An Underutilized Technology in Life Sciences: Incorporating Voice in Your 2022 Plans

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In this episode, I meet with John Merryman, Director CX Technology, Mobiquity and Erin Abler, Senior Principal Conversational Designer, Mobiquity. We talk about utilizing voice technology in the life sciences.

I'm Dan Limbach, your host and producer of the PharmaVOICE Webcast Network.

Dan: Welcome to the podcast program John and Erin.

John: Thanks Dan, great to be here.

Erin: Hi Dan. Thanks for having us.

Dan: It's my pleasure. So today we're talking about the value of voice in the life sciences. So let's start with the big picture. Please break down this topic for our industry. John, take it away.

John: Thanks Dan. So there's a lot to break down. So on the R&D side of the business in pharma, there's a lot going on and first off, you have within the R&D space you have a lot of range of scale. So you have companies like Moderna who have about 2,000 people now, companies that go up like Pfizer that have 80,000 employees worldwide. So within the R&D space, you have scientists, labs, your classic Mudfuds, experts, technicians and a lot of people who are working on very long-term research initiatives that are basically working against a big industry challenge where the volume of discovery is going down and the costs are going up. So it's a major paradox for the industry in terms of investment and the time it takes to get to a drug discovery.

So with this, there's long-term high risk investments, highly confidential, highly guarded information where voice is probably isn't the first thing that comes to mind, but it's something we're really excited to unpack today.

An example is when you get into a drug discovery and testing and validation there could be some really basic things like supply reordering and automation.

This is a nice kind of segue into the production side of the business as well where within production you have a global ecosystem in many cases of manufacturing plants around the world producing outputs, with that different cultures, different languages where transcription and translation could be another use case that's really powerful that doesn't necessarily infringe on confidentiality or trade secrets.

Erin, what are your thoughts on the brand side?

Erin: I think that the brand side is probably where we would be more familiar with thinking about voice as a prospective channel to be using with experiences. So thinking more about kind of the end of that long R&D process and production that John was just talking about; this is more maybe around the end of providers, healthcare providers in environments where anything from regular office visits all the way through hospital and urgent care situations, and then also for patients, consumers.

And where we'd be thinking about experiences that we have seen or that we have worked on would be maybe a little bit farther down the funnel, so not so much high up in terms of awareness; you're not using a voice experience typically to try to run some ads to people like you would on TV. I think it's more around the experience element.

So when you're providing a valuable experience as part of the patient's care, their condition management or recovery, you're able to show that there is a holistic approach coming from the pharmaceutical company or the life sciences company to treat the patient as a person, so not just the chemical elements.

I think there are some interesting things going on out there to increase brand awareness while also providing that value.

Dan: Thank you for that overview. We've got a lot more to talk about and next, I'd like to talk about technology. What are we talking about when it comes voice tech? John, let's start with you.

John: Thanks, Dan. So this is a really interesting space that's evolved I'd say aggressively in the last five or six years with the advent of a couple of things. One kind of bubble is the cloud of course with Google, Amazon, and Microsoft, and then a raft of independence kind of developing around natural language type services and use cases.

The other is a machine learning moving to the edge and the ability for ML or natural language processing and type engines to be put out into small environments on small devices, and that's something that's definitely happening now and it's starting to alter what will be possible on very small format processing devices.

So in a nutshell, this means that we're no longer dependent or local build dependent on traditional hardware, software integrated systems or hardwired systems to perform things like speech services. And the range of use cases has also exploded. So in addition to things like speech to text or text to speech, you have natural language interactions with natural language processing, understanding and generation. You have speech analytics kind of get into the meat of what's being spoken and content and analysis around interactions. Sentiment detection, understanding kind of the human factor of emotion and how people are actually interacting, is it positive or negative, is there aggression or sadness. There's all kinds of data now that could be interpreted from speech. And in addition, you have other things like transcription, interpretation services and translation services between multiple languages and formats.

So adding it all up, anything that we think about doing with voice as a human, there's a really strong corollary now in the technology space that equates to it.

