Extracting Evidence fro
Unstructered Data:

Potential applications of IBM Watson for Risk Assessment

EFSA Conference, October 16, 2015

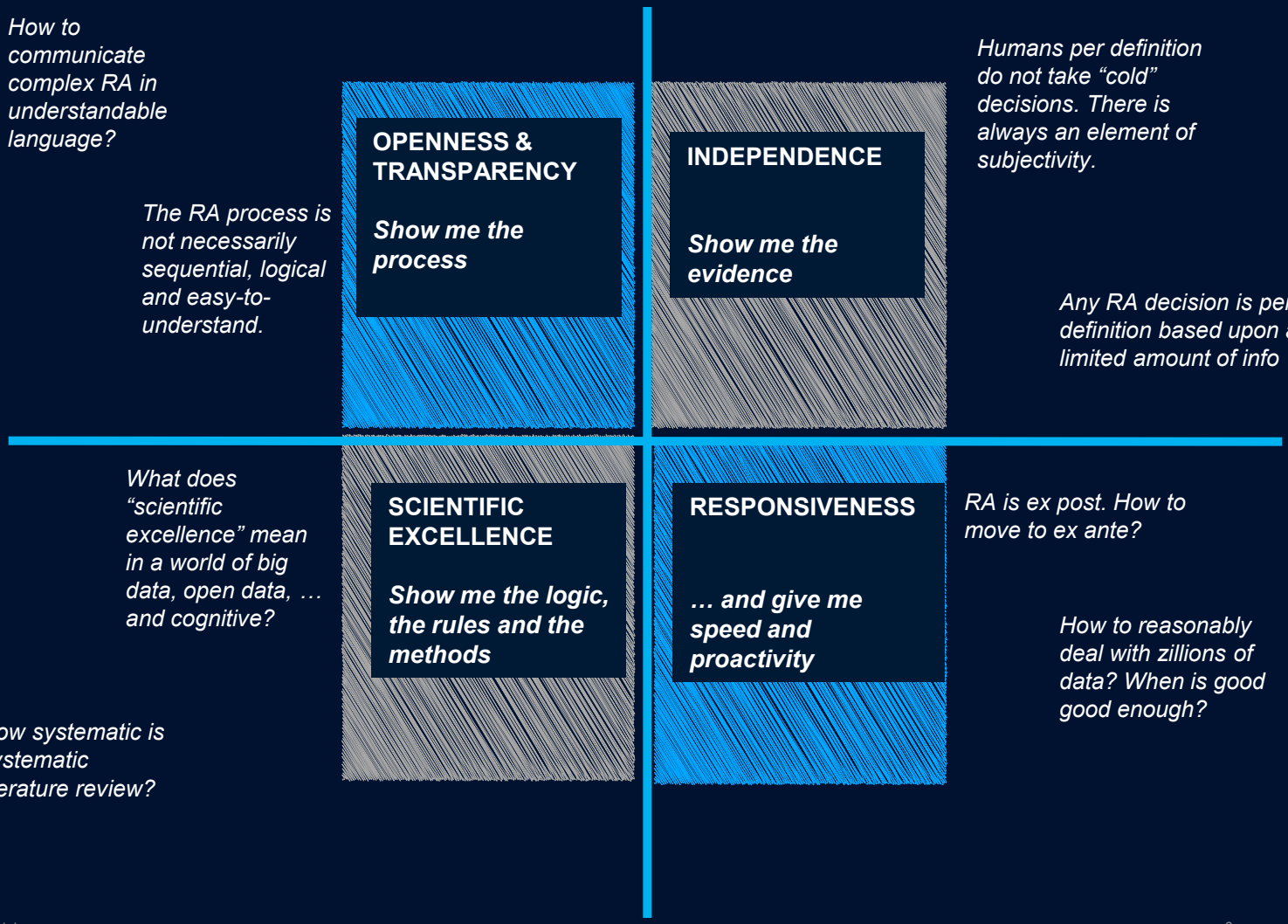
Cognitive Computing and Analytics hold tremendous potential for many industries and professions

Researchers at the University of Oxford predict that there is a 94 percent probability that cognitive analytics will lead to a **disruption** within the **information-intensive** industries

