

# Valuation and Financial Reports

## The Case of Measuring Goodwill Impairment

The accounting rules governing business combinations, goodwill, and intangible assets changed as a result of the Financial Accounting Standards Board (FASB) introducing Financial Accounting Standard (FAS) No. 141, *Business Combinations*, and No. 142, *Goodwill and Other Intangible Assets*, on June 30, 2001. The introduction of FAS 141 removed the use of pooling when accounting for acquisitions in favor of the purchase method. FAS 142 provides guidance for determining whether certain intangible assets and goodwill have lost market value, or in the language of the FASB have been *impaired*, subsequent to their purchase. Both 141 and 142 break new ground since they focus on the fair market values rather than on book values of acquired assets, liabilities, and goodwill.<sup>1</sup>

While a market value focus is embedded in the purchase method at the time the assets are acquired, FAS 142 extends the integration between book value and market value–based accounting by requiring that market valuing testing of acquired assets be carried out annually, or more frequently if conditions warrant.<sup>2</sup> Acquired intangible assets excluding goodwill are valued at their purchase price, and this price is considered to be equal to fair market value. Hence, their acquisition does not give rise to goodwill. By comparison, goodwill may emerge when valuing a reporting or business unit. Business units are combinations of physical assets (e.g., net working capital, plant, and equipment), intangible assets (e.g., customer lists, patents, copyrights), and a residual, which is termed *goodwill*. If the value of the reporting unit exceeds the fair market value of the assets that make it up, then the fair market value of goodwill is positive. If less, then goodwill is negative.<sup>3</sup>

Since the fair market value of goodwill can be measured only as a residual and cannot be measured directly, its impairment, or reduction in value, can be estimated only in steps. First, the fair market values of tangible and intangible assets of a reporting unit are calculated. These values are then aggregated and subtracted from the fair market value of the reporting unit. This difference is what FAS 142 refers to as the “implied fair value of

goodwill.” If this value is less than the carrying value of a reporting unit’s goodwill, then there is goodwill impairment. This impairment must be deducted from the firm’s net income in the year the loss is recognized. Both the carrying value of goodwill and the value of firm equity including goodwill are reduced by the amount of the impairment loss.

The introduction of FAS 141 and 142 standardizes the accounting for business combinations and valuing intangible assets acquired both as part of and outside of a business combination. At the same time, these changes introduce a series of uncertainties that are more related to valuation of business and intangible assets than they are to the rules governing the accounting for them. While the application of the fair market value standard is conceptually straightforward, its application to the measurement of impairment presents serious practical problems, such as the following:

- Should the fair market value of a reporting unit reflect a premium for control?
- Should the fair market value calculation include a marketability discount in those cases where the reporting unit no longer has equity trading in a liquid market?
- What is the appropriate discount rate to use if it is decided that fair market value is best measured by discounting expected cash flows?

The sections that follow clarify these issues by:

- Reviewing the steps that need to be taken to test for goodwill impairment and offering an example to illustrate the process.
- Demonstrating that statement guidance appears to require that valuation analysts value the reporting unit as a control transaction with appropriate adjustments for lack of liquidity and/or marketability.

## **TESTING FOR GOODWILL IMPAIRMENT**

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FAS 142 states that goodwill is measured at the “reporting unit” level. A *reporting unit* is an operating segment for which discrete financial information is available, thereby allowing segment management to review the financial and business operations of the segment.<sup>4</sup>

Goodwill impairment testing is done in two discrete steps:

1. The fair market value of the reporting unit is calculated. This valuation is done as of a specific date and must be repeated annually at the same time each year. The fair market value is compared to the carrying value of the reporting unit. If the fair market value is equal to or greater than the unit’s carrying value, then goodwill of the reporting unit is not considered to be impaired. Thus, step 2 of the impairment test is not

- necessary. Alternatively, “If the carrying amount of a reporting unit exceeds its fair value, the second step of the goodwill impairment test shall be performed to measure the amount of impairment loss, if any.”<sup>5</sup>
2. In this step, the implied fair market value of goodwill is estimated and compared to the carrying value of goodwill for the reporting unit. If the carrying amount of goodwill exceeds its implied fair market value, an impairment loss equal to this excess is recorded. The recorded loss cannot exceed the carrying amount of goodwill. After a goodwill impairment loss is recorded, the adjusted carrying amount of goodwill becomes the new accounting basis for subsequent goodwill impairment tests.

