

## ROIC Trends in Entertainment

There is typically an 80-90% statistical correlation between U.S. entertainment company valuations and their year-forward returns on invested capital (ROIC). Recently it hit 85%. This high correlation implies that changes in ROIC are predictive of changes in total valuation and share prices.

ROIC momentum was robust in 2010, as cash from operations grew 24-94% year over year for most of the entertainment companies, driven by a rebound of advertising spending in 2010 coupled with cost cutting in 2009.



Using free cash flow (FCF) to shrink the asset base through debt repayment or share repurchases accelerates ROIC improvement. How companies used their FCF in FY10 helps us project FY11 ROICs. In the latest 12 months:

- CBS, VIAB and NWSA all repaid meaningful levels of debt (down 10-39%) and their shares outstanding were flat.
- TWX added \$1.3 billion of debt and used all of it to repurchase shares, leaving its total asset base unchanged but lowering its cost of capital and improving shareholder returns (because debt is tax advantaged and TWX is underlevered).
- Disney added both debt and shares outstanding in the latest 12 months and we expect this to continue for the next 12-24 months as it invests in cruise

ships and the California Adventure theme park in Los Angeles, in addition to buying Internet assets that position the company strategically for the future.

### Investment Recommendations

Based on forward-year ROIC trends, we recommend CBS and VIAB. We estimate that CBS's ROIC will grow by about 100 basis points and that VIAB's ROIC will grow by about 230 basis points in FY11. CBS is a little below today's 85%-correlated regression line and VIAB's is above, which implies that their share price appreciation will be less disparate than their relative ROIC improvement suggests.

## Key Takeaways from This Report

### ROICs Drive Share Price in Entertainment

Returns on invested capital (ROIC) in the media space are closely related to share price performance. In fact, there is typically an 80-90% statistical correlation between U.S. entertainment company valuations and their year-forward ROICs. Recently, this correlation hit 85%. This high correlation implies that changes in ROIC are predictive of changes in total valuation and share prices. The slope of the entertainment regression line is typically steep, implying that it is important to accurately assess ROIC trends for entertainment companies.

### FCF and ROIC

ROIC improvement is closely related to trends in free cash flow (FCF). The entertainment companies have a structural FCF advantage because CapX is typically less than 20% of annual EBITDA. Rising FCF typically means rising ROIC. Most entertainment companies reported 24-94% increases in cash from operations over the latest 12 months, suggesting robust ROIC momentum.

### EBITDA

Entertainment companies' EBITDA rose 11-41% year over year in the 12 months ended September 30, 2010, with advertising-driven companies like CBS and VIAB at the high end and DIS at the low end. EBITDA is typically only 8-17% of total assets employed for the entertainment companies we cover.

### Segment ROAs

Film studio segment pre-tax returns on assets (ROA) are typically 8-10%, unless a studio has a major hit at the box office. For the past 12 months, Fox has reported an 18% ROA, thanks largely to Avatar profits. Cable Network ROAs are typically 22%. Broadcast segment ROAs are typically 8-10%. We publish detailed ROAs by division for each entertainment company each quarter.

### Company Comparisons

In the most recent quarter ended September 30, 2010, the highest ROA (calculated as EBITDA/Total Assets) was reported by Viacom at 19%, followed by Disney at 12%, followed by CBS at 11%, and followed by TWX and NWSA at 10%. Looking at the latest 12 months, we see that there is also a narrow 9-13% range of asset efficiency, with Time Warner at 9%, NewsCorp at 10%, VIAB+CBS together (to alleviate asset allocation vagaries) at 12% and Disney at 13%. We note that share price performance is tied to *trends* in ROICs rather than absolute levels.

### Other Industry Reports Published by Laura Martin, CFA

**12/2/2010 - Content's Shifting Economics**

**11/2/2010 - Over-the-Top TV**

**10/2/2010 - Content in the Sky with Diamonds (with Rich Kugele)**

**9/2/2010 - Is the Web Dead?**

**8/2/2010 - Valuing Media's Disruption**

**7/2/2010 - Newspapers: What They Teach Us About the Future**

**6/2/2010 - The Five Best Questions in Media**

**5/2/2010 - TV's NPV**

**4/2/2010 - Advertising Wars: Who Wins?**

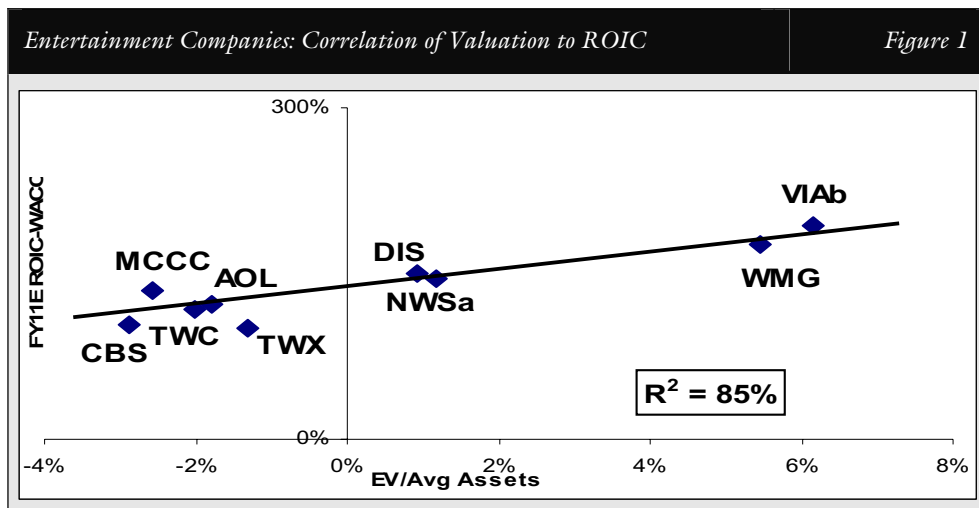
**3/2/2010 - Music's Emerging Economics**

## Why ROIC Matters in Media

Returns on invested capital (ROIC) in the media space are closely related to share price performance. In fact, there is typically an 80-90% statistical correlation between U.S. entertainment company valuations and their year-forward estimated ROICs. Recently, the correlation hit 85%. This high correlation implies that changes in ROIC are predictive of changes in total valuation and share prices. An important valuation implication of this high correlation is that a company is likely to stay on the line (i.e., valuations should move up or down) as its ROIC outlook changes.

