28%	0.25%	0.22%	0.20%
1.05%	0.43%	0.43%	0.43%	0.43%	0.40%	0.38%	0.35%	0.32%	0.29%	0.26%	0.23%	0.21%
1.10%	0.45%	0.45%	0.45%	0.45%	0.42%	0.39%	0.36%	0.33%	0.30%	0.28%	0.25%	0.22%
1.15%	0.47%	0.47%	0.47%	0.47%	0.44%	0.41%	0.38%	0.35%	0.32%	0.29%	0.26%	0.23%
1.20%	0.49%	0.49%	0.49%	0.49%	0.46%	0.43%	0.40%	0.36%	0.33%	0.30%	0.27%	0.24%
1.25%	0.51%	0.51%	0.51%	0.51%	0.48%	0.45%	0.41%	0.38%	0.35%	0.31%	0.28%	0.25%
1.30%	0.53%	0.53%	0.53%	0.53%	0.50%	0.46%	0.43%	0.39%	0.36%	0.33%	0.29%	0.26%
1.35%	0.55%	0.55%	0.55%	0.55%	0.52%	0.48%	0.45%	0.41%	0.37%	0.34%	0.30%	0.27%
1.40%	0.58%	0.58%	0.58%	0.58%	0.54%	0.50%	0.46%	0.43%	0.39%	0.36%	0.31%	0.28%
1.45%	0.60%	0.60%	0.60%	0.60%	0.56%	0.52%	0.48%	0.44%	0.40%	0.36%	0.32%	0.29%
1.50%	0.62%	0.62%	0.62%	0.62%	0.58%	0.54%	0.50%	0.46%	0.42%	0.38%	0.34%	0.30%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
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USD in thousands, unless specified

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
	06/30/2013	12/28/2013	03/29/2014	06/28/2014	09/30/2014	01/09/2015	04/04/2015	07/02/2015	09/30/2015	01/02/2016	04/02/2016	07/02/2016
3 Months Ending												
Sales & Services Revenue	8,871	9,049	9,170	9,657	10,047	9,933	10,340	10,348	10,523	9,115	13,181	13,913

<b>Number of Discount Offerings</b>	
Average Volume Discount	3.12%
Sample Contract Transaction Price	39,801
Volume Discount	1.163
Sample Transaction Price w/ Estimated Volume Disc.	38,608
Discount Allocation Profile	Equivalent
Standard Allocation to Engineering Phase	4.00%
Sample Transaction Price Attributable to Engineering	1,544.32

To illustrate the allocation of variable consideration to the following periods of revenue recognition, please use the drop-down list to select a sample discount strategy (as outlined on "Discount\_VC" sheet) and corresponding percent volume discount.

	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
Contract Revenue Before Discount (Eng.: 4% alloc.)	145.80	145.80	145.80	145.80	136.30	126.80	117.31	107.81	88.31	88.32	79.32	69.83
% engineering work	9.16%	9.16%	9.16%	9.16%	8.66%	7.99%	7.37%	6.77%	6.10%	6.69%	4.99%	4.39%
Contract Revenue w/ Estimated Volume Discount	141.43	141.43	141.43	141.43	132.22	123.00	113.79	104.58	85.37	86.16	76.94	67.73
Δ Revenue	4.37	4.37	4.37	4.37	4.08	3.80	3.52	3.23	2.95	2.86	2.38	2.09

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
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USD in thousands, unless specified

Volume Disc.	Nominal Decreases in Periodic Revenue as a Function of Percent Volume Discounts											
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016
1.00%	1.40	1.40	1.40	1.40	1.31	1.22	1.13	1.03	0.94	0.85	0.76	0.67
2.00%	2.80	2.80	2.80	2.80	2.62	2.43	2.25	2.07	1.89	1.71	1.52	1.34
3.00%	4.20	4.20	4.20	4.20	3.93	3.65	3.38	3.10	2.83	2.56	2.28	2.01
4.00%	5.60	5.60	5.60	5.60	5.23	4.87	4.50	4.14	3.78	3.41	3.05	2.68
5.00%	7.00	7.00	7.00	7.00	6.54	6.09	5.63	5.17	4.72	4.26	3.81	3.35
6.00%	8.40	8.40	8.40	8.40	7.85	7.30	6.76	6.21	5.66	5.12	4.57	4.02
7.00%	9.80	9.80	9.80	9.80	9.15	8.52	7.88	7.24	6.61	5.97	5.33	4.69
8.00%	11.20	11.20	11.20	11.20	10.47	9.74	9.01	8.28	7.55	6.82	6.09	5.36
9.00%	12.60	12.60	12.60	12.60	11.78	10.96	10.14	9.31	8.49	7.67	6.85	6.03
10.00%	14.00	14.00	14.00	14.00	13.08	12.17	11.26	10.36	9.44	8.53	7.61	6.70
11.00%	15.40	15.40	15.40	15.40	14.38	13.39	12.39	11.38	10.38	9.38	8.38	7.37
12.00%	16.80	16.80	16.80	16.80	15.70	14.61	13.51	12.42	11.33	10.23	9.14	8.04
13.00%	18.20	18.20	18.20	18.20	17.01	15.83	14.64	13.45	12.27	11.08	9.90	8.71
14.00%	19.60	19.60	19.60	19.60	18.32	17.04	15.77	14.49	13.21	11.94	10.66	9.38
15.00%	20.99	20.99	20.99	20.99	19.63	18.26	16.89	15.52	14.16	12.79	11.42	10.05
16.00%	22.39	22.39	22.39	22.39	20.94	19.48	18.02	16.66	15.10	13.64	12.18	10.73
17.00%	23.79	23.79	23.79	23.79	22.24	20.68	19.14	17.59	16.04	14.50	12.95	11.40
18.00%	25.19	25.19	25.19	25.19	23.55	21.91	20.27	18.63	16.99	15.35	13.71	12.07
19.00%	26.59	26.59	26.59	26.59	24.86	23.13	21.40	19.66	17.93	16.20	14.47	12.74
20.00%	27.99	27.99	27.99	27.99	26.17	24.35	22.62	20.70	18.88	17.05	15.23	13.41

Accounting for Change - Assessing Top-line Implications of New Revenue Recognition Principles  
 Data Manipulation  
 Variable Consideration: Manipulations

USD in thousands, unless specified

Volume Disc.	Relative Decreases in Periodic Revenue as a Function of Percent Volume Discounts												
	Q3 2013	Q4 2013	Q1 2014	Q2 2014	Q3 2014	Q4 2014	Q1 2015	Q2 2015	Q3 2015	Q4 2015	Q1 2016	Q2 2016	
1.00%	(0.02%)	(0.02%)	(0.02%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.01%)	(0.00%)
2.00%	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.02%)	(0.02%)	(0.02%)	(0.02%)	(0.02%)	(0.02%)	(0.02%)	(0.01%)
3.00%	(0.05%)	(0.05%)	(0.05%)	(0.04%)	(0.04%)	(0.04%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.03%)	(0.02%)	(0.01%)
4.00%	(0.06%)	(0.06%)	(0.06%)	(0.06%)	(0.05%)	(0.05%)	(0.04%)	(0.04%)	(0.04%)	(0.04%)	(0.04%)	(0.02%)	(0.02%)
5.00%	(0.08%)	(0.08%)	(0.08%)	(0.07%)	(0.07%)	(0.06%)	(0.05%)	(0.05%)	(0.05%)	(0.05%)	(0.05%)	(0.03%)	(0.03%)
6.00%	(0.09%)	(0.09%)	(0.09%)	(0.08%)	(0.08%)	(0.07%)	(0.07%)	(0.06%)	(0.06%)	(0.06%)	(0.06%)	(0.03%)	(0.03%)
7.00%	(0.11%)	(0.11%)	(0.11%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.07%)	(0.07%)	(0.07%)	(0.07%)	(0.04%)	(0.03%)
8.00%	(0.13%)	(0.12%)	(0.12%)	(0.12%)	(0.10%)	(0.10%)	(0.09%)	(0.08%)	(0.08%)	(0.07%)	(0.06%)	(0.05%)	(0.04%)
9.00%	(0.14%)	(0.14%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.09%)	(0.08%)	(0.08%)	(0.07%)	(0.06%)	(0.04%)
10.00%	(0.16%)	(0.15%)	(0.15%)	(0.14%)	(0.13%)	(0.12%)	(0.11%)	(0.10%)	(0.09%)	(0.09%)	(0.08%)	(0.06%)	(0.05%)
11.00%	(0.17%)	(0.17%)	(0.17%)	(0.16%)	(0.14%)	(0.14%)	(0.12%)	(0.11%)	(0.10%)	(0.10%)	(0.08%)	(0.06%)	(0.05%)
12.00%	(0.18%)	(0.18%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.13%)	(0.12%)	(0.11%)	(0.11%)	(0.07%)	(0.06%)	(0.05%)
13.00%	(0.21%)	(0.20%)	(0.20%)	(0.19%)	(0.17%)	(0.17%)	(0.14%)	(0.13%)	(0.12%)	(0.12%)	(0.08%)	(0.07%)	(0.06%)
14.00%	(0.22%)	(0.22%)	(0.21%)	(0.20%)	(0.18%)	(0.17%)	(0.15%)	(0.14%)	(0.13%)	(0.13%)	(0.08%)	(0.07%)	(0.06%)
15.00%	(0.24%)	(0.23%)	(0.23%)	(0.22%)	(0.20%)	(0.18%)	(0.16%)	(0.15%)	(0.14%)	(0.13%)	(0.09%)	(0.07%)	(0.07%)
16.00%	(0.25%)	(0.25%)	(0.24%)	(0.23%)	(0.21%)	(0.20%)	(0.17%)	(0.16%)	(0.15%)	(0.14%)	(0.09%)	(0.08%)	(0.07%)
17.00%	(0.27%)	(0.26%)	(0.26%)	(0.25%)	(0.22%)	(0.21%)	(0.18%)	(0.17%)	(0.16%)	(0.15%)	(0.10%)	(0.08%)	(0.08%)
18.00%	(0.28%)	(0.28%)	(0.27%)	(0.26%)	(0.23%)	(0.22%)	(0.20%)	(0.18%)	(0.17%)	(0.16%)	(0.10%)	(0.09%)	(0.08%)
19.00%	(0.30%)	(0.29%)	(0.29%)	(0.28%)	(0.25%)	(0.25%)	(0.21%)	(0.18%)	(0.17%)	(0.16%)	(0.11%)	(0.09%)	(0.08%)
20.00%	(0.32%)	(0.31%)	(0.31%)	(0.29%)	(0.26%)	(0.25%)	(0.22%)	(0.20%)	(0.18%)	(0.18%)	(0.12%)	(0.10%)	(0.10%)





Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentages Attributed to Engineering - Q3 2013

