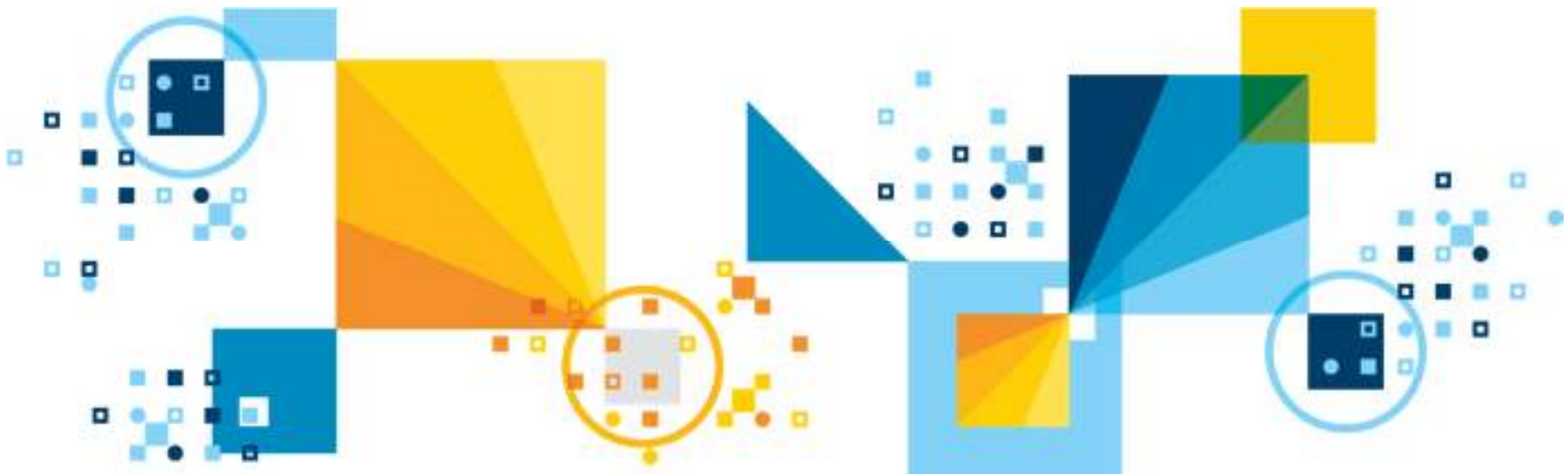


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# Watson, Big Data and cognitive computing



Long Ago, People Danced @ Concerts,  
Now They Video / Click / Share / Tweet...

1990s



2010s



KPCB

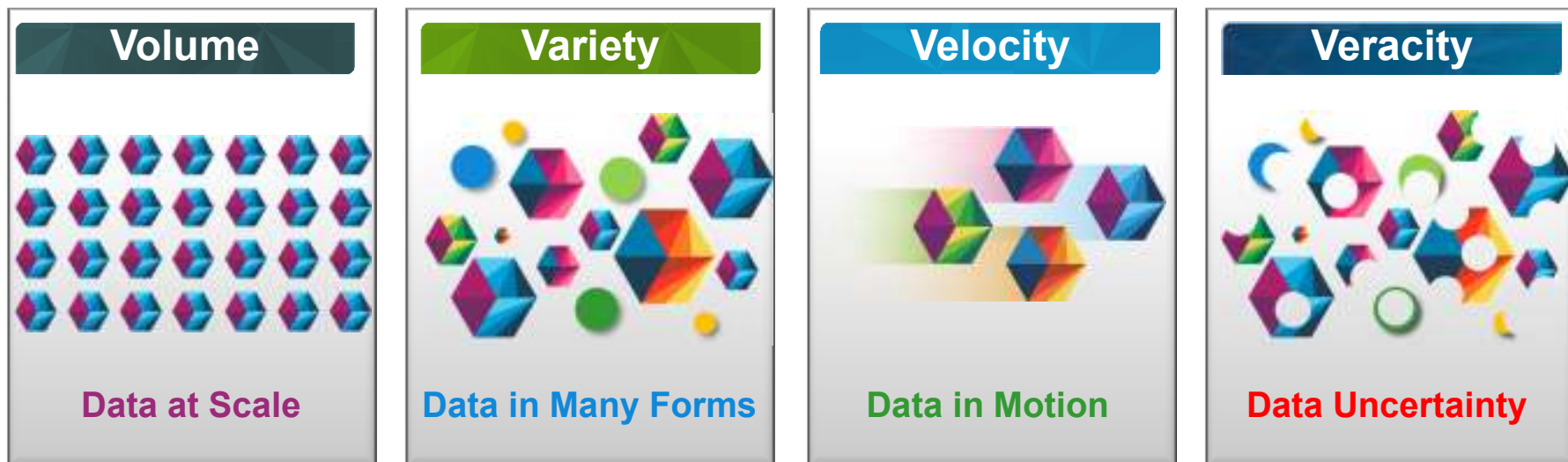
## Welcome to the Big Data Opportunity

“The list of life's certainties has gotten longer.

