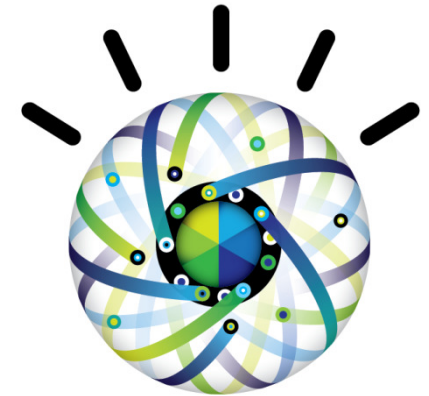


# Program Integrity in Government

## Transforming Data to Useful Information: Using Analytics to Detect and Prevent Improper Payments

May 2013



## Ed Rounds

- ***Smarter Analytics Executive, Fraud, Waste and Abuse***

Government, Healthcare, Insurance and Banking

Over 25 years in technology industry, 15 years banking industry

Consulted with companies on financial crime problems globally.

Implemented Anti Money Laundering and Fraud systems globally.

Thought Leader for AML and Fraud systems considering regulatory requirements, ROI modeling, systems and technology, implementation in the context of prevention, detection and investigation.



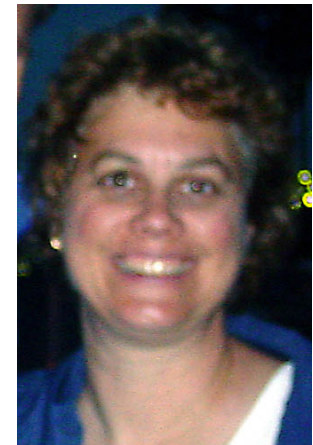
## Lisa N Smith

- ***Government and Healthcare Fraud Analytics Solutions SME***

29 years Public Sector and Healthcare Solutions Leader

Advanced Analytics solutions to identify and connect relationships across agencies to identify and prevent improper payments

Thought Leader for Program Integrity, Improper Payments, Fraud, Waste, Abuse and Error



## State budget challenges are forcing resource decreases yet service demands are rising

- *Fewer resources, expanding caseloads and more citizen services needed*
- *Need to ensure that those that need the services are getting them*
- *Inability to respond quickly to changing environment*
- *Need to reduce the potential fraud and waste in the system*
- *Data rich, Information poor*
- *Disconnected Towers of Data by Program*
- *Economic Realities*



## The challenges are already with us...

### ***Traditional Approaches have become obsolete***

*Information is compartmentalized – lack of full integration is obscuring visibility*

*Inability to link unstructured content with structured data and manage together*

*Untimely – Sense & Respond vs. Predict & Act*

*Inaccurate – Broadscale false positives and false negatives*

*Out of context – lack of sense making, collaboration, and support/guidance once threat is identified*

### ***Today's intensifying challenges mandate a fresh approach***

*Multiplication of threat types, and frequency with which they occur*

*Threats are increasingly asymmetrical*

*Explosion in complexity of threat identification*

*Multi cultural nature of threat*

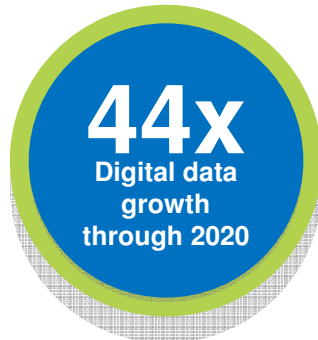
*Frequency of transaction/interactions*

*Transparency is clouding*

*Citizen, Policy Maker and Regulatory expectations and pressures are increasing*

# The Information Challenge Is Only Making It Harder...

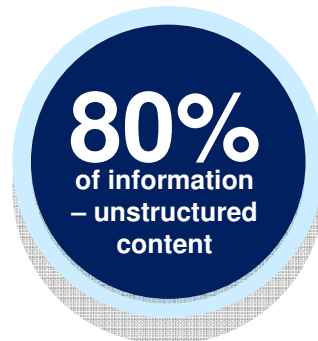
*An Explosion In Volume, Variety & Velocity*



