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Voice-Activated Change: Marketing in the Age of Artificial Intelligence and Virtual Assistants

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Abstract

The Internet of Things promises to make relationships with technology more personal than ever. Voice-controlled virtual or artificial intelligence assistants such as Amazon’s Alexa or Google Assistant execute the commands of their users, providing information, entertainment, utility, and convenience while enabling consumers to bypass the advertising they would typically see on a screen. This “screen-less” communication presents significant challenges for brands used to “pushing” messages to audiences in exchange for the content they seek in hopes of creating preference. It also raises ethical questions about data collection, usage, and privacy. Little is known about the role marketing will play in the increasingly connected, voice-controlled home. This case study explores critical cases to describe the implications, applications, and opportunities for voice-controlled personal assistants in marketing and advertising in the USA.

Keywords: Internet of Things, virtual assistant, voice assistant, marketing, advertising

Secrets are lies. Sharing is caring. Privacy is theft.¹

Introduction

More than 100,000 people say “good morning” to Alexa every day.² Alexa, of course, is not a person; she is a voice-controlled virtual assistant built by Amazon.

Voice-controlled virtual assistants and their connected devices are gaining popularity. The leader is the Amazon Echo device, with the Alexa virtual assistant, released in 2014.

Estimates indicate that 10 million Amazon Echos have been sold.³ According to Matt Thompson, chief product officer of Bitly, “Voice is the new OS”⁴ or “operating system.” This means that access to information, entertainment, and content of whatever sort will increasingly be provided and controlled through the voice assistant.

These assistants are designed to be on all the time, constantly listening for their names, ready to fulfill the needs of the user. The more interaction there is with the user, the more the assistant learns and the more personalized it becomes. This presents multiple challenges for marketers. Access to content will come to be curated by the virtual assistants rather than selected by the user from, for example, the results of an Internet search. And users will be exposed only to what they request, what they want or need, rather than an array of advertisements that underwrite the content. Both of these challenges are significant shifts for marketers. Further, content that is available and regularly accessed through the assistants is very limited. In fact, Matt Thompson, chief product officer of Bitly, says that 69 percent of Alexa skills have zero or one user.⁵ This indicates that marketers and advertisers are still learning about how voice-activated virtual assistants matter, how they are relevant, and what they mean for marketing.

These assistants may seem like a niche novelty, but they are attracting a lot of attention. The Consumer Electronics Show (CES) is the biggest trade show in the Western hemisphere and a showcase for the most cutting-edge and future-forward technology. There were so many Alexa-compatible devices at CES in 2017 that David Pogue, tech guru for Yahoo, declared Alexa “the star of the show.”⁶ Pogue summarized CES in one acronym: ARCHIVE, which stands for Alexa, Robotics, Cars, Health wearables, Internet of Things (IoT), VR — and Everything Else.

The attention these assistants are getting is certainly notable. What is most significant from the marketing perspective, however, is that with an always-on virtual assistant in the home, marketing shifts from the traditional start/stop campaign-driven activities of the last century to a constantly running, highly individualized, adaptive activity rooted in the notion that markets are truly conversations.⁷

Technology is moving much faster than academic literature. Few studies have been published about the IoT or voice assistants in the area of marketing and advertising, a surprising gap.⁸ One commentary provides vignettes about the IoT and recommendations for updating the service logic paradigm in marketing, a model of value co-creation.⁹ A graduate project published in the computer science area focuses on implications of automation and artificial intelligence in the home and strategic recommendations for companies to take advantage of technologies such as Alexa.¹⁰ A quantitative study examines the effect of “smart” interaction on brand attachment. Still, considering the growing IoT and voice assistant trend, there is certainly a gap in knowledge. There is also a gap in methodology; despite how little is understood about these new technological developments, no qualitative studies exist in marketing and advertising that the author could find.

A number of audiences will benefit from this research. Brands will gain a better understanding of the affordances, challenges, and ethical concerns involved with virtual assistants. Marketing and advertising professors can also benefit from the new knowledge generated in a rapidly developing, under-studied area. Finally, consumers can benefit from understanding the perspectives of marketers and implications for their privacy.

Purpose of the Study and Definition of Terms

The purpose of this instrumental case study is to discover the implications, applications, and opportunities for voice-controlled personal assistants for brands in the USA. Important terms used in this study include the following:

Voice-controlled virtual personal assistants: These are also called voice-controlled virtual assistants, AI (artificial intelligence) personal assistants or AI helpers, and terms can be used interchangeably. These virtual assistants include Amazon's Alexa, Google's Assistant, Apple's Siri, and Microsoft's Cortana, but the primary focus is on Alexa and Assistant.

