



## INTERNET SERVICES

### Mobile Advertising: The Hype, The Hope, And The Financial Reality

FAVORABLE

Industry Overview

#### INTERNET, MEDIA AND TELECOM

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certification and other  
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starting on page 10 and  
continuing through page 14.

The Mobile Ecosystem Emerges: An Integral Part of the Digital Marketing Mix

This week we offered a keynote address at a mobile marketing conference in Los Angeles. Our optimistic view on the future of mobile marketing hinges on the simultaneous growth in users, usage, and monetization of the mobile advertising and marketing platforms. In brief, we believe that the mobile ecosystem is becoming an integral part of the digital marketing mix and that its growth will create opportunities (and big changes) for consumers, marketers, and agencies alike.

Some additional items addressed in this report:

**Complexity of the mobile ecosystem.** The mobile marketing ecosystem is an order of magnitude more complex than the desktop or “tethered” Internet, largely due to the alignment required between carriers, handset OEMs, operating systems, and third party application developers, just to make a campaign happen.

**Opportunity: Mobile Advertising and Marketing Could Reach \$820 million in 2010, up over 60%.** Our research shows that the fourth quarter of 2009 marked a huge acceleration in the realization of revenues for 3<sup>rd</sup> party mobile ad networks and other key parts of the ecosystem. The growth of mobile search is an unknown factor – while query growth continues to be explosive, the monetization will likely be tied to outcomes other than just clicks. Our base case anticipates \$1.9 billion in mobile marketing and advertising revenues by 2014, growth of over 50% per year.

**Adoption of Apple and Android-based phones are key.** The iPhone’s seamless integration is impressive while Google’s Android operating system is enabling strong competitors in Motorola, HTC, and others. According to industry data, there has been a surge in overall ad impression volume tied to Android phones. The spirited rivalry will help to develop the ecosystem, we believe. Together, these competitors have achieved over half of all smartphone ad impressions.

**Who Will be Central? Google vs. Apple vs. Everyone Else.** In 2009, Google generated over \$11 billion in revenues in the US alone, over \$70 per unique user, largely based on its centrality in Internet search. In 2001, AOL’s position of access centrality led to over \$90 of advertising revenue per subscriber. We believe it is possible for the winners of mobile advertising and marketing to approach these levels some day.

### The Big Opportunity: Mobile Internet Improving the Tethered Web

We believe the big opportunity in the mobile ecosystem is to improve upon the business models of the “tethered” or desktop Internet. Mobile makes the tethered web better, more relevant, and more interesting. We believe incremental opportunities will be in new publishing models, location based search results, ad targeting and commerce, social media and gaming, and communications.

- **Smaller “Bytes”** – Browsing habits are changing to “nibbling” – better for mobile devices – as publishers tailor content offering for mobile viewers
- **Search** – Geo-location ability increases the relevance of search results for location based services; mobile coupons track consumers into retail stores
- **Social Media** – Companies like Facebook and Twitter derive significant value from mobile users, key sources of user content and distribution
- **Social Games** – Mobile platform like iPod Touch (and soon to come iPad) break free from console activity – conversely, sales of console game titles have been disappointing
- **Communications** – Email and IM become fully portable
- **Mobile Commerce and Payments** – Adoption of payments will open up new commerce opportunities

### Early Consumer Adoption and Reaction

Mobile web services are growing strongly in the U.S., but lag the penetration rates of higher wireless bandwidth countries such as Japan, South Korea and areas of Europe.

- **Consumer Purchasing:**
  - Apple sold 25.1 million iPhones in 2009
  - RIM sold 34 million units in 2009
  - Global smart phones estimated at 171 million units (15% penetration), per TWP analyst Doug Reid, based on IDC data
- **Mobile Web Usage:**
  - U.S. mobile web users increased 24% to 74 million users in last 12 months (source: e-marketer)
- **Consumers Are Interacting:**
  - Users are inviting their friends
  - Mobile and social media go hand in hand
  - Social graph influences the choice of mobile device...and vice versa

