



Trusting Actionable Data with AI

- Satya Sachdeva, Sogeti
- Bruce Killion, IBM



SOGETI

Trusting Actionable Data with AI

Summary:

Business Intelligence (BI) is no longer a back office function that produced bulky PDF reports produced on a daily weekly or monthly basis and used to sit on users' desktop until the next version came along. Actionable Data enables organizations to leverage BI at the point of interaction be it with clients, suppliers, employees or other partners in complex global eco system. However if the data is not trustworthy, the strategy can backfire with disastrous results. The presentation will cover how to leverage AI to ensure the critical actionable data is trustworthy.

Trusting Actionable Data with AI

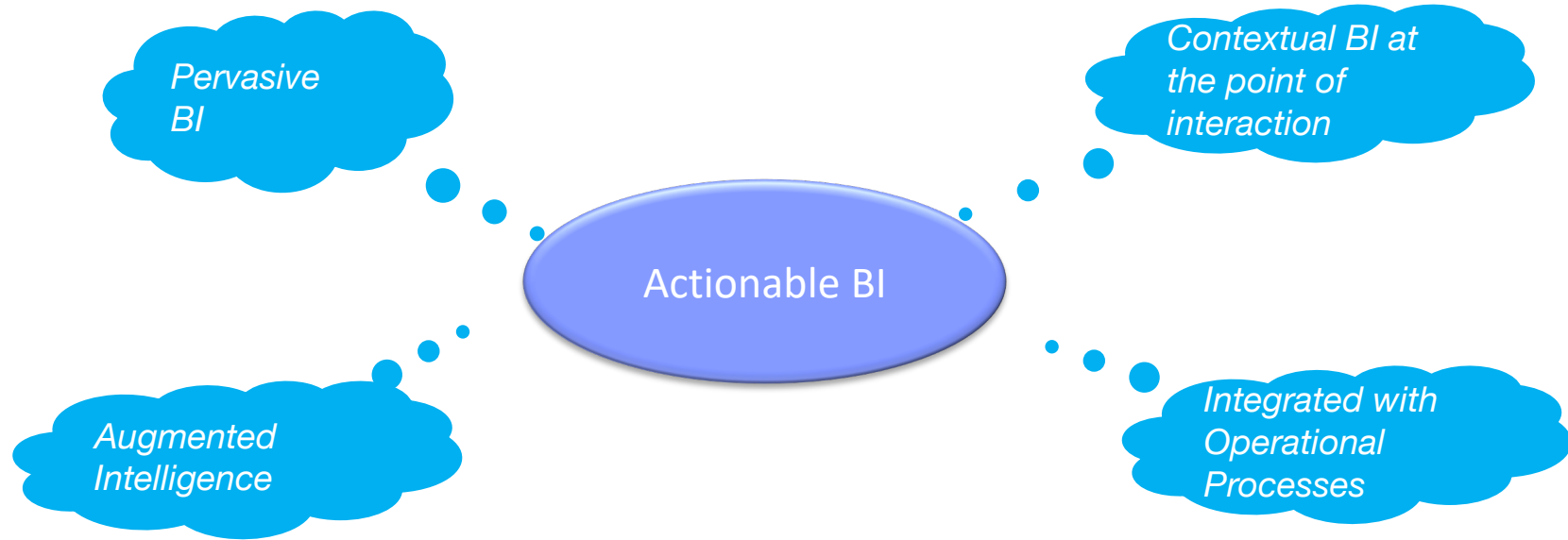
Part 1 - Satya Sachdeva, Insights & Data Practice VP, Sogeti

- Actionable BI
- Achieving Actionable BI
- How do we make data for Actionable BI trustworthy?
- Leveraging AI to make data trustworthy

Part 2 – Bruce Killion, Global Sales Executive Analytics, IBM

- New Challenges of Data-Driven Organization
- Analytics Life Cycle is Getting Smarter
- Strong Foundation for AI

What is Actionable BI

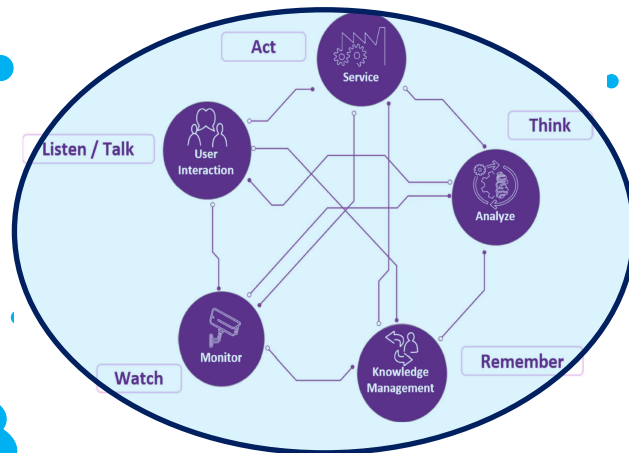


Embedding present, past, and future looking analytic outputs into your end users' day to day workflow – making AI integral part of Actionable BI

How does AI enable Actionable BI?

