# IBM SolutionsConnect 2015

Seize the Moment. Dive into Next Generation Technologies.

# Connected Intelligence – Session Agenda

- Introduction: Changing the Game with Analytics

- Australian Open Tennis Tournament:

   Engaging Customers with Real Time Relevant Insights

- New South Wales Waratahs:

   Impacting Outcomes with Predictive Analytics

- Technology Discussion:

   Opportunities for Your Business

# Changing the Game with Analytics

# Why are we talking about sports?

- Business Imperatives for any professional sports team

**Championship**

- Build a stronger team
- Create better training
- Maximize performance of every player
- Manage Real-time on field performance
- competitor's strategy

**Building Brand Value**

- Manage public images of team / players
- Build customer loyalty
- Leverage social media understand sentiment
- Improve customer engagement
- acquire new customer base

Predictive Performance Modeling

Event Driven Next Best Action

Performance Optimization

Real time Analytics

Marketing Campaign Management

Customer Insights

Social Media Analytics

Segmentation & Churn

# The Art of Winning
## an Unfair Game…

## The Science of Optimizing Performance

# The Obvious, and Expensive, Way to Win…
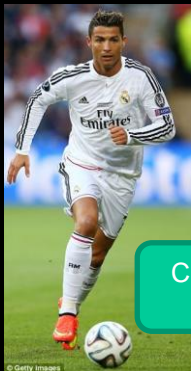## Sport is BIG Business…

**Baseball: NY Yankees**
- Valued at $2.5B
- $250M Ticket Sales
- Access to $1.25B Market
- Brand value: $521M
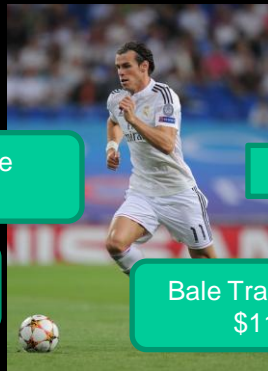
Masahiro Tanaka
$22M / year

Annual Payroll
$225M

Gareth Bale
$17M

Cristiano Ronaldo
$19M

Bale Transfer Fee
$113M

**Football: Real Madrid**
- Valued at $3.5B
- $675M Revenue
- Broadcasting right worth $1.1B
- Brand value $484M

**Statistics of Baseball**

DRS

FC

AB/HR

DIPS

ERA

BB

RBI

K

OPS

EQA

HR

3B

SB%

DRS

BA

2B

BsR

OBP

GPA

BB/K

AB

SB

BABIP

1B

R

2002 Oakland Athletics Campaign
- Billy Beane (GM) field a highly competitive team despite having the 3rd lowest payroll ($44M) in the league.
- Reaching the post at the top of their division
- Losing at the same stage as the NY Yankees despite payroll difference (NY payroll ~$125M)

**MONEYBALL**
IN THEATERS SEPTEMBER 23

**Winning in Baseball**

AB/HR

DRS

FC

DIPS

ERA

BB

K

RBI

OPS

3B

EQA

HR

EQA

SB%

DRS

BA

2B

BsR

OBP

GPA
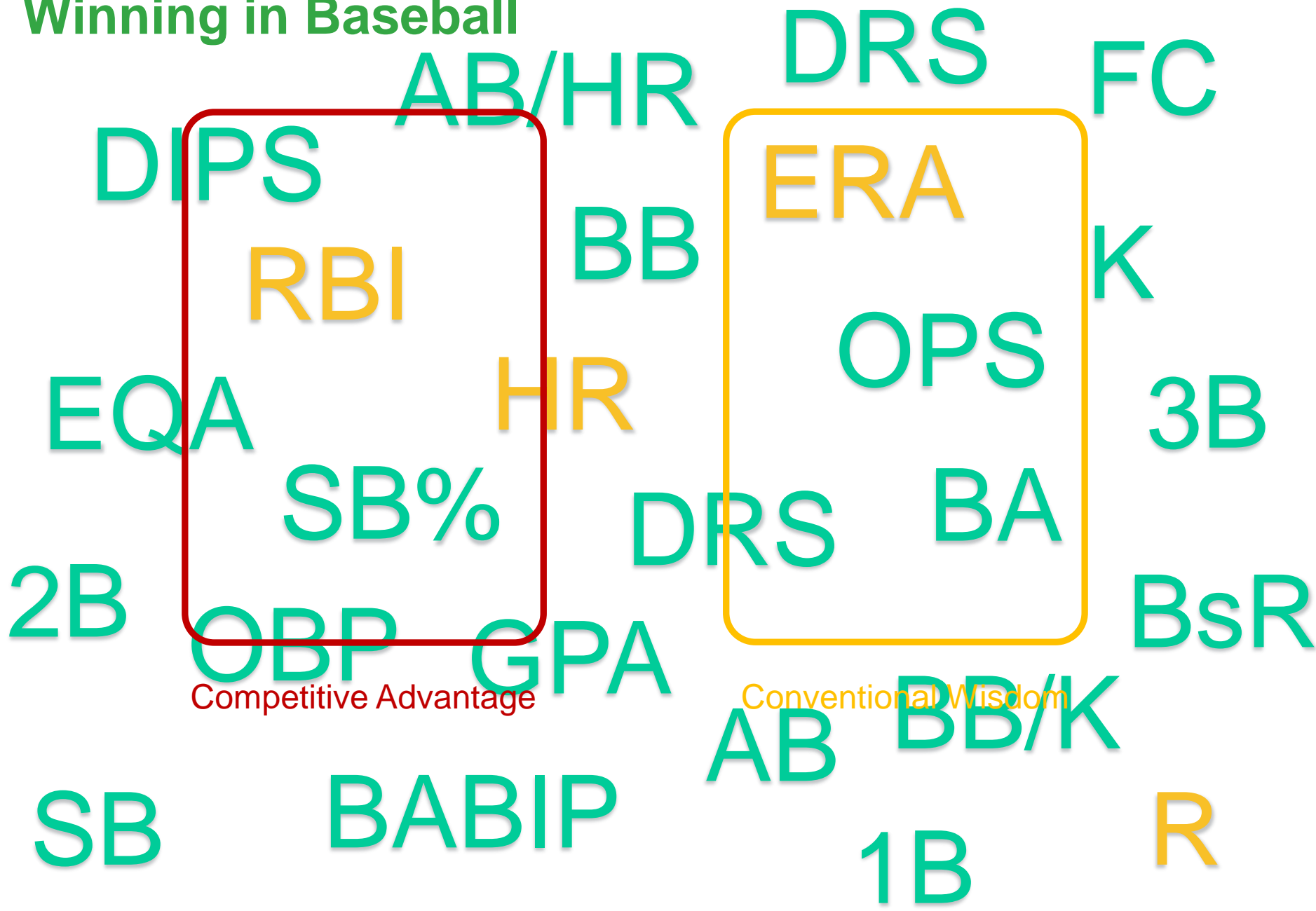
Competitive Advantage

Conventional Wisdom

AB

BB/K

SB

BABIP

1B

R

Billy Beane at IBM Information on Demand 2012
- ❑ Keynote on how analytics changed the way he built his team.
- ❑ Untimately maximizing outcome with available resources

# IBM SolutionsConnect 2015

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# Engaging Customers with Real Time Relevant Insights

