

# SAS Global Forum Analytics Update

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## 2011 Las Vegas Nevada

### Caesars Palace April 4-7, 2011

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SAS Global Forum, the premier event for SAS® professionals worldwide, is the taking place right now!

#### Thank You, Debbie Buck, 2011 SAS Global Forum Chair »

This year's conference was a huge success, thanks to Debbie Buck's commitment to SAS users and her help in the production of an outstanding event. On behalf of all attendees and SAS staff members, thank you, Debbie. A big thank you also goes out to Debbie's [section chairs](#) for the hundreds of volunteer hours they invested to make SAS Global Forum 2011 one of the best ever.

We would also like to gratefully acknowledge our 2011 SAS Global Forum [sponsors](#).

[Letter from 2012 Conference Chair Andrew Kuligowski »](#)

#### Highlights

##### [Chat with Tom Kari »](#)

Tom Kari, from Statistics Canada, won the SAS User Feedback Award and said that he has many tracks open with SAS Tech Support because he trusts and relies on them so much. Watch this Inside SAS Global Forum interview with Kari to learn more about his motivation for working with SAS.

##### [Running SAS Procs on Your Facebook Friends »](#)

Social media is not new, but it is a new area of study for SAS developers and programmers. One presentation that drew a large number of attendees was Chris Hemedinger's. He showed how to harvest Facebook data. If you missed it, you won't want to miss this blog post or his paper.

##### [Follow the SAS Global Forum Blog »](#)

So many presentations and so little time! SAS Global Forum blog may have covered some of the sessions you missed. Titles like these:

- Romancing Your Data: The Getting-to-Know-You Phase

#### QUICK LINKS

- [Online Proceedings](#)
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#### QUESTIONS?