The entertainment industry is experiencing unprecedented changes as content transitions to digital platforms. Estimating the impact of the opportunities and threats to ROIC from new digital delivery mechanisms represents a key value driver over the next several years.

Importantly, the slope of the entertainment regression line is typically steep. Therefore, it is important to accurately assess ROIC trends for entertainment companies. Making mistakes is expensive for investors in cases where an entertainment company underdelivers expected ROICs and a boon to investors who accurately predict ROIC improvements. Figure 1 includes a recent statistical correlation between FY11 forward-year returns on invested capital and valuations for the media stocks under our coverage.



*Source: Prices as of 12/21/10, Needham & Company, LLC estimates.*

## What Is ROIC?

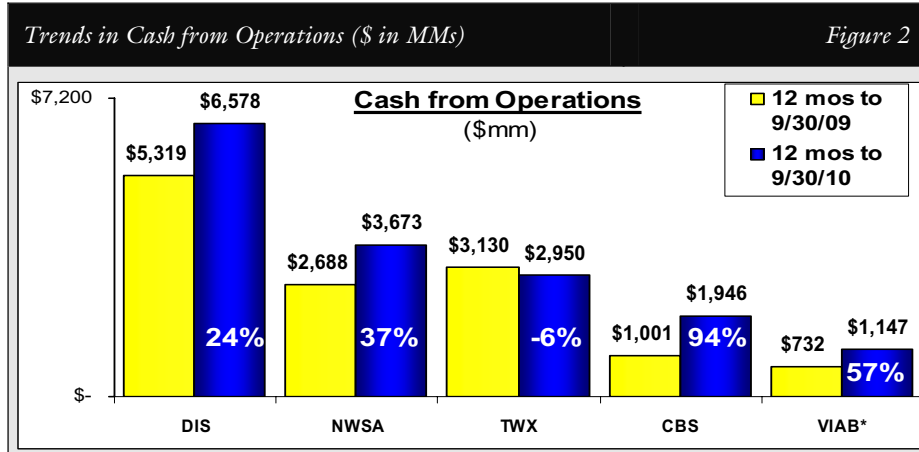
Return on invested capital, or ROIC, is a measure of how efficiently a company uses capital to generate profits. There are three primary sources of capital: 1) net income after taxes from running the businesses; 2) equity capital (public sale of shares); and 3) debt capital (public bond issuances and/or bank loans). Improving asset efficiency typically drives accelerating free cash flow that can be used for debt repayment, share repurchases, dividend increases and/or acquisitions (i.e., acquiring new cash flow streams). ROIC analysis focuses attention on the balance sheet and cash flow statement, which are often predictive of income statement metrics.

## Sources of Free Cash Flow

The clearest proxy for trends in ROIC is free cash flow (FCF). Rising FCF typically means rising ROICs. Entertainment companies typically have strong and improving FCF.

### Cash from Operations Trends

For the 12 months ended September 30, 2010, the strongest cash flow momentum was reported by CBS (up 94% year over year), Viacom (up 57% y/y) and NewsCorp (up 37% y/y); the weakest was reported by TWX (down 6% y/y). Share price performance over the past three years has closely mirrored their trends in free cash flow momentum and deleveraging.

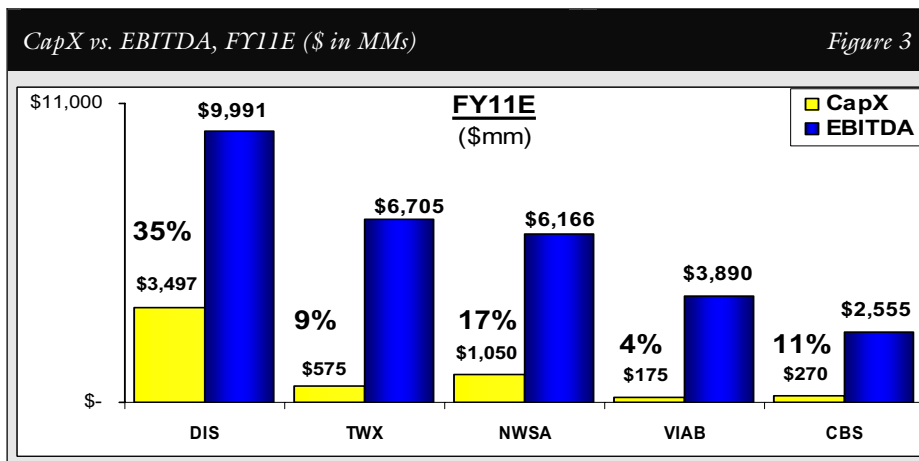


\*Represents VIAB's FY10, which is only 9 months since it changed its FYE to 9/30/10.

Source: Company reports, Needham & Company, LLC research.

### CapX vs. EBITDA

Each of the entertainment companies has a strong FCF profile, with capital spending representing only a small fraction of total EBITDA. Looking at our projections for the forward year, FY11, Viacom will use the smallest amount of capital spending to drive EBITDA growth (CapX divided by EBITDA is 4%) while Disney will use the most (at 35%). The other three companies sit within a tight range of 9-17% of CapX for every dollar of EBITDA.



