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Putting EBITDA In Perspective

Ten Critical Failings Of EBITDA As The Principal Determinant Of Cash Flow

This Special Comment is based on a speech given in New York on June 15, 2000, at the 10th Annual High Yield Bond Seminar of the New York Society of Security Analysts, by Pamela M. Stumpp, Senior Vice President, Corporate Finance Group, Moody's Investors Service.

Summary Opinion

- The use of EBITDA and related EBITDA ratios as a single measure of cash flow without consideration of other factors can be misleading.
- EBITDA is probably best assessed by breaking down its components into EBIT, Depreciation, and Amortization. Generally speaking, the greater the percentage of EBIT in EBITDA, the stronger the underlying cash flow.
- EBITDA is relevant to determining cash flow in its extremis. EBITDA remains a legitimate tool for analyzing low-rated credits at the bottom of the cycle. Its use is less appropriate, however, for higher-rated and investment grade credits particularly mid-way through or at the top of the cycle.
- EBITDA is a better measurement for companies whose assets have longer lives – it is not a good tool for companies whose assets have shorter lives or for companies in industries undergoing a lot of technological change.
- EBITDA can easily be manipulated through aggressive accounting policies relating to revenue and expense recognition, asset writedowns and concomitant adjustments to depreciation schedules, excessive adjustments in deriving "adjusted pro-forma EBITDA," and by the timing of certain "ordinary course" asset sales.
- We find the ten critical failings of using EBITDA to be the following:
  1. EBITDA ignores changes in working capital and overstates cash flow in periods of working capital growth
  2. EBITDA can be a misleading measure of liquidity
  3. EBITDA does not consider the amount of required reinvestment – especially for companies with short lived assets
  4. EBITDA says nothing about the quality of earnings
  5. EBITDA is an inadequate standalone measure for comparing acquisition multiples
  6. EBITDA ignores distinctions in the quality of cash flow resulting from differing accounting policies – NOT all revenues are cash
  7. EBITDA is not a common denominator for cross- border accounting conventions
  8. EBITDA offers limited protection when used in indenture covenants
  9. EBITDA can drift from the realm of reality
  10. EBITDA is not well suited for the analysis of many industries because it ignores their unique attributes

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An Historical Perspective

Prior to the 1980s, EBIT (earnings before interest and tax) or operating income was generally used as a key indicator of a company's ability to service its debt. With the advent of LBO mania in the 1980s, EBITDA (earnings before interest, taxes, depreciation and amortization) became widely used as a tool to measure a company's cash flow and, consequently, its ability to service debt. LBO sponsors promoted the concept that, because depreciation and amortization are non-cash charges, they should be available to service debt.

We note that the use of EBITDA has evolved over time. In the early 1980s EBITDA was used as a means of incorporating goodwill amortization for companies that made purchases at prices substantially above the prevailing book value of assets acquired. Soon after, EBITDA was being used to evaluate cash flow in the extreme for companies in a "near bankruptcy" state. With time, the concept was increasingly applied to companies with long-lived assets. Eventually, it was applied universally to companies regardless of circumstance.

The original premise of LBO's held that they could be successfully employed on companies that had previously spent a lot of money on plant and equipment, and for which large scale capital expenditure (CAPEX) programs would not be necessary in the foreseeable future.

EBITDA is relevant to determining cash flow in its extremis. In a deep recession a company can curtail CAPEX to pay principal and interest. But to what degree is CAPEX truly discretionary? Is EBITDA really a good proxy for the cash flow of a going concern? Unfortunately, the use of EBITDA has evolved from its position as a valid tool at the extreme bottom of the business cycle – where it was used to assess low rated credits – to a new position as an analytical tool for companies still in their halcyon days. EBITDA remains a legitimate tool for analyzing low-rated credits at the bottom of the cycle. Its use is less appropriate, however, for higher-rated and investment grade credits particularly mid-way through or at the top of the cycle.

Why LBO Sponsors And Bankers Prefer EBITDA

LBO sponsors and bankers have promoted the use of EBITDA for its obvious image benefits. EBITDA creates the appearance of stronger interest coverage and lower financial leverage. Companies in many industries, for example, have a need to reinvest depreciation. If such a company has EBITDA interest coverage of two times, and depreciation is 50% of EBITDA, coverage is actually only one times. Similarly, if that company's interest rate is 10%, its 5 times ratio of debt-to-EBITDA is actually 10 times debt-to-EBITA (operating earnings plus amortization).

Despite its shortcomings, the use of EBITDA has proliferated. In a recent article in a popular business magazine, a portfolio manager used the terms "EBITDA" and cash flow interchangeably in comparing valuations of a number of companies based on their cash flow growth rates. The use of EBITDA has become so widespread and the concept used synonymously with cash flow so often, that users have apparently overlooked its limitations. This prompts the question of whether there is an over reliance on EBITDA. Is the use of EBITDA becoming too commonplace, extending beyond its meaningful purpose, and replacing thoughtful analysis?

It is interesting to observe that management teams often only address that portion of the P&L that suits them best. For example, management of strong companies often refer to EPS, while management of weaker (or developing) firms address top-line growth and revenues. Some companies cite gross or operating margins, which look strong relative to amounts lower down on their P&L's. Those with a good EBITDA story speak to this. It is for analysts to question a company's motivation for emphasizing one measure versus another.

From The Issuers Themselves: How EBITDA Falls Short

The use of EBITDA-based ratios can be inappropriate and misleading. Relying on them without consideration of other credit measures can be dangerous (see *EBITDA/Interest: Friend or Foe?*, *Moody's Speculative Grade Commentary*, May 1995).

By all appearances, most corporate managers are aware of the limitations of EBITDA. In varying language, many financial statements contain warnings regarding the use of EBITDA.

The offering memorandum for the senior subordinated notes of Silverleaf Resorts, Inc., a developer, marketer and operator of timeshare resorts, states:

> "EBITDA is presented because it is a widely accepted indicator of a company's financial performance."

It continues, however, with the following warning:

> "However, EBITDA should not be construed as an alternative to net income as a measure of the Company's operating results or to cash flows from operating activities (determined in accordance with generally accepted accounting principles) as a measure of liquidity. Since revenues from vacation interval sales include promissory notes received by the company, EBITDA does not reflect cash flow available to the company. Additionally, due to varying methods of reporting EBITDA within the timeshare industry, the computation of EBITDA for the company may not be comparable to other companies in the timeshare industry which compute EBITDA in a different manner."

An Obvious Contradiction

The contradiction in this case is obvious, and clearly raises the question of why, given such readily discernable shortcomings, EBITDA has become so widely accepted as an indicator.

...Still More EBITDA Warnings On Financial Statements

The SEC 10-Q filing of Unicco, Inc. has extensive commentary regarding the limitations of EBITDA.

> "EBITDA is defined as income from continuing operations before provision for income taxes, interest expense, interest income and depreciation and amortization. EBITDA as presented may not be comparable to similarly titled measures used by other companies, depending upon the non-cash charges included. When evaluating EBITDA, investors should consider that EBITDA (i) should not be considered in isolation but together with other factors which may influence operating and investing activities, such as changes in operating assets and liabilities and purchases of property and equipment; (ii) is not a measure of performance calculated in accordance with generally accepted accounting principles; (iii) should not be construed as an alternative or substitute for income from operations, net income or cash flows from operating activities in analyzing the Company's operating performance, financial position or cash flows; and (iv) should not be used as an indicator of the Company's operating performance or as a measure of its liquidity".

EBITDA-Based Interest Coverage Ratios Can Be Misleading

The following study underscores our point that EBITDA-based interest coverage ratios can be misleading. In 1999, a record 147 companies defaulted on $44.6 billion of long-term publicly held debt. The bulk of the year's defaults were by US-domiciled companies, which contributed 99 defaults, or nearly 70% on an issuer basis.

