Keith Doan - Enterprise Architect

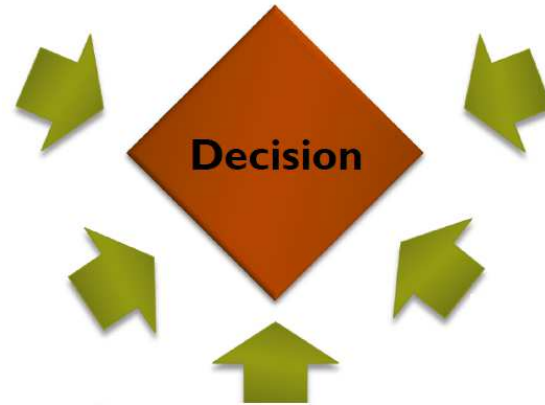# Optimising decision making at the point of contact

Session objectives

In today's session we will cover:

1. Optimising Decisions at the Point of Contact is Critical to Success
2. Elements of IBM Analytical Decision Management
3. Path to Decision Management
4. Case Studies
5. Summary

A changing world

Decision

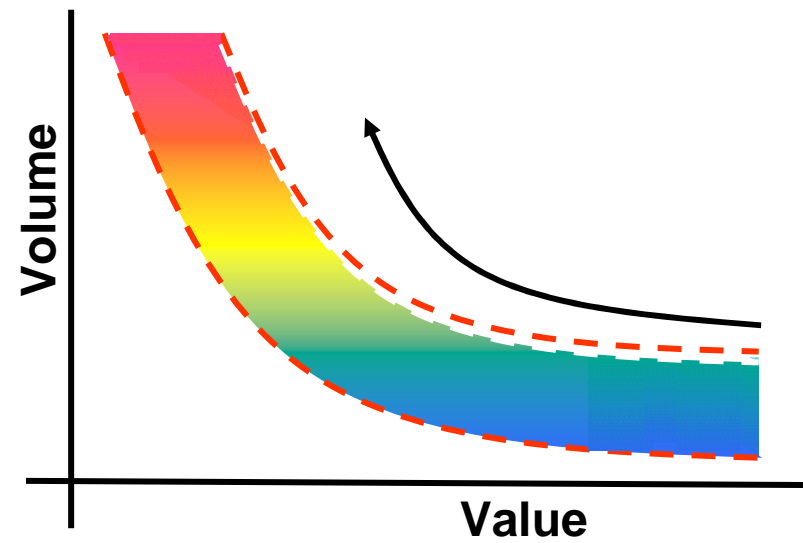**"We have seen more change in the last 10 years than in the previous 90."**
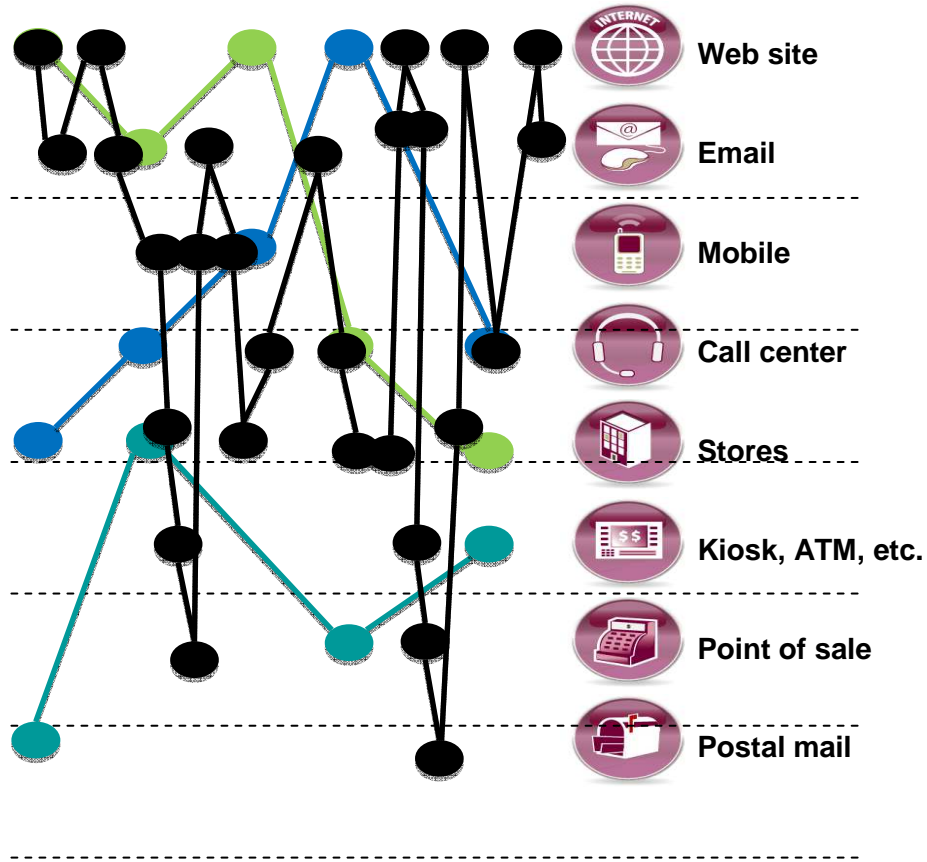
Ad J. Scheepbouwer, CEO, KPN Telecom
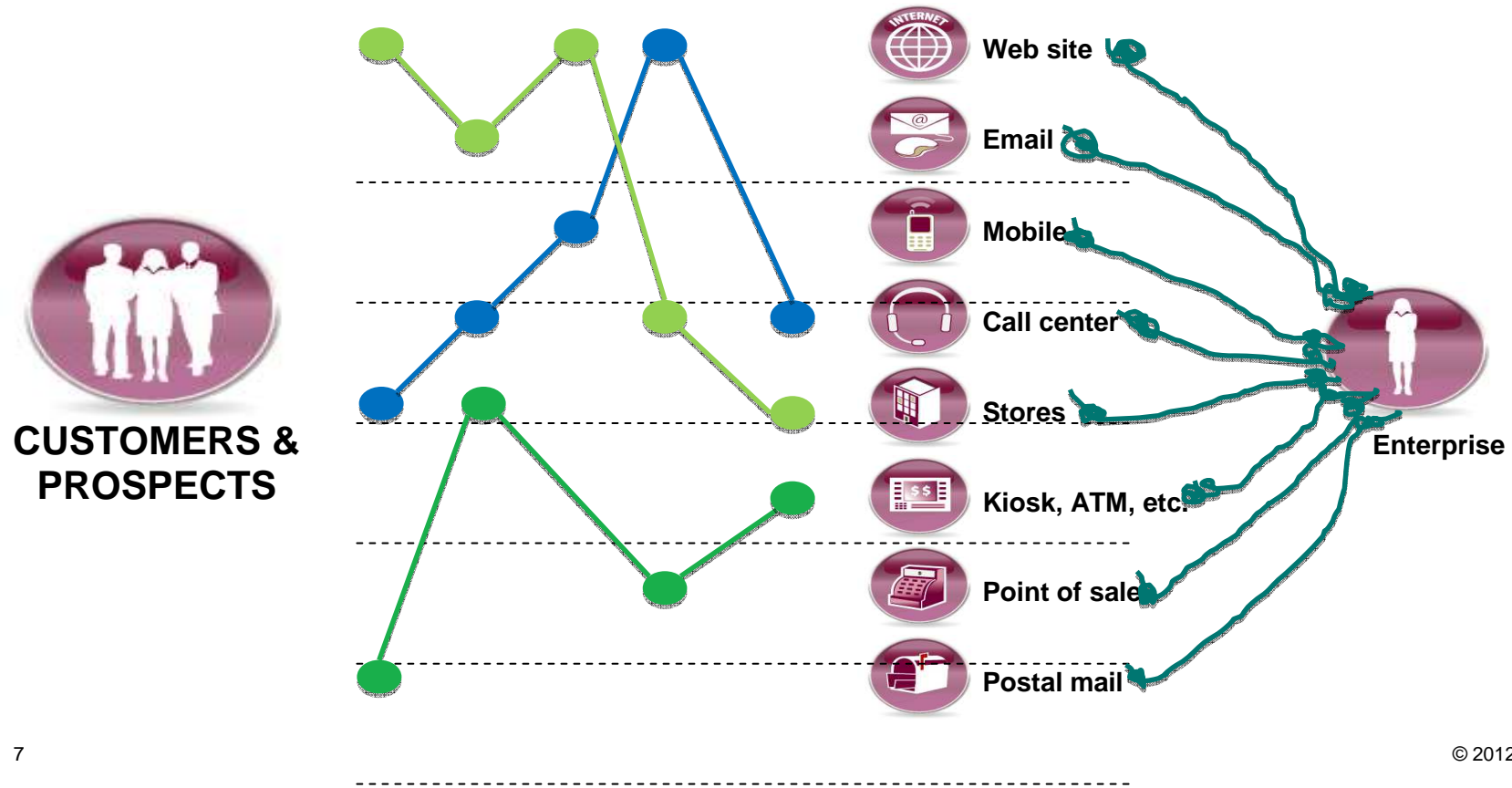
Instant operational decisions everywhere

