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Sector Bulletin
*Digital Media and Internet Technology*
September 2013

Mobile Influence on the Consumer Purchasing Process

Despite increasing commentary on the impact of showrooming, brick-and-mortar stores still account for 90%+ of retail transactions per Forrester Research. However, the Internet, generally, and mobile platforms, specifically, are making deeper inroads into the purchasing process. According to Forrester, by 2016, 44% of total retail sales in the US ($1.7 trillion of offline commerce) will be influenced by online research. Per comScore, one of every three monthly visitors to the average digital retailer website comes exclusively on mobile platforms. The personal nature of mobile devices supports product recommendations and advertising which can be targeted to the individual level. Personalization aids discovery, trial and acquisition of the most relevant content, products and services available online. When using a mobile device, consumers generally know what they want. Unaided recall of a product is a key economic driver on mobile platforms. Branded and direct response advertising that enhances consumer mindshare by effectively articulating product differentiation and features will be key to helping frame a consumer's mobile purchasing decision.

Variability in Accessing Retail Category. There is wide variation between smartphone and tablet users in how they access the retail category. While mobile apps drive the vast majority (78% of time spent) of retail category engagement on smartphones, mobile web browsing is actually the preferred touch point for tablet users (56% of time spent). In addition to direct access to a retailer site or app, the emergence of daily deal, couponing and similar services has expanded the universe of transaction opportunities. For Groupon, as of June 2013, ~50% of all North American transactions were completed on mobile devices compared with ~30% in June 2012, reflecting the increasing usage of Groupon's app over desktop entry.

% Retail Time Spent by Platform & Access Method
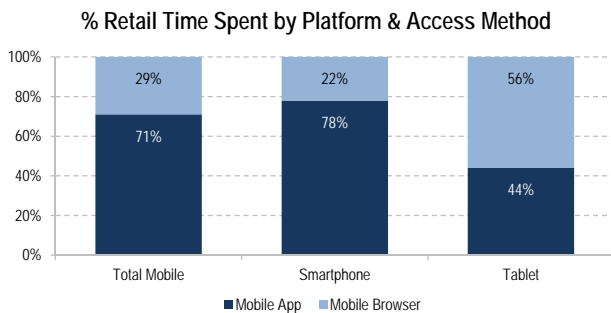
Source: comScore, June 2013

% of Groupon North America Transactions Completed on Mobile
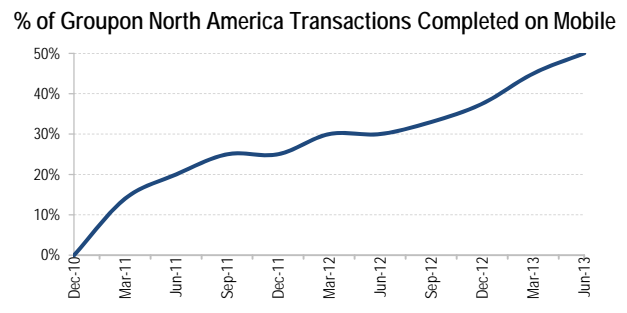

Source: Groupon

Smartphones as Shopping Assistants vs. Tablets for Buying. The tablet is the device for key product and research diligence. Screen size plays a factor in consumer behavior and the differences will be tested as more usage data emerges from devices that essentially merge the smartphone and tablet into a "phablet". Consumers view the smartphone as a supplemental resource during the purchasing journey, rather than as a checkout tool. Retailers and advertisers that prioritize features such as product information, ratings and reviews and even relevant promotions or sales notifications can connect better with their mobile consumer base, which will in turn lead to more transactions. Similarly, mobile app developers and advertisers will need to account for these device usage and behavioral differences in the creative and design process. As the data shows, one size does not fit all.