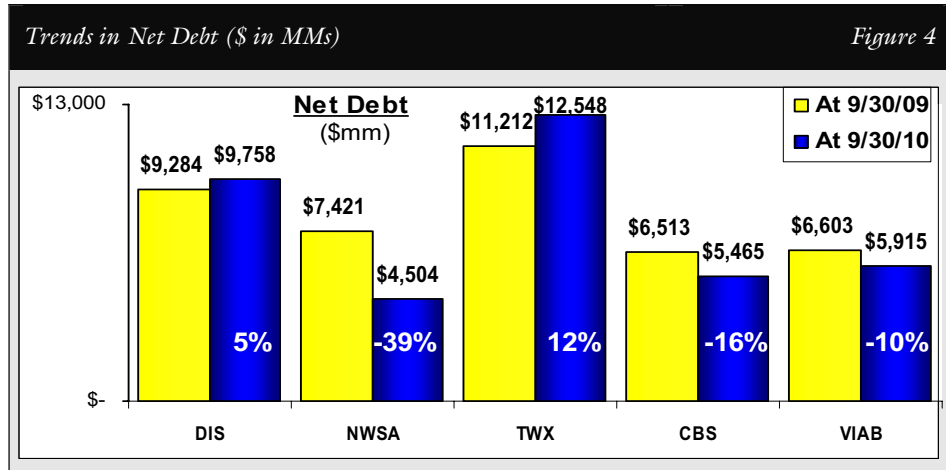
Source: Company reports, Needham & Company, LLC research.

## Uses of Cash to Shrink the Asset Base

One way to accelerate ROIC growth is to shrink the asset base by using free cash flow. The most common ways to achieve this are through repaying debt or by buying in shares.

### Net Debt Trends

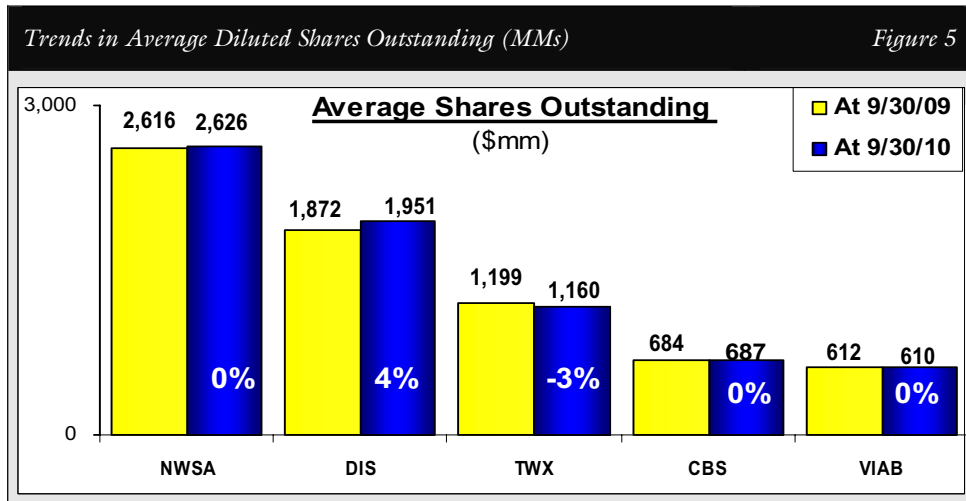
As illustrated in Figure 4, in the past 12 months, NewsCorp has repaid debt at the fastest rate, followed by CBS and Viacom. Disney and Time Warner added debt to their balance sheets over the past 12 months, despite strong free cash flow being thrown off by their operating assets.



*Source: Company reports, Needham & Company, LLC research.*

### Shares Outstanding Trends

As shown in Figure 5, share counts have been falling most rapidly at TWX. In fact, TWX repurchased about \$1.3 billion of shares in the past year (39 million shares @ \$32.25/share) representing all of the increase in TWX's financial leverage. NWSA, CBS and VIAB share counts have been stable. DIS has grown both its share counts and leverage, implying a growing asset base.

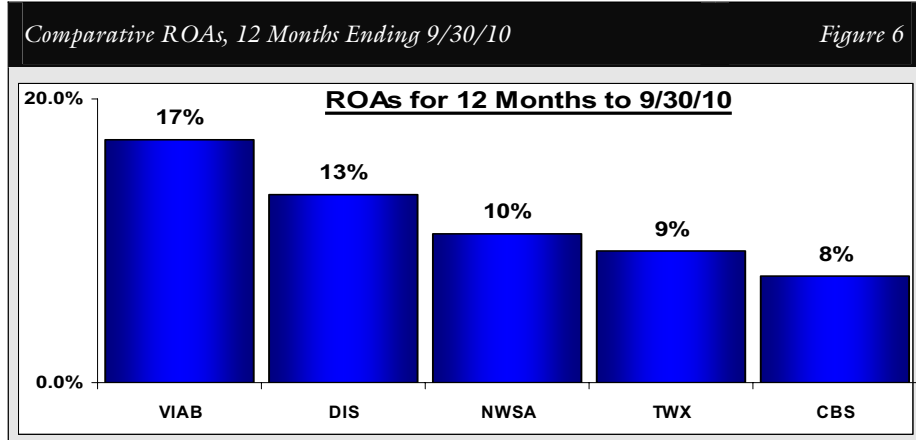


*Source: Company reports, Needham & Company, LLC research.*

## Asset Efficiency

### Comparative ROA Analysis

An easier to calculate and visualize proxy for ROIC is ROA (calculated as EBITDA/Total Assets). As illustrated by Figure 6, there is a wide disparity between the returns on assets employed by the large capitalization entertainment companies. We would caution that VIAB's ROAs may be overstated and CBS's understated owing to asset allocations determined upon their separating from each other. When averaged, these two companies would sit at 12%, exactly in the middle of the tight range of asset efficiency of the others. Importantly, share price performance is linked to trends in asset efficiency rather than an absolute level.