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VIDEO

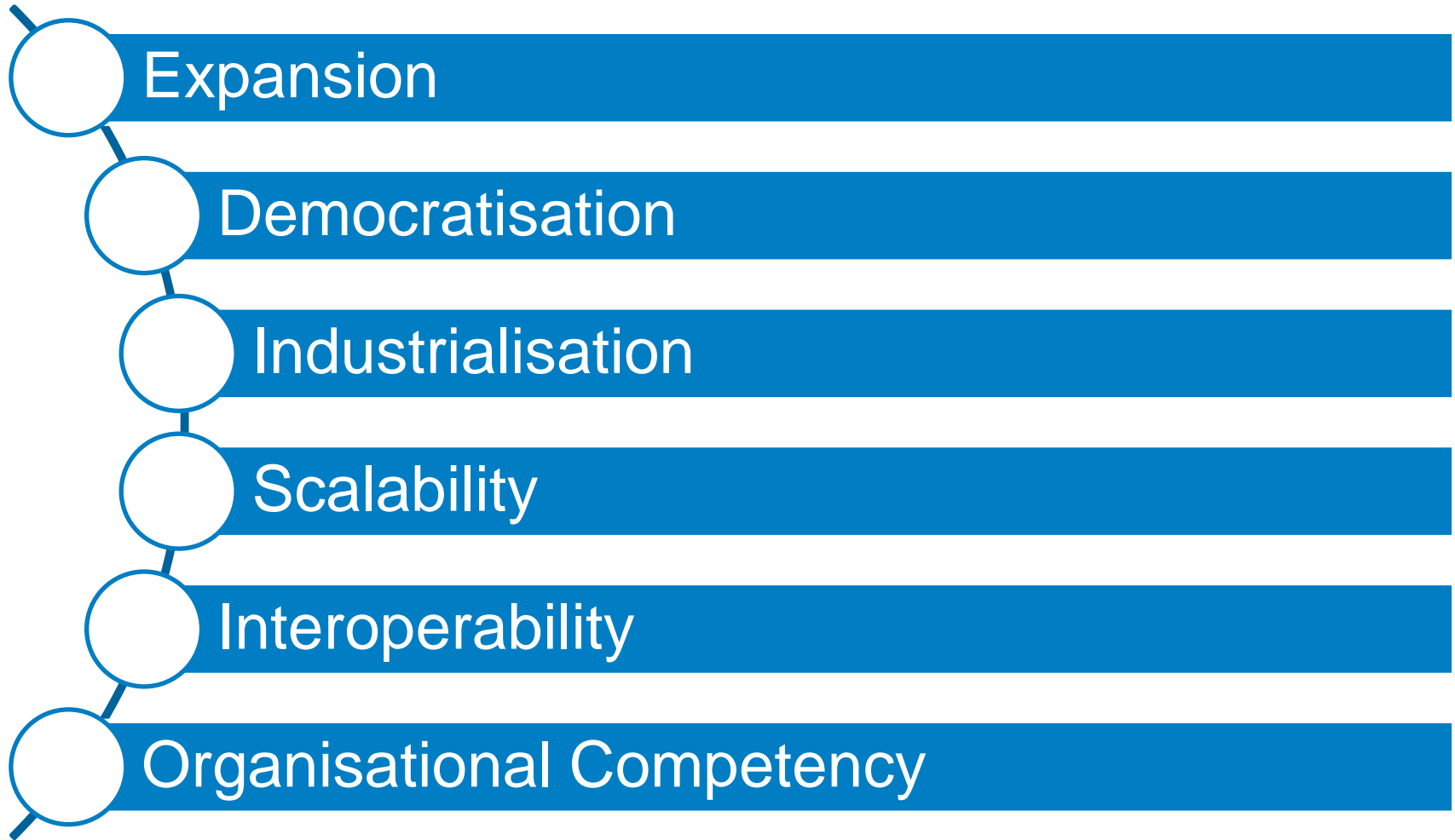


# 5 GOALS FOR SAS



- 01. **High-Performance Computing**
- 02. **Process Automation**
- 03. **Business Visualization**
- 04. **Data Management**
- 05. **SaaS**

# SAS' Vision for Analytics

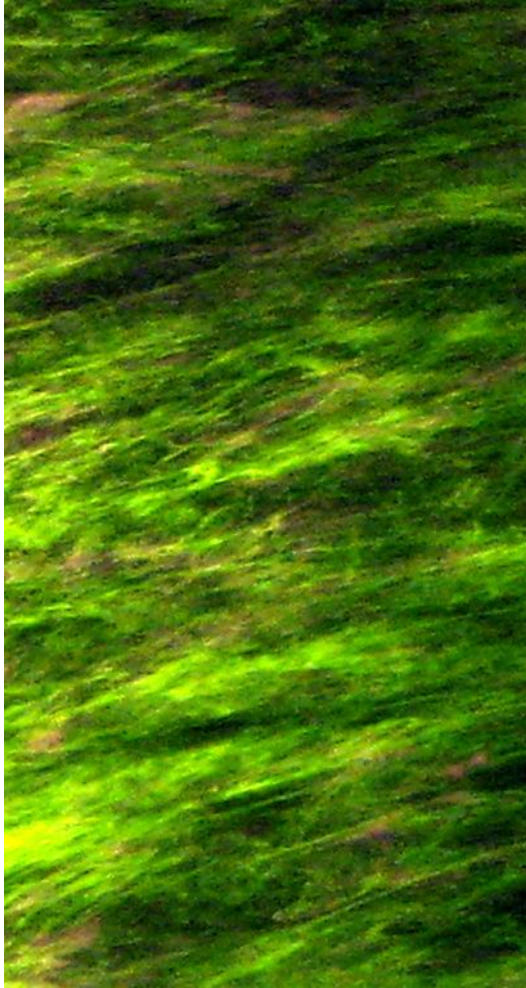


# Driving Innovation and Broadening Access



- Deliver advanced algorithms and powerful solvers
- Ensure robust performance and trustworthy results
- Solve the entirety of the analytics problem, not just the algorithms
- Establish focused interfaces to support varying skills levels
- Extend model development to all parts of the organisation

# Industrialisation and Scalability



- Establish standardised analytical workflows and lifecycle management
- Provide architecturally flexible deployment options
- Establish end-to-end process automation, logging, and transparency
- Capitalise on grid and fabric computing
- Scale beyond petabyte-level datasets
- Encompass *all* data within the organisation (structured, unstructured, binary)

# Interoperability and Organisational Competency

- Encapsulate and integrate with third party tools (e.g. R, PMML, third party models, etc)
- Establish SAS as the organisational Enterprise Decision Management framework
- Integrate with and deploy into 3<sup>rd</sup> party databases
- Provide our customers with access to global thought leaders (Davenport, May, etc)
- Connect our customers and support their creation of competitive advantage