**The Challenges**

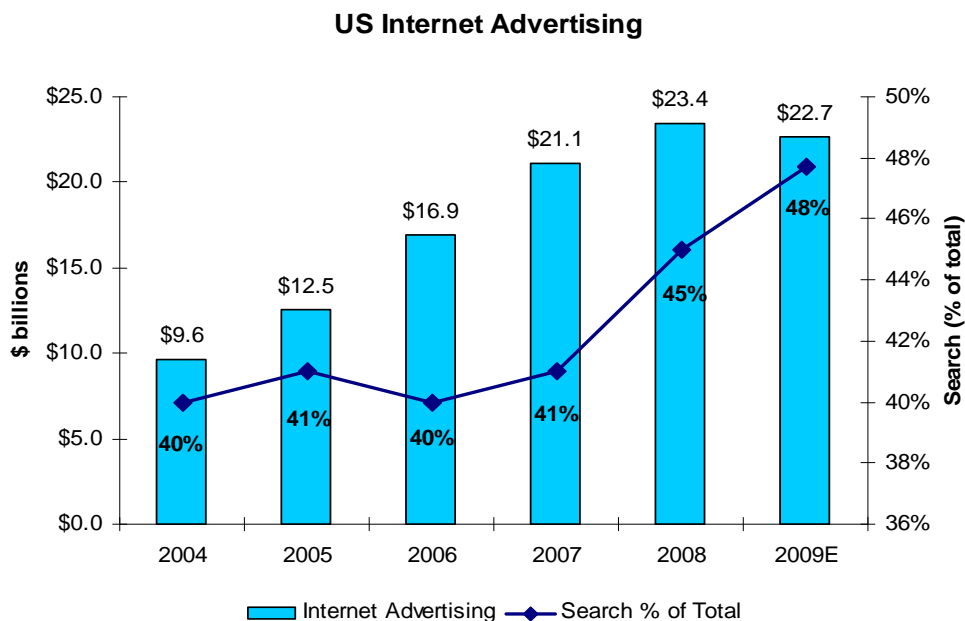
Similar to the tethered Internet, the mobile web has its challenges ahead.

- **Platform:**
  - Screen size (phone) limits view and marketing messages
  - Adoption of iPad and large format devices could change dynamics
  - Voice search technology addressing inadequate keyboard on many devices
  - Complex ecosystem of carriers, OS, handsets and content providers
- **Connectivity:**
  - Rush-hour crowds create network overload problems
  - Bandwidth speed lagging tethered in U.S.
    - Will data speeds be comparable to tethered?
    - Will carriers make the investment for full, robust coverage?
- **Attentiveness:**
  - Consumer time spent on tethered internet much higher than other media, yet revenues lag greatly
  - Consumers spend 20% of time on internet, yet only 12% of ad dollars are spent online. Mobile platform will experience similar lag (source: IAB)

**Growth in Online Ad Revenues Paused in 2009**

After a decade of solid growth, in 2009 Internet advertising revenues for the first time showed susceptibility to macroeconomic pressures, declining slightly to \$22.7 billion from \$23.4 billion in 2008. As illustrated below, Internet ad revenues grew at a CAGR of 25% from 2004 through 2008, from \$9.6 billion to \$23.4 billion.

**Exhibit 1: Tethered Web Ecosystem Paused After Solid 5-year Run**

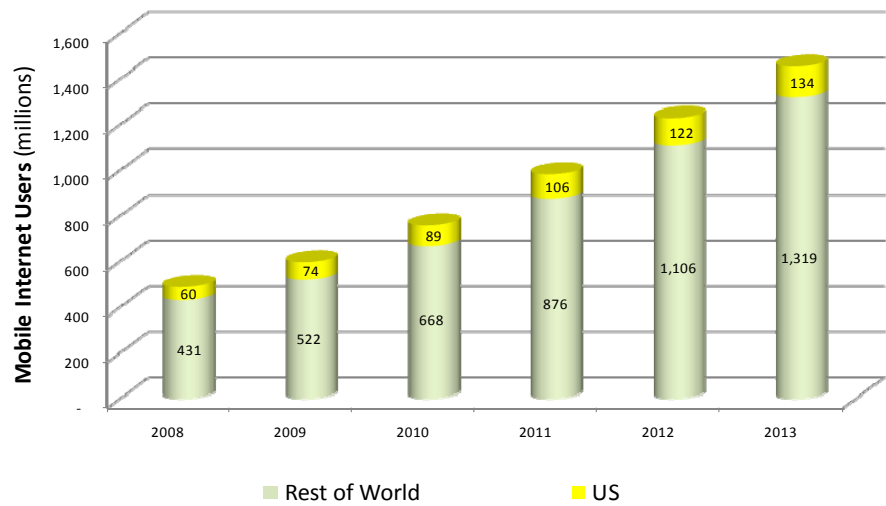


Source: IAB/PWC

**Mobile Internet Revenue Growth Accelerated During 2009**

While we expect Internet ad revenues to return to growth in 2010, mobile Internet ad revenue growth should significantly outperform for the foreseeable future. The chart below (data source: eMarketer) shows the solid growth expected from mobile Web audience, averaging 25% from 2009 through 2013.