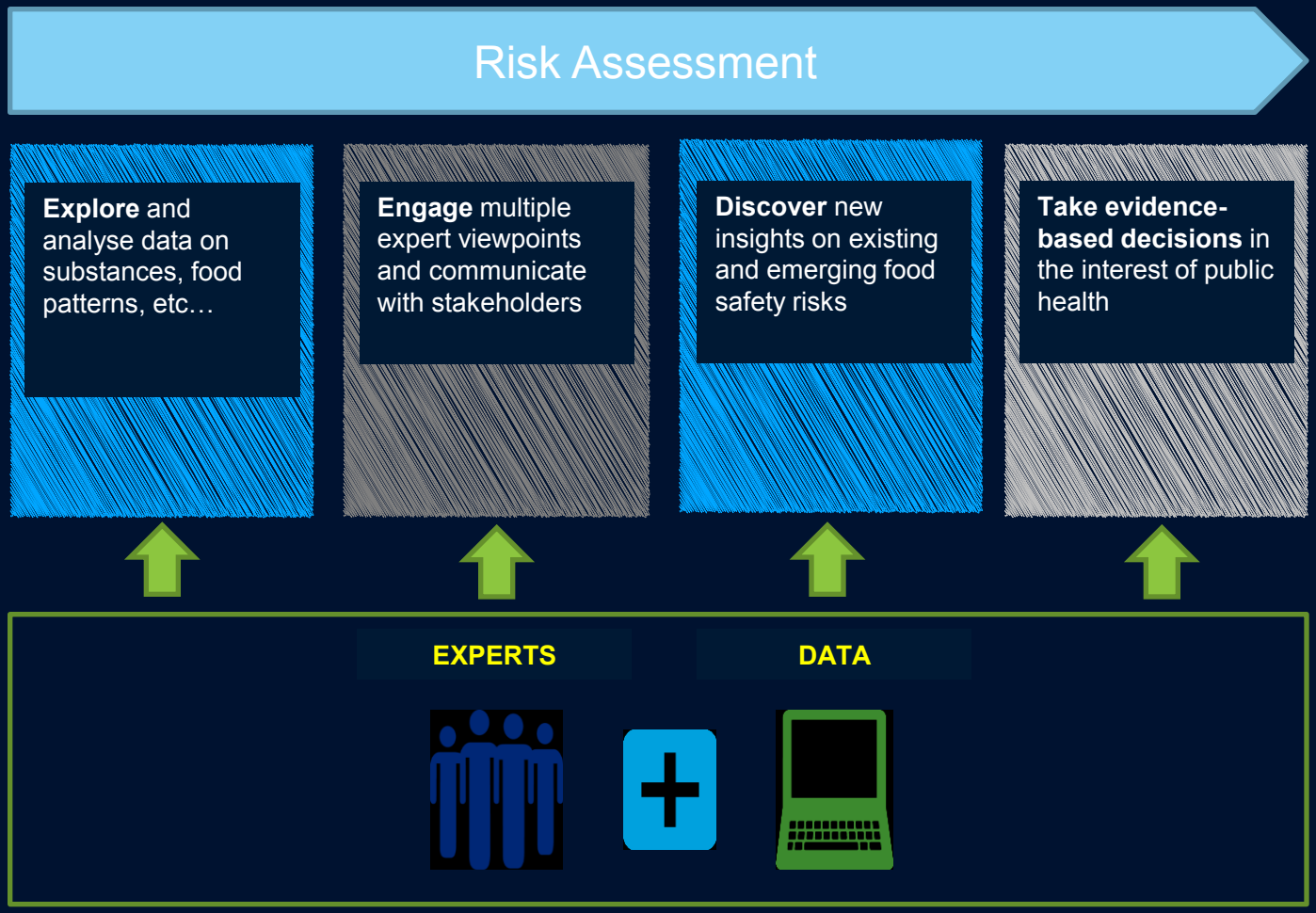
"For Gartner clients, the risk of investing too late in smart machines is likely greater than the risk of investing too soon."

Gartner Inc., January 14, 2014

Risk Assessment is facing important challenges



Data and expertise are at the heart of the Risk Assessment process



Welcome to Watson

Watson scales expertise to expand what's possible.