# Business Analytics Activities: The Top-level View

## The External Value Chain: Value Creation

ACTION TO DELIVER VALUE

CREATE INSIGHT

MANAGE INFORMATION

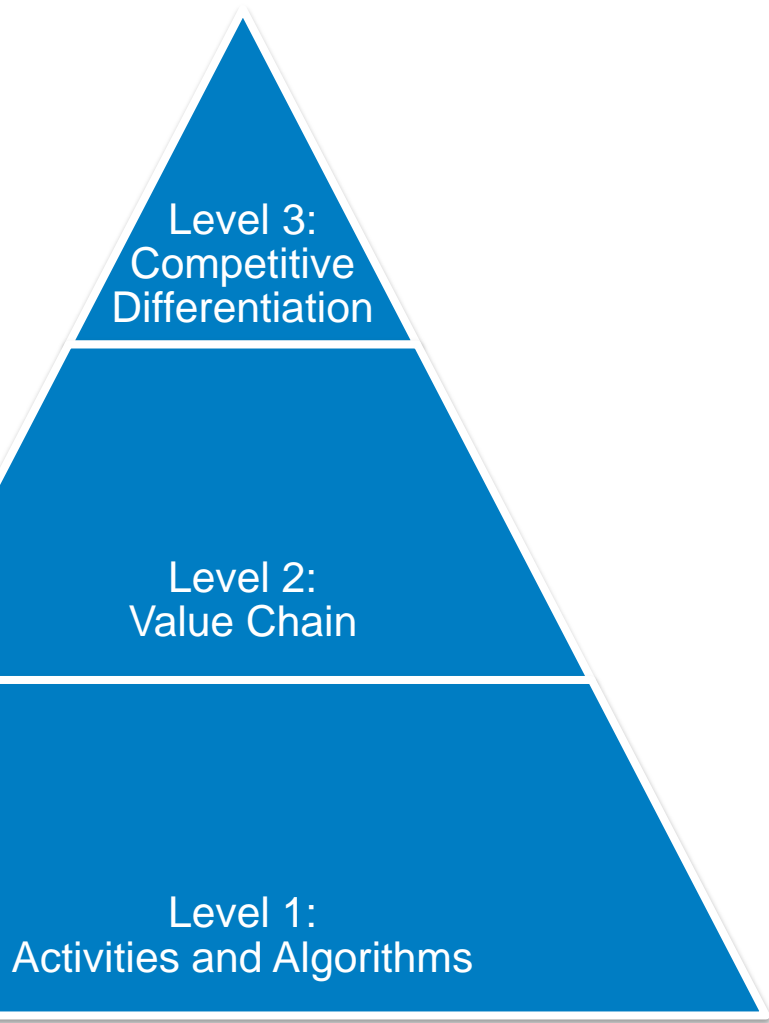
## The Internal Value Chain: Optimizing Execution

INTEGRATE  
INSIGHT INTO  
ACTIVITIES

TRACK AND  
MANAGE  
ASSETS

PROVIDE  
GOVERNANCE  
AND SUPPORT  
COLLABORATI  
ON

# Business Analytics: Common Perceptions



Level 3:

- Analytics is about competitive differentiation
- Creating and re-using competencies is the answer
- The deliverable is sustainable competitive advantage

Level 2:

- Analytics is about value creation
- Processes are the answer
- The deliverable is the tangible and intangible return

Level 1:

- Analytics is about algorithms
- Tools are the answer
- The deliverable is the model

