Analytics na Era Cognitiva

Danilo Silveira – IT Architect
2017

IBM

Point of View

Data is the new basis of competitive advantage

Front runners will:

Drive business outcomes
by applying more sophisticated analytics across more disparate data sources in more parts of their organization.

Capture the time value of data
by developing "speed of insight" and "speed of action" as core differentiators.

Change the game
in their industry and profession by infusing analytics into everything employees touch.

Analytics – Trend Overview

Drivers

- Growth in Big Data…both structured and unstructured
- Business Leaders know the data exists, but need tools to draw insights out of the data
- Continued advances in analytics algorithms & modeling
- Advances in open source platforms such as Apache Hadoop & Linux

Ten trends to watch in Analytics Solutions

1. **Organizations become more data-driven, spurring analytics solution demand.**
2. **Improved back- and front-office solutions.**
3. **IT and LOB participate in both buying decisions and deployments.**
4. **Demand for prepackaged solutions.**
5. **Traditional vendors focus on filling solution gaps.**

"Analytics will become deeply, but invisibly embedded everywhere." *David Cearley, vice president & Gartner Fellow*

Ten trends to watch in Analytics Solutions

6. **Emerging markets offer long-term growth opportunity.**
7. **Mobile and Cloud Analytics.**
8. **Data Economy Drives Analytics.**
9. **IoT drives analytics demand.**
10. **Increased Demand for Consulting Services.**

"By 2020, 50% of all business analytics software will incorporate prescriptive analytics built on cognitive computing functionality." *IDC:* *IDC FutureScape: Worldwide Big Data and Analytics 2016 Predictions*

Analytics – Trend Overview

Implications

- The ability to pull value from data can lead to competitive differentiation
- New processes, skills/training, and business leadership is required
- Needed: Better dashboard tools, designed for business users and available on mobile devices

VentureBeat: 5 data analytics trends to watch in 2016

Analytics – Trend Overview

Challenges

- Analytic tools tend to be too complex, requiring skilled resources.
- Embedding analytics into an existing business apps infrastructure
- Generating insights out of complex metadata is not easy
- Security, performance, scalability
- Predictive models need to translate to action, rather than simply being an intellectual exercise

"Analytics will take center stage as the volume of data generated by embedded systems increases and vast pools of structured and unstructured data inside and outside the enterprise are analyzed." *Gartner*

Adoption Challenges

- **Security concerns limit adoption of third-party-hosted solutions.** Third-party-hosted solutions lag in deployment compared to on-premises analytics solutions, with data security and privacy concerns often cited as key determinants for the choice of an on-premises solution.

- **Enterprises struggle with the efficient organization, management and processing of data and data sources.** Data integration, cleansing, management, storage and access are key challenges. IoT data collection systems will amplify data volume and complexity.

- **The success of a big data program depends on executive involvement in setting the strategy and expected business outcomes.** Executive sponsorship, having a clear strategy and alignment on financial objectives are important factors of analytic solution success.

InformationWeek DARKReading
Security Talent Gap Threatens Adoption Of Analytics Tools

PCWorld
Biggest Barriers to Business Analytics Adoption: People

Information Technology is at its most significant inflection point in 40 years.

Big Data

Relational

Pre-Relational

Mobile

Hadoop

Spark

Social

Columnar

In-Memory

NoSQL

Unstructured Data

Streaming Data

Cloud

IoT

Our clients can imagine the possibilities of analyzing all available data

Real-time traffic flow optimization

Fraud & risk detection

Understand and act on customer sentiment

Accurate and timely threat detection

Predict and act on intent to purchase

Low-latency network analysis

The era of Cognitive Computing has arrived…

What is Cognitive Computing?

