

Media

December 19, 2012

James Dix, CFA
(213) 688-4315
james.dix@wedbush.com

Dix's Mix: Recap of Our Panel on the Implications of New Advertising Technologies

- **At the close of our California Dreamin' Consumer Conference, we hosted a panel on "Ad Technology and Its Impact on Consumer Facing Companies" – this report summarizes key takeaways.** Our panelists were Michael Collins, CEO, Joule, a mobile marketing agency part of WPP; Jay Sears, SVP Demand, The Rubicon Project, a sell-side platform focusing on the real-time bidding ("RTB") online display market; Brian Stempel, VP of Business Development, The Trade Desk ("TTD"), a buy-side platform focusing on the RTB market; and Eion Townsend, Chief Strategy Officer, MediaMath, another buy-side platform in the RTB market. At the end of this note, we give a bit more detail on these companies. When attributing comments, we use the convention of using company names, but comments may reflect views simply of the panelists.
- **The biggest problems facing panelists now: brands not ready for mobile, and personnel and infrastructure of both publishers and marketers not ready to fully exploit ad automation's current potential.** For Joule, less than half of brands have sites and other enterprise and CRM infrastructure to capture the value of mobile traffic – the outlook is for 70-80% of brands to have this infrastructure in 12-24 months. Rubicon sees a gap between the ad automation infrastructure, which has made substantial strides in the past 1-2 years, and managements of brands and publishers, who have not adapted their organizations to the potential of this technology, risking damage to their brands and revenue as a result. MediaMath sees as a top challenge in 2013 weaning media buyers from old school buying techniques based on spreadsheets by educating them about the potential of RTB platforms like MediaMath. Looking ahead 1-2 years, TTD sees marketers tackling the challenge of incorporating hundreds of data points, including purchase history, to algorithmically bid on individual ad impressions at scale.
- **Panelists saw a 1-3 year period of mobile transition for search, where mobile cost-per-click ("CPC") would generally be at a discount to desktop.** Although Joule agrees that paid search growth will slow during the transition to mobile, as the supply of search inventory grows faster than the demand, it sees this as a temporary phenomenon (2-3 years) before mobile CPCs reach parity with desktop. Moreover, certain ad categories are likely to pay higher CPCs for mobile; consider restaurants, where location data from mobile is particularly relevant to conversions. MediaMath is even more bullish, expecting CPCs for mobile (in particular, for in-app mobile ads) to reach general parity with desktop in as little as a year; indeed, programmatic CPCs rose from a discount to guaranteed to rough equivalence in this amount of time.
- **Facebook Exchange (or FBX) should see substantial growth, as it feeds Facebook's substantial supply of display impressions into the surging demand for marketing strategies, such as retargeting, which benefit from programmatic buying.** Since summer, buy-side platforms like MediaMath and TTD have been serving consumers display ads on FB through FBX for sites, for example, which FB users have visited recently. A key advance is the use of FBX to track the response of those on FB who are exposed to these ad impressions, to allow for better calculation of return on advertising spend, per TTD.
- **Amazon's impact on ad market bigger than widely appreciated.** Rubicon opines that Amazon can help marketers' strategies using data on shopping and buying behavior. In so doing, TTD sees Amazon taking on some ad agency functions.
- **Joule draws a fundamental line, rooted in the consumer's state of mind in using different media, between 1) display advertising – including social display - and 2) paid search advertising.** Advances in display ad technology primarily drive demand generation, with search still primarily driving demand fulfillment, per Rubicon. Search inventory benefits from being in front of a consumer who is likely near the point of purchase. Display traffic is more varied, ranging from ads on weather sites, e.g., when users, after short dwell times, are open to going to other sites (good for advertisers), to ads on social platforms, when typical dwell times are longer, inhibiting immediate response to ads (bad for advertisers). The mere placement of an ad message, like a sponsored story, inside the news feed, as opposed to the right hand side of the page, likely has relatively little impact on the ads' value, per Joule. The panel debated whether FB's display ad share would converge over time on its ad inventory share, or whether the ad share would remain lower, given that FB is less suited to commercial engagement.