# Enterprise Miner 6.2

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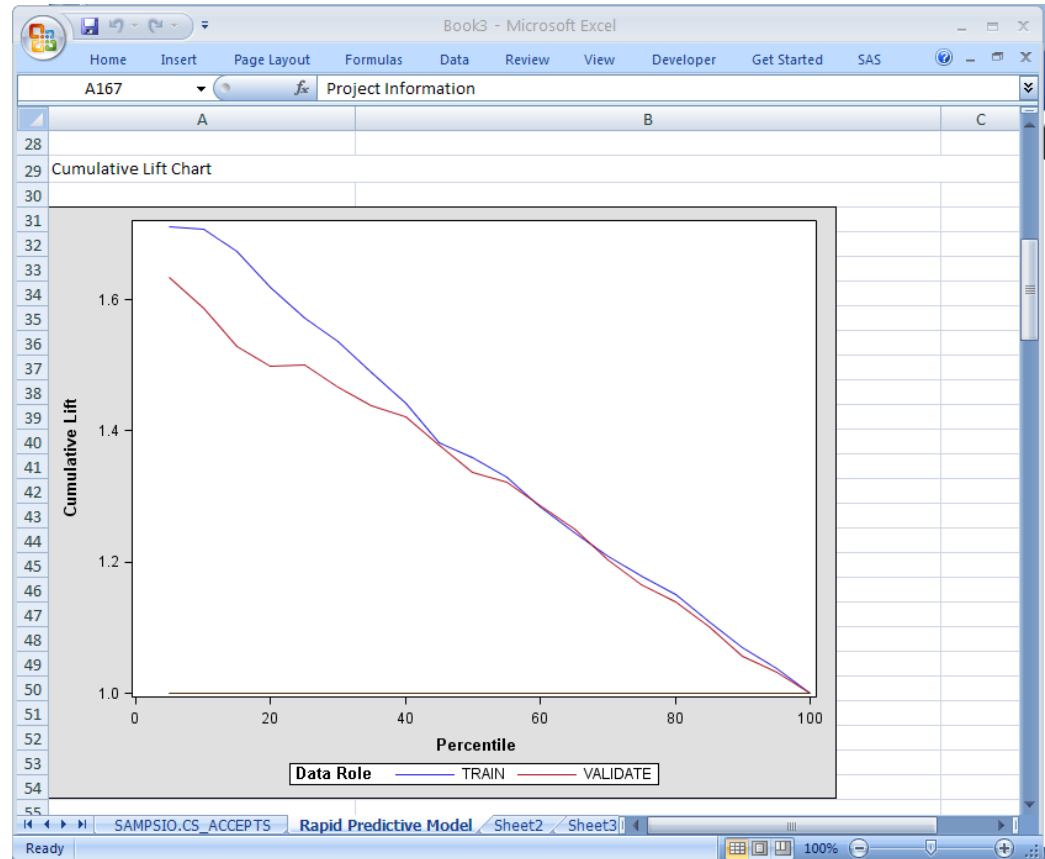
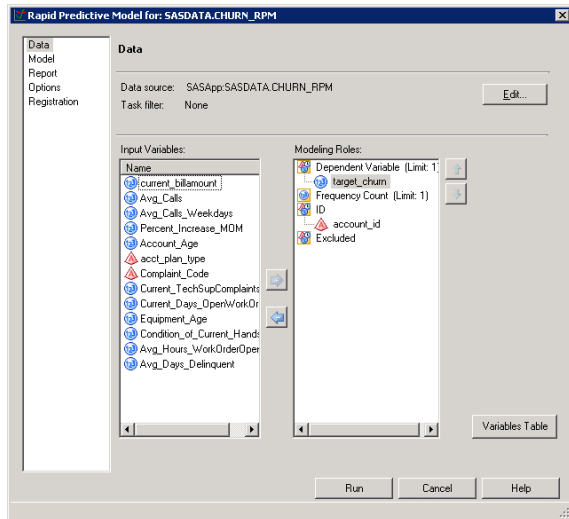
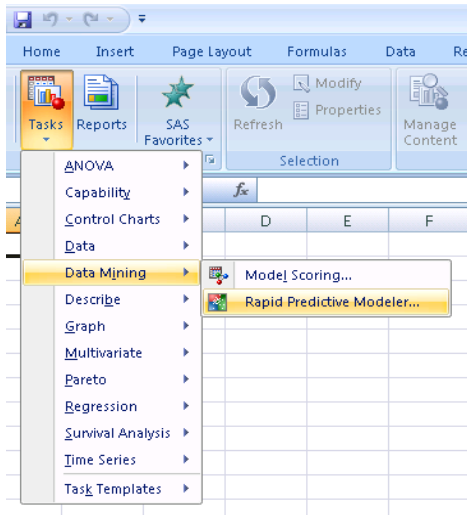
# Packaging and Platforms

- SAS Add-in for Microsoft Excel added to EM bundle
- New Platforms
  - Windows Server 2008
  - Windows Server 2008 X64
  - Windows Server 2008 R2 X64
  - Windows 7
  - Windows 7 for X64



