Turning Business Information into Business Insight with Content Analytics

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Analyzing content is critical to cognitive computing

Derive new business insight rapidly by aggregating, analyzing and visualizing unstructured content

- Aggregate information across multiple sources and types
- Analyze information using superior natural language processing techniques to extract meaningful facts, entities, concepts and sentiment
- Visualize to validate what is known or suspected or to reveal what is unknown

IBM Watson Content Analytics

IBM brings together the technologies that define the next generation o**f**
Cognitive Computing solutions
that can understand and learn

Moving your organization from simple query to information insight , from possibilities to probabilities, and from simple outputs to intelligent options

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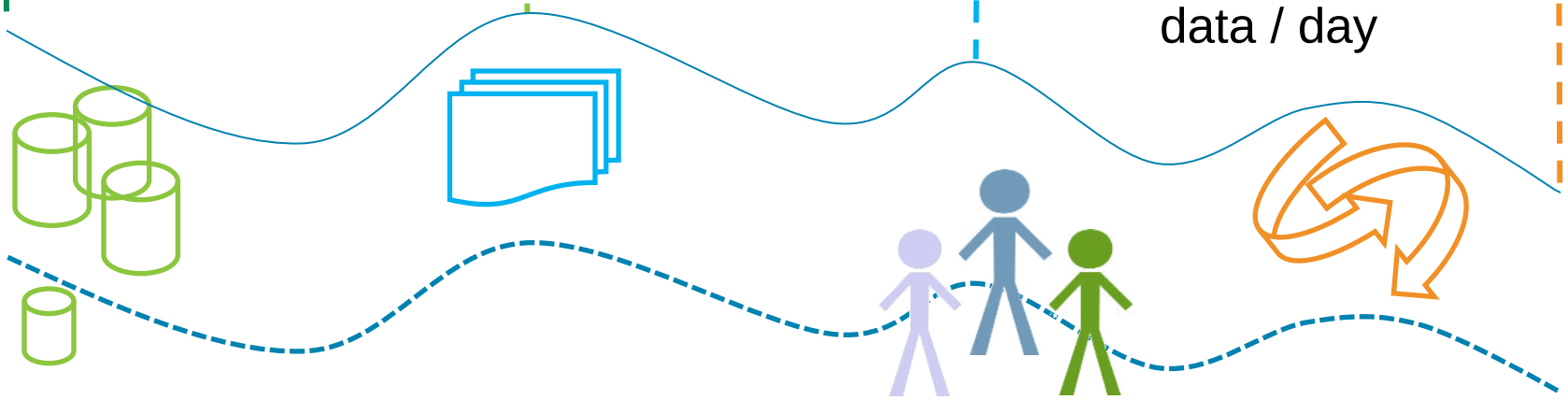
Businesses are "dying of thirst in an ocean of data"

90%
of the world's data was created in the last two years

80%
of the world's data today is unstructured

1 Trillion
connected devices generate 2.5 quintillion bytes data / day



1 in 2
business leaders don't have access

83%
of CIOs cited BI and analytics as part of their visionary plan

2.2X
more likely that top performers use business analytics

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Organizations face major challenges when it comes to understanding their unstructured information…

- Volume, variety, velocity and veracity of information
- Inability to analyze and use unstructured data
- Difficulty analyzing and revealing patterns in data
- Manual, inefficient data analysis
- Siloed, fragmented and unknown information
- Inability to find and share data
- Inability to understand customer sentiment and preferences

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To unlock insight from unstructured information, organizations need to …

- Incorporate data from all sources
- Recognize customer sentiment
- Understand potential for up-sell or cross-sell
- Determine the customer lifetime value
- Target the best customers
- Analyze product/service quality
- Speed time to value

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Watson Content Analytics helps organizations reveal unique business insights

