

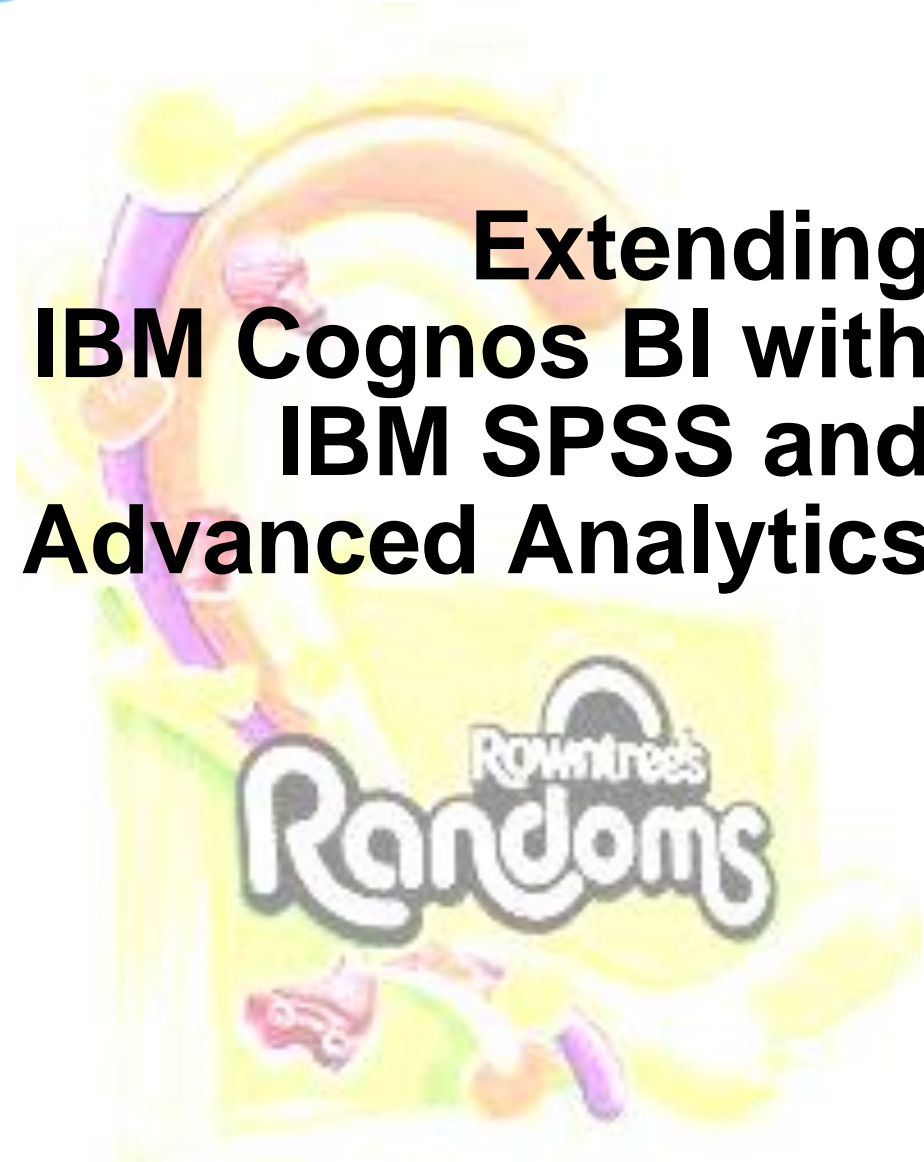


# Extending IBM Cognos BI with IBM SPSS and Advanced Analytics

**Information On Demand 2010**

The Premier Forum for Information & Analytics

**Gain Insight. Optimize Results.**





# How Decision-Making is Changing

***“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”



**Quality and value of decisions**

## **Decisions from “Intuition”**

- “Instinct”
- “Hunches”
- Based on experience

## **Automated Decision-Making**

- Knowledge, policies and practices embodied in business rules
- Decisions made efficiently and consistently
- Objective

## **Predictive Decision-Making**

- Accurate predictions based on historic patterns
- Leverage all available data
- Flexible, evidence-based decisions
- Robust in volatile environments – models re-generated from latest data to reflect changing fashions, trends, etc.





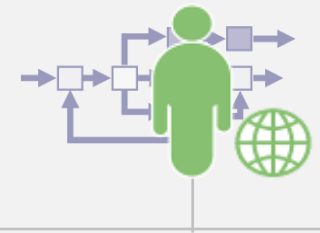
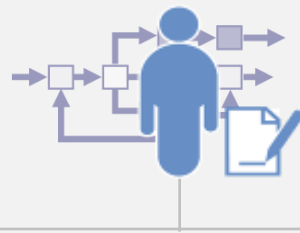
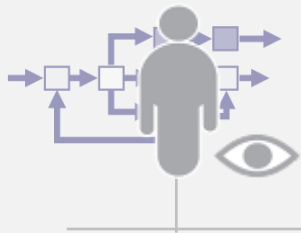
# Imagine If Your Decision Makers Could...

...predict and treat infection in premature newborns 24 hours earlier?

...adjust credit lines as transactions are occurring to account for risk fluctuations?

...determine who is most likely to buy if offered discounts at time of sale?

...apply inferred social relationships of customers to prevent churn?



