IBM BusinessConnect

IBM

A new era of thinking.

#BizCoMaroc

IBM Analytics Strategy

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Digital disruption is not just about incremental productivity gains

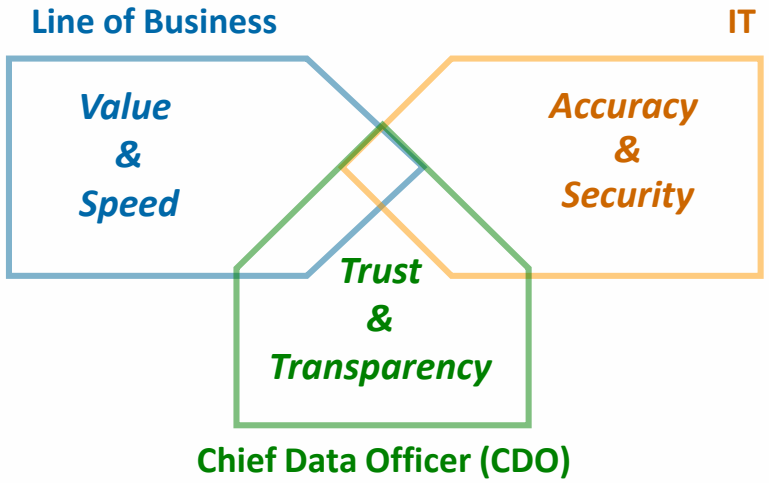
New business models are reshaping processes, companies and industries

- World's largest taxi company owns no taxis
- The world's largest schools have no campus
- Largest accommodation provider owns no real estate
- World's most valuable retailer has no inventory
- Most popular media owner creates no content
- World's largest movie house owns no cinemas
- Largest software vendors do not write the apps

The Analytics Marketplace is Radically Transforming

1. Analytics becomes central & pervasive while data fuels business outcomes
2. Increasing & diversified competitive pressures (technology, data & services)
3. Analytics skills are scarce and expensive & not likely to be fulfilled in the next 5 years

Organizational tensions are fueled by Big Data



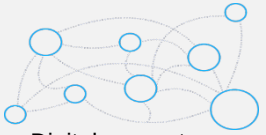
Disruptions have fundamentally changed business practices

Disruption 1

A digitized ecosystem is crucial for business success

New business models

Digital ubiquity



Digital ecosystem

Disruption 2

The upsurge of big data and analytics technology has been rapid and radical

Analytics & cognitive

Cloud

Social

The Internet of Things

Disruption 3

Organizations that deploy the right skills can leverage analytics to *know* instead of merely to *speculate*

Traditional transactional data

Contextual data

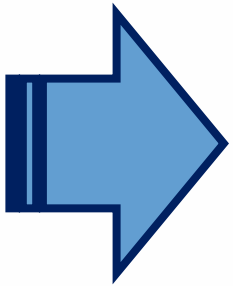
The rapid expansion of the use of advanced analytics

Breadth of analytic use,
as reported by respondents:

In 2014,

10%

of organizations were using advanced analytics **in three or more** functional areas of their business



In 2015,

71%

of organizations are using advanced analytics in **three or more** functional areas of their business

and

33%

of organizations are using advanced analytics in **six or more** functional areas of their business

Advanced analytics are defined as the extensive use of predictive, prescriptive or cognitive analytics within a business function

The Cognitive Era

Data is transforming industries and professions.

The world is being reinvented in code.

In the Cognitive Era digital intelligence meets digital business.

Design Thinking

Analytics strategic imperatives

Leveraging the new mix of data

Developers, platforms, infrastructures & Users

Solutions & smarter capabilities

Data & Internet of Things

Agile integration & governance of internal, external & machine-based data

Coding & Self-Service

Analytics for everyone on an open, fluid & unified architecture

Solutions & Cognitive

Accelerate outcomes & create deeper business relevance through digital intelligence


IBM Design


Business Analytics Mood Board
Keywords
IBM BPM cloud

We have studios & garages all around the world

Leveraging the new mix of data.

Agile integration & governance of internal, external & machine-based data.

Data flows from every device, replacing guessing and approximations with precise information. Yet 80% of this data is unstructured; therefore, invisible to computers and of limited use to business.

> 2.5PB

of unstructured data from 1 million customers is stored by Walmart every hour

0.5%

of world's data being analyzed

HEALTHCARE DATA

99% growth by 2017

88% unstructured

Healthcare data comes from sources such as:

Patient Sensors | Electronic Medical Records | Test Results

GOVERNMENT & EDUCATION DATA

94% growth by 2017

84% unstructured

Government & education data comes from sources such as:

Vehicle Fleet Sensors | Traffic Sensors | Student Evaluations

UTILITIES DATA

93% growth by 2017

84% unstructured

Utilties data comes from sources such as:

Utility Sensors | Employee Sensors | Location Data

MEDIA DATA

97% growth by 2017

82% unstructured

Media data comes from sources such as:

Video and Film | Images | Audio

Mueller, Inc. uses enhanced cognitive analytics to gain a competitive edge by finding valuable answers to questions not yet asked

Generates new leads
through enhanced marketing insight by recognizing patterns in customer call center data

Reduces time
spent on manual processes by creating new reports in the most effective format given the nature of the data

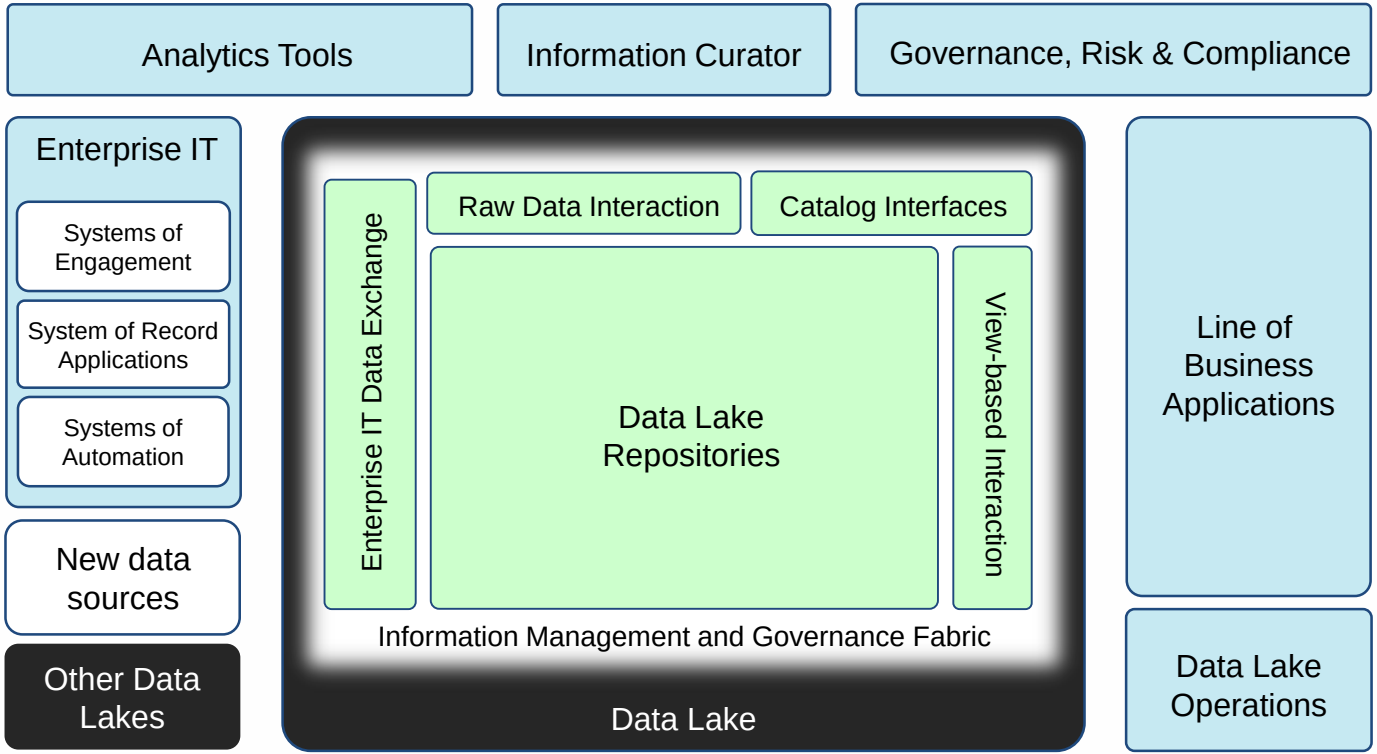
90% improvement
on time to value on processing new data (including from drones)

