
CHAPTER 11

U.S. GAAP AND INTERNATIONAL ACCOUNTING STANDARDS

CONTENTS

Introduction	11.02
Accounting Sources for Construction Contractors	11.03
U.S. GAAP	11.03
IFRS	11.04
Problems with U.S. GAAP for Contractors	11.04
Revenue Recognition Methods	11.04
U.S. GAAP: Percentage-of-Completion Method (PCM)	11.04
U.S. GAAP: Nature of Reasonable Estimates and Inherent Hazards	11.07
IFRS: Recognition of Contract Revenue and Expenses	11.08
Measuring Progress on Contracts under the PCM	11.11
U.S. GAAP	11.11
Income Determination: Revenue Elements	11.16
U.S. GAAP	11.16
IFRS	11.16
<i>Exhibit 11-1: Analysis of an Agreement for the Construction of Real Estate</i>	11.24
Change Orders	11.33
Claims	11.36
<i>Exhibit 11-2: IASB Accounting Policies for Claims and Variations</i>	11.38
Incentives	11.39
Income Determination: Cost Elements for Contractors	11.39
IFRS on Costs	11.42
Revised Estimates	11.44
Anticipated Losses on Contracts	11.47

Combining and Segmenting Criteria	11.48
Service Contracts	11.53
Other Unique IFRS Treatments	11.55
Multiple Element Contracts	11.55
Measurement	11.56
Construction Contract Work in Progress	11.56
IFRS Presentation and Disclosure	11.57
Appendix 11A: Example IFRS Disclosures	11.60

INTRODUCTION

International Financial Reporting Standards (IFRS) have mostly been an item of curiosity for American contractors and their financial statement preparers and users. With the FASB's announcement in the spring of 2008 that it will most likely defer to IFRS as FASB and the IASB (International Accounting Standards Board) accelerate their international convergence efforts, and the changes in the AICPA rules to permit standards in accordance with IFRS standards and their similarities and differences with U.S. GAAP have become a major issue for American contractors. The SEC has stated that it would like IASB standards to be implemented over the next several years, with a goal of accomplishing this within five years or so.

U.S. GAAP for contractors has not been recently updated (the main U.S. GAAP source, SOP 81-1 (ASC Subtopic 605-35), was issued in 1981). On the other hand, IFRS is more current (not only with IAS-11 (Construction Contracts), issued in 1993, but also with the July 2008 release of the IFRIC Interpretation 15 (IFRIC-15) (Agreements for the Construction of Real Estate), thereby seemingly increasing the chance that international contractor accounting rules would win out in a negotiation between FASB and IFRS. Finally, since the creation of the Private Company Financial Reporting Committee (www.pcfcr.org), the heightened concern is not only about what will happen to contractor U.S. GAAP involving international entities but also the debate about the difference between public and private companies.

As of early 2009, implementation of the IASB's standards as they are currently written is not a given. There are many issues that the FASB and IASB do not agree on. One of the most important of these is the definition of "revenues" and its recognition, measurement,

and disclosure. This issue is central to the construction and real estate industries' accounting practices. This issue also reaches beyond the construction and real estate industries. In order to come to agreement on revenue, the FASB has issued a discussion memorandum, asking for comments by June of 2009. The Associated General Contractors of America (AGC) and Construction Financial Management Association (CFMA) have provided fact patterns of contract agreements and details on the way the construction industry operates. Beyond this action, AGC and CFMA volunteered additional insight through letters and meetings to be sure that industry professionals are involved in the "recipe and not just be required to be force fed the end result." Hopefully, by participating in the development of these new standards the industry will be the beneficiary.

This chapter compares U.S. (U.S. GAAP) and international (IFRS) accounting issues that are unique to contractors. Other U.S. and international accounting comparisons are not addressed here but are of concern to U.S. contractors.

ACCOUNTING SOURCES FOR CONSTRUCTION CONTRACTORS

U.S. GAAP

Generally accepted accounting principles (GAAP) for contractors go back to the issuance of ARB-45, in 1955. The current source of GAAP for the construction industry is as follows:

- ARB-45 (Long-Term Construction-Type Contracts) (issued by the AICPA Committee on Accounting Procedure in 1955)
- Statement of Position 81-1 (SOP 81-1) (Accounting for Performance of Construction-Type and Certain Production-Type Contracts) (issued by the Accounting Standards Division, American Institute of Certified Public Accountants (AICPA) July 15, 1981)
- AICPA Audit and Accounting Guide *Construction Contractors* (originally issued in 1981 but modified by the AICPA from time to time to include changes that are necessary because of the issuance of new authoritative pronouncements)
- Annual Audit Risk Alert *Construction Contractors Industry Developments* (issued annually by the AICPA to alert its members to current accounting changes and the environmental risks of the industry)

IFRS

The International Accounting Standards Board has issued standards for contractors as follows:

- IAS-11 (Revised 1993) (Construction Contracts)
- IFRIC-15 (Agreements for the Construction of Real Estate)

PROBLEMS WITH U.S. GAAP FOR CONTRACTORS

Other than the issuances of accounting standards that are not unique to the industry, U.S. GAAP for contractors has not been updated for some time. There have been significant changes, however, within the construction industry since the issuance of SOP 81-1 more than 20 years ago, including but not limited to the following:

- The types of contracts that contractors are a party to, including design/build (the blending of risks typically associated with a contractor along with the agency relationships typically found in a construction management contract), partnering and joint ventures in various forms, and other types.
- Business combinations, mergers, consolidations.
- Technology not limited to use in construction equipment and processes, bidding, online abilities, fund transactions, accounting systems, and others.
- The effect on revenue and cost recognition, especially change orders and claims.
- Concerns about the appropriateness of change order and claim revenue recognition.

With the outdated source material of the U.S. GAAP, the latest due process in standards setting has come from overseas.

REVENUE RECOGNITION METHODS

U.S. GAAP: Percentage-of-Completion Method (PCM)

SOP 81-1 (ASC Subtopic 605-35) (Accounting for Performance of Construction-Type and Certain Production-Type Contracts) recommends using the percentage-of-completion method (PCM) when

estimates are reasonable and dependable and certain conditions exist. The use of the PCM depends on the ability to make reasonably dependable estimates. For the purpose of statement SOP 81-1, “the ability to make reasonably dependable estimates” relates to estimates of the extent of progress toward completion, contract revenues, and contract costs. The AICPA has stated that the PCM is preferable as an accounting policy in circumstances where reasonably dependable estimates can be made and where the following conditions exist:

- Contracts executed by the parties normally include provisions that clearly specify the enforceable rights regarding goods or services to be provided and received by the parties, the consideration to be exchanged, and the manner and terms of settlement.
- The buyer can be expected to satisfy its, his, or her obligations under the contract.
- The contractor can be expected to perform his or her contractual obligations.

The definition of “reasonably dependable estimates” relates to all areas subject to estimation, including

- Percent complete (i.e., progress made toward completion or a contract)
- Contract revenues (in total and amount earned to date)
- Contract costs

SOP 81-1 states a strong presumption that contractors generally have the ability to produce estimates that are sufficiently dependable to justify the use of the PCM. Persuasive evidence to the contrary is necessary to overcome the presumption of the use of the PCM.

Small contractors with poor, informal estimating procedures that result in poorly documented estimates and marginal quality job-costing systems may influence the conclusion about the ability to produce dependable estimates. However, the contractor’s internal procedures and systems, generally, should not influence the development of accounting principles but, rather, should be dealt with as internal control and auditing concerns.

The ability to produce reasonably dependable estimates is an essential element of contracting. An entity must have the ability to update and revise estimates continually, and with a degree of

confidence, to meet GAAP (note that the recognition of loss on uncompleted contracts requires this ability).

SOP 81-1 assumes that entities with significant contracting operations have the ability to produce reasonably dependable estimates and that the PCM should be applied.

The PCM should be applied on one or more bases as outlined by SOP 81-1. According to SOP 81-1, entities with significant contracting operations have the ability to produce reasonably dependable estimates and that for such entities the PCM of accounting is preferable in most circumstances. The method should be applied to individual contracts or profit centers, as appropriate, under one or more of the following accounting methods:

- Normally, a contractor is able to estimate total contract revenue and total contract cost in single total amounts. Those amounts should be used as the basis for accounting for contracts under the PCM. (The percentage-of-completion (POC) determination can also be performed under an acceptable criterion such as cost-to-cost or some other input or output measurement.)
- For some contracts, on which some level of profit is assured, a contractor may only be able to estimate total contract revenue and total contract costs in ranges of amounts. If, based on the information arising in estimating the ranges of amounts and all other pertinent data, the contractor can determine the amounts only in the ranges that are most likely to occur, those amounts should be used in accounting for the contract under the PCM. If the most likely range of amounts cannot be determined, the lowest probable level of profit in the range should be used in accounting for the contract until the results can be estimated more precisely. At that time, the contractor can change its accounting to the PCM.
- In some contract circumstances, however, estimating the final outcome is impractical except to assure that no loss will be incurred on a contract. In these circumstances, a contractor should use what is termed a “zero estimate of profit.” Under this method, equal amounts of revenue and costs should be recognized until results can be estimated more precisely. A contractor should use this method only if the previously described methods (single amounts or profit ranges) are clearly not appropriate. A change from a zero estimate of profit to a more precise estimate should be accounted for as a change in accounting estimate.
- GAAP permits the use of the completed contract method (CCM) for a single contract for which reasonably dependable

estimates cannot be made, but the contractor must disclose this policy and the reasons for its use.

Normally a contractor discloses its revenue and cost recognition policies on every material accounting method it uses.

U.S. GAAP: Nature of Reasonable Estimates and Inherent Hazards

In practice, contract revenues and associated costs are estimated in ways ranging from simple to complex. The ability to produce reasonably dependable estimates does not rely on the elaborateness of the contractor's estimating process. A contractor's estimating process should provide reasonable assurance of a continuing ability to produce reasonably dependable estimates.

The ability of the contractor to estimate anticipated contract revenues and costs covers more than the estimating and documentation of revenues and costs. It covers a contractor's entire internal control system, including its contract administration and management control systems. It depends on all of the procedures and personnel of the contractor, and it encompasses the systems and personnel not only of the accounting department, but of all areas of the company that participate in (1) production control (project management), (2) cost control, (3) administrative control, and (4) accountability for contracts.

The fact that circumstances necessitate frequent revisions of contract estimates does not necessarily indicate that the estimates are unreliable. Although final results may differ widely from the original estimates, this does not mean that the estimates are not reasonably dependable.

SOP 81-1 removes just about any doubt that the PCM should be used to account for contractor progress at a given time:

A contractor's estimates of total contract revenue and costs should be regarded as reasonably dependable if the revenue and cost can be estimated with a sufficient degree of confidence to justify the contractor's bids on the contracts.

The above statement can be reworded as follows: "If the contractor bids on a fixed-price-type contract, the PCM must be used to account for its revenues, costs, and gross profit." The types of contracts covered under this statement would be fixed price, with any variances for incentives or penalties and unit-price-type contracts. Cost-type or time-and-material contracts may or may not apply to the general

rule listed above, depending on whether these contract types require the contractor to bid on the work. The rule can be applicable to these contract types, for example, where the contractor bids on an hourly rate and a particular markup for a time-and-material contract or where a bid is submitted for a cost-type contract with a bid on the markup of the costs or percentage.

The use of the POC is discouraged in circumstances in which “inherent hazards make estimates doubtful.” The term “doubtful” is meant to describe situations in which there is uncertainty about the contract or terms of the contract, such as

- Contracts between unreliable parties
- Contracts on real estate that is exposed to the possibility of condemnation or expropriation
- Contracts whose completion may be subject to the outcome of pending legislation or litigation
- Contracts whose validity is in question (less than fully enforceable) or where there is no contract between the parties
- Contracts with ill-defined terms

There must be specific persuasive evidence of the existence of one or more of these situations (hazards) to indicate that the PCM is not preferable.

IFRS: Recognition of Contract Revenue and Expenses

Under IAS-11R (Construction Contracts), when the outcome of a construction contract can be estimated reliably, contract revenue and contract costs associated with the contract are recognized as revenue and expenses by reference to the stage of completion of the contract activity at the balance sheet date. An expected loss on the construction contract should be recognized as an expense immediately (IAS-11R, par. 22).

The method of accounting for construction contracts according to the stage of completion of the contract is known as the “percentage-of-completion method” (PCM) and involves (IAS-11, par. 25):

- Reliably estimating the outcome of the contract
- Determining the revenue and costs attributable to the stage of completion of the contract
- Determining the profit attributable to the stage of completion

In the case of a fixed-price contract, international standards state that the outcome of a construction contract can be estimated reliably when all of the following conditions are satisfied (IAS-11R, par. 23):

- Total contract revenue can be measured reliably.
- It is probable that the economic benefits associated with the contract will flow to the enterprise.
- Both the costs to complete the contract and the stage of completion at the balance sheet date can be measured reliably.
- The costs attributable to the contract can be clearly identified and measured reliably so that actual contract costs incurred can be compared with prior estimates.

Regarding revenue from contracts for services, IAS-18 (Revenue), states that the requirements of IAS-11 are generally applicable to the recognition of revenue and the associated expenses for a transaction involving the rendering of services. IAS-18 states that the outcome of a transaction involving the rendering of services can be reliably estimated when the recognition criteria substantially the same as those for construction contracts are satisfied (IAS-18, pars. 20–21). (The potential division of recognition between IAS-11 and IAS-18 is described below in the discussion of IFRIC-15.)

