Big Data: More than buzz
A new way to do business

GTA Technology Summit 2014

Speaker:

James Ferguson

Practice Principal
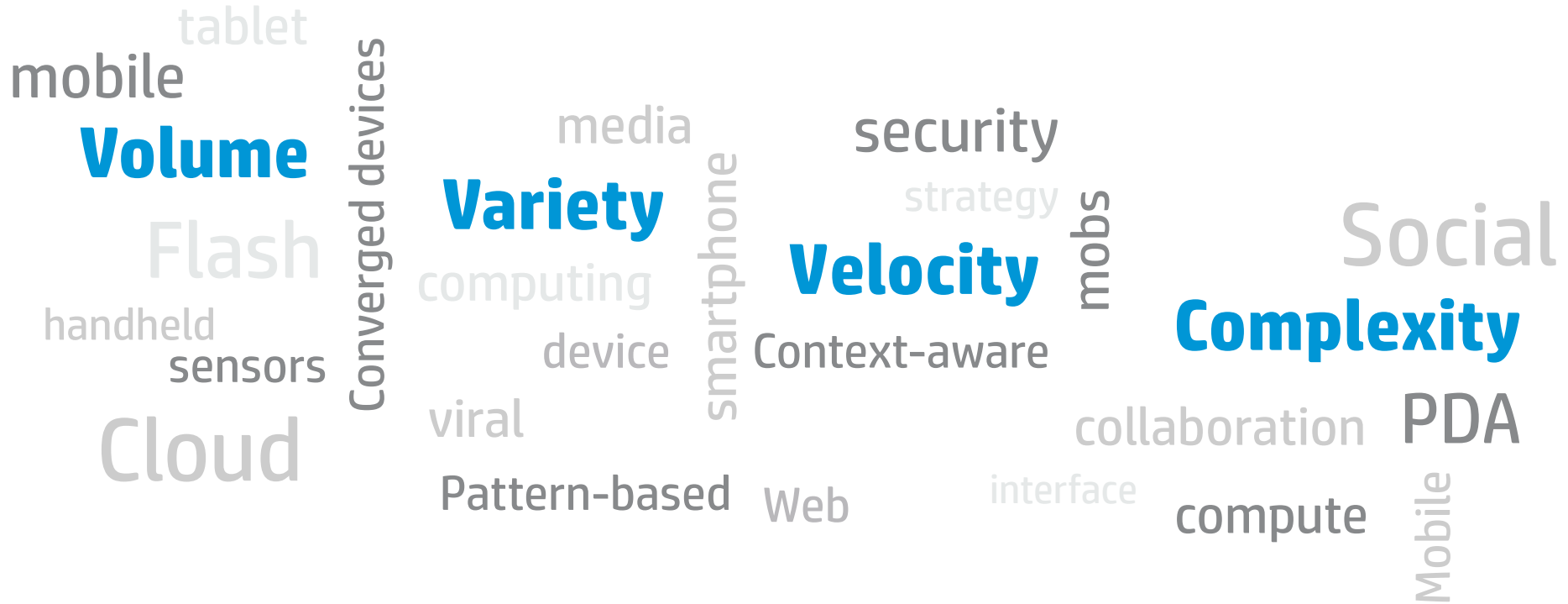
HP Enterprise Services

