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PRINT

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Mobile Evolution of Print for Publications

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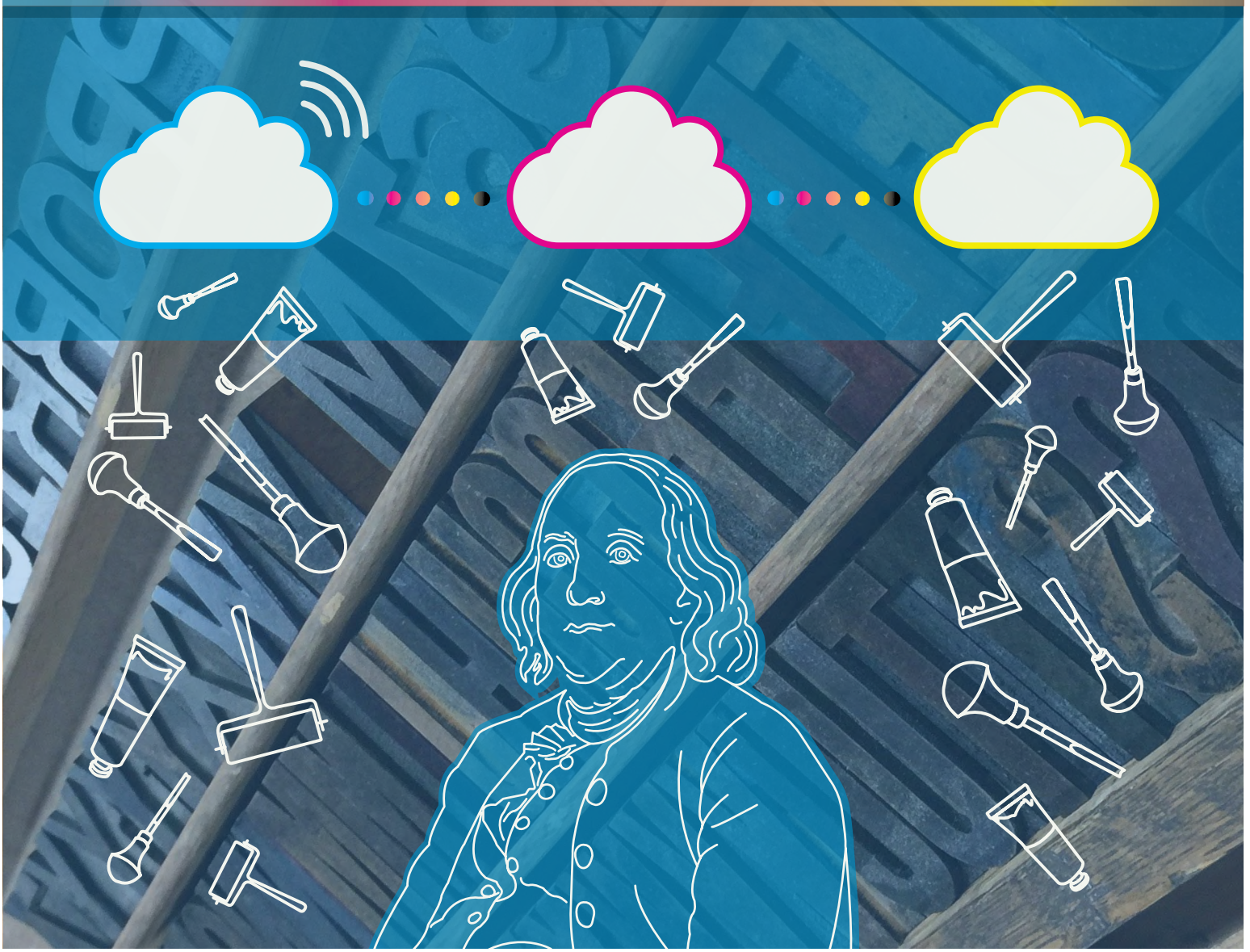

