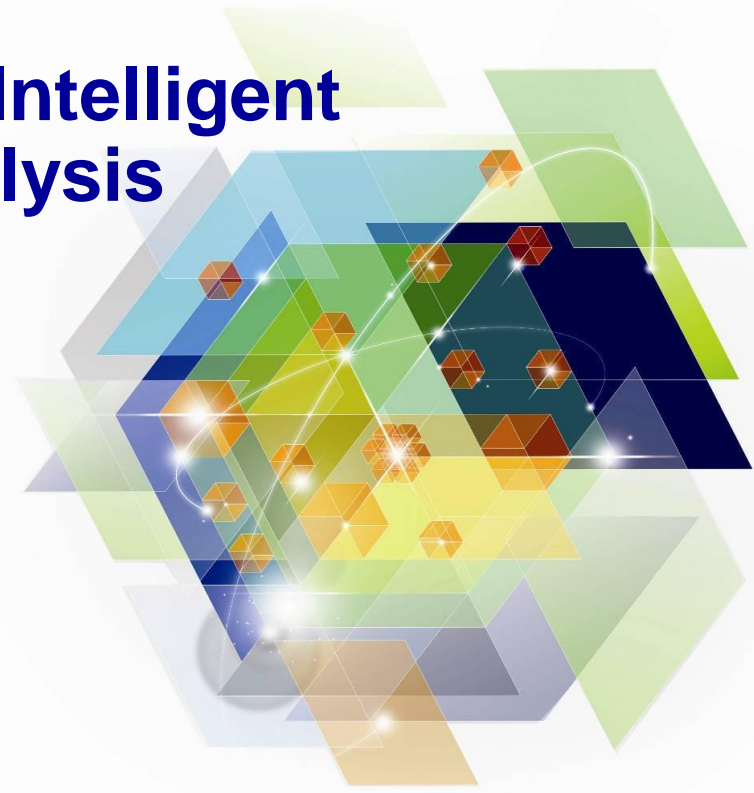




Business Analytics on zEnterprise

Turn Insight into Action with Intelligent Reporting and Predictive Analysis

Dave Jeffries, Director,
Business Analytics for System z,
IBM Software Group
(davejeff@us.ibm.com)





**Generate
More Revenue**

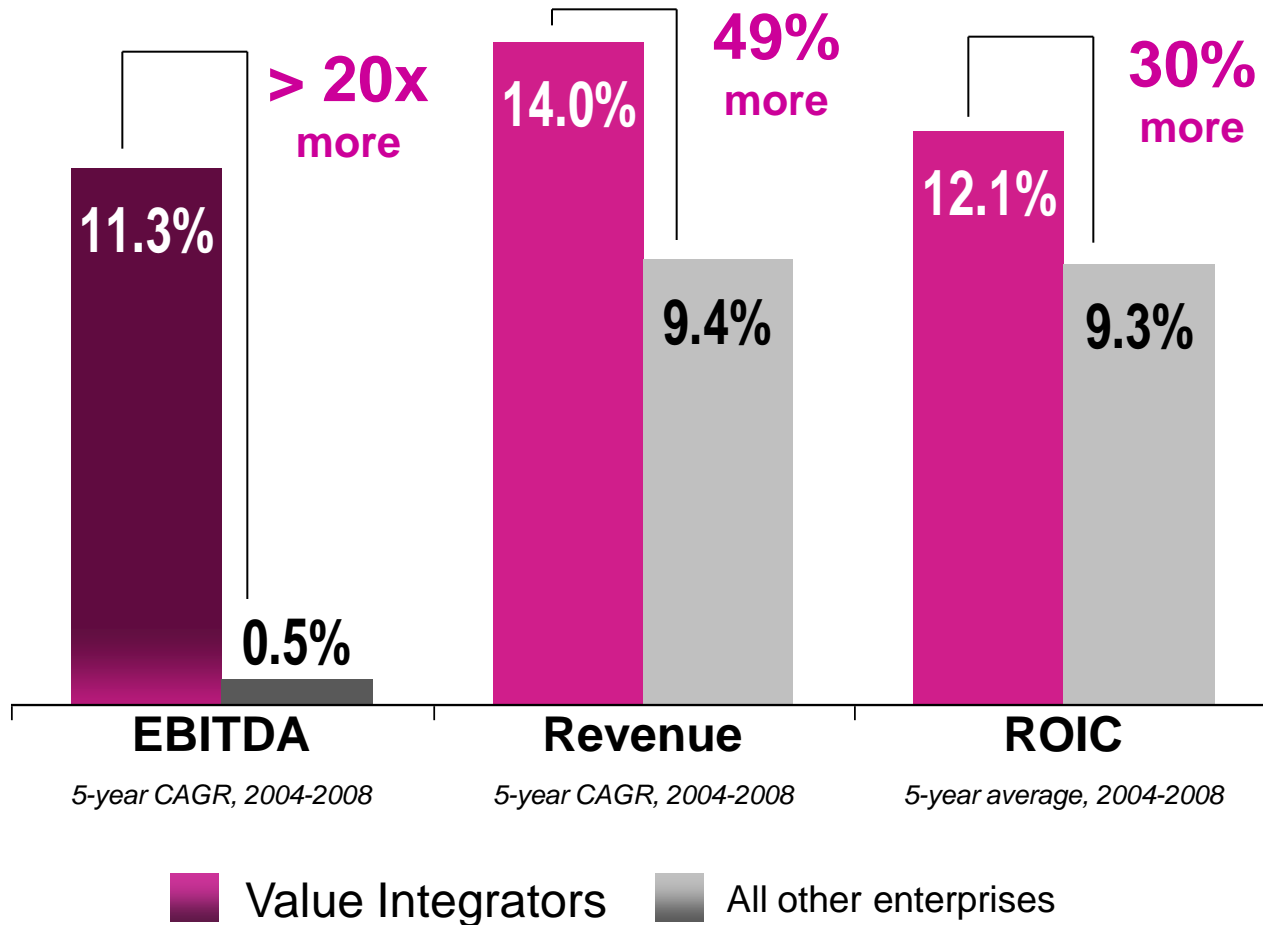
Reduce Risk

**Predict Future Outcomes
with Greater Confidence**

Lower Costs

Analytics-Driven Organizations Outperform

Efficiency + Business Insight Contributes to Better Financial Performance



Revenue Growth: N = 580; EBITDA: N = 531; ROIC: N = 501;

Source: IBM Institute for Business Value, The Global CFO Study 2010

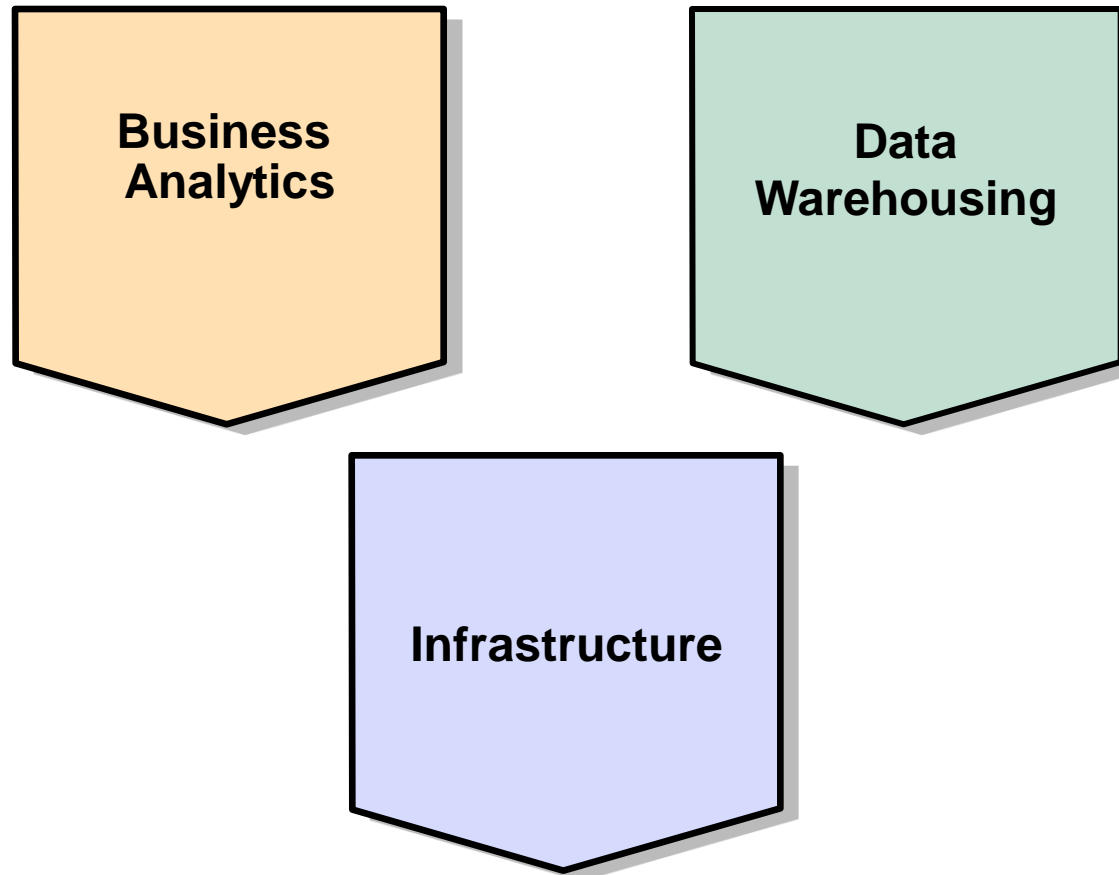
Forrester said: “delivering successful BI capabilities goes far beyond just the tools and enabling technologies”

“BI is a set of methodologies, processes, architectures, and technologies”