The smarter solution:

- Cognitive analytics solution analyzes data from various sources within the company for trends
- Now line-of-business (LOB) leaders can load structured and unstructured data into the platform.
- The solution highlights data patterns answering questions the company had not yet considered
- New marketing opportunities, enhanced safety protocols and supply chain improvements.

The data lake – harnessing the new data mix

Enabling an organization to operate as one for all platforms, functions and clients to have an agile and self-service operating model with trust and confidence across traditional and new sources of data.



Expanding organizations data universe

A 3ºc difference in Texas can equate to $24 million more in electricity spending per day…

IBM

\+ The Weather Company

UNDER ARMOUR

Medtronic

Johnson & Johnson

3.5B

There are about 3.5B Google searches each day.

Google

The Weather Company

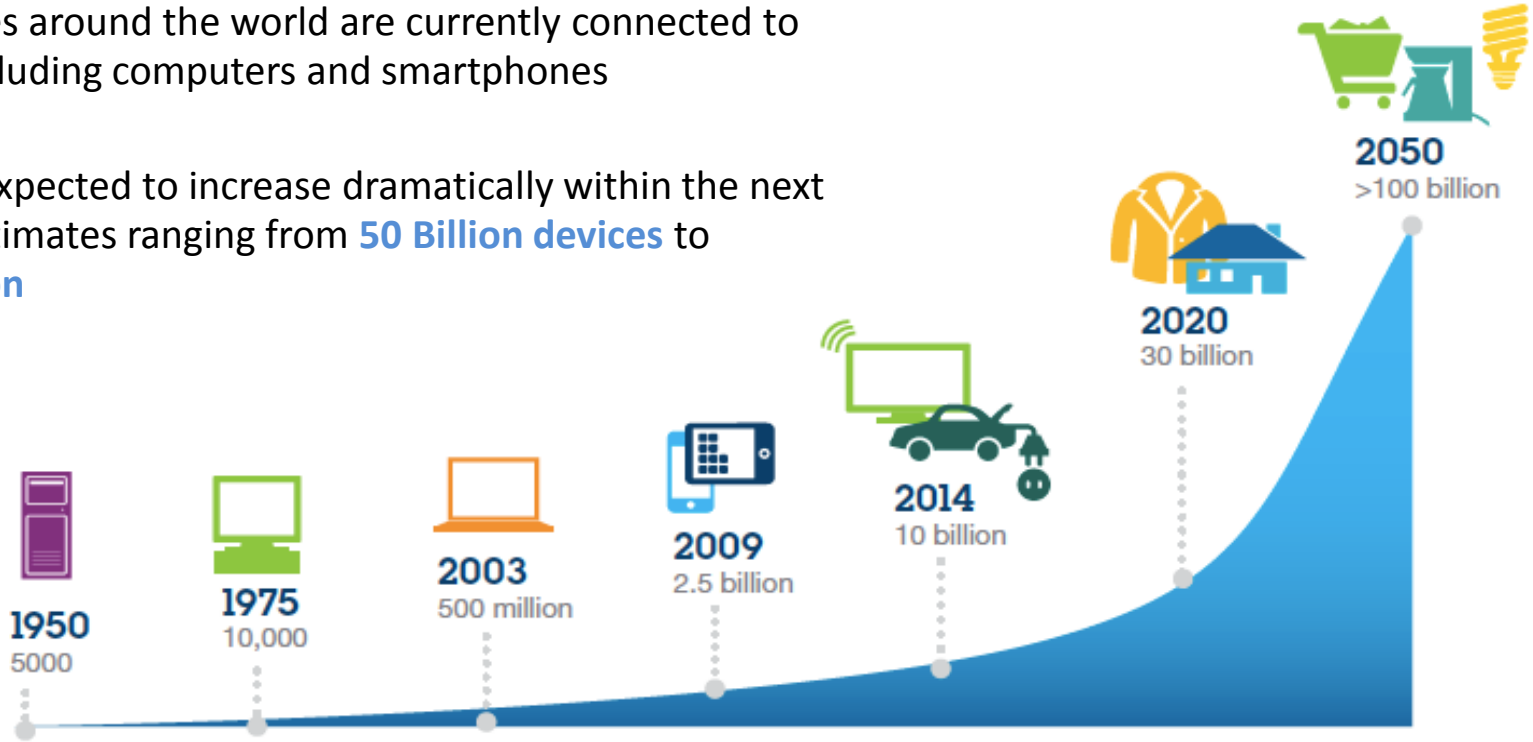
15B

Weather averages 15B forecast queries daily.

The 4th industrial revolution

10 billion devices around the world are currently connected to the Internet, including computers and smartphones