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Mobile Evolution of Print for Publications

by Stephanie Lau, M.A. • New York University

Introduction

We've all heard the doomsday prophecy popularized by the 1984 film, *Ghostbusters:* "Print is dead" (Reitman, 1984). In an age of smartphones and instant information, the word "print" evokes a bygone era of bookstores filled with musty old books and newsies hawking newspapers. Traditional print publishing, or media physically printed on paper as magazines and newspapers, have been on the decline. According to the Pew Research Center's (2015) analysis of Association for Audited Media (AAM) and publisher statement data, weekday circulation for top-tier newspapers, or newspapers with an average weekday circulation of 500,000 or more, fell 4% in 2015 and print ad revenues continued to decline from its peak of $47.4 billion in 2005 to $16.4 billion in 2014. For magazines, newsstand sales are "an important barometer of a magazine's editorial appeal, since they aren't influenced by discount programs and promotions the way subscription circulation [are]" (p. 71) despite being only 7% of a magazine's total print circulation. Overall, the decline of magazine print circulation was minimal but some magazines were hit harder than others. For example, based on AAM Audits and publisher statements of single copy sale circulation, *New York Magazine* experienced a 167% increase to 37,173 in 2014 from 14,204 in 2011, however, *TIME* dropped 48.5% from 116,780 in 2008 to 60,145 in 2014 and *The Economist* dropped 60.1% from 71,333 in 2008 to 28,058 in 2014 (Pew Research Center, 2015).

But is traditional print media really dead or is it evolving? When the Internet, or World Wide Web, became publicly available on August 6, 1991, few knew about it. It wasn't known well until CERN (Conseil Européen pour la Recherche Nucléaire or European Organization for Nuclear Research) announced "that the World Wide Web was free for everyone to use and develop, with no fees payable—a key factor in the transformational impact it would soon have on the world" (Bryant, 2011, The evolution of the Web section, para. 2). Within 25 years, the Internet became ubiquitous and disrupted everything as we knew it, including the way we communicate and consume media. Consequently, the Internet also became the most disruptive and difficult technology advancement for traditional print publishing such as magazine publications. According to a paper by Tomas (2013) magazine publishers struggled for 20 years to leverage the Internet and failed to optimize content delivery and create new revenue streams despite explosive online audience growth. The paper also notes that magazine websites often fell by the wayside and had few resources dedicated to them; they became dumping grounds for stories that didn't make the print cut and were cluttered with sidebars. "After decades of dropping subscription prices in hopes of boosting circulation to attract advertisers, the average subscription cost of magazines dropped again to an average of $1.65 per issue in 2011, which was down from $1.69 the previous year" (p. 302).

Despite this, magazine publishers continued to hemorrhage money and didn't change from their main and traditional revenue stream: print advertising. As a result, 591 magazines closed in 2007 and 525 magazines closed in 2008 (MediaFinder, 2009). While magazine closures slowed in recent years with a relative low of 82 magazine closures in 2012, cultural cornerstones like *Spin* and *Newsweek* weren't immune to the decline of print readership and ad revenue and both publications ceased print publications and moved to all-digital format (Zara, 2012).

Meanwhile, Apple released a revolutionary new phone to the U.S. and Europe in 2007 and Asia in 2008: the iPhone (Apple - Press Info, 2007). The iPhone disrupted the traditional print publishing industry again by ushering in a new age of mobile media spearheaded by smartphones. Based on Ericsson's 2015 Mobility Report, there are currently 2.6 billion smartphone users globally and this number is expected to grow to 6.1 billion smartphone users, or 70% of the global population, by 2020 (Lunden, 2015).

Additionally, according to a report by Smith (2015), the Pew Research Center created the American Trends Panel (ATP) which comprised of randomly selected U.S. adults who self-identified as internet users and participated in self-administered multi-step online, telephone, or mail surveys to represent 89% of all US adults who use the internet. The total sample size of the October 2014 panel was 3,181 respondents with a margin of error of ±2.3% and 2,188 for smartphone owners with a margin of error of ±2.7%. This survey found that 64% of American adults

are smartphone owners, a 35% increase from spring of 2011, and of these smartphone users, 33% say they follow breaking news events "frequently" while 68% "occasionally" do. Furthermore, 67% use their smartphones to share media such as pictures and videos about community events (Smith, 2015).

Smartphones became ubiquitous and smartphone apps are now central to how people communicate and consume media, creating new opportunities for the traditional print publishing industry to distribute content by mobile web (e.g. responsive webpages), native apps, or both. Recently, smartphone users spend more time on mobile apps than on mobile websites (Ghose & Han, 2014) and publishers like *The Guardian*, *The New York Times*, and *TIME* magazine have started to focus on "mobile first" initiatives where they create mobile optimized content—or content created specifically for mobile devices, such as smartphones and tablets. Smartphone technology proved to be a "digital bright spot to magazine publishers hungry for ways to monetize content and stay relevant in an increasingly digital world" (Tomas, 2013, p. 301) by providing portability, rich and interactive user experiences, and a plethora of granular user analytics.

