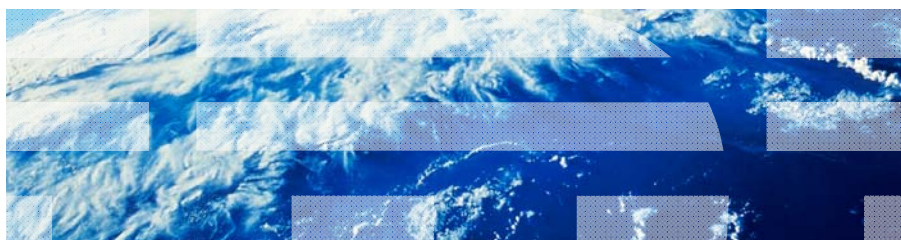


Keith Ellis, WW Predictive Analytics Industry Solutions Leader
10 May 2011



Predictive Analytics Overview



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Agenda

A Smarter Planet and Business Analytics

Predictive Analytics Defined

Interconnected Business Objectives

IBM SPSS Predictive Analytic Platform

Customer Examples

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Business Analytics 2011 




Our world is becoming
INSTRUMENTED




Our world is becoming
INTERCONNECTED



Virtually all things, processes
and ways of working are becoming
INTELLIGENT

... to help build a Smarter Planet



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Business Analytics 2011 

With this change comes an explosion in information ...



Volume of Digital Data



Variety of Information



Velocity of Decision Making


... Yet *organizations are operating with blind spots*

Lack of Insight
1 in 3 managers frequently make critical decisions without the information they need

Inefficient Access
1 in 2 don't have access to the information across their organization needed to do their jobs

Inability to Predict
3 in 4 business leaders say more predictive information would drive better decisions


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Source: IBM Institute for Business Value

Business Analytics 2011 

Imagine you could gain new insights to....

| | | | |
|---|--|--|--|
| <p><i>...predict regions where doctors prescribe high volume of medication?</i></p> | <p><i>...apply social relationships of customers to prevent churn?</i></p> | <p><i>...adjust credit lines as transactions are occurring to account for risk fluctuations?</i></p> | <p><i>...determine discount levels for select people at time of sale instead of offering to all?</i></p> |
| | | | |
| <p>Pharma Sales Manager</p> | <p>Telco Call Center Rep</p> | <p>Loan Officer</p> | <p>Retail Sales Associate</p> |

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Informed, aligned decisions and actions

IBM Business Analytics

Allows decision makers at virtually all levels of the organization to gain insight into business performance and data to support and guide actions.

| | | |
|---|---|---|
| How are we doing? | Why? | What should we be doing? |
| <p>Deliver immediate insights into business performance</p> | <p>Deeper analysis of trends and patterns</p> | <p>Foresight to plan & allocate resources and mitigate risk</p> |
| | | |
| <p>Dashboards/Scorecards</p> | <p>Reports</p> | <p>Ad hoc Query</p> |
| | | |
| <p>Content & Trend analysis</p> | <p>Planning/Budgeting</p> | <p>Predictive Modeling</p> |

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IBM Business Analytics value proposition

IBM Business Analytics delivers **actionable insights** for **decision makers** at all levels of your organization, enabling them to **optimize** business performance

Business Analytics Industry Solutions

Banking

- Campaign Insight & Optimization
- Customer Profitability Analysis
- Credit Risk
- Fraud Foresight

Insurance

- Customer Retention & Growth
- Predictive Analytics and Reporting for Claims

Government

- Crime Prevention
- Integration into Municipal Executive Dashboard

Retail

- Market Basket Analysis
- Store-Level Assortment Planning

Education

- Student Performance

Telco

- Churn Management

Industrial

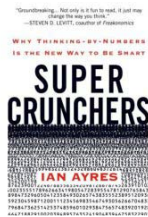
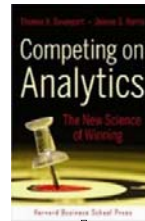
- Predictive Maintenance



The Analytical Edge

“At a time when companies in many industries offer similar products and use comparable technology, high-performance business processes are among the last remaining points of differentiation.”