Information is exploding



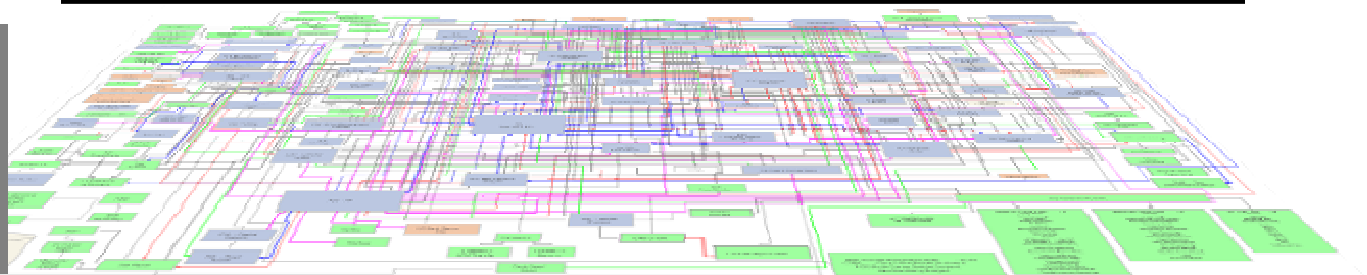
Change outpacing ability to keep up



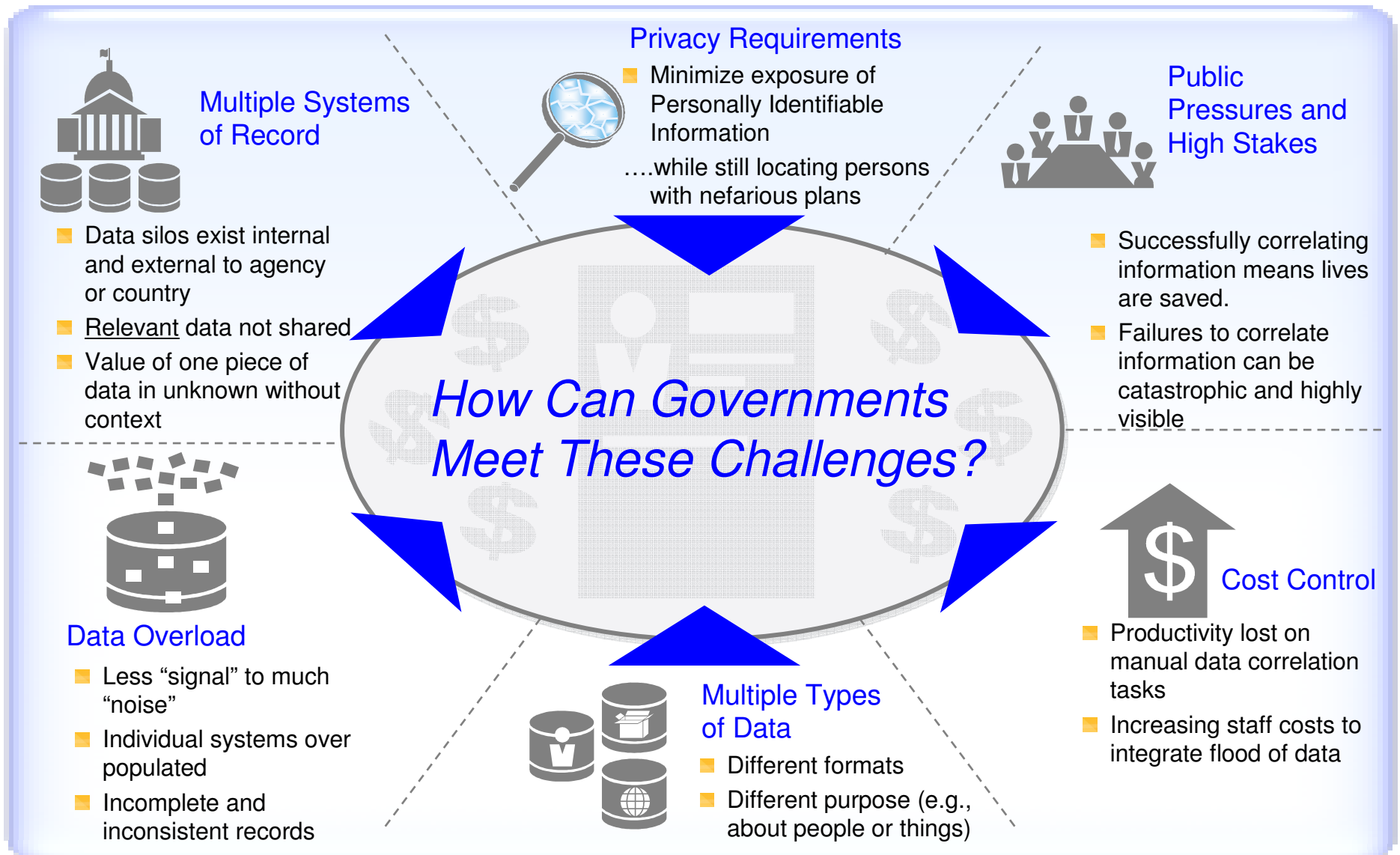
Sources of insight are multiplying



Performance gap is widening

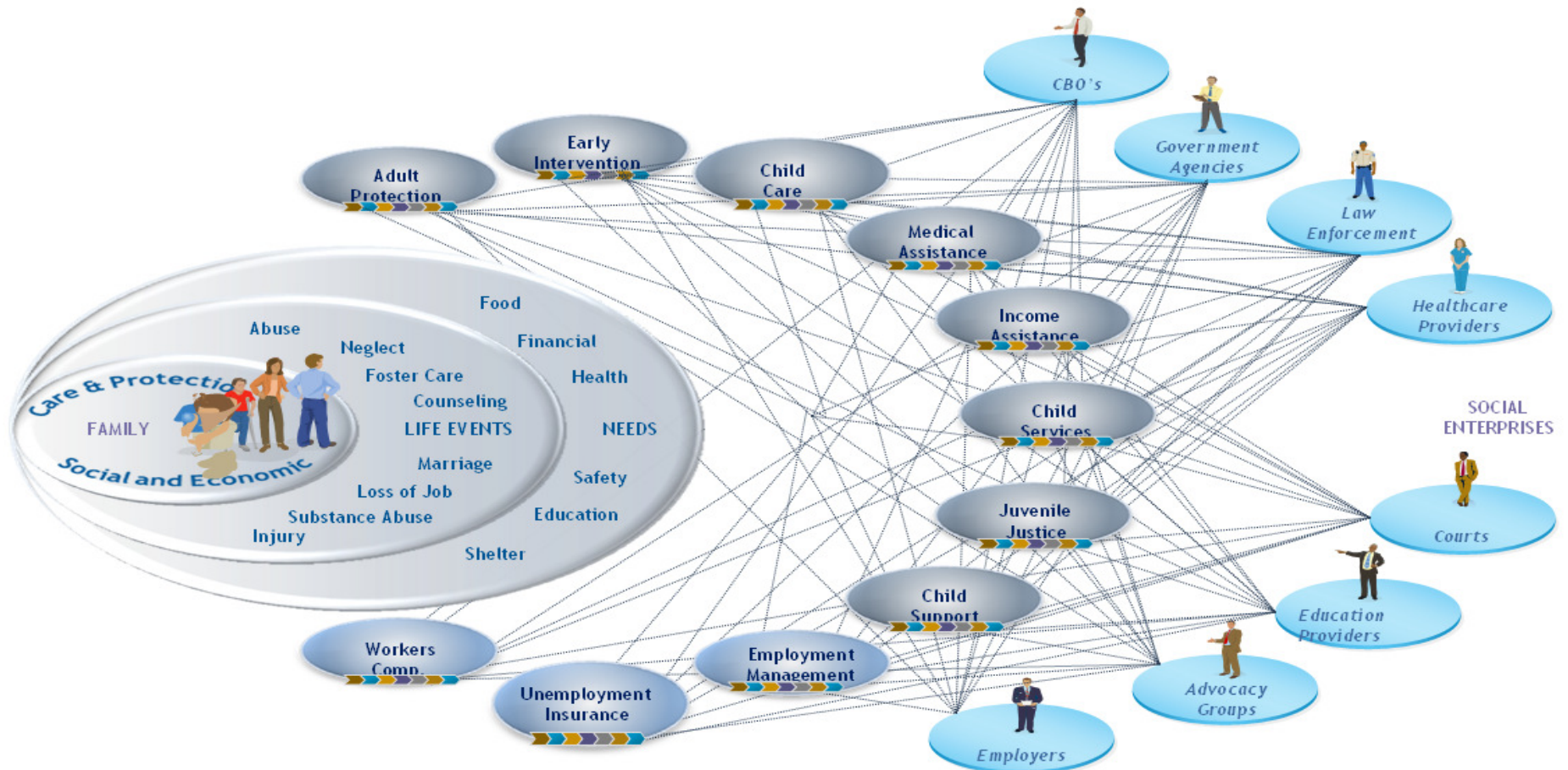


# The Data Challenge



# Today's Health and Human Services ENTERPRISE

## An unsustainable focus on programs, agencies & transactions



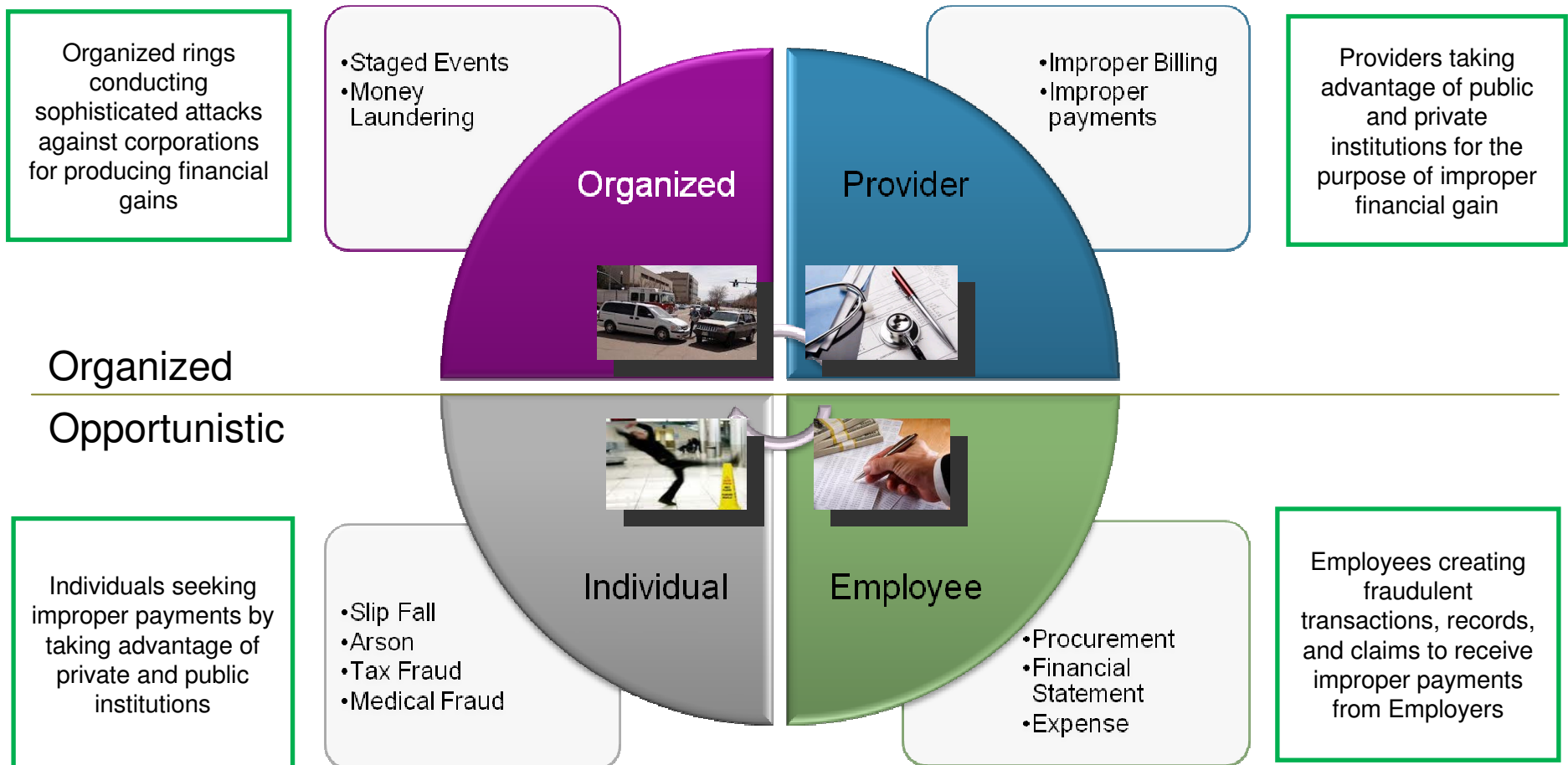
**Health and Human Services organizations need to be able to turn their data into actionable information that helps them meet stakeholder expectations.**