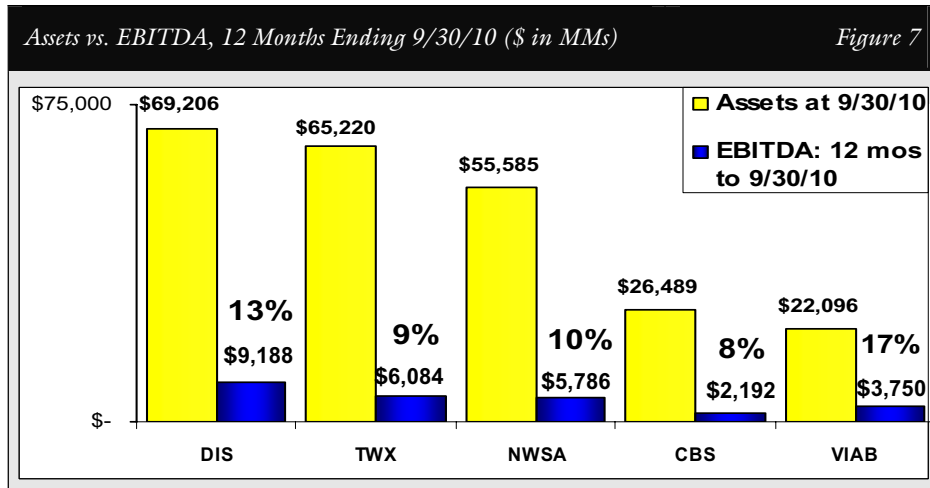


*Note: ROAs are calculated as EBITDA/Assets.*

*Source: Company reports, Needham & Company, LLC research.*

### Assets vs. EBITDA

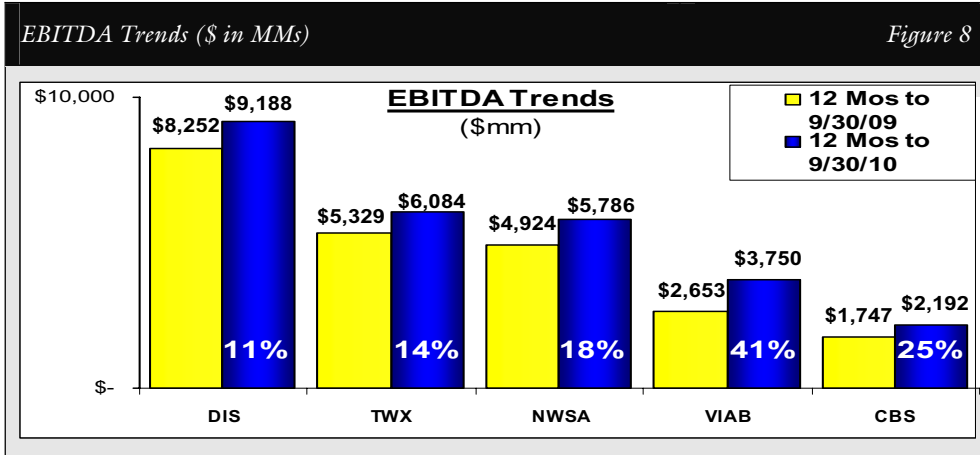
Figure 7 illustrates that Disney uses the most assets in its business and VIAB the least. If we combine VIAB and CBS (to cancel out potential spin-off asset allocation issues), they would have assets of \$48.6 billion, just smaller than NWSA, and have EBITDA/Assets of about 12%, right in line with the tight range (9-13%) of the other three companies in the entertainment space.



*Source: Company reports, Needham & Company, LLC research.*

**EBITDA Trends**

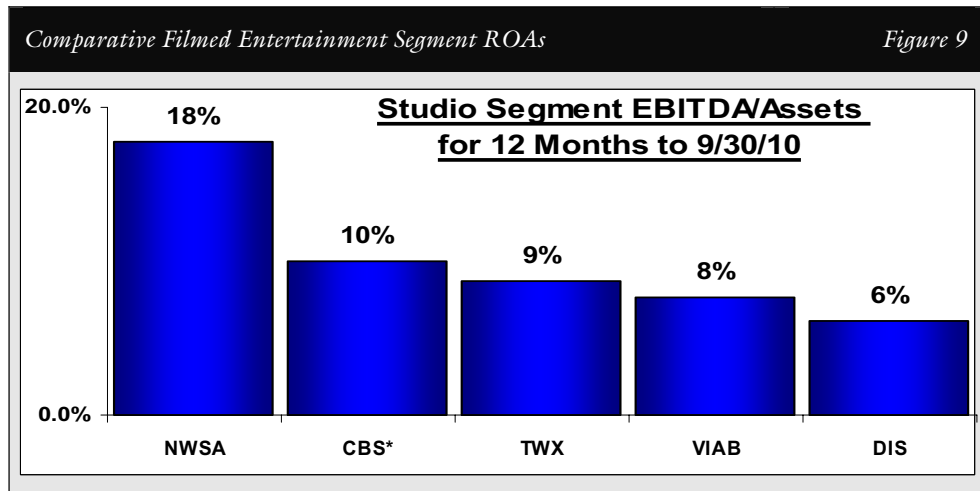
Figure 8 shows that VIAB has grown its EBITDA most over the past 12 months (up 41%), followed by CBS (up 25%), NWSA (up 18%), TWX (up 14%) and DIS (up 11%). At \$9.2 billion, Disney is the largest company in terms of EBITDA, at 50% above its closest competitor. In fact, in FY10A ESPN reported over \$4 billion of DIS's EBITDA, implying that this single division reported more EBITDA than either CBS or VIAB in total. Disney's financial future *IS* ESPN's.



Source: Company reports, Needham & Company, LLC research.

**Filmed Entertainment ROA Analysis**

Looking at the asset efficiency of the filmed entertainment segment of these large companies, we can see that NWSA has had extraordinary returns over the past 12 months, driven largely by the success of Avatar. This is typical of the film business where the hit-driven nature of the business means that the ROAs of this segment jump around depending on Box Office gross revenue and DVD sell-through success. We would expect NWSA's ROAs in the film segment to revert to the 10% level next year.

