Like your personal intelligent assistant? Welcome to the Cognitive Analysis era



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Intelligent Assistants and Cognitive Computing

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Yesterday

My First Intelligent Agent







Evolution of Cognitive Computing

- Turing Test published: a computer that exhibits intelligent behavior equivalent to, or indistinguishable from, that of a human.
- Scientific community focuses on machine translation

1950's

- Scientific community focuses on Al
- First successful NLP systems
- MYCIN diagnosed infectious blood diseases

1970's

 Semantic classification & probabilistic parsing are combined in machine systems. Can derive rules and their probabilities



 First commercial database management system tracks huge amount of structured data for Apollo Moon Mission

1960's

 Machine learning algorithms for language processing introduced

1980's

- Judea Pearl brings probability and decision theory into Al
- Watson. Question answering system capable of answering questions posed in natural language



Over the decades...

The last 10 years...

2007

World's first single molecule computer circuit
 TAKMI provides insights on patient groups to help doctors treat groups of patients at a time

2004

 Watson: IBM, WellPoint, Memorial Sloan Kettering use Watson to give doctors treatment options in seconds



 1997
 TAKMI (Text Analysis & Knowledge Mining) developed to capture and

2001

- Knowledge Mining) developed to capture and utilize knowledge embedded in text files – applied to call centers
- The High Performance Computing Act of 2004 was enacted
- IBM Content, Predictive and Streaming analytics
- Streaming analytics process 5 million messages of market data per second to speed up financial trading decisions

Today

Siri, Cortana, Google now







Hi. I'm Cortana.

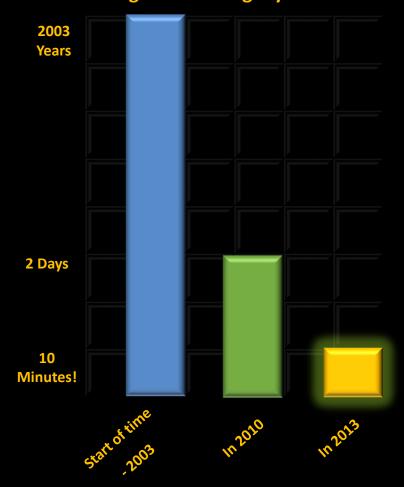
- IBM Watson
- Deloitte Cognitive Analytics™

The Next Stage of Human History:

Exponential & Global

Data is growing 60% per year

Time to get to 5bn Gigabytes of Data

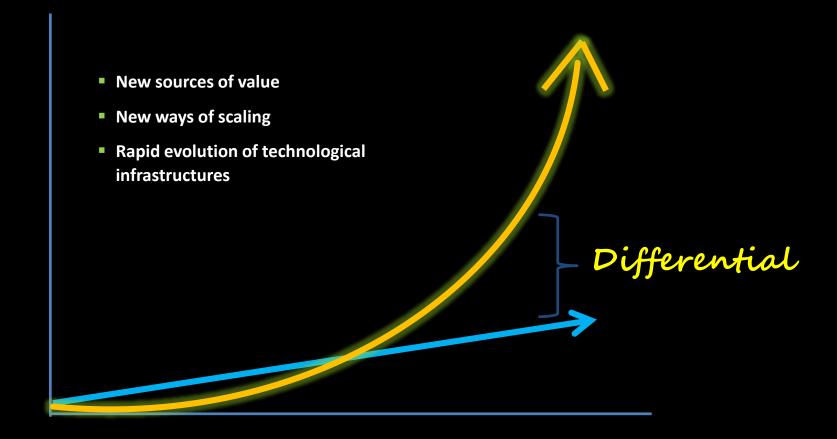


- A smartphone in Africa today has more computing power than the President of the United States had in the 1980's
- Decoding the human genome used to take 10 years, now it can be done in 7 days
- There will be 140K- 190K too few people with deep analytical skills to fill the demand of big data and analytics jobs in the US by 2018
- Big Data will drive \$232 billion in IT spending through 2016

Why is information growing exponentially?

- Zero friction to move or copy
- Computational applications
- Machine Learning
- Zero Marginal Cost
- Data Correlations
- Modeling and Simulations
- 100% Democratization of Effort and Innovation

Exponential Change



Moore's Law For Business?

Deloitte Cognitive Analytics™

At the intersection of various domains fueled by advances in several scientific, engineering, and

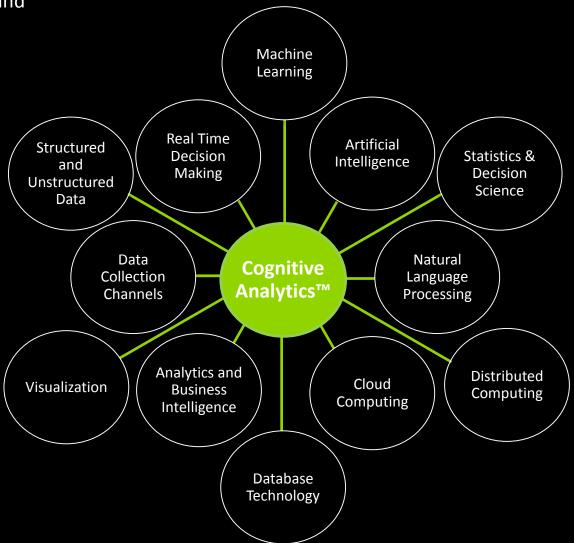
business disciplines.

Make relevant context-based suggestions and recommendations

Make quicker, more informed decisions

Capture and process larger amounts of data

Access to the right data at the right time



Tomorrow?