FOR B2C MARKETING PROFESSIONALS

# AI Must Learn The Basics Before It Can Transform Marketing

## Tools And Technology: The Enterprise Marketing Technology Playbook

by Joe Stanhope
June 1, 2017 | Updated: June 7, 2017

## Why Read This Report

Artificial intelligence (AI) is entering the popular lexicon with B2C marketers, and legitimate AI-powered solutions are now generally available from startups and major vendors alike. It's important for marketers to develop a sense of what AI is and can potentially accomplish, and what it is capable of today, before they purchase AI-powered technology solutions.

## Key Takeaways

**AI Has Massive Potential For B2C Marketers**
AI-powered marketing applications promise to reduce the opportunity costs incurred when brands are unable to fully leverage data and connect insights to engagement. AI solutions initially boost efficiency but will drive continuous lift to marketing key performance indicators (KPIs) in the long term.

**Understand How To Evaluate AI Solutions**
AI technologies for marketing present a combination of computing, analytics, and delivery capabilities. The complex and autonomous nature of AI systems tends to render them opaque and challenging to fully understand. B2C marketers must evaluate AI solutions in detail to ensure the capabilities match the use cases.

**Manage Your Assumptions About AI**
Because AI is a popular term in culture, science, and business, people develop many preconceived notions of what the technology is and can accomplish. Buyers must avoid making assumptions about AI and base their expectations on what the technology can realistically accomplish today.

# AI Must Learn The Basics Before It Can Transform Marketing

## Tools And Technology: The Enterprise Marketing Technology Playbook

by Joe Stanhope
with Mary Pilecki, Brandon Purcell, Srividya Sridharan, Arleen Chien, Christian Splaine, and Christine Turley
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## Artificial Intelligence Makes Bold Promises To B2C Marketers

It's time to face the facts: B2C marketers need help. It's not a matter of competence, vision, or willingness to invest in staff, technology, and services. Existing marketing constructs — including organizational design, insights generation, and rule-based systems for orchestrating and delivering customer interactions — centered on human cognition simply cannot cope with the volume, velocity, and complexity of modern customer engagement. Human beings are now the limiting factor in B2C marketing, and the opportunity costs are growing daily as data sits idle and interactions remain generic.

### Artificial Intelligence Is Here To Bridge The Opportunity Gap

AI development has steadily progressed for over 50 years, from humble beginnings in science fiction and obscure technical research, building into proof-of-concept systems that used games such as chess, Jeopardy!, and Go to transform computing theory into action, to become a part of our everyday lives through tools such as Amazon's Alexa and Spotify Discover Weekly playlists.[1] Many media, social, and retail firms see AI as an internal technology that is critical to their success, even citing the importance of AI in financial statements.[2] And enterprise technology vendors — such as IBM and Salesforce — are making billion-dollar-plus bets on AI.[3] Curious marketers are leading the charge in evaluating the potential of AI for their businesses (see Figure 1). "CMOs are responsible for staying competitive, and they see AI as a performance boost opportunity. If AI delivers results, uptake by businesses will follow," says Sarah Fay from Glasswing Ventures. It's easy to see the appeal; AI-powered marketing technology aspires to cultivate:

› **Efficiency.** Manual tasks beset B2C marketers and siphon time away from their strategic responsibilities. AI-powered marketing promises to automate many thankless albeit important tasks such as data integration, segment and rule creation, and experiment design. Any recurring, resource-intensive task is fair game for AI-powered solutions, allowing brands — and agencies — to deliver more while maintaining the same staffing levels. For example, many brands test subject lines in email campaigns, but writing copy is time consuming and expensive; AI-powered solutions promise to autonomously generate and test subject-line copy based on the content and audience for each campaign.

› **Smarter decisions.** Limited data access and insight generation capacity often throttle firms' efforts to deliver personalized, relevant interactions. AI-powered marketing technologies intend to overcome these challenges in two ways. First, they are engineered to ingest data from more sources and to extensively analyze relationships between those data points. Second, they automate the creation and testing of variations in segmentation and treatment that are far more granular than traditional targeting approaches. For example, current personalization and campaign-targeting approaches may rely on a few dozen or hundreds of rules and segments before becoming difficult to manage manually. AI-powered solutions, however, can automatically discover and generate thousands of discrete segments to evaluate exponentially more permutations of data, rules, and treatments.

