

Executive Summaries

Section I: Personalization **The Mastercard Digital Marketing Engine™: Using AI to Spot Micro Trends for Effective Customer Engagement** Raja Rajamannar, Mastercard

People are now bombarded with around 10,000 advertising messages daily, interrupting and impeding their online activities. It's clear that the traditional ways of advertising are no longer viable. Brand marketers must develop a new mindset to connect with consumers and drive return on investment (ROI). The single most powerful enabler and disruptor of marketing is now artificial intelligence (AI). It is an incomparable and essential tool, allowing marketers to engage with consumers meaningfully, authentically, and in real time. Marketers at Mastercard have risen to this challenge and created the Mastercard Digital Engine™. The engine matches consumers' passions and desires with micro trends, instantly delivering a personalized message suited to the context. We are just beginning to scratch the surface of AI's vast potential, but already it is fueling a higher standard of marketing. For marketers at Mastercard, AI is a gamechanger.

The Alibaba Challenge: How to Effectively Engage with a Billion Customers Yitong Wang, Alibaba; Ofer Mintz, University of Technology Sydney and Tel Aviv University; Depin Chen, Alibaba; Kehan Chen, Alibaba

Alibaba uses AI to engage with several million customers daily. Without AI, engaging with this throng of customers, both proactively and reactively, would be functionally impossible. Alibaba therefore uses five AI-based customer service chatbots, each with its own purpose, technical challenges, and abilities. By using AI-based service that provides automated and interactive customer service dispute resolution, Alibaba has achieved a 25 percent increase in customer satisfaction.

AI in Personalized Product Recommendations Kartik Hosanagar, The Wharton School, University of Pennsylvania; Dokyun Lee, Questrom School of Business, Boston University

Consumers today are presented with a wealth of product offerings in digital marketplaces and storefronts. Managers must consider how consumers will find products of interest among seemingly endless alternatives. Recommender systems combine data drawn from clickstreams, purchases, product ratings, user profiles, and social networks to help consumers learn about new products and select ones. For firms, recommender systems can turn browsers into buyers, cross-sell products, and increase customer loyalty. In recent years, designers have applied machine learning (ML) to create hybrid systems. This method shows great promise in terms of using new kinds of unstructured data to generate personalized recommendations. However, managers should focus not only on short-term customer engagement metrics, but also on long-term customer engagement and the societal impacts of large-scale personalization. It is not necessary to sacrifice the accuracy of recommendations in order to increase their diversity. We can now circumvent the filter bubble effect without causing a drop in customer engagement.

Hyper-Personalization for Customer Engagement with Artificial Intelligence Thomas H. Davenport, Babson College and Oxford Business School

Marketers have, for some time, been familiar with personalization rooted in customer attributes and behavior, and artificial intelligence is making personalization increasingly effective. AI-based hyper-personalization employs sophisticated methods and more data

than previous methods to produce greater precision. AI-fueled personalization increases customer engagement by suggesting products and services that are particularly suited to the specific needs and desires of a given consumer. However, marketers should be aware that the public's growing concerns about data privacy are now generating an increasing backlash against personalization.

Saving Lives with AI: Lessons in Personalization and Engagement Rex Briggs, MMA Global; Stefanie Friedhoff, Brown University; Erik Lundberg, ArtsAI

Fewer than 1 percent of marketers engaged in digital display, audio, and video advertising currently use artificial intelligence (AI) to personalize their ads. Yet this application of AI promises to increase the engagement of customers and improve results for businesses. When charged with teaching people about the COVID-19 vaccination, the Ad Council used this technology, carefully measuring whether it could increase engagement and vaccination rates. Through a series of live campaigns, starting with just nine messages which grew into hundreds, the team achieved significant gains in engagement by using AI personalization. This research not only saved lives and reduced hospitalizations, but also dramatically demonstrated the power of AI personalization.

After a Stroke, AI Helped Me Learn to Write Again Mukul Pandya, The Wharton School, University of Pennsylvania

Every year, more than fifteen million people around the globe suffer strokes. Those who survive often find themselves in a dark place once they realize that the resulting impairments may be with them for a long time. This mental anguish can be just as debilitating as the more direct effects of the stroke. Mukul Pandya, a lifelong writer and editor, describes how recent developments in artificial intelligence helped him to recover both his writing abilities and his sense of self after a debilitating stroke changed his life overnight.

