Smarter Analytics Live 2013

Turning information and insight into actionable business outcomes.

Intelligent Investigation Management

Stop fraud and protect the bottom line

Adrian Barfield, IBM

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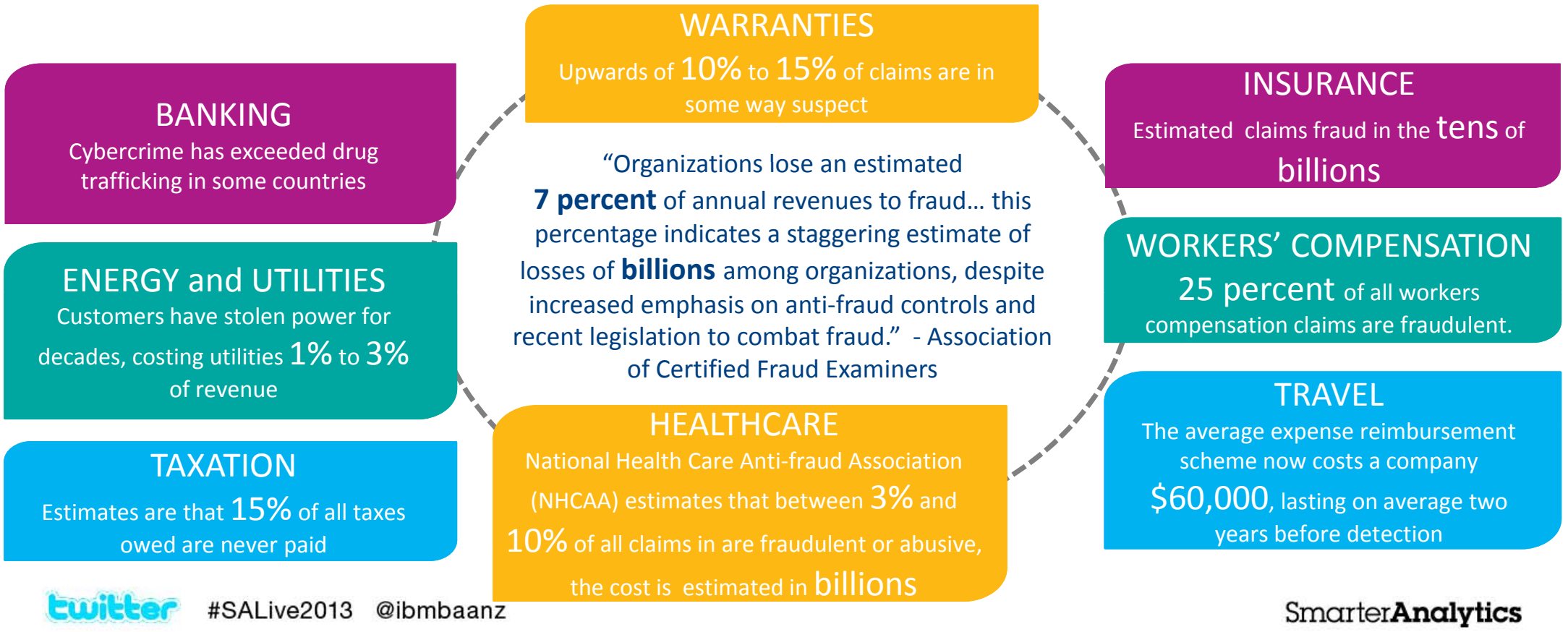
SmarterAnalytics

Abstract

Stop the fraud and protect the bottom line

- Fraud costs billions each year across the world—and organisations today view it as a real and growing threat. With organisations confronting cost-cutting measures or competitive pressure, there is growing pressure to investigate fraud and enforce compliance. . Join this session to find out how organisations today across government, financial services and insurance industries are leveraging solutions from IBM to gather information more easily than ever before, analyse it to spot trends and make connections, and drive investigations using their findings to more reliably investigate fraud.

Fraud costs private and public sector enterprises billions in revenues each year



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***Sources**: Banking – BBC News; Energy and Utilities – Electric Light and Power Magazine; Taxation – The Economist; Healthcare – National Health Care Anti-fraud Association; Insurance – Coalition Against Insurance Fraud; Warranties – Warranty Week; Worker's Compensation – US Chamber of Commerce; Travel – Business Travel News,, Gartner*

The investigation process is rife with challenges

- High operational cost chasing too many false positives
- Inefficiencies in coordinating investigations
- Limited visibility into the status of ongoing cases
- High resource needs to collect and assimilate information/evidence
- Inability to prevent and detect similar events in the future

These challenges limit an organization's ability to maximize recovery from perpetrators

Challenges: Fighting fraud and financial crime

- Investigation has become overwhelmingly complex
- **Information** trapped in content and disparate systems
- Timely analytics tools & capabilities to discover patterns
- Lack of visibility and control of the **investigative process**
- Governance of the **investigative process**

Generally lack an intelligent & integrated enterprise fraud and financial crime operating solution

Fraud investigations in the public sector has unique challenges to overcome

Pro-Active Investigation

Identifying high risk fraud and at risk internal controls. Policy and Process assessment and automation improving data governance strategy, automation of rules and internal controls to mitigate risk

Reactive Investigations

Automation of investigation procedures and the need to provide a collaborative environment to co-ordinate all forms of evidence to support decision to prosecute & Prosecution documentation. Interview and material management

Pattern Identification

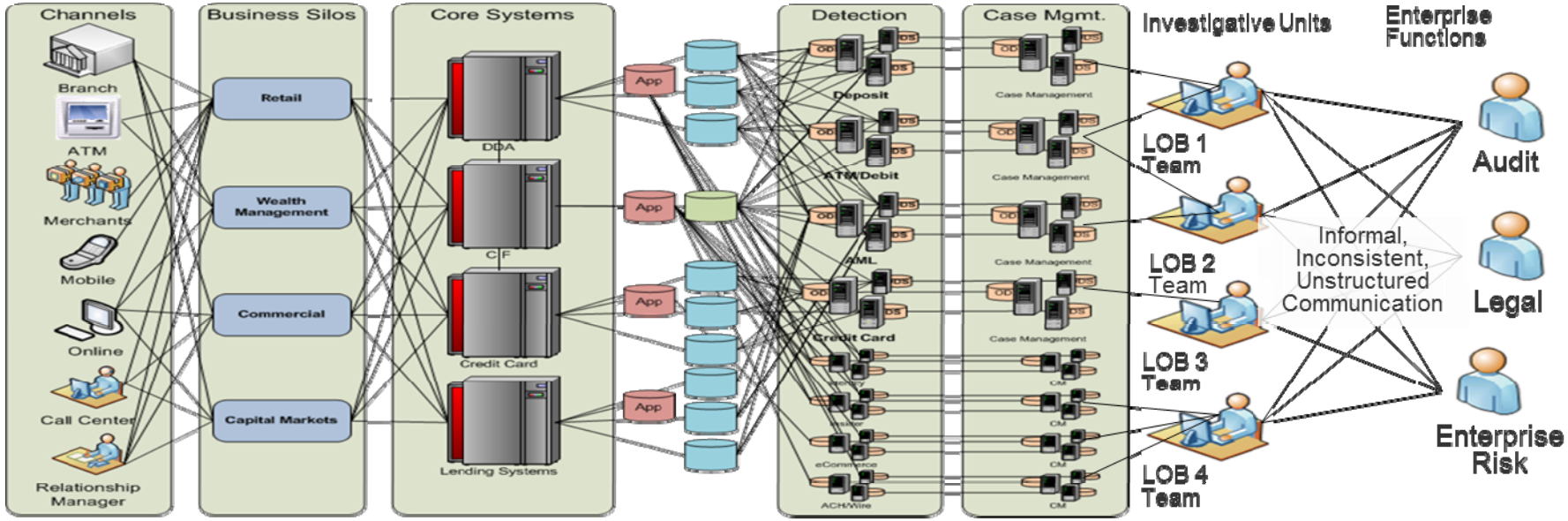
Identify type of fraud: Duplicate Fraud, Multi-payer; shell-game; defective goods; defective service by using technology to be more flexible in identifying pattern and type in order to properly investigate activity.