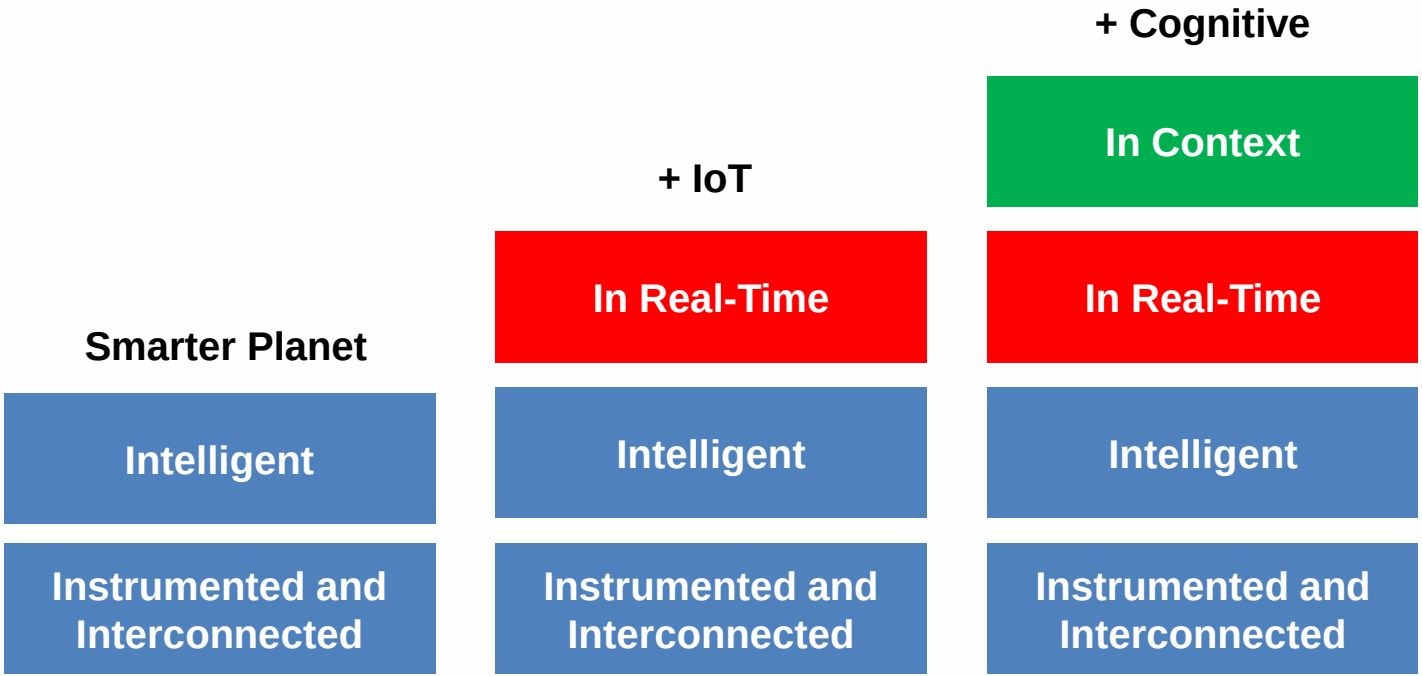
The number is expected to increase dramatically within the next decade, with estimates ranging from **50 Billion devices** to reaching **1 trillion**



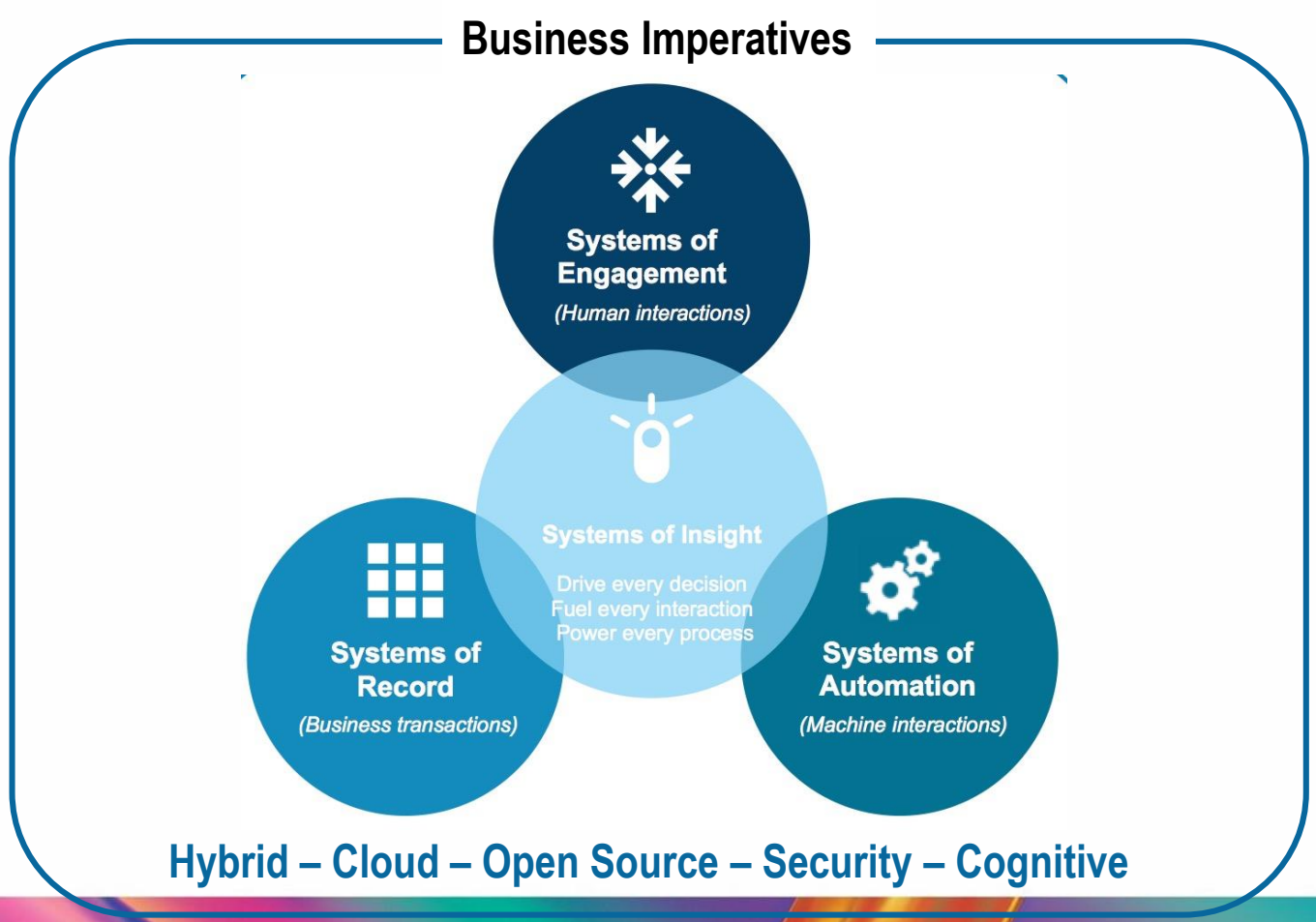
The Internet of Things has the potential to create economic impact ***of $2.7 trillion to $6.2 trillion*** annually by 2025

Analytics in context

IoT (Internet of Things) is one technology that is fundamentally changing how decisions are made; this has been a major focus for IBM since the launch of the "Smarter Planet".