Voice-controlled virtual assistant devices: These are devices connected to, or serving as the conduit for, virtual assistants. They include the Amazon Echo, Google Home speaker, Apple iPhone, and Windows PC.

IoT: This refers to networkability (and smartphone apps) for household gadgets such as dishwashers, refrigerators, lights, door locks, doorbells, security cameras, thermostats, showers, bikes, clothes, and sports equipment.¹¹ It brings the intelligence of the Internet to physical products,¹² making them smart, interconnected,¹³ and able to communicate autonomously.¹⁴

Research Questions

The central research question is: how has the emergence of voice personal assistants affected advertising and marketing?

Follow-up questions include the following:

- Why do these voice-controlled, connected devices such as Echo and Home matter to marketers?
- What is their promise, potential, lure, or appeal?
- What kind of shift does this represent for marketers?
- How do they create challenges for marketers?
- How do they create opportunities for marketers?
- What does it mean to create a relevant experience?
- What are the ethical and privacy implications, particularly for the data?
- What is the future of voice-controlled devices and virtual assistants?

Literature Review

As noted earlier, there are four primary voice-controlled virtual assistants: Amazon's Alexa, Google's Assistant, Apple's Siri, and Microsoft's Cortana. Each of these voice-controlled virtual assistants, also called AI personal assistants or AI helpers, is connected with a device: the Amazon Echo, Google Home speaker, Apple iPhone, or Windows PC. They are

designed so the interface, or the way a user would access them, “almost disappears,” according to the director of product management for the Alexa personal assistant.¹⁵ Creators such as Amazon want people to interact with them as they would with friends.¹⁶ These devices are constantly listening for their names. They respond to natural language—a user does not have to learn any specific commands—and through machine learning, they get better at understanding requests as they are used.

What is significant about these virtual assistants or AI helpers is that they are positioned to be the gateway to the connected home, the IoT. In fact, technologist David Pogue declares that Alexa will be “what saves the Internet of Things.”¹⁷ Rather than having to control one’s lights through a specific app on one’s phone, which requires unlocking the phone, opening the app, and then performing the desired action, a user can just ask Alexa to turn on the lights. Virtual assistants are not only getting better at talking to other apps and services but also emerging on the hardware of other companies, so the user will no longer need specific devices (iPhone, Windows PC, Amazon Echo, or Google Home speaker) to interact with them.¹⁸

Companies such as Amazon and Google want to “establish AI ecosystems” with “widespread device and developer support.”¹⁹ For example, Amazon Echo is designed to continuously add new capabilities. The Amazon Skill Kit (ASK) and Alexa Voice Services (AVS) enable any developer interested in creating new Echo capabilities (also known as skills) to do so.²⁰ This helps the ecosystem grow and helps “ensure their virtual assistants stay relevant.”²¹ If they do, they will gather more and more data about users, becoming more personalized, embedded in daily life, and relevant, and also increasing their ecosystem of connected/compatible products. In fact, 2017 has been declared the year that the “virtual assistant wars get real.”²²

Currently, Alexa has more than 7,000 skills.²³ Amazon just launched an Alexa hub to help marketers build those skills. As noted earlier, very few skills are actually used. The top four Alexa skills are very practical: the Kitchen Timer, as 51 percent of all Echos are in the kitchen; TuneIn, a native news app that will read news to you; Spotify, a music streaming app; and Amazon Music, another music streaming app.²⁴

The IoT has been talked about for years, but the masses have not been buying into it.²⁵ For the most part, consumers have not seen a great need for things to be networkable. It has also been a hassle to, for example, unlock one’s phone and find an app simply to turn on the lights. Virtual home assistants such as Alexa and Assistant, however, take away that hassle, allowing consumers to access connected devices with their voices rather than a specific app on their locked phone.²⁶ And these IoT devices are capable of maintaining a relationship with users,²⁷ acting as extensions of users themselves.²⁸