### **An Example: DDS Inc.**

DDS Inc. is a firm that purchases dental practices. The selling dentists stay on as professional practitioners, but all billing and purchases of supplies are done centrally. Between cost reductions and the implementation of better practice management techniques, DDS management expects to generate more profit per practice than these practices would on their own. Each practice is managed as a separate reporting unit. DDS management reviews the financial performance of each practice separately as it relates to meeting and exceeding established financial targets. In August 2001, DDS purchased the dental practice of Dr. Thomas Green. DDS paid the doctor \$400,000 in cash and assumed \$600,000 in liabilities.

The CFO of DDS, Mark G., wants to test the Green reporting unit for goodwill impairment as of March 31, 2002. Mark hires a valuation consultant to undertake step 1 of the impairment test. Based on this analysis, the Green reporting unit has a fair market value of \$900,000. Since the fair market value of the reporting unit is less than its carrying value of \$1 million, step 2 of the goodwill impairment process needs to be undertaken.

The consultant determined the fair market value of each identifiable physical and intangible asset and each identifiable liability, including any short- and long-term debt, as shown in Table 9.1. (Items with changed values are shown in bold type.)

The difference between the fair market value of the reporting unit, \$900,000, and the aggregated fair market value of the identifiable assets, \$800,000, is the fair market value of implied goodwill, \$100,000. Alternatively, the implied goodwill of \$100,000 can be calculated as the difference between the fair market value of equity (value of reporting unit less the fair market value of liabilities) and the fair market value of equity excluding goodwill (fair market value of identifiable assets less the fair market value of liabilities). The decline in the reporting unit’s fair market value is a result of

**TABLE 9.1** Balance Sheet for the Dr. Green Division of DDS

Assets	Fair Market Value of Asset Components at Acquisition Date	Fair Market Value of Asset Components as of March 31, 2002	Liabilities + Net Worth	Fair Market Value of Components of Liabilities + Net Worth at Acquisition Date	Fair Market Value of Components of Liabilities + Net Worth as of March 31, 2002
Current assets	\$100,000	\$100,000	Short-term debt	\$100,000	\$50,000
Net plant	350,000	\$300,000	Other current liabilities	\$100,000	\$100,000
Net equipment	\$250,000	\$250,000	Long-term debt	\$400,000	\$400,000
Intangible asset: Customer list	\$200,000	\$150,000	Equity value excluding goodwill	\$300,000	\$250,000
Total identifiable assets	\$900,000	\$800,000	Total liabilities + net worth	\$900,000	\$800,000
Goodwill	\$100,000	\$100,000	Goodwill	\$100,000	\$100,000
Total value of operating unit	\$1,000,000	\$900,000	Total liabilities + net worth	\$1,000,000	\$900,000

impairment of the unit's nongoodwill assets. The values of net plant and the customer list were each reduced by \$50,000, respectively, fully accounting for the unit's \$100,000 reduction in value. The consultant's analysis indicated that the value of the customer list had declined. There was a loss of customers when a large local employer reduced its local head count by consolidating its operations to regional facilities outside the local area. The consultant also found that lower rents and a weaker local economy resulted in a reduced value for local professional practice office space.

In this example, the balance sheet as of March 31, 2002, correctly represents the market value of the business. Although the market value declined by \$100,000 since the acquisition, that decline was fully accounted for by declines in value for the physical assets, office space, and an intangible asset, the customer list.