Tom Davenport, author of “Competing on Analytics”



“We are in a historic moment of horse-versus-locomotive competition, where intuitive and experiential expertise is losing out time and time again to number crunching.”

Ian Ayres, author of “Super Crunchers”



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Scott Adams, *The Dilbert Future*
US cartoonist (1957 -)

There are many methods for predicting the future. For example, you can read horoscopes, tea leaves, tarot cards, or crystal balls.

Collectively, these methods are known as "nutty methods."

Or you can put well-researched facts into sophisticated computer models, more commonly referred to as "a complete waste of time."

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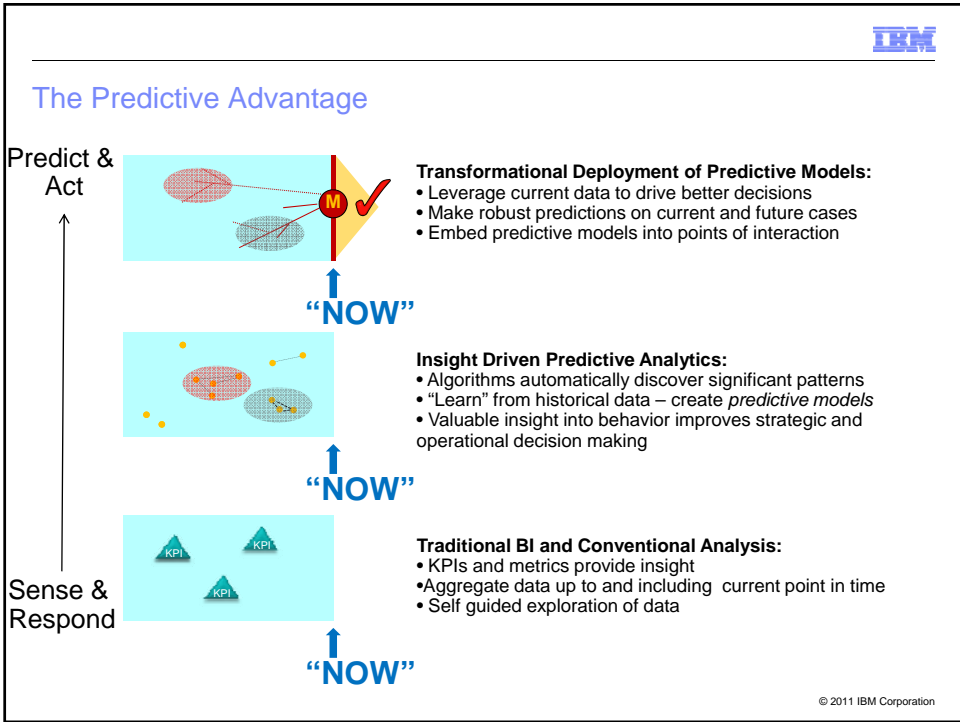
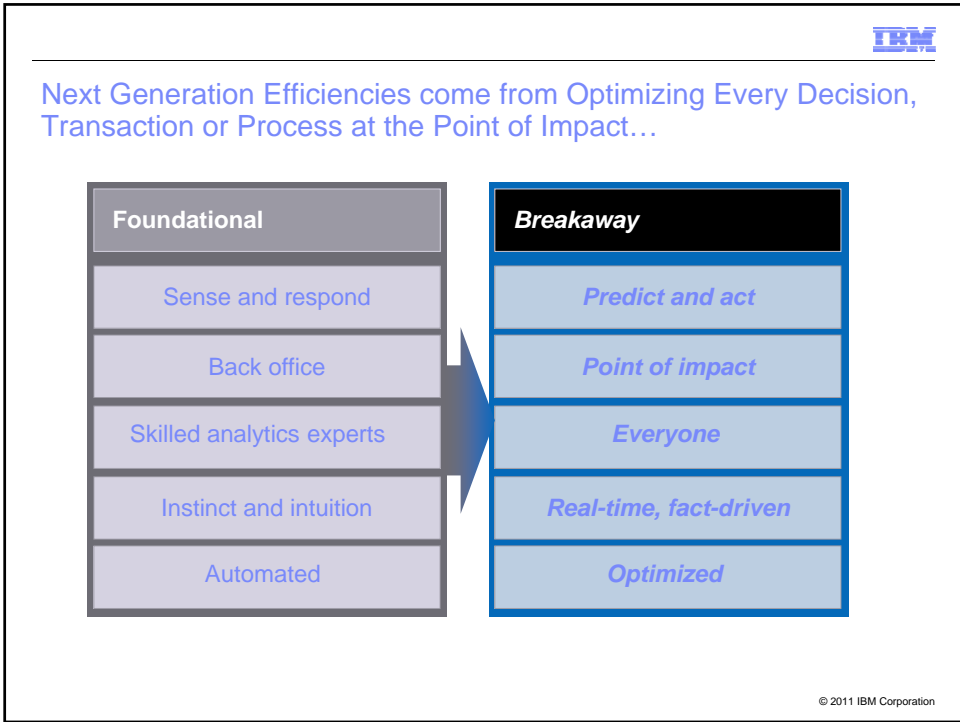
Predictive Analytics offers Unique Insights to Answer those Tough Business Questions