# SAS Enterprise Miner

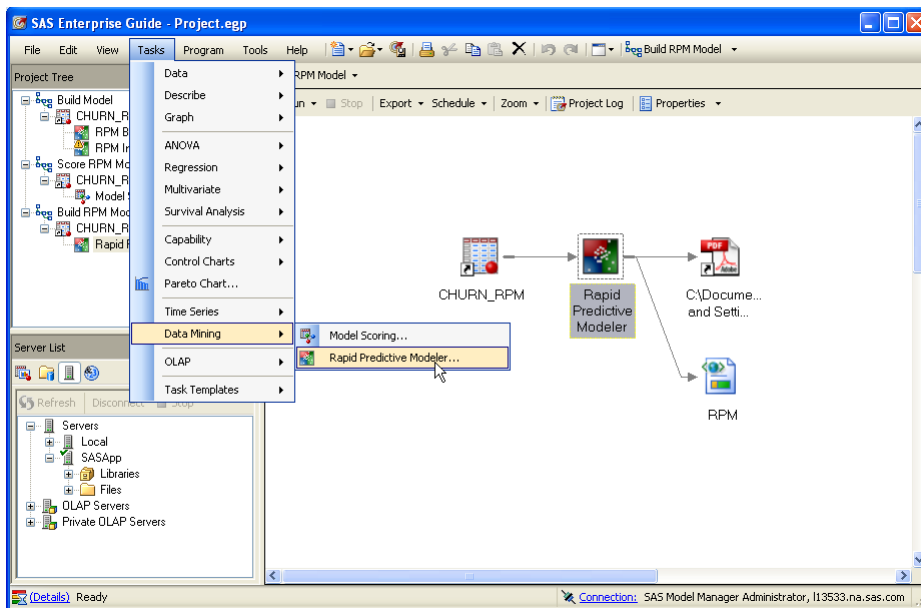
## Office Integration



# SAS Rapid Predictive Modeler

## Packaging

- Included in the SAS Enterprise Miner 6.2 bundle at no additional charge
- Delivered as a customized task in SAS Enterprise Guide 4.3 and the SAS Add-in for MS Office 4.3 (MS Excel only)