Physician

Loan Officer

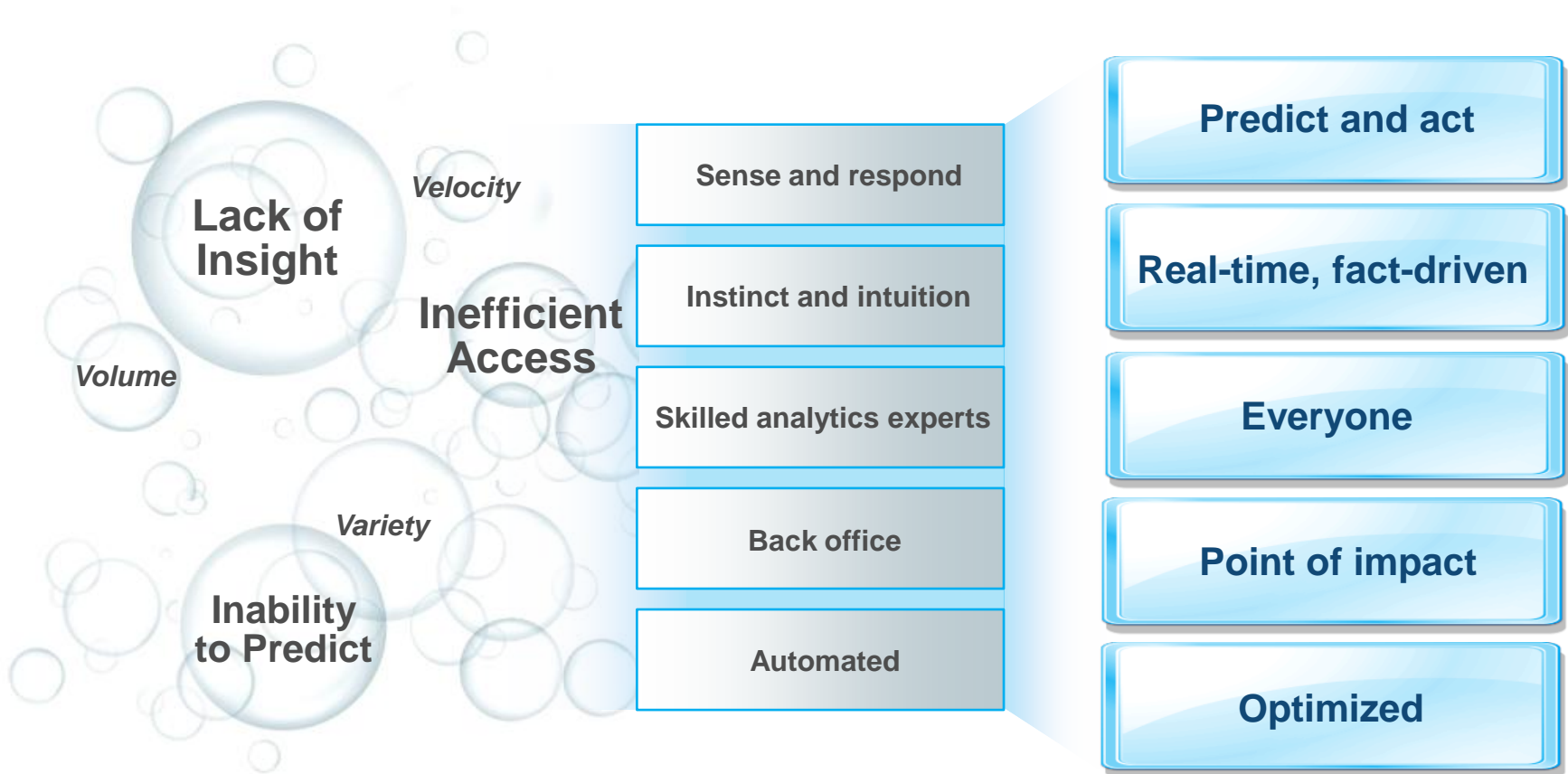
Retail Sales Associate

Telco Call Center Rep

...optimize every transaction, process and decision at the point of impact, based on the current situation, without requiring that everyone be an analytical expert



# New ways of working to optimize decisions and actions





# New ways of working to optimize decisions and actions





# IBM BI and Performance Management Capabilities Help Decision Makers Find the Answers

*How are we doing?*

*Why are we on/off track?*

*What should we do next?*

DASHBOARDING

SCORECARDING

REPORTING

QUERY

ANALYSIS

PLANNING



**Cognos**  
software



Executive



Manager



Business User



Line of Business Manager



Business Analyst



Financial Analyst



# SPSS as a value-add for IBM Cognos Customers

*How are we doing?*

*Why are we on/off track?*

*What should we do next?*

DASHBOARDING

SCORECARDING

REPORTING

QUERY

ANALYSIS

PLANNING

**Addition of KPPs  
(Key Performance Predictors)**

**Broad distribution  
of statistical  
results**

**Time series  
forecasting**

**New customer  
insight through  
Data Collection**

**Predictive analytics for  
deeper understanding  
of the data**



Executive



Manager



Business User



Line of Business Manager



Business Analyst



Financial Analyst



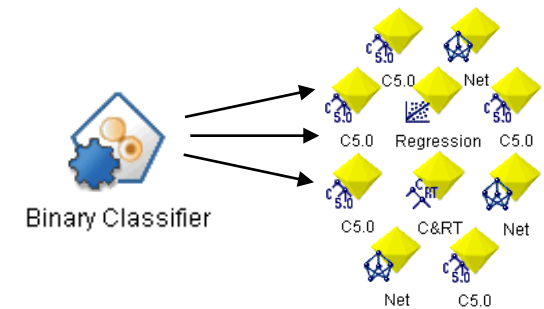
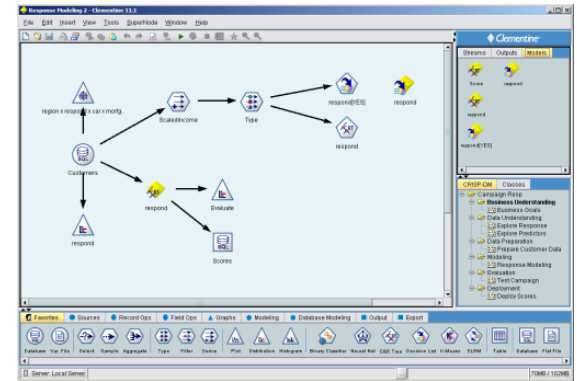
# Make informed decisions with predictors

*Infer the outcome of every interaction by modeling the hidden relationships in your data*

## IBM SPSS Predictive Analytics

### Solution Highlights

- Easy to learn, no programming approach to data mining
- Automatically create accurate, deployable predictive models
- Choose the best solution with multi- model evaluation
- Data mining within standard databases
- Multithreading, clustering and use of embedded algorithms







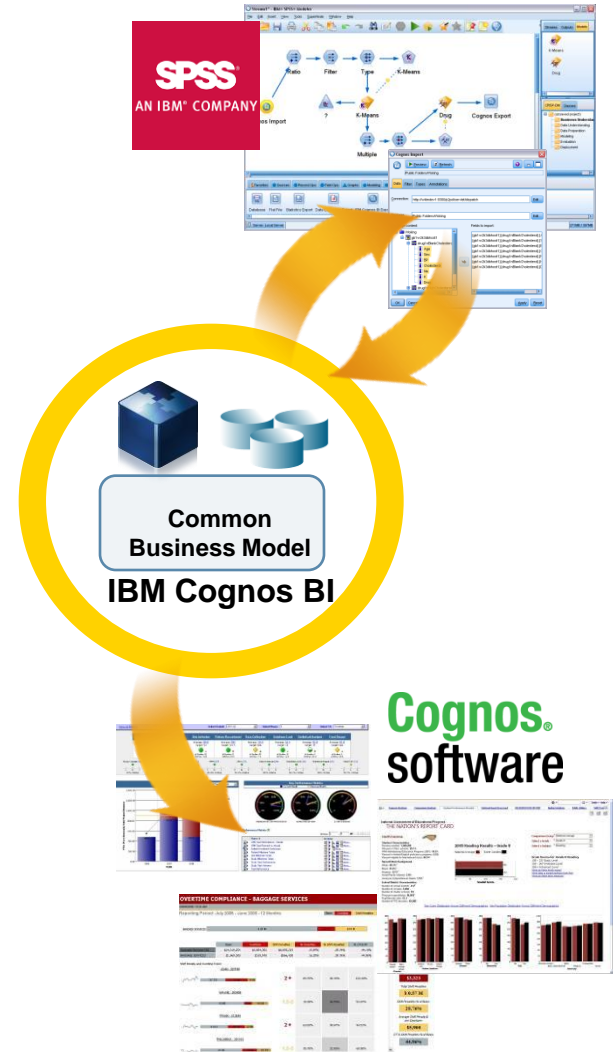
# Deliver the power of predictive analytics into the hands of the business users