However, there is a belief that digital media will cannibalize traditional print media. For example, Hearst Magazines chose not to bundle their digital and print subscriptions together and required their subscribers to purchase separate subscriptions. In January 2013, an iPad subscription for Hearst Magazines' *House Beautiful* was $20 and excluded a print subscription which was an additional $15 (Tomas, 2013). Hearst Magazines charged more for digital subscriptions to discourage their existing print subscribers from converting to digital because Hearst Magazines was unable to effectively monetize digital subscriptions; reduced print circulation would result in reduced print advertising revenue.

While it's true that publishing in its traditional print media format is declining, publishing as a whole isn't. Publishing is evolving from its traditional print media format into enhanced digital and mobile formats much like in the early 1990's when music evolved from physical formats into digital formats; from physical tapes and CD's to digital MP3's and cloud-based streaming services, like Spotify. Publishers must develop cross-media publishing strategies to publish content on several media formats, such as smartphones, the Internet, and print, transforming themselves to be "mobile-first", and leverage mobile technologies to not only survive, but to thrive.

Big Data and Analytics

Traditionally, print has been measured by a publication's readership and circulation. According to List (2007), circulation is defined as the number of copies distributed during a period of time (e.g. a monthly magazine's circulation is by month) and is measured by sales figures while readership is defined as the total number of readers during a period of time and is measured by surveys. Measuring a publication's circulation and readership has always been an estimate and can sometimes be ambiguous. For example, if a magazine circulated one million copies of an issue, it doesn't necessarily mean that all copies were distributed to the public or were sold. Issues may have been given away for free, sold at a discount, or unsold. Circulation estimates, made months earlier during the issue's print run, will be reduced when unsold issues are returned to the publisher. Furthermore, circulation figures can be even more ambiguous when deciding how to define what a subscriber is. Publishers may continue to send issues to consumers who allowed their subscription to lapse or cancelled their subscription to persuade consumers to re-subscribe. In both of these examples, it can take months after an issue's print run for publishers to finally determine the actual number of paid subscriptions (List, 2007).

Additionally, measuring readership also presents its own set of challenges. Typically, readership is measured by conducting readership surveys, but the accuracy of these surveys depends on the sample size and how frequently they are conducted. This can be time consuming and expensive. For example, a Morgan Gallup Poll required interviewers to conduct more than 1,000 interviews every week, "and the readership results were published every six months, for a total sample of about 30,000" (List, 2007, The problem of sample size section, para. 2).

On the other hand, smartphone apps offer precise analytics data that weren't possible before with traditional print. Measurement methods such as real-time consumer geolocation, user-interface heatmaps to visualize where consumers are tapping on a screen, and how long a consumer spends on a particular screen are examples. Publishers can optimize their app marketing and development resources by analyzing which platforms (e.g. iOS, Android, etc.) and devices (e.g. smartphone, tablet) best fit an audience. For example, if analytics data indicate that a publisher's demographics are primarily Android smartphone users, a publisher can save invaluable time, money, and resources by focusing on an Android smartphone app instead of an iPad app.

As of Q1 2016, there were 17.2 billion worldwide Apple App Store and Google Play app downloads, an 8.2% year-over-year increase from 15.9 billion in Q1 2015. This included 6.1 billion from Apple's App Store and 11.1 billion from Google Play (Nelson, 2016, p. 3). There were 1.4 million apps published on Apple's App Store as of June 2015 ("App Store (iOS)," 2016) and 2.1 million apps published on Google Play as of April 2016 (AppBrain, 2016). Analytics tools from Omniture, comScore, and Nielsen can be used to analyze the immense volume of available app-level data, or Big Data, to provide publishers with insights to understand and predict market segmentation (e.g. demographic, geographic, etc.), trends, and consumer interactions with surgical precision.

"Big Data is a generic term used to refer to massive and complex datasets, which are made of a variety of data structures (structured, semi-structured and unstructured data) from a multitude of sources" (Ribeiro, Silva, & da Silva, 2015, p. 618) and can include insights about consumer "engagement, behavior, and loyalty, revealing the content and media [consumers] find most compelling. It can help [publishers] track in-app ad responses, searches and purchases with the app, session duration and frequency of usage, and so on" (Ghose & Han, 2014, p. 1487).

