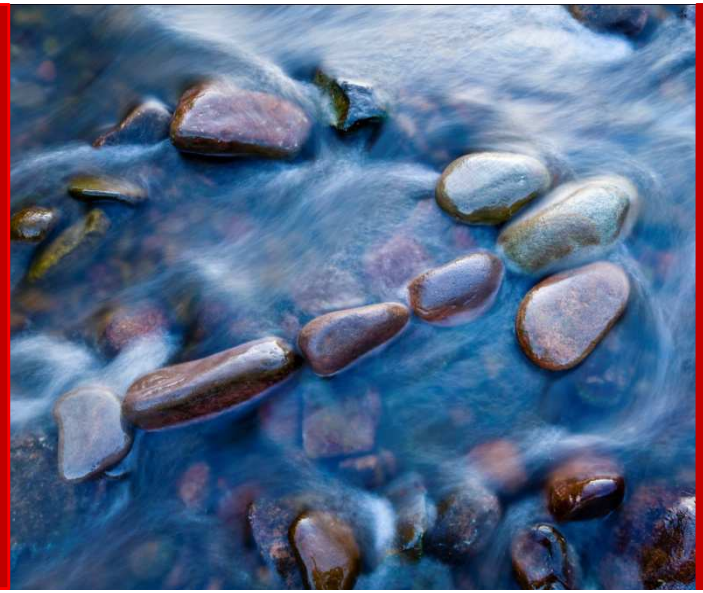


PREDICTIVE ANALYTICS DEMYSTIFIED

MINDSTREAM® ANALYTICS

Agenda

- Introduction
- What is Predictive Analytics?
- Who needs Predictive Analytics?
- How to build Predictive Models?
- Demonstration: IBM SPSS
- Questions and Answers

1. Introduction

MINDSTREAM ANALYTICS

The emergence of big data analytics

65%

of business are not using big data for business advantage

Increasing consumer expectations

84%

of consumers rely on social networks for purchase decisions

Accelerating pressure to do more with less

32%

Organizations using advanced analytics enjoy 32% higher return on invested capital

1. Introduction

- Would you like to increase your customer retention?
- Would you like to increase your sales and acquisitions?
- Would you like to increase your direct marketing response?
- Would you like to decrease your campaign spending?

Analytics Quotient

MINDSTREAM ANALYTICS

STEP 1:

Novice

- Inflexible
- Spreadsheets
- Extracts
- Manual Intervention
- Static Reports
- No governance

STEP 2:

Builder

- Departmental
- Task automation
- Silo KPIs, metrics
- Some standards
- Some self-service
- Emerging CoEs
- Minimal governance

STEP 3:

