Evolution of Digital Measurement

The History, the Challenges, and the Future

LUMA

Digital Brief 016

Executive Summary

Accurate measurement is critical for marketers. In order to effectively operate their digital properties, plan their campaigns and select their third-party partners they must have accurate, insightful and trusted measurement. "Digital" has evolved dramatically since the first simple websites were launched, and now consumers spend more time on digital devices than they do watching TV. Digital advertising has also surpassed television advertising.[1] Therefore, digital measurement is more critical than ever, and it continues to evolve rapidly.

This Digital Brief covers the evolution of measurement, and addresses the following topics:

- Web analytics
- Web audience management
- Mobile analytics
- Multi-touch attribution
- Mobile app attribution
- Fraud, viewability, and brand safety
- Third-party *walled garden* measurement
- The use of *identity* for people-based measurement
- Advanced measurement such as online-to-offline and attention measurement

The industry is changing so quickly we expect this paper to need updating in short order. But we hope the reader finds this brief useful in understanding the history and evolution of measurement technologies.

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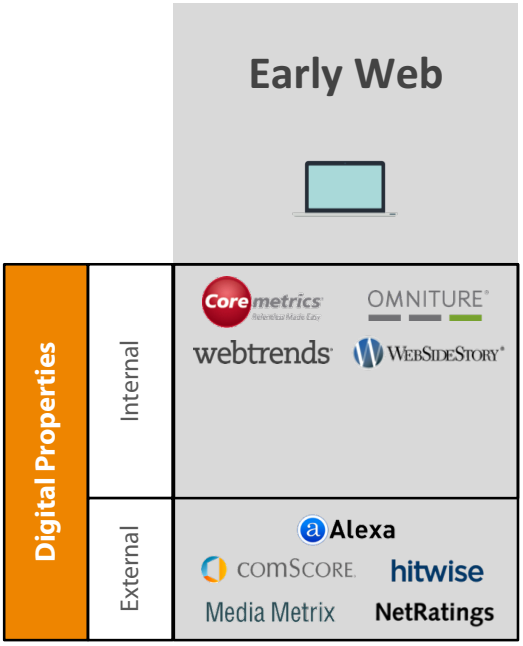
Digital Measurement Started with the Desktop Website

When *digital* began with the advent of the internet, a company's digital presence was really just one thing: a desktop website. Once a company published a website, inevitably two questions arose:

1. How is my website working?
2. How does a website's traffic compare to other sites on the Internet?

These questions drove the growth of the two earliest digital measurement categories: web analytics and web audience measurement. Web analytics software analyzes traffic on owned and operated properties. Metrics such as the number of visitors, traffic sources and funnel analyses were essential to understanding how a website was performing and how to improve site performance. These capabilities continue to play an important role today. The dozens of web analytics startups quickly narrowed to four early leaders: Coremetrics, Omniture, WebSideStory and WebTrends.

The **web analytics market** evolved over the years, even when it was primarily a desktop, web-focused market. While early web analytics systems would analyze log files (such as counting client requests to a web server) to understand page traffic, the software advanced to using cookies to track website visits, enabling the software to recognize individual (anonymous) users and run more powerful, robust reports. The category also continued to consolidate, with Omniture acquiring Visual Sciences (formerly WebSideStory) and IBM acquiring Coremetrics. Additionally, a new major player entered which disrupted the industry by offering web analytics for free: Google Analytics. Today, there are two major web analytics players: Adobe Analytics (from its acquisition of Omniture) which dominates the enterprise market, and Google Analytics which dominates the SMB market.



Web audience measurement was developed to assist both website operators and marketers. These offerings enable marketers to measure traffic across sites in order to plan and measure their digital (display) advertising. Companies such as Alexa, ComScore, Hitwise, Media Metrix and NetRatings were founded, seeking to set the standard for digital measurement in much the way that Nielsen set the standard for TV. This category also experienced significant consolidation, with ComScore and Nielsen emerging as the leaders. Early metrics for measuring web advertising effectiveness were very rudimentary, with the industry settling for clicks, views and Monthly Active Users (MAUs) as the most commonly used standards.

The Rise of Mobile – and New Measurement Challenges

Eventually a new challenge arose: mobile.

Measuring the mobile web wasn't a significant change, since traditional web analytics and web measurement tools could track these sites. But mobile apps were another story. With mobile apps being self-contained applications — very different from the traditional "website" architecture — incumbent web analytics software did not work. As the mobile app economy took off, a new class of vendors was founded to address mobile analytics, such as Flurry and Localytics, that were focused on mobile apps, as well as companies like Mixpanel that designed software to work across both web and apps.

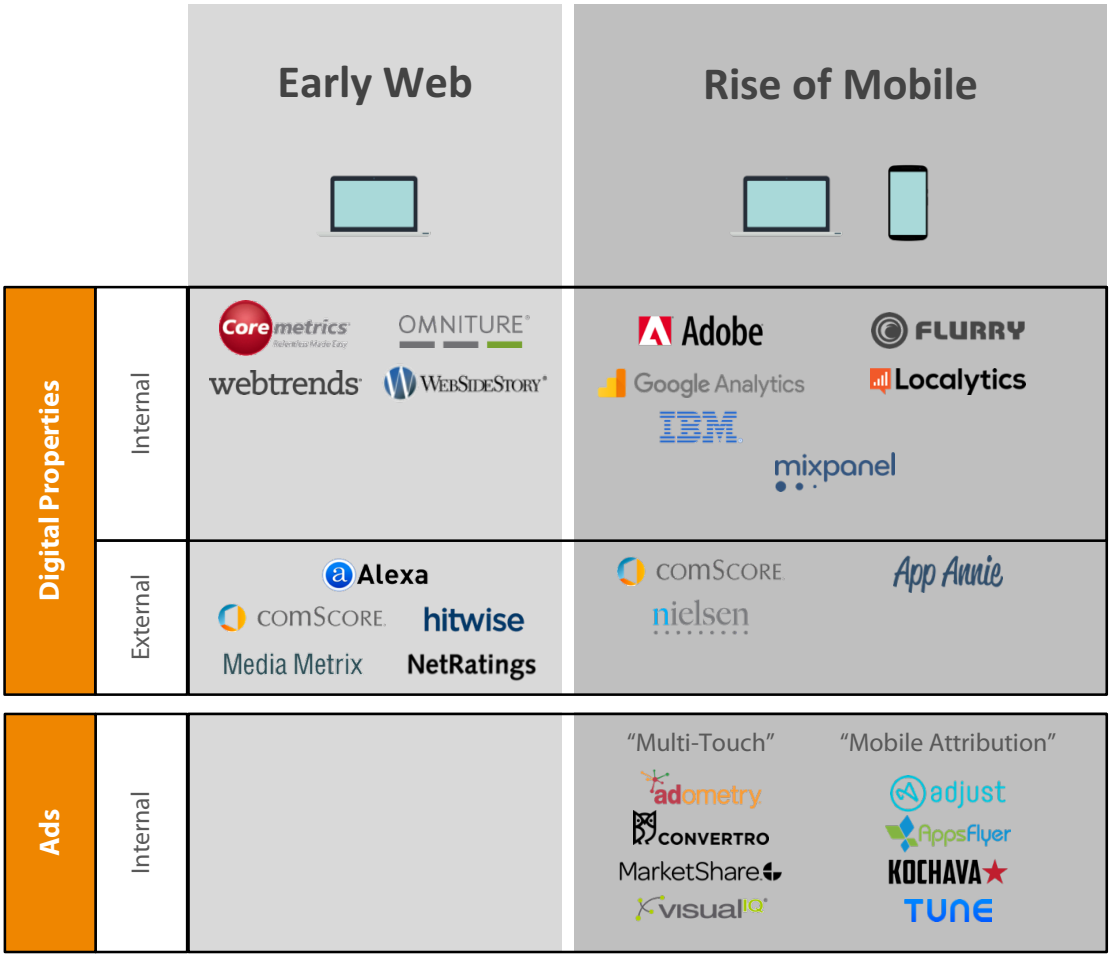
With the completely new mobile app paradigm, these vendors based their software on a new philosophy. Traditional web analytics were page-based, meaning they typically analyzed web traffic on an aggregated basis by page. New, mobile-centric analytics were people-based, since the software could identify specific individuals from persistent identifiers such as their mobile ID (or login, if available). This paradigm shift enabled the industry to create more robust analytics that provided reports on both basic app performance metrics (visits, navigation, etc.), as well as demographic and behavioral analyses of the app users — which could also be used for advertising and marketing purposes.