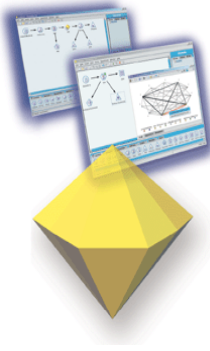
- Predictive Analytics is a transformational technology that enables more proactive decision making, driving new forms of competitive advantage
- Analyzes patterns found in historical and current transaction data as well as attitudinal survey data to predict potential future outcomes

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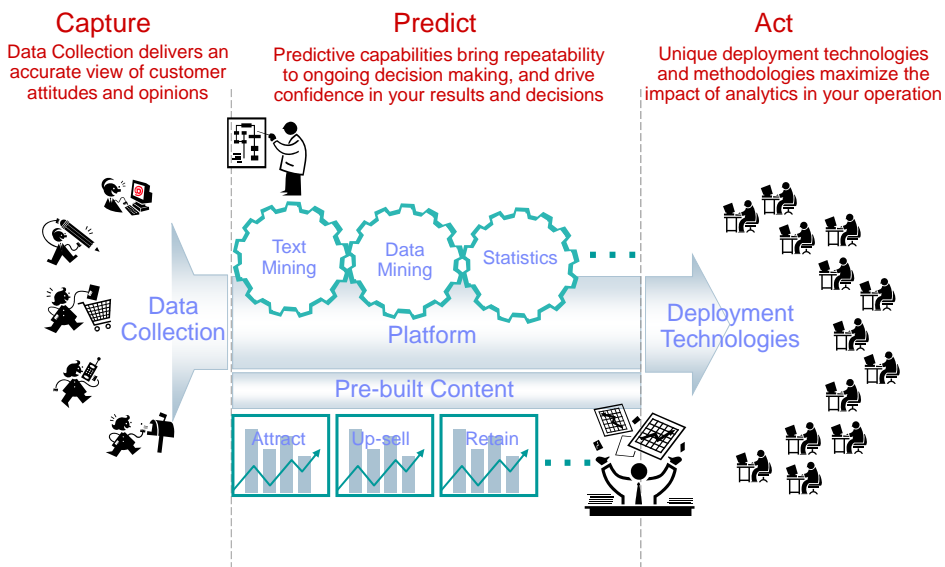


What Does Predictive Analytics Do?



- **Predict** - Future outcomes based upon historical information
 - What product to cross-sell to a customer
 - Where to staff police force based upon crime patterns
 - What is the risk for issuing credit to a customer
- **Group** - Creates natural forming clusters
 - Customer segmentation
 - Pricing clusters
- **Associate** - Creates relationships between entities
 - What products do customers own together
 - What medical treatments lead to improved recovery
- **Anomaly** - Find instances that fall outside of “normal” behavior
 - Anti-money laundering activity
 - Insurance and Healthcare fraud
- **Forecast** – Future results based upon historical inputs
 - Demand forecasting for supply chain efficiencies
 - Quarterly results for more effective financial planning

Enabling the Predictive Analytics Process



Data at the heart of Predictive Analytics

High-value, dynamic - source of competitive differentiation

The diagram illustrates a 360-degree customer view centered on a person icon. It is divided into four quadrants by a vertical and a horizontal line:

- Top-Left Quadrant:** Interaction data
 - E-Mail / chat transcripts
 - Call center notes
 - Web Click-streams
 - In person dialogues
- Top-Right Quadrant:** Attitudinal data
 - Opinions
 - Preferences
 - Needs & Desires
- Bottom-Left Quadrant:** Descriptive data
 - Attributes
 - Characteristics
 - Self-declared info
 - (Geo)demographics
- Bottom-Right Quadrant:** Behavioral data
 - Orders
 - Transactions
 - Payment history
 - Usage history

The bottom-right quadrant is enclosed in a red dotted border and labeled **"Traditional"** below it.

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Challenges to Growth

How to:

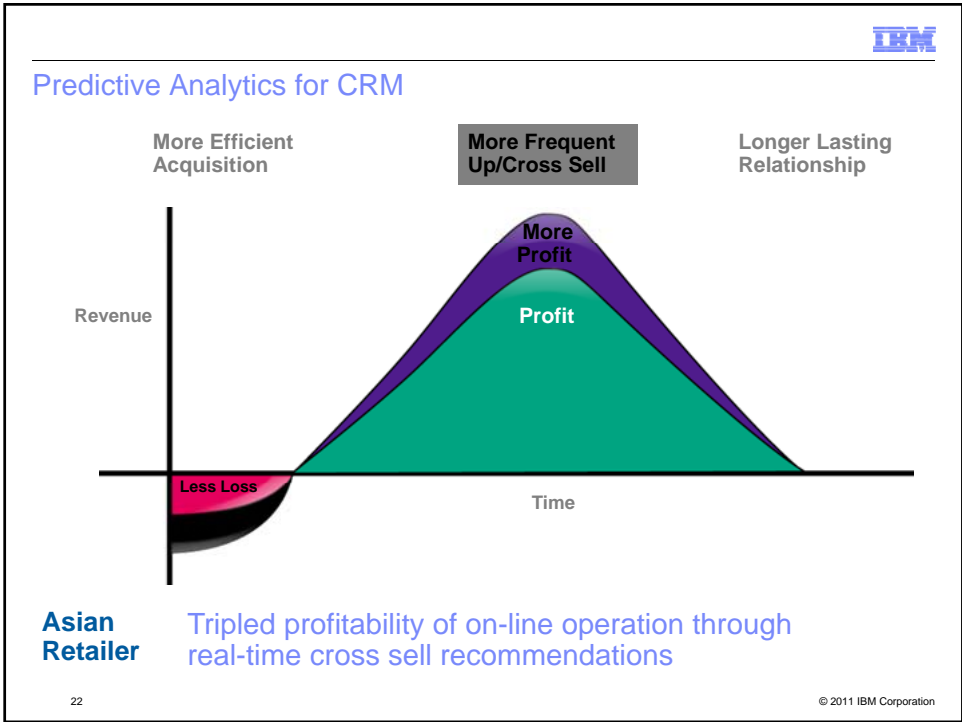
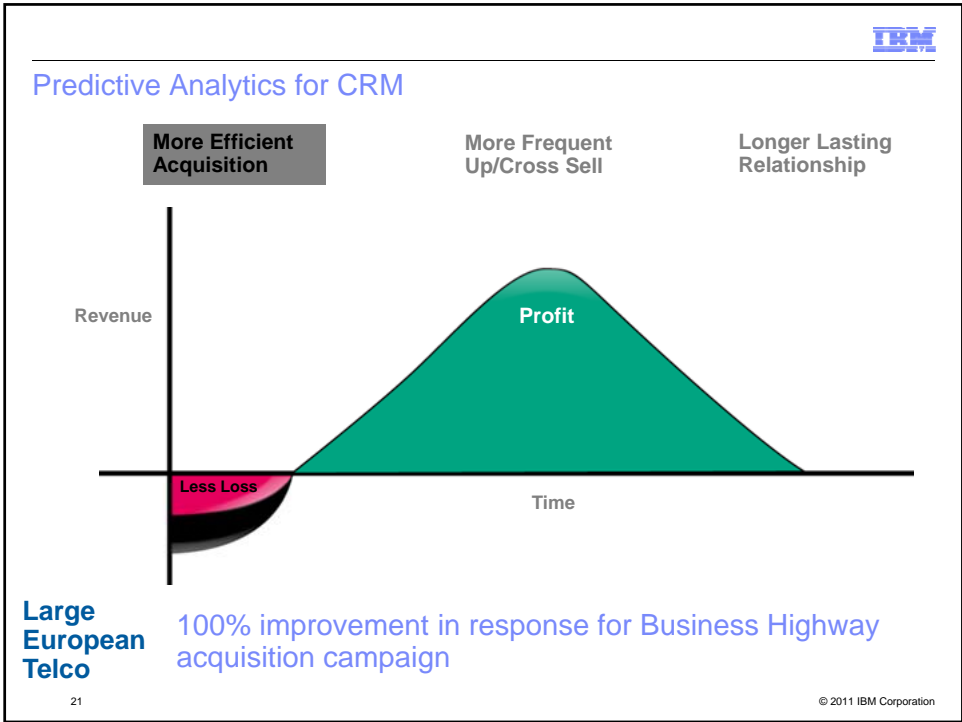
- Attract more and better customers
- Grow customer value
- Retain profitable customers