Watson can read

200 million pages

or a

14 km stack of paper

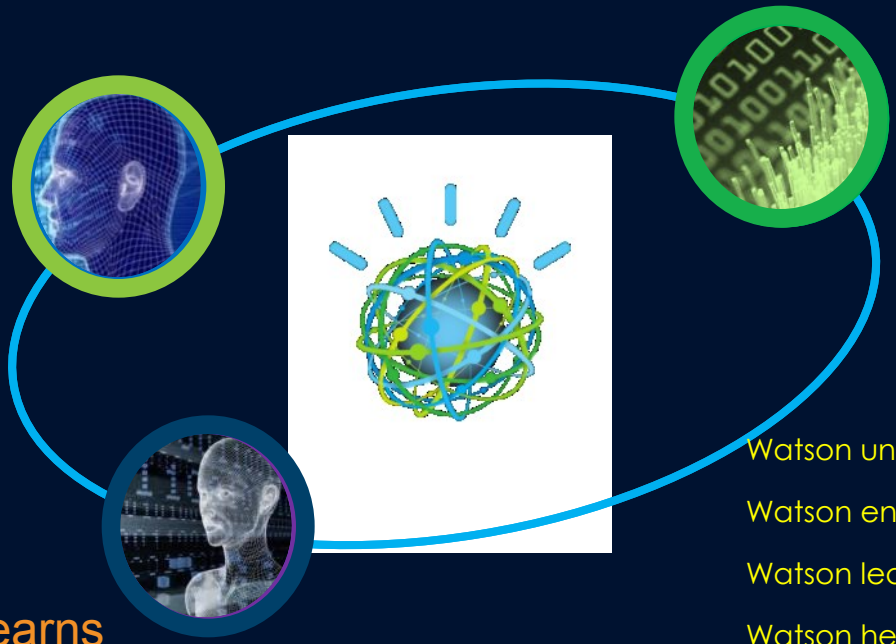
& respond to a question in

3 **seconds**

IBM Watson combines transformational technologies

1 Understands natural language and human communication

2 Generates and evaluates evidence-based hypothesis



3 Adapts and learns from training, interaction, and outcomes

Watson understands me.

Watson engages me.

Watson learns and improves over time.

Watson helps me discover.

Watson establishes trust.

Watson has endless capacity for insight.

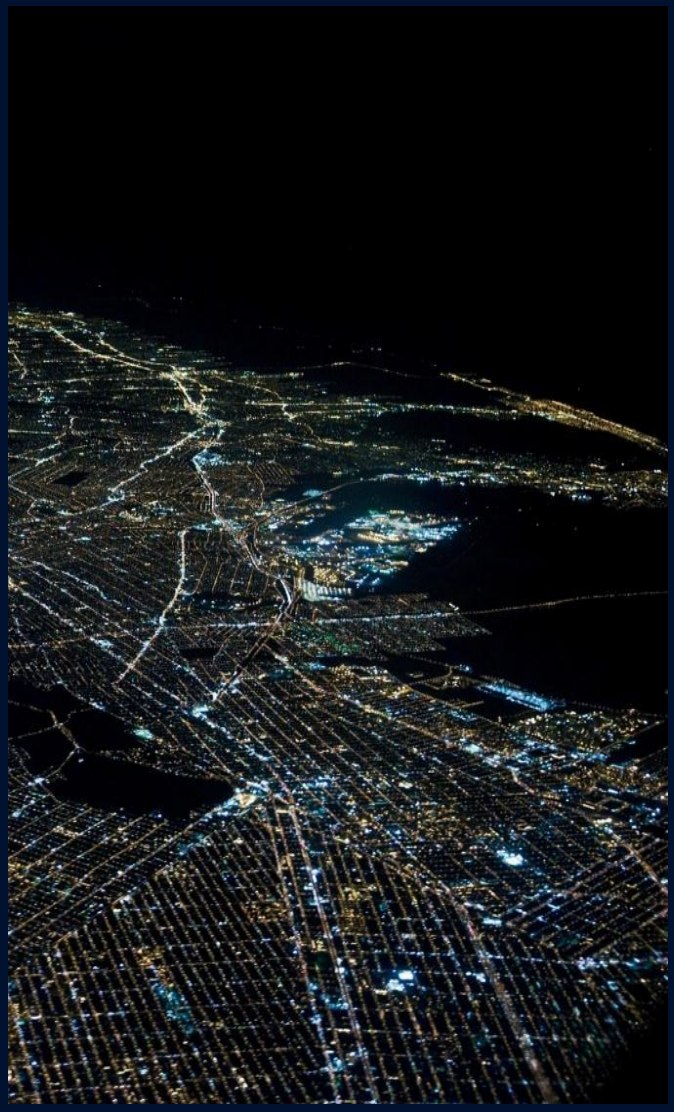
Watson operates in a timely fashion.