Let us now change this scenario to see how goodwill impairment could be found. Assume that the consultant determined the total value of the reporting unit to be \$875,000 instead of \$900,000, and that all of the other values for the physical and intangible assets are the same. Since the carrying value of goodwill is \$100,000 at the acquisition date, the valuation analyst would conclude that goodwill has been impaired and that its carrying value should be reduced by \$25,000. By reducing the fair market value of implied goodwill to \$75,000, the balance sheet is again in line with market values. The goodwill basis for future impairment testing is established at \$75,000, the new value of goodwill.

## QUESTION OF VALUE

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This discussion highlights two critical valuation issues that must be addressed by the valuation analyst. First, which methodology should be used to measure the value of the reporting unit, step 1 of the impairment test? Second, which methodologies should be used to estimate the fair market value of tangible and intangible assets in step 2?

### Step 1: Measuring the Value of the Reporting Unit

- *Standard of value.* FAS 142 appeals to the fair market value standard. Paragraph 23 of Statement 142 statement states:

*Thus, the fair value of a reporting unit refers to the amount at which the unit as a whole could be bought or sold in a current transaction between willing parties.<sup>6</sup> Quoted market prices in active markets are the best evidence of fair value and shall be used as the basis for the measurement, if available. However, the market*

*price of an individual equity security (and thus the market capitalization of a reporting unit with publicly traded equity securities) may not be representative of the fair value of the reporting unit as a whole. The quoted market price of an individual equity security, therefore, need not be the sole measurement basis of the fair value of a reporting unit.*

A footnote to the preceding paragraph sheds additional light on the fair value standard. It states:

*Substantial value may arise from the ability to take advantage of synergies and other benefits that flow from control over another entity. Consequently, measuring the fair value of a collection of assets and liabilities that operate together in a controlled entity is different from measuring the fair value of that entity's individual securities. An acquiring entity often is willing to pay more for equity securities that give it a controlling interest than an investor would pay for a number of equity securities representing less than a controlling interest. That control premium may cause the fair value of a reporting unit to exceed its market capitalization [emphasis mine].<sup>7</sup>*

- Paragraphs B152–B155 in Appendix B shed additional light on the reasoning that the board applied when considering valuing a reporting unit. B 154 states:

*The Board acknowledges that the assertion in paragraph 23, that the market capitalization of a reporting unit with publicly traded equity securities may not be representative of the fair value of the reporting unit as a whole, can be viewed as inconsistent with the definition of fair value in FASB Statements No. 115, Accounting for Certain Investments in Debt and Equity Securities, and No. 133, Accounting for Derivative Instruments and Hedging Activities. Those Statements define fair value as: if a quoted market price is available, the fair value is the product of the number of trading units times that market price. However, the Board decided that measuring the fair value of an entity with a collection of assets and liabilities that operate together to produce cash flows is different from measuring the fair value of that entity's individual equity securities. That decision is supported by the fact that an entity often is willing to pay more for equity securities that give it a controlling interest than an investor would pay for a number of equity securities that represent less than a controlling interest.*

The board's thinking on using market prices of minority value shares to determine value of an entity is unambiguous. One cannot use these prices by themselves. The fair market value of an entity is what a "willing" control buyer would pay and what a "willing" seller will accept.

This, of course, raises a whole set of very interesting questions. Who might the control buyer be? Is it a hypothetical control buyer or is the buyer in question the firm that actually purchased the unit? That is, is the buyer a firm just like the firm that in fact purchased the business for which the impairment testing is done? If so, should the value of the reporting unit be based on the incremental cash flows that were expected at the time of the acquisition, and, if so, are these expectations still reasonable? Again, who is to determine what is reasonable? In cases where the unit had shares trading in the market, then the investor expectations would be reflected in these prices and they could be used directly in step 1. But if market prices were not available, another method would have to be used. As described next, the FASB suggests using the discounted cash flow method. In cases where market prices are not available, the FASB suggests using the budgets of the reporting unit as a guide to estimating expected cash flows as long as these budgets are consistent with industry trends.

- B 155 presents the board's thinking on valuing a reporting unit that does not have publicly traded equity securities. In this instance, the board recommends that the discounted cash flow method be used.