Leader

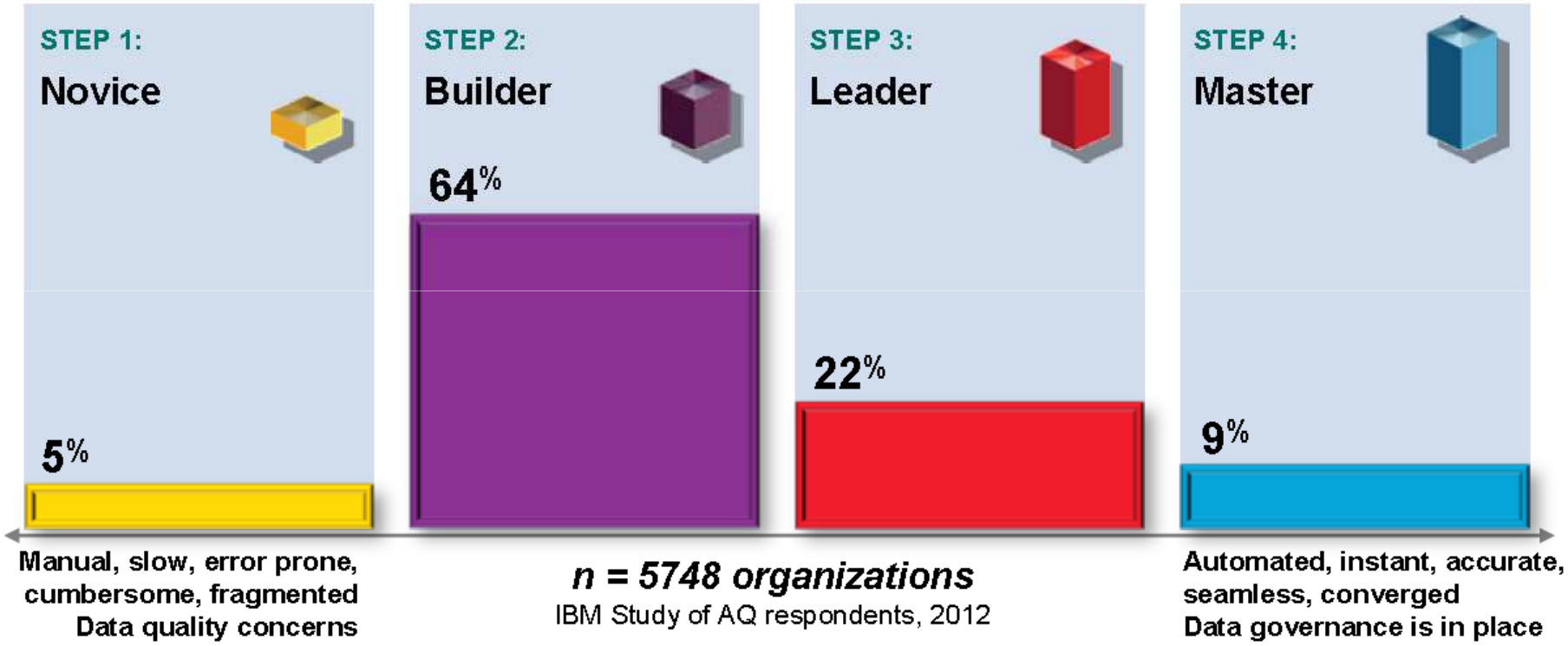
- Cross-functional
- Applied analytics
- Aligned KPIs, metrics
- Trusted information
- Common standards
- Full self-service
- Aligned CoEs
- Formal governance

STEP 4:

Master

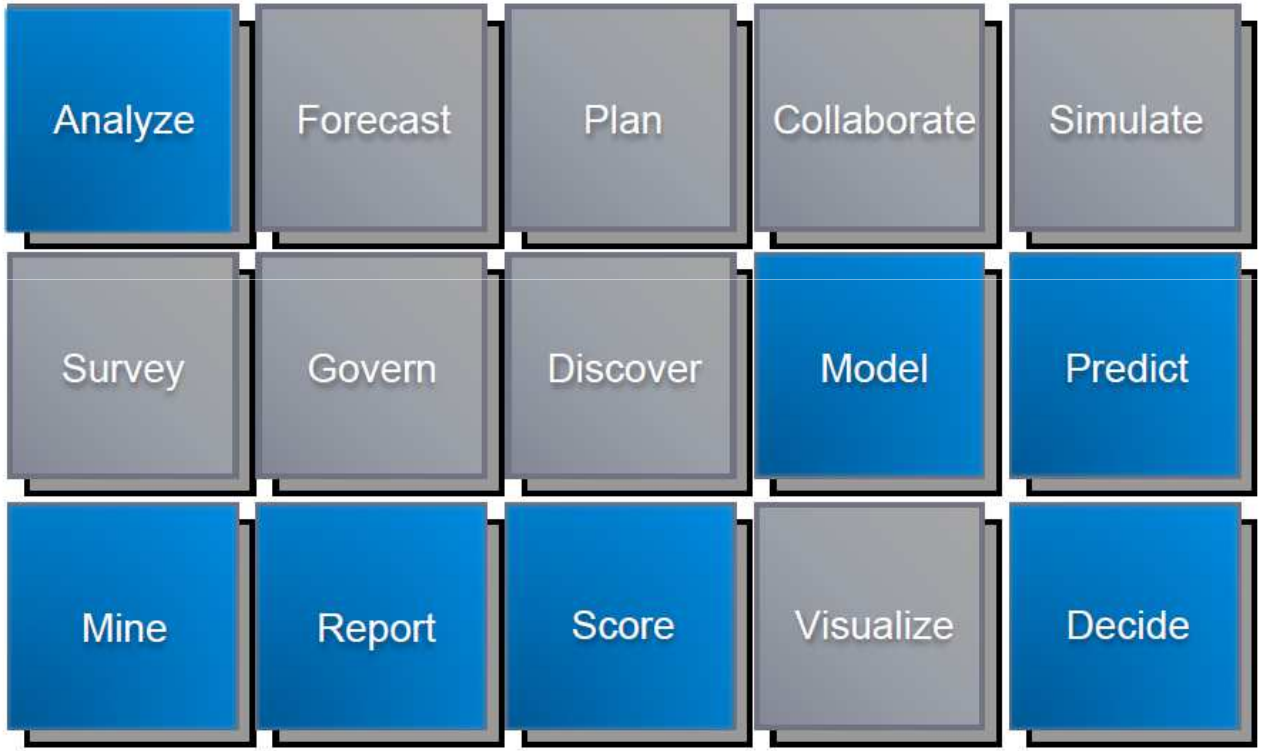
- Enterprise aligned
- Enabling strategy through execution
- Highly collaborative
- 360 degree insights
- Analytics-driven culture
- Strong analytics program & governance

