Pricing Strategies in a Digital World

Laura Martin
Scott J. Wallsten

Available at: https://works.bepress.com/scott_wallsten/62/
Pricing Strategies in a Digital World

The best question for media investors today is whether digital platforms will add or destroy value for TV and film creators and distributors. We believe that pricing strategies may well determine who wins and loses. Our primary conclusions include:

1. The demand curve for content in the digital world follows power laws and does not resemble the traditional demand curve in the analog world.

2. A key implication is that pricing strategies in the digital world that target the 10% of customers that represent 90% of economics have the best chance of adding value to existing ecosystem economics.

3. New content that targets, curates and super-serves the “super-fan,” such as MLB.tv priced at $100 per season, suggests a value-added pricing strategy.

4. Advertising-driven business models (like Hulu) in the online world threaten to chip away at the sharp edges of the TV ecosystem’s robust economics and undermine value for both content and distribution companies. Owing to the fixed cost structure of these businesses, profit risk is higher than revenue risk.

5. We urge caution with the notion that the Internet gives content owners a direct relationship with their customers. There are near-monopoly gatekeepers (Facebook, Google, etc.) between content and their consumers on the Internet, and an algorithm change can undermine content’s ranking (such as demand media’s experience with Google last week) with no negotiating recourse. Content’s current distribution partners have proven themselves thoughtful intermediaries, and content can protect its rights through recurring contract negotiations.

Investment Recommendations
Based on this work, we recommend CBS in the TV space and AOL in the Internet space. Both of these companies are strategically well positioned to take advantage of the new shape of the digital demand curve as consumers shift their viewing to digital platforms.
Key Takeaways from This Report

The best part of my job is that I get to work with geniuses. This month, I have the great privilege of collaborating with Dr. Scott Wallsten of the Technology Policy Institute and previously of the FCC. Dr. Wallsten has a Ph.D. in economics from Stanford and is a thinker who pushes my Wall Street frameworks to higher levels of mathematical accountability.

Together, Dr. Wallsten and I are going to attempt to show that the shape of the demand curve is different in the analog world vs. the digital world. As a result, we will further posit that this has implications for pricing strategy in the digital world for content companies.

This research keeps a tight focus on the content companies and their economics within the TV ecosystem both before and after the digital transition. Pricing strategies for content companies that add and destroy value are in the spotlight in this report.

I recommend Dr. Wallsten’s work. He can be reached at 202-730-9441 and scott@wallsten.net.

Other Industry Reports Published by Laura Martin, CFA

2/2/2011 · The Economics of Sports
1/2/2011 · ROIC Trends in the Entertainment Industry
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

Cover photo licensed from ann e. cutting fine photography · www.cutting.com
**Traditional Demand Curve—The Analog World**

Harking back to your college days, sitting through an introduction to micro-economics, you may recall a typical demand curve graph. Price is on the vertical (y) axis and unit demand is on the horizontal (x) axis.

- Demand is “elastic” if a 10% price increase results in demand falling by more than 10%.
- Demand is “inelastic” if a 10% increase in prices results in unit demand falling by less than 10%.
- Whether demand for a particular good is elastic or inelastic, the slope of the demand curve is similar enough across all relevant prices that, for the sake of projecting revenues, it doesn’t much matter where on the curve you are. Thus, the change in quantity demanded is similar whether the price changes from $100 to $99 or whether it changes from $50 to $49.

Historically, demand for popular entertainment content has been inelastic—changes in prices have only small effects on quantity consumed—largely because any given piece of entertainment has few good substitutes. Figure 1 shows a typical demand curve from the analog world.

![Traditional Demand Curve—The Analog World](image)

**Source:** Dr. Scott Wallsten.

**Details**

Using Figure 1 as an example of a typical demand curve in the analog world, it is anchored at the high end by a very high price point at which there is almost no unit demand and at the low end by a price of free, whereby everyone that wants that good or service would take it.

For example, if Figure 1 represented demand for a TV channel, it suggests that at $100 per month, there would be almost no demand for the channel and at free 90 million subscribers would avail themselves of this channel.
Demand Curve for the TV Ecosystem

Are all demand curves this shape? No. What is the shape of the demand curve for the TV ecosystem? The demand curve for the TV ecosystem is supply-constrained owing to the three major bundles offered by the distributors, for which there are poor substitutes. This structure maximizes profits for the TV ecosystem.

This supply-constrained environment is profit maximizing because it creates a demand curve that is flatter than a normal demand curve. It appears as a step function, not a rapidly downward sloping line. It prices the product in such a way that most households are charged as if they are “heavy users.” And in fact they are typically heavy users of about 14 channels each month. But to watch the 14 channels that are important to them each month, households must pay for 150 channels, many of which they don’t watch at all. Figure 2 comes from data published by the FCC for the cable industry.