Aggregate

… content from multiple internal and external sources and types

Analyze

… content by identifying trends, patterns, correlations, anomalies

Visualize

… to validate what is known or suspected or to reveal what is unknown

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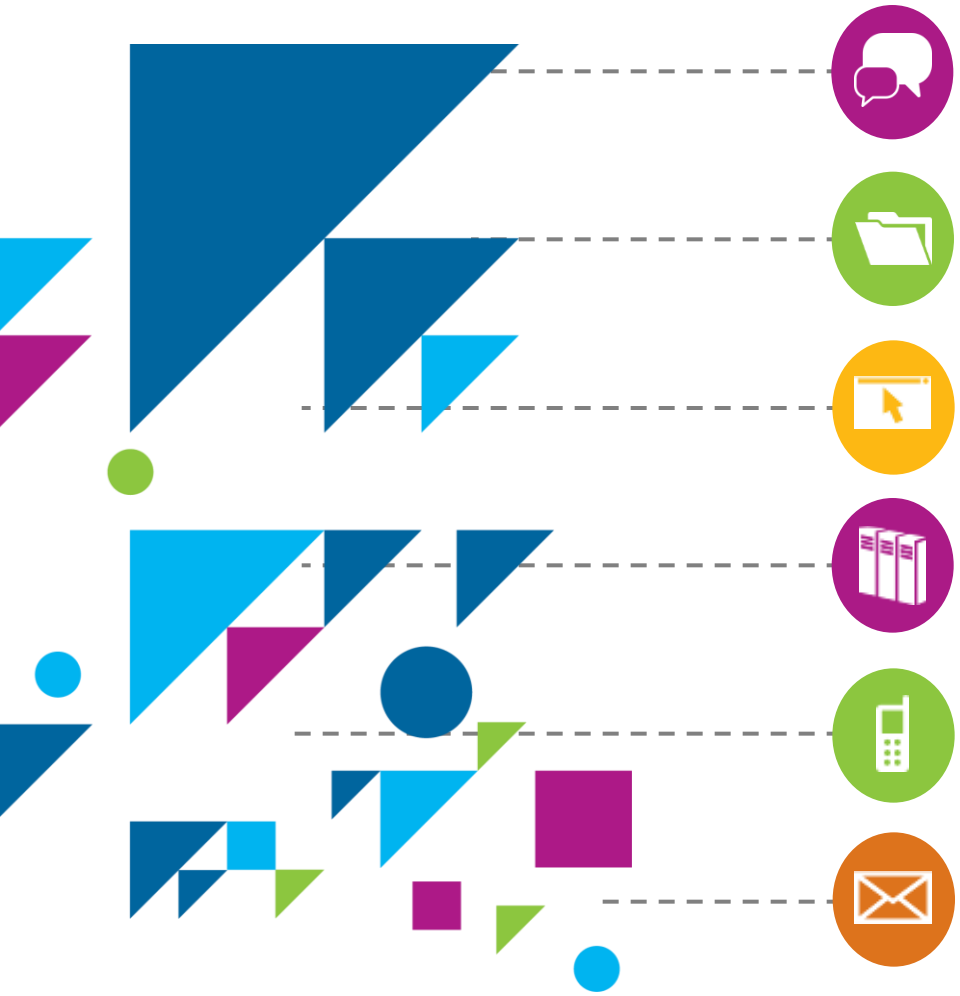
Surface actionable insights from enterprise information



Leveraging content requires the ability to aggregate, analyze and understand large volumes of text to reveal relevant insight quickly, from multiple information sources inside and outside the firewall

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Watson Content Analytics provides the “why” behind the “what”

What is happening?

- Analyzing structured data only gives you a partial view of the world around you
- Only 20 percent of enterprise content is structured
- Data analytics gives you the who, what, where and when of a subject

Why is it happening?

- Mining unstructured content gives you a comprehensive understanding of the world around you
- 80 percent of enterprise content is unstructured
- Content analytics distinctively adds the why and the how

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Watson Content Analytics provides the “why” behind the “what”

What is happening?		Why is it happening?
Sales missed because of out-of-stock inventory		Customers provide **negative sentiment** when product out of stock
20 percent increase in congestive heart failure patients’ readmission rate		**Missed medical** facts buried in doctors’/patient notes the indicate relationship of age to readmission
Claims payouts **over reserve by 8 percent**		**Missed suspicious** information in description claims submitted
Decrease in arrests over the past six months as the crime rate slowly rises		Resources redeployed incorrectly due to **unrecognized patterns** in crime reports