Evidence

Evidence gathering is getting more complex. The need to assess greater quantity & complex data, transactions, contracts, video, social media, audio, records.

Fraud schemes are becoming more complex

- Complex patterns ; many channels
- Structured and unstructured data
- Tight deadlines to assess risk and investigate possible fraud
- (LOB) Investigation Unit is focal part of the solution, involve other stakeholders to enrich investigation and raise awareness



Insurance - Fraud can be Reduced At Each Stage of the Claim Lifecycle

Identify fraud risks at policy submission

Identity
Behavior
Exposures
Timing
Locations

- Number of Claims within 30 days of Eff Date from this Agent

Flag & route fraudulent claims at intake

Identity
Anomalies
Patterns
Prediction

- Claimant, police officer, and body shop seen 5 times previously

Help Adjuster ID fraud during adjudication

Identity
Anomalies
Patterns
Text / Content
Social Data

- Twitter post identified and reported to Adjuster

Perpetually analyze loss data to ID fraud

Relationships
Anomalies
Patterns/Clusters
Text / Content
Social Data

- New pattern of data discovered - applied to entire claims book

Investigate, prosecute & recover fraud

Case Management
Unstructured data
Entity Link Analysis
Social Network Visualization

- Productivity to handle higher case load as more fraud is discovered

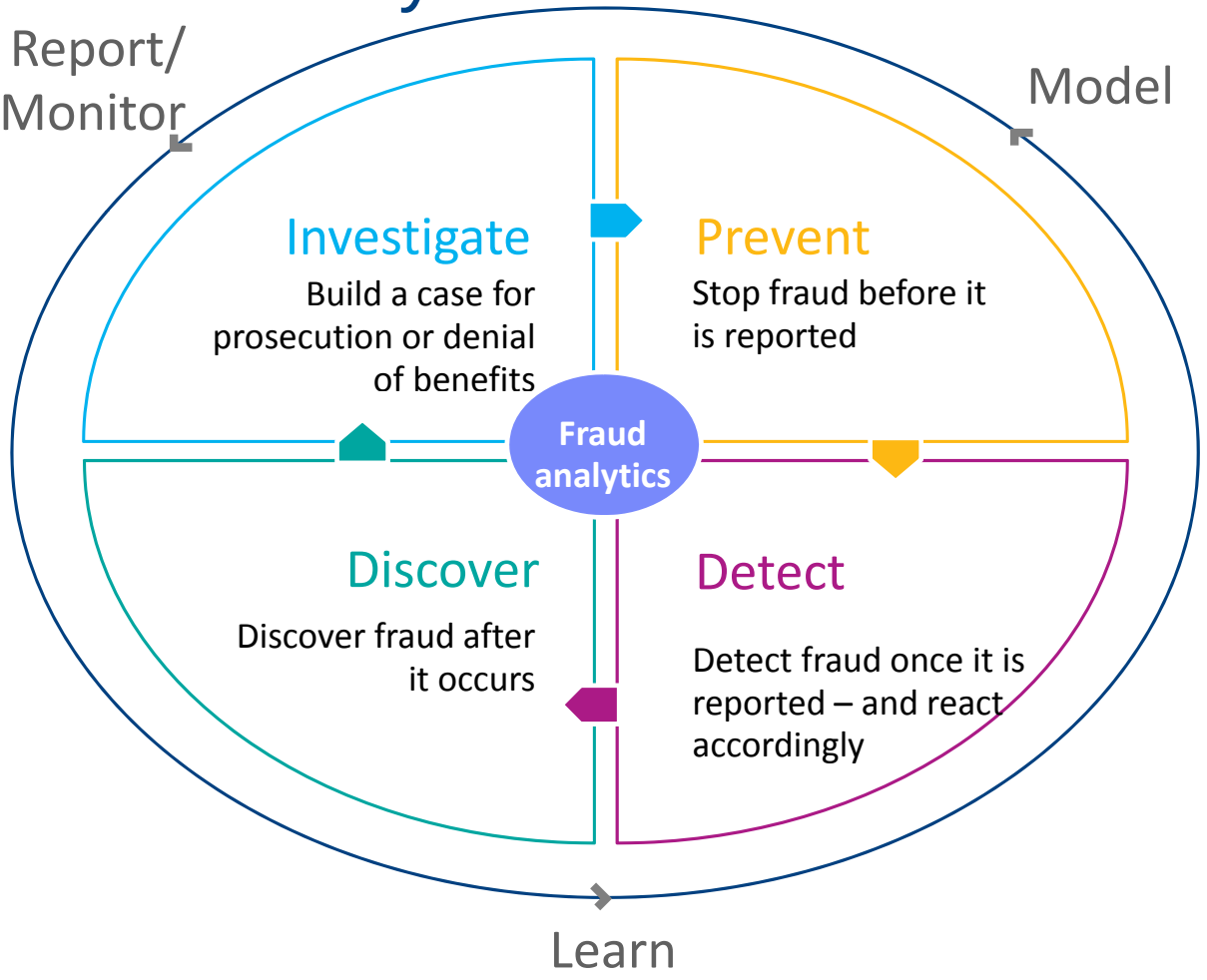
Report claim fraud outcomes and statistics

Dashboard
Reporting
Geo-Spatial
Trend Analysis
Prediction

- Geo-spatial analysis of ratio of BI claims in specific area

Transportation Security Administration · MASSACHUSETTS · IBC Insurance Bureau of Canada · IRS · santam · MetLife · INFINITY · ING

IBM's vision for fraud analytics



Investigate

Case management and visualization tools to aid investigators in building a case against fraudsters.

Today: Special investigations unit with manual adjusters

Prevent

Intervene if it appears the main purpose of the activity is to provide benefit to a fraudster

Today: Little is done to prevent fraud from occurring

Discover

Continuous comparison of customer, account 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

Detect

Detect if a 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

IBM has the technology to address end-to-end fraud management

Enterprise Performance Dashboards

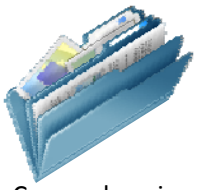
Cognos. software

- Create and deploy easy-to-understand reports, dashboards, and scorecards
- View information with real-time monitoring to make decisions in real-time
- Leverage planning and budgeting tools to improve process efficiency

Fraud Intelligence Analysis

- Any data source
- Risk scorecard
- Cross channel analysis
- Multi-stakeholder investigation
- Role based briefing

Advanced Case Management



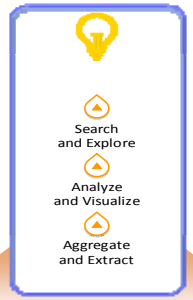
- Comprehensive case management
- Integrated collaboration and rules
- Case analytics
- Content-centric business process mgmt

Analysts & Investigators

Threat Detection Analytics

SPSS AN IBM® COMPANY

- Automated Pattern Discovery
- Analyze trends, forecast
- Predict future outcomes
- Conduct ad-hoc analysis
- Prescribe interventions



Content Analytics

- Configure raw internal and external content
- Process with natural language processing and enhanced content analytics
- Understand trends, patterns, correlations, anomalies, more

