
How Natural Language Technology will enable your business to meet the needs of the 21st Century

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Nowadays every meaningful enterprise - especially those that have large customer bases - rely on their website as a core component of their IT infrastructure. There are no successful, modern, large scale enterprises that do not have a website, yet as recently as 25 years ago, none of them did. If you spoke to the CIO of an enterprise business then, the chances were they did not even know what a website was and had no clue that it would become mission critical to their business in fewer than 5 years.

We operate in a rapidly changing technological landscape and the CIO of today has a standard set of “must have” assets (including the website) which they ensure are in the technology portfolio and are properly invested in and managed. Many enterprises don't yet see Natural Language technology as critical, but within a very short timeframe, it will be.

Visionary CIOs have recognized this and are taking the steps necessary to incorporate it into their technology stack now, removing a significant business continuity risk from the future. That's right, a business continuity risk: modern enterprises face real risks if they do not embrace natural language technology and leverage it to their competitive advantage.

Let's look at why in more detail.

BYOD will transform the Enterprise

Often, technology that started life in the consumer sector finds its way into the enterprise and the enterprise has to accept it. For example, a revolution in telephone technology resulting from the birth of the consumer-friendly smartphone has now led to its widespread adoption on the enterprise market.

Today CIOs are forced to address the needs of staff who are riding the wave of BYOD (Bring Your Own Device). They must cater for staff that bring smartphones, tablets and, soon, wearables, into the workplace because they find them more efficient than the dated enterprise products of yesterday.

The technology landscape continues to move forward at pace and the expectations of performance and capability set in the consumer market must be matched by the enterprise or face losing out to more nimble competition.

One such technology is “natural language”, a technology that enables computers (in the broadest sense) to understand humans through natural, humanlike interactions.

This is the inversion of the computing model that has existed for years. Until very recently the problem of making technology understand humans was way too hard to solve and instead the industry made an excellent living by training humans to understand and drive technology.

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The Rise of Natural Language Capabilities

The innate desire to interact with technology in an intelligent, humanlike manner has always been there, because language is the first choice communication method for all but the rarest of individuals. Steve Jobs can surely be credited with a true gift for understanding the relationship between people and technology and revolutionized many segments of the entire industry through his unstinting attachment to making technology do what people want, marking a clear tipping point for the natural language industry, and, consequently, an awareness and understanding of associated technologies like Automated Speech Recognition (ASR) which provides the 'bolt on' functionality of processing spoken inputs into a format that Natural Language software can then interpret and intelligently respond to.

Driven by the latent demand for computers that could understand us rather than the other way around, research and technology has continued to be funded with the goal of fulfilling this dream. Of course, what was actually needed was a large scale deployment in order to provide the volumes of users necessary to properly populate the statistical models that underpin ASR and make it achieve the speed and accuracy targets necessary to catapult it into usage by the mainstream consumer. When Steve Jobs committed so heavily to Siri, he brought both Siri and natural language technology to the masses in a way previously unimaginable. Siri's legacy is that it is now understood to be used five times more than even Apple predicted, benefitting ASR technology with every conversation. Furthermore, as competitors including Google and Microsoft were forced to compete, so the volumes of user inputs to ASR engines exploded, resulting in massively improved accuracy and speed for ASR.

It is no coincidence that the launch of Siri was not on the Mac platform. As with so many other farsighted insights, Steve Jobs knew that the desktop environment would be rapidly overtaken by mobile devices and that leading on this mobile platform would drive adoption on the desktop later rather than the traditional model of a program already existing for enterprise use being ported to the mobile platform in a half-functioning manner.

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A Key Technological Shift for the Enterprise

The simple fact is that technological advances in connectivity combined with micronization have meant that people are now connected 24/7 – but through a mobile platform rather than a desktop, changing the landscape for the enterprise business forever.

Enterprises have now fully embraced the internet. Until quite recently, the vision was that we would all 'self-serve' by shopping and supporting ourselves through their websites. Perhaps unexpectedly, people really liked this as it offered them independence and control and generally speaking this has been massively transformational to the enterprise sector.

