Gresham

INNOVATION LABS PAPER

Using Voice Technology to Control Enterprise Data

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Rob Yeates
R&D Lead Developer

How else will voice technology help in the workplace?

Workplace systems are typically an interconnected mesh of services owned by different actors. Being able to control all of these with one command is where the productivity gains will occur. For example, a user needing to book a meeting with a client in a remote office, with a flight and hotel included, won't need to know there are 16 services interacting to make that happen.

Instead, a simple voice instruction, 'Book a meeting next Thursday with Bill in the Sydney office' will see it done.

The virtual colleague

Imagine asking 'How are online sales performing?', 'How's our business doing across wholesale?' or 'What's selling well in Los Angeles?' and getting an immediate voice response? These are just a few examples from Uri Minkoff, CEO of Rebecca Minkoff, who is using Alexa daily from his office.

Removing the need for an analyst or BI tools for these repetitive and routine questions provides significant time savings - and it's a benefit entrepreneurial analytics firms have latched on to, with many new voice driven businesses cropping up, promising further efficiencies.

But it's not just the office environment that can benefit. In a manufacturing environment, where productivity is critical to profits, simply asking for a shipping label or the next piece of tooling could cut out significant admin time involved with interacting with a standard PC.

Ease of discovery

Simple questions should have simple answers. With voice, you can have the answer to 'When is my next meeting?' before you sit down at your desk.

But this can also apply to business critical processes. Capital One for example, has built a skill that enables its IT staff to quickly check the status of corporate systems and receive updates on high severity incidents.

Quick, easy and efficient. The consistent natural interface of voice reduces friction with technology.

Automated office management

Office innovator WeWork has placed Amazon Echo devices around its own headquarters as part of a pilot project, allowing employees to reserve meeting rooms, start meetings and file help-desk tickets, while new apps such as Transcribe from Amazon Web Services (AWS) are taking the pain out of creating meeting minutes, with automated transcription.

Accessibility

Transcribe, when layered with AWS Polly, takes meeting notes one step further, converting them into the language of your choice, while disability access can be facilitated through the removal of all UI and mechanical interactions. Deeper interaction into third party platforms such as Slack could provide additional benefits such as message reading.

Why Alexa?

The common thread with all of these skills is ease of build, and that's why Alexa is accelerating ahead of its competition.

Since Amazon released the Alexa skills kit in 2015 adoption has been very strong, with corporates and hobbyists alike creating over 25,000 skills so far.

Amazon Lex is the developer's route in.

"With Amazon Lex, the same conversational engine that powers Amazon Alexa is now available to any developer, enabling you to build sophisticated, natural language chatbots into your new and existing applications." - so says the Amazon website.

Where could voice interaction take Clareti? An experiment...

In our quest to find out if it is possible to build a natural interface for the Clareti platform we selected Alexa as our test bed, as its core compute library is based on AWS Lambda, in which we already have extensive experience.

We started with the intention of creating a prototype - a subset of commands to assess the potential for voice in supporting the reconciliations process.

Beginning with Clareti

Transaction Control (CTC), we chose to find the match rate for a given control on a given day. By using Alexa slots we were able to create a generic set of intents to discover:

- Which files had loaded for a given control
- When the control had run
- What the match rate for a given control was.

By including Clareti Analytics, we were also able to find:

- Average match rate over time
- The total value of unmatched items
- Grouped analysis of matched items.

