



Nearshore  
Americas™



DELIVERY SOLUTIONS

By Nearshore Americas

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COGNITIVE COMPUTING  
INSIDE A GLOBAL ENTERPRISE:  
**SEEING INTO THE FUTURE**

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## COGNITIVE COMPUTING: IMPACTS & OPPORTUNITIES

It is increasingly becoming impossible to ignore the impact of automation and cognitive computing on the broader business world.

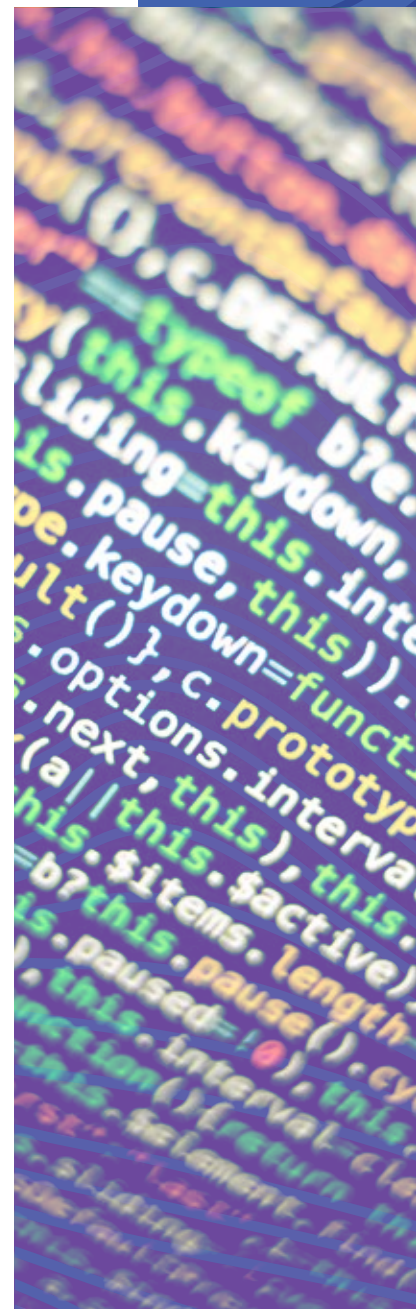
As much as 75% of the more than 200 business executives asked in the 2017 Economist Intelligence Unit report, [Artificial Intelligence in the Real World](#), stated that artificial intelligence will be actively implemented in their companies within the next three years – and that figure is likely to grow as wider spread adoption increases. The use of such technologies is taking root across localities and across industries with new applications being discovered almost daily.

Cognitive computing is an approach to software deployment and solutions that encompasses the use of artificial intelligence to mimic human thought. Such systems use pattern recognition, data mining, and machine learning to create forms of artificial intelligence that are able to perform certain functions. The growth of such innovations has been exponential as applications of the technology become more sophisticated.

While machine learning has been around for some time, cognitive computing is a newer iteration that seeks to offer a version of machine learning and artificial intelligence beyond simple pattern recognition. The evolution of virtual personal assistants like Cortana, Siri, and Google is an example of how machine learning has grown more sophisticated and moved more towards cognitive computing. These virtual personal assistants are now able to offer better responses to user queries because they can understand context and therefore extrapolate the correct response from the information provided. The result is a much better user interface and experience.

One of the primary uses for cognitive computing solutions is in the processing and analysis of big data. Recent research has predicted that the amount of data generated in 2017 is likely to be more than was generated in the previous 5,000 years of human history. Despite this, most researchers agree that only one percent of all data generated is ever actually analyzed – there is just too much. Cognitive computing can start to address that by using technological solutions to better process and analyze existing and emerging data sets and offer ways in which to leverage them for business success.

This white paper examines the ways in which cognitive computing can and will help businesses in various sectors to address the challenges of the current business environment and sets out a case for Mexico and the broader Latin American region to be a key player in the development of such solutions.



## DRIVERS OF COGNITIVE ADOPTION

Like the evolution of the technologies themselves, change is happening fast. There are a number of drivers that are enabling cognitive technologies to speed up the change in the business environment.

Core to this is that cognitive solutions allow automation, which in turn allows companies to serve clients better and cheaper. Automation offers two core advantages, the improvement of service and the reduction of costs. Routine and repetitive tasks can be performed by machines at a much faster speed than by human beings, and the cost savings are significant.

Machine learning and artificial intelligence allow consultants, doctors, and many other roles to do their jobs better. The [application of cognitive technologies in diagnostics in medicine](#), for example, has seen some startling and ultimately promising results, with algorithms capable of predicting heart attacks more accurately than doctors.

Cognitive computing reduces training time, allowing workers to be job-ready more quickly. Becoming an Uber driver, for example, becomes a much faster and less complicated process with solutions like Waze or Google Maps, as you don't first have to get familiar with the city you'll be driving in. The time to train someone to do a better job is therefore reduced. You could also implement cognitive computing technologies into credit analysis or marketing, for example.

