Predictive Perspectives **2011**

IBM

Combining the Power of Predictive Analytics with IBM Cognos Business Intelligence

Business Analytics

www.spss.com/perspectives

Agenda

- The changing nature of decision making
- The power of predictive analytics
- SPSS introduction
- Power of Cognos + SPSS
- Informed decision making with statistics
- Informed decision making with predictors
- Integration of Cognos BI + SPSS Modeler
- IBM Cognos 10: Statistical Reporting
- Summary

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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 reflects changing trends.
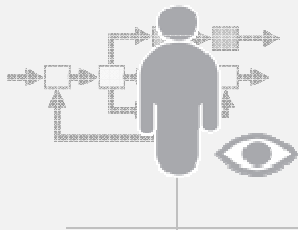
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Imagine If Your Decision Makers Could…

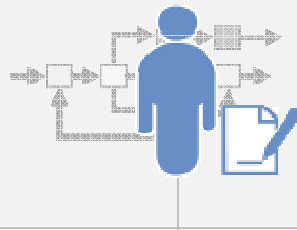…predict and treat infection in premature newborns 24 hours earlier?

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

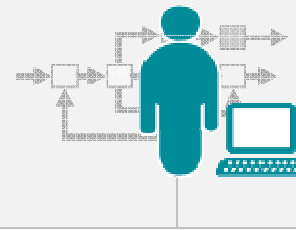…determine who is most likely to buy if offered discounts at time of sale?

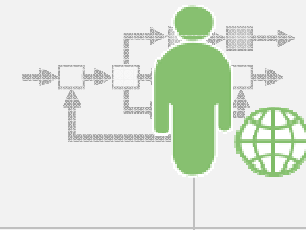…apply inferred social relationships of customers to prevent churn?
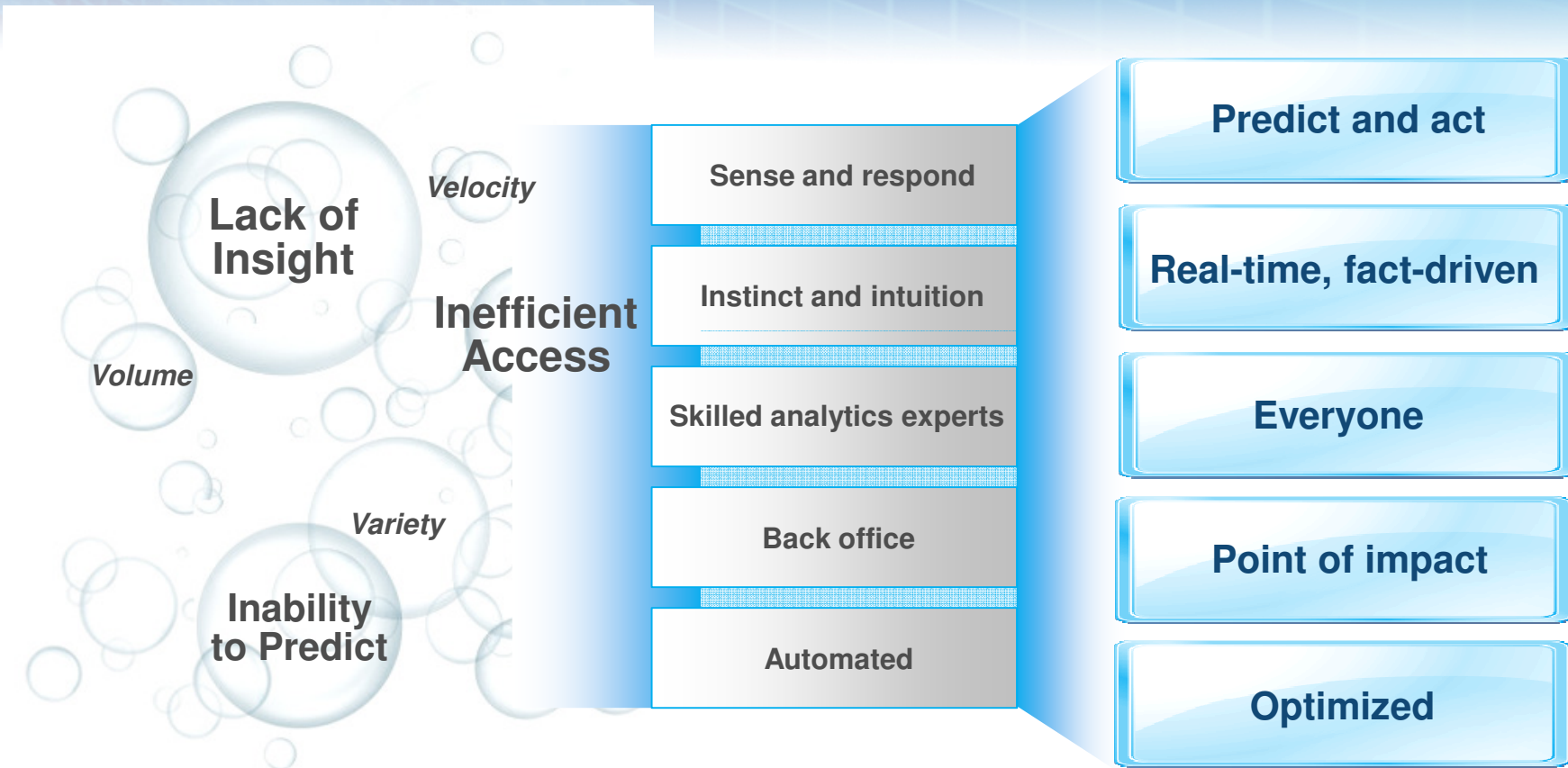
Physician