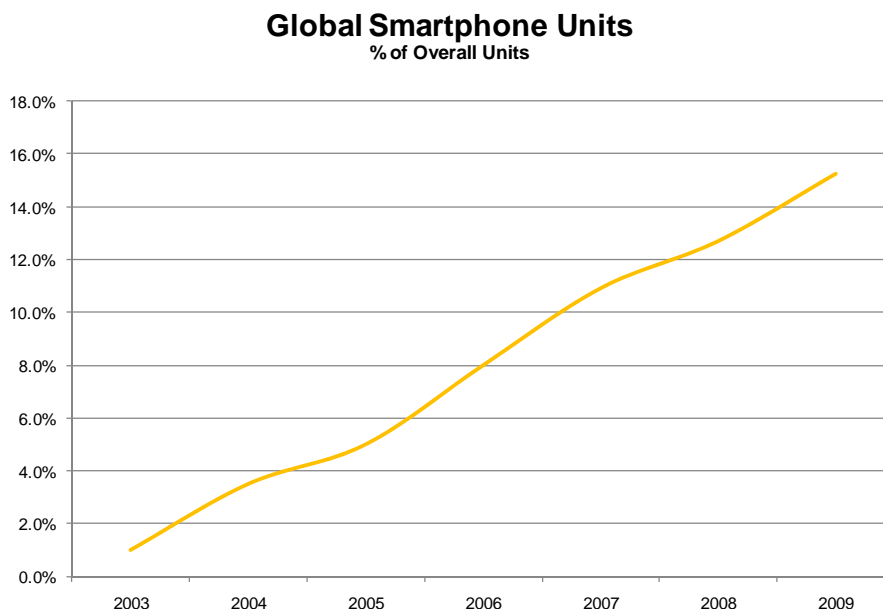
**Exhibit 2: No Pause in Growth of Mobile Internet Audience**



Source: comScore, eMarketer

The rapid growth of smartphones as a percentage of all mobile handsets has allowed the mobile Internet to flourish as an ad supported medium. The larger screen sizes and improved browsing experience on smartphones have resulted in exponential growth in time spent browsing the Web from mobile devices, with ad dollars beginning to follow in meaningful quantities. The chart below highlights the steady growth of smartphones as a percentage of all handset, from 3.5% in 2004 to 15.3% in 2009.

Exhibit 3: Mobile Web Driven by Shift to Smartphone



Source: IDC, TWP Research Analyst – Doug Reid

**U.S. Mobile Internet ARPU – Lagging the Desktop Web, but Growing Rapidly**

Over the period from 2004 through 2009, the number of Internet users, and the amount of time they spent on the Web grew steadily. As users shifted their shopping and content consumption from offline to online media, the value of ad inventory also increased consistently. The figure below shows that the total Internet advertising revenue per user nearly doubled over this period.

Exhibit 5: Average Revenue Per User (ARPU) for U.S. Internet

	2004		2009	
	Total Spend	\$ Per Unique	Total Spend	\$ Per Unique
All Display (Banner/Video/Rich)	\$3.8	\$23	\$7.7	\$37
Search Advertising	\$3.9	\$24	\$11.0	\$53
<u>Other Online Advertising</u>	<u>\$2.0</u>	<u>\$13</u>	<u>\$4.1</u>	<u>\$20</u>
Total Internet Advertising	\$9.6	\$60	\$22.7	\$110
Total U.S. Internet Users YE (MM)	161.1		205.7	

Note: IAB, TWP, \$ in Billions, Internet Users in Millions

Source: IAB, TWP Estimates

As is illustrated in Exhibit 6, the levels of revenue and revenue per user on the mobile Web/mobile ad networks are far below those on the desktop Internet. However, 4Q09 did show meaningful acceleration in mobile Web monetization, with ARPU roughly doubling over the course of 2009 for third party mobile ad networks like Millennial Media, Quattro, AdMob, Jumptap, and others.

