Reveal Technologies: A Case Of Key Differences Between U.S. GAAP & IFRS And The Impact On Financial Performance Evaluation

By: **Lynn Stallworth** and **Ken Brackney**

Abstract

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REVEAL TECHNOLOGIES: A CASE OF KEY DIFFERENCES BETWEEN U.S. GAAP & IFRS AND THE IMPACT ON FINANCIAL PERFORMANCE EVALUATION

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This case gives students the opportunity to apply their knowledge of the differences between U.S. Generally Accepted Accounting Principles (GAAP) and International Financial Reporting Standards (IFRS) by making a series of adjustments to a company's U.S. GAAP basis account balances to reflect IFRS. Students then construct IFRS-based financial statements and compare financial performance measures for the company. Finally, students consider the effects of the different standards as a means of evaluating which gives more insight into the company's financial condition.

THE CASE

Reveal Technologies, Inc. (Reveal) was a diversified manufacturer that conceives, designs and produces a broad range of engineered lighting and electrical components and products found in most homes, retail stores, offices and automobiles. The company, located in Alpharetta, Georgia, made components that are often hidden within, but integral to, their customers' products. The company was started in 2018 by Jane and Robert Key. The Keys were the primary shareholders with ownership of sixty percent of outstanding shares. Jane served as the company CEO. Robert was the head of the company's ambitious research and development section and the Chairman of the Board of Directors. The company's shares were traded on the OTCQB. Jane and Robert were both in their mid-sixties and are contemplating secession planning.

2020 was a difficult year for many companies as the economy abruptly came to a standstill and stock prices plummeted. Reveal's sales slowed and its stock price fell dramatically, resulting in the company recognizing impairment losses for both goodwill and other intangible assets. At the same time, plant and equipment which had been idled when competitive pressures forced Reveal out of a market for some components, was redirected to manufacture disinfecting UV-C lighting products. The company determined it needed to take a write-own on these assets too.

2021 offered hope for improved conditions. The Keys poured themselves into helping the company refocus its product offerings. The economy began to emerge from the steep decline in 2020, and Reveal's business tracked the improving economy. The company's shift toward manufacturing and marketing its line of disinfecting UV-C lighting products had gone better than expected thus far. Sales increased 20.5% over the previous year, admittedly a favorable reference point with the deep recession in 2020. Reveal continued to invest in research and development with the goals of delivering quality, health-preserving lighting products and adding to its share of a promising new market. The company anticipated continued growth over the next decade, albeit at a slower and more sustainable rate than observed in 2021.

Having navigated the recent challenges, the Keys would like to retire soon. Reveal has been approached by a German company, Lightec Germany AG (Lightec), that was interested in geographically redistributing its global supply chain. Lightec's acquisitions team, headed by Finn Von Trapp, had reviewed Reveal's financial statements and done some preliminary analysis of the company's financial position and performance (see Exhibit 1). He was concerned, though, that differences in IFRS and U.S. GAAP may be distorting his understanding of the company's financial condition.

As part of the due diligence for the acquisition, Finn had collected the company's comparative financial statements and related notes (see Exhibits 2 and 3) as well as the Management Discussion and Analysis (Exhibit 4) and information on the company's Critical Accounting Policies (Exhibit 5) for the most recent annual period. Finn had also hired valuation specialists from WS International (WSI) to assess the extent and quality of Reveal's intellectual property as well as the fair values of the company's assets.

After evaluating Reveal's research and development processes, results and expenditures as well as the company's patent applications, WSI had determined that the company had established technological feasibility of various development projects and expensed further costs on projects in 2021, 2020, and 2019. The expensed costs (in thousands) and useful lives of the resulting assets were as follows:

	2021	2020	2019
Costs expensed after technological feasibility	$2,156	$1,812	$1,780
Useful life in years (including the current year)	4	4	5

WSI had provided fair value estimates of all assets and liabilities at the December 31, 2021 financial statement date. According to the valuation specialists, the fair values of all assets and liabilities approximate their carrying values, with the following exceptions:

	Fair Value at December 31, 2021
Property	$7.5 million
Plant and equipment	$12.3 million
Goodwill	$60.0 million
Intangible assets	$39.8 million

Finn asked WSI to determine estimated fair values for several other items as well. WSI estimated the fair value of the property Reveal owned as of December 31, 2020 to be $6.3 million. In its financial statements for the year ended December 31, 2020, Reveal took impairment write-downs on several long-term assets, including plant and equipment, goodwill and other intangible assets. WSI provided estimated fair values as of December 31, 2021 for just the previously impaired assets of $8.0 million for the plant and equipment; $60.0 million for the goodwill; and $34.1 million for the other intangible assets. The estimated fair values of the previously impaired assets approximate their recoverable amounts.