Analytics Quotient



2. What is Predictive Analytics?

- Empirically-derived models used for predicting future outcomes



Better predict customer behavior, increasing profits and revenue

2.1 Goals of Predictive Analytics

- Bring key business insights into our decision-making processes
- Solution to our biggest challenges with data mining
- Integration of predictive analytics with data driven decision making
- Positive ROI and superior outcomes

2.1 Goals of Predictive Analytics

MINDSTREAM ANALYTICS

Customer

- Advanced client segmentation
- Leveraging customer sentiment analysis
- Reducing customer churn

Finance

- Enabling continuous planning and forecasting
- Automating financial and management reporting
- Improving visibility, insight and control

Risk

- Making risk-aware decisions
- Managing financial and operational risks
- Reducing the cost of compliance

Operations

- Optimizing the supply chain
- Deploying predictive maintenance capabilities
- Transform threat & fraud identification processes

2.1 Goals of Predictive Analytics

MINDSTREAM ANALYTICS

Customer

Banking
- Increase account profitability

Insurance
- Retain policy holders with better service & marketing

Retail
- Understand sales patterns

Telecommunications
- Reduce churn with custom retention offers

Finance

Government
- Effective budget management

Retail
- Develop dynamic merchandise plans

Industrial
- Plan and forecast sales & operations

Operations

Industrial
- Predict maintenance issues before they occur

Retail
- Improve store performance with P&L reports

Telecommunications
- Understand & manage network traffic

Banking
- Measure branch performance

Insurance
- Streamline claims process

Government
- Reduce fraud and waste

Risk

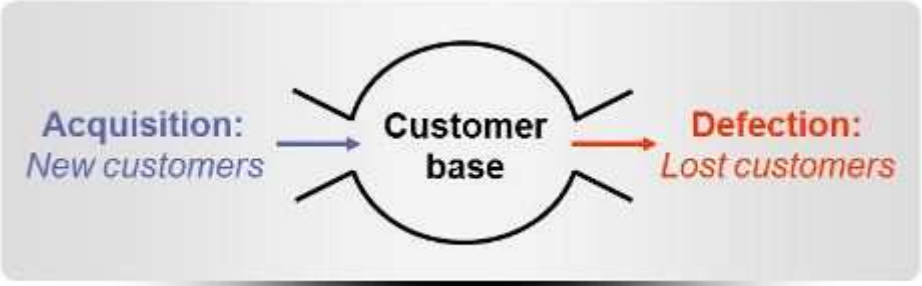
Banking
- Align risk strategy and financial planning
- Improve compliance & regulatory response

Insurance
- Improve compliance & regulatory response

3. Who needs Predictive Analytics?

- Companies that need to:

1. **secure** their competitiveness
2. **increase** sales and grow customer base
3. **manage** fraud
4. **meet** customer's expectations
5. **improve** core business capacity



4. How to build Predictive Models

- Hypothesis testing using econometrics and predictive analytics
  1. Assumptions validation and defining hypothesis
  2. Data description and data collection
  3. Data exploration with easy-to- access procedures and algorithms
  4. Identification of key factors for analysis
  5. Predictions and forecasting using linear and non-linear regression models
  6. Presentation of the results using charts and graphs