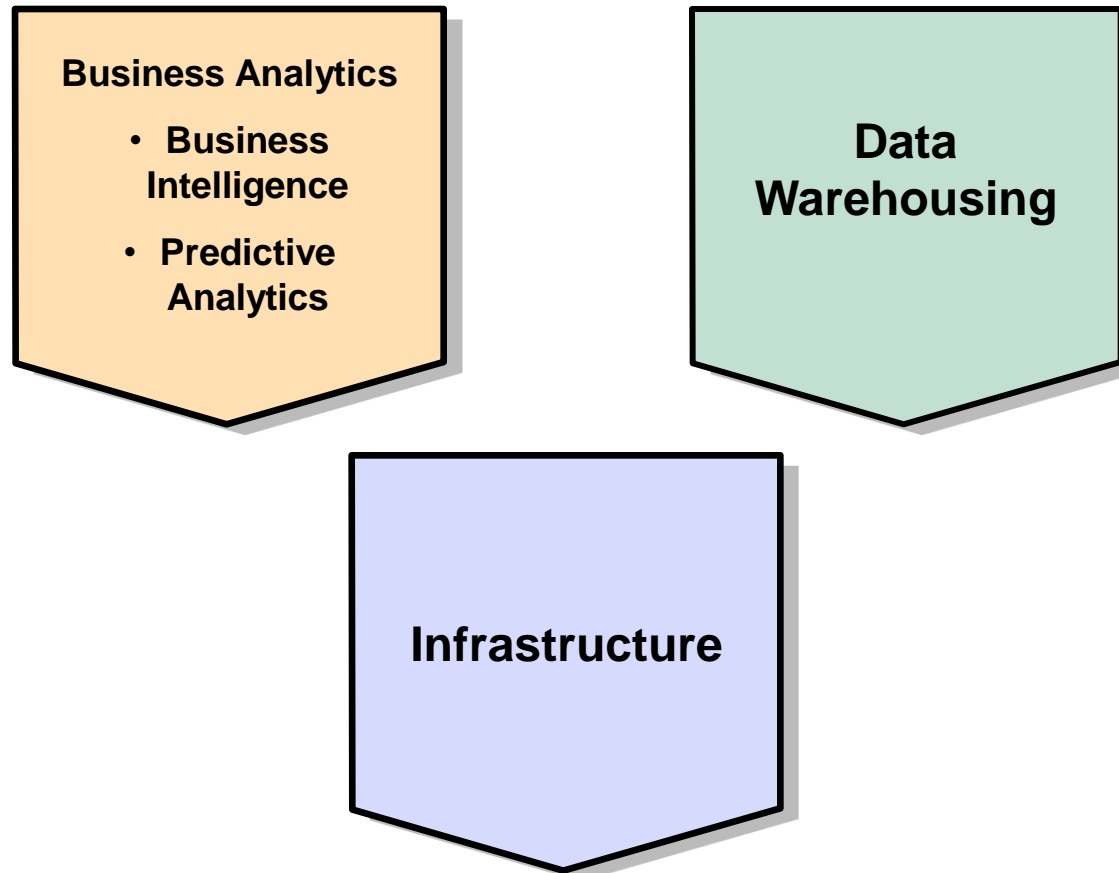
Forrester : Enterprise BI Survey Q&A: BI Professionals Recognize The Need To Focus Beyond Tools, March 17, 2009



Key components for Business Analytics success



Key Business Analytics Capabilities for Success



All departments, all users, in all roles across the organization need access to business insights



Executives



Business Managers



Line of Business Manager



Business Users



Business Analyst



Financial Analyst

How are we doing?

Why?

What should we do next?



Real-time or historical; operational or strategic

Guided or self-service access and exploration

Foresight using Statistical and Predictive Analytics

Common Business Model



Message Sources



Relational Sources



Application Sources



OLAP Sources



Modern and Legacy Sources

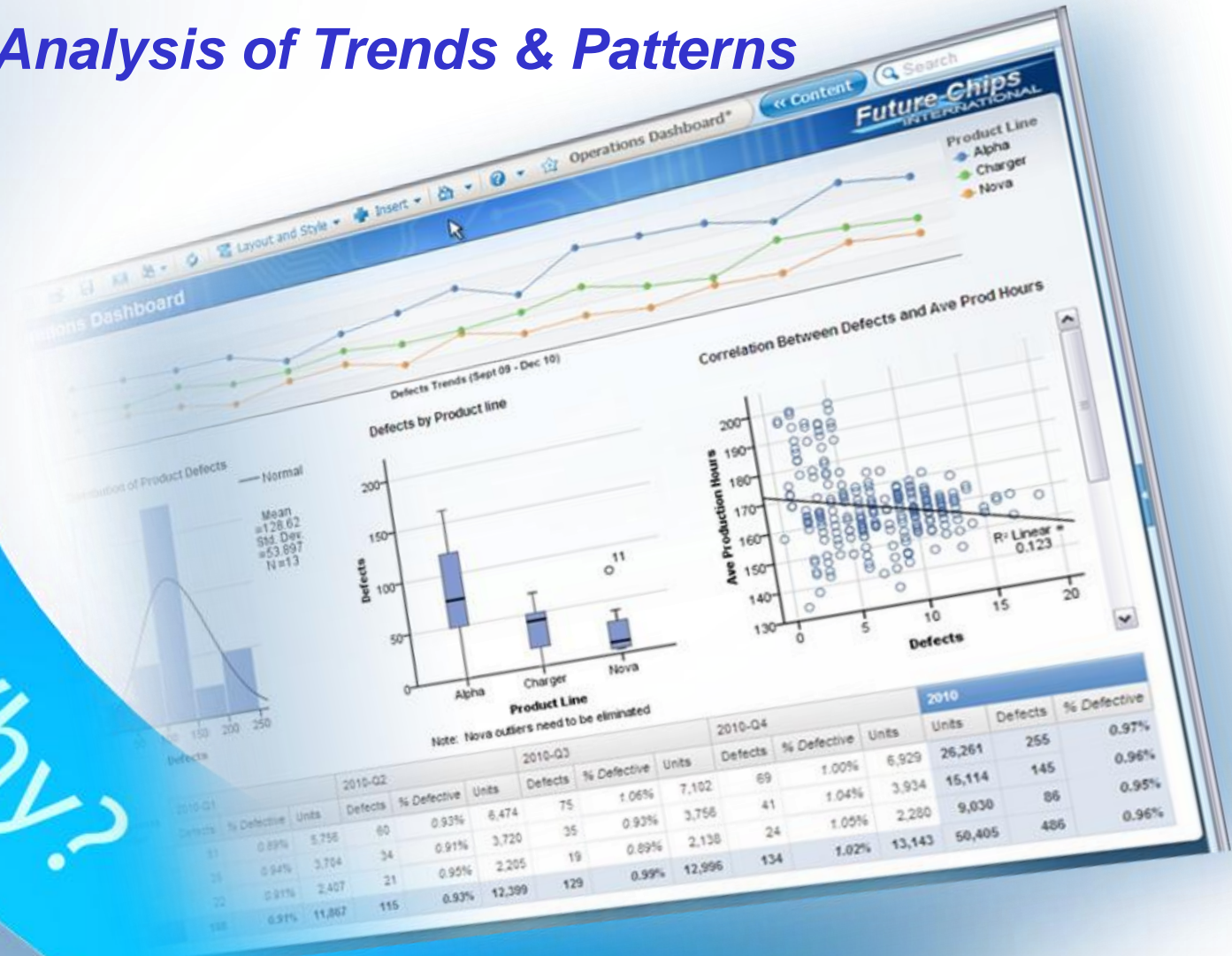
➤ Immediate Insights to Business Performance



How are we doing?

Deeper Analysis of Trends & Patterns

Why?



➤ Foresight to Plan & Allocate Resources

What should we be doing?

insurance_claims_manage...

for Claims

Define Combine Deploy Reports

Automotive Properties

Choose Who This Claim Area Applies to

Use Rules to Decide Which Action is Triggered

Find an existing rule Create a new rule Add annotations OR Split OR

Rule name	Risk points	Sort	Remove
1 Police Intervention	1	▲▲	✖
2 Multiple Claims	3	▲▲	✖
3 Cost over 5k	2	▲▲	✖
4 Cost over 3k	1	▲▲	✖
Material and Injury Claim	1	▲▲	✖
Material and Injury Claim	0	▲▲	✖

Allocate to

Refer

Standard

Fast track

Remove

Measure

Propensity

Remove

Remainder: Appl

Export

Add Action

Moving from Reactions to Predictions

SMART IS

Turning a Call Center in a Profit Center.



A large Dutch financial services company implemented predictive cross selling programs in its call centers. The implementation took 2 months and generated **\$30 Million in incremental sales**. Essentially, 1M calls generated 180,000 suggestions, reps made 60,000 offers turning into 30,000 leading to 22,000 sales.

SMART IS

Turning clients into advocates.



A large Swiss telco provider adopted a client retention approach based on satisfaction. Based on the use of the “Wisdom of Crowds” principle, gathering feedback. The company **reduced churn from 14% to 2%**.

SMART IS

Preventing crime before it happens.



A large city in the US turned to predictive analytics to predict occurrences of crimes in four blocks radius in tranche of 4 hours. Insights led to optimized deployment of police resources **reducing homicides by 35%** year over year, and robberies by 20%.