With this in mind, the design, capability and focus of the website was initially focused on generating extra revenue; but as the website became ubiquitous it naturally failed to meet the real desires of the customer, the end consumer of the technology. Not only did people still get frustrated with it, but it did not work properly for them on their chosen mobile devices, meaning that businesses lost a vital connection with their customers. And because customers increasingly shop online rather than visiting traditional stores, a new wave of start-ups have been able to leverage this disconnect with great success.

Today's emerging consumer technologies of wearables and the Internet of Things are already gaining traction in the consumer market, and enterprises will be forced to adapt to or face real business continuity risks.

Let's take a simple problem: How do I get my highly valuable brand in front of my target audience?

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The Need for Contextual Intelligence

Users do not interact with technology for fun. In the enterprise world they are doing so to get something done. This task could be the simplest of things; obtaining a piece of data like, “what’s my account balance?”. But the chances are that this is actually not just a ‘one question, one answer’ engagement. They ask what their balance is to see if their pay has landed this month, but just as likely to see if they can afford to make some other transaction.

And they are trying to do this through a reduced form factor device and increasingly frequently now, one without a screen – many wearables are screen-free environments, requiring alternative input methods, most commonly, voice.

In short, most users want to make the technology do things for them; they want it to perform tasks on their behalf. To get these users’ tasks performed, the technology of their choice must be leveraged.

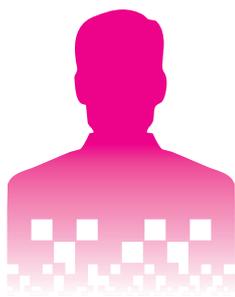
Here, something major is on our side. All of these devices are connected to “the cloud” and the cloud lets enterprises deploy masses of computer power to users who have only a low power, battery conserving mobile device.

But even that is not enough. Simple questions like “what’s my account balance?” require real contextual understanding. It could be a bank account, a credit card account or even a loyalty card. On first investigation there are some problems here. Type “what is my account balance” into any operating system and retrieve a baffled response. Yet, this is what users think and what they want the technology to understand. Put at its simplest, they just want the technology to understand them and their needs and help them achieve their goals.

More and more investment is being made by the major consumer facing technology companies to bring this level of understanding to the user, and as consumers experience technology understanding them, they will increasingly expect the business world to keep pace, favoring those enterprises that they perceive as being “smart” like their consumer devices.

This is just one reason why the enterprise must include a natural language capability in their IT stack, in order to survive and thrive.

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The Virtual Employee

Many businesses see customer service as a cost center and they also know that the attempts they have made to reduce it over the years have largely failed, with resultant customer churn.

Yet technology already exists to address the problem, with smarter enterprises investing in natural language-based solutions that both natively understand the customer and succeed in performing tasks for them. The customer gets their problem solved quickly and easily without an irritating call to the call center and the enterprise gets the benefit because their well-trained natural language-powered digital assistant has succeeded where other solutions have not.

But this is just the tip of the iceberg.

If digital assistants can be smart enough to act as call center agents then surely they can be used in revenue generation as a virtual shop assistant? Yes, they can. Here the customer gets satisfaction by having their queries instantly resolved while the enterprise sees greater sales conversion rates and resultant top line revenue growth.

There are already a few good examples in active service today of such solutions for self service and sales assistance, and they are growing fast and becoming increasingly intelligent, and it is the really intelligent ones that will truly succeed. Today's digital assistants must know their customers, be able to understand context, handle multi-phase dialogs and ultimately add value to customer interaction.

Tomorrow's enterprise will not just deploy these digital assistants to the current desktop website; they will also do so on the mobile platforms of choice of the customer. Mobile solutions driven by natural language don't even need a screen to communicate with the customer and if they are intelligent enough, will succeed in delivering real value add through identifying in context what the customer wants to achieve and making it happen.

For the 21st Century enterprise, communicating with the user in natural language will be as core to their survival as having a website is today.