Wedbush Securities does and seeks to do business with companies covered in its research reports. Thus, investors should be aware that the firm may have a conflict of interest that could affect the objectivity of this report. Investors should consider this report as only a single factor in making their investment decision. Please see page 4 of this report for analyst certification and important disclosure information.

PROGRAMMATIC BUYING PART OF TREND TO AD AUTOMATION

The roughly \$2bn U.S. RTB market has grown primarily out of spending on ad networks and direct buys from publishers, as well as from some new buying driven by the growth of retargeting as an option that has the necessary scale. The panelists generally did not see RTB to this point as having grown at the expense of the paid search market. Rather, RTB has been used to generate more demand to be fulfilled by paid search. Per The Trade Desk, using RTB across not just display, but also video, to drive more search traffic could be a more compelling reason for advertisers to use the technology than the promise of a complex attribution formula, of which marketers could be skeptical. Looking forward, the buy-side platforms see RTB display's spending gains coming more from traditional media like print and TV than online search.

RTB is spreading across devices, as well as gaining share of different types of digital ad inventory. Thus, on the first point, the share of Rubicon's network traffic from smart phones, now in the 5-7% range, is increasing rapidly. On the second point, a number of panelists had comments. MediaMath said that U.S. display inventory is roughly half in premium, 20% in social, 20% in RTB display, with the balance primarily in mobile and video. Per Rubicon, the 20% share of the market that is transacted through RTB is increasing through "programmatic guaranteed" transactions, covering for example inventory previously deemed as premium and sold through direct sales forces – Rubicon expects this to be a key 2013 trend. The Trade Desk said that a key trend, which has started this year and will be important in 2013, is the expansion of RTB to buy video, mobile and social ad inventory.

Per MediaMath, automation of ad buying – which has been essential to the growth of the RTB market thus far – will disrupt the advertising ecosystem more broadly, beyond simply the online display advertising market. Rubicon seemed in accord, noting that over the next year or so the major online advertising players would see important disruption from this automation, but that over the longer term, companies with expertise in business analytics software like SAS could see attractive opportunities from entering into the ad automation business.

Consolidated buying platforms simplify the task of applying data on the ads that are delivered and tracking target response, including conversion to sales. MediaMath says that such buy-side platforms assist in properly attributing impact on conversion to ads that the target sees well prior to the final search-and-buy sequence.

We conclude that RTB technologies will have the biggest impact on display, video and mobile display, although we believe, somewhat in contrast to our panelists, that these technologies will affect search advertising as well. RTB could increase paid search click growth by more efficiently generating demand than the existing marketing mix, but it could also allow marketers to shift some search spending from those clicks with low propensity to convert (e.g., cull lower-performing search keywords or product listings) to display strategies targeted at prospects with a higher propensity to convert (e.g., retargeting those with abandoned shopping carts on FBX).

THOUGHTS ON IMPLICATIONS FOR PARTICULAR PLAYERS

Panelists were generally bullish on FB's growth potential, despite mixed views on its valuation. Joule sees FB as an undervalued asset, because it is in a select club of digital properties that can offer to marketers the key features of scale and relevance. Rubicon, although bullish on FB's valuation, sees FB's outlook turning on, among other things, how its strategy for exploiting its data assets unfolds, including how marketers could use them for their strategy (e.g., marketing strategy) outside of the FB platform. MediaMath sees signs in FBX that FB is working hard to solve its monetization challenges. The Trade Desk sees FB as uniquely positioned to close the mobile data loop, so that marketers can see the impact of mobile marketing on sales (e.g., by linking data on mobile ads to purchases on desktop). Joule stressed that linking mobile activity to sales will be a huge catalyst for mobile marketing generally.

Panelists see FB's mobile monetization in its infancy, despite its substantial potential. Joule notes that there are still relatively few opportunities for marketers to use FB on mobile. Some cautioned about the risks to FB of overloading the mobile platform with too much ad inventory.

Mixed views on Yahoo's competitive position. These experts in the cutting edge of the display ad market still seem unsure of what Yahoo's strategy is to leverage its still sizeable position in the display market. The buy-side platforms saw Yahoo's technology as an issue, and the recent steps to improve it as needed.