The **volume**, **variety** and **velocity** of data is creating an unprecedented opportunity.

2.5B

gigabytes of new data are generated every day

4/5ths of which is unstructured.



Watson unlocks unstructured data and aids breakthrough insights

Witness reports

Analyst reports

Forensic reports

Watson Corpus

Watson Reads

Witness: On December 9, 2000, Witness reported affiliate of a drug cartel, **John Doe** was seen at **49 Willows Lane.** He was seen entering the building with a suitcase.

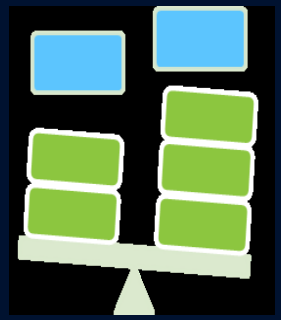
Analyst Report: October 10, 2012, A transcript of a wire tap of the cell phone detailed calls to **Joe Bloggs, John Smith** and **John Q. Public**

Forensic report January 3, 2013, Weapons recovered at a **49 Willows Lane** included **a 38 caliber firearm** and **two shot guns**

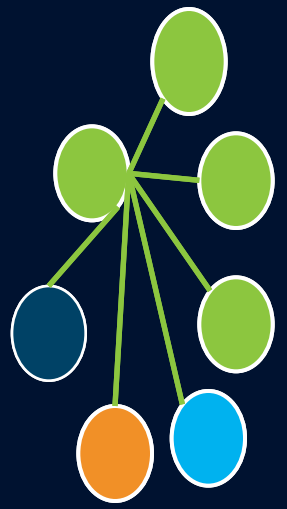
Evaluates

Weighs and Scores Evidence

- Quantity
- Proximity
- Relationship
- Domain Truths



Links



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How might cognitive systems deliver better results

Search Engine*

Who discovered black holes?

Looks for terms

In 1915, **Einstein's** theory of general relativity predicted the existence of black holes
Hubblesite.org

Q&A about the history of scientist theories

Are black holes real?
Skyandtelescope.com

Story about whether black Holes exist

Black Holes History – Amazing Space
amazing-space.stsci.edu

Story about All the steps To discovering black holes

Black Hole – Wikipedia, the free encyclopedia
Wikipedia.org

Enyclopedic Definition of black holes

*Search on 1/28/2015

Cognitive System

Who discovered black holes?

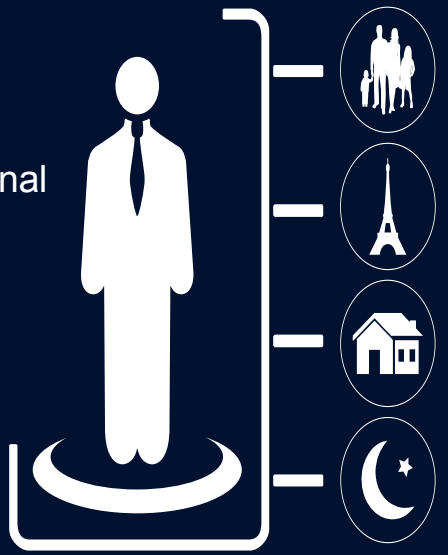
Reads 100,000 newspapers

Reads all of Wikipedia

Reads 10,000 pages analyst notes

Reads 1,000 pages of Witness Interviews

Understands "who" as multi-dimensional trait



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IBM can put Watson to work for you

Explore
Visually depict and analyze data for clear advice

Engage
Help organizations build stronger relationships with constituents

Discover
Help people create new insights by synthesizing information

Decide
Help users make more informed evidence-based decisions

Potential Applications for Open Risk Assessment

1. Reading and understanding scientific evidence in a more comprehensive and efficient manner
   - Technology Example: Watson Advisor for Ted Talks, Watson Discovery
2. Guidance / recommendations on safety criteria
   - Technology Example: Watson Oncology Advisor
3. Watching trends in the industry and social reactions
   - Technology Example: Watson News Explorer