Agenda

- **Case for big data**

- **Big data and the public sector**

- **Changing landscape of analytics**

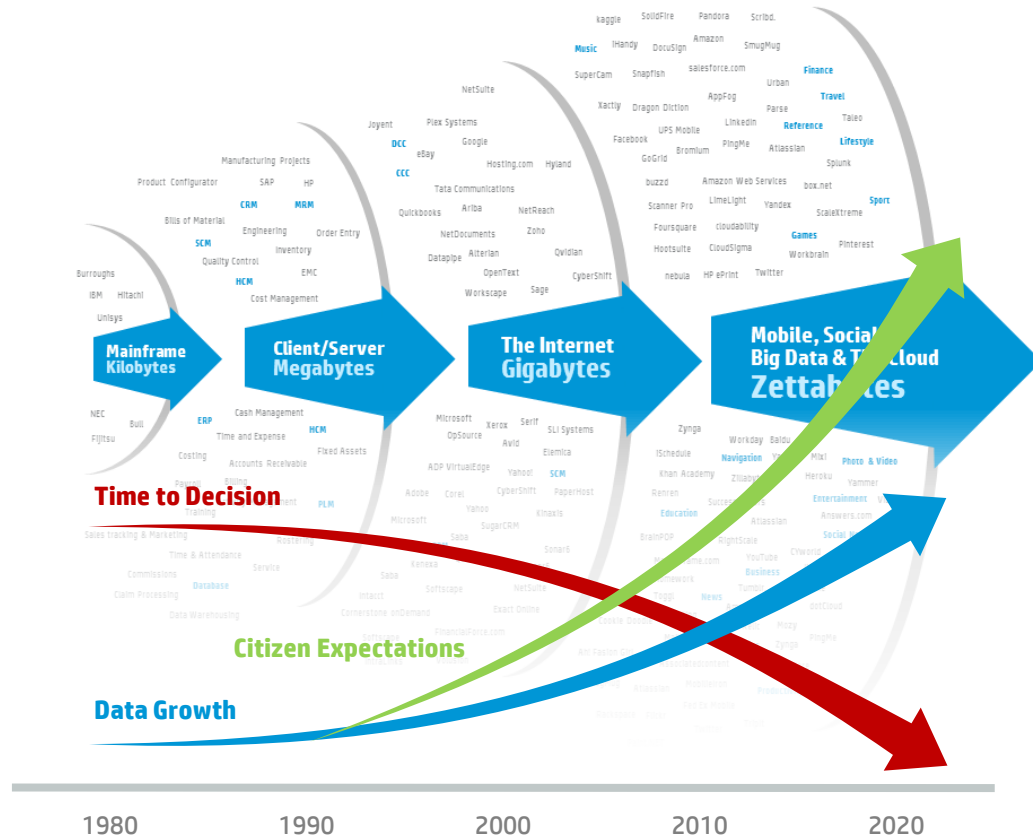- **HP approach**

- **Where to start**

- **Q&A**

Case for big data

Big Data: The changing face of information

tablet

mobile

Volume

Converged devices

media

Variety

computing

device

viral

security

strategy

smartphone

Velocity

Context-aware

mobs

Complexity

Social

Flash

handheld

sensors

Cloud

Pattern-based

Web

collaboration

interface

compute

PDA

Mobile

Increased demand for analytics

✓ Ingest all forms of data

✓ Extract themes/sentiment from social commentary & media data

✓ Stream analyze and purge continuous data

✓ Implement Hybrid data management environments

✓ Data mining & predictive analytics

✓ Real time analytics & decision management

Data is changing the world at an explosive rate, so...

Expectations...

Drive need for INNOVATION

Big data and the public sector

Big Data: Public Sector

From Meritalk Survey on Big Data 2012 of Government Leadership

2%
State & Local Governments have a big data strategy

50%
Not leveraging the data they have to drive positive outcomes

Drivers of Big Data in public sector

Engage with constituents and government partners

Manage risk across the public sector

Improve transparency of government

Improve efficiency and productivity

Retain and manage data for e-discovery and compliance

Leverage the value of information

Integrate social media and intelligence into appropriate processes

London Metro Police: Social Media Analytics

Protect and engage citizens for public safety and response

Near real-time understanding of potential threats enabled police planning and proactive engagement to prevent disorder. "To be able to monitor sentiment, respond to messages, and reply on a London-wide or national scale is of tremendous benefit."

Andrew Watson, MPS Deputy CIO

Automatic contextual analysis of large volumes of unstructured data identified new, key influencers in the community along with early identification of potential issues and a gauge of public sentiment.
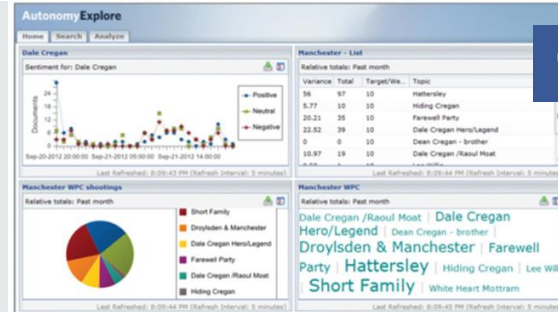
Anaheim, CA - ForeSight Situational Awareness Solution

Transform disparate data into actionable information through correlation and analytics

Empower those responsible for maintaining vigilance, planning, and execution with heightened situational awareness of resources, assets, and conditions across multiple locations and data sources—all in real time.

