

# Engaging healthcare consumers with artificial intelligence solutions

How this advanced technology can help enhance the consumer experience, improve patient outcomes and lower operational costs

As the consumerization of healthcare continues, many people expect their insurance experience to resemble their interactions with Google, Netflix, Amazon and other frequently used services. There's a strong demand for convenience, accuracy, quick results and customization.

The challenge for healthcare payers — health plans and self-insured employers — is to meet those expectations with improved consumer experiences while simultaneously lowering operational costs. New applications of cognitive computing, coupled with the vast amounts of claims and clinical data payers have in their data stores, have the potential to meet this challenge.

Cognitive systems use artificial intelligence (AI) to mine and understand disparate data, find connections among myriad types of structured data, conduct deep analyses and communicate insights to people in a conversational and relatable manner. This technology establishes an artificial neural network that can learn and adapt to the specific needs of different organizations and individuals.

In this paper, we'll describe how AI has begun engaging consumers in a variety of marketplaces, and explore how health plans and self-insured employers can apply this technology in their efforts to improve health outcomes, enhance members' experiences and lower the cost of care.

## Business gets personal

AI is increasingly being used across industries as a competitive strategy to attract and retain customers. Below we present just a few examples of how IBM Watson™ has applied this technology in a variety of fields.



The Weather Company has launched Watson™ Ads, which allows brands like the Campbell Soup Company to create ads in the form of personalized recipes that complement the user's local weather<sup>1</sup>.



1-800-Flowers is enhancing its mobile experience with an IBM Watson-powered gift concierge that uses AI to tailor product suggestions for shoppers<sup>2</sup>. The system can interact with users via natural language, interpreting their inquiries and following up with a series of qualifying questions — such as type of occasion and sentiment — to ensure the right product suggestion. As the customer's use grows, the system will learn more about individual needs, enabling a more refined shopping experience over time<sup>3</sup>.



An individual life and business liability insurer in the Czech Republic is using Watson to gain customer insight, find sales leads and create personalized promotions. This system can process claims 22 percent faster and analyze 50 times more customer calls, emails, chats and other interactions than previously — recommending responses and using machine learning to improve suggestions over time<sup>4</sup>.

In the past, the company was only able to analyze about 2 percent of all customer interactions; today they can tap into nearly 100 percent of this information<sup>4</sup>. The company has used the analysis to identify common inquiries and create in-depth solutions that call center staff can use to better address customer needs. This allows them to resolve requests immediately, reducing callbacks and increasing customer satisfaction. They've also used the analytics to create customized promotions using insights gleaned during call center interactions.

### Faster access to data

Healthcare consumers can also benefit from the improved engagement that AI can provide. Take care management, for example. Before a care manager interacts with a patient, they first need to reference the historic notes and other relevant background materials in order to have an informed and helpful conversation. Unfortunately, this can be a cumbersome process, and critical information is often buried in the unstructured text.

IBM Watson™ Care Manager is a cloud-based solution designed to help care managers deliver client-centered care that can adapt to changing conditions, offering a learning system that improves over time.

The solution utilizes the Watson technology for summarizing journal articles and extracting key concepts, and correlates this data with information from the free text in the Care Manager's notes. This allows care managers to quickly access the information they need to connect dots that otherwise might not be connected.

Watson Care Manager can also recommend pertinent information for the care manager to collect during an assessment, helping to ensure that all of the patient's needs are considered.

### Questions, meet answers

Health plan members are often confused and overwhelmed when navigating the ins and outs of their benefits. Straightforward information and personalized guidance can help them better understand their options and make confident decisions.

IBM Watson Health™ is implementing virtual agents as part of its member engagement solution. Virtual agents use AI technology to help both health insurers and self-insured employers improve the member experience with fast answers to specific questions via convenient self-service channels.

In addition, virtual agents can help reduce customer service costs by 30 percent, so the potential cost-savings could be significant.<sup>5</sup>.

Of course, customer service agents must still handle some calls and online queries, and they typically spend a lot of time searching multiple databases for the information they need to help callers. This contributes to the high cost of the call and keeps members waiting. A solution that includes a virtual agent could enable call center staff to locate answers faster.

### A virtual agent:

- Understands the questions asked by members and customer service agents by extracting their underlying meaning and intent
- Guides conversations by posing the right sequence of questions to provide the fastest, most accurate answers possible
- Learns from its interactions with people, enabling it to improve its performance over time
- Uses its natural language processing ability to ask clarifying questions, so that it can give the right answers

Several other features can enhance the user experience:

- **Chat bot** technology interprets users' text messages. Some virtual agents can also understand speech and respond with texts. Because phone calls are still the most common method of contacting call centers, this speech-to-text capability can be useful.
- **Tone analyzer** technology detects and reacts to vocal patterns that reflect the caller's mood. If the caller seems to be irritated, for example, the software might provide a shorter, more succinct answer to a question.