The Rise of Mobile – and New Measurement Challenges

Similar to the web analytics market, the incumbent web measurement companies couldn't track mobile app traffic. Therefore, new startups such as App Annie addressed the mobile app ecosystem, providing metrics like app downloads, demographic and usage metrics across major mobile apps.

As the digital economy grew and became more complex, another category emerged: attribution.

Advertisers struggled to understand which advertising channel was effective (or not), which advertising partner to credit for traffic, and how to properly allocate digital advertising spend. One category addressed the "traditional" digital economy: multi-touch attribution, with vendors including Adometry, Convertro, MarketShare and VisualIQ, which aimed to solve the aforementioned challenges. Similarly, for the mobile app economy, mobile publishers needed to determine which advertising partners were responsible for driving an app install. Therefore, the mobile app attribution category was created, consisting of vendors such as Adjust, AppsFlyer, Kochava and TUNE.



The Dawn of Programmatic Introduced Additional Complexity

With the rise of programmatic, digital advertising advanced rapidly. The volume of targetable inventory exploded with the growth of advertising exchanges such as Google's DoubleClick Ad Exchange, Yahoo Right Media, AppNexus, Adap.tv, LiveRail, MoPub and Nexage, and sell-side platforms such as The Rubicon Project and PubMatic. However, the complexity grew for both audience targeting and measurement due to three main issues:

Fraud

The deliberate act of exploiting an advertiser's online budget without providing any value-added service in return, such as fake traffic, fake leads or misrepresented and ineffective ad placement.

Viewability

A metric that aims to track only impressions that can actually be seen by users. For example, if an ad is loaded at the bottom of a webpage but a user doesn't scroll down far enough to see it, that impression would be deemed not viewable.

Brand Safety

Contextual technology aimed at ensuring an advertisement does not display on webpages where its appearance might negatively impact the advertiser's brand.

With marketers demanding that ads should be fully viewable by a real person in a brand-safe environment, a new class of vendors emerged to attack these issues, which includes DoubleVerify, Integral Ad Science (IAS), Moat and White Ops. They implemented solutions that could be utilized both in a real-time environment (to block undesirable impressions before an ad is served) or for audit / reporting purposes.

The issue is a massive one, with daunting statistics. In January, 2016 the ANA and WhiteOps released a study which concluded that advertisers would lose an estimated $7.2 billion globally as a result of fraudulent impressions.[2] In the study, advertisers experienced bot traffic of 3% to 37%. Additionally, media with high CPMs were more vulnerable to bot traffic, which further magnifies the loss due to the fraudulent traffic. Another study by IAS conveys that 50% of programmatic ads are out-of-view, 9.5% are served against risky content, and more than $8 billion of loss is attributed to ad fraud in the United States alone.[3] During the Cannes Lions Festival of Creativity in June 2017, Unilever's Chief Marketing Officer, Keith Weed proclaimed, "if you don't have your ad viewed, you are dead."[4]

The Dawn of Programmatic Introduced Additional Complexity

The mobile app install market has also been challenged.

A recent study by TUNE analyzed 24 billion clicks across 700 ad networks and found that the average fraud across these networks was 15%.[5] Some were dramatically worse than others, with 8 networks being 100% fraudulent and 35 networks at least 50% fraudulent. The types of fraud prevalent in the mobile app economy include the following practices:

Click Spammers

The use of brute force to generate large volumes of clicks in the background of an app or browser, sometimes on the order of hundreds per hour (which taxes users' batteries and data plans), in an effort to randomly time a click with an organic download or profit from brand advertisers who pay for impressions that are never seen.

Click Injection

A newer and more sophisticated approach that involves malware that runs in the background on a device and detects when a user downloads a new app. The software fires a click or tracking code during the download, securing last click credit for an organic install or one driven by another ad partner after the fact.

Domain or Location Spoofing

Misrepresenting a site destination to drive action or user location to charge premium pricing.

Viewability Fraud

Hidden ads, created by stacking multiple ads on top of each other; only the one above is visible to the consumer — or stuffing a banner or video ad into a 1x1 pixel so it is impossible to see.

Other

Additional shady practices keep emerging, including forced redirects where users are pushed into the app store without touching (or seeing) an ad; switching creative to drive results with off-brand / misleading ads; mixing rewarded and non-incentivized traffic to create the appearance of better than actual performance; install farms, where humans operate multiple actual devices to download apps to drive chart-ranking position; and in-app purchase fraud (with both consumers accessing virtual goods for free as well as fraudsters intercepting purchase requests on their way to an app store with proxy servers and returning fake receipts to the app, both which wreak havoc on marketers' LTV models).