The TV ecosystem has solved the problem of the “tyranny of choice” (which the Internet suffers from) by bundling its enormous number of channels into essentially three choices: basic cable, expanded basic and premium bundles. That is, the consumer must choose from nearly nothing, something, or everything. It’s like tall, grande and vente or bronze, silver and gold levels of service or small, medium and large. Often the best marketers rely on offering only three choices to consumers.

Is this industry structure bad for consumers? We would argue “no.” This supply-constrained ecosystem funds far more voices (channels) than would survive in an a la carte world. The 80/20 rule that is prevalent in the analog world suggests that only 20-30 channels would survive (and at lower cost structures) in an a la carte world compared to >150 channels today. Minority and special interest channels would be unlikely to survive. Since most households watch some channels that would not survive in an unbundled world, the bundled world clearly delivers benefits to most consumers.
Demand Curves in the Digital World

Is the demand curve in the digital world different? Yes. What is the shape of the demand curve in the digital world? Most folks will recognize the shape of Figure 3 because it resembles the “long-tail” demand curve popularized by Chris Anderson in his 2007 book entitled “The Long Tail.”

In the digital world, the demand curve often follows power laws. What is a power law? When the frequency of an event (e.g., unit demand) varies as a power of some attribute (e.g., its price), the frequency is said to follow a power law. This implies that small changes in pricing have an enormous impact on unit demand and most of the unit demand creates little economic value. Demand curves in the digital world are “hyper-elastic” at parts of the curve vs. hyper-inelastic at the top of the curve. Interestingly, when plotted on logarithmic paper, the demand curve in the digital world resembles the traditional demand curves in the analog world.

Figure 3 is derived from Pew Internet and American Life Foundation survey data, October 2010, asking how much people would pay for digital products and services above what they pay for their Internet access. It shows the distribution of online spending and illustrates that a tiny number of subscribers account for a large share of spending. Their findings concluded that the top 2% of spenders account for 52% of all digital spending while the top 10% account for 80% of total spending. This curve is far steeper than in the analog world, where 20% of customers typically represent 80% of revenue.

Our own survey results mirror these findings. We completed a proprietary survey of 200 cable/satellite/telco subscribers, asking them what they would pay for ABC, Fox Broadcast Network, ESPN, MTV, Nickelodeon, Disney Channel, Comedy Central and Fox News. Each demand curve follows a power law distribution with the top 10% of respondents representing over 50% of total economics. We include the demand curves and payment details from our proprietary survey in Appendix A.
Pricing Strategies in the Digital World

We believe the differing shapes of the demand curve in the digital vs. analog world suggests that a successful pricing strategy for content companies is to target and super-serve the price-insensitive “super-fan” and “ultra-engaged-users” at the high end (hyper-inelastic) of the digital demand curve.

The Internet is perfect for identifying and curating small audiences. We posit that a premium pricing strategy targeted at passionate consumers of hit content is the best way to add value. Tactically, if content companies use their mass reach from the TV to push super-fans to a website where the business model is predicated on generating incremental revenue from ultra-heavy users, that should represent incremental economics coupled with little risk of undermining the current economic ecosystem.

Figure 4 juxtaposes the demand curves in the current TV ecosystem vs. the demand curve in the digital world. It clearly suggests that a pricing strategy aimed at the top end of the digital demand curve (see the shaded area between 68 and 98) has the highest likelihood of adding value to the currently favorable economics of the bundled TV ecosystem.

![Pricing Strategies that Add Value in a Digital World](image)

Source: FCC, NCTA, Dr. Scott Wallsten.

Case Study: MLB Digital Initiatives

Major league baseball (MLB) has been the most aggressive content owner at super-serving the super-fan via the Internet. It accomplishes this via MLB.tv, which offers no free content. All content is paid for by fans for one season at a time. The regular MLB plan was priced at about $100 for the 2010 season. The MLB premium plan was about $120. Premium subscribers can see archived games after the blackout period. These prices are for regular season games only, no playoffs. Archived games are available for $24 in the offseason. We do not think this premium pricing structure for MLB’s digital content threatens the TV ecosystem.
Playoffs. MLB.tv also offers a post-season online service for the playoffs. It is $9.95 in addition to the regular season, blackout free, and employs broadcast audio and multiple viewing angles the customer can select. This product is marketed as an “extra” add-on service to TV coverage, and avid fans state that it is insufficient on a stand-alone basis. We estimate that MLB.tv had ~750,000 online video subscribers in 2010 and total revenue of $70-100 million in 2009.