ForeSight provides analytics to automate information flows, interrogate data elements to discover trends and anomalies, and bring information forward in a secure framework—providing leaders with fast, accurate assessments for informed command decisions.

HP Earth Insights & Conservation International

Transforming environmental science

Near real-time data analytics drives new insights about the world's tropical forests; empowering decision makers to create proactive solutions for conservation management.

The Wildlife Picture Index (WPI) Analytic System serves as an early warning system to enable the protection of hundreds of threatened and endangered species.
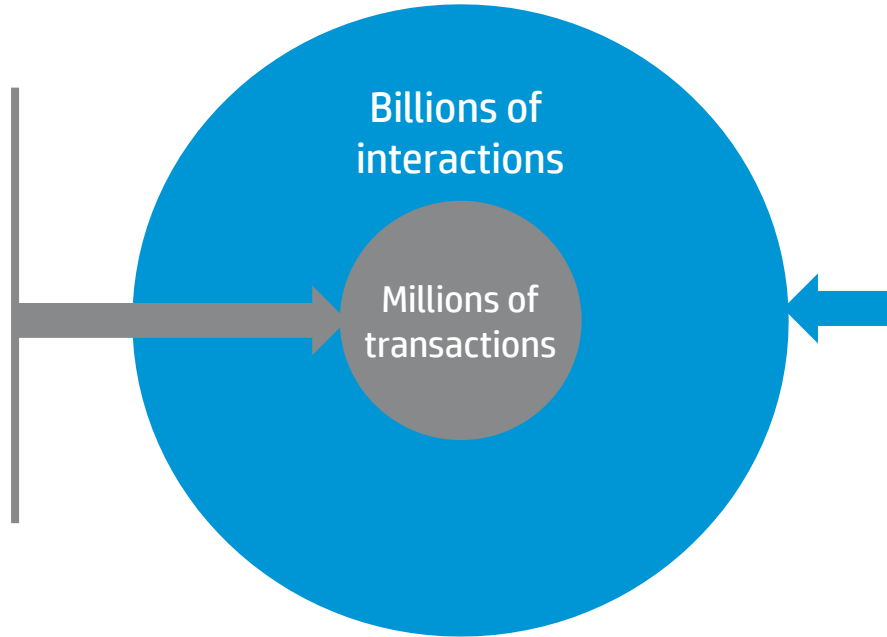
Changing landscape of analytics
Shift toward analytic automation & integration

Big data—what does it look like?

- Vehicle registration
- Voter Registration
- Reseller data
- Customer support
- Tax data
- Responses
- Web logs
- Budget data
- Syndicated data

Billions of interactions

Millions of transactions

- Online sales
- Downloads
- Call notes
- SMS
- Web chat
- Blogs
- Social networks
- Mobile apps
- Sensors
- Survey response
- Emails
- Videos

Enterprise information that comes from line-of-business systems that provide **structured database** information that is used **to run the government**

+

Global information that comes from **internal and external unstructured** sources that is used to gain **insight on the business drivers**

Big Data needs a unified approach

One platform for structured, semi, and unstructured to benefit from 100% of data.

Enable me to:

- **Capture**
- **Store**
- **Manage**
- **Analyze**
- **Optimize**
- **Govern**

on

Social, Interaction Data

Transaction Data

Processing, Analytic Data
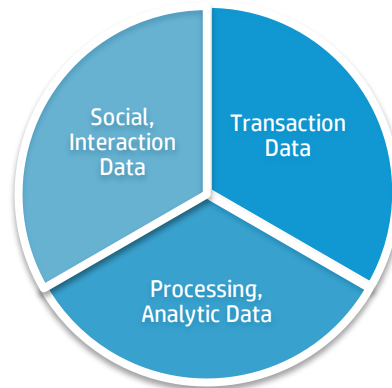
100% of data

Structured (10-15%)
CRM, transactions, HR, financial

Unstructured (85-90%)
Audio, Video, emails, social media

Trends in analytics

ANALYTIC
DEFINED
ENTERPRISES

DATA
DEFINED
ENTERPRISES

TRANSACTION
DEFINED
ENTERPRISES

SYSTEM INTEGRATION

DECISION MANAGEMENT

PREDICTIVE ANALYTICS

DATA MINING

REPORTING

DATA INTEGRATION

Reporting	Discovery	Prediction	Optimization	Automation
What happened?	Why did it happen?	What is likely to happen?	What do we want to happen?	Make it happen

