Cognitive Solutions
Dr. John E. Kelly III

Senior Vice President,
Cognitive Solutions and Research
Cognitive Solutions

Transformation Progress
Created integrated units with industry orientation
• Analytics, Security, Commerce

Expanded Watson Platform (2-3x)
• API’s, languages, clients, partners, global footprint

Built Watson Health Platform
• 4 acquisitions, 30+ partners

Established Watson IoT Platform
• Acquired The Weather Company

$17.8B
2015 Revenue

$7.2B
2015 Pre-tax Income
The way to find information

The way to make better decisions
~$12B
For a deep water project in the Gulf of Mexico

>$1T
Inaccurate retail sales forecasting

~$2T
Wasteful healthcare spend
Cognitive opens new opportunities on top of traditional IT

Opportunity for decision-making support 2025

Traditional global IT spend 2016

~$2T

~$1.2T

Decision Support

Productivity

Data center systems
Client relationship management
Process automation
Enterprise resource planning

Note 1
Cognitive is having an impact across industries
Innovation platform for Cognitive Business

Ecosystem and partnerships

Industry solutions

Client solutions

IBM Provided Data

Publicly Sourced Data

Partner Provided Data

Private Client Data

Public Filings
Medical Journals
U.S. Geological Survey
Patents

Apple
Twitter

Johnson & Johnson
Medtronic
Thomson Reuters
Under Armour

Representative sample of data
Cognitive solutions bring about new revenue streams

<table>
<thead>
<tr>
<th>Data access / Pay-per-Insight</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subscription (number of users)</td>
</tr>
<tr>
<td>Shared value with partners</td>
</tr>
<tr>
<td>Revenue share (ecosystem)</td>
</tr>
<tr>
<td>Global partners (licensing)</td>
</tr>
</tbody>
</table>
IBM’s advantage in the Cognitive era

- Largest cognitive ecosystem
- Deep domain expertise
- Most powerful and scalable cognitive platform
- Most essential industry datasets

Diagram:
- Ecosystem and partnerships
- Industry solutions
- Client solutions

Data sources:
- IBM Provided Data
- Publicly Sourced Data
- Partner Provided Data
- Private Client Data
David Kenny
General Manager, IBM Watson Platform

Deborah DiSanzo
General Manager, IBM Watson Health

Harriet Green
General Manager, IBM Watson IoT, Commerce and Education
100TB ingested per day

2.2B locations

15–26B API requests per day
IBM Watson differentiation

Trust and Security

Expertise Learning

Domain Expertise

Cognitive Business Services
Watson-as-a-Service

IBM owned applications

Ecosystem applications

IBM Provided Data

Publicly Sourced Data

Partner Provided Data

Private Client Data
Scaling IBM Watson

Ecosystem Partners

300%+ growth Yr/Yr

Clients

72% growth Yr/Yr
Mike Turillo
Co-Founder and Chairman of the Board
Inno360
<table>
<thead>
<tr>
<th>Before Watson</th>
<th>After Watson</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Client sales cycle</strong></td>
<td><strong>Client sales cycle</strong></td>
</tr>
<tr>
<td>6 - 9 months</td>
<td>3 weeks - 2 months</td>
</tr>
<tr>
<td><strong>PoC pricing per seat</strong></td>
<td><strong>PoC pricing per seat</strong></td>
</tr>
<tr>
<td><em>Standard</em></td>
<td><em>2x higher with Cognitive</em></td>
</tr>
<tr>
<td><strong>Time to “upsell” to full license</strong></td>
<td><strong>Time to “upsell” to full license</strong></td>
</tr>
<tr>
<td><em>Average 6 months</em></td>
<td><em>1 month</em></td>
</tr>
<tr>
<td><strong>Pricing on standard license</strong></td>
<td><strong>Pricing on standard license</strong></td>
</tr>
<tr>
<td><em>$100–150k / year</em></td>
<td><em>$500k–$2M</em></td>
</tr>
</tbody>
</table>
Before Watson

Decision making
Days of manual keyword searches through thousands of documents

Expertise Availability
Expertise and historical references isolated with the most experienced engineers

Cultural transformation
Knowledge base lost with employee retirement

After Watson

Decision making
In seconds, evidence-weighted insights from over 20K documents

Expertise Availability
Over 30 years of expertise at the fingertips of 1000+ engineers/staff

Cultural transformation
Corporate memory and legacy of experts emerged with open access for all
Science  Simplify  Scale
Building out Watson Health
Deborah DiSanzo

General Manager,
Watson Health
Healthcare disruption is underway

150+ exabytes
Amount of U.S. healthcare data\(^3\)

$47 trillion
Global economic impact of five leading chronic diseases by 2030\(^4\)