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

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New ways of working to optimize decisions and actions

Lack of Insight

Velocity

Volume

Inefficient Access

Variety

Inability to Predict

Sense and respond	Predict and act
Instinct and intuition	Real-time, fact-driven
Skilled analytics experts	Everyone
Back office	Point of impact
Automated	Optimized

New ways of working to optimize decisions and actions

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

IBM SPSS: Industry Leader in Predictive Analytics

- 40+ year heritage, with a single aim:
  - to drive the widespread use of data in decision making
- Drove the creation of the Predictive Analytics market
- Acquired by IBM October 2009

- Enables organizations to predict future events and proactively act upon that insight to drive better business outcomes
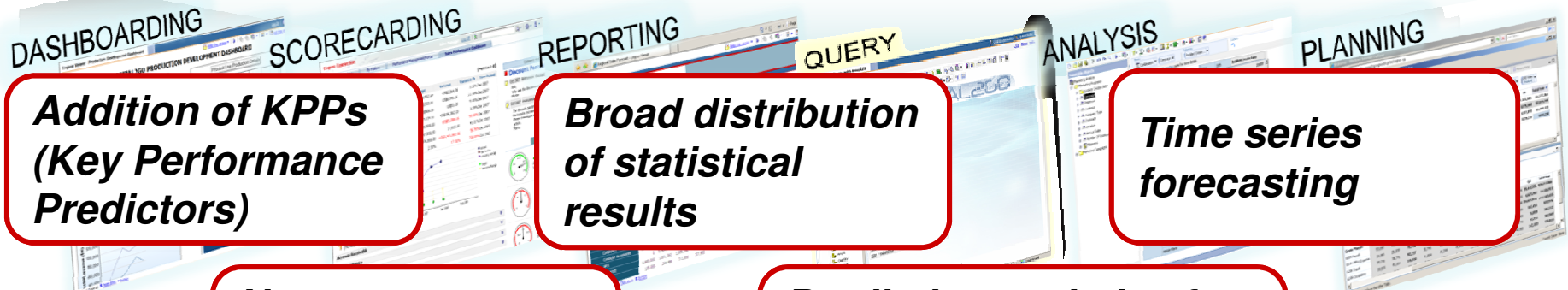
SPSS Enables New Solution Value for IBM Cognos Customers

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

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Make informed decisions with statistics

