THE AI REVOLUTION IS COMING

Are marketers ready?
Business transformations driven by the AI revolution are impossible to ignore: in every industry, AI-enabled systems are transforming organizations and the role of the marketer. AI has real promise to improve most aspects of a company’s operations—and perhaps no business function has the potential to benefit from it like marketing. The question is:

Are marketers and their organizations READY FOR THE AI REVOLUTION?
The marketing industry stands on the threshold of perhaps its biggest transformation since the introduction of database marketing in the 1970s. With today’s AI tools marketers are now able to bridge the gap between the vast amounts of data companies have collected and leverage these assets to define and execute effective optimized “one-to-one” personalized marketing at scale. There is no question that companies that embrace AI-driven marketing can and will unlock vast customer and shareholder value.

**AI will fundamentally change marketing**

According to the 2018 Accenture-Microsoft AI Marketing Survey, 80 percent of marketing executives believe AI will have a significant impact on the marketing role by 2020, and 64 percent believe AI will become fundamental to marketing within the next three years.

**FIGURE 1: WHAT MARKETING EXPECTS FROM AI**

- **CREATE VALUE**: 84%
  - AI-enabled workflow automation enables marketers to focus more time on value-generating tasks

- **BE STRATEGIC**: 82%
  - AI enhances data and allows marketers to derive more insights and make informed strategic decisions

- **OPTIMIZE SPEND**: 64%
  - AI automation and insights enables marketers to target campaign spend more effectively (e.g., content bidding)

*Source: 2018 Accenture-Microsoft AI Marketing Survey*

To realize the potential value of AI, marketers will need to understand how AI can transform the role of the marketer, increase the marketing organization’s AI readiness, and lay the groundwork for genuine human-machine collaboration.
What is AI, really?

When many people think of AI, what comes to mind is HAL, the computer from *2001: A Space Odyssey*, or Skynet from the *Terminator* franchise: robots or computers with superhuman intelligence across a variety of knowledge domains, typically used for nefarious purposes. In reality, the kind of AI that companies talk about today is very different, and fortunately much more benign.

**Artificial intelligence is broadly defined as a computer system that performs tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making and translation between languages.**

In contrast to the broad, human-like AI portrayed in most science fiction, most successful AI systems today (such as Google Deepmind’s AlphaGo) are designed to solve narrowly defined tasks, such as playing a game, recognizing faces or recommending products from a catalog.

**These systems tend to be characterized by two qualities:**

- Systems do not have to be explicitly programmed in advance
- Systems can learn from decisions and improve performance over time

The first of these qualities is what separates AI systems from traditional rules-based automation. Basic automation tackles manual or routine tasks using preprogrammed directives to trigger a specific, repetitive action—in other words, “If X, then Y.” A simple example is the basic mail merge, which automates the sending of emails with customizable fields (name, address, etc.) after the sender manually identifies a list of values.
AI, on the other hand, has its roots in the discipline of machine learning

Machine Learning is an approach to software engineering that employs statistical algorithms that enable computers to “write their own code” given a set of input data. For example, a Machine Learning algorithm is trained with thousands of pictures of cats to learn how to distinguish cats in future images, on its own, without a programmer to specify individual rules about fur, claws, ears and so on.

Recent advances in Machine Learning techniques (particularly the sub-field known as deep learning), together with the explosion in data and cloud-based compute capacity, are responsible for much of AI’s recent progress.

**FIGURE 2: TRADITIONAL PROGRAMMING VS. ARTIFICIAL INTELLIGENCE**
AI-based systems complete manual or routine tasks by dynamically learning the rules that, given a set of conditions, are most likely to produce a desired output or outcome. The distinction is AI’s ability to learn and adapt to changing conditions—narrowly approximating higher-order human thinking—rather than simply doing what it is told. With mature AI in place, marketers can go beyond simply automating basic tasks to fully automating targeted decisions and actions based on a set of human-defined parameters. This will enable marketers to spend more time on creative and strategic ways to generate more value.