EXHIBIT 1: U.S. GAAP RATIOS

Reveal Technologies, Inc.		
Financial Ratios		
December 31, 2021		
Financial Ratio		GAAP Basis
Profitability	Gross profit rate	41.9%
	Profit margin	10.9%
	Return on assets	9.5%
	Return on investment	17.9%
	Earnings per share	$0.89
	Investment turnover	0.87
Liquidity	Current ratio	2.18
	Quick ratio	1.42
	Cash to total assets ratio	3.3%
	Sales to receivables	3.09
	Days' receivables ratio	118.20
	Cost of sales to payables	2.93
	Working capital turnover	3.29
Leverage/Solvency	Debt to equity ratio	77.4%
	Debt ratio	43.6%
	Interest coverage ratio	6.81
Efficiency/Activity	Inventory turnover	3.68
	Days in inventory	99.15
	Inventory to assets ratio	13.8%
	Accounts receivable turnover	3.61
	Average collection period	101.03

EXHIBIT 2: U.S. GAAP FINANCIAL STATEMENTS

Reveal Technologies, Inc.
Consolidated Statements of Operations
Years Ended December 31, 2021, 2020 and 2019
(In Thousands, except per share data)

	2021	2020	2019
Revenue	$183,548	$152,312	$172,121
Cost of sales	106,581	91,394	101,250
Goss profit	76,967	60,918	70,871
Operating expenses:			
Selling, general and administrative	43,729	44,030	42,408
Research and development	4,541	3,712	2,372
Amortization	3,076	4,068	5,010
Depreciation	2,130	2,000	1,100
Impairment of goodwill	–	14,874	–
Impairment of long-lived assets	–	11,680	–
Total operating expenses	53,476	80,364	50,890
Operating income (loss)	23,491	(19,446)	19,981
Interest expense and other charges	(3,449)	(3,853)	(2,506)
Net income (loss)	$ 20,042	$(23,299)	$ 17,475
Net loss per share, basic and diluted	$0.89	$(1.10)	$0.92
Weighted-average shares, basic and diluted	22,581	21,192	19,034

Reveal Technologies, Inc.
Consolidated Statements of Stockholders' Equity
Years Ended December 31, 2021, 2020 and 2019
(In Thousands)

	Common Stock	Additional Paid-in Capital	Retained Earnings	Total Stockholders' Equity
Balance, January 1, 2019	$16	$ 64,569	$12,287	$ 76,872
Issuance of common stock for cash, net of issuance costs	4	16,189	–	16,193
Shares issued for contingent consideration and acquisition	1	6,628	–	6,629
Net income (loss)	–	–	17,475	17,475
Balance, December 31, 2019	21	87,386	29,762	117,169
Shares issued for contingent consideration and acquisition	–	1,196	–	1,196
Net income (loss)	–	–	(23,299)	(23,299)
Balance, December 31, 2020	21	88,582	6,463	95,066
Issuance of common stock for cash, net of issuance costs	3	14,276	–	14,279
Net income (loss)	–	–	20,042	20,042
Balance, December 31, 2021	$24	$102,858	$26,505	$129,387

Reveal Technologies, Inc. Consolidated Balance Sheets December 31, 2021 and 2020 (In Thousands, except per share data)		
	12/31/2021	12/31/2020
ASSETS		
Current Assets		
Cash and cash equivalents	$ 7,655	$ 1,945
Trade receivables, net of allowance for doubtful accounts	59,439	42,172
Unbilled contract receivables	12,918	11,083
Inventories, net	31,743	26,164
Vendor deposits, prepaid expenses and other	11,014	9,510
Total current assets	122,769	90,874
Property, plant and equipment, net	16,852	13,479
Goodwill	57,300	57,300
Intangible assets, net	31,297	28,372
Other assets, net	1,317	1,113
Total assets	$229,535	$191,138
LIABILITIES AND STOCKHOLDERS' EQUITY		
Current Liabilities		
Accounts payable	$ 36,395	$ 28,833
Accrued and other liabilities	12,998	11,570
Notes payable	6,934	5,428
Total current liabilities	56,327	45,831
Revolving credit facility	24,719	38,633
Notes payable	18,310	11,189
Other noncurrent liabilities	792	419
Total liabilities	100,148	96,072
Contingencies and commitments		
Stockholders' Equity		
Common stock, par value $0.001 (35,000 shares authorized and 24,097 shares issued and outstanding at Dec. 31, 2021; and 35,000 shares authorized and 21,352 shares issued and outstanding at Dec. 31, 2020)	24	21
Additional paid-in capital	102,858	88,582
Retained earnings	26,505	6,463
Total stockholders' equity	129,387	95,066
Total liabilities and stockholders' equity	$229,535	$191,138