Along with death and taxes we can now include  
information overload.”



# Big Data Is All Data



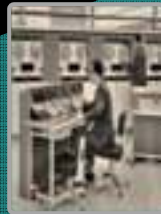
# We Have Entered a New Era of Computing .



Tabulating  
Systems Era



1900



1950



Programmable  
Systems Era



Cognitive Systems Era



...Enabling New Opportunities and Outcomes

2011

# Big Data Analytics And Natural Language Cognitive: The Next Wave of Disruptive Technology



# Principles of Cognitive Computing

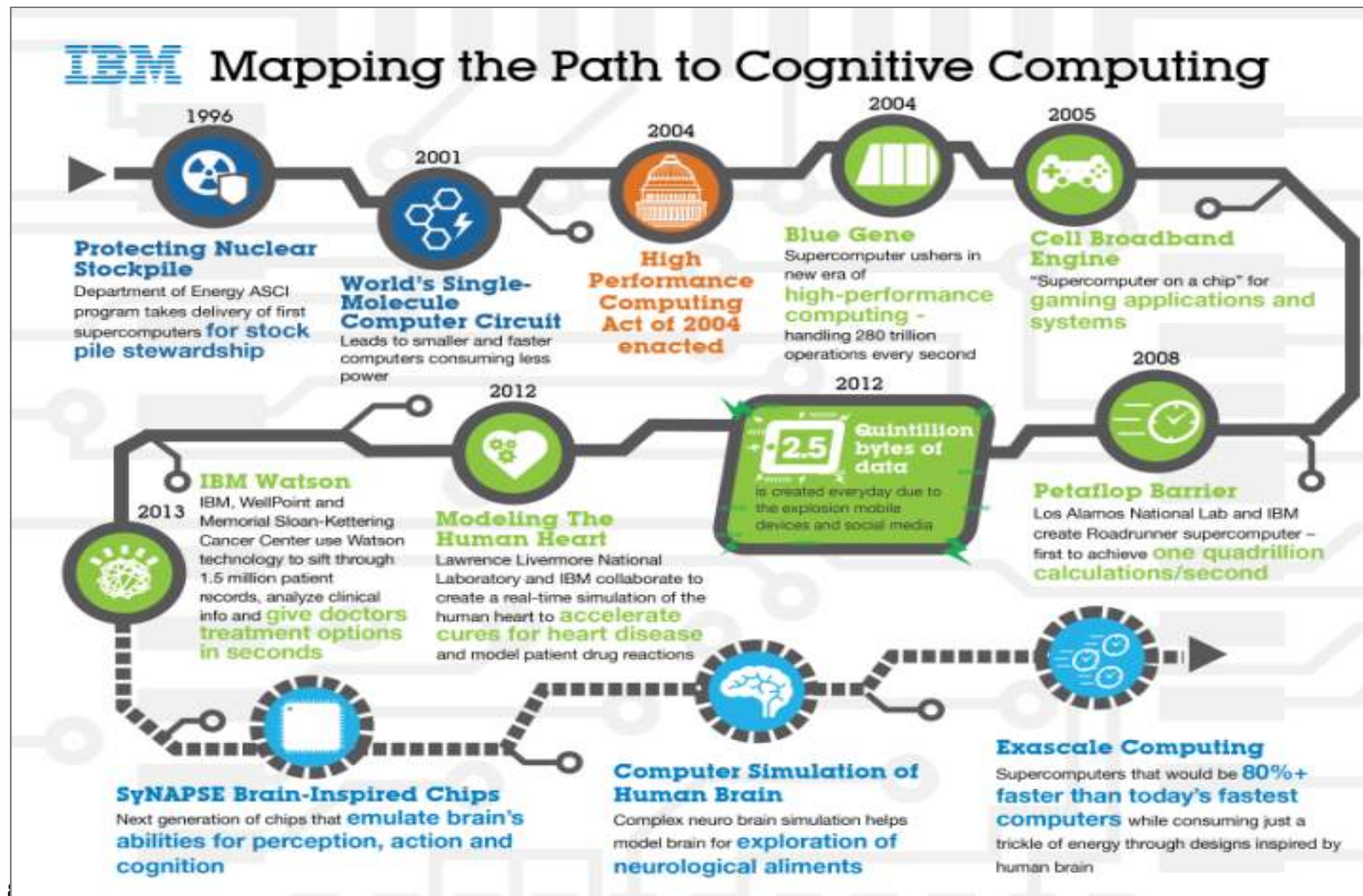
**Cognitive Systems** - *Applying human-like characteristics to conveying and manipulating ideas, that when combined with the inherent strengths of digital computing can address problems with higher accuracy, more resilience, and on a massive scale over very large bodies of information*