MLB is in TV Everywhere. Beginning in NYC (with the Yankees) and San Diego, MLB allows in-market streaming if a MLB.tv subscriber is also a customer of the local cable/Internet service that carries the channel broadcasting the game. MLB expects many additional franchises to make similar deals by the end of 2011. This helps the TV ecosystem retain subscribers and makes MLB a good partner to the distribution companies in the ecosystem.

MLB mobile initiatives. “MLB At Bat” was the Apple app store’s highest grossing application in 2010 (the price is $15), according to MLB. It was accessed 37 million times during the postseason. MLB At Bat had 1.2 million downloads during the 2009 World Series at $15 each by our estimates.

Is Sports Different?

Does sports content have more value than entertainment content? It depends. We think the answer is no at the premium quality, hit-driven end of the entertainment spectrum. We believe that the demand curve in the digital world holds the same power law shape across all forms of content and that this implies that there are 1-2 million viewers for many of the top-10 TV series on TV. For example, we believe there are >1 million viewers of the CSI franchise (all 3 of them) that would pay $50-80 per season for chat rooms with the stars, tickets to CSI tapings, footage that was cut from the final episode, etc. Any viewer that pays $50-80 per season for CSI content (a small portion of CBS's network schedule) is probably NOT going to turn off the TV bundle for $52-67 per month because it airs LOTs of CSI content. Worst case, finding and super-serving these viewers (evangelists) elongates the lifespan and stickiness of the show. Best case, it creates a new profit center for expensive hit content and makes the biggest hits more profitable.
Advertising-Driven Pricing Strategies Undermine Value

Between 1950 and 1959, the number of television sets rose from 5 million to 42 million (85% of households). The monetization for TV broadcasters between 1950 and 2009 was nearly 100% from advertisers. Therefore, as high-speed modem penetration grew in the U.S., three of the four broadcasters put their broadcast content (the highest-cost content on TV) on Hulu and on their websites and pursued an advertising-driven business model. However, the Internet is ill-suited for “top-of-the-purchase funnel” goals owing to its fractured audiences. Nearly 50% of TV viewing is of the broadcast TV networks and when this content is available on the Internet for free, it encourages consumers to not pay the $60 per month to the cable/satellite/telco company.

Bottom line: because an advertising-based pricing strategy is predicated on maximizing the number of viewers, it competes with the middle of the bundled demand curve. The edges of the stair-steps collapse into the middle and the demand curve takes on a more traditional shape. The potential value destruction from this business decision is mathematically illustrated below.

Advertising-driven online pricing strategies encourage consumers to unbundle. Selling current content to low-cost subscription services like Netflix also encourages consumers to unbundle. Figure 7 illustrates conceptually what’s at risk when content companies unbundle their content from the current TV ecosystem. Figure 7 shows a “normalized” demand curve in an a la carte or prolific “over-the-top” world compared with the current demand curve for the TV ecosystem. The economics in between is what is at risk through unbundling.

Today, bundles of channels push out and “flatten” the demand curve. If demand for bundles decreases because other options are substitutable, the bundled demand curve collapses into a normalized demand curve, destroying the value between the two demand curves shown in Figure 7. This represents significant value leakage from the current TV ecosystem.
Today, the bundled ecosystem is a revenue-maximizing ecosystem for the incumbent participants. New entrants want revenue and are incented to give consumers higher value by improving consumer’s individual returns, which (by definition) pushes consumers toward a more typical demand curve or, even worse, a digital demand curve.

As the number of choices of how to view your favorite TV channels increases, the risk is that it becomes more difficult to identify and group the low, medium, and high-demand groups, and the demand curve loses its “flatness” created by the three bundle options. Bottom line: revenues in an a la carte world are much less than those in a bundled world.

When technology investors insist that the consumer always wins and the TV ecosystem is doomed, they assume that the demand curve of the current TV ecosystem will give way to a more normalized demand curve shape over time. We are less pessimistic.

- We believe that pricing strategies that are based on the different shape of the digital vs. analog demand curves imply that content creators can generate extra revenue by identifying and super-serving the super-fans of their hit content.
- We think the content companies are accurately skeptical of the new digital partners. The music labels generally regret their decision to give up pricing power to Apple because at $0.99 per song, the consumer “unbundled” the music album, cutting out 80% of revenue from the music ecosystem. Google search eviscerated the newspaper business by selling advertising alongside that premium content while the newspapers lost 80% of their market value.
- The gatekeepers that sit between consumers and content on the Internet are often larger and in many ways scarier and they change more often than intermediaries in the physical world. This makes them harder to predict and difficult to influence over the long term, adding risk to content’s long-term goals.