EXHIBIT 3: SELECTED NOTES TO THE FINANCIAL STATEMENTS

Note 2. Significant Accounting Policies

Inventories

The Company uses the last-in, first-out (LIFO) method to determine the reported cost for the majority of its inventories (approximately 80%). The remainder of the inventories is determined according to the first-in, first-out (FIFO) method. The portion determined according to LIFO is stated at the lower of cost or market, and the remaining portion is stated at the lower of cost or net realizable value. The Company's LIFO reserves as of December 31, 2021 and 2020 were $5,861 and $4,025, respectively. **See Note 4.**

Property, plant and equipment

Property, plant and equipment, net is stated at cost less accumulated depreciation, and is depreciated over its estimated useful life using the straight-line method as follows:

Plant and Equipment Asset	Estimated Useful Life
Machinery and equipment	3-7 years
Furniture and fixtures	5-7 years
Computers and software	3-7 years
Motor vehicles	5 years
Leasehold improvements	Lesser of lease term or estimated useful life

The recoverability of the carrying value of tangible long-lived assets is evaluated whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The tangible assets are grouped with other assets at the lowest level for which identifiable cash flows are largely independent of the cash flows of other groups of assets and liabilities. The Company assesses whether the undiscounted projected future cash flows of the tangible long-lived assets are sufficient to recover the carrying amount of the asset group being assessed. If the undiscounted projected cash flows are less than the carrying value of the assets, an impairment loss is calculated by comparing the carrying value of the asset group to its fair value. The amount of the impairment of tangible long-lived assets is charged against earnings in the period in which the impairment is determined.

Maintenance and repairs are expensed as incurred. Upon retirement or sale, the cost and related accumulated depreciation are removed from the respective accounts, and any resulting gain or loss is recognized in the Consolidated Statements of Operations. **See Note 5.**

Goodwill
The Company performs an annual assessment of goodwill for impairment as of October 1 each year. The goodwill may be tested for impairment on a more frequent basis, if a triggering event occurs. The test for impairment compares the carrying value of the company's sole reporting unit with the reporting unit's estimated fair value. For purposes of this assessment, the Company estimates the fair value of the reporting unit using the market approach. Under the market approach, the Company utilizes the market capitalization of its common stock, and applies an estimated control premium based upon an analysis of control premiums paid in acquisitions of companies in the same or similar industries. If the carrying value of the reporting unit exceeds the estimated fair value, the Company reduces the goodwill balance for the amount of the difference, but not below zero. The amount of impairment of goodwill is written off against earnings in the period in which the impairment is determined. **See Note 6.**

Intangible assets
Intangible assets, net are stated at cost less accumulated amortization, and are amortized over estimated useful lives using the straight-line method as follows:

Intangible Asset	Estimated Useful Life
Customer relationships	10-15 years
Trademarks and trade names	12-17 years
Non-compete agreements	6 years
Favorable leases	10 years

The recoverability of the carrying value of intangible long-lived assets is evaluated whenever events or changes in circumstances indicate that the carrying value may not be recoverable. The intangible assets are grouped at the lowest level for which identifiable cash flows are largely independent of the cash flows of other groups of assets and liabilities. The Company assesses whether the undiscounted projected future cash flows of the intangible assets are sufficient to recover the carrying amount of the asset group being assessed. If the undiscounted projected cash flows are less than the carrying value of the assets, an impairment loss is calculated by comparing the carrying value of the asset group to its fair value. The amount of the impairment of intangible long-lived assets is charged against earnings in the period in which the impairment is determined. **See Note 7.**

Fair value measurement
The Company uses fair value measurement for certain assets and liabilities. Generally Accepted Accounting Principles establish a fair value hierarchy consisting of three levels to serve as a guide for companies in determining fair values. The three levels of the hierarchy are defined as follows:

- Level 1 – Quoted prices in active markets for identical assets and liabilities;
- Level 2 – Quoted prices for similar assets and liabilities in active markets, quoted prices for identical or similar assets and liabilities in markets that are not active or other inputs that are observable or can be corroborated by observable market data; and
- Level 3 – Unobservable inputs that are supported by little or no market activity and that are significant to the fair value of the assets and liabilities.