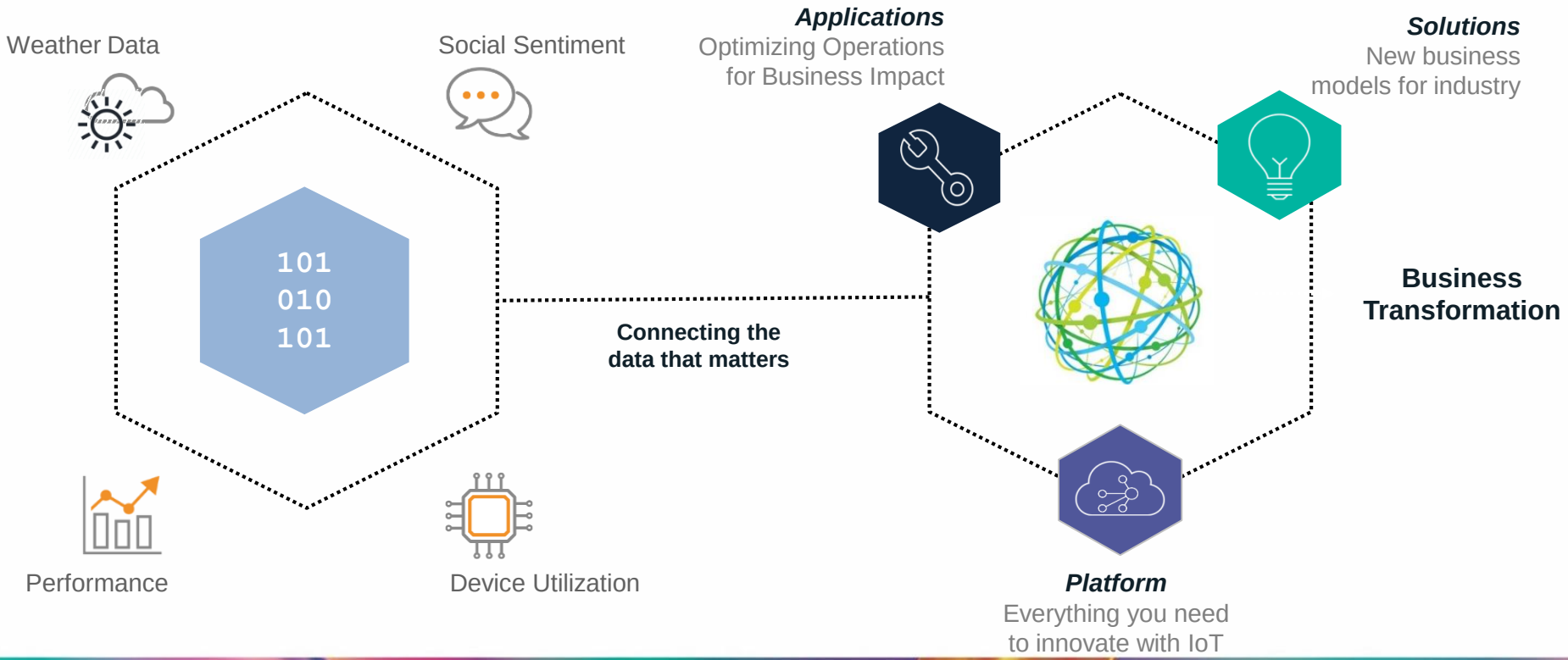


Ubiquitous computing: systems convergence



Leveraging all data through digital intelligence

Start by deploying a highly secure, scalable, and open platform that lets you start small, and grow quickly



Developers, platforms, infrastructure & the citizen analyst

Analytics for everyone on an open, fluid & unified architecture.

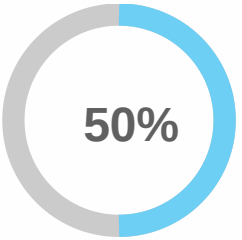
The world is being rewritten in software code, and cloud is the platform on which the new digital builders—from developers to business professionals—are reimagining everything from banking to retail to healthcare.

100,000,000
lines of code in a new car

5,000,000
lines of code in smart appliances

1,200,000
lines of code in a smartphone

80,000
lines of code in a pacemaker



of **B2B collaboration** will take place through **web APIs** next year.

Smart TVs represented 27% of all TV sales in 2012; by 2018, they will represent 82%.

Sensors for **industrial asset monitoring and management** will grow from just over 15M units in 2014 to over 40M units in 2018

By 2020, there will be 925M **smart meters** installed worldwide, more than double the 400M in 2014.

Smart LED lighting will grow from 6M units in 2015 to 570M units in 2020, used for safety communication, health, pollution and personalized services.

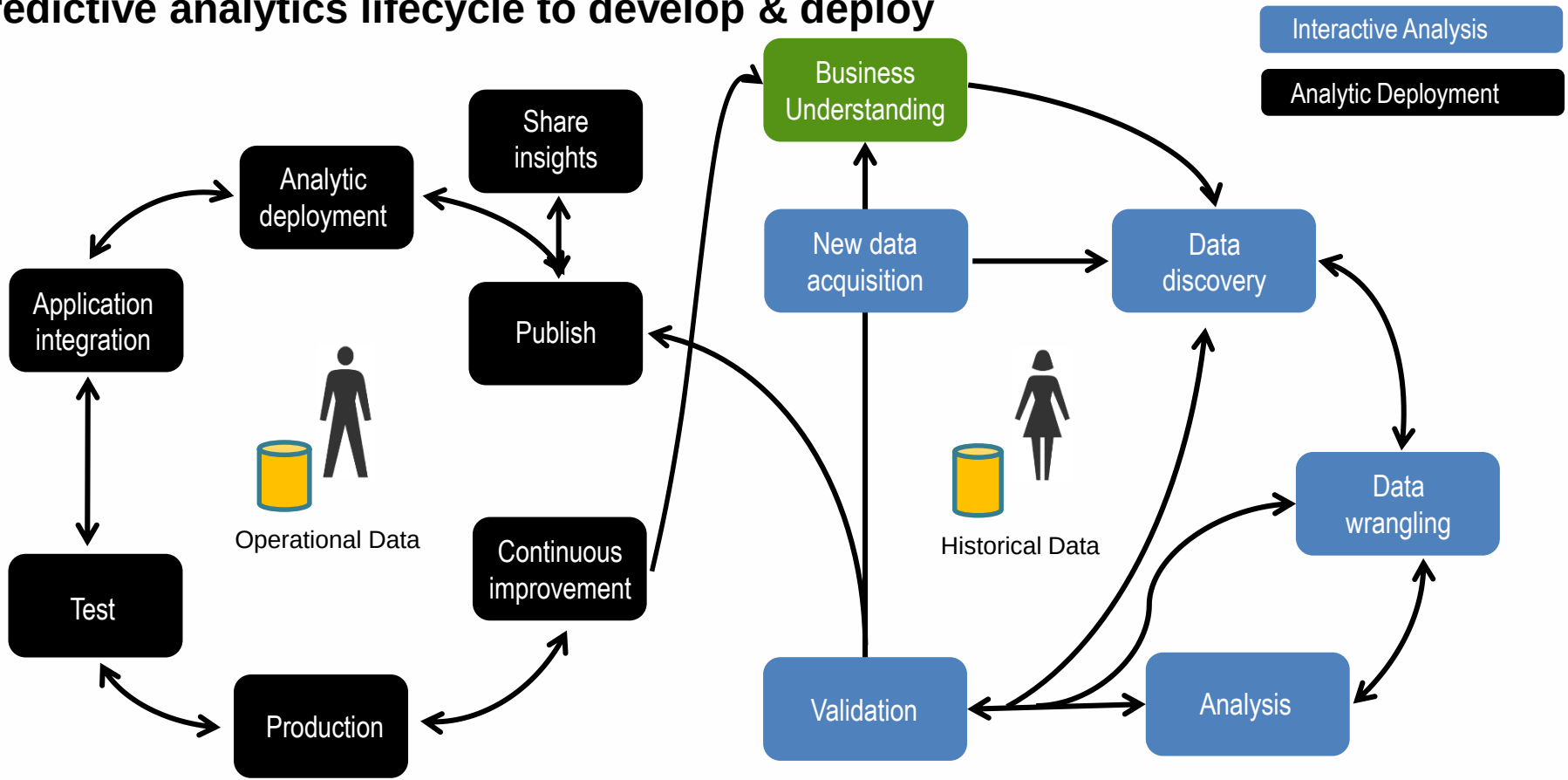
Code Tools
Analytics Data APIs

Revenues for **smart grid sensors** will grow ten-fold from 2014 to 2021.

By 2017, there will be 1B connected things in **smart homes**, including appliances, smoke detectors and cameras.

Smart traffic sensors and other devices installed in smart cities will grow from 237M units in 2015 to 371M in 2017.

Predictive analytics lifecycle to develop & deploy



Self-service analytics

From a set of powerful and open analytical components to build, complement, or enhance your own solutions to an accessible and unified cloud-based analytical experience for all users, novice and experts alike.