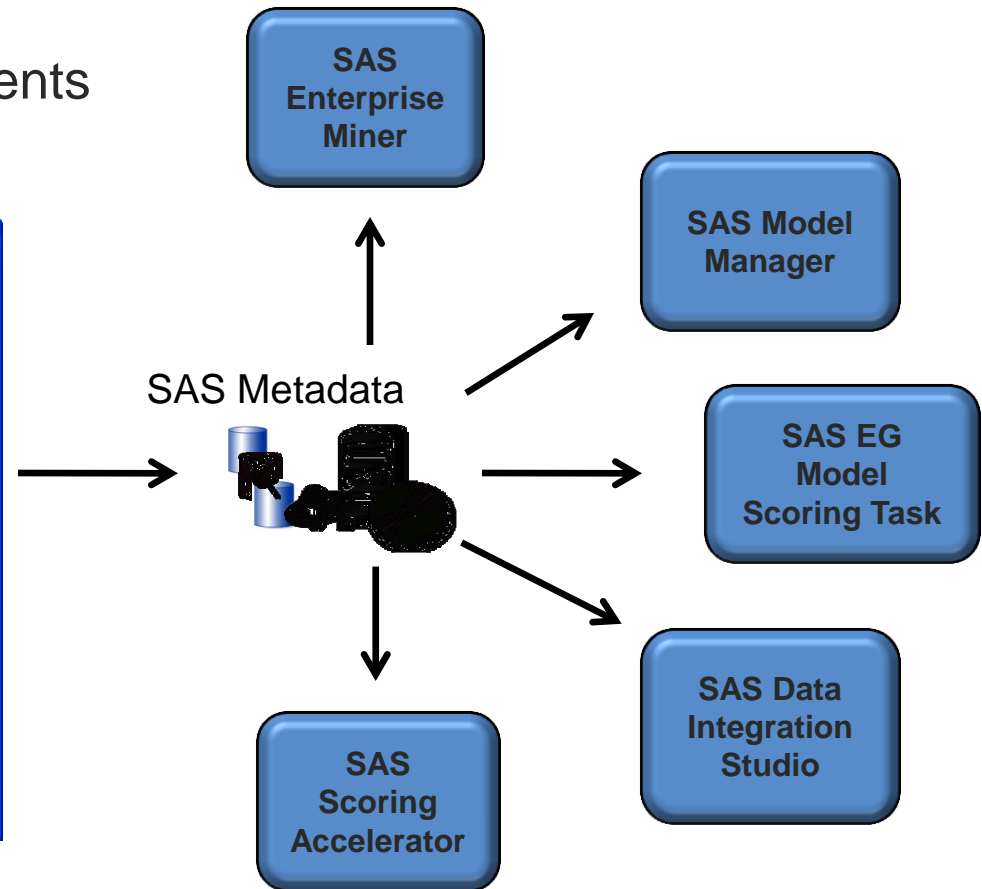
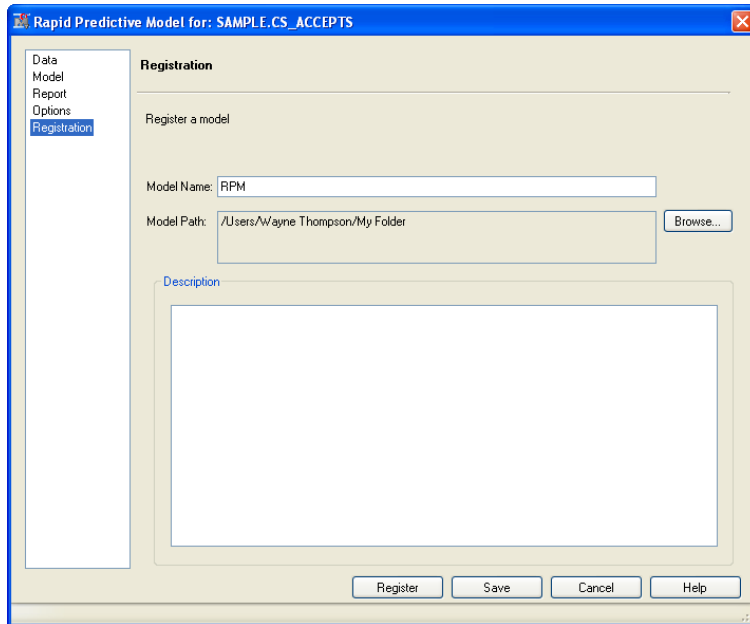
The screenshot shows a Microsoft Excel spreadsheet with a context menu open over a cell. The menu includes options like 'ANOVA', 'Capability', 'Control Charts', 'Data Mining', 'Describe', 'Graph', 'Multivariate', 'Pareto', 'Regression', 'Survival Analysis', 'Time Series', and 'Task Templates'. The 'Rapid Predictive Modeler...' option is highlighted. The spreadsheet data is as follows:

	churn	current billamount	Avg. Calls	Avg. Calls Weekdays
1				
2	1	14210	17950	
3	2	14407	0	
4	3	14030	5978.333333	
5	4	10594	2136	
6	5	12712	204.6666667	
7	6	13807	15490.33333	
8	7	3805	5075	
9	8	4776	3470.333333	
10	9	2847	94.66666667	
11	10	10238	5147.666667	
12	11	1101111	21866	2015
13	12	1101179	8082	2667
14	13	1101208	3347	0
15	14	1101316	14788	4982.333333
16	15	1101318	47991	65506.66667
17	16	1101319	11563	326.6666667
18	17	1101323	4616	4244
19	18	1101503	22061	12681.66667
20	19	1101591	34888	66
21	20	1101720	4034	73
22	21	1101993	10274	1740

