

Artificial Intelligence in Action: Digital Humans

Case Study: FaceMe

April 2019

TOWARDS OUR INTELLIGENT FUTURE TE ARA MŌ TĀTOU ATAMAI O ĀPŌPŌ

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Special Study

Artificial Intelligence in Action: Digital Humans

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CASE STUDY: BRINGING BRANDS' PERSONALITIES TO LIFE

A “Digital Human” brings emotional capabilities to chatbot communication. It is the personification of an underlying AI based chatbot or digital assistant. While a chatbot enables conversation, a digital human enables connection and individualisation.

A Digital Human resembles a human in form, features and expression. It can express tone of voice and body language. Many Digital Humans can sense the user's body language, expression or tone of voice. This enables the Digital Human to respond appropriately. For example, if a user looks confused, the Digital Human can offer more explanation.

HOW AI HELPS

Research company IDC notes that digital humans are particularly helpful for coaching or advisory roles. This is where the digital humans emotional and sensing capabilities come to the fore. IDC recognises two clear use cases for Digital humans:

- **Customer facing digital humans.** These provide customer service, training, coaching, advisory or even provide care. For example, a healthcare digital human assists patients to understand their illnesses and medications. A digital human can do this with individualised empathy.
- **Digital humans for employees.** Chatbots can help workers answer knowledge based questions. A digital human can train and coach employees and assist with activities such as setting development goals.

THE MARKET

Two of the most advanced Digital Human creator businesses in the world are New Zealand based. Soul Machines creates digital humans powered by neural networks inspired by the human brain. The company is a commercialised University of Auckland venture. Soul Machines customers (and digital humans) include: Collection House Group (“Kash”), Autodesk (“AVA”), Vector (“Will”) and ANZ Bank (“Jamie”).

Auckland based FaceMe is profiled in depth within this case study. Its customers (and digital humans) include: Vodafone (“Kiri”), NAB’s UBank (“Mia”), Ministry of Primary Industries (“Vai”), ASB Bank (“Josie”), UBS Bank (“Daniel Kalt”), and more recently BMW, Southern Cross and BCG.

The international market includes:

- **Magic Leap.** The US based startup has created a stunningly lifelike looking digital human, Mica, although they are yet to develop her verbal powers.
- **Clevertar** (and its subsidiary for SME Conversagent) create cartoon like avatars for frontline.
- **ObEN** creates digital humans that look and sound like an existing human. This "digital twin" can complete activities its real-life counterpart cannot. For example, ObEN CEO Nikhil Jain created his own digital twin to interact with his children while he was away for work. His digital twin speaks Mandarin, which is helpful because Jain himself cannot.

Digital Human Example 1, - Mica by Magic Leap

In late 2018, U.S. mixed reality startup Magic Leap released a surprise new product called Mica. Mica is a (currently) non-verbal digital human. The company created Mica complementary to its mixed reality headset, Magic Leap One.

Mica's creators have placed significant focus natural looking eye movement and body language. Users who have experienced interacting with Mica via the Magic Leap One report it to be a 'profound' experience.

While Mica does not speak yet, Mica's makers say they intend for the digital human to be an educator, companion, and guide in the future.

FIGURE 1

Mica by Magic Leap



Source: IDC, 2019

Example 2: Will by Soul Machines

New Zealand AI business Soul Machines creates artificial humans with personality and character. One of its digital humans, Will, works for energy distribution company Vector. Will is an educator, teaching children about sustainable energy. Will interacts with students and can quiz them on energy topics. Soul Machines has high hopes for their digital humans within the education sector, hoping to democratize education and address growing teacher shortages.

FIGURE 2

Will – Vector’s Digital Teacher



Source: IDC, 2019

CASE STUDY: FACEME

FaceMe’s intelligent digital human platform uses AI to create a natural, human-like interface for machine to human communication. CEO Danny Tomsett founded FaceMe in 2011. The company began by focusing on real-time video as a contact centre channel. The video channel outperformed other contact centre channels, with three-four times the number of sales conversions and higher Net Promoter Scores. The challenge for FaceMe was adoption. Organisations were starting to shift interactions into the digital realm.

FaceMe realised an opportunity to create personalised, human-like experiences and a brand-aligned presence within digital contact channels using digital humans. For example, an energy drink brand's digital human might be energetic, have an upbeat tone and appear in its 20s or 30s. A digital human for healthcare might look more experienced, speak slower and have a calm and assuring demeanour.

Tomsett points out that FaceMe is not a chatbot company but it designs its technology to work with any chatbot company.

The FaceMe Solution

FaceMe started research and development for the core AI technology for its Digital Humans in 2015. The company’s global technology network enables its digital humans to process and respond to hundreds of thousands of interactions at the same time, in real time, across any platform.