**Rigorous Economic Analysis of Value Destruction Risk**

Bundling video content reduces the economic effects of differing preferences across consumers because pure price discrimination is not possible. There are important positive economic implications of bundling. The first implication of bundling is that it increases revenue and results in some consumers purchasing channels they would not purchase in an a la carte world. Figure 8 shows (with math) why bundling channels is typically more lucrative than selling them a la carte:

- Angela is willing to pay $90 to subscribe to network 1 and $10 to subscribe to network 2. Bob will pay $55 for network 1 and $45 for network 2. Cindy will pay $40 for network 1 and $60 for network 2. Dave will pay $10 for network 1 and $90 for network 2.
- If the channels are offered a la carte, the revenue-maximizing price for network 1 is $40 and Angela, Bob and Cindy subscribe to it. The revenue-maximizing price for network 2 is $45 and Bob, Cindy and Dave subscribe. *Revenue to the TV ecosystem a la carte is $255.*
- Without other options available, the revenue-maximizing bundle price is $100 since each consumer is willing to pay that much for a bundle that includes both networks. *Revenue to the TV ecosystem from a bundle is $400.*
OTT Video Becomes Available

Bundling has been a successful and profitable strategy to date, but over-the-top video (OTT) threatens to undermine it. Over-the-top video is typically defined as traditional TV channel content that is delivered over the Internet rather than via TV wires. While OTT may complement linear programming today, consumers have only limited money and time for video entertainment. If OTT choices outside the bundle continue to grow, their success must come at the expense of the bundle.

Let’s now assume that Network 1 becomes available as an over-the-top option at a lower price. Even with only one of the networks available a la carte, the ecosystem collapses. With this sole change, nobody would purchase network 1 on the TV for $40 when it is available OTT for $35, and only Dave would continue to subscribe to a $100 bundle. Angela, Bob and Cindy would all purchase Network 1 via the OTT option for $35 and view the bundle as paying an additional $65 for network 2. None of them value network 2 that highly so none of them buy the bundle. Figure 9 illustrates these economic consequences.
Impact of OTT Option

Figure 9

Source: Dr. Scott Wallsten.

Ecosystem Impact from OTT

If any one competitor follows this OTT pricing strategy and the incumbent distributors cannot change this OTT price, the revenue-maximizing pricing strategy for all distributors changes. The a la carte revenue-maximizing price for network 1 becomes $35, since if it is any higher, three of the consumers will simply choose the OTT option (Dave values network 1 only at $10, so he still will not subscribe to network 1), and for network 2 becomes $45. The economics to the incumbents and to the ecosystem as a whole collapse. Total a la carte revenue decreases to $240, some of which will go to the OTT entrant.

The revenue-maximizing bundle price falls to $80. At that price, Bob, Cindy and Dave are all willing to purchase the bundle. Angela would not choose the bundle because she views it as an additional $45 for network 2 when she can already get network 1 for $35. Total revenue to this TV ecosystem is $275: $240 for the bundle and $35 from Angela for the OTT option.

If network 2 also became available OTT for a lower price, the maximum price the distributors can charge for that network a la carte would similarly fall to the OTT price. If the OTT price for network 2 is sufficiently low nobody will purchase the bundle.

Risk Profile Rises from Unbundling

The second economic implication of bundling is that the distribution of revenue across consumers is far more uniform than it would be otherwise. In our example, although each subscriber values each network within the bundle differently, each subscriber contributes $100 in revenue to the TV ecosystem. Figure 10 captures the distribution of revenue in an a la carte world: Bob and Cindy generate the most revenue and Angela the least. This asymmetric distribution adds risk to the overall ecosystem because the predictability of value for each consumer falls.
In the digital world, however, the economic risk to the bundle is higher because the demand for digital goods is skewed to a small number of subscribers. That is, a small number of consumers are willing to pay a lot for access to specific content they value.

**Investment Recommendations**

**CBS (CBS, Buy, Target Price $28)**

We believe that the TV broadcasters such as CBS, ABC (DIS, Hold), Fox (NWSA, Buy) and NBC (CMCSA, Not Rated) are most likely to produce the type of hit content that can be monetized by charging consumers at the top end of the digital demand curve. CBS is our top TV pick from this work.

