

## What Big Data Means to You?

### March 21, 2013





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### Objective: Big Data -- Let's do a deep dive

- Challenges & opportunities facing federal organizations
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  - Big data
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- 6 ways we can make a difference today







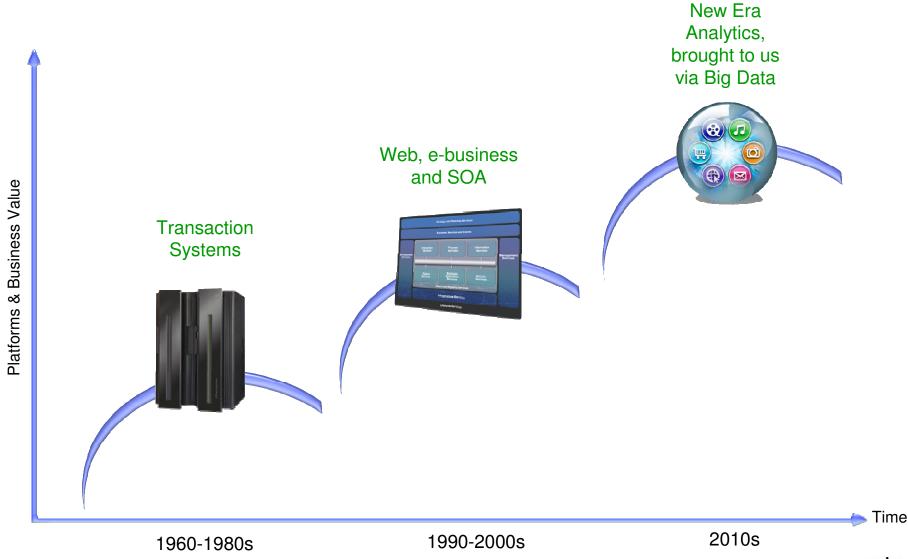
## Challenges and opportunities facing federal organizations

Strategic Policy Front Office Middle Office **Back Office** Initiative Dodd-Frank Compliance Big data Oversight Analytics storage and Healthcare access Reform Improper **Payments** Analytics Credit Reform Enforcement Reporting processing capabilities Smarter Government



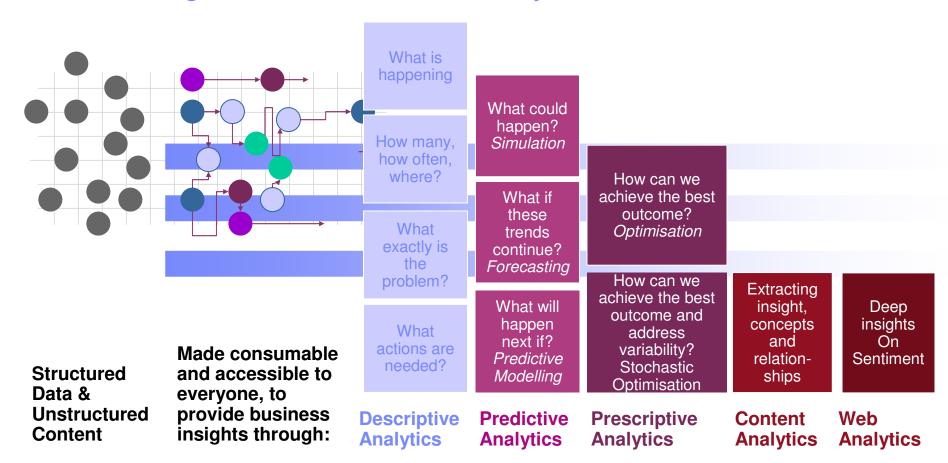


### We've seen changes like this before ......





### What is Big Data and Advanced Analytics?

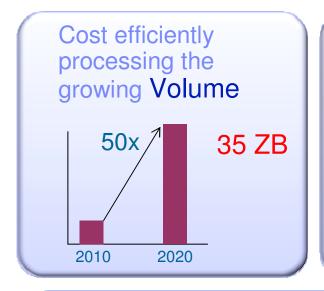


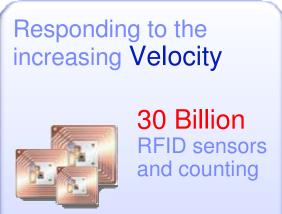
Big Data → Advanced Analytics → Business Insights