Integrated security

Assembly required

Ready-to-analyze

ARM

box Spark

IBM Bluemix

Analytics Capability spectrum

Cloud / Hybrid provisioning

Components ecosystem and the APIs economy

Bluemix is an **open-standard**, cloud-based **platform** for **building**, **managing**, and **running applications of all types** (web, mobile, big data, new smart devices, and so on).

Go Live in Seconds
The developer can choose any language runtime or bring their own. Zero to production in one command.

APIs and Services
A catalog of IBM, third party, and open source API services allow the developer to stitch an application together in minutes.

On-Prem Integration
Build hybrid environments. Connect to on-premises assets plus other public and private clouds.

DevOps
Development, monitoring, deployment, and logging tools allow the developer to run the entire application.

Layered Security
IBM secures the platform and infrastructure and provides you with the tools to secure your apps.

Flexible Pricing
Try services for free and pay only for what you use. Pay as you go and subscription models offer choice and flexibility.

Componentizing Watson in cognitive services

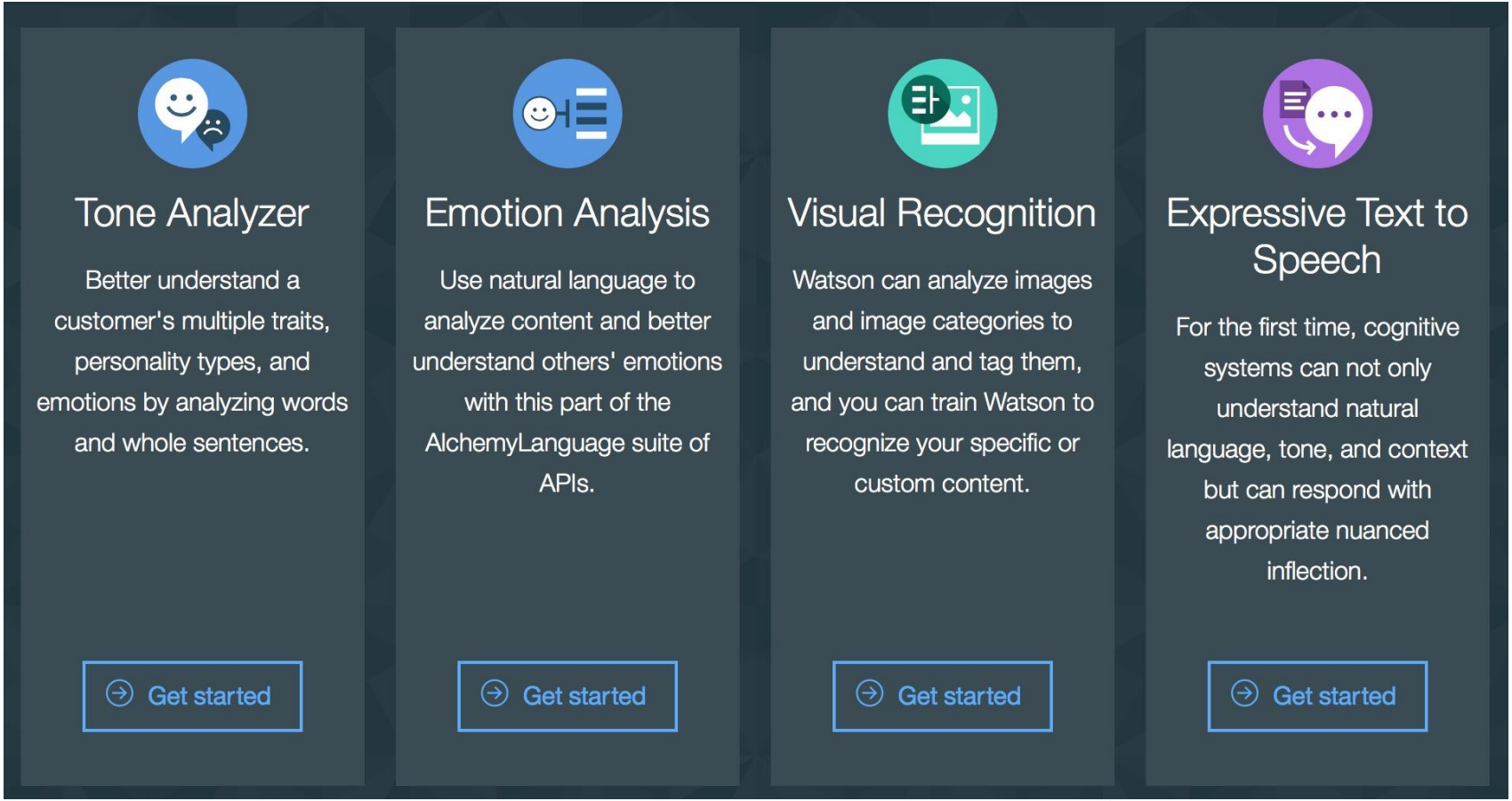
The Waston that competed on *Jeopardy!* in **2011** comprised what is now a single API—**Q&A**—built on **five underlying technologies.**

Since then, Watson has grown to a family of **28 APIs.**

By the end of 2016, there will be nearly **50 Watson APIs**—with more added every year.

- **Natural Language Processing**
- **Machine Learning**
- **Question Analysis**
- **Feature Engineering**
- **Ontology Analysis**

Cognitive elements dealing with emotions



A future-proof foundation for innovation

Embrace

>Integrates data, apps & services: made interoperable through open standards

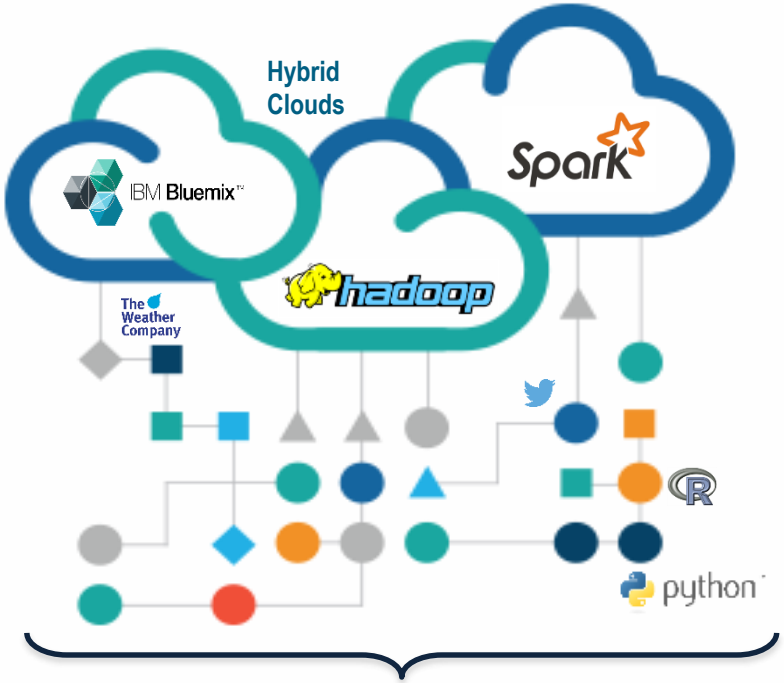
Extend

>Flexible choice of delivery models: public cloud, private cloud, & traditional IT

Facilitate

>Simplifies the composition, orchestration & management of workloads while acting as one dynamically managed, secure environment