In addition to providing quantitative information and insights, an invaluable Big Data capability is data visualization. A common data visualization is a heatmap: a map of aggregated and colorized data value relationships. A mobile app heatmap allows publishers to visualize and experience how their consumers interact and navigate through an app to understand their users' workflow of actions, identify any problem areas and points of user frustration (e.g. confusing user-interfaces) and abandonment (see figure 1). Heatmaps of consumer taps and swipes can identify where consumers are focusing on the screen and why consumers may or may not be doing certain actions (Even, 2015).

An example of a mobile app heatmap showing where users are tapping on a login screen. (Source: Even, A., 2015)

Figure 1

For example, many consumers may repeatedly try to pinch and zoom an image in an app to enlarge it when in reality, the functionality to pinch and zoom is not available in the app. Consumers may misinterpret the lack of a pinch and zoom functionality as the app being "broken" and quit the app. In this example, heatmaps can help mobile app developers obtain actionable lessons. A heatmap will show that many consumers attempted to enlarge the image with the pinch and zoom gesture. The mobile app developer could interpret this information in a few ways: add iconography or messaging that the image cannot be enlarged, add functionality for consumers to pinch and zoom, or other types of interaction. If this issue remains unresolved, consumers will continue to feel frustrated, quit using the app, and may leave negative app reviews in the Apple iTunes or Google Play app stores.

With Big Data, publishers and app developers not only can develop and improve app features and user experiences but can also develop content strategies for monetization, develop data driven publishing (i.e. publishing content given a context), and build brand trust. Thanks to analytics and mobile technologies, the publishing industry can now deliver the "right data and content to the right user at the right time on the right device" (Turner, 2014, p. 398) based on a consumer's demographic, geographic, and behavioral insights.

For example, a user persona, Jane Doe, will be used to represent a typical mobile app user from XYZ magazine's market segment. Jane is a 25-year-old female that uses the XYZ mobile app on a regular basis. Analytics data about Jane indicate that she is located in New York, NY and frequently consumes content about yoga and hiking on XYZ's mobile app. Based on this information, XYZ's content platform can be configured to deliver more content that is relevant to Jane, which in this case is content related to yoga and hiking near New York, NY, instead of content that is less relevant to Jane. Additionally, based on Jane's smartphone geo-location, the XYZ mobile app may send helpful tips by push notification whenever the app detects that Jane is near a hiking trail.

In order to do this, publishers need to leverage content management systems (CMS) and content strategies to create a platform capable of delivering content based on a targeted context derived from Big Data analytics. Doing so provides publishers with the unprecedented ability to effectively and dynamically target their consumers and deliver personalized content at specific times, scenarios, and locations.

Benevolent Apps

One important thing to keep in mind is that simply building a mobile app or replicating the web browser experience in an app is insufficient to create the best user experience or mobile app; companies must build "benevolent" apps.

> Companies that advocate for their customers have a good chance of getting their business, and the customers will in turn advocate for you with potential customers. A benevolent app can build trust, which in turn can lead people to consider purchasing your product. (Urban & Sultan, 2015, p. 32)

Companies must carefully consider their approach for mobile apps because apps that initially appear to be benevolent, more often than not, are actually promoting products and services. These apps are called "push" apps. Push apps are apps whose purpose is to generate revenue by promoting sales, coupons, and etc. to consumers with advertorial content such as co-branding, product placement, and etc.

A good example of a "push" app is the *Mary Kay Virtual Makeover* app for iOS and Android. The smartphone app allows consumers to take a picture of themselves and virtually "try on" different Mary Kay cosmetics and nail polish (Mary Kay Inc., 2016). Initially, the *Mary Kay Virtual Makeover* app appears "benevolent" because the app helps consumers select and learn about Mary Kay cosmetics, however, in reality, the app is embedded marketing and an over-branded advertorial. The app is centered on the Mary Kay brand and Mary Kay products but does nothing to inform or help consumers with anything apart from Mary Kay cosmetics. The app's sole purpose is to advance Mary Kay's interests: inform consumers about Mary Kay products and increase Mary Kay's sales conversion rates.

When consumers realize that a mobile app is impelling products, the app becomes disposable (i.e. one-time use) because it serves the singular purpose of promoting products specific to a company or situation. In the case of the *Mary Kay Virtual Makeover* app, the consumer may download the app because of a promotion or singular need to buy a specific Mary Kay product, but when the consumer purchases the product or when the promotion ends, the consumer is unlikely to return to the app.