# Australian Open 2015
## Maximizing the Fan Experience

# Finding your way through the crowds
## *Using live data from a range of sources*
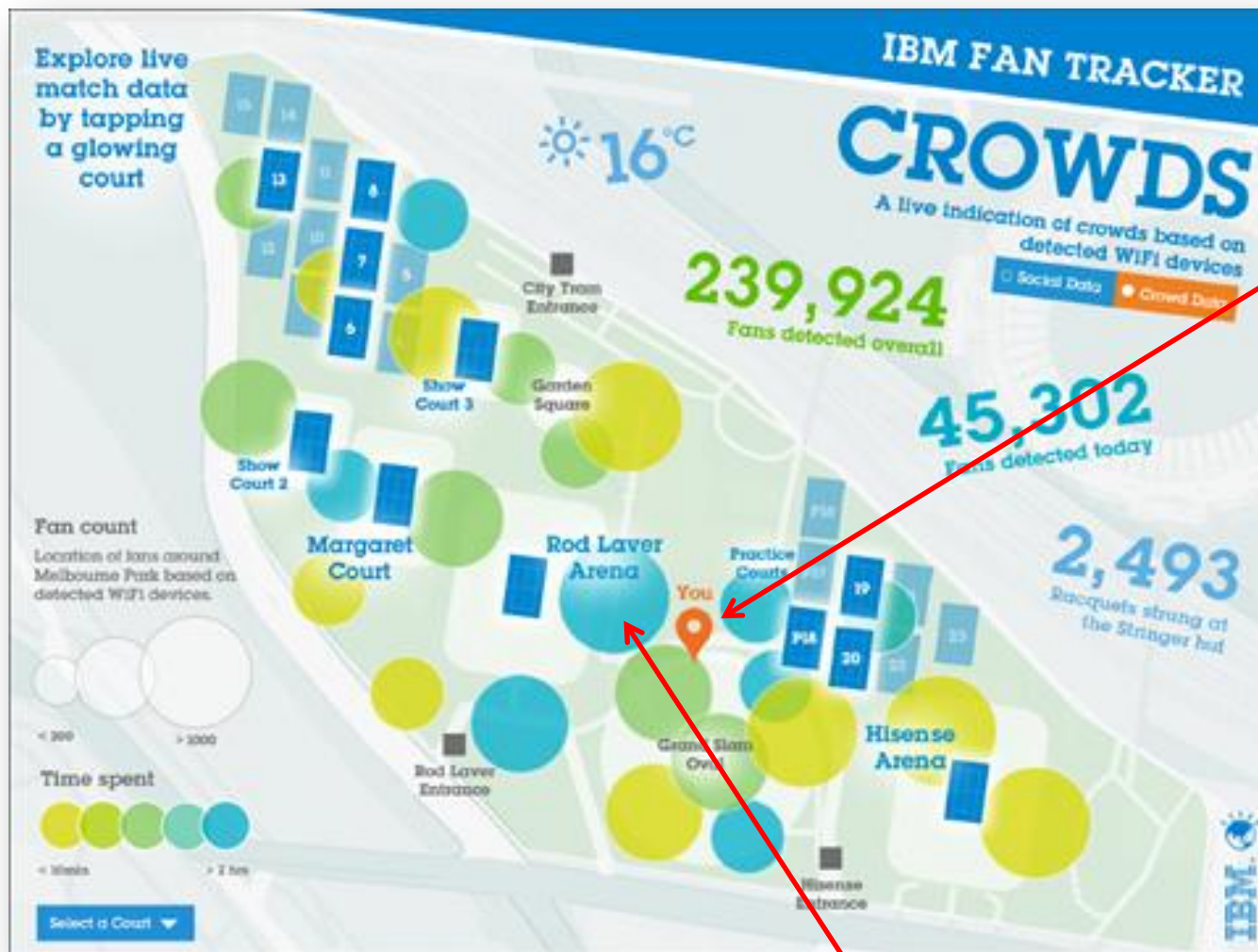


**You Are Here** - through GPS tracking they can see where they are on site

**Available through the website and the official apps**

**Where the crowds are** - using data obtained via Wi-Fi enabled device signals, fans can see where the biggest crowds are and quickly find the most popular spots

# What are other people saying
## *Keeping up with social media buzz*

Popular **Instagram** spots, **Twitter** stats and sample photos shared via social media

Open's **Selfie Station** promotion
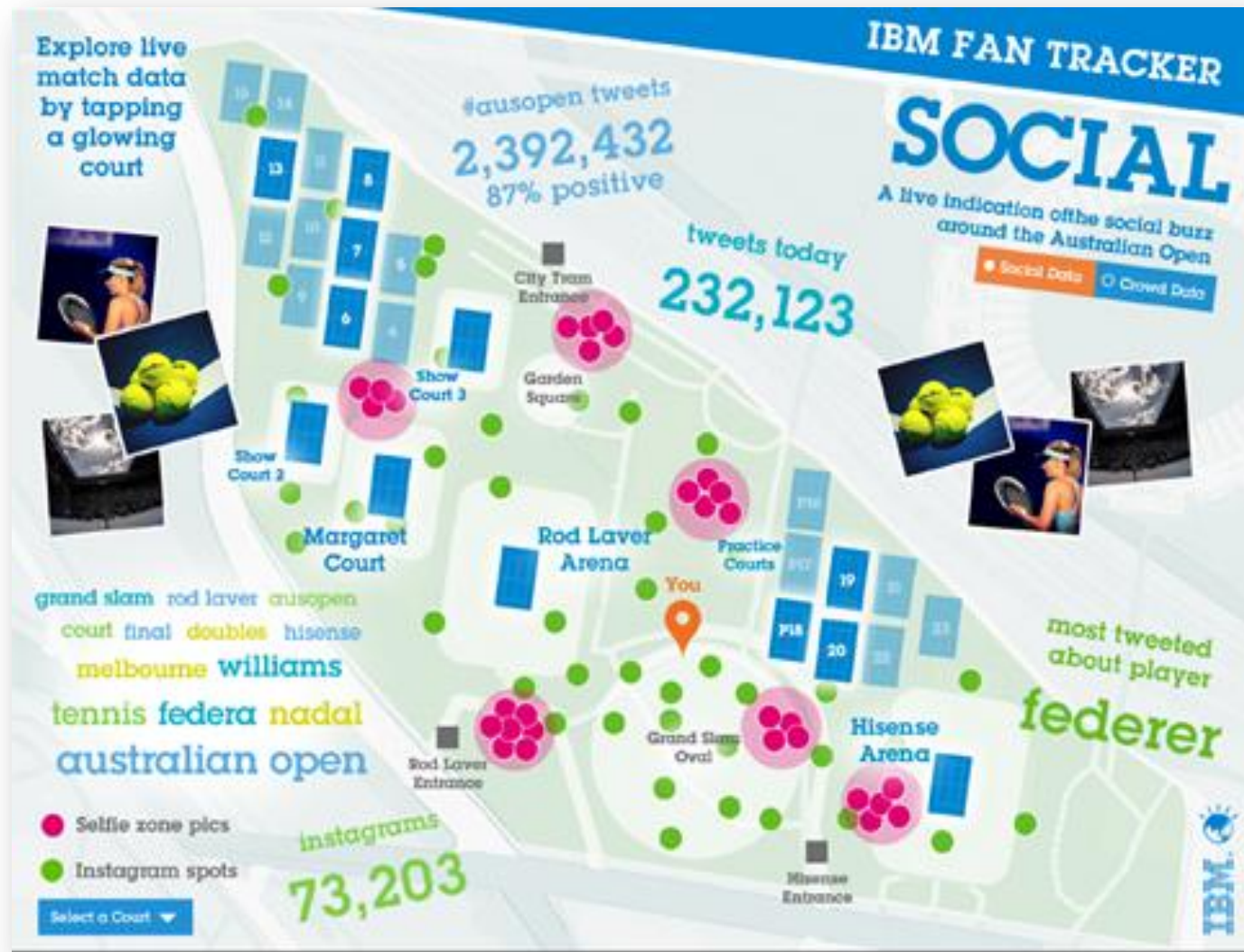
# Getting the action from all courts
## *Real-time feeds, historical analysis, sentiment*
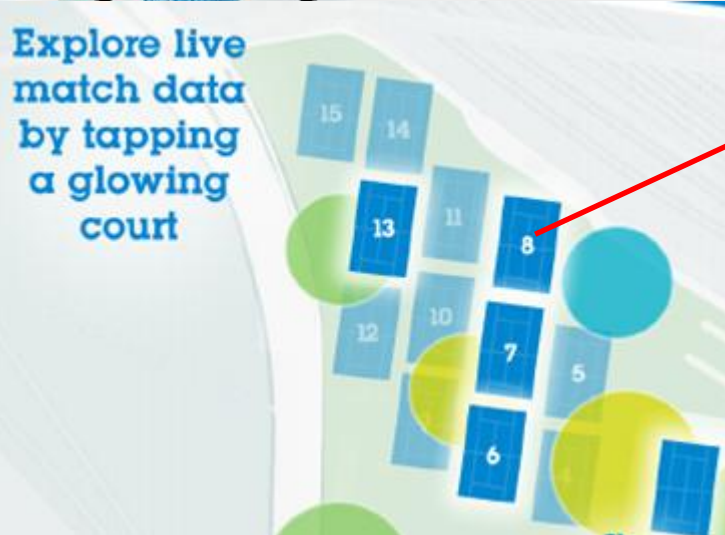


**Click on each court to see:**
- Court data such as scores and stats,
- Social sentiment and key social words about that match
- Player bios and stats
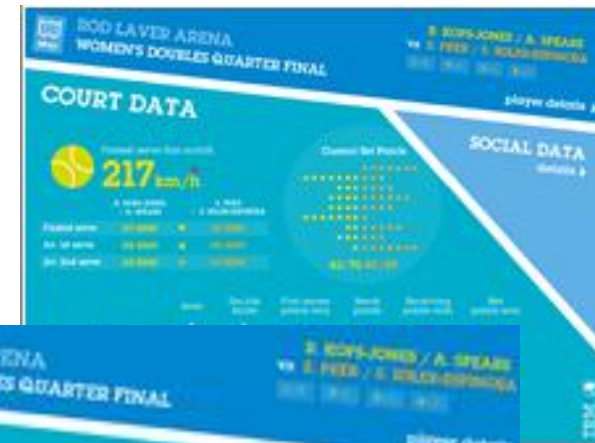
# Meanwhile in the control room
## *Operations dashboard for Tennis Australia*

Giving Tennis Australia a deep view of what's happening throughout the tournament from a wide range of operations based data sources, facilitates **Next Best Action**

# Meet the Watsons
## *Several interfaces to cognitive computing*



Welcome to a new experience with Technology.
Meet the new digital "Australian Open Geek"

Go on ... Ask a question!

**Niki & Nikita are 58-cm tall**

They listen, emphasise and express emotions.

They give verbal answers to Australian Open questions.