1. **Outstanding strategic position.** The best positioned content companies own top-ten TV shows, own their copyrights, have long-term library value, and global revenue upside potential. CBS meets all these criteria.
2. **Revenue growth.** We believe that CBS has $3 billion of incremental revenue sources over the next 2-4 years, including:
   - $1B from retransmission consent fees and reverse compensation from station affiliates. CBS has a goal of $250MM in retransmission fees from its O&O stations by 2012.
   - $1B from content library licensing deals (like Netflix).
   - $500MM from international syndication sales.
   - $500MM from local digital.
3. **Margins on the rise.** CBS generated a 23% EBITDA margin in 2007 and has stated that it will exceed that level by 2012, driven by the presidential election cycle, higher payments from the new Comcast deal, plus their NCAA sublet deal with Turner Broadcasting. Since the nascent advertising recovery should continue for 3-5 years, CBS’s margin expansion momentum should continue well after this “visible” two-year period.
4. **New digital devices drive value for CBS.** New devices (tablets, iPads) and platforms (Netflix, Amazon, etc.) need CBS’s library and new content. In the recently announced Netflix deal, CBS stated that it licensed less than 10% of its library for “hundreds of millions
of dollars” (we estimate $200-250MM). This two-year deal was non-exclusive. Therefore, we expect CBS to offer the same deal to Amazon’s new streaming service. CBS has the option (but Netflix does NOT) to renew the deal for an additional two-year term. Making very old library product available to Netflix for an astronomical amount of money feels additive to the ecosystem to use. We do not think 20-50-year-old TV episodes compete with new shows on CBS, nor does it threaten the value of the TV ecosystem, in our view. At these prices, Netflix must raise its price to consumers over time, which lessens its advantage compared with the TV ecosystem.

5. **CBS is “de-risking” itself.** Cost cutting of about $400MM during the recession, pushing out long-term maturities of debt instruments, the renegotiated NCAA deal, shifting revenue mix away from advertising focused, and Outdoor transit contracts all indicate lower risk to the CBS story.

6. **International upside.** CBS’s high-quality premium (expensive) content generated $1B of international revenue in 2010, which we believe is growing at double-digit rates. International syndication will be a core driver of CBS’s revenue mix moving away from an advertising-driven business model. Over the past 10 years, 22 CBS shows have been sold into syndication, 15 of which CBS owns or co-owns. Going forward, we believe that CBS will try to own 100% of more of its shows in order to keep more of the upside and because new deals for digital platforms are easier to navigate if CBS owns all the rights.

7. **Return of capital.** CBS’s $1.5 billion buyback plan is on track with about $250MM completed in 1Q/11. The Board continues to discuss a potential hike in dividends. No serious M&A activity right now.

8. **Cyclical strength.** The scatter TV market up 35% over last May’s upfront prices in 4Q10 and up 40% currently (1Q11), implying that this year’s May upfront market (where 80-90% of Network TV advertising time is sold) will be robust. Advertising revenue typically has 70-80% incremental profit margins.

9. **Borders bankruptcy exposure muted.** Simon & Shuster stopped shipping books to Borders on December 31, 2010 and CBS took steps to minimize its exposure. When asked if their exposure was $34 million or less, CBS implied that their exposure to Borders was much lower than that.

Risks to our target price for CBS include economic weakness, a less robust advertising cycle, and potentially falling price points on digital platforms.

**AOL (AOL, Buy, Target Price $35)**

We think this work suggests that AOL is well positioned to benefit from the high end of the digital demand curve. AOL is going after the high end of the monetization spectrum on the Internet, the branded advertiser. According to comScore, only 6% of branded advertising is online today as compared to 30% of direct response advertising. The key to closing this gap is targeting the high end of the monetization demand curve in the digital world, including the largest branded advertisers (consumer products companies, autos, etc.). More specifically, our Buy rating and 12-month target price of $35 on AOL is predicted upon the following analytical building blocks:

1. **The brand identity of the Internet today is about discounting.** Consumers go to the Internet when they already know what they want to buy and they expect to get it for a discount online. Ebay, Amazon, Google and Groupon are some of the most successful companies in the Internet space and they all provide a valuable service by often saving consumers money. CEO Tim Armstrong calls this “the race to the bottom [of the purchase funnel].”
2. Some branded advertisers do NOT want to introduce themselves to their next client via a discount. Many premium brands spend millions of dollars a year in TV, radio, magazine and newspaper advertising creating a price-premium brand. The discounting focus of the Internet is one reason that the largest advertisers have been largely absent from the Internet to date, in our view.

3. AOL’s “Project Devil” is targeted at capturing this unmet monetization demand. CEO Tim Armstrong has excellent relationships with large brand advertisers and is delivering what they are asking for: a safe environment of content with only one advertisement per page. The Devil ads are flexible enough to include still pictures, video, text and a mapping function showing the closest retail store. These sections are changeable by advertisers real-time.

4. How big an opportunity is this? Total TV advertising was ~$60B in 2010 (as per Magna Global) vs. display advertising ~$10B (IAB), meaning there is another $50B that potentially could move online from the traditional TV media. These large brand advertisers do not want to risk that the 94% of their advertising budgets spent on TV to build their brand message is undermined by discounting on the Internet (6% of spending).

5. On the local side, AOL, through its Patch product, is well positioned to monetize local merchants ad spending. We estimate that Patch charges a $100 CPM vs. Devil at a $30 CPM. We believe that Patch markets are profitable within 12 months.