Mobile Commerce Activities of Smartphone & Tablet Owners
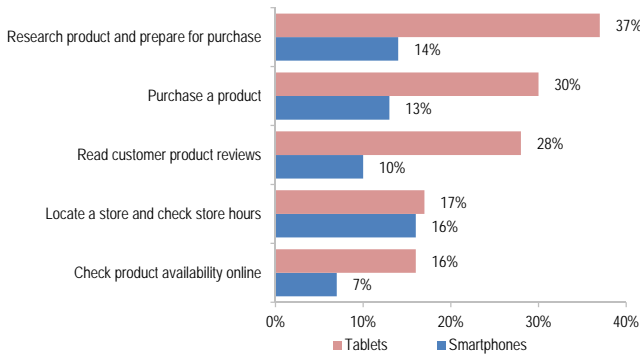
Source: Forrester Research, May 2013

Shopping vs. Buying Habits of Smartphone & Tablet Owners
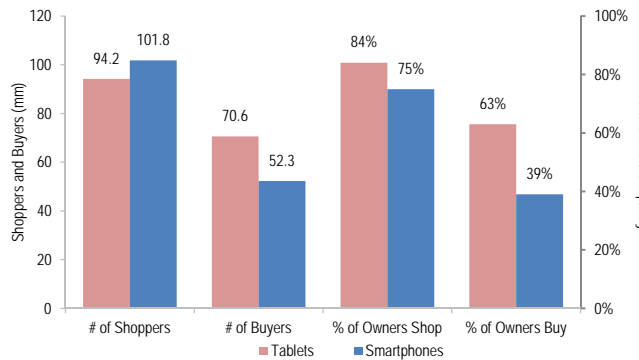
Source: eMarketer, April 2013

Key Mobile Influencer: Social Media. The emergence of social media presents a challenge to brands, particularly as consumers are increasingly tone setters and spontaneously share their experiences across their personal networks via mobile devices. News feed updates on Facebook, Twitter and Reddit will include recommendations, reviews and opinions which can dramatically alter the perception of a brand. The two-year old image-sharing site Pinterest has emerged as a key influencer among global millennial consumers as 39% said that the site influences their shopping by giving them ideas and linking them to products they like, according to Havas. Advertisers are increasingly focused at this intersection of mobile, commerce and social.
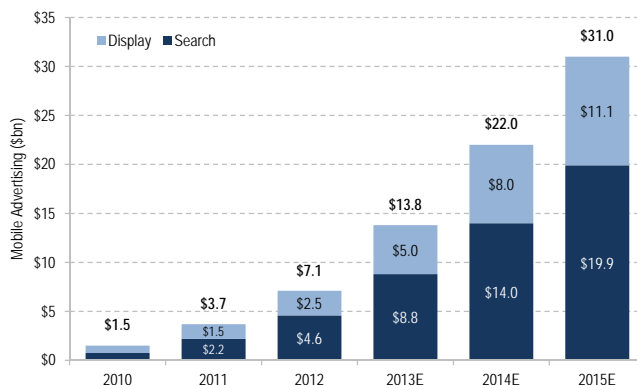
Momentum Builds in Mobile Advertising

Mobile commerce is a key catalyst for mobile advertising as retailers are more inclined to advertise if spending drives a transaction. Mobile provides advertisers, app developers and ultimately retailers with a number of key benefits:

- *Continual Access*: With the proliferation of Internet-connected devices, high speed wireless networks and advancements in GPS technology, advertisers can reach audiences at all stages of the purchase decision anytime, anywhere to increase the likelihood that the consumer will become a purchaser of the product or service.

- *Personalization*: When consumers download apps or browse a site, data is exchanged that provides information about the users' interests. This data is collected and analyzed to provide valuable insights on consumer behavior which creates the opportunity to personalize the mobile advertising experience (e.g., recommendations).

- *Location and Audience Targeting*: Data from mobile devices is often shared in a manner that can identify a user's location. An ad can be targeted to a consumer who is in close proximity to a specific retailer or restaurant. Similarly, highly specific audiences can be created based on location, behavioral and demographic preferences to match advertisers' objectives. The ability to create and deliver highly relevant audiences also enhances the value of advertising space for developers and publishers.