*Uncover key insights in your corporate data by integrating predictive analytics as a core activity to drive business decisions*

## Integration with IBM SPSS Modeler 14.1

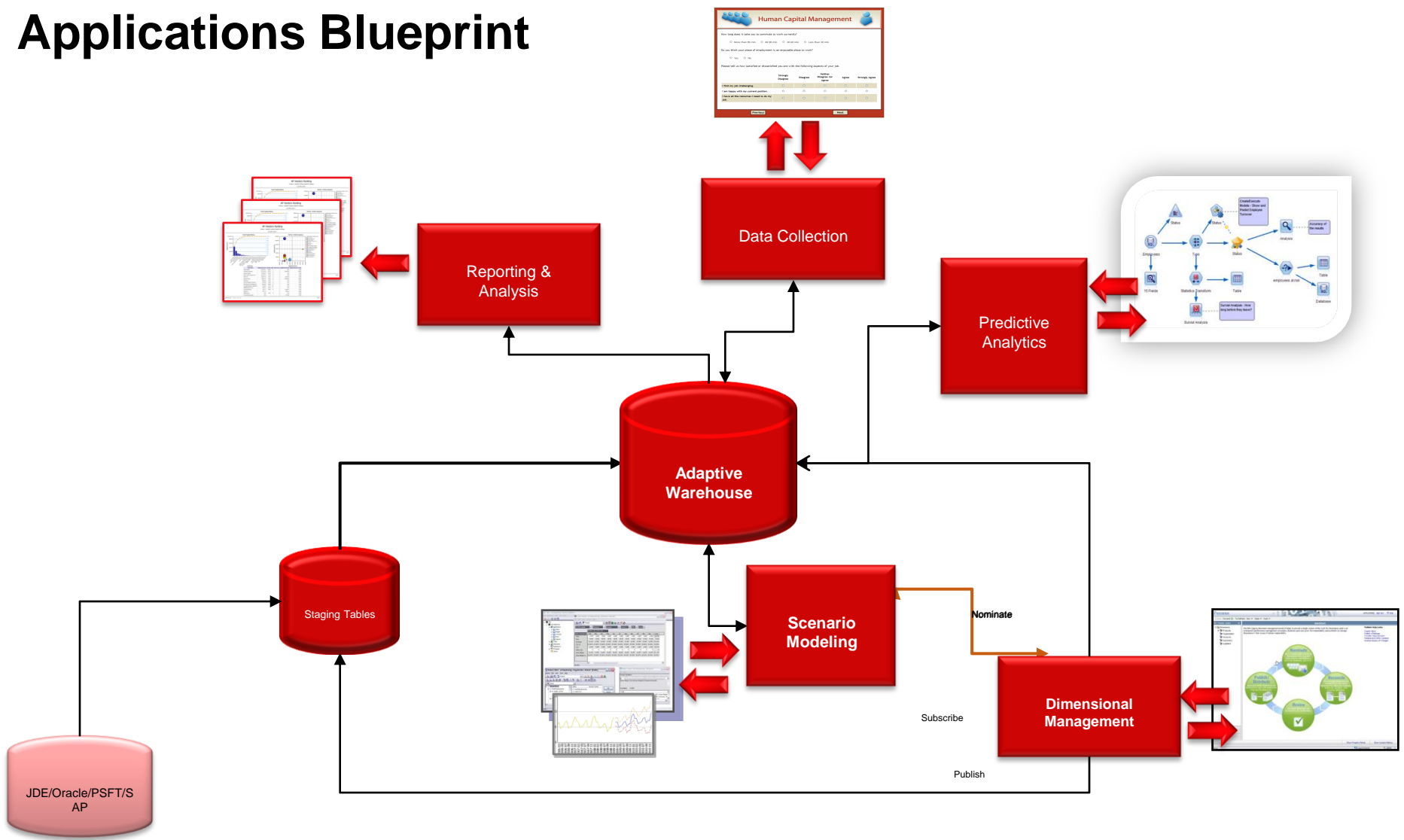
### Solution Highlights

- Leverage BI to identify problem or situation needing attention
- Develop factual context using reliable trends, patterns and predictions.
- Easily distribute the results to broad user communities





# Applications Blueprint



# An example: Human capital management



The screenshot displays the SAS Enterprise Miner software interface, illustrating a data mining workflow for human capital management. The main workspace shows a flowchart of the process:

- Employees** (SQL source) feeds into **15 Fields** (Table).
- 15 Fields** feeds into **Type** (Table).
- Type** feeds into **Status** (Table).
- Type** also feeds into **Statistics Transform** (Table), which then feeds into **Survival Analysis** (Table).
- Status** feeds into **Analysis** (Table).
- Status** also feeds into **employees at risk** (Table).
- employees at risk** feeds into **Table** (Table) and **Database** (SQL).

Annotations and callouts include:

- A box labeled **Create/Execute Models - Show and Predict Employee Turnover** is connected to the **Status** node.
- A box labeled **Accuracy of the results** is connected to the **Analysis** node.
- A box labeled **Survival Analysis - How long before they leave?** is connected to the **Survival Analysis** node.

The interface includes a menu bar (File, Edit, Insert, View, Tools, SuperNode, Window, Help), a toolbar with various icons, and a right-hand pane with tabs for **Streams**, **Outputs**, and **Models**. The **Models** tab shows a list of models, including **Status w. Aut...** and **Status**. Below this, the **CRISP-DM** classes are listed: **Business Understanding**, **Data Understanding**, **Data Preparation**, **Modeling**, **Evaluation**, and **Deployment**. The bottom status bar shows **Server: Local Server** and **297MB / 474MB**.