6. How big an opportunity is this? About 80% of total household spending is done within 12 miles of home. Patch is a community network. We think the upside here could be enormous.

Risks to our target price for AOL include poor integration of the Huffington Post, escalating employee turnover, falling access revenue, and/or economic weakness.
Appendix A

In a proprietary survey, we asked 200 cable/telco/satellite TV subscribers how much they would pay for eight specific channels delivered over-the-top. All of their responses followed a similar pattern. Of the folks who were willing to pay for each channel, their price points followed a power law distribution. Typically, about 50% of respondents say they would pay zero. Of the payers, a few people are willing to pay $20-25 per month and typically >50% of “payers” will pay less than $2 per month.

Source: Needham & Company, LLC research.

### Appendix A

#### Willingness to Pay - 200 Subscribers

![Willingness to Pay - 200 Subscribers](image1)

Source: Needham & Company, LLC research.

#### Economics Concentrated at the High End of the Curve

![Economics Concentrated at the High End of the Curve](image2)

<table>
<thead>
<tr>
<th>Channel</th>
<th>% that would pay zero</th>
<th>% that would pay something</th>
<th>Revenue from top 2% (5 of 200)</th>
<th>Revenue from top 10% (20 of 200)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ABC Broadcast</td>
<td>38%</td>
<td>62%</td>
<td>19%</td>
<td>46%</td>
</tr>
<tr>
<td>Fox Broadcast</td>
<td>42%</td>
<td>58%</td>
<td>15%</td>
<td>44%</td>
</tr>
<tr>
<td>ESPN</td>
<td>48%</td>
<td>52%</td>
<td>20%</td>
<td>51%</td>
</tr>
<tr>
<td>Fox News</td>
<td>65%</td>
<td>36%</td>
<td>25%</td>
<td>60%</td>
</tr>
<tr>
<td>Comedy Central</td>
<td>40%</td>
<td>60%</td>
<td>18%</td>
<td>46%</td>
</tr>
<tr>
<td>MTV</td>
<td>65%</td>
<td>35%</td>
<td>26%</td>
<td>62%</td>
</tr>
<tr>
<td>Disney Channel</td>
<td>54%</td>
<td>46%</td>
<td>18%</td>
<td>45%</td>
</tr>
<tr>
<td>Nickelodean</td>
<td>58%</td>
<td>42%</td>
<td>25%</td>
<td>60%</td>
</tr>
<tr>
<td><strong>Averages</strong></td>
<td><strong>51%</strong></td>
<td><strong>49%</strong></td>
<td><strong>21%</strong></td>
<td><strong>52%</strong></td>
</tr>
</tbody>
</table>

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

**ANALYST CERTIFICATION**

I, Dan Medina, 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.
Companies mentioned in this report under coverage by Needham & Company, LLC:

<table>
<thead>
<tr>
<th>Company</th>
<th>Symbol</th>
<th>3/7/2011</th>
<th>Rating</th>
<th>Disclosures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amazon</td>
<td>AMZN</td>
<td>169.08</td>
<td>Hold</td>
<td>B, G</td>
</tr>
<tr>
<td>AOL</td>
<td>AOL</td>
<td>19.26</td>
<td>Buy</td>
<td>B</td>
</tr>
<tr>
<td>Apple</td>
<td>AAPL</td>
<td>355.36</td>
<td>Buy</td>
<td>A, B, G</td>
</tr>
<tr>
<td>CBS Corp.</td>
<td>CBS</td>
<td>23.62</td>
<td>Buy</td>
<td>B</td>
</tr>
<tr>
<td>Google</td>
<td>GOOG</td>
<td>591.66</td>
<td>Buy</td>
<td>B, G</td>
</tr>
<tr>
<td>Netflix</td>
<td>NFLX</td>
<td>207.40</td>
<td>Underperform</td>
<td>B, G</td>
</tr>
<tr>
<td>NewsCorp</td>
<td>NWSA</td>
<td>17.21</td>
<td>Buy</td>
<td>B, G</td>
</tr>
<tr>
<td>Viacom, Inc. CL B</td>
<td>VIAB</td>
<td>46.16</td>
<td>Buy</td>
<td>B</td>
</tr>
<tr>
<td>Walt Disney Co.</td>
<td>DIS</td>
<td>43.02</td>
<td>Hold</td>
<td>B</td>
</tr>
</tbody>
</table>
Thomas A. Maloney, CFA  
Director, Equity Research  
(212) 705-0366
Craig Bisagna  
Research Coordinator  
(212) 705-0488