One of the biggest trends in financial services is the use of chatbots. Juniper Research found that, [on average, the time saving per chatbot enquiry](#) in comparison with traditional call centers was four minutes or more. The research company predicts that by 2022, the average cost saved per chatbot interaction for messaging-based banking bots will be US\$0.70.

## GROWING REVENUES

Cognitive solutions are big business. Forrester Research is predicting that cognitive computing revenues will triple in 2017. International Data Corporation (IDC) forecasts that artificial intelligence and cognitive systems will reach US\$12.5 billion in global revenue in 2017, growing almost 60% over the 2016 figures. Spending in the sector worldwide will reach a compound annual growth rate (CAGR) of 54.4% through 2020, at which point revenues will reach more than US\$46 billion.

The five applications of these technologies that IDC predicts will see the greatest level of investment in, ranging from 9% to 10.3% respectively, are fraud analysis and investigation; diagnosis and treatment systems; automated customer service agents; automated threat intelligence and prevention systems; and quality management investigation and recommendation systems.

Traditionally, customer service for financial services has been through call centers, but this is also one of the main drivers of the adoption of chatbots. This is because of attrition in call centers, which in Latin America is around 30% a year or more, meaning that if a call center starts in January with 100 positions and ends with 70, by the end of the second year there might only be 30 people who started at the beginning of the process.

The second element, according to Parés, is the time it takes to train call center agents to understand the nuances of a business, which can take 6 to 12 weeks.

The last driver is cost savings. In some of the cost analysis that Nearshore Delivery Solutions has seen of banks in the Latin American region the cost savings would be as much as 500% and on average the cost savings vary between 100% and 500% when they move from a traditional call center to a chatbot to answer Frequently Asked Questions (FAQs).

This can allow for a more strategic deployment of call center resources to handle more complex and difficult queries and transactions from customers. Increasingly, cognitive solutions, including chatbots, are better able to mimic human interaction, meaning they are able to understand context and tone while the interaction becomes more human like.

There is still room for improvement though. Only 20% of banking chatbot interactions are successful in 2017, according to Juniper Research, although it is predicting that it will jump to over 93% by 2022.

New technologies are called disruptive because they are exponential technologies. This means they grow in an exponential manner and it is hard for us to understand what the impact of that will be. Organizations in the current context will need to understand what will happen when they improve their call center by ten exponential steps, what happens when the logistics of the company is improved by exponential measures, and what happens when the cost of ensuring the compliance of banks becomes exponentially cheaper and faster.

## BY THE NUMBERS

- The amount of data created globally in 2025 will top 180 zettabytes of data (or 180 trillion gigabytes), in comparison to the less than 10 zettabytes generated in 2015, according to IDC.
- IDC FutureScapes 2017 predicted that, by next year, three-quarters of developer teams will include cognitive computing or AI functionality in one or more applications or services, and by 2019, all Internet of Things (IoT) and as much as 40% of digital transformation initiatives will be supported by AI capabilities.
- Forrester Research says that while vendors in the digital analytics space have been slow to integrate IoT analytics support into their products, with less than 20% currently doing so, that number is set to double this year.

The core questions that we need to grapple with are how this is going to impact all of these different industries and how we will ensure that we have the talent and skillsets to take advantage of these technologies and changes.

## THE BIG DATA DILEMMA: A USE CASE

The growth in the number of computers deployed throughout the technological ecosystem – from just a few in the 1950s and 1960s to billions in the present day – has been accompanied by an exponential increase in the amount of data generated. In 2013, estimates put [the amount of data generated per day at 2.5 quintillion bytes](#).

We generate more data than we are able to process, synthesize, and use in a meaningful way to make decisions. Cognitive computing offers a solution to the big data dilemma.

One of the core challenges that banks are facing at the moment is not only compliance, but also marketing and servicing in order to make their service offering unique. Banks have so much information about customers that they often do not know how to put it together.

A bank knows where a client lives and has basic information about them, but it also knows all the transactions a client does, so it has insights into client entertainment preferences, where they purchase groceries, where they like to eat out, and so on. Despite this, at the end of the month, bank clients tend to always receive the same marketing material that hundreds of thousands of customers receive.

The question then becomes why banks cannot target clients with a specific message when they have such a unique insight into

### BY THE NUMBERS

- Gartner is predicting that a third of businesses will employ AI to enhance at least one of their primary sales processes by 2020, while Forrester Research says that insights-driven businesses will steal US\$1.2 trillion per annum from their less-informed peers by the same year.
- The AI market will pass the US\$40 billion by 2020 and will surpass US\$100 billion by 2025, according to Constellation Research.
- New skillsets will emerge. McKinsey Global Institute is predicting not only an increasing need for data scientists, but also the need to create millions of translator roles, a job that essentially translates the data and analysis generated so that it can be used to solve business problems.

the customer. “Even when they have all the available information and they want to give you specialized personalized treatment, they are not able to process this data in a meaningful way,” said Gustavo Parés, partner at Nearshore Delivery Solutions. “In order to do that with a mainframe or with older technologies, they would need to have thousands of analysts just processing your information and deciding on the best marketing material for you. Since there is not enough money and time to do that, cognitive computing can offer a solution.”

