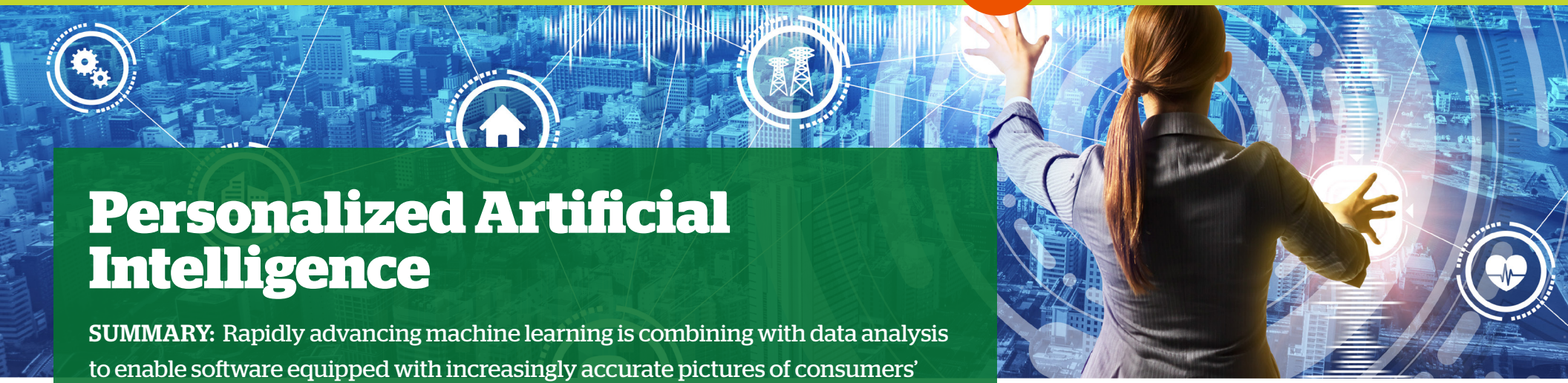

Personalized Artificial Intelligence

SUMMARY: Rapidly advancing machine learning is combining with data analysis to enable software equipped with increasingly accurate pictures of consumers' lives and likes. This technology can support personalized microtargeting and allow organizations to offload customer service work to chatbots and other interfaces. Individuals may interact more and more with software that seems to know and understand them, sometimes better than their friends.

Forecasts

- Machine learning and data proliferation make the spread of personalized artificial intelligence, or AI, inevitable; only its ubiquity and capacities are in question.
- AI will offer increasingly personalized decision support in a range of activities. People will look to AI for advice on purchases, solutions, and even questions of social life. Some will grow dependent on their artificial support systems.
- Personalized AI tools will interact not only with their "owners" but also with each other and with other humans—e.g., to set up appointments.
- AI systems may be oversold or misused and become associated with ineffectiveness. This perception could persist even after the technology has further matured. The notorious inaccuracy of voice recognition systems offers a lesson.

Key Uncertainties

Speed of development of AI technologies and methods

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Speed of change in computing power, especially as advances in raw computing power slow down

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Acceptance of AI and how people react as they simulate intelligence more closely

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Effects of privacy concerns and norms

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Data regulation around privacy

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Interoperability and the compatibility of systems

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Data access and control and whether it is siloed or open

Personalized Artificial Intelligence

UPDATED AUGUST 2018

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Supporting Trends

- **Machine learning innovation.** Innovations in machine learning are accelerating the development of artificial intelligence.
- **Accessible AI for business.** Google and Microsoft are offering simplified interfaces to enable non-experts to develop their own customized machine-learning applications.
- **Affective computing.** Affective computing integrates emotion detection and simulated psychological sensitivity into computers.
- **AI as customer.** Consumers are empowering smart assistants (e.g., Alexa and Siri) to make transactions, requiring companies to adapt to new "non-human" customers at the point of sale.
- **Human–machine hybrid work.** Semi-autonomous systems that work in partnership with humans may be more prevalent than fully autonomous systems.
- **Anticipatory ambient intelligence.** Ambient intelligence may lead to artificial intelligence systems that anticipate consumers' needs in every aspect of life.
- **Internet of things.** The internet of things (IoT) is spreading rapidly.
- **Voice interfaces.** Voice interfaces are proliferating on phones, in the home, and in vehicles.
- **Wearable technologies.** Wearables will continue to grow and will expand into new domains like payment and health monitoring.