The Dawn of Programmatic Introduced Additional Complexity

With this increase in fraudulent activity, the mobile app attribution companies (among others) have rolled out fraud prevention solutions in an attempt to mitigate the problem —and to also provide a *clean* baseline for their attribution analyses.

These vendors detect and prevent this activity by running statistical analyses which look for patterns of automated clicks and installs, click farms, background clicks and incentivized installs. Anomalies in the distribution of clicks, conversions and the corresponding time to install are used to block / blacklist certain publishers, IP addresses and data centers, as well as advise the publishers on which traffic they shouldn't pay for and/or have refunded. Advertisers may also include minimum performance requirements (i.e., a base level Day 1 Retention) into their IOs to ensure that installs they pay for are actually valid.

Given the dollars at stake, those committing fraud will continue to innovate; therefore, industry participants need to work together to zero in on solutions to stamp out these practices and ensure a healthy ecosystem.

The Rise of the Social Publishing Platforms

Concurrent with the growth of mobile and programmatic advertising was the rise of another, equally transformative power in digital: the large publishing / social platforms, such as Facebook, YouTube, Twitter, etc. Over time, advertisers significantly ramped up spend on these platforms since they have large audiences, sophisticated targeting, perform well and are perceived to have higher brand safety than the open, programmatic ecosystem. Today, these platforms have amassed enormous market share, with Facebook and Google now capturing an estimated 85% of advertising market growth.[6]

These platforms initially operated in closed environments or *walled gardens* where they dictated their own advertising terms and standards, and the only metrics marketers received came from the proprietary measurement systems of the social platforms themselves. This dynamic has caused significant angst among marketers and a new issue: transparency (or lack thereof), fostering an environment that drove distrust. As stated by Unilever's Mr. Weed, "If you don't have third-party verification, it's like letting them mark their own homework."[7]

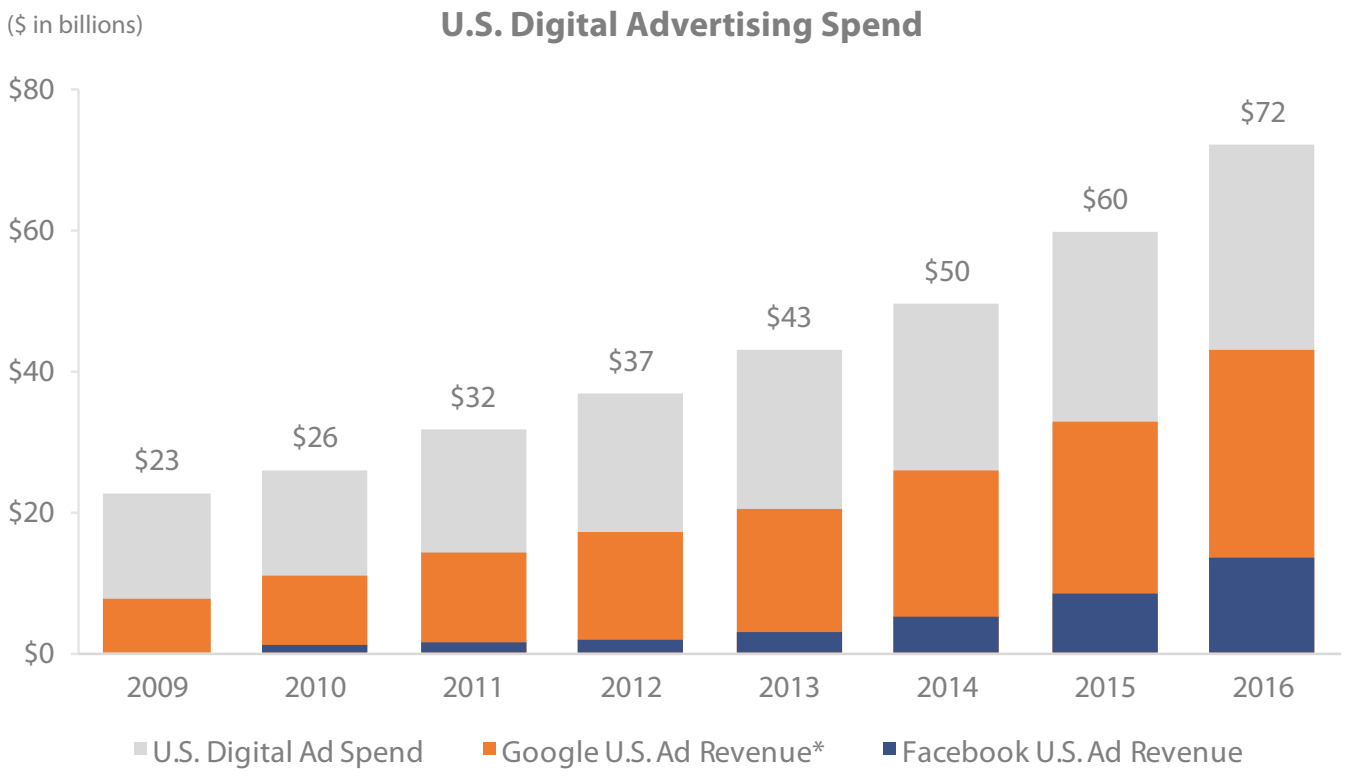
The Rise of the Social Publishing Platforms

And marketers had reason to worry.

In 2016, Facebook admitted to inaccurate measurement reporting, including overestimating the average viewing time for video ads and discrepancies. This led to the under- or over-counting of four metrics: weekly reach, monthly reach, the number of full video views and the time spent with publisher's Instant Articles.[8] More recently, in May 2017, Facebook issued refunds to customers associated with measurement issues related to its *video carousel* ad units.[9]

Facebook was not alone.