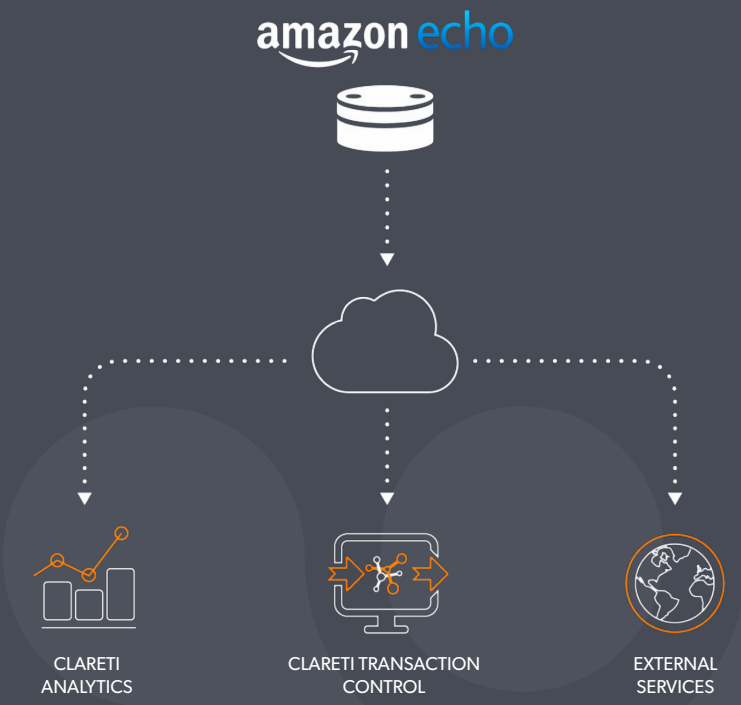
We included an RPA application by extending the controller and were able to activate RPA tasks by using only our voices.

This demonstrated genuine voice control and provided a natural interface. For example:

1. "Computer, ask Clareti, 'what's the match rate for commodities for today?'"
2. Alexa responds: "The match rate for commodities for today is 92.3%"
3. "How does that compare with yesterday?"
4. Alexa responds: "The match rate yesterday was 90.1%. The match rate is 2.2% higher today."
5. "Mail me the match rate details."
6. Alexa responds: "Email has been sent."

Steps one to four interact with Clareti Transaction Control. Steps five and six use Clareti Analytics.

What Gresham has Prototyped



SUPERCHARGED DATA ANALYSIS
NATURAL CONVERSATION
ACCESSIBILITY

The challenges of developing for voice

With new and emerging technologies there are always challenges. The most obvious with Alexa being the fact any created software is dependent on AWS.
But there are also understandable concerns around security. Authentication issues exist - individuals need to be identified by their voice, leading to issues around authorisation, particularly if there are multiple voices in range.

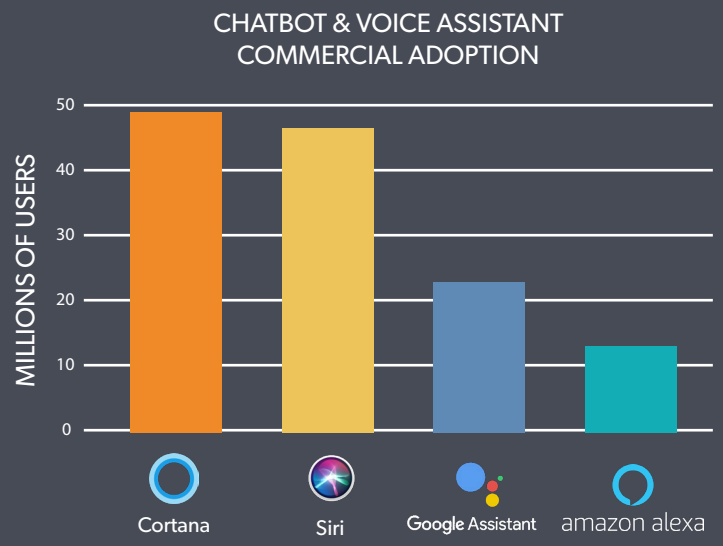
The same barriers as SaaS and IaaS adoption still exist as data flows through the AWS platform. In terms of building functionality, getting started is easy and accessible - simple call and response is trivial. The complexity builds when additional services, such as directive service to allow asynchronous response are added in.