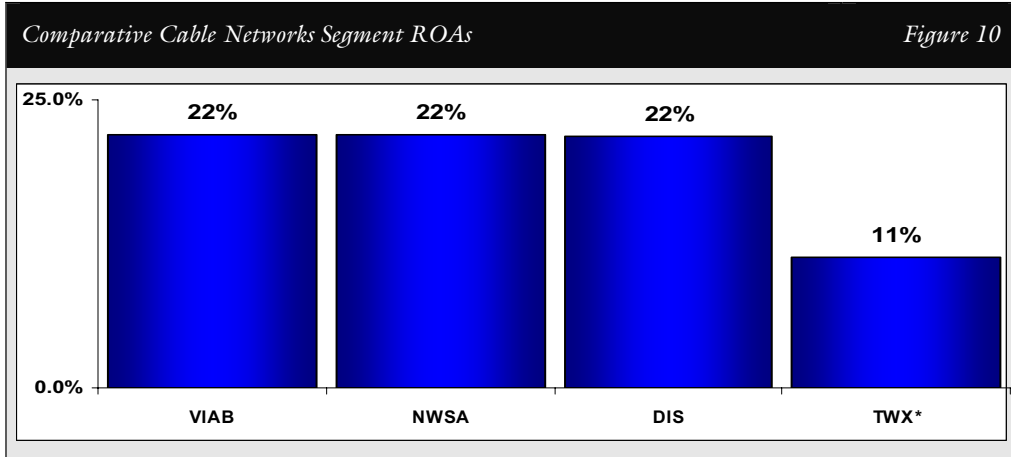


\*CBS's "Entertainment" segment includes the CBS network.

Source: Company reports, Needham & Company, LLC research.

**Cable Networks ROA Analysis**

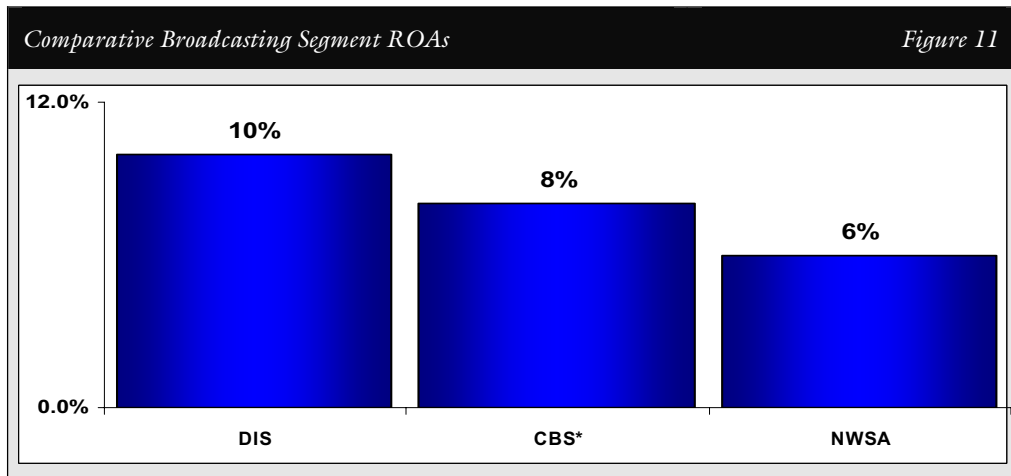
At 22%, Cable Networks report the highest asset efficiency of any business in the media space. ROAs are consistent across companies as well. Each of TWX’s divisions has large allocations of purchase price accounting (PPA) from its merger with AOL in 2001 included in their assets. Excluding all PPA, TWX’s cable networks would have an implied ROA of 57%, which seems too high. We have no reason to think that TWX’s cable network ROAs are meaningfully different than its peers.



\*TWX’s cable networks segment assets include approximately \$27.8B of purchase price amortization, mostly related to the AOL merger of 2001. Excluding all of this amount, cable network ROAs at TWX would be 57%.  
 Source: Company reports, Needham & Company, LLC research.

**Broadcasting ROA Analysis**

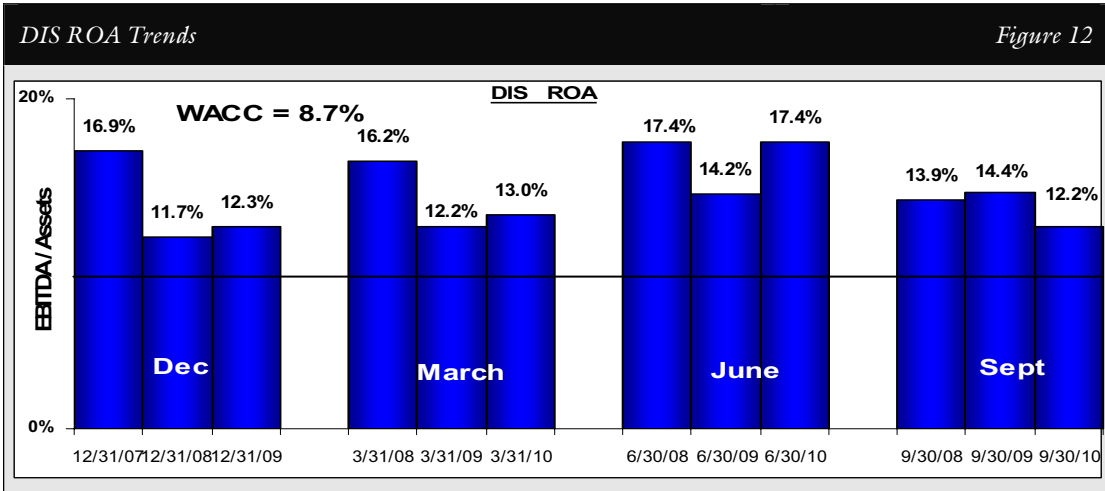
The broadcasting segment of the large media conglomerates report relatively steady ROAs, ranging between 6% and 10%. These are much lower than the cable networks segment, largely because broadcasting only has one revenue stream (advertising) compared with cable networks which have two (advertising plus affiliate fees).