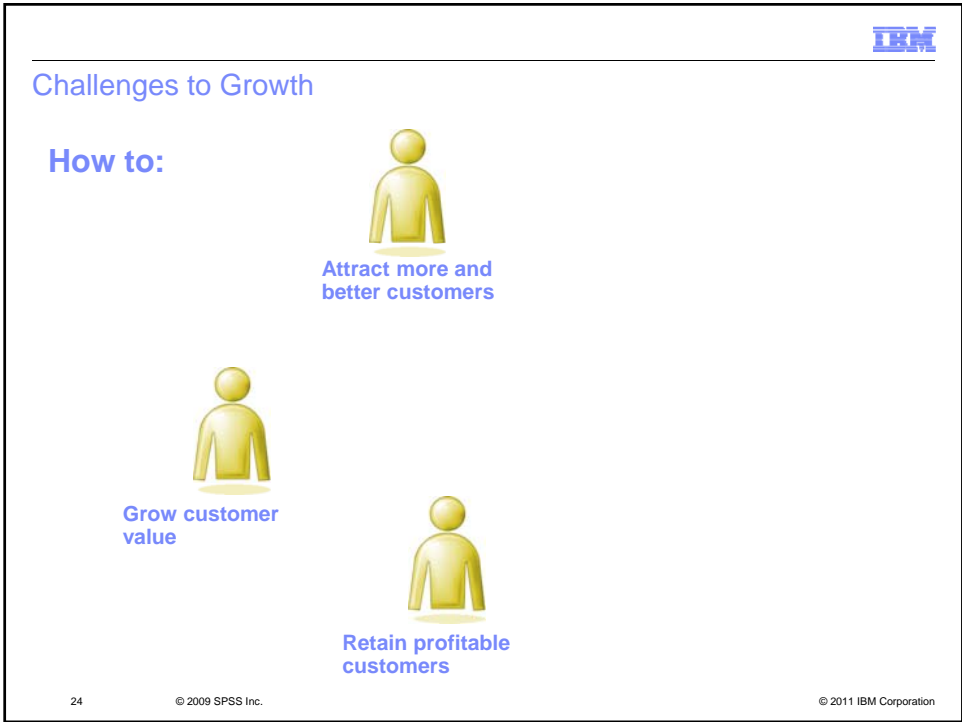
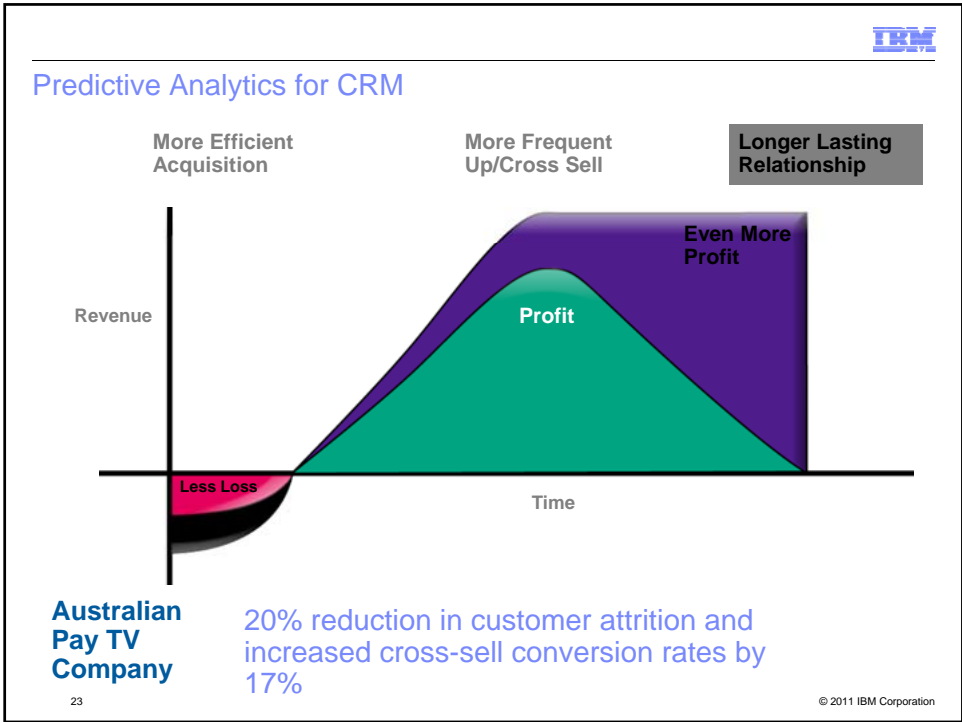
19 © 2009 SPSS Inc. © 2011 IBM Corporation

