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North America

Industry

Internet

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GICS SECTOR	INFORMATION TECHNOLOGY
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Industry Overview

April 6, 2003

April 2003 — An Update From the Digital World

- The coming of age of online advertising
  We continue to believe that online advertising will surprise on the upside in C2003 in spite of — and perhaps, in part, because of — the challenging economic and social environment.
- Yahoo!'s the proxy for the online ad industry, and we like what we see
  We touch on Yahoo!'s impressive list of improvements to provide a better experience for users and more effective marketing for advertisers.
- Yahoo!'s own platform is still underpenetrated, in our view
  While the market opportunities for the Internet leaders remain quite large, we believe Yahoo!'s ability to tap and leverage its own platform is distinctly compelling.
- Our Internet & PC Applications Software Industry View is Attractive
  We continue to believe that, at the margin, online is gaining share from offline, that this will occur for some time to come, and that this should continue to benefit the Internet leaders. So far, it appears that trends in 2003 have been strong.

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April 2003 — An Update From the Digital World

Updates from the Digital World — An Overview
We published our first "Digital World" report in December, 2002. We thought that there were some major events and inflection points occurring related to the Internet that were underappreciated. In that report, we focused on online vs. offline momentum related to expanded global distribution, lower relative pricing related to transparency and the ramp in the sale of used goods, and the rising impact of replacement products.

In our February, 2003 report, we focused on the relevance and magnitude of sellers (and buyers) migrating online, as illustrated by eBay's momentum.

In our March, 2003 report, we focused on what we believe is one of the answers to the "what just happened to assist such strong momentum in CQ4:02" question. In addition to improvements in the Search/Find/Obtain (SFO) experiences of the Internet, a key part of the answer may be — the scale and ramp of residential broadband usage.

In our late March, 2003 report, we focused on the strong relative results in terms of customer satisfaction that Internet leaders such as Amazon.com, eBay, and Expedia have scored in the highly regarded American Customer Satisfaction Survey (ASCI). Convenience, low (and transparent) prices/pricing, uniquely strong 24x7 customer service, and extensive selection have long been key factors behind the growth for leading online commerce (and information) sites, and it's becoming increasingly apparent to us (and measurable) that these attributes are helping drive especially strong customer satisfaction and loyalty and that the Internet leaders, owing in part to their technology platforms, may indeed have the ability to raise the bar on customer satisfaction.

In this note we focus on the positive core secular trends in Internet advertising and drilldown on Yahoo! as a proxy and driver of these trends.

Links to aforementioned reports:

http://www.morganstanley.com/institutional/techresearch/digital_world1202.html

http://www.morganstanley.com/institutional/techresearch/digital_world0203.html

http://www.morganstanley.com/institutional/techresearch/digital_world0303.html

http://www.morganstanley.com/institutional/techresearch/online_classifieds1102.htm
l

http://www.morganstanley.com/institutional/techresearch/digital_world03032.html

http://www.morganstanley.com/institutional/techresearch/digital_world0403.html

The coming of age of online advertising

It is a challenging time for the economy and for the advertising market in general. And yet we believe the current environment helps create opportunities for the online ad market. At a time when there have been rumblings that some advertisers are tentative as they don't want to be in the wrong venue at the wrong time, the Internet offers a distinctive way of targeting potential customers in the right place at the right time. And at a time when business expenses are hyper scrutinized, the Internet beckons with its promise of high ROIs thanks to its effective and targeted forms of marketing.

Yahoo!'s estimated strong advertising results in CQ1:03 should support our view that CQ4:02 was a positive inflection point for Internet advertising and that the worst may finally be over — we believe the future looks good. Note that in CQ4:02, Yahoo!'s ad (marketing services) revenue rose 33% Y/Y, to $196MM *with* search and 8% *without* search, while Microsoft's ad revenue rose 40%+ Y/Y to $200MM+ (and search was the largest component).