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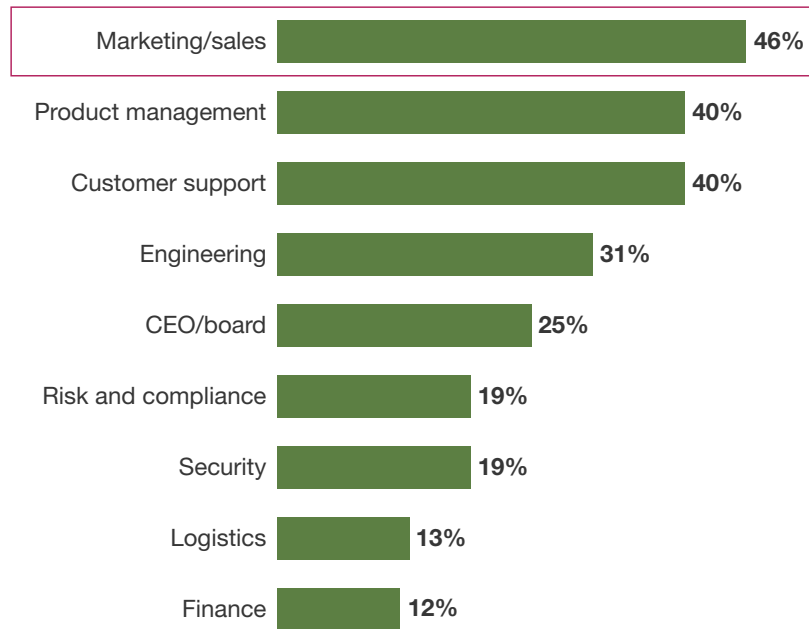
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› **Speed.** Standard marketing processes designed to sequentially gather data, analyze results, and iterate campaigns are ill equipped to keep up with today's fast-moving consumers and complex cross-channel customer relationships. AI-powered marketing technology not only applies cutting edge computing infrastructure to analyze data faster, but continuously processes information as it arrives rather than waiting for batch processes. Additionally, the self-learning aspect of AI ensures that insights are applied almost instantly to campaigns and interactions. For example, marketers can sidestep the inefficient process of evaluating campaign results, determining necessary budget adjustments, and calling their agency to authorize changes by setting up rules in AI-powered systems to automatically increase spending under high-performance conditions and drop spending back down if campaign performance lags.

› **Continuous performance improvement.** Traditional marketing processes, such as campaign and optimization programs, are discrete, time-bound efforts that are difficult to manage, slow to optimize, and often perceived as arbitrary by consumers.[4] By contrast, AI-powered marketing solutions operate continuously as a single-streaming campaign. These systems learn faster by experimenting in real time against marketing KPIs, always applying the most recent data and algorithms to interactions and adjusting to changing conditions and customer preferences. For example, AI-powered campaign solutions can detect when a previously excluded segment shows new activity and automatically add that group of customers into the campaign stream to capitalize on their renewed engagement.

› **Customer journey optimization.** AI's scalability for large volumes of diverse data provides the opportunity to expand the overall depth and scope of customer interactions by operationalizing enterprise data and incorporating insights from all customer touchpoints. AI-powered marketing technology is capable of leveraging business data to optimize offers, and it can personalize campaigns for customers based on their customer-service interactions or in-store behavior. For example, AI-powered marketing systems could integrate with a corporation's enterprise resource planning (ERP) system to access cost optimization, inventory, and economic forecasting data to incorporate dynamic pricing into campaigns.

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**FIGURE 1** Marketing Is The No. 1 Department Exploring AI Investments

**"What areas of your organization are leading or evaluating the investment and adoption in AI systems?"**
(Please select the top three.)

| | |
|---|---|
| Marketing/sales | 46% |
| Product management | 40% |
| Customer support | 40% |
| Engineering | 31% |
| CEO/board | 25% |
| Risk and compliance | 19% |
| Security | 19% |
| Logistics | 13% |
| Finance | 12% |

Base: 606 business and technology professionals
Note: Not all answers shown.
Source: Forrester's Q2 2016 Global State Of Artificial Intelligence Online Survey

## Take A Hard Line On Defining What AI For B2C Marketing Is — And Isn't

Don't let vendors' tendency to anthropomorphize AI distract you; the clever names and cartoon characters belie a complicated topic that combines sophisticated computing, data management, and analytics.[5] Marketing technology (martech), like any data-rich, complex technology segment, is a strong candidate for AI-powered technology. And not surprisingly, B2C marketers find themselves inundated with vendors touting AI in myriad forms, so they must think critically when considering AI solutions. To support marketing use cases, AI-powered martech must possess three critical capabilities (see Figure 2):