Little academic research has been conducted about how these devices are actually used by consumers or what they think of them. One recent study examining perceptions and uses of the Amazon Echo among pre-service teachers revealed appreciation of the AI tutor’s ability to learn from its audience and give swift up-to-date answers to inquiries, as well as the user’s ability to create customized apps. The ability to input and output information solely through voice, and the potential for both formal and informal learning, were also appreciated.²⁹ The value exchange of sacrificing privacy for information, access, or

some rewards has been shifting for decades. For example, we willingly join loyalty programs at the grocery store, exchanging our shopping data for rewards. These devices present the latest questions about what privacy is worth, since they constantly monitor a customer's home for spoken commands.³⁰ This can make consumers feel creepy, or "feel like a guinea pig with this technology."³¹ Data is stored in the cloud, and it is unclear how it will work in the future if government, police, or other companies want to access the data. In a recent murder case in Arkansas, police asked Amazon for audio recorded from the suspect's home hub, the Echo.³² Amazon refused, but the suspect eventually complied. Scott Stein, senior editor at CNET, says: "There is an element of how much of an open world are we living in and how much of that should we be comfortable with being out there?"³³ He also notes that people have already been getting more and more comfortable with "being out there."³⁴

Brands are interested in having conversations with audiences through voice assistants for a number of reasons. Recent research suggests that friendlike interaction with voice assistants (Siri, in this case) can result in positive brand warmth and positive brand attachment.³⁵ Brand warmth refers to the customer's perceptions of a brand's intentions.³⁶ Brand attachment refers to the strength of the bond connecting the customer with the brand.

Research has also shown that the perceived ability of a brand to fulfil an individual's need for competence enhancement facilitates brand attachment.³⁷ Competence results when people feel that they have the skills and abilities needed for a certain social, academic or athletic circumstance.³⁸ Proksch notes that there is some evidence indicating that need fulfilment in general may lead to attachment.³⁹

Researcher reflexivity

It is important to acknowledge the author's perspective and positioning in this study.

The author's own bias is that she was a digital media strategist in advertising agencies before becoming an assistant professor of advertising. She was part of the radical shift toward digital, data-driven advertising and has run digital advertising campaigns with Google on behalf of clients for years. She now teaches courses in branding, media strategy, and digital insight and analytics, all of which are relevant to this paper. She thinks this topic is important because she wants her students and clients to understand the opportunities and implications of these voice assistants.

Research Methodology

Rationale for qualitative design

A qualitative approach is used to shed light on this question of how the emergence of voice personal assistants has affected advertising and marketing. Qualitative designs are used to understand the experiences of people and the meaning they attribute to those experiences.⁴⁰ Such designs move beyond the "what" of quantitative research and explore questions of "how" and "why." Philosophically, qualitative research is rooted in the ontological assumption that multiple realities exist, and that understanding and reporting these realities is valuable. From an epistemological perspective, getting close to participants and assembling the data they provide is the foundation of knowledge—as Creswell says,

“knowledge is known through the subjective experiences of people.”⁴¹ Qualitative research, then, fundamentally enables the creation of knowledge.

There are many different approaches to creating this knowledge. Qualitative case studies are designed to provide greater understanding of a case and capture both “the uniqueness and complexity” of it.⁴² The two principal uses of case study, as defined by Stake,⁴³ are to obtain both the descriptions and the interpretations of others. An instrumental case study begins with a research question, stemming from puzzlement or a need for general understanding. Here, the researcher seeks to understand something else; the inquiry is considered the instrument to understand. The emphasis on interpretation is important, as is the emphasis on preserving “multiple realities, the different and even contradictory views of what is happening.”⁴⁴

Ethical considerations

Ethical practices and appropriate treatment of participants are always of great concern. The informed consent form was sent to a participant via email once the participant responded and showed interest. The participant was asked to sign it, scan it, and email it back to the author. The purpose of this form is to inform participants about the goals and procedures of the study, the purposes and uses of the data, and their rights to withdraw at any time without negative consequences. Each participant did sign the informed consent form and agree to be recorded.

Confidentiality and protection of data are also a priority. The participant interviews were recorded on the author’s iPhone, which is password-protected, as well as on her desktop computer in her locked office. The author was the only person who had access to the recordings. They will be destroyed within one year of completion of the study by deleting them from the device.

All records were kept confidential by assigning an alias rather than specific names on each record. All interview data was edited to remove references to specific people to ensure complete confidentiality of interview data. Only the author had access to the information provided. She had a physical (not digital) list linking names and aliases that she kept in her locked file until the completion of the study. The list will then be shredded. No real names are used in any computer files or stored on any server.