In 2017, YouTube experienced a backlash from advertisers raising brand safety concerns after it was disclosed that it served ads against extremist and hate-speech content. Not surprisingly, advertisers haven't taken these developments lightly, as AT&T, GM, Johnson & Johnson, JPMorgan Chase, L'Oreal, Lyft, McDonalds, Pepsi, Starbucks, Verizon and Walmart were among the hundreds of brands that paused spend on YouTube in the wake of the brand safety revelations.[10] While these actions ultimately did not impact YouTube's financial performance, and the advertisers largely returned to YouTube in short order, the high-profile news highlighted the issue and need for brand safety measures.[11]



*Revenue ex-TAC
Source: eMarketer, Company Filings

The Rise of the Social Publishing Platforms

Additionally, Marc Pritchard, Chief Brand Officer of P&G, made headlines when he put the industry on notice at the IAB's Annual Leadership Meeting in January 2017, announcing that the world's largest advertiser would no longer pay for any digital media, ad tech or agency vendors that didn't comply with its viewability, fraud protection and third-party verification requirements.[12]

The walled gardens have responded in kind and have begun to open up to independent measurement in an attempt to comfort the marketers. This response is being viewed positively by marketers, who have been demanding "value, viewability and verification" for quite a while, as noted in Unilever's Mr. Weed's comments from 2015[13]:

> **"Our position on this has been clear for some time. We need to get standards that help define viewability across different platforms and publishers, and those standards need to be third-party verified. It is very encouraging to see Facebook joining the ranks of digital media partners who are setting themselves apart — and this commitment continues the momentum. Our hope is that these steps will lead ultimately to 100% viewability through third-party verification across the industry."**
>
> BUSINESS INSIDER (Sept 17, 2015)

The walled gardens have been coming down as social platforms have opened up to third-party measurement providers. Since DoubleVerify, IAS and Moat were already providing measurement, viewability and fraud solutions to the *open* ecosystem, it was natural for these vendors to provide the same solutions within the social platforms. Moat led the market, being the first third-party measurement vendor within Facebook and YouTube, verifying ad views and the length of time users spend viewing video ads. IAS and DoubleVerify followed Moat and also integrated fraud and viewability solutions within Facebook and YouTube. All three now also work in some capacity with additional platforms such as Snap, Twitter, Pinterest, and Pandora.

Further, Moat's leadership in third-party measurement of the social platforms helped drive its acquisition by Oracle. Adobe has long held the lead in analytics among the marketing clouds due to its Adobe Analytics (Omniture) offering, but it now has a strong competitor in Oracle — which will have the capability to provide measurement of the social platforms with the acquisition of Moat. As the social platforms continue to capture additional advertising market share, it will be interesting to watch the analytics battle play out among the marketing clouds.

People-Based Marketing and the Rise of *Identity*

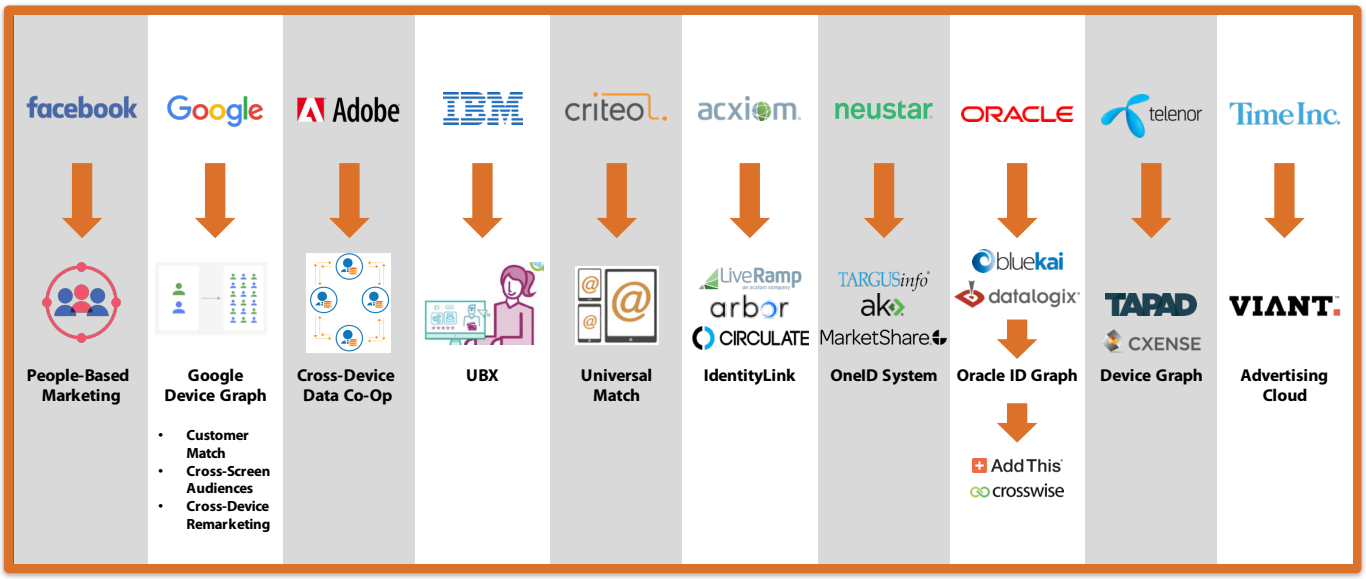
Changes in consumer behavior — with the use of multiple devices, apps and browsers — increasingly created marketing and measurement challenges for enterprises because of the fragmented nature of consumer interactions. The social platforms had an inherent advantage in solving this issue as a result of having logged-in consumers across their O&O properties and, therefore, across devices, apps and browsers. These platforms took advantage of their position and focused the industry on the benefits of utilizing identity for targeting and measurement. Facebook led the way, coining the term "people-based marketing" in 2014 when they publicly re-launched the Atlas assets acquired from Microsoft:

"Real people-based marketing combines philosophy and practice to accurately reach consumers in a mobile world — wherever your audience is, on any device. Atlas moves beyond cookies to reveal the connections between online, mobile and in-store experiences, delivering ad targeting and measurement of unprecedented power. By putting people at the core of success, we can help marketers understand, guide and grow their results more effectively than ever before."

In a generic sense, LUMA looks at people-based marketing to be marketing that reaches real people, has 1:1 messaging, and through mass media channels irrespective of device.

People-Based Marketing and the Rise of *Identity*

This launch of people-based marketing drove the broader industry to focus on the role of *identity* for marketing and advertising. The walled gardens led the way with their inherent advantage: logged-in consumers across their O&O properties. But enterprise software vendors also recognized the power of "moving beyond cookies" and "putting people at the core," and started investing heavily in identity graphs, online-to-offline identity matching and cross-device in order to enable their enterprise customers to more effectively plan, target and measure their marketing activities.



Another concept, which is complementary to people-based marketing is people-based measurement, where identity solutions are utilized to measure real people tied to an actual marketing goal.

Again, Facebook started evangelizing this concept, describing its people-based measurement as helping "marketers understand their campaigns impact based on real people by moving beyond cookies to reveal the connections between online, mobile and in-store experiences. With this view, marketers can see how different campaign strategies deliver on real business outcomes, and also compare ad performance across channel, for a complete picture of campaign performance." An enterprise software company focused on this area is Neustar. Through its acquisitions of Aggregate Knowledge and MarketShare, Neustar has built a solid "Identity Data Management Platform" powered by its OneID technology, which provides a unified view of the customer journey to optimize media activation and media efficiency. Its strong identity capabilities helped enable the company to recently win P&G's global business as its "multi-region DMP."