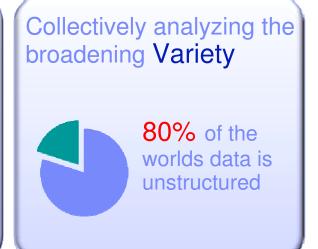




### The Characteristics of Big Data include:







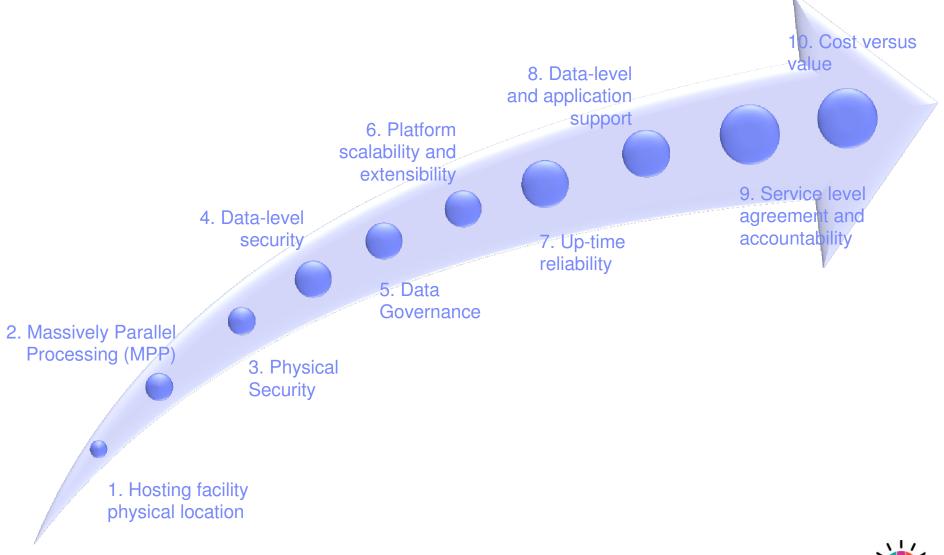


1 in 3 business leaders don't trust the information they use to make decisions





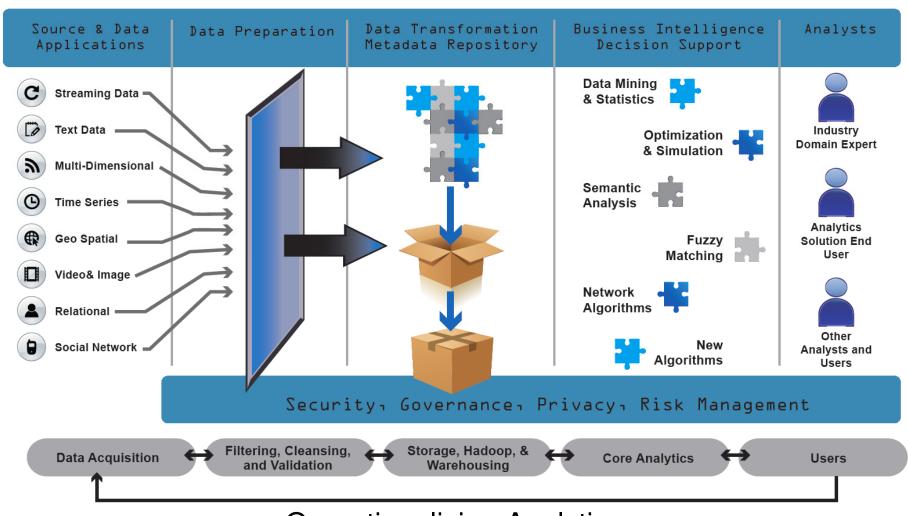
### Operational considerations as it related to supporting big data.







# Advanced analytics solutions requires several interacting design steps. Notional Information Flow – The Information Supply Chain.