Most of the material is in aggregate form. Individual quotes were used from some participants, however, and were also identified by their alias and general description (title and organization type).

Sample selection procedures

As Stake points out, “case study research is not sampling research.”⁴⁵ Cases are not easily generalized, and that is not the goal. The goal is to maximize what we can learn.⁴⁶ Given that time is always a limitation, Stake also recommends selecting cases that are easy to access and open to our inquiry.⁴⁷ With this in mind, purposeful criterion sampling was used to identify cases in the Lincoln/Omaha market. The main criterion for sample selection was determining “what advertising leaders can I access who successfully create innovative digital content on new platforms?” Criteria included a director role at an advertising agency that engaged in digital content marketing and had received advertising industry

awards, called Addys, for innovative digital work. An extremely limited number of people have developed content for voice-controlled assistants because the platform is so new. So, rather than including development of content as a criterion, consideration of content was included. The case was bounded by the instrument of study, as well as the criterion that participants had to have been considering, in the past six months, developing content for voice-controlled assistants.

Data Collection, Analysis, and Presentation

Semistructured interviews were conducted with pilot study participants. Each participant was interviewed once for about 45 minutes. Interview is a common data collection procedure across all forms of qualitative research. This data collection approach is considered by Stake to be the main road to multiple realities.⁴⁸ The questions asked in an interview are open-ended and seek to aggregate perceptions or knowledge across all participants in the interview process. The questions asked provide a framework for the interview discussion and are developed in advance; however, there is greater flexibility in this data collection method than in other forms, including quantitative research. The researcher should keep careful records of the interview by taking notes and/or recording the discussion. Then the researcher should transcribe and interpret the discussion as soon as possible following the commencement of the participant interview.

Another important method of data collection discussed by Stake⁴⁹ is document review, which involves examining newspapers, annual reports, correspondence, or meeting minutes among other documents relevant to the object, the case, or those seeking understanding. These resources often supplement the information collected through other forms of data collection, providing a wider lens to examine the case.

A variety of documents and digital content were reviewed to provide this wider lens. The author read numerous online articles about content marketing and current usage of voice-activated assistants in marketing. She also reviewed the websites of the primary digital assistants, Google Assistant and Amazon Alexa, and their primary devices, Google Home and Amazon Echo, and explored the content available to users of these devices.

To analyze the data, the author attempted to ruthlessly “winnow and sift” through the information in order to stay focused.⁵⁰ Organization in writing the report is just as important as organization in data collection, so Stake⁵¹ presents a seven-step plan to identify the sections important in the writing of the case study. Those steps include entry vignette, issue identification, extensive narrative description, development of issues, descriptive detail including documents, quotations and triangulating data, assertions, and closing vignette.⁵²

Stake notes that with instrumental case studies, in which the case helps elucidate the phenomena or relationships within it, the researcher needs more categorical data and measurements than in intrinsic studies. Direct interpretation is still an important analytics strategy as well. The author first read through her very detailed handwritten notes, identifying important phrases and issues. She then put them into Excel, with responses in a column with the question. She then listened to the interviews again to add any important

detail that she might have missed in her notes. She wrote down themes that were prominent in each column, and then uploaded the Excel document into a word cloud program called TagCrowd. This enabled her to see the frequencies of words in the responses. (See Figure 1.)



Figure 1. Frequency analysis of terms from interviews

Validation strategies

A number of validation strategies were employed to help document the “accuracy” of this study.⁵³ First, triangulation was used; the author studied evidence from multiple sources to illuminate the perspectives and themes uncovered in the study. The sources included multiple participants who have experienced this case as well as other documents, such as online articles and digital content, to help serve as a check.

Rich, thick description is a cornerstone of qualitative research, and care was taken to provide abundant detail in this study. This enables the reader to understand the transferability of the study.⁵⁴ Researcher bias was also clarified through researcher positioning earlier in this study.

In the future expanded study beyond this pilot, member checking will also be used to help evaluate the accuracy and credibility of the preliminary findings or analyses. In this process, the researcher connects with participants again and seeks out their views on the interpretation of the account thus far. This is generally regarded as a critically important step in qualitative research, since the whole goal of qualitative research is to understand the experiences of people and create knowledge rooted in those subjective experiences. In fact, of all commonly used validation strategies, Lincoln and Guba (1985) cite member checking as “the most critical technique for establishing credibility.”⁵⁵ This process can be done in many different ways: by e-mailing transcripts, summaries of interviews or preliminary analyses to participants and asking for feedback, or by participant focus groups.⁵⁶

Findings and Discussion

The author met “John” in the author’s office. “John” is an executive and director of digital strategy at an advertising agency. He was eager to talk and leaned forward often; this seemed to be a topic that excited him. A fairly early adopter, “John” had experience with Amazon Alexa as a user, and that experience presumably helped inform his responses.