- Putting data into context
- Accelerating the dissemination of info
- Identifying new patterns & insights

The journey to cognitive analytics starts with data...

cognition

1. process or faculty of acquiring knowledge.
2. perception, knowledge.

artificial intelligence

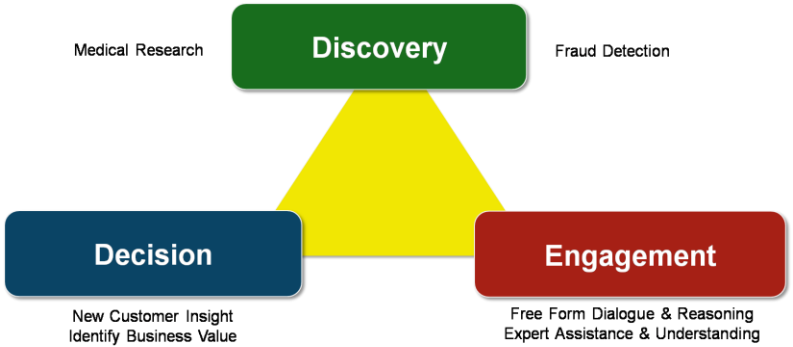
1. computer science field of AI research agents that perceives its environment and takes actions that maximize its chance of success at some goal.
2. mimics "cognitive" functions.