Predictive Analytics for CRM

The graph plots Revenue on the vertical axis and Time on the horizontal axis. A black curve starts below the zero line, crosses it, and then rises to a peak before falling back to the zero line. The area above the zero line is shaded green and labeled 'Profit'. Above the graph, three person icons are positioned at different points in time, labeled 'Attract', 'Grow', and 'Retain' respectively.

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Challenges to Profitable Growth

How to:

Grow customer value

Attract more and better customers

Retain profitable customers

Mitigate risk

Detect and prevent fraud

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Predictive Enterprise at Work

- **Capture information**
 - Attributes, Interactions, Behaviors, and Attitudes
 - Customers
 - Employees
- **Predict behavior and preferences**
 - Statistics for deeper insight
 - Data Mining for predictive modeling
 - Text Analytics for unstructured insight
- **Act on results**
 - Embed predictive decisions
 - Dramatically improving business processes
 - Transform customer experience

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Capture: SPSS Data Collection

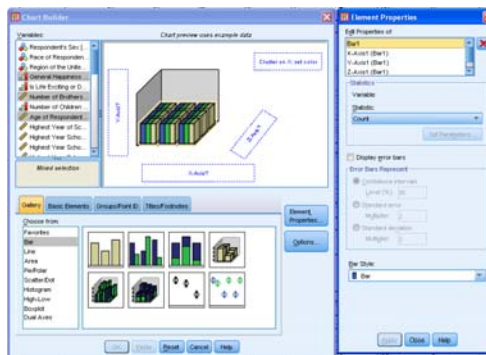
- **Data collection capabilities to capture attributes, interactions, behaviors, and attitudes for customers, employees or constituents**
- **Augments internally captured data with sentiment and opinion data and use this combination as part of the analytic process**

Delivers an accurate view of customer attitudes and opinions

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Predict: SPSS Statistics

- Advanced statistics and data management for analysts researching business problems
- Collection, preparation, analysis, interpretation, explanation and presentation of data
- Provides insight into a sample of data and tools for prediction and forecasting based on the data