Different standards are applicable for cost-plus contracts. The outcome of a construction contract under cost-plus contracts can be estimated reliably when the following conditions are satisfied (IAS-11R, par. 24):

- It is probable that the economic benefits associated with the contract will flow to the enterprise.
- The contract costs attributable to the contract, whether or not specifically reimbursable, can be clearly identified and measured reliably.

Costs incurred by a contractor that relate to the future activity of a contract are recorded as an asset if it is probable that they will be recovered. International standards record these costs in an account that has no U.S. GAAP equivalent. Under IAS, these costs are defined as an amount due from the customer, and they are often classified as contract work in progress (IAS-11R, par. 27). These costs are not taken into account for the purpose of determining the costs incurred to date for comparison with total expected contract costs. They are, however, included in the estimate of total contract costs (IAS-11, par. 31).

An enterprise is generally able to make reliable estimates after it has agreed to a contract that establishes (IAS-11R, par. 29) the following:

- Each party's enforceable rights regarding the asset to be constructed.
- The consideration to be exchanged.
- The manner and terms of settlement.

IAS standards also address the contractor's ability to estimate with sufficiency. It is usually necessary for the enterprise to have an effective internal financial budgeting and reporting system. The enterprise reviews and, when necessary, revises the estimates of contract revenue and contract costs as the contract progresses. The need for revisions does not necessarily indicate that the outcome of the contract cannot be estimated reliably (IAS-11R, par. 29).

When the outcome of a construction contract cannot be estimated reliably:

- Revenue should be recognized only to the extent of contract costs incurred that it is probable will be recoverable.
- Contract costs should be recognized as an expense in the period they are incurred in (IAS-11R, par. 32).

IAS-11R permits the deferral or nonrecognition of income during the early stages of a contract because the outcome of a contract cannot be estimated reliably in its early stages. If in an early-stage contract it is probable that the enterprise will recover the contract costs incurred, contract revenue is recognized only to the extent of costs incurred that are expected to be recoverable, in the manner of a zero-profit contract. However, even though the outcome of a contract cannot be estimated reliably, if it is probable that total contract costs will exceed total contract revenues, a loss must be recorded immediately as an expense (IAS-11R, par. 33).

Contract costs that are not probable of being recovered are recognized as an expense immediately. Under the international standards, examples of circumstances in which the recoverability of contract costs incurred may not be probable and in which contract costs may need to be recognized immediately as an expense include contracts (IAS-11R, par. 34)

- That are not fully enforceable; that is, their validity is seriously in question.
- Whose completion is subject to the outcome of pending litigation or legislation.

- Relating to properties that are likely to be condemned or expropriated.
- For which the contractor is unable to complete the contract or otherwise meet its obligations under the contract.

If the circumstances that prevented the outcome from being estimated reliably change, contract revenue, costs, and gross profit should be recognized under the standard POC rules (IAS-11R, par. 35). These IAS definitions and situations almost exactly match the hazards defined in SOP 81-1.

Reliable Estimation of Contract Outcome Not Possible

Where it is not possible to reliably estimate the outcome of a contract, the PCM is not used for revenue recognition. Instead revenue is recognized only to the extent of contract costs incurred that are expected to be recoverable. Contract costs are expensed as incurred (IAS-11, par. 32). This approach is necessary to avoid recognizing profit on a contract before it is probable that a profit will be earned on the overall contract.

To the extent that contract costs are not expected to be recoverable, contract revenue is not recognized. Because all contract costs are expensed as incurred, this means that the irrecoverable costs will not be covered by contract revenue and a net loss will be recorded. IAS-11 provides examples of circumstances where contract costs may not be recoverable (IAS-11, par. 34).

When uncertainties that have prevented the outcome of a contract from being reliably estimated are removed or no longer exist, the entity should commence accounting for revenue and costs using the PCM (IAS-11, par. 35). That is, the entity recognizes revenue according to the stage of completion of the contract, rather than only recognizing revenue to the extent of recoverable costs incurred.

MEASURING PROGRESS ON CONTRACTS UNDER THE PCM

U.S. GAAP

The measurement of progress on uncompleted contracts is used in determining the amounts of estimated revenue and gross profit on uncompleted contracts at any point in time. Various U.S. GAAP methods are available in order to do this.

Input Measurements

Under the cost-to-cost (considered to be an input measurement) method, the contractor recognizes income based upon the formula of contract costs to date divided by total estimated contract costs multiplied by the contract amount as modified by change orders and incentives and penalties.

The efforts-expended method is an input method based on a measure of the work completed, such as labor hours, labor dollars, machine hours, or material quantities. Under the labor-hours method, for example, the extent of progress is measured by the ratio of hours performed to date compared with the estimated total hours at completion. Estimated total labor hours should include (1) the estimated labor hours of the contractor and (2) the estimated labor hours of subcontractors engaged to perform work for the project, if labor hours of subcontractors are a significant element in the performance of the contract. A labor-hours method can measure the extent of progress in terms of efforts expended only if substantial efforts of subcontractors are included in the computation. The contractor should not use the labor-hours method if it is unable to obtain reasonably dependable estimates of subcontractors' labor hours at the beginning of the project and as work progresses.

The various forms of the efforts-expended method are based on the assumption that profits on construction contracts are derived from the contractor's efforts in all phases of operations, such as designing, procurement, and management. Profit is not assumed to accrue merely as a result of the acquisition of material or other tangible items used in the performance of the contract or the awarding of subcontracts. A significant drawback of the efforts-expended method is that the efforts included in the measure may not all be productive.

The "units of delivery method" recognizes as revenue the contract price of units of a basic production product delivered during a period and recognizes as the cost of earned revenue the costs allocable to the delivered units. Costs allocable to undelivered units are reported in the balance sheet as inventory or work in progress. This method is best used in circumstances in which an entity produces units of a basic product under production-type contracts in a continuous or sequential production process according to a buyer's specifications.

The units-of-work-performed method, such as tonnage moved, can utilize different measurements, such as in terms of costs, units of work, and value added.

Any method used by the contractor to measure contractor progression, however, must be applied consistently.

In summary, input measures (efforts devoted to a contract) include various methods, such as the following:

- *Based on costs* Possibly some early costs should be disregarded because they do not relate to contract performance, such as cost of materials not unique but purchased for the contract and not installed.
- *Based on efforts expended* The efforts-expended method is an input method based on a measure of the work completed, such as labor hours, labor dollars, machine hours, or material quantities. Under the labor-hours method, for example, the extent of progress is measured by the ratio of hours performed to date compared with the estimate of total hours at completion.

Input methods measure progress toward completion indirectly and assume that there is a relationship between unit of input and productivity.

Output Measurements

Output measures (those defined in terms of results achieved) include methods that are based on units produced, units delivered, contract milestones, or value added. These methods measure physical progress results directly.

The use of an input or output method requires the exercise of judgment and the tailoring of the measure to the circumstances. The results of input or output measures should be periodically reviewed and confirmed by alternative measures that involve observation and inspection, for example, cost-to-cost method results can be compared with physical observations by engineers, architects, or construction managers.

IFRS on Measuring Progress on Contracts

Under international standards the stage of completion of a contract may be determined in a variety of ways. The enterprise should use the method that reliably measures the work performed. Depending on the nature of the contract, the methods may include the following (IAS-11, par. 30):

- The proportion of estimated total contract costs that contract costs incurred for work performed to date represents

- Surveys of work performed
- Completion of a physical proportion of the contract work

Progress payments and advances received from customers usually do not reflect the work performed or give a reliable basis for measuring the stage of completion.

When the stage of completion is determined by reference to the contract costs incurred to date, only those contract costs that reflect work performed are included in costs incurred to date. Examples of contract costs that are excluded are as follows:

- (a) Contract costs that relate to future activity on the contract, such as costs of materials that have been delivered to a contract site or set aside for use in a contract but not yet installed, used or applied during contract performance, unless the materials have been made specially for the contract; and
- (b) Payments made to subcontractors in advance of work performed under the subcontract [IAS-11, par. 31; IAS-18 par. 24].

PCM measurements if PCM is measured by cost-to-cost method

In the appendix to IAS-11, IFRS seems to only support method A and not the typical method B that is used mostly in the United States (i.e., the cost-to-cost method measures the revenue, and actual costs determine the costs to date).

The following is the example provided by IFRS:

[Example 11-1]

The following example illustrates one method of determining the stage of completion of a contract and the timing of the recognition of contract revenue and expenses (see paragraphs 22–35 of IAS-11).

A construction contractor has a fixed price contract for 9,000 to build a bridge. The initial amount of revenue agreed in the contract is 9,000. The contractor's initial estimate of contract costs is 8,000. It will take 3 years to build the bridge.

By the end of year 1, the contractor's estimate of contract costs has increased to 8,050.

In year 2, the customer approves a variation resulting in an increase in contract revenue of 200 and estimated additional contract costs of 150. At the end of year 2, costs incurred include

100 for standard materials stored at the site to be used in year 3 to complete the project.

The contractor determines the stage of completion of the contract by calculating the proportion that contract costs incurred for work performed to date bear to the latest estimated total contract costs. A summary of the financial data during the construction period is as follows:

	Year 1	Year 2	Year 3
Initial amount of revenue agreed in contract	9,000	9,000	9,000
Variation	<u>—</u>	<u>200</u>	<u>200</u>
Total contract revenue	<u>9,000</u>	<u>9,200</u>	<u>9,200</u>
Contract costs incurred to date	2,093	6,168	8,200
Contract costs to complete	<u>5,957</u>	<u>2,032</u>	<u>—</u>
Total estimated contract costs	<u>8,050</u>	<u>8,200</u>	<u>8,200</u>
Estimated profit	950	1,000	1,000
Stage of completion	26%	74%	100%

The stage of completion for year 2 (74%) is determined by excluding from contract costs incurred for work performed to date the 100 of standard materials stored at the site for use in year 3.

The amounts of revenue, expenses, and profit recognized in the statement of comprehensive income in the three years are as follows:

	To date	Recognized in prior years	Recognized in current year
Year 1			
Revenue ($9,000 \times .26$)	2,340	—	2,340
Expenses ($8,050 \times .26$)	<u>2,093</u>	<u>—</u>	<u>2,093</u>
Profit	<u>247</u>	<u>—</u>	<u>247</u>
Year 2			
Revenue ($9,200 \times .74$)	6,808	2,340	4,468
Expenses ($8,200 \times .74$)	<u>6,068</u>	<u>2,093</u>	<u>3,975</u>
Profit	<u>740</u>	<u>247</u>	<u>493</u>
Year 3			
Revenue ($9,200 \times 1.00$)	9,200	6,808	2,392
Expenses	<u>8,200</u>	<u>6,068</u>	<u>2,132</u>
Profit	<u>1,000</u>	<u>740</u>	<u>260</u>

INCOME DETERMINATION: REVENUE ELEMENTS

U.S. GAAP

The major factors that must be considered in determining total estimated revenue include the basic contract price, contract options, change orders, claims, and contract provisions for penalties and incentive payments.

Basic Contract Price

The estimated revenue from a contract is the total amount that a contractor expects to realize from the contract, which is determined primarily by the terms of the contract and the basic contract price. The contract price may be relatively fixed or highly variable and subject to a great deal of uncertainty, depending on the type of contract involved. The total amount of revenue that will ultimately be realized on a contract is often subject to a variety of changing circumstances and, accordingly, may not be known with certainty until the parties to the contract have fully performed their obligations. Thus, the determination of total estimated revenue requires careful consideration and the exercise of judgment in assessing the probabilities of future outcomes.

Although fixed-price contracts usually provide for a stated contract price, a specified scope of the work to be performed, and a specified performance schedule, they sometimes have adjustment schedules based on the application of economic price adjustment (escalation), price redetermination, incentive, penalty, and other pricing provisions.

Determining contract revenue under unit-price contracts generally involves the same factors as under fixed-price contracts.

Determining contract revenue from a time-and-material contract requires a careful analysis of the contract, particularly if the contract includes guaranteed maximums or assigns markups to both labor and materials, and the determination involves consideration of some of the factors discussed below that pertain to cost-type contracts.

IFRS

A construction contract is defined in IAS-11 (par. 3) as “a contract specifically negotiated for the construction of an asset or a combination of assets that are closely interrelated or interdependent in

terms of their design, technology and function or their ultimate purpose or use.”

For those contractors subject to or choosing to utilize IAS-11R, contract revenues should include the basic contract price plus or minus the effects of (1) variations in contract work (change orders); (2) claims; (3) contract options; (4) price redetermination, incentive, and penalty provisions; and (5) escalation provisions, if any. Contract revenue is measured at the fair value of the consideration to be received. Contract revenue is often an estimate because the total amount of contract revenue is affected by a number of uncertainties. Thus, as events occur and uncertainties are resolved, the estimated amount of contract revenue increases or decreases.

International Accounting Standards also address other types of revenue. Incentive payments should be included in contract revenues when progress on a contract has sufficiently advanced to the point that it is probable that the specified performance standards will be met or exceeded and the amount of the incentive payment can be measured reliably.

Incidental income, for example, income from the sale of surplus material or the disposal of equipment at the end of a contract, is not generally considered contract revenue. Rather, incidental income should reduce contract costs. This method of revenue recognition generally does not work for U.S. GAAP, especially the international standards’ rules related to the reduction of costs from incidental income. Under U.S. GAAP, sales of surplus material and scrap is reported as miscellaneous income or as part of contract income.