Unlike "push" apps, "benevolent apps offer services that aren't directly tied to sales but are designed to help [consumers] solve problems or make decisions" (Urban & Sultan, 2015, p. 32) and advocate for consumers before a company's interests without overtly promoting products or service. Companies that consider building a benevolent app should:

1. Determine what their consumers' needs are.
2. Decide what kind of content or service they can provide to consumers.
3. Develop a standalone mobile app strategy and leverage smartphone features (e.g. geo-location).
4. Avoid over-branding, prompting, and preferential treatment of company products and services.

Some examples of this are the REI's *National Park Guide & Maps* and Under Armour's *Map My Fitness Workout Trainer* mobile apps.

Recreational Equipment, Inc., or REI, is a privately held consumer cooperative headquartered in Kent, WA that specializes in sports equipment and outdoor clothing and gear with 143 retail stores throughout the U.S. ("REI," 2016). To celebrate the National Park System's 100th birthday, REI announced the launch of their free *REI National Park Guide & Maps* Android and iOS apps (REI Newsroom, 2016). The app leverages crowdsourced knowledge from the outdoor community about U.S. National Parks that include information hiking trail maps and difficulty ratings, live GPS location and tracking, family-friendly activities, and park amenities (Recreational Equipment, Inc., 2016).

Similarly, Under Armour, an American sportswear retailer, has a suite of mobile apps including the *Map My Fitness Workout Trainer* mobile app created by Austin-based MapMyFitness. The *Map My Fitness Workout Trainer* app is a community focused app with features such as audio exercise coaching, workout activity tracking, and nutrition tracking (MapMyFitness, Inc., 2016). When MapMyFitness was acquired by Under Armour in November 2013 for $150 million, the acquisition not only facilitated Under Armour's positioning to become a major player in nutrition and fitness tracking, but accord-

ing to Under Armour's CEO, Kevin Plank, it reinforced Under Armour's understanding of the value of becoming a trusted brand of an engaged community that informs and empowers users to improve their health and fitness (Dolan, 2015).

Both the *REI National Park Guide & Maps* and *Map My Fitness Workout Trainer* mobile apps emphasize benevolence by helping their consumers navigate through confusing situations—visiting a National Park or improving fitness—with little to no marketing of products or services. By doing so, these apps build consumer trust and positively portray REI and Under Armour. This may cause consumers to consider REI and Under Armour products in the future and, in turn, increase sales conversion rates (Urban & Sultan, 2015).

Virtual Reality

Unlike traditional print, mobile apps provide publishers with the ability to provide rich and interactive content such as videos, real-time polls, and immersive virtual reality experiences. Developers and graphic designers at publishers should focus on "a mobile-first mind-set rather than grappling with questions about how to scale a particular feature to work on a desktop and then re-configure it for a mobile device" (Clark, 2015, p. 255). Also, consider how interactive content can enhance storytelling and create immersive media environments.

National Geographic effectively implemented interactive content and immersive media environments to provide the best experience for its digital readers. Tomas (2013) notes that between May and July 2012, *National Geographic*

> [print] subscribers also received live coverage of a new Mount Everest expedition, supplemented with Twitter feeds, photos, video, and blog posts from team members…[and the] February 2013 issue utilized new technology developed by National Geographic innovation fellow Corey Jaskolski, which allowed the magazine to provide a 360-degree virtual view of the historic Leptis Magna ruins in Libya. (p. 310)

Lately, virtual reality has become more cost-effective and readily available to the mass market. In 2015, YouTube announced that they would support 360-degree video uploads which don't require expensive equipment to view them. Viewers can watch these videos in any direction by clicking and dragging their computer screens on a Google Chrome browser, moving their smartphones on a YouTube mobile app, or tilting their heads while using a mobile VR headset such as Google Cardboard and Samsung Gear VR. The cost of creating 360-degree videos has become more affordable, with cameras now costing between $300 and $1000 (Chowdhry, 2015).

Whether it's the *Wall Street Journal's* video about fashion designer Jason Wu preparing for New York Fashion Week, Bjork's "Stonemilke" music video, or the *BBC's* tour of CERN's Large Hadron Collider (Gil, 2016), the introduction of mass-market virtual reality creates new and exciting opportunities for accessible and immersive experiences for audiences across all industries. For publishers, this is an opportunity for advanced digital storytelling.