### Digging deeper with enterprise data

By mining and analyzing the vast amounts of enterprise data an employer or health plan has accrued, an organization can reveal deep insights that can be used to personalize consumer interactions. The integration of claims and clinical data can help answer a wide range of questions, some of them fairly complex. For example, a solution using artificial intelligence would know whether a member was eligible for coverage of a particular surgical procedure, and what it would cost the member based on their current deductible and out-of-pocket expenditures. It would also offer available provider options, so the member could compare costs and quality reviews.

Care management data can also be integrated into the customer service interaction to alert the member of a care gap in chronic condition management or a preventive health measure that is overdue, and offer recommended next steps.

Enhancing provider relations and productivity through intelligent provider inquiries is another area in which healthcare payers can benefit from AI technology. Despite the growing adoption of electronic transactions for benefit and eligibility verification, health plans fielded over 152 million telephone inquiries in 2015 — at a cost of \$4.36 per inquiry<sup>6</sup>. Providers spent \$4.02 per manual inquiry, for a total industry cost of \$8.39 per transaction<sup>7</sup>. If providers could quickly and accurately verify benefit eligibility and financial responsibility in a matter of a few seconds — versus the six – 21 minutes they spend now<sup>8</sup> — all parties would likely see improvement in both productivity and member satisfaction ratings.

## Looking forward

AI technologies can help healthcare payers work toward achieving the Institute for Healthcare Improvement's Triple Aim of improved outcomes, enhanced member experience and reduced per capita costs of care.

The health payer of the future is poised to become a trusted advisor for consumers in the areas of:

- Benefit coverage
- Cost-share information
- Provider support
- Intuitive health insights
- Proactive coaching
- Value-based care

## For more information

Visit [ibm.com/watson/health/value-based-care/patient-engagement/](http://ibm.com/watson/health/value-based-care/patient-engagement/)

## Notes

1 Swant, M. IBM and The Weather Company's Cognitive Council Aims to Shape the Future of AI in Advertising. AdWeek. April 13, 2017. Available at [www.adweek.com/digital/ibm-and-the-weather-companys-cognitive-council-aims-to-shape-the-future-of-ai-in-advertising](http://www.adweek.com/digital/ibm-and-the-weather-companys-cognitive-council-aims-to-shape-the-future-of-ai-in-advertising).

2 Samuely, A. 1800Flowers Unwraps IBM Watson-Powered Mobile Gift Concierge, Signaling AI's Rise. Retail Dive. Available at [www.retaildive.com/ex/mobilecommercedaily/1800flowers-unwraps-ibm-watson-powered-mobile-gift-concierge-signaling-ais-rise](http://www.retaildive.com/ex/mobilecommercedaily/1800flowers-unwraps-ibm-watson-powered-mobile-gift-concierge-signaling-ais-rise).

3 Ibid.

4 IBM case study, January 2017. [www.03.ibm.com/software/businesscasestudies/us/en/corp?synkey=W142616G09148F62](http://www.03.ibm.com/software/businesscasestudies/us/en/corp?synkey=W142616G09148F62).

5 <https://www.ibm.com/blogs/watson/2017/10/how-chatbots-reduce-customer-service-costs-by-30-percent/>

6 CAHQ. 2016 CAQH Index: A Report of Healthcare Industry Adoption of Electronic Business Transactions and Cost Savings. Available at <https://www.caqh.org/sites/default/files/explorations/index/report/2016-caqh-index-report.pdf>.

7 Ibid.

8 Ibid, p. 31.

## About IBM Watson Health

Each day, professionals throughout the health ecosystem make powerful progress toward a healthier future. At IBM Watson Health, we help them remove obstacles, optimize efforts and reveal new insights to support the people they serve. Working across the landscape, from payers and providers to governments and life sciences, we bring together deep health expertise; proven innovation; and the power of cognitive computing to enable our customers to uncover, connect and act — as they work to solve health challenges for people everywhere.

To learn more about our consumer and cognitive solutions, [click here](#)

or visit: [content.truvenhealth.com/PAY-201801-PAY-AIConsumerwhitepaperLP.html](http://content.truvenhealth.com/PAY-201801-PAY-AIConsumerwhitepaperLP.html)

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