Cognitive Business

is where digital transformation meets digital intelligence

Emerging capabilities & key opportunities for Cognitive Computing

Emerging Capabilities

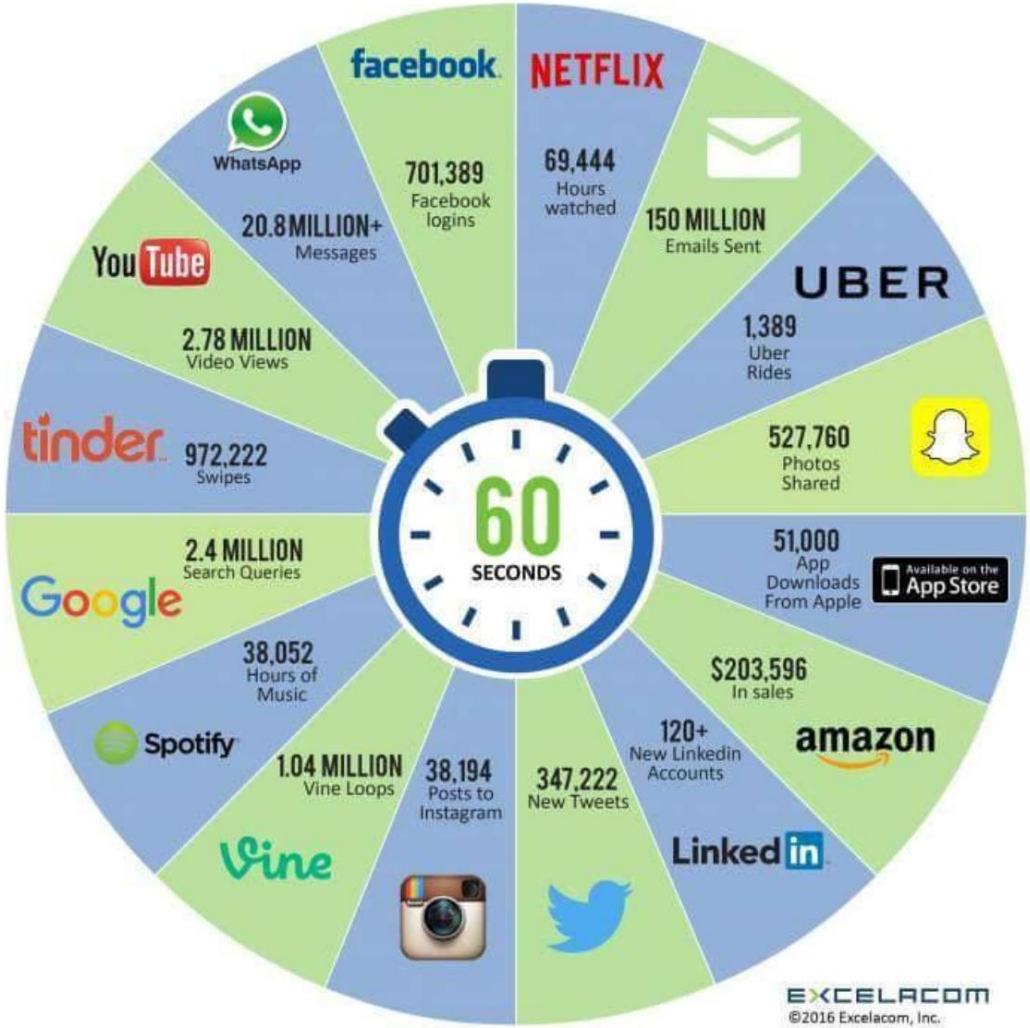


Key Opportunity Areas

Big Data & Analytics

Machine Learning

Natural Language & Speech


facebook
701,389
Facebook logins
NETFLIX
69,444
Hours watched
