Practical Community in Business Model

IBM WATSON CASE

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February / 2018

Karina Coleta prepared this case under supervision of Professor Fabian Salum, both from Fundação Dom Cabral. It is intended to be used as basis for discussion in classroom, rather than to illustrate the effective or ineffective handling of any particular administrative situation.

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"IN THE END, AN ORGANIZATION IS NOTHING MORE THAN THE COLLECTIVE CAPACITY OF ITS PEOPLE TO CREATE VALUE"

Louis V. Gerstner Jr., CEO responsible for IBM's historic turnaround between 1993 and 2002

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The International Business Machines Corporation (IBM) has stimulated the development of creative minds in technology since 1945, when Thomas John Watson Sr. established the first corporate scientific research laboratory in the United States. *The Watson Scientific Computing Laboratory* began its activities at Columbia University and it became the IBM Research that continues, until today, to develop technology applicable in many services and sectors.

Among these great ideas is the technology that bears the name of the founder: IBM Watson. It all started in 2004 when IBM's computer systems chief Charles Lickel became aware of the historic victory of a participant in the traditional TV game of questions and answers called Jeopardy! The competitor Kenneth Jennings had won 74 consecutive games.
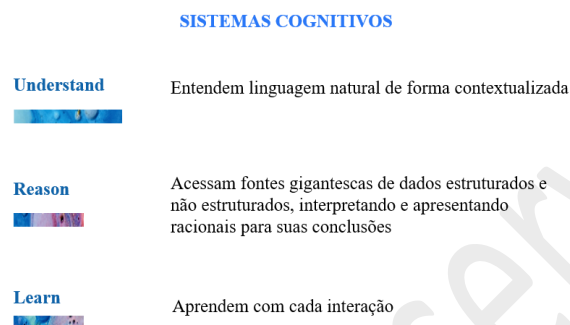
Lickel then suggested that researchers should develop a technology to compete in Jeopardy! to demonstrate to the public IBM's technical ability in a relaxed way. Seven years later, in 2011, Kenneth Jennings and Brad Rutter accepted the challenge of competing with Watson in the game show. The human opponents lost, but the rebound of the event stimulated IBM to exploit Watson's potential in the market.

Kenneth Jennings (left) and Brad Rutter in the challenge against Watson

IBM Watson is a system based on cognitive computing that opens the door to a new partnership between people and computers. Its difference to the already known artificial intelligence (AI) is about perception. It is common to consider AI as a potential substitute for the human being. But the goal of cognitive computing is to empower human being and his action in the world. To do so, this technology accesses the vast existing database and looks for the best adequate response to be used, providing a natural language interaction experience, and (re) building itself through a learning capacity process. This is what differentiates the cognitive system from the traditional ones.

SISTEMAS COGNITIVOS

Understand — Entendem linguagem natural de forma contextualizada

Reason — Acessam fontes gigantescas de dados estruturados e não estruturados, interpretando e apresentando racionais para suas conclusões

Learn — Aprendem com cada interação

(IMAGE)

Cognitive Systems

Understand- They understand natural language in a contextualized way

Reason- They access huge sources of structured and unstructured data, interpreting and presenting rationales for their conclusions

Learn- They learn with each interaction

IBM has used this Watson capability in the technology solutions offered to its business partners. One of the first applications was in the health field, enabling physicians and hospitals to intelligently access vital data for diagnosis and personalized treatments. With Watson, a physician can analyze a patient's health history and compare a specific case with information from the thousands of scientific papers published each year and the thousands of records from other patients.

In addition, Watson is used in the development of *ChatBots* (conversational interface between customer and services), data security systems against cyber attacks, and even in cognitive toys.

Assista ao vídeo sobre a utilização do Watson em brinquedos youtube.com/watch?v=uUSaKW7RIyo

(IMAGE)

Watch the video about the use of Watson in toys

www.youtube.com/watch?v=uUSakW&Rlyo

In Brazil, where IBM will be 100 years old in 2017, Watson technology already has many different applications. *Fleury Medicina e Saúde* was the first partner of IBM Watson Health in Latin America. The goal of the partnership is to validate Watson Genomics in Brazil, a tool to assist personalized care based on genetic sequencing. By extracting information from the vast medical literature and genomic alterations of a patient, Watson assists health professionals to take decisions.

Still at the health field and following the goal of personalizing and advancing cancer treatment, the *Mãe de Deus Hospital* is the South American pioneer in the use of Watson for Oncology. With units in Porto Alegre in Rio Grande do Sul, the hospital applies cognitive technology to provide physicians with more accurate and quick information about therapeutic options based on scientific evidence from around the world. This customization, volume and agility are only possible because Watson can analyze an immense amount of data regarding clinical information, test results, health history, treatment alternatives for specific cases, and provide the most appropriate response for each patient.

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E AINDA VER OS PACIENTES

vocêIBM

Você com o poder da IBM

(IMAGE)

I can read 5000 new medical studies a day and still see my patients

You with the power of IBM

In the pharmaceutical industry, Watson for *Drug Discovery* had its first use in Latin America with the company *TheraSkin*. Specialized in dermatological and dermocosmetic drugs, and present in more than 30 thousand pharmacies in the Brazilian market, the company is committed to the development of new products. According to the PD&I manager, Deli Oliveira, the use of Watson allowed not only agility in the analysis of scientific productions on

the subject, but allowed "the selection and use of solutions aimed at specific targets of dermatological disorders, reducing side effects related to a possible product".