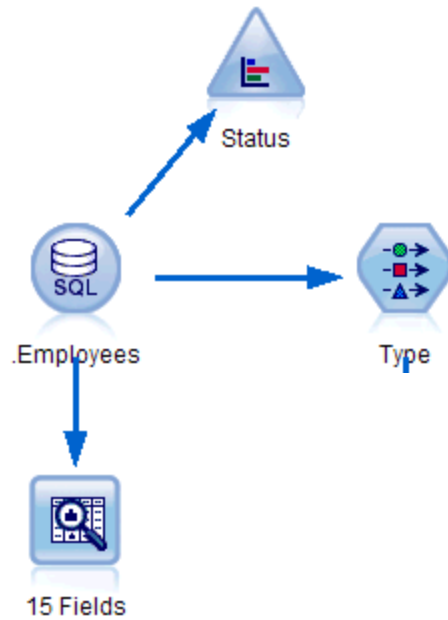


# Human capital management – get data



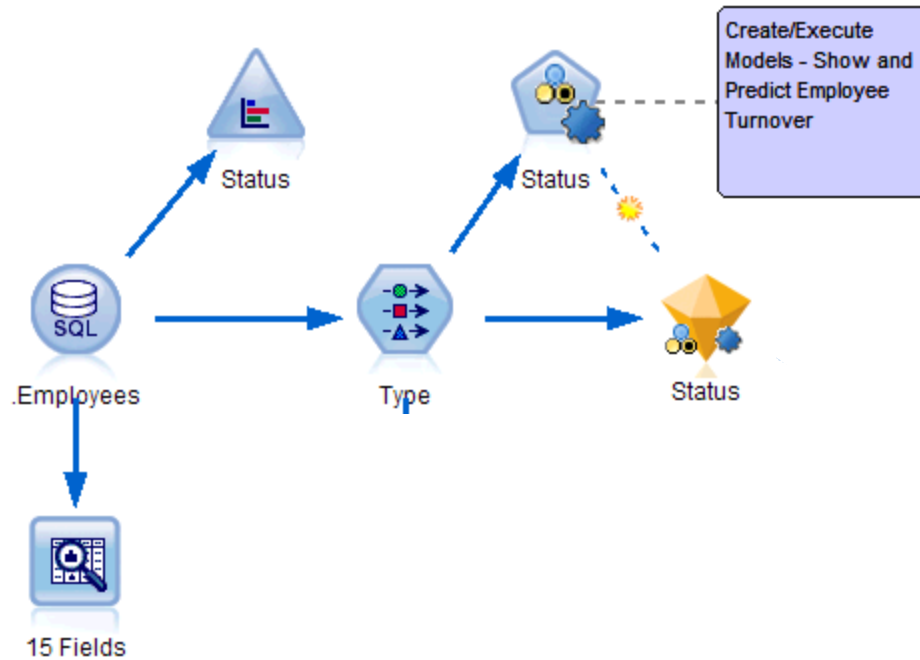


# Human capital management – profile data



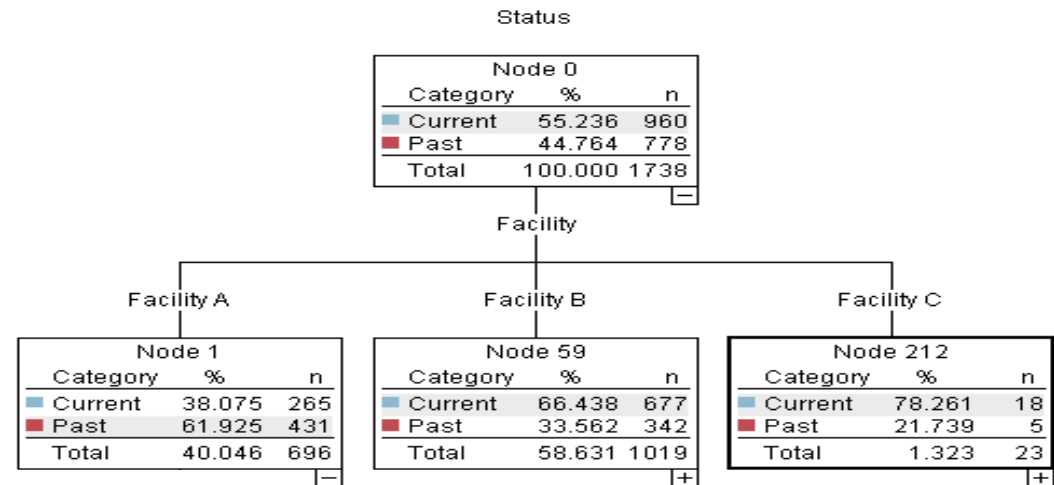


# Human capital management - predicting



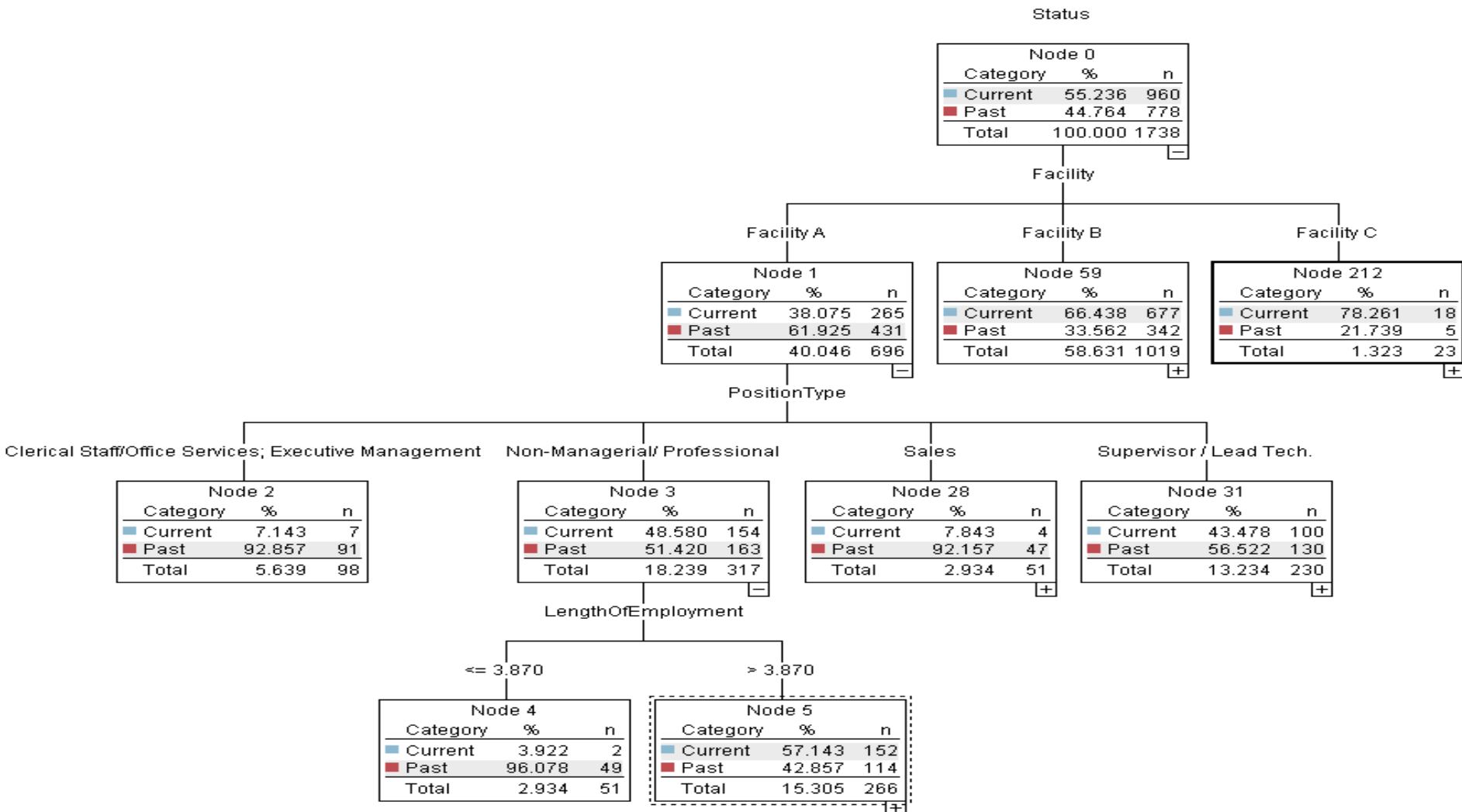


# Look at the Prediction – Who's leaving?





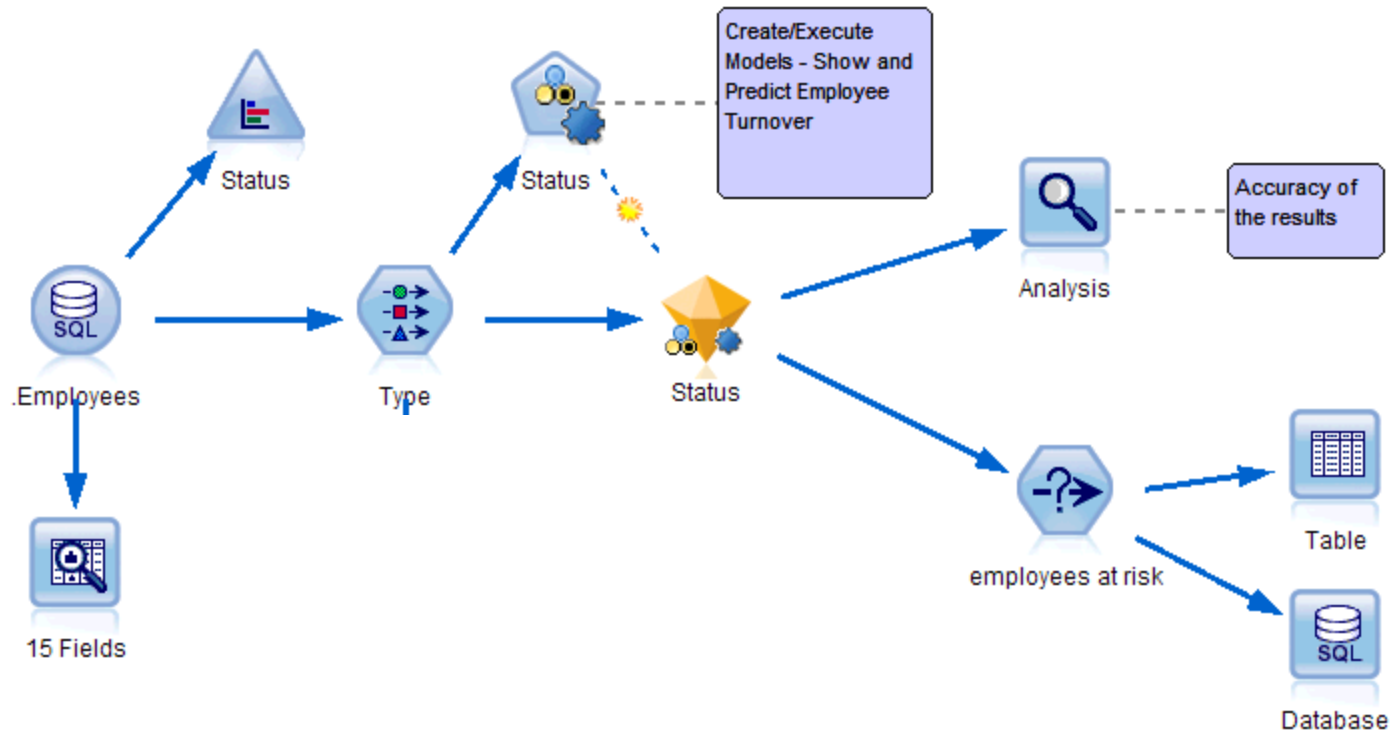
# Look at the Prediction – Who's leaving?







# Human capital management – Analyse Predictions





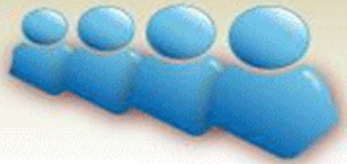
# Human capital management – Now what?

- Conduct employee satisfaction surveys
- Combine employee satisfaction into modelling process
- Explore relationship between:
  - tenure and employee attrition
  - staff performance review process and attrition
  - employment channel and job role
  - etc, etc
- Screen CV's with Text Analytics to identify better qualified candidates





# Employee satisfaction surveys



## Human Capital Management



How long does it take you to commute to work currently?

- More than 90 min
- 60-90 min
- 30-60 min
- Less than 30 min

Do you think your place of employment is an enjoyable place to work?

- Yes
- No

Please tell us how satisfied or dissatisfied you are with the following aspects of your job.