# The use of advanced analytics provides a great degree of business value when combined with big data capabilities.

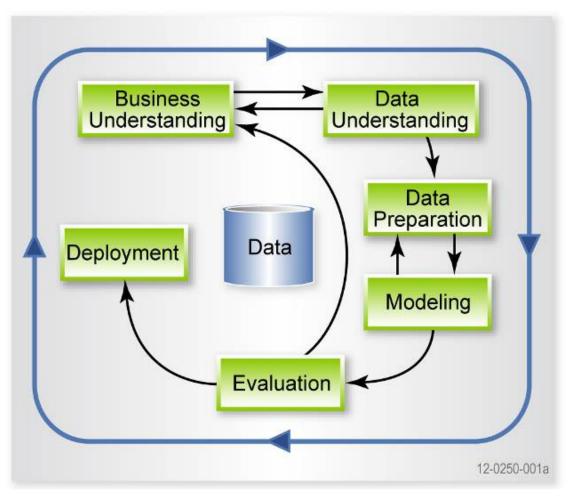
Competitive Advantage & Business Value	Stochastic Optimization	How can we achieve the best outcome including the effects of variability?	Prescriptive
	Optimization	How can we achieve the best outcome?	
	Predictive modeling	What will happen next if ?	Predictive
	Forecasting	What if these trends continue?	
	Simulation	What could happen?	
	Alerts	What actions are needed?	
	Query/drill down	What exactly is the problem?	Descriptive
	Ad hoc reporting	How many, how often, where?	
	Standard Reporting	What happened?	

**Degree of Complexity** 





## Considerations as it related to analytics:



**CRISP-DM Process** 





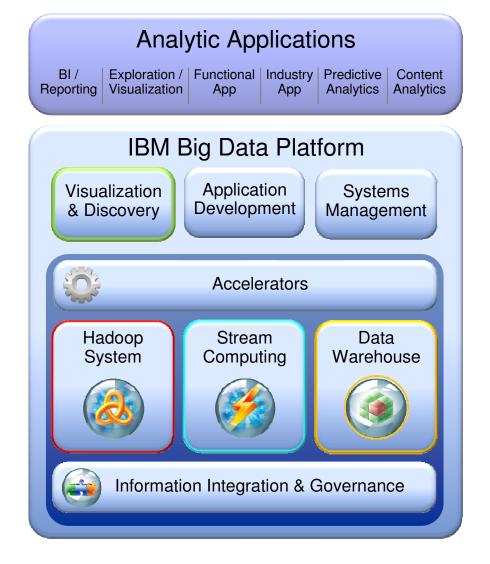
### 6 ways government employees can make a difference today.

- 1. Improper Payments
- 2. Regulatory Oversight
- 3. Domestic Security
- 4. Operational Efficiency
- 5. Prescriptive Policy Analysis
- 6. Anyone Can Make A Difference





### The IBM Big Data Platform







## The IBM Big Data Platform

- Cognos
- i2
- InfoSphere Data **Explorer**

### **Analytic Applications**

BI/ Reporting

Exploration / Visualization

Functional Industry App

App

Predictive Content Analytics Analytics

- SPSS
- IBM Content **Analytics**
- System T

- InfoSphere Data **Explorer**
- i2

 InfoSphere Streams

 InfoSphere **BigInsights** 



Visualization & Discovery

**Application** Development

**Systems** Management



Hadoop System

Stream Computing

Data Warehouse



Information Integration & Governance

- PureData for:
- Transactions
- Analytics
- Operational **Analytics**
- InfoSphere Warehouse
- InfoSphere Information Server
- InfoSphere Data **Explorer**



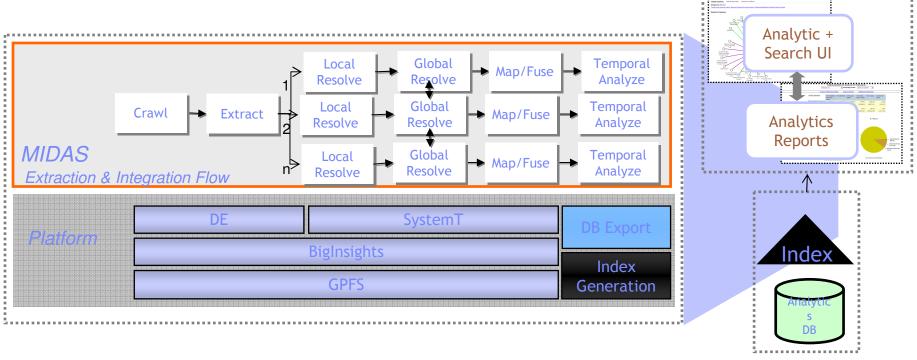


**Applications** 

#### MIDAS Architecture: A detailed view from IBM research

MIDAS offers analytical insights into public financial filings by exposing information concepts and relationships within extracted concepts, enabling:

- •Extraction, mapping, temporal analysis, and fusion, creating person and organization entities
- •Analysis of person-level data and person-to-organization relationships
- Analysis of organization counter-party relationships
- Advanced quantitative analytics on fused structured and structured data



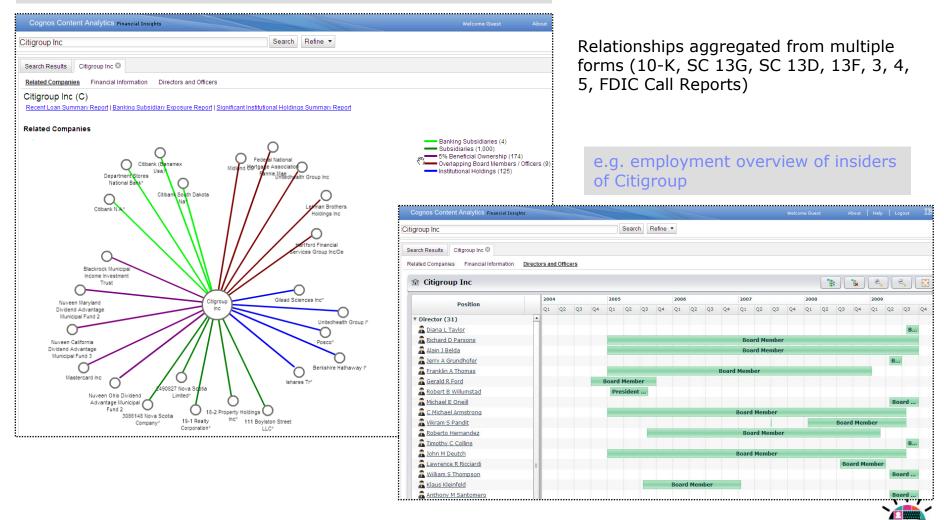


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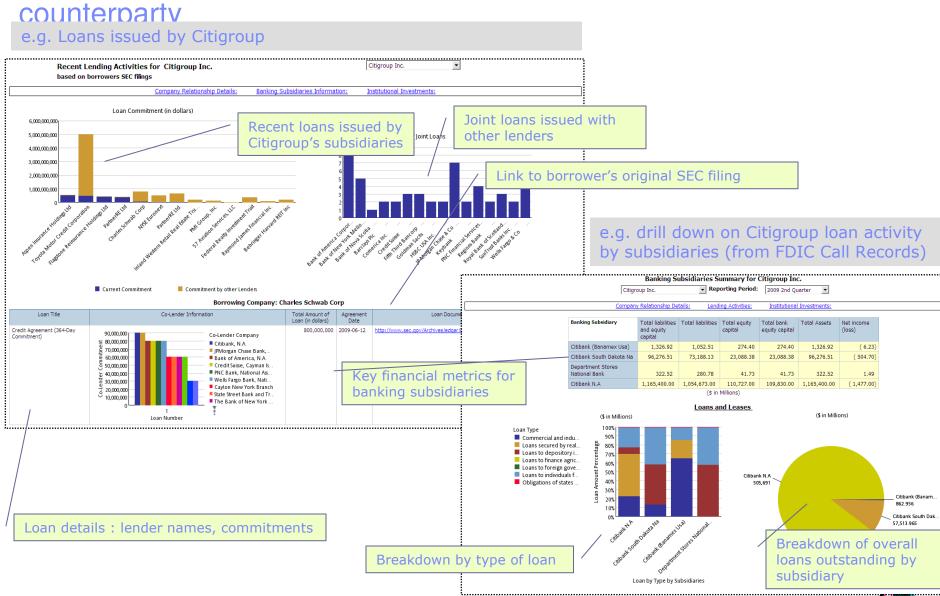
### MIDAS: Explore counterparty relationships with other companies

e.g. observe shared director of Citigroup with Federal National Mortgage Association, Diana Taylor





## MIDAS Analytics: Analyze and aggregate recent loans issued by



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