Identity Insight

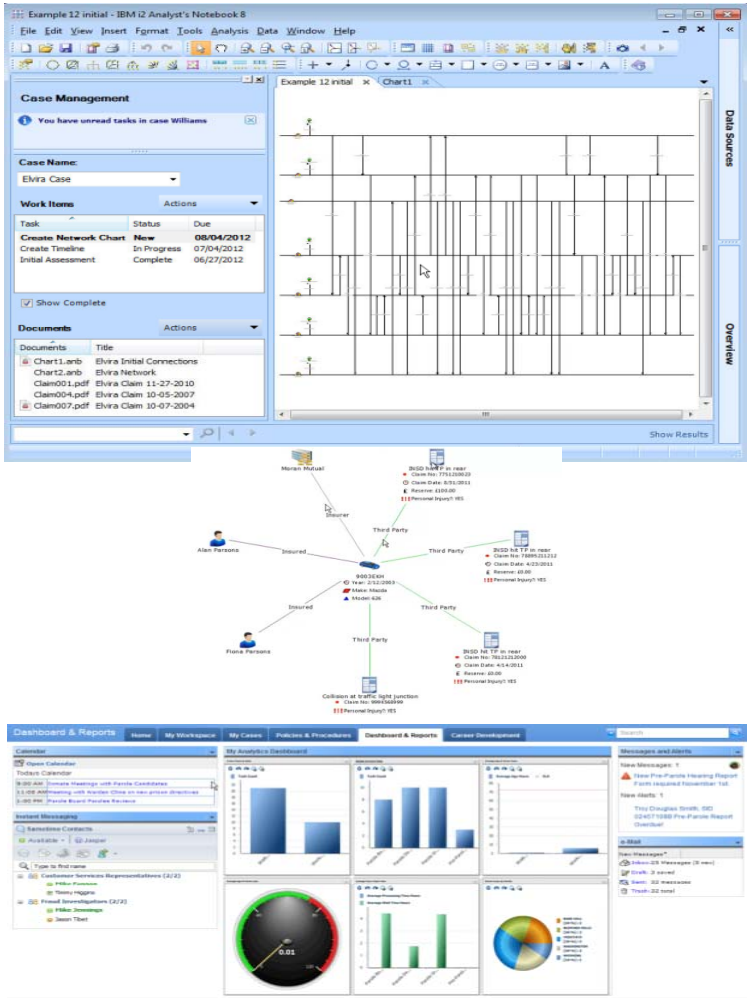
- Identities and relationships are pre-calculated and perpetually updated
- Suspicious pattern alerting
- Massive data volumes and real-time performance
- Context accumulation technology
- Properly addresses multi-cultural name variations

Intelligent Investigation…

IBM Intelligent Investigation Manager

A new solution for optimizing fraud investigation

- Efficiently process cases and coordinate activity across the investigative team
- Conduct forensic analysis, generate leads, visualize the scope of the fraud and gather evidence.
- Capture results directly into the case.
- Discover new entities, patterns and insights by searching through structured and unstructured content
- Facilitate the management of the case including the handoff to supervisors, litigators or other authorities
- Provide transparency into the effectiveness of the investigative process using integrated KPI reporting and analytics
- Provides an audit trail of information, tasks, reviews, approvals and correspondence associated with all aspects of a case



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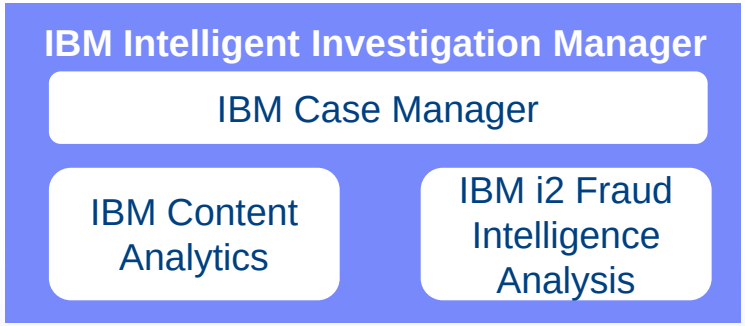
Intelligent Investigation Manager components



IBM Case Manager for delivering customizing investigative solutions that enable investigative teams to efficiently manage an investigation

IBM i2 Fraud Intelligence Analysis for conducting forensic analysis in the context of the investigation

IBM Content Analytics for driving the discovery process across all available data during the investigation

The value of forensic analysis

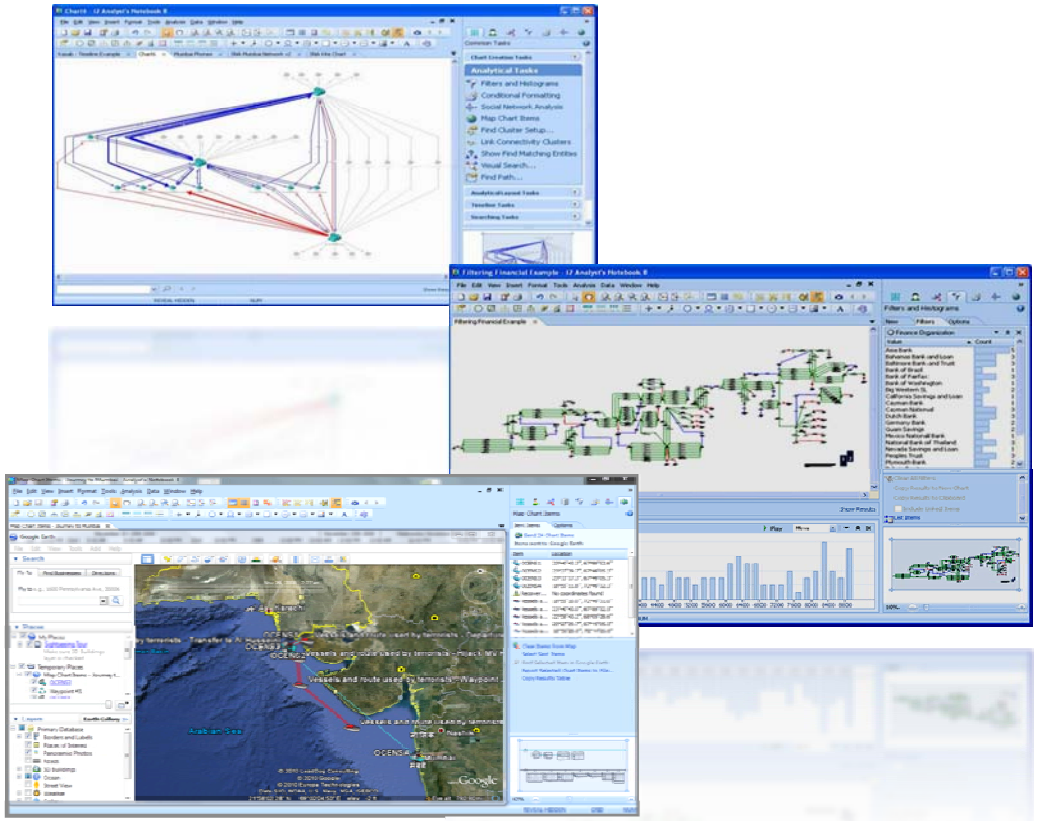
Improve context by delivering more insight into the relationships between data points

- Model does not show correlations between individuals

Visualizes connections that otherwise would have to be picked up the case investigator

Allows analysts to be more effective – ability to receive deeper insight into investigation process