SOME OTHER PREDICTIONS FROM THE PANELISTS

For brands, mobile marketing gets 1% or less of the overall spend, although this share is starting to increase noticeably, and could be near a 10% run-rate in a year, per Joule. For Joule's clients in the developed markets like the U.S. and Europe, 60-70% of their spending is in mobile display, 20% on mobile video and just 10% on mobile search, which is not yet at scale. Mobile advertising in BRIC markets like China and India is still primarily display, along with some MMS.

Retail may be one of the sectors to see the biggest impact from mobile marketing, per Joule. The change in consumer shopping behavior wrought by the mobile phone – both in and out of store - will create disruption and opportunity for retailers.

MediaMath sees the potential for performance display to eventually become dominant, cutting into the share of display advertising used for mere branding. A key catalyst would simply be performance display pricing branding display out of the market. This could ultimately move branding budgets – at lower rates – to traditional media.

Not only does The Trade Desk see a majority of online display advertising transacted through RTB within the next 1-2 years, but sees the transition to RTB for video and social being substantially faster than the 5-6 year transition expected for online display. A key reason would be that the infrastructure and know-how for RTB display could be leveraged to trade other types of ad inventory. 2013 could see a spike in the share of pre-roll video ads bought and sold with RTB technology, and according increases in video ad rates.

Perhaps not surprisingly, panelists saw open exchange platforms as having a good future competing against more closed systems like Google's, Facebook's and Apple's. Google's ad exchange competes with Rubicon, and Google has buy-side platforms, which compete with MediaMath and The Trade Desk. The depth of Google's stack gives it a data-rich, convenient offering for digital marketers. On the other hand, competitors can potentially offer more transparency and better pricing in aggregate. Furthermore, independents may have access to key inventory supply, such as Facebook, which Google does not.

MORE ON THE PANEL

Joule. Part of WPP, Joule is a full-service mobile marketing agency, handling global campaigns and mobile agency-of-record responsibilities for Fortune 1000 marketers, including strategy, design, execution, media and analytics.

MediaMath. MediaMath is the leading provider of digital media trading technology and services, and invented the demand side platform.

The Rubicon Project. Rubicon Project is the leading independent advertising technology company for the comScore 500 and reaches a global audience of more than 200 million U.S. and 646 million global unique visitors monthly, the largest reach on the Internet. Rubicon's Real Time Trading Marketplace Reports give helpful insights on global trends in this fast-growing space.

The Trade Desk. The Trade Desk is one of the fastest growing buyers' platforms, focusing on digital buying tools, data protection and data management, funnel attribution across media partners, and is an alpha partner of Facebook Exchange, working with Facebook on FBX.

We take full responsibility for any errors of content or attribution in this report.

Covered Public Companies Mentioned (As of Close 12/18/2012)

Company	Ticker	Price	Rating	Price Target
Facebook	FB	\$27.71	OUTPERFORM	\$35.00
Google	GOOG	\$721.07	NEUTRAL	\$675.00
WPP Plc	WPPGY	\$71.96	OUTPERFORM	\$72.00

Analyst Certification

I, James Dix, CFA, certify that the views expressed in this report accurately reflect my personal opinion and that I have not and will not, directly or indirectly, receive compensation or other payments in connection with my specific recommendations or views contained in this report.

Disclosure information regarding historical ratings and price targets is available at <http://www.wedbush.com/ResearchDisclosure/DisclosureQ312.pdf>

Investment Rating System:

Outperform: Expect the total return of the stock to outperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

Neutral: Expect the total return of the stock to perform in-line with the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

Underperform: Expect the total return of the stock to underperform relative to the median total return of the analyst's (or the analyst's team) coverage universe over the next 6-12 months.

The Investment Ratings are based on the expected performance of a stock (based on anticipated total return to price target) relative to the other stocks in the analyst's coverage universe (or the analyst's team coverage).*

Rating Distribution (as of September 30, 2012)	Investment Banking Relationships (as of September 30, 2012)
Outperform: 54% Neutral: 42% Underperform: 4%	Outperform: 13% Neutral: 0% Underperform: 0%

The Distribution of Ratings is required by FINRA rules; however, WS' stock ratings of Outperform, Neutral, and Underperform most closely conform to Buy, Hold, and Sell, respectively. Please note, however, the definitions are not the same as WS' stock ratings are on a relative basis.