- *How do I leverage data across multiple data sets to gain **a comprehensive view of a family's ongoing needs and program results***
- *How do I **match client needs to the right program or service** and maximize a limited budget and resources?*
- *How can I **identify clients at risk** and implement successful preventive measures?*
- ***Which factors are most likely** to drive successful outcomes for clients?*
- *Am I **managing my resources** effectively?*



# Many Possibilities for Improper Actions against Government Programs



## Typical Fraud Detection Challenges

### *Time is short to make a decision*

- Prompt pay and mandates: Many private companies or government agencies have only days to decide to complete a payment to someone (for example, medical claims, or tax refunds)
- Failure to stop an improper payment (either an error or a fraud) opens up the “pay and chase” scenario, drastically lowering the chance of recovery

### *Limited in what information can be accessed and used*

There may be competitive or political reasons why organizations do not share information

There are strict laws governing the handling and disclosure of personal information

### *Those who are involved in fraud are **CONSTANTLY** changing their tactics*

- They monitor what the government or other organization – like a bank – is doing to combat against them
- They experiment to find the limits of where their fraudulent behaviors will NOT be detected

### *There are many **BILLIONS** of dollars at stake*

- In 2010 OMB estimated that across the Federal government “improper payments” exceeded \$125B
- Includes both errors and processes as well as fraudulent behaviors and organized schemes

## Anti-Fraud Signature Solution



### Anti-fraud, Waste and Abuse:

***Detect* fraudulent behavior before payment and minimize loss from overpayments**

#### Solution Benefits

- Dramatically reduce costs from fraud and abuse
- Pay valid transactions faster and with greater certainty
- More efficient use of investigative resources reduces costs and increases rate of return

#### Assess Vulnerability

- Identify significant schemes and vulnerabilities
- Build and test predictive models
- Measure financial and reputational risk

#### Detect and Stop Fraud

- Generate smart business rules based on statistical scoring and outlier detection
- Generate highly-sophisticated predictive models
- Real-time scoring
- Integrate rules and models with claims processing systems
- Take direct and pre-emptive action
- Identify and intercept suspicious cases, pre-payment



***Advanced analytics used to detect fraud, manage case volume, investigate fraud schemes and support prosecution***

#### Manage case load, investigate suspects

- Assign, manage cases
- Monitor case load
- Analyze case intelligence
- Conduct link analysis
- Document and share case intelligence
- Enforce compliance plan
- Measure results
- Feedback results for closed loop learning

#### Big Data Platform

Trusted Data Integration & Delivery

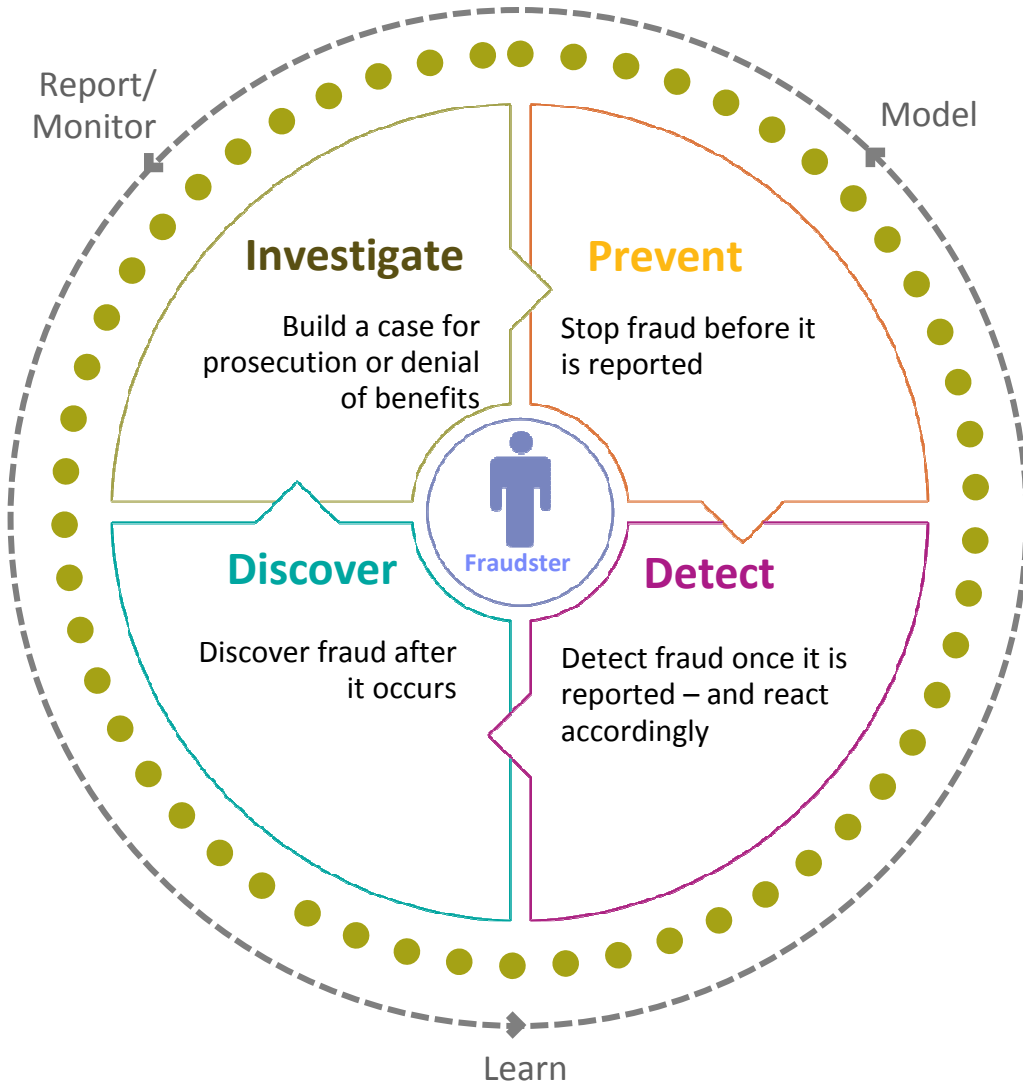
Business Intelligence Workload Management