## Watson is a Cognitive System

- Analyses human language to identify inferences between text passages
- Can demonstrate human-like accuracy
- Performs at speeds far faster, and at a scale far bigger, than a human



# We are on a journey to Cognitive Computing





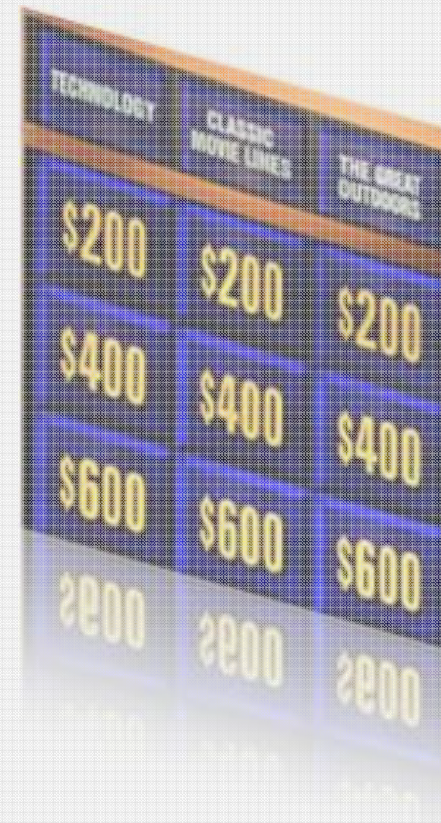
# 2011

## WATSON



## Why We wanted to play Jeopardy

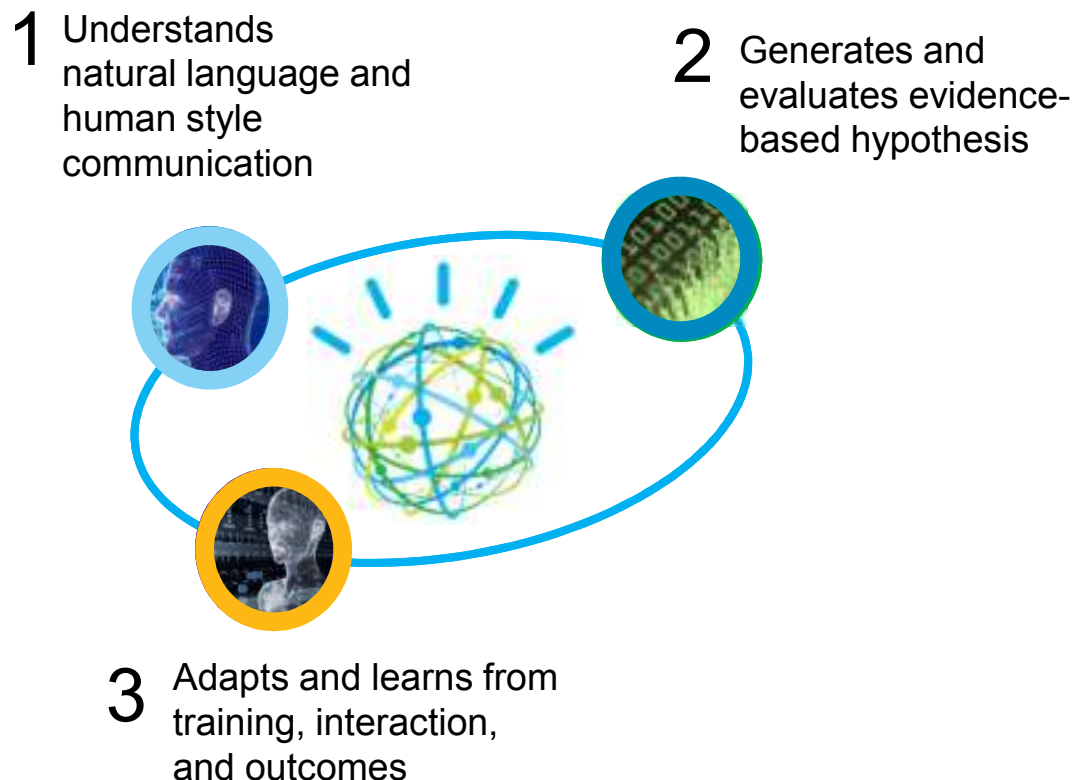
**grand challenge:** can we build a computing system that rivals a human's ability to **quickly answer questions posed in natural language with speed, accuracy and confidence.**