…while supporting the community

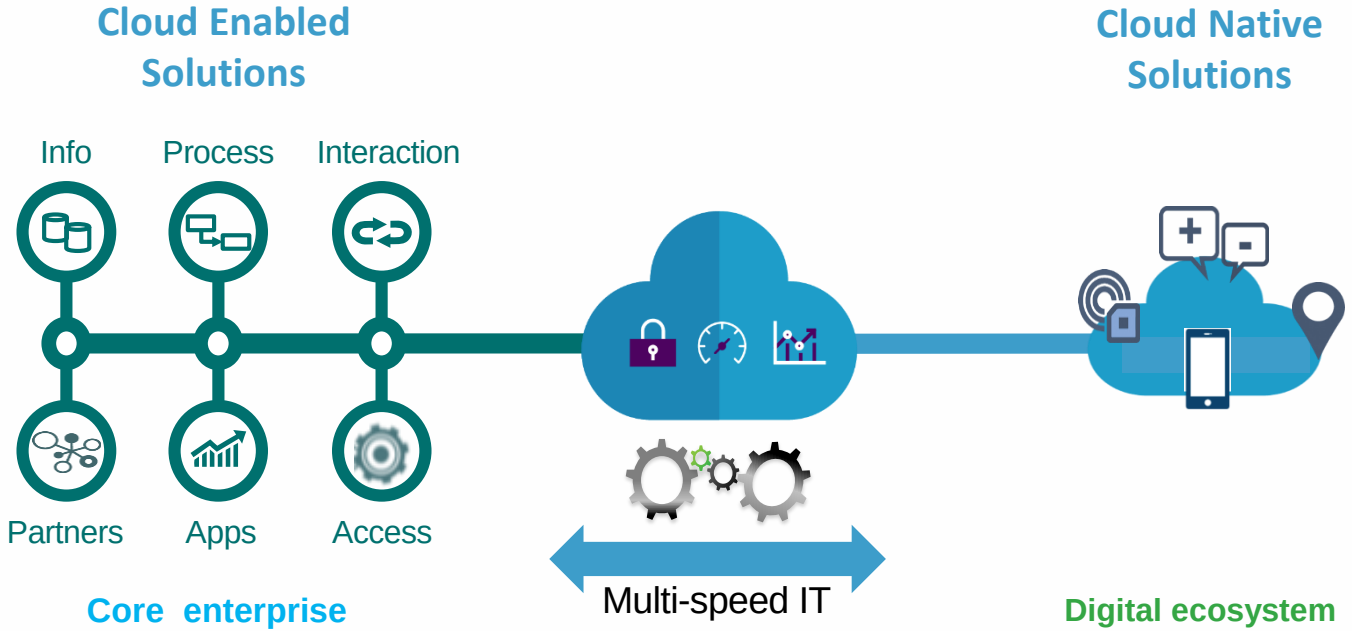


Outcomes

No lock-in, no rip and replace...

...and full benefit of open source

A Hybrid Cloud Enables Multi-Speed IT



- Composable environments to rapidly build and deploy new cloud-native and mobile solutions
- Flexibility to move apps to the cloud as-is or build cloud native solutions
- Leverage existing investments by connecting them to cloud services

Blockchain: The Hyperledger project

To implement consensus based device coordination across a global network of billions of interacting devices, we chose the blockchain technology platform

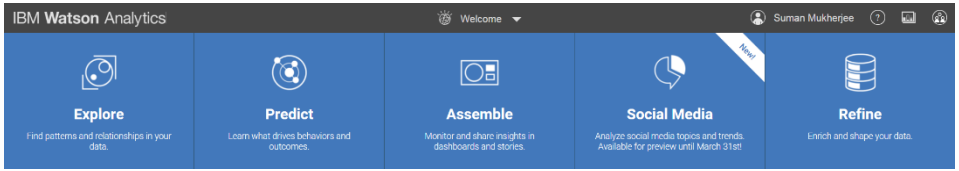
- No single point of failure
- No need to trust all the participants
- All participants can see all the transactions
- Many participants verify the work of each transaction
- Transactions can be confirmed by **distributed consensus**
- Multiple ecosystem participants can check on each transaction: **redundant verification**

- Linux Foundation - announced 17th December 2015
- New Hyperledger project to transform the way business transactions are conducted around the world

The democratization of advanced analytics

IBM Watson Analytics

…self-sufficiency for business users and experts alike



- A **free unified experience** in the cloud
- Putting the power to **explore, predict,** and **decide** into the hands of every business user
- **Guided discovery** and **data science** capabilities **embedded** in the product so you can
- Embedded cloud services that make it easy to **refine, access, and use new and existing sources of data**

Analytic solutions & smarter capabilities.

Accelerate outcomes, build learning systems & create deeper business relevance.

Cognitive systems can understand the world through sensing and interaction, **reason** using hypotheses and arguments and **learn** from experts and through data. Watson is the most advanced such system.

Today, businesses in

36

countries across.

17

industries are applying cognitive technologies.

78%

of **business and IT executives** believe that successful business will **manage employees** alongside **intelligent machines.**

There are

350+

Watson ecosystem partner companies, with

100

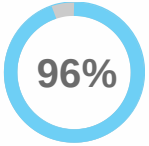
of those have taken their product to market.

On average there are

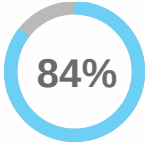
1.3B

Watson API calls a month and growing.

Among C-Suite executives familiar with cognitive computing:

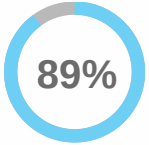


in **insurance** intend to invest in cognitive capabilities.