**Watson App**
- **Cognitive,** answer conversation style questions about grand slam
- **Analytics**, visualize 8 years of grand slam data for numeric questions
- **System U,** learning about people from data available in social media

# IBM Mobility
## *Bringing live action to fans everywhere*

**Mobile First**

- Build and deploy multi-platform mobile applications
- Optimise mobile experience to build loyalty
- Leverage analytics to turn information into insights

**Over the 2 week event duration**

- 1.2 M app downloads
- 35 M mobile page views
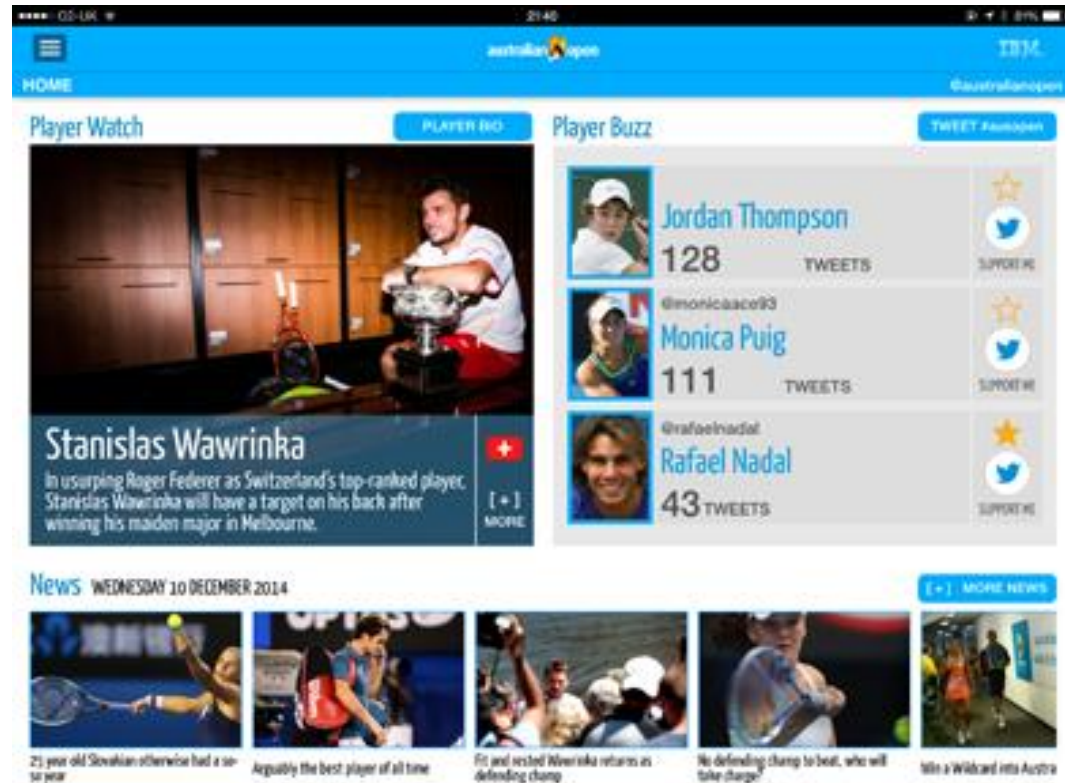


**Second Screen**

- Live streaming, Highlights, interviews
- Follow your favourite player, express support
- Remote control for replay

# IBM Analytics
## *Powering the 'advantage made with data'*

**Three things to get right**

- Build a culture that infuses analytics everywhere
- Be proactive about privacy, security and governance
- Invest in a big data and analytics platform

**80%** of CEOs believe they deliver a superior customer experience

but only **8%** of their customers agree

Type of shot
Scores
Serve %
Duration
Winners
Points
Serve Speed

**Analytics**

- Acquire, grow and retain customers – reaching the right customer at the right time with the right offer
- Optimise operations & Improve IT economics

**Making a smart game smarter with IBM analytics and 8 years of Grand Slam data**

# IBM Cloud
## *Powering the new economy*

**australian open** 19 January – 1 February 2015

**Two weeks of extreme IT demand!**

**ROLAND - GARROS** 19 MAY - 7 JUNE 2015

**US OPEN 2015** **AUGUST 31 - SEPTEMBER 13**

**WIMBLEDON** 29 JUNE - 12 JULY 2015

**Cloud**
- Shared Private Cloud
- Consulting and strategy

**IBM. Watson Tournament Dashboard** australian open

RES & SCHEDULE  DRAWS  PLAYE

→ Predictive Cloud   → Algorithm Impact   → Watson Impact

Tweet Velocity: 4     Log Velocity: 10

SCHEDULE OF PLAY

PLAYER IMPACT

TRAFFIC

Instance Time Saved     Traffic     Forecast

300000
200000
100000
0

TI Instance Hours Saved   Predicted Traffic   Actual Traffic   Capacity

Adjust capacity to meet demand, hour by hour

**Since 2008**
- 45% more users
- 35% cheaper per user

# IBM Predictive Customer Intelligence
## *Starting with the customer focus*



Voice of the empowered customer

Customer growth and retention

Deliver value across all touch points

Foster "markets of one"

Marketing ROI

Customer Loyalty

Customer acquisition
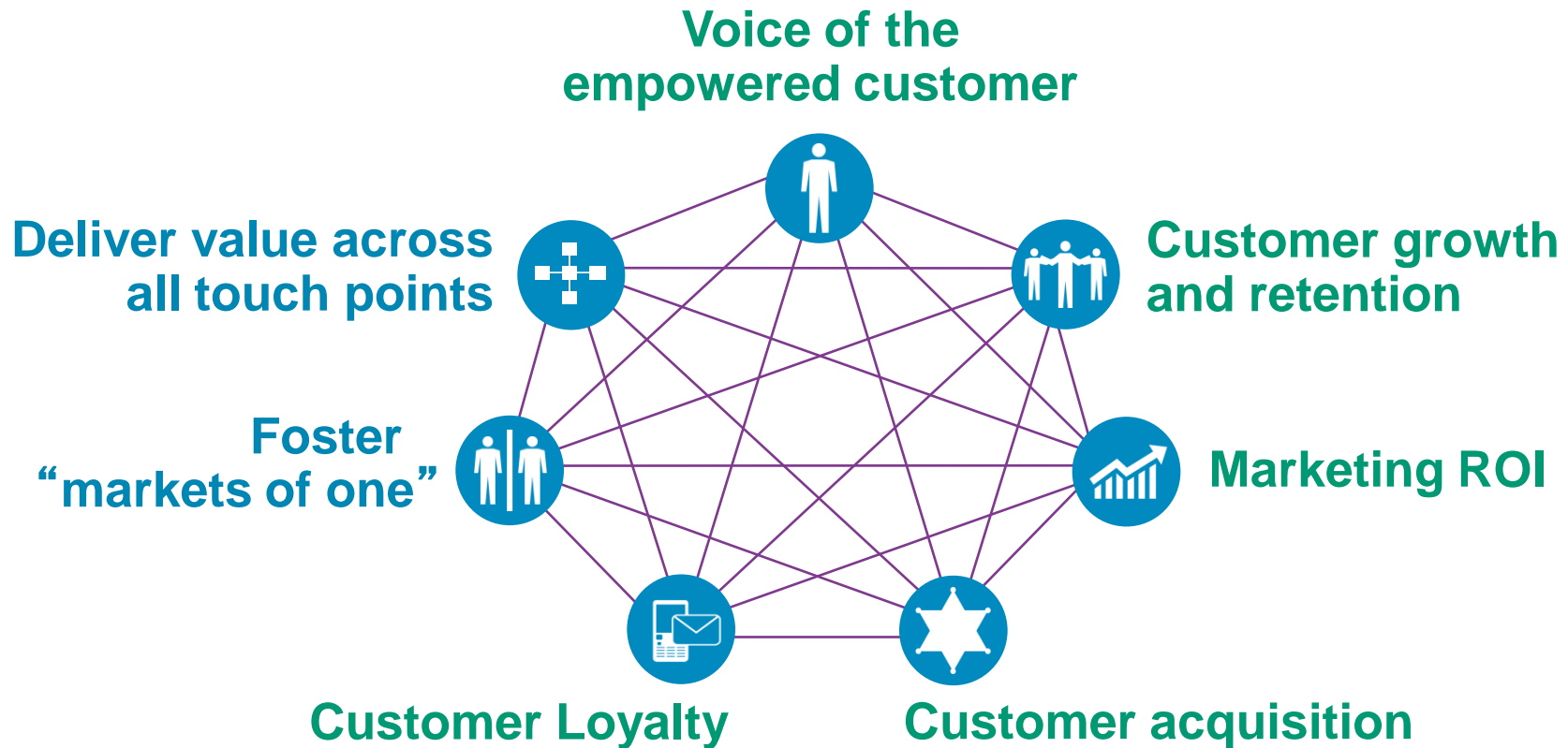
Despite the changing consumer dynamics, sales, marketing and customer service imperatives remain constant