Following this guidance, the Company utilizes valuation techniques that maximize the use of observable inputs and minimize the use of unobservable inputs, to the extent possible, and consider counterparty risk in the assessment of fair value. **See Note 8.**

Note 4. Inventories, Net
Inventories consisted of the following (in millions):

	December 31,	
	2021	**2020**
Raw materials	$ 6.9	$ 5.3
Finished goods	25.7	22.1
Total	32.6	27.4
Less: Provision for obsolescence	(0.9)	(1.2)
Inventories, net	$31.7	$26.2

Note 5. Property and Equipment, Net
Property and equipment, net of accumulated depreciation, consisted of the following (in millions):

	December 31,	
	2021	**2020**
Property	$ 6.2	$ 5.8
Plant and equipment	17.1	12.0
Less: Accumulated depreciation	(5.2)	(3.1)
Less: Impairment loss	(1.2)	(1.2)
Property, plant and equipment, net	$16.9	$13.5

As a result of changes to our business, during the fourth quarter of 2020, we assessed the recoverability of the book value of our long-lived tangible assets. The result of such evaluation indicated that net plant and equipment with a book value of $8.9 million (gross assets of $12.0 million and related accumulated depreciation of $3.1 million) were impaired. The fair value of these assets was estimated at $7.7 million, and we recognized an impairment charge of $1.2 million for the year ended

December 31, 2020 in the Consolidated Statements of Operations. This impairment relates primarily to the changing market conditions and competitive pressures. No further impairment was identified for the year 2021.

Depreciation expense related to property and equipment, reported as "Depreciation" in the Consolidated Statements of Operations, was \$2.1 million, \$2.0 million and \$1.1 million for the years ended December 31, 2021, 2020 and 2019, respectively.

Note 6. Goodwill

Changes in the carrying amount of goodwill were as follows (in millions):

	Year Ended December 31,	
	2021	**2020**
Goodwill, January 1	\$57.3	\$72.1
Acquisitions	–	0.1
Less: Impairment loss	–	(14.9)
Goodwill, December 31	\$57.3	\$57.3

During the last three quarters of 2020, we experienced poor performance of our common stock, the result of unanticipated adverse developments in the economy that presented major challenges for nearly all businesses. In the annual assessment of goodwill for impairment, as of October 1, 2020, we determined that the carrying value of our sole reporting unit (\$72.2 million) exceeded its estimated fair value (\$57.3 million) by \$14.9 million. As a result of this assessment, we reduced the carrying value of goodwill by \$14.9 million and reported a loss of the same amount as "Impairment of goodwill" in the Consolidated Statement of Operations for the year ended December 31, 2020. No further impairment was identified for the year 2021.

Note 7. Intangible Assets, Net

Intangible assets consisted of the following (in millions):

	December 31, 2021			December 31, 2020		
	Gross Cost	**Accumulated Amortization**	**Net Carrying Costs**	**Gross Cost**	**Accumulated Amortization**	**Net Carrying Costs**
Customer relationships and product supply agreements	$27.7	$ (8.7)	$19.0	$24.6	$(6.6)	$18.0
Trademarks/trade names	14.9	(3.1)	11.8	12.2	(2.3)	9.9
Other	1.5	(1.0)	0.5	1.3	(0.8)	0.5
Intangible assets	$44.1	$(12.8)	$31.3	$38.1	$(9.7)	$28.4

Prompted by adverse economic developments and the resulting changes we made to our business, during the fourth quarter of 2020, we evaluated the recoverability of the carrying value of our intangible long-lived assets. We compared the assets' net carrying value of $38.9 million (gross assets of $48.6 million less accumulated amortization of $9.7 million) with their estimated fair value of $28.4 million, and concluded these assets were impaired. We recognized an impairment charge of $10.5 million for the year ended December 31, 2020 in the Consolidated Statements of Operations. The impairment arises primarily from the consolidation of certain operations and the discontinuance of underperforming product lines. No further impairment was identified in the year 2021.

Amortization expense related to intangible assets, reported as "Amortization" in the Consolidated Statements of Operations, was $3.1 million, $4.1 million and $5.0 million for the years ended December 31, 2021, 2020 and 2019, respectively. Estimated future amortization expense related to intangible assets is $3.0 million for 2022, $2.8 million for 2023, $2.6 million for 2024, $2.5 million for 2025, $2.4 million for 2026, and $18.0 million thereafter.