› **Sense: Ingest data and context.** Much of AI's advantage over traditional systems of insight and engagement is its built-in ability to consume data from a broad range of customer, behavior, and content sources, at scale and real-time speed. Solutions commonly offer the APIs and connectors to access customer relationship management (CRM), customer, transaction, and product data

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from applications or databases. They often include JavaScript for web data collection and software development kits (SDKs) for mobile data collection. And they can directly access or accept feeds of content and associated metadata from systems such as content management systems (CMS), content marketing platforms (CMP), and digital asset management (DAM). Some solutions may also enrich inbound data with third-party data, social media data, public information sources, and cooperative databases.

› **Think: Deploy self-learning models.** AI is an umbrella term that represents a variety of analytical techniques — most commonly machine learning — that apply algorithms to predict outcomes. But predictive modeling or machine learning alone is not AI. The algorithms employed by AI systems are not static; they constantly test themselves against marketing KPIs and dynamically retrain their models to improve performance. This goes far beyond simply rescoring a data set with fresh data; these algorithms may update model logic, for example, with revised variable coefficients, or fully update them utilizing new variables and discarding others. AI systems may also experiment with multiple versions of algorithms simultaneously to efficiently maximize performance.

› **Act: Take action.** AI-powered marketing solutions aren't merely scoring engines; they directly activate insights to inform and execute customer interactions. This closes the gap between analysis and engagement to support a high-speed, self-sustaining feedback loop.[6] AI-powered actionability ranges today from internal marketing tasks such as rules and segment discovery to autonomous delivery of personalized experiences. Some solutions natively deliver customer interactions, such as personalization to email or websites, while others may orchestrate third-party endpoints for mobile, search, and display ads.

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**FIGURE 2** AI-Powered Marketing Technology's Self-Contained Capabilities
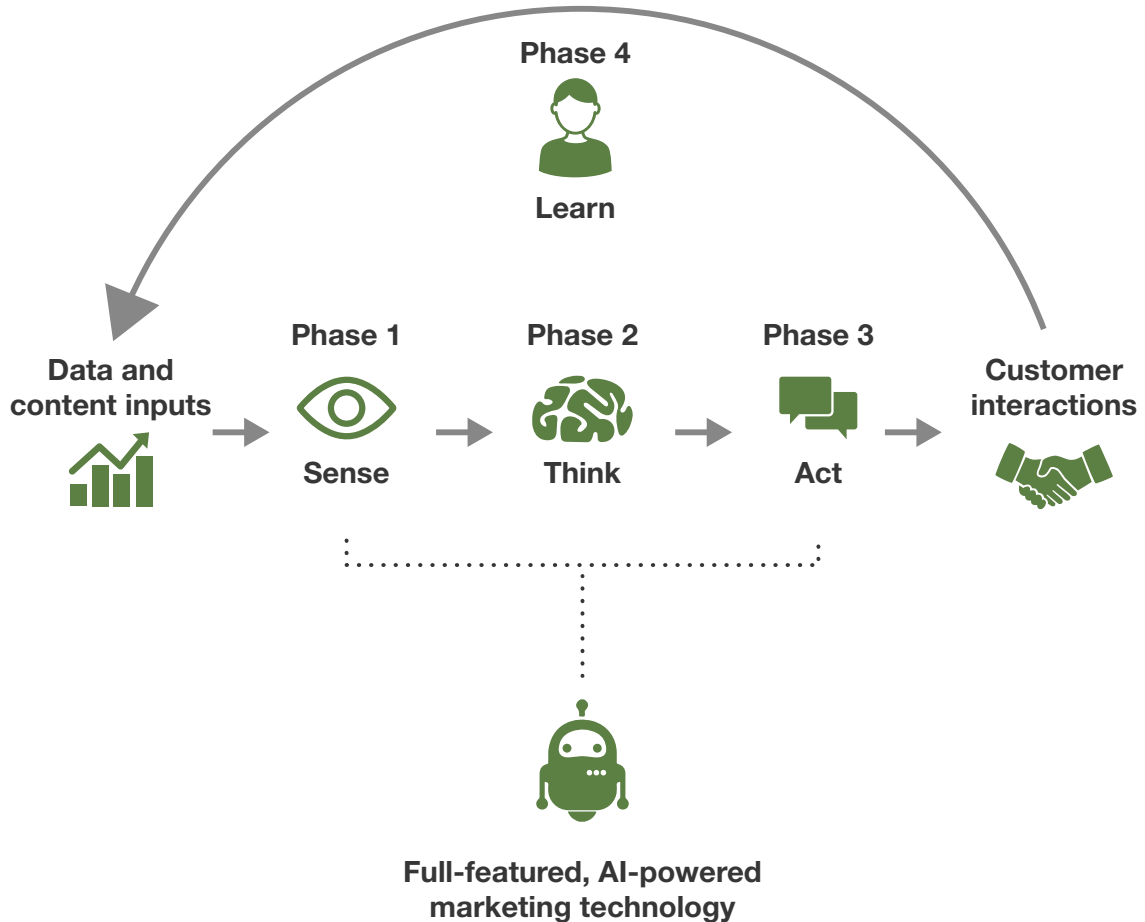