Erin: Oh yeah, we tend to think of voice assistance in a pretty narrow category as something where you have a device that sits on your home counter and that's what your speech experience is. Maybe you're using a voice assistant on your phone. But as John just pointed out, there are technologies at this point that are enabling much more sophisticated understanding of voice interactions in different environments and that makes them deployable to a lot of situations where we haven't traditionally been able to use it as flexibly. So I'm thinking about scenarios where a physician may want to use voice for dictation to EHR systems.

There are just a lot of interesting cases that we're seeing arise with clients coming in, where it's not necessarily about using that thing that's on your countertop, although we certainly have that and there are great use cases for it. It's also really about enablement for product and environment to provide services.

Dan: Excellent. Now, I would like to shift and take a look at the R&D side of the house first and if you've got any use cases that you can share with us, that would be great. John, we'll start with you.

John: Sure, thanks Dan. So you think about the R&D world we were talking about earlier, you have a range of kind of routine repetitive activities that could be benefited by voice and automation. So things like training. So training lab technicians, for instance, could be a right way for automation. Also, lab protocols, so in flight step by step advice using voice on how to do things. And these things can really kind of speed up the time to onboard people and drive down quality of risk or effectiveness type issues of workforce when it comes to kind of learning how to do things and stepping through a process.

There's also other early use cases around recording observations hands free, maybe capturing or replaying previously recorded data. There's just a wide range of kind of human interaction that could be automated through voice in this clinical lab space for starters.

Erin, what do you think about trials?

Erin: Clinical trials have been an area where we've actually been able to do some work with regard to aiding in providing a capture of information method for patients. So if they are participating in a clinical trial, they can perhaps report their experience, their adherence to the medication that they are taking as part of the trial and that they're doing that potentially using voice or chat rather than through writing. This makes it easier for people to say things in their own words, which I think is really interesting. Sometimes we kind of downplay the need for greater appreciation of literacy levels when inviting people into care environments and kind of meeting them where they're at.

But one thing that is interesting about voice and chat is that you are basically asking some questions and prompting people to share their experience and doing that in a way that lets them say that in their own

words and just making it more lightweight for them to do that wherever they are and whatever means they have at their disposal. So that's a phone, that may be voice device, just making that more flexible for them.

And then we've also talked a little bit about there are maybe some red zone areas or things that are perceived as red zone areas today with regard to really any form of life sciences or clinical testing and that might be around adverse event reporting. But again, if you think about actually providing a structured way to get that information from people and do that in a way that respects their understanding of what's going on while following regulatory guidelines, I think that voice does offer some interesting opportunities for that capture.

Dan: Outstanding. That's a lot of great information about the R&D side, but what about the patient and provider side; how does voice play into this space? Erin, this is in your wheelhouse.

Erin: Yeah, for sure. As somebody steeped in user experience design for many years and now conversation design for the past several years, I focus a lot on the needs of people who are lower down in that funnel of experience for pharmaceutical drugs and for care. So, we've seen things where today physicians have to go to a lot of different portals to get drug information online. That might be something where, for instance, if we could provide them a consolidated source where they're just asking a question, we're giving them a way to easily access information without having to look it up. And that is one of the key benefits of voice.

A lot of the time we hear that the way that people use devices in their home is to get songs, to retrieve music that they want to play, to ask for ways to control their home environment, turn on lights at a certain time and so forth. And these are things that you're providing convenience and you're providing more of a straight line to the thing that they want to do. And similarly, you think about physicians who have so much on their plates and are trying to do so many things at one time, if you can make it easier for them to access the information they need when they need it, that's a huge value creator.

But you know there's also potentially some elements of relationship building that could be involved with conversation design. And when I say that I take it a little bit more broadly beyond voice to chat, where you could potentially have follow ups from a care provider to a patient through a chat format. There are also companies that have done telephone follow up calls with people where they can answer some simple questions, and while that feels like IVR, they are working hard to make it something that's more conversational so patients can have that conversation and just quickly go through 'here's my experience in recovery and here's how I am able to kind of relay that information back my physician.'

Dan: John, did you want to add anything?

John: Yeah, that's great, Erin. And look, this is a really complicated ecosystem. When you think about from the pharma company to the patient, you know there's a lot of players in the mix. You have the providers kind of distributing advice and prescribing medicine, distribution and retail of the patient themselves and different ecosystems where the classic HIPAA third rail comes up constantly in terms of patient privacy, confidentiality, also just what people are willing to tolerate in terms of the environment that they're getting information.