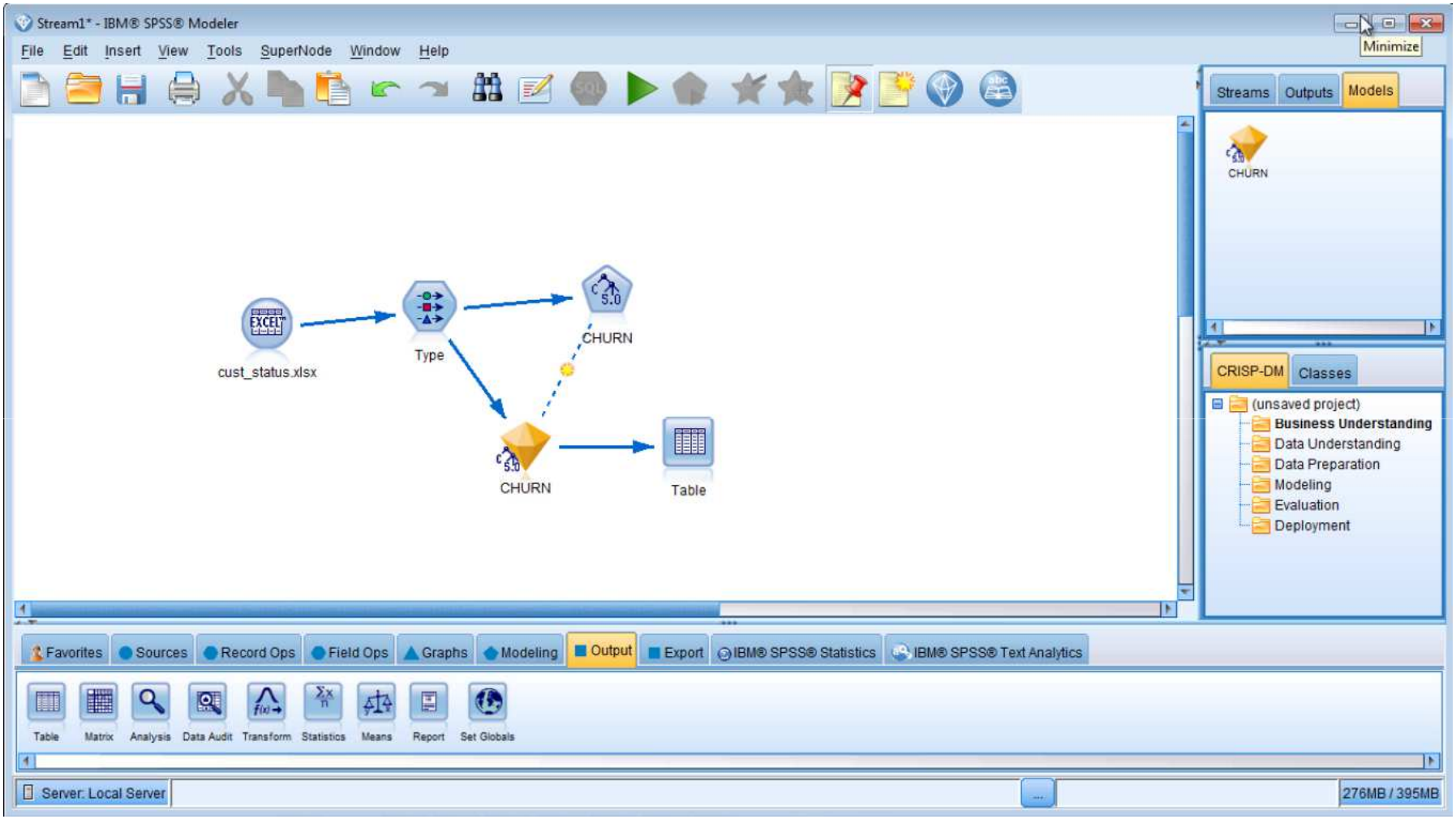
5. Demonstration: IBM SPSS

- **Analyze:** Cognos Workspace
- **Forecast:** SPSS Statistics
- **Mine, Model, Predict:** SPSS Modeler
- **Plan:** Cognos TM1
- **Visualize & Decide:** Cognos Insight and SPSS Decision Management

Data on Airlines in SFO

- Collected monthly via customer interviews held at all airport terminals and boarding areas from July 2005 through March 2011
- Interviews were done using a stratified random sample of flights selected by airport staff
- The questionnaires were available in English, Japanese, Chinese, and Spanish.