IFRIC-15: Agreements for the Construction of Real Estate

In 2008, IASB issued an interpretation that addressed revenue recognition issues that U.S. and international contractors who also develop property often face: Is the agreement that a contractor and an owner enter into for the construction of improvements to real estate or a contract for the provision of services or sale of real estate? Under U.S. GAAP, a contract, whether for services only of materials provided and services is governed by the GAAP dictated by SOP 81-1. On the other hand, a sale contract for the sale of real estate would fall under FAS-66 (Accounting for Sales of Real Estate) (ASC Topics 360 and 976). What accounting principles apply if the contractor/developer sells a piece of real estate but is also required to perform construction work on the property first?

One view that IFRIC-15 considered on this issue was that IAS-11 should apply to all agreements for the construction of real estate.

In support of this view, are the following arguments (IFRIC-15, “Basis for Conclusions”; BC, par. 14):

- (a) Such agreements are in substance construction contracts. The typical features of a construction contract—land development, structural engineering, architectural design and construction—are all present.
- (b) IAS 11 requires a PCM for revenue recognition for construction contracts. Revenue is recognized progressively as work is performed. Because many real estate development projects span more than one accounting period, the rationale for this method—that it “provides useful information on the extent of contract activity and performance during a period” (IAS 11 paragraph 25)—applies to real estate development as much as it does to other construction contracts. If revenue is recognized only when the IAS 18 conditions for recognizing revenue from the sale of goods are met, the financial statements do not reflect the entity’s economic value generation in the period and are susceptible to manipulation.
- (c) FASB Standard No. 66 *Accounting for Sales of Real Estate* requires a PCM for recognizing profit from sales of units in condominium projects or time-sharing interests (provided specified criteria are met). Thus US generally accepted accounting principles (GAAP) acknowledge that such real estate sales have the same economic substance as construction-type contracts. IFRSs can and should be interpreted in the same way to avoid unnecessary differences.

A second view is that IAS-11 applies only when the agreement meets the definition of a construction contract. An agreement that does not meet the definition of a construction contract is within the scope of IAS-18 (IFRIC-15, BC par. 15). IFRIC-15 draws a conclusion that reflects the second view in the IASB consensus. Supporting this position, the IFRIC-15 (BC par. 16) noted that:

- (a) The fact that the construction spans more than one accounting period and requires progress payments are not relevant features to consider when determining the applicable standard and the timing of revenue recognition.
- (b) Determining whether an agreement for the construction of real estate is within the scope of IAS 11 or IAS 18 depends on the terms of the agreement and all the surrounding facts and circumstances. Such a determination requires judgment with respect to each agreement. It is a judgment, not an accounting policy choice.

- (c) IAS 11 lacks specific guidance on the definition of a construction contract and further application guidance is needed to help identify construction contracts.
- (d) IASB also stated that as differences exist between the requirements in IFRSs and U.S. GAAP for revenue recognition in general and for construction contracts in particular, they cannot be eliminated by interpretation. These differences are being addressed in a general project on revenue recognition conducted jointly by the IASB and the US Financial Accounting Standards Board.

IFRIC-15 notes that when IAS-11 applies, for accounting purposes the construction contract also includes contracts for the rendering of services that are directly related to the construction of the real estate in accordance with paragraph 4 of IAS-18 and paragraph 5(a) of IAS-11 (IFRIC-15, BC par. 17).

IFRIC-15 states that an agreement for the construction of real estate would be within the scope of IAS-11 in two circumstances:

1. If the agreement meets the definition of a construction contract or
2. If control and the significant risks and rewards of ownership of the work in progress in its current state transfers to the buyer continuously as construction progresses (IFRIC-15, BC par. 18). (Because IAS-11 only requests that the contract be a construction contract and does not require continuous transfer for the use of the PCM, IFRIC-15 clarified that IAS-11 applies only when the agreement meets the definition of a construction contract.)

IFRIC-15 IAS References

The IFRIC-15 discussion included the following References to other IAS pronouncements. Certainly the important ones are IAS-11 (Construction Contracts) and IAS-18 (Revenue):

- IAS-1 (Presentation of Financial Statements) (as revised in 2007)
- IAS-8 (Accounting Policies, Changes in Accounting Estimates and Errors)
- IAS-11 (Construction Contracts)
- IAS-18 (Revenue)

- IAS-37 (Provisions, Contingent Liabilities and Contingent Assets)
- IFRIC-12 (Service Concession Arrangements)
- IFRIC-13 (Customer Loyalty Programmes)

Entities performing accounting according to international standards experienced similar confusion; contractors performing construction contracts, real estate improvements, or other types of revenue, such as services, construction management, etc., were not sure how to account for its revenue transactions, especially if more than one type of performance was contained in one agreement. These same accounting issues and principles apply to contractors, whether they are the general, the general employing subcontractors, or the subcontractor, and whether selling services or goods. Agreements that cover construction, sales, or services take diverse forms, and one agreement may combine rights and obligations that are required to be accounted for under more than one standard. Additionally, an entity may account for a contract or a provision of a contract under one standard and as the facts and circumstances change could be required to modify or change the accounting; for example:

Entities that undertake the construction of residential real estate may start to market individual units (apartments or houses) “off plan”, i.e., while construction is still in progress, or even before it has begun. Each buyer enters into an agreement with the entity to acquire a specified unit when it is ready for occupation. Typically, the buyer pays a deposit to the entity that is refundable only if the entity fails to deliver the completed unit in accordance with the contracted terms. The balance of the purchase price is generally paid to the entity only on contractual completion, when the buyer obtains possession of the unit [IFRIC-15, par. 2].

IFRIC-15 addresses two issues: (1) whether an agreement for construction of real estate is within the scope of IAS-11 or IAS-18 and (2) when revenue on construction of real estate should be recognized. IFRIC-15 describes a typical situation in which an entity undertakes the construction of commercial or industrial real estate, enters into an agreement with a single buyer, the buyer may be required to make progress payments between the time of the initial agreement and contractual completion, and construction may take place on land the buyer owns or leases before construction begins. IFRIC-15 also addresses situations where the contractor supplies labor only and not materials. Also, the scope requires that the entity has analyzed the agreement for the construction of real estate and

any related agreements and concluded that it will retain neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the constructed real estate to an extent that would preclude recognition of some or all of the consideration as revenue. If recognition of some of the consideration as revenue is precluded, IFRIC will apply only to the part of the agreement for which revenue will be recognized (IFRIC-15, par. 7).

Within a single agreement, an entity may contract to deliver goods or services in addition to the construction of real estate (e.g., a sale of land or provision of property management services). In accordance with paragraph 13 of IAS-18, such an agreement may need to be split into separately identifiable components including one for the construction of real estate. (In the background to IFRIC-15, the IFRIC notes that IFRIC-12 (Service Concession Arrangements) and IFRIC-13 (Customer Loyalty Programmes) already provide guidance on determining whether a single agreement should be divided into components and, if so, how to allocate to each component the fair value of the total consideration received or receivable for the agreement (see paragraph 13 of IFRIC-12 and paragraphs 5–7 of IFRIC-13). Therefore, IFRIC-15 only includes a reminder, in paragraph 8, that such identification and allocation are required. The fair value of the total consideration received or receivable for the agreement is required to be allocated to each component. If separate components of a single agreement are identified, the entity will apply the following criteria of IFRIC-15 paragraphs 10 and 11 to the component for the construction of real estate in order to determine whether that component is within the scope of IAS-11 or IAS-18. The segmenting criteria of IAS-11 then apply to any component of the agreement that is determined to be a construction contract.

The determination of whether an agreement (for the construction of real estate, sale of real estate, or sale of services only) is within the scope of IAS-11 or IAS-18 depends on the terms of the agreement and all the surrounding facts and circumstances. Such a determination requires judgment with respect to each agreement (IFRIC-15, par. 10).

IAS-11 applies when an agreement meets the definition of a construction contract set out in paragraph 3 of IAS-11: “a contract specifically negotiated for the construction of an asset or a combination of assets.” An agreement for the construction of real estate meets the definition of a construction contract when the buyer is able to specify the major structural elements of the design of the real estate before construction begins or specifies major structural changes once construction is in progress (whether or not it exercises that ability). When IAS-11 applies, the construction contract also

includes contracts or components for the rendering of services that are directly related to the construction of the real estate in accordance with paragraph 5(a) of IAS-11 and paragraph 4 of IAS-18 (IFRIC-15, par. 11). Paragraph 5(a) of IAS-11 states the following: “construction contracts include: contracts for the rendering of services which are directly related to the construction of the asset, for example, those for the services of project managers and architects.” Paragraph 4 of IAS-18 states the following:

The rendering of services typically involves the performance by the entity of a contractually agreed task over an agreed period of time. The services may be rendered within a single period or over more than one period. Some contracts for the rendering of services are directly related to construction contracts, for example, those for the services of project managers and architects. Revenue arising from these contracts is not dealt with in this Standard but is dealt with in accordance with the requirements for construction contracts as specified in IAS-11 *Construction Contracts*.

In contrast, an agreement for the construction of real estate in which buyers have only limited ability to influence the design of the real estate, e.g., to select a design from a range of options specified by the entity or only minor variations to the basic design, is an agreement for the sale of goods within the scope of IAS-18.

Accounting for Revenue: Construction Contract

When the agreement is within the scope of IAS-11 and its outcome can be estimated reliably, the entity recognizes revenue by reference to the stage of completion of the contract activity in accordance with IAS-11 (IFRIC-15, par. 13). The agreement, however, might not meet the definition of a construction contract and therefore be within the scope of IAS-18 (Revenue). In this case, the entity determines whether the agreement is for the rendering of services or for the sale of goods (IFRIC-15, par. 14).

Accounting for Revenue: Rendering of Services

If the (selling/developing/constructing) entity is not required to acquire and supply construction materials, the agreement may be only an agreement for the rendering of services in accordance with IAS-18. In this case, if the criteria in paragraph 20 of IAS-18 are met, IAS-18 requires revenue to be recognized by reference to the stage of completion of the transaction using the percentage-of-completion

method (the PCM). The requirements of IAS-11 are generally applicable to the recognition of revenue and the associated expenses for such a transaction (IAS-18, par. 21; IFRIC-15, par. 15). Note that although the international accounting rules stipulate that IAS-18 (Revenue) applies in this situation, the entity is required to employ the PCM.

Accounting for Revenue: Sale of Goods

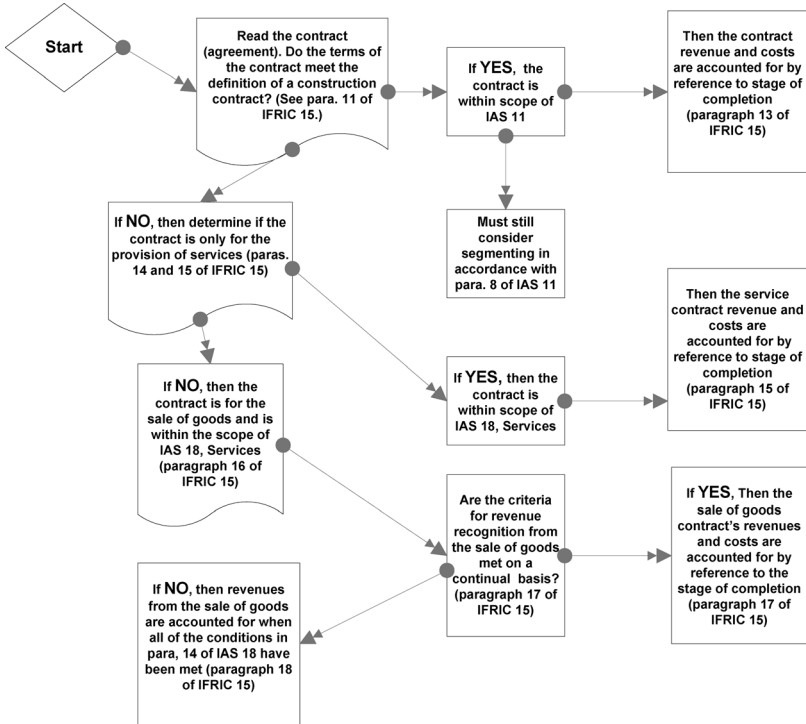
If the entity is required to provide services together with construction materials in order to perform its contractual obligation to deliver the real estate to the buyer, the agreement is an agreement for the sale of goods and the criteria for recognition of revenue set out in paragraph 14 of IAS-18 apply (IFRIC-15, par. 16) (these are (1) the transfer of risks and rewards, (2) no continuing control, (3) revenue can be measured reliably, (4) economic benefits flow to the entity, and (5) costs can be measured reliably).

The entity may transfer to the buyer control and the significant risks and rewards of ownership of the work in progress in its current state as construction progresses. In this case, if all the criteria in paragraph 14 of IAS-18 are met continuously as construction progresses, the entity recognizes revenue by reference to the stage of completion using the percentage-of-completion method. The requirements of IAS-11 are generally applicable to the recognition of revenue and the associated expenses for such a transaction (IFRIC-15, par. 17).

The entity may transfer to the buyer control and the significant risks and rewards of ownership of the real estate in its entirety at a single time (e.g., at completion, upon, or after delivery). In this case, the entity recognizes revenue only when all the criteria in paragraph 14 of IAS-18 are satisfied (IFRIC-15, par. 18). This revenue method would be just the opposite if the entity transferred to the buyer the ownership of the real estate first and then completed the work or construction on the property after the transfer.