Artificial intelligence is not something you can merely “set and forget”

Today’s AI systems are not yet mature enough to autonomously adapt and extrapolate beyond the use cases for which it is designed. AI must be guided and taught, by people. Common sense is an innately human capability; teaching it to a machine requires clearly defined objectives, optimized for specific situations. Algorithms and governance provide the necessary guardrails to keep AI on track; even the most innocuous application can lead to embarrassing, and potentially disastrous, consequences.

AI makes determinations based on the data with which it was trained. Biased data can and will often lead to skewed results. Academic researchers demonstrated that AI can reproduce and exacerbate bias present in the data used to train the algorithms. AI can, for instance, reinforce outdated gender roles or further racial stereotypes if a company fails to create ethical governance systems for AI design and use.
Technical design of AI can have ethical implications. Consider the results of a series of NIST studies that evaluated the performance of facial recognition software packages along demographic lines. The algorithms demonstrated lower recognition accuracies on female, black and younger faces. Researchers demonstrated that while these groups were inherently more difficult to identify, the parameters selected by the development team further hindered the accuracy of identification for these groups. As facial recognition software is used by law enforcement and national security, the implications of misidentification can be serious—leading to mistaken arrests, or potentially resulting in perpetrators going free.

Thoughtful intervention and close human-machine collaboration are small challenges to overcome to realize the full potential of AI.

**What can AI do?**

What kinds of tasks can AI perform? AI and Machine Learning systems act intelligently in four interconnected ways, each of which has a variety of high-value applications (Figure 3).

**FIGURE 3: FOUR WAYS IN WHICH AI ENABLES MACHINES TO ACT INTELLIGENTLY**

**UNDERSTAND THE WORLD**
- Computer vision
- Face recognition
- Listening
- Remote sensing
- Optical character recognition (OCR)

**TEST & DECIDE**
- Predictive modeling
- Bandit experimentation
- Reinforcement learning
- Unsupervised learning
- A/B testing
- Expert system

**INTERACT WITH HUMANS**
- Natural language processing (NLP)
- Gesture recognition
- Speech recognition
- Speech synthesis
- Machine translation
- Content generation

**TAKE ACTION**
- Agents
- Recommender system
- Digital Marketing execution
- API-bound integration
- Robotics
UNDERSTANDING THE WORLD AND INTERACTING WITH HUMANS

The foundation for AI systems is its ability to perceive and understand the world. AI’s ability to quickly sort and classify large amounts of structured and unstructured data can help marketers focus on reacting to, or even predicting, customer needs.

For example, Microsoft has built an AI-based listening service that monitors public web and social channels to detect issues users experience when they upgrade their Windows 10 PC. The Microsoft listening service sorts through millions of messages posted on sites like Reddit or Twitter to alert product and engineering management to emerging issues within 24 hours of a new release going live. Insights from the service have dramatically reduced the time to detect and fix issues in the wild, and have spurred changes in how new releases are launched.

When the ability to understand the world combines with the ability to synthesize language or visual communication, AI can autonomously engage in two-way interactions. Breaking down barriers between machines and people substantially increases the number of people marketing can engage without losing the personal touch that drives higher loyalty.

To illustrate this point, a large telco in the U.S. saw the value of AI-powered conversational marketing firsthand. The marketing team needed to qualify cold leads on a much larger scale. Cold leads come in as contact information gathered from websites, chats, calls, outbound telemarketing and email campaigns. An intelligent agent follows up via email in a humanlike, two-way exchange, qualifies the lead and passes it to sales reps. The arrangement has two benefits: it has increased the volume of qualified leads, giving sales reps more time to focus on closing deals. Previously, qualifying 800 leads took one month; the AI platform can do the same volume in one week. The result of this investment in marketing AI yielded a 2,000 percent return on investment (ROI).5

Testing, deciding and taking action

Although the human interaction aspects of AI systems are often the most visible, the true heart of what makes AI special is the ability to take action and learn. Reinforcement learning is a form of ML that predicts a course of action, takes the action, measures the outcome and uses this information to improve the next prediction. Experimentation takes reinforcement learning to the next level by deliberately testing two or more options for a communication or other action to learn which is the most effective.
Using these techniques, AI systems can explore highly complex and varied options for customer engagement very quickly, and continuously optimize their performance as more data becomes available. This means marketers can set parameters and allow the AI to optimize and learn to achieve precision.