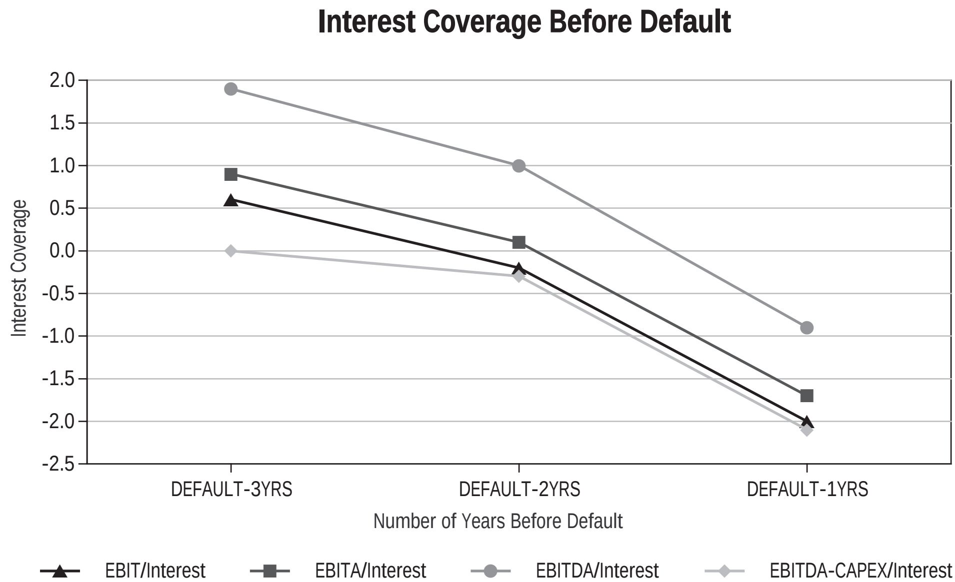
From this group, we selected a sample of 51 companies with defaulted debt totaling $15 billion. These companies represent 35% of the defaulting companies and 34% of the dollar amount of 1999 defaulted debt issues (*see Appendix 1*). Criteria for the selection required that the companies have three years of financial statements prior to default, and that these statements delineate EBIT, depreciation and amortization. We did not make any adjustments for unusual items.

As we can see in *Exhibit 1*, three years prior to default, the sample group produced a composite EBITDA interest coverage of 1.9 times. After deducting CAPEX, however, coverage falls to zero times.

In the following years, credit statistics fell precipitously. Just two years before default, EBITDA interest coverage was 1 times, while the other indicators such as EBITA/Interest, EBIT/Interest and EBITDA-CAPEX/Interest fell into negative territory.

In this case, EBITDA-less-CAPEX is a better indicator than EBITDA alone because over the three years prior to default, the group spent 1.6 times its level of depreciation, with 69% of the companies investing more than their depreciation over this period.

Exhibit 1



Ten Critical Failings Of EBITDA

REASON #1:
EBITDA IGNORES CHANGES IN WORKING CAPITAL AND OVERSTATES CASH FLOW IN PERIODS OF WORKING CAPITAL GROWTH

Following The Money – Working Capital Affects Cash Flow

EBITDA is insensitive to the actual collection of cash because it ignores fundamental changes in working capital that are otherwise calculated when deriving net cash from operating activities. A company may complete its earnings cycle (book revenues and recognize operating income) but not collect cash until a later period. Earnings are not cash, but merely reflect the difference between revenues and expenses, which are accounting constructs. Thus, it is important to scrutinize revenue recognition policies, especially for capital intensive start-ups.

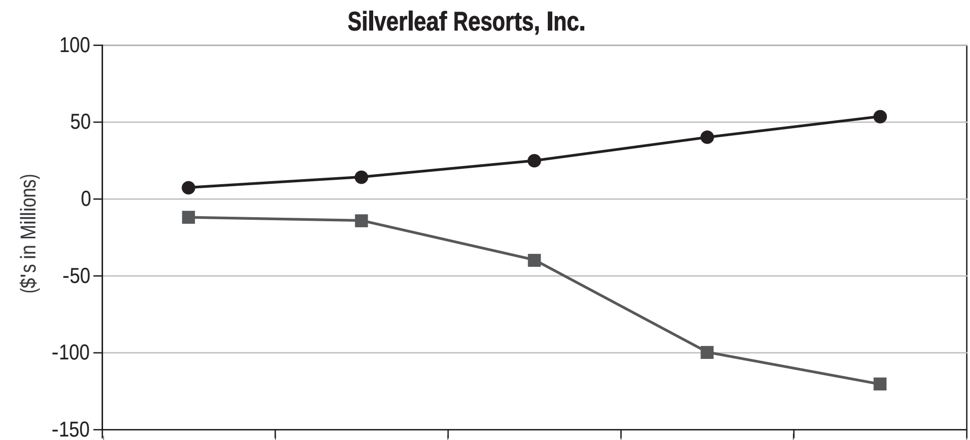
Moreover, a material increase in the average age of a company's accounts receivable, together with a sharp growth in sales, could produce an unfavorably wide gap between cash and earnings. Likewise, an acceleration in cash payments to trade creditors as payment terms tighten would also produce an unfavorably wide spread between a company's reported expenses and the cash it actually has available in a given accounting period.

The timeshare industry provides an excellent example of companies whose earnings cycles are completed long before cash is realized. They recognize revenues and earnings but don't collect cash until a later period. Timeshare companies produce high levels of EBITDA but typically consume cash in their operations.

Silverleaf Resorts, Inc. ordinarily receives 10% of the purchase price in cash for the sale of a vacation interval, but must pay in full the costs of development, marketing, and sale of the interval. Silverleaf typically provides financing to customers over a seven-year period and carries its portfolio of notes receivable on its balance sheet. Because revenues from vacation interval sales include promissory notes received by the company, EBITDA does not reflect actual cash flow available to the company. Thus, the gap between cash and EBITDA has dramatically increased with the growth of the company.

Exhibit 2 shows the significance of the gap by adjusting sources from operations to include the growth in notes receivable (Silverleaf reports the growth as net cash used in "investing activities").

Exhibit 2



	1995	1996	1997	1998	1999
EBITDA	7.5	14.4	25.1	40.3	53.7
Adjusted Cash From Operations	(11.9)	(13.9)	(39.6)	(99.5)	(120.3)

EBITDA fails to correlate with cash for timeshare companies as well as those companies that recognize revenues materially ahead of the collection of cash. Moreover, EBITDA itself is subject to the risk of un-collectible accounts receivable, which in turn, typically secure loans to finance cash consumption. **Sunterra Corporation**, another timeshare company, recently announced a $43 million after-tax charge related to the company's mortgages receivable.

A Case Study: Hefty EBITDA Fails To Produce Cash

In an August 1999 press release, Moody's assessment of "**Waste Management, Inc.** was as follows:

> *"Waste Management, Inc. remains a market leader in the waste service industry with an extensive infrastructure of landfills, transfer stations, and collection operations primarily in North America. However, while the company has shown continued high levels of EBITDA, Moody's is particularly concerned with the significant amount of cash required to support the company's operations. A hefty growth in working capital, high levels of capital spending in excess of depreciation, payments for litigation and insurance, and pension payments resulting from the recent termination of old Waste Management's pension program, together with requirements posed by a continuing acquisition program and related merger costs continue to absorb cash, reducing the potential for any meaningful debt reduction from operating cash flow."*

Why did Waste Management's substantial EBITDA fail to produce cash? To answer this question, let's look at Waste Management over the twenty-one months from January 1998 to September 1999.

First, there is a question as to the value of using EBITDA for a company with a history of unusual charges. In Waste Management's case, the adjustments to EBITDA are noteworthy given that asset impairment charges and merger costs totaled over $6 billion during 1996 though September 1999, representing 48% of aggregate EBITDA for that period. The frequency and magnitude of these unusual charges raises concerns about the appropriateness of adding back "unusual" items to derive EBITDA. Additionally a large portion of these charges are cash charges, and therefore not added back to derive sources from operations.

Second, in recent years Waste Management's operations have absorbed a great deal of cash. This was true in 1998 despite the $4 billion of "adjusted EBITDA" see (Exhibit 3). By outward appearance, the $4 billion EBITDA looked like an attractive 6 times coverage of interest expense and a reasonable 3 times ratio of debt-to-adjusted EBITDA. In actuality, the company was consuming cash. Net cash provided by operating activities was only $1.5 billion, while net cash used investing activities was $4.6 billion (primarily acquisitions and capital expenditures). To finance the shortfall, the company borrowed $2 billion and issued $1 billion of stock.

In 1998, the $2.5 billion gap between EBITDA, at $4 billion, and sources from operations, at $1.5 billion, illustrates the fallacy that EBITDA can be relied upon as a proxy for cash flow. In this case, in order to reconcile EBITDA with cash from operations, the following deductions from EBITDA are necessary (among others): $338 million of working capital growth, $254 million of taxes paid, $652 million of cash interest, and $1.1 billion representing the cash portion of the $2.7 billion of asset impairment and merger costs.

A similar pattern continued in 1999, albeit at a more moderate pace.

Exhibit 3 ($'s in millions)

Waste Management's Summary Operating Data For 1998 And 1999

	FYE 1998	FYE 1999
Income from Operations	**(160)**	**540**
Plus:		
Asset impairments	864	739
Merger costs	1,807	44
EBIT Before Unusual Items	**2,511**	**1,323**
Depreciation and Amortization	1,499	1,614
EBITDA Before Unusual Items	**4,010**	**2,937**

Third, EBITDA fails to consider the effects of cash demands on the balance sheet. This is particularly noteworthy in the case of Waste Management, which evidenced a build-up in accounts receivable and a reduction in accounts payable and accrued liabilities during the first six months of 1999. Exhibit 4 considers the effects of working capital changes and the cash requirements associated with the "run-up" in accounts receivable and the reduction in payables and accrued liabilities.