## AI Infiltrates Many Marketing Technology Categories

Artificial intelligence is not a standalone solution; it is an enabling technology that is applied to specific problem sets, each featuring its own data, analysis, output, and goal.[7] By this definition, almost every marketing task and application can benefit from AI. But it's still early in the AI-powered marketing technology learning curve for both marketers and technologists. Today, the large majority of AI applications in marketing have focused on augmenting existing use cases such as targeting and personalization to achieve enhanced velocity, granularity, and efficacy. Utilizing AI for tightly defined use cases is appropriate at this stage of the adoption cycle as B2C marketers learn how to apply AI techniques to marketing, adapt their processes, and gain confidence in the results generated (see Figure 3).

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**FIGURE 3** Align AI Technology Adoption To Marketing-Focused Use Cases

| Function | Digital media | Personalization | Insights detection | Dynamic content | Marketing automation |
|---|---|---|---|---|---|
| **Capabilities** | Real-time decisioning for bidding on digital ad buys; selecting ad campaign target audiences | Target individual users with product recommendations; email, SMS, and web messages tailored for offer, content, and timing | Rule and segment discovery; anomaly detection; audience and market research | Create original test, image, and video content for messaging and web interactions | Orchestrate and execute cross-channel marketing campaigns; optimize channel mix and spend to maximize KPIs |
| **Vendors pursuing offerings** | MediaMath, Rocket Fuel | Adobe, Dynamic Yield, Jetlore, LiftIgniter, Lytics, Oracle, Rocket Fuel, Salesforce, SAS, Signpost, ViSenze | Adobe, Equals 3, GumGum, IBM, NetBase, Optimove, Salesforce | GumGum, Persado | Albert, Amplero, Boomtrain, Emarsys |

Mainstream → Emerging

**Solution maturity**
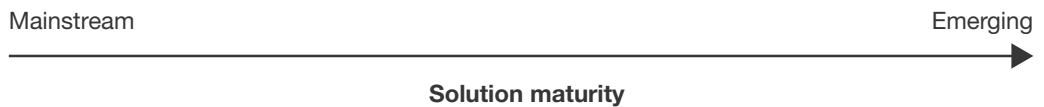
## Shine A Light On AI-Powered Marketing Technologies

AI solutions ask B2C marketers to place their trust in tools that are often black boxes to everyone but mathematics or computer science experts. These tools are heavily automated to orchestrate end-to-end data, analytics, and delivery processes without human intervention. The loose semantics of AI and general excitement surrounding its potential further complicate the situation, increasing the risk of obscuring its true nature and complicating apples-to-apples comparisons. But adopting AI-powered marketing technology doesn't have to be an act of faith. AI technologies give the impression of being monolithic and impenetrable, but B2C marketers can break AI-powered marketing technology into constituent parts to evaluate and match prospective solutions to their own needs (see Figure 4).