- Provides evidence/output for criminal or civil prosecution



Capabilities Are Used by Clients In Multiple Sectors

IBM

National Security

Counter Terrorism

Counter Intelligence

Intelligence Analysis

Border Security

Cyber Risk

Defense

Establishing Civilian Structures

Counter Intelligence

Intelligence Analysis

Target Analysis and Defense

Peacekeeping

Force Protection

Pattern of Life Analysis

Human Terrain Mapping

Law Enforcement

Tactical Lead Generation

Counter Terrorism

Major Investigations

Organized Crime

Neighborhood/ Community Policing

Public Order/Major Event Management

Volume Crime

Fusion Centers

Private Sector

Security Investigations

Industry Oversight & Compliance

Cybercrime

Risk Management

Anti-Money Laundering

Fraud

Government

Industry Oversight & Compliance

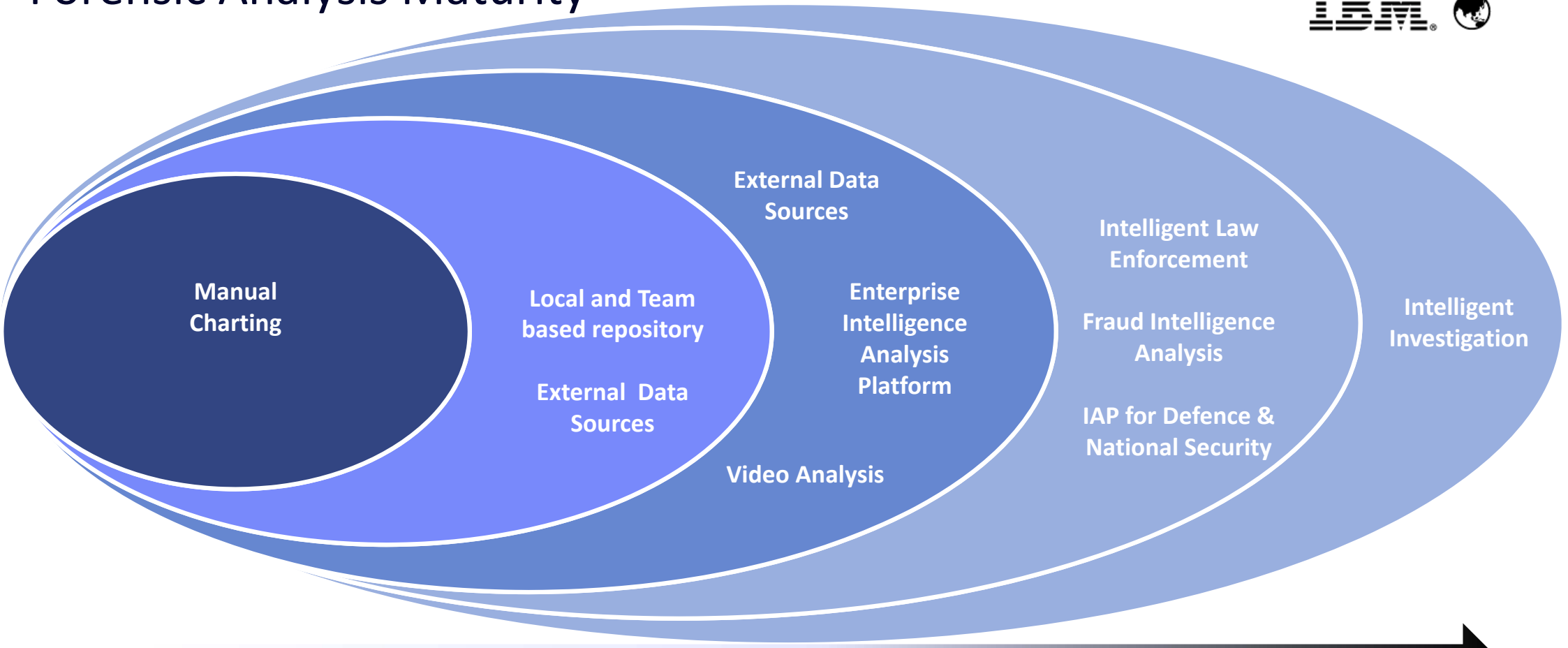
Cybercrime

Securities Investigations

Anti-Money Laundering

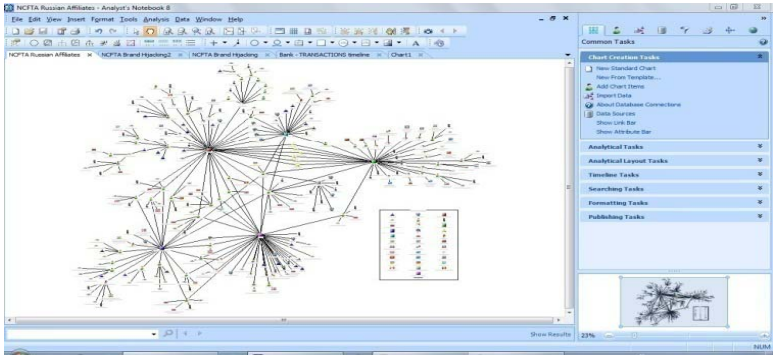
Fraud

Forensic Analysis Maturity

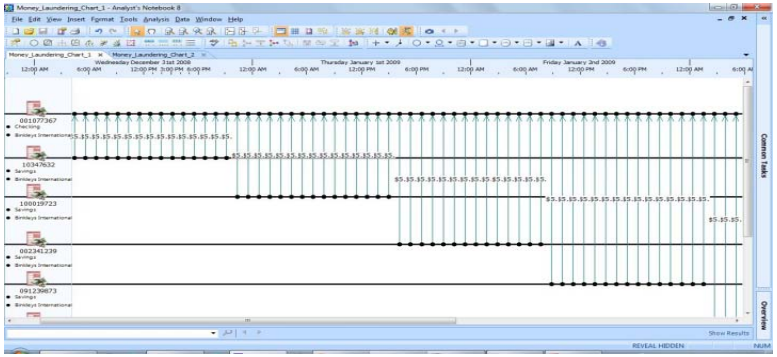


Increasing sophistication, depth, accessibility and applicability to industry

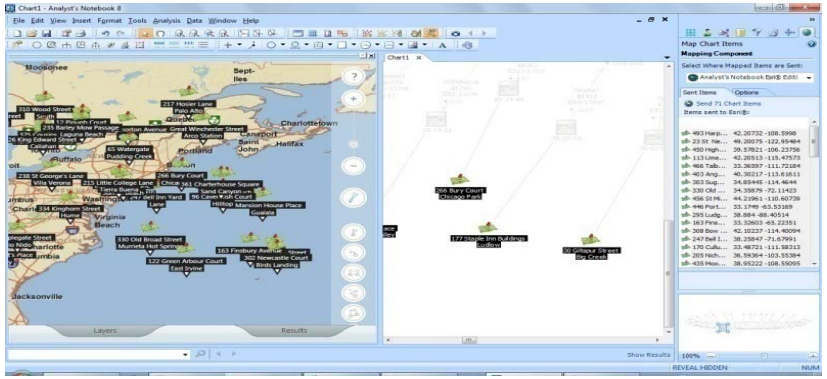
Make investigators productive through interactive visualisations



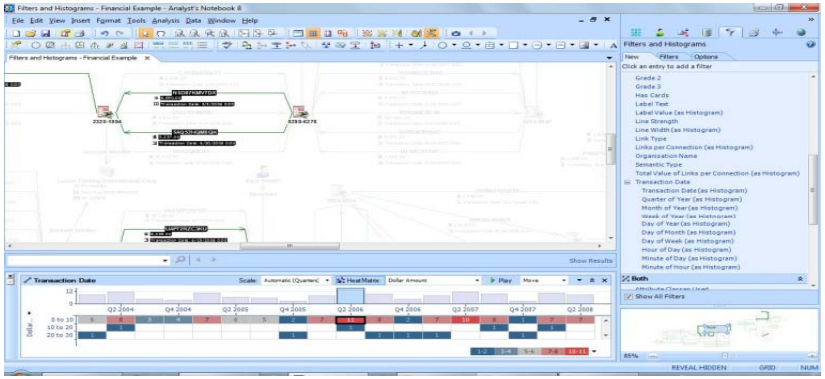
Link analysis & social network analysis



Transaction timelines



Geospatial



Histograms & activity heat maps

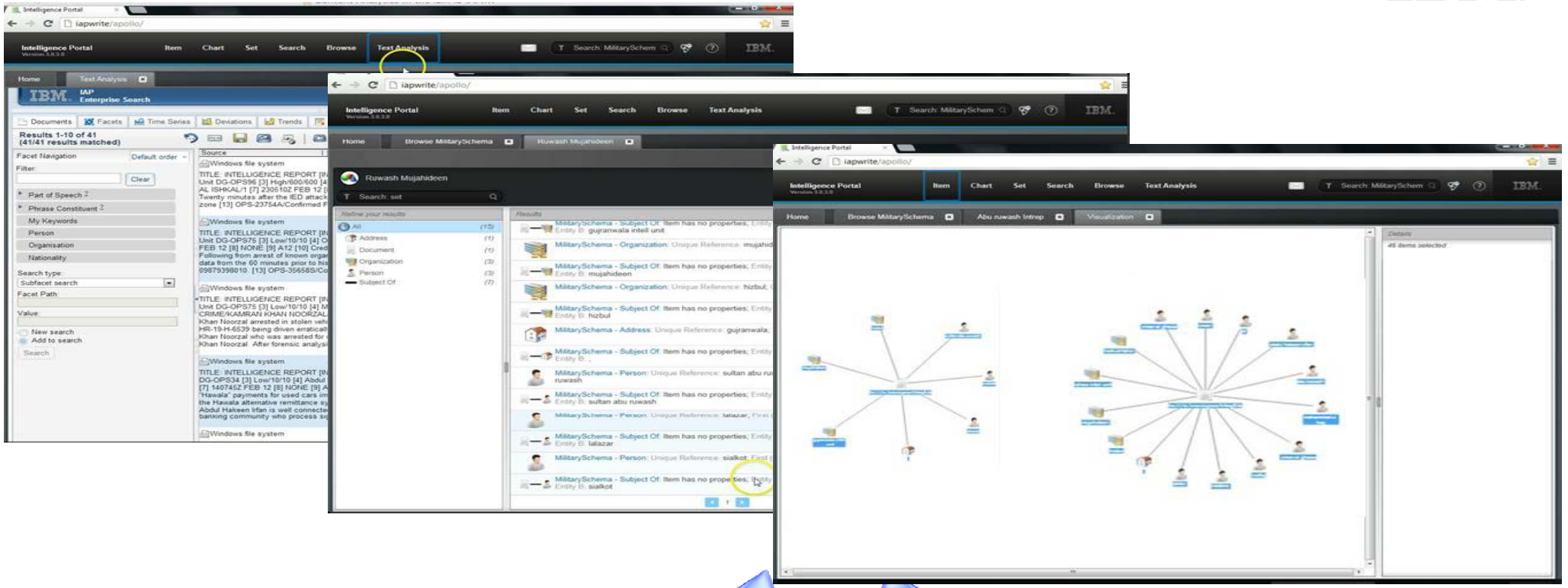
Key Issue: "80% of time spent on entering or managing data & information"