People-Based Marketing and the Rise of *Identity*

LUMA' Digital Brief 010, "Power to the People: Leveraging First-Party Data to Deploy People-Based Marketing" (August 2016) states that digital advertising was built utilizing two main proxies:

1. Cookies as proxies for real people.

2. Metrics, such as clicks or impressions, as proxies for achieving a marketing goal.

However, there is no longer any reason to use proxies since measurement technologies have advanced. The remedy for the first point was discussed in the prior section, with robust identity solutions being utilized for *targeting* (people-based marketing) and *measurement* (people-based measurement). Regarding the second issue, a marketer's goal is not to drive clicks or impressions — but to drive revenues. Since direct response advertising and brand advertising have different dynamics, each will be discussed separately.

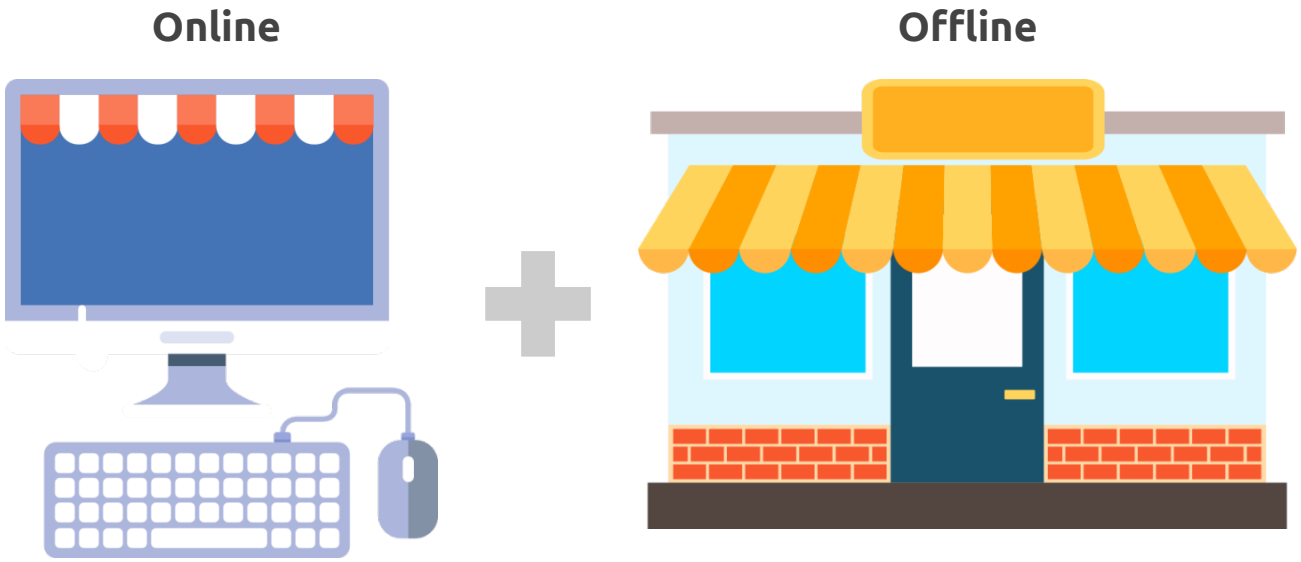
Measure Results, Not Proxies

Direct Response Advertising

In the era of the early web, typically the conversion event (a sale of a product or service online) was captured by placing a pixel on the check-out page of a website to record that event. This worked well (and still works) for online attribution when the advertiser directly drives a user from an advertising event (search, display) to the conversion event in a browser-based session on a single device. But this breaks down if the conversion path was more complicated, such as the following:

- An online advertising event drove the purchase offline in a store.
- The user was on a mobile device and the advertising event and conversion event were in separate environments (such as from the mobile web to an app which were not connected by deep linking).
- The advertising event was on a mobile device and the conversion event was on a desktop computer.

Identity solutions enable the marketer to create a single view of the customer and recognize that it is the same individual that performed the actions described above. But what about the conversion event? This “single view of the customer” must tie the online- or offline-purchase event to all the interactions with the consumer (see “Online-to-Offline” on the following page). Therefore, this means the systems that capture both online and offline (in-store) sales data must be connected. Only when this happens can a marketer have all the information necessary to feed an accurate, omnichannel, multi-touch attribution system.



Measure Results, Not Proxies

Brand Advertising

Brand advertising is even more complicated since, in most instances, the advertiser does not actually sell the goods to the consumer. For example, P&G advertises Crest toothpaste which might be purchased at a Target store. There are two new developments being utilized today by brand marketers to help measure the effectiveness of their brand advertising dollars: 1) online-to-offline and 2) time-based measurement.

Online-to-Offline

Digital advertising now makes up 37% of total advertising spend, but eCommerce still only comprises 8% of all purchases.[1, 14] Therefore, it is critical for marketers to be able to understand how digital advertising impacts in-store purchases, which has driven the need to develop online-to-offline measurement and attribution solutions.

Being the largest digital advertising company that needs to prove the efficacy of its services, Google has developed considerable capabilities in this area. It first launched its "store visit insights" in 2014, where store visits data is reported directly in AdWords. In order for Google to count a *visit* to an advertiser's location it takes into consideration multiple data sources such as the following:

- The person's time at the location
- Google Map searches or navigation to the location
- Google web searches
- The strength and accuracy in identifying visitors to an advertiser location

A visit is then only counted when a combination of factors leads to a high-confidence factor that there was indeed a visit. Since launch, Google has measured more than four billion store visits from Google ads.