*Pervasive
BI*

*Contextual BI at
the point of
interaction*

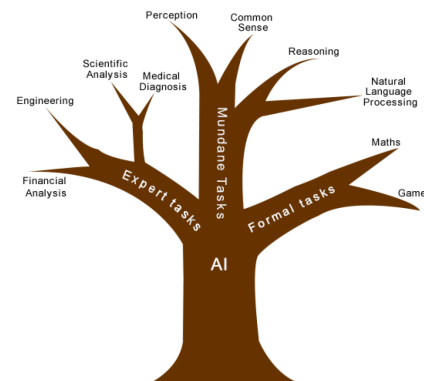
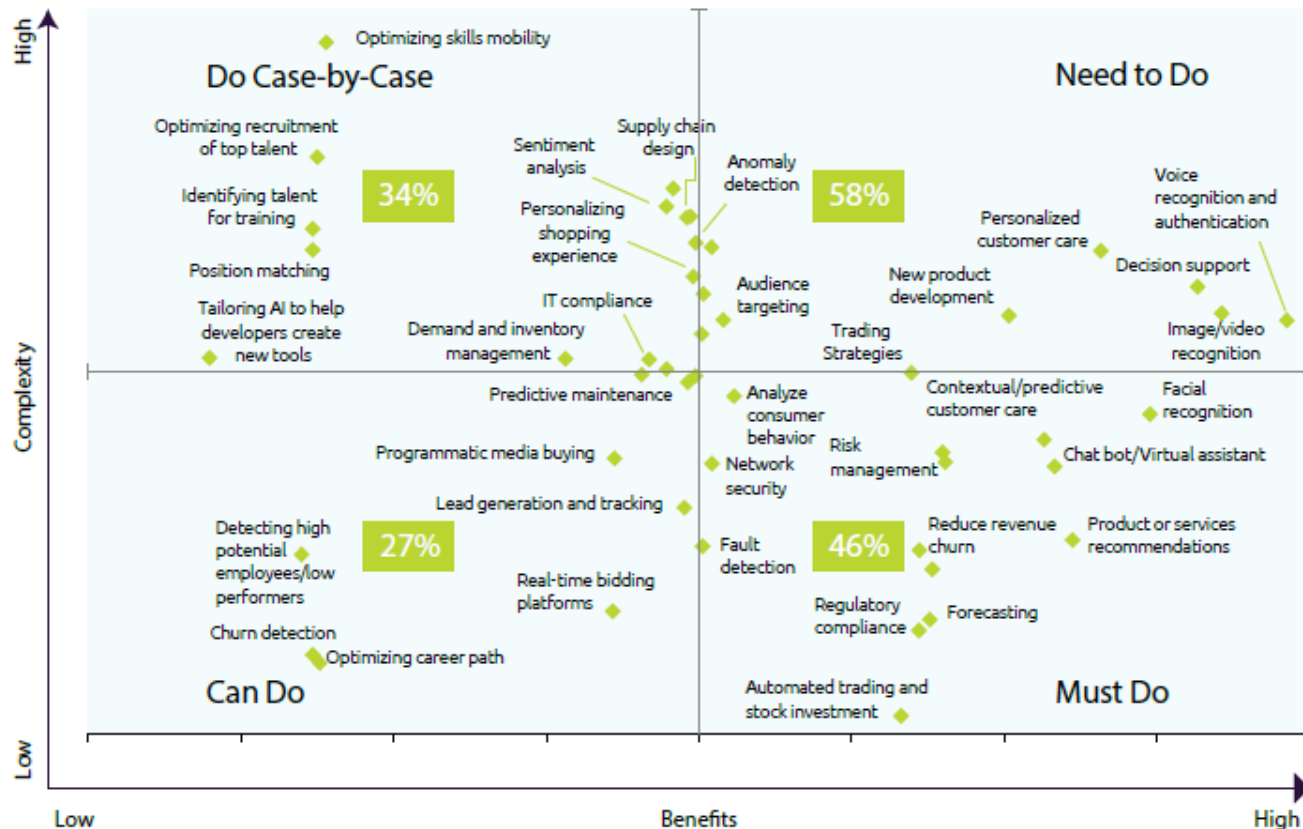


*Integrated with
Operational
Processes*

*Augmented
Intelligence*

AI is accelerating the process of
making BI Actionable

Actionable BI – AI Use Analysis



Achieving Actionable BI – Do you need to know AI?

“

You don't produce your own electricity, you just take advantage of it. Likewise, you might just take advantage of smart solutions that can be deployed to solve specific problems.

Luciano Floridi,
University of Oxford

“

Do you need to know AI to leverage AI?

I don't think you need to be an expert in the technology of AI to benefit from it. You don't need to be skilled in AI, you need to be skilled in your use case.

Rob High,
IBM Watson

Existing developers in traditional organizations shouldn't have to immerse themselves into the deep learning model in order to benefit from it.

Rajen Sheth,
Google

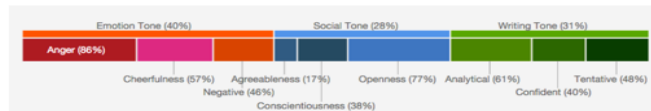
”

We are not going to go on a big hiring spree and try to hire up all the AI experts around the world. Instead, we will focus on hiring people with the right mathematical background and aptitude to understand our problems, our data, and our customers.

Michael Natusch, Prudential Plc

”

Leveraging AI APIs



Becoming an AI-native

An AI-native company is going to treat data very seriously.