An article by Perez (2016) mentions that *The New York Times* announced that in addition to the one million Google Cardboard VR devices already distributed to their print subscribers in November 2015, 300,000 more Cardboard devices would be distributed to their longtime digital subscribers in May 2016 to promote the NYT VR app, an immersive smartphone app designed to enhance stories with 360-degree videos. Currently, the app features 360-degree videos on topics such as the global refugee crisis and terrorism. In a partnership with the Lunar and Planetary Institute (LPI) and the Universities Space Research Association (USRA), *The New York Times* developed the new 360-degree video, "Seeking Pluto's Frigid Heart", as part of their latest Google Cardboard giveaway to encourage their subscribers to use the NYT VR app to "stand" on Pluto's surface and view its largest moon (Perez, 2016). According to Meredith Kopit Levien, executive vice president and chief revenue officer of The New York Times Company, "The great irony here is that it takes the print newspaper—a 164-year old business—and its still remarkable distribution system to deliver one of the most advanced digital storytelling technologies to more than a million people" (Business Wire, 2015, Advertising section, para. 4).

Conclusion

When it comes to mobile apps, publishers need to be wholly engaged "rather than asking IT to build an app, [publishers] should design an app as you would design a new product" (Urban & Sultan, 2015, p. 36). Often times, publishers make the mistake of first designing a mobile webpage—websites that don't open natively in an app but in a smartphone browser, such as Safari or Chrome—and then try to duplicate the exact experience in a mobile app, ignoring mobile app specific features and insights. For

example, mobile apps have features such as offline content caching (the ability to access and display content without an internet connection), but mobile webpages do not. Another common problem is when a CMS doesn't support multiple platforms (e.g. mobile app, desktop website, etc.) and causes content to render incorrectly on different platforms; content may display perfectly fine on a desktop computer but not display correctly on a mobile app (see Figure 2).

Publishers can also gain a comprehensive understanding about their consumers by using Big Data. Analytics tools from Omniture, comScore, and Nielsen can analyze Big Data quickly and accurately to understand and predict market segmentation, trends, and consumer interactions to help publishers optimize their resources for marketing and mobile app development. This wasn't previously possible with traditional measurements used by the publishing industry.

Once publishers establish a multi-platform CMS and analyze Big Data around their industry trends and target audience, publishers can greatly benefit from benevolent apps.

> "Companies that advocate for their customers have a good chance of getting their business, and the customers will in turn advocate for you with potential customers. A benevolent app can build trust, which in turn can lead people to consider purchasing your product" (Urban & Sultan, 2015, p. 32).

However, publishers must be attentive with the benevolent app approach and avoid creating advertorial "push" apps which result in disposable apps that consumers won't return to.

Publishers should also consider mobile innovations such as immersive virtual reality experiences which have become cost-effective and readily available to the mass market. Publishers can now take consumers to distant planets, fashion shows, or refugee camps to inspire user engagement and to enhance storytelling. If done successfully, publishers can reap huge rewards much like *The New York Times* did with their Google Cardboard promotions. According to editor in chief of *The New York Times Magazine,* Jake Silverstein, "The power of VR is that it gives the viewer a unique sense of empathic connection to people and events… Through this immersive video experience, we can put our readers at the center of the most important story of our time" (Business Wire, 2015, para. 4).

Despite traditional print publishing's continual decline, it isn't dead. Physical print is evolving into digital print in the form of Big Data, benevolent apps, and new technologies such as virtual reality. Publishers must evolve and develop "mobile-first" cross-media publishing strategies using a CMS. They must also create enhanced content for mobile platforms, such as smartphones, and deliver contextualized content to consumers when and where they want it using Big Data analytics. If they ignore their need to adapt, they are doomed to become relics of a bygone era.

References

App Store (iOS). (n.d.). *Wikipedia*. Retrieved April 22, 2016, from https://en.wikipedia.org/wiki/App_Store_(iOS)

AppBrain. (2016, April 23). *Number of Android applications*. Retrieved April 23, 2016, from http://www.appbrain.com/stats/number-of-android-apps

Apple - Press Info. (2007, January 9). *Apple Reinvents the Phone with iPhone*. Retrieved April 12, 2016, from http://www.apple.com/pr/library/2007/01/09Apple-Reinvents-the-Phone-with-iPhone.html

Bryant, M. (2011, August 6). 20 years ago today, the World Wide Web opened to the public. *The Next Web*. Retrieved April 10, 2016, from http://thenextweb.com/insider/2011/08/06/20-years-ago-today-the-world-wide-web-opened-to-the-public/

Chowdhry, A. (2015, March 14). YouTube Now Lets You View And Upload 360-Degree Videos. *Forbes*. Retrieved April 13, 2016, from http://www.forbes.com/sites/amitchowdhry/2015/03/14/youtube-360-degree-videos/#2f309ffa1a95

Clark, M. D. (2015, September). WhichWayNC: A Model for Mobile Media Development. *Journalism & Mass Communication Educator, 70*(3), 251-263.