## Watson in action During Jeopardy!



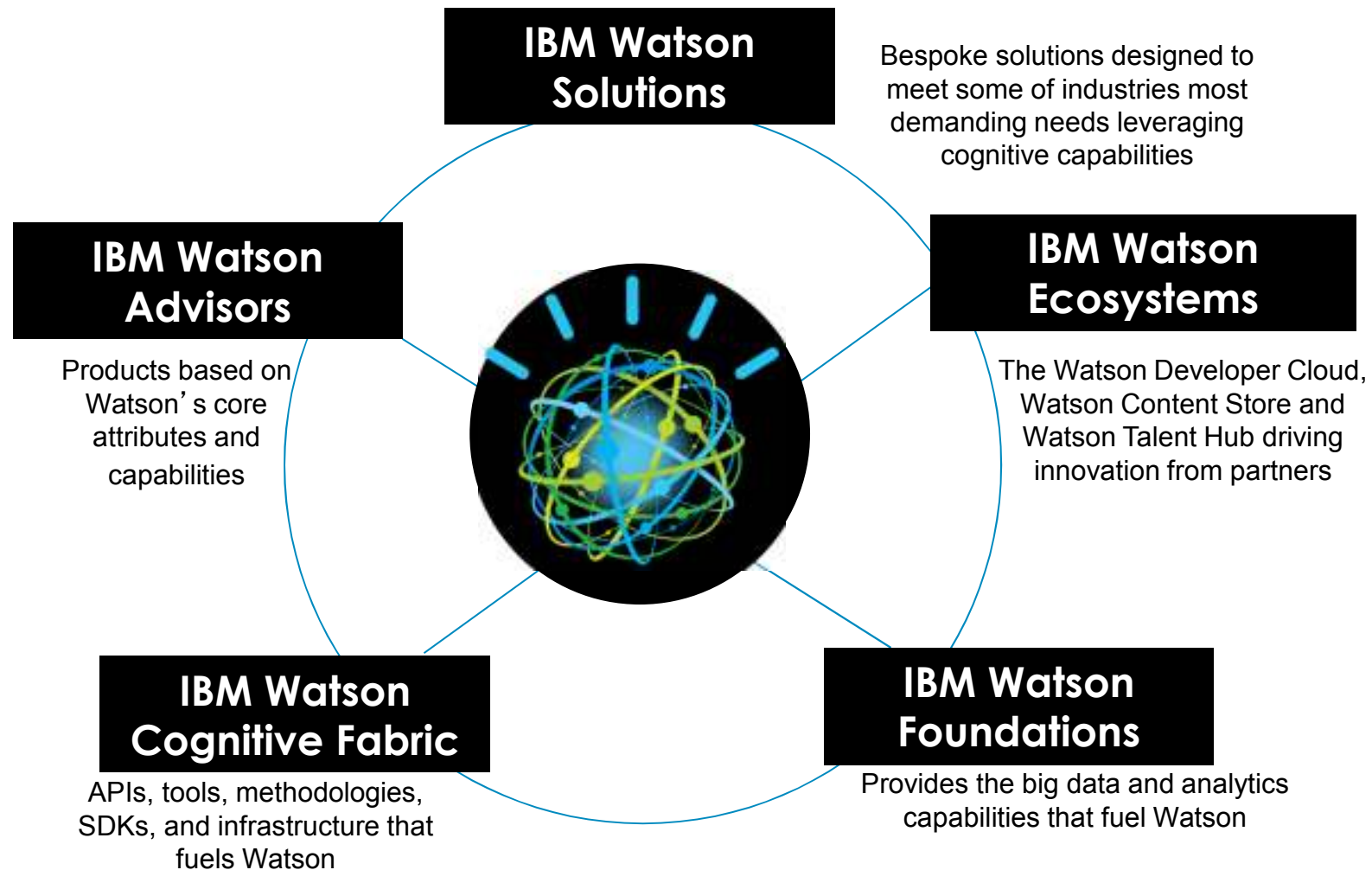
# Watson combines transformational capabilities to deliver a new world experience using cognitive computing