50%
Expected alternative payments from the Centers of Medicare and Medicaid by 2018\(^5\)

75%+
Percentage of patients expected to use digital health services in the future\(^6\)
The data and cognitive opportunity is significant

- Global healthcare spending: ~$8T
- Waste in healthcare spending: ~$2T
- IBM addressable market: ~$200B

Health solutions
Life Sciences solutions
Watson Health Cloud: A platform for innovation

- Life Sciences
- Oncology / Genomics
- Imaging
- Care Management and Population Health
- Payments and Value

IBM Watson Health Cloud

Analytics / Insights Platform
Image Analytics
Cognitive Knowledge Platform

- 200M+ lives
- 100M+ patient records
- 30B+ images
- 1.2M+ medical abstracts
Watson Health is well-positioned to lead in the health market

**Capabilities / Assets / Positions**

<table>
<thead>
<tr>
<th></th>
<th>Watson Health</th>
<th>Data Analytics</th>
<th>Cloud Providers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive Insights</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinical Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Claims Data</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cloud and Security</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Keys to ecosystem success**

Full circle = Leadership capability
Empty circle = Minimal / no capability

© 2016 IBM Corporation
Watson oncology solutions use cognitive computing to help doctors make evidence-based treatment decisions
Oncology is evolving, providing opportunity for cognitive technology

MSKCC trained Watson in the field of Oncology

Watson is a “learned colleague” to support physicians
Around the world, the number of people suffering from a chronic disease is increasing.

**Watson Health** is working with leading organizations to build global offerings that address unmet health needs.
Tip: Use empowering words, like "I can, I will, or I understand."

Heart Health:
Prevention and Living with Heart Disease

Learn More
Watson Health capturing the market

Data

Insights

Ecosystem
IBM Watson Internet of Things (IoT)

Harriet Green

General Manager,
IBM Watson IoT, Commerce and Education
The Opportunity

90%
Data never acted upon

$1.7 Trillion
In value added by the IoT to the global economy in 2019\textsuperscript{4}

29 Billion
Connected devices by 2020

$400+ Billion
IBM addressable market by 2019\textsuperscript{5}
Watson IoT leading the market

- 4,000+ IoT clients
- 750+ IoT patents
- 1,700+ Partners
- 10,000+ Security clients
- 30+ Industry solutions
Boosting operational efficiency

Transforming the customer experience

Disrupting industries
Digitization of the physical world
IBM addressable IoT industry market opportunity by 2019

Manufacturing
$142B
Opportunity

Transportation
$37B
Opportunity

Consumer
$43B
Opportunity
Watson IoT transforming air transportation
Aircraft manufacturers, suppliers, airlines, and airport operators
Connecting the air transportation ecosystem

- Design
- Operate
- Manufacture
- Maintain
Clients pioneering transformation

**Design**

**Operate**

**Maintain**

**Manufacture**

- **Etihad Airways**
- **Siemens**
- **Delta**
- **Kone**
- **Heathrow**
- **Toronto Pearson**
- **Pratt & Whitney**
- **Boeing**
- **Rolls-Royce**
- **Airbus Group**
Scaling IoT solutions across industries

• Invent new business models
• Develop differentiated solutions
• Improve operational efficiency
• Drive better customer engagement
• Utilize IBM innovation
Watson IoT growing momentum

- Munich Centre global headquarters
- 67,000 square meters of pure potential
- 8 global experience centers
- 1,000 researchers, developers, designers
- New Watson APIs
- Acquisition of The Weather Company
- Client focused leadership
Cognitive solutions: An engine for growth

Big, incremental opportunity

Highly differentiated platform

Cognitive solutions are here now
These charts and the associated remarks and comments are integrally related, and they are intended to be presented and understood together.

In an effort to provide additional and useful information regarding the company’s financial results and other financial information as determined by generally accepted accounting principles (GAAP), certain materials presented during this event include non-GAAP information. The rationale for management’s use of this non-GAAP information, the reconciliation of that information to GAAP, and other related information is included in supplemental materials entitled “Non-GAAP Supplemental Materials” that are linked to the company’s investor relations web site at http://www.ibm.com/investor/events/investor0216.html. The Non-GAAP Supplemental Materials are also included as Attachment II to the company’s Forms 8-K dated January 19, 2016 and Attachment I to the company’s Form 8-K dated February 25, 2016.
Footnotes

1. Source: GMV 1H16, McKinsey Global Institute, May 2013
2. Representative sample of data
3. Institute of Health Technology Transformation
5. Source: U.S. Health & Human Services
7. Source: Health Affairs, Team analysis
8. Business Insider, “The 'Internet of Things' will be the world's most massive device market and save companies billions of dollars,” John Greenough, April 14, 2015.