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.05%	0.03%	0.08%	0.08%	0.09%	0.11%	0.14%	0.18%	0.19%	0.21%	0.28%	0.21%
4.05%	0.02%	0.01%	0.04%	0.07%	0.09%	0.12%	0.15%	0.17%	0.20%	0.26%	0.20%
4.10%	0.04%	0.01%	0.02%	0.05%	0.08%	0.11%	0.13%	0.16%	0.18%	0.24%	0.18%
4.15%	0.06%	0.03%	0.00%	0.03%	0.06%	0.09%	0.10%	0.14%	0.17%	0.23%	0.18%
4.20%	0.08%	0.05%	0.02%	0.02%	0.04%	0.07%	0.10%	0.13%	0.15%	0.21%	0.17%
4.25%	0.10%	0.07%	0.03%	0.00%	0.03%	0.06%	0.08%	0.11%	0.14%	0.18%	0.16%
4.30%	0.12%	0.09%	0.06%	0.02%	0.01%	0.04%	0.07%	0.10%	0.12%	0.18%	0.14%
4.35%	0.14%	0.11%	0.07%	0.04%	0.01%	0.02%	0.05%	0.08%	0.11%	0.16%	0.13%
4.40%	0.16%	0.13%	0.09%	0.06%	0.02%	0.01%	0.04%	0.07%	0.10%	0.14%	0.12%
4.45%	0.18%	0.15%	0.11%	0.07%	0.04%	0.01%	0.02%	0.05%	0.08%	0.13%	0.11%
4.50%	0.21%	0.17%	0.13%	0.08%	0.06%	0.03%	0.01%	0.04%	0.06%	0.11%	0.10%
4.55%	0.23%	0.19%	0.15%	0.11%	0.07%	0.04%	0.01%	0.02%	0.05%	0.08%	0.08%
4.60%	0.25%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	0.01%	0.04%	0.08%	0.08%
4.65%	0.27%	0.23%	0.19%	0.14%	0.11%	0.08%	0.04%	0.01%	0.02%	0.06%	0.07%
4.70%	0.29%	0.25%	0.21%	0.16%	0.12%	0.09%	0.06%	0.03%	0.01%	0.04%	0.06%
4.75%	0.31%	0.27%	0.23%	0.18%	0.14%	0.11%	0.07%	0.04%	0.01%	0.03%	0.04%
4.80%	0.33%	0.29%	0.25%	0.20%	0.16%	0.13%	0.09%	0.06%	0.02%	0.01%	0.03%
4.85%	0.35%	0.31%	0.26%	0.22%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	0.02%
4.90%	0.37%	0.32%	0.28%	0.23%	0.19%	0.16%	0.12%	0.08%	0.05%	0.02%	0.01%
4.95%	0.38%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.00%
5.00%	0.41%	0.36%	0.32%	0.27%	0.22%	0.19%	0.15%	0.12%	0.08%	0.06%	0.01%
5.05%	0.43%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.13%	0.10%	0.07%	0.03%
5.10%	0.45%	0.40%	0.36%	0.31%	0.26%	0.23%	0.18%	0.15%	0.11%	0.08%	0.04%
5.15%	0.47%	0.42%	0.38%	0.32%	0.28%	0.24%	0.20%	0.16%	0.13%	0.11%	0.05%
5.20%	0.48%	0.44%	0.40%	0.34%	0.29%	0.26%	0.21%	0.18%	0.14%	0.13%	0.06%
5.25%	0.51%	0.46%	0.42%	0.36%	0.31%	0.28%	0.23%	0.20%	0.16%	0.14%	0.07%
5.30%	0.53%	0.48%	0.44%	0.38%	0.33%	0.29%	0.25%	0.21%	0.17%	0.16%	0.08%
5.35%	0.55%	0.50%	0.46%	0.39%	0.34%	0.31%	0.26%	0.23%	0.18%	0.18%	0.09%
5.40%	0.58%	0.52%	0.48%	0.41%	0.36%	0.33%	0.28%	0.24%	0.20%	0.19%	0.10%
5.45%	0.60%	0.54%	0.49%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.21%	0.12%
5.50%	0.62%	0.56%	0.51%	0.45%	0.39%	0.36%	0.31%	0.27%	0.23%	0.23%	0.13%

Margin Transfer	Legend
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Volume Discount	0.00% - 6.00%
Conservative	8.00% - 12.00%
Medial	14.00% - 20.00%
Liberal	

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.039%	0.042%
Conservative	Medial	(0.08%)	(0.08%)
Conservative	Liberal	(0.16%)	(0.16%)
Medial	Conservative	0.25%	0.25%
Medial	Medial	0.11%	0.11%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.45%	0.45%
Liberal	Medial	0.28%	0.28%
Liberal	Liberal	0.15%	0.15%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Allocated to Engineering - Q4 2013

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.03%)	(0.06%)	(0.09%)	(0.11%)	(0.14%)	(0.16%)	(0.19%)	(0.21%)	(0.23%)	(0.21%)
4.05%	0.00%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.12%)	(0.15%)	(0.17%)	(0.20%)	(0.20%)	(0.20%)
4.10%	0.04%	(0.01%)	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.13%)	(0.16%)	(0.18%)	(0.24%)	(0.19%)
4.15%	0.06%	0.03%	(0.00%)	(0.03%)	(0.06%)	(0.09%)	(0.12%)	(0.14%)	(0.17%)	(0.23%)	(0.18%)
4.20%	0.08%	0.05%	0.02%	(0.02%)	(0.04%)	(0.07%)	(0.10%)	(0.13%)	(0.15%)	(0.21%)	(0.17%)
4.25%	0.10%	0.07%	0.03%	0.00%	(0.03%)	(0.06%)	(0.08%)	(0.11%)	(0.14%)	(0.19%)	(0.16%)
4.30%	0.12%	0.09%	0.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.10%)	(0.12%)	(0.18%)	(0.14%)
4.35%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.16%)	(0.13%)
4.40%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.14%)	(0.12%)
4.45%	0.18%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.13%)	(0.11%)
4.50%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.06%)	(0.11%)	(0.10%)
4.55%	0.23%	0.19%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.09%)	(0.09%)
4.60%	0.26%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.08%)	(0.08%)
4.65%	0.27%	0.23%	0.19%	0.14%	0.10%	0.08%	0.04%	0.01%	(0.02%)	(0.06%)	(0.07%)
4.70%	0.28%	0.25%	0.21%	0.16%	0.12%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.05%)
4.75%	0.31%	0.27%	0.23%	0.18%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.03%)	(0.04%)
4.80%	0.33%	0.29%	0.26%	0.20%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.03%)
4.85%	0.35%	0.31%	0.28%	0.22%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)
4.90%	0.37%	0.32%	0.28%	0.23%	0.19%	0.16%	0.12%	0.09%	0.06%	0.02%	(0.01%)
4.95%	0.39%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.00%
5.00%	0.41%	0.36%	0.32%	0.27%	0.22%	0.19%	0.15%	0.12%	0.08%	0.06%	0.01%
5.05%	0.43%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.13%	0.10%	0.07%	0.03%
5.10%	0.45%	0.40%	0.36%	0.31%	0.26%	0.23%	0.18%	0.15%	0.11%	0.08%	0.04%
5.15%	0.47%	0.42%	0.38%	0.32%	0.28%	0.24%	0.20%	0.16%	0.13%	0.09%	0.05%
5.20%	0.49%	0.44%	0.40%	0.34%	0.29%	0.26%	0.21%	0.18%	0.14%	0.13%	0.06%
5.25%	0.51%	0.46%	0.42%	0.36%	0.31%	0.28%	0.23%	0.20%	0.16%	0.14%	0.07%
5.30%	0.53%	0.48%	0.44%	0.38%	0.33%	0.29%	0.25%	0.21%	0.17%	0.18%	0.08%
5.35%	0.55%	0.50%	0.46%	0.39%	0.34%	0.31%	0.26%	0.23%	0.19%	0.18%	0.09%
5.40%	0.58%	0.52%	0.48%	0.41%	0.36%	0.33%	0.28%	0.24%	0.20%	0.19%	0.10%
5.45%	0.60%	0.54%	0.49%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.21%	0.12%
5.50%	0.62%	0.56%	0.51%	0.45%	0.39%	0.36%	0.31%	0.27%	0.23%	0.23%	0.13%

**Margin Transfer**

Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%

**Volume Discount**

Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%

**Legend**

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.039%	0.042%
Medial	Medial	(0.06%)	(0.06%)
Liberal	Liberal	(0.16%)	(0.16%)
Conservative	Conservative	0.25%	0.25%
Medial	Medial	0.11%	0.11%
Liberal	Liberal	(0.00%)	0.00%
Conservative	Conservative	0.45%	0.45%
Medial	Medial	0.28%	0.28%
Liberal	Liberal	0.15%	0.15%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transition Price Percentage Attributed to Engineering - Q1 2014												
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%	
4.00%	0.00%	(0.03%)	(0.06%)	(0.09%)	(0.11%)	(0.14%)	(0.16%)	(0.19%)	(0.21%)	(0.25%)	(0.21%)	
4.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.08%)	(0.12%)	(0.15%)	(0.17%)	(0.20%)	(0.26%)	(0.20%)	
4.10%	0.04%	0.01%	(0.02%)	(0.05%)	(0.06%)	(0.11%)	(0.13%)	(0.16%)	(0.18%)	(0.24%)	(0.18%)	
4.15%	0.08%	0.03%	(0.00%)	(0.03%)	(0.04%)	(0.09%)	(0.12%)	(0.14%)	(0.17%)	(0.23%)	(0.18%)	
4.20%	0.08%	0.05%	0.02%	(0.02%)	(0.04%)	(0.07%)	(0.10%)	(0.13%)	(0.15%)	(0.21%)	(0.17%)	
4.25%	0.10%	0.07%	0.03%	0.00%	(0.03%)	(0.06%)	(0.08%)	(0.11%)	(0.14%)	(0.19%)	(0.16%)	
4.30%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.10%)	(0.12%)	(0.18%)	(0.14%)	
4.35%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.16%)	(0.13%)	
4.40%	0.18%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.14%)	(0.12%)	
4.45%	0.18%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.01%)	(0.04%)	(0.06%)	(0.13%)	(0.10%)	
4.50%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.06%)	(0.11%)	(0.10%)	
4.55%	0.23%	0.19%	0.15%	0.11%	0.08%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.08%)	
4.60%	0.26%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.08%)	(0.08%)	
4.65%	0.27%	0.23%	0.19%	0.14%	0.11%	0.08%	0.04%	0.01%	(0.02%)	(0.06%)	(0.07%)	
4.70%	0.29%	0.25%	0.21%	0.16%	0.12%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.05%)	
4.75%	0.31%	0.27%	0.23%	0.18%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.03%)	(0.04%)	
4.80%	0.33%	0.29%	0.25%	0.20%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.03%)	
4.85%	0.35%	0.31%	0.28%	0.22%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)	
4.90%	0.37%	0.32%	0.28%	0.23%	0.19%	0.16%	0.12%	0.09%	0.05%	0.02%	(0.01%)	
4.95%	0.39%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.00%	
5.00%	0.41%	0.36%	0.32%	0.27%	0.23%	0.19%	0.15%	0.12%	0.08%	0.06%	0.01%	
5.05%	0.43%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.13%	0.10%	0.07%	0.03%	
5.10%	0.45%	0.40%	0.36%	0.31%	0.26%	0.23%	0.19%	0.16%	0.11%	0.09%	0.04%	
5.15%	0.47%	0.42%	0.38%	0.32%	0.28%	0.24%	0.20%	0.16%	0.13%	0.11%	0.05%	
5.20%	0.49%	0.44%	0.40%	0.34%	0.29%	0.26%	0.21%	0.18%	0.14%	0.13%	0.06%	
5.25%	0.51%	0.46%	0.42%	0.36%	0.31%	0.28%	0.23%	0.20%	0.16%	0.14%	0.07%	
5.30%	0.53%	0.48%	0.44%	0.38%	0.33%	0.29%	0.25%	0.21%	0.17%	0.16%	0.08%	
5.35%	0.55%	0.50%	0.46%	0.39%	0.34%	0.31%	0.26%	0.23%	0.19%	0.18%	0.09%	
5.40%	0.58%	0.52%	0.48%	0.41%	0.36%	0.33%	0.28%	0.24%	0.20%	0.19%	0.10%	
5.45%	0.60%	0.54%	0.49%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.21%	0.12%	
5.50%	0.62%	0.56%	0.51%	0.45%	0.39%	0.36%	0.31%	0.27%	0.23%	0.23%	0.13%	

Margin Transfer		Volume Discount		Legend	
Conservative	4.00% - 4.45%	Conservative	0.00% - 6.00%	Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%	Medial	6.00% - 8.00%	Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%	Liberal	8.00% - 12.00%	Liberal	5.05% - 5.50%
		Conservative	12.00% - 14.00%	Conservative	0.00% - 6.00%
		Medial	14.00% - 20.00%	Medial	6.00% - 8.00%
		Liberal		Liberal	8.00% - 12.00%
					14.00% - 20.00%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q2 2014