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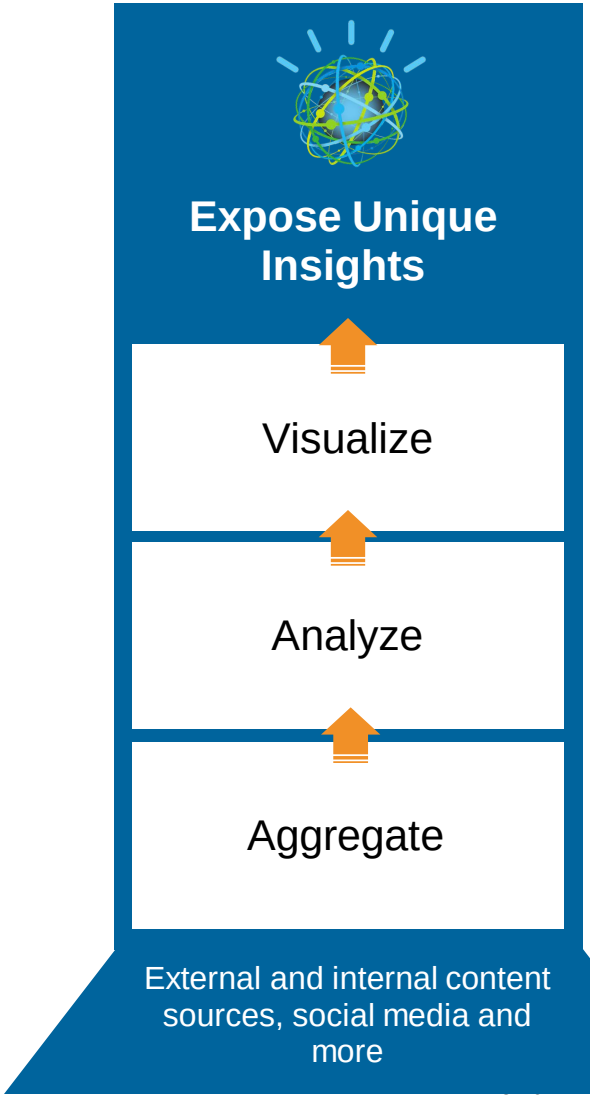
IBM Watson Content Analytics

- Transform information into business insight quickly without building models or deploying complex systems
- Derive insight in hours or days – not weeks or months
- Easier to use for knowledge workers to discover and analyze content
- Flexible and extensible for deeper insights



IBM Watson Content Analytics

- **Dynamically explore content for new business insight**
  - Uncover trends, patterns, relationships and sentiment, from enterprise content to drive fact-based decisions
- **Multiple views for visual analysis, exploration and investigation**
  - Enable knowledge workers to analyze content through feature-rich, easy to use visualizations
- **Powerful solution modeling for deeper insight**
  - Deliver deeper insights through flexible and extensible application integration and development
- **Deliver rapid insight to other systems, users and applications for complete business view**
  - Transform information into insight quickly without building models or deploying complex systems

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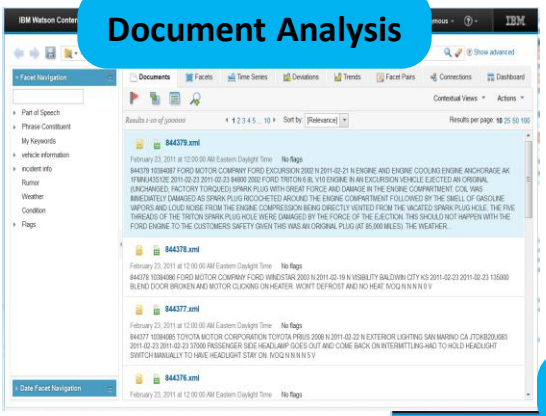
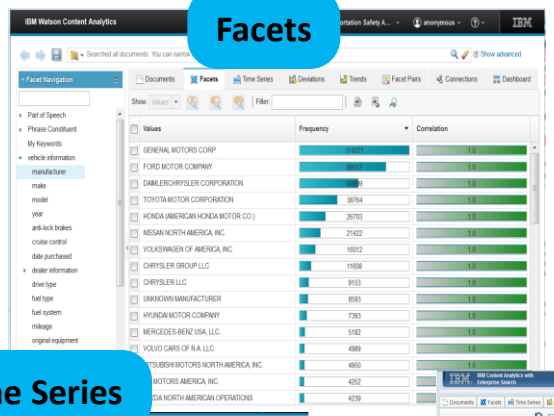
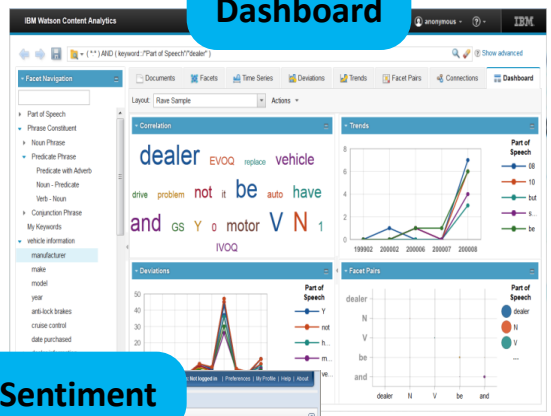
Document Analysis