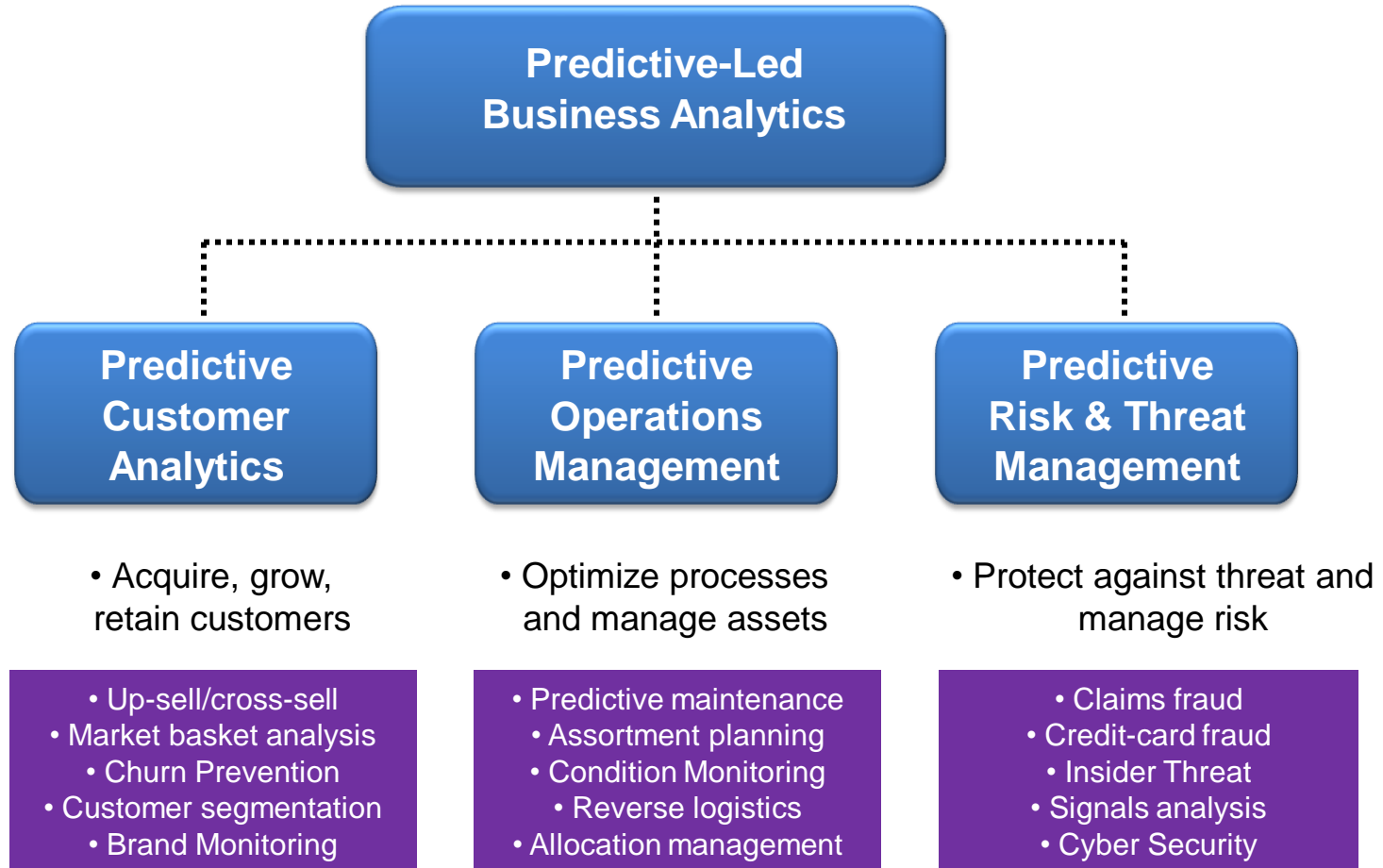
SMART IS

Dramatically lowering the cost of claims.



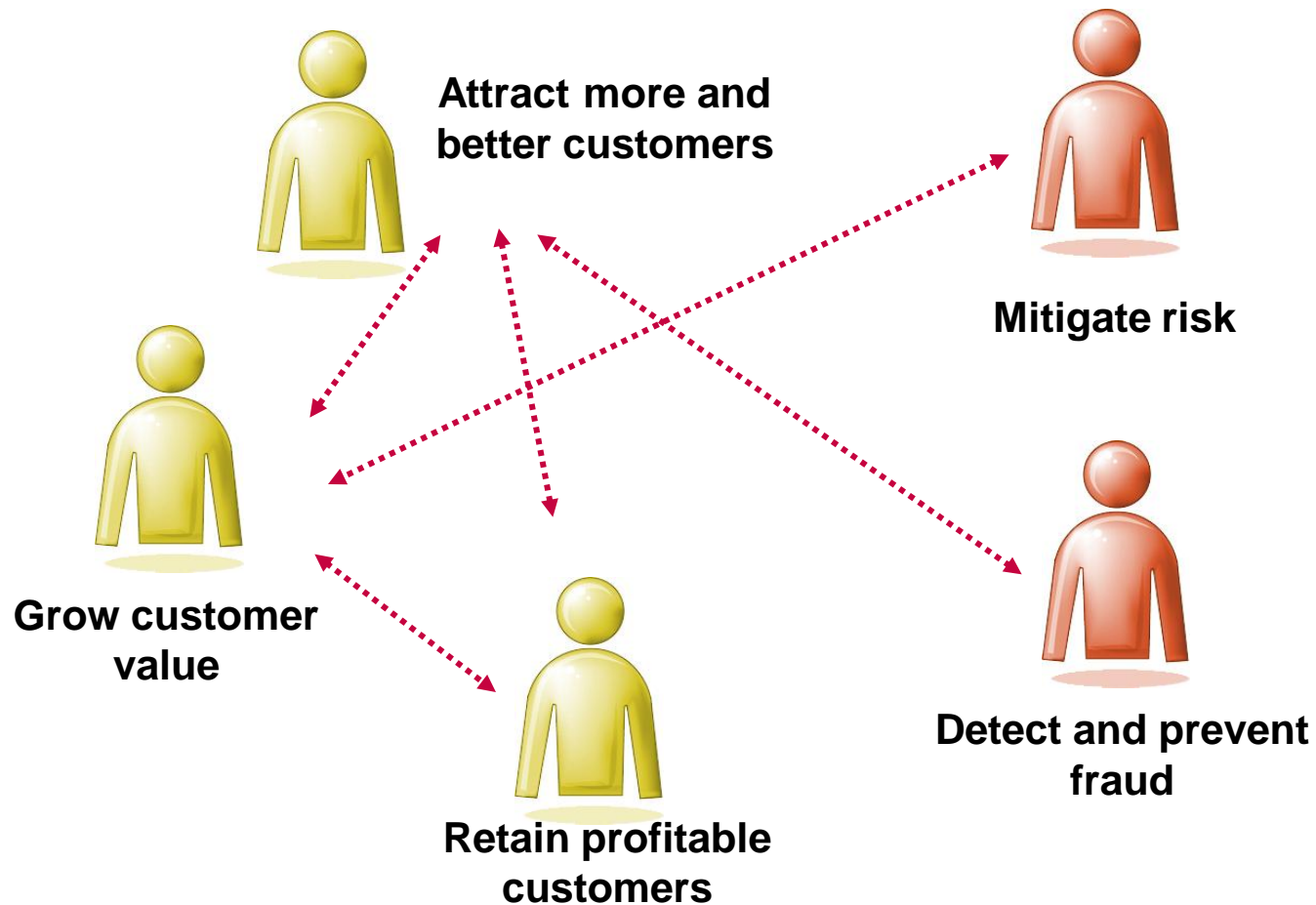
A large US insurer has embedded predictive analytics in claims handling while maximizing and accelerating the collection of subrogation payment. The company achieved an **ROI of 403% with payback in 3 months**.

Predictive Led Business Analytics Solutions



Challenges to Profitable Growth

How to:

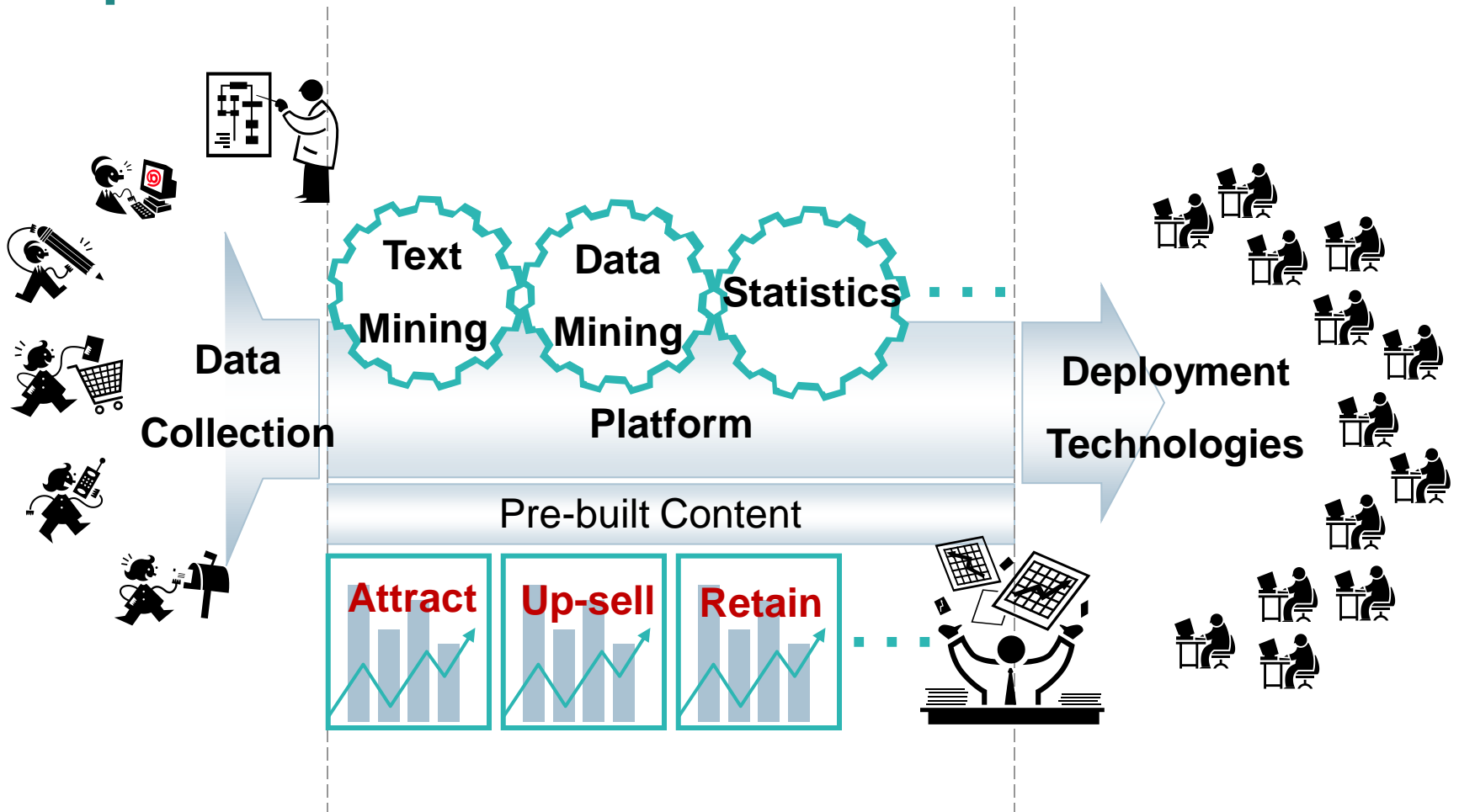


Driving Smarter Business Outcomes

Capture

Predict

Act



IBM SPSS Products available on Linux for System z

■ IBM SPSS Statistics:

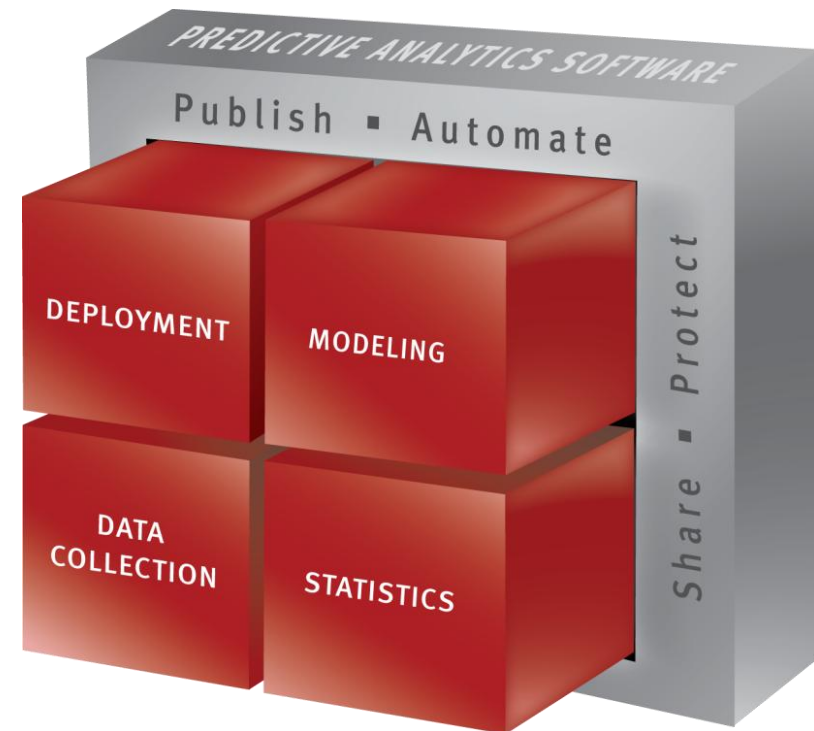
- Drive confidence in your results and decisions

■ IBM SPSS Modeler:

- Bring repeatability to ongoing decision making

■ Deployment

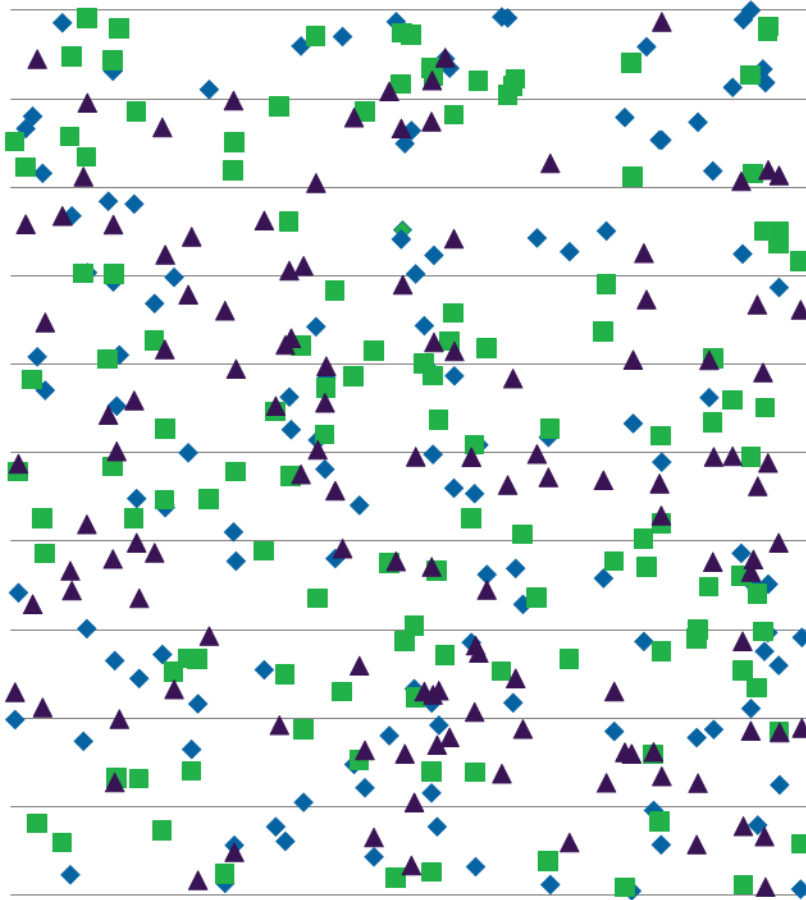
- IBM SPSS Collaboration and Deployment Services
- IBM SPSS Decision Management
 - Maximize the impact of analytics in your operation



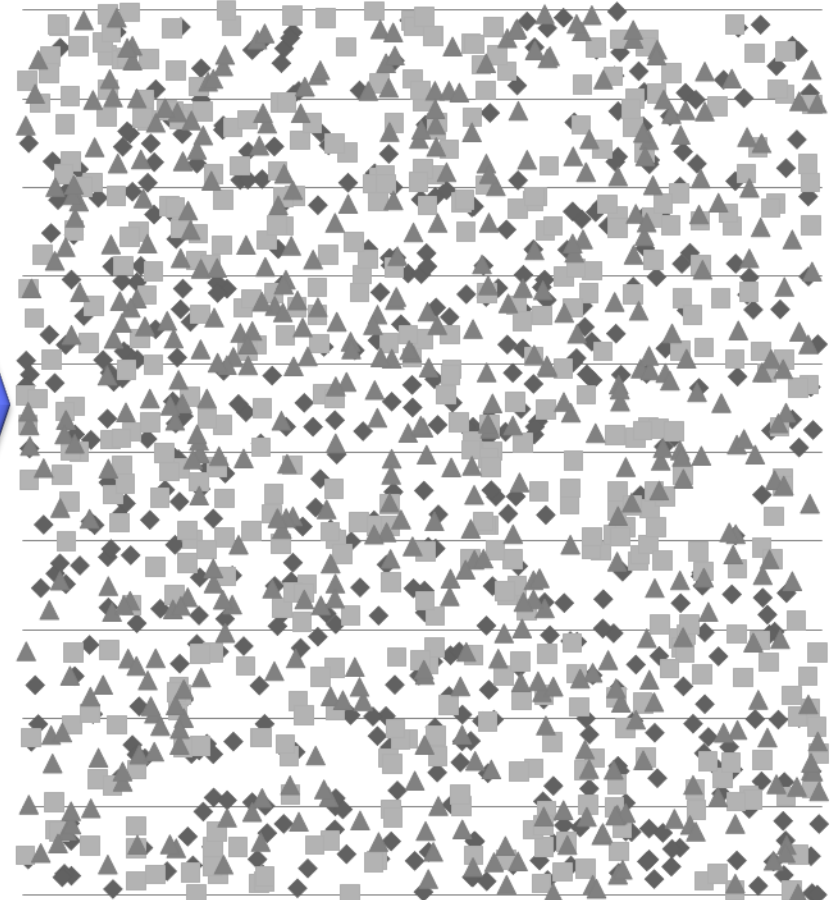
The Baseline of Predictive Analytics – Applied Mathematics

Statistics: Derive the Attributes of Universe from a Small Sample

A Sample of Data

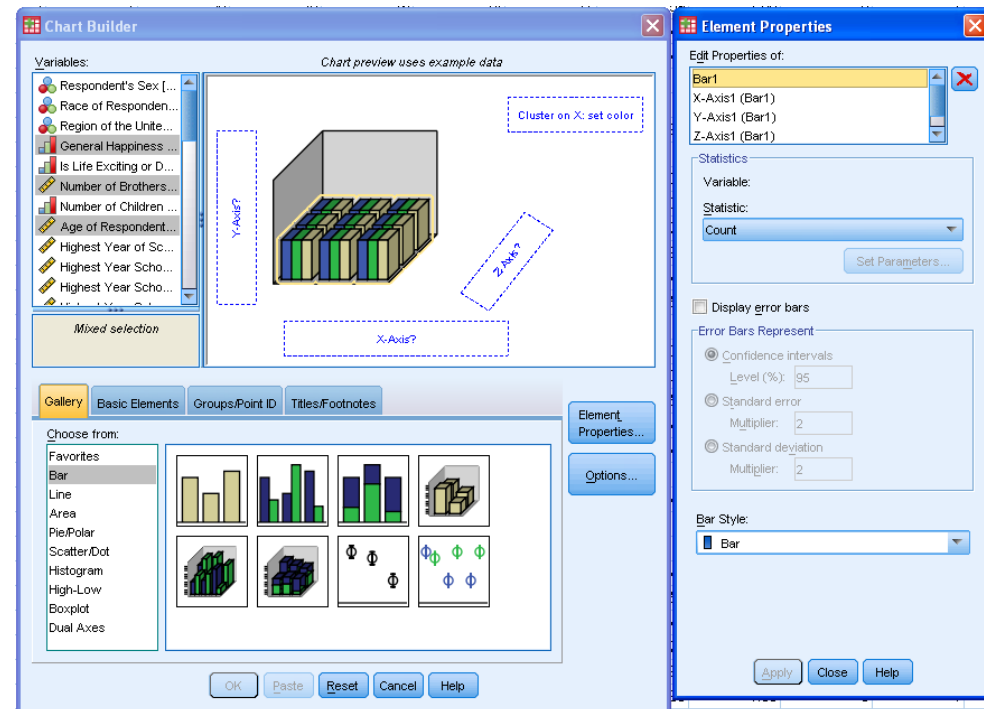


A Universe of Data



Predict: SPSS Statistics

- Advanced statistics and data management for analysts researching business problems
- Collection, preparation, analysis, interpretation, explanation and presentation of data
- Provides insight into a sample of data and tools for prediction and forecasting based on the data