\*CBS’s “Local Broadcasting” segment includes both Radio and TV stations.  
 Source: Company reports, Needham & Company, LLC research.

**DIS ROA Trends**

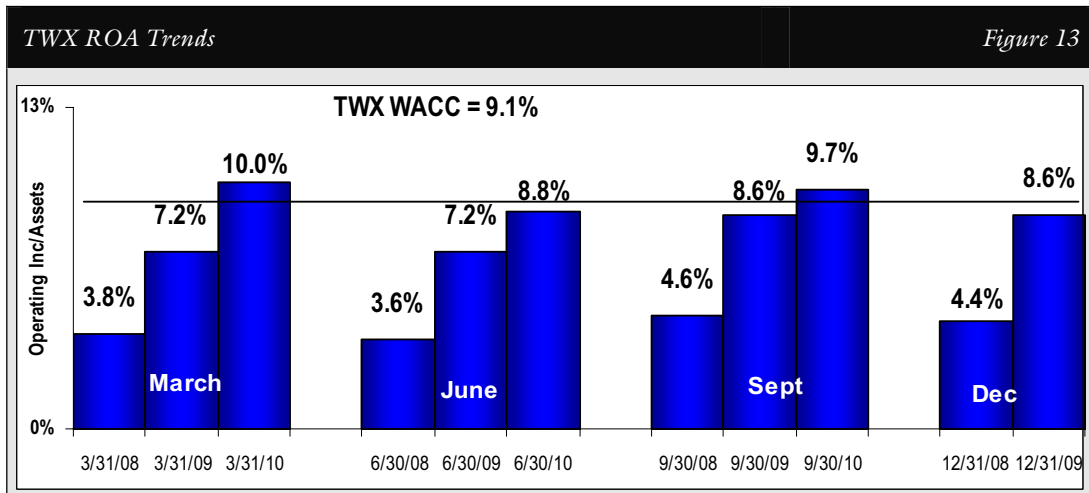
DIS’s ROAs generally range from 11-17%, well above its WACC of 8.7%. The diversity of DIS’s business makes its ROAs relatively stable across the fiscal year, despite the hit-driven nature of its content assets. In the most recent quarter ended September 30, 2010, DIS’s ROA fell both year over year and quarter over quarter, thereby reversing its steady progress reported during the first three quarters of FY10.



Source: Company reports, Needham & Company, LLC research.

**TWX ROA Trends**

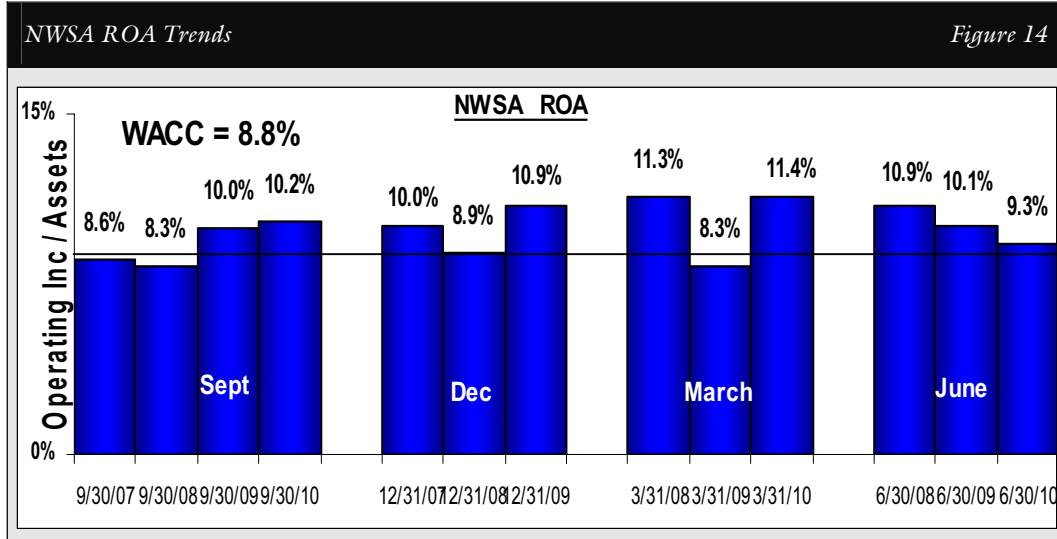
TWX’s ROAs have hovered between 7% and 10%, ever since TWX spun off its cable assets. TWX’s WACC is about 9.1% and TWX reached that level in two of the past four quarters. Importantly, the diversity of TWX’s businesses make its ROAs relatively stable across the fiscal year despite the hit-driven nature of its content assets. Seasonality is not particularly evident.



Source: Company reports, Needham & Company, LLC research.