Section II: Automation **AI + Human Is the Essential Formula for Customer Engagement** Chetan Dube, Amelia

In the future, customer engagement in business will rely on a combination of digital and human work. Companies often overlook the necessity of investing equally in both sides of this equation. AI systems and humans must work together as a cohesive team to create personalized user engagement and customer support. Such collaborations can engender repeat business, brand loyalty, and high customer satisfaction over time. Business leaders must therefore be prepared to step out of their comfort zones and make the attempt. It is also essential that they properly prepare their employees for these changes, involving them in the planning, designing, and deployment of AI collaborative projects so they recognize the model's potential to improve not just the business but their own jobs and livelihoods. Companies should trust the technology and their employees in equal measure so they can work together harmoniously, producing impactful customer engagement. Any strategy that doesn't account for the profound contributions of both is out of tune and out of touch.

The Leader's Strategic Mindset: A Key Factor for AI Success Pernille Rydén, IT University of Copenhagen; Torsten Ringberg, Copenhagen Business School; Omar A. El Sawy, Marshall School of Business, University of Southern California

For businesses that aim to succeed with artificial intelligence, their leaders' strategic mindset is a key factor. Businesses are increasingly using AI to transform their processes and create new ways of engaging with customers. An analysis of more than 1,000 leaders' mindsets reveals the danger of a disconnect between the breathless use of the technology and the strategic mindset behind it. Leaders risk falling back on old assumptions about customer engagement and projecting them upon the use of AI. If this mindset doesn't fit, neither the enterprise nor its customers will draw value from the investment in AI. Finding the right 'why' depends on leaders' goals, their intended customers, and their actual AI needs. Our strategic mindset framework, along with examples

of AI/mindset combinations can help managers to find the mindset that best fits their AI customer engagement needs.

Section III: Predictions

White Glove Service: AI in Wealth Management Raises Client Engagement at Scale Brian Lincoln, IBM Consulting; Robert Grant, IBM Consulting; Suresh Iyengar, IBM Consulting

The rush of new investors to the markets over the past two years and the growing pool of affluent individuals seeking advice have created a significant strain on wealth manager operations. Clients want to feel that firms know them and expect the same digital convenience they experience in other parts of their lives. However, firms are challenged by the reality of physical documentation requirements and paper intensive processes, with back offices under pressure to automate all while clients seek a seamless digital experience. Leaders have started to apply artificial intelligence (AI) and machine learning (ML) to dramatically enhance intelligent document processing (IDP) to straight through process client requests. The same type of machine learning models used for IDP to transform client experience, reduce processing times, limit or eliminate errors, and provide regular status updates can be used to drive substantial personalization. The generative capabilities of foundation models offer a range of possibilities for wealth advisors to personalize their interactions with clients while driving engagement at scale. Even simple applications of AI to documents can produce impactful results, reducing cycle time, reducing costs, increasing capacity, and improving client engagement.

Resurrecting Jimi Hendrix: The Power of AI to Expand Consumer Engagement Through Musical Fan Cultures Alan Schulman, UpperRight, Stacey Lynn Schulman, HI: Human Insight

Many of history's greatest composers, musicians, and performing artists have created their own unique, instantly recognizable sound. How might their music

have evolved had they lived on and continued to create? In recent years, artificial intelligence (AI) and machine learning (ML) have been used to attempt to replicate, reimagine, and expand on what these historic artists created. This study explores how listeners react to AI-generated music that endeavors to interpret and advance the signature sound of several world-renowned artists. Through an analysis of widely available consumer sentiment as well as our own independent research, we explore the delicate boundaries between art and technology and propose a framework for assessing how AI-generated music provides the aesthetic and commercial saliency consumers expect from human musicians. This technology has far-reaching implications for consumer engagement with brands that invest in associations with musical fan cultures and sonic branding.

Wizenoze: The Value of Engaging the Customer's Customer Stefano Puntoni, The Wharton School, University of Pennsylvania

The Internet offers an incredible wealth of data, but finding relevant, reliable, and readable information for students from primary to graduate school is difficult. Yet, search engines like Google cannot match content to the reading skills of the user and do not always yield results suitable for quality education. The Dutch educational technology startup Wizenoze offers a better way. Founded in 2013, Wizenoze has found a way to curate information on the Internet for children and students, ensuring that what they see is age appropriate, true, safe, and suited to their reading level. After its initial launch, the company's leaders realized that they had considered the needs of educational institutions, but they had not listened to end users: students and teachers. In consultation with these groups, they realized that even though Wizenoze gave students access to a smaller, curated trove of information than the open Internet, many students still found searching for specific information difficult. They wanted an easier way to get the best information about their topic. The company's solution is a demonstration both of the importance of considering end users and of AI's ability to personalize service

at scale in order to increase user engagement and satisfaction.