Harvesting the data



Feeding the data into algorithms



Labeling the data so that the algorithms can make accurate predictions

Actionable BI and AI Challenges

Actionable BI and AI

Contextual
Dynamic
Integrated with Workflow and Processes

Advanced Analytics

On Demand and Adaptive
Advanced Visualization
Leveraging AI APIs
Model Development and Deployment

Unified Data

Current and Historical
Structured, Unstructured and Streaming
Across Application and Business Unit Silos

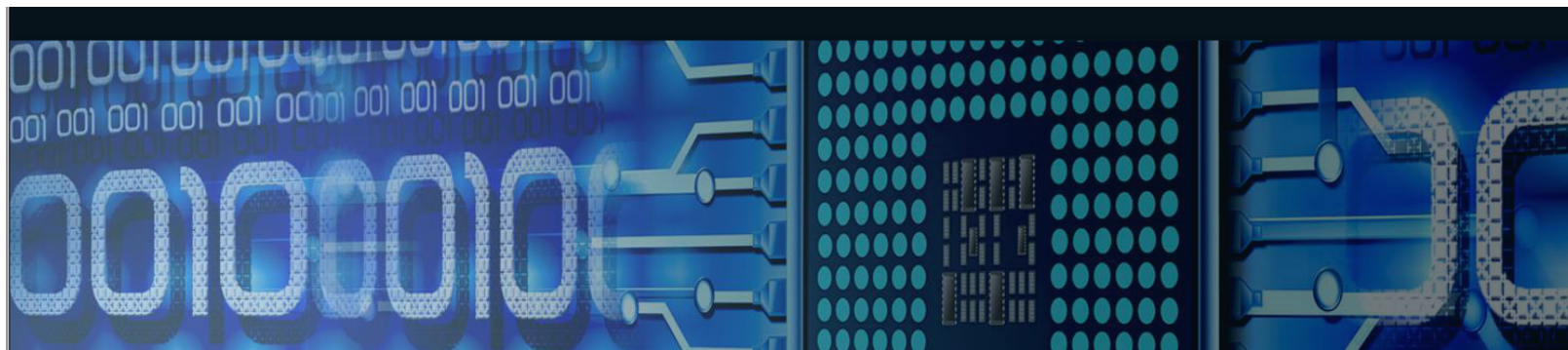
Increasing Complexity

44 ZB in 2020 =>
50x 2010

Data in 2015/16 =>
entire human history

26 billion IoT Devices
2020

From Science to Enterprise



- Big Data Analytics offers access to speech, text and social analytics tools and expertise on demand
- Machine Learning allows rapid processing of large amounts of customer centric data including customer conversations in the form of calls, email, chat

Unstructured data comes from multiple sources:

CCTV camera
data

CDR data
(Telecom)

Digital pictures
and videos
posted online

Telephonic conversation

Emails and
feedbacks

GPS data
(from
mobile
devices)

Sensors used
to gather
information

Transaction records

Posts to social media sites

Access
Logs

To churn big data to actionable insights brings in new practical and theoretical challenges:

Data Acquisition | Storage |
Processing | Data Transport and
Dissemination | Data Management
and Curation | Archiving | Security
| Analyzing for Business Actions

Trustworthy Data Challenge – AI amplifies Data challenges

“Ninety Percent of AI is Data Logistics”

“Bad data impacts profitability of 88% of companies

RETURN - Wed, 15 Mar 2017

| mirates | 16:55 | CHC Christchurch | 3h 20 |
|--------------------|------------|----------------------------|-------|
| K419 | 18:15 | SYD Sydney Kingsford Smith | |
| Connect in airport | | | |
| mirates | | SYD Sydney Kingsford Smith | |
| K419 | | BKK Bangkok Suvarnabhumi | |
| Connect in airport | | | |
| Long wait | | | |
| mirates | 02:25 (+1) | BKK Bangkok Suvarnabhumi | |
| K419 | 06:05 | DXB Dubai | |
| Connect in airport | | | |
| Long wait | | | |
| mirates | 14:35 | DXB Dubai | |
| K9 | 18:25 | LGW London Gatwick | 7h 50 |

Arrives: Thu, 16 Mar 2017 | Journey duration: 38h 30

James Lloyd > Skyscanner
23 August · 4h

Hi Skyscanner. Just wondering what you'd recommend I do during the 47 year layover your website has suggested?

Annemarie Dooling, Rosa Repo, Nea Tamminen and 14,658 others like this.
2,715 shares 1k comments

Skyscanner Unless you're a huge fan of The Terminal, I'd probably recommend spending those years outside of the airport, so here are a few suggestions:

- Missed Songkran but you've got another 46 years to enjoy it... See more

5,685 · 26 August at 06:12 · Edited

View previous replies

Skyscanner I reckon he's too busy planning the next 47 years, Adam. It's a lot to get sorted! · Jen

694 · 24 August at 06:48

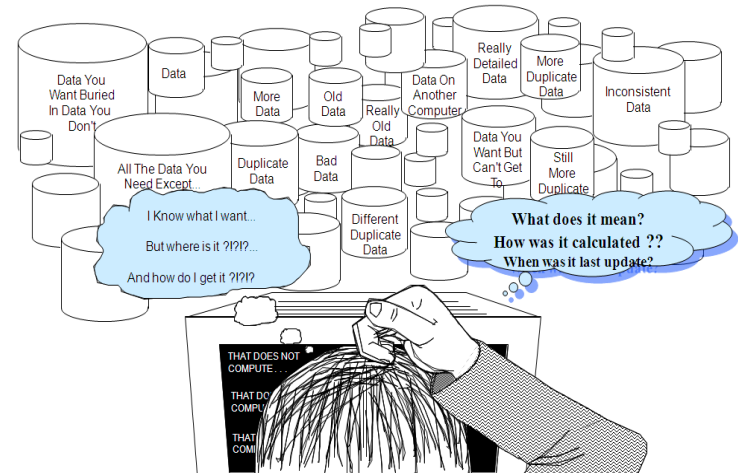
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- Machine Learning won't be effective if data is locked away in silos
- Is the training data set representative and of reliable quality?
- Additional Data Transformations for Modeling :
 - Missing Data
 - Noisy Data
 - Data value conflicts
 - Normalization
 - Data Reduction
 - Discretization