When the entity is required to perform further work on real estate already delivered to the buyer, it recognizes a liability and an expense in accordance with paragraph 19 of IAS-18 (i.e., matching of expenses and revenues). The liability is measured in accordance with IAS-37. When the entity is required to deliver further goods or services that are separately identifiable from the real estate already delivered to the buyer, it would have identified the remaining goods or services as a separate component of the sale, in accordance with paragraph 8 of IFRIC-15 (IFRIC-15, par. 19). The flowchart in Exhibit 11-1 was presented as an informational analysis as an accompaniment to IFRIC-15, but it is not officially a part of the standard.

**EXHIBIT 11-1
ANALYSIS OF AN AGREEMENT FOR THE CONSTRUCTION OF
REAL ESTATE**



New Disclosures Addressed by IFRIC-15

When an entity recognizes revenue using the PCM for agreements that meet all the criteria in paragraph 14 of IAS-18 continuously as construction progresses (see paragraph 17 of IFRIC-15), it discloses (IFRIC-15, par. 20):

- (a) How it determines which agreements meet all the criteria in paragraph 14 of IAS 18 continuously as construction progresses;

- (b) The amount of revenue arising from such agreements in the period; and
- (c) The methods used to determine the stage of completion of agreements in progress.

For the agreements disclosed that are in progress at the reporting date, under item (c), above, the entity also discloses (IFRIC-15, par. 21):

- (a) The aggregate amount of costs incurred and recognized profits (less recognized losses) to date; and
- (b) The amount of advances received.

Note that IAS-1 (Presentation of Financial Statements) (as revised in 2007) requires an entity to provide disclosures about its significant accounting policies (IAS-1, par. 117), judgments management has made in applying those policies (IAS, par. 122), and major sources of estimation uncertainty. In order to better match these principles, IFRIC-15 states that to satisfy the general requirements of IAS-1, agreements with “continuous transfer” require specific disclosures similar to those of paragraphs 39 and 40 of IAS-11.

Disclosures and Presentation Already Required by IAS-11

Prior to the release of IFRIC-15, paragraphs 39–45 of IAS-11 required (and continue to require) the following disclosures and presentation guidelines:

An entity shall disclose (IAS 11, par. 39):

- (a) The amount of contract revenue recognized as revenue in the period;
- (b) The methods used to determine the contract revenue recognized in the period; and
- (c) The methods used to determine the stage of completion of contracts in progress.

Entities disclose contingent liabilities and contingent assets in accordance with IAS-37 (Provisions, Contingent Liabilities and Contingent Assets). Contingent liabilities and contingent assets may arise from such items as warranty costs, claims, penalties, or possible losses (IAS-11, par. 45).

Entities disclose each of the following for contracts in progress at the end of the reporting period (IAS-11, par. 40):

- (a) The aggregate amount of costs incurred and recognized profits (less recognized losses) to date;
- (b) The amount of advances received (advances are amounts received by the contractor before the related work is performed) [IAS 11, par. 41]; and
- (c) The amount of retentions. (Retentions are amounts of progress billings that are not paid until the satisfaction of conditions specified in the contract for the payment of such amounts or until defects have been rectified. Progress billings are amounts billed for work performed on a contract whether or not they have been paid by the customer [IAS 11, par. 41].)

IAS-11 also requires the following presentations (IAS-11, par. 42):

- (a) the gross amount due from customers for contract work as an asset (the gross amount due from customers for contract work is the net amount of [IAS-11, par. 43]): (a) costs incurred plus recognized profits less (b) the sum of recognized losses and progress billings for all contracts in progress for which costs incurred plus recognized profits (less recognized losses) exceeds progress billings); and
- (b) The gross amount due to customers for contract work as a liability (The gross amount due to customers for contract work is the net amount of [IAS-11, par. 44]: (a) costs incurred plus recognized profits less (b) the sum of recognized losses and progress billings for all contracts in progress for which progress billings exceed costs incurred plus recognized profits (less recognized losses).)

Effective Date and Transition

IFRIC-15 should be applied for annual periods beginning on or after January 1, 2009. Earlier application is permitted. An entity can apply IFRIC-15 for a period beginning before January 1, 2009; however, it must disclose that fact. Changes to IFRIC-15 are to be accounted for retrospectively in accordance with IAS-8.

IFRIC Discussion on Accounting for Revenue: IAS-11 versus IAS-18 Recognition

When an agreement is within the scope of IAS-11 (Construction Contracts) and its outcome can be estimated reliably, the entity

should recognize revenue by reference to the stage of completion in accordance with IAS-11. This process is very different from U.S. GAAP but may end up with the same revenue measurement calculations, i.e., the PCM nevertheless.

When an agreement does not meet the definition of a construction contract, it is within the scope of IAS-18 (Revenue). IFRIC-15 identifies the following types of agreements for the construction of real estate that are within the scope of IAS-18 and that are distinguishable in substance (IFRIC-15, BC par. 21):

- (a) Agreements for the rendering of services only;
- (b) Two types of agreements for the sale of goods:
 - (i) Agreements in which the entity transfers to the buyer control and the significant risks and rewards of ownership of the work in progress in its current state as construction progresses;
 - (ii) Agreements in which the entity transfers to the buyer control and the significant risks and rewards of ownership of the real estate in its entirety at a single time (e.g., at completion, upon or after delivery).

In situations where a customer acts in essence as its own general contractor and enters into agreements with individual suppliers for specific goods and services, such as when the entity is responsible only for assembling materials supplied by others (i.e., it has no inventory risk for the construction materials), the agreement is for the rendering of services under IAS-18 (IFRIC-15, BC par. 22). IFRIC-15 noted that if the criteria in IAS-18, paragraph 20, are met (i.e., that the revenue can be measured reliably, economic benefits will flow to the entity, stage of completion can be measured accurately, and the costs can be measured reliably), IAS-18 requires revenue to be recognized by reference to the stage of completion using the PCM. IAS-18 refers back IAS-1, stating that the requirements of IAS-11 are generally applicable to the recognition of revenue and the associated expenses for such a transaction.

IFRIC-15 also notes that construction activities often require an entity that undertakes the construction of real estate, directly or through subcontractors, to provide services together with construction materials (IFRIC-15, BC par. 23). However, the entity delivers to the buyer a real estate asset, either completed or in its current stage of completion. Therefore, IFRIC-15 concludes that the criteria in paragraph 14 of IAS-18 for recognition of revenue from the sale of goods should apply to such agreements. (Note that paragraphs of IAS-18 falls under the category of “sale of goods” and states that the

five criteria are (1) the entity has transferred to the buyer the risks and rewards of ownership, (2) the entity retains neither managerial control nor effective control, (3) revenue can be measured reliably, (4) economic benefits will flow to the buyer, and (5) the costs can be measured reliably.) If these criteria are met, IFRIC-15 refers entities to IAS-11 for guidance on applying the percentage-of-completion method. IFRIC-15 states that this conclusion is consistent with the basis for using the percentage-of-completion method in SOP 81-1, which states the following:

The business activity taking place supports the concept that in an economic sense performance is, in effect, a continuous sale (transfer of ownership rights) that occurs as the work progresses . . .

IFRIC-15 notes that agreements with continuous transfer might not be encountered frequently.

IFRIC-15 also identifies agreements for the construction of real estate in which the entity transfers to the buyer control and the significant risks and rewards of ownership of the real estate in its entirety at a single time (e.g., at completion or upon or after delivery). IFRIC-15 states in D21 that these agreements are sales of goods within the scope of IAS-18. Such agreements give the buyer only an asset in the form of a right to acquire, use and sell the completed real estate at a later date. IFRIC-15 states that revenue from such agreements should be recognized only when all the criteria in paragraph 14 of IAS-18 are satisfied.

To distinguish contracts that are deemed to transfer risks and ownership as progress occurs, however, if control and the significant risks and rewards of ownership of the work in process in its current state do not transfer to the buyer as construction/manufacture progresses, and transfer essentially takes place only on delivery of the completed units, the entity would apply the requirements of paragraph 14 of IAS-18 at that time and use of the PCM would not be appropriate (IFRIC-15, BC par. 28).

As another alternative, if an entity must perform further work on real estate already delivered to a buyer, IFRIC-15 notes that IFRIC-13 (Customer Loyalty Programmes) already provides guidance on how to apply paragraphs 13 and 19 of IAS-18. IFRIC-18, paragraph 13 states:

The recognition criteria in this Standard are usually applied separately to each transaction. However, in certain circumstances, it is necessary to apply the recognition criteria to the separately identifiable components of a single transaction in order to reflect the substance of the transaction. For example,

when the selling price of a product includes an identifiable amount for subsequent servicing, that amount is deferred and recognised as revenue over the period during which the service is performed. Conversely, the recognition criteria are applied to two or more transactions together when they are linked in such a way that the commercial effect cannot be understood without reference to the series of transactions as a whole. For example, an entity may sell goods and, at the same time, enter into a separate agreement to repurchase the goods at a later date, thus negating the substantive effect of the transaction; in such a case, the two transactions are dealt with together.

IFRIC-18, paragraph 19, states the following:

Revenue and expenses that relate to the same transaction or other event are recognised simultaneously; this process is commonly referred to as the matching of revenues and expenses. Expenses, including warranties and other costs to be incurred after the shipment of the goods can normally be measured reliably when the other conditions for the recognition of revenue have been satisfied. However, revenue cannot be recognised when the expenses cannot be measured reliably; in such circumstances, any consideration already received for the sale of the goods is recognised as a liability.

Paragraph BC9 of IFRIC-13 states the following:

IAS 18 does not give explicit guidance. However, the aim of IAS 18 is to recognize revenue when, and to the extent that, goods or services have been delivered to a customer. In the IFRIC's view, paragraph 13 applies if a single transaction requires two or more separate goods or services to be delivered at different times; it ensures that revenue for each item is recognized only when that item is delivered. In contrast, paragraph 19 applies only if the entity has to incur further costs directly related to items already delivered, e.g., to meet warranty claims. In the IFRIC's view, loyalty awards are not costs that directly relate to the goods and services already delivered—rather, they are separate goods or services delivered at a later date . . .

The illustrative examples that follow are adapted from supplemental material that follows IFRIC-15, IE section, which states that this material is not officially part of IFRIC-15:

Example 11-2

A contractor/developer (CD) buys a plot of land for the potential construction of commercial real estate. It designs an office block to build on the land and submits the designs to planning authorities in order to obtain building permission.

The CD markets the office block to potential tenants and signs up lessees under conditional lease agreements. The CD then markets the office block (development) to potential buyers and signs with one of them a conditional agreement for the sale of land and the construction of the office block. The buyer cannot put the land or the incomplete office block (development) back to the CD. The CD receives the building permits and all agreements become unconditional. The CD is given access to the land in order to undertake the construction and then constructs the office block.

In this illustrative example, IAS would require that the agreement be separated into (1) a component for the sale of land and (2) a component for the construction of the office block. The component for the sale of land is a sale of goods within the scope of IAS-18.

Because all the major structural decisions were made by the CD and were included in the designs submitted to the planning authorities before the buyer signed the conditional agreement, it is assumed there will be no major change in the designs after the construction has begun. Consequently, the component for the construction of the office block is not a construction contract and is within the scope of IAS-18. The facts, including that the construction takes place on land the buyer owns only after the sale of the land and that the buyer cannot put the incomplete office block back to the CD, indicate that the CD transfers to the buyer control and the significant risks and rewards of ownership of the work in progress in its current state as construction progresses. Therefore, if all the criteria in paragraph 14 of IAS-18 are met continuously as construction progresses, the CD recognizes revenue from the construction of the office block by reference to the stage of completion using the PCM.

Alternatively, assume that the construction of the office block started before the CD signed the agreement with the buyer. In that event, the agreement should be separated into three components: (1) a component for the sale of land, (2) a component for the partially constructed office block, and (3) a component for the construction of the office block. The entity should apply the recognition criteria separately to each component. Assuming that the other facts remain unchanged, the entity recognizes revenue from the component for the construction of the office block (item 3) by reference to the stage of completion using the PCM.

In this example the sale of land is determined to be a separately identifiable component from the component for the construction of real estate. However, depending on facts and circumstances, the entity may conclude that such a component is not separately identifiable. For example, in some jurisdictions, a condominium is legally defined as the absolute ownership of a unit based on a legal description of the airspace the unit actually occupies, plus an undivided interest in the

ownership of the common elements (that includes the land; the actual building; and all the driveways, parking, lifts, outside hallways, recreation, and landscaped areas) that are owned jointly with the other condominium unit owners. The undivided interest in the ownership of the common elements does not give the buyer control and the significant risks and rewards of the land itself. Indeed, the right to the unit itself and the interest in the common elements are not separable.

Example 11-3

A CD is developing residential real estate and starts marketing individual units (apartments or condos) while construction is still in progress. Buyers enter into a binding sale agreement that gives them the right to acquire a specified unit when it is ready for occupation. They pay a deposit that is refundable only if the CD fails to deliver the completed unit in accordance with the contracted terms. Buyers are also required to make progress payments between the time of the initial agreement and contractual completion. The balance of the purchase price is paid only on contractual completion, when buyers obtain possession of their unit. Buyers are able to specify only minor variations to the basic design, but they cannot specify or alter major structural elements of their unit. In the jurisdiction, no rights to the underlying real estate asset transfer to the buyer other than through the condo agreement. Consequently, the construction takes place regardless of whether sale agreements exist.