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**FIGURE 4** Ask Questions To Demystify AI-Powered Marketing Technologies

| Phase | Questions |
|---|---|
| **Deployment** | • Is the AI-based functionality a standalone module or embedded within existing functionality?<br>• Does initial system training create a custom model for each client ,or is it derived from a standard base model?<br>• What is the typical training time both to commence standard operation and to fully optimize the models?<br>• Can clients provide training data, or does the system collect the training data itself following implementation?<br>• How much data or activity is required for initial model training?<br>• What is the recommended minimum data, activity, or content volume for ongoing operation of the system? |
| **Sense** | • What sources can the system ingest data from and using which technical methods?<br>• What sources can the system ingest content from and using which technical methods?<br>• What data enrichment options are available?<br>• What is the frequency of data collection, and is it a transactional or batch process?<br>• How frequently is the database updated with new data?<br>• How does the system link data sources together and construct customer profiles?<br>• How long is data retained in the system? |
| **Think** | • What AI techniques does the solution employ?<br>• Are models unique to each client?<br>• What data, if any, is used or shared across clients?<br>• How does the system establish control groups and construct validation experiments?<br>• What key performance indicators (KPIs) are available for users to select as the dependent variable for measurement and optimization?<br>• Does the system optimize against one or multiple KPIs? |

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**FIGURE 4** Ask Questions To Demystify AI-Powered Marketing Technologies (Cont.)

| Phase | Questions |
|---|---|
| **Act** | • What channels does the product support natively?<br>• What channels does the product support via integrations with third parties and using which technical methods?<br>• Can scores, data, or other objects be exported from the system?<br>• How does the offering incorporate customer preferences and relevant privacy or opt-out requirements? |
| **Learn** | • How often are records scored?<br>• How often are models refactored?<br>• To what degree are humans involved in algorithm evaluation, optimization, monitoring, and deployment processes?<br>• How does the system monitor for unanticipated anomalies in data or results? |
| **Controls and monitoring** | • Can users manually define audiences and segments, or apply filters and suppressions?<br>• Does the solution offer its own interface for content editing?<br>• Does the solution offer reporting or dashboards to monitor activity and results?<br>• Can users define rules to act as safeguards and enforce business constraints?<br>• Can users set up their own experiments or control groups outside of the primary analytics environment to monitor or validate activity?<br>• Can users review and approve content prior to use in live interactions?<br>• Can users manually promote, remove, or edit treatments, segments, and other objects? |

## Check Your Preconceived Notions Of AI At The Door

Whether we realize it or not, humans bring deep-seated perceptions to AI adoption. B2C marketers' expectations for AI are colored by exposure to thinking machines in popular culture, the use of existing analytics and optimization techniques, and the specific scenarios in which we wish to apply AI-powered technology. To successfully evaluate and adopt AI-powered marketing technologies, B2C marketers must separate AI mythology from its occasionally counterintuitive reality:

› **Myth 1: AI is new to martech.**

**Reality: Marketers have been laying the groundwork to adopt AI for years.** If you spend money on digital media, your demand-side platform (DSP) has likely been applying AI techniques to programmatic real-time bidding (RTB). DSPs, a mainstay of digital advertising technology, leverage the machine-learning branch of AI to facilitate and optimize display ad campaigns. Additionally, the

overall sophistication and data-driven approach of martech paves the way for rapid AI adoption by B2C marketers. "This trend is different from the digital economy in the early 2000s because the infrastructure and business components are already in place for AI," says Sarah Fay.

› **Myth 2: AI is all about fancy math and algorithms.**

**Reality: AI is about the data.** One of AI's strengths is locating relationships in data that traditional — i.e., human-powered — analysis techniques are unlikely to discover. Marketers must supply AI-powered systems with accurate, updated, and complete data, preferably as detailed and diverse as possible. It's also critical to set up the feedback loop to continuously incorporate results data to iterate and optimize outcomes. "AI provides huge benefits because it uses more granular data for a better understanding of consumer behavior, and we don't have to rely on survey or panel data, driving better content, messaging, and engagement," says Paolo Yuvienco of DigitasLBi.

› **Myth 3: AI systems work out of the box.**

**Reality: AI systems need training time.** Like the human brains they aspire to emulate, AI systems must learn to solve problems.[8] AI systems learn how to optimize outcomes through intensive trial and error based on each firm's specific business data, customer behaviors, and KPIs. AI algorithms are typically trained on a firm's historical data. The length of the training period varies depending on how long it takes to prepare the data to build the initial model, the use cases, and the AI techniques involved. Data preparation can range from several weeks to months, and model training can range from several days to several weeks for initial training and up to six months of ongoing use to fully optimize the algorithms.