The value of operational decisions

IBM Performance 2012
Smarter Analytics. Smarter Outcomes.

Customer interaction

Web site

Email

Mobile

Call center

Stores

Kiosk, ATM, etc.

Point of sale

Postal mail

**CUSTOMERS &
PROSPECTS**

IBM Performance 2012
Smarter Analytics. Smarter Outcomes.

What Customers Expect

CUSTOMERS &
PROSPECTS

Web site

Email

Mobile

Call center

Stores

Kiosk, ATM, etc.

Point of sale

Postal mail

Enterprise

Market of One

An intelligent conversation

Organisations need to:

LISTEN AND UNDERSTAND

DECIDE WHAT TO SAY NEXT

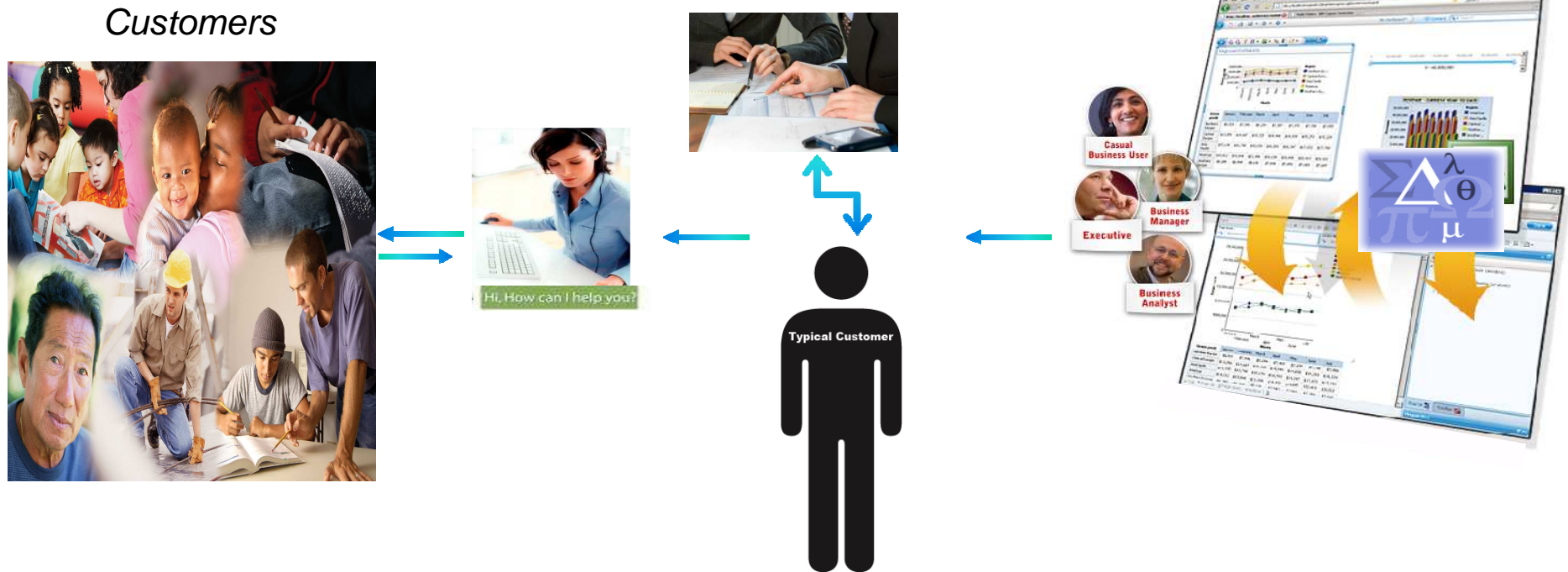…and repeat this over and over again across thousands or millions of customer relationships.
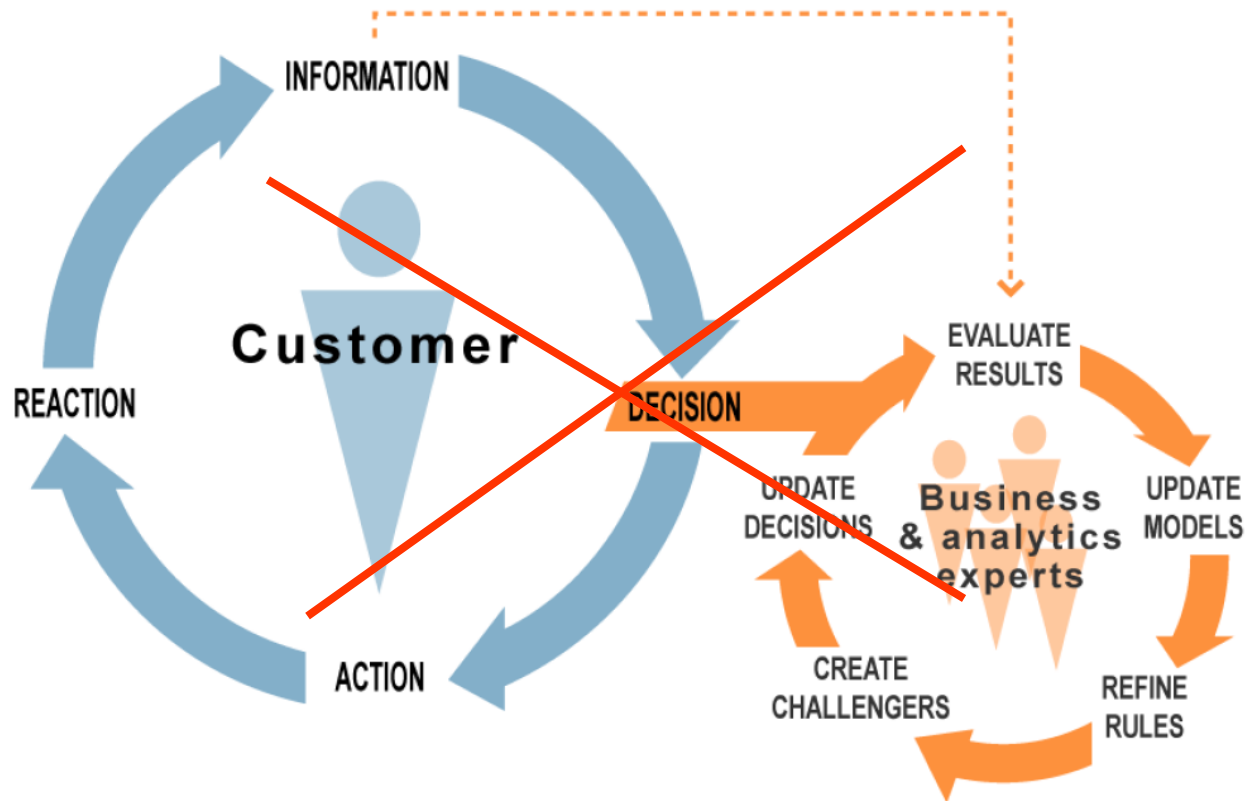
(This is then) SPEAK
(Only then) SPEAK