SPSS Modeller



Airlines in SFO – Bar Chart

- Passengers by Origin or Destination

*Output1 [Document1] - IBM SPSS Stati

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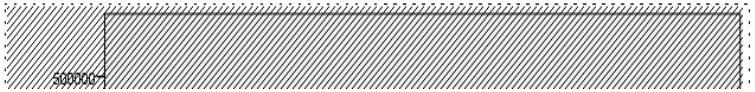
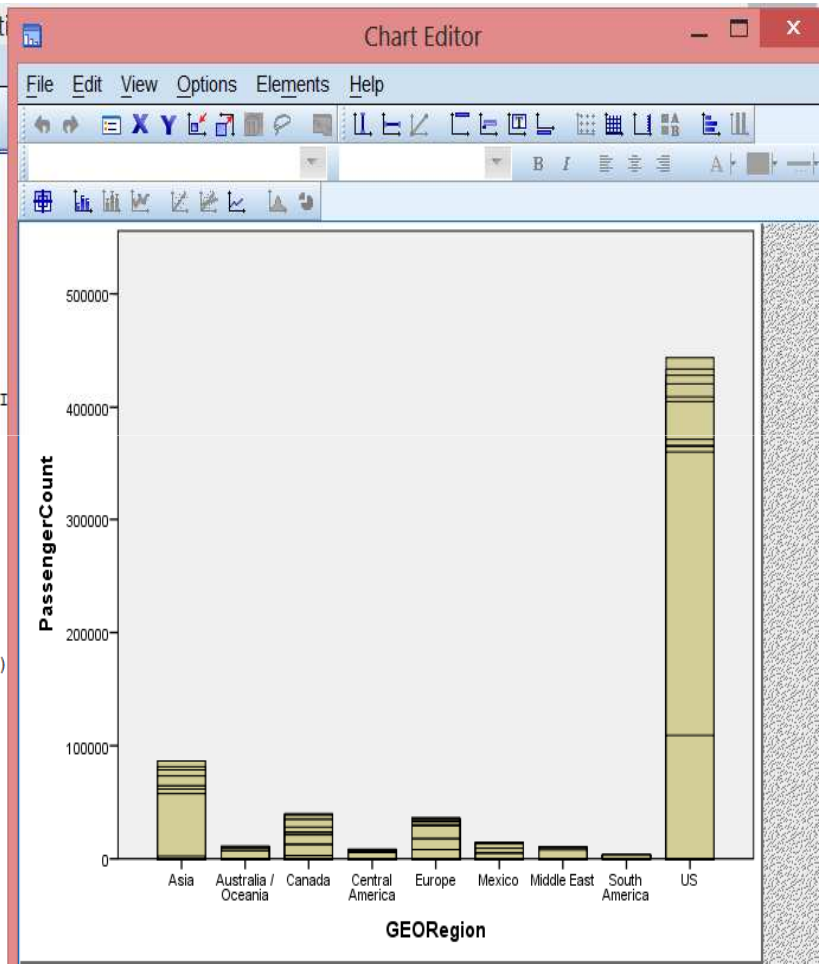
```
* Chart Builder.
GGRAPH
  /GRAPHDATASET NAME="graphdataset" VARIABLES=GEORegion PassengerCount MISSING=LISTWI
  /GRAPHSPEC SOURCE=INLINE.
BEGIN GPL
  SOURCE: s=userSource(id("graphdataset"))
  DATA: GEORegion=col(source(s), name("GEORegion"), unit.category())
  DATA: PassengerCount=col(source(s), name("PassengerCount"))
  GUIDE: axis(dim(1), label("GEORegion"))
  GUIDE: axis(dim(2), label("PassengerCount"))
  SCALE: linear(dim(2), include(0))
  ELEMENT: interval(position(GEORegion*PassengerCount), shape.interior(shape.square))
END GPL.
```