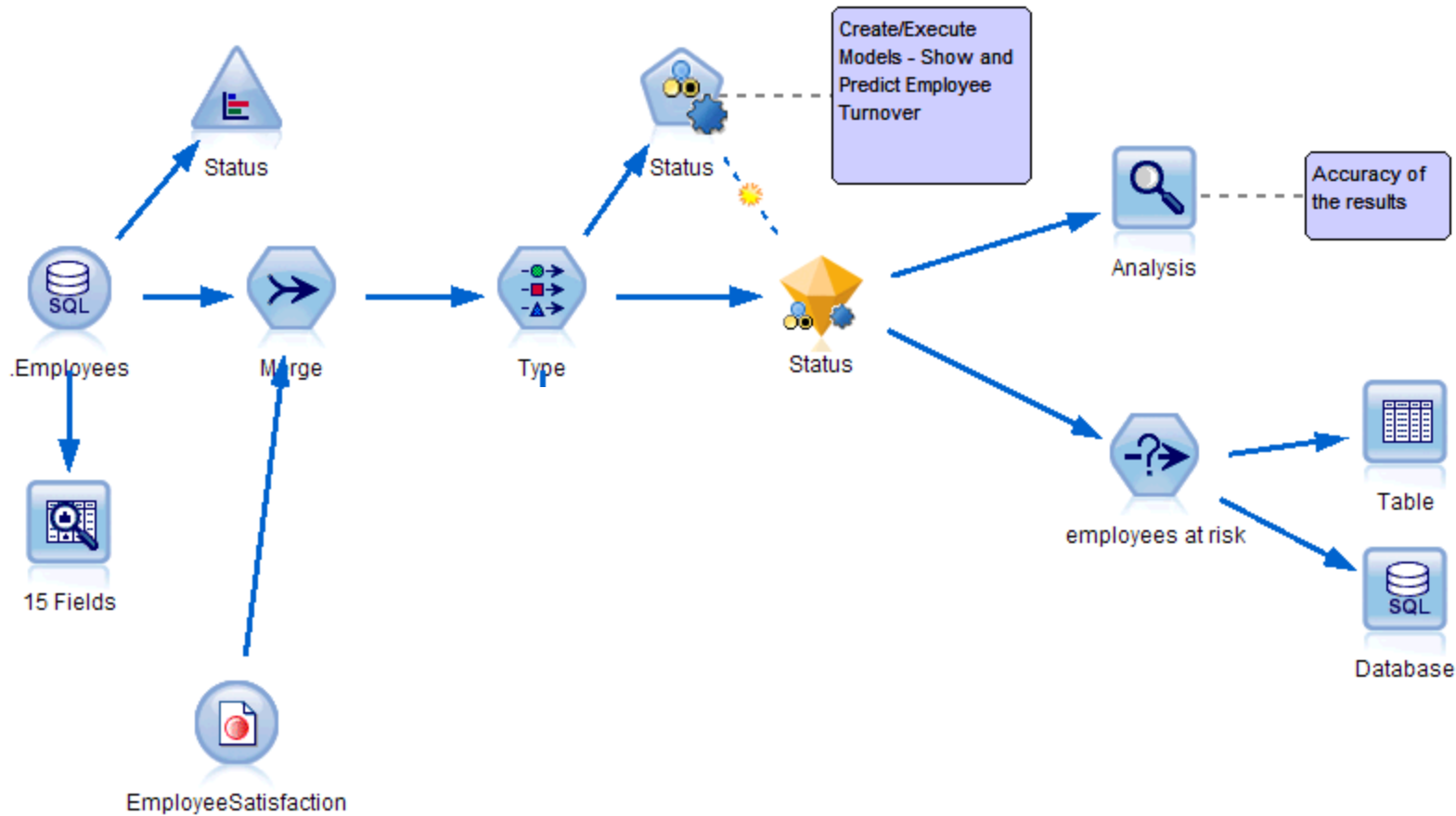
	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strongly Agree
I find my job challenging.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am happy with my current position.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I have all the resources I need to do my job.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Previous