We see three trends that should continue to support positive online advertising trends:

1) *Sharp ramp and critical mass penetration of "always-on" residential broadband usage*. There were 17MM+ US subscribers (and 44MM+ globally) in CQ4, up a strong 57% Y/Y, and our broadband team (including Rich Bilotti [cable] and Simon Flannery [telecom services]) believe healthy growth is likely to continue. In addition, the related ramp in streaming media usage was impressive, in our view — in January, Yahoo! had a 385% Y/Y ramp, to 70MM sessions. Increasingly pervasive and faster online access provides advertisers with the opportunity to create higher quality, and more relevant, interactive ads;

2) *Ramp in the need for news, information, communication, and connectivity*. In part, this is a function of the war and the weak economy (which has, at the margin, we believe, caused many people to stay closer to home and also become more cost-conscious). The data related to increased usage behind this ramp supports the thesis that online continues to gain share from offline and is driving

vendors and advertisers to develop strategies for the growing online distribution channel;

While one data point does not a trend make, we believe recent stats from comScore Networks related to online usage of information on the war are notable. Major news sites posted an 82% increase in US visitors on Monday, March 24, compared to the average for the four Mondays ending March 9 (prior to the Azores summit and ultimatum). With limited availability of TV and radio coverage during the workday, workplace Internet users were relying more and more on online sources for up-to-date news. In addition, for the same dates, major online news sites realized an 85% average increase in at-work visitors compared to an increase of only 13% for visitors at-home.

3) *Steady improvements in the user experience and functionality of leading Web sites*. As active Internet users, we have noted ongoing improvements for the leading sites, including Amazon.com, eBay, Expedia, and Yahoo!. We noted in our last *Digital World* report that "we think that the Internet leaders have the potential, owing, in part, to the power of their technology platforms, to set new standards for customer satisfaction..." Improvement in the user experience is key to assisting the online share gains. In addition, related improvements in targeted marketing and data gathering also provide advertisers with an increasingly effective marketing venue to generate transactions and build brand.

Yahoo!'s the proxy for the online ad industry, and we like what we see

In our view, understanding what Yahoo! is doing is critical to understanding the trends of online advertising. In recent months, Yahoo! has been aggressively working to make its users come back for more of everything it's offering. It has been driving to improve search and to integrate this capability throughout its network, while pushing the quality and relevance of its ad creative for both users and advertisers.

To illustrate our point, we took a five-minute clicking tour of the Yahoo! network. Compared to what we would have seen a year ago, we found a sharp increase in the breadth and depth of advertisements: Intuit (in the Yahoo! Tax channel), Discover (Tax), Mitsubishi (Autos), State Farm (Finance), HSBC (Finance), Hilton (Travel), Nokia (Mobile), and Gap.

We also took a five-minute clicking tour of Yahoo! Search; while we didn't find nearly as many name brands, we certainly found lots of advertisers — we call them the Search Scrappers, the companies (many with online focused businesses) that have found the 20%+ ROI for online search to be very compelling.

As Yahoo! has been able to ramp traditional advertisers over the past year in its core online marketing business, we believe it should, increasingly, be able to ramp them in its growing search efforts as well. The power of the ramp in online search advertisers comes home with two data points from search leaders Google and Overture. Google has indicated that it has 100K+ advertisers on its site (up from next to none a year ago), while Overture had 80K advertisers at year-end 2002 (up from 53K Y/Y). In addition, Yahoo! increased its advertisers to 85K from 60K over the same period.

What has Yahoo! been doing to bring in these advertisers? First, we believe it's made its site better — the last six months suggest an aggressive, methodical frenzy of activity, including the following changes and new features:

- front page redesign;
- search relevance and integration throughout Yahoo!'s channels;
- expansion of music services via Launch;
- rollout of streaming media via Yahoo! Platinum and expansion in movies;
- redesign of shopping with improvements in search and a ramp in comparison shopping;
- increased focus on business services especially those targeted at SMEs;
- first iteration of a broadband user interface as illustrated through the DSL partnership with SBC; and
- premium services (for offerings ranging from extra email storage, expanded email address offerings, to improved fantasy sports, to a plethora of ringtones for mobile phones) integrated throughout the network that leverage the easy-to-use Yahoo! Wallet for payment.

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The changes are consistent with Yahoo!'s stated objective to "enhance product quality and innovation…with a focus on customer-centricity…product differentiation including improved personalization…and better integration including contextual links between services."

In our view, the aforementioned improvements combine to provide: 1) a better experience for users, which should continue to help increase usage; and 2) a more effective marketing venue for advertisers, which should increase their willingness/ability to spend money on Yahoo!. Better experiences for users *and* advertisers should help drive revenue and profit growth for Yahoo!.