150 MILLION
Emails Sent
UBER
1,389
Uber Rides
527,760
Photos Shared
51,000
App Downloads From Apple
Available on the App Store
$203,596
In sales
amazon
120+
New Linkedin Accounts
Linked in
347,222
New Tweets
38,194
Posts to Instagram
1.04 MILLION
Vine Loops
38,052
Hours of Music
Spotify
2.4 MILLION
Search Queries
Google
972,222
Swipes
tinder
2.78 MILLION
Video Views
YouTube
20.8 MILLION+
Messages
WhatsApp
60
SECONDS
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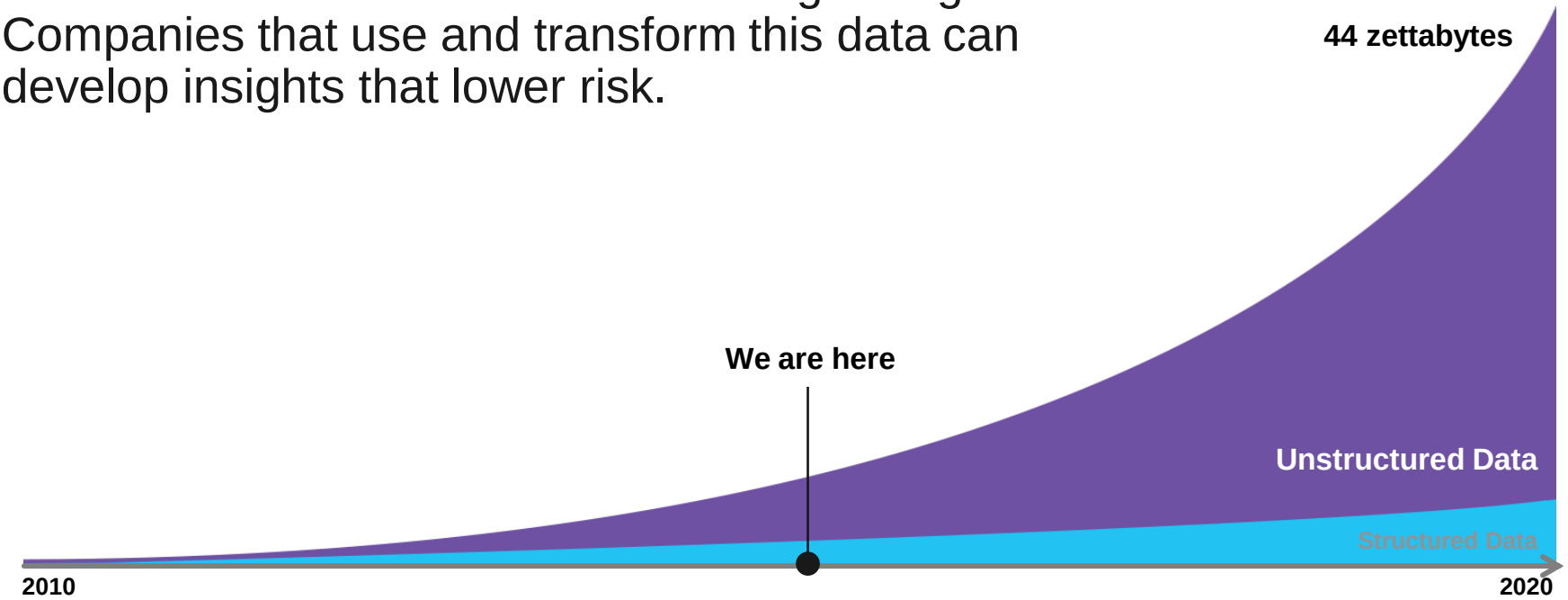
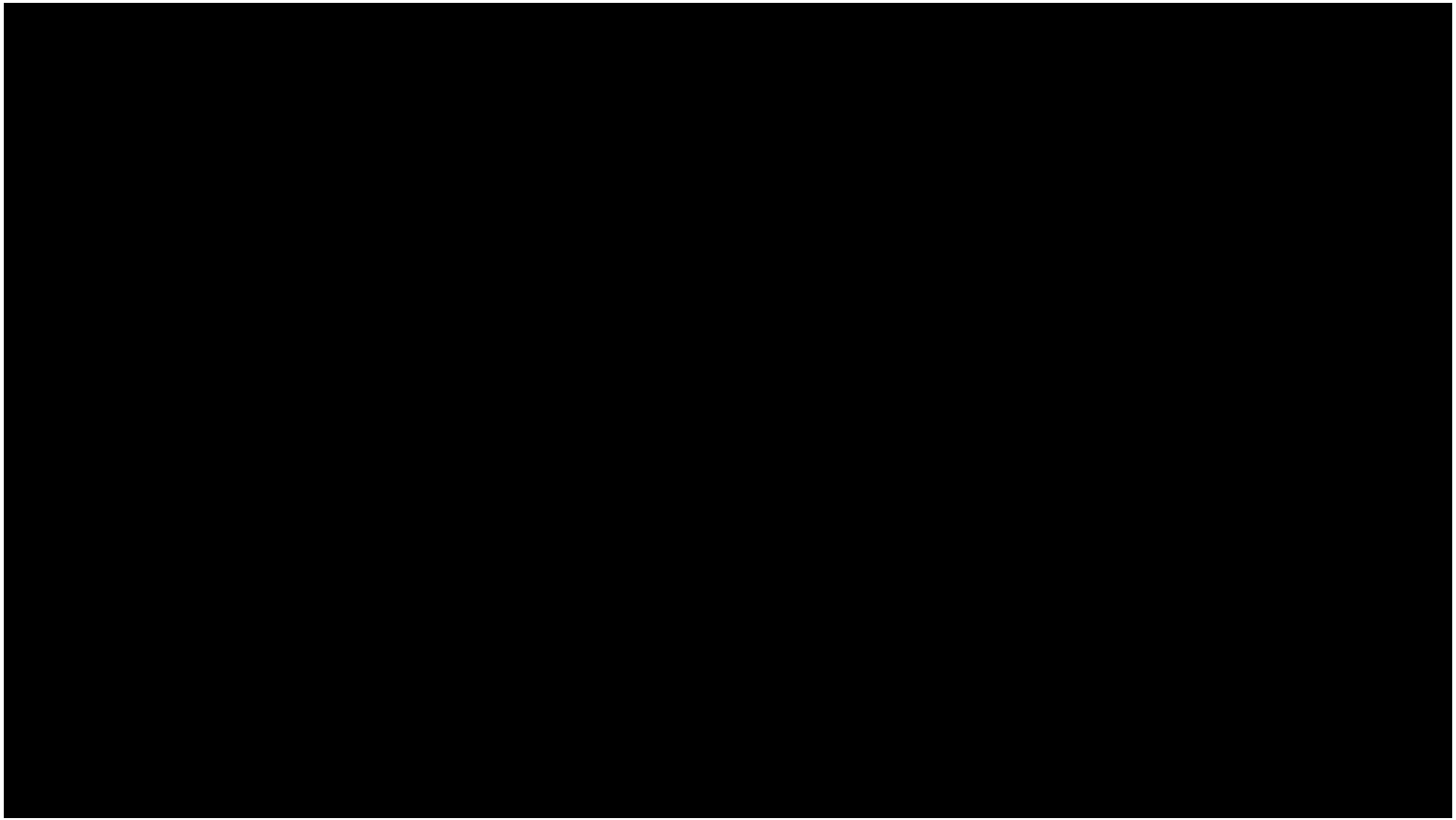
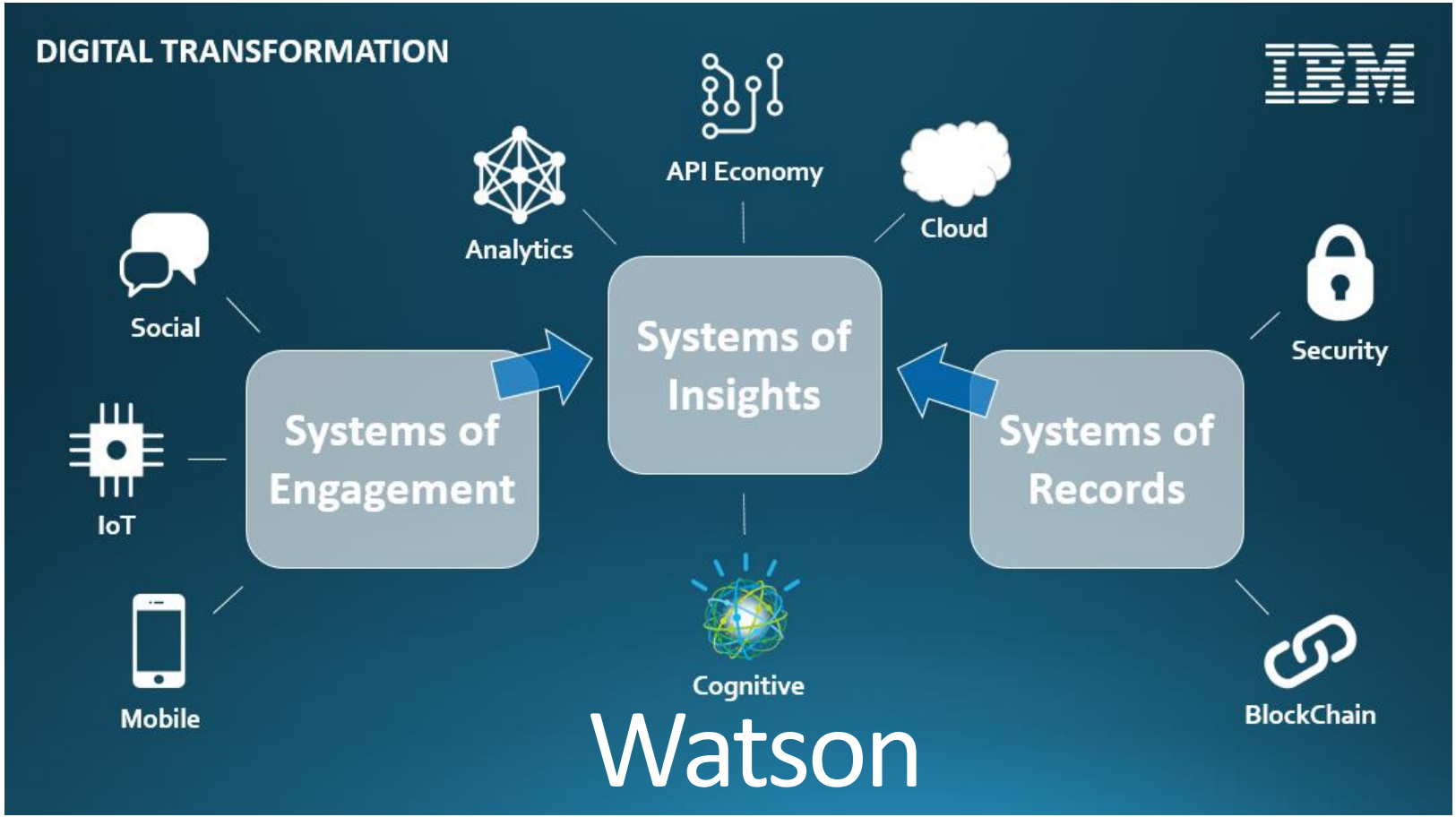
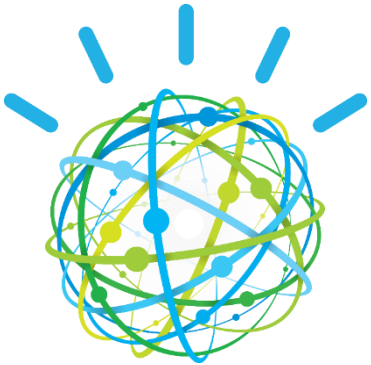
90%
of data created in the last 10 years were ABANDONED and took opportunities with them. ☹