- *"sometimes we had to manually enter information from nearly 300 reports a day…"*

Leaving ONLY 20% of time on analysis

- "

Unstructured data – Automatic Entity Extraction



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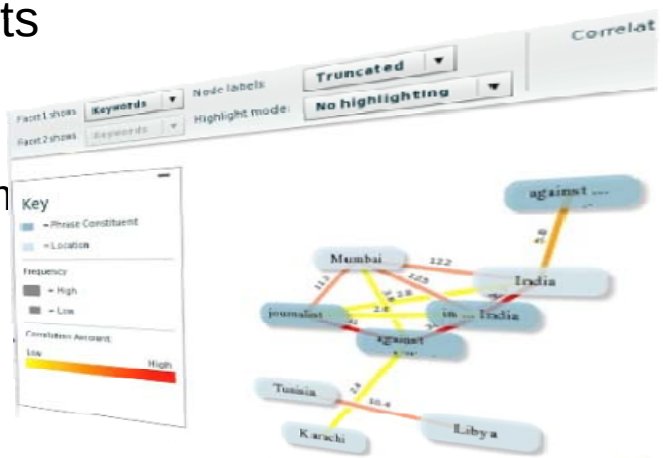
Content Analytics enables agencies to ingest, search and analyze unstructured and structured data from multiple sources

Content Analytics for Investigation

Enables agencies to ingest and analyze investigative documents



Correlate data

- Correlate unstructured information (reports, notes) to structural system

Analyse unstructured information

- Derive and identify new trends, patterns and anomalies

Connect structured and unstructured data

- Provide a 360-degree view of suspects and relationships

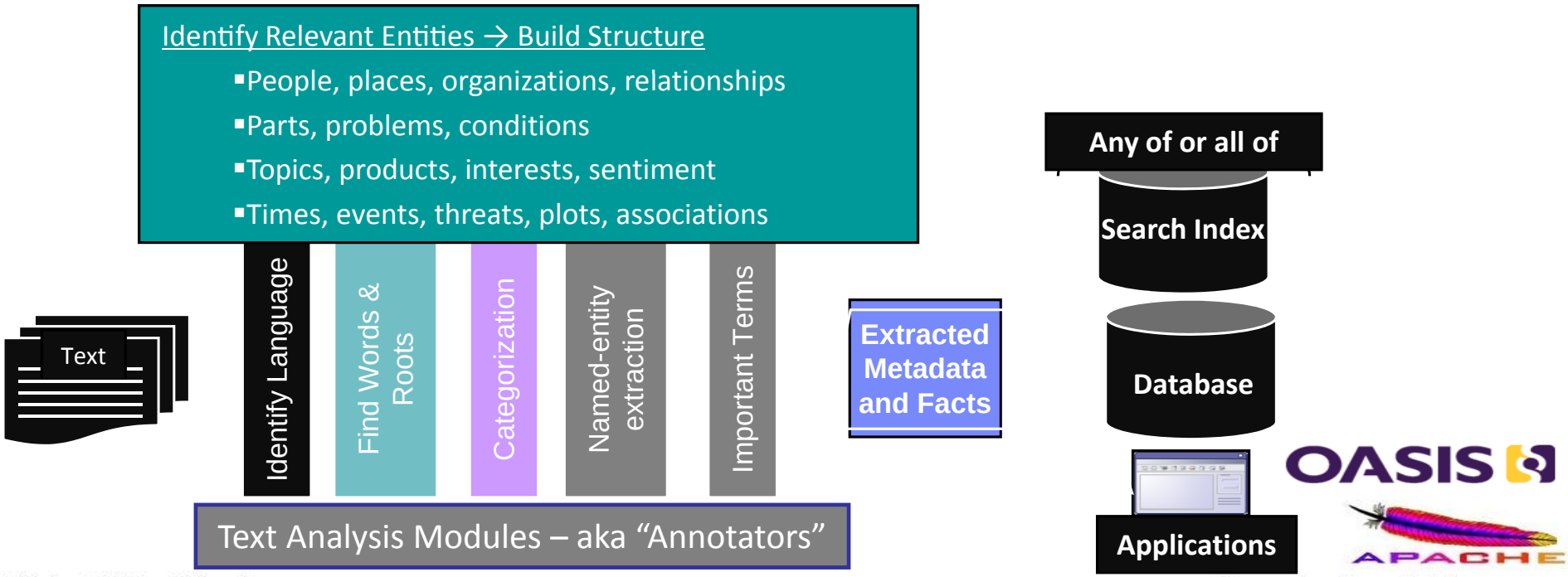
Advanced analytical features

- Semantic searching, risk alerting, SNA etc… help turn volumes of data into a wealth of insights

Document Processing – Pipeline Details

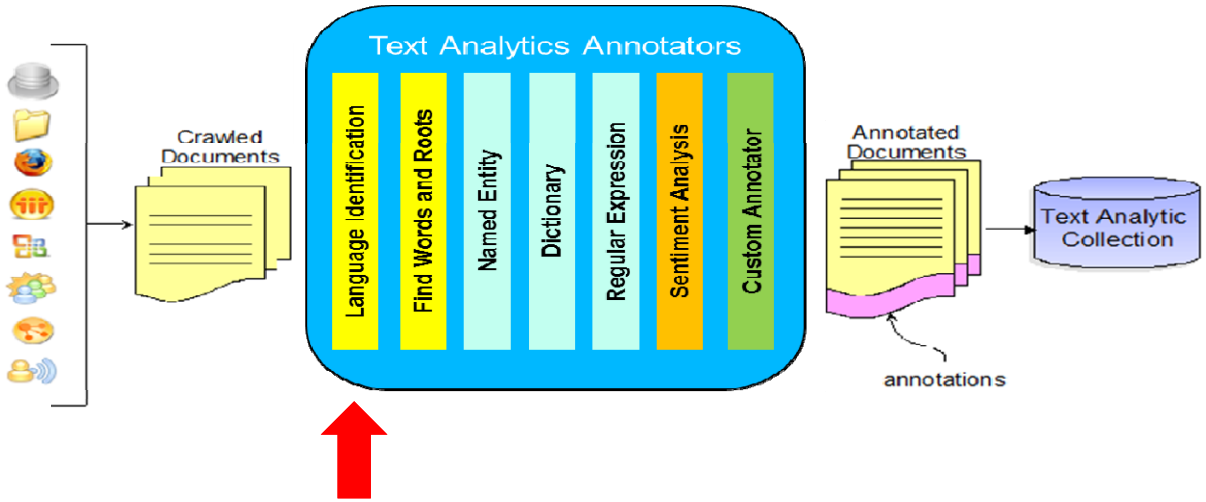
The only industry standard for content analytics

- OASIS Standard as of March 2009 - UIMA
- Enables interoperability of different analytics solutions and enterprise applications
- Provides an SDK for building and composing text analytics
- Defines a common interface for integrating text analysis modules
- Enables development of new and re-use of existing components for analysis



What do Content Analytics annotators do?

annotator- a software component that performs linguistic analysis tasks, then produces and records annotations



I was waiting at the traffic lights in my Audi A4 (9003EKH) at the corner of Ruckers and Wills street, when I was hit from behind by a Toyota Prius (7893THR).