Giving users more reasons to stay and giving users (and advertisers) more reasons to pay

In our view, the Yahoo! Network is increasingly being optimized for Search/Find/Obtain (SFO), which we view as the next "killer application" of the Internet (see our report, *The Online Classified Advertising Report: It's About Search/Find/Obtain (SFO)…*, dated November 18, 2002). We believe the SFO opportunity is closely related to the transformation of online advertising in ways that enable it to take advantage of the distinctive features made possible by the online medium. Per our definition, online classified advertising is "an interactive advertisement with *search* and *find* functionality, usually brief but linked to relevant information, listed online under headings with others of the same category. Frequently, these advertisements have embedded transaction capabilities that allow a user to facilitate *obtaining* the product/service he/she is interested in."

Already, 100MM+ active registered users turn to Yahoo! when they think about searching for things ranging from inbound emails…to job opportunities…to the hottest music videos…to dates…to the most memorable images of the NCAA basketball tournament…to the latest news about the war in Iraq…to sending flowers on Valentine's Day…to setting up a Web site…to live NASCAR video coverage…to local movie times…to booking a vacation…to getting stock quotes…to obtaining tax help.

A year ago, users could already find most of this stuff on Yahoo!, but the experience was disaggregated and clunky. Now, owing to user interface improvements, and the integration of more effective search, the user experience has improved. Based on our experience and supporting data, we believe this leads to increased usage of the site by its users and increased monetization opportunities for Yahoo!. And we believe there's a self-reinforcing trend — as users increasingly find (and obtain) what they are searching for, they return to search for more. And, for Yahoo!, as it builds knowledge about what customers are searching for, it can increasingly anticipate how to give customers what they want, when they want it.

Recently Yahoo! updated its mission — "to be the most essential global Internet service for consumers and businesses." It also updated its strategy — "to leverage the power of the Yahoo! global network to create the most innovative highest quality products for our consumers and provide the most efficient and effective marketing platform for businesses." In essence, Yahoo! wants its users to come to its site first when looking for stuff, and once they check in, the Yahoo! network wants them to stay — and increasingly, to pay.

In our view, the Yahoo! Network is increasingly being optimized for Search/Find/Obtain (SFO), which we view as the next "killer application" of the Internet

Yahoo!'s own platform is underpenetrated, in our view

Much has already been said about the underpenetrated market opportunities for companies like eBay, Amazon.com, and Expedia. The same can be said for Yahoo!, but we believe Yahoo! is distinctive because its own platform remains underpenetrated. And Yahoo! is keenly focused on tapping this opportunity. Yahoo! has been in a somewhat unique position in that it obtained tens of millions of customers before they really *became* customers – we call this a monetization backfill opportunity. Over the past few years by ramping its offerings of relevant premium (i.e., for pay) services — ranging from extra email storage, to personals subscriptions, to games on demand, to SBC Yahoo! DSL — the company has increased its direct paying relationships with users from 375,000 in 2001 to 2.2 million in 2002, and the company expects the number to range from 3.4 million to 4.2 million by year-end 2003. We believe the 2003 range is conservative.

The essence of the opportunity we see for Yahoo! can be framed in terms of the following question: “How many other companies have 100MM+ active interactive registered users, 20–40%+ usage growth, 80%+ gross margins, 25–30% EBITDA margins, and generate only $5.52 in annual revenue per user (ARPU), of which less than 10% is derived directly from payments from those users?” We welcome your insights…

In 2002, Yahoo! stated that it was focused on doubling its 2001 revenue per average user (ARPU) and revenue per average employee (ARPE) within 3–5 years. This translates into what we view as a conservative ramp in revenue from $717MM to $1.9B and an increase in ARPU from $4.20 to $8.40 per year, based on a conservative increase in average users from 172MM to 225MM.

Key drivers of the ARPU ramp include growth and increased penetration from: 1) sponsored search; 2) non-search online advertising; 3) user paid access and/or content (like the SBC DSL relationship and Yahoo! Premium streaming media); 4) user paid a la carte offerings (like extra storage and personals); and 5) listings revenue (like HotJobs and Yahoo! Stores).

We expect current trends to continue: As Yahoo! makes its services more relevant, users should be more willing to pay more for them (and a few dollars per user over millions of users can go a long way with Yahoo!’s financial model) and advertisers should be willing to pay more to tap the users. And, it’s important to note that Yahoo!’s operating expenses do not need to ramp commensurate with usage and revenue growth, which should result in significant operating leverage, in our view.