A great example is in my local pharmacy I spent 10 minutes waiting in line mainly because of a lovely person of a certain age basically did not want to share their age in a public forum, and it literally took 10 minutes to kind of get through that step. And you think about the interaction in that environment or even at home in a mixed environment, a lot of people aren't real excited about kind of capturing information about their prescriptions or therapies in any kind public forum, a cold stop. So this kind of leads to a lot of different ideas around use cases, around can a pharma kind of deliver to the patient drug information within the context of the home and a private kind of safe environment.

Also, going deeper, can you get advice or information on the benefits, what to expect, when to call a doctor, the whole range of side effects, drug interaction risk and just basically getting real-time information instead of kind of going over the cliff of drop off from one interaction with patient, provider or pharmacist to the next where it's basically a cold stop and you don't really have an easy path to go back and get information unless you go looking for it. So there's a lot of range there that could be filled out with voice type experiences or voice interaction models that would reduce the friction.

Erin: And one thing I'll just add there too, I think John makes a great point about the episodic nature of those physician and patient interactions. You kind of you live with the condition all the time, but you only see your doctor once in a while. So there are a lot of things that could come up in the interim around your diet, your condition management, whether a symptom is something you should be concerned about, that people might be hesitant to reach out to their care provider to ask about but that could be very important for them to do so. And so if we can start to address those gaps in care through conversational means, I think it makes it very approachable and also just provides that opportunity for people to get those pieces of information that are more specific to them and their condition and their experience in a way that's really easy.

Dan: Well as we know with any emerging trends, especially technology-based trends, there are always going to be obstacles and challenges. What are some of hurdles that life sciences have faced and how do you handle these challenges? Let's start with you, Erin.

Erin: Yeah. I'm actually going to start with a perceptual one. There are a lot around regulatory concerns and I know we'll get into that. But I want to mention that straight off the bat, patients, consumers have this traditional experience of voice that's associated with interactive voice response or IVR systems. And they have a really negative association with that because those systems have been so rigid. The syntax was very strict. Traditionally you had to say exactly what the system was expecting, so

it might even offer you numbers to represent choices, and that was very reliant on menus to try to manage the complexity of the conversation.

So it really drove home how tedious a conversation is when it is forcibly linear and doesn't allow for any deviation and mostly consists of you giving yes/no or numeric inputs to longwinded questions.

Not until relatively recently John was mentioning earlier the flurry of technological advances that have been made in this area, but with the dissemination of more sophisticated natural language processing, we've started to see that change. So now you can ask more open-ended questions, you will get those when you're interacting with an IVR and you get greater flexibility in the range of recognized phrases that it will accept and be able to act on.

So continuing to make advancements, but I do just want to call out that that's kind of the traditional association that people have and that we have to overcome that burden as well.

John: Erin, thanks for that perspective. On the regulatory compliance and patient privacy side, there's also a range of risks, as mentioned with the HIPAA third rail, it goes beyond HIPAA though. So just beyond regulations; there's also what is the patient really willing to tolerate from an interaction model point of view. What type of information are they willing to share via voice? And we've in the past dealt with some of these issues really by design, so designing to avoid sensitive data, anything personal, personal health information related information that would be shared over voice, for instance, is avoided by design. But the technology kind of sphere is evolving to the point now that you have more range of possibility to handle those types of data – data types in a way that's still confidential and safe, but it also creates a more rich and authentic experience for the user.

The same type of risk will apply to intellectual property, a different sphere of risk and data protection. But there's shared concerns around IP leakage or information kind of flowing outside of the environment or ending up in a distributed computing environment where way too many endpoints have access to information. So a lot of this can be handled by design by access control and again, with the raft of services and technologies that are out there, there's a lot of the art of the possible is out there to tackle these types of issues from a compliance and regulations and IP and confidentiality point of view.

What are your thoughts on the state, Erin, as far as the tolerance people have for this type of tech in general?

Erin: Yeah, I think there's a very understandable concern around technology that feels like it has that capacity for surveillance. And to John's point, we have to recognize not only the legal restrictions particularly around HIPAA, but also understand that people have some reservations about using these devices, particularly in certain contexts or for certain purposes. And fundamentally we need to provide a fair exchange of value in what we offer in a voice or conversational experience. So if it's not more convenient or more direct or more personalized, then why would I as a consumer refuse to engage.