TED

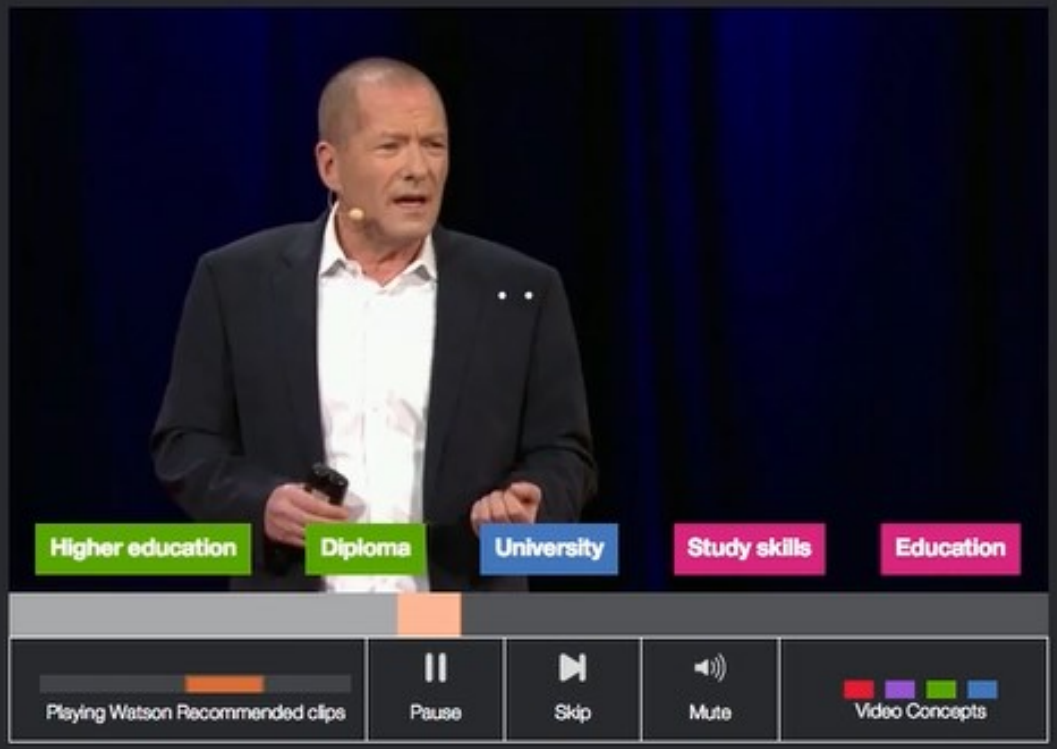
5 Videos with possible answers to your question:

SHARE

what is the impact of poverty on education?

We found some interesting concepts in this playlist you might like to explore:

Recommended by IBM Watson™ | Video concepts | High school | Homework help service | Peer review | Al Gore | Influenza



Richard Baraniuk
The birth of the open-source learning revolution
Peer review | Publishing | Creative Commons

Shai Reshef
An ultra-low-cost college degree
Homework help service | High school | Higher education

Geoffrey Canada
Our failing schools. Enough is enough!
High school | Bank | Education

Sugata Mitra
The child-driven education
Internet | Emergence | Leonardo da Vinci

Bill Joy
What I'm worried about, what I'm excited about
Al Gore | Influenza | Apple Inc.