The analysts responsible for preparing research reports do not receive compensation based on specific investment banking activity. The analysts receive compensation that is based upon various factors including WS' total revenues, a portion of which are generated by WS' investment banking activities.

Wedbush Equity Research Disclosures as of December 19, 2012

Company	Disclosure
Facebook	1
Google	1
WPP plc	1

Research Disclosure Legend

1. WS makes a market in the securities of the subject company.
2. WS managed a public offering of securities within the last 12 months.
3. WS co-managed a public offering of securities within the last 12 months.
4. WS has received compensation for investment banking services within the last 12 months.
5. WS provided investment banking services within the last 12 months.
6. WS is acting as financial advisor.
7. WS expects to receive compensation for investment banking services within the next 3 months.
8. WS provided non-investment banking securities-related services within the past 12 months.
9. WS has received compensation for products and services other than investment banking services within the past 12 months.
10. The research analyst, a member of the research analyst's household, any associate of the research analyst, or any individual directly involved in the preparation of this report has a long position in the common stocks.
11. WS or one of its affiliates beneficially own 1% or more of the common equity securities.
12. The analyst maintains Contingent Value Rights that enables him/her to receive payments of cash upon the company's meeting certain clinical and regulatory milestones.

Price Charts

Wedbush disclosure price charts are updated within the first fifteen days of each new calendar quarter per FINRA regulations. Price charts for companies initiated upon in the current quarter, and rating and target price changes occurring in the current quarter, will not be displayed until the following quarter. Additional information on recommended securities is available on request.

FB

1) 05/04/12 OUTPERFORM \$44	2) 07/27/12 OUTPERFORM \$35
--------------------------------	--------------------------------



GOOG

1) 08/16/10 UNDERPERFORM \$525	2) 10/12/10 NEUTRAL \$575	3) 12/13/10 OUTPERFORM \$750	4) 04/15/11 OUTPERFORM \$700	5) 06/07/11 OUTPERFORM \$680	6) 07/12/12 NOT RATED NA
-----------------------------------	------------------------------	---------------------------------	---------------------------------	---------------------------------	-----------------------------



WPPGY

1) 11/02/09 NEUTRAL \$46	2) 12/07/09 OUTPERFORM \$57	3) 03/10/10 OUTPERFORM \$60	4) 07/19/10 OUTPERFORM \$60	5) 10/15/10 OUTPERFORM \$68	6) 03/04/11 OUTPERFORM \$74
7) 04/29/11 OUTPERFORM \$76	8) 10/17/11 OUTPERFORM \$87	9) 02/29/12 OUTPERFORM \$70	10) 03/05/12 OUTPERFORM \$70	11) 04/30/12 OUTPERFORM \$71	12) 08/27/12 OUTPERFORM \$75



* WS changed its rating system from (Strong Buy/Buy/Hold/Sell) to (Outperform/ Neutral/Underperform) on July 14, 2009.

Please access the attached hyperlink for WS' Coverage Universe: <http://www.wedbush.com/services/cmg/equities-division/research/equity-research> Applicable disclosure information is also available upon request by contacting Ellen Kang in the Research Department at (213) 688-4529, by email to ellen.kang@webbush.com, or the Business Conduct Department at (213) 688-8090. You may also submit a written request to the following: Business Conduct Department, 1000 Wilshire Blvd., Los Angeles, CA 90017.

OTHER DISCLOSURES

RESEARCH DEPT. * (213) 688-4505 * www.wedbush.com

EQUITY TRADING Los Angeles (213) 688-4470 / (800) 421-0178 * EQUITY SALES Los Angeles (800) 444-8076
CORPORATE HEADQUARTERS (213) 688-8000

The information herein is based on sources that we consider reliable, but its accuracy is not guaranteed. The information contained herein is not a representation by this corporation, nor is any recommendation made herein based on any privileged information. This information is not intended to be nor should it be relied upon as a complete record or analysis; neither is it an offer nor a solicitation of an offer to sell or buy any security mentioned herein. This firm, Wedbush Securities, its officers, employees, and members of their families, or any one or more of them, and its discretionary and advisory accounts, may have a position in any security discussed herein or in related securities and may make, from time to time, purchases or sales thereof in the open market or otherwise. The information and expressions of opinion contained herein are subject to change without further notice. The herein mentioned securities may be sold to or bought from customers on a principal basis by this firm. Additional information with respect to the information contained herein may be obtained upon request.