## Watson:

- Understands me
- Engages me
- Learns and improves over time
- Helps me discover
- Establishes trust
- Has endless capacity for insight
- Operates in a timely fashion

# Announcing The Watson family - 2014





## Watson Decision Advisor

Situations in which:

Need more informed, evidence-based decisions

Large body of data is available to draw upon

For example:

Clinical medicine treatment

Mechanical system repair

Airline capacity management



Treatment Plan	Confidence	Patient Preferences Match
<b>Treatment plan 1</b> Systemic Chemotherapy: Carboplatin, Paclitaxel, Docetaxel	<b>95%</b>	Acceptable match with patient preferences
<b>Treatment plan 2</b> Systemic Chemotherapy: Carboplatin, Paclitaxel, Docetaxel	<b>45%</b>	Unacceptable match with patient preferences
<b>Treatment plan 3</b> Systemic Chemotherapy: Docetaxel	<b>8%</b>	Preferred match with patient preferences

## Watson Decision Advisor helping oncologists treat cancer

---

Attacking the cause of  
 $\frac{1}{4}$  of deaths



### **Business problem:**

Need better individualized cancer treatment plans

WellPoint's Interactive Care  
Insights for Oncology  
powered by IBM Watson



### **Solution:**

- Evidence-based suggestions to inform oncologists' decisions
- Analyzes patient data against massive volumes of medical literature
- Evolves with the fast-changing field

# Watson Discovery Advisor

- Helps Researchers discovery new insights by synthesizing information in seconds
- Initial client focus in Pharma, Education and Publishing
- Early Client Participants



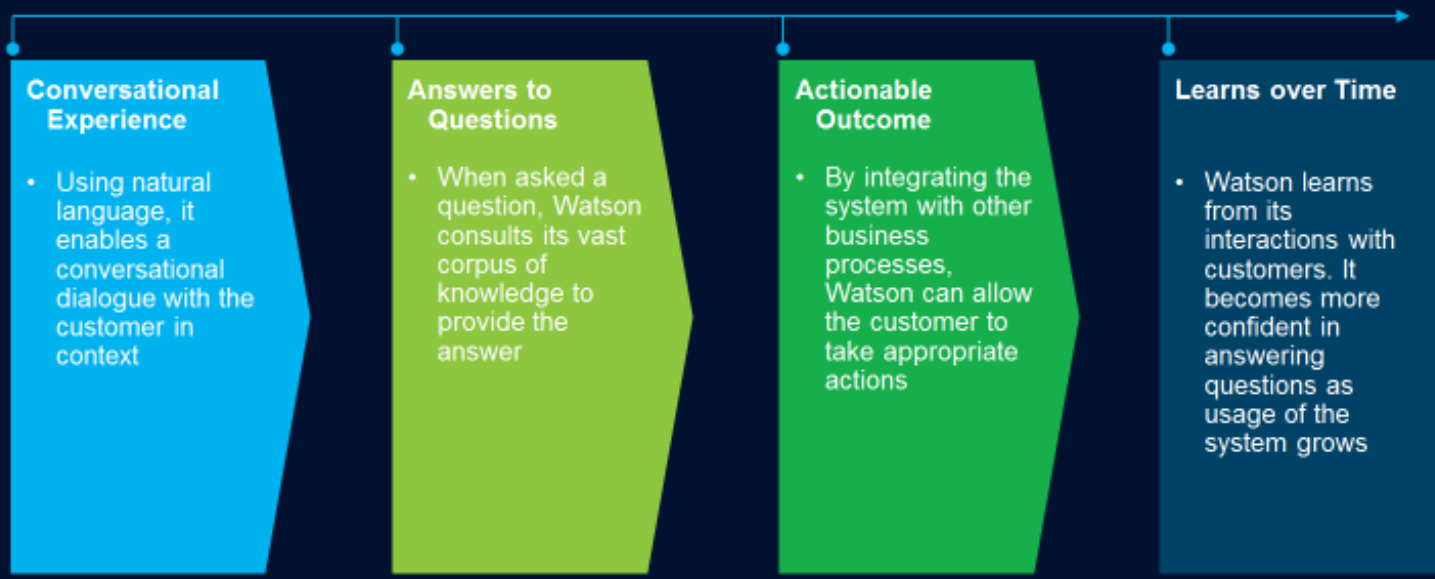
## Watson Engagement Advisor

Helps organizations improve how they answer their clients' needs

- Engage under-engaged clients
- Grow top-line revenue
- Improve bottom line results