The Brazilian legal establishment can count on Watson's cognitive ability too. The partnership with *Finch Soluções* resulted in the "Legal Cognitive" platform that supports legal professionals in the analysis of the immense documentary base. With this technology, according to Finch Soluções CEO, Armando Buchina, "a lawyer or legal manager can create more appropriate sector strategies, for example, deals or defenses against litigation, or simply understand the reason why actions are being judged as appropriate (gain) or unfounded (loss) before the judge or region."

In the banking sector, Bradesco uses Watson in the customer service. This choice results in greater autonomy for the customer and more efficiency for the bank by reducing the load on the service channels. Bradesco executive director, Luca Cavalcanti, notes that "the applications for this technology are practically unlimited, and in Bradesco it already answers more than 22 thousand questions per day".
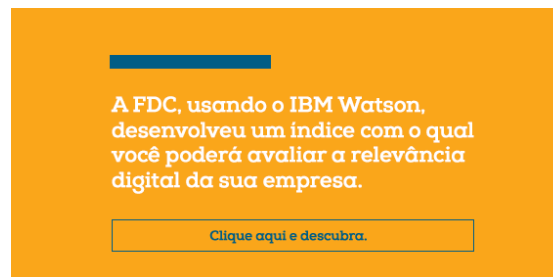
Watson can also be found in the construction industry in Brazil. The partnership with *MRV Engenharia* resulted in the application "Meu MRV", a unique tool in the sector. Watson's cognitive functions are present in the virtual assistant "*Maria Rosa Vaz*" that interprets the questions and information provided by the user and formulates answers to questions such as " is my apartment ready?" Among other functions, the client can monitor the evolution of an apartment he bought, through photos and videos, make requests and consult the payment statements. And with each interaction, the "mascot" of the company learns and refines the tool, improving the user experience.

MRV: Maria Rosa Vaz

Through Watson technology, the Fundação Dom Cabral created the "Digital Relevance Index". With it, companies can evaluate their digital relevance from three variables: performance, presence and perception. The first one presents the ranking of the company website in search results. The presence uses the data regarding the number of followers of the company to evaluate the level of engagement. And perception interprets the general feeling based on the quotes of these followers.

A FDC, usando o IBM Watson, desenvolveu um índice com o qual você poderá avaliar a relevância digital da sua empresa.

Clique aqui e descubra.

(IMAGE)

FDC, using IBM Watson, has developed an index with which you can assess the digital relevance of your business.

Click here and find out

These are some examples of the use of Watson in Brazil, but other companies and startups join them in the search of value offer improvement to the clients and other stakeholders. Currently, more than 80,000 developers and 500 startups have embraced that technology in the world. And IBM expects to reach 1 billion people by 2018.

In addition to the already established partnerships, another great opportunity envisioned by IBM is to offer Watson technology as a starting point for developers to create their own applications. One way is the use of the Bluemix platform, created so that the developers can explore the potential of Watson. In it, you can create an account for free and have access to the cognitive functions performed by Watson's Application Programming Interface (APIs) and other IBM technologies. The user is only charged when he creates a commercial application which requires a higher consumption of services.

To exemplify some of the Watson APIs on the platform: the user can select his/her own text and then use the *Language Translator* function to translate it into English; then, the *Personality Insight* provides a personality description based on the text; and the *Tone Analyzer* function indicates the tone of the text based on selected excerpts. Thus, besides the translation, the user can check his style of writing: direct, assertive, positive or negative, or in several other possibilities.

Building applications based on cognitive systems like Watson has two advantages. The first is the ability to analyze unstructured data such as audios, images, and free texts in product descriptions, comments, and customer reviews. This is a great advantage as this type of resource is growing and currently represents 80% of the existing database. The second advantage is the ability of the system to learn from user experience and refine the solutions.

With this model, through the Bluemix platform, IBM seeks to align its internal resources and capabilities - from the technology and expertise of its team, which was developed over time - to the current and future demands of its partners and customers. The idea is that partnerships co-create value internally and externally. This allows the company and its partners to combine and exploit short and long-term advantages to estimate the scope of the possibilities of collaboration between the capacities of the cognitive system and the unique abilities of the human being.

REFERENCES

The information was collected and compiled from the official website of IBM (Forbes) *"How IBM is building a business model around Watson"*, Exame Magazine "Bradesco uses artificial intelligence in customer service", *"TheraSkin moves on with its process of innovation", Computer History*, Fleury Medicine and Health, Mãe de Deus Hospital, MRV, FDC, all from September 2017. In addition to the book *"Who says elephants can't dance? Inside IBM's historic turnaround"* by Louis V. Gerstner Jr; and the lecture by IBM's director of strategy and industry solutions, Mauro D'Angelo, to the Practical Community in Business Model in August 2017.

This material was prepared by the guest teacher Karina Coleta, under the guidance of Prof. Fabian Salum - FDC. To learn more about our studies and productions go to the website: www.practicalbusinessmodel.com