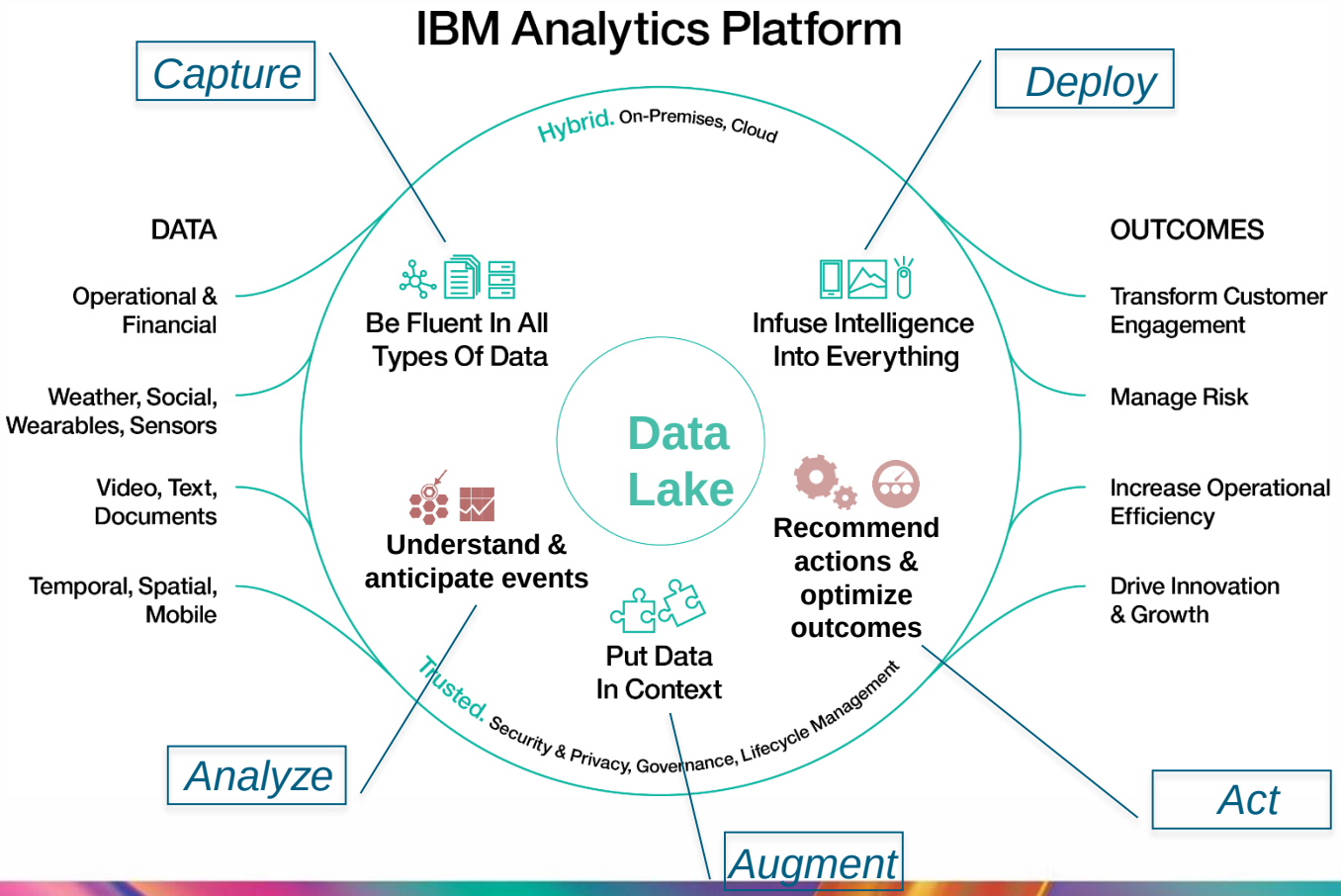
in **healthcare** believe it will play a disruptive role in the industry, and 60% believe they lack the skilled professionals and technical experience to achieve it.

in **retail** intend to invest in cognitive capabilities.

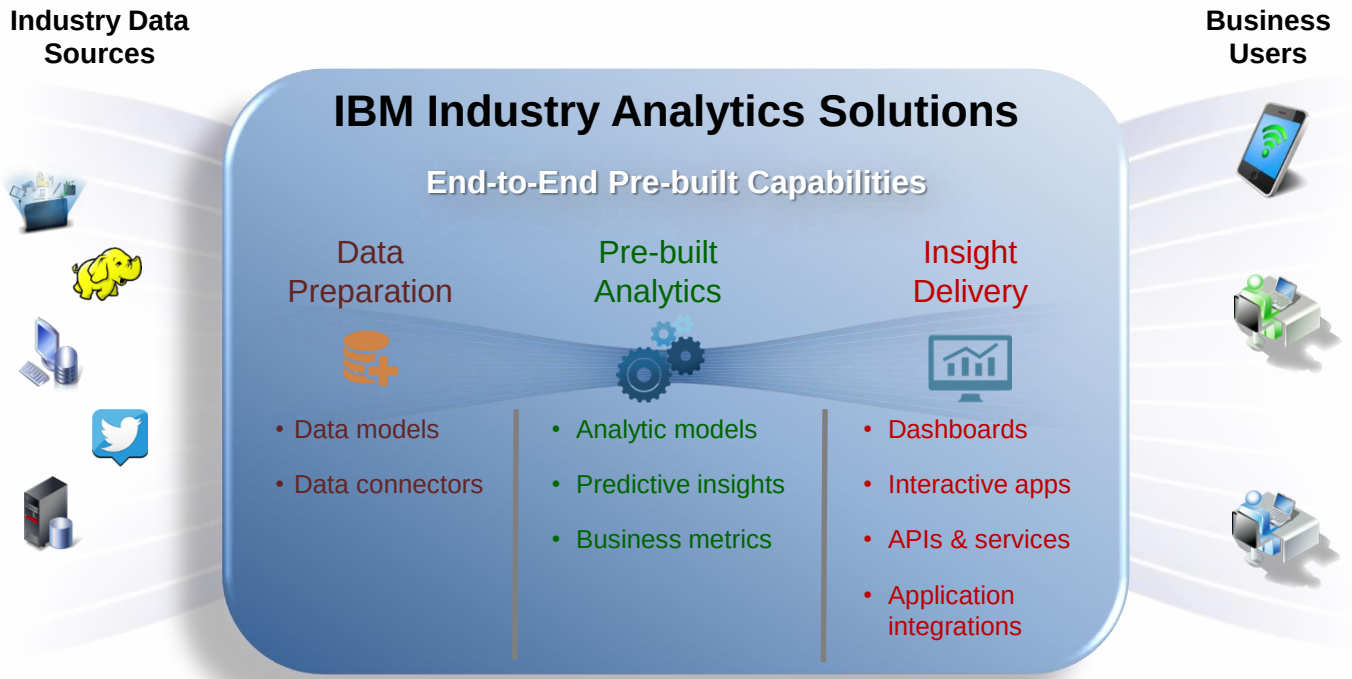


in **telecommunications** believe it will have a critical impact on the future of their business.

A platform focused on actionable



A new breed of solution delivering immediate value



WHAT WE ARE DELIVERING

IoT is Driving Digital Disruption Into the Physical World

Accelerating advancements in technology…

- Advanced Analytics
- Product Lifecycle Mgmt
- Cloud Computing
- Pervasive Connectivity
- Embedded Sensors

Are transforming every part of business…

Improving Operations and Lowering Costs

- Predictive maintenance
- Analyze and reduce risk
- Factory automation

Creating New Products and Business Models

- Smarter, safer cars
- Health and fitness
- Home and building automation

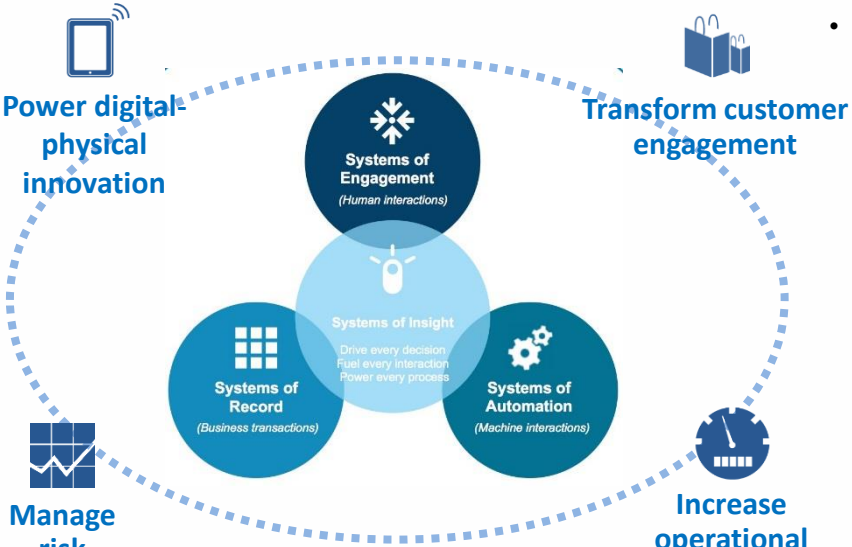
Driving Engagement and Customer Experience

- Smarter, more profitable retail
- Engaged events and venues
- Apps that link the digital and physical world around a brand

Infusing analytics everywhere, driving insight to outcome

- **100%** prediction of aircraft-on-the-ground events for high-risk engines
- **97%** accuracy in predicting engine events that lead to airline disruption

- **270%** increase in cross-sales of accessory products
- **50%** increase in effectiveness of retention campaigns



- **40%** increase in identifying suspicious transactions
- **80%** increase in productivity
- **200%** increase in reporting capabilities

- Reduces energy costs by up to **20%**
- Saves up to **$25M** per year keeping refrigerators at optimal temperatures
- **Remote diagnosis** of refrigerators to streamline labor efforts

Honda - Real-Time Racing Decisions for Formula1 Drivers

- As a race is taking place, data is streamed to the cloud and shared with the pit crew teams equipped with tablets and mobile technology.