Next

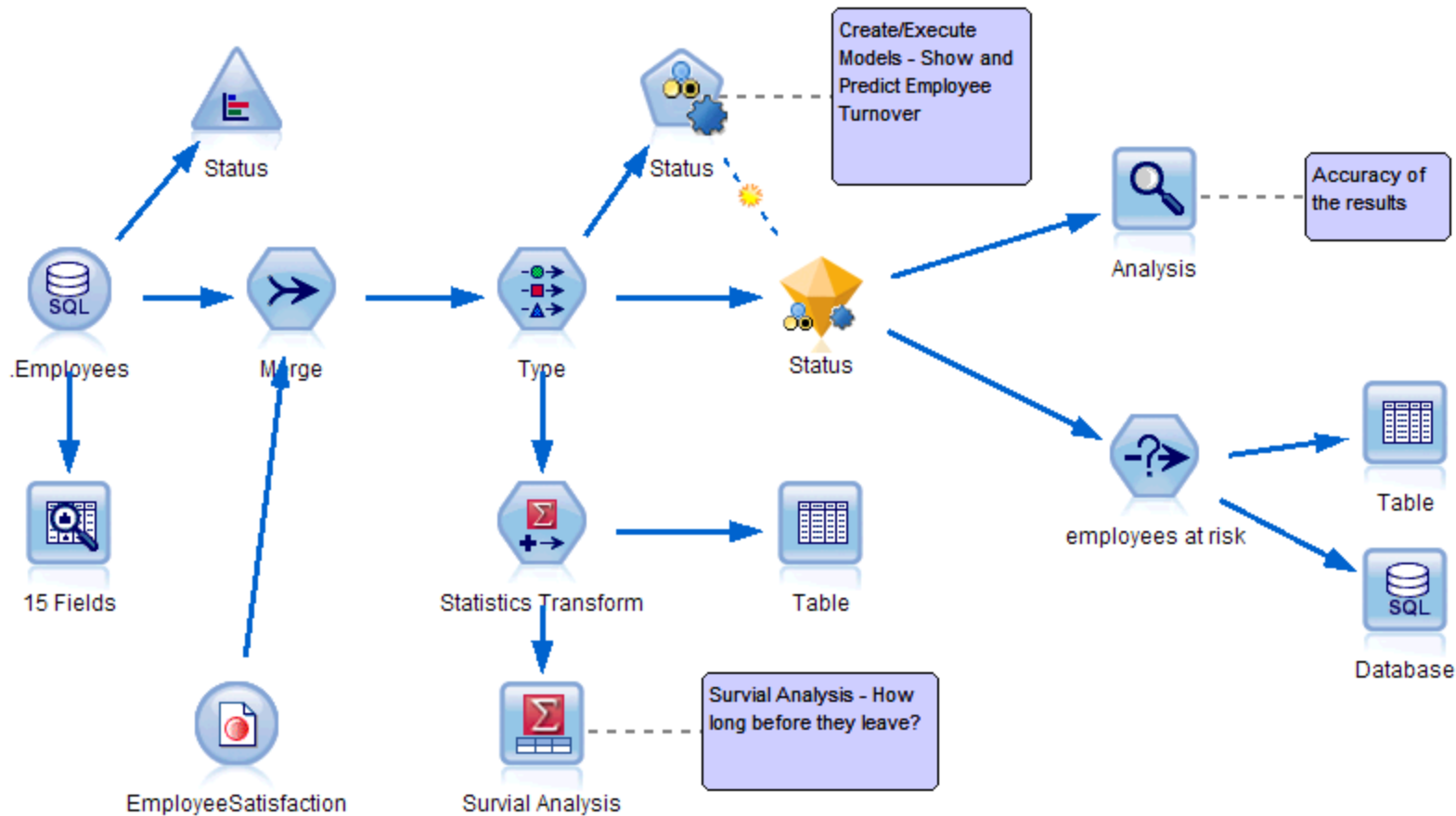


# Include attitudinal information in modelling process



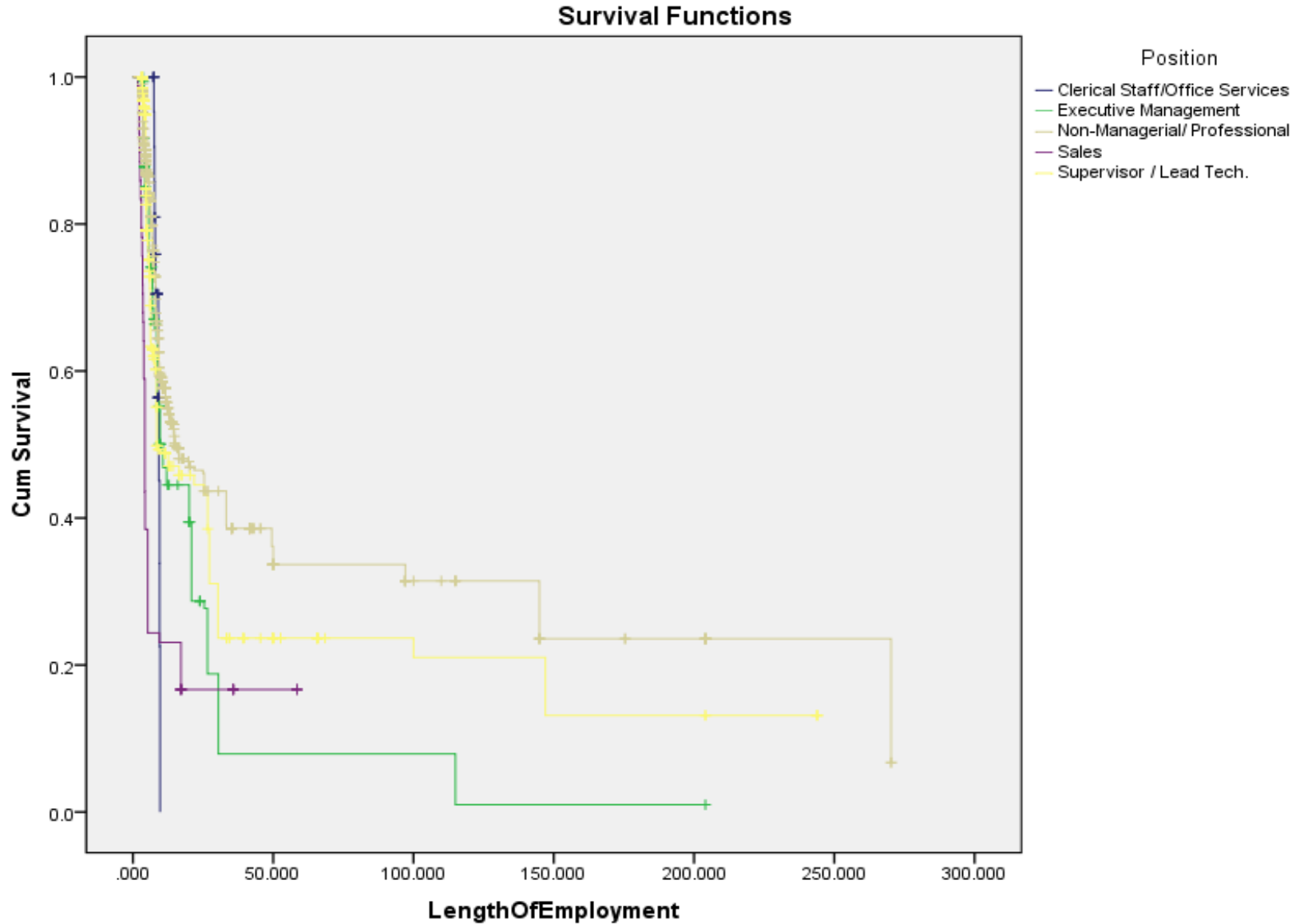


# Explore the importance of tenure

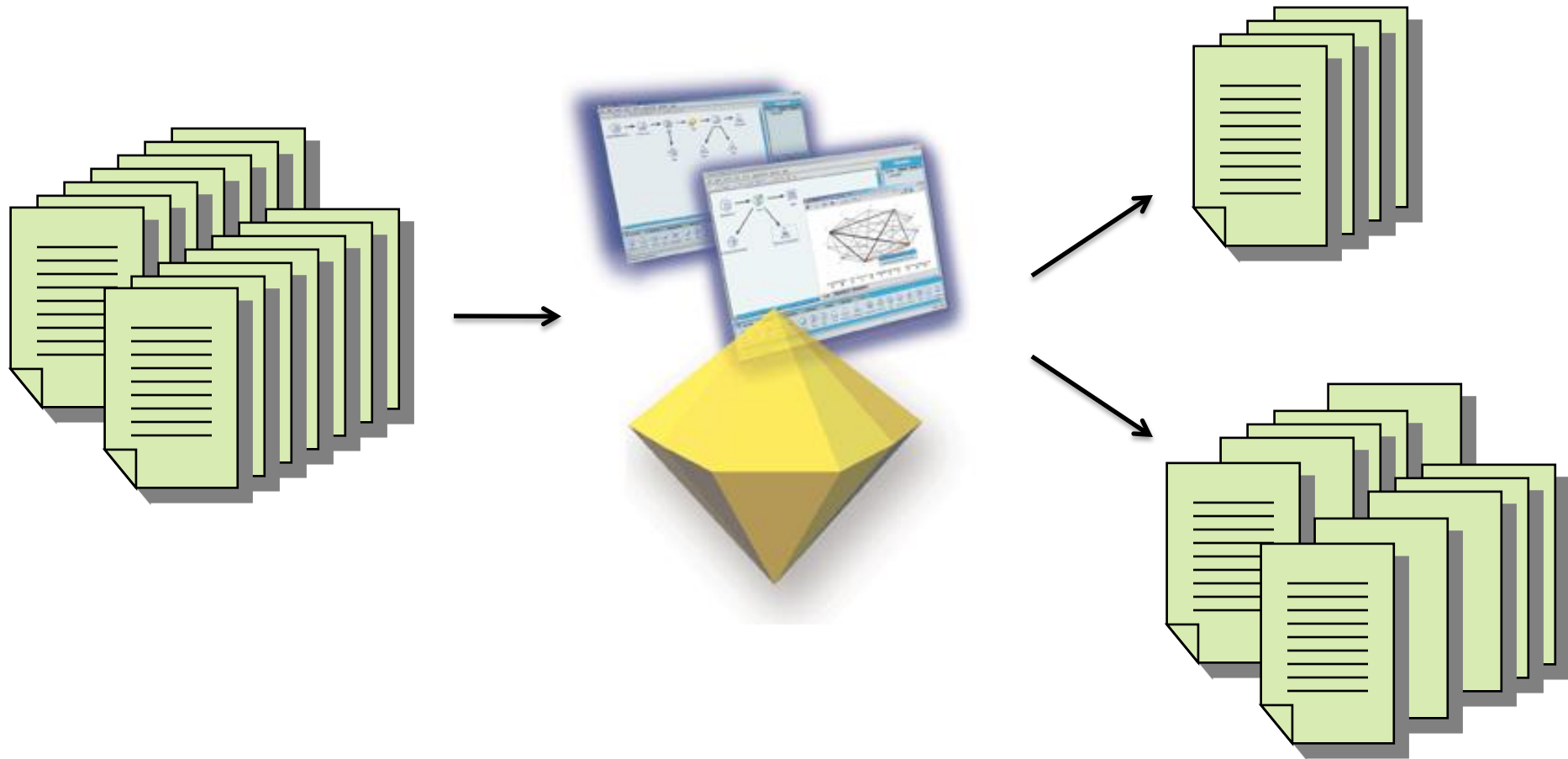




# Explore the importance of tenure



# Screen resumes to identify ideal candidates

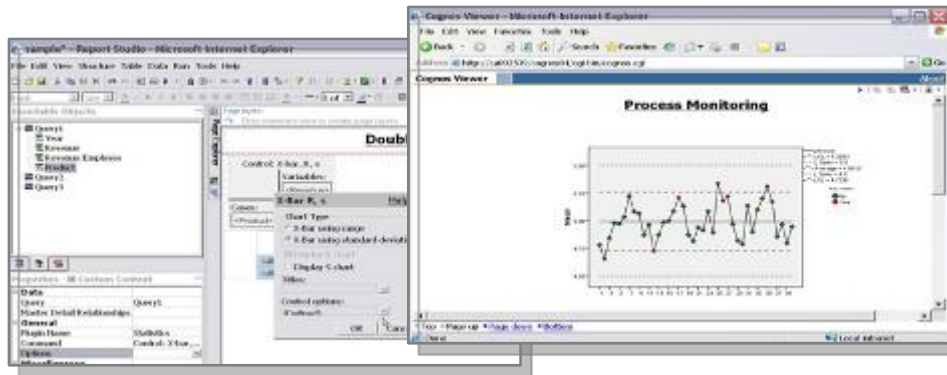




# Analytics Everyone Can Use to answer key business questions ->Cognos 10 delivers Statistical Reporting

## Incorporate Statistical Results with Core Business Reporting

- Analysts will be able to easily disseminate statistical analysis
- Delivers accurate statistical evidence to back decisions
- Save time preparing analysis to meet presentation needs



Desire to easily share analysis w/Broader Business Community

## Solution Highlights

- Seamlessly integrated into Report Studio Professional
- Based on the market leading SPSS statistical engine
- Mass distribution through Dashboards, Reports
- Works for data sources supported by IBM Cognos Platform



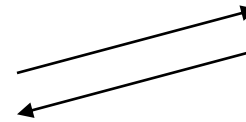
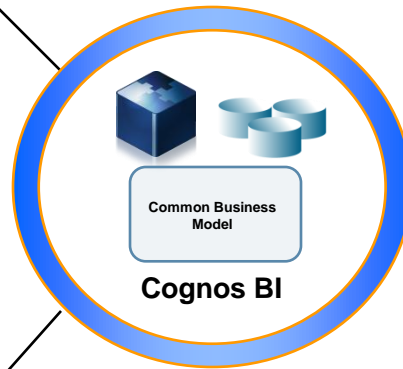




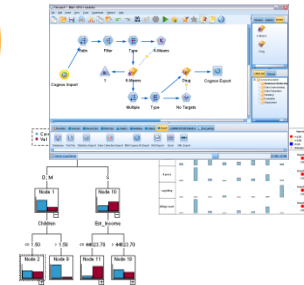
# Demo: Adding value with analytics



1) Leveraging BI, identify problem or situation needing attention