In this example the terms of the agreement and all the surrounding facts and circumstances indicate that the agreement is not a construction contract but, rather, a forward contract that gives the buyer an asset in the form of a right to acquire, use and sell the completed real estate at a later date, with an obligation to pay the purchase price in accordance with its terms. Although the buyer might be able to transfer its interest in the forward contract to another party, the entity retains control and the significant risks and rewards of ownership of the work in progress in its current state until the completed real estate is transferred. Therefore, revenue should be recognized only when all the criteria in paragraph 14 of IAS-18 are met, at completion in this example, and not via the PCM.

Alternatively, assume that in the jurisdiction the law requires the CD to transfer immediately to the buyer ownership of the real estate in its current state of completion and that any additional construction becomes the property of the buyer as construction progresses. The CD would need to consider all the terms of the agreement to determine whether this change in the timing of the transfer of ownership means that the entity transfers to the buyer control and the significant risks and rewards of ownership of the work in progress in its current state as construction progresses. For example, the fact that if the agreement

is terminated before construction is complete, the buyer retains the work in progress, and the CD has the right to be paid for the work performed might indicate that control is transferred along with ownership. If it does, and if all the criteria in paragraph 14 of IAS-18 are met continuously as construction progresses, the entity recognizes revenue by reference to the stage of completion using the PCM taking into account the stage of completion of the whole building and the agreements signed with individual buyers.

Other IFRIC Discussions

Determining whether the CD will retain neither continuing managerial involvement to the degree usually associated with ownership nor effective control over the constructed real estate to an extent that would preclude recognition of some or all of the consideration as revenue depends on the terms of the agreement and all the surrounding facts and circumstances. Such a determination requires judgment. IFRIC-15 assumes the entity has reached the conclusion that it is appropriate to recognize revenue from the agreement and discusses how to determine the appropriate pattern of revenue recognition.

Agreements for the construction of real estate may include such a degree of continuing managerial involvement by the CD undertaking the construction that control and the significant risks and rewards of ownership are not transferred even when construction is complete and the buyer obtains possession. Examples are agreements in which the CD guarantees occupancy of the property or a return on the buyer's investment for a specified period. In such circumstances, recognition of revenue may be delayed or precluded altogether.

Agreements for the construction of real estate may grant the buyer a right to take over the work in progress (albeit with a penalty) during construction, e.g., to engage a different CD to complete the construction. This fact, along with others, may indicate that the CD transfers to the buyer control of the work in progress (WIP). The CD that undertakes the construction of real estate will have access to the land and the work in progress in order to perform its contractual obligation to deliver to the buyer completed real estate. If control of the WIP is transferred continuously, that access does not necessarily imply that the entity undertaking the construction retains continuing managerial involvement with the real estate to usually associated with ownership to an extent that would preclude recognition of some or all of the consideration as revenue. The entity may have control over the activities related to the performance of its contractual obligation but not over the real estate itself.

Change Orders

U.S. GAAP

Change orders are modifications of an original contract that effectively change the provisions of the contract without adding new provisions.

Change orders may be initiated by either the contractor or by the customer. They could include changes in specifications or design, method or manner of performance, facilities, equipment, materials, site, or the period for completion of the work. Many change orders are unpriced; that is, the work to be performed is defined, but the adjustment to the contract price is to be negotiated later. For some change orders, both scope and price may be unapproved or in dispute.

Accounting for change orders under GAAP depends on the underlying circumstances, which may differ for each change order, depending on the customer, the contract, and the nature of the change. Change orders should therefore be evaluated according to their characteristics and the circumstances in which they occur.

In some circumstances, change orders are a normal element of a contract and may be numerous, possibly making separate identification impractical. Such change orders may be evaluated statistically on a composite basis using historical results modified to reflect current conditions. If such change orders are considered by the parties to be a normal element within the original scope of the contract, changes in the contract price might not be routinely negotiated. It is easy to conclude that contract revenue and costs should be adjusted to reflect change orders where they are approved by the customer and the contractor and where both scope and price of the change orders are clearly defined.

The majority of the problem in employing U.S. GAAP criteria for change orders is their flexibility. U.S. contractors do not employ any consistency in accounting for change orders other than a concern for contract job gain or fade. If a contractor's accounting method(s) over change orders do not significantly affect the movement of contract job gain or fade, the method employed will not generally be questioned by the contractor's auditors or surety. This is essentially a concern that the gross profit percentage realized between different fiscal periods is consistent. In addition to concerns about consistency in practice, the gross profit method is simply not permitted under international standards. Therefore, U.S. GAAP treatment of accounting for change orders is not permitted under IASB standards.

Accounting for Unpriced Change Orders

Accounting for unpriced change orders depends on their characteristics and the circumstances in which they occur. Under the completed-contract method, costs attributable to unpriced change orders should be deferred as contract costs if it is probable that aggregate contract costs, including costs attributable to change orders, will be recovered from contract revenues.

For all unpriced change orders, recovery should be deemed probable if the future events necessary for recovery are likely to occur. Factors to consider in evaluating whether recovery is probable are the customer's written approval of the scope of the change order, separate documentation for change order costs that are identifiable and reasonable, and the entity's favorable experience in negotiating change orders, especially as it relates to the specific type of contract and change order being evaluated. The following guidelines should be adhered to in accounting for unpriced change orders under the POC:

- Costs attributable to unpriced change orders should be treated as costs of contract performance in the period in which the costs are incurred if it is *not* probable that the costs will be recovered through a change in the contract price.
- If it *is* probable that the costs will be recovered through a change in the contract price, the costs should be deferred (excluded from the cost of contract performance) until the parties have agreed on the change in contract price or, alternatively, treated as costs of contract performance in the period in which they are incurred, and contract revenue should be recognized to the extent of the costs incurred.
- If it is probable that the contract price will be adjusted by an amount that exceeds the costs attributable to the change order and the amount of the excess can be reliably estimated, the original contract price should also be adjusted for that amount when the costs are recognized as costs of contract performance if their realization is probable. However, because the substantiation of the amount of future revenue is difficult, revenue in excess of the costs attributable to unpriced change orders should only be recorded in circumstances in which realization is assured beyond a reasonable doubt, such as where circumstances in which an entity's historical experience provides such assurance or the entity has received a bona fide pricing offer from a customer and records only the amount of the offer as revenue.

Approval

SOP 81-1 does not focus on the issue of approval versus no approval for a discussion of income recognition on change orders. Rather, its focus is one of pricing and probability of cost recovery. A change order can be approved in scope (i.e., additional work to be performed) but not yet in price.

It is not GAAP to recognize change orders only upon written approval; however, many contractors take this conservative approach. SOP 81-1 states that change orders should be evaluated according to their characteristics and the circumstances they occur in. For a contractor operating in an environment where change orders are frequent and the approval process occurs after the costs have been expended, nonrecognition of revenue until approval would understate profit.

Change Orders Scope and Price

If change orders are in dispute or are unapproved with regard to both scope and price, they should be evaluated as claims.

Contract options and additions should include treatment as a separate contract in certain circumstances, such as where the option or addition

- Differs significantly from the original contract
- Price is negotiated without regard to the original contract and involves different economic judgments
- The contract price and cost relationship are significantly different from the original contract

IFRS: International Standards on Change Orders

IAS-11 uses the term “variation” to describe a change order. Under these standards, a variation (change order) that affects contract revenue occurs when a customer instructs a contractor to change the scope of work to be performed.

Variations should be included in contract revenues when (IAS-11, par. 13.)

it is probable that the customer will approve the variation, and the amount of revenue resulting from the variation can be reasonably estimated.

These recognition and measurement criteria are different from those under U.S. GAAP. Under IASB standards customer approval is the primary determinant (not pricing), change orders are only initiated by customers (in U.S. GAAP they can be initiated by either the contractor or the customer), and accounting for change orders has a consistent gross profit concern and focus. Additionally, IAS-11 notes that contract revenue may increase or decrease from one period to the next, and it provides the following examples of the potential causes (IAS-11, par. 12) (note, not all are change orders):

- A contractor and a customer may agree to variations or claims that increase or decrease contract revenue in a period subsequent to that in which the contract was initially agreed.
- The amount of revenue agreed in a fixed-price contract may increase as a result of cost-escalation clauses.
- The amount of contract revenue may decrease as a result of penalties arising from delays caused by the contractor in completing the contract.
- When a fixed-price contract involves a fixed price per unit of output, contract revenue increases as the number of units is increased.

Claims

U.S. GAAP

Claims are amounts in excess of the agreed contract price (or amounts not included in the original contract price) that a contractor seeks to collect from customers or others for customer-caused delays, errors in specifications and designs, contract terminations, change orders in dispute or unapproved as to both scope and price, or other causes of unanticipated additional costs or delays.

Recognition of amounts of additional contract revenue relating to claims is appropriate only if (1) it is probable that the claim will result in additional contract revenue and (2) if the amount can be reliably estimated. Those two requirements are satisfied by the existence of all of the following conditions:

- The contract or other evidence provides a legal basis for the claim, or a legal opinion has been obtained stating that under the circumstances there is a reasonable basis to support the claim.
- Additional costs are caused by circumstances that were unforeseen at the contract date and are not the result of deficiencies in the contractor's performance.

- Costs associated with the claim are identifiable or otherwise determinable and are reasonable in view of the work performed.
- The evidence supporting the claim is objective and verifiable, not based on management's feel for the situation or on unsupported representations.

If the foregoing requirements are met, revenue from a claim should be recorded only to the extent that contract costs relating to the claim have been incurred.

The amounts recorded, if material, should be disclosed in the notes to the financial statements. Costs attributable to claims should be treated as costs of contract performance as incurred.

An alternative recognition method includes treatment as revenues only when amounts have been received or awarded, and this method and treatment should be disclosed. The criteria for disclosure as a contingent asset should be in accordance with FAS-5 (Accounting for Contingencies).

IFRS on Claims

Under IFRS, a "claim" is an amount that the contractor seeks to collect from the customer or another party as reimbursement for costs not included in the contract price (IAS-11, par. 14). (Note that the wording used refers to "costs" and not "amounts" as termed under GAAP.) A claim may arise from, for example, errors in the initial specifications, delays caused by the customer, or disputed variations. The settlement of claims arising from circumstances not envisaged in the contract or arising as an indirect consequence of approved variations is subject to a high level of uncertainty relating to the outcome of future negotiations.

International rules regarding claims have different recognition criteria different from that in the United States standards. Under IAS-11R, one option to recognize claims is that they should be included in contract revenues only when (1) negotiations have advanced to the point that it is probable that the customer will accept the claim and (2) the amount that will probably be accepted can be measured reliably. The second method could be more appropriate because of the frequency and large number of disputes that arise on construction contracts and the length of time that negotiations may last and contractors take variations (change orders) and claims into account only when they have actually been approved by the customer. Examples of IASB accounting policies for claims and variations (change orders or disputes) and whether revenue is recognized, are presented in Exhibit 11-2.

EXHIBIT 11-2
IASB ACCOUNTING POLICIES FOR CLAIMS AND VARIATIONS

Variation (change order) or claim	Balance sheet or contract revenue treatment
Example potential situation:	
1. The customer approved changes to the contract's design specifications with a total cost of \$100,000.	Contract revenue should be recognized because all criteria set out in paragraph 13 of IAS-11 are met. The \$100,000 should be included in the contract price in the calculation of its revenues.
2. Due to weather conditions, the contract will overrun by six months. This increase in time performance period leads to an increase in overhead costs of \$50,000. The contract does not allow reimbursement for these costs.	Because there is little or no chance of the customer approving a change order for these changes, under IAS the additional costs incurred should be included in the balance-sheet asset named WIP if the contract is still profitable. However, a lower expected profit margin should be recognized because of the additional costs incurred. The total expected loss should be recognized immediately (and no WIP recorded on the balance sheet) if the additional costs will result in a loss on the contract.
3. Due to unforeseen underground conditions, the contractor incurred additional costs in the current year on a contract. Negotiations to obtain the customer's acceptance of the change orders or claims are in the preliminary stages.	Revenue should not be recognized yet, because negotiations have not reached a stage where it is probable that the customer will accept the claim. The contractor should include the additional costs in the balance sheet account, WIP, and recognize a lower expected profit margin in the current period due to the additional costs incurred.
4. The customer caused delays in a material purchasing decision. This delay cost the contractor \$5,000. Although not yet discussed with the customer, it is concluded by the contractor that the customer will probably accept a change order or claim for this because it was due to delays caused by the customer itself.	As all of the criteria set out in paragraph 14 of IAS-11 are met; so, the \$5,000 can be included in the contract price (revenue).

Incentives

U.S. GAAP

In U.S. GAAP rules for incentives the estimated revenue from a contract is the total amount that a contractor expects to realize from the contract whether from the original contract amount itself; the contract with change orders and claims; or the contract amount plus change orders, claims, and incentives. Incentives are included in the total estimated revenue amount when the realization and collection of the incentive are assured.

IFRS

Under international standards, the timing of inclusions of incentive amounts is spelled out more definitely. Under IAS-11R, incentive payments are additional amounts to be paid to the contractor if specified performance criteria are met or exceeded. For example, a contract may allow for an incentive payment to the contractor for early completion. Another example is an incentive for cost reductions. Under IASB rules, incentive payments are included in contract revenue when (IAS-11, par. 15)

- The contract is sufficiently completed so that it is probable that the specified performance criteria will be met or exceeded and
- The amount of the incentive payment can be measured reliably.