Exhibit 4 ($'s in millions)

Changes To Waste Management's Working Capital

	December 1998	June 1999	September 1999
Revenues (LTM)	12,703	12,886	13,101
Accounts Receivable	2,246	2,655	1,935
AR Days	**65 days**	**75 days**	**54 days** *
Accounts Payable and Accrued Liabilities	3,328	3,067	2,796

**After writedown of nearly $550 million of accounts receivable*

Accounts Receivable days grew from 65 at December 1998 to 75 at June 1999, – representing an increase of $409 million of accounts receivable on the balance sheet – at the same time the company's accounts payable and accrued liabilities contracted by $261 million. The net effect was a massive $670 million working investment need (defined as accounts receivable less the sum of accounts payable and accrued liabilities) for this period – or, 29% of EBITDA for the six months. A simple EBITDA/interest analysis would have ignored these balance sheet changes and would not have recognized this immense cash consumption.

Taking the analysis one step further, we note that Waste Management took pre-tax charges totaling $1.8 billion for the quarter ended September 1999. This included the writedown of nearly $550 million of accounts receivable, reducing AR days to 54. The writedown is evidenced, in part, by a $680 million tax adjusted asset impairment charge. In general, the appropriateness of "adding back" asset impairment charges when they are recurring is questionable. In particular, it is not appropriate to "add-back" that portion of the impairment charge relating to AR's booked during the course of 1999 and subsequently written-off as un-collectible.

REASON #2:
EBITDA CAN BE A MISLEADING MEASURE OF LIQUIDITY

The analysis of liquidity is dynamic. An analysis of an issuer's financial flexibility should consider many factors in addition to total cash inflows and outflows. EBITDA, however, provides limited insight into evaluating liquidity. EBITDA and other cash flow measurements, such as cash sources from operations, provides only a simple construct over a defined period of time. They provide no qualitative information about a company's sources and uses of cash, its access to liquidity, or the strength of its liquidity facilities.

In assessing liquidity, Moody's considers the potential near-term claims on the issuer and compares these to all likely near-term sources of cash. The analysis begins with a critical evaluation of an issuer's sources (internal and external) and uses of cash. We then analyze a series of reasonable stress scenarios, and assess the company's ability to meet both its operating needs and its debt obligations under these scenarios. This is followed by a close examination of the company's contingency funding plans for a period of stress caused by either company-specific concerns or by a general market disruption (see *Moody's Approach to Assessing the Adequacy of Liquidity Risk Insurance*" – *January 2000*).

EBITDA Fails To Consider The Following Elements That Are Critical To Assessing An Issuer's Liquidity:

- Potential near-term claims on cash including direct obligations as well as contingent obligations
- The issuer's confidence sensitivity
- The strength and stability of cash flow
- The level of necessary or committed capital spending
- Funding needs to support working capital
- Vulnerability to reduced access to capital markets
- The liquidity of the issuer's assets
- The strength of a company's liquidity facilities

EBITDA Does Not Consider The Quality Of A Liquidity Facility

The immediacy, quality, and diversity of all sources of cash are crucial factors in assessing the strength of an issuer's access to external sources of cash (such as its credit facilities). The strength of a company's liquidity facility depends on the facility's availability during periods of market stress and company related setbacks (see *Assessing the Strength of a Liquidity Facility – June 1999*). EBITDA, however, is not dynamic enough to consider the qualitative aspects of an issuer's credit facilities. EBITDA fails to detect provisions such as MAC clauses, restrictive covenants, and other funding-inhibiting legal language in the back-up line documentation that may significantly lessen, if not entirely eliminate, the effectiveness of credit facilities as a source of alternate liquidity.

Performance covenants and the extent of the leeway that a company has in meeting them are key to the strength of a credit agreement and hence a company's liquidity. For example a company that is in near breach of its financial covenants may discover that, as its financial position erodes, availability under an undrawn credit facility may quickly dissipate. As a standalone measure, EBITDA provides no information as to whether a company is able to meet the requirements of its borrowing base or to comply with its covenants.

Liquidity Is Access To Cash: EBITDA Doesn't Capture Ability To Cover Debt Service From Earnings

A company could have a strong reported consolidated EBITDA but not the cash to pay interest. Cash could be in an unrestricted subsidiary and thus reinvested; or cash could be in a foreign subsidiary and might be subject to restrictions on the repatriation of cash and or withholding taxes on dividends. These factors, in turn, could delay the timing and decrease the amount of cash received.

Analysis of a company's ability to cover debt service from earnings must also consider the significance of seasonality or other timing factors. A high interest coverage ratio is of limited value if, for example the interest is due in June and the earnings are not realized until December. Thus, the sources and uses analysis is critical. It is also important to pay attention to the adequacy of a company's liquidity to provide for such timing differences.

EBITDA Does Not Always Coincide With The Receipt Of Cash

Take the case of a wireless service company that recently sold a block of communication towers to an independent service company at a gain over the net book value of the towers. The wireless company entered into a lease with the buyer of the towers to enable it to continue to maintain the equipment on the towers.

Post-sale, one would expect the company's EBITDA to be reduced by the amount of the lease payment. However, the wireless service provider, who received cash for the towers at the time of sale and used the proceeds to repay debt, followed sale-leaseback accounting which defers and amortizes the gain on the sale over the term of the lease. The transaction was expected to have no effect on EBITDA because the amortization of the gain would offset the cost of the lease. Nonetheless, in this example, cash came into the company at the time of sale, and EBITDA in periods following the sale overstates cash flow by the amount of the deferred gain recognized.

REASON #3:
EBITDA DOES NOT CONSIDER THE AMOUNT OF REQUIRED REINVESTMENT – ESPECIALLY FOR COMPANIES WITH SHORT LIVED ASSETS

EBITDA is a better measurement for companies whose assets have longer lives – it is not a good tool for companies whose assets have shorter lives or for companies in industries undergoing a lot of technological change. The use of EBITDA as an indicator of debt coverage implies that funds generated by non-cash charges for depreciation are not needed for reinvestment for ordinary capital expenditures. Although acknowledging the fungibility of cash, this assumption would be conceptually valid if a company's future capital investments are to be funded from excess cash balances or from the proceeds of new financing or asset sales. If a company relies on funds from operations to finance new capital investments, however, depreciation may not be available for debt service. In such instances, capital expenditures should be deducted from EBITDA.

The term "maintenance CAPEX" is often used as an indicator of the level of required reinvestment, but this term is not consistently applied and could imply a smaller amount of reinvestment than that which is actually required longer-term. Moreover, due to inflation, the investment needed to maintain the physical plant will generally be greater in current dollars than depreciation of prior capital expenditures.

Some industries afford management more flexibility with respect to the timing and amount of capital spending. Deferring or reducing capital expenditures, however, could lower a business's productive capacity and efficiency, both of which are very important, particularly in highly leveraged companies.

Furthermore, there are instances in which book depreciation may not equal economic depreciation. In these cases, companies must reinvest more than depreciation expense to maintain plant. This is particularly relevant in capital intensive industries, where assets are bought at an extremely high price and subsequently written down. In these cases, companies will continue to have to reinvest the old ("pre-write-down") level of depreciation (*see sidebar*).

A Case Study: What Happens When Economic Depreciation Exceeds Book Depreciation

In the five years before Masco Corporation sold the assets of its home furnishings group, it invested $275 million to fully equip all 89 facilities used in its furniture business. Masco sold this business because it failed to meet the company's return objectives.

In August 1996, Masco's assets were sold to **Lifestyle Furnishings International Ltd. (LFI)** for $1.05 billion. Because LFI paid less than the $1.6 billion book value of the net assets acquired, LFI wrote them down by $600 million at closing. Plant and equipment was written down by a net $151 million, to $328 million, and goodwill of nearly $400 million was expunged.

As we can see in Exhibit 4, the hefty plant writedown cut ongoing depreciation expense from historical levels of $36 million. Given the large investment in plant during the prior five years, however, the book value of plant post-writedown was considerably less than its economic value. New management recognized that capital reinvestment would have to be made at historical (pre-writedown) levels, not at current (post-writedown) levels to maintain the plant.

When LFI's subordinated notes were rated, Moody's found that *"Ongoing depreciation expense will be understated relative to economic depreciation, thus causing overstated returns on assets. CAPEX IN EXCESS of current depreciation expense will likely be required to maintain the plant."* This proved to be correct. In the two years subsequent to the transaction, LFI spent $74 million in capital expenditures, 1.7 times depreciation expense of $43.6 million. Not unexpectedly, the amount invested was approximately equal to two years of depreciation at the historical annual level of $36 million.