GGraph

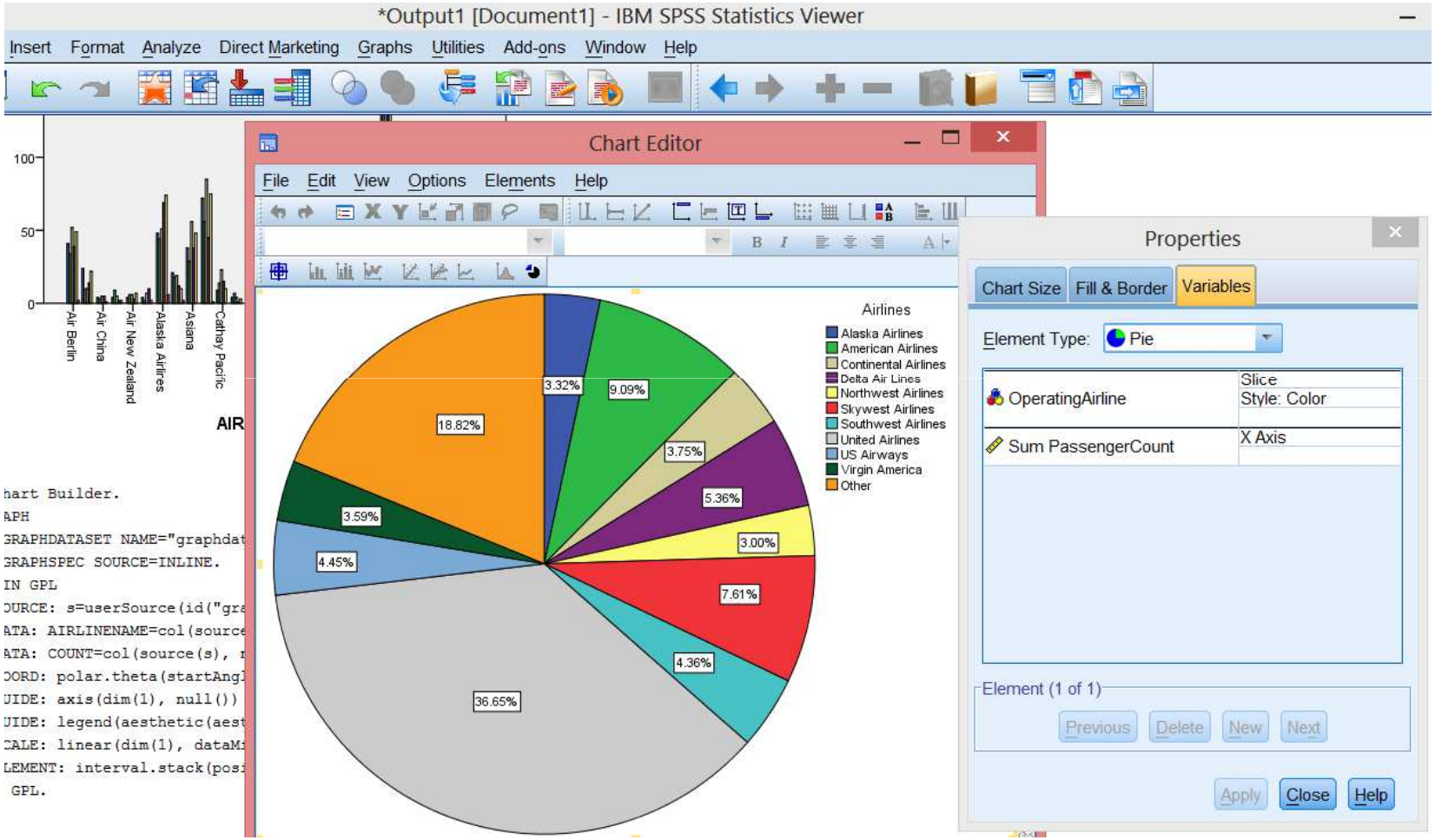
[DataSet3]