Challenge: Insights are not part of operational processes

Decisions based on a mix of corporate
policy, experience and gut feel

Customers

No full-cycle feedback

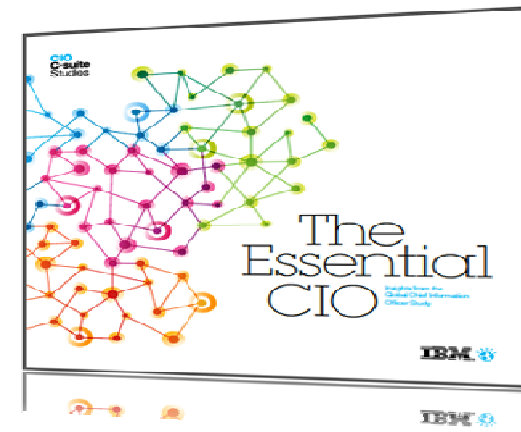# Don't speak the same language

Transformation and Growth Require Better Decisions

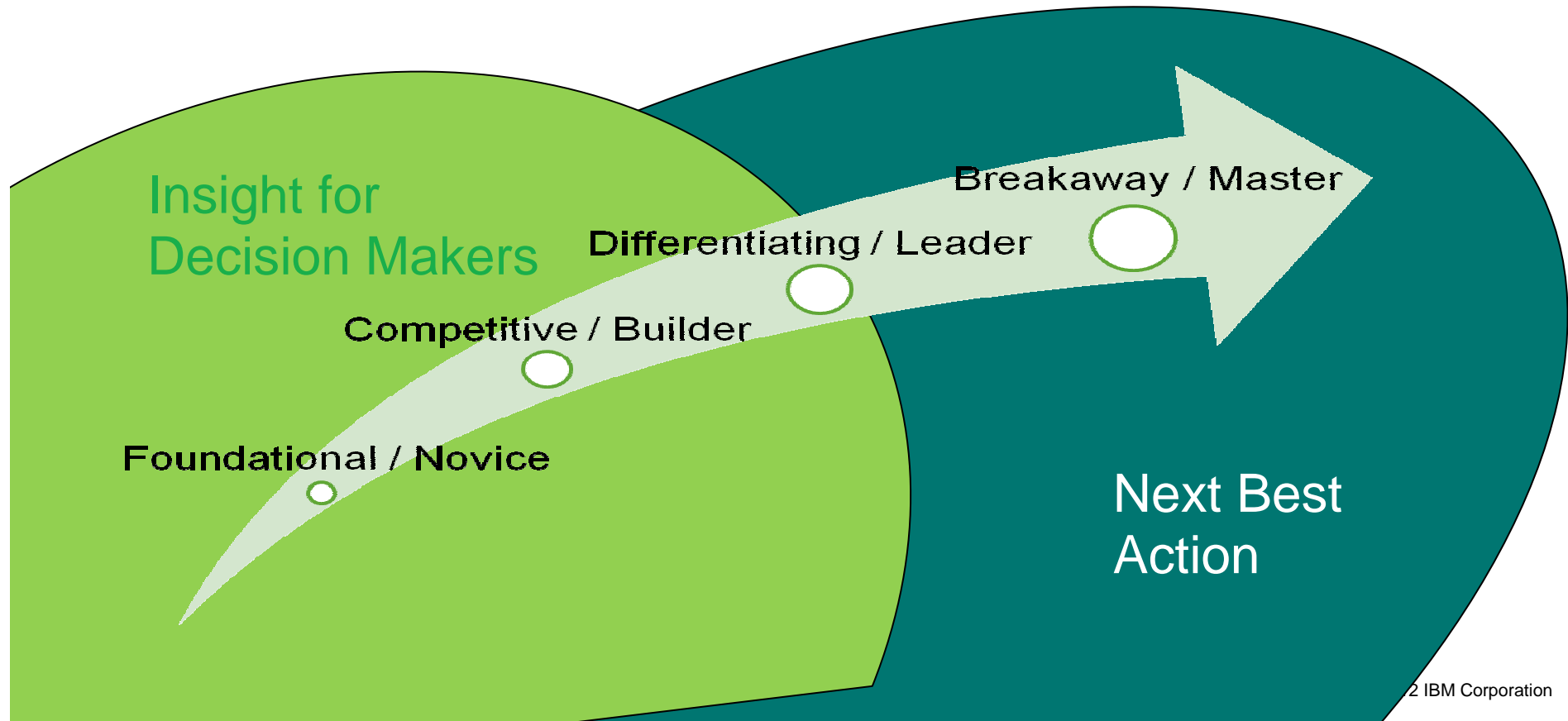*CIOs recognise that effective decision automation is key to success*

75% of CIOs with mandates to transform the business are looking to "drive *better real time decisions*."