Enterprise Data Security & Compliance

# IBM Vision for Fraud analytics is based on applying a series of interlocking tools to address fraud across its lifecycle

**Investigate**  
*Case management and visualization tools to aid investigators in building a case against fraudsters.*  
*Today: Special investigations unit with manual adjusters*

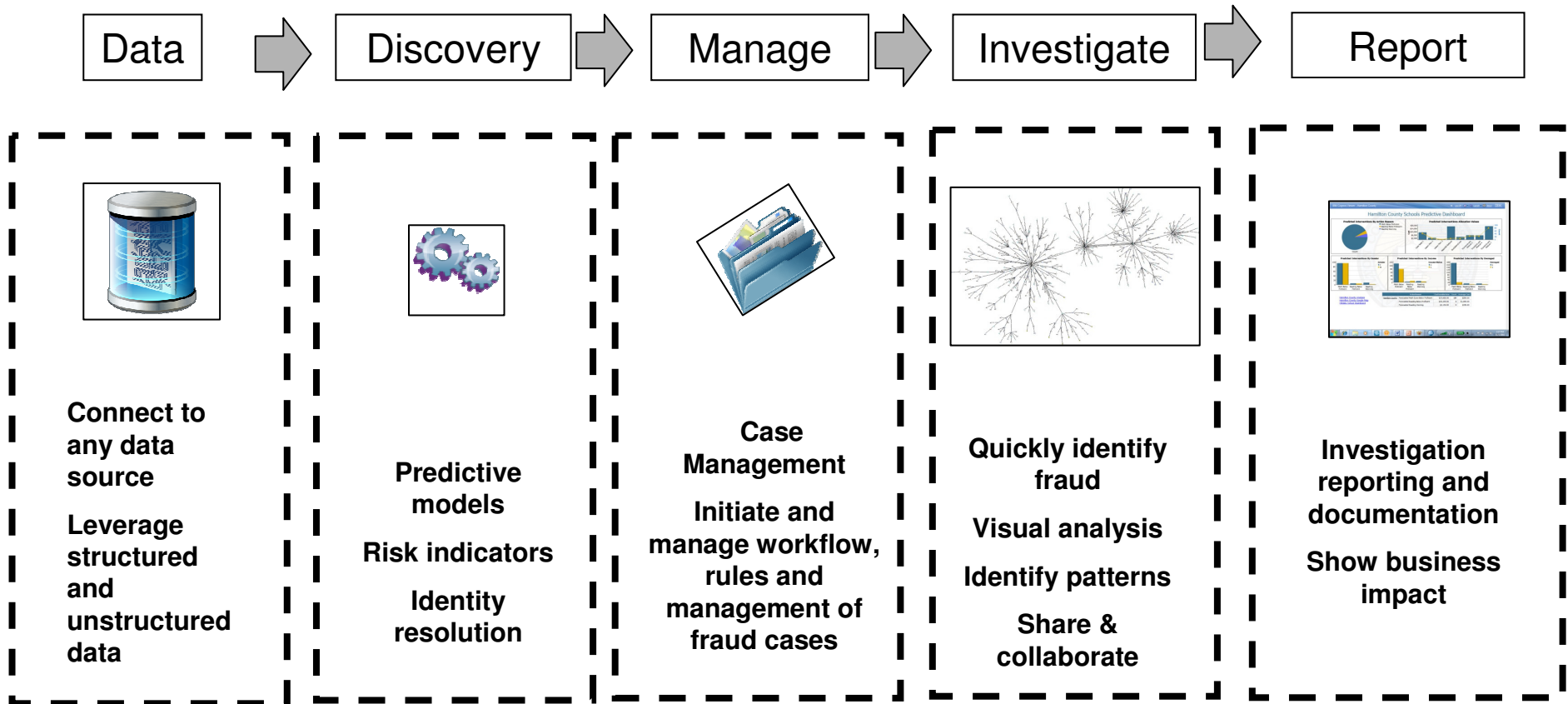
**Discover**  
*Continuous comparison of claim or transaction data to the data of cases known to be fraudulent in order to identify fraud that was not previously detected*  
*Today: Not really done*



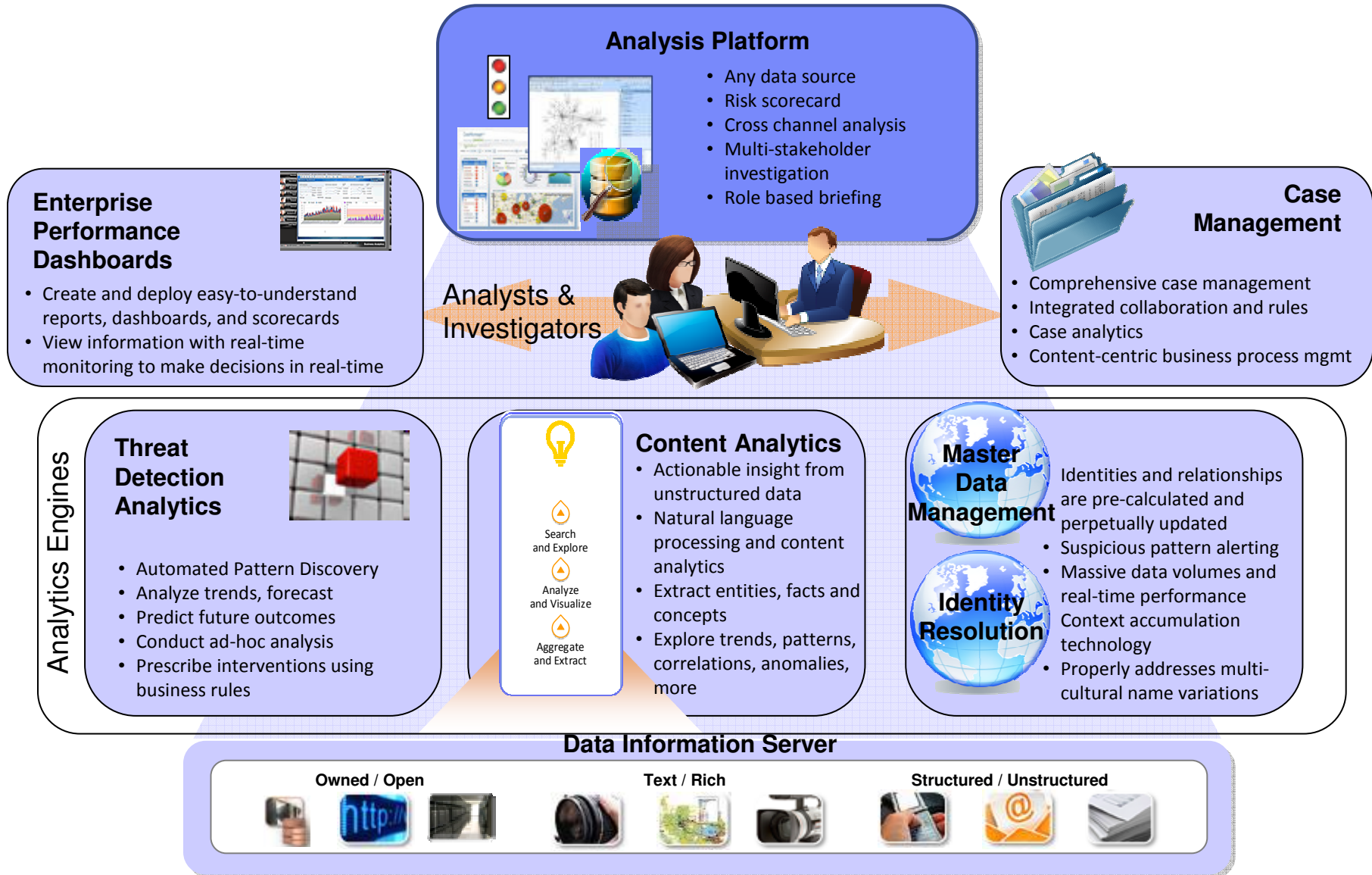
**Prevent**  
*Prevent the issuance of the services if it appears the main purpose of the application is to provide benefit to a fraudster*  
*Today: Little is done to prevent fraud from occurring*