The author interviewed “Will” over Skype. He is a self-described “dot-com veteran” who led the interactive department of an advertising agency before launching his own agency. He does not consider himself to be a particularly early adopter. He was more measured about virtual assistants, seeing them as another way to deliver convenient content, and more philosophical about their role in marketing and society more broadly.

Consumer-orientation and individualization

The theme of “consumers” came up more often than any other except “home.” While this is not shocking, it is still worth noting. In the advertising and marketing world, the term “consumers” is virtually synonymous with “humans” or “audiences.” Historically, advertising and marketing focused on the brand, the product. Now the audience is empowered, fueled by vast amounts of information available at one’s fingertips, voices distributed and amplified by the megaphone of social media. This shifts the focus for marketers from product to audience. As “John” said,

With these kinds of virtual assistants and devices, it’s a unique challenge to understand the inputs and that data. Ultimately it comes back to “do we understand this type of consumer” and “how should we respond to them.” It becomes a creative challenge, too; that response could vary by the individual. Instead of one brand message, it could be crafted more toward what the brand knows about you or me, the individual. The conversation could go a bunch of different directions. It’s a challenge to understand what the conversation needs to be and how it should be phrased. It’s not even just personalization; it’s how are you connecting with that one individual.

Better and smarter

Given that this study focused on what the emergence of voice-activated personal assistants means for marketing and advertising, it is significant that the term “better” came up so many times. Just as technology always promises something better to consumers—a way to improve life, perform a task more efficiently, or get information more easily—it has also promised something better to brands—better, smarter ways to use data and connect with audiences in a more personalized, contextualized way. Doing so requires better content and integration from advertisers, and a better understanding of audiences and data. These devices and experiences have the potential to enable consumers to make smarter, better decisions, and to enable marketers to deliver better, smarter content, but they also require that marketers do a better job of understanding consumers and the data. “Will” said:

Technology has been getting better and better when it comes to seamlessly integrating into people's daily lives. From wearable technology to things like Alexa where it's integrated into your home and it doesn't even feel like technology so much anymore as it does sort of part of your life, a utility, something you use and have to think less and less about it. So, I think in terms of seamless integration into people's lives and making them easier and easier, it has a lot of potential. And for the most part, that's probably a good thing.

Further, a central promise of the voice-controlled, AI, machine-learning-driven assistants is that they continually get better at knowing the user's needs, preferences, and intentions. As "John" said,

Consumers aren't stupid. I think that they understand that the more inputs that they are giving to this thing, it's actually making the experience better, *for them*. These devices learn from their behaviors, and Google and Amazon have always been the leaders in that area, from the inception of Web 2.0. This is just another way to do that, but it's putting it right into their homes.

Conversation → data → experience

Conversations with the device create data, and data drives the experience. As "John" noted earlier, the more inputs or conversations there are, the more data there is, and the better, more relevant the experience can be. The theme of experience reflects a big shift from the traditional advertiser perspective of distributing a "message" about the product or brand. "Will" points out:

Advertisers have been wising up for years that their message should feel less intrusive and more integrated in an experience. If the advertising is relevant, and technology will increase relevance, and seamlessly integrated into the experience, it's not as off-putting or jarring. People will pay to filter ads out of their lives, or feel like they are. That makes our job a lot more challenging. We have to find ways from product placement to content sponsorship to this to integrate into experience. We're still in the industry figuring that out.

An essential element of figuring it out is analyzing the data and inputs from the assistants. As "John" says,

They are going to provide a level of business intelligence based on consumer interaction at the home level, the very personal level; brands are going to understand so much more about their consumers. It's the data and inputs that are being provided to these devices and how that might be shared with brands—that is where Google and Amazon are going to make hay. Having access to that kind of data for brands is going to be super important as marketing continues to become more of a one-to-one relationship.

The process of marketing becomes even more conversational, more personal. People are having conversations with these devices; these devices speak back to them in ways which are much different than how a search engine or website gives a response to a user.