Income Determination: Cost Elements for Contractors

U.S. GAAP

U.S. GAAP provides for general flexibility in accumulating contract costs; and contract costs for tax purposes are defined by IRS regulations. The lack of definite costing rules for GAAP, or the flexibility of the rules, depending on how one sees the situation, makes comparison of gross profit percentages between U.S. contractors difficult due to the inconsistency of application. One contractor may deem a particular contract cost as a job cost, whereas another might not.

General parameters on contract costing under GAAP state that contract cost elements should consist of (1) direct costs, such as materials, labor and labor overhead, subcontracts, and (2) indirect costs identifiable with or allocated to contracts (examples: support

costs, mechanical shop, repairs and maintenance, office job payrolls, billing and collection costs, and bidding and estimating costs). Other costs or expenses must be period costs if they cannot be clearly related to discernible future benefits.

Although income is recognized over the completion time period of the contract under the PCM or as units are delivered under the units-of-delivery modification or is deferred until complete under the CCM, nothing peculiar to any of these methods requires accounting for contract costs to deviate in principle from the basic framework: contract costs must be accumulated by individual contracts.

General costing principles (consistent with general principles for inventory and production costs in other areas) state that direct costs should be included, such as material, labor, and subcontracts. Also, indirect costs allocable to contracts should be job-costed, including indirect labor, contract supervision, tools and equipment, supplies, quality control and inspection, insurance, repairs and maintenance, depreciation and amortization, and support costs (possibly certain types of typical general and administrative).

Other considerations on costing include the following:

- General and administrative costs should ordinarily be charged to expense as incurred (may be accounted for as contract costs under the CCM or for contract costs by government contractors).
- Selling costs should be expensed as incurred.
- Costs under cost-type contracts should be charged to contract costs in conformity with GAAP in the same manner as costs under other types of contracts.
- In computing estimated gross profit (costs to complete on uncompleted contracts) or for providing for losses on contracts, estimates of cost-to-complete should reflect all of the types of costs included in contract costs.

Capitalized or inventoriable costs should not be carried at amounts that when added to the estimated costs to complete are greater than the estimated realizable value of the contract. This applies to home builders and to land developers who accumulate the costs of a contract in an account and recognize the expense on the sale under FAS-66 (ASC Topics 360 and 976). Interest costs should be accounted for in accordance with FAS-34 (Capitalization of Interest Cost) (ASC Topics 360 and 835).

Precontract costs are defined as costs incurred in anticipation of future contract sales. Examples and associated rules for precontract costs are as follows:

- *Costs incurred in anticipation of a specific contract that will have no future benefit unless the contract is obtained.* Examples are mobilization, engineering, architectural, or other costs incurred on the basis of commitments. These costs should be either job-costed or expensed based on the contractor's method of job costing and the company's expectation of successfully obtaining the project.
- *Costs incurred for assets to be used in connection with specific anticipated contracts.* Examples are purchases of specific equipment, materials, or supplies. These costs should be either capitalized or recorded as job costs.
- *Costs incurred to acquire or produce goods in excess of the amounts required under a contract in anticipation of future orders for the same item.* These types of costs should be recorded as inventory items, if their future recovery is probable.

Basically, costs incurred for start-up, proposed or bid pending contracts, and learning costs should be expensed as incurred in accordance with SOP 98-5 (Reporting on the Costs of Start-Up Activities) (ASC Subtopic 720-15).

Cost adjustments arising from back charges are defined as billings for work performed or costs incurred by one party that in accordance with the agreement should have been performed or incurred by the party who was billed. Back charges are frequently disputed. Examples are back charges for cleanup work and for a subcontractor's use of a general contractor's equipment.

SOP 81-1 recommends the following procedures in accounting for back charges:

- Back charges to others should be recorded as receivables and, to the extent considered collectible, applied to reduce contract costs or to increase revenue, if material.
- If the billed party disputes the propriety or amount of the charge, the back charge is in effect a claim and the criteria for recording claims apply.
- Back charges from others should be recorded as payables and as additional contract costs to the extent that it is probable that the amounts will be paid.

Estimated cost to complete is a significant variable in the process of determining income earned from uncompleted contracts. The latest estimate must be used based on information that is known as of the financial statement preparation date (not just information known as of the balance sheet date). This means that the estimated

costs to complete will change based on all factors and circumstances that occur after the financial statement period date to the date of the issuance of the financial statements.

IFRS on Costs

Contract Job Costs

Contract job costs should consist of (1) costs that relate directly to the specific contract, (2) costs that are attributable to construction contract activity in general and that can be allocated to the contract under an allocation method, and (3) other costs that are specifically chargeable to the customer under the terms of the contract. IAS-11R also details the costs deemed to be direct contract costs. Costs that relate directly to a specific contract include

- Architectural, engineering, and technical assistance that is directly related to a contract.
- Claims from third parties.
- Costs of materials used in construction.
- Costs of moving assets and materials to and from the contract site.
- Depreciation of plant and equipment used on the contract.
- Labor costs, including site supervision.
- Rental costs.
- The estimated costs of required modification, guarantee work, including expected warranty costs.

Incidental Income

Contract costs may be reduced by any incidental income that is not included in contract revenue, for example, income from the sale of surplus materials and the disposal of plant and equipment at the end of the contract (IAS-11, par. 17). This is not always a simple process. Say, for example, that electrical contractor ABC installs a new underground electrical cable to a building and as part of the contract is able to keep any salvage. The contract is for \$5 million and the anticipated contract costs are \$4 million. In the process of digging the trench for the power line ABC digs up the old electrical cable, finds that it is very thick copper and is able to sell the metal for \$1 million.

IAS-2 states that a production process may result in more than one product being produced simultaneously, for instance, where there is a main product and a by-product (in this case, a contract and a by-product of the contract). When the costs of each product are not separately identifiable, the allocation between the products may be based, for example, on the relative sales value of each product either at the stage in the production process when the products become separately identifiable or at the completion of production. Most by-products, by their nature, are immaterial. When this is the case they are often measured at net realizable value, and is deducted from the cost of the main product. As a result, the carrying amount of the main product is not materially different from its cost (IAS-2, par. 14). This suggests that the proceeds from the by-product should be deducted from the costs of the contract. In addition, IAS-11 states that a series of contracts should be accounted for as a single contract when the group of contracts is negotiated as a single package, the contracts are so closely interrelated that they are, in effect, part of a single project with an overall profit margin and the contracts are performed concurrently or in a continuous sequence (IAS-11, par. 9). Therefore, the sale of the copper should not be accounted for separately. The construction contract should be accounted for including the copper sale recoveries; that is, the cash to be received from the copper sales should be deducted from the contract costs.

Allocation of Costs

Costs that may be attributable to contract activity in general and can be allocated to specific contracts include (1) insurance, (2) costs of design and technical assistance that is not directly related to a specific contract, and (3) construction overhead (IAS-11, par. 18).

Such costs are allocated using methods that are systematic and rational and that are applied consistently to all costs having similar characteristics. The allocation is based on the normal level of construction activity. Construction overhead is defined as costs such as the preparation and processing of construction payroll. Costs that may be attributable to contract activity in general and that can be allocated to specific contracts also include interest costs (borrowing costs).

Costs that are specifically chargeable to a customer may include some general administration costs and development costs for which reimbursement is specified in the terms of the contract (IAS-11, par. 19).

Costs that cannot be attributed to contract activity or allocated to a contract are excluded from the costs of a construction contract. Such costs include (IAS-11, par. 20)

- Depreciation of idle plant and equipment that is not used on a particular contract.
- General administration costs for which reimbursement is not specified in the contract.
- Research and development costs for which reimbursement is not specified in the contract.
- Selling costs.

Contract costs include the costs attributable to a contract from the date of securing it contract to its completion. However, costs that relate directly to a contract and that are incurred in securing it are also included as part of its costs if they can be separately identified, measured reliably, and it is probable that the contract will be obtained (IAS-11, par. 21). When costs incurred in securing a contract are recognized as an expense in the period in which they are incurred, they are not included in contract costs when the contract is obtained in a subsequent period.

Costs of securing a contract would normally comprise the direct costs of preparing and presenting the bid for the contract, which could include design costs, external consultancy fees, and the costs of preparation and printing of the bid documentation. In some cases a number of bids are submitted for a number of contracts. If only one of those contracts is obtained, it is only the cost associated with the contract that is actually obtained that may be included in contract costs and then only if the costs are separately identifiable and able to be reliably measured.

Revised Estimates

U.S. GAAP

FAS-154 (Accounting Changes and Error Corrections—a Replacement of APB Opinion No. 20 and FASB Statement No. 3) (ASC Subtopic 250-10) was issued in May of 2005 as a replacement for APB-20. The question is whether the new standard replaces the past practice of contractors concerning accounting for and disclosure of revised estimates. It does in that formerly changes of (material) estimates were optional and now they are required.

FAS-154 was issued in order to bring certain U.S. standards more in agreement with international standards, and it is effective for accounting changes and corrections of errors made in fiscal years beginning after December 15, 2005. FAS-154 includes a section that addresses changes in accounting estimates. Certainly the biggest

typical estimate that the construction industry is concerned with is that related to revenue recognition on uncompleted contracts. FAS-154 (par. 19; ASC 250-10-45-17) states the following:

A change in accounting estimate shall be accounted for in (a) the period of change if the change affects that period only or (b) the period of change and future periods if the change affects both. A change in accounting estimate shall not be accounted for by restating or retrospectively adjusting amounts reported in financial statements of prior periods or by reporting pro forma amounts for prior periods.

In paragraph 22, under the title of “Disclosures,” FAS-154 (ASC 250-10-50-4) addresses the issue of estimate changes, which are typical for contractors, stating that “disclosure is required if the effect of a change in the estimate is material.” Footnote 7 of paragraph 22 states the following:

The requirement to disclose the effects if a change in estimate is material are carried forward from Opinion 20. The Board did not reconsider the need for that requirement in the project that led to issuance of this Statement. Numerous Statements have been issued by the Board subsequent to Opinion 20 that address required changes in estimates. Those Statements also include various disclosure requirements. This Statement is not intended to impose new disclosure requirements or change the existing disclosures that GAAP requires for specific changes in estimate.

Revised estimates of total contract amount and costs to complete and, consequently, revenue earned are often required in the construction industry. The nature of accounting for construction contracts is that revisions are continuous.

According to SOP 81-1 (pars. 82–84; ASC 605-35-25-85 through 605-35-25-86 and 605-35-50-9 through 605-35-50-10) contractors have two options for revisions in revenue, costs, and gross profit estimates:

1. *Cumulative catch-up method* Any change in estimate is accounted for in the period of change (this is the preferred method).
2. *Reallocation method* The effect of the change is accounted for ratably over the period of change and subsequent periods.

Significant revisions of contract changes are required to be disclosed if the change is material. The following example is of a significant revision:

Example 11-3: Change in Accounting Estimate: Disclosure Only

Statement of Financial Accounting Standards No. 154 (FAS-154) (Accounting Changes and Error Corrections—a replacement of APB Opinion No. 20 and FASB Statement No. 3) requires that a change in accounting estimate be accounted for in (1) the period of change if the change affects that period only or (2) the period of the change and future periods if the change affects both. Paragraph 33 of APB-29 requires disclosure of the effect on income before extraordinary items, net income and the related per share amounts of the current period for a change in an accounting estimate that affects several future periods, such as a change in service lives of depreciable assets or in actuarial assumptions affecting pension costs. FAS-154 does not require, unless material, disclosure of the effect on those income statement amounts of changes in accounting estimates made each period in the ordinary course of accounting for such items as uncollectible accounts or inventory obsolescence.

IFRS on Changes in Estimates

The PCM is applied on a cumulative basis in each accounting period to the current estimates of contract revenue and contract costs. Therefore, the effect of a change in the estimate of contract revenue or costs or the in the estimate of the outcome of a contract is accounted for as a change in accounting estimate. The changed estimates are used in the determination of the amount of revenue and expenses recognized in the income statement in the period in which the change is made and in subsequent periods (IAS-11R, par. 38). IFRS also have unique disclosures on this issue. For U.S. GAAP “significant revisions” require disclosure.

For changes in accounting estimates, an entity should disclose the nature and amount of the change that affects the current period or that is expected to have an effect in future periods. The only exception is where it is impracticable to estimate the effect on future periods. If it is impracticable to disclose the effect on future periods, that fact must be disclosed (IAS-8, pars. 39–40). IAS-34 (Interim Financial Reporting) contains an additional disclosure with respect to changes in estimates, which requires that if an estimate of an amount reported in an interim period is changed significantly during the final interim period of the financial year but a separate financial report is not published for the final interim period, the nature and amount of that change in estimate should be disclosed in a note to the annual financial statements for that financial year (IAS-34, par. 26).

Where revenue has already been validly recognized on a contract but subsequently uncertainty arises about the recoverability of the amount due from the customer, any provision against the amount due is recognized as an expense rather than as a reduction of contract revenue (IAS-11, par. 28).

Anticipated Losses on Contracts

U.S. GAAP

A contractor should make for a provision for a loss contract as soon as loss on the contract becomes evident (SOP 81-1, pars. 85–89). This provision should be computed on the basis of total estimated cost to complete compared with the expected total contract revenue, less any loss already recognized under the company's accounting method. If it is material, the provision should be shown separately on the balance sheet, or it can be included in the over- or under-billing calculations if it is not material. Anticipated loss should be reported in the income statement as an element of costs rather than as a reduction of revenue.