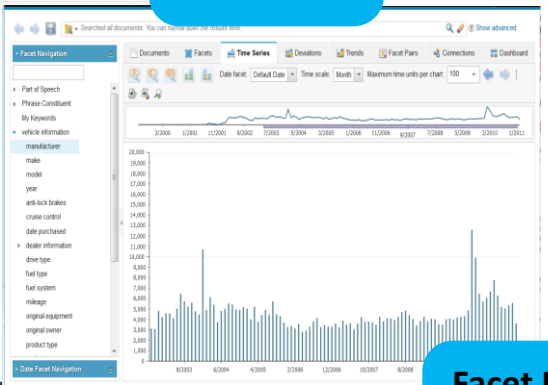
Facets



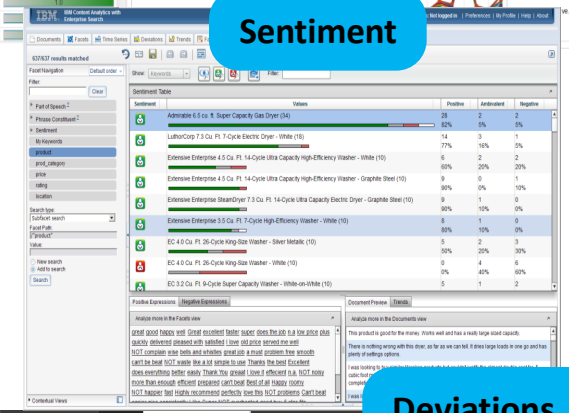
Dashboard



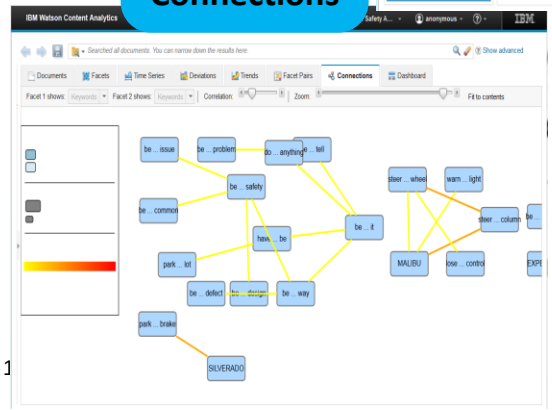
Time Series



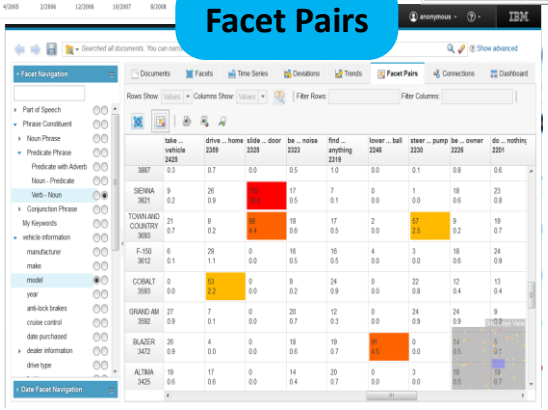
Sentiment



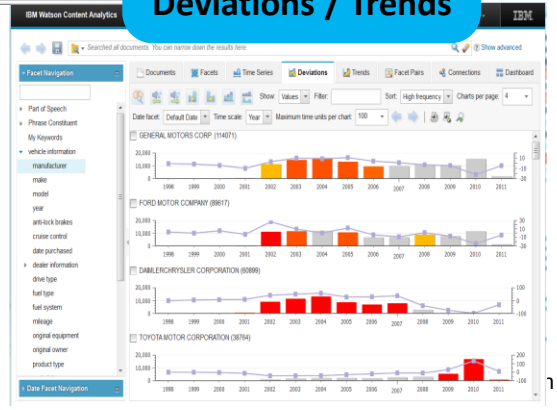
Connections



Facet Pairs



Deviations / Trends



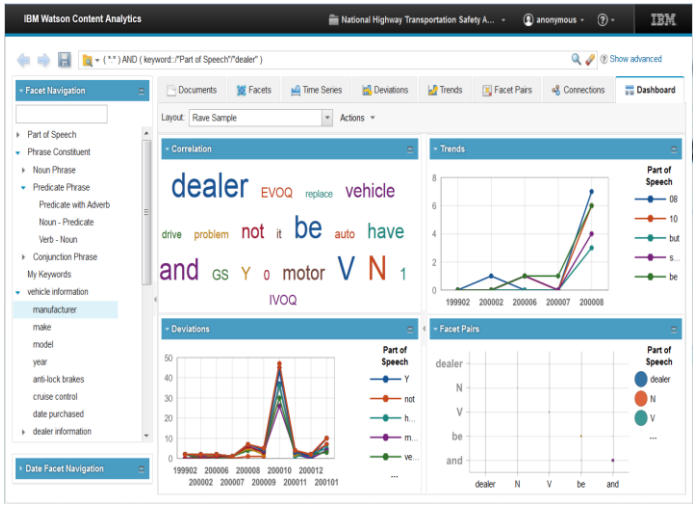
Text Analytics is the basis for Watson Content Analytics

What is Text Analytics?

Text Analytics (NLP*) describes a set of linguistic, statistical, and machine learning techniques that allow text to be analyzed and key information extraction for business integration

Not only was the pick-up line at the **counter** very long, but I waited **30 minutes** just to talk to a rude **representative** who gave me a **car** that smelled like **smoke** had **stained** floor mats, a **dented** fender, and only **half a tank of gas**

where	counter
time	30 minutes
person	representative
vehicle	car
issue 1	smoke
issue 2	stained