#### Exhibit 6: Third Party Ad Networks: Desktop vs. Mobile

##### Comparing Third Party Ad Networks, Desktop and Mobile

	2009 Revenues	Users / Uniques (Mil)	Rev/User	Note
Desktop Ad Nets	\$2.2 B	190	\$12	Up Slightly (y/y), favoring audience-centric approach
Mobile Ad Nets	\$180 M	74	\$2	More than 2x higher than 2008 levels
Mobile Ad Nets*	\$320 M	79	\$4	Huge 4Q

\*Annualized 4Q Run Rate

Source: TWP Estimates and SEC filings

#### Monetization of Central Hubs on Tethered Web

As mobile Internet advertising revenues accelerate, the competition for centrality has intensified. Historically, a position of centrality has led to between \$30 and \$90 of revenue per user, as shown in figure 7 below.

#### Exhibit 7: AOL, Yahoo, and Google have all benefited from centrality (Revenues in billions, subs/unique in millions; \$ per unique in units)

	Ad Revenues	Avg. Subs/Uniques	\$ Per Unique
AOL - 2001	\$2.3	25.2	\$91
AOL - 2009	\$1.0	19.0	\$53
Yahoo!	\$4.7	151.8	\$31
Google	\$11.1	151.6	\$73

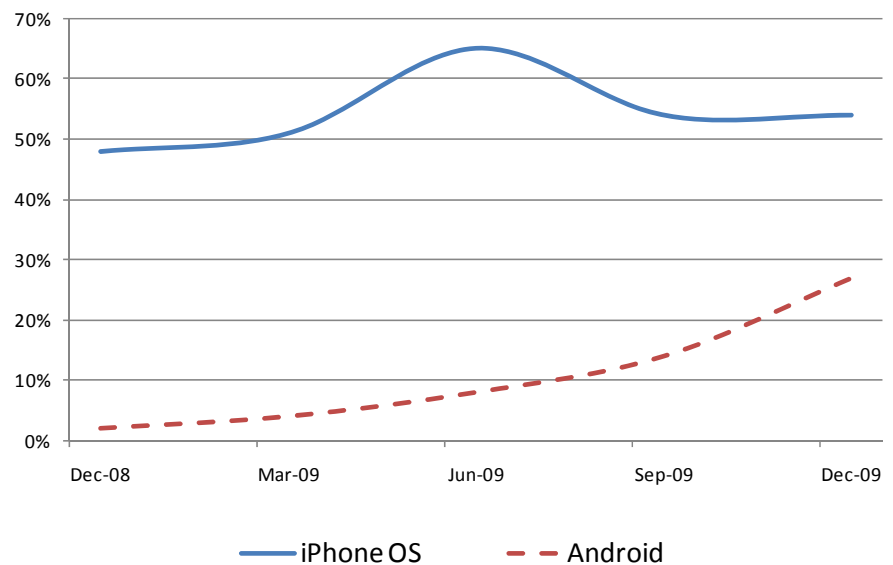
Source: TWP Estimates, Company reports, comScore

### The Quest for Centrality

Until recently, the iPhone had developed the most viable mobile marketing and advertising ecosystem. The iPhone's ease of use and rich Internet browsing experience, as well as integration with app store and iTunes, have established a significant first-mover advantage in mobile Internet.

More recently, however, Google's Android operating system has begun to gain traction with consumers and handset OEMs like Motorola and HTC. The figure below demonstrates how mobile ad impressions have shifted towards Android-based phones in late 2009.

### Exhibit 8: North American Smartphone Ad Impressions, by Mobile OS



Source: AdMob

### Investment/M&A Activity

In this same time frame (November 9, 2009), Google announced it would acquire mobile ad network AdMob for \$750 million. This was the most significant step by the company since it announced the release of Android and the formation of the Open Handset Alliance on November 5, 2007, and it further signals Google's seriousness about growing influence and revenues derived from the mobile web. Following closely on Google's November AdMob announcement, Apple announced in January that it would acquire Quattro, a smaller, competing mobile ad network.

**Mobile Advertising Revenue Forecast**

U.S. mobile advertising and marketing revenues are poised to grow to \$820 million in 2010, up over 60% vs. 2009, with mobile ad networks accounting for approximately half of that total. Based on our estimates shown in the figure below, search will represent approximately 18% of 2010 mobile Internet ad revenues.