### How Watson Engagement Advisor works



# Watson Explorer

- Find, extract and deliver content regardless of format or where the data resides
- Helps improve the return on all types of information including:
  - Structured data in databases and data warehouses
  - Unstructured content such as documents and web pages
  - Semi-structured information such as XML





## Watson Analytics

- Enables anyone to independently discover new patterns to inform better decisions
- Targeted horizontals: Sales and Marketing
- Cloud-based model supports adoption for departmental groups by enabling quick startup and evaluation

In the  
Labs



**Just ask  
a question**



## This will be Watson going for

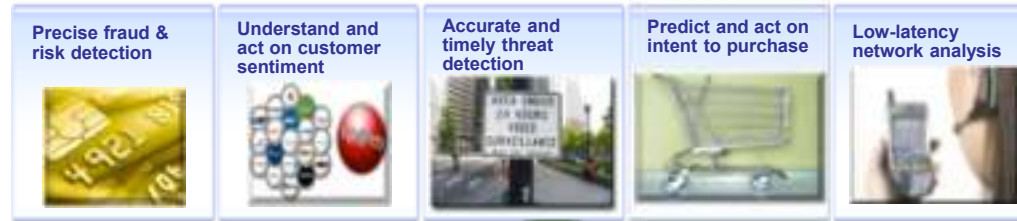
- Understands natural language
  - Generates and evaluates hypotheses
  - Adapts and learns
- Reasons
  - Explores
  - Visualizes
- Sees
  - Hears
  - Experiences



# Watson Debating System



Imagine the possibility of leveraging all of your data assets

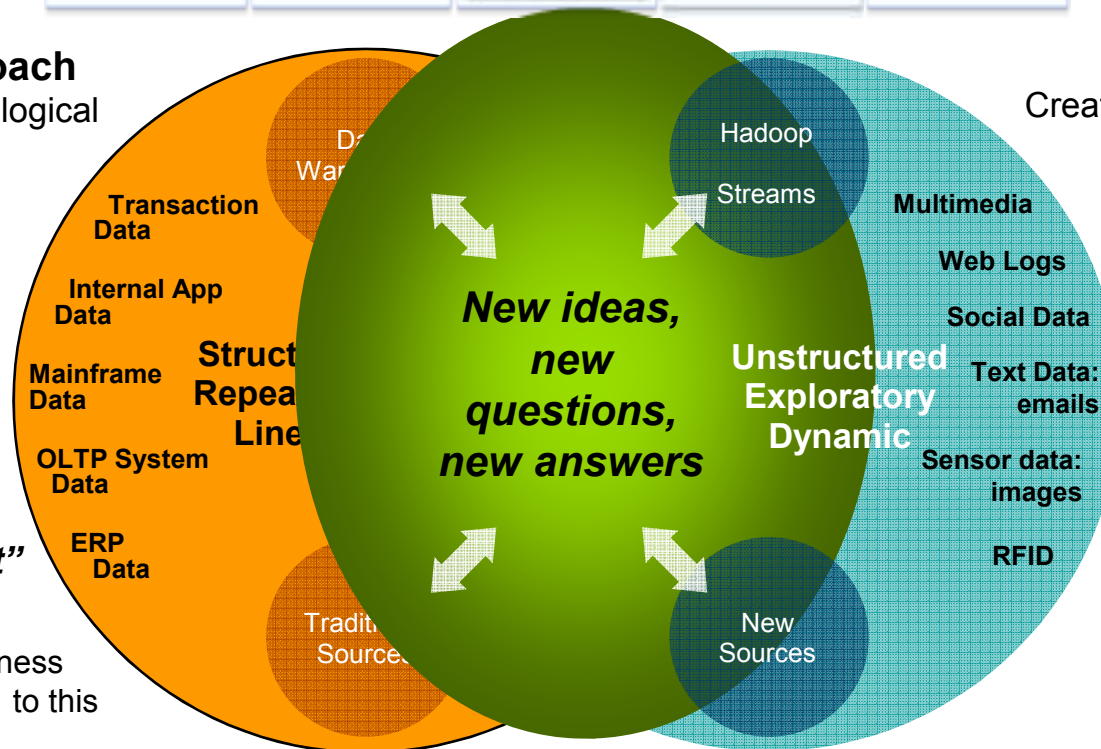


**Traditional Approach**  
Structured, analytical, logical

Data: rich, historical, private, structured customers, history, Transactions, financial..