Validate your assumptions and test hypotheses

IBM SPSS Statistical Analysis

Solution Highlights

- Comprehensive workbench

- Increase functionality with add on modules, scripting and programmability

- Flexible deployment options maximize resource utilization
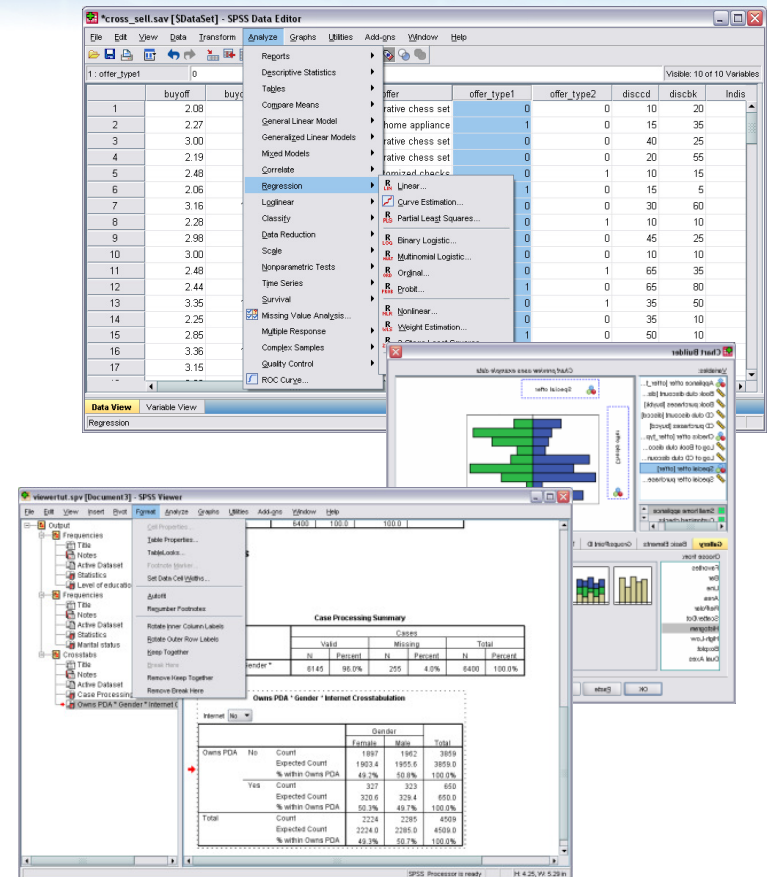
Make informed decisions with predictors

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

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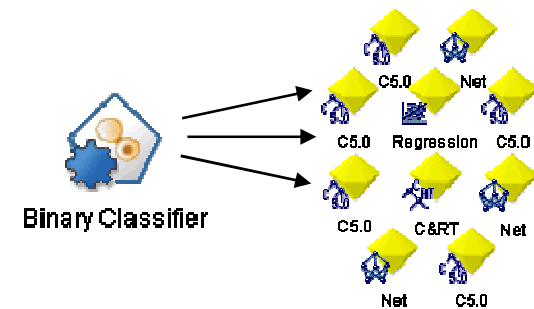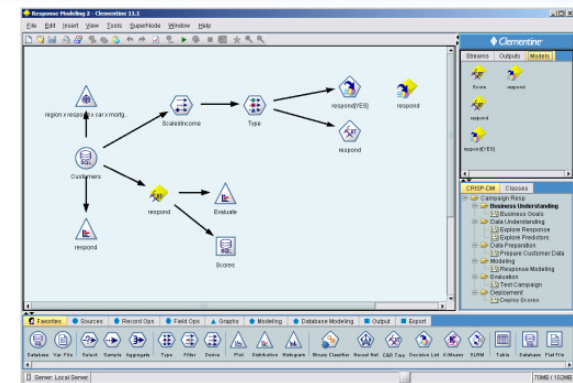
Deliver the power of predictive analytics into the hands of the business users

