# Artificial Intelligence in Action:

# Artificial Intelligence in Action: Chatbots

*Case Study: Ambit*

*May 2019*



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Te Kāhui Atamai Iahiko o Aotearoa

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# Special Study

# Artificial Intelligence in Action: Chatbots

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## MAKING CONVERSATIONS MEANINGFUL

An online conversational interface is often referred to as a chatbot, or a digital employee. Chatbots and digital employees move beyond traditional human-computer interfaces. Traditional interfaces use structured commands, action triggers, and navigational links. Chatbots enable conversation and successful call resolution without the need for human intervention.

These digital employees let businesses reduce the effort and time for customers to search a website, get answers to frequently-asked-questions (FAQs), wait on the phone, or queue at a store. Enterprise chatbots are partly driven by the success of consumer solutions. For example, Google Now Assistant, Apple Siri, and Microsoft Cortana. IDC predicts that by 2023, 40% of New Zealand workers will start working with bots or other forms of AI. Company leaders will need to redesign operational processes, performance metrics, and recruitment strategies.

## HOW AI HELPS

Research company IDC illustrates two high-level use cases for businesses. One is internal to the company, the other is external and customer facing:

- Digital assistants for enterprise knowledge workers. Digital assistants help workers answer questions, predict future events, and provide internal recommendations. Chatbots help surface information related to a knowledge worker's ongoing daily efforts. Examples include a worker completing a presentation with the help of a digital assistant going through existing files, notes, and presentations to provide additional content. These chatbots leverage machine learning on large data sets, enabling innovation, collaboration, and higher employee productivity. This maximises return on information assets.
- Automated customer service agents. Provide customer service via an automated conversation platform that learns customer needs and problems, and responds to queries immediately. This frees up team members and reduces the time and resources spent solving the customer's need.

Within these two use cases there are a vast number of sub-use-cases. For example, companies can use digital employees to:

- Train employees on new topics.
- Find information, data and other resources.
- Answer FAQs.
- Resolve customer queries.
- Act as the IT Helpdesk. The digital employee can take the information required to open a case and take queries and updates on the case.
- Diagnostic services. Troubleshoots problems. For example, with your laptop or your car or your broadband connection.
- Marketing. Recommend products, services and offers based on next best activity.
- Gather feedback or information about customers (or employees) to use for insight and change activity.
- Sales. Undertake quotes, estimates, application and purchase or bookings.
- Reviewing contracts and agreements.

### Mini Case Study: Lemonade's Maya

Lemonade insurance in the US has been making waves with its radical approach to property and casualty insurance. Its team built the company on a 'substrate of technology and data'. It bases its business model on behavioural economics. The company deployed a chatbot, Maya for sales and customer service. Maya instant messages users to quote insurance prices, take payment and make claims. The discussion with Maya is always consistent, on brand, fast and easy. Lemonade says consumers can get insured in 90 seconds and make a claim in less than 3 minutes. CEO Daniel Schreiber said that the use of AI for customer experience "allows us to transform the experience but it also enables us to save the cost".

### Mini Case Study: Lazada

Lazada, an ecommerce company owned by Alibaba Group, had an overwhelming selection of products on its website. Too many options for customers led to lost sales. Lazada launched a redesigned web portal and created dedicated landing pages for special sales events. It implemented a Facebook Messenger–based personal shopper assistant called "AskVoila". The chatbot takes a customer through the fashion and style selections. It personalises the product recommendation, including gift ideas. It bases this personalisation on a set of questions that the chatbot asks the customer. The result is growth in sales conversions and greater insights into customer tastes and preferences. Lazada feeds these back into inventory management and marketing campaigns.

## THE MARKET

Global platform-play chatbot vendors include Parlo, NextIT, Nuance, Progress NativeChat and Imperson. Within Australasia, Auckland based Ambit offers a conversation platform, as does Australian based company Flamingo.ai. Other New Zealand companies Jade Software (an Ambit partner) and Prefer, position themselves as solutions providers.

Several vendors target smaller businesses with no-code chatbot solutions. For example, Botsify, Chatfuel or ItsAlive.

Some chatbot vendors focus on solutions for particular use cases or verticals. For example, kiwi start-up JRNY builds digital assistants for the insurance industry. Australian company Flamingo Ai focuses on insurance and banking solutions.

Services companies also offer chatbot deployment in New Zealand. For example, Datacom, Clearpoint, Accenture, and Provoke. These companies work with toolsets from the tech players such as Google, Microsoft or IBM. They design and build solutions using software development kits (SDKs).