**The “Circle of Trust”**

Data warehouse & business analytics moving closer to this data



**New Approach**  
Creative, holistic thought, intuition

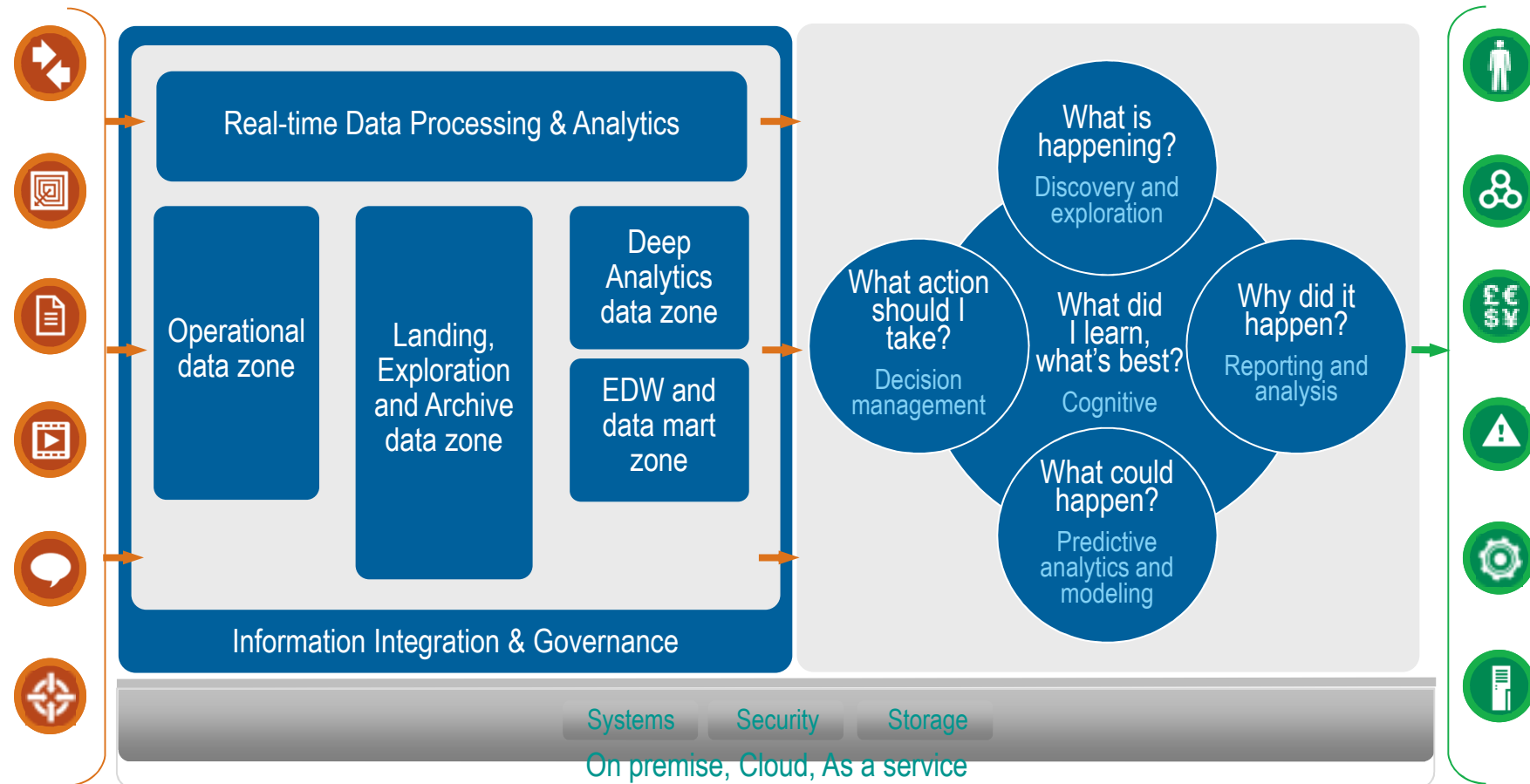
Data: Intimate, unstructured. Social, mobile, GPS, web, photos, video, email, logs