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.03%)	(0.06%)	(0.09%)	(0.11%)	(0.14%)	(0.16%)	(0.19%)	(0.21%)	(0.23%)	(0.21%)
4.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.12%)	(0.15%)	(0.17%)	(0.20%)	(0.26%)	(0.20%)
4.10%	0.04%	(0.01%)	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.13%)	(0.16%)	(0.18%)	(0.24%)	(0.19%)
4.15%	0.06%	0.03%	(0.00%)	(0.03%)	(0.06%)	(0.09%)	(0.12%)	(0.14%)	(0.17%)	(0.23%)	(0.18%)
4.20%	0.08%	0.05%	0.02%	(0.02%)	(0.04%)	(0.07%)	(0.10%)	(0.13%)	(0.15%)	(0.21%)	(0.17%)
4.25%	0.10%	0.07%	0.03%	0.00%	(0.03%)	(0.06%)	(0.08%)	(0.11%)	(0.14%)	(0.18%)	(0.16%)
4.30%	0.12%	0.09%	0.05%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.10%)	(0.12%)	(0.18%)	(0.14%)
4.35%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.11%)	(0.16%)	(0.13%)
4.40%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.14%)	(0.12%)
4.45%	0.18%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.01%)	(0.06%)	(0.08%)	(0.13%)	(0.11%)
4.50%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.06%)	(0.11%)	(0.10%)
4.55%	0.23%	0.19%	0.15%	0.11%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.09%)	(0.08%)
4.60%	0.25%	0.21%	0.17%	0.13%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.08%)	(0.08%)
4.65%	0.27%	0.23%	0.19%	0.14%	0.11%	0.08%	0.04%	0.01%	(0.02%)	(0.06%)	(0.07%)
4.70%	0.29%	0.25%	0.21%	0.16%	0.12%	0.09%	0.06%	0.03%	(0.01%)	(0.04%)	(0.05%)
4.75%	0.31%	0.27%	0.23%	0.18%	0.14%	0.11%	0.07%	0.04%	0.01%	(0.03%)	(0.04%)
4.80%	0.33%	0.29%	0.25%	0.20%	0.16%	0.13%	0.09%	0.06%	0.02%	(0.01%)	(0.03%)
4.85%	0.35%	0.31%	0.28%	0.22%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)
4.90%	0.37%	0.32%	0.28%	0.23%	0.19%	0.16%	0.12%	0.09%	0.06%	0.02%	(0.01%)
4.95%	0.39%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.00%
5.00%	0.41%	0.36%	0.32%	0.27%	0.22%	0.19%	0.15%	0.12%	0.08%	0.06%	0.01%
5.05%	0.43%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.13%	0.10%	0.07%	0.03%
5.10%	0.45%	0.40%	0.36%	0.31%	0.26%	0.23%	0.18%	0.15%	0.11%	0.08%	0.04%
5.15%	0.47%	0.42%	0.38%	0.32%	0.28%	0.24%	0.20%	0.16%	0.13%	0.09%	0.05%
5.20%	0.49%	0.44%	0.40%	0.34%	0.29%	0.26%	0.21%	0.18%	0.14%	0.11%	0.08%
5.25%	0.51%	0.46%	0.42%	0.36%	0.31%	0.28%	0.23%	0.20%	0.16%	0.13%	0.08%
5.30%	0.53%	0.48%	0.44%	0.38%	0.33%	0.29%	0.25%	0.21%	0.17%	0.14%	0.07%
5.35%	0.55%	0.50%	0.46%	0.39%	0.34%	0.31%	0.26%	0.23%	0.19%	0.16%	0.08%
5.40%	0.58%	0.52%	0.48%	0.41%	0.36%	0.33%	0.28%	0.24%	0.20%	0.18%	0.09%
5.45%	0.60%	0.54%	0.49%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.21%	0.12%
5.50%	0.62%	0.56%	0.51%	0.45%	0.39%	0.36%	0.31%	0.27%	0.23%	0.23%	0.13%

Margin Transfer	Legend
Conservative	Conservative
Medial	Medial
Liberal	Liberal
Volume Discount	Conservative
	Medial
	Liberal

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.039%	0.042%
Medial	Medial	(0.06%)	(0.06%)
Liberal	Liberal	(0.16%)	(0.16%)
Conservative	Conservative	0.24%	0.25%
Medial	Medial	0.11%	0.11%
Liberal	Liberal	(0.00%)	0.00%
Conservative	Conservative	0.45%	0.45%
Medial	Medial	0.28%	0.28%
Liberal	Liberal	0.15%	0.15%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Allocated to Engineering - Q3 2014											
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	0.03%	0.06%	0.08%	0.10%	0.13%	0.15%	0.18%	0.20%	0.25%	0.20%
4.05%	0.02%	(0.01%)	(0.04%)	(0.06%)	(0.09%)	(0.12%)	(0.14%)	(0.18%)	(0.19%)	(0.24%)	(0.18%)
4.10%	0.04%	0.01%	(0.02%)	(0.05%)	(0.07%)	(0.10%)	(0.12%)	(0.15%)	(0.17%)	(0.23%)	(0.16%)
4.15%	0.08%	0.03%	(0.00%)	(0.03%)	(0.05%)	(0.08%)	(0.11%)	(0.13%)	(0.16%)	(0.21%)	(0.17%)
4.20%	0.08%	0.05%	0.01%	(0.01%)	(0.04%)	(0.07%)	(0.09%)	(0.12%)	(0.14%)	(0.20%)	(0.16%)
4.25%	0.10%	0.06%	0.03%	0.00%	(0.03%)	(0.06%)	(0.08%)	(0.11%)	(0.13%)	(0.18%)	(0.15%)
4.30%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.04%)	(0.06%)	(0.08%)	(0.10%)	(0.16%)	(0.14%)
4.35%	0.13%	0.10%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.08%)	(0.10%)	(0.15%)	(0.12%)
4.40%	0.15%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.03%)	(0.06%)	(0.09%)	(0.13%)	(0.11%)
4.45%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.07%)	(0.12%)	(0.10%)
4.50%	0.18%	0.16%	0.12%	0.09%	0.05%	0.02%	(0.01%)	(0.03%)	(0.06%)	(0.10%)	(0.08%)
4.55%	0.21%	0.17%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)	(0.05%)	(0.09%)	(0.07%)
4.60%	0.23%	0.19%	0.16%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.03%)	(0.07%)	(0.05%)
4.65%	0.26%	0.21%	0.18%	0.14%	0.10%	0.07%	0.04%	0.01%	(0.02%)	(0.06%)	(0.04%)
4.70%	0.27%	0.23%	0.19%	0.15%	0.12%	0.09%	0.05%	0.02%	(0.01%)	(0.04%)	(0.05%)
4.75%	0.29%	0.25%	0.21%	0.17%	0.13%	0.10%	0.07%	0.04%	0.01%	(0.02%)	(0.04%)
4.80%	0.31%	0.27%	0.23%	0.19%	0.15%	0.12%	0.08%	0.05%	0.02%	(0.01%)	(0.03%)
4.85%	0.33%	0.29%	0.25%	0.20%	0.16%	0.13%	0.10%	0.07%	0.04%	0.01%	(0.02%)
4.90%	0.36%	0.30%	0.27%	0.22%	0.18%	0.15%	0.11%	0.08%	0.05%	0.02%	(0.01%)
4.95%	0.38%	0.32%	0.28%	0.24%	0.19%	0.16%	0.13%	0.10%	0.06%	0.04%	0.00%
5.00%	0.38%	0.34%	0.30%	0.25%	0.21%	0.18%	0.14%	0.11%	0.08%	0.05%	0.01%
5.05%	0.40%	0.36%	0.32%	0.27%	0.23%	0.20%	0.16%	0.12%	0.09%	0.07%	0.02%
5.10%	0.42%	0.38%	0.34%	0.29%	0.24%	0.21%	0.17%	0.14%	0.11%	0.08%	0.03%
5.15%	0.44%	0.40%	0.35%	0.30%	0.26%	0.23%	0.19%	0.16%	0.12%	0.10%	0.04%
5.20%	0.48%	0.41%	0.37%	0.32%	0.27%	0.24%	0.20%	0.17%	0.13%	0.12%	0.06%
5.25%	0.48%	0.43%	0.38%	0.34%	0.29%	0.26%	0.22%	0.18%	0.15%	0.13%	0.07%
5.30%	0.50%	0.45%	0.41%	0.36%	0.30%	0.27%	0.23%	0.20%	0.16%	0.15%	0.08%
5.35%	0.52%	0.47%	0.43%	0.37%	0.32%	0.29%	0.24%	0.21%	0.17%	0.16%	0.09%
5.40%	0.54%	0.48%	0.44%	0.38%	0.34%	0.31%	0.26%	0.23%	0.18%	0.18%	0.10%
5.45%	0.56%	0.51%	0.46%	0.40%	0.35%	0.32%	0.27%	0.24%	0.20%	0.20%	0.11%
5.50%	0.58%	0.53%	0.48%	0.42%	0.37%	0.34%	0.29%	0.25%	0.22%	0.21%	0.12%

Margin Transfer	Legend
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Volume Discount	0.00% - 6.00%
Conservative	8.00% - 12.00%
Medial	14.00% - 20.00%
Liberal	

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.03%	0.039%
Conservative	Medial	(0.06%)	(0.06%)
Conservative	Liberal	(0.15%)	(0.15%)
Medial	Conservative	0.23%	0.22%
Medial	Medial	0.10%	0.10%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.42%	0.42%
Liberal	Medial	0.26%	0.26%
Liberal	Liberal	0.14%	0.14%



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Allowed to Engineering - Q4 2014