# IBM Predictive Customer Intelligence
## *Delivers intelligence to marketing and operational systems*

**Big Data**

**IBM Predictive Customer Intelligence**

**Enterprise Marketing**

**Multi-channel Customer Interactions**

**WHAT?**
**Behavioral data**
- Orders
- Transactions
- Payment history
- Usage history

**WHO?**
**Descriptive data**
- Attributes
- Characteristics
- Self-declared information
- Geographic demographics

**HOW?**
**Interaction data**
- Email & chat transcriptions
- Call center notes
- Web clickstreams
- In-person dialogues

**WHY?**
**Attitudinal data**
- Opinions
- Preferences
- Needs and desires

Acquisition models

Campaign response models

Churn models

Customer lifetime value

Market basket analysis

Price sensitivity

Product affinity models

Segmentation models

Sentiment models

Up-sell / Cross-sell models

Predictive Customer Intelligence available both inbound (real-time) and outbound (batch)

Campaigns

Offers

Messaging

Lead Management

Cross-channel Campaign Mgmt

Real-time Marketing

Marketing Event Detection

Digital Marketing

Web

Interactive Voice Response

Mobile apps

Short Message Service

Social media

Chat

Voice

Email

# IBM Predictive Customer Intelligence
## *Customer success stories*

**XO communications**

**reduce customer churn with predictive models**

**50% reduction**

*in customer churn*

**$9M - $13M**

*projected additional annual revenue*

**Decreased number of service agents**

*while maintaining the service levels*

**5 months**

*investment recovery period*

**C spire wireless**

**optimize cross-selling and prevent churn**

**270% increase**

*in cross-sales of accessory products*

**50% increase**

*in effectiveness of customer retention campaigns*

**Increased satisfaction**

*by creating a more personalized customer experience*

**Excellent buy-in**

*from front-line crew*

# Impacting Outcomes with Predictive Analytics

# PREVENTING INJURY WITH ANALYTICS

An injured player isn't the only one who feels the pain. The loss of a key team member can negatively impact a club's chemistry, record and fan attendance.

What insights are hidden in the vast amounts of data that you collect on players, matches, injuries, training regimes, treatments, psychological conditions, external factors, pitch conditions, GPS trackers, impact sensors and more….

# Identifying risks:  A physically tough game
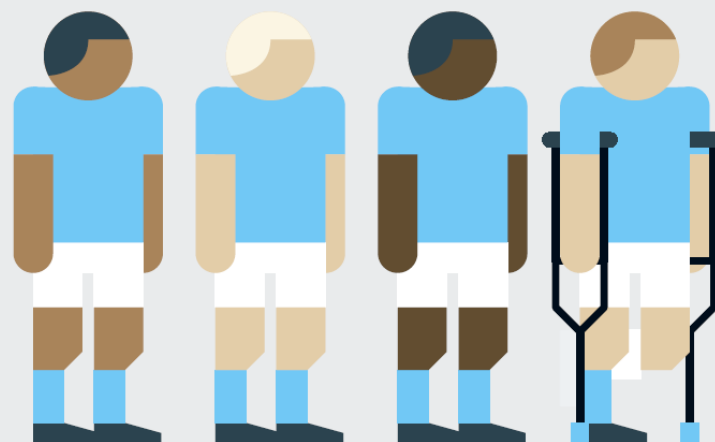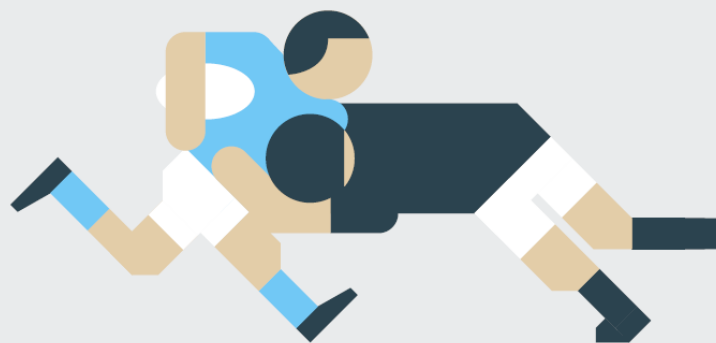


Players make 20-40 tackles per match.   1 in 4 get injured each season.

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# Missing players cause missed opportunities



**Players**
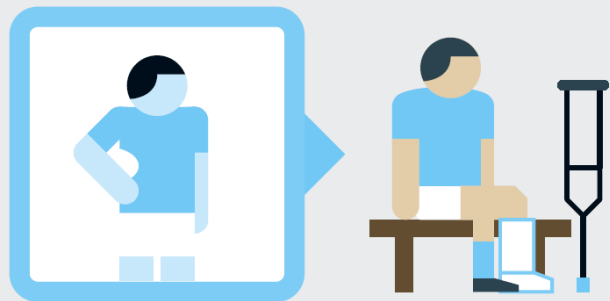
Players with injuries are benched.

**Organization**

RECORD 0-3

The team is less competitve.

**Fans**

Viewership declines.

# Using analytics to avoid injury

GPS Data
**51 points**

Medical Data
**32 points**

Player Data
**12 points**

Wellness Data
**24 points**

Collecting 8,820 data points per week for the squad

Plus 9,000 data points collected per game (including opposition statistics)

18 injured players last season, 8 were in Australian Wallabies squad

Cumulative total of 78 games missed

Costs **$2.9m** across a season

# Using analytics to avoid injury



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📈 **10%/35%**
Backs  Forwards

Filter : All ▼   Sort : Highest injury risk ▼

Risk
**98**%
▲ +10

**Adam** Ashley-Cooper

**Kurtley Beale**
Risk **94**% ▲ +9

**Israel Folau**
Risk **51**% ▲ +7

**Tatafu Polota Nau**
Risk **16**% ▲ +1

**Benn Robinson**
Risk **14**% ▲ +9

**Stephen Holies**
Risk **13**% ▲ +3

**Michael Hooper**
Risk **12**% ▲ +1

**Rob Horne**
Risk **12**% ▲ +1

**Alofa Alofa**
Risk **10**% ▼ -7
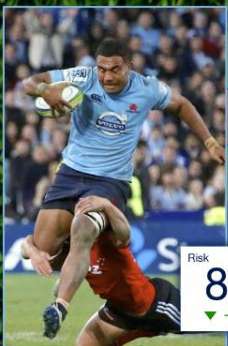
Risk **8**% ▼ -1

Risk **6**% ▼ -1

Risk **5**% ▼ -1

Risk **4**% ▼ -3

**WARATAHS**® *Performance Analysis*    SMART ANALTICS BY **IBM**

🔍 Search

**Benn Robinson**
Risk 14% ▲ +9

**Tatafu Polota Nau**
Risk 16% ▲ +1

**Sekope Kepu**
Risk 5% ▼ -1

# Adam Ashley-Coo...

| | | | |
|---|---|---|---|
| DOB | **27/3/1984** | Debut | **2012** |
| Height | **1.82m** | Age | **30** |
| Weight | **98kg** | Position | **Outside Centre** |
| Caps | **43** | | |

Risk
**98%**
▲10%

100% Risk

75% Max Risk

25% Min Risk

0% Risk
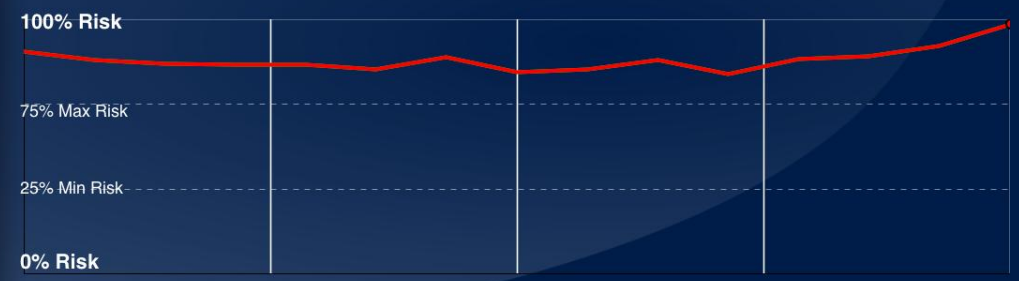
| Change risk | 🏃 Fitness | 〽️ Risk | ❤️ Wellbeing |
|---|---|---|---|

Fitness    **3/5**

This player is **ACTIVE**

| Sit & Reach | (cm) | | Groin Squeeze (0) | (mmHg) |
|---|---|---|---|---|
| average | 10 | | average | 251 |
| current | 10 | | current | 270 |

| Hip Int Rotation (L) | (deg) | | Groin Squeeze (60) | (mmHg) |
|---|---|---|---|---|
| average | 15 | | average | 174 |