“US Organizations believe 32% of their data is inaccurate”

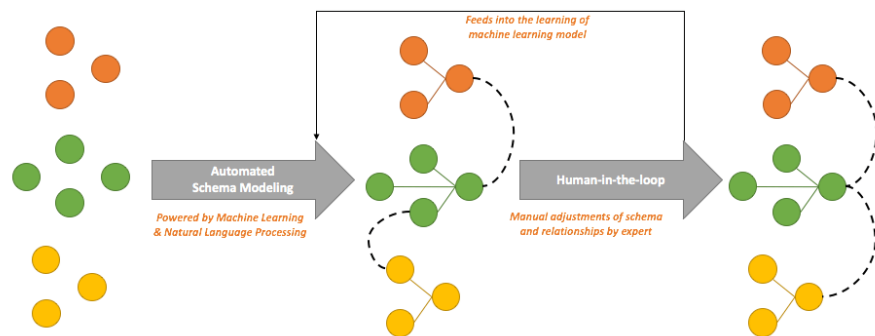
Limitations of Traditional Data Management

- Data curation is an intellectually intensive activity, time consuming and intensive
- Given the increasing role, amount, variety, velocity and complexity of data, curation risks to be a bottleneck
- Data Scientists can spend between 50%-80% of their time on data massaging rather than building analytical models



AI for Data Curation to make it Trustworthy

- Leveraging machine learning to minimally automate :
 - Data cataloging and data characterization (e.g., inferring schemas and structure)
 - Transformation recommendations
 - Metadata mapping
- Discover and Automate Data Quality Process
 - Data quality rules, and business entity discovery
 - Semantic search, pattern identification, and data classification,
 - Anomaly detection and notification
- Data Integration Operations
 - Burst to handle data spikes
 - Prioritize operational issue investigations
 - Self-heal to handle changes to environments
- Embedding machine learning components in integration flows or pipelines to support real-time analytics and decision making.



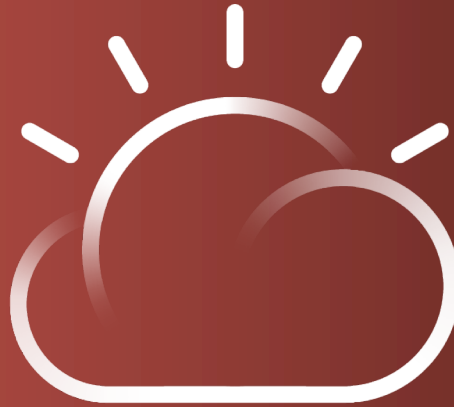
| ORDER | | | | | | | | | |
|------------|------------|-----------|---------------------------|----------------|--------------|--------|--|--------|------------|
| Field0 | Field1 | Field2 | Field3 | Field4 | Field5 | Field6 | Field7 | Field8 | Field9 |
| 4/5/2015 | Estelle | Chambers | 7312 Branch St. | Far Rockaway | NY | 21984 | 70788 4-in-1 SD Card 8GB Class 6 | | 308276.28 |
| 8/30/2016 | Alfred | Sanches | 7583 Malden St. | Potomac | MD | 20054 | 74428 Haquee UTP CAT6 100m Orange 6.3M Gmz | | 303080 |
| 10/3/2015 | Brandon | WESCO | 11 N. Longfellow Lane | Jersey City | NJ | 0401 | 73013 70Wx48Lx18.8MM 8" Go720 207777 | | 335500 |
| 12/21/2014 | Morton | | 7 Sunbeam Dr. | Upper Darby | PA | 19082 | 72536 Asus NB A750-4622V (3-2350/17.3"/4/900/W/HP | | 97500 |
| Date | Customer | Product | Amount | | | | | | |
| 1/10/2015 | Chelsea | Sandowal | 59 Upper Rd. | Mountain | VA | 24401 | 72872 Logitech Laptop 30" Comfort | | 100359.81 |
| 8/5/2016 | Johnny | Nunes | 3413 Lake Shore Lane | Bartlett | IL | 60010 | 70279 CPU Cooler BestMachine Genesis | | 94115.31 |
| 2/9/2015 | Shane | McFarland | 147 Garden Avenue | New Kensington | PA | 15068 | 73204 Blu-ray Disc 25GB 10x Spindle Recordable Print | | 154800 |
| 10/4/2016 | Julian | Franklin | 802 North Franklin St. | Concord | GA | 30012 | 71987 Bafemia 3-pin - 3x3-pin Adapter 60cm orange/black | | 897484.04 |
| 10/13/2014 | | | | | | | | | 376460 |
| 11/25/2015 | First Name | Last Name | Address | Product ID | Product Name | | | | 7757619.49 |
| 4/5/2015 | | | | | | | | | 430465.41 |
| 4/25/2015 | Norman | Mckenzie | 8307 West Wild Horse Ave. | Caret | GA | 30120 | 72884 Processor AMD Athlon II X4 641 FM1 | | 156000 |
| 2/6/2017 | Cornelius | Douglas | 9261 Birchpond Street | Imperial | CA | 29189 | 70143 Cooler Master SickleFlow 120mm Blue LED | | 756820 |
| 11/27/2016 | Rosie | Henry | 105 Main Dr. | Wilmington | MA | 2072 | 71787 Haquee UTP Cross cable 1m RJ45 CAT5 | | 432606 |
| 11/24/2016 | Brenda | Griffin | 618 Main St | Wilmington | MA | 2474 | 73410 Samsung toner CLT-M44025 Magenta | | 161985.54 |
| 1/12/2016 | Donnie | Huff | | | | 13917 | 71333 Razer Hydra Motion Controller Portal 2 Bundle | | 1127675 |
| 7/28/2016 | Dora | Shelton | | | | 32779 | 72795 HP Inkjet No.22XL C8933C Zwart | | 211752 |
| 12/16/2015 | Nash | Thomas | 788 Farney Lane | East Lansing | MI | 48823 | 72889 CoolerMaster Nostalge X-Lite | | 475554.18 |
| 3/6/2013 | Lloyd | Schmitt | 11 East Livingston Ave. | Kenosha | WI | 53140 | 72515 Acer Aspire M5-5810-73686532Mn (7-2617M/15.6"/6/5 | | 76022.31 |
| 7/24/2013 | Sylvia | Stephens | 257 Woodside Dr. | Riversdale | GA | 30274 | 71652 iCUD Video HDMI Male mini C to Male mini C 1.8M | | 250000 |
| 10/24/2015 | Tommie | Craig | 79 Jackson Street | Discont | MA | 1826 | 71953 Haquee VGA/monitor kabel 1.8m M/M HQ ferrietkern | | 9000 |
| 8/23/2015 | Alicia | Stevens | 328 Snake Hill Rd. | Hallandale | FL | 33009 | 73511 Innergie M Mini Combo 38RC Duo USB Car Charging Ki | | 275130 |