Mobile Ads Following Mobile Commerce. The largest US mobile ad contributor continues to be search, which is estimated at $9 billion in 2013 and growing to $14 billion in 2014. While banner (display) ads benefit from being the primary item on a mobile screen, the limitation of smaller real estate on smartphones poses a challenge to advertisers and publishers. Mobile campaigns delivering rich media (interactive, video) tend to mitigate these limitations and lead to higher engagement and click-thru-rates. Similarly, ads that are native to the platform on which they are displayed, bought or sold, will resonate better with audiences. Sponsored stories on Facebook and ads in the Newsfeed are native to Facebook's platform. The content on Facebook, Twitter and Tumblr are multi-format as are the ads themselves. Advertisers have flocked to social media leaders with the ability to seamlessly integrate brand messaging into the flow of user conversations.
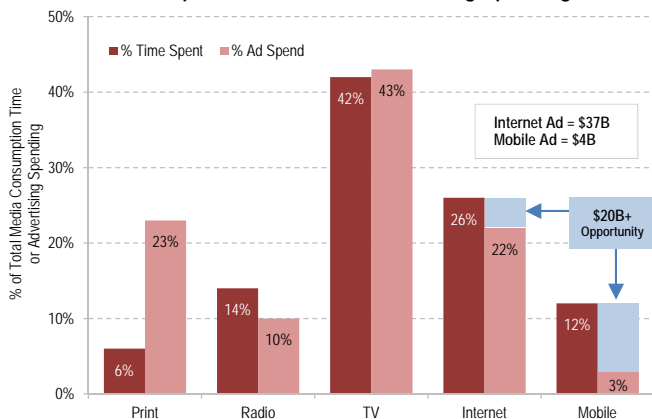
Mobile Advertising Spend in US & Western Europe

Mobile Advertising ($bn)

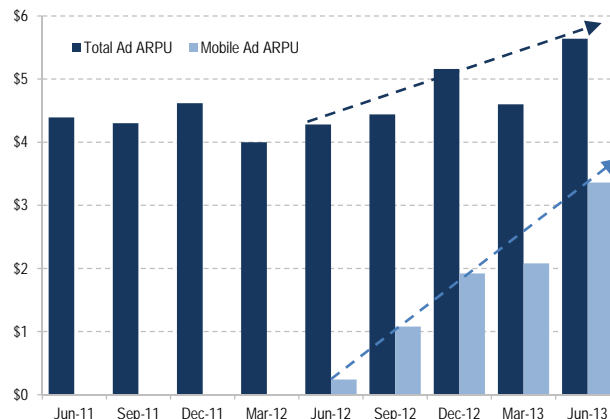| Year	Search	Display	Total
2010			$1.5
2011	$2.2	$1.5	$3.7
2012	$4.6	$2.5	$7.1
2013E	$8.8	$5.0	$13.8
2014E	$14.0	$8.0	$22.0
2015E	$19.9	$11.1	$31.0

Source: Wall Street research

Migration of Ad Dollars to Mobile. Given the benefits of mobile advertising as compared to offline and desktop, marketers will continue to shift their advertising budgets to mobile. Time spent on mobile devices represents 12% of total time online, but less than 3% of mobile advertising dollars. This $20 billion mobile gap should follow in the footsteps of the continued migration (and potentially cannibalization) of offline advertising dollars to PC-based, Internet advertising. The convergence of improved measurement technologies, industry standards and ad agency adoption is expected to accelerate the closing of this gap. Mobile is early along this continuum, but the indications are promising. Yahoo's $1.1 billion acquisition of Tumblr is an effort to jumpstart Yahoo's objective to attract millennials who are a highly mobile demographic. While the potential upside is significant, the question is whether Tumblr's audience remains loyal to the site as Yahoo seeks to monetize its investment. Facebook's ability to demonstrate mobile traction (40% of overall revenue as of Q2 2013) augurs well for the prospect of future monetization of its $1 billion acquisition of Instagram. Analysts have attributed the recent rise in Facebook's stock price to the increasing mix of overall revenue from the mobile channel as well as rapidly growing mobile ad average revenue per user (ARPU).