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

Integration with IBM SPSS Modeler

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

SPSS
AN IBM® COMPANY

Common Business Model
IBM Cognos BI

Cognos®
software

IBM
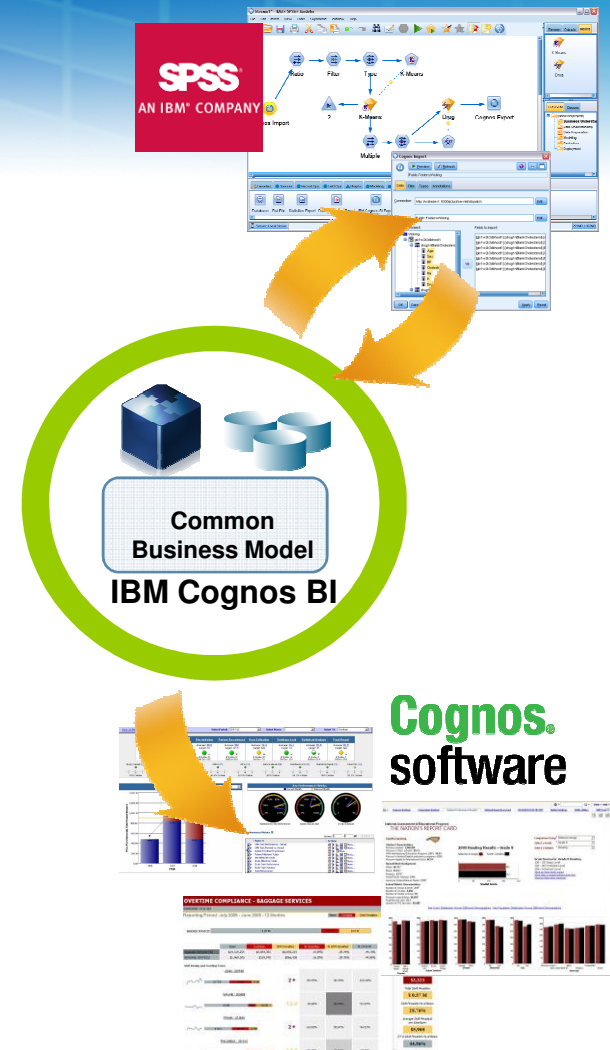
Streamline process to create and distribute predictive results

Leverage your investment in data modeling and IBM Cognos BI

IBM SPSS Modeler 14.1

Solution Highlights

- Interact with familiar data view
- minimize IT involvement for data access and preparation.
- Automatically publish predictive results to Cognos BI package

Consume sanctioned BI data

Export directly to IBM Cognos BI
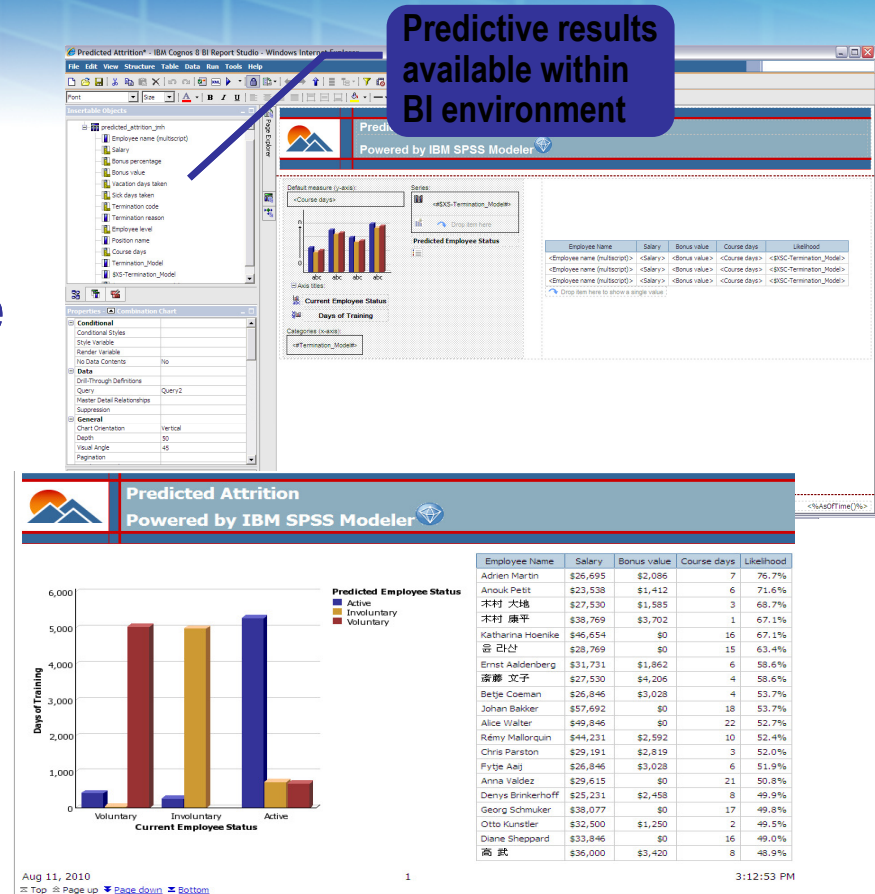
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Add predictive intelligence IBM Cognos BI Dashboards

Focus efforts around the future – anticipate, rather than react.