The software development landscape currently features a bevy of chatbot development frameworks. These include Amazon Lex, Botkit, Botsify, Chatfuel, Facebook Messenger Platform, IBM Watson, Microsoft Bot Framework, Motion.ai, Oracle Intelligent Bots, Rebot.me, Pandorabots, and Telegram Bot.

# CASE STUDY: AMBIT – CREATING MEANINGFUL CONVERSATION

New Zealand start-up Ambit deploys digital employees on its conversational AI platform. The platform is use-case agnostic; it is suitable for any vertical. CEO Josh Comrie says Ambit customers are financial services, retail, telecommunications, utilities and government businesses.

Ambit is a platform play. Comrie says this means a shorter engagement to get a digital employee up and running. What could take 9 to 12 months for a services company to build, Ambit says it can deliver in a matter of weeks on its platform.

Three years ago, Comrie and his team brainstormed a series of ideas for a new company. They whittled these ideas down to the few with the best potential and value. The team investigated delivering automated coaching experiences, then recognised that enterprise chatbots had better potential in the B2B market, their preferred market space. Ambit went to market with an MVP (Minimum Viable Product). Through feedback, Ambit recognised the opportunity is in a use-case agnostic conversational AI platform.

Ambit's platform has Natural Language Processing (NLP) and contains a series of language models; company aligned, industry aligned and universal language models. Software is overlaid that enables conversation design, analysis and machine learning.

In a few short years Ambit has grown fast. Its customers include ACC, Tower, KPMG, Flexicards, Hallensteins/ Glassons and Squirrel Mortgages. It continues to build out its platform adding functionality and integration, which all of its existing customers benefit from too. The company's current focus is on expansion into the Australian and US markets.

## *The Ambit Solution*

The Ambit solution includes a two-part engagement; services and software that are delivered either through Ambit or a partner.

### Services

A customer's engagement with Ambit starts with an ideation workshop. This lets the customer build ideas about what they want the digital employee experience to be like and how that might look across the entire business. Ambit and the customer then validate these ideas.

### Software

Once the customer and Ambit have developed producible outputs, Ambit shifts into the design, build and integrate phases. There are four main components to these phases:

- Design. As of May 2019, Ambit scripts every line the digital employee says. This is like a flow chart of expected inputs from the user and how the digital employee will respond. In the future, Ambit plans to include pre-formed conversation in the platform. This approach will become more automated in the second half of 2019, allowing for even faster conversation build and deployment.
- Analyse. The customer needs to understand how the digital employee is performing. Analytics are applied to conversations. For example, how many people are chatting with the digital employee, what were they doing when they engaged, how long do people spend talking with the digital employee, at what point did they exit the conversation? This lets the customer understand what is working or not working in the environment. It also lets the customer gather analysis around what its customers want in real time.
- Teach. Ambit uses supervised machine learning. When an end user types an utterance that the bot can't match to a command to execute, that utterance must be assigned to an existing intent, or a new intent can be created. The intent either aligns with an existing conversation topic, or the supervisor can create a new topic.

- Console. In a digital employee to human conversation sometimes it may be appropriate to hand over the conversation to a human company representative. The console lets customers create seamless handover points and routes to humans.

### *The Future*

- The future for Ambit is growth. CEO Josh Comrie has relocated to Australia to drive this growth whilst formulating the company's USA and UK plans.
- Ambit is also working on further functionality for its platform. This year it will add Customer Experience Management functionality. Using data garnered from the chatbot and other conversation channels, the platform will provide real-time actionable insights across customers' businesses.

## KEY PREREQUISITES TO CHOOSING A CHATBOT

To be ready for chatbots within your organisation, IDC recommends that your company:

- Is at a level of maturity where it has customers that are already interacting with your company in a digital way,
- Can expose data sets essential for the chatbot to personalise and contextualise experiences, and,
- Can deploy security and privacy measures to maintain trust in your chatbot.

## OVERCOMING CHALLENGES

### *People*

A challenge for chatbots is to recognise our human variations in dialect, tone, nuance, and intent across different languages. For example, how might chatbots understand linguistic modalities such as sarcasm, hyperbole, and humor?

Another challenge is managing colloquial language and small talk across different geographic regions. Chatbots also need to have geography-specific chatbot personalities. For example, the personality of a Brazilian chatbot would differ from a Chinese chatbot.

Comrie notes that the first challenge is articulating the value you offer to customers. Another people-related challenge, Comrie says, is recruiting for in-demand roles such as developers and data scientists.