IBM'S PERSPECTIVE ON ACTIONABLE BI

- Bruce Killion

Sogeti Executive Summit

Chicago, IL
August 2, 2018



IBM Analytics

Making Data Trusted, Accessible and Actionable

Bruce Killion

Global Sales Executive
IBM Business Analytics



IBM Cloud

Cognitive businesses will redefine how decisions are made

AI is the system of the future.

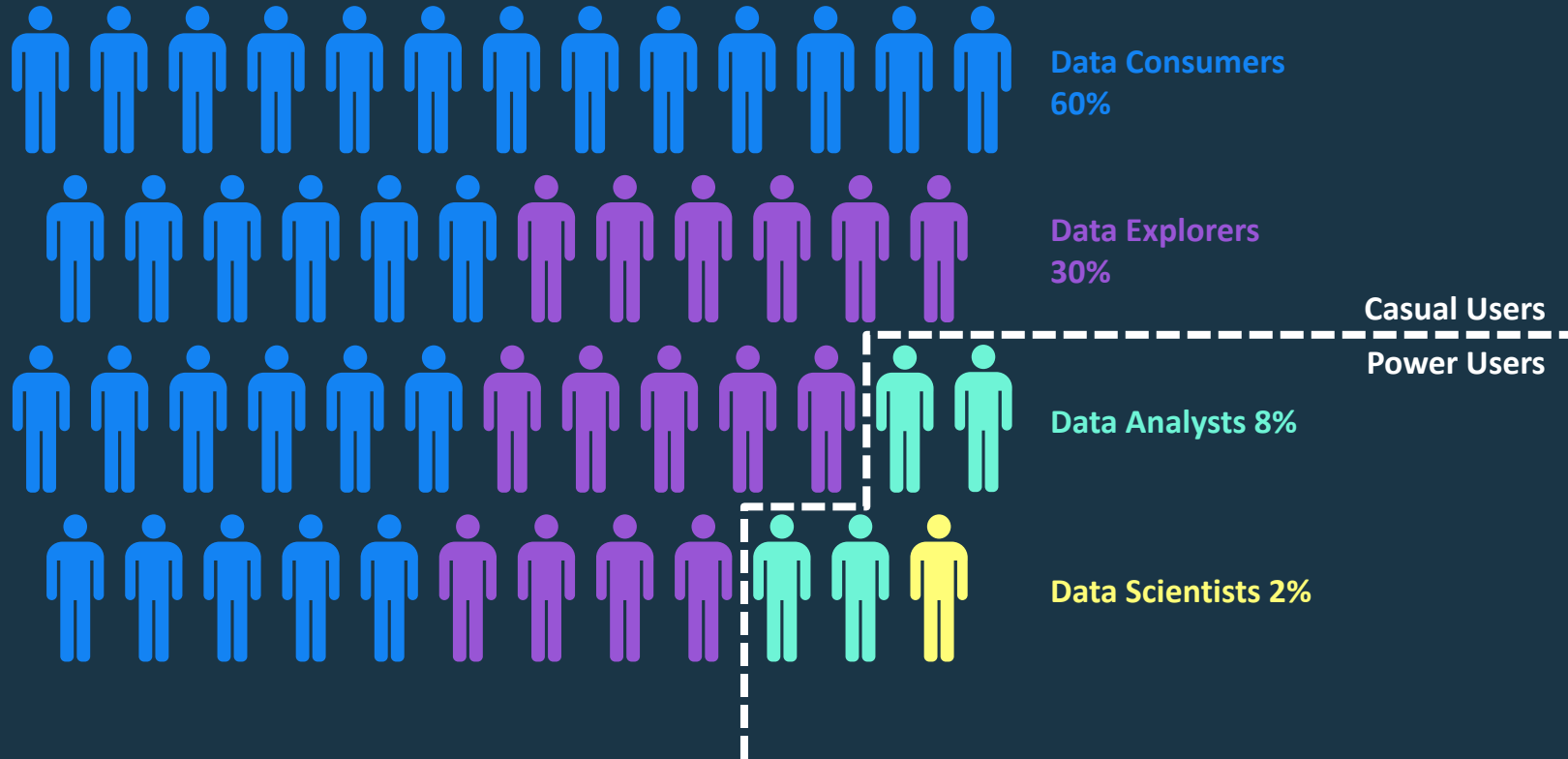
People will define what is to be learned.
System will learn how to learn it.