Note 8. Fair Value Measurement
The fair value levels applicable to the Company's specific assets and liabilities are summarized in the table below:

Item	Fair Value Level	Fair Value (In Thousands)	
		December 31,	
		2021	2020
Cash and cash equivalents	Level 1	$7,655	$1,945
Trade receivables, net	Level 3	$59,439	$42,172
Unbilled contract receivables	Level 3	$12,918	$11,083
Notes payable (current)	Level 2	$6,934	$5,428
Notes payable (noncurrent)	Level 2	$18,310	$11,189

The cash and cash equivalents are highly liquid investments in debt securities with original maturities at time of purchase of no more than three months. The fair values of these assets are determined from quoted prices of identical securities traded in active markets. Their carrying value approximates their fair value.

The receivables arise from transactions with customers in the normal course of business. The receivables generally are of short duration, with maturities of 12 months or less. The fair values of these assets are determined from internal valuation models that consider the counterparties' credit risks. With relatively short terms, their carrying values approximate their fair values.

The notes payable arise from the Company's operating and financing activities. These liabilities are current or noncurrent, depending mainly upon their maturity dates. The fair values of the notes payable are determined from the quoted prices of loan contracts with similar terms and provisions that are traded in active public markets. For those with maturities of less than a year, their carrying values approximate their fair values.

Certain assets and liabilities may be measured at fair value on a nonrecurring basis. Examples for the Company include goodwill, long-lived assets, and assets and liabilities acquired in a business combination. For goodwill, the fair value of the reporting unit in a goodwill impairment test utilizes the market approach based upon inputs that are readily available from public markets or can be derived from observable market transactions, and thus are classified as Level 2 in the fair value hierarchy. For long-lived assets, the fair values of intangible assets in an impairment assessment are estimated using discounted projected cash flows, which are based upon significant unobservable inputs and thus are classified as Level 3 in the fair value hierarchy. For assets and liabilities acquired in a business combination, the Company utilizes inputs classified as Level 3 in the fair value hierarchy to estimate their fair values.

EXHIBIT 4: SELECTED MANAGEMENT DISCUSSION AND ANAYSIS

Executive Overview

Reveal Technologies, Inc. is a leader in designing, manufacturing, marketing and selling of lighting and electrical solutions serving the industrial, commercial and government markets in the U.S. and internationally. Through advanced technologies, we have created an innovative company that offers a comprehensive advanced product platform of high-quality interior and exterior electrical and lighting products.

We generate revenue by selling lighting and electrical products for use in the commercial, industrial and government markets, which include vertical markets such as military, municipal, commercial, industrial, warehouse, education, hospitality, retail, healthcare, multi-family and signage media-accent markets. We market and distribute our products globally through networks of electrical distributors and supply companies, electrical contractors, energy service companies, end-users, independent sales agencies and representatives, electrical supply companies, as well as internal marketing and direct sales force. We bring together the best products in the market today with an experienced, knowledgeable team for our customers to achieve their goals.

We continue to make key investments to ensure that we provide the highest quality lighting and electrical products. This dedication to quality extends beyond our products to the service we provide at every point in a project, to achieve energy savings on time and within budget, managing all phases of the project, including design and specification, scope and budget development, final material selection, pursuit and securing of project incentives, installation and project management.

Goodwill

On October 1, 2020, we performed our annual goodwill impairment test. For much of the year leading up to the testing date, we experienced poor performance of our stock price, the result of unforeseeable economic conditions that seriously disrupted operations for most companies around the world. The impairment test indicated that the carrying value of goodwill exceeded its estimated fair value. In accordance with Accounting Standards Codification 350-20, Intangibles – Goodwill and Other (ASC 350-20), goodwill with a carrying amount of $72.2 million was reduced to its estimated fair value of $57.3 million, resulting in an impairment charge of $14.9 million for the year ended December 31, 2020 in the Consolidated Statements of Operations. On October 1, 2021, we preformed out annual goodwill impairment test. No further impairment was identified for the year 2021. See Note 6 of Notes to Consolidated Financial Statements.

Impairment of Long-lived Assets

As a result of changes we made to our business in response to changing economic conditions in 2020 and 2021, which included the consolidation and restructuring of our businesses, product lines, and operations, we evaluated the recoverability of the carrying value of our intangible long-lived assets. The result of such evaluation for 2020 indicated that gross intangible assets of $48.6 million and related accumulated amortization of $9.7 million were impaired, and we recognized an impairment of $10.5 million for the year ended December 31, 2020 in the Consolidated Statements of Operations. No further impairment was identified in the year 2021. See Note 7 of Notes to Consolidated Financial Statements.