CLEAN TECHNOLOGY & INDUSTRIAL GROWTH
Sean K. F. Hannan  
Electronic Manufacturing Services, Electronic Components & Smart Grid  
(617) 457-0906
Michael Lew  
Energy Efficiency  
(212) 705-0383
Y. Edwin Mok  
Solar Photovoltaics  
(415) 262-4896
Conor Irvine  
Research Associate  
(415) 262-4886
James Ricchiuti  
Display, Vision & Imaging Technologies; Industrial Technology  
(212) 705-0381

COMMUNICATIONS & ENTERPRISE INFRASTRUCTURE
Glenn Hanus  
Enterprise Storage/Datacenter Technology  
(212) 705-0361
Richard J. Kugele  
Disk Drives & IT Distribution/IT Hardware & Software  
(617) 457-0908
Richard F. Valera  
Communications Infrastructure  
(212) 705-0373

CONSUMER
Christine Chen  
Specialty Retail  
(415) 262-4877
Laura Martin, CFA  
Entertainment, Cable & Media  
(917) 373-3066
Dan Medina  
Research Associate  
(212) 705-0295
Mark May, CFA  
Internet Services & Digital Media  
(212) 705-0317
Kevin R. Allen  
Research Associate  
(212) 705-0405
Sean McGowan  
Leisure & Lifestyle  
(212) 705-0466
Charles R. Wolf  
Digital Lifestyle  
(212) 705-0447

HEALTHCARE
Mark Monane, M.D.  
Biotechnology & Life Sciences  
(212) 705-0346
Bryan Huang  
Research Associate  
(212) 705-0284
Alan Carr, Ph.D.  
CNS/Metabolic Disorders, Inflammatory & Infectious Disease  
(212) 705-0435
Dalton L. Chandler  
Medical Technology  
(212) 705-0315
Elliot Wilbur, CFA  
Specialty Pharmaceuticals  
(212) 705-0333
Serge Belanger  
Research Associate  
(212) 705-0407

SEMICONDUCTORS & SEMICONDUCTOR EQUIPMENT
N. Quinn Bolton, CFA  
Communication ICs & Consumer Semiconductors  
(212) 705-0322
Jason Rechel  
Research Associate  
(212) 705-0446
Vernon P. Essi, Jr.  
Analog & Mixed Signal Semiconductors  
(617) 457-0948
Rajvindra S. Gill  
Consumer Semiconductors  
(212) 705-0355
Y. Edwin Mok  
Semiconductor Equipment  
(415) 262-4896

SOFTWARE
Michael Huang  
SaaS/Application Software  
(415) 262-4898
Jonathan C. Maietta  
Enterprise Software  
(617) 457-0943
Richard F. Valera  
Electronic Design Automation  
(212) 705-0373
Scott Zeller  
Enterprise Software  
(617) 457-0903

Lawrence Tarantino  
Managing Editor  
(212) 705-0402
Willie Johnson  
Graphic Design/Desktop Publishing  
(212) 705-0285
Needham & Company, LLC. employs a rating system based on the following (Effective July 1, 2003):

**Strong Buy**: A security, which at the time the rating is instituted, indicates an expectation of a total return of at least 25% over the next 12 months.

**Buy**: A security, which at the time the rating is instituted, indicates an expectation of a total return between 10% and 25% over the next 12 months.

**Hold**: A security, which at the time the rating is instituted, indicates an expectation of a total return of +/-10% over the next 12 months.

**Underperform**: A security, which at the time the rating is instituted, indicates an expectation that the price will depreciate by more than 10% over the next 12 months.

**Under Review**: Stocks may be placed UR by the analyst, indicating that the stock rating and/or price target are subject to possible change in the near term, usually in response to an event that may effect the investment case or valuation.

**Rating Suspended**: Needham & Company, LLC has suspended the rating and/or price target, if any, for this stock, because there is not a sufficient fundamental basis for determining a rating or price target. The previous rating and price target, if any, are no longer in effect and should not be relied upon.

**Restricted**: Needham & Company, LLC policy and/or applicable law and regulations preclude certain types of communications, including an investment recommendation, during the course of Needham & Company, LLC’s engagement in an investment banking transaction and in certain other circumstances.

For disclosure purposes (in accordance with FINRA requirements), we note that our Strong Buy and Buy ratings most closely correspond to a “Buy” recommendation. When combined, 70% of companies under coverage would have a “Buy” rating and 16% have had investment banking services provided within the past 12 months; Hold mostly correspond to a “Hold/Neutral” recommendation; while our Underperform rating closely corresponds to the Sell recommendation required by the FINRA.

Our rating system attempts to incorporate industry, company and/or overall market risk and volatility. Consequently, at any given point in time, our investment rating on a stock and its implied price appreciation may not correspond to the stated 12-month price target. For valuation methods used to determine our price targets and risks related to our price targets, please contact your Needham & Company, LLC salesperson for a copy of the most recent research report on the company you are interested in.