issue 3	dented
issue 4	half a tank of gas



What is Content Analytics?

Content Analytics (Text Analytics + Mining) refers to the text analytics process plus the ability to visually identify and explore trends, patterns, and statistically relevant facts found in various types of content spread across internal and external content sources

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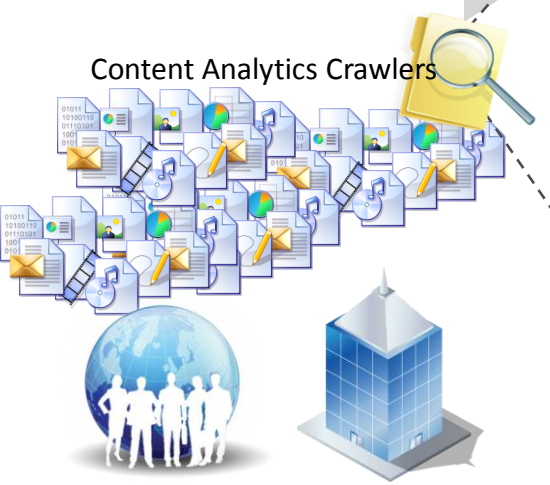
Watson Content Analytics – How it works

Real-time NLP REST API

Content Push API

Content Analytics Crawlers



Source Information

Corporate (Contact Center, Test Data, Dealer notes, ECM, etc.) and External (NHTSA, Edmunds, Consumer Reports, MotorTrend etc.)

Component Issue: "Engine Light"
Situation: "Refueling"

Extracted Concept

Person | Issue | Warning | Driver action

Noun | Verb | Noun Phrase | Prep Phrase

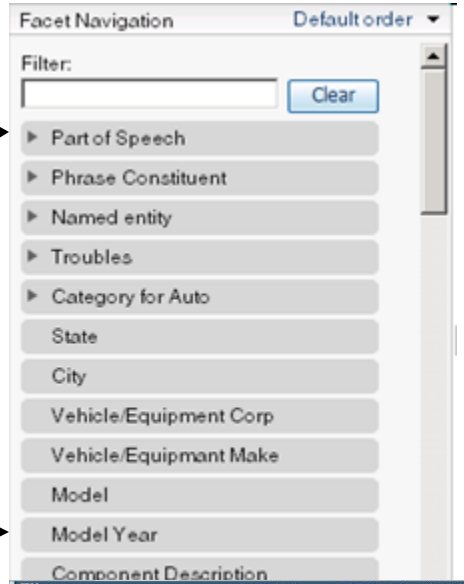
"Owner" "reports" "check engine lite"
"flashes" "after refueling"
...