- Interactive decision making, learning and evidence-based explanations
- A range of techniques including natural language processing, knowledge and planning
- Statistical prediction analysis and pattern recognition to make highly data-driven decisions



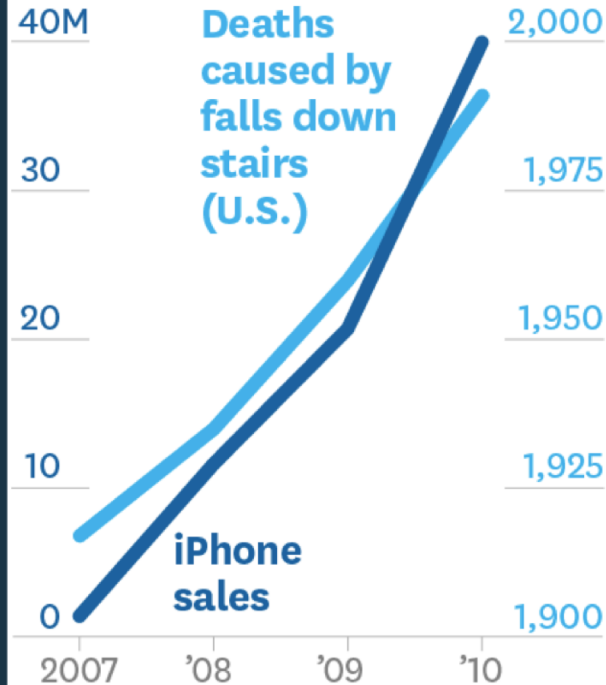
99% say their firms are trying to
become insights-driven, but only
one-third report succeeding

There is a growing population of Professionals hungry to put data to work



Business users with only **basic** analytics skills could conduct analysis yielding **misleading** or **incorrect** insight

MORE IPHONES MEANS MORE PEOPLE DIE FROM FALLING DOWN STAIRS



SOURCE TYLERVIGEN.COM
FROM "BEWARE SPURIOUS CORRELATIONS,"

Dashboards are a common interface to analytics for most users.

"The greatest danger in using ungoverned dashboards for decision making is in misattributing causality when comparing elements on the dashboard"

Joel Shapiro, "Three Ways Data Dashboards Can Mislead You" – Harvard Business Review
<http://www.tylervigen.com/spurious-correlations>

Bringing together **man and machine** to help us make better, smarter decisions.

Humans excel at

Common Sense

Dilemmas

Morals

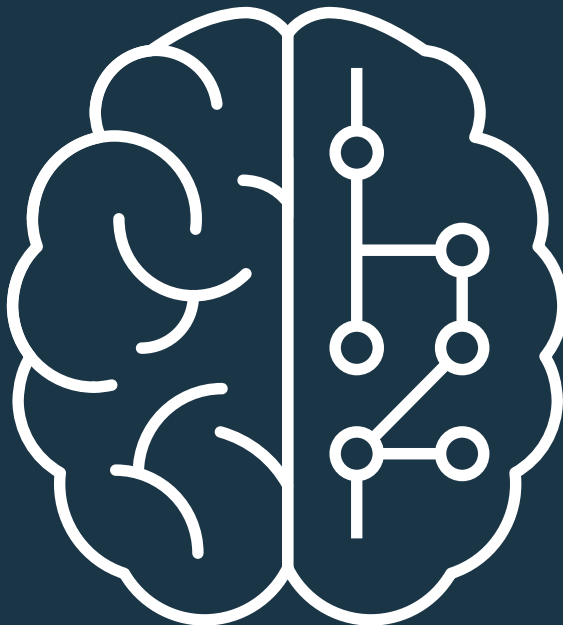
Compassion

Imagination

Dreaming

Abstraction

Generalization



AI Systems excel at:

Pattern Identification

Locating Knowledge

Machine Learning

Eliminate Bias

Endless Capacity

Natural Language Understanding

Data Science and Business Analytics makes data simple, accessible and actionable

Descriptive, Diagnostic, Predictive, Prescriptive to plan a course, monitor the business, predict the future, and change the outcome