**Detect**  
*Detect if a claim, payment or other transaction is likely a willful act to achieve financial gain through misrepresentation and/or falsification; and take steps to stop or send to Investigation*  
*Today: Relies heavily on people to detect*

# Analysis Lifecycle to Target Improper and Fraudulent Activity

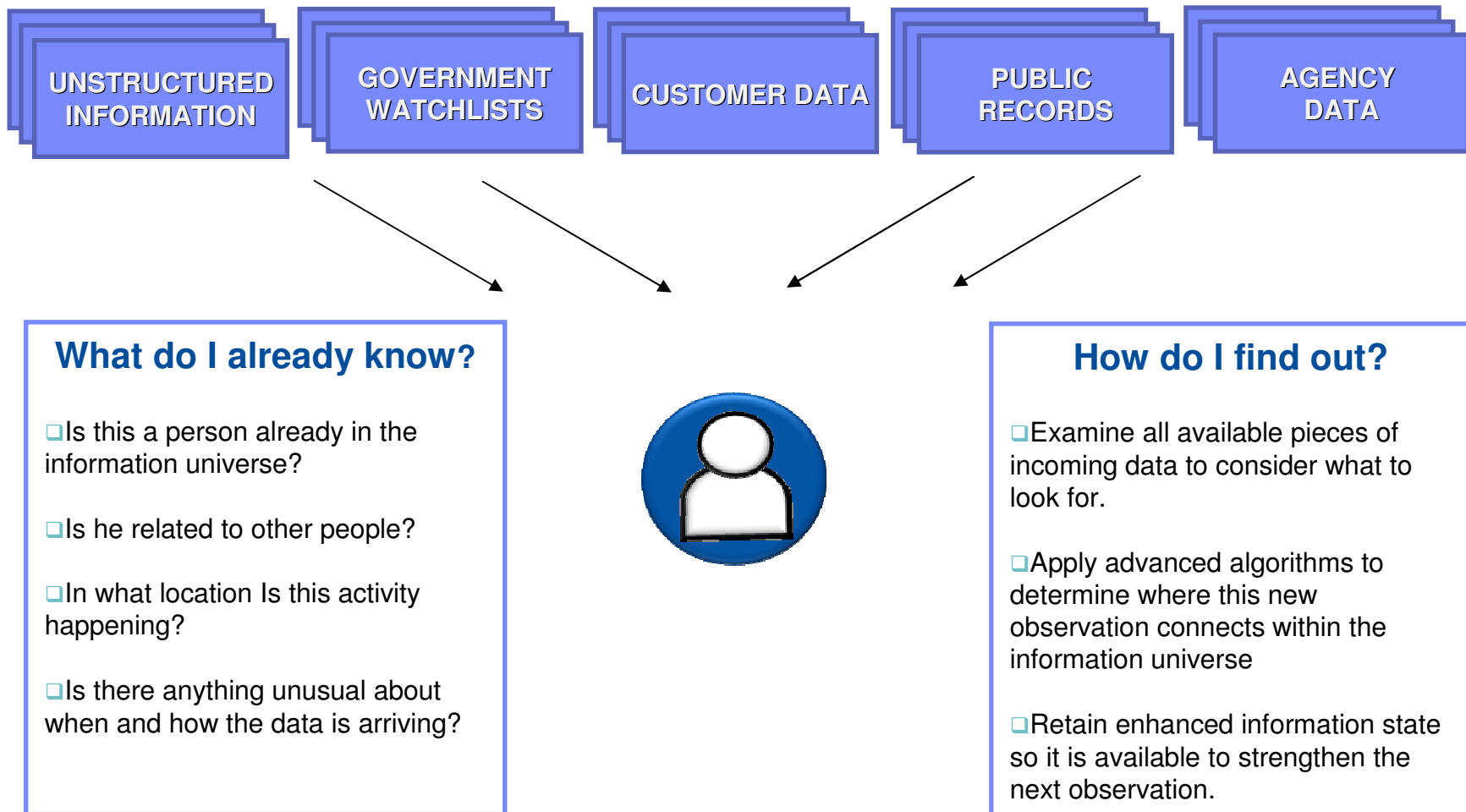


# Critical Components for Fraud Detection, Prevention and Investigation



# Connect Related Information From Massive Data Volumes

## *Establishing Situation Context*



## Examine identity data to understand who is who



Mr. Joseph Carbella  
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Tel#: 978-365-6631

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DOB: 07/09/66  
Tel#: **978-365-6631**

Mr. Giuseppe Carbello  
APT 4909  
Bethesda, MD 20814  
DOB: **09/07/66**  
Tel#: **978-365-6631**

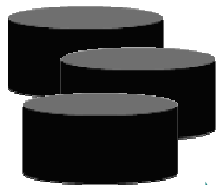
→ Close match  
→ Exact match

→ Transitive Match  
→ Multi-cultural match



*Identity and Relationship Analytics  
Perpetual, Streaming, Real-Time Analytics*

**Each new input record compared to other entities and key historical holdings instantly.**



Enterprise & External Sources



Web Service enabled for business process integration

### Who is who?

- Establish Unique Identity
- Integrate Data Silos
- Physical/Digital Attributes
- People & Organizations
- Biometric Validation
- Multicultural Names

### Who knows who?

- Obvious & Non-Obvious
- Links people & groups
- Degrees of Separation
- Role Alerts

