Real-time Scoring for DB2 for z/OS
Real time scoring with DB2 for z/OS and SPSS Modeler 15 (NEW!)

- Delivers better, more profitable decisions, using the latest data, at the point of customer impact
  - Enables more informed customer interaction
  - Improves fraud identification and prevention

- With improved accuracy, speed and performance while reducing cost and complexity
  - Improves accuracy by scoring new and relevant data directly within the OLTP application
  - Scales to large data volumes to improve accuracy of data models
  - Delivers the performance needed to meet and exceed SLAs of OLTP applications
  - Minimizes demand on network, HW, SW and resources

Part of an extensive Business Analytics solution on System z!
Value Proposition

- Supports strategic, tactical and operational decisions
- Helps reduce uncertainty in decision making
- Helps improve competitive positioning
- Enhances business performance

Delivers an end-to-end solution on a single platform...

- Data warehousing
- Business intelligence
- Predictive analytics

Combines innovative capabilities & platform strengths to support...

- Timely, accurate and secure information
- Superior availability, scalability and performance
- Reduced costs and complexity
- Rapid deployment and expansion

Evolves with your business...

- Start with what you need
  - Functionality
  - Application
  - Department
  - Enterprise
- Deploy the way you need
  - Turnkey optimized
  - Private cloud
  - Services and education

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IBM uniquely offers an end-to-end, integrated, rock-solid infrastructure and applications for enterprise analytics.

Source Data

ETL
- Extract
- Transform
- Load

Cubing Services

Data Warehouse

Query Acceleration

OLTP Data
- z/OS

InfoSphere Information Server
- Linux on z

DB2
- z/OS

IDAA
- Netezza

InfoSphere Warehouse
- Linux on z

Cubing Services

Business Analytics
- Business Intelligence:
- Predictive Analytics

Cognos
- z/OS
- Linux on z

and SPSS
- Linux on z

Technology Entry Point 
#1

Technology Entry Point 
#2

Technology Entry Point 
#3

Technology Entry Point 
#4

Technology Entry Point 
#5

Technology Entry Point 
#6
Predictive customer analytics: Sales growth from inbound contacts

“Mr. Watson, you are currently close to your 10GB monthly limit however, as a valued long-term customer, we’re able to make you an offer on unlimited broadband”

“I’m calling to get my information on my download limit”

“Certainly, Mr. Watson. I’ll just get that for you right now…”

Next Best Action: Recommend Broadband Unlimited

<table>
<thead>
<tr>
<th>Campaign</th>
<th>Market Segment</th>
<th>Predicted Satisfaction</th>
<th>Eligible</th>
<th>Likelihood</th>
<th>Predicted ARPU</th>
<th>Predicted Margin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Retention</td>
<td>1</td>
<td>64%</td>
<td>NO</td>
<td>12%</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Broadband Unlimited</td>
<td>2</td>
<td>68%</td>
<td>YES</td>
<td>68%</td>
<td>13</td>
<td>5.2</td>
</tr>
<tr>
<td>Anywhere Smartphone</td>
<td>2</td>
<td>68%</td>
<td>YES</td>
<td>72%</td>
<td>23</td>
<td>4.3</td>
</tr>
</tbody>
</table>

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Predictive threat & fraud analytics: Improving claims processing

**Historical Data:**
- Policy Information
- Claim history
- External data

**Context Data:**
- Current claim data
- Automatically generated questions (intelligent scripting)

**Suspect**
- Refer to Associate
- Standard processing
- Fast track

**Service**

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What is involved Scoring

Identify predictive models/patterns found in historical data

Use those predicted variables to score data & identify the best possible future outcomes

Data:
- Demographics
- Account activity
- Transactions
- Channel usage
- Service queries
- Renewals

Analyses
- Segments
- Profiles
- Scoring models

Scoring

Customer Service Center

Align

Anticipate

Act
Scoring Associated with an OLTP Application

**Historical Scoring**

- User has transaction
- Delivers a static score
- Business Application / OLTP
- Historical Data store
- Scoring Application
- ETL (R-T, min, hr, wk, mth)
- Copy
- Batch Copy (nightly, weekly, monthly)

**Real-time Scoring**

- User has transaction
- Delivers a dynamic score
- Business Application / OLTP
- Historical Data store
- Scoring Application
- ETL (R-T, min, hr, wk, mth)
- Copy
- Real-Time Web Services Call/Response
The Impact on Real-time Scoring