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	0.03%	0.05%	0.08%	0.10%	0.12%	0.14%	0.16%	0.19%	0.21%	0.18%
4.05%	0.02%	0.01%	0.04%	0.06%	0.08%	0.11%	0.13%	0.15%	0.17%	0.23%	0.17%
4.10%	0.04%	0.01%	0.02%	0.04%	0.07%	0.08%	0.11%	0.14%	0.16%	0.21%	0.17%
4.15%	0.06%	0.02%	0.00%	0.03%	0.05%	0.06%	0.10%	0.15%	0.16%	0.18%	0.15%
4.20%	0.07%	0.04%	0.01%	0.01%	0.04%	0.08%	0.11%	0.11%	0.13%	0.18%	0.15%
4.25%	0.09%	0.06%	0.03%	0.00%	0.02%	0.05%	0.07%	0.10%	0.12%	0.17%	0.14%
4.30%	0.11%	0.08%	0.05%	0.02%	0.01%	0.04%	0.06%	0.08%	0.11%	0.15%	0.13%
4.35%	0.13%	0.09%	0.06%	0.03%	0.01%	0.02%	0.05%	0.07%	0.10%	0.14%	0.12%
4.40%	0.14%	0.11%	0.08%	0.05%	0.02%	0.01%	0.03%	0.06%	0.12%	0.15%	0.11%
4.45%	0.16%	0.13%	0.10%	0.06%	0.03%	0.01%	0.02%	0.04%	0.07%	0.11%	0.10%
4.50%	0.18%	0.15%	0.11%	0.08%	0.05%	0.02%	0.02%	0.03%	0.06%	0.10%	0.09%
4.55%	0.20%	0.16%	0.13%	0.10%	0.06%	0.04%	0.01%	0.04%	0.08%	0.12%	0.08%
4.60%	0.21%	0.18%	0.15%	0.11%	0.08%	0.05%	0.02%	0.00%	0.03%	0.07%	0.07%
4.65%	0.23%	0.20%	0.16%	0.13%	0.09%	0.07%	0.04%	0.01%	0.02%	0.06%	0.06%
4.70%	0.25%	0.21%	0.18%	0.14%	0.11%	0.08%	0.05%	0.02%	0.01%	0.05%	0.05%
4.75%	0.27%	0.23%	0.20%	0.16%	0.12%	0.09%	0.06%	0.04%	0.01%	0.02%	0.04%
4.80%	0.29%	0.25%	0.21%	0.17%	0.14%	0.11%	0.08%	0.05%	0.02%	0.01%	0.03%
4.85%	0.30%	0.27%	0.23%	0.19%	0.15%	0.12%	0.09%	0.06%	0.03%	0.01%	0.02%
4.90%	0.32%	0.28%	0.25%	0.20%	0.17%	0.14%	0.10%	0.08%	0.05%	0.02%	0.01%
4.95%	0.34%	0.30%	0.26%	0.22%	0.18%	0.15%	0.12%	0.09%	0.06%	0.04%	0.00%
5.00%	0.36%	0.32%	0.28%	0.23%	0.20%	0.17%	0.13%	0.10%	0.07%	0.05%	0.01%
5.05%	0.38%	0.33%	0.30%	0.25%	0.21%	0.18%	0.15%	0.12%	0.09%	0.07%	0.02%
5.10%	0.38%	0.35%	0.31%	0.27%	0.22%	0.20%	0.16%	0.13%	0.10%	0.08%	0.03%
5.15%	0.41%	0.37%	0.33%	0.28%	0.24%	0.21%	0.17%	0.14%	0.11%	0.08%	0.04%
5.20%	0.43%	0.39%	0.36%	0.30%	0.26%	0.23%	0.19%	0.16%	0.12%	0.11%	0.06%
5.25%	0.45%	0.40%	0.38%	0.31%	0.27%	0.24%	0.20%	0.17%	0.14%	0.12%	0.06%
5.30%	0.48%	0.42%	0.38%	0.33%	0.28%	0.25%	0.21%	0.18%	0.15%	0.14%	0.07%
5.35%	0.48%	0.44%	0.40%	0.34%	0.30%	0.27%	0.23%	0.20%	0.18%	0.16%	0.08%
5.40%	0.50%	0.45%	0.41%	0.36%	0.31%	0.28%	0.24%	0.21%	0.18%	0.17%	0.08%
5.45%	0.52%	0.47%	0.43%	0.37%	0.33%	0.30%	0.26%	0.23%	0.19%	0.18%	0.10%
5.50%	0.54%	0.49%	0.45%	0.39%	0.34%	0.31%	0.27%	0.24%	0.20%	0.20%	0.11%

Legend

Margin Transfer	Volume Discount
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.034%	0.037%
Conservative	Medial	0.06%	0.06%
Conservative	Liberal	0.14%	0.14%
Medial	Conservative	0.21%	0.21%
Medial	Medial	0.09%	0.09%
Medial	Liberal	0.00%	0.00%
Liberal	Conservative	0.39%	0.38%
Liberal	Medial	0.24%	0.24%
Liberal	Liberal	0.13%	0.13%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q1 2015

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	0.05%	0.08%	0.09%	0.09%	0.11%	0.13%	0.15%	0.17%	0.21%	0.17%
4.05%	0.02%	0.01%	0.03%	0.06%	0.08%	0.10%	0.12%	0.14%	0.18%	0.22%	0.18%
4.10%	0.03%	0.01%	0.02%	0.04%	0.06%	0.09%	0.11%	0.13%	0.15%	0.20%	0.15%
4.15%	0.05%	0.02%	0.00%	0.03%	0.05%	0.07%	0.09%	0.12%	0.14%	0.18%	0.14%
4.20%	0.07%	0.04%	0.01%	0.01%	0.04%	0.06%	0.08%	0.10%	0.12%	0.17%	0.13%
4.25%	0.08%	0.05%	0.03%	0.00%	0.02%	0.05%	0.07%	0.09%	0.11%	0.16%	0.13%
4.30%	0.10%	0.07%	0.04%	0.02%	0.01%	0.03%	0.05%	0.08%	0.10%	0.14%	0.12%
4.35%	0.12%	0.08%	0.06%	0.03%	0.01%	0.02%	0.04%	0.07%	0.09%	0.13%	0.11%
4.40%	0.13%	0.10%	0.07%	0.04%	0.02%	0.01%	0.03%	0.05%	0.08%	0.11%	0.10%
4.45%	0.15%	0.12%	0.09%	0.06%	0.03%	0.01%	0.02%	0.04%	0.08%	0.10%	0.09%
4.50%	0.17%	0.13%	0.10%	0.07%	0.05%	0.02%	0.00%	0.03%	0.05%	0.09%	0.08%
4.55%	0.18%	0.15%	0.12%	0.09%	0.08%	0.03%	0.01%	0.02%	0.04%	0.07%	0.07%
4.60%	0.20%	0.17%	0.14%	0.10%	0.07%	0.05%	0.02%	0.00%	0.03%	0.06%	0.06%
4.65%	0.21%	0.18%	0.15%	0.12%	0.09%	0.06%	0.03%	0.01%	0.02%	0.05%	0.05%
4.70%	0.23%	0.20%	0.17%	0.13%	0.10%	0.07%	0.05%	0.02%	0.00%	0.03%	0.04%
4.75%	0.25%	0.21%	0.18%	0.15%	0.11%	0.08%	0.06%	0.03%	0.01%	0.02%	0.03%
4.80%	0.26%	0.23%	0.20%	0.17%	0.13%	0.10%	0.07%	0.05%	0.02%	0.01%	0.03%
4.85%	0.28%	0.25%	0.21%	0.17%	0.14%	0.11%	0.08%	0.06%	0.03%	0.01%	0.02%
4.90%	0.30%	0.28%	0.23%	0.19%	0.15%	0.13%	0.10%	0.07%	0.04%	0.02%	0.01%
4.95%	0.31%	0.28%	0.24%	0.20%	0.17%	0.14%	0.11%	0.08%	0.05%	0.03%	0.00%
5.00%	0.33%	0.29%	0.26%	0.22%	0.18%	0.16%	0.12%	0.09%	0.07%	0.05%	0.01%
5.05%	0.35%	0.31%	0.27%	0.23%	0.19%	0.17%	0.13%	0.11%	0.08%	0.06%	0.02%
5.10%	0.36%	0.33%	0.29%	0.25%	0.21%	0.18%	0.15%	0.12%	0.09%	0.07%	0.03%
5.15%	0.38%	0.34%	0.31%	0.26%	0.22%	0.20%	0.16%	0.13%	0.10%	0.08%	0.04%
5.20%	0.40%	0.36%	0.32%	0.27%	0.24%	0.21%	0.17%	0.14%	0.11%	0.10%	0.05%
5.25%	0.41%	0.37%	0.34%	0.29%	0.25%	0.22%	0.19%	0.16%	0.13%	0.11%	0.06%
5.30%	0.43%	0.39%	0.35%	0.30%	0.26%	0.24%	0.20%	0.17%	0.14%	0.13%	0.07%
5.35%	0.45%	0.40%	0.37%	0.32%	0.28%	0.25%	0.21%	0.18%	0.15%	0.14%	0.08%
5.40%	0.46%	0.42%	0.38%	0.33%	0.29%	0.26%	0.22%	0.19%	0.16%	0.15%	0.08%
5.45%	0.48%	0.44%	0.40%	0.35%	0.30%	0.28%	0.24%	0.21%	0.17%	0.16%	0.09%
5.50%	0.50%	0.45%	0.41%	0.36%	0.32%	0.29%	0.25%	0.22%	0.19%	0.18%	0.10%

Margin Transfer	Legend
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Volume Discount	
Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.032%	0.034%
Conservative	Medial	(0.05%)	(0.05%)
Conservative	Liberal	(0.13%)	(0.13%)
Medial	Conservative	0.20%	0.20%
Medial	Medial	0.09%	0.09%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.36%	0.36%
Liberal	Medial	0.22%	0.23%
Liberal	Liberal	0.12%	0.12%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q2 2015

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	0.02%	0.03%	0.04%	0.05%	0.06%	0.07%	0.08%	0.09%	0.10%	0.11%
4.05%	(0.00%)	(0.01%)	(0.03%)	(0.05%)	(0.08%)	(0.10%)	(0.12%)	(0.14%)	(0.16%)	(0.18%)	(0.20%)
4.10%	0.03%	0.01%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.10%)	(0.12%)	(0.14%)	(0.16%)	(0.18%)
4.15%	0.06%	0.02%	(0.00%)	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.09%)	(0.11%)	(0.12%)	(0.13%)
4.20%	0.08%	0.04%	0.01%	0.00%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.10%)	(0.11%)	(0.12%)
4.25%	0.08%	0.05%	0.03%	0.00%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.09%)	(0.10%)	(0.11%)
4.30%	0.08%	0.06%	0.04%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)	(0.10%)	(0.11%)
4.35%	0.11%	0.08%	0.05%	0.03%	0.00%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.10%)	(0.11%)
4.40%	0.12%	0.09%	0.07%	0.04%	0.02%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)
4.45%	0.14%	0.11%	0.08%	0.05%	0.03%	0.01%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.09%)
4.50%	0.15%	0.12%	0.10%	0.07%	0.04%	0.02%	(0.00%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)
4.55%	0.17%	0.14%	0.11%	0.08%	0.05%	0.03%	0.01%	(0.02%)	(0.04%)	(0.06%)	(0.07%)
4.60%	0.18%	0.15%	0.12%	0.09%	0.07%	0.04%	0.02%	(0.00%)	(0.03%)	(0.05%)	(0.06%)
4.65%	0.20%	0.17%	0.14%	0.11%	0.08%	0.06%	0.03%	0.01%	(0.02%)	(0.04%)	(0.05%)
4.70%	0.21%	0.18%	0.15%	0.12%	0.09%	0.07%	0.04%	0.02%	(0.00%)	(0.03%)	(0.04%)
4.75%	0.23%	0.20%	0.17%	0.13%	0.10%	0.08%	0.05%	0.03%	0.01%	(0.02%)	(0.03%)
4.80%	0.24%	0.21%	0.18%	0.15%	0.12%	0.09%	0.07%	0.04%	0.02%	(0.01%)	(0.02%)
4.85%	0.26%	0.23%	0.20%	0.16%	0.13%	0.11%	0.08%	0.05%	0.03%	0.01%	(0.01%)
4.90%	0.27%	0.24%	0.21%	0.17%	0.14%	0.12%	0.09%	0.06%	0.04%	0.02%	(0.01%)
4.95%	0.29%	0.25%	0.22%	0.19%	0.15%	0.13%	0.10%	0.08%	0.05%	0.03%	0.00%
5.00%	0.30%	0.27%	0.24%	0.20%	0.17%	0.14%	0.11%	0.09%	0.06%	0.04%	0.01%
5.05%	0.32%	0.28%	0.25%	0.21%	0.18%	0.15%	0.12%	0.10%	0.07%	0.05%	0.02%
5.10%	0.33%	0.30%	0.27%	0.23%	0.19%	0.17%	0.14%	0.11%	0.08%	0.06%	0.03%
5.15%	0.36%	0.31%	0.28%	0.24%	0.20%	0.18%	0.15%	0.12%	0.09%	0.07%	0.04%
5.20%	0.36%	0.33%	0.29%	0.25%	0.22%	0.19%	0.16%	0.13%	0.11%	0.09%	0.04%
5.25%	0.38%	0.34%	0.31%	0.27%	0.23%	0.20%	0.17%	0.14%	0.12%	0.10%	0.05%
5.30%	0.39%	0.36%	0.32%	0.28%	0.24%	0.22%	0.18%	0.16%	0.13%	0.12%	0.08%
5.35%	0.41%	0.37%	0.34%	0.29%	0.25%	0.23%	0.19%	0.17%	0.14%	0.13%	0.07%
5.40%	0.43%	0.39%	0.36%	0.31%	0.27%	0.24%	0.21%	0.18%	0.15%	0.14%	0.08%
5.45%	0.44%	0.40%	0.37%	0.32%	0.28%	0.25%	0.22%	0.19%	0.16%	0.15%	0.09%
5.50%	0.46%	0.42%	0.38%	0.33%	0.29%	0.27%	0.23%	0.20%	0.17%	0.17%	0.09%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.029%	0.031%
Medial	Medial	(0.05%)	(0.05%)
Liberal	Liberal	(0.12%)	(0.12%)
Conservative	Conservative	0.18%	0.18%
Medial	Medial	0.08%	0.08%
Liberal	Liberal	(0.00%)	0.00%
Conservative	Conservative	0.33%	0.33%
Medial	Medial	0.20%	0.21%
Liberal	Liberal	0.11%	0.11%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	4.00% - 4.45%	4.00% - 4.45%
Medial	Medial	4.50% - 5.00%	4.50% - 5.00%
Liberal	Liberal	5.05% - 5.50%	5.05% - 5.50%
Conservative	Conservative	0.00% - 6.00%	0.00% - 6.00%
Medial	Medial	8.00% - 12.00%	8.00% - 12.00%
Liberal	Liberal	14.00% - 20.00%	14.00% - 20.00%