% Time Spent in Media vs. % Advertising Spending in US

% of Total Media Consumption Time or Advertising Spending

Media	% Time Spent	% Ad Spend
Print	6%	23%
Radio	14%	10%
TV	42%	43%
Internet	26%	22%
Mobile	12%	3%

Internet Ad = $37B
Mobile Ad = $4B

$20B+ Opportunity

Sources: eMarketer; IAB; KPCB *2013 Internet Trends*
Note: $20 billion opportunity calculated assuming Internet and Mobile ad share equal their respective time spent share

Facebook Annualized Ad ARPU

Quarter	Total Ad ARPU	Mobile Ad ARPU
Jun-11	$4.4	
Sep-11	$4.3	
Dec-11	$4.6	
Mar-12	$4.0	
Jun-12	$4.3	$0.2
Sep-12	$4.4	$1.1
Dec-12	$5.2	$1.9
Mar-13	$4.6	$2.1
Jun-13	$5.6	$3.4

Source: Facebook

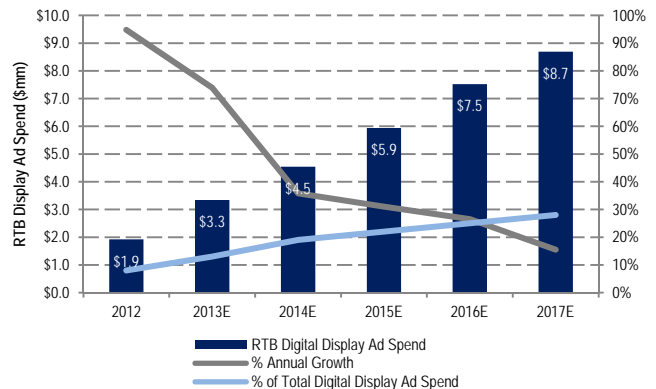# Expansion of Real-Time Bidding to Mobile Advertising

Historically, the buying and selling of digital advertising involved direct transactions between advertisers and publishers. As Internet usage increased, the number of publishers with significant inventory increased. In the past, most publishers lacked the scale and capabilities to monetize their inventory. Ad networks emerged to purchase unsold ad inventory from publishers, package it and sell the inventory to advertisers. Recently, the growth of real-time ad exchanges has reduced the transactional friction associated with buying and selling of digital inventory. Ad exchanges provide increased transparency, liquidity and efficiency. Real-time bidding (RTB) or programmatic buying involves the algorithm-driven purchase and sale of digital advertising on an impression-by-impression basis on real-time ad exchanges. Recent sector partnerships (AppNexus / Millennial Media) and consolidation (see below) indicate that leading mobile players are embracing RTB.

Factors Driving RTB Adoption in Mobile. Advertisers and publishers are recognizing RTB's impact on the mobile ecosystem:

- *Increase Mobile CPMs*: As the supply of digital ad inventory has grown, it has placed downward pressure on mobile ad cost per thousand (CPMs). Publishers point to programmatic ad buying as an efficient clearinghouse to match buyers and sellers and lift CPMs.

- *Optimize Location-Based Data*: The anytime, anywhere nature of mobile devices enables advertisers to reach consumers in real-time as they change location. As underlying mobile advertising technology improves, advertisers will be better able to employ data-driven predictive modeling and artificial intelligence techniques to perfect relevant ad delivery.

Automated Ad Spending to Reach $3.3 billion in 2013. RTB display ad spend continues to make inroads into the overall digital advertising space. By 2016, RTB spending is forecasted to reach $8.7 billion and comprise 29% of total digital display ad spending.

US Real-Time Bidding Display Ad Spending

RTB Display Ad Spend ($mm)

Bar values: 2012: $1.9; 2013E: $3.3; 2014E: $4.5; 2015E: $5.9; 2016E: $7.5; 2017E: $8.7

Legend:
- RTB Digital Display Ad Spend
- % Annual Growth
- % of Total Digital Display Ad Spend

Source: eMarketer, August 2013

Recent Merger Activity in Mobile RTB

Synopsys. On September 9, 2013, Twitter reached an agreement to acquire MoPub, a startup that helps publishers manage their mobile ad inventory. Terms were not disclosed, but reports indicate that Twitter outbid Millennial Media and others with an offer of $350 million in stock.

Implications.