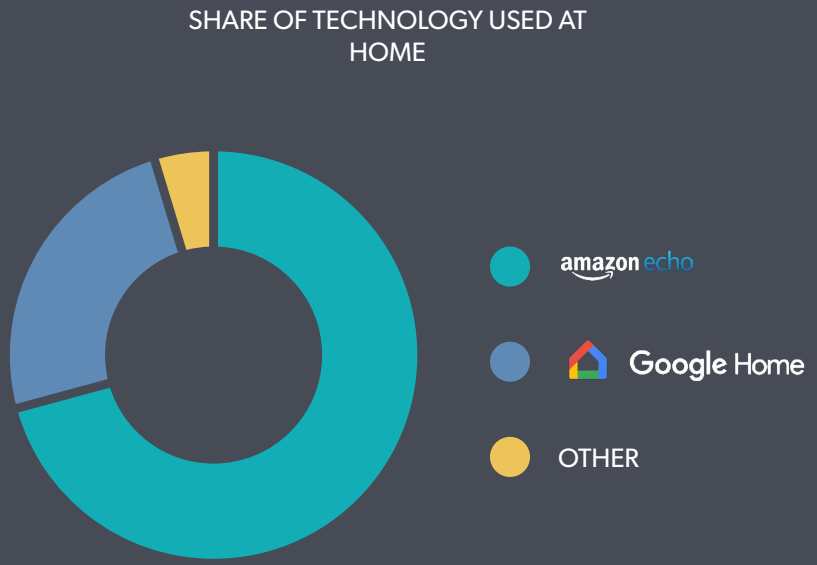
Integration with additional applications can be challenging; but this of course depends on the tooling. For Gresham, we wanted to explore integration with our core platform, Clareti Transaction Control and Clareti Analytics and the main challenge was maintaining a consistent interaction with Alexa in case of any issue.

From a technical perspective, we faced the following challenges during our experiment:

- All skills are public. Private skills are now available through Alexa for Business.
- There are missing features, core libraries lag behind. Our developers were forced to use Node 6.1, which was 18 months old (an eternity in javascript!) 8.1 has just been made available on AWS Lambda, while it was released to the broader market eight months ago.
- Documentation is challenging to discover - the SDK is the most useful source.
- Push to Alexa only recently arrived in the form of Notifications.

Voice Technology





So what's next for voice technology for business?

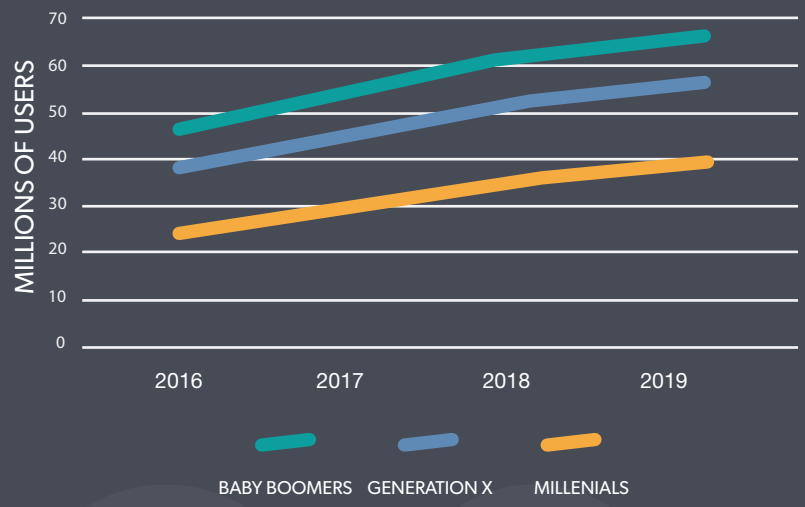
Voice offers an unprecedented level of automation in the workplace. Together with RPA technology (you can read our earlier blog on this here), it is possible to replace a number of manual functions.

Right now, we're seeing the extension of capabilities in a rich ecosystem of tools. It's fair to say the 'killer' app hasn't been delivered yet, but as steadily increasing adoption amongst all age ranges continues to increase the audience, this is likely to only be a matter of time.

The technology providers need to up their game a little in the meantime; in a recent survey the most common complaints were around commands being misunderstood (59%) or executed incorrectly (30%).

In my view, the core challenge will be adoption. It may take some time for employees to chat to Alexa with the same ease as they do at home, but as with most technology shifts, it will soon become commonplace.

Popularity Stats



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UK
+4420 7653 0222

Luxembourg
+352 278 537 739

North America
+1 646 943 5955

Singapore
+65 6832 5166

Sydney
+612 8514 7007

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