› **Myth 4: AI autonomy will put marketers out of a job.**

**Reality: AI lets marketers do their real jobs.** "AI isn't a silver bullet. You still have to do the work as a marketer to think about audiences, creative, and offers," says Stephan Pretorius from Wunderman. AI is indeed a form of automation, but it can only address specific and focused tasks for which it is trained. Rather than eliminating human participation in marketing, AI efficiency shifts the balance of work in B2C marketers' favor by allowing them to focus on the strategic aspects of their roles.[9] As one brand noted, adopting AI-powered marketing technologies massively reduced the strain of constant check-ins and approvals between team members and allowed them to refocus their agencies on creative and content work.

› **Myth 5: AI will reveal a treasure trove of rich customer insights to marketers.**

**Reality: AI learns for its own sake rather than to externalize knowledge.** AI-powered marketing technologies arguably have broader and more detailed visibility to customers than any other entity — human or machine. But AI-powered applications take a machine-first approach: They have a job to do and operate very quickly and efficiently without external interference. Even

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if an AI system's choices and components were fully observable, the velocity and scale of its processing would be unintelligible to humans. B2C marketers should not expect a play-by-play recap of what an AI-powered app learns.

## Buy Into AI For The Efficiency, Stay For The Performance

Time and time again, new trends make a splash only to fade away when next year's model arrives. But AI is more than common marketing technology gimcrackery. Unlike innovations that make the classic mistake of attempting to replace existing technologies, AI is complementary to marketers' skills, processes, and technology investments. AI provides the cognitive scale brands need to keep pace with escalating customer demands, the deluge of data and content, and almost limitless customer journey permutations. AI also aligns with B2C marketers' fundamental priorities to make customer engagement more timely, personalized, and results driven. AI will transform marketing over the next five years, leaving few facets of customer engagement untouched. AI for marketing is in its formative stages, so adoption today is as much about gaining experience as it is about driving marketing results. B2C marketers must start familiarizing themselves today with AI's role in the martech stack to master the technical, organizational, process, and planning innovation that AI adoption will drive. To get started, B2C marketers must:

› **Call it like it is.** Artificial intelligence is hot and represents a big opportunity for B2C marketers. It shouldn't surprise anyone that vendors in the martech landscape are tripping over themselves to leap onto the AI bandwagon. But AI legitimacy is variable, and some solutions billed as AI will turn out to be standard predictive modeling or testing. To avoid misunderstandings and disappointment, B2C marketers must be thorough when selecting AI-powered marketing technologies — dig into the details and ask the tough questions to understand exactly how a solution works and what to expect.[10]

› **Think small.** AI is too complex to reward fishing expeditions or poorly scoped deployments. Roll out AI selectively by addressing tightly defined and measurable use cases. Initially, prioritize the enhancement of existing use cases where interactions are well understood, processes defined, and outcomes benchmarked to fully monitor how the AI is working and establish lift over traditional approaches. Tasks such as website personalization and email send-time optimization, seemingly pedestrian tasks, are the ideal initial foray into AI. Additionally, test any new AI capability in a proof of concept (POC) or on a sample population before releasing it into the wild.

› **Anticipate the intense content requirements for AI-powered systems.** AI-powered marketing tech, with its endless test-and-learn cycles and thousands of microsegments, has an insatiable appetite for content and creative. Even AI systems focused on dynamic content creation and visual computing demand a substantial content base for training and operational purposes. B2C

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marketers must plan to integrate content systems with their AI technologies, earmark resources to create new content, and consider investing in content intelligence systems to support and streamline content creation.[11]

› **Trust but verify.** AI-powered marketing technology promises tremendous lift in marketing performance with minimal human effort. But AI is opaque, and it's nearly impossible to understand exactly what is happening as the system operates. B2C marketers must monitor AI applications to verify target segments, track control groups, and evaluate marketing KPIs. It's also critical to realize that AI may make decisions that impact customers beyond its scope. Check customer feedback, customer satisfaction scores, Net Promoter Scores, and customer experience metrics to monitor for anomalies or unintended effects. It is also advisable to construct a master control group independent of the AI application.

› **Join forces with the customer insights team.** AI adoption is a cross-department effort because it blends data, analytics, and marketing into a productized, complex solution. B2C marketers benefit by leveraging customer insights (CI) colleagues' expertise to evaluate AI tools, prepare and deliver data, and develop ongoing monitoring plans. The marketing-CI partnership is also apt because while AI systems are great at optimizing for results, they don't explain how or why outcomes occur. B2C marketers and CI professionals must work together to continue developing customer insights, articulating customer journeys, and validating and evaluating campaign results.