**WARATAHS** *Performance Analysis*　　　SMART ANALTICS BY **IBM**

Search

Benn Robinson

Risk 14% ▲ +9

Tatafu Polota Nau

Risk 16% ▲ +1

Sekope Kepu

Risk 5% ▼ -1

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## Risk
# 98%
▲10%

100% Risk

75% Max Risk

25% Min Risk

0% Risk

| Change risk | 🏃 Fitness | 〰 Risk | ❤ Wellbeing |
|---|---|---|---|

Risk　　🟥　　　　　1/8

| Sum of volume(distance >12kph) | | Force load per minute | | Velocity load per minute | |
|---|---|---|---|---|---|
| average | 18 | average | 3 | average | 3 |
| current | 39 | current | 5 | current | 4 |

| Acceleration events | | Rating of percieved exertion | | Total sprint distance(m) | |
|---|---|---|---|---|---|
| average | 38 | average | 6 | average | 16 |
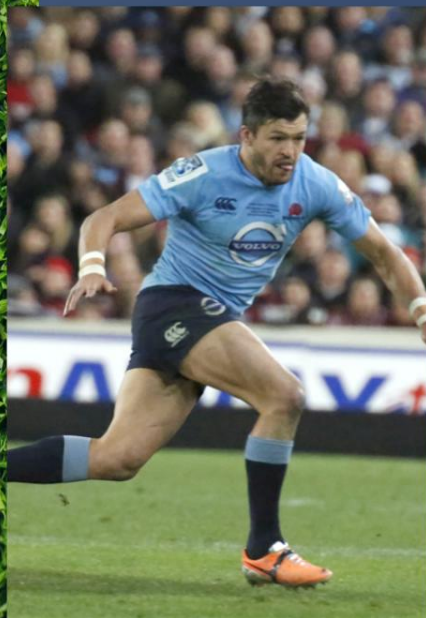
**WARATAHS**® *Performance Analysis*     SMART ANALTICS BY **IBM**

Search

Benn Robinson
Risk 14%
▲ +9

Tatafu Polota Nau
Risk 16%
▲ +1

Sekope Kepu
Risk 5%
▼ -1

# Adam Ashley-Coo...

| | | | |
|---|---|---|---|
| DOB | **27/3/1984** | Debut | **2012** |
| Height | **1.82m** | Age | **30** |
| Weight | **98kg** | Position | **Outside Centre** |
| Caps | **43** | | |

**Risk**
# 98%
▲ 10%

100% Risk

75% Max Risk

25% Min Risk

0% Risk

Change risk       🏃 **Fitness**       〰 **Risk**       ♥ **Wellbeing**

Wellbeing        9/11

| Sleep quality | | | Recovery Index | | | Hip flexor quads | | |
|---|---|---|---|---|---|---|---|---|
| average | 7 | | average | 7 | | average | 8 | |
| current | 8 | | current | 7 | | current | 7 | |

| Leg heaviness | | | Muscle soreness | | | Groin | | |
|---|---|---|---|---|---|---|---|---|
| average | 6 | | average | 7 | | average | 7 | |

# Current Risk

**98**% **10%** ▲

## Sum of v1 (distance > 12kph)

Sum of the total distance (meters) covered whilst running above 3.33 m/s (12kph) during the selected splits.

| Average | 18 |
|---|---|
| Current | 39 |

## Acceleration Events

Sum of the total number of 'acceleration' efforts above 2m/s/s (7.2kph/s) or > 50% max during the selected splits.

| Average | 38 |
|---|---|
| Current | 68 |

## Sit & Reach (cm)

| Average | 10 |
|---|---|
| Current | 10 |

## Total sprint distance

Sum of the total distance(meters) covered whilst ruuning above 6.55m/s (24kph) during th selected splits

| Average | 16 |
|---|---|
| Current | 1 |

## Hip Rotation (deg)

| Average | 20 |
|---|---|
| Current | 20 |

---

**98** % New Risk

| 18 | 28 | 39 | 50 | 60 |
|---|---|---|---|---|

| 38 | 53 | 68 | 83 | 98 |
|---|---|---|---|---|

| 2 | 5 | 10 | 12 | 15 |
|---|---|---|---|---|

| 1 | 8 | 16 | 24 | 31 |
|---|---|---|---|---|

| 5 | 10 | 20 | 25 | 30 |
|---|---|---|---|---|

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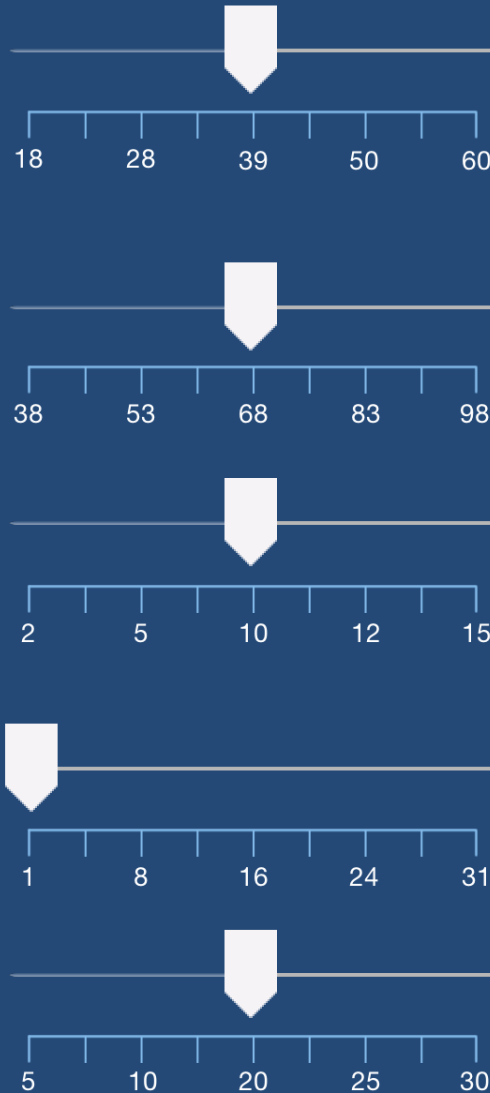
Close

## Top contributes of injury risk

1. Sum of volume
2. Average acclereations / hr
3. Sit & Reach cm
4. Average high agility %
5. Sum of sprints
6. Height
7. Hip internal rotation
8. Sum of load

# Gaining a competitive advantage



**Players**
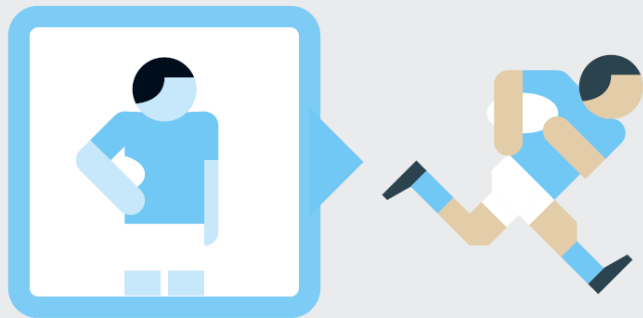
Healthy, talented players.

**Organization**

RECORD 3-0

Better record.

**Fans**

Viewership grows.

"*The predictive analytics technology gives us a very **objective, sensitive and reliable measure** of predicting each player's limit and his injury risk, allowing us to **modify training accordingly**.*"
—*Haydn Masters, athletic development manager*

# Waratahs aren't the only organization placing focus on their assets and operations

## Interconnected growth, lower data-capture cost
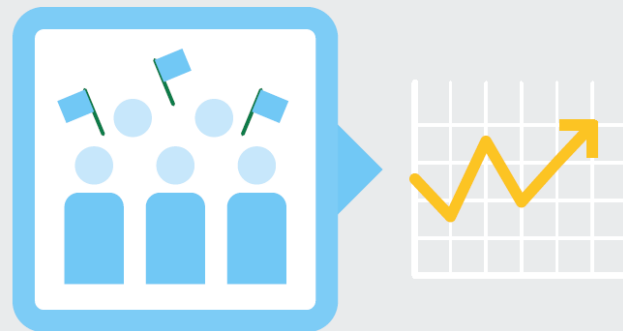
**1 trillion, USD0.03**

Number of sensors by 2015[1]

Estimated price of average passive sensor by 2021, representing a 66 percent decrease in eight years[2]

## Focus on asset failure

**#1**

Failure of critical assets was the top risk stated by executives as having the biggest impact on operations[3]

## Focus on operational processes
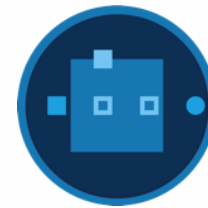
**99%**

Percent of CIOs with mandates to transform the business who are looking to simplify key internal processes[4]

1 Making Markets:Smarter Planet. IBM Investor Briefing, 2012
2 Big Data-Startups, "The Great Sensor-Era: Brontobytes Will Change Society," April 16, 2013.
3 Aberdeen Group, *Asset Management: Using Analytics to Drive Predictive Maintenance*, March 19, 2013.
4 IBM, *The Essential CIO: Insights from the Global Chief Information Officer Study*, May 2011.

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# And…what if you could?