ENGLISH

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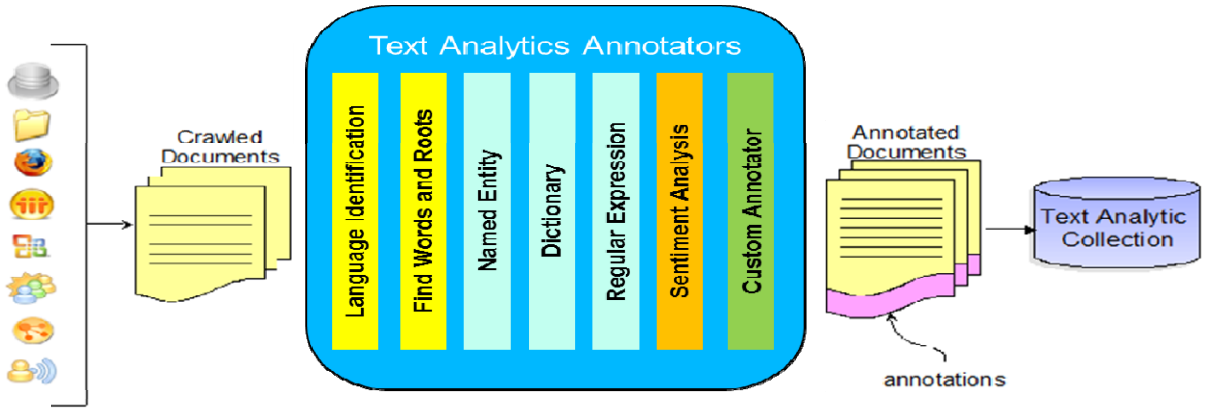

[redacted]

Noun | Verb | Adverb | Determiner | Pronoun | Etc…

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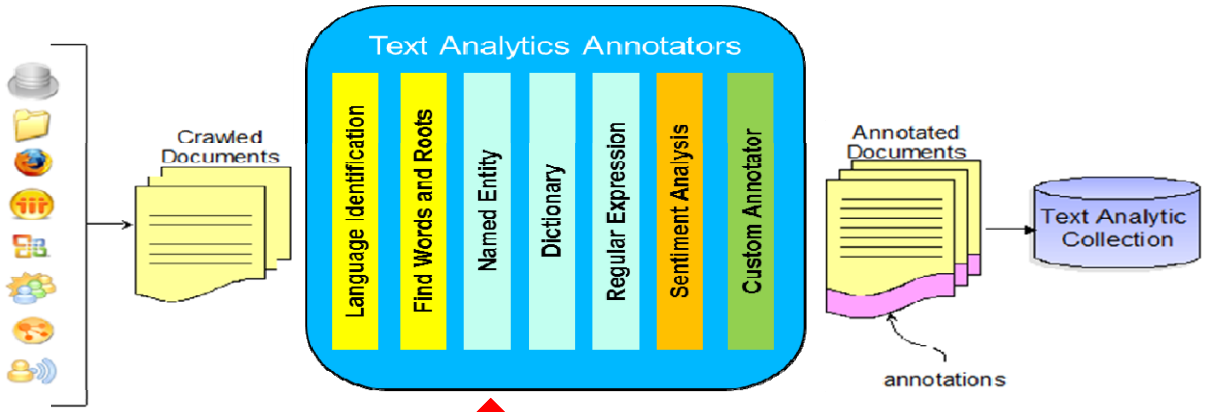

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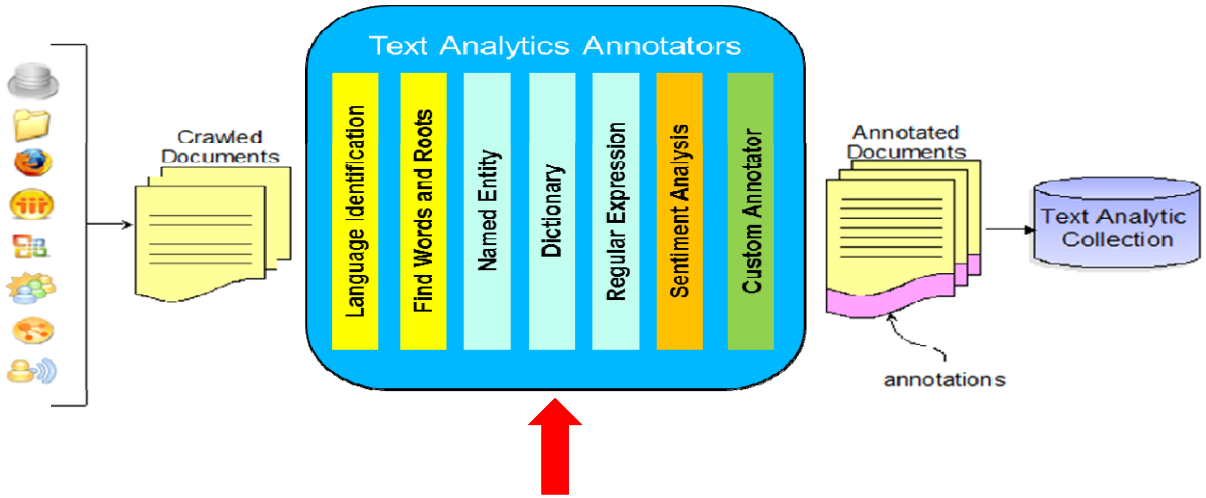

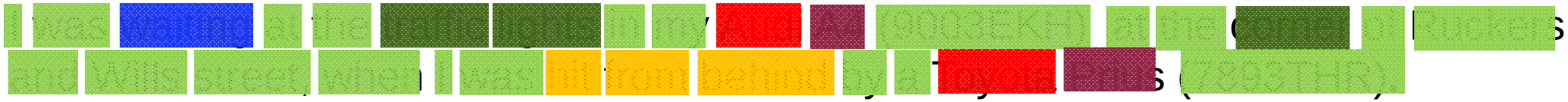

Car Manufacturer

Car Model

Motion Identifier

Incident Identifier

Location Identifier

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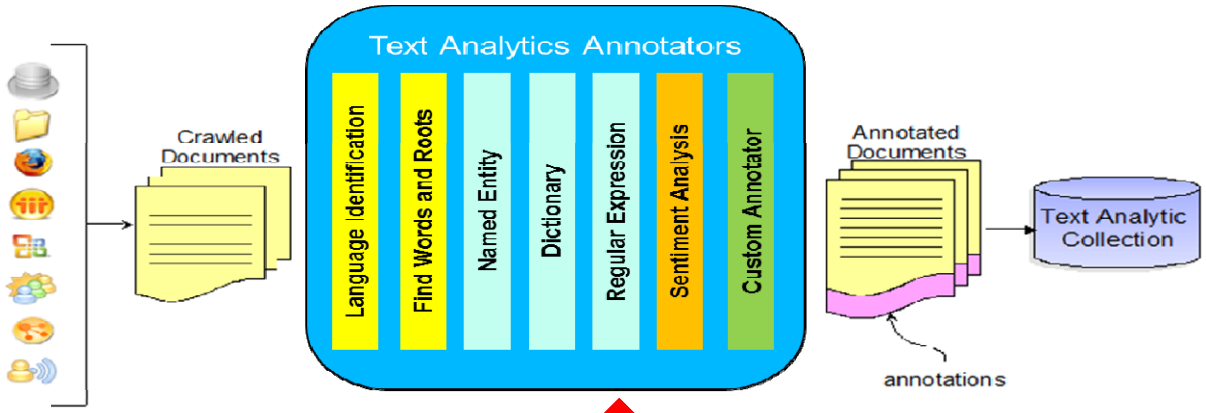