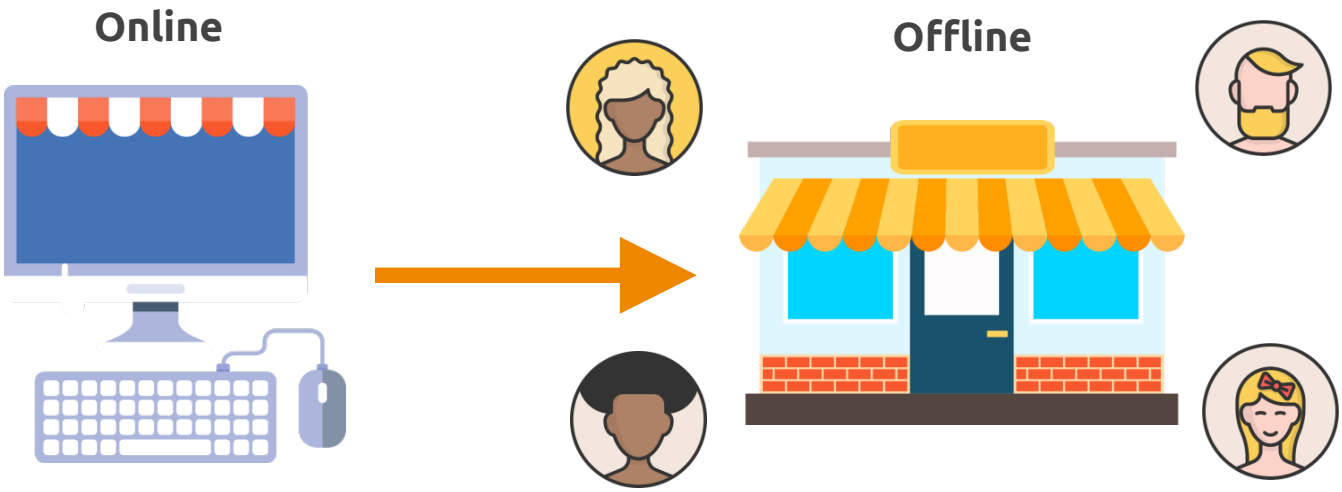
Measure Results, Not Proxies

Online-to-Offline (Cont.)

Facebook also has focused on developing robust online-to-offline capabilities. In the preceding example, P&G didn't know if advertising Crest on Facebook actually drove any sales. So in 2013, Facebook partnered with Datalogix (now part of the Oracle Data Cloud), Acxiom and Epsilon. These partners obtain SKU-level purchase data by consumer from thousands of retailers. They also have the name and contact information of the consumers (generally through loyalty card programs), which can then be matched to Facebook data. By comparing groups of users exposed to an ad vs. groups of users not exposed (using a privacy-compliant methodology), Facebook and its partners are able to prove whether an ad campaign does in fact drive offline sales. A 2012 report by Facebook and Datalogix concluded that in 70% of the campaigns analyzed, every $1 spent on Facebook led to an additional $3 in offline sales. [15]

Snap has launched one of the latest online-to-offline solutions, with its "Snap to Store" measurement to show if an advertising campaign drove shoppers to a store. In its S-1 filing, Snap reported that a sponsored geofilter drove over 42,000 incremental people to visit Wendy's locations.[16] The capability became so crucial to Snap's reporting that it recently announced the acquisition of location analytics provider Placed to power Snap-to-Store.

Others in the industry have pursued online-to-offline technologies and services, with Acxiom being the most aggressive of the enterprise software vendors. Acxiom acquired LiveRamp, Arbor and Circulate and, with LiveRamp's IdentityLink, is now the largest provider of online-to-offline data matching and identity resolution services, which are utilized by customers for both targeting and measurement purposes.



Measure Results, Not Proxies

Time-Based Measurement

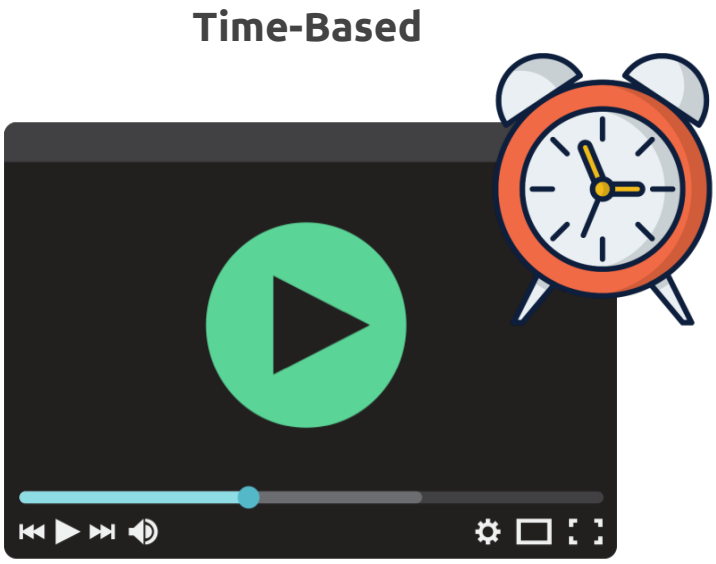
Another difficulty with brand advertising is that marketers focus on more abstract metrics, such as *brand awareness*, *brand identity* and *purchase intent* when measuring the success of a campaign. TV advertising has long been focused on these concepts; however, online brand advertising has struggled with multiple issues for measuring success. First, selling *impressions* has been the typical method to price campaigns. However, as discussed previously, while an impression may have been served, there are many instances where the ad was not viewable or was served to a bot. Second, clicks have been the typical measurement metric for whether an online campaign was successful, but there is no proof that clicks are actually any indication of success. As stated by Aniq Rahman, president of Moat, "no one buys a luxury watch or handbag by clicking on an ad." Instead, "attention is the scarce resource marketers are tying to value; we're figuring how to measure it."[17]

YouTube was the first company to embrace attention-based advertising when it launched its TrueView cost-per-view format in 2010 which allows viewers to skip an ad after five seconds if they are not interested. YouTube only charges advertisers when someone actually watches the video. Other traditional online publishers have started using similar philosophies, where the goal of driving *attention* has led to a new approach by publishers: selling ads based on time and attention, where they sell on a cost per second or cost per hour model rather than clicks. *The Economist* has been experimenting with selling ads on these bases — where they only charge if an ad has over five seconds of active reader view time — and has shown exceptional results. An early campaign showed an 11% brand awareness lift among readers exposed to the ad, which compares to an average brand-awareness lift of 2.1% for most campaigns.[16]

In order to measure *active* reader time, a measurement system would need to support this. Moat has long focused on *attention analytics* and has supported this type of measurement.

Additionally, in May 2017, IAS launched its Consumer Exposure Technology to determine, measure and control how viewable exposure time and frequency have a role in turning consumer attention into action.

Advertisers can now determine how many times real people were exposed to the campaign and how much time they spent with each touch point. This allows advertisers to maximize media spend while effectively reaching and influencing their target audience.