Exhibit 5 ($'s in millions)

LFI Plant Depreciation And CAPEX, Pre And Post Writedown

	Pre-write-down	December 1996	December 1997	December 1998
Net Plant	478.5 (June 30, 1996)	349.3	337.4	359.1
Depreciation Expense	36.0	29.1	20.2	23.4
CAPEX	276 (1991 – 1995)	61.0	32.7	41.4

Without Reinvestment A Downward Spiral Ensues And The Lease And Financing Windows Slam Shut

Trucking companies provide an excellent example of what happens when depreciation is not reinvested. Trucking companies have short-lived assets and, consequently, need to reinvest depreciation to maintain quality service. Without fleet renewal, the wheels literally fall off, and service levels decline. The problem can set in motion a vicious downward spiral as maintenance costs quickly increase and equipment utilization rates decrease.

Exhibit 6 shows the financials of two companies, **Builders Transport, Inc.** and **Trism, Inc.,** that filed for bankruptcy in 1998 and 1999, respectively. While both companies showed reasonable EBITDA interest coverage, they were not able to cover interest from EBIT, and ultimately the lease and financing windows slammed shut. Unable to both cover debt service and appropriately reinvest in their fleet, the companies sold assets to raise cash, resulting in a downward spiral.

Exhibit 6 ($'s in millions)

Builders Transport, Inc.	**1995**	**1996**	**1997**
EBITDA	**42.1**	**25.7**	**13.0**
EBITDA Interest Coverage	2.8	1.6	.8
EBIT Before Unusual Items	**16.5**	**(2.5)**	**(16.3)**
EBIT	15.1	(2.5)	(35.0)
Depreciation Expense	20.7	23.0	24.8
CAPEX	6.8	2.1	1.2
% Depreciation Expense/EBITDA	49%	89%	191%
% CAPEX/Depreciation Expense	33%	9%	5%
Company Owned Tractors	2,606	2,562	2,392

Trism, Inc.	**1996**	**1997**	**1998**
EBITDA	**29.4**	**29.7**	**27.3**
EBITDA Interest Coverage	2.1	2.1	2.0
EBIT Before Unusual Items	**9.2**	**10.1**	**7.1**
EBIT	5.1	6.9	6.3
EBIT Interest Coverage	.4	.5	.5
Depreciation Expense	18.8	18.2	18.8
CAPEX	15.5	5.6	4.1
Capital Lease Equipment Purchases and Borrowings	3.2	25.4	34.8
Equipment Sales	8.1	6.2	11.7
Company Owned and Leased Tractors	2,013	1,865	1,712

Builders Transport Inc.'s EBITDA consisted 85% of depreciation for the three years before it filed for bankruptcy, but only 15% of depreciation was actually reinvested. As the company cycled down, and cash was otherwise used to make significant debt and lease payments, the gap between CAPEX and depreciation became most pronounced.

The Downward Spiral

Trism, Inc., a U.S. trucking company specializing in hauling heavy machinery and equipment, had EBITDA interest coverage of at least 2 times in each of the three years before it defaulted on its $86.2 million of senior notes in June 1999. So what happened?

With EBIT interest coverage of only 0.4 times, the company could not service debt and maintain its fleet, and ultimately lost its ability to incur new leases. Prior to default, the company increasingly relied on lease financing to purchase new higher-cost tractors. At the same time, it sold a larger number of older lower-cost tractors to generate cash. PP&E increased because the value of the higher-cost newer tractors exceeded the book value of the tractors sold. Although the average age of the company's tractor fleet was only 2.7 years at fiscal 1998 (down from 2.8 years at fiscal 1997), the number of tractor units owned and leased was shrinking at an average annual rate of 8%. The company was effectively liquidating its fleet to raise cash, resulting in a concomitant reduction in total tractor miles. This in turn led to a decline in revenues and a downward spiral to bankruptcy.

REASON #4:
EBITDA SAYS NOTHING ABOUT THE QUALITY OF EARNINGS

Sometimes EBITDA Should Be Limited To: – EBIT

EBITDA is probably best assessed by breaking down its components into EBIT, Depreciation, and Amortization. Generally speaking, the greater the percentage of EBIT in EBITDA, the stronger the underlying cash flow.

To the extent that EBITDA contains a high amount of depreciation and amortization, it is important to evaluate whether funds provided by such non-cash charges are truly available for debt service. To the extent that a company relies on cash from operations to finance new capital investments, then depreciation or amortization may not be entirely available for debt service.

Amortization: Not All Types Are Alike

Generally speaking, amortization of costs that are capitalized can be added-back, but it is important to look at the content of the amortization. Not all types of amortization expense are alike, and certain forms of amortization should be treated differently.

Adding back amortization of deferred financing costs such as underwriting fees and expenses depends on the frequency of issuance. For non-frequent issuers, adding-back such costs may not be unreasonable. For a recurring issuer, however, these costs can be viewed as interest and not added-back.

Amortization of acquisition goodwill can also be added-back because acquisitions are generally funded, directly or indirectly, with new securities or excess cash and not out of funds from operations. But even the add-back of goodwill amortization has limitations. Should a company fail to produce acceptable returns on the assets of an acquired company – either on account of a faulty acquisition or because of an excessive purchase price, – then it is likely that the carrying value of goodwill is impaired and will be written down. Mathematically, the write-down of goodwill should not adversely affect future EBITDA because non-cash charges for amortization will be reduced commensurate with the writedown. Nonetheless, these cases generate concern regarding the strength of EBIT in the future.

Amortization of items that are more properly expensed or of uncertain future value should not be added-back. This includes capitalized costs that are conceptually representative of capital expenditures. The case studies in this section offer two examples of companies whose amortization charges should not have been added-back.

A Case Study: The Livent Failure
Amortization Of Some Items Can Be Misleading, Where Future Value Is Uncertain

The now defunct **Livent, Inc.,** a theatrical production company, capitalized pre-production expenses and amortized them over the expected life of its theatrical productions. The company's 1997 annual report stated the following accounting policies for pre-production costs:

> "Pre-production costs associated with the creation of each separate production are deferred to the opening of the production. Such pre-production costs, including expenses for pre-opening advertising, publicity and promotions, set construction props, costumes and salaries and fees paid to the cast, crew musicians and creative constituents during rehearsals, are thereafter amortized based on estimated revenues, net of direct operating expenses, from each production. The Company's period of amortization of such pre-production costs for a particular production is limited to a maximum of five production years. The Company reviews the carrying value of unamortized pre-production costs for each separate production on a quarterly basis and, where conditions warrant for a particular production, the Company may revise the estimated revenue and resultant amortization period for pre-production costs based on the sales experience for that production and its experience with other similar productions. When appropriate, the Company adjusts pre-production costs down to an amount not in excess of their estimated net recoverable amount."

Livent should have charged-off all pre-production and deferred costs because of the fickleness of revenues associated with such productions. When a production fails, there are no future revenues against which to match the future expense, so why capitalize?

When reviewing businesses with less predictable income and requirements for large initial outlays, such as theatrical productions, amortization of pre-production costs and certain deferred costs should not be included in the calculation of EBITDA because they are conceptually representative of capital investment with the concomitant risk that the company may not be able to fully recoup the substantial investments made.

Moody's primary concern for Livent centered on the subjectivity associated with the company's accounting convention of amortizing such costs based on the expected revenues. Such practice created uncertainty and, ultimately, risk that the company would not be able to fully recoup the substantial investments made. "Moody's found the quality of Livent's earnings to be weakened by its economic dependence on relatively few shows and the uncertainty of the duration of a production. The subjective nature of Livent's accounting convention – capitalizing pre-production costs and amortizing them based on expected revenues from each production" – was not a viable or reliable approach. In this instance, the use of EBIT, rather than EBITDA would have yielded a truer picture of the company's risk profile.

Livent recorded unusual charges in 1997 and 1998, and in September 1998 announced that serious irregularities in its financial records would require restatement going back to 1996. The company filed for bankruptcy in November 1998.

Notwithstanding the irregularities that ultimately led to the company's downfall, *Exhibit 7* shows the extraordinary effect on EBITDA resulting from the add-back of amortization of pre-production costs as well as deferred costs relating to pre-opening expenditures for certain theaters. Over the 1994 to 1997 period, the gap between EBITDA (excluding the amortization of deferred and pre-production costs) and EBITDA (including the amortization of such costs) was $220 million. In 1997 alone, the gap was an astounding $111 million. Without adding-back such charges, EBITDA was a $53 million loss, but when the charges are added-back, EBITDA becomes a positive $58 million producing a debt-to-EBITDA ratio of only 3.7 times.

Exhibit 7 ($'s in millions)

Livent's Deferral And Amortization Of Production Expenses

	1994	1995	1996	1997
EBIT	9.8	20.7	19.0	(55.9)
Depreciation and Amortization of Fixed Assets	1.8	2.2	2.9	3.3
EBITDA Excluding Amortization of Deferred and Pre-production Costs	**11.6**	**22.9**	**21.9**	**(52.6)**
Debt/EBITDA		2.0X	5.5X	
Amortization of Deferred Costs	1.7	1.4	1.7	1.8
Amortization of Pre-production Costs	26.1	32.4	45.8	69.4
Non-cash Writedown of Pre-production Costs				27.5
Refinancing Charges				12.2
EBITDA Including Amortization of Deferred and Pre-production Costs and other Writedowns	**39.4**	**56.7**	**69.4**	**58.3**
Debt/EBITDA		.8X	1.7X	3.7X

The subtle problems associated with amortization are also well illustrated when we look at companies, such as some electronic alarm monitoring companies, that must grow their revenues and businesses by acquiring subscriber accounts from other companies (see sidebar). Such subscriber assets are characterized by limited life spans and a need for continual replenishing because the subscribers leave after a period of time.