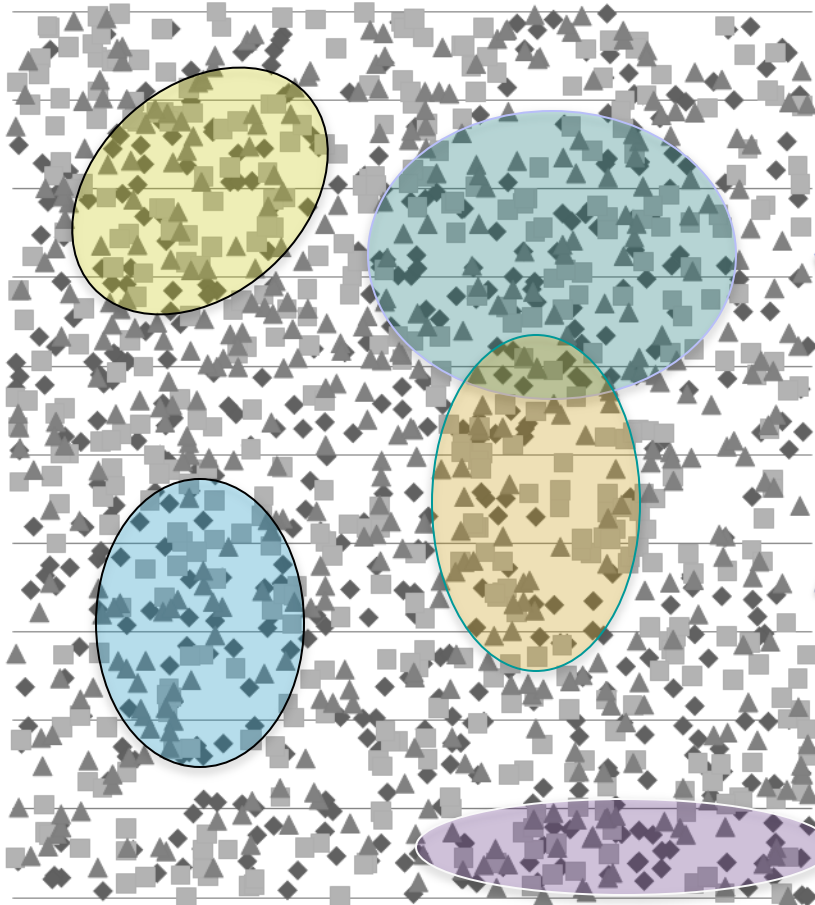


Drives confidence in your results and decisions

Taking Predictive Analytics to the Next Level

Data Mining: Predict the Behavior of the Next Case with a Model

A Universe of Data



A Predictive Model

•Known Attributes:

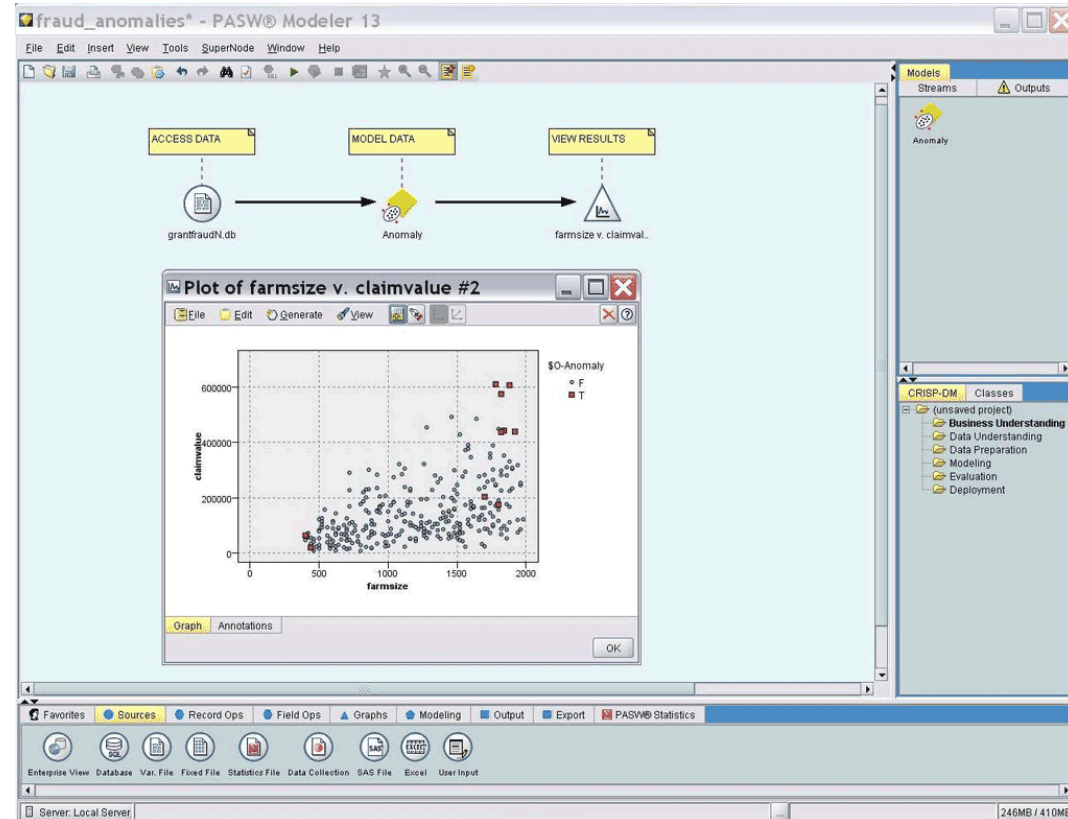
- Single, 2 adult children
- Lives in Chicago
- 4x years old
- Does not own a car
- Renter
- Works for international software company
- Amateur athlete - running, triathlons
- Drinks Diet Mt Dew

•Predicted Attributes and Behavior

- Frequent traveler
- Eats out a lot
- Prefers to purchase on-line
- Thinking about retirement
- Buys high bandwidth internet
- Likes technical gadgets and athletic gear
- Training for next big race
- Not a coffee drinker

Predict: SPSS Modeler

- Workbench with data preparation functions to build analytic streams or jobs and a run time environment for job execution
- Set of mining algorithms that provide insight and prediction
- Enables the discovery of key insights, patterns and trends in data that can be used to optimize business decisions