IBM Cognos Business Intelligence

Solution Highlights

- Predictive results immediately available to IBM Cognos Business Intelligence
- Easily compare current state to predicted result
- Measure by effect of key factors on predicted outcome.

Commander Dashboard - Predictive - _

Cognos Viewer - Commander Dashboard - Predictive

Administrator   Log Off   About

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Commander Dashboard

Historic

Real Time View (Past 24 hours)

✎ Show/Hide Real Time Params | ✔ Submit

Predictive

Predicted Levels (28 Oct 2010 - 8am - 12pm)

✎ Show/Hide Predictive Params | ✔ Submit

Arrest Details

Predicted Arrest Counts

⊼ Top ⌅ Page up ⯆ Page down ⯯ Bottom
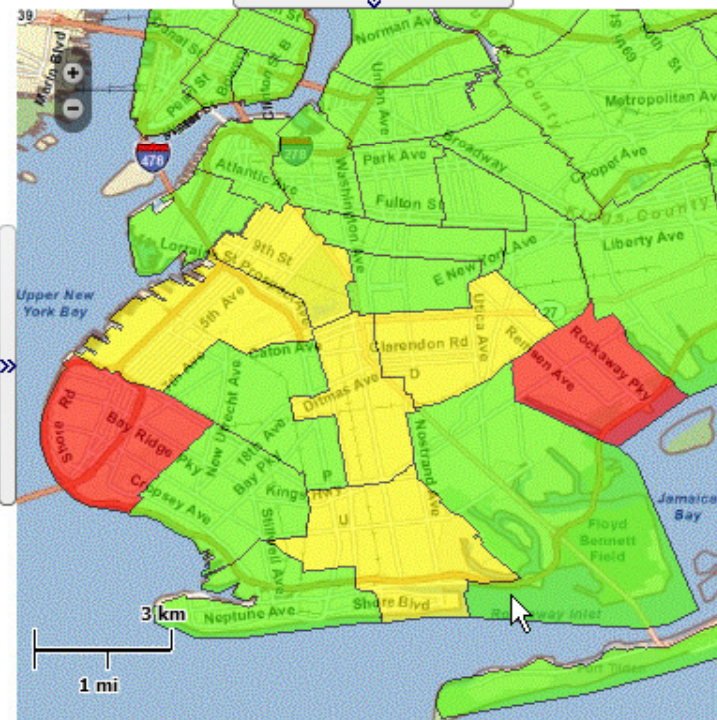
Cognos Statistics

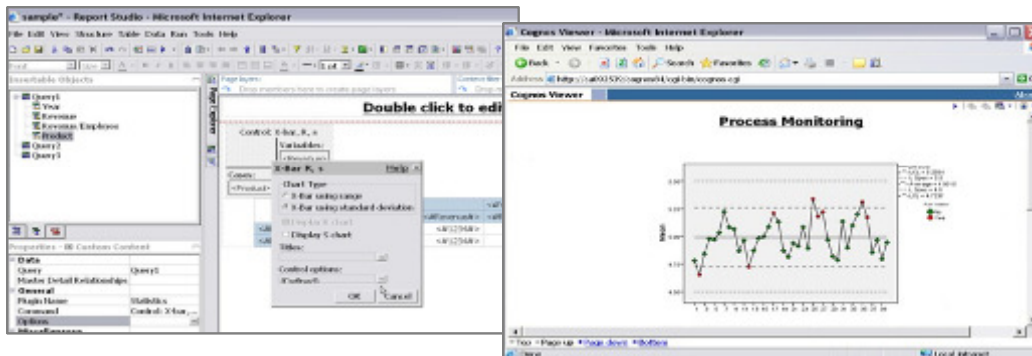## Incorporate Statistical Results with Core Business Reporting