Under GAAP, the purchase price for the acquired subscribers is amortized over the expected remaining life of the acquired service contracts. Where companies routinely purchase such subscribers, there is the risk of analytic distortion – particularly if the related costs are added-back without also deducting the ongoing disbursements for such costs. In essence, spending by these companies to acquire subscribers – or similar assets – represents the equivalent of an ongoing cash cost. This underscores the importance of giving careful consideration to the deduction of such spending from EBITDA.

A Case Study:
EBITDA Distortions When Subscriber Attrition Necessitates Continual Reinvestment

Protection One, Inc. is one of the largest operators of alarm monitoring systems in the US and Europe with 1.6 million subscribers. Until recently, subscribers were acquired principally through acquisition of other operators and the purchase of subscriber contracts from dealers around the country. The company's assets are primarily intangible, including $1.2 billion of customer accounts, and $1.1 billion of goodwill and trademarks.

Protection One's attrition levels require continuous investment in order to replace existing customers who leave after a period of time. The cost of acquiring subscribers – including amounts paid to dealers and the estimated fair value of accounts acquired in business acquisitions – is capitalized as customer accounts and, until recently, has been amortized on a straight-line method over a ten-year life, which approximates the normal life of a subscriber. Internal costs incurred in support of acquiring customer accounts are expensed as incurred.

In rating the company's senior notes, Moody's found that, the attrition rate necessitated an investment equivalent to the amortization of subscriber accounts each year to replace lost subscribers, and that this cash is therefore not available for debt service. This example underscores the importance of tracking the free cash flow available for debt service after amortization and capital expenditures. Assuming an 8% to 10% annual attrition rate, the company would need to replace its entire customer base over 10 to 12.5 years, at a cost of about $96 - $120 million per year. Deducting the costs of replacement plus capital expenditures from EBITDA would produce no cash flow.

Exhibit 8 shows the effect on EBITDA when the costs of replacement and capital expenditures are deducted. For 1999, Protection One reported EBITDA of $208 million or 2.4 times interest expense. For 1998 the numbers were $162 million or 2.9 times. But in both years, EBITDA consisted mostly of amortization of intangibles and depreciation expense.

After deducting $189.2 and $89.9 million amortization of customer accounts for each of these years (as a proxy for the costs of replacing attrition and capital expenditures – which consistently and significantly exceeded depreciation), interest coverage was insufficient. This analysis is material given that the company has over $1.1 billion of debt. We acknowledge that there were likely acquisitions of customers during the course of the year, *the pro-forma* effects of which have not been included in the analysis.

Exhibit 8 ($'s in millions)

Protection One, Inc.: The Effect On EBITDA When The Costs Of Replacement And CAPEX Are Deducted

	1998	1999
Income (loss) Before Income Taxes and Extraordinary Item	**(.8)**	**(109.5)**
Plus:		
Interest Expense, net	56	87
Other Charges	8.9	5.8
Amortization of Intangibles and Depreciation Expense	119.2	237.2
Less:		
Other Non-recurring (Income) Expense	(20.6)	(12.8)
EBITDA – Company Reported	**162.5**	**207.7**
EBITDA Less Amortization of Customer Accounts ($89.9 million and $189.2 million) **and CAPEX** ($32.8 million and $32.7 million)	**39.9**	**(14.2)**
Adjusted Interest Coverage	.7	no coverage

REASON #5:
EBITDA IS AN INADEQUATE STANDALONE MEASURE FOR COMPARING ACQUISITION MULTIPLES

EBITDA is commonly used as a gauge to compare acquisition prices paid by companies and/or financial sponsors and is thought to represent a multiple of the current or expected cash flow of an acquired company. Although this measurement can be used as a rough rule of thumb, it is important to remember that EBITDA does not always correspond to cash flow. Moreover, users of this approach should be aware that EBITDA multiples create an illusion of making acquisition prices appear smaller. For example, a 6.5 times EBITDA multiple for a company whose EBITDA consists 50% of EBITA and 50% of depreciation, equates to a materially higher 13 times multiple of operating earnings plus amortization.

Industries each have their own cash flow dynamics making it difficult to assess EBITDA multiples without taking such sector differences into account. Nonetheless even within a single industry, the value of using EBITDA multiples is limited by the fact that they convey only partial information about the acquired company.

Even though EBITDA acquisition multiples may reflect qualitative differences between two companies in the same industry, the actual multiples convey little about the underlying businesses. (For example, two companies may be in the same industry, but one may have a subsidiary that is in a different line of business with different profitability and investment requirements). Moreover, differing EBITDA multiples may convey little vital information such as an upgrade to plant and accompanying ability to roll out new services.

In general, EBITDA acquisition multiples convey no specific information about:

- quality of an acquired company's EBITDA, including its mix of EBIT, depreciation, and amortization
- extent and nature of an acquired company's contingent obligations, liquidity and debt maturity profile
- state of the acquired company's working capital that could pose an immediate cash drain on the consolidated entity
- quality of an acquired company's asset base, its management, the markets that it serves, or its growth prospects
- extent of "earn-outs" which could materially increase the acquisition multiple
- history or stability of an acquired company's earnings
- effects of differing accounting policies
- extent of manipulation based on short-term adjustments to earnings including temporary cutbacks in marketing or administrative expenses

The Evolution Of EBITDA Multiples – From EBITDA To Pro-Forma EBITDA To Pro-Forma Adjusted EBITDA: The Need For Full Disclosure

EBITDA multiples can be materially influenced by pro-forma adjustments which may or may not be realized. Thus, when using multiples derived from pro-forma adjusted EBITDA it is important to understand the adjustments that have been made and to assess carefully the likelihood of such realization.

Acquisition multiples have evolved in recent years from simple calculations based on a purchase price divided by trailing EBITDA to more complicated calculations that include the pro-forma full year effects of strengthening actions yet to be implemented. These actions may include synergies attributable to the elimination of duplicate sales forces and corporate overhead, plant closures, joint purchasing and other cost saving programs. These changes make it necessary for users of EBITDA acquisition multiples to have full disclosure about the assumptions used in the calculations.

A Case Study: The Importance Of Questioning Acquisition Multiples

Windmere-Durable Holdings, Inc. acquired three businesses for $315 million from The Black & Decker Corporation in June 1998. An analysis of the acquisition price as shown by Exhibit 9 demonstrates that acquisition multiples can be calculated in a variety of ways, each producing vastly different results.

When calculated on the acquired company's EBITDA, the acquisition multiple was 11.9 times actual 1997 EBITDA of $26.4 million. However, when $20 million of anticipated "acquisition related cost savings" are taken into account, EBITDA grows by 76% to $46.4 million. The acquisition multiple drops to 6.8 times using pro-forma adjusted EBITDA.

In such cases, two critical questions must be explored. First, is EBITDA the appropriate basis for this acquisition multiple? And second, are the cost savings likely to be realized within the anticipated period?

As it worked out, the cost savings took longer than planned. In evaluating this acquisition, we can see that EBITA is a better measure for the acquisition multiple because both Windmere and the acquired companies have historically reinvested amounts at least equal to depreciation. On an EBITA basis, the multiple grows to a whopping 26.6 times actual 1997 EBITA because depreciation comprised 55% of the acquired company's EBITDA.

Exhibit 9 ($'s in millions)

Windmere-Durable Holdings, Inc.: Different Acquisition Multiples Can Yield Vastly Different Results

	1997	Multiple
EBITA	11.9	26.6X
EBITDA	26.4	11.9X
Pro-Forma Adjustments	20.0	
Pro-Forma Adjusted EBITDA	46.4	6.8X

REASON #6:
EBITDA IGNORES DISTINCTIONS IN THE QUALITY OF CASH FLOW RESULTING FROM DIFFERING ACCOUNTING POLICIES – NOT ALL REVENUES ARE CASH

Different accounting policies can have a profound effect on EBITDA, making that measurement a poor basis for the comparison of financial results across firms. The caveats contained in the offering memorandum for Silverleaf Resorts, Inc.'s senior notes, cited previously, confirms this concern.

Accounting policies can affect the quality of earnings and therefore EBITDA. The most profound impact on EBITDA, however, relates to the manner in which revenues are recognized. In particular, accounting policies that accelerate revenues – or the recognition of revenues without near-term realization of cash – makes EBITDA a poor basis for the comparison of cash-flow among companies.