*The Board noted that in most instances quoted prices for a reporting unit would not be available and thus would not be used to measure the fair value of a reporting unit. The Board concluded that absent a quoted market price, a present value technique might be the best available technique to measure the fair value of a reporting unit. However, the Board agreed that this Statement should not preclude the use of valuation techniques other than a present value technique, as long as the resulting measurement is consistent with concept of fair value. That is, the valuation technique used should capture the five elements outlined in paragraph 23 of Concept Statement 7 and should result in a valuation that yields results similar to a discounted cash flows method.*

- B 155 recognizes that discounted cash flow analysis requires projections of an entity's cash flows. The guideline established is that cash flows should "reflect the expectations that marketplace participants would use in their estimates of fair value whenever that information is available without undue cost and effort." The statement "does not preclude the use of an entity's own estimates, as long as there is no information

indicating that marketplace participants would use different assumptions. If such information exists, the entity must adjust its assumptions to incorporate that market information.”

- Based on the preceding discussion, the board has clearly concluded that value of a reporting unit is equal to its value as a stand-alone entity plus any value created by exploiting the expected synergies a control buyer might be able to create if the firm were sold.

Let us look at an example to illustrate this point. Let us say that Firm A purchased Firm B for \$1,000. It paid this amount because it expected to receive \$50 a year in perpetuity from the purchased assets, and Firm A's management expected to generate an additional \$50 in perpetuity through a permanent reduction in Firm B's operating expenses. If Firm B's cost of capital were 10 percent, then Firm A would be willing to pay \$1,000 for Firm B. This \$1,000 would be the sum of \$500 ( $\$50 \div 0.10$ ) for assets in place, plus an additional \$500 ( $\$50 \div 0.10$ ) to obtain the “right” to implement its cost reduction strategy. On Firm A's books, the purchase of Firm B would be recorded as the fair value of assets in place of \$500 plus the fair value of implied goodwill of \$500.

Let us assume that over the course of the following year a weaker economy resulted in lower-than-expected cash flows from assets in place. Instead of \$50, assets in place were expected to generate cash flow of \$30 in perpetuity. If Firm B is still expected to produce an extra \$50 a year through cost reductions, then the value of operating unit B would now be \$800. Since there is a \$200 reduction in the value of the B operating unit, step 2 of the goodwill impairment test is undertaken. The valuation analysis indicates that the fair market value of B's identified assets was \$300 ( $\$30 \div 0.10$ ). The implied fair market value of goodwill is still \$500 ( $\$800 - \$300$ ). Hence, there is no goodwill impairment. Stand-alone assets are now worth less, and their reduction in value accounts for the full reduction in the value of operating unit B. In short, even if step 1 indicates impairment of value, it does not follow that the source of the reduction in value is the impairment of goodwill.

Now consider the circumstance where the cash flows from B emerge as expected. Assuming no change in interest rates, the value of the reporting unit must be at least \$1,000. Why? A hypothetical buyer would have to pay a control premium, even if this buyer plans to run the reporting unit in the same way as existing management. The buyer pays a premium, because having the right to control how the unit's assets are deployed has a value. Put differently, a control buyer is purchasing access to expected cash flows plus a call option on yet undetermined cash flow increments. This call option has a value, even if the current owner is exploiting anticipated synergies. The FASB had this example in mind when it noted:

*Board members noted that a valuation technique similar to that used to value the acquisition would most likely be used by the entity to determine fair value of the reporting unit. For example, if the purchase price were based on an expected cash flow model, that cash flow model and related assumptions would be used to measure the fair value of the reporting unit.*<sup>8</sup>

**The Marketability Discount: How Big?** The FASB notes in passing that the value of a reporting unit's equity that does not trade in a liquid market will be less valuable than the equity of an identical reporting unit that does trade in such a market. As noted in Chapter 6, the decrement in a private firm's equity value relative to an identical public company counterpart is termed the *marketability* or *liquidity discount*. The size of discount depends on a number of factors, although even when these factors are controlled for, the range of acceptable values is quite wide.