Personal connection

The word cloud (Figure 1) was helpful, but it missed some important terms in the conversations that were important to the meaning of the case. The immediacy, the convenience, the relevance, and the learning/AI all contribute to the opportunity to create a deep, personal connection, something marketers have always sought and rarely achieved. “John” says:

The allure is that it’s no longer waiting to conduct a search or process a thought. It’s all in the immediacy of how quickly you can think, how quickly you can speak, to actually get tasks or things that you want done, done.

There is no distance between the user and the technology; the interface virtually disappears. And with it, the distance between device and human, machine and friend, starts to disappear as well. “John” notes that a voice-activated assistant

[c]reates a deeper personal connection because you’re rising to the immediacy of what consumers want in that moment. It opens up doors creatively by being there in the moment of truth when you’re looking for something. You could order something and have it delivered to your house in two hours.

When Internet search engines emerged, marketers became excited about being able to get into the minds of consumers by understanding what they search for. With social media, marketers could understand what consumers thought about. But this always-on, immediate-response assistant provides an unprecedented opportunity for marketers.

As “John” says,

Pinpointing those exact times when brands or needs pop into a consumer’s mind, contextually, when those types of things happen, is going to be of importance to a brand. That’s a shift; it’s no longer about tactics; it’s about how we’re reaching consumers based on their behaviors in everyday life. Not a specific touchpoint in a consumer decision journey, but more or less, dialing in on how they think, how they process during the course of the day.

Trade-offs; the value exchange

All forms of technology have trade-offs, however. There is a value exchange, something a user is willing to sacrifice in order to receive a benefit they perceive as greater. It is important to understand the implications of such technology. “Will” says:

There's the potential for advertising to get more Big Brother-y, more creepy than it already is, and that's something we should be concerned about. The optimist in me sees the potential for advertising to get better, add more value to people's lives, to help people make better decisions, find the information they need, be inspired or motivated in some way that's positive. The more it's integrated into experience in that way, the better.

I distinctly remember hearing about this [intelligent homes] in the early '90s and 2000s. There's something for whatever reason that's fascinating to people, intriguing about intelligent homes—that they can do all of these things for you, make your life easier. But it remains to be seen. Is it making people happier, smarter, safer, more informed, better citizens, humans? I don't know. It has the potential to make things a lot worse in a lot of ways. What I feel like often doesn't happen is that we don't stop to think. Technology is evolving so rapidly that we don't have time to stop and take stock of what's happening, think about what it means to us, to our culture. It wasn't that long ago that people were asking these kinds of questions about television, and what that's doing to us. This is one of many things in our evolving ecosystem in which impacts could be really profound.

Conclusions and Implications

The primary question this study sought to illuminate is this: how are marketing and advertising affected by the emergence of voice-controlled virtual assistants? The research revealed a number of themes and implications. First, the focus for brands must clearly be on the audience. This is something marketers should already know, but it becomes essential in the case of voice-activated assistants. A successful conversation requires focusing on consumers, on people, at the individual level; being relevant to them, tailoring and personalizing content, services and integrations to better meet an individual's needs; and using that conversation to get smarter.

Virtual assistants are always on, taking in information and getting smarter. Marketers must determine how to analyze this information and use it to create relevant experiences that consumers will actually want, conversations that add value and are enjoyable or useful to engage in.

The voice control component is important, but the larger question rests in access and control. In the past few decades, as the world became more digital, marketers became more digital as well. This translated into being first on a list of Google search results, matching intent with content, so that users could decide what they wanted. With the rise of AI and an increasingly connected home, however, that user decision may be taken out of the equation and replaced with devices that make decisions for us, provide curated answers, talk to each other, and employ machine learning to become more and more personalized. Marketers may be marketing to these devices instead.

Author Biography

Valerie K. Jones is curious about what is next. That curiosity fueled an award-winning career at advertising agencies from Chicago to San Francisco, the creation of her own digital marketing consultancy, and a move to academia. She is now an assistant professor of advertising and public relations at the University of Nebraska–Lincoln College of Journalism and Mass Communications. She brings more than 15 years of expertise in integrated marketing communications, digital media strategy, and analytics from Starcom, Fox Interactive, IBM, and her consultancy into her research and teaching. She now funnels her curiosity into research that focuses on the intersection of digital media, innovation, and culture. She holds a master’s degree in integrated marketing communications from Northwestern University.

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