# SAS Rapid Predictive Modeler

## Execution

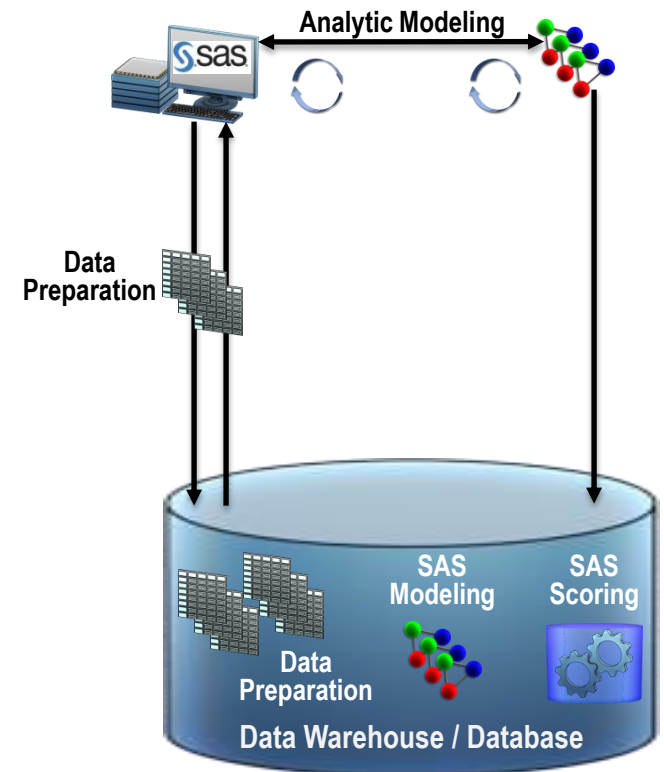
- Implemented as customized EM process flow diagrams
- Full integration with EM
- Full integration with SAS BI clients



# In-Database Scoring

## Execution

- Achieve higher model-scoring performance and faster time to results
- Reduced data movement and latency
- Get better results with ability to use modern, complex modeling methods
- Less labor costs and errors by eliminating model score code rewrite and model re-validation efforts
- Better manage, provision and govern data



# Upcoming Features

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# SAS Enterprise Miner 7.1

- **Data Mining**
- **Release Objectives**
  - Application tools
  - In-database processing
- **Key Features**
  - Survival data mining for time dependent outcomes
  - High performance rate making (claims, severity, and pure premium)
  - Support for logistic regression models in LAR/LASSO node
  - Optimal binning with constraints for credit score carding
  - In-database expansions for statistical transformations and modeling
  - Time series data mining tools (Experimental)

# SAS Model Manager 3.1

- **Data Mining**
- **Release Objectives**
  - Deeper support for existing models
  - Broader support for additional model types
- **Key Features**
  - Workflow to replace lifecycle templates and enable automated and collaborative model import, comparison, validation, scoring, monitoring and retraining
  - Model retraining in MM
  - New report types
  - Model management for additional types of models including R models

# SAS Forecast Server 4.1

- **Forecasting and Econometrics**
- **Release Objectives**
  - Address expanded set of forecasting needs
- **Key Features**
  - Enhancements to filtering and modeling functionality
  - Support for combination models
  - Support for rolling simulations
  - Addition of custom time intervals
  - PROC HPFTEMPRECON for temporal reconciliation (“benchmarking”) of multiple time series

# SAS/STAT 9.3

- **Statistics**
- **Key Features**
  - New FMM procedure (experimental) for finite mixture modeling
  - Shared frailty models in PHREG
  - Expanded capabilities for Bayesian analysis including the addition of a RANDOM statement and multivariate priors in MCMC
  - Production SURVEYPHREG procedure
  - New model diagnostics in NLIN
  - GRAPH license no longer required for ODS Graphics

# SAS/ETS 9.3

- **Forecasting and Econometrics**
- **Key Features**
  - New procedure for fitting copula distributions
  - New procedure for statespace modeling
  - Automatic variable selection for COUNTREG procedure
  - Update data engines to support latest releases
  - Additional / improved ODS Graphics plots

- **Operations Research**
- **Key Features - Optimization**
  - New network simplex linear programming algorithm
  - Crossover feature for interior-point linear programming solver (experimental)
  - Improvements to nonlinear solvers and introduction of a multi-start method for nonlinear programming
  - Performance improvements for mixed integer programming solver
- **Key Features - Simulation**
  - Using data to drive models – empirical distributions, nonhomogeneous Poisson processes
  - Improved usability to simplify navigation of large models
  - Support for Windows 64 and remote SAS servers
  - Automatic input distribution fitting using JMP for Simulation Studio

# High Performance Computing

- Underutilized resources
- Support incremental growth
- Unnecessary data movement
- Guarantee uptime & continuity
- Increasing costs
- Growth in data and user volumes; complexity
- Slow time to results
- Slow response time
- Limited analysis due to lack of resources
- Low productivity

## SAS High Performance Computing

SAS Grid  
Computing

SAS  
In-Database

SAS  
In-Memory  
Analytics

Event Stream  
Processing



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