This brings up an interesting problem. Consider again the example of Firm A, a private firm, acquiring Firm B, a public firm. When Firm B is part of Firm A, however, it is no longer a public company and its implied equity value (net assets) will be lower by virtue of the fact that the equity no longer trades in a liquid market. For purposes of impairment testing, should the net assets of Firm B be marked down for lack of marketability? The answer would seem to be yes. Forgetting for the moment the exact size of the discount, even if the expected cash flows at the impairment date are exactly equal to those at the time Firm B was acquired, the value of these cash flows would be worth less. The reason is that the implied equity no longer transacts in a liquid market. What this means is that when step 1 of the impairment test is undertaken, the value of the implied equity of Firm B will be below its carrying value, and step 2 of the impairment test would then need to be undertaken. When step 2 is completed, we would find that the value of net assets excluding goodwill would be worth less, but the value of goodwill would not be impaired. Note that if Firm B were a private firm this reduction in value would not emerge, since the marketability discount would already have been reflected in Firm B's purchase price.

**The Cost of Capital** When the discounted cash flow method is used to value a reporting unit, the valuation professional must develop a cost of capital that reflects both business and financial risks of the reporting unit. When the unit shares the same business and financial risks of the parent, then the parent's cost of capital may be used. If, however, this is not the case, as is true in many acquisitions, then the cost of capital must be developed separately. It is certainly consistent with FAS 141 and 142 that the same logic that gave rise to the cost of capital used in the original acquisition analysis be applied for the purpose of impairment testing. Since the cost of capital at

the impairment date is likely to be different, and in some cases quite different, than at the acquisition or last impairment testing date, then even if the expected cash flows have not changed, the value of the reporting unit will. If the interest rate level is significantly higher at the impairment testing date than at the acquisition or last impairment testing date, then the value of the reporting unit will be lower than the carrying value, all else equal. Again, step 2 of the impairment testing procedure will have to be undertaken. In this circumstance, we may find that the decline in the value of the reporting unit was fully accounted for by the decline in value of net assets, with the implied value of goodwill remaining unchanged.

### **Step 2: Measuring the Value of Tangible and Intangible Assets**

Step 2 is more complex than step 1 because it requires that the fair market values of each of the identified tangible and intangible assets and liabilities of a reporting unit be estimated. In effect, step 2 requires that the balance sheet of a reporting unit be placed on a market value basis, as shown in Table 9.1. The basic fair market value accounting identity underlying this table can be stated as follows:

$$\begin{aligned} \text{Value of reporting unit} &= \text{value of identified assets} + \text{value of goodwill} \\ &= (\text{value of reporting unit} - \text{value of liabilities}) + (\text{value of identified assets} \\ &\quad - \text{value of liabilities}) + \text{value of goodwill} = \text{fair market value of equity} \\ &= \text{fair market value of net assets} + \text{fair market value of implied goodwill} \end{aligned}$$

If the fair market value of equity at the impairment testing date is below the net carrying value of the reporting unit, which is the equity value of the reporting unit including goodwill at the acquisition date, then step 2 is initiated. But as the preceding equation indicates, to do this one needs to calculate the fair market value of net assets. This requires that each asset be identified. For an asset to be recognized for impairment testing purposes, it must meet either of two criteria. The first is *separability*, which means that the asset can be separated from a collection of assets and sold separately. Tangible assets are clearly separable and can be sold or leased apart from their connection to the operating activities of the operating business. The second criterion is the *contractual-legal* standard. An asset is recognized as such when it gives rise to specified rights and other legal obligations. Licensing a technology and royalty agreements are two good examples. Clearly, recognized assets can meet both criteria.

Based on this discussion, it is clear that if step 2 of the impairment test is carried out, one must first recognize assets and then value them as stand-alone

**TABLE 9.2** Guidance for Assigning Amounts to Assets and Liabilities

Asset and Liability Classes	Standard of Value
Marketable securities	Fair market value
Receivables	Present value of expected dollars received
Plant and equipment	Replacement cost or fair market value
Intangible assets	Fair market value
Nonmarketable securities	Appraised values

entities. This means that the synergy arising out of collective use of recognized assets is not valued separately but is effectively treated as part of goodwill.