**Exhibit 9: U.S. Mobile Ad Market Poised to Grow +60%, 2010 vs. 2009**

	2010
SMS (non-carrier texting charges)	\$150
Search	\$150
Direct Sold Display	\$120
Ad Networks	\$400
<b>Total</b>	<b>\$820</b>

Source: TWP Estimates; Note: \$ USD in millions

Below we provide our base case and bold case scenarios for growth of desktop and mobile Internet advertising revenues for 2014, as well as our 2010 estimates. Our base case shows mobile Internet ad revenues growing at a CAGR of 25% over this period, while our bold case calls for growth upwards of 50% on average. This compares to our expectation that “tethered” Internet advertising revenues will grow in the range of 6-9% annually over the same period. As can be seen below, a main driver of the growth in mobile revenues is the revenue per user, which we show growing at 70%/220% across the two scenarios, from a base of \$10 in 2010.

**Exhibit 10: Long Range Revenue Projection Model for Desktop and Mobile Internet Revenues**

	2010 Estimates			2014 Estimates for Users and Revenues, US Only					
	Users	Revs	Rev/user	BASE CASE			BOLD CASE		
	Users	Revs	Rev/user	Users	Revs	Rev/user	Users	Revs	Rev/user
<b>US Desktop Internet (Mil):</b>	209	\$25,500	\$122	226	\$32,193	\$142	226	\$35,995	\$159
<b>US Mobile Internet (Mil):</b>	80	\$820	\$10	113	<b>\$1,932</b>	\$17	136	<b>\$4,319</b>	\$32
<b>Mobile as % of Desktop</b>	38%	3%	8%	50%	6%	12%	60%	12%	20%

- Assumptions:**
- \* US Internet users grow 2% p.a.
  - \* US Internet Ad revs grow 6-9% p.a. through 2014
  - \* US Mobile Web user base reaches 50-60% of Desktop User base by 2014
  - \* US Mobile ARPU reaches 12-20% of Desktop Internet Ad ARPU by 2014

Source: comScore, eMarketer, TWP estimates

**Conclusions:**

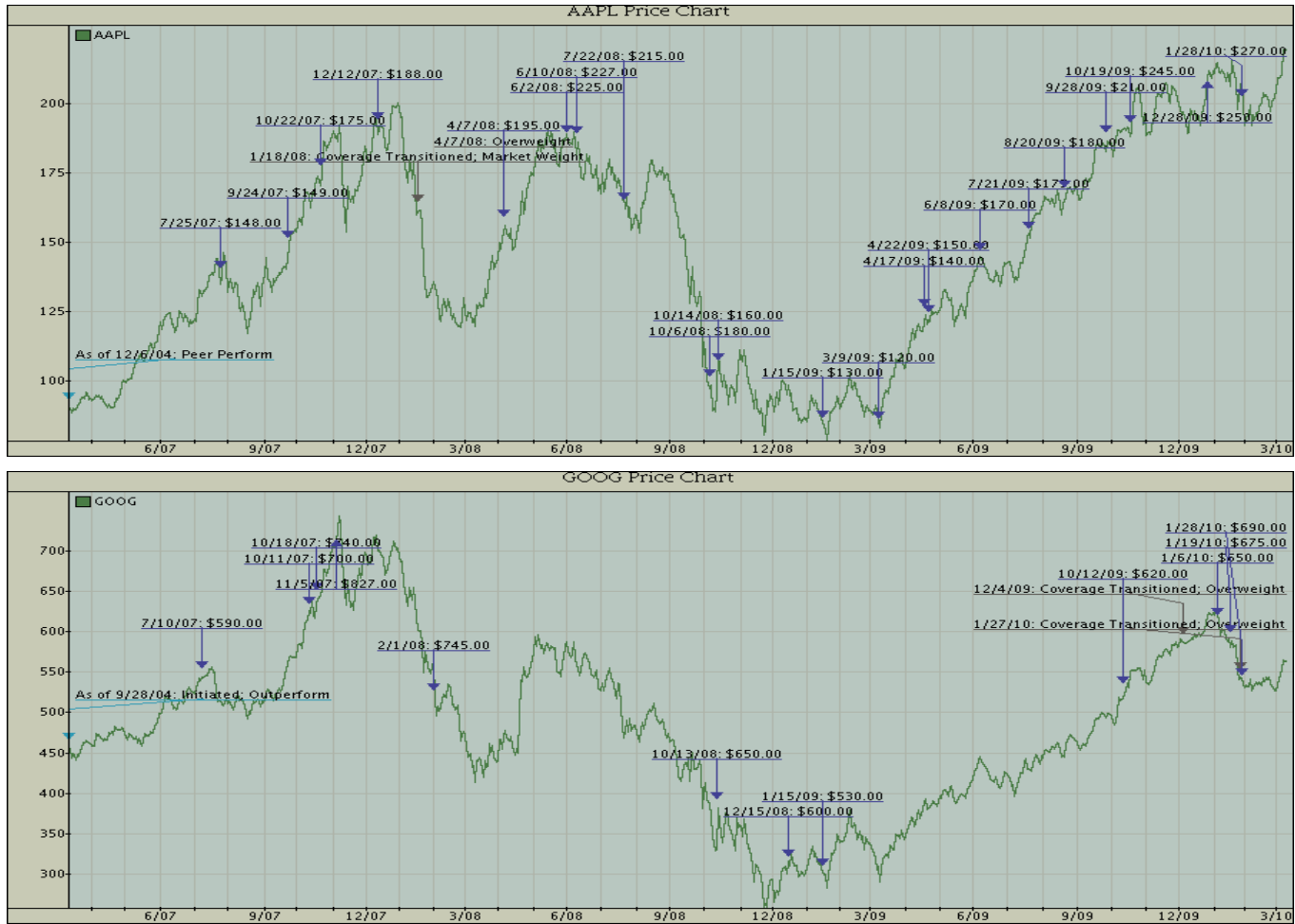
- Mobile advertising broke through in 4Q09
  - Advertisers moving beyond experimental stage
- Mobile advertising and marketing exceeded \$500mm in 2009
  - 2010 Mobile Ad Revenues projected to grow over 60% to \$820mm
  - Base case 2014 projection of just under \$2bn
- Battle for centrality between Apple, Google, and others...
  - Popularity of Google's Android OS surging, joining Apple with a significant share of total mobile ad impressions
  - Few winners if platform dominance achieved by one party