The FaceMe solution works together with any chatbot. Its Digital Humans lift chatbot output into realistic conversation, with emotion, warmth and expression. Using computer vision, the solution can take in additional inputs - such as what it sees and hears – and determine how to respond appropriately. For example, if an end user appears confused by a response, the Digital Human might offer to clarify its answer.

The solution can also plug into a wider ecosystem using APIs. For example, a technology buyer could integrate a Digital Human with a fashion advice app or with biometrics. Those businesses can then build solutions that incorporate a Digital Human in novel ways, beyond its standard capabilities.

FaceMe's Digital Humans are available 'in person' via kiosks (in a store for example) or as an online presence via a web browser or on cellular phones.

OVERCOMING CHALLENGES

FaceMe identifies the following challenges to consider for both developing and deploying Digital Humans:

- It is an early adopter market. This means there are still a lot of "unknowns". For example, the spaces where FaceMe could add the most value, where is best to scale, etc.
- As it is an early adopter market, market education and getting traction with customers can be a challenge for service providers.
- FaceMe is conscious of the potential for ethical issues and bias around its use of AI and privacy issues around data. The company says it embodies strong values to foster good decision making across the organisation.

THE BENEFITS OF DEPLOYING A DIGITAL HUMAN

These benefits relate to a Digital Human deployment rather than its chatbot aspects:

- Emotional context. Digital humans are able to take into account a user's expressions and tone (where it makes sense) and respond in an emotionally appropriate way.
- Providing the embodiment of brand and developing brand loyalty and advocacy.
- Bringing "humanness" into digital experiences.
- Increasing sales conversions and higher customer advocacy.

THE RISKS

For technology buyers the first risk is not having a clear digital experience strategy and roadmap. The second risk is 'biting off more than you can chew'. Tomsett is quick to point out that a bigger risk is 'doing nothing'. AI takes time, it's an iterative strategy that customers need to build upon over time.

The phenomenon known as the "uncanny valley" is a risk for companies that develop Digital Humans. This is where a digital human is close to human-like but is not fully convincing. This phenomenon tends to make humans feel 'on edge' or 'creeped out'. To our human brains, a life-like digital human can appear to an actual human as a 'human with something wrong with it'. This can negate the positive customer experience created by developing a connection with the human user.

As an example, in a test screening for the film Shrek in 2010, children started crying because Princess Fiona was almost human but not quite human. The answer for Shrek's producers was to tone down Princess Fiona's human characteristics to make the character a bit more "cartoony".

THE FUTURE

The nature of human-computer interfaces is changing. Digital humans will be a key part of everyday customer experiences across many verticals. Emotional connection is becoming more important as is the power of embodied brand in a digital world. IDC anticipates augmented reality will disrupt the Digital Human space. For example, digital humans as personal assistants, advisers or tour guides.

FaceMe currently operates in New Zealand, Australia, and has recently expanded to the U.S. and Europe. It is investing into research and development in New Zealand; Tomsett expects the development team to double in size over the next 18 months. The company is investigating future strategic initiatives that would involve large technology partnerships. From a product perspective, FaceMe will democratise access to digital humans via a platform-based solution in the short term. In the longer term, expect some innovation in the augmented/virtual reality space.

OUR GUIDANCE

Forget trying to manage down expectations of this type of AI — it's already too late for that. People already experience cognitive technology in their personal lives — and they know what they want. Consumers use Alexa and Siri at home and that's the expectation they have for a Digital Human.

Your organisation may need to rethink its customer journeys before integrating them into a Digital Human. Monolithic processes from the paper-forms age won't translate well into cognitive experiences.

FaceMe's guidance for deploying a Digital Human includes:

- Not all end-users will be comfortable speaking to an AI on all topics. Companies must understand what topics should remain a human to human conversation. Workshopping and iterative user testing will tease these out.
- Using an iterative process means organisations will develop a deep understanding of the actual problems their customers are wanting the Digital Human to help them solve.
- The customer insights that companies are learning through implementing and using a digital human are proving to be invaluable. Companies should consider how they can capture, analyse and act upon those insights in a methodical way.



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The rapid development of AI technologies presents major opportunities and challenges for our country: from creating world leading AI businesses, nurturing a pool of talented AI engineers, applying AI technologies to our agriculture, government, manufacturing and service industries to holding a meaningful national debate on the broader implications for society, New Zealand needs to actively engage with AI now in order to secure our future prosperity.

The Forum brings together citizens, business, academia and the government connecting, promoting and advancing the AI ecosystem to help ensure a prosperous New Zealand.

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