**NWSA ROA Trends**

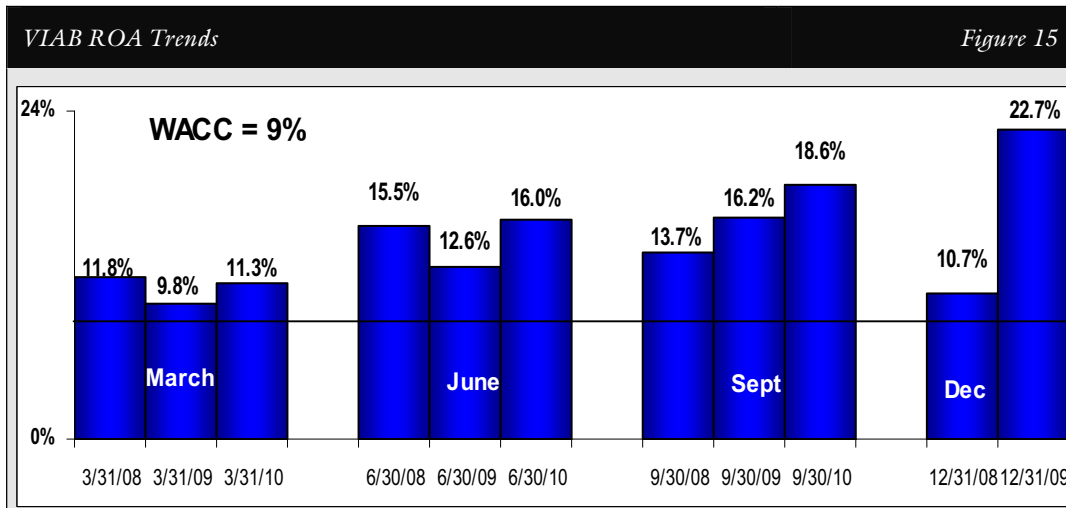
NWSA’s ROAs have hovered between 8% and 11% for the past 13 quarters. NWSA’s WACC is about 8.8% and NWSA has reached that level in 10 out of the past 13 quarters, including the quarter just ended, September 30, 2010. Importantly, the diversity of NWSA’s businesses makes its ROAs relatively stable across the fiscal year, despite the hit-driven nature of its content assets.



Source: Company reports, Needham & Company, LLC research.

**VIAB ROA Trends**

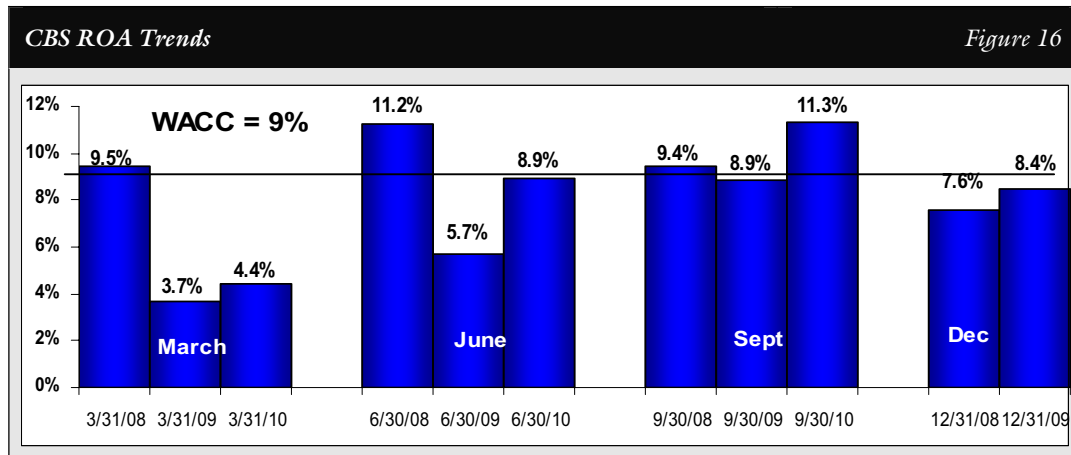
VIAB’s ROAs (defined as EBITDA/Assets) have been up five quarters in a row. ROAs have been above VIAB’s WACC for the past 11 quarters, ranging from a low of 9.8% to a high of 22.7%. VIAB’s WACC is approximately 9.0%. We note that share prices tie closely to trends in ROIC, not the actual level of ROICs.



Source: Company reports, Needham & Company, LLC research.

### CBS ROA Trends

CBS's ROAs (defined as EBITDA/Assets) in the first nine months of FY 2010 are much higher than the similar period in FY 2009. CBS's WACC is approximately 9% and CBS's ROAs have surpassed that level only four times in the past 11 quarters, but this might in part relate to the asset allocation of its spin-off from Viacom. If CBS was overallocated assets in the spin-off, CBS would show extraordinarily low ROAs and Viacom would show high ROAs. We note that share prices tie closely to trends in ROIC, not the actual level of ROICs.



### ROIC-Based Investment Conclusions

Based on an analysis of returns on capital, we recommend CBS and VIAB in the entertainment sector. They are both companies that are generating enormous amounts of FCF and are using it to shrink their asset bases through share repurchases and debt repayment. This accelerates their ROIC improvement, which in turn is 85% correlated to a rising share price.

We estimate that CBS's ROIC will grow by about 100 basis points in FY11 (from 5.2% to 6.2%), despite the absence of political advertising revenue. CBS's weighted average cost of capital (WACC) will remain at about 9.0%, according to our estimates. CBS is a little below the valuation line (see Figure 1), which implies that its ROIC improvement should drive higher share price appreciation than its ROIC improvement implies. We publish a comprehensive analysis each quarter of the asset allocation and capital efficiency trends by segment for CBS.

We estimate that VIAB's ROIC will grow by about 230 basis points in FY11 (from 12.8% to 15.1%). VIAB's WACC will remain at about 9.0%, according to our estimates. VIAB's valuation is slightly above the valuation line (see Figure 1), which may mute the full impact of its ROIC improvement in FY11. We publish a comprehensive analysis each quarter of the asset allocation and capital efficiency trends by segment for Viacom.

Our 12-month target price for CBS is \$23 and risks to our target price include a softening economy, broadcast network ratings softness and anemic local advertising growth. Our 12-month target price for Viacom is \$43 and risks to our target price include Paramount's hit-driven film results, falling cable TV subscriptions and ratings weakness. Please see our full reports on these two companies for detailed models and valuation work. Appendix A includes detailed comparative valuation information for CBS and VIAB.