1980   1990   2000   2005   2010

Integrating analytics as a closed-loop process

	Business
TIER IV	✓ Business Strategy Alignment
	✓ Business Process Modeling
	✓ Management of Change
	✓ Governance
	Analytic
TIER III	✓ Key Performance Indicators
	✓ Data Model
	✓ Analytic Insights
	✓ Analytic Deployment
	Platform
TIER II	✓ Master Data Management
	✓ Security Management
	✓ Support Model
	✓ Operations
	Infrastructure
TIER I	✓ Facilities
	✓ Network
	✓ Storage
	✓ Compute

Effective Enterprise Analytic Solutions are delivered through the coordination of business processes, analytics, platform management and infrastructure.

Enterprise Analytic Solutions integrate data science with business intelligence, enterprise applications and business processes to improve decision making and optimize business operations.
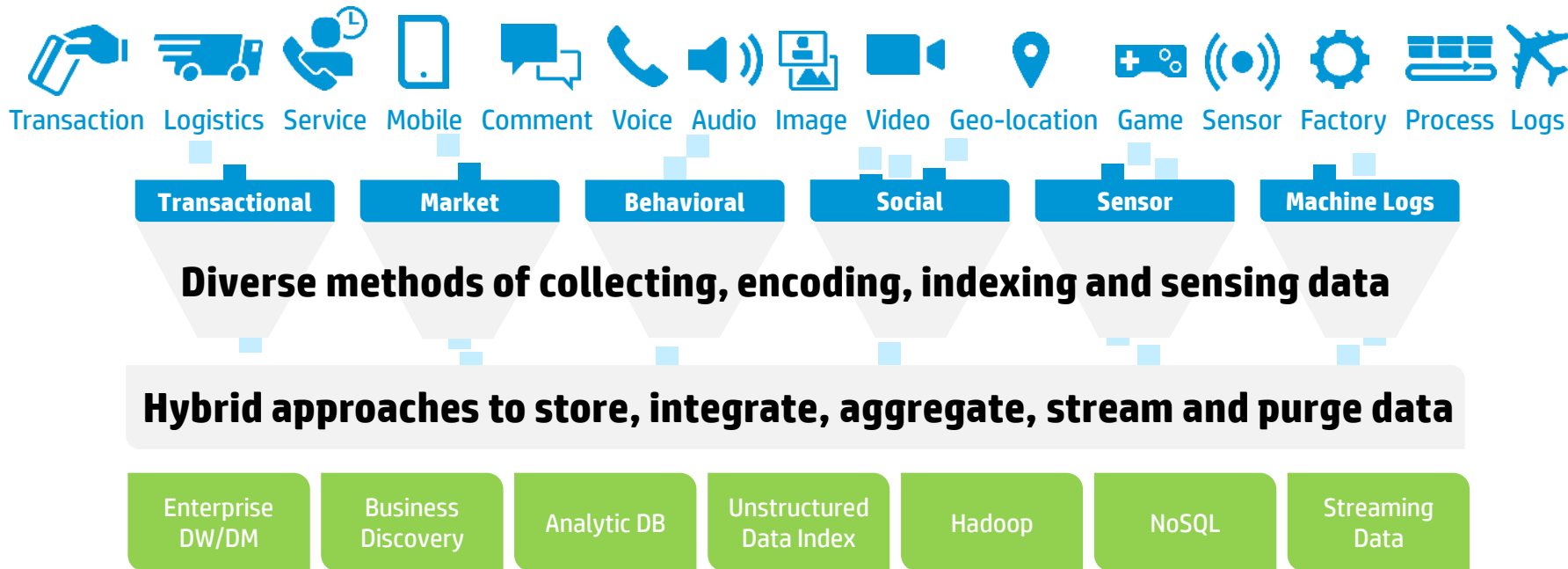
HP approach
Analytic solution skills and processes

Hybrid Data Management

Transaction Logistics Service Mobile Comment Voice Audio Image Video Geo-location Game Sensor Factory Process Logs

| Transactional | Market | Behavioral | Social | Sensor | Machine Logs |

Diverse methods of collecting, encoding, indexing and sensing data

Hybrid approaches to store, integrate, aggregate, stream and purge data

| Enterprise DW/DM | Business Discovery | Analytic DB | Unstructured Data Index | Hadoop | NoSQL | Streaming Data |