WEDBUSH

EQUITY RESEARCH DEPARTMENT (213) 688-4529

DIRECTOR OF RESEARCH

Mark D. Benson (213) 688-4435

MANAGER, RESEARCH OPERATIONS

Ellen Kang (213) 688-4529

RETAIL AND CONSUMER

Consumer Products

Rommel T. Dionisio (212) 938-9934
Kurt M. Frederick, CFA CPA (415) 274-6822

Footwear, Apparel and Accessories

Corinna Freedman (212) 688-9876

Healthy Lifestyles

Kurt M. Frederick, CFA CPA (415) 274-6822

Restaurants

Nick Setyan (213) 688-4519
Colin Radke (213) 688-6624

Specialty Retail: Hardlines

Joan L. Storms, CFA (213) 688-4537
John Garrett, CFA (213) 688-4523

Specialty Retail: Softlines

Betty Chen (415) 273-7328
Alex Pham (415) 273-7315

RETAIL/CONSUMER MARKET RESEARCH

Gabriella Santaniello (213) 688-4557

INDUSTRIAL GROWTH TECHNOLOGY

Clean Technology
Craig Irwin (212) 938-9926

Environmental Services
Al Kaschalk (213) 688-4539

Industrial Biotechnology

Liana Moussatos, Ph.D. (415) 263-6626
Christopher N. Marai, Ph.D. (415) 274-6861

Water and Renewable Energy Solutions

David Rose, CFA (213) 688-4319

TECHNOLOGY, INTERNET, MEDIA & SOCIAL MEDIA

Communications Equipment

Rohit Chopra (212) 668-9871
Sanjit Singh (212) 938-9922
Ryan Flanagan (212) 938-9942

Computer Services: Financial Technology

Gil B. Luria (213) 688-4501

Enterprise Software

Steve Koenig (415) 274-6801

Entertainment: Retail

Michael Pachter (213) 688-4474
Nick McKay (213) 688-4343
Alicia Reese (212) 938-9927

Entertainment: Software

Michael Pachter (213) 688-4474
Nick McKay (213) 688-4343

Internet and E-Commerce

Michael Pachter (213) 688-4474
Nick McKay (213) 688-4343
Alicia Reese (212) 938-9927

Media

James Dix, CFA (213) 688-4315
Alicia Reese (212) 938-9927

Movies and Entertainment

Michael Pachter (213) 688-4474
Nick McKay (213) 688-4343
Alicia Reese (212) 938-9927

Semiconductors

Betsy Van Hees (415) 274-6869
Ryan Jue, CFA (415) 263-6669

LIFE SCIENCES

Biotechnology/Biopharmaceuticals/BioDefense

Gregory R. Wade, Ph.D. (415) 274-6863
David M. Nierengarten, Ph.D. (415) 274-6862
Christopher N. Marai, Ph.D. (415) 274-6861

Cardiovascular, Hepatic and Devices

Akiva Felt (415) 263-6648

Emerging Pharmaceuticals

Liana Moussatos, Ph.D. (415) 263-6626
Richard Lau (415) 274-6851
Christopher N. Marai, Ph.D. (415) 274-6861

Healthcare Services - Managed Care

Sarah James (213) 688-4503
Daniel Patt (212) 938-9937

Medical Diagnostics and Life Sciences Tools

Zarak Khurshid (415) 274-6823

EQUITY SALES

Los Angeles (213) 688-4470 / (800) 444-8076
San Francisco (415) 274-6800
New York (212) 938-9931
Boston (617) 832-3700

EQUITY TRADING

Los Angeles (213) 688-4470 / (800) 421-0178
San Francisco (415) 274-6811
New York (212) 344-2382
Boston (617) 832-3700

CORPORATE HEADQUARTERS

1000 Wilshire Blvd., Los Angeles, CA 90017-2465
Tel: (213) 688-8000 www.wedbush.com