Reduce failures, maximize performance

Improve customer satisfaction

Optimize asset availability and life

Smarter replacement and inspection

Lower risk exposure

Improve fuel cost efficiency

Decrease loss of service

Decrease planned & unplanned maintenance

Optimize labor and operations costs

Reduce required compliance activity

Recover lost revenue

Optimize workforce productivity

# IBM Predictive Maintenance and Quality (PMQ)

**Reduce**
operational costs

**Improve**
asset productivity

**Increase**
process efficiency

## Accelerate time to value

- Real-time capabilities
- Big data, predictive analytics, business intelligence
- Quicker and more-accurate decision making
- IBM Maximo® integration
- Open architecture
- Advanced quality algorithms

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# IBM Predictive Maintenance and Quality analyzes data from multiple sources and provides recommended actions



**#2** Generate predictive and statistical models

**#3** Attain analytical insights

**#4** Display alerts and recommend actions

**#1** Collect and integrate data
Structured and unstructured, streaming and at rest

**Predictive Maintenance and Quality**
- Data agnostic
- User-friendly model creation
- Interactive dashboards
- Enables faster decisions

**#5** Act upon insights

**Asset performance**

**Quality improvement**

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# PMQ enables better business outcomes

- Monitor, maintain and optimize assets for better availability, utilization and performance

- Predict asset failure and identify poor quality parts earlier to better optimize operations and supply chain processes

- Reduce guesswork and incorporate experiential knowledge during the decision-making process

*Includes foundational models, dashboards, reports and source connectors*

Pratt & Whitney, an aircraft engine manufacturer uses predictive analytics to prevent costly aircraft-on-ground engine events

Honda R&D uses predictive analytics to improve the performance and safety of its electric vehicle batteries

## 100% prediction

*of aircraft-on-the-ground events for high-risk engines*

## 50% reduction

*in carbon dioxide emissions by commercializing EV technology*

## 97% accuracy

*in predicting engine events that lead to airline disruption*

## Boosts confidence

*and customer satisfaction with EVs by improving performance*

## USD63 million

*in extrapolated cost savings to airlines if prediction had been available in the previous year*

## Improves design

*by analyzing massive amounts of operating data*

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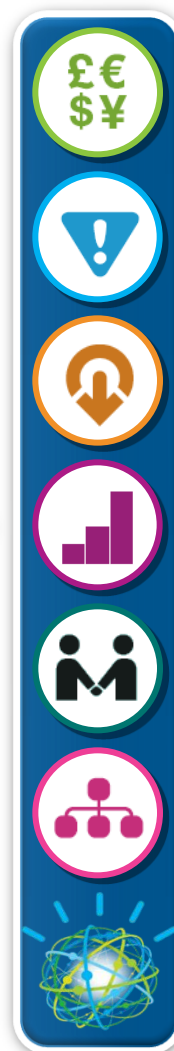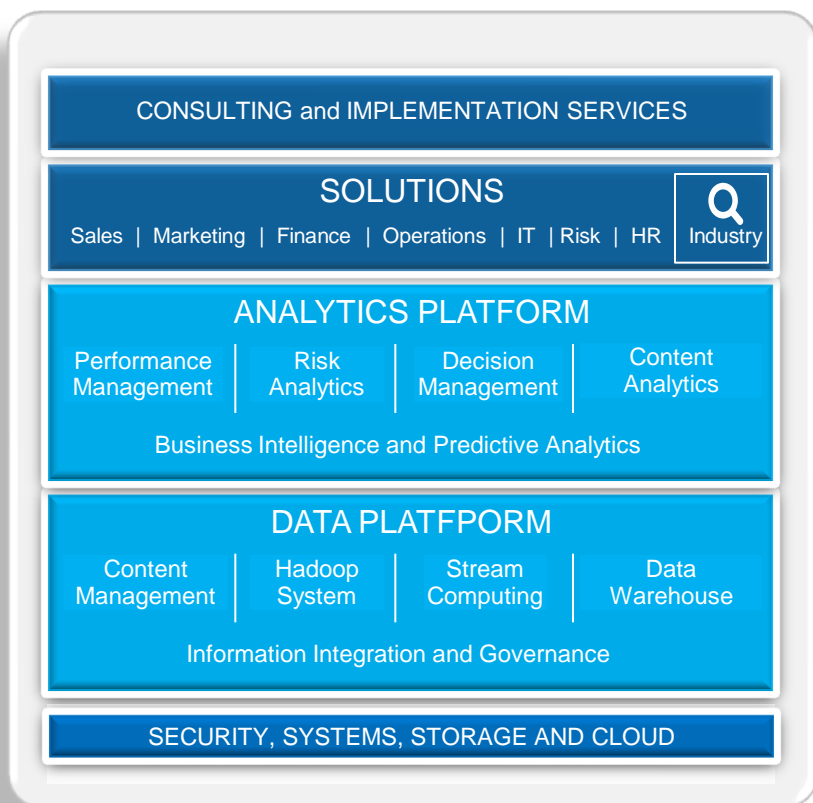
# Opportunities for Your Business

Being Peter Brand…

- Fictional character in *Moneyball* portrait by Jonah Hill.

- The brain of operations.

# IBM's Holistic and integrated approach to Data & Analytics
## *There is no single 'big data' solution or product*

**CONSULTING and IMPLEMENTATION SERVICES**

**SOLUTIONS**

Sales | Marketing | Finance | Operations | IT | Risk | HR

Industry

**ANALYTICS PLATFORM**

| Performance Management | Risk Analytics | Decision Management | Content Analytics |

Business Intelligence and Predictive Analytics

**DATA PLATFPORM**

| Content Management | Hadoop System | Stream Computing | Data Warehouse |

Information Integration and Governance

**SECURITY, SYSTEMS, STORAGE AND CLOUD**

Data   Media   Content   Machine   Social

Transform financial processes

Manage risk

Optimize operations and reduce fraud
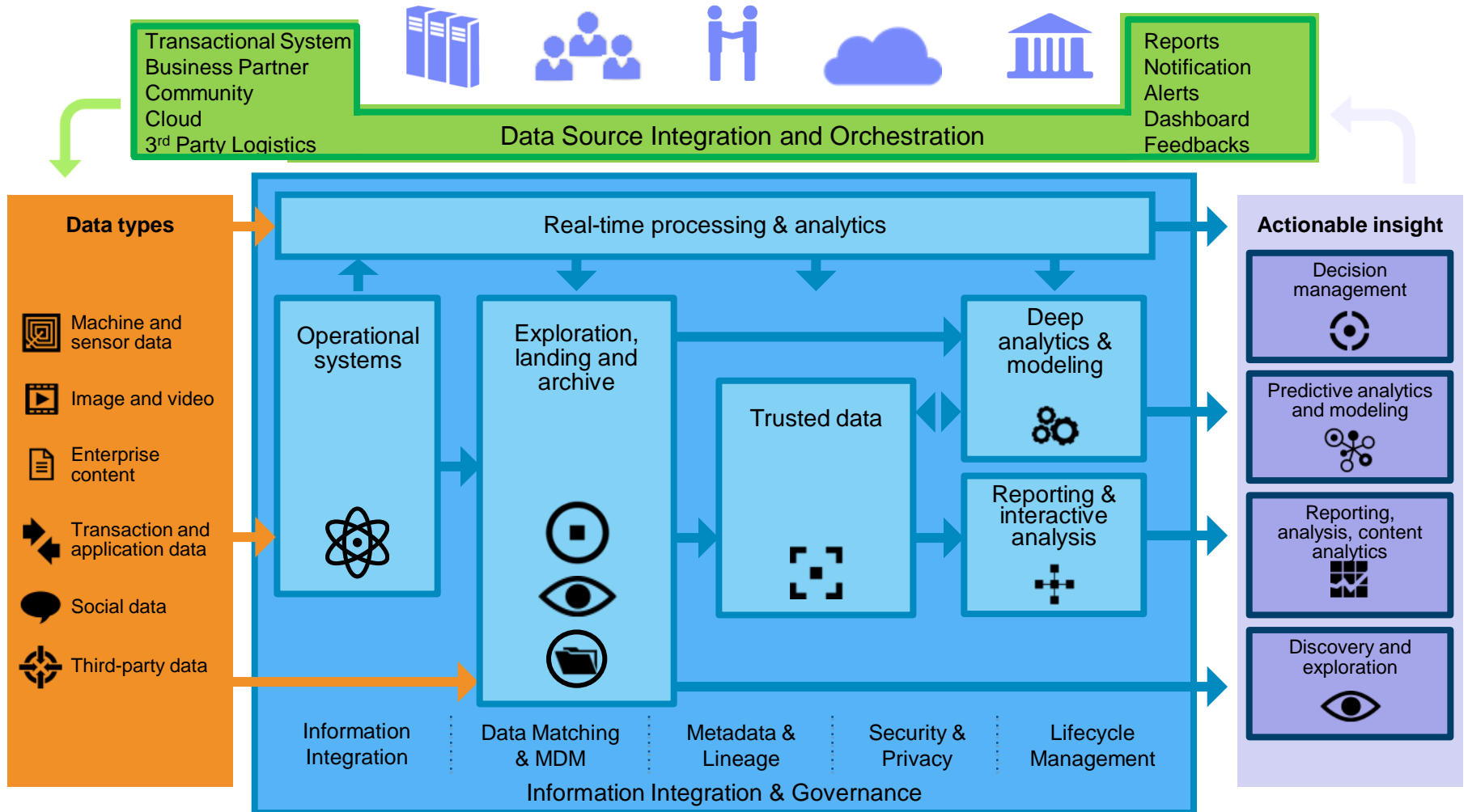
Improve IT economics