### Who does what?

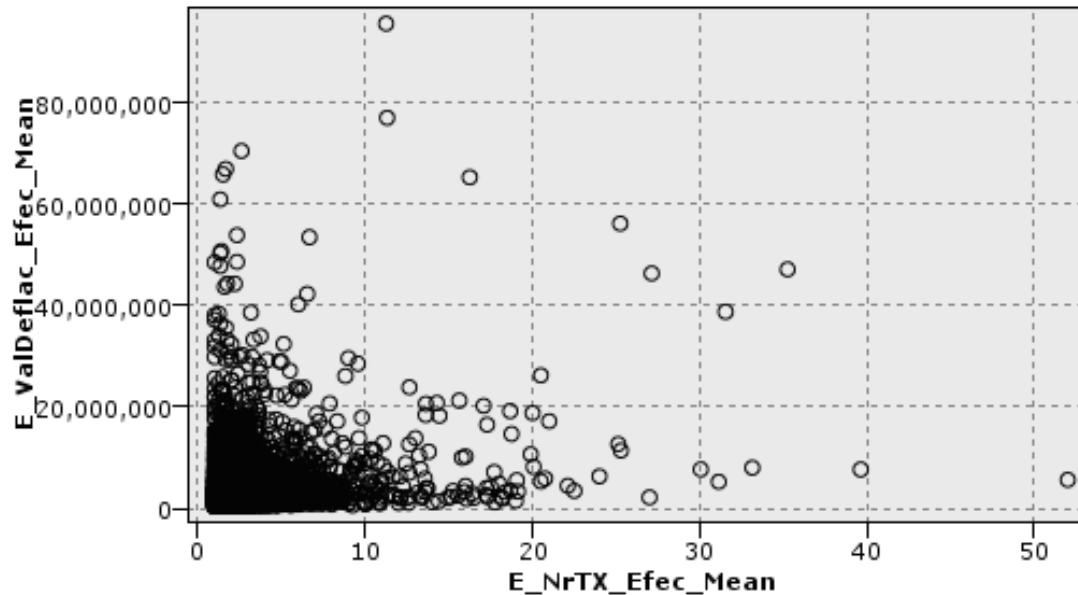
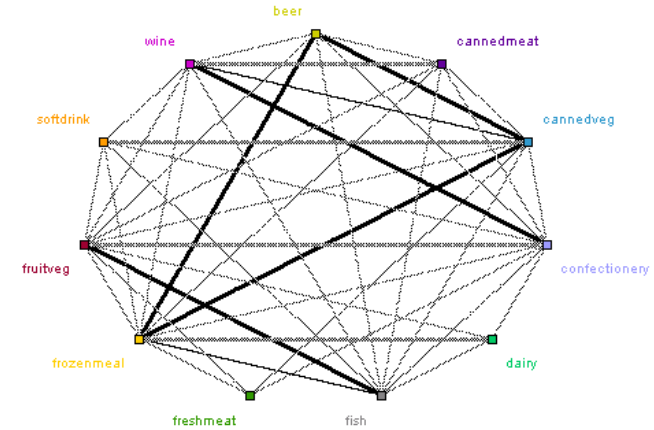
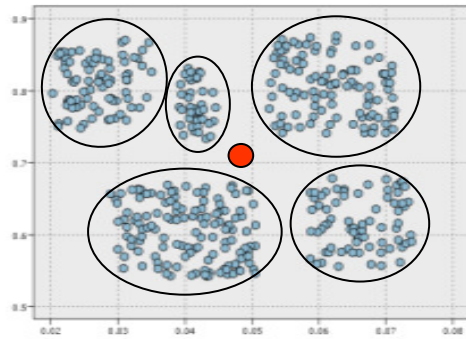
- Events & Transactions
- Complex Event Processing
- Criteria Based Alerting
- Quantify Identity Activities



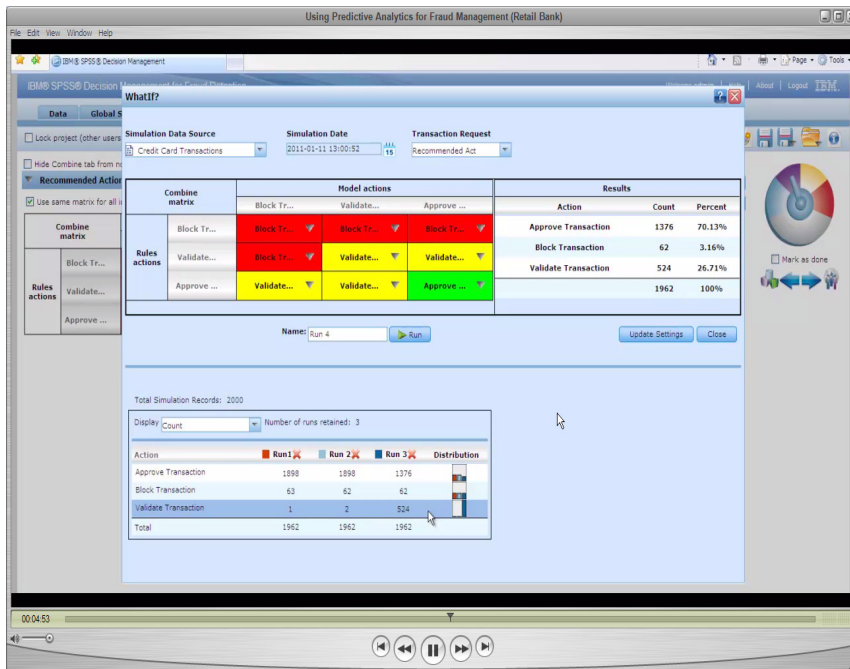
## Predictive Analytics Uncovers Anomalous Behavior

*Automatically clusters entities into naturally forming groups – accounts, origination, beneficiary, intermediaries*

*Identifies anomalous behavior within peer groups*



## IBM Decision Management



Using Predictive Analytics for Fraud Management (Retail Bank)

Simulation Data Source: Credit Card Transactions | Simulation Date: 2011-01-11 13:00:52 | Transaction Request: Recommended Act

		Model actions			Results		
		Block Tr...	Validate...	Approve ...	Action	Count	Percent
Rules actions	Block Tr...	Block Tr...	Block Tr...	Block Tr...	Approve Transaction	1376	70.13%
	Validate...	Block Tr...	Validate...	Validate...	Block Transaction	62	3.16%
	Approve ...	Validate...	Validate...	Approve ...	Validate Transaction	524	26.71%
					Total	1962	100%

Total Simulation Records: 2000

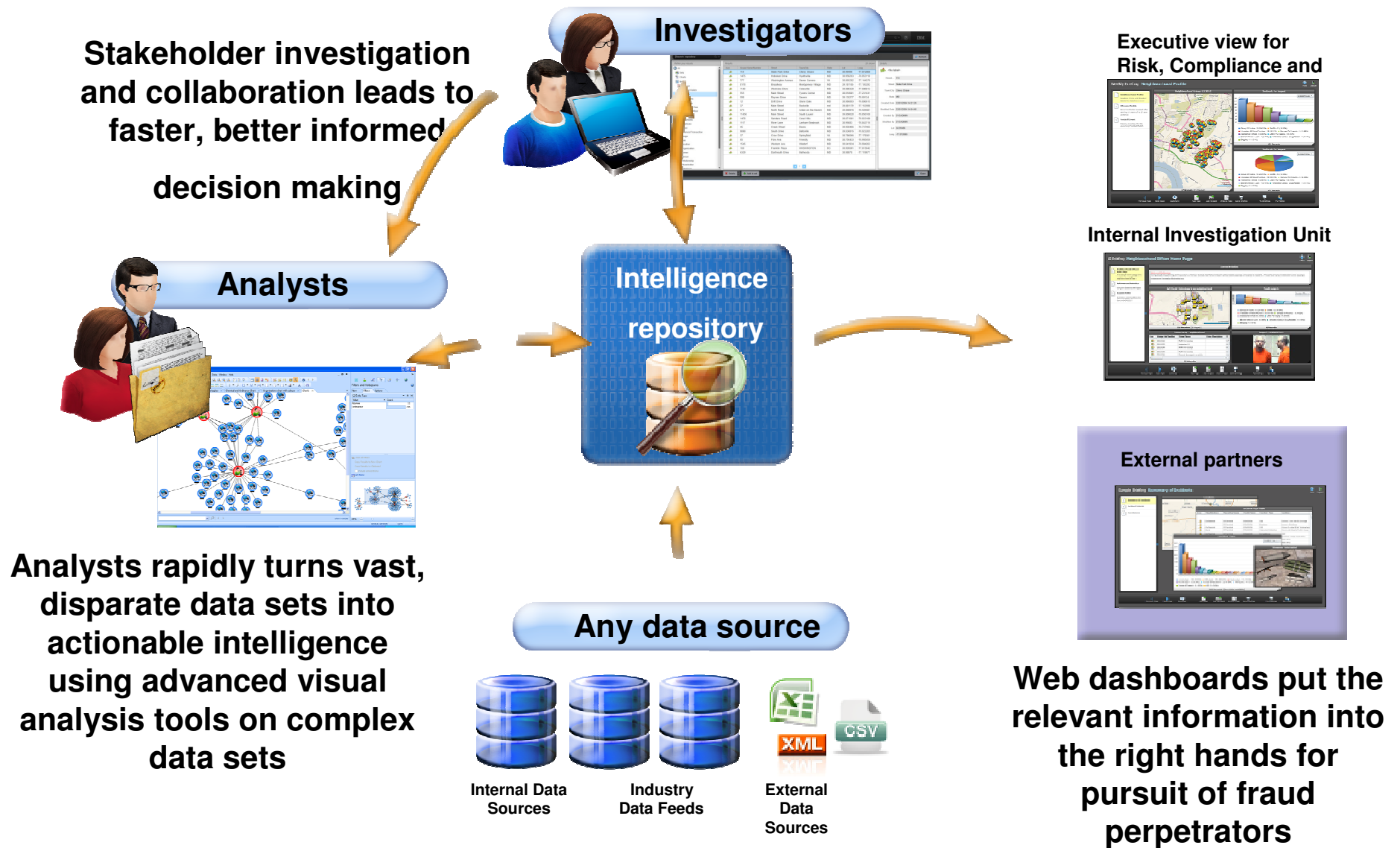
Actions	Run 1	Run 2	Run 3	Distribution
Approve Transaction	1998	1998	1376	
Block Transaction	63	62	62	
Validate Transaction	1	2	524	
Total	1962	1962	1962	