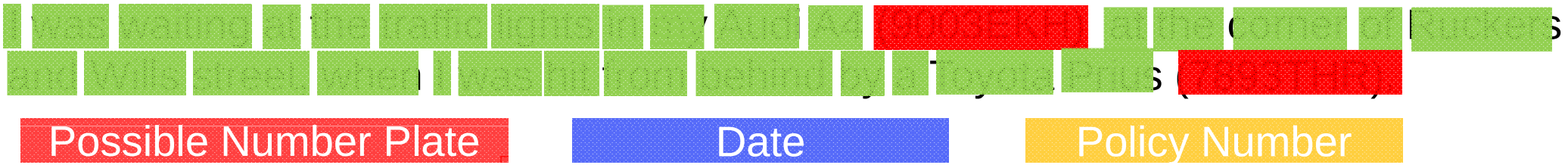

Possible Number Plate | Date | Policy Number

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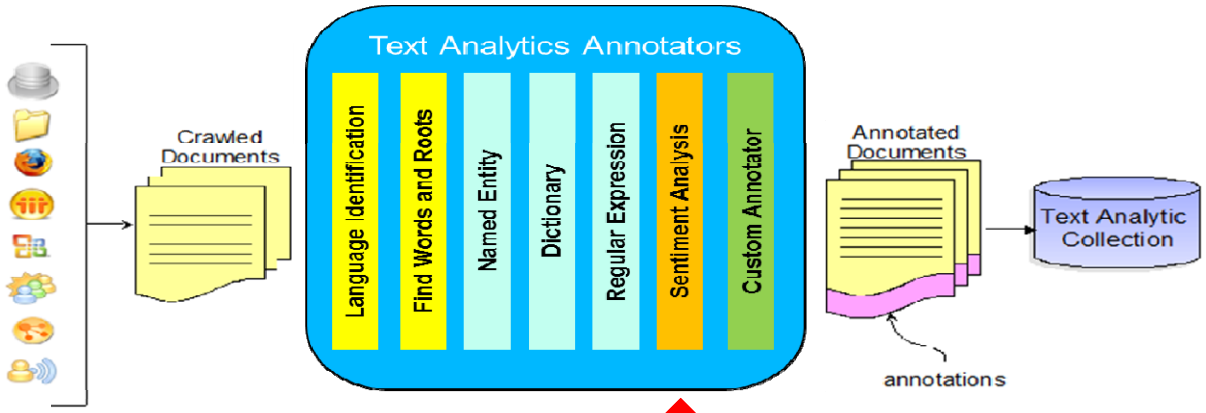

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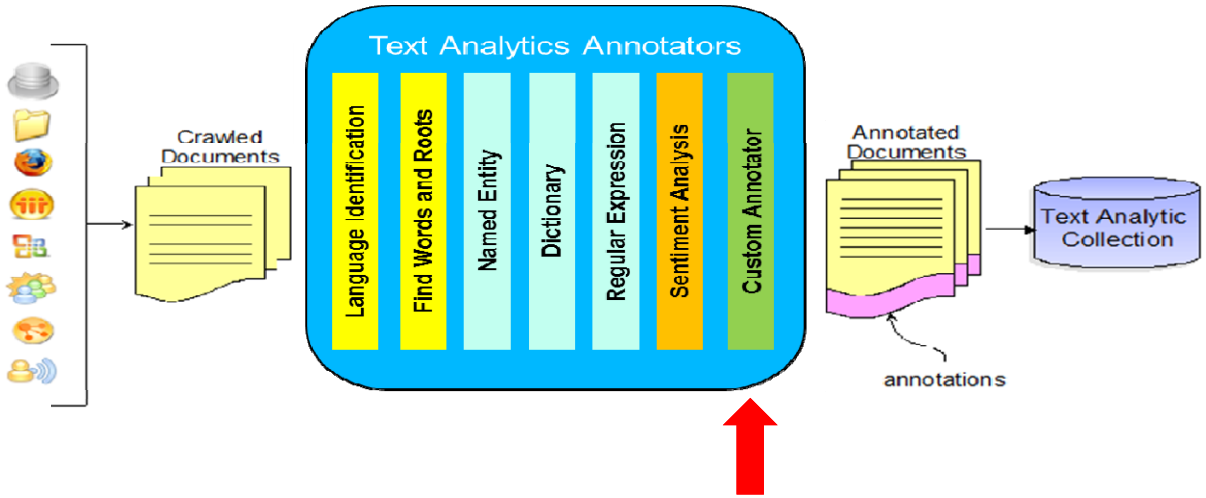
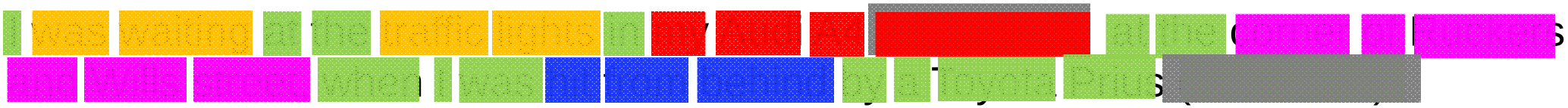




Policy Holder Vehicle

Possible Non Fault

Vehicle

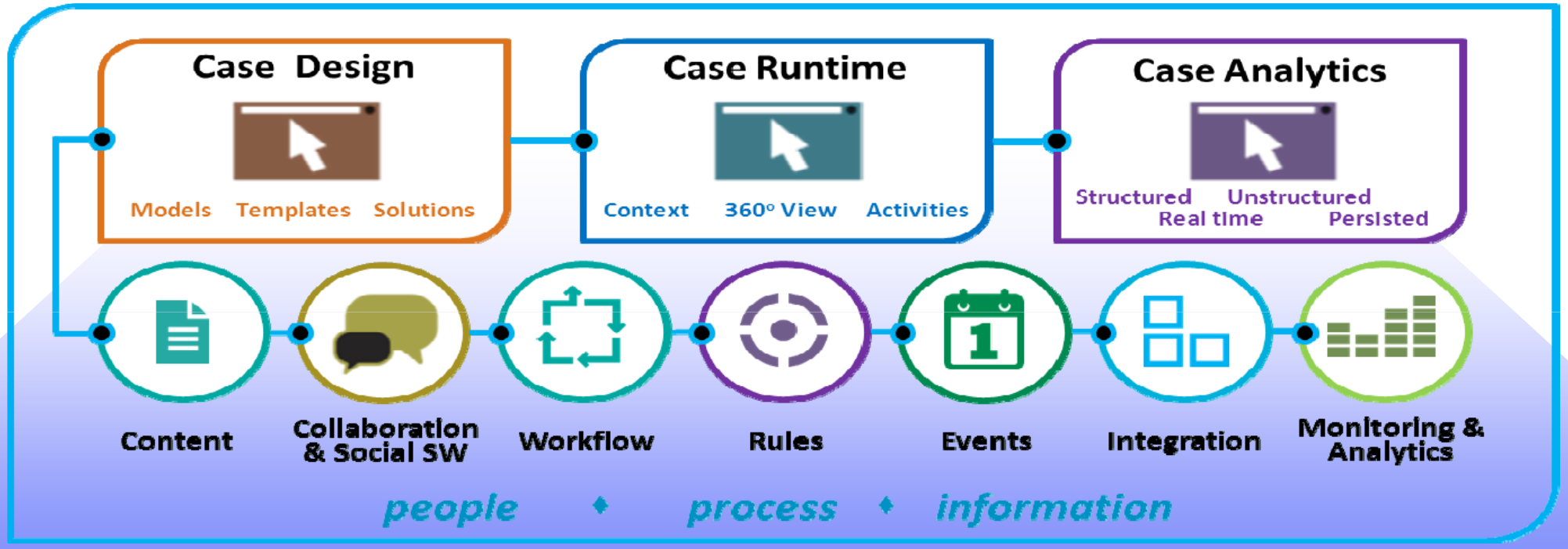
Stationary Vehicle

Incident Location

Number Plate

IBM Case Manager

Simplifying the delivery of investigative solutions

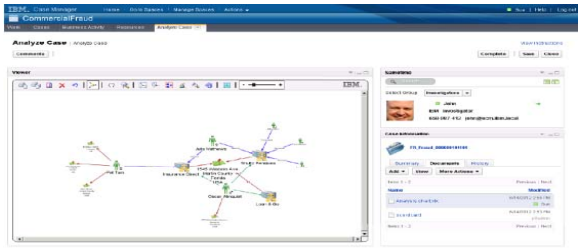


The value of case management to fraud investigation

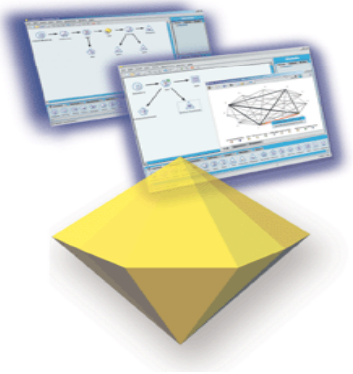
Provides more efficiency and transparency to the investigative process