Revenue recognition policies that don't correlate with the receipt of cash include "barter" transactions commonly used by internet companies, "pre-need" services revenues of deathcare companies – for which cash is placed in a trust, and revenues of timeshare companies that correspond to mortgage notes receivable. Revenues that are reported under percentage-of-completion (POC) accounting can similarly result in a significant gap between EBITDA and cash.

EBITDA Can Change Abruptly For A Company Using Percentage Of Completion Accounting

Typically, companies that sell services or equipment under long-term contracts use POC accounting. Progress on contracts, and ultimately the percentage of revenues recognized, is measured by costs incurred to date compared with an estimate of total costs at the project's completion. Customers are billed according to contract terms. Amounts recognized as revenue under POC accounting, but not yet billed to the customer, are booked as unbilled accounts receivable.

Companies that derive a high proportion of their revenues from POC contracts generate a disparity between EBITDA and cash, manifested by a build-up of unbilled accounts receivable. While these companies can produce good margins and generate high levels of EBITDA, they are at risk of abrupt losses resulting from an underestimation of project costs. The level of EBITDA can change dramatically and unexpectedly for companies using POC accounting because provisions are typically made for the entire amount of expected losses, if any, in the period in which losses on contracts are first determinable.

EBITDA is an inadequate measurement for companies using POC, because a simple EBITDA calculation includes revenues that are recognized but not realized. Moreover companies that use POC run the risk of subsequently charging-off unbilled accounts receivable when project costs exceed the original expectation. This is what happened to Giddings & Lewis, Inc. in 1996 (see sidebar).

A Case Study: Impact On EBITDA When Revenues Are Recognized But Not Realized

Giddings & Lewis, Inc. (G&L), a supplier of industrial automation and machine tools, uses POC accounting for all long-term contracts. Its business is characterized by customer orders that have long lead times, because they are driven by multi-year capital investment programs. Historically, a large percentage of bookings have come from the big three automobile manufacturers, whose major build cycles generally do not coincide with one another.

Exhibit 10 shows G&L's steady growth in revenues. This growth is accompanied by a substantial increase in unbilled accounts receivable.

In 1994, unbilled accounts receivable comprised a massive 73% of total receivables. When added to inventory, these unbilled receivables resulted in over 240 days of inventory. EBITDA grew consistently over the period (in fact at a 24% compounded rate since 1989), although margins fell reflecting competitive pressures.

Although EBITDA seemed robust, the company abruptly recorded pretax charges totaling $80.1 million in the 4th quarter of 1996, reducing EBIT to a $24 million loss for the year. This was largely related to its use of POC – primarily a failure to accurately estimate costs and price contracts profitably. G&L attributed the charge-offs to the need to "achieve customer satisfaction on certain complex agile transfer line contracts and to recognize costs associated with the formal adoption of a plan to improve operations including workforce reductions and reengineering of certain business processes, product rationalization and warranty expenses and costs associated with the write-down of inventory at the company's other business locations."

Exhibit 10 ($'s in millions)

Giddings & Lewis, Inc.: EBITDA Ignores The Potential Hazards Of Unbilled Receivables

	1993	1994	1995	1996
Sales	571.5	619.5	730.6	763.0
A/R's	246.1	343.9	350.6	281.0
A/R Days	174	203	175	134
Billed A/R's	141.6	94.5	147.9	139.2
Billed A/R Days	100	56	74	67
Unbilled A/R's	**104.6**	**249.4**	**202.7**	**141.7**
Unbilled A/R Days	**74**	**147**	**101**	**68**
% Unbilled A/R's	42%	73%	58%	50%
Inventory	57.4	74.8	102.3	89.0
Inventory Days	57	56	63	52
Inventory + Unbilled A/R Days	161	241	187	135
EBIT	**74.8**	**75.8**	**38.1**	**(24.3)**
Depreciation & Amortization	14.8	15.4	19.3	20.3
EBITDA Before Unusual Items	**89.6**	**91.2**	**57.4**	**(4.0)**
Plant Writedown			30.3	
Charges – Principally POC				64.1
EBITDA After Unusual Items	**89.6**	**91.2**	**87.7**	**60.1**

REASON #7:
EBITDA IS NOT A COMMON DENOMINATOR FOR CROSS-BORDER ACCOUNTING CONVENTIONS

EBITDA can vary for the same company depending on whether it was calculated based on US GAAP or on GAAP used in a foreign country. Foreign country accounting standards and practices often differ from US GAAP in terms of revenue recognition, methodologies that capitalize rather than expense costs, goodwill recognition, and fixed asset depreciation. Even modest differences can be very meaningful when debt service is thin.

A Case Study: How Cross-Border Accounting Conventions Can Create Discrepancies In EBITDA

Celumovil S.A illustrates the degree to which EBITDA can differ due to different accounting conventions – particularly those relating to capitalization of costs – across countries.

Celumovil, a provider of cellular services in Colombia started wireless operations in 1994. When Celumovil's senior notes were rated in 1998, its six-month revenues were $215 million through June 1998, generating $73 million of EBITDA based on Colombian GAAP and only $13 million of EBITDA based on US GAAP. Exhibit 11 shows the disparity between Colombian GAAP EBITDA and US GAAP EBITDA, which was material, given the company's leverage. The company had $969 million of debt on a pro-forma basis.

Celumovil was growing rapidly, with 570,000 subscribers in June 1997 – an increase of over 240,000 net subscribers in the previous six months. In rating the proposed senior notes, Moody's found Celumovil's accounting practices, based on Colombian GAAP, to be fairly aggressive when compared with practices under US GAAP. Moody's findings were based on the fact that Celumovil did not expense any of the marketing and subscriber acquisition costs, but rather capitalized them over 24 months. This, we found, would cause Colombian GAAP EBITDA, earnings, and book equity to be overstated as compared to US GAAP during the rapid customer addition phase.

Exhibit 11 ($'s in millions)

Celumovil S.A.: EBITDA Can Differ As A Result Of Cross-Border Accounting Conventions

	December 1997	6 Months June 1998
Operating Income	84.3	65.6
Depreciation and Amortization	13.4	7.1
Colombian GAAP EBITDA	**97.7**	**72.7**
Handset Subsidy Expense	8.1	21.2
Sales Commission Expense	16.3	18.0
Colombian GAAP EBITDA Before Subscriber Acquisition Costs	**122.1**	**111.9**
Cash Handset Subsidies	(48.4)	(64.4)
Cash Sales Commissions	(50.6)	(44.3)
Colombian GAAP EBITDA After Subscriber Acquisition Costs	**23.1**	**3.2**
Add-back of Cash Sales Commissions	50.6	44.3
Amortization of Sales Commissions	(23.6)	(34.2)
Amortization of R&D Expense	(1.2)	(0.6)
US GAAP EBITDA	**48.9**	**12.7**

REASON #8: EBITDA OFFERS LIMITED PROTECTION WHEN USED IN INDENTURE COVENANTS

EBITDA is commonly used as a component in indenture covenants that restrict the permissible levels of debt incurrence. While there are many variations to these tests, debt incurrence tests based on EBITDA are typically structured in one of three ways (see *Indenture Covenants are Important – but Protective Attributes are Eroding in this Late Stage of the Credit Cycle, June 1998*).

(1) **Consolidated Cash Flow To Fixed Charges** – with *consolidated cash flow* defined as net income plus provision for taxes plus consolidated interest expense including the interest component of all payments associated with capital lease obligations plus depreciation and amortization plus certain one time issuance expenses – and with fixed charges generally defined as consolidated interest expense whether paid or accrued, capitalized interest and interest expense on indebtedness that is guaranteed and all dividend payments on preferred stock.

(2) **Consolidated Coverage Ratio** – defined as the aggregate amount of consolidated EBITDA of the company and its restricted subsidiaries for the most recent four consecutive fiscal quarters ending prior to the date of such determination, for which consolidated financial statements of the company are available to consolidated interest expense for such four fiscal quarters, in each case for each fiscal quarter of the four fiscal quarters ending prior to the issue date on a pro-forma basis, to give effect to acquisitions as if they had occurred at the beginning of such four quarter period.

(3) **Maximum Leverage Ratio** – Defined as pro-forma debt of the company and its restricted subsidiaries on a consolidated basis divided by annualized pro-forma EBITDA of the company and its restricted subsidiaries

Structural Problems With EBITDA As A Component Of The Debt Incurrence Test

Debt incurrence tests predicated on EBITDA have certain structural problems relating directly or indirectly to EBITDA as a component. In particular, the tests implicitly assume that EBITDA is interchangeable with cash flow and is fully available to service debt, thus ignoring working capital and capital reinvestment needs. Moreover, the tests permit "leveraging" based on EBITDA that may not, in fact, be coincident with the receipt of cash, or which may intermittently be bolstered by sales of certain assets.

