



Q&A with Damien Healy, VP of Technology and Operations, Xaxis EMEA
Illustration: Luke Brookes



Making Sense of AI in Marketing

Can artificial intelligence help marketers? What about machine learning or natural language processing? Deirdre McGlashan, MediaCom's Global Chief Digital Officer, and Damien Healy, Vice President of Technology and Operations for Xaxis EMEA, put their heads together to talk it out. Below are excerpts from their conversation.

DM: When I asked around for an authority on artificial intelligence (AI), more than a few people pointed in your direction. Tell our readers a little about yourself and your experience with advanced computing.

DH: I describe myself as a futurist and technology enthusiast. I actively engage with all kinds of technology, including artificial intelligence, robotics, biotech and virtual reality. For fun, I build drones and computers. As distressing as it is to my wife, my home is a treasure trove of VR headsets, telepresence devices, drones, ridiculously powerful computers and piles of other pieces of technology that catch my eye. I'm still waiting for my USB-sized molecular scanner from SCiO's Kickstarter fundraising campaign.

At Xaxis EMEA, I work with some of the most advanced computing technology in the world. The people at

Xaxis are great too, but that's really just icing on the cake!

DM: There is a lot of interest in AI and machine learning. Can you please explain the difference between them?

DH: Generally speaking, machine learning is a subset of AI, which includes natural language processing (NLP) and automated reasoning. Machine learning is the use of algorithms to allow a machine to adapt to circumstances over time. It's most effective when the inputs and outputs are well understood and the range of decisions is somewhat limited. Artificial intelligence, on the other hand, is defined by comparison to the human brain itself. A true AI will be able to think, act and reason at least as well as a human would.

DM: Thanks for the clarification. Let's focus on AI. How is it developing, and what kind of impact is it having on different industries?

DH: Developments in AI are progressing rapidly. It's hard to think of an industry that won't be completely transformed by AI over the next two decades. IBM, Microsoft, Google and other companies are already working on projects that foresee computers as entities with a level of real intelligence.

DM: Can you please tell us about some of these projects, what's the biggest or most impressive in your eyes?

DH: One of the most visible examples is IBM's Watson, the machine that famously beat the world's best players on the game show "Jeopardy". Watson was custom-built to process natural language and reason its way through information. It's now being used in many industries, including medical diagnostics, where it can diagnose patients and propose treatments much more effectively than any one human ever could.

On the theoretical side, the Human Brain Project is collecting everything we know about the brain in one place, with the goal of creating a computer that can emulate brain processes. This won't simply be a matter of advanced software and masses of computers; we'll need fundamentally different kinds of computer processors, designed from scratch, to create the first-ever true digital brain. I'm not sure anyone knows what happens after that.

DM: Wow – a truly digital brain, that's amazing. Before we arrive at the world of digital brains, we know that some form of AI is currently being used in many industries. How could this kind of AI be used in marketing?

DH: Most of the media technology I use today already leverages a certain amount of machine learning. Our data management platform regenerates targeting models every few minutes, based on the latest information about audiences and media placement opportunities, and our demand-side platforms use custom algorithms that predict the value of each ad impression across our entire portfolio of clients. It's a complex process that must work in an adaptive way to be successful. The world changes, so the machines need to adapt to those changes in near real time.

DM: Speaking of adaptive, one of the big jobs machines help with these days is to make sense of the volume of data out there, like social data. Please describe the importance of natural language processing (NLP) for marketers.

DH: NLP allows machines to understand emotion and nuance in language, and to read in a relatively human way. This gives us the ability to filter and categorize relevant text, like tweets. Our contextual NLP technology processes several billion web URLs per day as they are visited by consumers.

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Combining an advanced understanding of contextual content and the patterns by which such content is consumed can help us identify factors that may be important to marketers, like interests and likely gender. It's not possible to do this at scale without NLP technology, which is why its use has become so widespread.

DM: What do you find most exciting, Damien, about the brave new world of computer intelligence?

DH: Most people don't realize that we are already completely dependent on AI, and that our lives are meaningfully better because of it. The world is full of semi-autonomous computers protecting our energy grids and helping to fly the 100,000 commercial aircraft in the air every day. That said, we are still in the early days for AI.

DM: With this much integration into our everyday lives already, what do you feel the biggest impact will be on us? Is there anything about AI that we need to be worried about?

DH: I think that its impact is going to be more pronounced and disruptive than the industrial revolution. According to Oxford researchers, 35 percent of existing UK jobs and 45 percent of existing US jobs will be fully automated within the next 20 years. New kinds of jobs will appear, but the machines will

continue to get smarter and smarter. It's going to be a roller-coaster ride of epic proportions, full of both amazing opportunity and great peril.

DM: And what about existential risk? Could computers take over the world à la HAL in "Space Odyssey"?

DH: AI will almost certainly take over the world, but there's a good chance that we'll be far better off than HAL's operators were!

Ray Kurzweil, the American author, computer scientist and futurist, is famous for predicting a "singularity" event in 2045. He describes the singularity as "a future period during which the pace of technological advance will be so rapid, its impact so deep, that human life will be irreversibly transformed." Fortunately, it's not all doom and gloom. He thinks that we will be intimately entwined with our machine brethren by that point, making each of us part of the greatest evolution since the dawn of man.

Stay tuned: seatbelts are optional.