# INTELLIGENT ASSISTANTS: THE ROUNDTABLE

QUESTIONS BY
WELLINGTON HOLBROOK,
CTO OF ATB FINANCIAL

**ARTIFICIAL SOLUTIONS**
BY ANDY PEART, CHIEF MARKETING AND STRATEGY OFFICER

*Tell us about scaling your chatbot - what has been the volume and complexity of interaction achieved? If you haven't scaled the chatbot, why not and what are your plans for doing so?*

Scalability should be a minimum requirement for any chatbot. But in an enterprise situation you need so much more. Any conversational interface must be multi-lingual to serve the business globally, alongside the ability to easily port applications across devices and services depending on the customer demands in different local areas.

An enterprise development tool needs to deliver a range of features such as version control, roll back, and a choice of on-premises or cloud data storage. In addition, integration into web services and back-end systems is essential to draw on other data sources to increase personalisation within interactions and deliver real value to the customer.

*What is your approach to omni-channel bot development?*

To deliver a true omnichannel experience, your conversational application needs to be able to work across any device, operating system or service, in any language.

Teneo enables enterprises to achieve this with ease because it's platform agnostic and already available in 35 languages. Our digital employees can even continue conversation as users switch from one device to another. This type of interaction will become crucial as the smart home really starts to take off and users ditch their mobile phone as they walk through the door and start talking to smart hub in the kitchen.

*What next for AI-driven bots?*

Enterprises are fast finding out that they need to deliver the humanlike conversational experience consumers are demanding. Unfortunately most comparable products on the market are a long way from enabling businesses to develop this quickly and within budget.

Teneo is the only technology to deliver all the tools an enterprise needs to build intelligent, conversational applications. We achieve this by simplifying the complexity in building natural language applications. Initially, through intelligent automation, removing the need for specialist skills such as computational linguists, and then by enabling applications to be easily maintained in real-time by business users. With Teneo, you can create in days that which can take months in competitive products. ☐

> **"With Teneo, you can create in days that which can take months in competitive products."**

**ASPECT**
BY TOBIAS GOEBEL, DIRECTOR OF EMERGING TECHNOLOGIES

*Tell us about scaling your chatbot - what has been the volume and complexity of interaction achieved? If you haven't scaled the chatbot, why not and what are your plans for doing so?*

As a vendor in the space of voice and messaging bots for many years, we have built many different bot applications that scale from a few hundred or thousand users at a hotel chain, to millions of users at large utilities or service providers around the globe. Scale is a function of user base, but also of marketing. We believe in soft rollouts to improve early behavior quickly to be ready for prime time soon.

*What is your approach to omni-channel bot development?*

Our platform, Aspect CXP, is powered by a design-once-deploy-anywhere framework that has been in use over 10 years. Enterprises can build a self-service workflow once, that gets brought to life in the form of "conversations", or "dialogs", and deploy it on any channel that can be a conduit for a dialog and has an API. Today that includes the likes of voice IVR, SMS, Facebook Messenger, Twitter, and web chat.

**SNIPS**
**BY RAND HINDI,**
**FOUNDER AND CEO**

**What next for AI-driven bots?**
We believe that building great chatbots is even more a function of good design than good technology. If you have a software engineer design a human-machine interface, you get a functional and very logical bot – but probably not one that works well for us flawed humans and our ambiguous use of human language. We see an emerging interest in liberal arts and humanities majors like writers, actors, psychologists, linguists, that bring creative talent to the table. It is time to move from STEM to STEAM and add the arts to the equation. □

"We believe that building great chatbots is even more a function of good design than good technology"

*Tell us about scaling your chatbot - what has been the volume and complexity of interaction achieved? If you haven't scaled the chatbot, why not and what are your plans for doing so?*

There are three dimensions to scaling an AI assistant: the infrastructure required, the robustness of the model to new types of interactions, and the languages it can handle.

For the infrastructure, the difficulty lies in parallelizing the machine learning models. Indeed, language models tend to be quite large and resource intensive when not optimized carefully, which can lead to large infrastructure costs.

One way to circumvent that is to process the user query directly on the device it has interacted with, thus moving the computation to the edge instead of the cloud. Our company Snips is currently the only one offering a complete voice platform that can run on device, without any cloud backend. This also gives nice properties such as resilience to internet outages, offline capabilities, privacy and low latency.

With regards to robustness and languages, we invented a radical new method called "Data Generation". The idea is to generate synthetic data instead of using real user data. High quality data is generated using a mix of machine learning and human operators, which enables us to go from a few example data points to tens of thousands per intent, thus improving dramatically the performance of language models. And because it doesn't require real users, it means we can generate data even before we launch a product. It solves the T0 data issue, and can thus be used to launch a product in a new language, before any data is received for that language.

**What is your approach to omni-channel bot development?**
Any good assistant platform should enable hybridization, meaning multiple AI providers as well as humans should be able to interact together seamlessly. This is typically done by having either an AI manager that dispatches the queries, or better, by modularizing the assistant and having a shared protocol that all the providers can understand. Although no standards exist yet, many are starting to surface, and I believe AI assistants will become interoperable in the near future.

**What next for AI-driven bots?**
The two major trends I see happening on the technology side, is the emergence of more robust language models, maybe using transfer learning and data generation in combination, as well as handling Privacy by Design. The latter can be done either by computing directly on device, or using some modern encryption methods such as homomorphic encryption or differential privacy. □