ADDITIONAL INFORMATION IS AVAILABLE UPON REQUEST.

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Notes: Price chart updated as of 3/6/2010. All price targets displayed in the chart above represent either a specific price target or the midpoint of a range. Prior to November 16, 2006, Thomas Weisel Partners LLC used a three-tier rating system with different rating names and definitions: Outperform, Peer Perform and Underperform.

Source: First Call, FactSet and Thomas Weisel Partners LLC



Notes: Price chart updated as of 3/6/2010. All price targets displayed in the chart above represent either a specific price target or the midpoint of a range. Prior to November 16, 2006, Thomas Weisel Partners LLC used a three-tier rating system with different rating names and definitions: Outperform, Peer Perform and Underperform.

Source: First Call, FactSet and Thomas Weisel Partners LLC

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Apple Inc.: Our 12-month price target of \$270 reflects an approximate 24x multiple on our FY10 EPS estimate of \$11.40 and compares to the 30% EPS CAGR which we expect AAPL to deliver from FY09 to FY13. Risks to our 12-month price target include uncertainty around AAPL's ability to meet investor expectations for iPhone and Mac growth as well as AAPL's ability to maintain an aggressive pace of new product innovation and the risk that iPhone cannibalization of iPod accelerates beyond investor expectations.

Yahoo! Inc.: Our \$17 12-month price target and Market Weight rating for Yahoo! are based on blended valuation analysis, including a 18x P/E (proforma earnings) multiple, 23x P/E (GAAP earnings) multiple, a 10x EV/EBITDA multiple, and a 5% free cash flow yield assumption. There always are risks that the price target for any security will not be realized. In addition to general market and

macroeconomic risks, for Yahoo, these risks include, among other things: competition, progress of the Microsoft search outsourcing deal, and the ability to develop new services and marketing channels, particularly for mobile and social media.

Google Inc.: Our 12-month price target of \$690 is based on a blended valuation approach using earnings, EBITDA and free cash flow multiples. There are always risks that the price target for any security will not be realized. In addition to general market and macroeconomic risks, for Google, these risks include, among other things: regulatory, competition, the expansion into international markets, and the ability to develop new products and exposure to interactive advertising. We rate the stock Overweight.

The following table outlines the Thomas Weisel Partners LLC stock rating system, along with the relevant definitions, effective November 16, 2006.