Dolan, B. (2015, February 6). In-Depth: Under Armour's fitness app acquisition spree. *MobiHealthNews*. Retrieved April 11, 2016, from http://mobihealthnews.com/40365/in-depth-under-armours-fitness-app-acquisition-spree

Even, A. (2015, January 22). Big Data and mobile analytics: Ready to rule 2015. *VentureBeat*. Retrieved April 20, 2016, from http://venturebeat.com/2015/01/22/big-data-and-mobile-analytics-ready-to-rule-2015/

Ghose, A., & Han, S. P. (2014, June). Estimating Demand for Mobile Applications in the New Economy. *Management Science, 60*(6), 1470-1488. Retrieved from http://dx.doi.org/10.1287/mnsc.2014.1945

Gil, L. (2016, April 4). The best 360 degree and VR videos on YouTube. *Wareable*. Retrieved April 25, 2016, from http://www.wareable.com/vr/the-best-360-degree-vr-videos-on-youtube

List, D. (2007, March 26). Print audience measurement. *Audience Dialogue*. Retrieved April 5, 2016, from http://www.audiencedialogue.net/meas-print.html

Lunden, I. (2015, June 2). 6.1B Smartphone Users Globally By 2020, Overtaking Basic Fixed Phone Subscriptions. *TechCrunch*. Retrieved March 3, 2015, fromhttp://techcrunch.com/2015/06/02/6-1b-smartphone-users-globally-by-2020-overtaking-basic-fixed-phone-subscriptions/

MapMyFitness, Inc. (2016). Map My Fitness Workout Trainer (Version 16.3.2) [Mobile application software]. Retrieved April 12, 2016, from https://play.google.com/store/apps/details?id=com.mapmyfitness.android2

Mary Kay Inc. (2016). Mary Kay Mobile Virtual Makeover (Version 4.5.7) [Mobile application software]. Retrieved April 12, 2016, from https://itunes.apple.com/us/app/mary-kay-mobile-virtual-makeover/id504989389?mt=8

MediaFinder. (2009, February 9). *525 Magazines Ceased Publication In 2008*. Retrieved April 20, 2016, from http://www.mediafinder.com/public.cfm?page=pressReleases/525MagazinesCeasedPublicationIn2008

Nelson, R. (2016, April 18). Sensor Tower's Q1 2016 Data Digest: App Downloads Grew 8.2% Year-Over-Year. *SensorTower*. Retrieved April 23, 2016, from https://s3.amazonaws.com/sensortower-itunes/Quarterly+Reports/Sensor-Tower-Q1-2016-Data-Digest.pdf?src=blog

Perez, S. (2016, April 28). The NYT is giving out 300,000 more Google Cardboard viewers. *TechCrunch*. Retrieved April 28, 2016, from http://techcrunch.com/2016/04/28/the-nyt-is-giving-out-300000-more-google-cardboard-viewers/

Pew Research Center. (2015, April 29). *State of the News Media 2015*. Retrieved April 5, 2016, from http://www.journalism.org/files/2015/04/FINAL-STATE-OF-THE-NEWS-MEDIA1.pdf

Recreational Equipment, Inc. (2016). REI - National Parks Guide & Maps (Version 3.0.1) [Mobile application software]. Retrieved April 11, 2016, from https://itunes.apple.com/app/id1031987936

REI. (n.d.). *Wikipedia*. Retrieved April 11, 2016, from http://en.wikipedia.org/wiki/REI

REI Newsroom. (2016, January 7). REI Sets Out to Help Adventurers Go Deeper Into National Parks in Centennial Year. Retrieved April 11, 2016, from http://newsroom.rei.com/news/corporate/rei-sets-out-to-help-adventurers-go-deeper-into-national-parks-in-centennial-year.htm

Reitman, I. (Producer), & Reitman, I. (Director). (1984). *Ghostbusters* [Motion Picture]. United States: Columbia Pictures.

Ribeiro, A., Silva, A., & da Silva, A. R. (2015, December). Data Modeling and Data Analytics: A Survey from a Big Data Perspective. *Journal of Software Engineering and Applications, 8*(12), 617-634.