Advertisers have been “doing the math”

Historically, advertisers have been concerned with reach and frequency. But recently, more advertisers have been “doing the math” to determine which forms and methods of advertising provide the “best bang for the buck,” or ROI. Over the past 3–5 years, Fortune 500 companies have increasingly reallocated their mix of advertising dollars across various media. A couple of years ago, P&G was quite vocal in reallocating spending from traditional offline media (like newspaper and TV) to more cost-effective offline formats like radio. These examples point to the rising focus on advertising ROI at major corporations, as well as heightened sensitivity to cost-effective solutions during the recent economic recession.

In our opinion, ROI is defined as the revenue generated by click-through sales divided by the associated online advertising investment. While the simplicity and “trackability” of such a metric has been touted as a key advantage of online advertising, we believe that a more comprehensive view of the online medium can point to even greater impact. We view online advertising as much more than just a direct marketing tool — it is a brand-building solution that can translate into increased market share across both online and offline channels. In effect, advertisers can integrate customer acquisition, transactions and brand building. Such broad impact, though difficult to measure, will likely become increasingly important as Internet users grow in sophistication. Specifically, as the Internet becomes more incorporated into overall consumer behavior across channels, so too will online advertising become an integral component of overall marketing and brand strategy.

It’s our view that rising focus on ROI can assist the growth of online advertising, as platforms such as Yahoo!, Google, and Overture can offer the following:

- better reach and frequency due to the sheer number of visitors that are spending significant amounts of time online, especially on these site;
- better creative outlets with the aggressive adoption of broadband and rich-media advertising and streaming available;
- better targeting through real-time interaction with known silos of highly concentrated age and interest demographics;
- ability to use user data to improve user experience;
- better flexibility, including the ability to cancel ads real-time and nimbly shift ad dollars to other forms of online marketing that may provide a higher ROI on a short-term basis;
- better data sharing and reporting that enables advertisers to better understand and calculate ROI.

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A recent study that has been receiving traction in the advertising world suggests that most leading advertisers are spending less than the optimum amount on online advertising. The Cross-Media Optimization Study was published by The Interactive Advertising Bureau (http://www.iab.net/) in February. Its results suggest that, as a rule of thumb, 10–15% of a national brand's media budget should be online for optimal results, based on data from previous advertising campaigns. For 2002, many top advertisers in the US used only 1% (or less) to 7% as the standard mix for online.

Furthermore, adding online advertising was found to expand reach and coverage, while also increasing the ROI. Corporations that have effectively used online advertising, such as Unilever, McDonald's, Colgate-Palmolive and Kimberly-Clark, believe that online was helpful in connecting them with consumers, thus making the medium influential in purchasing decisions and in increasing brand awareness. It's notable that Yahoo! has indicated that its renewal rates with advertisers are strong. Additionally, online advertising was found to be supplemental to TV's reach and coverage for normally hard-to-reach consumers in outlying areas.

Rolling out the carpet for advertisers

Just as Yahoo! has been getting its house in order to make its users feel more welcome and more willing to pay, so has it been working on its proposition for advertisers. Over the course of the past year-plus, Yahoo! refocused its efforts to increase the value of its network to advertisers by: 1) standardizing ad units in an effort to streamline planning/buying, 2) reducing clutter on its site in order to help increase effectiveness of ads, and 3) strengthening infrastructure so that it can, increasingly, support complex creative executions.

For specifics about Yahoo!'s financial model and valuation thoughts, see our recent reports on Yahoo!.

https://secure.ms.com/ER/ebs/2003/ny/yh/yhoo0116.pdf

https://secure.ms.com/ER/ebs/2003/ny/yh/yhoo0213.pdf

In addition, our industry investment thesis can be found on page 7.

Internet & PC Applications Software — Mary Meeker & Brian Pitz

Industry Investment Thesis

We continue to believe that the Internet is still in the early stages of becoming a central communications, information, commerce, and entertainment medium.

We estimate there are 550-600 million Internet users worldwide using the Internet an estimated average of roughly 30 minutes per day. We expect the number of Internet *users* to grow at 10-20% annually for the next several years, with stronger growth in non-US markets. And we believe that *usage* growth (in part because of ongoing broadband adoption) should continue to be higher, thus demonstrating compelling underlying growth trends.