- *Ad Monetization Play*: Twitter has no shortage of advertisers seeking access to its platform and users. MoPub works with publishers to gauge the performance of mobile ads. This transaction is a move to drive ad revenues which is important in and of itself, but more so given Twitter's planned IPO.

- *VC Impact*: MoPub had raised $18.5 million in funding from investors including Accel Partners, Harrison Metal Capital, Jafco Ventures and Iris Capital.

- *Quotable*: From Kevin Weill on Twitter's Official Blog: "The two major trends in the ad world right now are rapid consumer shift toward mobile usage, and the industry shift to programmatic buying. Twitter sits at the intersection of these, and we think by bringing in MoPub's technology and team to Twitter, we can further drive these trends for the benefit of consumers, advertisers and agencies. We also plan to use MoPub's technology to build real-time bidding into the Twitter ads platform so our advertisers can more easily automate and scale their buys."

Sources: Company press releases; Crunchbase

Synopsys. On August 13, 2013, Millennial Media announced an agreement to acquire mobile ad network rival Jumptap in a largely stock deal at $261 million.

Implications.

- *Market Share Grab*: While Millennial Media (NYSE:MM) ranks as the largest mobile ad network (aside from Google), it trails significantly in market share. According to eMarketer, Google held ~50% of US and global mobile market ad share in 2012, followed by app-specific ad networks run by Facebook, Twitter, YP and Pandora. Millennial held a 1.4% share in 2012.

- *Strength in Numbers*: According to Millennial, the expected combined PF 2013E revenue will be $340-$350 million with adjusted EBITDA at near break even. Millennial reports 2013E adjusted EBITDA of $4.5 million compared to Jumptap's negative $10.7 million.

- *VC Impact*: Jumptap had raised $122 million in funding from investors including General Catalyst Partners, Summerhill Venture Partners, Redpoint Ventures, Valhalla Partners, AllianceBernstein and WPP.

- *Quotable*: Millennial's CEO Paul Palmieri: "Jumptap's expertise in performance, cross-screen, real-time bidding and third-party data fit well with, and provide incremental scale to Millennial Media's existing platform."

Public Market Trading Performance

Source: Capital IQ as of September 18, 2013
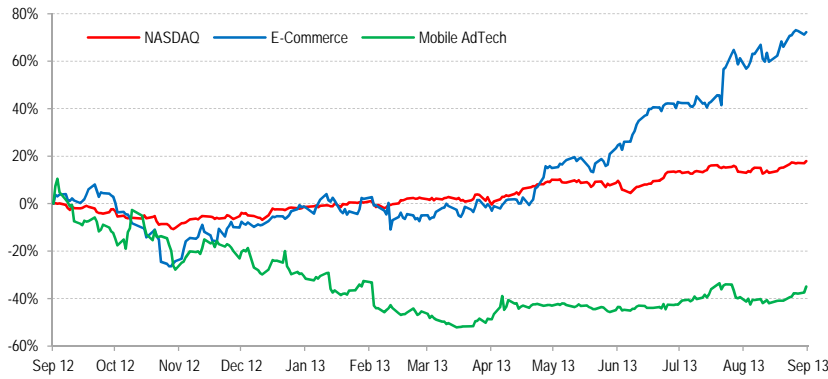
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Selected Public Company Valuation

