SAP Predictive Analysis: Strategy, Value Proposition

Charles Gadalla, Solution Management, SAP Business Intelligence
Manavendra Misra, Chief Knowledge Officer, Cognilytics
Analytics solutions from SAP: Key capabilities

**Business intelligence (BI)**
- SAP BusinessObjects BI solutions
- BI clients
  - Reporting
  - Analysis
  - Dashboarding
  - Data discovery
- Integration and connectivity
  - Mobile BI
  - Integration with SAP HANA
  - Embedded analytics
  - Integration with the SAP NetWeaver Business Warehouse (SAP NetWeaver BW) component
- SAP BusinessObjects BI On Demand solution

**Enterprise information management (EIM)**
- Data services
- Master data management
- Event processing
- Content management
- Information governance

**Data warehousing**
- In-memory computing
- Enterprise data warehousing
- Data marts
- Data modeling

**Collaboration**

**Analytic applications**
- Extensible, role-based analytic solutions
- Designed to work with various data sources
- Designed for specific industries and lines of business

**Enterprise performance management (EPM)**
- Strategy management
- Planning, budgeting, and forecasting
- Profitability and cost management
- Financial consolidation
- Disclosure management and XBRL

**Governance, risk, and compliance (GRC)**
- Enterprise-ready GRC
- Access risk management
- Global trade services
- Continuous transaction monitoring
SAP’s strategic focus on business intelligence

Core
- Core for innovation
- Complete BI suite
- Continued leadership

Creative
- Use by IT and departments
- Fast time to value
- Connection to the enterprise

Mobile
- First experience for BI
- Content to point of impact
- Expansion to untapped users

Extreme
- Big data
- Real time
- Predictive

Social
- Ability to capture the decision
- Information in context
- Ability to leverage the network

Innovation without disruption
Predictive Analysis comprises primarily of Statistical Analysis and Data Mining, but can also include methods and techniques from Operations Research.

**Discipline Interlock by Technology**

- **Segmentation**
  - K-means Clustering
  - Genetic Algorithms
  - Graph Theory

- **Data Mining**
  - Kohonen Networks
  - Decision Trees
  - Polynomial Networks & GMDH
  - Association Rules

- **Forecasting**
  - Neural Networks
  - Time Series Analysis
  - Spectral Density
  - Linear, Logistic Regression & GLMs
  - Discriminant Analysis
  - Bayesian Networks

- **Statistics**
  - Wavelets
  - Fourier Transforms
  - Harmonic Analysis
  - ANOVA
  - Canonical Correlation
  - Hierarchical Clustering
  - MANOVA
  - Factor Analysis

- **BI**
  - OLAP
  - Querying
  - SQL

- **Sales forecasting**
  - Resampling
  - Kernels
  - Monte Carlo

- **Customer Churn Analysis**
  - Link Analysis

- **Market Basket Analysis**
  - Radial Basis Functions
  - Support Vector Machines
Predictive Analysis & HANA Synergies

- Leverage the complementary capabilities of both SAP Predictive Analysis and SAP HANA
- Integrated and optimized for interoperability, enabling the combination of real-time and operational analytics, access to big data, and predictive capabilities
- If it’s available through HANA, it can be used for data mining and predictive analysis — gain real-time access to BPC, BW, ERP, Analytic Applications, and more

**Prediction \(\times\) Real-time \(+\) Big Data = Competitive Advantage**
Predictive Analysis & SAP HANA: A Perfect Marriage

**Predictive Analysis**
- UI for Predictive Queries
- Business Focus
- Low Learning Curve
- HANA Optimized
- SAP Optimized & Integrated
- SBOP Integration Options

**Deepest Insight**
- Intelligent Answers
- Fast Performance
- No Data Left Behind
- SAP Integrated
- Competitive Advantage

**SAP HANA**
- Ideal for Predictive Queries
- Column Store
- Compression
- In-Memory Optimized
- SAP Optimized
- SAP In-Memory Computing Platform

Increase your access to and reliability to data
Predictive Analysis with SAP HANA

- Simplified UI/UX for predictive analysis in HANA
- HANA as source of data for In Database Predictive Analysis
  - HANA Table as source
  - HANA View as source
    - Attribute View
    - Analytical View
    - Calculation View
- Sample and Filter the data in HANA
- Visualize the data in SBOP PA
- Apply HANA PAL algorithms on data and visualize the results
- HANA as source of data through JDBC
  - Apply algorithms on the data and perform the analysis
  - Visualize the results
- Persist the results back to HANA as tables
Predictive Analysis with SAP BusinessObjects

- XI 3 & BI 4 UNV universes are supported as source of data
  - Prepare the data using data preparation techniques
  - Apply algorithms on the data and perform the analysis
  - Visualize the results
- Perform predictive analysis on data from universe
  - Using SBOP PA algorithms
  - Using Open Source R algorithms
  - Export the created predictive model into PMML format
- Persist the results of the analysis
  - Results can be written onto underlying database tables
  - Results can be shown on the SAP BusinessObjects BI client tools
Predictive Analytics: Vision

**Database to Decision Predictive Analytics**
- In-database predictive analytics and R integration
- Best in-class predictive modeling
- Advanced data visualization and easy to use exploration

**For Everyone in the Business**
- Seamlessly embedded in business user applications
- Intuitively extended into BI clients and reports
- Insight into events instantly delivered to dashboards, alerts, and mobile devices

**Harnessing Powerful Big Data Analytics**
- Real-time on massive amounts of structured and unstructured data
- Complex questions answered in-memory, lightning fast
- Deep Hadoop integration with built-in text analysis
Target Applications Areas