Research and Development

We pride ourselves on delivering the highest quality lighting products. Our research and development team is focused on the design and integration of electronics, optics and thermal management solutions to create advanced lighting and electrical solutions. Through these efforts, we seek to enhance our existing products, design new products and develop solutions for customer applications. We believe that quick responsiveness to customer demands and our ability to achieve industry certifications such as UL, DLC and Energy Star for certain products differentiate us from many of our competitors, as we rapidly introduce new products to address market needs.

During 2021, 2020 and 2019, we spent $4.5 million, $3.7 million and $2.4 million, respectively, on research and product development activities. We continue to invest in our product development, prototypes and specifications as we believe that increased levels of spending on research and development will be necessary to successfully develop advanced lighting products that will have the brightness of traditional lighting systems while being offered at acceptable prices.

Intellectual Property

Protection of our proprietary intellectual property is important to our business. At December 31, 2021, we held 16 U.S. patents and 2 foreign patents, and had 5 patent applications currently filed with the U.S. Patent and Trademark Office or with the World Intellectual Property Organization or foreign patent offices. Although we expect that several of our patent applications will issue, we cannot be certain that patents will be granted with respect to any of our pending patent applications or with respect to any patent applications filed by us in the future, nor can we be sure that any patents that may be granted to us in the future will be commercially useful in protecting our technology. In addition, despite our efforts to protect our intellectual property, unauthorized parties may attempt to copy aspects of our products or obtain and use information that we regard as proprietary.

EXHIBIT 5: SELECTED CRITICAL ACCOUNTING POLICIES AND ESTIMATES

The preparation of financial statements in conformity with accounting principles generally accepted in the United States of America (U.S. GAAP) requires management to make certain estimates and assumptions regarding matters that are inherently uncertain and that ultimately affect the reported amounts of assets, liabilities, revenues and expense, and the disclosure of contingent assets and liabilities. The estimates and assumptions are based upon management's experience and understanding of current facts and circumstances. These estimates may differ from actual results. Certain of our accounting policies are considered critical as they are both important to reflect our financial position and results of operations and require significant or complex judgment on the part of management. The following is a summary of certain accounting policies considered critical by management.

Long-Lived Assets

Key estimates related to long-lived assets, including plant and equipment and intangible assets, include useful lives and the recoverability of carrying values. As a result of future decisions, such estimates could be significantly modified. The estimated useful lives of plant and equipment range from three to seven years, and depreciation is recognized on a straight-line basis. Useful lives are estimated based upon our historical experience and industry information. Intangible assets with finite useful lives are amortized on the straight-line basis over their estimated useful lives. We evaluate the recoverability of the carrying value of long-lived assets whenever events or changes in circumstances indicate that the carrying value may not be recoverable. Under such circumstances, we assess whether the undiscounted projected cash flows of our long-lived assets are sufficient to recover the carrying amount of the asset group being assessed. If the undiscounted projected cash flows are less than the carrying value of the assets, we calculate the impairment amount by comparing the carrying value of the asset group to its fair value. The amount of the impairment of long-lived assets is written off against earnings in the period in which the impairment is determined.

Goodwill

We record goodwill as the excess of purchase price over the fair value of the identifiable net assets acquired. Goodwill is not amortized, but is subject to annual impairment testing unless circumstances dictate more frequent assessments. We perform an annual impairment assessment for goodwill during the fourth quarter of each year, or more frequently whenever changes in circumstances indicate that the fair value of the asset may be less than the carrying amount. We have one reporting unit for goodwill impairment testing purposes. In testing goodwill for impairment, we compare the fair value of the reporting unit to its carrying amount. The fair value of the reporting unit is determined by calculating our market capitalization at the impairment test date. If the fair value of the reporting unit is greater than its carrying amount, there is no impairment. On the other hand, if the fair value of the reporting unit is less than its carrying amount, the difference is treated as a direct reduction of goodwill, not to exceed the existing goodwill balance. There can be no assurance that our estimates and assumptions made for purposes of the goodwill impairment testing will prove to be accurate predictions of the future. Changes in assumptions and estimates could cause us to perform an impairment test prior to the annual impairment test scheduled in the fourth quarter.

Research and Development

Research and development costs to develop new products, which consist of salaries, contractor fees, building cost, utilities, administrative expenses and allocations of corporate costs, are charged to expense as incurred.