**Valuing Net Assets** FAS 141, paragraph 37, provides guidelines for assigning values to individual assets and liabilities. The spirit and substance of paragraph 37 is that market prices, when available, should be used. Each asset, whether intangible or tangible, should be valued as if it were sold separately from the collection of assets that make up the reporting unit. Table 9.2 shows examples of the standards of value that should be applied to different asset classes.

To the extent that secondhand markets exist for the assets in question, these prices should be used. In most instances, market prices will not be available.<sup>9</sup> Examples of intangible assets that meet the criteria for recognition apart from goodwill follow. This list appears in paragraph A14 of FAS141.<sup>10</sup>

- a. Marketing-related intangible assets
  - (1) Trademarks, trade names ₣
  - (2) Service marks, collective marks, certification marks ₣
  - (3) Trade dress (unique color, shape, or package design) ₣
  - (4) Newspaper mastheads ₣
  - (5) Internet domain names ₣
  - (6) Non-competition agreements ₣
- b. Customer-related intangible assets
  - (1) Customer lists ▲
  - (2) Order or production backlog ₣
  - (3) Customer contracts and related customer relationships ₣
  - (4) Non-contractual customer relationships ▲
- c. Artistic-related intangible assets
  - (1) Plays, operas, ballets ₣
  - (2) Books, magazines, newspapers, other literary works ₣

- (3) Musical works such as compositions, song lyrics, advertising jingles ₣
- (4) Pictures, photographs ₣
- (5) Video and audiovisual material, including motion pictures, music videos, television programs ₣
- d. Contract-based intangible assets
  - (1) Licensing, royalty, standstill agreements ₣
  - (2) Advertising, construction, management, service or supply contracts ₣
  - (3) Lease agreements ₣
  - (4) Construction permits ₣
  - (5) Franchise agreements ₣
  - (6) Operating and broadcast rights ₣
  - (7) Use rights such as drilling, water, air, mineral, timber cutting, and route authorities ₣
  - (8) Servicing contracts such as mortgage servicing contracts ₣
  - (9) Employment contracts ₣
- e. Technology-based intangible assets
  - (1) Patented technology ₣
  - (2) Computer software and mask works ₣
  - (3) Un-patented technology ▲
  - (4) Databases, including title plants ▲
  - (5) Trade secrets, such as secret formulas, processes, recipes ₣

## SUMMARY

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FAS 142 requires that goodwill emerging from acquisitions be tested to determine whether it has been impaired. Prior to FAS 142, goodwill was amortized over as many as 40 years, with the amortized amount deducted from net income. FAS 142 requires firms to effectively undertake a market test to see whether goodwill has been impaired. This test is completed in two steps. The first simply requires a revaluing of the reporting unit. If this value is equal to or greater than the unit's carrying value then goodwill has not been impaired. On the other hand, if the calculated value is less than the unit's carrying value, then step 2 must be undertaken. The purpose of step 2 is to assign the value of the reporting unit to its identified and recognized assets and liabilities. These assets are valued as stand-alone entities. The difference between the carrying value of assets (including goodwill) at the impairment valuation date and the market value of the reporting unit at the valuation date is implied goodwill. If this value is less than the carrying value of goodwill, then the difference is equal to the value of goodwill impairment loss.

The purpose of FAS 141 and FAS 142 is to provide investors with better financial information regarding the success of past acquisitions. In the process of doing this, the FASB has forced firms to deal with a number of thorny and, in some cases, unresolved valuation issues:

- Valuing the reporting unit from the perspective of hypothetical new buyer or from the perspective of the acquiring firm implementing its strategy for deploying the acquired assets.
- Applying a marketability discount to the value of a reporting unit when the unit no longer has equity trading in a liquid market.
- Estimating the proper cost of capital when the discounted cash flow approach is used to value the reporting unit.