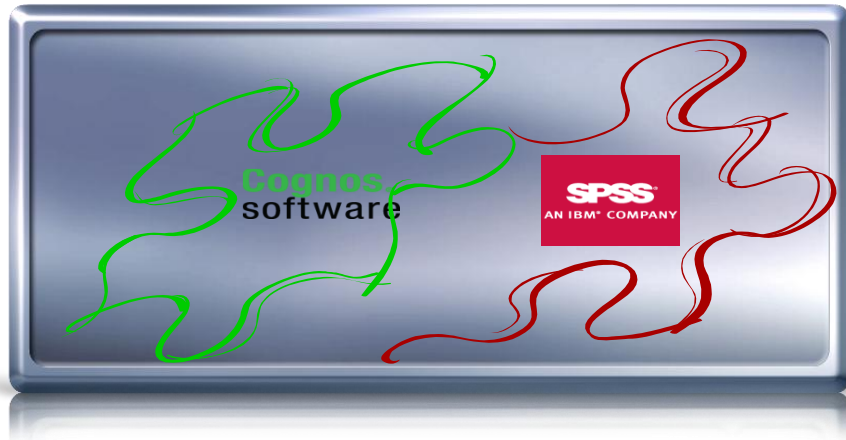
2) Use SPSS predictive analytics & feed results back into the BI layer



3) Results widely distributed via BI for consumption by Business Users



# Summary



*How are we doing?*

*Why are we on/off track?*

*What should we do next?*

- IBM Business Analytics answers the 3 performance management questions
  - Drives better business outcomes by freeing the business to develop new insights
  - Provides the predictive ‘brains’ for the next generation of decision making and business optimization
  - Predictive intelligence can be broadly distributed to decision makers via IBM Cognos BI reports and dashboards



# Information and Analytics Communities

- **On-line communities, User Groups, Technical Forums, Blogs, Social networks, and more**
  - Find a community that interests you at...
    - [ibm.com/software/data/community](http://ibm.com/software/data/community)
- **Information Champions**
  - Recognizing individuals who have made the most outstanding contributions to Information Management communities
    - [ibm.com/software/data/champion](http://ibm.com/software/data/champion)

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