Watson App: Discovery Advisor

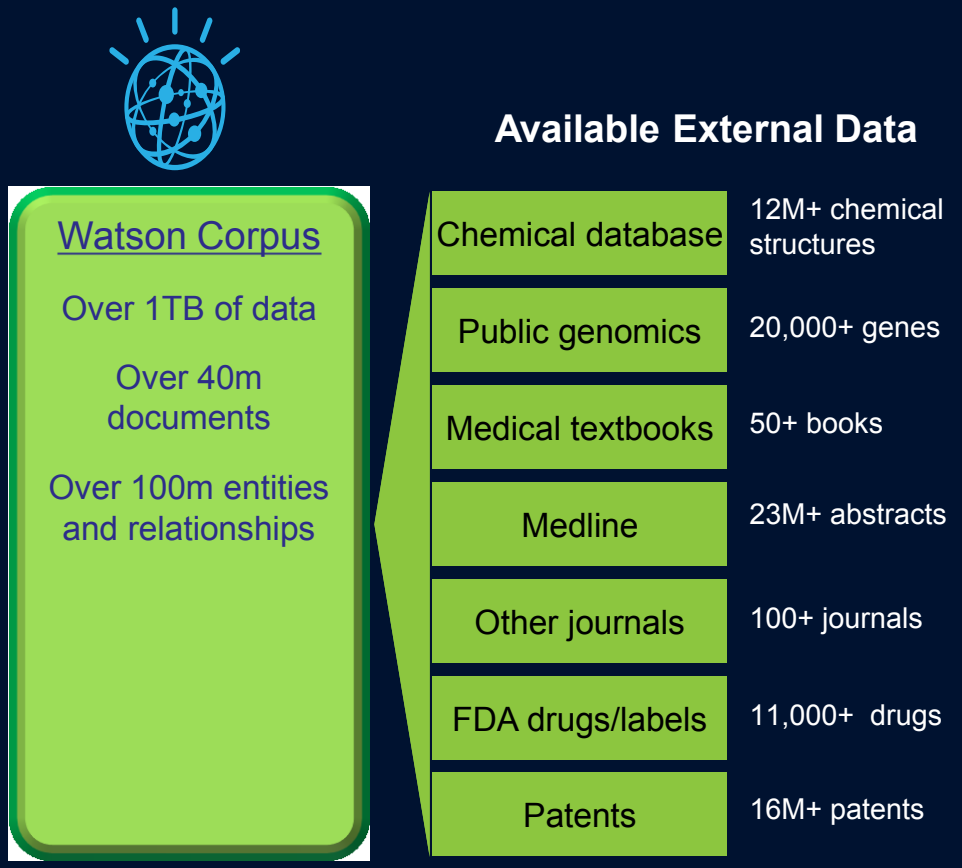
Business challenge:

- Researchers can't innovate fast enough to create truly breakthrough therapies
- They struggle to anticipate the safety profile of new treatments and design trials that demonstrate efficacy and safety

Watson solution:

Making linkages that unlock insights
Which **accelerate breakthroughs in**

- Disease understanding
- Drug discovery
- Toxicity assessment (early safety)
- Trial design
- Comparative effectiveness
- Pharmacovigilance (drug safety)



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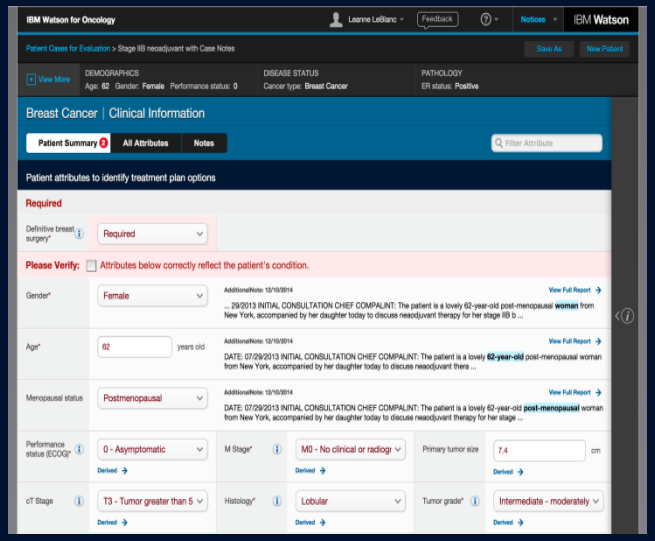
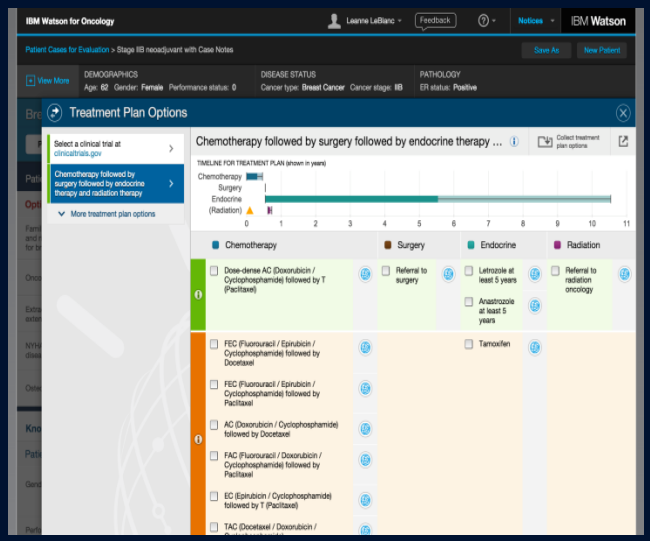
Watson App: Oncology Advisor
Trained by Memorial Sloan Kettering