Attract, grow, retain customers
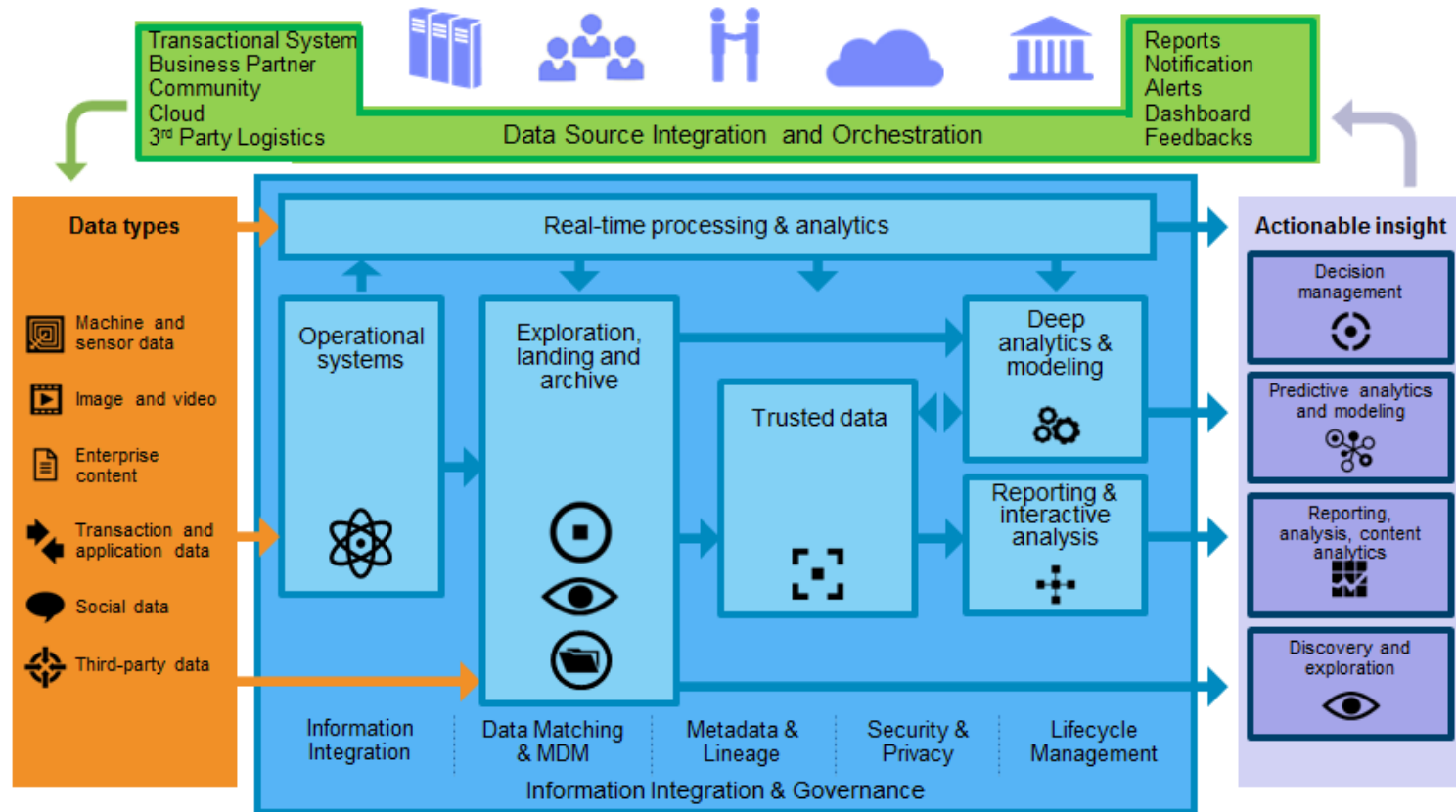
Create new business models

Watson Cognitive Computing

# Better information through transformation
## Providing faster, better insights at reduced cost

# IBM Data & Analytics Deployment Options



**Data Source Integration and Orchestration**

Transactional System
Business Partner
Community
Cloud
3rd Party Logistics

Reports
Notification
Alerts
Dashboard
Feedbacks

**Data types**
- Machine and sensor data
- Image and video
- Enterprise content
- Transaction and application data
- Social data
- Third-party data

Real-time processing & analytics

Operational systems

Exploration, landing and archive

Trusted data

Deep analytics & modeling

Reporting & interactive analysis

Information Integration | Data Matching & MDM | Metadata & Lineage | Security & Privacy | Lifecycle Management

**Information Integration & Governance**

**Actionable insight**
- Decision management
- Predictive analytics and modeling
- Reporting, analysis, content analytics
- Discovery and exploration

**1** **On premise private cloud**
 ▪ Starting point for most customers

**2** **Public cloud**
 ▪ New business model

**3** **Hybrid cloud**
 ▪ Cloud economics combined with legacy data

# IBM Data & Analytics Key Products



**7** Managed File Transfer

**6** Watson Analytics

**2** Streams

**1** DB2, Informix, Cloudant

**3** BigInsights

**4** PureData & DB2 BLU

SPSS

Cognos BI

Data Explorer

**5** Information Server
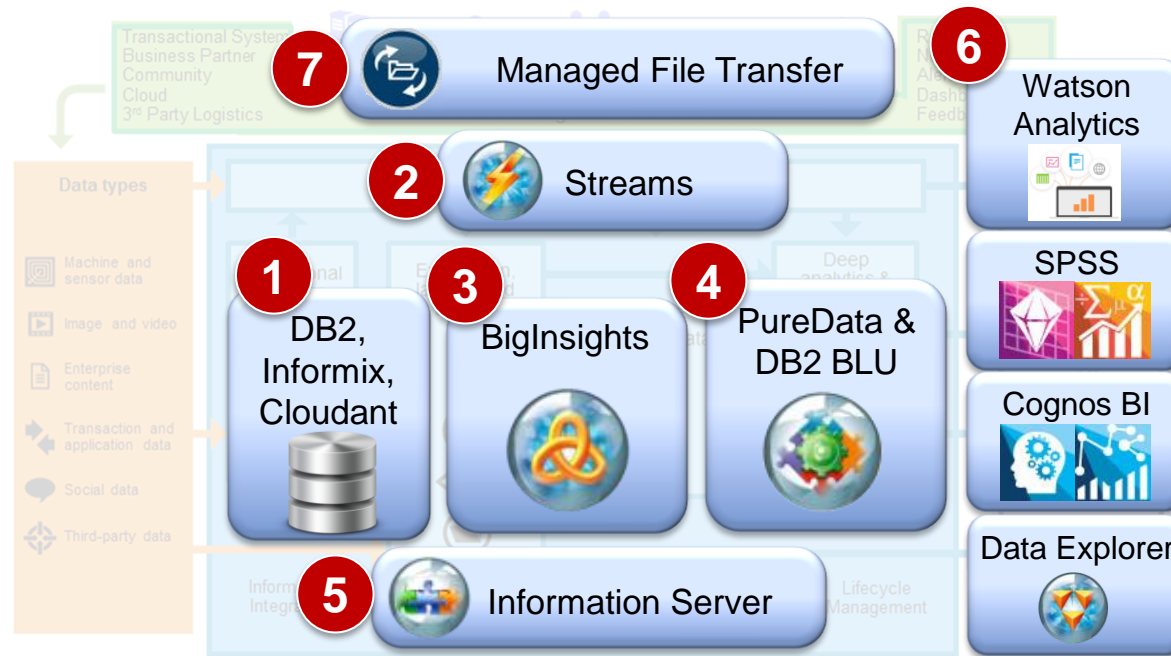
**1 DB2, Informix, Cloudant - Operational Systems**
- Enterprise class transactional database systems