Advanced Analytics – Domains

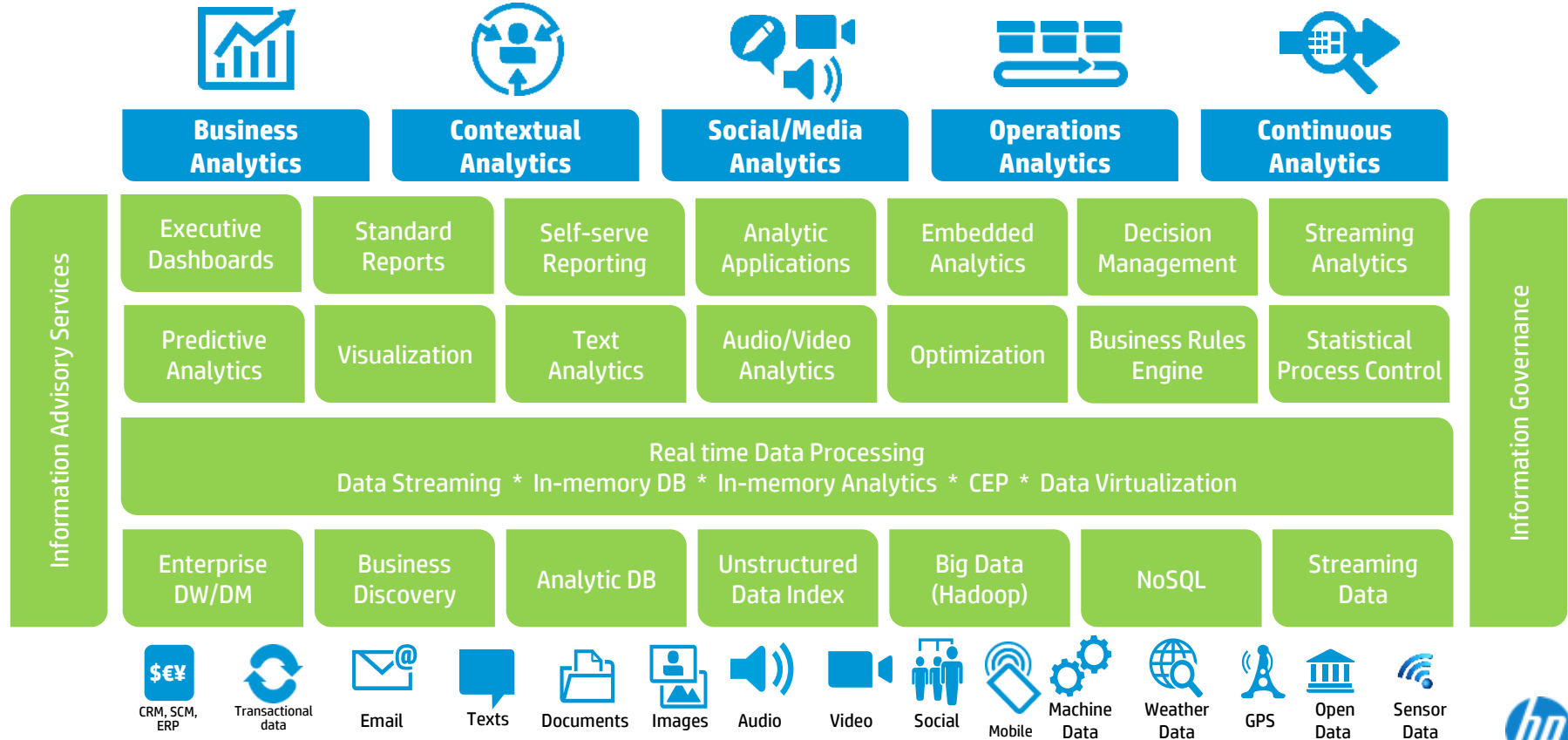| Business Analytics	Contextual Analytics	Social/Media Analytics	Operations Analytics	Continuous Analytics
Measure, monitor and predict key indicators of business performance. Use analytics to simulate and forecast business outcomes.	Combine all available transactional, behavioral, attitudinal, demographic and performance data for a complete 360* view of products or stakeholders.	Collect and analyze external data to understand, monitor and respond to events that impact business objectives.	Analyze systems and processes to identify opportunities for process improvement and predictability.	Monitor continuous streams of information from sensors and machines to predict and manage performance – in real time.