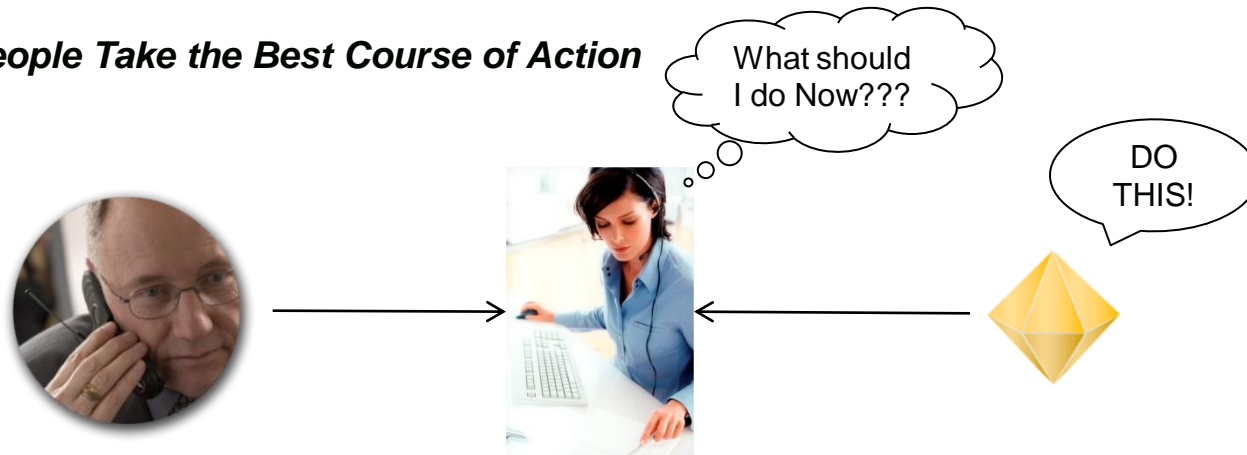


Brings repeatability to ongoing decision making

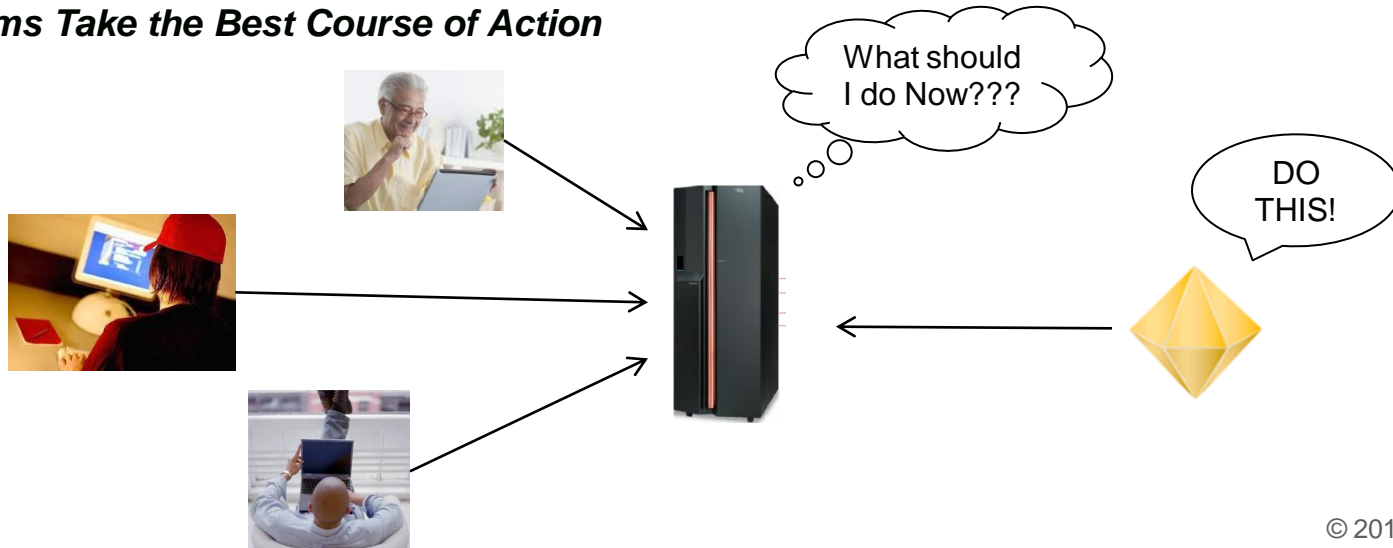
The end game of predictive analytics = Deployment

Applying predictions at the point of interaction

Help People Take the Best Course of Action

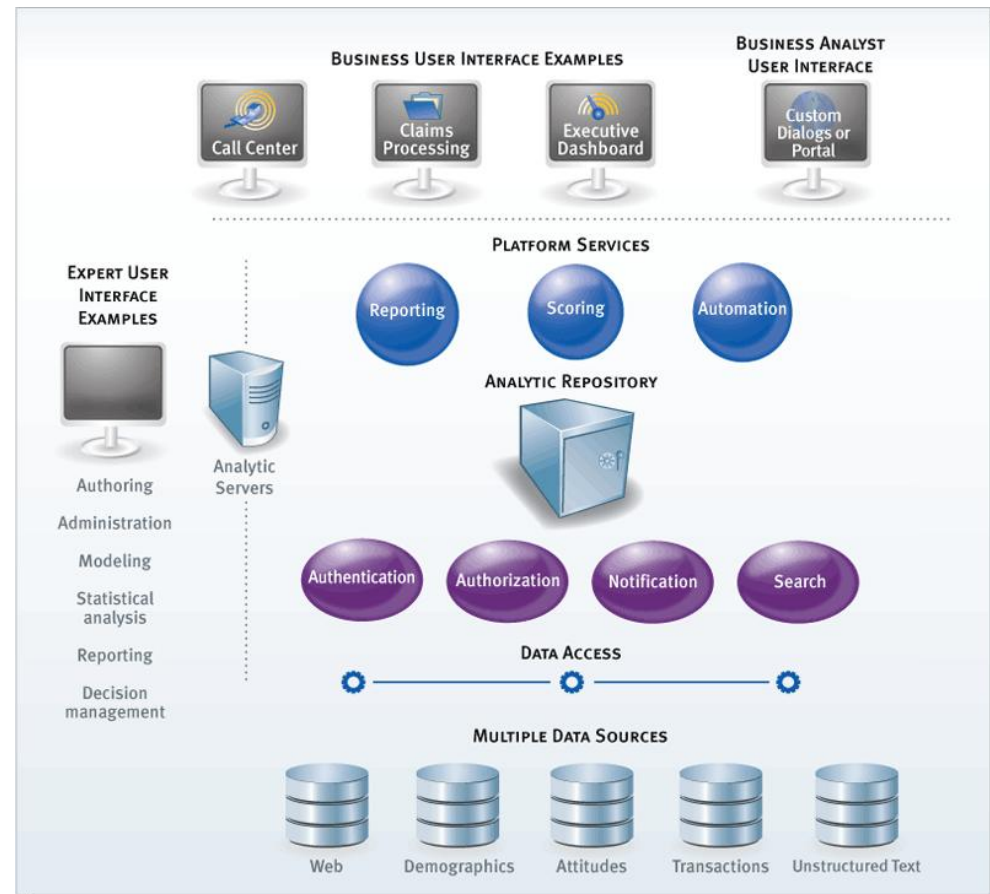


Help systems Take the Best Course of Action



Act: SPSS Collaboration and Deployment Services

- Flexible enterprise foundation for managing and deploying analytics throughout the organization
- Automates analytical processes
- Enables collaboration by securely sharing and reusing analytic assets
- Streamlines deployment of analytical information on a scheduled or real-time basis



Maximizes the impact of analytics in your operation

Act: SPSS Decision Management

Optimize Operational Decisions for Better Results

- Focused on the point of impact
- Automated decisions become part of the business DNA
- Putting the power of predictive analytics
 - In the hands of the business
 - In language they can understand
- Best practices decision making for industry problems
 - Completely configurable solution templates

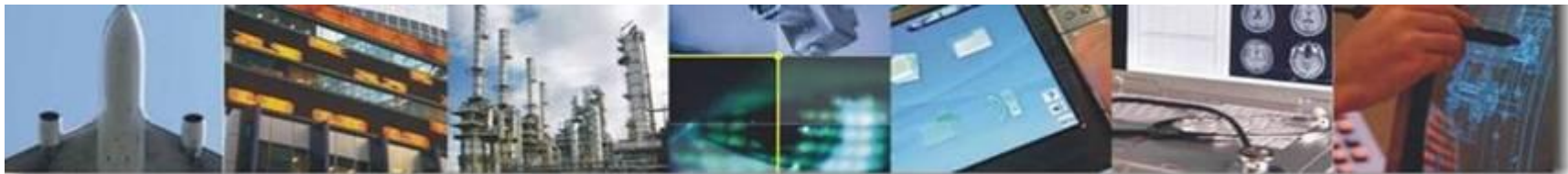
Combine Matrix	Model Actions		
	Fast Track	Follow S...	Potentia...
Fast Track	Fast Track	Follow S...	Follow S...
Follow S...	Follow S...	Follow S...	Potentia...
Potentia...	Follow S...	Potentia...	Potentia...

The next wave of predictive analytics.

Why Predictive Analytics on System z?

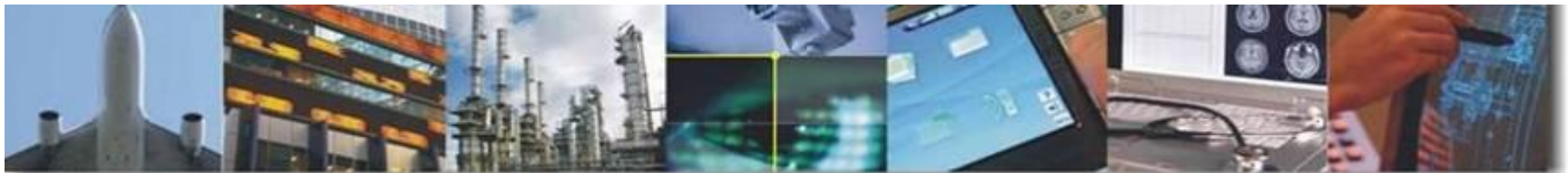
- **Analytics is becoming mission critical**
- **The volumes of data that need to be analyzed is huge**
 - Much of this data resides on System z
 - Overhead of moving this data is significant
- **Several apps that need to consume Predictive Analytics outcomes are on System z**

<p>High business growth</p>	<p>Continuous business operations</p>	<p>Flexibility and speed to respond</p>
<p>Reduce business risk</p>	<p>Green strategy Running out of energy and space</p>	<p>Secure Cloud Services</p>



Several applications that need to consume Predictive Analytics outcomes are on System z

Banking	Insurance	Retail	Healthcare	Public Sector
<i>Core Banking</i>	<i>Internet Rate Quotes</i>	<i>On-line Catalog</i>	<i>Patient Care Systems</i>	<i>Electronic IRS</i>
<i>Wholesale Banking – Payments</i>	<i>Policy Sales & Management (e.g. Life, Annuity, Auto)</i>	<i>Supply Chain Management</i>	<i>On–line Claims Submission & Payments</i>	<i>Web based Social Security</i>
<i>Customer Care & Insight</i>	<i>Claims Processing</i>	<i>Customer Analysis</i>		<i>Tax processing</i>



Predictive analytic solutions add value to those applications

Banking	Insurance	Retail	Healthcare	Public Sector
<i>Core Banking</i>	<i>Internet Rate Quotes</i>	<i>On-line Catalog</i>	<i>Patient Care Systems</i>	<i>Electronic IRS</i>
<i>Wholesale Banking – Payments</i>	<i>Policy Sales & Management (e.g. Life, Annuity, Auto)</i>	<i>Supply Chain Management</i>	<i>On-line Claims Submission & Payments</i>	<i>Web based Social Security</i>
<i>Customer Care & Insight</i>	<i>Claims Processing</i>	<i>Customer Analysis</i>		<i>Tax processing</i>