**To review our rating system prior to July 1, 2003 please refer to the following link:** http://www.needhamco.com/Research_Disclosure.asp.

Stock price charts and rating histories for companies under coverage and discussed in this report are available at http://www.needhamco.com/. You may also request this information by writing to: Needham & Co., LLC, 445 Park Ave., 3rd Floor (Attn: Compliance/Research), NY, NY 10022.

**ANALYST CERTIFICATION**

By issuing this research report, each Needham & Company, LLC analyst and associate whose name appears within this report hereby certifies that (i) the recommendations and opinions expressed in the research report accurately reflect the research analyst’s and associate’s personal views about any and all of the subject securities or issuers discussed herein and (ii) no part of the research analyst’s or associate’s compensation was, is or will be directly or indirectly related to the specific recommendations or views expressed by the research analyst or associate in the research report.

The following disclosures (as listed by letter on the cover page) apply to the securities discussed in this research report:

- **A** The research analyst and/or research associate (or household member) has a financial interest in the securities of the covered company (i.e., a long position consisting of common stock).
- **B** The research analyst and research associate have received compensation based upon various factors, including quality of research, investor client feedback, and the Firm’s overall revenues, which includes investment banking revenues.
- **C** The Firm has managed or co-managed a public offering of securities for the subject company in the past 12 months.
- **D** The Firm and/or its affiliate have received compensation for investment banking services from the subject company in the past 12 months.
- **E** The Firm and/or its affiliate expect to receive or intend to seek compensation for investment banking services from the subject company in the next three months.
- **F** The analyst or a member of the analyst’s household serves as officer, director or advisory board member of the covered company.
- **G** The Firm, at the time of publication, makes a market in the subject company.
- **H** The Firm and/or its affiliates beneficially own 1% or more of any class of common equity securities of the subject company.
- **I** The analyst received compensation from the subject company in the last 12 months.
- **J** The subject company currently is or during the 12-month period preceding the date of distribution of this research report was a client of the Firm and received investment banking services.
- **J1** The subject company currently is or during the 12-month period preceding the date of distribution of this research report was a client of the Firm and received non-investment banking securities related services.
- **J2** The subject company currently is or during the 12-month period preceding the date of distribution of this research report was a client of the Firm and received non-securities related services.
- **K** Our affiliate has received compensation for products and services other than investment banking services from the subject company in the past 12 months.

This report is for informational purposes only and does not constitute a solicitation or an offer to buy or sell any securities mentioned herein. Information contained in this report has been obtained from sources believed to be reliable, but Needham & Company, LLC makes no representation as to its accuracy or completeness, except with respect to the Disclosure Section of the report. Any opinions expressed herein reflect our judgment as of the date of the materials and are subject to change without notice. The securities discussed in this report may not be suitable for all investors and are not intended as recommendations of particular securities, financial instruments or strategies to particular clients. Investors must make their own investment decisions based on their financial situations and investment objectives. The value of income from your investment may vary because of changes in interest rates, changes in the financial and operational conditions of the companies and other factors. Investors should be aware that the market price of securities discussed in this report may be volatile. Due to industry, company and overall market risk and volatility, the securities current price, our investment rating may not correspond to the stated price target. Additional information regarding the securities mentioned in this report is available upon request. © Copyright 2011, Needham & Company, LLC, Member FINRA, SIPC.
Laura Martin, CFA
Managing Director, Needham & Company, LLC
Senior Analyst: Entertainment, Cable & Media

Laura Martin graduated from Stanford in 1980, Harvard Business School in 1983, and she holds a CFA designation. In 1983, Martin joined Drexel Burnham Lambert in investment banking, with a media company focus. In 1991, she moved to the “buy side” at Capital Research & Management as a media analyst, with money management responsibilities for a $500 million media-equity portfolio. Beginning in 1994, she worked on the “sell side” at Credit Suisse First Boston as the senior media analyst publishing research on the largest U.S. entertainment and cable companies. She was nationally ranked by Institutional Investor magazine each year between 1999 and 2001. In 2002, Martin moved to Paris to become EVP of Financial Strategy and Investor Relations for Vivendi Universal. In 2004, she founded Capital Knowledge, LLC (www.CapKnowledge.com), a financial consulting firm providing expert witness testimony, capital markets advice, and valuation services to senior management teams. In the same year, she founded Media Metrics, LLC publishing equity research on the largest entertainment, cable and Internet stocks in the U.S., where she was nationally ranked as “Best of the Independent Research Boutiques” by Institutional Investor for many years. In 2009, Martin moved to Needham & Company, LLC, where she continues to publish research on large U.S. entertainment, cable and media companies.