IFRS on Loss Contracts

IAS-11R states that when it is probable that total contract costs will exceed total contract revenue, the expected loss should be recognized as an expense immediately (IAS-11R, par. 36). The amount of the contract loss is determined even if no work has commenced on the contract notwithstanding the stage of completion of contract activity, or the amount of gross profits from other contracts that are not treated as a single construction contract (IAS-11R, par. 37). When it is probable that contract costs will exceed total contract revenue, the expected loss should be recognized immediately as an expense (IAS-11, par. 36).

An expected loss may be identified either when the outcome of a contract can be reliably estimated or even when the outcome is in doubt. If the outcome is in doubt, it may still be probable that a loss will be incurred even though the outcome may not be capable of reliable estimation. In this situation an estimate should be made based on the available information and provision made (IAS-11, par. 33). This loss accrual provision would then be reviewed and revised as necessary as the contract proceeds.

Provision for an expected loss is made irrespective of (IAS-11, par. 37)

- Whether or not work has commenced on the contract
- The stage of completion of the contract activity
- The profitability of other contracts that are separately accounted for in accordance with the standard

Recording the loss accrual in the balance sheet may seem to be different between GAAP and IFRS. Under GAAP a loss accrual can either stand on its own and be shown in an account with a name such as “accrued losses on uncompleted contracts” or netted with the over- or underbillings. Under IFRS, provisions for losses are “set against the amount ‘due from customers’ (if an asset) or added to ‘due to customers’ (if a liability)” (IAS-11, par. 43–44).

Combining and Segmenting Criteria

U.S. GAAP

The basic GAAP presumption is that each contract is the profit center for revenue recognition, cost accumulation, and income measurement. The presumption of individual contract revenue recognition may be overcome only if a contract or series of contracts meets the conditions for either combining or segmenting contracts (SOP 81-1, pars. 7, 38, and 40–42; ASC 605-35-05-13, 605-35-25-9, and 605-35-25-12 through 605-35-25-14). A group of contracts (combining) and a phase or segment of a single contract or group of contracts (segmenting) may be used as a profit center in some circumstances. Because there are numerous implications of combining and segmenting contracts, the following criteria are essential in determining whether contracts may be accounted for as a combination or segment: (1) evaluation of the facts and circumstances surrounding the contract or contracts, (2) the contract terms, and (3) management’s intent.

It is not a common occurrence that a contractor seeks to combine or segment a contract or contracts and does actually combine or segment them. Because GAAP is generally based on contracts that are accounted for under the PCM, consideration of contract combination or segmenting might have little financial statement effect unless the contracts that are combined or segmented have significant gross profit percentage differences. Note that an individual contract cannot be segmented into phases unless it is in reality more than one contract.

Combining Contracts

Combining for construction contracts can occur when a group of contracts is so closely related that they are, in effect, parts of a single

project with an overall profit margin. In such a situation, accounting for the contracts individually may not be feasible or appropriate. In these circumstances, consideration should be given to combining the contracts for profit recognition purposes. The underlying rule in combining contracts is that revenue and profit are earned—and should be reported—uniformly over the performance of the combined contracts. For example, a group of construction-type contracts may be negotiated as a package with the objective of achieving an overall profit margin, although the profit margins on the individual contracts may vary. In those circumstances, if the individual contracts are performed and reported in different periods and accounted for separately, the reported profit margins in those periods will differ from the profit margin contemplated in the negotiations for reasons other than differences in performance.

Contracts may be combined for accounting purposes only if they meet the following criteria (criteria for contract combination for tax purposes are determined by the tax laws and regulations and do not necessarily relate to the contractor's treatment for GAAP purposes):

- The contracts are negotiated as a package in the same economic environment with an overall profit margin objective.
- They constitute, in essence, an agreement to do a single project. A project for this purpose consists of construction or related service activity with different elements, phases, or units of output that are closely interrelated or interdependent in terms of their design, technology, and function or their ultimate purpose or use. (For example, a construction manager at risk where the contractor is receiving both a fee and is self-performing part of the job as a subcontractor.)
- The contracts require closely interrelated construction activities with substantial common costs that cannot be separately identified with or reasonably allocated to the elements, phases, or units of output.
- They are performed concurrently or in a continuous sequence under the same project management at the same location or at different locations in the same general vicinity.
- They constitute in substance an agreement with a single customer. In assessing whether the contracts meet this criterion, the facts and circumstances relating to the other criteria should be considered. In some circumstances, different divisions of the same entity would not constitute a single customer if, for example, the negotiations are conducted independently with the different divisions. On the other hand, two or more parties may constitute in substance a single customer if, for example,

the negotiations are conducted jointly with the parties to do what is in essence a single project.

- If the financial statements are consolidated and one of the consolidated entities is a subcontractor to one of the other consolidated entities, the subcontract billings to date and under- (over-) billings should be eliminated in the consolidation and costs to date should be combined to compute percentage of completion.

Contracts that meet all of the above criteria may be combined for profit recognition and to determine the need for a provision for losses. The criteria should be applied consistently to contracts with similar characteristics in similar circumstances.

Segmenting a Contract

A single contract or a group of contracts that otherwise meets the test for combining may include several elements or phases, each of which the contractor negotiated separately with the same customer and agreed to perform without regard to the performance of the others.

Note that the foregoing criteria describing the facts and circumstances surrounding the segmenting of a contract must be present. The phrase “each of which the contractor negotiated separately . . . and agreed to perform without regard to the performance of the others” is an essential element. Normally, a contractor does not negotiate the various phases of a contract separately without regard to the other phases of a contract. It is difficult for a contractor to meet these criteria, which are required for U.S. GAAP contract segmenting.

The goal in contract segmenting relates to the accounting of contract activities in certain described situations where if accounted for as a single profit center, the reported income may differ from that contemplated in the negotiations for reasons other than differences in performance. If the project is segmented, revenues can be assigned to the different elements or phases to achieve different rates of profitability based on the relative value of each element or phase to the estimated total contract revenue.

A project, which may consist of a single contract or a group of contracts, with segments that have different rates of profitability, may be segmented if it meets the following, consistently applied criteria:

- The contractor submitted bona fide proposals on the separate components of the project and on the entire project.

- The customer had the right to accept the proposals on either basis.
- The aggregate amount of the proposals on the separate components approximated the amount of the proposal on the entire project.

A project that does not meet the above criteria may still be segmented only if it meets all of the following criteria:

- The terms and scope of the contract or project clearly call for separable phases or elements.
- The separable phases or elements of the project are bid or negotiated separately.
- The market assigns different gross profit rates to the segments because of factors such as different levels of risk or differences in the relationship of the supply and demand for the services provided in different segments.
- The contractor has a significant history of providing similar services to other customers under separate contracts for each significant segment to which a profit margin higher than the overall profit margin on the profit is ascribed.
- The significant history with customers who have contracted for services separately is one that is relatively stable in terms of pricing policy rather than one unduly weighted by erratic pricing decisions.
- The excess of the sum of the prices of the separate elements over the price of the total project is clearly attributable to cost savings incident to combined performance of the contract obligations (for example, cost savings in supervision, overhead, or equipment mobilization).
- The similarity of services and prices in the contract segments and services and the prices of such services to other customers contracted separately should be documented and verifiable.

IFRS on Contract Division and Combination

Rules for combining and segmenting construction contracts are also addressed by the international standards, which are similar to, but not as detailed as, the U.S. GAAP rules (IAS-11R, pars. 7–10). Nor are the IFRS principles as restrictive as the U.S. guidance is.

The requirements of international standards for combination or segmentation are applied separately to each construction contract.

As under U.S. GAAP, they state that in certain circumstances it is necessary to apply the criteria for revenue and cost recognition to the separately identifiable components of a single contract or to a group of contracts together in order to reflect the substance of a contract or a group of contracts.

An IASB standards criterion not present in U.S. rules is that when a contract covers a number of assets, the construction of each asset should be treated as a separate construction contract when

- Separate proposals have been submitted for each asset;
- Each asset has been subject to separate negotiation and the contractor and customer have been able to accept or reject the part of the contract relating to each asset; and
- The costs and revenues of each asset can be identified.

The U.S. rules do not refer to physical assets as part of the criteria for determining contract groupings.

The general rules under IAS-11 for contract combination are that a group of contracts should be treated as a single construction contract, whether with a single customer or with several customers, when

- The group of contracts is negotiated as a single package;
- The contracts are so closely interrelated that they are, in effect, part of a single project with an overall profit margin; and
- The contracts are performed concurrently or in a continuous sequence.

A contract may provide for the construction of an additional asset at the option of the customer (i.e., a change order increasing the work to be performed or the scope of the work contracted) or be amended to include the construction of an additional asset. The construction of the additional asset should be treated as a separate construction contract when

- The asset differs significantly in design, technology, or function from the asset or assets covered by the original contract or
- The price of the asset is negotiated without regard to the original contract price.

Example 11-4: A contractor is negotiating two contracts with a single customer. The customer must either accept both contracts or reject both. The first contract will be for the design of a processing plant and the second for the plant's actual construction.

The anticipated gross profit on the design contract is 20% and the planned profit margin on constructing the plant is 10%. Should these contracts be accounted for as one contract or separate contracts?

Answer to Example 11-4: The two contracts should be accounted for as a single contract. The contracts were negotiated as a single package because the customer must accept both or reject both. The contracts are closely related and will be performed in a continuous sequence. An overall gross profit margin should be recorded collectively as work is performed on both contracts based upon the overall contract price and costs.

Service Contracts

U.S. GAAP

SOP 81-1 covers the rules for all contracts, including service contracts. Construction management contracts can be deemed to be a service contract. Those contracts that are better known in their association with service contracts are contracts for maintenance such as HVAC maintenance contracts. Under U.S. GAAP, service contracts can be reported either under SOP 81-1 under the PCM, under a straight line method, or under other methods, depending on the facts and circumstances of the contract and situation.

Example 11-5: ABC Contractors is contracted to manage the building of an office building under a construction management contract paid by a fee of \$20,000 per month over eighteen months. If the construction takes more than eighteen months, ABC will get no further money, and it may retain the full fee over eighteen months if it is able to complete the construction in less than eighteen months. Under U.S. GAAP ABC will report the revenue process for the contract under the PCM. ABC could have chosen to measure its progress under the cost-to-cost method, based upon the time expected (such as measurement over eighteen months), or under an external (output) measure of percent complete.

Example 11-6: XYZ HVAC Company signed a contract to service a shopping center HVAC system for \$120,000 for a year. The contract terms provide that XYZ must include labor and equipment but will be able to bill separate for materials. XYZ estimates that its total costs to service the agreement will be \$60,000. Under U.S. GAAP, XYZ can report this contract under the PCM using the cost-to-cost method or can recognize the revenue over a straight line method. Alternatively, XYZ can report the revenues under any other reasonable method. (For example, XYZ believes that once it obtains a new service agreement, such as

this one, the work will mostly be required during the first 90 days. Based upon this, XYZ elects to account for their service contracts by matching revenues with costs incurred for the first 90 days and then report the balance of the unearned revenues over the remaining term of the agreement. Under this method, XYZ picked up \$60,000 in costs and revenues in the first 90 days and then amortized the balance of the contract of \$60,000 over the remaining 9 months.

IFRS

IFRS seems to put service contracts in the same category as construction contracts. It defines the rendering of a service as an entity performing an agreed-upon task for a customer, which service may involve asset maintenance, membership services, professional services, or the construction development or customization of assets (IAS-11, par. 3; IAS-18R par. 4).

A service may be linked to a discrete event or performed in the short-term, or be rendered over a period longer than the reporting period. Construction contracts are an example of the latter. Service contracts may be for a single element, in which the entity renders one type of service; multiple-element contracts provide for the delivery of one or more services and may include delivery of goods as well as services (IAS-11, par. 8; IAS-18R, par. 13).

The key accounting issue in accounting for both service and construction contracts is the allocation of revenues and costs to the different accounting periods in which the contract work is performed and the services provided. The recognition of service revenue is usually on the PCM if the recognition criteria for revenue recognition are met. The guidance provided in IAS-11 is therefore applicable to the measurement of service revenue (IAS-18R, par. 21).

Revenue is recognized according to the stage, or percentage, of completion of the contract (IAS-18R, par. 20). The method used to determine the stage of completion depends on the nature of the contract. A consistent approach should be taken to the revenue recognition of similar contracts. The more common methods are cost to cost, output measurement of physical progress, and proportion of services performed to total services to be performed (IAS-18R, par. 25). A straight-line basis of revenue recognition is used for service revenues only when the service is provided by an indeterminate number of acts over a specified time period and when there is no other method available that provides a better measure of the stage of completion (IAS-18R par. 25).

Using the facts of Example 11-5 (above), the answer under IFRS is as follows: IFRIC-15 states that if the constructing entity is not

required to acquire and supply construction materials, which ABC Contractors construction management is, the agreement may only be for the rendering of services in accordance with IAS-18. In this case, because the criteria in paragraph 20 of IAS-18 are met, IAS-18 requires revenue to be recognized by reference to the stage of completion of the transaction using the percentage-of-completion method (the PCM).