Problems can arise if there is additional leveraging based on EBITDA when depreciation and/or amortization needs to be reinvested to perpetuate the business. Movie theater exhibition companies, for example, need to reinvest depreciation over a period of time to adapt to changing technology and industry innovation. In cases such as these, EBITDA should not be the basis for additional leveraging. In a very short period, theater exhibition has evolved from the "town theater" to "duplex" to "triplex" to "multiplex" (8-16 screens) to "megaplex" (18-24, 30, or more screens with stadium seating), and technology has changed to digital sound and is evolving to digital projection. Without reinvestment of depreciation, these entities lose their ability to compete.

Similarly, the indenture covering Protection One's senior subordinated notes (as cited earlier) contains a debt-to-EBITDA limitation of 6 times. But Protection One's EBITDA is not cash available for leveraging because 55% of EBITDA consists of amortization of subscriber accounts, and needs to be reinvested to replenish the subscriber base.

EBITDA Tests Can Be Manipulated By Asset Sales

Some companies have EBITDA that is periodically augmented from the gain on asset sales in the "ordinary course". In these cases the timing of such sales can influence EBITDA and, consequently, a company's ability to comply with its covenants.

Paging companies, for example, often take used paging equipment from leasing subscribers, refurbish them, and sell them into the resale channel for used pagers. The refurbished pagers are sold at a margin over the net book value of the depreciated pager plus the costs of refurbishment.

Paging companies have considerable latitude with respect to the timing of such re-sales. They can, for example, mask declining revenues from core services by selling a larger than normal volume of refurbished pagers into the resale market. EBITDA does not discriminate between earnings from core paging services and sales of refurbished pagers. Moreover, EBITDA does not detect unusual variations in the volume of product sales from one quarter to another. EBITDA can be influenced by the amount of depreciation ascribed to the units of pagers sold. The equipment margin, and consequently EBITDA, can be made larger, depending on the pool of refurbished pagers sold.

Other Problems With EBITDA Based Covenants

- Debt incurrence tests predicated on EBITDA often contain expansive definitions of "permitted debt", allowing commitments under bank credit agreements to be significantly increased, together with numerous and enormous baskets for additional debt, that fundamentally moot the effect of the restriction. For example, indentures in the telecommunications sector often contain EBITDA based debt incurrence limitations that allow unlimited vendor financing at subsidiary levels, thus enabling the notes to become structurally subordinated to significant amounts of vendor financing. Some indentures for theater exhibition companies permit unlimited sale-leaseback transactions and indentures for some network communications companies allow unlimited construction related debt.
- EBITDA is often broadly defined and may include adjustments for the affects of acquisitions, divestitures, and "incremental contributions" (synergistic benefits) as determined by the company.
- EBITDA tests enable leveraging based on cash flows recognized but not realized. Consider the impact of EBITDA based fixed charge coverage tests for timeshare companies whose EBITDA consists largely of mortgage notes receivable from buyers of vacation intervals. The indenture for Silverleaf Resorts, Inc.'s senior subordinated notes requires a consolidated coverage ratio of 2.0 to 1.0 for the incurrence of additional debt, but exculpates the incurrence by the company of debt secured by mortgages receivable (with such debt not to exceed 70% of the mortgages receivable of the company). Therefore, the company can pledge substantially all of the proceeds of its EBITDA, but can use EBITDA as the basis for incurring additional indebtedness.

A Case Study: When EBITDA Debt Limitations Fail To Protect Noteholders

Covenants contained in the senior subordinated notes indentures of **Regal Cinemas, Inc.** allow the company to incur a significant amount of additional debt to make acquisitions based on EBITDA, while leaving the acquired companies as unrestricted subsidiaries that do not guarantee Regal's notes.

In this case, the noteholders not only experienced the risk of a material rise in leverage, but also have no contractual claim to the cash flow of the acquired companies which, in turn, could be leveraged without limitation.

The debt limitation in Regal's indenture enables the company to incur debt to the extent that pro-forma for such incurrence its Leverage Ratio (defined as debt-to-EBITDA for the four most recent fiscal quarters) is not greater than 7:1. Consolidated EBITDA is generously defined to include adjustments for the effects of acquisitions and divestitures during the course of the reference period as if they had occurred at the beginning of the period in addition to incremental contributions (i.e. synergistic benefits) to consolidated EBTIDA that the company reasonably believes in good faith could have been achieved during the reference period as a result of acquisitions.

REASON #9:
EBITDA CAN DRIFT FROM THE REALM OF REALITY

As evidenced throughout this Special Comment, EBITDA can easily be manipulated though aggressive accounting policies relating to revenue and expense recognition, asset writedowns and concomitant adjustments to depreciation schedules, excessive adjustments in deriving "adjusted pro-forma EBITDA" and by the timing of certain "ordinary course" asset sales to influence quarterly results.

In addition, users of EBITDA should be alert to:

- Situations in which management decisions have been taken to make cash flow appear more robust. Revenue loading or expense cutbacks made to enhance the sale prospects or price of a company can often bolster EBITDA, albeit on an unsustainable basis. Underfunding marketing expenses may make short-run EBITDA vibrant at the expense of long-run growth.

  Moody's recently rated the bank debt of a <u>single product</u> manufacturer in connection with that company's sale by its parent in early 2000. The company's sales were $366 million, and in rating the notes, we noticed that marketing costs were cut 35% from $126 million to $82 million. While the company reports a strong $121 million of EBITDA and no permanent sacrifice of volume or market share to date, credit statistics remain very vulnerable to a restoration of marketing spending to historic levels. Such a return may be needed in order to thwart competition and to maintain market share.
- Companies with excessive "noise" in their earnings should prompt serious questions as to whether unusual charges should be "added-back" to show a normalized EBITDA. Such charges could be a symptom of fundamentally low returns or questionable viability.
- Cash flow that is heavily influenced by asset sales may not be recurring. It is important to distinguish between one-time asset sales such as sales of fiber channel capacity and recurring sales such as refurbished pagers or used equipment sold by rental service companies.

REASON #10:
EBITDA IS NOT WELL SUITED FOR THE ANALYSIS OF MANY INDUSTRIES BECAUSE IT IGNORES THEIR UNIQUE ATTRIBUTES

EBITDA is a tool more relevant to basic industries dominated by capital-intensive long-lived asset classes. Steel companies, for instance, can live off of the fat without need of new furnaces. But EBITDA has evolved from asset classes with long-lives (20 or more years) to companies that have considerably shorter asset lives (3-5 years) and which need continual reinvestment to maintain their asset base.

EBITDA also fails to consider the specific attributes of a number of industries, including:

Cable TV

Cable companies need to reinvest amounts comparable to depreciation over time to upgrade technology that is constantly changing. Amortization is a continuing source of cash flow and can be looked at for debt service.

Deathcare

Deathcare companies use EBITDA, but this is not an accurate representation of cash flow and many of the companies have demonstrated an intensive need for working capital.

Deathcare companies provide funeral and cemetery services on an "at-need basis" (at the time the death) or on a "pre-need basis" (in advance of death). Accounting policies differ among companies and are also affected by state laws that require proceeds of certain pre-need sales to be put into a trust.

Revenues are recognized for pre-need sales of cemetery interment rights (or plots), related services (funeral services or interment services), and merchandise sales (casket) together with the concurrent recognition of related costs when the customer contracts are signed. This raises a number of issues:

1. The services provided are performed at a later date and such costs are subject to inflation.
2. Many states require that proceeds from pre-need sales merchandise and services be paid into trust funds.
3. Deathcare companies often provide credit for such services that can extend as long as 84 months.

Thus, there is a gap created between EBITDA and cash. EBITDA is further misleading because some companies capitalize and subsequently amortize marketing and advertising expenses as opposed to recognizing them as a current period expense.

E&P Companies

The quality, durability, and proximity of EBITDA to discretionary cash flow varies greatly for petroleum exploration and production (E&P) companies. An issuer's ability to maintain a given level of EBITDA is affected by its ability to sustain productive CAPEX outlays, commodity price fluctuations, production risk and drilling risk. EBITDA also needs to be assessed in the context of reserve life on proven developed reserves and adjusted for CAPEX needed to sustain production.

1. A substantial and constant level of CAPEX is needed to replace the production that generated reported EBITDA in the first place.
2. The natural gas and oil price component of EBITDA can swing widely between reporting periods.
3. The production life of total proven reserves and proven developed reserves will differ widely among firms. One firm's reserve life may be only five years, while another's may be ten or more. The cash burn rate, drilling, and liquidity risks of the short-lived firm is much higher than that of the long-lived firm.
4. EBITDA risk is closely linked to the proven developed reserve life. Only proven developed producing reserves generate cash flow, and the higher risk proven undeveloped reserves need time and CAPEX to bring to production.
5. The unit finding and development costs associated with replacing reserves can vary widely among firms and should be assessed relative to the unit cash margins those reserves will produce over the price cycle.
6. A firm with an 8-year reserve life may have a large pocket of high-margin, but very short-lived, higher-risk production masking low-margin, higher-cost, but long-lived production.