Grow
Revenue



Grow, Retain, and Satisfy
Customers

*Better understand customer
behavior*

Reduce
Cost



Increase Operational
Efficiency

Streamline operations

Mitigate
Risk



Mitigate and Manage
Risks

Identify high risk signals

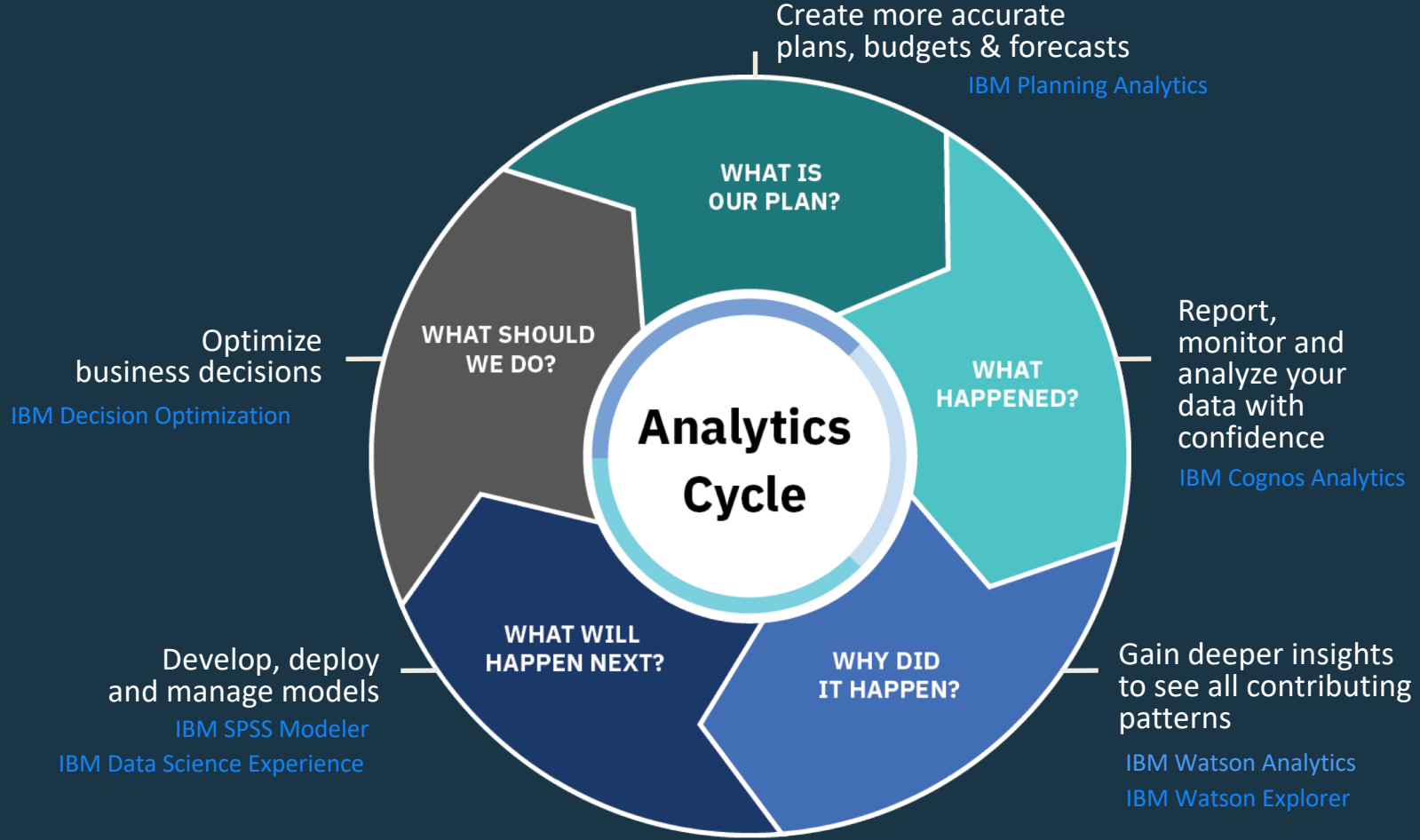
Drive
Innovation



Drive Innovation with
Analytics

*Validate business decisions
with data*

IBM Data Science and Business Analytics Platform



Make your data usable for all consumers of data

COLLECT

Hybrid data management



- Collect all types of data, structured and unstructured
- Includes all open sources of data
- Leverages a single platform with a common application layer
- Write once and deploy anywhere

Key IBM offerings

- Db2 and Db2 Warehouse
- Db2 Event Store
- Integrated Analytics System
- Big SQL and Hortonworks Hadoop

ORGANIZE

Unified governance & integration



- Satisfy all matters of finding, cataloging and masking data
- Integrates fluid datasets
- Delivers built-in compliance
- Leverages advanced machine learning capabilities

Key IBM offerings

- Information Server
- Data Replication
- Master Data Management
- Industry Models and Stored IQ

ANALYZE

Data science & business analytics



- Delivers descriptive, prescriptive and predictive insights across all types of data
- Empowers all of your teams and their unique use cases
- Enables advanced analytics and data science methods