*Optimize Operational Decisions for Better Results*

*Combines Rules with Predictive Analytics  
Real-time or scheduled processing  
Business User interface for managing  
Fraud configuration*

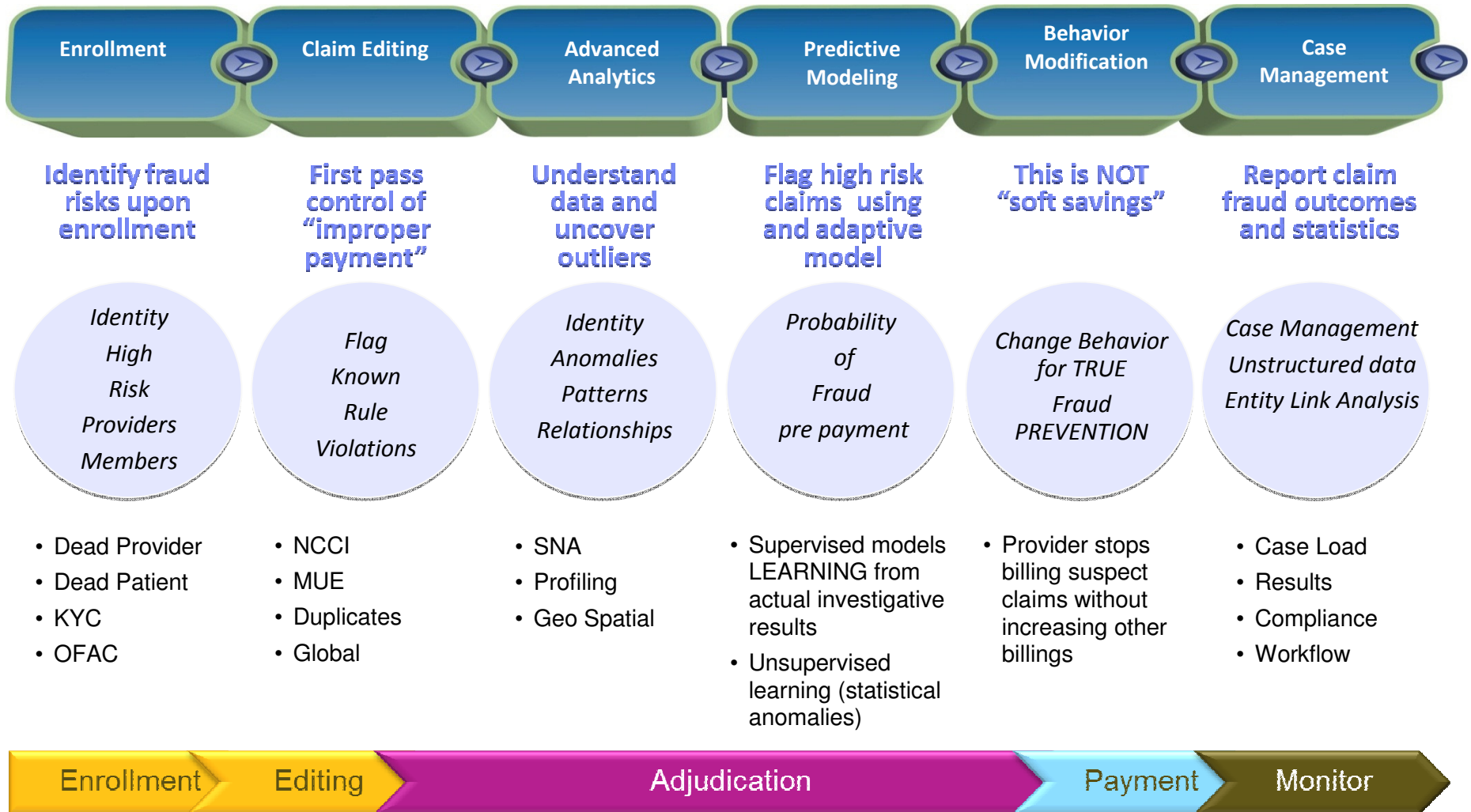
- Easily modify rules and decision outcomes
- Simulation and What/If Analysis