So we as people designing and building these experiences should respect and accept that, I think, and make the extra effort to ensure that we are answering those concerns and providing that value. Because otherwise we are going to get lost in the mix of general associations people have with the technology.

Dan: Well, that's certainly a lot to think about. Well, finally, for those in the industry who are intrigued with voice, what are your recommendations on how to even get started? John, let's start with you.

John: Yeah, thanks Dan. So to get started, the way we approach these types of initiatives is to start really with a lot focus on a use case. So defining and prioritizing a use case that's going to have material value to the user and to the business and something that falls under the realm of can this be done realistically with technology that exists today and is it in the ballpark of being cost effective. So that's usually a paper, whiteboarding type exercise.

Now to get started into kind of building, we'll typically get into envisioning and prototyping. We're a big fan of kind of getting a non-prod prototype put in place early so you can start testing and experimenting. And the sooner you can get the tech or the use case example in front of example users outside of your design bias bubble, the better off you're going to be as far as capturing real-world inputs in terms of usability, likeability, does this have merit out in the wild.

So based on feedback from that, we will typically move into a pilot ready MVP, something that can be brought in production in a limited scale. So we're talking about maybe dozens to hundreds of users to really prove out the concept and advance the use case and feature sets around it.

And from there, we get into a general product development. This is really where you get into building a production ready environment that's ready for scale and roll out that would still go through nurturing and refinement and continue its iteration, but is also built to be a secure, scalable product.

That's the consulting and services view of life, but this can be done within house if you have resources to do it as well. How do you tackle this from a design point of view?

Erin: So I think one of the key areas where we have been able to provide value in a consulting capacity is to really help our clients understand appropriate use cases and to pursue those in an effective way. A few things I would say are important is to start wherever you are. Keep focused on the features that are going to be lightweight and small enough for you to deploy and be able to test rapidly, to John's point about prototyping, but kind of look around. If this is a technology that you're not as familiar with using, what are others in your space doing? What are they avoiding and why? What do you gain by doing it and what do you risk by not doing it? As somebody who works in user experience, I always want to be keeping focused on users, their needs and their context. We sometimes say that if there's a more effective way to solve the need than voice, then do that, use that channel. Don't try to cram this down people's throats because it's just not going to work. But also don't let it keep you from pushing harder to see the future. Ambient computing where you engage with voice around your home, these things are

coming, they're already happening and they're going to be more and more common use cases for different avenues of information. There are really fantastic use cases for voice in circumstances where someone's hands need to be free or where it's much easier to ask a question than it is to look something up.

I also say that it's important to know whether you're experimenting or learning or actually deploying a business solution. It's kind of the difference between breaking ground and gaining ground. Because if your KPIs aren't a reasonable match with your level of expertise in this area, you need to be very careful about the type of business case you're making. I think that's why so many of our clients in pharma and healthcare find value in identifying a use case and doing a rapid build and learn exercise. So you find out so much about the technology and its utility of your customers when you're testing it with them. And we sometimes see it open up avenues of consideration for other areas of business, even other consumer experiences.

John also mentioned, just iterating, testing, learning. Don't expect to put this out into the world as well and just have it serve you without maintenance. It's like any digital experience you have to continue to put effort into understanding its effectiveness and improving it over time.

Last, I guess I would just say embrace the uniqueness of it. You might not find that you have a swarm of use cases for voice that come to mind right away, but if you find some that are highly effective, it could be an incredible differentiator and really bring unexpected value to your brand and your business.

Dan: Well, there's certainly a lot of potential in this area and I'm excited to see how it continues to evolve. Erin and John, I want to thank you for sharing your thought leadership and expertise with us today.

Erin: Thanks so much, Dan. Really enjoyed it.

John: Thanks a lot, Dan. I really enjoyed the conversation. Thanks so much for having us.

And that does it for this episode. For more information about Mobiquity, visit mobiquity.com. And don't forget to check out our other podcasts, webinars, virtual panels, white papers, videos and more at pharmavoice.com.

Until next time, I'm Dan Limbach.