The most sophisticated types of AI applications can be trained to go beyond presenting options and can autonomously take appropriate action.

Sprint has found AI’s test-and-decide ability useful in customer retention. Operating in a highly competitive market with dynamic and fickle customers, the telco giant was looking for ways to grow its ARPU (Average Revenue Per Unit) and minimize churn, as well as improve the overall customer experience. Sprint found its answer in the form of an AI marketing solution which uses continuous experimentation to determine the right combinations of offers, copy and creative that maximize customer retention and revenue. Sprint used this solution to underpin its campaigns, and in less than 10 months, boosted social referrals by 45 percent and generated “millions in incremental revenue at an ROI of 650 percent.”

What’s needed for AI to fulfill its marketing potential?

Marketers should consider two things integral to getting the most from AI technology: the readiness of individual marketers to adopt and embrace AI, and the readiness of marketing organizations to adopt an AI-centric approach to marketing.
Increase AI readiness

Despite decades of progress in data management and automation, many marketers today still rely on intuition and institutional knowledge to make decisions about the marketing process. Even in highly data-driven organizations, the leap between using analysis and automating decision-making is a large one. Today, marketers still rely on subjective interpretation of results.

AI-driven marketing, by contrast, places much of this decision-making in the hands of machines, requiring marketers instead to focus on choosing the right success metrics and setting the parameters within which AI systems can experiment to find the best marketing approach.

Marketers of the future will still bring the traditional marketing competencies of creativity, ideation and customer empathy. In fact, these skills will become more important when AI systems automate many of the mechanical and quantitative tasks that consume marketers’ time. That said, marketers will need to continue to grow skills in data and analytics to guide decisions made by increasingly sophisticated AI systems.

How can marketing leaders begin to close these skills gaps? One approach is to develop these skills internally; however, this is unlikely to be effective as a sole approach because technical data skills take time to develop, and many marketers do not want to become full-time data scientists. Perhaps for this reason, only about half of the executives surveyed see company-organized in-house training as a way to develop an AI-ready marketing organization, and just three percent plan to significantly increase their investment in training and reskilling programs in the next three years.

One of the big shifts in marketing today is how dynamic it’s become: how fast the consumer is moving, and how fast the solutions are moving. Working internally as an integrated team becomes critically important to bringing innovative solutions to the table, rather than working on our own.

VP of Global Marketing, Large Consumer Packaged Goods Company
Instead, marketing leaders are looking to bolster their data and AI skills by bringing in talent from outside the company. 72 percent of marketers surveyed said they’re looking externally for the requisite AI technical skills to augment their existing workforce.⁹

However, both these approaches overlook another option that may infuse needed technical skills and talent more quickly without the long lead-time necessary for recruiting or developing current talent: pair existing marketers with technical talent from other areas of the company. Building a hybrid team with representatives from marketing, engineering and data science creates cross-functional groups who can quickly boost the marketing organization’s AI readiness. This option will require innovative thinking and close collaboration across traditional organizational silos.

**Build an AI-ready organization**

Leading marketing organizations will democratize comprehensive customer data and evolve to a continuous process of nurturing and engaging customers at scale. Pervasive data and cohesive customer engagement enables AI systems to test offers at scale, drive hyper-personalized marketing to individuals and learn in real-time to drive optimization.
As organizations equip the workforce with AI, employees will need to learn how best to work productively and benefit from it. As humans and machines collaborate, marketers should increasingly delegate tasks to machines and focus more on the outcomes they hope to achieve. As AI matures, so can the complexity of the tasks delegated to machines.

This marriage of human ingenuity with intelligent technology will enable companies to go beyond simply boosting productivity to developing differentiated customer experiences and creating entirely new products, services and markets.

**Accenture estimates that effective human-machine collaboration could boost business revenues by 38 percent between 2018 and 2022 (as much as 50 percent in the consumer goods and health sectors) and lift global profits by a total of $4.8 trillion by 2022.**

Marketers can plant the seeds for collaboration in their organization by starting simply: targeting low-risk opportunities that demonstrate AI’s power while also providing valuable learnings. This could include using social listening tools to understand customer experience and brand attitudes, or using a chatbot to augment customer service while generating valuable insights through the data it generates.