Using the facts of Example 11-6 (above), the answer under IFRS is as follows: The definition of a service contract described in IAS-11, paragraph 3, is met. XYZ HVAC Company has a choice of accounting methods (cost to cost, output measurement of physical progress, or proportion of services performed to total services to be performed), as long as the chosen method is consistently applied.

OTHER UNIQUE IFRS TREATMENTS

Multiple Element Contracts

Often a bundle of services or services and the sale of a number of goods (such as land or real estate) are bundled into one contract. The determination of whether contracts should be accounted for as single- or multiple-element contracts requires considerable judgment. A contract has separate elements if the product or service elements represent a separate earnings process.

Under IFRS guidelines, a multiple-element contract should generally be separated into its constituent parts and each part accounted for separately unless the commercial effect of each transaction cannot be understood without considering the separate components as a single transaction (IAS-11, par. 8; IAS-18R, par. 13). The total contract price must be allocated to each element. The allocation should be in proportion to the fair value of the individual elements. Price discounts granted for a multiple-element contract are therefore allocated proportionately to each element.

Where the performance of one element of a contract is closely linked to the performance of another, it may be more appropriate to treat the two elements as one contract. Two elements are closely linked if the commercial effect of one element cannot be properly understood without considering the two elements as if they were one. The terms of each multiple-element contract should be carefully considered to ensure that the correct treatment is applied (IAS-18R, par. 13). The PCM should be used separately for the individual elements of a multi-element contract, provided the normal recognition criteria for the PCM are met.

Measurement

Revenue for services provided should be measured at the fair value of the consideration receivable (IAS-11, par. 12; IAS-18R, par. 9). Revenue should be discounted if the inflow of cash is deferred and the impact of the time value of money is significant. The present value of the consideration receivable should be recognized as revenue, and the unwinding of the discount on the receivable should be recognized as a component of interest income (IAS-11, par. 11). This treatment reflects the financing element of the terms of the contract. Loss accruals can also be discounted where this has a material impact on the assessment of impairment.

Concerns about the collectability of revenues already recognized should be reflected as a bad-debt expense and not an adjustment to current contract revenues (IAS-18R, par. 22). However, if, on the other hand, contract terms are renegotiated, adjustments to contract revenue should be recognized in the income statement prospectively.

Construction Contract Work in Progress

Under U.S. GAAP, there is very little use for a contract work in progress (WIP) account. The majority of use under GAAP is for time-and-material contracts that remain unbilled as of the period end. For IFRS, the use of the WIP account is significant. Under IFRS there is a WIP account, not only in total, but for each individual contract that is released to contract expense only after certain criteria are met. Under U.S. GAAP, all contract expenses are automatically expensed and are only used to measure the percentage of completion in the cost-to-cost formula.

Under IFRS, construction contract WIP balances represent costs incurred in respect of construction contracts as at the balance sheet date that will be recovered in future periods (IAS-11, par. 27).

Construction contracts WIP should be recognized only after the date when it becomes probable that the contract will be obtained and economic benefits will flow to the entity. Costs incurred for the contract after that date should be included in that contract's WIP account. Initial measurement of a construction contract's WIP balances is at cost. This cost should include all costs that relate directly to the specific contract and allocated overheads relating to construction contracts generally. The allocation of overhead costs should be performed on a systematic and consistent basis (IAS-11, par. 18).

Other costs should be included in WIP if the contract specifically allows for the "recharge" (additional billings whether current or

future) of such costs (IAS-11, par. 16). General overhead and selling costs not specifically rechargeable under the terms of the contract should not be included in WIP (IAS-11, pars. 19–20). Costs relating to inefficiencies and other costs not specifically applicable to the contract, for example the depreciation cost of idle equipment, should also be excluded (IAS-11, par. 20(d)). The attributable or allocable borrowing costs should be included in the contract WIP balance if the entity follows a policy of capitalizing borrowing costs (IAS-11, par. 18).

Subsequent to initial measurement, WIP balances are to be reduced by the amount of contract costs transferred to contract expense in the income statement. The amount transferred is determined by the stage of completion of the construction contract (IAS-11, pars. 7 and 22) and is calculated on a contract-by-contract basis additionally subject to the requirements to combine and segment contracts. The difference between the actual costs incurred and contract expenses recognized in the income statement remain in WIP. The costs of each construction contract are assessed independently of other contracts. The loss on one contract cannot be offset by an expected profit on another (IAS-11, par. 37(c)).

IAS-11 expresses the WIP balance in the following terms (IAS-11, par. 43):

The gross amount due from customers for contract work is the net amount of:

Costs incurred plus recognized profits, less
The sum of recognized losses and progress billings, and

For all contracts in progress for which costs incurred plus recognized profits, less recognized losses, exceeds progress billings.

The sum of these amounts is included in the balance sheet as “Construction Contract WIP.” Where progress billings exceed costs incurred plus recognized profits (less recognized losses), the balance is a net credit balance and should be reflected as deferred revenue in the balance sheet. This is included in liabilities as such or as “amounts due to customers for contract work” (IAS-11, par. 44). The negative balance is not offset against positive work in progress balances on other contracts.

IFRS Presentation and Disclosure

Where progress billings exceed costs incurred plus recognized profits (less recognized losses), the balance will be a net credit balance

and is defined in the standard as the gross amount due to customers (IAS-11, par. 44).

The gross amount due from customers for contract work should be disclosed as an asset. The gross amount due to customers for contract work should be disclosed as a liability (IAS-11, par. 42). Note that IAS-11 does not specify the specific wording of either the asset or the liability. In practice the classification of the asset varies. The asset can be called, for example, "Construction contract work in progress due from customers." The liability can be described in terms such as "Amounts due to customers for contract work." Progress billings are amounts billed for work performed on a contract whether or not they have been paid by the customer. The WIP used in the calculation of the gross amounts due from and to customers are the amounts actually invoiced. Amounts invoiced to customers but for which payment has not been received at the balance-sheet date should be included in trade receivables. For example, assume that under the PCM \$100,000 is recognized as revenue, allocable costs recognized are \$60,000, and progress billings are \$70,000. Of the \$70,000 progress billings, \$50,000 has been paid by the customer at the balance sheet date. The balance sheet would then include gross amounts due from customers of \$30,000 (\$100,000 of contract revenue recognized (\$60,000 of costs plus \$40,000 of gross profit) less \$70,000 of progress billings) in the WIP account and trade receivables of \$20,000 (\$70,000 of progress billings less the \$50,000 paid). There is no specific requirement in IAS-11 to disclose separately the accounts receivable balance of \$20,000.

Other disclosure requirements of IAS-11 are as follows:

- The policies for revenue recognition and
- The methods used to determine the stage of completion of contracts in progress (IAS-11, par. 39(b); IAS-18R, par. 35(a)).
- The amount of contract revenue recognized as revenue in the period broken out by each significant category of revenue (IAS-11, par. 39(a); IAS-18R, par. 35(b)). Separate disclosure should be made of revenues from services and royalty revenue (IAS-18R, pars. 35(b)(ii) and 35(b)(iv)).
- With respect to contracts in progress at the balance-sheet date:
 - The aggregate amount of contract costs incurred and recognized profits (less recognized losses) to date (IAS-11, par. 40(a)). Note: there is no requirement to disclose the amount of profits recognized separately because it is the aggregate of costs and profits that has to be reported, although some entities do disclose the two constituents separately as well as the aggregate amount.

- The amount of contract advances received. Advances are amounts paid by customers before the related contract work has been carried out. These amounts are included within either trade receivable or payables (IAS-11, par. 40(b)).
- Total of positive WIP balances (include in current assets in a separate line item on balance sheet). Negative WIP balance should be included in current liabilities within trade and other liabilities representing deferred revenues, and they can be called amounts due to customers. The amount of contract retentions, included in trade receivables (IAS-11, pars. 40(c) and 41–45). Retentions are amounts of progress billings that are not paid until the satisfaction of conditions specified in the contract for their payment or until defects have been rectified.
- Contingent liabilities and assets in accordance with IAS-37 (Provisions, Contingent Liabilities and Contingent Assets), which can arise from items such as warranty costs, claims, penalties, or possible losses.

APPENDIX 11A EXAMPLE IFRS DISCLOSURES

Accounting Principles

We report in accordance with International Financial Reporting Standards (IFRS). Within the possible choices allowed by IFRS, our accounting policies enhance transparency by limiting the ability of management to influence results. Our full accounting policies are described in the financial statements section of the annual report, but here are some noteworthy examples.

All marketing costs are expensed. It is permissible according to IFRS and common in the engineering and project management business to capitalize marketing costs related to a project at the end of a reporting period if management believes that there is a high likelihood that the project will be secured. Such a policy has potential for abuse and, therefore, ABC Engineering writes off marketing costs for all projects not secured by the end of the reporting period.

Revenues and profits for lump-sum turnkey (also known as LSTK, EPC, or fixed price) contracts are recognized on a straight-line basis (measured by percentage of completion), while providing for any contingencies that may arise during the completion phase. Forecast losses are recognized immediately. The percentage completion of a project is determined by dividing the total actual cost incurred to date by the total forecasted costs to completion (which include all project-specific provisions).

New Orders and Order Book

New orders and order book are key indicators of the future prospects of engineering and project-management companies.

New orders are the cumulative amount of new orders and change orders (to existing contracts) received during the period. When a new order or change order is in a currency other than the reporting currency (USD), it is computed by converting the order value to USD at the exchange rate prevailing on the date the order is received.

An order is only an order if all conditions precedent have been met. It is common practice in the engineering and project management business to “take to book” a new order as soon as the contract with the client is signed. However, it is common for contracts to have conditions precedent, most notably related to project financing. We therefore take to book new orders only once all conditions precedent have been met and the contract has become effective.

Order book is the value, on a given date, of the unexecuted portion of all active orders previously received. It reflects the amount of guaranteed revenue for future periods, and is also commonly referred to as “forward order book” or “backlog.”

The order book is computed as follows:

$$\begin{aligned}
 & \text{Order book at the previous reporting date} \\
 & + \text{New orders received during the period} \\
 & - \text{Revenue recognized during the period} \\
 & \pm \text{Exchange differences} \\
 & = \text{(closing) Order book on the reporting date}
 \end{aligned}$$

LSTK versus EPCM strategy (or why do some project engineering companies have greater gross profit margins than others)

ABC Engineering pursues an LSTK (lump-sum turnkey, also referred to as EPC or fixed-price) strategy, which means it usually contracts to deliver, on a given date and for a fixed price, a process plant working to agreed specifications.

The common alternative strategy is EPCM (engineering, procurement, and construction management, also known as “cost plus” or “reimbursable”). Under an EPCM contract the contractor gets paid to manage the project but without much price risk.

In an LSTK project the entire cost (capital value) of the project is paid over to the contractor, who in turn pays suppliers and subcontractors (and often makes a profit on such payments). The capital value of the project is thus recognized as revenue by the contractor. Cost overruns and cost savings are for the account of the contractor. LSTK contracts typically carry a lower profit margin (in %) than EPCM contracts but because of their greater size the profit in absolute terms can be greater.

In an EPCM contract, the contractor only gets paid for its man-hours and suppliers and subcontractors are paid directly by the client. As a result, only the man-hour component of the project is recognized as revenue by the contractor. Cost overruns and cost savings are usually to the account of the client. EPCM contracts typically carry a higher profit margin (in %) than LSTK contracts, but on a far smaller contract size.

LSTK contracts involve a higher degree of risk and require a strong balance sheet. However, for a company that knows how to manage the risk, the potential reward is higher profit.

Many mining companies, and in particular junior mining houses, build process plants only once in a few years, and as a result lack the in-house resources to supervise an EPCM contractor and are not adept at managing project risk.

ABC Engineering manages risk on an ongoing basis and can charge a premium for relieving the client of project risk.

There is a growing demand for LSTK contracting, because

- The shortage of skilled personnel in the metallurgical and mining industry worldwide is forcing clients to assign more responsibility for projects to their contractors.
- Finance providers to projects in the mining sector often require the main contractor to provide a fixed (LSTK) price so as to minimize lending risk.

The table in Exhibit 11-3 illustrates the costs borne by a client on a USD100 million project when carried out through LSTK and EPCM contracts. It is a highly simplified representation, and each contract has a different cost structure, but the comparison demonstrates how an LSTK contractor can generate higher profits than an EPCM contractor for a given project, even though the EPCM contractor may have a higher profit margin (in percentages).

EXHIBIT 11-3
USD100 MILLION PROJECT WHEN CARRIED OUT THROUGH
LSTK AND EPCM CONTRACTS

Amounts in USD million	EPCM	LSTK
Total project value (capital expenditure)	100	100
Costs borne by client divided as follows:		
Contractor services	15	19
Client in-house project management and insurance	5	—
Equipment, construction, infrastructure, and third-party services (includes profit to LSTK contractor)	80	80
	100	100
Revenue recognized by contractor	15	100
Sample contractor's profit margin	15%	10%
Profit for contractor	2.25	10.00

Project engineering companies with high-gross-profit and profit-after-tax margins often pursue an EPCM strategy, and other companies (such as ABC Engineering) pursue an LSTK strategy with lower margins but higher potential profits.

As a result of heightened demand in the industry, which has resulted in overstretched suppliers and contractors, shortage of skills, and wage inflation, a hybrid form of contracting is gaining popularity. The aim of a hybrid contract, which can contain elements of both EPCM and LSTK, is to either more effectively manage risk associated with the unknown or provide appropriate incentives, in the form of bonuses, should the contract be completed within a specified period.