7. In some cases, production from an individual new natural gas well may decline 50%, or more, in the first year before flattening out at low levels in the third year.

Accounting policies can also affect EBITDA. Some E&P companies use "successful efforts" accounting whereby exploration expense and dry hole costs are expensed, while other E&P's use "full cost" accounting that capitalizes exploration and dryhole costs. For E&P's that use successful efforts, exploration and dry hole expenses should be added back to EBITDA (yielding EBITDAX) to make it comparable to EBITDA (EBITDAX) for E&P's using the "full cost" method. Both "successful efforts" and "full cost" accounting capitalize development costs – costs incurred in bringing proven but undeveloped reserves to production.

Fiber Channel Builders

Fiber channel builders have a business plan that calls for them to sell limited amounts of fiber assets and to use their unsold fiber capacity to generate a recurring revenue stream. EBITDA for fiber channel builders is highly affected by the one-time sales of fiber capacity. Construction and development expenses are capitalized. Thus, EBITDA contains both the revenues related to the one-time sale plus amortization of capitalized construction and development costs attributed to the capacity sold. While EBITDA may reflect cash derived during the period – it is highly influenced by one-time sales since no more revenues can be gleaned from the fiber capacity sold

Homebuilding

There are three basic issues with using EBITDA for homebuilders:

1. EBITDA contains very little depreciation
2. Homebuilders can affect earnings by capitalizing marketing costs. It is important to look at the degree to which marketing expenses are capitalized and subsequently amortized
3. Homebuilders often buy land and it takes time to get approvals for development and to actually build the infrastructure for communities even before a home is built.

To look at a meaningful measure of interest coverage certain adjustments have to be made. Homebuilders capitalize interest in connection with the development of land. When this interest is amortized it is in the cost of goods sold (instead of amortization). Thus to arrive at a numerator to serve as a comparative measurement across companies – it is important to adjust EBITDA for the amount of interest that is amortized through cost of goods sold. The denominator is interest incurred rather than interest expense to get to a better measure of economic debt service.

Paging

Providers of paging and other wireless messaging services derive the majority of revenues from fixed periodic fees. Operating results benefit from this recurring revenue stream with minimal requirement for incremental selling expenses or other fixed costs.

Many paging companies often take back used paging equipment from subscribers that lease pagers, refurbish them, and sell them into the resale channel for used pagers. The refurbished pagers are sold at a margin over the net book value of the depreciated pager plus the costs of refurbishment.

Paging companies have considerable latitude with respect to the timing of such re-sales. They can, for example, mask declining revenues from core services by selling a larger than normal volume of refurbished pagers into the resale market. EBITDA does not discriminate between earnings from core paging services and sales of refurbished pagers. Moreover, EBITDA does not detect unusual variations in the volume of product sales from one quarter to another. EBITDA can be influenced by the amount of depreciation ascribed to the units of pagers sold. The equipment margin, and consequently EBITDA, can be made larger, depending on the pool of refurbished pagers sold.

Restaurant

Depreciation should not be viewed as a continuing source because there is a need to reinvest in modernizing the restaurants and updating themes. Certain restaurant themes need to be refreshed about every seven years to address changing tastes and styles; otherwise there may likely be a steady erosion in cash flow.

Rental Services

Rental service companies can temporarily get away with not reinvesting depreciation if the fleet is young. But, this can not last indefinitely. Over time, depreciation will need to be reinvested to maintain the fleet. EBITDA for companies in the rental services industry can be affected by the volume and timing of used equipment sales.

Theater Exhibition

Movie theater exhibition companies have a large PP&E component on the balance sheet. They need to reinvest depreciation over a period of time to adapt to changing technology and industry innovation, and thus EBITDA should not be the basis for additional leveraging. In a very short period, theater exhibition has evolved from the "town theater" to "duplex" to "triplex" to "multiplex" (8-16 screens) to "megaplex" (18-24, 30, or more screens with stadium seating), and technology has changed to digital sound and is evolving to digital projection. Without reinvestment of depreciation, these entities lose their ability to compete.

Because of the widespread use of leases in the theater exhibition industry, leverage covenants based simply on EBITDA may not comprehensively constrain leverage including the growing obligations under operating leases. Thus, debt plus capitalized operating leases – to – EBITDA plus Rents provides a more effective means of gauging financial leverage, and is also more effective for comparative analytical purposes due to divergent financing strategies for sector participants.

Timeshares

For companies in the timeshare industry, revenues from the sales of vacation intervals consist mostly of promissory notes. In general, 10% of timeshare sales are realized in cash and the remaining 90% consist of mortgage receivables due over 7 years. However, once a timeshare sale is booked, the entire sale is accounted for as revenue. Thus EBITDA does not reflect cash flow available to the company. Moreover, due to varying methods of reporting EBITDA within the timeshare industry, the computation of EBITDA may not be comparable to other companies in the timeshare industry which compute EBITDA in a different manner.

Some timeshare operators sell their receivables through some form of securitization in order to finance operations. When this sale is made, companies often recognize an immediate gain attributable to the favorable spread on the mortgage notes receivable rate over the securitization rate. This is also a non-cash item since no cash is realized until there are payments on the mortgage receivables.

Trucking

In general, EBITA is the better determinant of the financial health of a trucking company. Equipment replacement is critical since trucks are short-lived assets. If depreciation is not reinvested – the wheels literally fall off. In addition, and unlike ocean going shipping for example, depreciation is a close proxy in terms of what needs to be spent to maintain the fleet and is almost always very close to CAPEX on a normalized basis. Without fleet renewal, there can be a vicious downward spiral as maintenance costs quickly increase and utilization rates decrease.

APPENDIX 1

51 OF 147 COMPANIES TO DEFAULT IN 1999

Selected companies had three years of financial statements prior to default, which delineated EBIT, depreciation and amortization

	Company	Month of Default	Defaulted Debt ($'s in millions)
1	American Pad & Paper Company	November	$130.0
2	AMF Bowling Worldwide, Inc.	July	$1,826.5
3	AMNEX, Inc.	May	$15.0
4	Bayard Drilling Technologies, Inc.	June	$100.0
5	Breed Technologies, Inc.	September	$330.0
6	ClimaChem, Inc.	December	$105.0
7	Coho Energy, Inc.	April	$150.0
8	Complete Management, Inc.	February	$69.0
9	Continucare Corporation	April	$46.0
10	Dailey International, Inc.	May	$275.0
11	DecisionOne Holdings Corporation	August	$298.4
12	Eagle Geophysical, Inc.	July	$100.0
13	Favorite Brands International, Inc.	March	$395.0
14	Filene's Basement Corporation	August	$10.8
15	Fine Host Corporation	January	$175.0
16	Fruit of the Loom, Inc.	December	$675.0
17	FWT, Inc.	April	$105.0
18	General Media, Inc.	May	$80.0
19	Graham-Field Health Products, Inc.	December	$100.0
20	Gulf States Steel, Inc.	April	$190.0
21	Health-Chem Corporation	April	$8.0
22	Hollywood Theaters, Inc.	February	$110.0
23	Hvide Marine, Inc.	August	$300.0
24	ICF Kaiser International, Inc.	June	$140.0
25	ICON Fitness Corporation	July	$162.0
26	Integrated Health Services, Inc.	November	$1,343.8
27	Just For Feet, Inc.	November	$200.0
28	Leasing Solutions, Inc.	April	$71.9
29	Mariner Post-Acute Network, Inc.	October	$569.0
30	MOA Hospitality, Inc.	October	$80.0
31	Mobile Energy Services Company, L.L.C.	January	$323.1
32	OpTel, Inc.	October	$425.0
33	Planet Hollywood International, Inc.	March	$250.0
34	PRIMESTAR Satellite, Inc.	April	$475.0
35	Purina Mills, Inc.	September	$350.0
36	RainTree Healthcare Corporation	July	$26.0
37	Sabratek Corporation	October	$85.0
38	SmarTalk TeleServices, Inc.	January	$150.0
39	Specialty Foods Acquisition Corporation	June	$894.3
40	Stuart Entertainment, Inc.	May	$100.0
41	Sun Healthcare Group, Inc.	April	$853.3
42	Teletrac, Inc.	June	$105.0
43	Thorn Apple Valley, Inc.	March	$17.3
44	TransAmerican Refining Corporation	April	$1,696.0
45	TRISM, Inc.	June	$86.2
46	Tultex Corporation	May	$185.0
47	TV Filme, Inc.	June	$120.0
48	Universal Standard Healthcare, Inc.	February	$11.6
49	Vista Eyecare, Inc.	October	$125.0
50	Wireless One, Inc.	February	$389.3
51	Zenith Electronics Corporation	April	$158.5
		Total Debt:	**$14,986.0**
		% of Total $44,595.5 Million of Defaulted Debt in 1999:	**33.6%**

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