 <p>Banking</p> <ul style="list-style-type: none"> • Customer Intimacy & Offer Optimization • Integration into Enterprise Risk 	 <p>Insurance</p> <ul style="list-style-type: none"> • Cross-sell & Retention • Risk-based Claims Processing 	 <p>Retail</p> <ul style="list-style-type: none"> • Market Basket Analysis • Assortment Planning 	 <p>Healthcare</p> <ul style="list-style-type: none"> • Evidence based healthcare 	 <p>Public Sector</p> <ul style="list-style-type: none"> • Policing and Crime prevention • Human Capital Management
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Market dynamics are shifting

- **Business Analytics is now mission critical**
 - Need to support broader users
 - Users are more intense with increasing data access demands
 - Requirements for high scalability, availability & performance
- **Asked to do more with less (IT and Business)**
 - Better access to relevant information
 - Need economies of scale
 - Consolidation with reduced complexity
- **Corporate regulatory compliance**
 - Driving intense scrutiny of data security policies
- **Environmental concerns still top of mind**

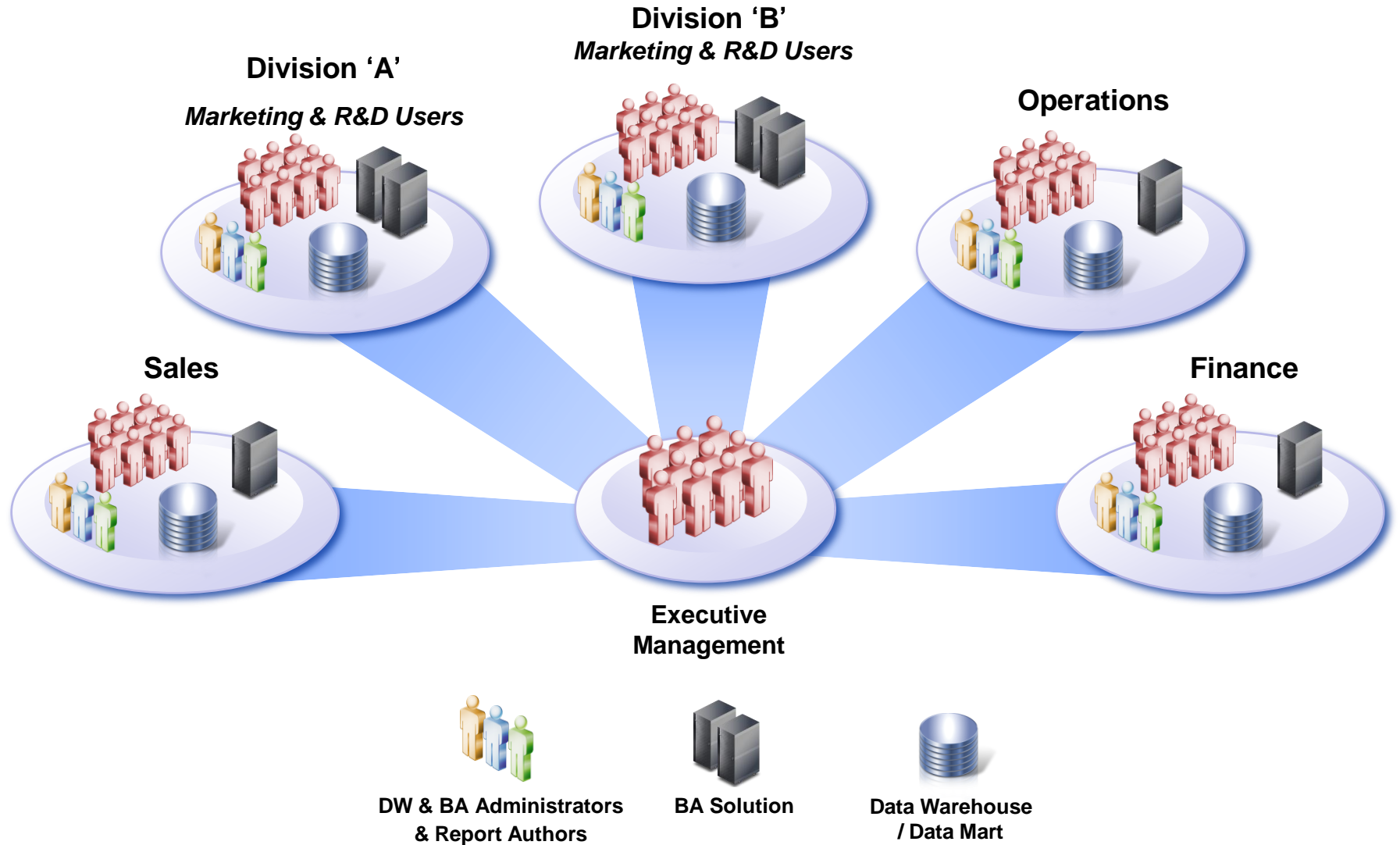


By 2014, externalizing BI will increasingly become an expected aspect of most companies' relationships with customers and partners.

Externally focused BI programs will frequently go beyond information dissemination by facilitating a collaborative decision-making process that breaks through the firewall to involve stakeholders from organizations in a broad ecosystem

Source : Gartner, Prepare for Customer-Facing Business Intelligence, Kurt Schlegel, October 2010

Today's traditional infrastructure – a siloed approach



Powerful Combination: Predictive Analytics Solutions and System z

IBM SPSS strengths

- **Most complete solution for predictive analytics**
 - Data Mining, Statistics, Text Analysis, Surveys
- **Ease of use**
- **Embrace open source, open standards**
- **Best in class solution for operationalizing Predictive Analytics**
- **Sophisticated automation**
- **Rich visualization and automation for business users**
- **Powerful framework integrate Predictive Analytics into line of business solutions**

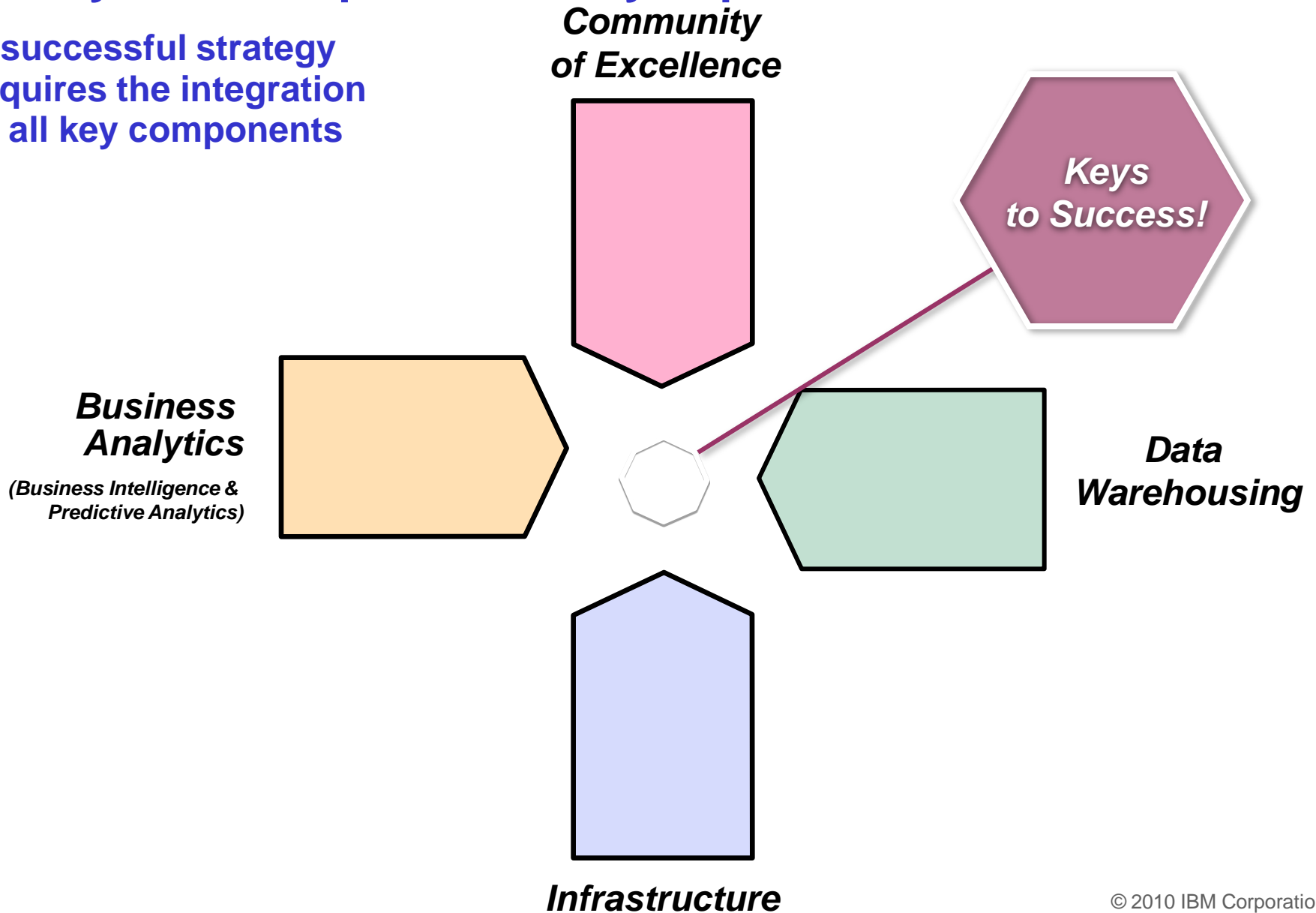


System z strengths

- **Enterprise strength scalability, reliability and performance**
- **60% of Enterprise information is on System z**
- **Best in class work load optimization and capacity utilization**
- **Unmatched security and resilience**