## Appendix A Comparative Valuation Information

Table 1 Summary Comparative Financial & Valuation Information \$ and shares in millions, except per share data													
Laura Martin's Coverage				2011E Multiples				Break-even DCF	12/20'10			Conflicts Disclosure	
Sorted by Industry	Ticker	Market Cap (\$B)	Rating	EV/ EBITDA	P/E	EV/ FCF	FCF Yield	Target Price	Current Price	Target/ Current			
<b>Content Companies</b>													
1	ACL, Inc.	ACL	\$3	BUY	4.4	15.6	6.3	12.6%	-15.5%	\$35.00	\$23.96	46%	B
2	CBS	CBS	\$13	BUY	8.2	13.8	14.0	11.6%	0.2%	\$23.00	\$18.92	22%	B
3	Discovery Communications	DISCA	\$18	HOLD	11.0	20.2	19.4	5.8%	2.1%	NA	\$42.42		B
4	Disney	DIS	\$71	HOLD	8.1	15.5	24.3	4.7%	4.4%	NA	\$37.06		B, G
5	NewsCorp	NWS	\$42	BUY	7.6	14.9	17.7	6.2%	0.3%	\$20.00	\$16.11	24%	B, G
6	Time Warner Inc	TWX	\$36	HOLD	7.5	12.4	20.0	7.0%	0.4%	NA	\$31.65		B
7	Viacom	VIA	\$23	BUY	7.5	12.0	17.0	7.5%	0.9%	\$43.00	\$38.59	11%	B
8	Warner Music	WMG	\$0.9	BUY	7.1	(6.7)	15.6	17.9%	-7.5%	\$8.50	\$5.63	51%	B
Industry Total/Average			\$205		7.7	12.2	16.8	9.2%	-1.9%	NA	\$26.79	NA	
<b>Cable Companies</b>													
9	Mediacom	MCCC	\$0.6	HOLD	7.6	NM	NM	NM	0.6%	NA	\$8.45		B, G
10	Time Warner Cable	TWC	\$23	BUY	6.1	15.3	41.9	4.5%	1.4%	\$65.00	\$65.26	0%	B
Industry Total/Average			\$23		6.8	15.3	41.9	4.5%	1.0%	\$65.00	\$36.86	-0.4%	
Total/Average from Above			\$229		7.2	13.8	29.3	6.8%	-0.4%			NM	
Sorted by Industry	WACC	Revenue 2011E	OIBDA 2011E	EPS 2011E	EV	Net Debt	Debt/ OIBDA	Debt Rating	FCF	FCF/ Share	Dividend/ Share	Div. Yield	
\$ in millions, except per share data													
<b>Content Companies</b>													
1	ACL, Inc.	10.5%	\$2,093	\$480	\$1.53	\$2,100	(\$1,000)	(2.1)	BBB	\$333	\$3.01	\$0.00	NA
2	CBS	9.1%	\$14,332	\$2,555	\$1.37	\$20,871	\$7,150	2.8	BBB-	\$1,495	\$2.20	\$0.20	1.1%
3	Discovery Communications	9.1%	\$4,085	\$1,807	\$2.10	\$19,864	\$2,550	1.4	BBB+	\$1,022	\$2.45	\$0.00	NA
4	Disney	8.7%	\$40,511	\$9,991	\$2.39	\$80,907	\$10,250	1.0	A	\$3,335	\$1.75	\$0.35	0.9%
5	NewsCorp	8.8%	\$34,790	\$6,099	\$1.08	\$46,361	\$3,300	0.5	BBB+	\$2,617	\$1.01	\$0.15	0.9%
6	Time Warner Inc	9.1%	\$28,050	\$6,705	\$2.54	\$50,023	\$11,600	1.7	BBB	\$2,507	\$2.21	\$0.85	2.7%
7	Viacom	9.0%	\$14,241	\$3,890	\$3.22	\$29,365	\$5,400	1.4	BBB	\$1,725	\$2.91	\$0.60	1.6%
8	Warner Music	9.1%	\$2,782	\$336	(\$0.84)	\$2,370	\$1,420	4.2	BB-	\$152	\$1.01	\$0.00	NA
<b>Cable Companies</b>													
9	Mediacom	9.2%	\$1,515	\$570	\$0.63	\$4,305	\$3,680	6.5	B+	\$124	\$1.75	\$0.00	NA
10	Time Warner Cable	9.1%	\$19,491	\$7,051	\$4.27	\$42,760	\$20,500	2.9	BBB	\$1,021	\$2.92	\$1.60	2.5%

Sources: Needham & Company, LLC estimates, Company documents, FirstCall, Yahoo Finance.

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**ANALYST CERTIFICATION**

I, Laura Martin, hereby certify that the views expressed in this research report accurately reflect my personal views about the subject company (ies) and its (their) securities. I also certify that I have not been, am not, and will not be receiving direct or indirect compensation in exchange for expressing the specific recommendation(s) in this report.

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Companies mentioned in this report under coverage by Needham & Company, LLC:

<b>Company</b>	<b>Symbol</b>	<b>Closing Price 12/31/2010</b>	<b>Rating</b>	<b>Disclosures</b>
AOL	AOL	\$23.71	Buy	B
CBS Corp.	CBS	19.05	Buy	B
Discovery Communications	DISCA	41.70	Hold	B, G
Mediacom Communications	MCCC	8.47	Hold	B, G
NewsCorp	NWSA	14.56	Buy	B, G
Time Warner Cable, Inc.	TWC	66.03	Buy	B
Time Warner, Inc.	TWX	32.17	Hold	B
Viacom, Inc. CL B	VIAB	39.61	Buy	B
Walt Disney Co.	DIS	37.51	Hold	B
Warner Music Group	WMG	5.63	Buy	B

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	% of companies under coverage with this rating	% for which investment banking services have been provided for in the past 12 months
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Buy	62	15
Hold	28	5
Underperform	<1	0
Rating Suspended	2	0
Restricted	0	0
Under Review	0	0

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