- Maximize Customer Revenue and Retention
- Customer loyalty
- Cross sell and up sell opportunities
- Next best offer
- Churn prediction and reduction
- Improving marketing campaign response rates
- Market basket analysis
- Crime and Threat Control for the Public Sector
- Retain/recruit good employees

- Enhanced Human Capital Management
- Predict student enrollment
- Reduce maintenance cost
- Identify opportunities for manufacturing process improvement
- Reduce quality defects
- Fraud detection/risk management
- Improve demand/assortment planning
Target Industries and LoB

- **INDUSTRY**
  - Retail
  - Health Care / Pharma
  - Insurance
  - Oil & Gas
  - Financial Services
  - Manufacturing
  - Transportation
  - Government
  - Education

- **LoB**
  - Marketing
  - HR, HCM
  - Market Intelligence
  - Consumer Intelligence
  - Product Planning
  - Category Management
  - Customer Service, CRM
  - Contributor Relations
  - Risk or Fraud Prevention
  - Tax or Revenue Collection
  - Finance
  - And more...
Individual Credentials: Manav Misra

- **Relevant Background**
  - Manav brings a depth of experience in predictive analytics, business intelligence, neural networks, and building large scale systems.
  - As a co-founder of Store Perform Technologies, Manav’s team built an online system that allowed the largest systems optimize store performance.
  - Manav led the business intelligence team at KBtoys.com and was responsible for building a large data warehouse, decision support system, analytics platform, and operating dashboards.
  - Earlier, he was a professor of computer science at the Colorado School of Mines where he performed research in analytics, and mining large data sets using neural networks.

- **Applicable Expertise and Skills**
  - Analytics for Digital Marketing, Predictive Modeling, Pattern Recognition in data sets of images, and sensor data.

- **Relevant Projects and Learning**
  - Led KBToys’ email marketing program.
  - Led KBToys’ BI and Analytics team that mined web-logs and associated the clickstream and purchase behavior (both online and in-store) with external data to create customer profiles and generate personalized offers for online customers.
  - Pattern recognition in unstructured data sets like images and sensor maps.
Our Approach Detail – Decision Model Development

- Identify all potential events
- Convert into an objective function with a defined dependent variable and potential independent variables
- Define an approach for modeling team to input model variables

Define

Generate

Execute

- Choose a “best for” statistical modeling technique for the desired dependent variable e.g. Logit vs. Markov etc.
- Create a modeling environment modelers to model a loan stage
- Provide tools for modelers to visualize model discrimination e.g. Lorenz curves or Gini Indices for validation

- Provide to execute predictive models from 3rd parties
- Determine account level probability of an event occurring e.g. PD/LGD, Re-default of Mod
- Provision to add in additional parameters to inform predictive calculations at loan level via model parameters
Advanced Analytics – Strategy Execution

Prospect and Customer Database

Segmentation & Modelling

Campaign Tracking & Analysis

Max π

Campaign Fulfillment

Offer Optimization

ROI
SAPPHIRE Blitz – Turn Big Data Into Big Value

HANA AND HADOOP: TURN BIG DATA INTO BIG VALUE

SAP, and Cognilytics will jointly demonstrate scenarios at SAPPHIRE that will stretch the limits of Big Data and Real Time Analytics by leveraging the power of SAP HANA. Our real-life representative use case will integrate the distributed computational capabilities of Apache Hadoop and the real-time analytics from SAP HANA. A quick summary of what you will see:

- 600 million rows loaded into Hana for real-time analytics (5 year valuation projection for a 10 million loan portfolio)
- 1.5 trillion computations on the Hadoop platform (based on a predictive model using logistic regression or a Dynamic Bayesian Network)
- SAP BusinessObjects Explorer and Exploration Views will be used to dynamically explore through the result data-set
- Business insights into likely strategic defaulters (borrowers with the ability to pay, but not the willingness to pay on their loan who may choose to strategically default), and geographic hot-spots

Visit the Test Drive area DT230 & DT228, the Partner Theater or HDS booth #1063.
Live Demo: SAP HANA Big Data Strategy and Use Cases.

Turn BIG DATA Into BIG VALUE with SAP HANA
Location: Test-Drive Area DT230, DT228

HDS Booth #1063
05/14 - Monday – 12:30 - 1 pm
05/15 - Tuesday – 11:30 - 12 pm

Partner Theater
05/16 - Wednesday – 12:00 - 12:20 pm

About Cognilytics
Cognilytics is a global provider of Big Data, Real-time and Advanced Predictive Analytics solutions. We help our clients monetize their strategic data assets leveraging the SAP suite of products (FIM, Business Objects, Business Warehouse, EPM, HANA and Advanced Predictive Analysis).

On Demand: please contact
Gary Gauba, Chairman & CEO
gary.gauba@cognilytics.com
Avi Gupta, EVP, Sales and Marketing
avi.gupta@cognilytics.com
Shiv Thiagarajan, Director, West & Central
shiv@cognilytics.com
Mohit Dhawan, Director, East
mohit.dhawan@cognilytics.com
Jim Sheedy, Manager, Central
jim.sheedy@cognilytics.com

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- Large data set (10 M rows by 50 fields)
- Mortgage company looking for default risk
- In a credit card company, the cluster analysis has recently been reduced from 72 to 48 hours
Key Learning

- SAP Predictive Analysis provides a simple, unique and excellent GUI and User experience with SAP HANA
- A modern GUI for the definition and execution of predictive analysis processes
- SAP Predictive Analysis provides unique GUI for consuming R packages
- SAP Predictive Analysis + SAP HANA is a winning combination!!
Thank you for participating.

Please provide feedback on this session by completing a short survey via the event mobile application.

SESSION CODE: 0806

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