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

Analyst

Isolated Tool

Desire to easily share analysis w/Broader Business Community

Manager

Advanced Business User

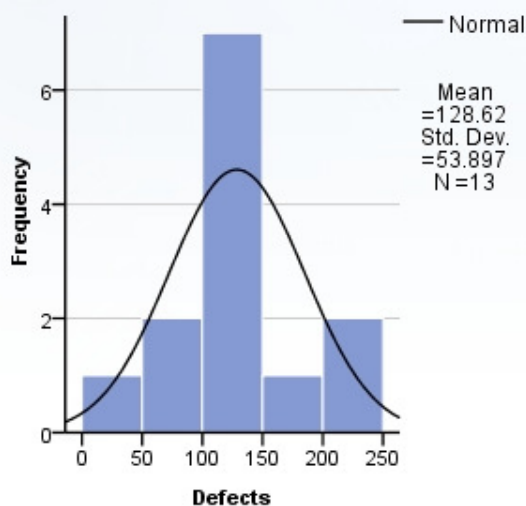Executive

Individual Contributor

Solution Highlights

– Seamlessly integrated into Report Studio Professional

– Based on the market leading SPSS statistical engine

– Mass distribution through Dashboards, Reports

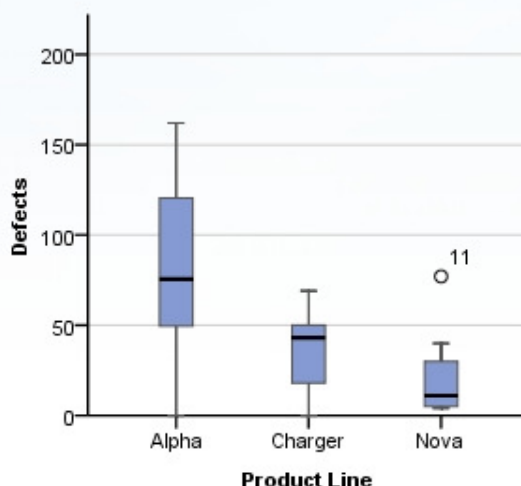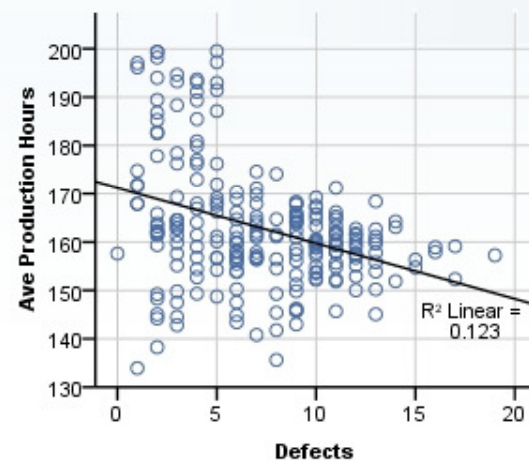– Works for data sources supported by IBM Cognos Platform

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Layout and Style ▾ | Insert ▾ | Operations Dashboard* | « Content | Search

Operations Dashboard

Future-Chips INTERNATIONAL

Defects Trends (Sept 09 - Dec 10)

Product Line
- Alpha
- Charger
- Nova

Distribution of Product Defects

— Normal

Mean =128.62
Std. Dev. =53.897
N =13

Defects

Defects by Product line

Defects

Product Line

Note: Nova outliers need to be eliminated

Correlation Between Defects and Ave Prod Hours

Ave Production Hours

R^2 Linear = 0.123

Defects

Product defects by Quarter	2010-Q1			2010-Q2			2010-Q3			2010-Q4			2010		
	Defects	% Defective	Units	Defects	% Defective	Units	Defects	% Defective	Units	Defects	% Defective	Units	Units	Defects	% Defective
Alpha	51	0.89%	5,756	60	0.93%	6,474	75	1.06%	7,102	69	1.00%	6,929	26,261	255	0.97%
Charger	35	0.94%	3,704	34	0.91%	3,720	35	0.93%	3,756	41	1.04%	3,934	15,114	145	0.96%
Nova	22	0.91%	2,407	21	0.95%	2,205	19	0.89%	2,138	24	1.05%	2,280	9,030	86	0.95%
Product(All)	108	0.91%	11,867	115	0.93%	12,399	129	0.99%	12,996	134	1.02%	13,143	50,405	486	0.96%

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

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