**2 Streams - Real-time Analytics**
- Enterprise class stream processing & analytics

**3 Big Insights - Enterprise Hadoop**
- Greater resiliency, recoverability and security
- Enhanced, flexible storage management (GPFS)
- Enhanced data access (BigSQL, Search)
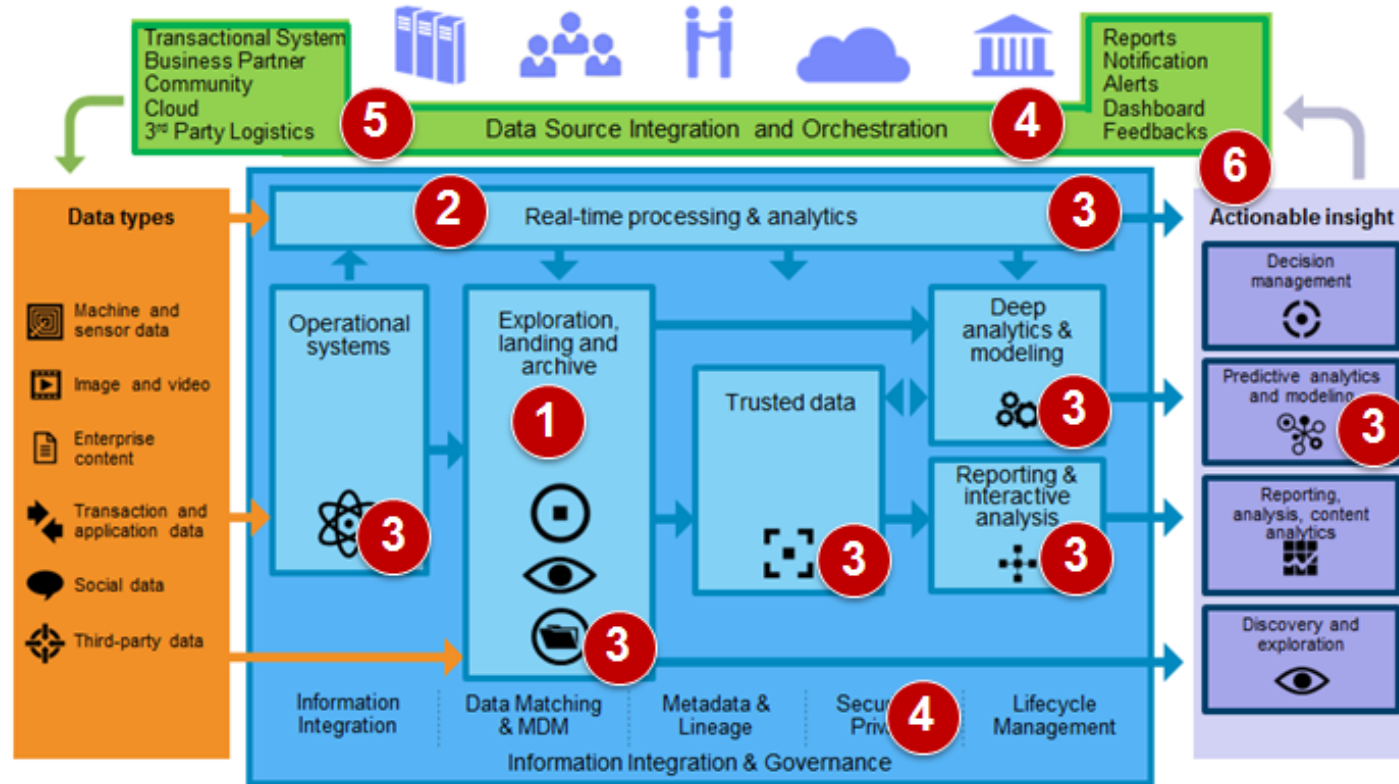- Analytics accelerators & visualization

**4 Pure Data for Analytics - Data Warehouse**
- Richest set of analytics capabilities
- Ability to analyze data in place

**DB2 BLU Acceleration**
- Columnar in-memory analytics database

**5 Information Server - Governance**
- Complete integration & governance capabilities
- Ability to govern all data where ever it is

**6 SPSS – Data Modelling & Advanced Analytics**
**Cognos – Business Intelligence & Reporting**
**Data Explorer – Search and Discovery**
**Watson Analytics – Service for Business Users**

**7 Managed File Transfer**
- Complete Enterprise File Transfer portfolio
- Accelerated File Transfer
- Maximize throughput across LAN and WAN
- Manage Security, Governance, Compliance, Risks and SLA data exchange

# IBM Data & Analytics Differentiating Factors



**1 More than Hadoop**
- Greater resiliency and recoverability
- Advanced workload management & multi-tenancy
- Enhanced, flexible storage management (GPFS)
- Enhanced data access (BigSQL, Search)
- Analytics accelerators & visualization
- Enterprise-ready security framework

**2 Data in Motion**
- Enterprise class stream processing & analytics

**3 Analytics Everywhere**
- Richest set of analytics capabilities
- Ability to analyze data in place

**4 Governance Everywhere**
- Complete integration & governance capabilities
- Ability to govern all data where ever it is

**5 Analytics Data Integration and Governance**
- Data feed governance, security and SLA
- Supports all data feed integration use cases
- Assured data delivery, end-to-end visibility
- Maximize existing bandwidth potential

**6 Complete Portfolio**
- End-to-end capabilities to address all needs
- Ability to grow and address future needs
- Remains open to work with existing investments

# IBM as a partner can provide end to end capabilities for your Data & Analytics journey

**VALUE**

- **Addresses critical industry imperatives**

- **Accelerate time-to-value through repeatable solutions**

- **Outcome-based approach that drives business value at each step in the journey**

- **Accountability & Responsibility**

## SERVICES

- Consulting and services projects

- Intellectual Property packaged as software assets

- Industry expertise and proven accelerators

## SOFTWARE

- Built on IBM Software Products, and technology

- Deep portfolio of information and analytics capabilities

- Embed insights to drive actions and deliver value

## RESEARCH

- Advanced technology and expertise applying innovation to real world problems

- Predictive analytics algorithms and techniques

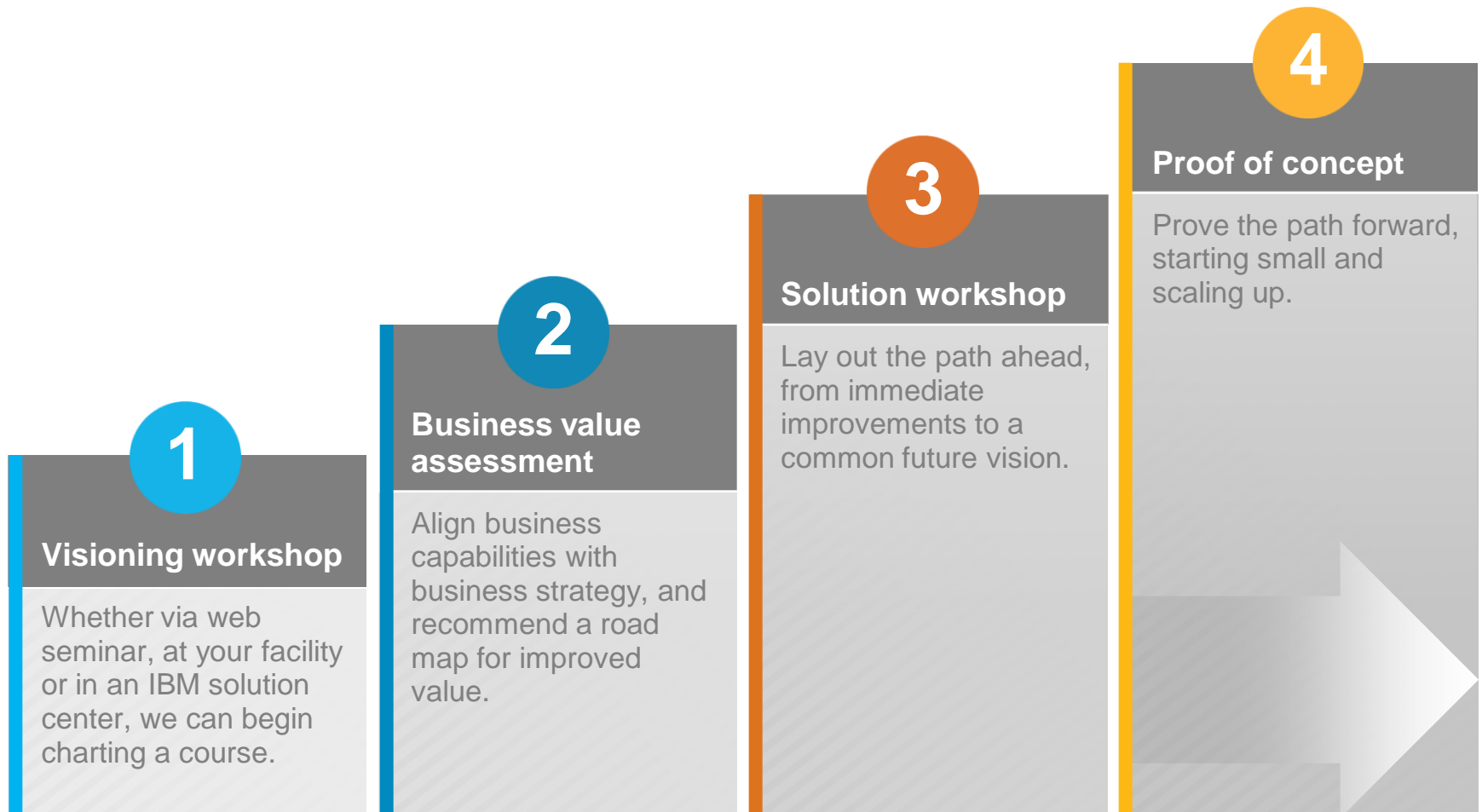- First of a Kind combined client / research projects

## ACADEMIA

- Partnership with National University of Singapore

- "Master of Science Business Analytics" program sponsor

- Address global acute talent shortage

- Participate in industry projects

## INFRASTRUCTURE

- Servers, Network, Storage solutions that address full spectrum of needs
- On-premise, private cloud, public cloud, hybrid cloud deployment

# Let's get started achieving better business outcomes with proven approaches to collaborative problem solving

**1**

**Visioning workshop**

Whether via web seminar, at your facility or in an IBM solution center, we can begin charting a course.

**2**

**Business value assessment**

Align business capabilities with business strategy, and recommend a road map for improved value.

**3**

**Solution workshop**

Lay out the path ahead, from immediate improvements to a common future vision.

**4**

**Proof of concept**

Prove the path forward, starting small and scaling up.

# IBM SolutionsConnect 2015

Seize the Moment. Dive into Next Generation Technologies.

# Thank You

IBM