Business challenge:

- Ability to assess quickly the best treatments for an individual patient based on latest evidence and clinical guidelines

Watson solution:

- A tool to assist physicians make personalized treatment decisions
  - Analyzes patient data against thousands of historical cases and trained through thousands of Memorial Sloan Kettering MD and analyst hours
  - Suggestions to help inform oncologists' decisions based on over 290 medical journals, over 200 textbooks, and 12M pages of text
  - Evolves with the fast-changing field

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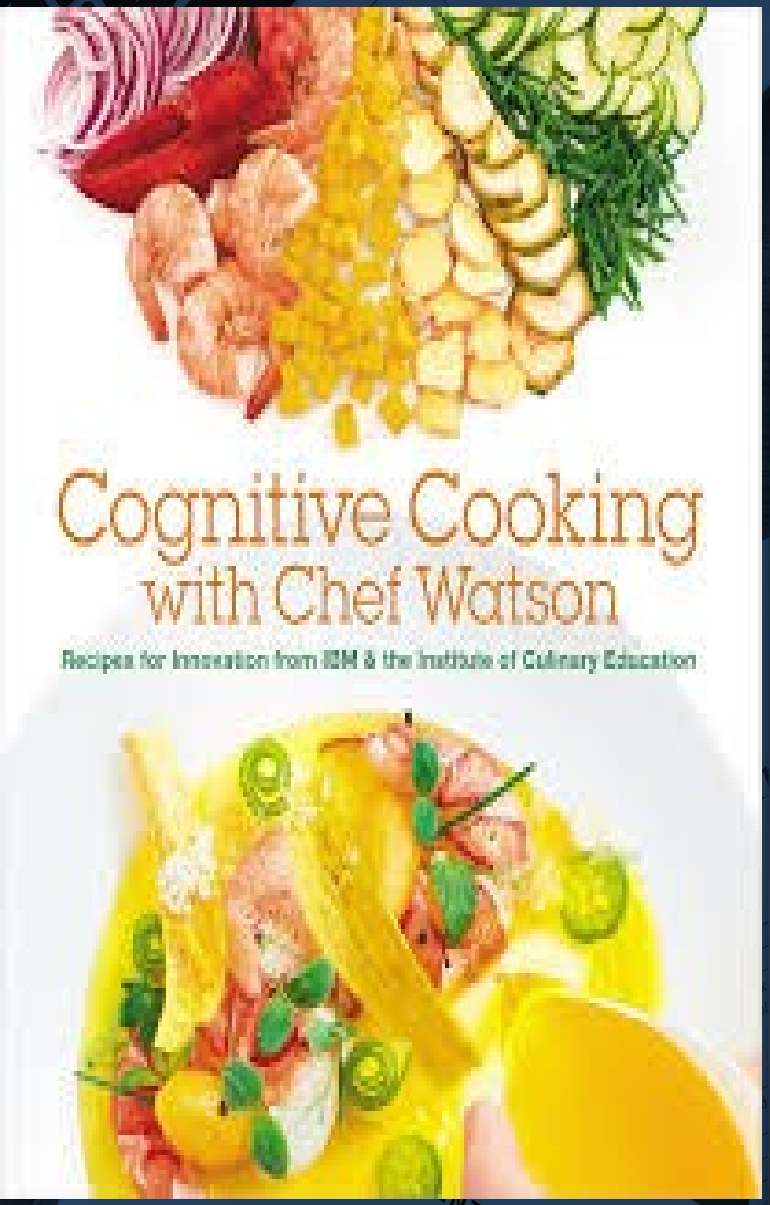
Cognitive Cooking
with Chef Watson
Recipes for Innovation from IBM & the Institute of Culinary Education


EAT
TRENDING
Now Serving

What will you do with Watson?

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