Company Name	Ticker	Stock Price 9/18/13	% of 52-Week High	% of 52-Week Low	Market Cap	Enterprise Value	Cash	EV / Revenue LTM	EV / Revenue 2013E	EV / Revenue 2014E	EV / EBITDA LTM	EV / EBITDA 2013E	EV / EBITDA 2014E
E-Commerce													
Groupon, Inc.	NasdaqGS:GRPN	$11.17	100 %	429 %	$7,168	$5,984	$1,182	2.5 x	2.3 x	2.1 x	45.0 x	19.0 x	14.9 x
RetailMeNot, Inc.	NasdaqGS:SALE	34.42	92	132	1,753	2,033	115	12.0	10.4	8.3	32.5	27.3	21.9
Demandware, Inc.	NYSE:DWRE	44.75	91	187	1,347	1,242	110	14.0	12.4	9.1	-	-	-
ChannelAdvisor Corp.	NYSE:ECOM	32.61	91	229	665	584	94	9.8	8.8	7.1	-	-	-
Digital River Inc.	NasdaqGS:DRIV	17.23	85	135	576	310	570	0.8	0.8	0.8	10.6	9.6	5.9
E-Commerce Average			**92 %**	**222 %**				**7.8 x**	**6.9 x**	**5.5 x**	**29.4 x**	**18.6 x**	**14.2 x**
Mobile Advertising Technology													
Millennial Media Inc.	NYSE:MM	$6.54	39 %	111 %	$536	$414	$123	2.0 x	1.5 x	1.0 x	-	35.5 x	9.9 x
QuinStreet, Inc.	NasdaqGS:QNST	9.28	96	172	399	363	128	1.2	1.2	1.1	10.8	8.4	8.1
Hipcricket, Inc.	OTCBB:HIPP	0.39	30	148	52	52	1	1.9	1.7	1.4	-	-	-
Velti Plc	NasdaqGS:VELT	0.35	3	109	32	44	19	0.2	0.3	0.3	-	-	-
Voltari Corporation	NasdaqCM:VLTC	5.26	55	161	25	22	55	0.2	-	-	1.2	-	-
Mobile Ad Tech Average			**44 %**	**140 %**				**1.1 x**	**1.2 x**	**1.0 x**	**6.0 x**	**21.9 x**	**9.0 x**

Source: Capital IQ. Amounts in millions of U.S. dollars, except share price.

Selected Recent Merger Activity

Date	Target	Acquirer	Enterprise Value	Revenue	EBITDA	EV / Revenue	EV / EBITDA	Description
E-Commerce								
Sep 13	Decide Inc.	eBay Inc.	-	-	-	-	-	Price prediction and shopping engine
Aug 13	Monoprice, Inc.	Blucora, Inc.	$180	$131	$16	1.4 x	11.3 x	Online retailer of electronics
Aug 13	hybris GmbH	SAP AG	-	$110	-	-	-	Multi-channel commerce software solutions
Jul 13	Lexity, Inc.	Yahoo! Inc.	$38	-	-	-	-	App maker for e-commerce businesses
Mar 13 A	Cooking.com, Inc.	Target Corp.	-	$100	-	-	-	Online retailer of kitchen products
Feb 13	Redcats USA, Inc.	Charlesbank Capital	$525	-	-	-	-	Online retailer of plus-size apparel
Nov 12	BufferBox Inc.	Google Inc.	$17	-	-	-	-	E-commerce delivery solutions
Nov 12	GoJane LLC	Aéropostale, Inc.	$33	$19	-	1.7 x	-	Online retailer of women's apparel
E-Commerce Average						**1.6 x**	**11.3 x**	
Mobile Advertising Technology								
Sep 13	MoPub, Inc.	Twitter, Inc.	$350	$100	-	3.5 x	-	Mobile ad exchange
Sep 13	Gradient X, Inc	Amobee, Inc.	$15	-	-	-	-	Mobile media advertising tech platform
Aug 13 A	Jumptap, Inc.	Millennial Media Inc.	$261	$64	-	4.1 x	-	Mobile advertising tech platform
Jul 13	AD-X Limited	Criteo Corp.	-	-	-	-	-	Smartphone app tracking/analytic solutions
Jul 13	Wireless Developer Agency	[x+1], Inc.	-	-	-	-	-	Mobile marketing services
Jul 13	AdMovate, Inc.	Yahoo! Inc.	-	-	-	-	-	Mobile advertising technology
Jul 13	EveryScreen Media, Inc.	Media6Degrees Inc.	-	-	-	-	-	Mobile targeted digital advertising
Jul 13	ExactTarget, Inc.	Salesforce.com, Inc	$2,250	$317	-	7.1 x	-	Digital marketing SaaS solutions
Mobile Ad Tech Average						**4.9 x**	**NA**	

Sources: Capital IQ; TechCrunch; Reuters. Amounts in millions of U.S. dollars.