A cognitive solution designed to profile clients for marketing purposes will use all the big data already stored in a bank’s system, for example, extract the information, and apply business rules to it. If the bank wants to reward customers with, for example, a coupon for a restaurant, the system can analyze the data, determine the kind of restaurant a customer likes to go to, and then send a coupon for that restaurant to the customer at an appropriate point by applying the business rules that have been defined.

*“Cognitive computing is about teaching the system how to learn from you so that it can know when you tend to go to restaurants, for example, and can therefore target you with an incentive or coupon at an appropriate time,” said Parés.*

Nearshore Delivery Solutions is using IBM’s BlueMix cloud solution and IBM Watson to offer its clients solutions to tackle specific problems. Bluemix is the set of tools and programming languages brought together on a cloud platform as a service (PaaS) that offers the functionality of a mainframe in a cloud solution.

Bluemix brings IBM’s cognitive computing solution Watson into the cloud. Watson draws on information and very large data sets to offer analysis that can be used in a number of different contexts. These can be applied in medicine, financial services, or even cooking.



## CASE USE: **ANALYZING FINANCIAL PERSONALITIES**

Financial services companies and banks have been early adopters of cognitive computing solutions, according to IDC. Some of that adoption has focused on fraud analysis and prevention, but there has also been a focus on ways in which cognitive computing and big data can yield valuable insights for marketing and sales applications.

Nearshore Delivery Solutions is using IBM Watson's Personality Insights to offer its financial services clients a better way to measure risk, as well as match potential and existing clients with the right broker or sales person for them.

Several studies have shown that personality influences the risk that an individual is willing to make regarding financial decisions. This application uses IBM Watson's Personality Insights to determine a person's personality based on their tweets. The tweets are analyzed against the Myers-Briggs personality test and offer a profile of the client that looks at risk appetite and builds a personality profile for the individual.

In addition, the system is able to help the investment agent in choosing the best fund recommendations by matching the client to each fund and offer a percentage match rating to highlight the most appropriate funds for that investor.

Beyond this, the system is able to select the sales agent that is likely to best connect with the potential client on the basis of personality compatibility. Leveraging all of the data available about individuals from social media means that financial institutions can better service clients by equipping their agents with the best possible information about how and when to approach a potential client.

## **WHAT MEXICO CAN OFFER IN COGNITIVE COMPUTING**

Although expertise in cognitive computing in Latin America is still growing, the region is ideally positioned to capitalize on the trend and leverage the existing talent base that it has. [Mexico is one of the countries that graduates the most engineers every year.](#) Parés sees this as an opportunity to position the country as a source of talent for the United States.





Currently, only two percent of H-1B visas (skilled worker visas) from the United States are granted to Mexicans, yet over seventy-seven percent go to workers from India. “There is a huge opportunity to start growing really fast because we have the skills, we have the size, and we have the proximity to many of the service hubs in the US,” said Parés.

The New York, Manhattan, New Jersey area is demanding thousands of these types of positions, as are California, parts of Atlanta, and Florida. “The political context plus the fact that Mexico is the nearest low-hanging fruit that can provide this kind of experience, consultants, and engineers means we can really capitalize on this potential,” explained Parés. “It is not only the tech part, but Mexico has evolved into a powerhouse of several industries, such as automotive.

*“We really believe that Mexico is going to change to become a player in the cognitive arena because we have what is needed. This is going to open up an exciting new chapter for the relationship between Mexico and the US in terms of technology and industry solutions.”*

Nearshore Delivery Solutions' [Computo Cognitivo website](#) offers relevant information on the cognitive computing landscape and its implications for Mexico and Latin America.





DELIVERY SOLUTIONS

## ABOUT NEARSHORE DELIVERY SOLUTIONS

Nearshore Delivery Solutions is an international company with operations in the US, Mexico, and parts of Central and South America. We serve global clients on the IT side and offer cognitive computing solutions for many industries in the region. We are ideally positioned to leverage the best platforms from different vendors to give our clients a competitive edge from both the technology and the business value side. Driven partially by client demand and our own recognition of and belief in the importance of cognitive computing, we are committed to being a leader in the field in Latin America.

**Website:** <http://nearshoremx.com/>



## ABOUT NEARSHORE AMERICAS

Nearshore Americas produces authoritative and independent news, analysis, and research on the fast-emerging Latin American and Caribbean BPO, IT, software, and call center industries.

Our team, which includes staffers and contributors from countries throughout the region, is dedicated to expanding knowledge around Americas-centric investment and innovation. Our mission is to illuminate, inspire, and motivate business decision makers to more closely examine investment in services and partnership opportunities in the Americas.

Nearshore Americas is owned by Next Coast Media, a digital media and integrated marketing services firm based outside of New York City.

**Website:** [www.nearshoreamericas.com](http://www.nearshoreamericas.com)