Structured and unstructured data are growing. Companies that use and transform this data can develop insights that lower risk.





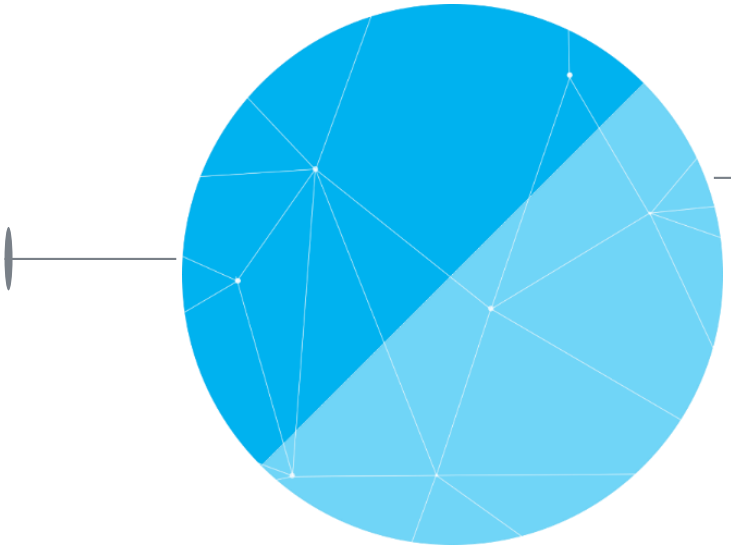

DIGITAL TRANSFORMATION
IBM
API Economy
Analytics
Cloud
Social
Security
Systems of Insights
Systems of Engagement
Systems of Records
IoT
Cognitive
Mobile
BlockChain
Watson



Watson

artificial **intelligence**
applied to **business**

Cognitive systems are creating a new partnership between humans and technology



Humans excel at:

COMMON SENSE
MORALS
IMAGINATION
COMPASSION
ABSTRACTION
DILEMMAS
DREAMING
GENERALIZATION

Cognitive Systems excel at:

LOCATING KNOWLEDGE
PATTERN IDENTIFICATION
NATURAL LANGUAGE
MACHINE LEARNING
ELIMINATE BIAS
ENDLESS CAPACITY

IBM's Watson AI saved a woman from leukemia

It discovered a rare illness that doctors had missed.

Jon Fingas , @jonfingas
08.07.16 in Medicine

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Comments

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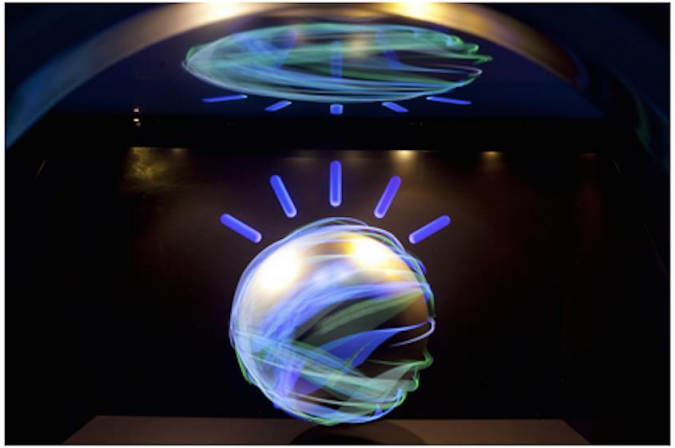
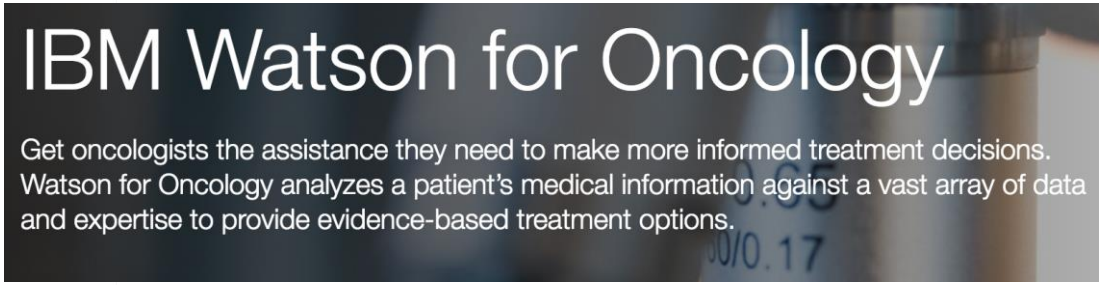


IBM's Watson has done everything from winning at *Jeopardy* to cooking exotic meals, but it appears to have accomplished its greatest feat yet: saving a life. University of Tokyo doctors report that the artificial intelligence diagnosed a 60-year-old woman's rare form of leukemia that had been incorrectly identified months earlier. The analytical machine took just 10 minutes to compare the patient's genetic changes with a database of 20 million cancer research papers, delivering an accurate diagnosis and leading to proper treatment that had proven elusive. Watson has also identified another rare form of leukemia in another patient, the university says.



https://www.engadget.com/2016/08/07/ibms-watson-ai-saved-a-woman-from-leukemia/

Oil extraction, billion dollar company

...one well-informed decision for each problem.

woodside

INCREASE KNOWLEDGE

Watson ingested 30 years of knowledge from Woodside.