Given this relatively robust underlying growth, we continue to believe that the leading Internet companies should, over time, be able to generate strong double-digit top-line growth, and as the financial models scale towards higher long-term margins, should be able to generate even stronger earnings growth — AKA leverage. If the leaders execute to their opportunities, we believe that the leaders could continue to demonstrate classic growth-stock undervaluation characteristics.

While the general economic environment continues to be challenging — we note that according to our analysis, most GDP forecasts for 2001 were too high by 90%+ *and* 97% of the companies in the S&P 500 missed earnings estimates at least once in 1999–2000 — we point out that many of the leading Internet companies are supporting very strong revenue growth, and that CQ4:02 appears to have been a positive inflection point. In C4Q:02, we note that Y/Y growth rates for the Internet leaders were compelling — 100% Y/Y growth for Expedia (70% pro forma with Classic Custom Vacations acquisition), 51% for Yahoo! (34% pro forma with HotJobs acquisition), 89% Y/Y growth for eBay (55% pro forma for PayPal acquisition), and 28% for Amazon.com.

In general, near term, we remain focused on what we consider to be key underlying positive trends:

1) The **Internet should prove to be the growth distribution channel of the decade** — As companies that benefited from leveraging the PC as their distribution channel — like Microsoft (MSFT, $25, Overweight-V) and America Online (AOL, $12, ++) — created significant new businesses and shareholder wealth, we believe an emerging group of still relatively early-stage companies should do the same with the Internet.

2) **Search/find/obtain (SFO) is becoming a global reality and may be the next 'killer application' of the Internet** — Google, eBay (EBAY, $89, Overweight-V), Amazon.com (AMZN, $26, Overweight-V), Yahoo! (YHOO, $24, Overweight-V), Expedia (EXPE, $50, ++), Microsoft and Overture (OVER, $14, ++) have driven this, and it benefits users/vendors as it helps reduce friction and makes markets more efficient.

3) **Residential broadband (with an estimated 44MM+ global subscribers as of CQ4:02) has hit critical mass** — The early stage (and strong growth momentum, up 57% Y/Y in CQ4 in the US to 17MM) of consumer broadband adoption, and the powerful usage patterns of broadband (vs. narrowband) users, at work and home, should help pace strong growth for leading beneficiaries.

4) **Underlying growth rates for global Internet usage/users remain strong** — in spite of (and, perhaps, in part, because of) a very challenging economic and social environment.

5) **Online continues to gain share from offline** — Note Expedia in travel, eBay in collectibles, Yahoo! in news. e-commerce accounts for only 1.65% (and rising) of retail sales in the US.

6) **"Mind share" well above "market share" demonstrates growth opportunity** — an estimated 550-600 million-plus Internet users and, for example, only 31 million active Amazon.com customers?

7) **Internet momentum/opportunity is compelling compared to other media** – Per a Spring, 2002 US survey by SRI, consumers spent 13% of media usage on the Internet (up 23% Y/Y) vs. slower growth for TV (48% of media usage), radio (31%), newspapers (5%) and magazines (3%).

8) The **consumer appears to be alive and well for key technology-related purchases** — Internet, digital cameras, MP3 players, WiFi, video games… could the consumer (vs. the enterprise) drive the next leg of technology-related growth and a PC

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upgrade cycle? In addition, we believe that many **small to medium-sized enterprises (SMEs) have benefited** from the increased usage of the Internet as vendors/users/sellers.

9) **Technology platform-driven convenience, low (and transparent) prices/pricing, uniquely strong 24x7 customer service, and extensive selection have been key factors behind growth** in leading online commerce (and information) sites and should continue to spur growth for the leaders. In addition, we believe that positive trends for the ramps in *used* and *replacement* goods continue to be quite strong, assisted by rising user confidence (in part, through customer ratings and feedback) in obtaining these types of goods/services.

10) **Online advertising trends could surprise on the upside** in next 6–12 months, and we believe the compelling ROI will become more apparent to advertisers. We believe online advertising (including search) could grow 20-30% in 2003 and accelerate in 2004.

11) **Handful of industry leaders gaining share** with less competition on almost all fronts and **operating leverage with inherently scalable models is powerful** — for example, Amazon.com got big fast, spent lots of money, now what? Fixed costs and operating leverage, in our view.

12) **Positive earnings surprises can be, more often than not, followed by more of the same**…

++Rating for this company have been removed from consideration in this report because, under applicable law and/or Morgan Stanley policy, Morgan Stanley may be precluded from issuing such information with respect to this company at this time.

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