Developing a Trustworthy AI Rating System and Its Impact on Customer Engagement

Jennifer Shkabatur, Reichman University; **Alex Mintz**, Reichman University

Studies have shown that customers who trust products and services are more engaged, which makes their experience and satisfaction higher. But users are in the dark about the trustworthiness of products that influence their everyday choices, such as recommendation engines, chatbots, mobile apps, digital assistants, and the like. They also have no tools with which to assess them. We propose a method for rating the trustworthiness of AI products and their impact on customer engagement, demonstrating its utility through three real-world applications of AI. Our method allows users to practically test AI products against commonly accepted trust parameters such as human agency and oversight, technical robustness and safety, privacy and data governance, transparency and explainability, non-discrimination and fairness, societal and environmental well-being, and accountability. This method can be used by the business community, investors, regulators, ranking agencies, and customers.

Section IV: Customer Insights

Mars' ACE: Using AI and Behavioral Data in Ad Testing with High Correlating Sales

Laurent Larginat, Mars, Inc.

Advertising testing is a time-honored tradition used by marketers to gain insights into consumers' responses to ads. Typically, they use standard survey methods in which respondents are asked about ad-recall, ad-preference, or future purchase desire to gauge reactions before the ad is launched. But traditional ad testing is limited by its declarative, survey-style approach; today's marketers need an alternative solution to drive sales and create a sustainable competitive advantage. Mars developed its own pro-

prietary method of assessing effectiveness by using consumer behavioral methods and applying artificial intelligence (AI). We used behavioral data, including eye-tracking, facial reactions, skin conductivity, EEG, and more, applying AI algorithms to analyze the data and ultimately link benchmarks to sales success. The result is 85 percent accuracy in predicting whether ads would lead to a sales.

Machines that Dream: How AI-Human Collaborations in Art Deepen Audience Engagement

Refik Anadol, Artist; **Pelin Kivrak**, Refik Anadol Studios and Tufts University

Human engagement at the intersection of the physical and the virtual world is becoming ever more interactive and multisensory. The Los Angeles-based Refik Anadol Studio experiments and collaborates with artificial intelligence (AI) and the metaverse to create immersive artwork that evokes a range of senses and fosters audience engagement. As the use of generative AI models for artistic purposes becomes more prevalent, it inspires essential discussions about where creativity lies in human-AI collaborations. Artists have a range of perspectives on how to use AI and machine learning (ML) to creatively engage audiences.

Unlocking Deeper Insights into Customer Engagement Through AI-Powered Analysis of Social Media Data

P.K. Kannan, Robert H. Smith School of Business, University of Maryland; **Yi Yang**, Hong Kong University of Science and Technology; **Kunpeng Zhang**, Robert H. Smith School of Business, University of Maryland

Brands use social media channels to engage with their customers by posting content to inform them of new products and services, get feedback, and increase sales through influencer marketing. Users interact and engage with these posts by liking, commenting on, or sharing the content. These interactions between brands and users result in a network of links characterizing a social engagement structure, highlighting the common users between brands. AI

techniques can help firms understand the structure of social engagement and derive market intelligence from this rich data source. We used deep learning auto-encoder techniques to process the network data and identify the competitive structures within brands and product-markets and those that cross boundaries to include different products and brands. Through such analysis, companies can anticipate trends in the market that could affect their brands, noting threats from competing brands and opportunities for co-branding by identifying attractive segments of customers to target and ultimately grow their business.

How Artificial Intelligence Can Keep Classical Music in Business David Serkin Ludwig, The Juilliard School

Audiences have been engaging with what we call classical music for over a thousand years, but the future of the art form is uncertain today as it competes for attention and relevance. Developments in technology, especially artificial intelligence (AI), are quickly changing the way classical music is produced and disseminated. Rather than displacing creators and performers, AI can be a tool to help musicians write, play, and teach more effectively and engage audiences on a far greater scale.

Infosys: AI Helps Build Customer Engagement to Ace the Tennis Game Navin Rammohan, Infosys; Mukul Pandya, The Wharton School, University of Pennsylvania

Eight years ago, Infosys, a global IT services company headquartered in Bangalore, was looking for a global sport through which it could build customer engagement using AI and digital technology. It hoped to reimagine the sport through data and digital experiences. It also hoped that the sport would have a huge following in its primary markets of North America and Europe. Almost a decade later, the company has used AI and other digital technologies to deepen the engagement that key stakeholders – including

fans, coaches, players, and the media – have with the game.