INCREASE EXPERTISE

Engineers increased their expertise with a virtual advisor:
”Lesson Learned!”

LEARN AND ADAPT

Each new result is added to the database, helping future decisions.

Central Nacional Unimed

Desafio

A medida que o negócio da CNU cresce, a dependência de análise manual das faturas médicas atrasa o tempo de resposta e aumenta os custos.

- 1.3 milhões de faturas, sendo 200 mil com documentos justificantes
- Processo manual
- Erro humano

Central Nacional Unimed

Transformação

A CNU pode processar cerca de 1.3 milhões de faturas mais rápido do que nunca através de conteúdos digitalizados e processos automatizados.

Resultados

90%
menos em custos administrativos, aumento da rentabilidade

10%
mais rapidez no processamento de faturas médicas

35%
menos tempo dedicado a analisar faturas

Soluções criadas em 2016 por parceiros

✓ Detecção e Comprovação de Fraudes

Solução compacta de fácil e rápida implantação para o combate a situações de fraude, lavagem de dinheiro e outros delitos, e violações a normas e procedimentos.

Indústria(s): Bancos médios e pequenos; Seguradoras; Seguro Saúde; outras Instituições Financeiras
Interlocutor(es): COO, CFO, CRO, CCO, Gerente de Risco, Gerente de PLD (Prevenção de Lavagem de Dinheiro), Gerente de Compliance

✓ Jurídico Cognitivo

Solução para análise, resposta e redução de contencioso jurídico (Trabalhista, tributário etc)

Indústria(s): Cross
Interlocutor(es): Diretores / Gestores da área Jurídica

Ministério da
Justiça e Segurança Pública
GOVERNO FEDERAL

Desafio

Para combater a corrupção, lavagem de dinheiro, tráfico de drogas e o crime organizado, o governo precisa identificar e investigar todo tipo de dado em quantidades absurdas.

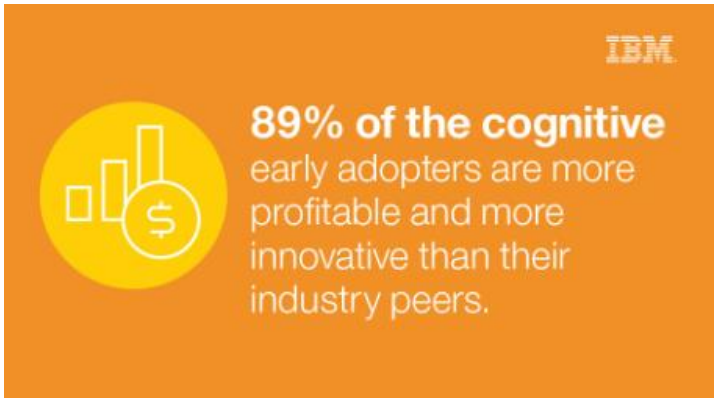
- Anos de movimentos e registros em contas de bancos, trocas de emails, telefones, registros de empresas e dados sociais
- Em uma investigação, centenas de terabytes levaram 10 meses e milhares de homem-hora para serem analisados
- 60% dos dados estruturados

Ministério da
Justiça e Segurança Pública
GOVERNO FEDERAL

Resultados

Diminuição drástica no número de horas e recursos investidos para analisar dados.

- 8.9 bilhões de dólares identificados como recursos ilícitos
- Discos de terabytes podem ser reduzidos a poucos giga de dados relevantes
- Pesquisas semânticas e por palavras-chaves em dados estruturados e não estruturados
- Liberar os investigadores para gastar mais tempo com analyses importantes



Analytics: Dawn of the cognitive era - 2016

2.5 quintillion
bytes of new data created daily

Expertise matters more today than ever, but even top experts can’t keep up

Are you ready for the **challenges** and **opportunities**?

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Thank you