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## Supplemental Material

### Survey Methodology

The Forrester's Q2 2016 Global State Of Artificial Intelligence Online Survey was fielded in May, June, and July 2016. This online survey included 612 respondents globally. For quality assurance, we screened respondents to ensure that they met certain standards in terms of job responsibilities and the size of their organization. Artificial intelligence was defined to respondents as a self-learning system that is able to interact with humans naturally, understand the environment, solve problems, and perform tasks that normally require human qualities, abilities, and intelligence without the need to code instructions and rules.

### Companies Interviewed For This Report

We would like to thank the individuals from the following companies who generously gave their time during the research for this report.

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| | |
|---|---|
| Albert | Liftigniter |
| Adobe | Lytics |
| Amplero | MediaMath |
| Boomtrain | NetBase Solutions |
| Cosabella | Oracle |
| DigitasLBi | Persado |
| Dynamic Yield | Rocket Fuel |
| Equals 3 | Salesforce |
| Glasswing Ventures | SAS |
| GumGum | Signpost |
| IBM | ViSenze |
| Jetlore | Wunderman |

## Endnotes

[1] Source: Joon Ian Wong and Nikhil Sonnad, "Google's AI won the game Go by defying millennia of basic human instinct," Quartz, March 25, 2016 (https://qz.com/639952/googles-ai-won-the-game-go-by-defying-millennia-of-basic-human-instinct/) and Adam Pasick, "The magic that makes Spotify's Discover Weekly playlists so damn good," Quartz, December 21, 2015 (https://qz.com/571007/the-magic-that-makes-spotifys-discover-weekly-playlists-so-damn-good/).

[2] Source: Jeffrey Bezos, "2016 Letter to Shareholders," Amazon, April 12, 2017 (https://www.amazon.com/p/feature/z6o9g6sysxur57t).

[3] Source: Jon Markman, "AI Is The Future Of Salesforce," Forbes, September 13, 2016 (https://www.forbes.com/sites/jonmarkman/2016/09/13/ai-is-the-future-of-salesforce/#1f60ca051dde) and Danny Vena, "IBM's Watson Is Tackling Healthcare With Artificial Intelligence," The Motley Fool, March 19, 2017 (https://www.fool.com/investing/2017/03/19/ibms-watson-is-tackling-healthcare-with-artificial.aspx).

[4] Calling out what is "digital" isn't relevant, or even possible, when digital is part of everything. Fifty-nine percent of us use our mobile phones while shopping in a physical store. Twenty-two percent stream television programming to watch anywhere on any device. See the Forrester report "Thriving In A Post-Digital World."

[5] AI applications can involve 12 software capabilities, all deep, complex, specialized, and changing rapidly, with added innovation from academia and business. However, knowing what's real or which AI technologies add up to a solution has become the exception. See the Forrester report "AI Tech Marketing Meets The End Of Truth."

[6] Insights-driven businesses use closed-loop learning processes to rapidly adapt their business and attack new markets. See the Forrester report "The Insights-Driven Business."

[7] Artificial intelligence (AI) is an umbrella term for a variety of techniques for collecting, applying self-learning statistical techniques to, and acting on data. See the Forrester report "The Top Emerging Technologies For B2C Marketers."

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[8] "Without training, AI systems are quite useless. Training, which is the process by which artificially intelligent systems learn to function, is an essential but onerous part of their development." See the Forrester report "TechRadar™: Artificial Intelligence Technologies And Solutions, Q1 2017."

[9] Fears of job loss are real, if overstated, as we'll see. But the defining feature of jobs in 2027 won't be their replacement at the hands of automation technologies. Instead, businesses and society will negotiate a new relationship between humans and robots — one in which they'll work together rather than be perfect substitutes for one another. See the Forrester report "The Future Of Jobs, 2027: Working Side By Side With Robots."

[10] Independent of any particular building block, questions should focus on flexibility to expand capability, the learning process, engagement, automation, and production use cases as proof points for AI. See the Forrester report "AI Tech Marketing Meets The End Of Truth."

[11] Content intelligence technologies will help marketers create better content that's more likely to resonate with customers and prompt them to act. That means better offers, better real-time experiences, and better business outcomes. But it will also elevate marketers' content acumen — blending art and science to understand what really resonates. See the Forrester report "Content Intelligence: Algorithms Assign Meaning And Value To Content."

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