Section V: Omnichannel Engagement **AI for Customer Engagement at Google** Google's Customer Engagement leadership team: **Tim Frank, Aastha Gaur, Abheek Gupta, Doris Neubauer, Ian Suttle, Leo Cheng, Natalie Mason, Qiushuang Zhang, Ravi Narasimhan, Roman Karachinsky, Sandeep Beri, Shashi Upadhyay, Tony Li, Vicky Ge**

We spotted significant opportunities to better apply AI/ML research at all customer engagement touchpoints, creating step change opportunities to provide value to our customers, both directly and through Google's representatives. Always working to put our customers first, we offer a prioritization framework, rooted in case studies on the AI we employed, tracing the impact of our AI/ML applications on customer engagement. We learned a number of valuable lessons from this work.

Singapore's Hospital to Home Program: Raising Patient Engagement Through AI John Abisheganaden, National Healthcare Group, Singapore; **Kheng Hock Lee**, SingHealth Group; **Lian Leng Low**, SingHealth Group; **Eugene Shum**, SingHealth Group; **Han Leong Goh**, Integrated Health Information Systems; **Christine Gia Lee Ang**, Integrated Health Information Systems; **Andy Wee An Ta**, Integrated Health Information Systems; **Steven M. Miller**, Singapore Management University

Singapore's public healthcare system has designed a Hospital to Home (H2H) program to safely reduce inpatient readmissions of elderly patients within 12 months of an initial stay. H2H focuses especially on patients who suffer from multiple chronic ailments and have complex care needs, helping these patients to safely transition back to their homes and communities. It uses an AI prediction model trained on health record and demographic data to perform the initial patient screening for program enrollment. We summarize our observations on how AI can play such a supporting role behind the scenes, enabling a healthcare program that provides direct engagement with every patient.

Commonwealth Bank: Amplifying Customer Centricity with AI Steven Randazzo, Warwick Business School and Harvard University; Jin H. Paik, Harvard Business School and Altruistic; Yael Grushka-Cockayne, Darden School of Business, University of Virginia

Commonwealth Bank leveraged data and artificial intelligence (AI) in its operations to maintain a competitive edge by bridging gaps between retail, call center, and digital services. The transformation was driven by the increased availability and standardization of data, which allowed the bank to create new differentiators, such as customization and enhanced interactions. In addition, as AI continues to influence decision-making, the bank commoditized speed, access, and price, placing greater focus on creating unique experiences that customers cannot find elsewhere. The case study revealed that managers developing retail-based AI programs should: increase the adoption of AI and eliminate its appearance of ‘magic’ by explaining the models and outputs, train workers affected by the AI and ensure that its further use and implementation are guided by their feedback, and consider how the AI can deliver a range of messages that will resonate with customers, not just sales messages.

Singapore’s AI Applications in the Public Sector: Six Examples Steven M. Miller, Singapore Management University

These six examples of Singapore public sector AI applications illustrate different ways of enhancing public engagement across the domains of transportation, municipal services, employment and retraining support, parks and recreation areas, K-12 education, and border security. For such applications it is essential to strike a careful balance between the benefits of enhanced and automated accessibility, responsiveness, and personalization and the risks of lack of public trust, perceived overreach, lack of understandability, and

excessive complexity. Leaders must also select projects with clearly defined use cases which address people’s needs rather than pursuing projects just for the sake of using AI. They should also start with basic tasks that help residents to do essential things more easily, building a foundation for moving forward with more sophisticated AI methods and models that offer new services to residents. Most of these examples were the result of steady, iterative efforts spanning multiple years of patient, persistent, and consistent management, along with parallel efforts to establish policies, governance, and technology platforms and products. The government’s approach to building and deploying AI capabilities requires engagement at the national level.

Section VI: The Future
3 Visions of the Future of AI for Customer Engagement: 2027 Scenarios Jerry Wind, The Wharton School, University of Pennsylvania, Mukul Pandya, The Wharton School, University of Pennsylvania, Margherita Pagani, SKEMA Business School, Jerry Dischler, Google

Artificial intelligence is making ever deeper inroads into every aspect of business, society, and our lives. By 2027, how will AI transform the future of customer and human engagement? *Management and Business Review* and the ANA’s Global CMO Growth Council organized a forum with this issue’s authors and selected CMOs to explore three possible scenarios for the future - optimistic, pessimistic and most likely. Their results comprise a fascinating combination of opportunities and risks, good and bad. Most importantly, participants outlined the steps we should take today to address these possibilities and prepare for 2027. These scenarios were developed before generative AI took the world by storm with the release of ChatGPT and GPT4 towards the end of 2022. But generative AI does not invalidate the conclusions presented in this special issue and in our scenarios. In fact, it turbocharges the transformative effects of AI on customer engagement and on our lives.