IBM System z: A premier analytic platform

A successful strategy requires the integration of all key components

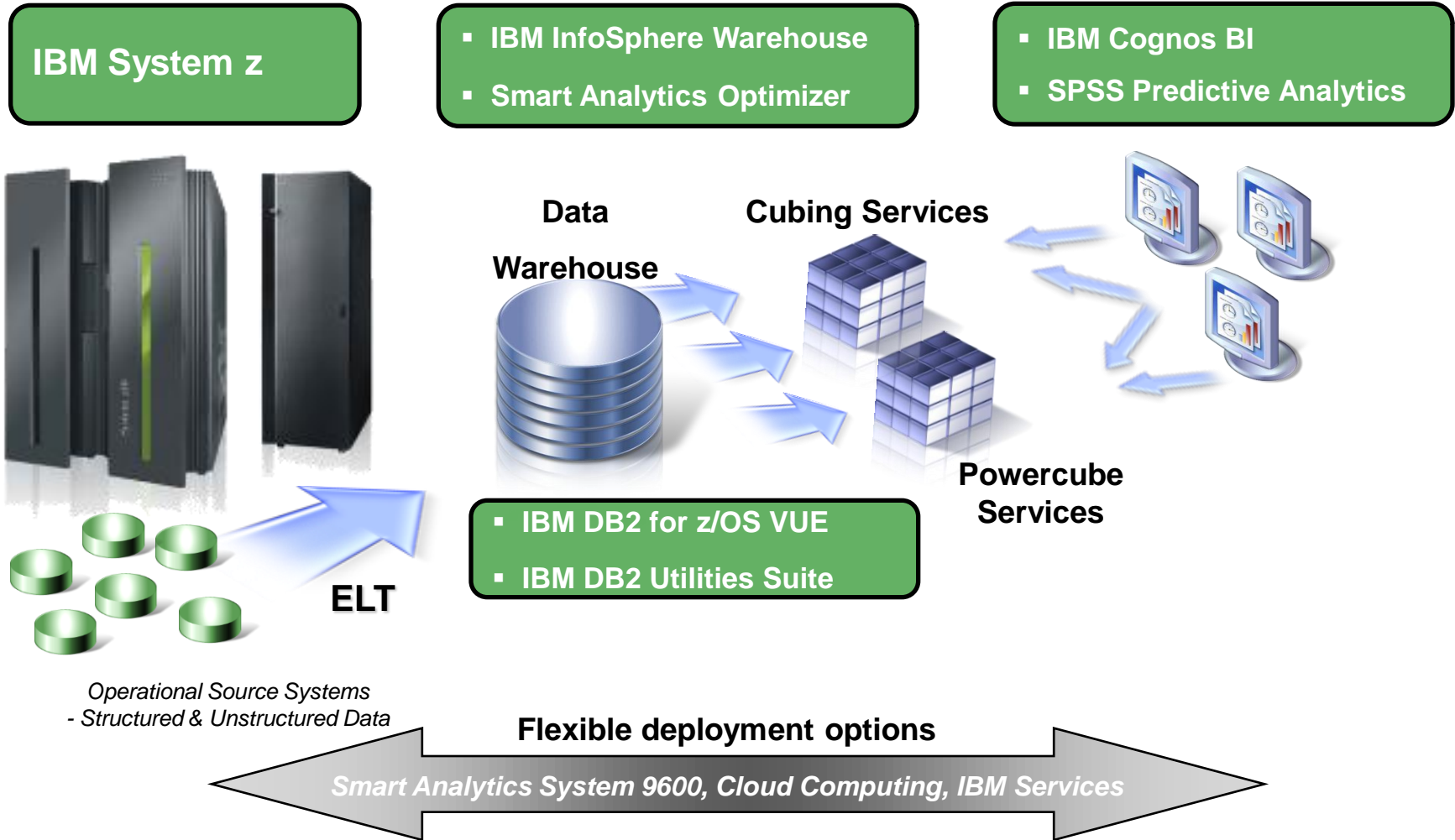


IBM System z: A premier analytic platform

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

<p>Delivers an end-to-end solution on a single platform</p>		<p>Business intelligence Predictive analytics Data warehousing</p>		
<p>Solves key barriers to success</p>		<p>Timely, accurate and secure information Reduced costs and complexity Superior availability, scalability and performance Rapid deployment and expansion</p>		
<p>Evolves with your business</p>		<table border="0"> <tr> <td style="vertical-align: top;"> <p>Start with what you need</p> <ul style="list-style-type: none"> – Functionality – Application – Department – Enterprise </td> <td style="vertical-align: top; padding-left: 20px;"> <p>Deploy the <i>way you need</i></p> <ul style="list-style-type: none"> – Turnkey optimized – Private cloud – Services and education </td> </tr> </table>	<p>Start with what you need</p> <ul style="list-style-type: none"> – Functionality – Application – Department – Enterprise 	<p>Deploy the <i>way you need</i></p> <ul style="list-style-type: none"> – Turnkey optimized – Private cloud – Services and education
<p>Start with what you need</p> <ul style="list-style-type: none"> – Functionality – Application – Department – Enterprise 	<p>Deploy the <i>way you need</i></p> <ul style="list-style-type: none"> – Turnkey optimized – Private cloud – Services and education 			

End-to-end Business Analytics and Data Warehousing solution on a single platform





Blue Insight

The IBM internal Private Analytics Cloud



“

*Our commitment to informed decision making led us to consider private cloud delivery of Cognos via System z, which is the enabling foundation that makes possible **+\$25M savings over 5 years.***

”

- IBM CIO Office

- Consolidated 115 multi-product, departmental BI deployments to 1 Cognos 8 BI on System z
- Support for our global workforce (2009: 72K, 2010: 130K, 2011: **300K**)
- Realizing value from +60 data sources across IBM
- Projected \$25M in savings (60% Consolidation, 35% Standardization, 5% Automation)
- **Integrated Predictive Analytics**



Miami-Dade County

Selects IBM System z platform to expand their IBM Cognos 8 BI enterprise infrastructure



...We are now able to expand the usage of our Business Intelligence reporting. By the end of 2010, we will have users from over 42 County departments with over 1500 users creating and consuming reports with stable environments on System z.



- Jaci Newmark, Project Lead, Enterprise Business Intelligence Architecture,
Miami-Dade County

- 11 days to go from distributed to System z deployment model
- Consolidated multiple BI deployments onto a single platform
- Consolidate multiple, disparate data sources onto a single platform
- Ensured 99.999% availability & complete disaster recovery plan



University of North Carolina Health Care

Deploys a hybrid data warehouse solution combining the strengths of InfoSphere and DB2 software on System z and System p platforms



“ *With the deployment of the Carolina Data Warehouse for Health, we have been able to increase the timeliness of the information available to our researchers, staff and physicians," "Because the system can also support general queries that relate to the diagnosis and treatment of a wide array of patients, we are now able to make more intelligent decisions leading to improved patient care."*

Donald Spencer, MD, MBA,

Associate Director of Medical Informatics, UNC Health Care





numius
PERFORMANCE
MANAGEMENT

Numius' Client Success Story

Uses DB2 for z/OS and Cognos 8 BI for Linux on System z



- Produced 400 reports in the same time as 1 report in the old environment
 - ✓ 400 reports ran in 45 minutes as opposed to 1 report in 46 minutes
 - ✓ Easily supported 130 concurrent users, as opposed to 8 on the source environment
- No reports timed out, not one user was rejected. Even when the system slowed down, it remained stable
- The client would not need to redesign his application to achieve his objective of reaching out to a large community
- This solution helps improve waste control in Belgium by informing producers, consumers and authorities faster and more thoroughly

Jo Coutuer, Senior Business Intelligence Architect, Numius



IBM Cognos BI Total Cost of Ownership Study

Explores the TCO of choosing an x86 based infrastructure vs. System z for a Cognos 8 BI deployment using proven IBM TCO measurement methodology

- Average savings over 5 years of with a System z deployment: **36%**
- Reduction in high availability costs with System z: **50%**
- System administration savings alone pay for System z investment.





Industry analysts agree

*“In short, I believe that **mainframes are the most modern platforms available** in the commercial marketplace today.”*

Source: Clabby Analytics, Migrate From Mainframe? To What?, Joe Clabby, June 24, 2010

*“Companies that buy into outdated hype about its complexity fail to realize the potential **performance gains associated with mainframe use.**”*

Source: Aberdeen Group, The Fable of Mainframe Complexity, Max Gladstone, May 5, 2010

*“Clients wishing to **evolve** their legacy application portfolios into more-modern technologies and architectures can do so on the **IBM mainframe.**”*

Source: Gartner, Mainframe Modernization: When the Platform Is the Solution, Dale Vecchio, 8 January 2010

*“The mainframe has long been recognized as a platform with an **enviable reputation for reliability, security, and efficiency**, Ovum considers that IBM by exploiting these characteristics has produced the next generation of data centre and cloud centre management platforms.”*

Source: Roy Illsley, Principal Analyst, Ovum

IBM Product Portfolio Business Analytics and Data Warehousing on System z

Business Intelligence

- Cognos Business Intelligence for Linux on System z
- *...and very shortly z/OS !*

Predictive Analytics

- SPSS Statistics
- SPSS Modeler
- SPSS Collaboration and Deployment Services
- SPSS Decision Management

Data Warehousing

- DB2 for z/OS VUE (Value Unit Edition)
- InfoSphere Warehouse
- Smart Analytics Optimizer

**Solution Edition for Data Warehousing (pricing option)*

Data integration and movement

- InfoSphere Information Server
- InfoSphere Change Data Capture
- InfoSphere Replication
- InfoSphere Federation
- Global Name Recognition

Master data management

- InfoSphere Master Data Management Server

InfoSphere industry models

- Banking, Insurance, Retail, Telco, Health Payor, Health Provider, Financial Markets


Flexible deployment options

- IBM Smart Analytics System 9600
- IBM Smart Analytics Cloud
- IBM Services




Typical Utilization for Servers


Windows: 5-10% Unix: 10-20% **System z: 85-100%**



System z can help **reduce** your floor space up to **75%-85%** in the data center



System z can lower your total cost of ownership, requiring as little as **30%** of the power of a distributed server farm running equivalent workloads



The cost of storage is typically **three times more** in distributed environments



Thank you

For additional information please visit
ibm.com/software/data/businessintelligence/systemz