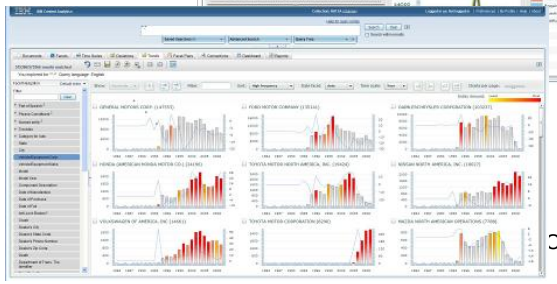
Content Analytics
UIMA Pipeline + Annotators

Analyzed Content (and Data)

RDB

Fine grain control over the entities and facets that are created





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Deeper contextual analysis with Watson Content Analytics

Not only was the pick-up line at the counter very long, but I waited 30 minutes just to talk to a rude representative who gave me a car that smelled like smoke, had stained floor mats, a dented fender, and only half a tank of gas.

Pickup/Delivery	Attitude/Helpful/Friendly	Body Damage
Speed of Service	Odor	Fuel Level
Counter	Interior Cleanliness	

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Pickup/Delivery	Attitude/Helpful/Friendly	Body Damage
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Watson Content Analytics for your business

- Customer experience
- Customer satisfaction and survey analysis
- Product and service quality
- Churn prediction
- Marketing campaign development and execution
- New revenue opportunities
- Product enhancements

- Community policing
- Investigation analytics
- Incident management
- Antigang initiatives
- Antiterrorism initiatives
- Cyber crime investigation

- Diagnostic assistance
- Clinical treatment
- Critical care intervention
- Research for improved disease management
- Fraud detection and prevention
- Voice of the patient
- Claims management
- Prevention of readmissions
- Patient discharge and follow-up care

- Risk assessment
- Fraud detection
- Policy and underwriting analysis
- Claims analysis, payment validation and loss review
- Reserve trending and optimization
- 360-degree view of the customer

- Anti–money laundering
- Internet banking fraud
- Operational efficiency
- Risk management and compliance

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Customer Insight

Customer Insight Solutions

- *Customer Experience*
- *Customer Sentiment*
- *Product and Service Quality*
- *Churn prediction*
- *Marketing campaign development and execution*
- *New revenue opportunities*
- *Product enhancements*

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"How can I understand why my customer satisfaction is decreasing?"

"How can I decipher customer complaints?"

"How do I know what my customers are saying about me?"

"How can I identify why products are failing?"

"How do I know what my customers want?"

"How can I prevent customer churn?"

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Customer Insight Solution

- Discover new insights from unstructured content
- Powerful search and analysis to for keyword & semantic search, facet navigation, trend analysis, correlations, regardless of source or format
- Early detection of industry trends
- Insight into customer sentiment about your company and products
- Better identification of new revenue opportunities, customer satisfaction issues, early problem detection, product modification requirements
- Deep analysis of call centers and social media outlets
- Integration with existing content repositories, BI tools, and more to augment existing analytics environments

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Customer Insight Benefits

- Reduced customer cost to serve
- Improved customer satisfaction and retention
- Grows lifetime value of customer
- Increase in new customers with superior products and services
- Beat the competition based on knowing what your customers want
- Reduced manual analysis cost & effort for content like call center logs, website blogs, and documents