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q3 2015

	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.10%)	(0.11%)	(0.13%)	(0.14%)	(0.16%)	(0.14%)
4.05%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.06%)	(0.08%)	(0.10%)	(0.12%)	(0.13%)	(0.16%)	(0.14%)
4.10%	0.03%	0.01%	(0.02%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)	(0.11%)	(0.12%)	(0.16%)	(0.13%)
4.15%	0.04%	0.02%	(0.00%)	(0.02%)	(0.04%)	(0.06%)	(0.07%)	(0.10%)	(0.11%)	(0.15%)	(0.12%)
4.20%	0.06%	0.03%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)	(0.10%)	(0.14%)	(0.11%)
4.25%	0.07%	0.05%	0.02%	0.00%	(0.02%)	(0.04%)	(0.06%)	(0.08%)	(0.09%)	(0.13%)	(0.11%)
4.30%	0.08%	0.06%	0.04%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)	(0.12%)	(0.10%)
4.35%	0.10%	0.07%	0.05%	0.03%	0.00%	(0.02%)	(0.04%)	(0.06%)	(0.07%)	(0.11%)	(0.09%)
4.40%	0.11%	0.08%	0.06%	0.04%	0.02%	(0.01%)	(0.02%)	(0.04%)	(0.06%)	(0.10%)	(0.08%)
4.45%	0.12%	0.10%	0.08%	0.06%	0.03%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.09%)	(0.07%)
4.50%	0.14%	0.11%	0.09%	0.06%	0.04%	0.02%	(0.00%)	(0.02%)	(0.04%)	(0.07%)	(0.07%)
4.55%	0.15%	0.13%	0.10%	0.07%	0.05%	0.03%	0.01%	(0.01%)	(0.03%)	(0.06%)	(0.06%)
4.60%	0.17%	0.14%	0.11%	0.09%	0.06%	0.04%	0.02%	(0.00%)	(0.02%)	(0.05%)	(0.05%)
4.65%	0.18%	0.15%	0.13%	0.10%	0.07%	0.05%	0.03%	0.01%	(0.01%)	(0.04%)	(0.04%)
4.70%	0.19%	0.17%	0.14%	0.11%	0.08%	0.06%	0.04%	0.02%	(0.00%)	(0.03%)	(0.03%)
4.75%	0.21%	0.18%	0.15%	0.12%	0.09%	0.07%	0.05%	0.03%	0.01%	(0.02%)	(0.03%)
4.80%	0.23%	0.19%	0.17%	0.13%	0.11%	0.08%	0.06%	0.04%	0.02%	(0.01%)	(0.02%)
4.85%	0.24%	0.21%	0.18%	0.15%	0.12%	0.10%	0.07%	0.05%	0.03%	0.01%	(0.01%)
4.90%	0.25%	0.22%	0.19%	0.16%	0.13%	0.11%	0.08%	0.06%	0.04%	0.02%	(0.01%)
4.95%	0.26%	0.23%	0.20%	0.17%	0.14%	0.12%	0.09%	0.07%	0.05%	0.03%	0.00%
5.00%	0.28%	0.25%	0.22%	0.18%	0.15%	0.13%	0.10%	0.08%	0.06%	0.04%	0.01%
5.05%	0.28%	0.26%	0.23%	0.19%	0.16%	0.14%	0.11%	0.09%	0.07%	0.05%	0.02%
5.10%	0.30%	0.27%	0.24%	0.21%	0.17%	0.15%	0.12%	0.10%	0.08%	0.06%	0.02%
5.15%	0.32%	0.29%	0.26%	0.22%	0.19%	0.16%	0.13%	0.11%	0.09%	0.07%	0.03%
5.20%	0.33%	0.30%	0.27%	0.23%	0.20%	0.17%	0.14%	0.12%	0.10%	0.08%	0.04%
5.25%	0.35%	0.31%	0.28%	0.24%	0.21%	0.18%	0.16%	0.13%	0.11%	0.10%	0.05%
5.30%	0.36%	0.33%	0.29%	0.25%	0.22%	0.20%	0.17%	0.14%	0.12%	0.11%	0.06%
5.35%	0.37%	0.34%	0.31%	0.27%	0.23%	0.21%	0.18%	0.15%	0.13%	0.12%	0.06%
5.40%	0.39%	0.35%	0.32%	0.28%	0.24%	0.22%	0.19%	0.16%	0.14%	0.13%	0.07%
5.45%	0.40%	0.37%	0.33%	0.29%	0.25%	0.23%	0.20%	0.17%	0.15%	0.14%	0.08%
5.50%	0.42%	0.38%	0.35%	0.30%	0.27%	0.24%	0.21%	0.18%	0.16%	0.15%	0.08%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.027%	0.025%
Conservative	Medial	(0.04%)	(0.04%)
Conservative	Liberal	(0.11%)	(0.11%)
Medial	Conservative	0.17%	0.17%
Medial	Medial	0.07%	0.07%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.30%	0.30%
Liberal	Medial	0.19%	0.19%
Liberal	Liberal	0.10%	0.10%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	4.00% - 4.45%	4.00% - 4.45%
Conservative	Medial	4.60% - 5.00%	4.60% - 5.00%
Conservative	Liberal	5.05% - 5.50%	5.05% - 5.50%
Medial	Conservative	0.00% - 6.00%	0.00% - 6.00%
Medial	Medial	8.00% - 12.00%	8.00% - 12.00%
Medial	Liberal	14.00% - 20.00%	14.00% - 20.00%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Allocated to Engineering - Q4 2015											
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.02%)	(0.04%)	(0.05%)	(0.07%)	(0.09%)	(0.10%)	(0.12%)	(0.13%)	(0.17%)	(0.13%)
4.05%	0.01%	(0.01%)	(0.03%)	(0.04%)	(0.06%)	(0.08%)	(0.09%)	(0.11%)	(0.12%)	(0.16%)	(0.12%)
4.10%	0.03%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.07%)	(0.08%)	(0.10%)	(0.11%)	(0.15%)	(0.12%)
4.15%	0.04%	0.02%	(0.00%)	(0.02%)	(0.04%)	(0.06%)	(0.07%)	(0.09%)	(0.10%)	(0.14%)	(0.11%)
4.20%	0.05%	0.03%	0.01%	(0.01%)	(0.03%)	(0.05%)	(0.06%)	(0.08%)	(0.09%)	(0.13%)	(0.10%)
4.25%	0.06%	0.04%	0.02%	0.00%	(0.02%)	(0.04%)	(0.05%)	(0.07%)	(0.08%)	(0.12%)	(0.09%)
4.30%	0.08%	0.05%	0.03%	0.01%	(0.01%)	(0.03%)	(0.04%)	(0.06%)	(0.07%)	(0.11%)	(0.08%)
4.35%	0.09%	0.07%	0.04%	0.02%	0.00%	(0.01%)	(0.03%)	(0.05%)	(0.06%)	(0.10%)	(0.08%)
4.40%	0.10%	0.08%	0.06%	0.03%	0.01%	(0.00%)	(0.02%)	(0.04%)	(0.05%)	(0.09%)	(0.07%)
4.45%	0.11%	0.09%	0.07%	0.04%	0.02%	0.01%	(0.01%)	(0.03%)	(0.04%)	(0.08%)	(0.07%)
4.50%	0.13%	0.10%	0.08%	0.06%	0.03%	0.02%	(0.00%)	(0.02%)	(0.04%)	(0.07%)	(0.06%)
4.55%	0.14%	0.11%	0.09%	0.07%	0.04%	0.03%	0.01%	(0.01%)	(0.03%)	(0.06%)	(0.05%)
4.60%	0.15%	0.13%	0.10%	0.08%	0.06%	0.04%	0.02%	(0.00%)	(0.02%)	(0.05%)	(0.05%)
4.65%	0.16%	0.14%	0.11%	0.09%	0.07%	0.05%	0.03%	0.01%	(0.01%)	(0.04%)	(0.04%)
4.70%	0.18%	0.15%	0.13%	0.10%	0.08%	0.06%	0.03%	0.02%	(0.00%)	(0.03%)	(0.03%)
4.75%	0.19%	0.16%	0.14%	0.11%	0.09%	0.07%	0.04%	0.03%	0.01%	(0.02%)	(0.03%)
4.80%	0.20%	0.17%	0.15%	0.12%	0.10%	0.08%	0.05%	0.04%	0.02%	(0.01%)	(0.02%)
4.85%	0.21%	0.18%	0.16%	0.13%	0.11%	0.09%	0.06%	0.04%	0.03%	0.00%	(0.01%)
4.90%	0.23%	0.20%	0.17%	0.14%	0.12%	0.10%	0.07%	0.05%	0.03%	0.01%	(0.01%)
4.95%	0.24%	0.21%	0.18%	0.15%	0.13%	0.11%	0.08%	0.06%	0.04%	0.03%	0.00%
5.00%	0.25%	0.22%	0.20%	0.16%	0.14%	0.12%	0.09%	0.07%	0.05%	0.04%	0.01%
5.05%	0.26%	0.23%	0.21%	0.18%	0.15%	0.13%	0.10%	0.08%	0.06%	0.05%	0.02%
5.10%	0.28%	0.25%	0.22%	0.19%	0.16%	0.14%	0.11%	0.09%	0.07%	0.06%	0.02%
5.15%	0.29%	0.26%	0.23%	0.20%	0.17%	0.15%	0.12%	0.10%	0.08%	0.07%	0.03%
5.20%	0.30%	0.27%	0.24%	0.21%	0.18%	0.16%	0.13%	0.11%	0.09%	0.08%	0.04%
5.25%	0.31%	0.28%	0.25%	0.22%	0.19%	0.17%	0.14%	0.12%	0.10%	0.09%	0.04%
5.30%	0.33%	0.29%	0.27%	0.23%	0.20%	0.18%	0.15%	0.13%	0.10%	0.10%	0.05%
5.35%	0.34%	0.31%	0.28%	0.24%	0.21%	0.19%	0.16%	0.14%	0.11%	0.11%	0.06%
5.40%	0.35%	0.32%	0.29%	0.25%	0.22%	0.20%	0.17%	0.15%	0.12%	0.12%	0.06%
5.45%	0.36%	0.33%	0.30%	0.26%	0.23%	0.21%	0.18%	0.16%	0.13%	0.13%	0.07%
5.50%	0.38%	0.34%	0.31%	0.27%	0.24%	0.22%	0.19%	0.17%	0.14%	0.14%	0.08%