Provides coordination and management of overall investigation

- Routing of work to investigative team
- Integration of collaborative elements
- Management of investigation documents
- Support for ad-hoc work that occurs during an investigation



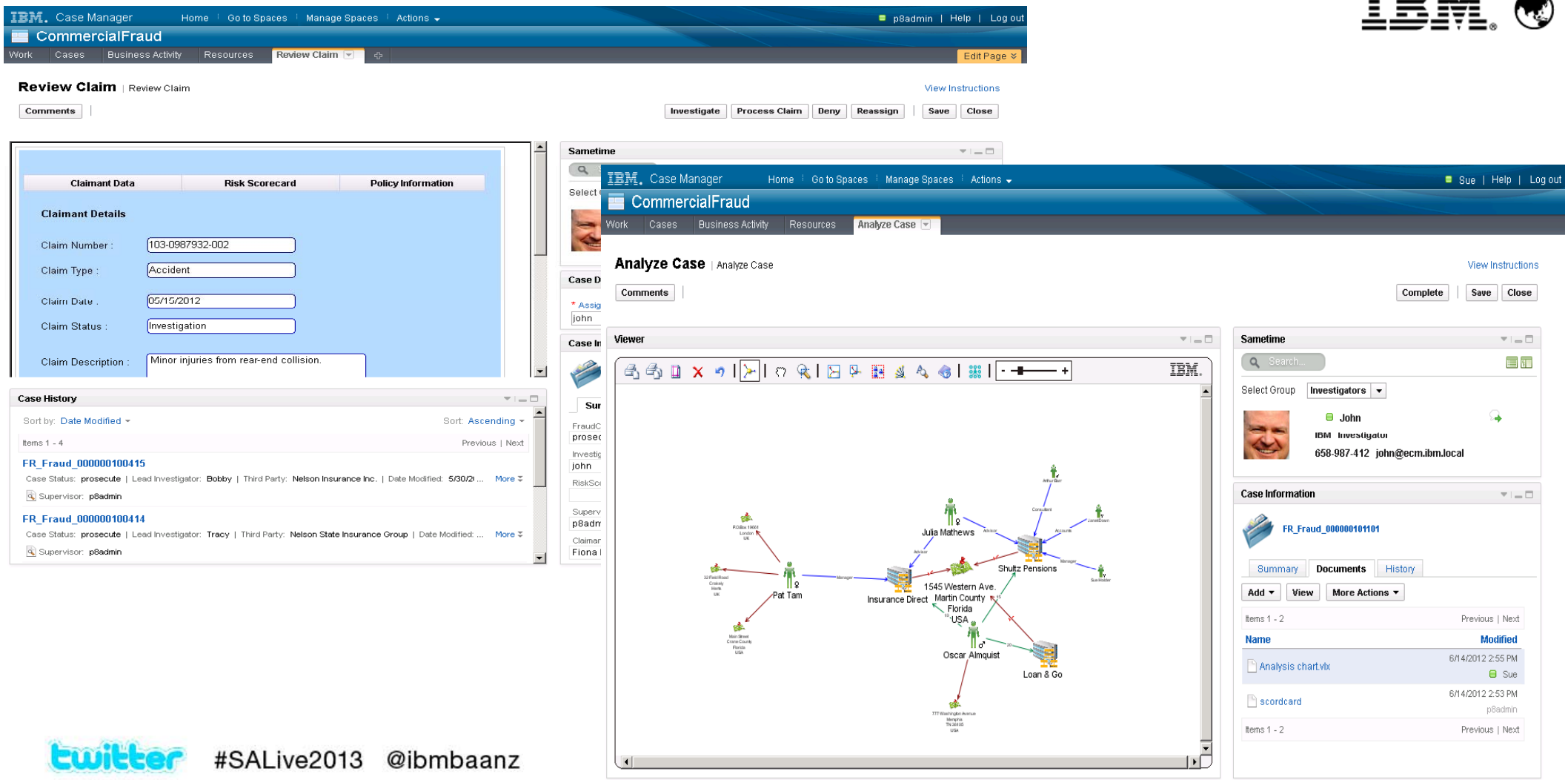
Preparation of ‘case ready’ reports for negotiation or prosecution



Improve efficiencies

- KPIs – investigations, $ saved
- As the investigation is occurring
- After the investigation has completed

Crossing the Investigation Team boundaries



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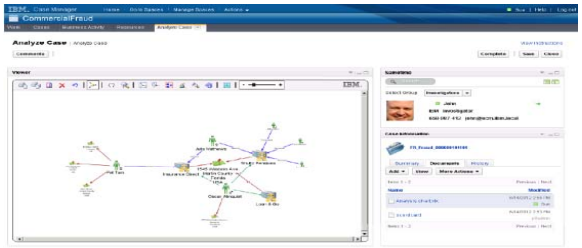
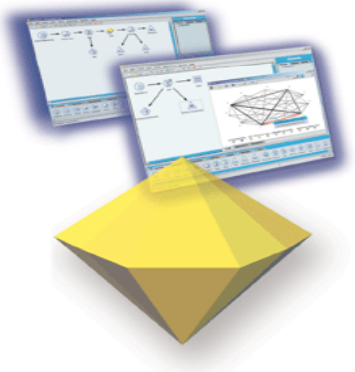
In Summary

- **Provides Governance around the entire investigation process**
- **Enforce service levels**
- **Breakdown the boundaries across information silos for clearer visibility**
- **Provide access to information held within structured AND unstructured data sources.**
- **Identify correlations between information**
- **Pre-integrated solution stack to provide faster ROI and lower TCO**

- **Most Importantly - turn information into intelligence to stop fraud and protect the bottom line!**





Smarter Analytics Live 2013

Turning information and insight into actionable business outcomes.

Demonstration – Ask the experts area

Intelligent Investigation Manger 15:00 – 15:15

Adrian Barfield, IBM Software Solutions

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SmarterAnalytics

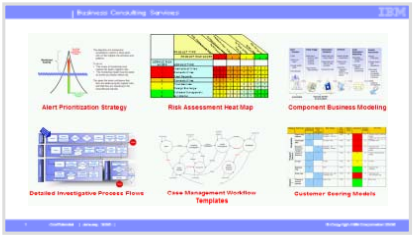
adrian.barfield@au1.ibm.com

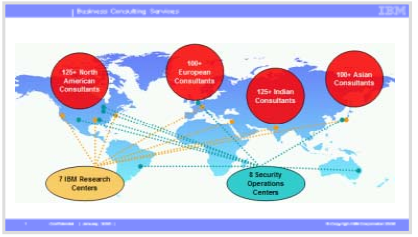
Join me to play against Watson!

IBM's capabilities in Security and Fraud

Industry Recognition

- 2011 **Top Analytics and Business Intelligence Service Provider** (Gartner Group)
- 2010 **Best Security Company** (SC Magazine)
- 2009 **#1 Identity and Access Management** (IDC Market Share Leadership)
- 2011 **Dynamic Case Management Strategy Leader** (Forester Report)
- 2008 **Leading analytic model solution** (last Gartner Group Report)





Broad and Deep Domain Expertise

- Broad expertise & experience across Financial Crimes (AML, Fraud, Case Management, Sanctions, Governance, Enterprise Risk, Identity and Access Mgmt)
- Tested reference models for financial crimes (architecture, workflows, business processes, risk assessments, scoring models, scenarios, IAM)
- Proven project management methodology
- System Implementation Accelerators