Executive Dashboards & Reports

Analytic Modeling and Insight

Embedded Analytics

Analytic & Data Management - Capability stack

Business Analytics	Contextual Analytics	Social/Media Analytics	Operations Analytics	Continuous Analytics

Information Advisory Services	Executive Dashboards	Standard Reports	Self-serve Reporting	Analytic Applications	Embedded Analytics	Decision Management	Streaming Analytics	Information Governance
	Predictive Analytics	Visualization	Text Analytics	Audio/Video Analytics	Optimization	Business Rules Engine	Statistical Process Control	

Real time Data Processing
Data Streaming * In-memory DB * In-memory Analytics * CEP * Data Virtualization

Enterprise DW/DM	Business Discovery	Analytic DB	Unstructured Data Index	Big Data (Hadoop)	NoSQL	Streaming Data

CRM, SCM, ERP · Transactional data · Email · Texts · Documents · Images · Audio · Video · Social · Mobile · Machine Data · Weather Data · GPS · Open Data · Sensor Data

Information Advisory Services

Pave your path to innovation with workshops, assessments and discovery environments

- Align business priorities and create roadmaps through collaborative workshops
- Strategically assess the use and value of your data to design information plans
- Explore, test and analyze your data's value within discovery environments

Benefits

- Accurately identify, assess and test information and Big Data sets before investing capital

- Decrease resource expenditures by leveraging HP's consultants and data scientists, specialized methodologies, tools and private cloud-analytics resources

- Quickly align business and data priorities to drive growth and innovation

HP Services

- Big Data Discovery Experience

- Information Optimization Transformation Experience Workshop (IO TEW)

- Master Planning

- Business Value Assessment

- Enterprise Data Warehouse (EDW) Assessment

HAVEn: Big Data platform

Standard platform with connectors, applications, and engines

HAVEn
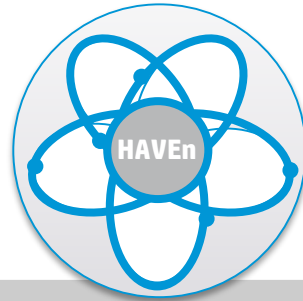
Hadoop/HDFS
Catalog massive volumes of distributed data

Autonomy IDOL
Process and index all information

Vertica
Analyze at extreme scale in real-time

Enterprise Security
Collect & unify machine data

n
Apps
Powering HP Software + *your* apps

Social Media Video Audio Email Texts Mobile Transactional Data Documents IT/OT Search engine Images

Information Governance Services

Govern your information as a strategic asset through a holistic approach

- Classification models to assess what data is relevant and align it to requirements
- Archiving models to optimally organize and control data within a centralized policy engine
- Record management models to manage physical and electronic records reliably and cost-effectively

Benefits

- Govern information more holistically to maximize its value

- Improve processes for information classification, archiving, and records management

- Experience lower costs, less risk, and greater efficiency

HP Services

- Classification Services
- Archiving Services
- Records Management Services

Where to start

Embark on your path forward

Take the first step towards seizing the power

Business alignment: workshop – business executives and IT

Big Data Initiative: strategy & planning

Pilot and measure value and build business case for enterprise roadmap and implementation

Solution: design & implement

Iterative phases

Governance, Maintenance and support

"The power to innovate and drive growth"

Identify relevant use cases

- **Business & Economy**
  - Fraud detection
  - Lottery
  - Tax & Revenue
  - Digital cities
- **Education & Children**
  - Child welfare
  - Human trafficking

- **Resources & Environment**
  - Agriculture
  - Wildlife
  - Water/air quality
- **Safety & Security**
  - Flash point prediction
  - Situational awareness

Summary

- Identify your business value and vision

- Examine your current state

- Balance the demand between your tactical and strategic Big Data initiatives

- Create breakthrough changes in how to optimize, leverage, and use your data

- Build an executive-business value roadmap that jump-starts your journey

Q & A

Resources

Public Sector e-Zine on Big Data

http://www.epageflip.net/t/95928

Public Sector e-Zine

http://www.epageflip.net/t/112819

Thank You