Smith, A. (2015, April 1). U.S. Smartphone Use in 2015. *Pew Research Center*. Retrieved February 15, 2016, from http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/

The New York Times Launches NYT VR; Delivers Over One Million Google Cardboard Viewers. (2015, October 20). *Business Wire*. Retrieved April 28, 2016, from http://www.businesswire.com/news/home/20151020005620/en/York-Times-Launches-NYT-VR-Delivers-Million

Tomas, K. (2013, December). Virtual Reality: Why Magazines Should Adopt a Mobile-First Publishing Strategy. *Publishing Research Quarterly, 29*(4), 301-317.

Turner, M. (2014, December). Reinvention, Revolution and Revitalization: Real Life Tales from Publishing's Front Lines. *Publishing Research Quarterly, 30*(4), 388–400.

Urban, G. L., & Sultan, F. (2015, Winter). The Case for "Benevolent" Mobile Apps. *MIT Sloan Management Review, 56*(2), 31–37.

Zara, C. (2012, December 22). In Memoriam: Magazines We Lost In 2012. *International Business Times*. Retrieved April 10, 2016, from http://www.ibtimes.com/memoriam-magazines-we-lost-2012-956388

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  - Normal

Graphics

- Be sure that submitted tables and other artwork are absolutely necessary for the article.
- Write a caption for each graphic, include captions in a list at the end of your Word document.
- Electronic artwork is preferred and should be in PDF or TIFF format.
- Send all artwork files and hard copies of these files with your submission.

Tables

- Set up tables in separate documents, one document for each table.
- Do not attempt to make it "pretty." Use the default Word style "Normal" for all table text. Do not use any other formatting.
- Do not use hard returns inside the table ("enter" or "return").
- Get the correct information into the correct cell and leave the formatting to the designer.
- Tables will be formatted by the designer to fit in one column (3.1667" wide) or across two columns (6.5" wide).

Artwork

- Scan photographs at 300 ppi resolution.
- Scan line drawings at 800 ppi resolution.
- Screen captures should be as large as possible.
- Graphics should be sized to fit in either one column or across two columns.
  - One column is 3.1667" wide, two columns are 6.5" wide.
  - Graphics may be larger than these dimensions, but must not be smaller.

Manuscript Guidelines

Eligibility for Publication

Members of the Graphic Communications Education Association, or students of GCEA members, may publish in the *Visual Communications Journal*.

Audience

Write articles for educators, students, graduates, industry representatives, and others interested in graphic arts, graphic communications, graphic design, commercial art, communications technology, visual communications, printing, photography, desktop publishing, or media arts. Present implications for the audience in the article.

Types of Articles

The *Visual Communications Journal* accepts four levels of articles for publication:

1. Edited articles are accepted or rejected by the editor. The editor makes changes to the article as necessary to improve readability and/or grammar. These articles are not submitted to a panel of jurors. The decision of the editor is final.
2. Juried articles are submitted to the editor and are distributed to jurors for acceptance/rejection. Juried articles are typically reviews of the literature, state-of-the-art technical articles, and other nonempirical papers. Jurors make comments to the author, and the author makes required changes. The decision of the jurors is final.
3. Refereed articles are submitted to the editor and are distributed to jurors for acceptance/rejection. Refereed articles are original empirical research. Jurors make comments to the author and the author makes required changes. The decision of the jurors is final.
4. Student articles are submitted by GCEA members and are accepted/rejected by the editor. These articles are not submitted to a panel of jurors. The editor's decision is final. Please be aware that poorly written student papers will be rejected or returned for editing.

Submittal of Manuscripts

All manuscripts must be received by the editor no later than December 15th to be considered for the spring *Journal* or by June 15th to be considered for the fall *Journal*. Include digital copies of all text and figures. Prepare text and artwork according to the instructions given in these guidelines. Be sure to include your name, mailing address, e-mail address, and daytime phone number with your materials. E-mail all materials to the editor (address shown below).

Acceptance and Publication

If your article is accepted for publication, you will be notified by e-mail. The *Visual Communications Journal* is published and distributed twice a year, in the spring and in the fall. Printed copies are mailed to GCEA members. A PDF version of the *Journal* is published online at www.GCEAonline.org.

Notice

Articles submitted to the *Journal* cannot be submitted to other publications while under review. Articles published in other copyrighted publications may not be submitted to the *Journal*, and articles published by the *Journal* may not be published in other publications without written permission of the *Journal.*

Submit All Articles and Correspondence to:
Dan Wilson, dan.wilson@illinoisstate.edu
or check www.GCEAonline.org for contact information for the GCEA First Vice-President.

See following page for style guidelines