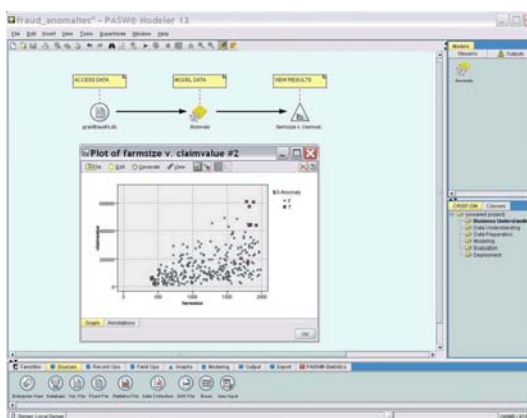
Drives confidence in your results and decisions

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Predict: SPSS Modeler

- Workbench with data preparation functions to build analytic streams or jobs and a run time environment for job execution
- Set of mining algorithms that provide insight and prediction
- Enables the discovery of key insights, patterns and trends in data that can be used to optimize business decisions



Brings repeatability to ongoing decision making

30

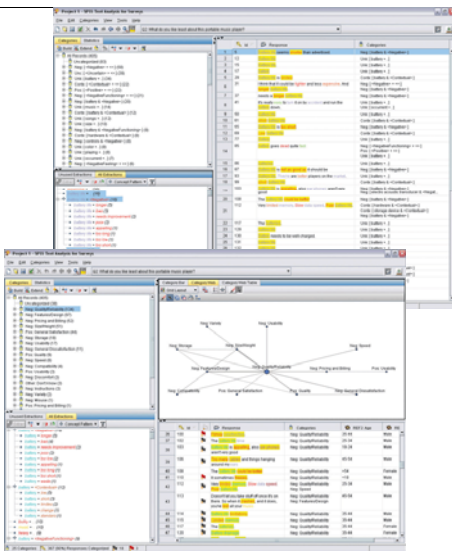
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Predict: SPSS Text Analytics

- Uses natural language processing heuristic rules and statistical techniques to reveal conceptual meaning in text
- Extracts concepts from text and categorizes them
- Makes unstructured qualitative data more quantifiable, enabling the discovery of key insights from sources such as survey responses, documents, emails, call center notes, web pages, blogs, forums and more

Brings repeatability to ongoing decision making

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Act: SPSS Collaboration and Deployment Services

- Flexible enterprise foundation for managing and deploying analytics throughout the organization
- Automates analytical processes
- Enables collaboration by securely sharing and reusing analytic assets
- Streamlines deployment of analytical information on a scheduled or real-time basis

Maximizes the impact of analytics in your operation

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Act: SPSS Decision Management

- Framework for domain specific applications that combine Models, Rules, and Optimization to solve business problems
- Extends predictive insights to the business user at the point of decision
 - E.g. Should a call be proactively routed to a retention representative because they have a high churn likelihood?

Maximizes the impact of analytics in your operation

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What is Deployment?

- It's about how it gets into the DNA of your organization
- A predictive analytics 'solution' is more than just creating analytic output.
- Think about how the entire process will be deployed in your organization.

Dashboards & Reports?

Consumer facing points of interaction?

System Level Deployment

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Enterprise Transformation in Action

Hi, How can I help you?

Cross-sell?
<context data>

<customer data>

Example Leveraging Service Calls as Sales Opportunities

| Potential Campaign | Valid in this case? | Margin | Response Probability | Expected Value |
|--------------------|---------------------|--------|----------------------|----------------|
| A | No | | | |
| B | Yes | 90 | 54% | 49 |
| C | Yes | 85 | 62% | 64 |

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Transformation at the point of interaction....

Risk Profiling on Legacy System

Real Time Cross Sell Recommendation

Mobile Secondary Screening Notification

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Delivering Customer Value



Infinity Property and Casualty Corporation Reducing Fraud

- Real-time claims scoring solution to determine whether claims are legitimate and qualify for immediate approval or are potentially fraudulent and should be further investigated
- Cut referral time from 14 days to less than 24 hours on Special Investigation claims
- Identified and addressed subrogation claims at twice the speed – from 26 to 10 days

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Delivering Customer Value



Cablecom GmbH Reducing Customer Churn

- Identify early indicators of customer churn using data collection surveys and data and text mining, tailoring direct marketing efforts as a result
- 100% improvement in churn detection and an initial reduction in actual churn from 19% to 2%
- 53% of its unsatisfied customers became company promoters