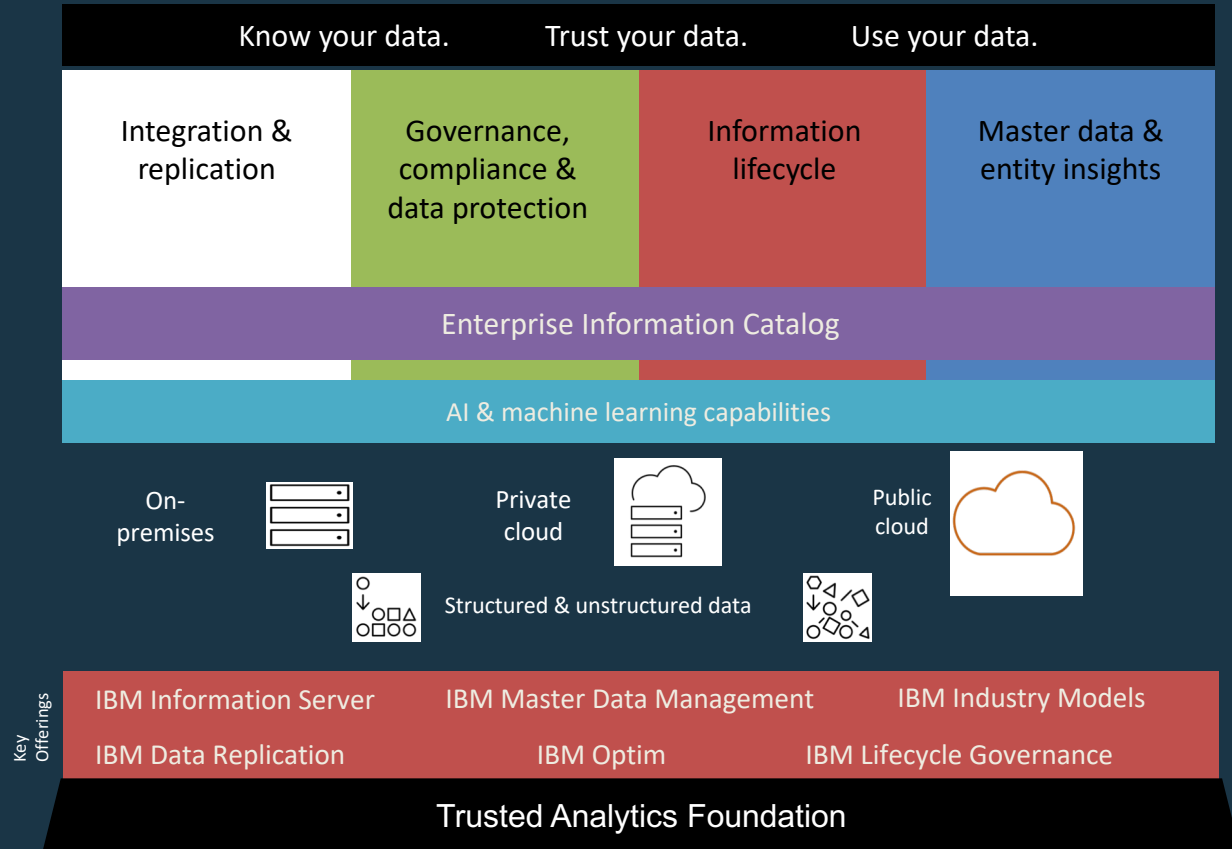
Key IBM offerings

- SPSS and DSX
- Cognos and Watson Analytics
- Watson Explorer
- Planning Analytics

User and application independence across on-premises, private cloud and public cloud

Modular and scalable trusted analytics foundation with IBM Unified Governance & Integration platform

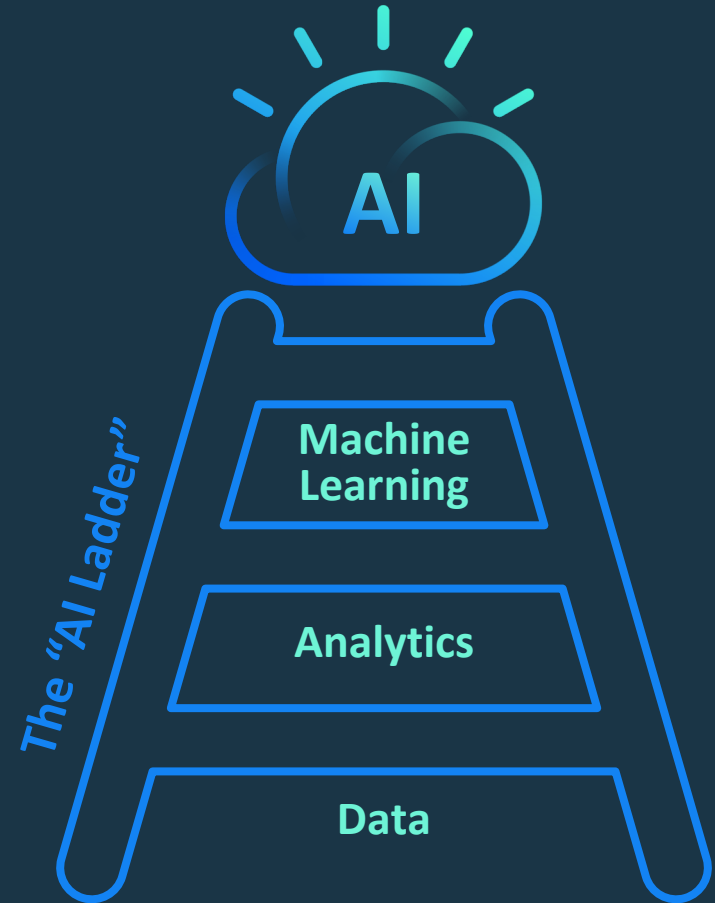
- Open and extensible platform
- Advanced machine learning
- Brings structured and unstructured together
- Scalability and parallel processing
- Smarter metadata drives embedded governance
- Pre-built industry data models
- Unified platform with adaptive deployment and licensing



We make data
simple and
accessible

We deliver data
insights for better
business decisions

We help our clients
climb
the AI Ladder



THANK YOU