# IBM Analysis Platform – supports your investigation

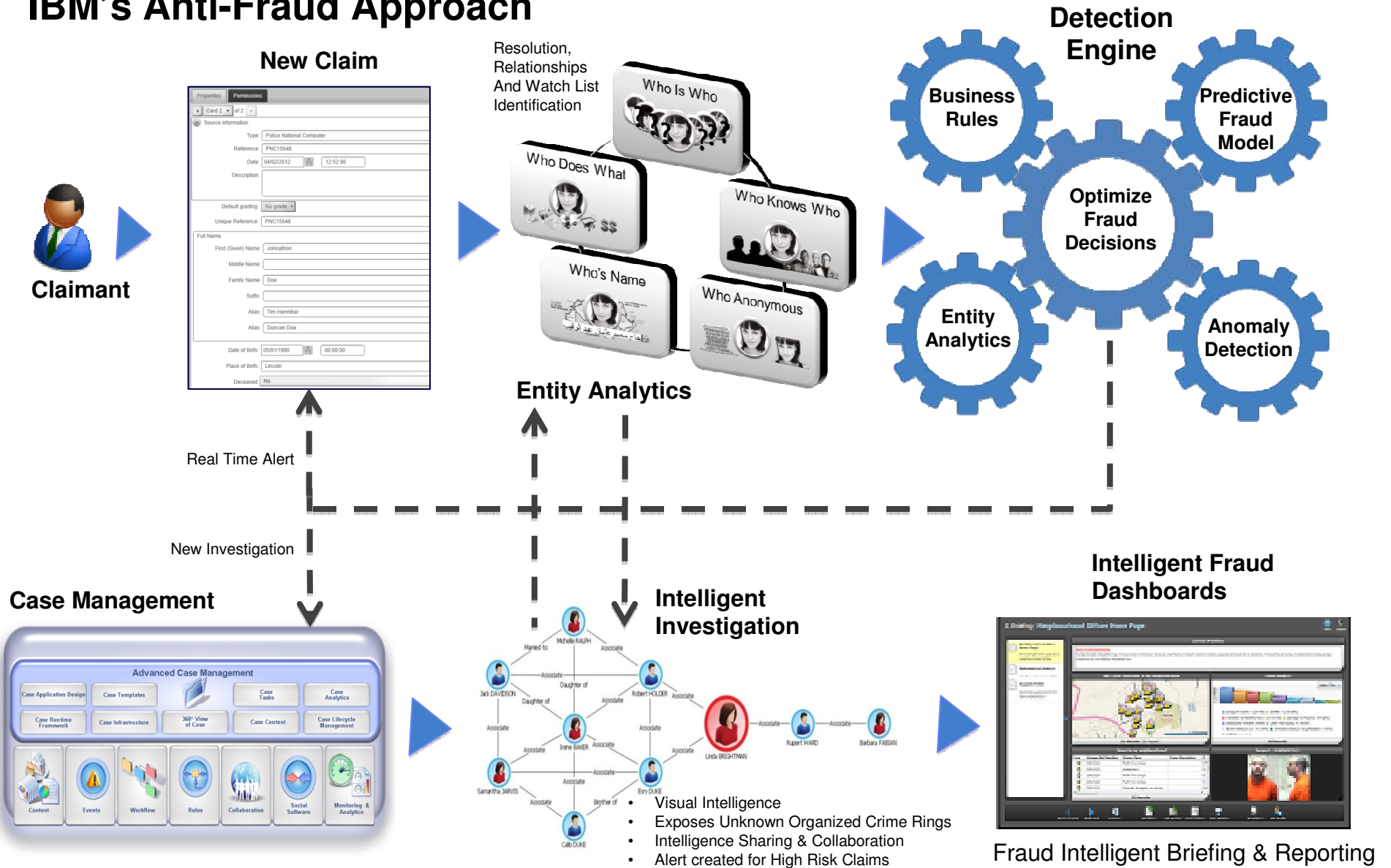


# Fraud is Reduced At Each Stage of the Fraud Prevention Lifecycle

*Fraud and abuse no longer has to be discovered when the fraudster makes a mistake; we can examine massive amounts of data in real time to predict, prevent, and prove fraudulent claims*



# IBM's Anti-Fraud Approach



## IBM Social Services customers are realizing benefits...

631% ROI , 2 Month Payback, Annual Benefit: \$24,725,000

*Identified \$191 million in Potentially False Medicaid Claims*

\$900,000 saved annually with Improved Litigation

Over 100,000 Payment Overlaps

Thousands of Homeless on Non-Homeless Cases

Thousands of Back to Back Cases Opened

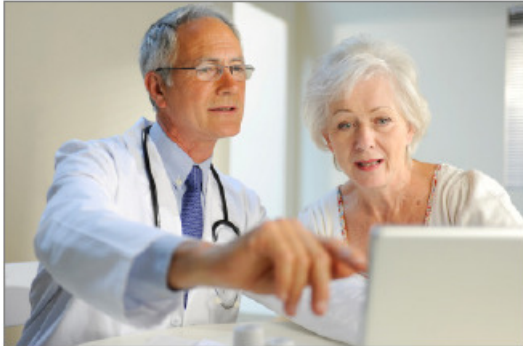
Thousands of Four or More Cases Opened within 180 day period

50% Reduction of Citizen Identification Management

50% Reduction for Investigate to Closure Time

Recovering 30 million € annually

## Government Innovation North Carolina Department of Health and Human Services



- *Oversees the Division of Medical Assistance (DMA) which is responsible for overseeing the Medicaid budget*
- *NC Medicaid budget is second only to the education budget*
- *The DMA handles approximately \$12 billion in annual paid claims (2009)*

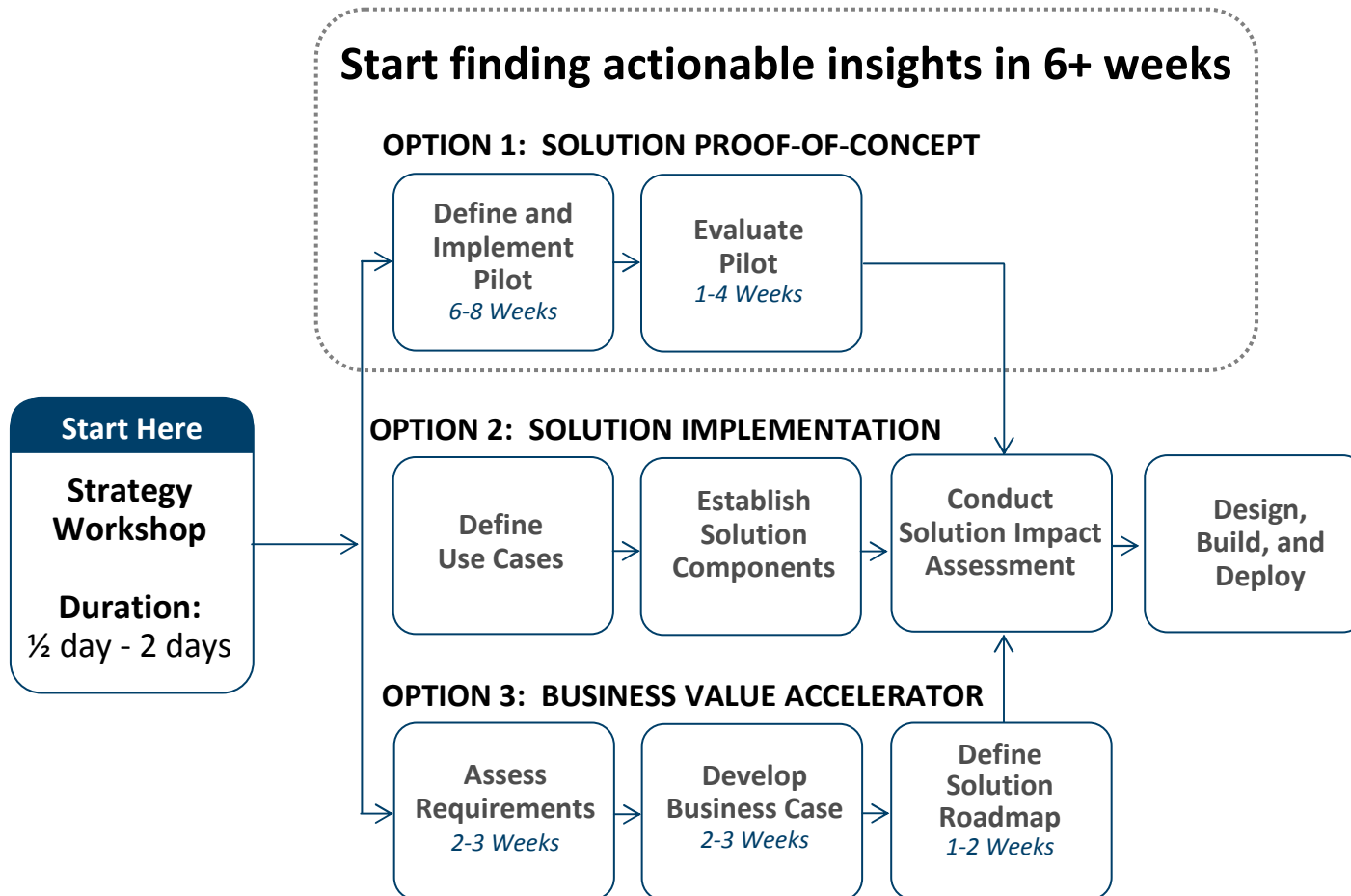
### ▪ *Program Integrity Challenge*

- *From 2009 to 2011, Outpatient Behavioral Health has seen a significant increase in number of providers paid high dollars for assessment and therapy*
- *Total Behavioral Health Expenditures are \$2.4 billion*
- *Outpatient Behavioral Health is \$640 million (27%) of that total*
- *Suspected schemes are:*
  - *Billing for services not rendered*
  - *Billing for excessive recipients per workday*
  - *Excessive billing beyond a 24 hour period*
  - *Billing for care and services that are provided by an unauthorized, unqualified, or unlicensed person*
  - *Failure to provide supervision of staff when required Program*



# Getting started with IBM Smarter Analytics Signature Solutions

There are three paths to value based on your needs



*THANK YOU*