- The data is analyzed in real-time by researchers at HRD Sakura, Honda's R&D facility in Japan and the McLaren Honda F1 team in the United Kingdom.

- Transmitting this analysis using streaming technology, as the race is taking place allows for adjustments to basic metrics such as temperature, pressure and power levels to improve fuel efficiency, speed adjustments, vehicle's overall performance and optimize pit stops

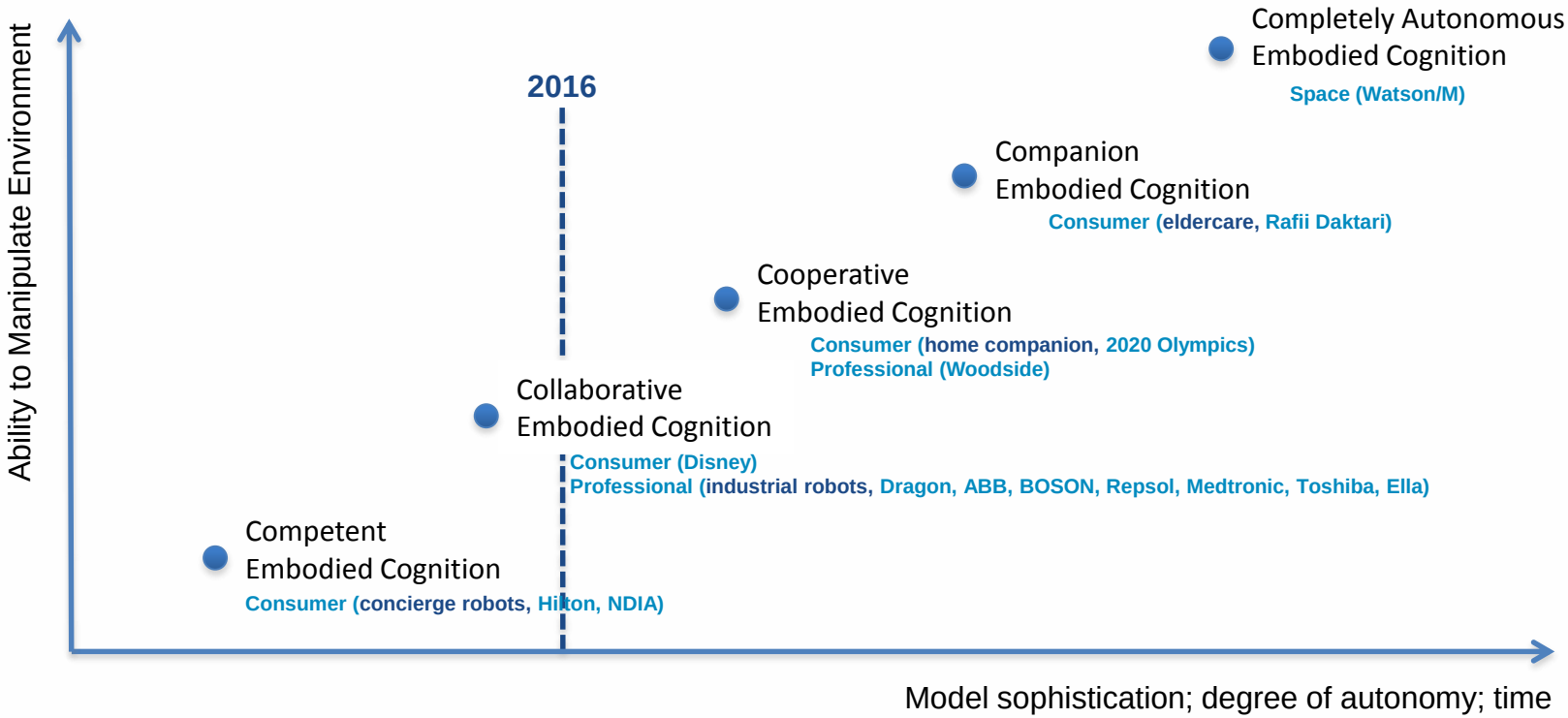
Basic cognitive capabilities

Watson can communicate	Interact/dialogue in natural language
Watson can understand	Reason leveraging unstructured data
Watson can learn	Educated vs. trained/programmed

The elements of cognitive solutions

- The right platform – (collect data, leverage analytics, adapt, learn & act)
- The right data – (relevant, curated, augmented, in all variety)
- The right ecosystems – (partners for expertise and industry knowledge + APIs)

The evolution of cognitive use cases



An analytics journey – from descriptive to cognitive

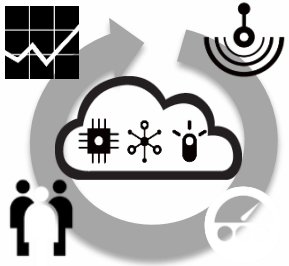
… Optimizing operational assets

Descriptive

- Gather incident records
- Chart incidents data
- Share incident reports

Predictive

- Gather incidents data
- Unveil incidents cause variables
- Predict upcoming incidents



Cognitive

- Monitor incidents reports & real-time engine data
- Understand systems & team interactions
- Build preventive repair plans & learn from engineers

Prescriptive

- Gather incidents forecasts
- Gather repair team plans & parts
- Optimize team schedules & parts availability

Enabling smarter outcomes

The numbers speak for themselves…

$13 back for every dollar spent[1]

250% is the ROI of solutions that incorporate predictive analytics[2]

7.6% boost to customer lifetime value for firms using engagement analytics[3]

69% of front runners created a significant positive impact on business outcomes using data and analytics in the past three years[4]

$13 : 1

IBM…

… has **15,000** analytics consultants and over 400 mathematicians

… has invested more than **$26 billion** in big data and analytics capabilities,

… acquired **30+** companies,

… built **9** Analytics Solution Centers

… supports an ecosystem of more than **6,000** business partners

… generates an average of more than **500** analytics patents every year

… embeds experience from **50,000** engagements within its analytics solutions

How we deliver insights to clients

Outcomes

Transform

Access all data in real-time	*Integrate physical and digital*	*Optimize operations*	*Secure and protect*	*Speed to action*

Enable

The Internet of everything	**Analytics for everyone**	**Predictive and actionable insight**	**Ubiquitous Delivery**	**Open Innovation**

Advanced Analytics emerging themes

- Fast, exogenous & right data

  Trustworthy insights anywhere, at any speed, with any data, at any scale

- The next generation of Systems of Insight

  Insights on a need-to-know basis

- The next frontier in people analytics

  (customer/citizen/patient/student/…)

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