STOCK RATING	STOCK RATINGS DEFINITIONS	PCT. OF SECURITIES RATED IN EACH CATEGORY	PCT. FOR WHICH IB SERVICES HAVE BEEN PROVIDED
<b>Overweight (O)</b>	When an analyst rates a stock Overweight, he/she is advising our clients to carry a position in the stock that is in excess of its weighting relative to the stocks either in that analyst's coverage or an index identified by the analyst that includes, but is not limited to, stocks covered by that analyst.	61.1%	23.8%
<b>Total Buy</b>		<b>61.1%</b>	<b>23.8%</b>
<b>Market Weight (M)</b>	When an analyst rates a stock Market Weight, he/she is advising our clients to carry a position in the stock that is in line with its weighting relative to the stocks either in that analyst's coverage or an index identified by the analyst that includes, but is not limited to, stocks covered by that analyst.	37.7%	8.7%
<b>Total Hold</b>		<b>37.7%</b>	<b>8.7%</b>
<b>Underweight (U)</b>	When an analyst rates a stock Underweight, he/she is advising our clients to carry a position in the stock that is below its weighting relative to the stocks either in that analyst's coverage or an index identified by the analyst that includes, but is not limited to, stocks covered by that analyst.	1.2%	0.0%
<b>Total Sell</b>		<b>1.2%</b>	<b>0.0%</b>
<b>Suspended Rating (S)</b>	The stock rating has been suspended.		
<b>Not Rated (NR)</b>	The stock is not rated, but it is covered by a Thomas Weisel Partners LLC analyst.		
<b>Not Covered (NC)</b>	The stock is not covered by a Thomas Weisel Partners LLC analyst.		

Notes: The percentage of investment banking services is calculated as of 12/31/2009. The percentage of securities rated in each category is calculated as of 3/9/2010. The new rating system is effective 11/16/2006. An analyst's coverage universe is defined as all of the stocks within the analyst's industry that reasonably are part of his/her potential coverage, not necessarily the stocks specifically covered. "Buy", "Hold" and "Sell" are not ratings categories defined by Thomas Weisel Partners LLC and should not be interpreted as investment opinions. We show these categories for illustrative purposes in accordance with NASD and NYSE regulations. The above table includes Thomas Weisel International stocks.

Source: FactSet and Thomas Weisel Partners LLC

The following grid outlines the Thomas Weisel Partners LLC industry rating system, along with the relevant definitions, effective November 16, 2006.

INDUSTRY RATINGS	INDUSTRY RATINGS DEFINITIONS
<b>Favorable</b>	When an analyst assigns a Favorable rating to an industry that means he/she believes that, generally, the industry's fundamentals or stock prospects are improving.
<b>Neutral</b>	When an analyst assigns a Neutral rating to an industry that means he/she believes that, generally, the industry's fundamentals or stock prospects are stable.
<b>Unfavorable</b>	When an analyst assigns an Unfavorable rating to an industry that means he/she believes that, generally, the industry's fundamentals or stock prospects are deteriorating.

Source: Thomas Weisel Partners LLC

The following grid outlines the Thomas Weisel Partners LLC stock rating system, along with the relevant definitions, in effect from April 4, 2003, to November 16, 2006.

COMPANY RATING	RATINGS DEFINITION
<b>Outperform (O)</b>	The stock is expected to outperform the median performance of the Analyst's coverage universe over the next six to 12 months.
<b>Peer Perform (P)</b>	The stock is expected to perform in line with the median performance of the Analyst's coverage universe over the next six to 12 months.
<b>Underperform (U)</b>	The stock is expected to underperform the median performance of the Analyst's coverage universe over the next six to 12 months.
<b>Suspended Rating (S)</b>	The stock rating has been suspended.
<b>Not Rated (NR)</b>	The stock is not rated, but it is covered by a Thomas Weisel Partners LLC analyst.
<b>Not Covered (NC)</b>	The stock is not covered by a Thomas Weisel Partners LLC analyst.

SECTOR RATING	SECTOR RATING DEFINITION
<b>Overweight (OW)</b>	The Analyst's coverage universe is expected to outperform the S&P 500 over the next six to 12 months.
<b>Market Weight (MW)</b>	The Analyst's coverage universe is expected to perform in line with the S&P 500 over the next six to 12 months.
<b>Underweight (UW)</b>	The Analyst's coverage universe is expected to underperform the S&P 500 over the next six to 12 months.

Source: Thomas Weisel Partners LLC

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