For digital campaign execution, a sensible first step is to use AI and Machine Learning to generate predictive campaign segments for traditional campaigns, and compare their performance to traditional, manually built segments. Once satisfied that these “smart segments” deliver comparable or better performance than existing methods, marketers can move to a more complete end-to-end automation approach in which the AI system builds and executes campaign segments automatically, using reinforcement learning to optimize against an outcome such as subscription renewals or website visits. The marketer provides a battery of creative and copy he or she believes can be combined in ways that will resonate with customers with different values, but lets the AI determine what’s shown to which individual, and when.

Through close collaboration, marketers will be able to use machines to sharpen their focus on outcomes and help to achieve their goals more quickly and efficiently than ever before.
It’s time to prepare for the AI future

As AI works its way across the marketing organization, it promises to dramatically change the way marketers work, hire, learn and organize. In fact, 84 percent of marketers surveyed think AI will make their role more effective. It also has virtually limitless potential to add value to the marketing organization overall: repetitive work will get done faster and more accurately, decisions will be informed by more intelligence, and the entire marketing chain will be optimized.

Individual marketers will change the way they work as AI is added to their toolkit. Modern marketing organizations will evolve operations and incentives to support the marketer of the future. Leading organizations will think of data and automated decision-making as foundational capabilities that transcend traditional organizational boundaries. As these boundaries erode, faster and more impactful application of AI across the organization will emerge.

The stakes have changed. A majority of marketers believe AI will be a keystone component of marketing. Established strategies will be accelerated and powered by AI in ways that are not yet possible with current systems. Marketing teams must fully embrace and embed AI into their DNA. Only then will they be equipped to quickly adapt to a dynamically evolving customer landscape.
The AI revolution is coming. WILL MARKETERS BE READY?
JOIN THE CONVERSATION

@AccentureStrat

linkedin.com/company/accenture-strategy

AUTHORS

Mercedes Fuller
Managing Director, Accenture Strategy
mercedes.fuller@accenture.com

Paul Swiontkowski
Senior Director, Global Lead Data Science and Analytics
pswiont@microsoft.com

CONTRIBUTORS

Derek Nesmith
Manager, Applied Intelligence
robert.d.nesmith@accenture.com
NOTES

1 2018 Accenture-Microsoft AI Marketing Survey
2 2018 Accenture-Microsoft AI Marketing Survey
3 Oxford English Dictionary
4 https://deepmind.com/research/alphago/
6 https://resources.conversica.com/h/i353572669-centurylink-case-study
8 2018 Accenture-Microsoft AI Marketing Survey
9 2018 Accenture-Microsoft AI Marketing Survey
10 2018 Accenture-Microsoft AI Marketing Survey
12 2018 Accenture-Microsoft AI Marketing Survey

ABOUT ACCENTURE

Accenture is a leading global professional services company, providing a broad range of services in strategy and consulting, interactive, technology and operations, with digital capabilities across all of these services. We combine unmatched experience and specialized capabilities across more than 40 industries — powered by the world’s largest network of Advanced Technology and Intelligent Operations centers. With 509,000 people serving clients in more than 120 countries, Accenture brings continuous innovation to help clients improve their performance and create lasting value across their enterprises. Visit us at www.accenture.com.

ABOUT ACCENTURE STRATEGY

Accenture Strategy operates at the intersection of business and technology. We bring together our capabilities in business, technology, operations and function strategy to help our clients envision and execute industry-specific strategies that support enterprise-wide transformation. Our focus on issues related to digital disruption, competitiveness, global operating models, talent and leadership helps drive both efficiencies and growth. For more information, follow @AccentureStrat or visit www.accenture.com/strategy.

ABOUT MICROSOFT

Microsoft (Nasdaq “MSFT” @microsoft) is the leading platform and productivity company for the mobile-first, cloud-first world and its mission is to empower every person and every organization on the planet to achieve more.