Effective Industry Standards & Initiatives

As marketers such as P&G and Unilever have made clear, standards are critical to fostering a healthy advertising ecosystem. However, currently there are no agreed upon industry-wide standards. As an example, below are the video viewability standards to measure an impression currently in the market:

Organization	Video Viewability Standard
Media Rating Council, Inc.	Desktop: 50% in-view, 2 seconds Mobile: 50% in-view, 2 seconds
facebook	Desktop: 100% in-view, 3 seconds Mobile: 50% in-view, 3 seconds
YouTube	50% in-view, 2 seconds*
	100% in-view, 3 seconds
	100% in-view, upon start
Instagram	In-Feed: 100% in-view, 3 seconds Stories: 100% in-view, upon start

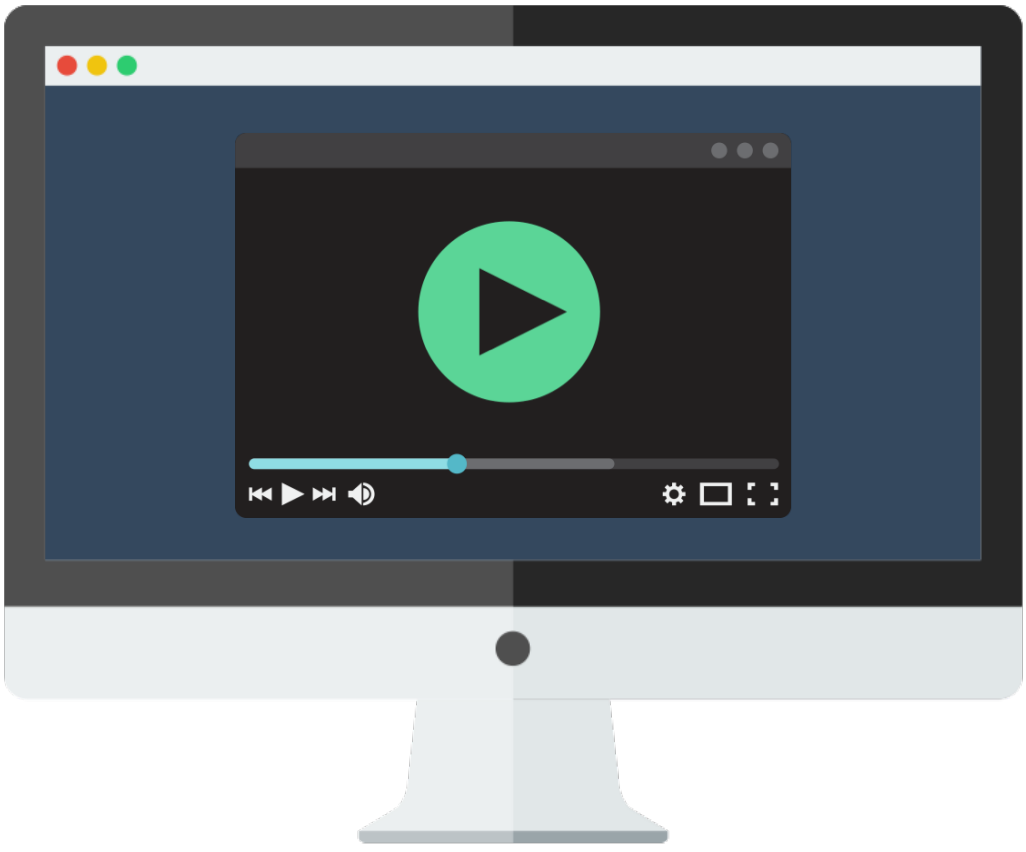
Source: *Pressboard*

**YouTube only charges an advertiser for a view on TrueView ads if the video ad is 100% in-view and plays to completion or 30 seconds (whichever is shorter).*

With so many different standards, marketers are justifiably confused. Mr. Pritchard of P&G recently stated that the industry can no longer "tolerate the ridiculous complexity of different viewability standards" and "accept the excuses." [18] P&G has explicitly stated that they will pull spend from companies that don't adopt the MRC viewability standard or support third-party measurement. With this type of pressure from heavyweight brands such as P&G and Unilever, we expect third-party measurement to become more ubiquitous across the ecosystem with common standards likely coordinated by independent third parties such as the MRC.

Effective Industry Standards & Initiatives

In an attempt to address this, in December 2016 Moat launched the Moat Video Score, a promising new metric for measuring digital video exposure that incorporates video length *seen* and video length *heard*, amplified by the percentage of screen real estate the ad occupied. Moat scores the video impression on a scale of 0-100, with 100 indicating the video was played to completion, was visible and audible throughout, and took up the device's entire screen. Launch partners that signal strong initial support for this approach include Bank of America, Condé Nast, Fox, GroupM, Hulu, NBCUniversal, Snap and Unilever.



Looking Forward in Measurement

In this paper we have focused on a number of measurement topics:

- Web analytics
- Web audience management
- Mobile analytics
- Multi-touch attribution
- Mobile app attribution
- Fraud, viewability, and brand safety
- Third-party *walled garden* measurement
- The use of *identity* for people-based measurement
- Advanced measurement such as online-to-offline and attention measurement

Looking ahead, we believe the additional trends to watch include the following:

- Advanced multi-touch measurement
- Marketing dashboards
- Location
- Advanced TV measurement

See the following page for more on these trends to watch.

Looking Forward in Measurement

Advanced Multi-Touch Attribution

Early attribution solutions have been focused on digital attribution to help allocate spend across search, display, social, etc. The holy grail in marketing is full attribution, which is the ability to tie marketing spend to real purchases, online or off. Accurate attribution remains elusive to this day for a number of reasons: 1) it is difficult to properly attribute TV spend, 2) it is difficult to prove when advertising drives offline purchases, and 3) marketers continue to operate their marketing activities in silos by channel. As discussed previously, marketers' inability to view and measure the complete customer journey is compounded further by the challenge to fully incorporate *identity*. To many marketers without insights into identity, the same consumer can appear as different individuals across multiple channels and devices, leading to wasted advertising spend. We expect to see continued advancement in multi-touch attribution as identity and measurement solutions evolve.

Marketing Dashboards

As marketing spend fragments across channels and new measurement solutions emerge, it becomes more difficult for marketers to gain a clear picture of all their marketing activities and KPIs of their business. Vendors that aggregate data sources and reports from multiple systems, such as Beckon, Datorama, DOMO and Origami Logic, enable marketers to gain a better understanding of their marketing activities and results so they can, therefore, make more informed decisions. Singular, focused on the mobile app economy, provides similar robust dashboards for mobile-centric customers.

Location

Location as a measurement signal is rapidly evolving. Companies such as 4Info, AdTheorent, Foursquare, NinthDecimal, Placed and PlaceIQ help identify whether advertising (digital, TV and out-of-home) drives consumers to stores (though confirming purchases at a SKU level remains challenging).