Margin Transfer	Legend
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Volume Discount	
Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.024%	0.026%
Conservative	Medial	(0.04%)	(0.04%)
Conservative	Liberal	(0.10%)	(0.10%)
Medial	Conservative	0.15%	0.15%
Medial	Medial	0.07%	0.07%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.27%	0.27%
Liberal	Medial	0.17%	0.17%
Liberal	Liberal	0.09%	0.09%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Allocated to Engineering - Q1 2016											
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	14.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.02%)	(0.03%)	(0.05%)	(0.08%)	(0.08%)	(0.09%)	(0.10%)	(0.12%)	(0.15%)	(0.12%)
4.05%	0.01%	(0.01%)	(0.02%)	(0.04%)	(0.05%)	(0.07%)	(0.08%)	(0.09%)	(0.11%)	(0.14%)	(0.11%)
4.10%	0.02%	0.00%	(0.01%)	(0.03%)	(0.04%)	(0.06%)	(0.07%)	(0.08%)	(0.10%)	(0.13%)	(0.10%)
4.15%	0.03%	0.02%	(0.00%)	(0.02%)	(0.03%)	(0.05%)	(0.06%)	(0.08%)	(0.08%)	(0.12%)	(0.10%)
4.20%	0.04%	0.03%	0.01%	(0.01%)	(0.02%)	(0.04%)	(0.05%)	(0.07%)	(0.08%)	(0.11%)	(0.09%)
4.25%	0.06%	0.04%	0.02%	0.00%	(0.01%)	(0.03%)	(0.05%)	(0.06%)	(0.08%)	(0.10%)	(0.08%)
4.30%	0.07%	0.05%	0.03%	0.01%	(0.01%)	(0.02%)	(0.04%)	(0.05%)	(0.07%)	(0.10%)	(0.08%)
4.35%	0.08%	0.06%	0.04%	0.02%	0.00%	(0.01%)	(0.03%)	(0.04%)	(0.06%)	(0.09%)	(0.07%)
4.40%	0.09%	0.07%	0.05%	0.03%	0.01%	(0.00%)	(0.02%)	(0.03%)	(0.05%)	(0.08%)	(0.07%)
4.45%	0.10%	0.08%	0.06%	0.04%	0.02%	0.00%	(0.01%)	(0.02%)	(0.04%)	(0.07%)	(0.06%)
4.50%	0.11%	0.09%	0.07%	0.05%	0.03%	0.01%	(0.00%)	(0.01%)	(0.03%)	(0.06%)	(0.05%)
4.55%	0.12%	0.10%	0.08%	0.06%	0.04%	0.02%	0.01%	(0.01%)	(0.02%)	(0.05%)	(0.04%)
4.60%	0.13%	0.11%	0.09%	0.07%	0.05%	0.03%	0.02%	(0.00%)	(0.01%)	(0.04%)	(0.03%)
4.65%	0.15%	0.12%	0.10%	0.08%	0.06%	0.04%	0.02%	0.01%	(0.01%)	(0.03%)	(0.02%)
4.70%	0.16%	0.13%	0.11%	0.09%	0.07%	0.05%	0.03%	0.02%	(0.00%)	(0.02%)	(0.01%)
4.75%	0.17%	0.14%	0.12%	0.10%	0.08%	0.06%	0.04%	0.02%	(0.00%)	(0.01%)	(0.00%)
4.80%	0.18%	0.15%	0.13%	0.11%	0.09%	0.07%	0.05%	0.03%	0.01%	(0.00%)	(0.01%)
4.85%	0.19%	0.16%	0.14%	0.12%	0.09%	0.08%	0.06%	0.04%	0.02%	0.00%	(0.01%)
4.90%	0.20%	0.18%	0.15%	0.13%	0.10%	0.08%	0.07%	0.05%	0.03%	0.01%	(0.00%)
4.95%	0.21%	0.19%	0.16%	0.14%	0.11%	0.10%	0.07%	0.06%	0.04%	0.02%	0.00%
5.00%	0.22%	0.20%	0.18%	0.15%	0.12%	0.10%	0.08%	0.06%	0.05%	0.03%	0.01%
5.05%	0.23%	0.21%	0.19%	0.16%	0.13%	0.11%	0.09%	0.07%	0.06%	0.04%	0.01%
5.10%	0.25%	0.22%	0.20%	0.17%	0.14%	0.12%	0.10%	0.08%	0.06%	0.05%	0.02%
5.15%	0.26%	0.23%	0.21%	0.18%	0.15%	0.13%	0.11%	0.09%	0.07%	0.06%	0.03%
5.20%	0.27%	0.24%	0.22%	0.19%	0.16%	0.14%	0.12%	0.10%	0.08%	0.07%	0.03%
5.25%	0.28%	0.25%	0.23%	0.20%	0.17%	0.15%	0.13%	0.11%	0.09%	0.08%	0.04%
5.30%	0.29%	0.26%	0.24%	0.21%	0.18%	0.16%	0.14%	0.11%	0.09%	0.08%	0.04%
5.35%	0.30%	0.27%	0.25%	0.22%	0.19%	0.17%	0.14%	0.12%	0.10%	0.10%	0.05%
5.40%	0.31%	0.28%	0.26%	0.23%	0.20%	0.18%	0.15%	0.13%	0.11%	0.10%	0.06%
5.45%	0.32%	0.30%	0.27%	0.24%	0.21%	0.19%	0.16%	0.14%	0.12%	0.11%	0.06%
5.50%	0.34%	0.31%	0.28%	0.24%	0.21%	0.20%	0.17%	0.15%	0.13%	0.12%	0.07%

Margin Transfer		Volume Discount		Mean	
Conservative	0.021%	Conservative	0.023%	Conservative	0.023%
Medial	(0.04%)	Medial	(0.04%)	Medial	(0.04%)
Liberal	(0.09%)	Liberal	(0.09%)	Liberal	(0.09%)
Conservative	0.13%	Conservative	0.13%	Conservative	0.13%
Medial	0.06%	Medial	0.06%	Medial	0.06%
Liberal	(0.00%)	Liberal	(0.00%)	Liberal	0.00%
Conservative	0.24%	Conservative	0.24%	Conservative	0.24%
Medial	0.15%	Medial	0.15%	Medial	0.15%
Liberal	0.08%	Liberal	0.08%	Liberal	0.08%

Margin Transfer		Volume Discount		Mean	
Conservative	4.00% - 4.45%	Conservative	4.00% - 4.45%	Conservative	4.00% - 4.45%
Medial	4.60% - 5.00%	Medial	4.60% - 5.00%	Medial	4.60% - 5.00%
Liberal	5.05% - 5.50%	Liberal	5.05% - 5.50%	Liberal	5.05% - 5.50%
Conservative	0.00% - 6.00%	Conservative	0.00% - 6.00%	Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%	Medial	8.00% - 12.00%	Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%	Liberal	14.00% - 20.00%	Liberal	14.00% - 20.00%

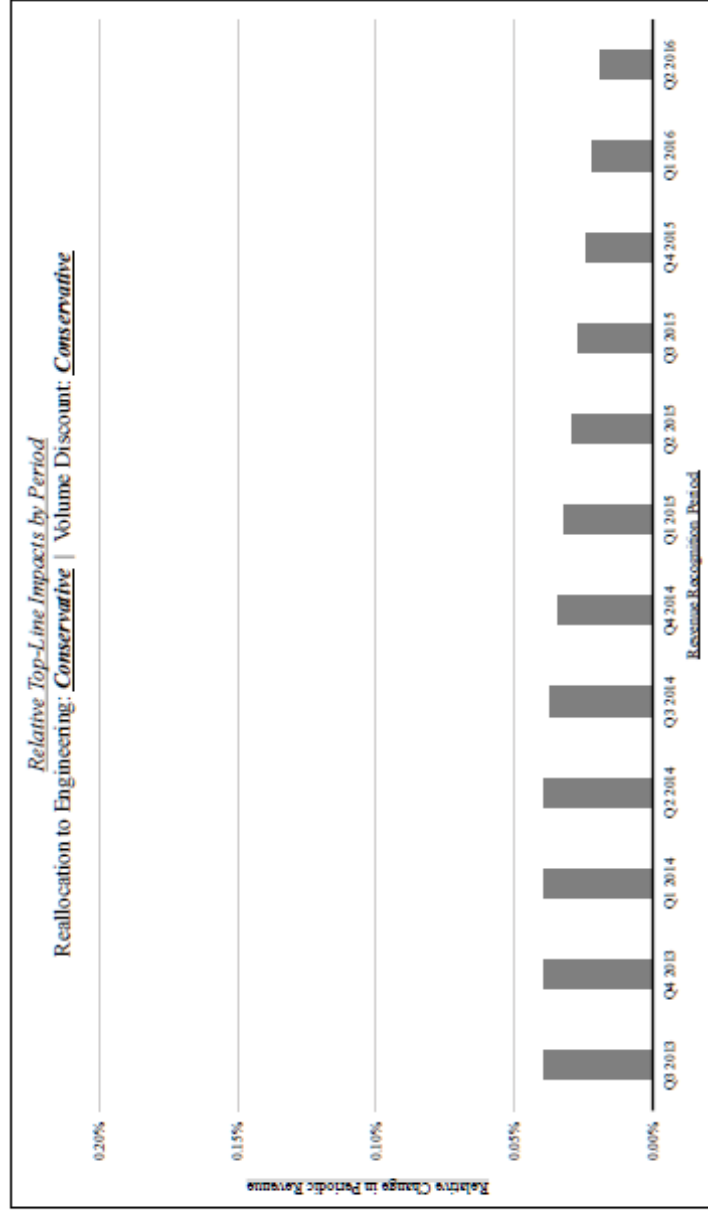
Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 Top-Line Impacts: Relative Periodic Changes

Relative Changes in Periodic Revenue as a Function of Percent Volume Discounts & Transaction Price Percentage Attributed to Engineering - Q2 2015										
	0.00%	2.00%	4.00%	6.00%	8.00%	10.00%	12.00%	16.00%	18.00%	20.00%
4.00%	0.00%	(0.01%)	(0.03%)	(0.04%)	(0.05%)	(0.07%)	(0.08%)	(0.10%)	(0.13%)	(0.10%)
4.05%	0.01%	(0.01%)	(0.02%)	(0.03%)	(0.05%)	(0.06%)	(0.07%)	(0.09%)	(0.12%)	(0.10%)
4.10%	0.02%	0.00%	(0.01%)	(0.02%)	(0.04%)	(0.05%)	(0.06%)	(0.08%)	(0.12%)	(0.09%)
4.15%	0.03%	0.01%	(0.00%)	(0.02%)	(0.03%)	(0.04%)	(0.05%)	(0.07%)	(0.11%)	(0.08%)
4.20%	0.04%	0.02%	0.01%	(0.01%)	(0.02%)	(0.03%)	(0.04%)	(0.06%)	(0.10%)	(0.08%)
4.25%	0.05%	0.03%	0.02%	0.00%	(0.01%)	(0.02%)	(0.03%)	(0.05%)	(0.09%)	(0.07%)
4.30%	0.06%	0.04%	0.03%	0.01%	(0.01%)	(0.02%)	(0.03%)	(0.05%)	(0.08%)	(0.07%)
4.35%	0.07%	0.05%	0.04%	0.02%	0.00%	(0.01%)	(0.02%)	(0.04%)	(0.07%)	(0.06%)
4.40%	0.08%	0.06%	0.04%	0.03%	0.01%	(0.00%)	(0.01%)	(0.03%)	(0.06%)	(0.05%)
4.45%	0.09%	0.07%	0.05%	0.04%	0.02%	0.00%	(0.01%)	(0.02%)	(0.05%)	(0.04%)
4.50%	0.10%	0.08%	0.06%	0.04%	0.03%	0.01%	(0.00%)	(0.02%)	(0.04%)	(0.03%)
4.55%	0.11%	0.09%	0.07%	0.05%	0.04%	0.02%	0.00%	(0.01%)	(0.03%)	(0.02%)
4.60%	0.12%	0.10%	0.08%	0.06%	0.04%	0.03%	0.01%	(0.01%)	(0.04%)	(0.03%)
4.65%	0.13%	0.11%	0.09%	0.07%	0.05%	0.04%	0.02%	(0.01%)	(0.03%)	(0.02%)
4.70%	0.14%	0.12%	0.10%	0.08%	0.06%	0.04%	0.03%	0.01%	(0.02%)	(0.01%)
4.75%	0.15%	0.13%	0.11%	0.09%	0.07%	0.05%	0.04%	0.02%	(0.01%)	(0.01%)
4.80%	0.16%	0.14%	0.12%	0.10%	0.08%	0.06%	0.04%	0.03%	0.01%	(0.00%)
4.85%	0.17%	0.15%	0.13%	0.10%	0.08%	0.07%	0.05%	0.03%	0.02%	(0.01%)
4.90%	0.18%	0.16%	0.14%	0.11%	0.09%	0.08%	0.06%	0.04%	0.02%	(0.00%)
4.95%	0.19%	0.17%	0.15%	0.12%	0.10%	0.09%	0.07%	0.05%	0.03%	0.01%
5.00%	0.20%	0.17%	0.15%	0.13%	0.11%	0.09%	0.07%	0.06%	0.04%	0.01%
5.05%	0.21%	0.18%	0.16%	0.14%	0.12%	0.10%	0.08%	0.06%	0.04%	0.01%
5.10%	0.22%	0.19%	0.17%	0.15%	0.12%	0.11%	0.09%	0.07%	0.05%	0.02%
5.15%	0.23%	0.20%	0.18%	0.16%	0.13%	0.12%	0.10%	0.08%	0.06%	0.02%
5.20%	0.24%	0.21%	0.19%	0.17%	0.14%	0.12%	0.10%	0.07%	0.06%	0.03%
5.25%	0.25%	0.22%	0.20%	0.17%	0.15%	0.13%	0.11%	0.09%	0.07%	0.03%
5.30%	0.26%	0.23%	0.21%	0.18%	0.16%	0.14%	0.12%	0.10%	0.08%	0.04%
5.35%	0.27%	0.24%	0.22%	0.19%	0.17%	0.15%	0.13%	0.11%	0.09%	0.04%
5.40%	0.28%	0.25%	0.23%	0.20%	0.17%	0.16%	0.13%	0.12%	0.10%	0.05%
5.45%	0.29%	0.26%	0.24%	0.21%	0.18%	0.16%	0.14%	0.12%	0.10%	0.05%
5.50%	0.30%	0.27%	0.25%	0.21%	0.19%	0.17%	0.15%	0.13%	0.11%	0.06%