Airlines in SFO – Pie Chart

- Passengers by Airlines



Airlines in SFO - Crosstab

- Cross Tabulation of Destinations and Incomes

*Output1 [Document1] - IBM SPSS Statistics Viewer

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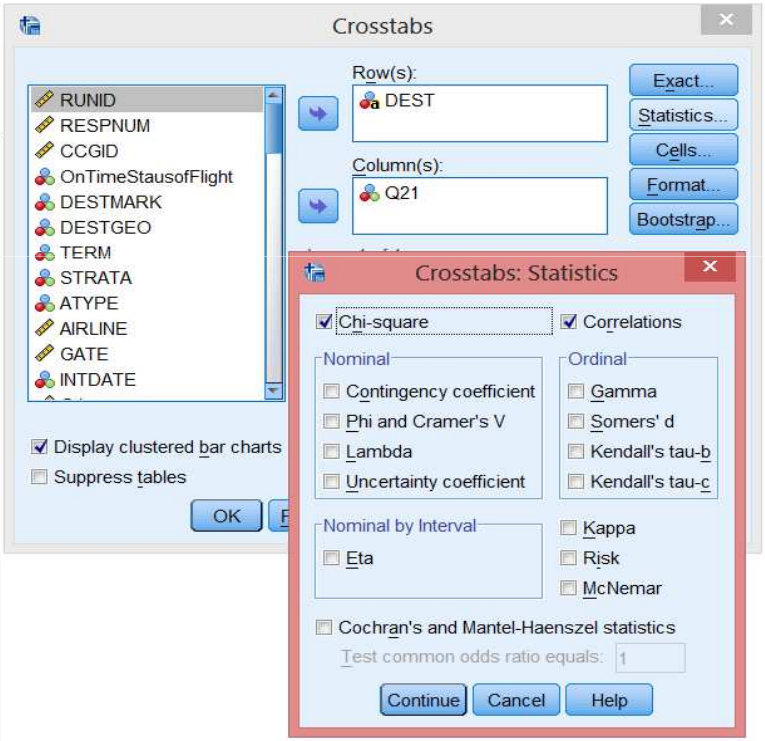
```
CROSSTABS
  /TABLES=DEST BY Q21
  /FORMAT=DVALUE TABLES
  /STATISTICS=CHISQ CORR
  /CELLS=COUNT COLUMN
  /COUNT ROUND CELL
  /BARCHART.
```

DEST * Q21 Crosstabulation

		Q21						
		0	1	2	3	4	5	Total
DEST	TOKYO-NRT	10	8	20	20	13	5	76
		1.3%	1.2%	2.1%	3.1%	1.6%	16.7%	2.0%
	SEATTLE	26	32	46	29	35	2	170
		3.5%	4.7%	4.8%	4.5%	4.4%	6.7%	4.4%
	PHILADELPHIA	26	13	28	18	36	2	123
		3.5%	1.9%	2.9%	2.8%	4.5%	6.7%	3.2%
	NEW YORK-JFK	45	25	53	33	64	2	222
		6.0%	3.7%	5.5%	5.1%	8.0%	6.7%	5.7%
	LOS ANGELES	39	53	72	48	32	1	245
		5.2%	7.8%	7.5%	7.4%	4.0%	3.3%	6.3%
	LONG BEACH	5	16	20	9	11	1	62
		0.7%	2.3%	2.1%	1.4%	1.4%	3.3%	1.6%
	LONDON-HEATH	21	14	19	12	17	2	85
		2.8%	2.0%	2.0%	1.8%	2.1%	6.7%	2.2%
	LAS VEGAS	33	34	35	25	23	2	152
		4.4%	5.0%	3.6%	3.8%	2.9%	6.7%	3.9%
	KLAMATH FALL	5	3	5	0	1	0	14
		0.7%	0.4%	0.5%	0.0%	0.1%	0.0%	0.4%
	KAHULUI	5	3	8	6	4	0	26
		0.7%	0.4%	0.8%	0.9%	0.5%	0.0%	0.7%
	HOUSTON	15	20	23	19	24	0	101
		2.0%	2.9%	2.4%	2.9%	3.0%	0.0%	2.6%
	HONOLULU	24	26	24	7	16	0	97
		3.2%	3.8%	2.5%	1.1%	2.0%	0.0%	2.5%



- Q21_Income Group column: 1=Under 50,000, 2=$50,000 - $100,000, 3=$100,001 - $150,000, 4=Over $150,000, 5=Over $500,000

Airlines in SFO – Crosstab (cont.)