**The real benefit is derived from integration of new data sources with traditional corporate data**

# A New Architectural Approach is Required

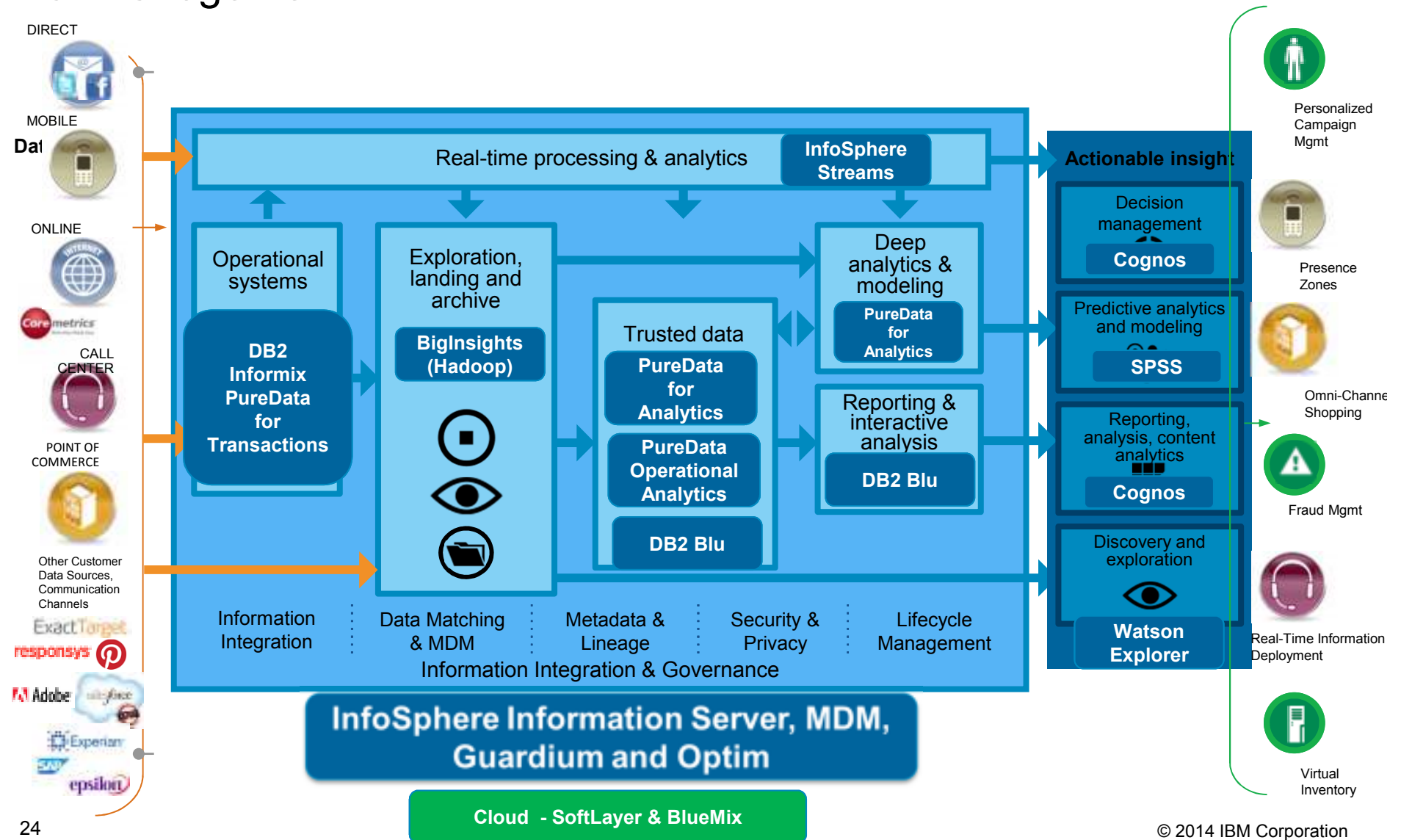
All Data

New/Enhanced Applications





# IBM Big Data Analytics (Watson Foundations) - One architecture that fits together





[www.ibmbigdatahub.com](http://www.ibmbigdatahub.com)  
[www.analyticszone.com](http://www.analyticszone.com)