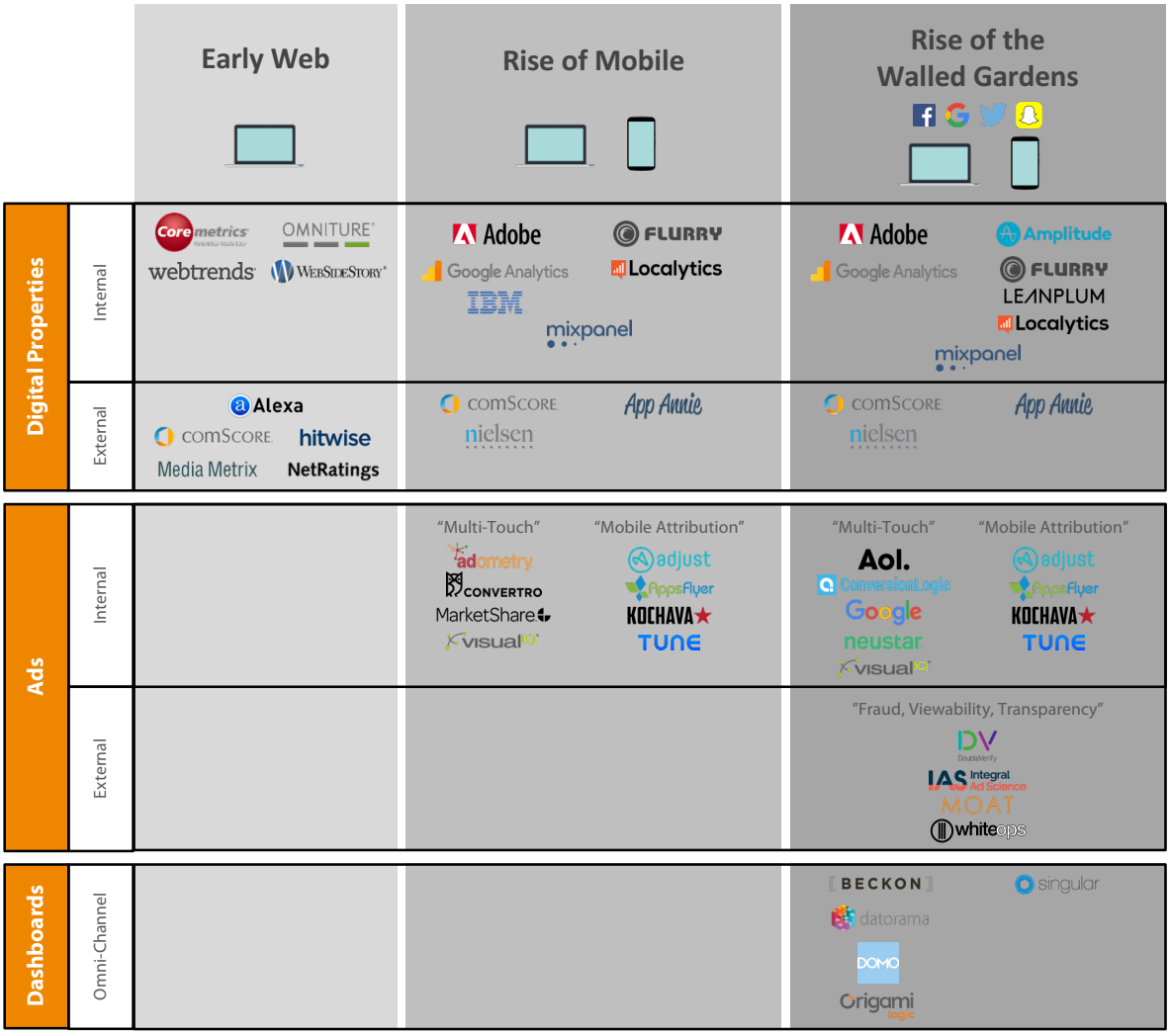
Advanced TV Measurement

While there have been significant changes in digital measurement, TV measurement has remained surprisingly consistent. Nielsen's "Gross Rating Point" (GRP) has remained the dominant measurement standard by which the TV advertising economy is based. However, we expect there to be significant changes in the near future as: 1) TV advertising becomes more targeted, 2) OTT viewing increases, and 3) marketers run integrated video ad campaigns across digital and traditional TV platforms. New, innovative startups such as iSpot.tv address attention and conversion analytics, and we anticipate additional disruptive measurement solutions to emerge to address advanced TV measurement.

Summary: Evolution of Digital Measurement

As outlined in this paper, measurement techniques and technologies have evolved and advanced greatly since the advent of *digital.* We expect innovation to continue to advance rapidly with the following guiding principles:

- Standardized measurement criteria utilized across the *open* and *closed* ecosystems
- Measurement transparency from all publishers leveraging trusted third-party vendors
- A focus away from measuring single channels independently to measuring all channels holistically
- Robust *identity* capabilities embedded into measurement solutions
- Utilization of measurement metrics as closely aligned with real outcomes — driving revenues — as possible



Sources

[1] https://www.emarketer.com/Report/US-Ad-Spending-eMarketer-Forecast-2017/2001998

[2] http://www.ana.net/content/show/id/38432

[3] https://integralads.com/resources/h2-2016-media-quality-report/

[4] https://www.mediapost.com/publications/article/303217/unilevers-weed-on-viewability-fraud-andwhat-hel.html

[5] https://www.tune.com/blog/mobile-ad-fraud-24-billion-clicks-700-ad-networks-reveals/

[6] https://digitalcontentnext.org/blog/2016/06/16/google-and-facebook-devour-the-ad-and-data-piescraps-for-everyone-else/

[7] https://blogs.wsj.com/cmo/2015/06/16/twitter-finally-rolls-out-auto-play-video/

[8] https://www.wsj.com/articles/facebook-overestimated-key-video-metric-for-two-years-1474586951

[9] http://money.cnn.com/2017/05/16/technology/business/facebook-ad-refund/index.html

[10] http://www.reuters.com/article/us-google-youtube-idUSKBN16U1O1

[11] https://www.axios.com/google-most-youtube-advertisers-have-returned-since-boycott-2440980741.html

[12] https://adexchanger.com/ad-exchange-news/pgs-pritchard-dont-want-waste-time-money-crappymedia-supply-chain/

[13] http://www.businessinsider.com/facebook-is-finally-giving-advertisers-2-things-theyve-beenasking-after-for-ages-2015-9

[14] https://www.census.gov/retail/mrts/www/data/pdf/ec_current.pdf

[15] http://edition.cnn.com/2012/09/23/business/facebook-datalogix/

[16] https://www.sec.gov/Archives/edgar/data/1564408/000119312517029199/d270216ds1.htm

[17] https://digiday.com/uk/25-publishers-exploring-time-based-sales/

[18] http://adage.com/article/media/p-g-s-pritchard-calls-digital-grow-up-new-rules/307742/

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