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Customer Insight Through NLU

As is often the case, enterprises tend to segment the problem into the functional pieces they can see before them, “let’s get a customer service natural language solution” or “let’s get a virtual sales assistant”.

They then – mistakenly - go out to shop for these point solutions and implement them. But to address the needs of the connected customer the enterprise must invest in a platform that enables them to face their customers with one voice regardless of which topic the customer is interested in or which device they have chosen as their gateway to the enterprise.

So what should such a platform contain?

A Natural Language Interaction Platform

If we take just one of the simple scenarios mentioned earlier, the digital assistant for customer support. Naturally they need to be able to create it, balancing the challenge of building these digital assistants to budget and within a reasonable timeframe. So the first thing the platform needs is an easy to use creation and maintenance environment.

Secondly they will not just need to be able to build such applications, but also to deploy them on a huge scale. This points again to a cloud deployment model that is capable of rapid performance and huge scalability.

Thirdly, the platform must have integration capabilities. Customers will be using applications built with the platform and run through its engine but the tasks the customers will want to perform will need to be implemented by the enterprise’s back end systems, so talking to those systems is a must.

Fourthly, the platform must be able to store the interactions between applications and customers, in order for the enterprise to know its customer through many interactions on many different platforms and devices, given that the data is where the true opportunity lies for.

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Owning and understanding data offers a unique opportunity to enterprises

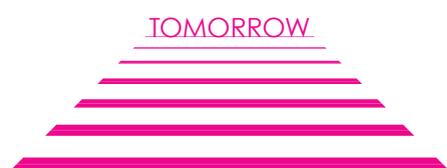
No Guilt - Use the Data

This natural language data, of every interaction with every customer, through every channel, is the rich seam of gold that the successful enterprise of 2020 will mine. It poses key challenges for today's enterprises who may well already assume they have this covered in the "big data" strategy implemented by their CIO. But not all data is equal. This data is free format data in the natural, conversational language of the customer. Understanding it unlocks huge value for the enterprise, from marketing to products to service and beyond. So the platform does not just need the capability to store the data but to use it.

It is important to note that the enterprise must not feel guilty for using this data; in fact this is where a second and even bigger opportunity lies.

Owning and understanding this data offers a unique opportunity to enterprises. The smart enterprise that has invested in a natural language platform will be able to talk the same language as their customer because they have "heard" every single interaction the customer has had with them.

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Why now?

So, if this is a vision for the future, why do you need to do anything now?

Because this is a journey and to get to the destination you need to start on that journey. Digital assistants for support and sales are already being successfully implemented by organizations, improving customer service and saving money.

And, of even more importance, they are starting the process of gathering true knowledge and insight into what your customer are thinking – knowledge that can be used to improve your service and product offerings now and in the near future as the basis of personalization.

But it is still a long way away, right? No! As we have seen all too often, it is those enterprises that are slow to adopt technological advances that can wither spectacularly quickly. Enterprises that don't attack this problem or see it as a mission critical opportunity today risk not being in business at all tomorrow.

Next Steps

Natural language interaction is already being adopted by some of the world's most innovative enterprises and they are already using it for competitive advantage.

The Teneo Platform from Artificial Solutions has been proven in over 200 NLI projects.

For a discussion to explore how NLI could help your enterprise, please get in touch.



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About Artificial Solutions

Artificial Solutions® is the leading specialist in Natural Language Interaction (NLI). The company's patented technology enables people to converse with applications and services running on computers, mobiles, wearables and other electronic devices in a humanlike, intelligent manner.

Called Teneo, it is the first complete platform to enable enterprises to rapidly develop and analyze natural language applications that embrace artificial intelligence through the use of machine learning and implicit personalization.

Teneo allows business users and developers to collaborate on creating sophisticated natural language applications in record time that run on any operating system, in 35 languages, without the need for specialist linguistic skills. Teneo also unlocks the knowledge held in immense volumes of natural language conversations, delivering unprecedented levels of big data insight and true 'voice of your customer' understanding.

Artificial Solutions' technology is deployed by hundreds of public and private sector organizations and used by millions of people. For more information visit www.artificial-solutions.com