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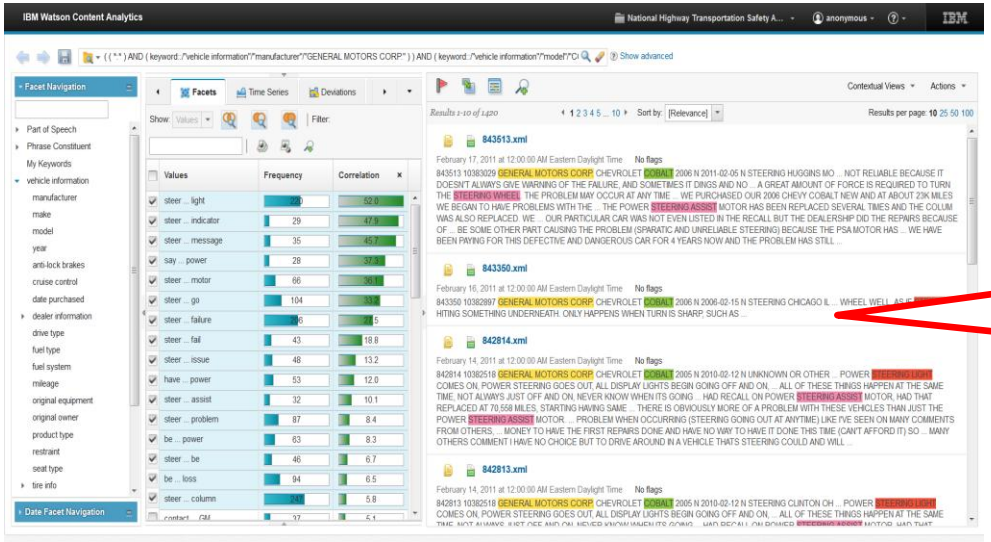
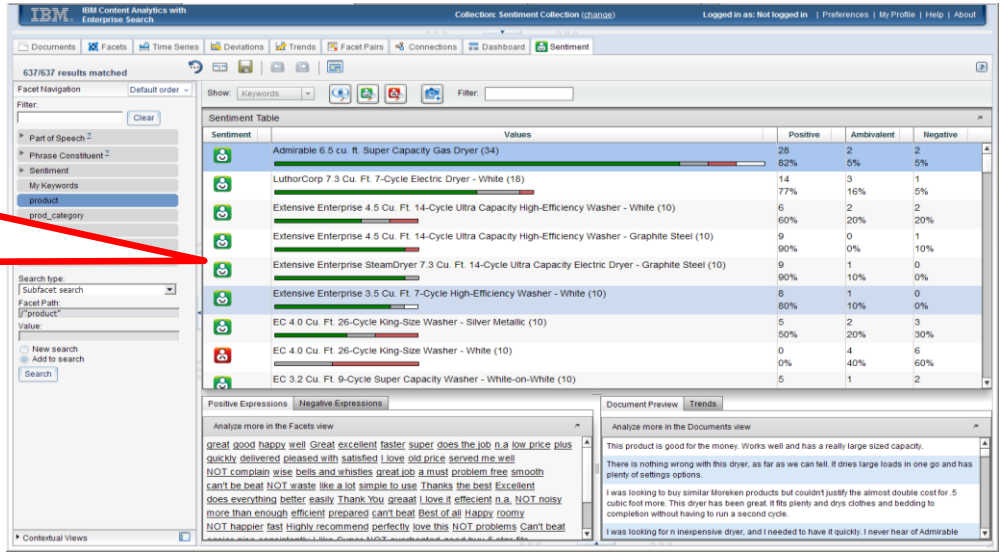
Expose Unique Business Insights



View customer comments, feedback, sentiment comments in context

“See and hear” what your customers think of your company, products or services



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Global Automakers

Mining content to improve quality and reduce costs

Reduce by 1%, or more the cost of recalls, estimated at tens-to-hundreds of billions of dollars a year

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A Car Rental Agency

Quickly identifying customer satisfaction trends

Quickly identifies problems, in real-time, at over ***3000*** *locations in 146 countries*

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A Major Convenience Store Retailer

Uncovered which fresh and prepackaged items to stock in 10,000+ stores

Increased gross profit

by ***half a point***

year-over-year

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Are you….

- **Discovering new insights** from unstructured content…

  … to **reduce customer cost** to serve?

- **Analyzing for patterns, trends, correlations**, regardless of source or format…

  … to **improve customer satisfaction** and retention?

- **Understanding customer sentiment** about your company…

  … to **grow the lifetime value** of your customer?

- **Identifying customer satisfaction** issues or problem …

  … to **provide superior products** and services?

- **Automating examination** of unstructured content …

  … to **reduce manual analysis** and associated costs?

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Watson Content Analytics

Reveal business insight trapped in unstructured content

Watson Content Analytics is a powerful analytics solution that helps organizations aggregate, analyze and visualize massive amounts of information to expose unique insights.

IBM Watson Content Analytics helps you…

- Expose new insights from unstructured information even when you do not know what you are looking for
- Confirm or validate insights that you believe to be known

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Thank You!

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