Related Drivers of Change

- Automating Work
- Anticipatory Intelligence
- Human-Machine Cooperation
- Blockchain Platforms

Notable Data Points

RISE OF THE MACHINES

By 2021, the number of **devices with built-in AI assistants will exceed Earth's population.**

Source: Ovum

PERSONALIZED ASSISTANCE

The Amazon Alexa AI assistant reached 30,000 "skills" (apps) in 2018, with the number growing rapidly.

Source: VentureBeat

INTERNET OF THINGS

The installed base of IoT devices is projected to **grow from 21 billion in 2018 to over 50 billion in 2020.**

Source: Juniper Research

Strategic Insights

- AI systems have the potential to vastly improve customer and member experiences—staying aware of users' past interactions and preferences and offering proactive recommendations. However, theory is likely to be ahead of reality for at least several years.
- Organizations will have to keep pace with AI capabilities that enable new and better member services—leaders will need to avoid implementing these capabilities in ways that frustrate customers, members, and staff.
- AI systems will increasingly be able to serve as vehicles for highly personalized interfaces for members, customizing their interactions with organizations.
- AI will offer the means to provide personalized training and education, personalized content offerings, and personalized information services.
- People will expect to be able to use the same AI systems they use in their daily lives at work, and non-work systems and interfaces will set expectations for work versions. Employees will want to BYOAI (bring your own AI) to work.
- If companies use AI-enabled systems chiefly to reduce costs without adequate attention to effectiveness, these systems could come to be seen as a cheap approach that is dismissive of customers' needs.

Timing

- **Stage:** Emergence—new capabilities are appearing quickly and just beginning to be applied
- **Speed:** Rapid, as the field is developing quickly

Potential Alternative Futures

- **Idiot robots:** AI is oversold, disappointing adopters and those interacting with AI systems, resulting in persistent skepticism of the technology.
- **Walled bots:** Proprietary and incompatible data systems fragment the information that AIs depend on, limiting effectiveness.
- **I love my algorithm:** Many people prefer interacting with AI for many purposes, for reasons including privacy from other humans.
- **The bot behind the curtain:** In many applications, AI systems are hidden from view and indistinguishable from a human actor.

Take Action

- **Personalize the member experience.** Using AI, associations can identify patterns of behavior and preferences that help customize the member experience. AI can recommend products and services your members might overlook and deepen their level of engagement. In the near future, AI is likely to work like a personal shopper and search agent. Experiment with enabling members to tailor complex conference experiences. Longer-term, personal assistants could become a primary member interface, managing transactions where human presence is not required. However, this could make association services more essential as they are integrated seamlessly into members' lives.
- **Avoid the creepiness factor.** Some members may find close observation of their online behaviors more intrusive than helpful. Some member data could be too sensitive to analyze, such as career services, self-assessments, and credentialing information. Associations will need data privacy policies consistent with their culture and member expectations.
- **Work with your industry's pioneers in AI.** These are early days for this technology, yet leading AI providers are already targeting key industries and discovering innovative ways to help companies and professionals work smarter. Seek out these pioneers to lead the way into this future. Other associations exploring the leading edge of AI also may be a resource. Associations will be fast followers, but they can't get too far behind in educating their members and using these capabilities.
- **Plan ahead for the future of your technologies.** Now is the time to ask what it will take to make your technology systems AI ready, and whether your current vendors are factoring these capabilities into their research and development plans.

Keyword Search

To continue researching this change driver, use combinations of these search terms: ***personalized, personalization, AI, artificial intelligence, recommendation engines, machine learning, expert systems, ambient intelligence, recommender system, collaborative filtering, microtargeting***

Who Will Be Affected

Many industries are already experimenting with AI's potential: hotels and the hospitality industry; conference and event companies; business, accounting, and professional services; healthcare providers and researchers; retail; media and communications; etc. Wherever the crush of transactions or the complexity of data analysis exceeds human capacity to manage, artificial intelligence increasingly will be the best solution.

About ASAE ForesightWorks

ASAE ForesightWorks is a deliberate, evidence-based research program and emerging line of products to provide association professionals with a continual stream of intelligence about the changes facing the association industry, including:

- regularly updated action briefs;
- tools for applying insights from the research in your association;
- guidance in performing environmental scans; and
- opportunities to engage with peers around the research.

Ultimately, the program's mission is to empower association leaders to create a culture of foresight.

Check **asaecenter.org/ForesightWorks** and follow **@ASAEfdn** on Twitter for updates on new findings and events.