DEST * Q21 Crosstabulation

	Q21						
	0	1	2	3	4	5	Total
TOKYO-NRT	10	8	20	20	13	5	76
	1.3%	1.2%	2.1%	3.1%	1.6%	16.7%	2.0%
SEATTLE	26	32	46	29	35	2	170
	3.5%	4.7%	4.8%	4.5%	4.4%	6.7%	4.4%
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KLAMATH FALL	5	3	5	0	1	0	14
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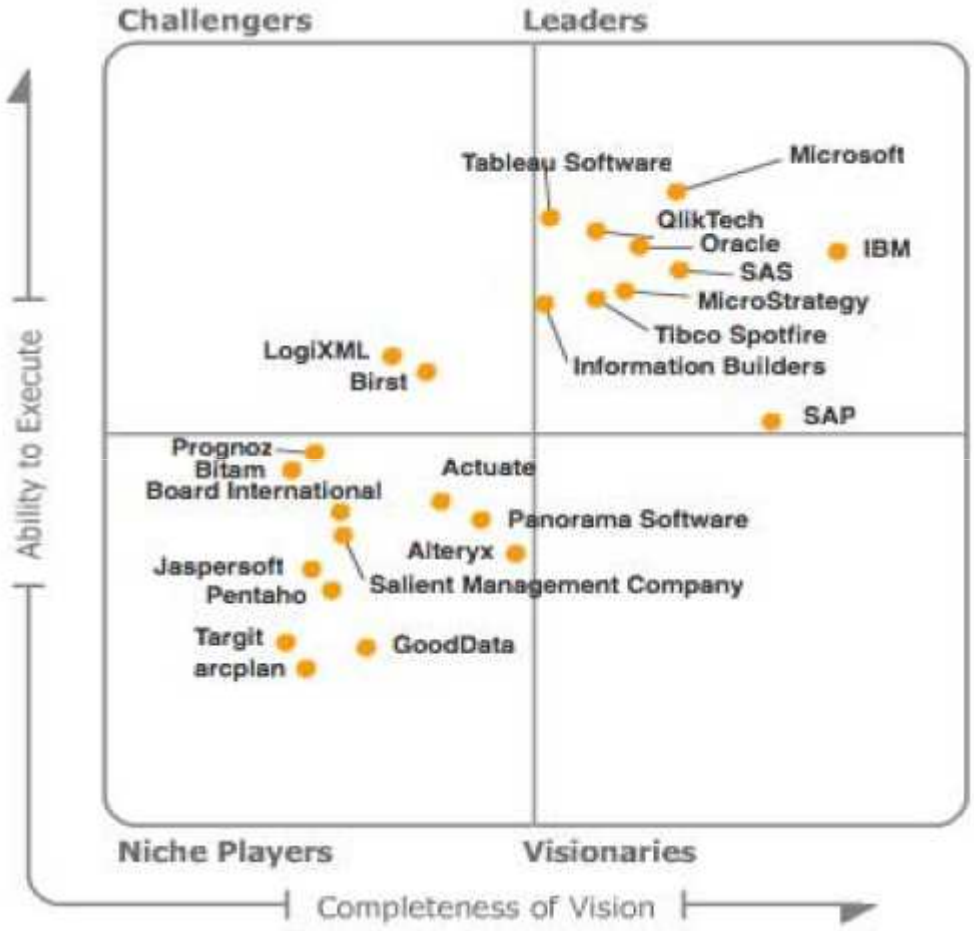
- Q21_Income Group column: 1=Under 50,000, 2=$50,000 - $100,000, 3=$100,001 - $150,000, 4=Over $150,000, 5=Over $500,000

- It is obvious that Airlines should provide First Class and Business Class on the top 8 routes
- On the remaining routes it is not necessary

Conclusion

Magic Quadrant for Business Intelligence & Analytics Platforms



Conclusion

By the end of the day, you should be prepared to answer these questions

- *Have you planned your journey?*
  Or are you just letting it happen?
- *Are you deciding on capabilities rather than products?*
- *Do you think of analytics in a holistic way?*
- *Is your current approach sustainable and cost effective?*
- *Will you be ready to support your business teams' demands?*

Thank You !