Multiple infrastructures required

High Networking Traffic

Difficult to commit to SLA’s
IBM SPSS Modeler 15 Real-time Scoring with DB2 for z/OS

Support for both in-transaction and in-database scoring on the same platform

End to end solution

Consolidates Resources

Reduced Networking

Meet & Exceed SLA

Support for both in-transaction and in-database scoring on the same platform
Integration Real-Time Scoring for DB2 for z/OS into an OLTP application

1. Create a stream to build a model.

2. Execute the model building node to produce a model apply node.

3. Evaluate the model against a separate test partition of the data to test the model.

4. Publish the model to your DB2 subsystem.

5. Add score execution to your OLTP application Via DB2 UDF invocation.

6. To rebuild the model, repeat steps 1..4 above.
Real-time scoring market opportunities

Where transactions are the Biggest of Big Data—highest volume, variety, velocity, velocity—at impact such as in-person/in-line, on-the-phone, and on-line

<table>
<thead>
<tr>
<th>Use Case</th>
<th>Industry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Credit card fraud detection/prevention</td>
<td>Banking</td>
</tr>
<tr>
<td>Risk and claims fraud detection/prevention</td>
<td>Insurance</td>
</tr>
<tr>
<td>Risk, crime, fraud detection/prevention</td>
<td>Government</td>
</tr>
<tr>
<td>Cross sell, up-sell from market basket analysis</td>
<td>Retail</td>
</tr>
<tr>
<td>Cross sell, up-sell from market basket analysis, scheduling, inventory, irregular operations</td>
<td>Travel</td>
</tr>
<tr>
<td>Optimize logistics from telemetry, fuel consumption, schedule and weather patterns</td>
<td>Transportation</td>
</tr>
<tr>
<td>Churn management, IVR/Call Center Processing</td>
<td>Telco</td>
</tr>
<tr>
<td>Meter management, Asset management</td>
<td>Utilities</td>
</tr>
</tbody>
</table>
Common Customer Pain Points

Pain Point #1

– **Pain point**: Slow and limited access to insight
– **Business Impact**: Timely and smarter decisions cannot be made throughout various levels and departments of the organization, which leads to a lack of business results
– **Solution**: Leverage the complete offering of IBM SPSS predictive analytics solutions on System z to provide a more complete view of the business with greater and faster access to real-time, insightful data, which enables the business to become more agile to market needs

Pain Point #2

– **Pain point**: Rising costs with complex IT environments
– **Business Impact**: Business needs have forced IT to add and integrate various systems and applications for all users, causing add-ons to potentially be exponentially difficult and costly
– **Solution**: Leverage IBM SPSS predictive analytics solutions on System z to integrate predictive analytics applications very well with most other applications and systems, increasing ROI

Pain Point #3

– **Pain point**: Increasing and changing corporate compliance requirements negatively affects system performance
– **Business Impact**: Not being able to deliver against any of these requirements can greatly impact the uptake by the business of the solution and cause potential security issues
– **Solution**: Leverage IBM SPSS predictive analytics solutions on System z for an industry leading scalable, reliable, available, and secure infrastructure
Who is Interested?

- **Responsibilities:**
  Manage to goals/objectives of the department
- **Reporting Structure:**
  Reports up to Executives
- **Why:**
  The value that real-time scoring delivers to their business and how it helps them meet and exceed their business goals.

- **Responsibilities:**
  Build the models/understand the data
- **Reporting Structure:**
  Report to the business manager
- **Why:**
  Modeler 15 is the best solution for scoring/predictive analytics.

- **Responsibilities:**
  Build and manage the business applications based on the requirements of the business department/user
- **Reporting Structure:**
  Part of IT, providing a ‘Service’ to the business
- **Why:**
  Now, it is easy to integrate real-time scoring capability into the business application
Project Assessment?

- Is your transactional data in DB2 for z/OS?
  - Are you able to target customers with the right messages, offers and cross-sell and up-sell opportunities?
  - What has recently changed in the market which might impact your customers’ actions – renewal, defection, indifference?
  - Can you personalize each interaction with your customers?
  - Can you identify & pre-empt the warning signs of customer defections?
Challenges vs. Opportunities

- What is hindering your success
  - How many individual deployments?
  - Where is the data?
  - Who needs it? When?
  - Can you afford to not accomplish their objectives?

- Review how leveraging System z can change the game for your organization

Which direction are you going?