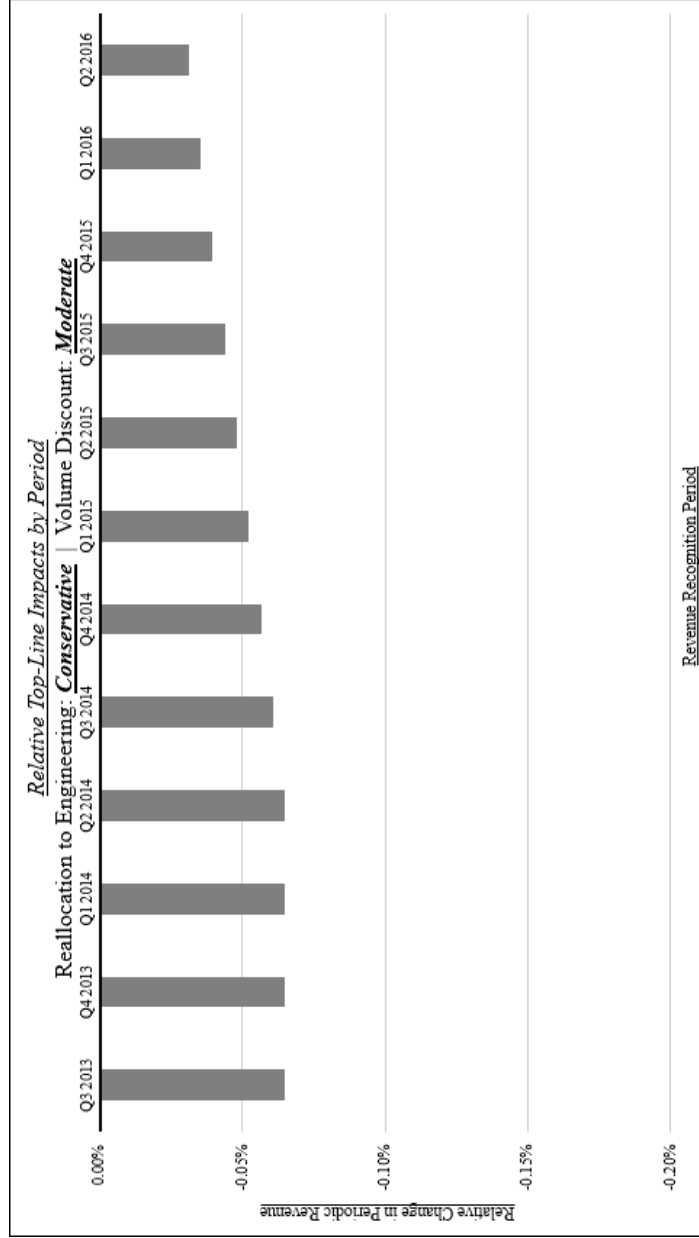
Margin Transfer	Legend
Conservative	4.00% - 4.45%
Medial	4.50% - 5.00%
Liberal	5.05% - 5.50%
Volume Discount	
Conservative	0.00% - 6.00%
Medial	8.00% - 12.00%
Liberal	14.00% - 20.00%

Margin Transfer	Volume Discount	Median	Mean
Conservative	Conservative	0.019%	0.020%
Conservative	Medial	(0.03%)	(0.03%)
Conservative	Liberal	(0.08%)	(0.08%)
Medial	Conservative	0.12%	0.12%
Medial	Medial	0.05%	0.05%
Medial	Liberal	(0.00%)	0.00%
Liberal	Conservative	0.21%	0.21%
Liberal	Medial	0.13%	0.13%
Liberal	Liberal	0.07%	0.07%

Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation

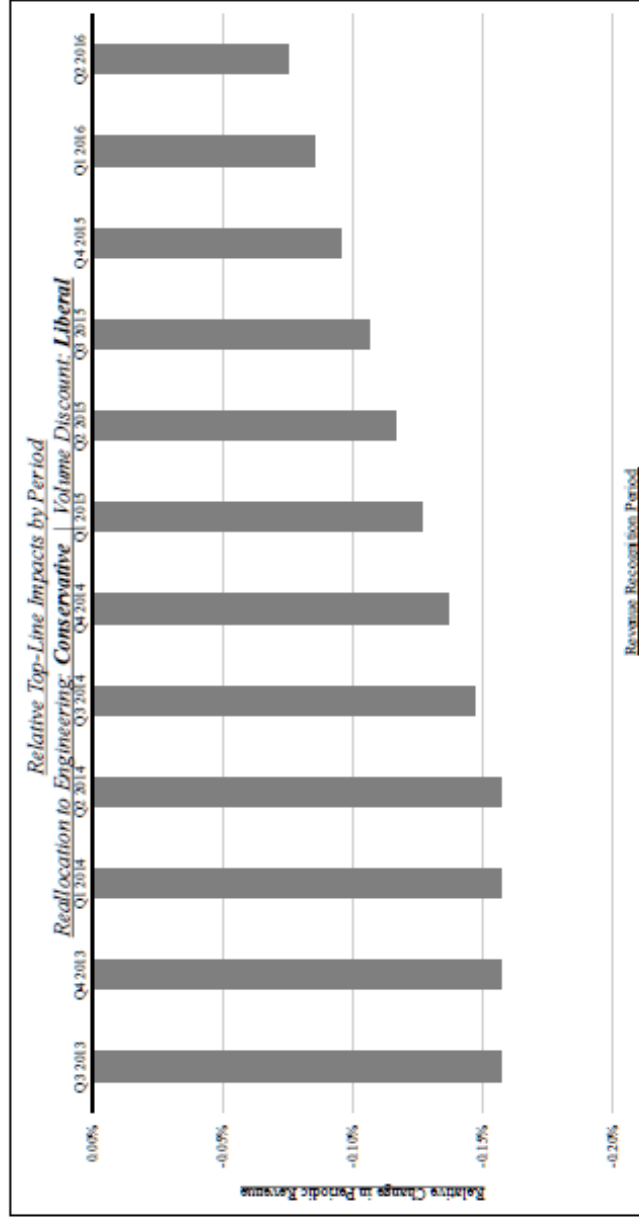


Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



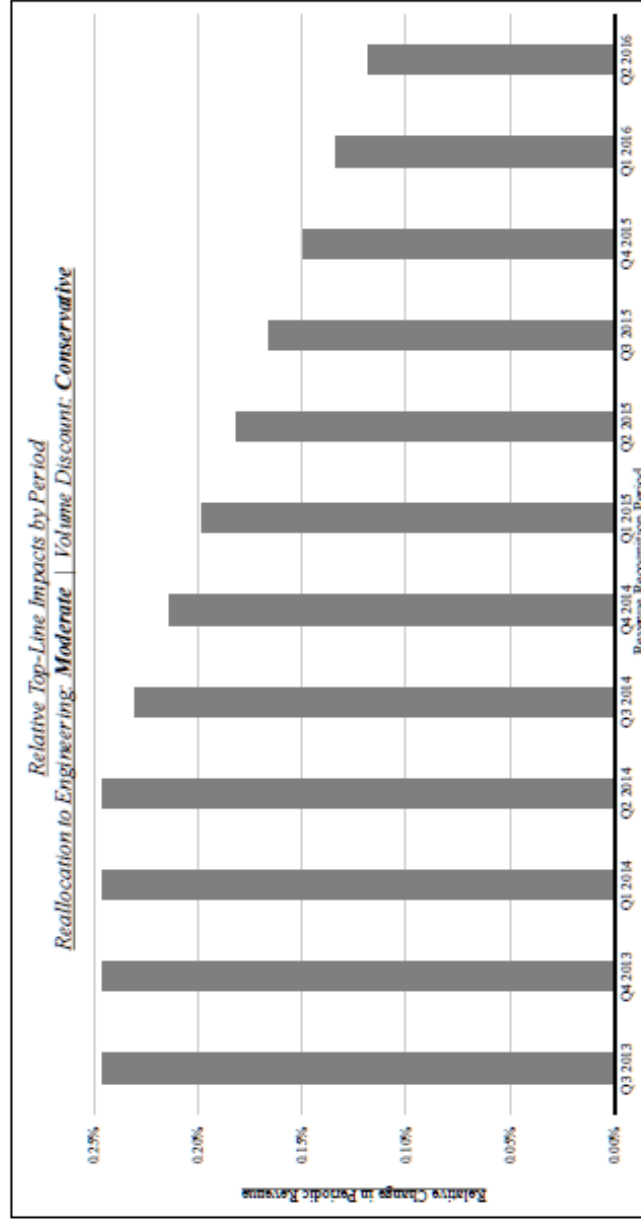
Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation

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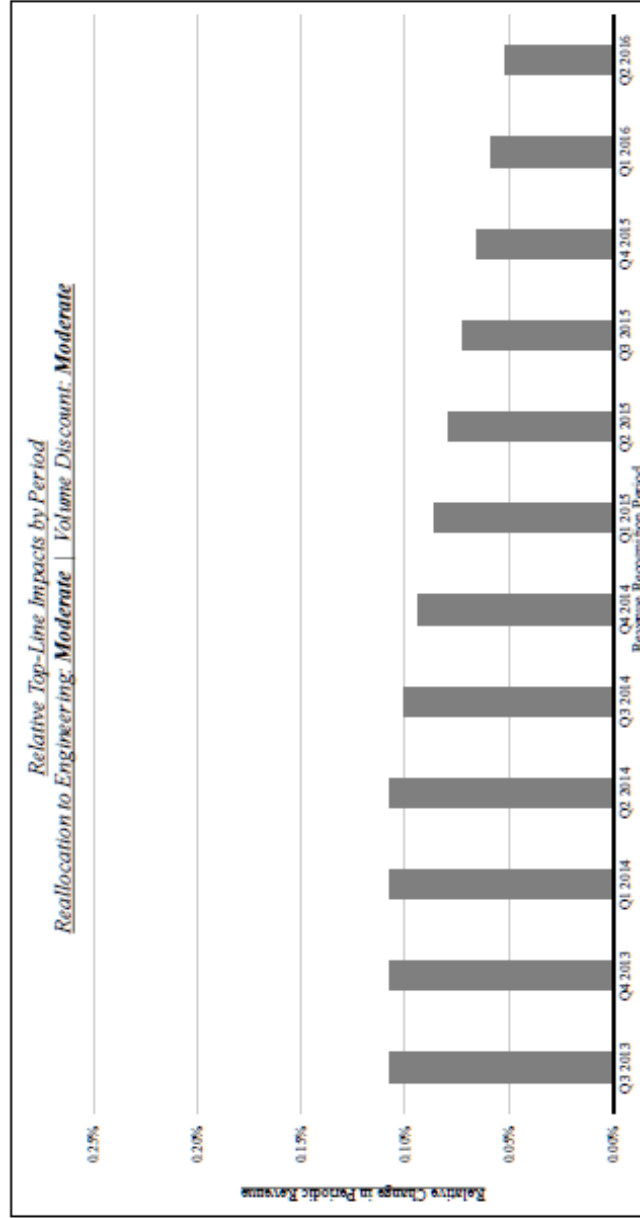
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Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation

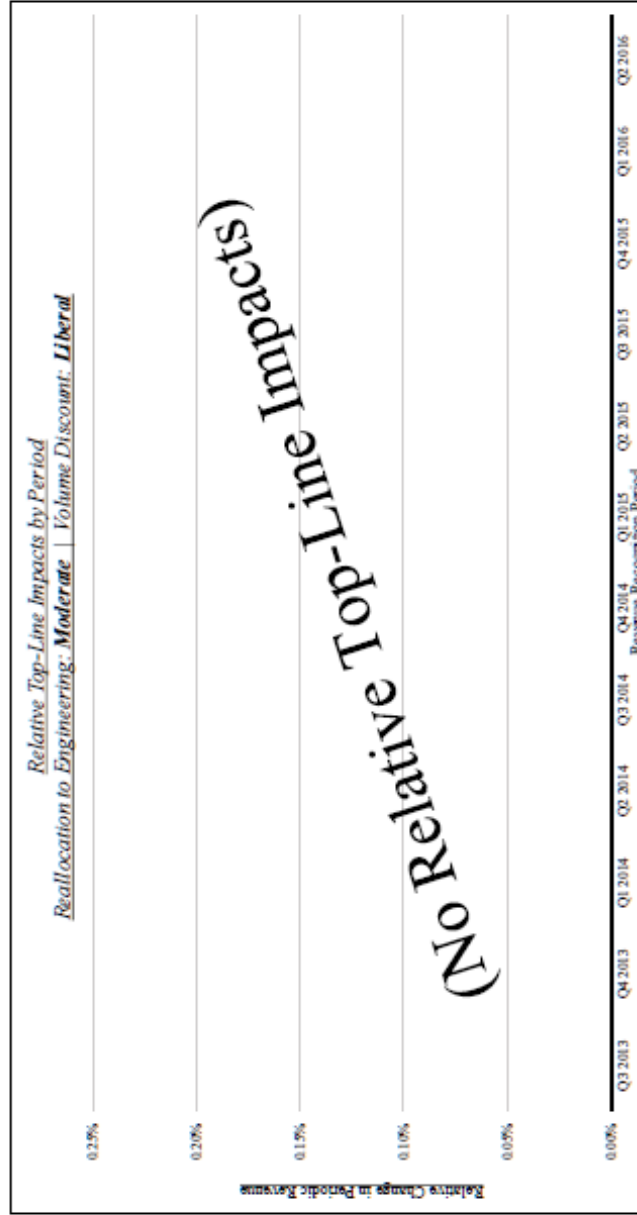




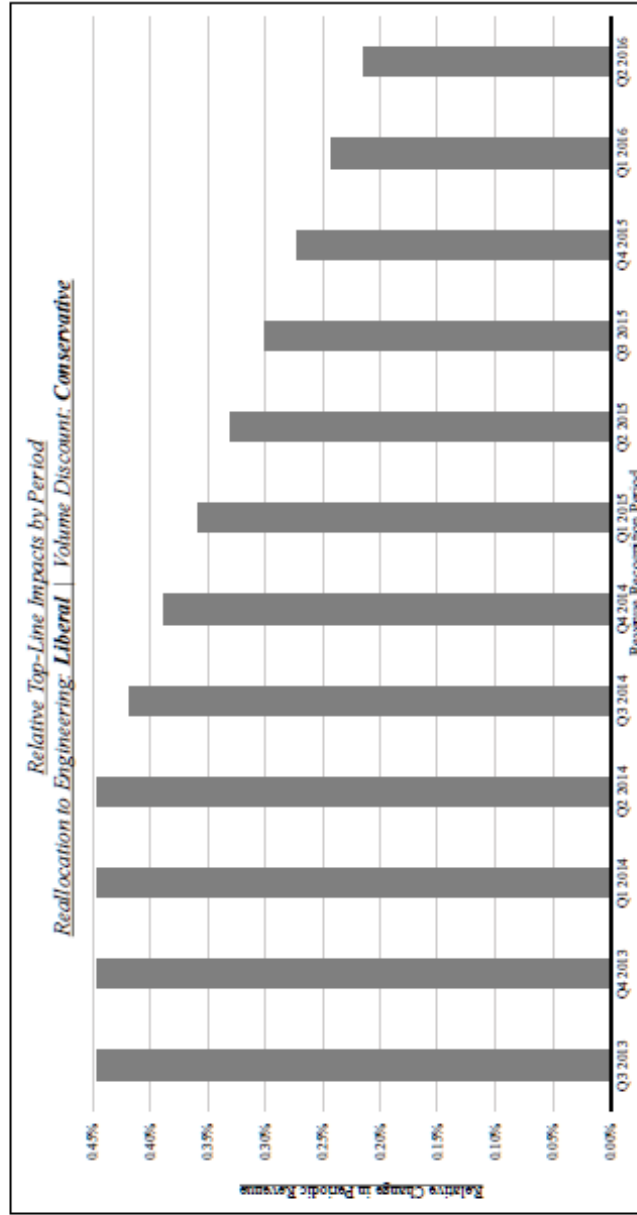
Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



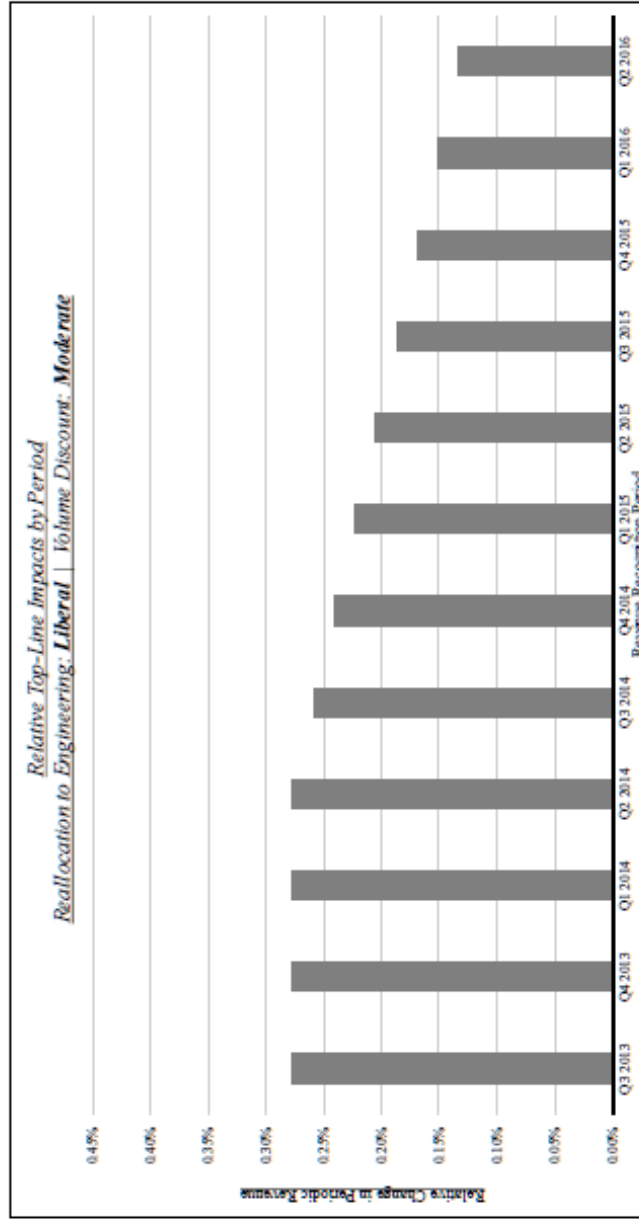
Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



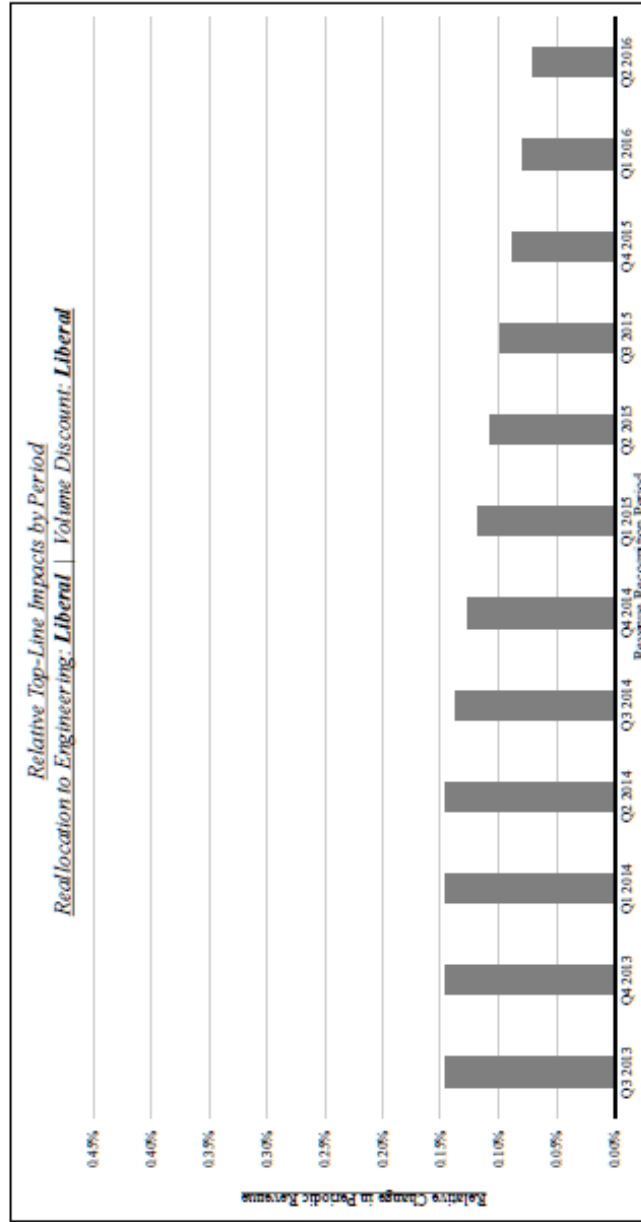
Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Relative Periodic Changes by Level of Manipulation



Accounting for Change: Assessing Top-line Implications of New Revenue Recognition Principles  
 Periodic Exhibits & Charts  
 (Chart) Top-Line Impacts: Average Relative Periodic Changes of All Levels of Manipulation