### *Process*

An emerging hurdle, according to IDC, is regulatory challenges. For example, a global consumer products company discovered that chatbot integration with WeChat requires China government approval. This rendered the deployment of their bot challenging. In Europe, GDPR regulations complicate the ability of the organisation to build and deploy the chatbots with speed.

### *Technology*

The technology behind most chatbot dialogue is still mostly rules-based-driven as opposed to having cognitive capabilities. Additionally, some chatbots only work on proprietary platforms (e.g., Facebook Messenger), which may limit the audience. Companies must understand whether the chatbot is a configuration/rules-based system or an AI-based platform.

## THE BENEFITS OF DEPLOYING CHATBOTS

Over time businesses have become more complex, yet there are still many roles that contain repetitious and/or mundane tasks or processes. Employees have the same conversation with different people, for example, in the call centre, internal support centres, HR, inbound sales teams. Chatbots enable a high degree of accuracy and consistency in responses. Chatbots don't go off-script or make promises they can't keep. The platform-based chatbot enables scale and growth without commensurate costs.

The key benefits to the customers' experience are:

- Saves time - the chatbot has immediate answers. It won't put consumers on hold while it checks the knowledge base.
- The consumer can interact with the business at the time and place it suits them, not the other way around.
- Answers are consistent with what it has said before.

Key benefits for the enterprise are:

- Reduced human workload lets enterprise shift human resources to higher value work.
- Fewer repeat calls. More consistent responses than with humans and fewer errors made.
- Building up a rich data set of the customers' interactions with the chatbot. This empowers the enterprise to make faster, better, fact-based decisions and improvement actions.
- Increased conversions for sales journeys where chatbot makes quoting and signing up easier.

## WHO ELSE IS USING CHATBOTS?

Enterprises can deploy Chatbots across any vertical. They can be used to interact with customers or with enterprise knowledge workers. There are any, many examples of chatbots and chatbots deployed across the industries and here are a few interesting deployments::

- **Hipmunk** is a travel deals company with a chatbot that helps people find and book travel. It is available through Facebook and Skype.
- **Duolingo** is a language learning platform. It uses a chatbot for users to practice conversation skills.
- The **Starbucks** chatbot lets you pre-order coffee.
- The **Wall Street Journal's** chatbot lets consumers find the latest news or view a market overview.
- The **Mayo Clinic** has deployed Sensely's digital nurse. This gives consumers health care recommendations based on signs and symptoms.
- Global law firm **Norton Rose Fulbright** created Parker who answers questions about privacy and data breaches.
- U.S. bank **Wells Fargo** has a chatbot that can answer natural language queries about their accounts such as "what's the balance on my credit card?" and "How much have I spent on food this week?". It can also provide more general information such as the location of the nearest ATM.

## OUR GUIDANCE

Rule-based chatbots tend to be easier to implement while conversational AI-powered platforms can scale and self-heal. Organisations must be clear on the type of technology they need to adopt and scrutinise the investment against strategic goals.

Take a tactical and practical first deployment of a chatbot to get your feet wet. Get buy in throughout the business at an early stage; ensure you have your social license. Seek to provide meaningful, contextual experiences. Determine what your customers really want from a chatbot as they interact with it. Be prepared to expand your chatbot's capabilities fast with high user engagement. Recognise that you will need data to train your chatbot to improve.

Further guidance includes:

- Solutions should focus on reducing friction and streamlining information while improving the customer experience.
- Facebook messenger is a great place to implement first solutions without having to make a large investment.
- Ensure you have the right fraud protection and security features to build and maintain trust from your consumers. Fingerprint or face recognition tech is one way to achieve this.
- Your chatbot must be consistent with your other content. The company must update its repertoire in the same processes as the website and knowledge base.
- Your chatbot will perform far better if it understands the tone, the intent, and the context of the consumer. Sentiment analysis is a key capability here.
- In defining metrics for success, recognise that chatbots typically enhance the ability of humans to tackle more complex engagements by automating responses to low-level engagements.
- Set the right expectations internally and remember that your AI is like a learning child, it will get better from Day 1 with the right training.
- Decide on the degree to which your chatbot will be customised for local and regional variations in language, dialect, and knowledge. Sensitivity to local and regional differences requires chatbot developers to collaborate with subject matter experts.


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The Artificial Intelligence Forum of New Zealand is a non-government association with a mission to harness the potential of Artificial Intelligence (AI) to help bring about a prosperous and inclusive Future New Zealand.

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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