Sources: IBM Global CIO Study 2011

IBM Analytical Decision Management - From Insight to Next Best Action

Insight for
Decision Makers

Breakaway / Master

Differentiating / Leader

Competitive / Builder

Foundational / Novice

Next Best
Action

IBM Analytical Decision Management in Action: Smart Call Centre

What is the next best action for this customer?

Call Centre Agent

Find customer: 800-000-0021 🔍   Logout

IBM.

Notifications   🔼 ⚙ ❎

Alerts   **Actions**

Eligible for Offers

Likely to Churn

Customer Info   🔼 ⚙ ❎

Name	Gender	Age	Id
Lyle Leader	Male	53	21
Education	Marital Status	Location	
Assoc Degree	Married	Map	

Customer Details   🔽 ⚙ ❎

Smart Call Center

Find customer: 800-000-0021 🔍   Logout   IBM.

Notifications

Alerts	Actions

Eligible for Offers   Likely to Churn

Customer Info

Name	Gender	Age	Id
Lyle Leader	Male	53	21

Education	Marital Status	Location
Assoc Degree	Married	Map

Customer Details

Profile	Usage	Billing	Case Detail

Update Case

Case Status by Month

Month Opened	Case ID	Case Description	Case Status
Oct	26	GPRS Issue	Close
	15	Network Problem	Close
Sep	25	Handset Problem: microphone issue	Close

Smart Call Center

Find customer: 800-000-0021 🔍 Logout

IBM.

Notifications

| Alerts | **Actions** |

Premium phone:64 MB media edition
Predicted Profit: $247.09

Submit Response

Customer Info

Name	Gender	Age	Id
Lyle Leader	Male	53	21
Education	Marital Status	Location	
Assoc Degree	Married	Map	

Customer Details

| **Profile** | Usage | Billing | Case Detail |

Churn Propensity

Churn Score

Customer Satisfaction

Satisfaction Score

Customer Lifetime Value (CLTV)

CLTV Ratio

Social Network Influence

Influencer Authority

Plan Details

Segment

PLATINUM

Contract

Freedom 60

Current Offer

Smart Call Center

Find customer: 800-000-0021 🔍   Logout

IBM.

Notifications

| Alerts | **Actions** |

Premium phone:64 MB media edition
Offer Accepted

Submit Response

Predicted Profit: $221.70

Customer Info

Name	Gender	Age	Id
Lyle Leader	Male	53	21
Education	Marital Status	Location	
Assoc Degree	Married	Map	

Customer Details

| **Profile** | Usage | Billing | Case Detail |

Churn Propensity

Churn Score

Customer Satisfaction

Satisfaction Score

Customer Lifetime Value (CLTV)

CLTV Ratio

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Influencer   Authority

Plan Details

Segment

PLATINUM

Contract

Freedom 60

Current Offer

Premium phone

Smart Call Center

Find customer: 800-000-0021 🔍   Logout

IBM.

Notifications ▲ ⚙ ✕

| Alerts | Actions |

Eligible for Offers   Likely to Churn

Customer Info ▲ ⚙ ✕

Name	Gender	Age	Id
Lyle Leader	Male	53	21
Education	Marital Status	Location	
Assoc Degree	Married	Map	

Customer Details ▲ ⚙ ✕

| Profile | Usage | Billing | Case Detail |

Top 5 in Social Network for Lyle Leader

Lyle Leader, 800
-000-0021

Arnold Clark,
800-000-0026

Frannie Friend,
800-000-0022

Network Nellie,
800-000-0025

Social Sam, 800
-000-0023

Data Dan, 800-
000-0024

Session objectives

In today's session we will cover:

1. Optimising decision at the point of contact as a competitive advantage

2. Elements of IBM Analytical Decision Management

3. Path to Decision Management

4. Case Studies

5. Summary

Elements of IBM Analytical Decision Management

Optimised Decisions

Scoring

Monitoring

Business Rules ➕ **Predictive Analytics** ➕ **Simulation/ Optimisation**

Access to All Data
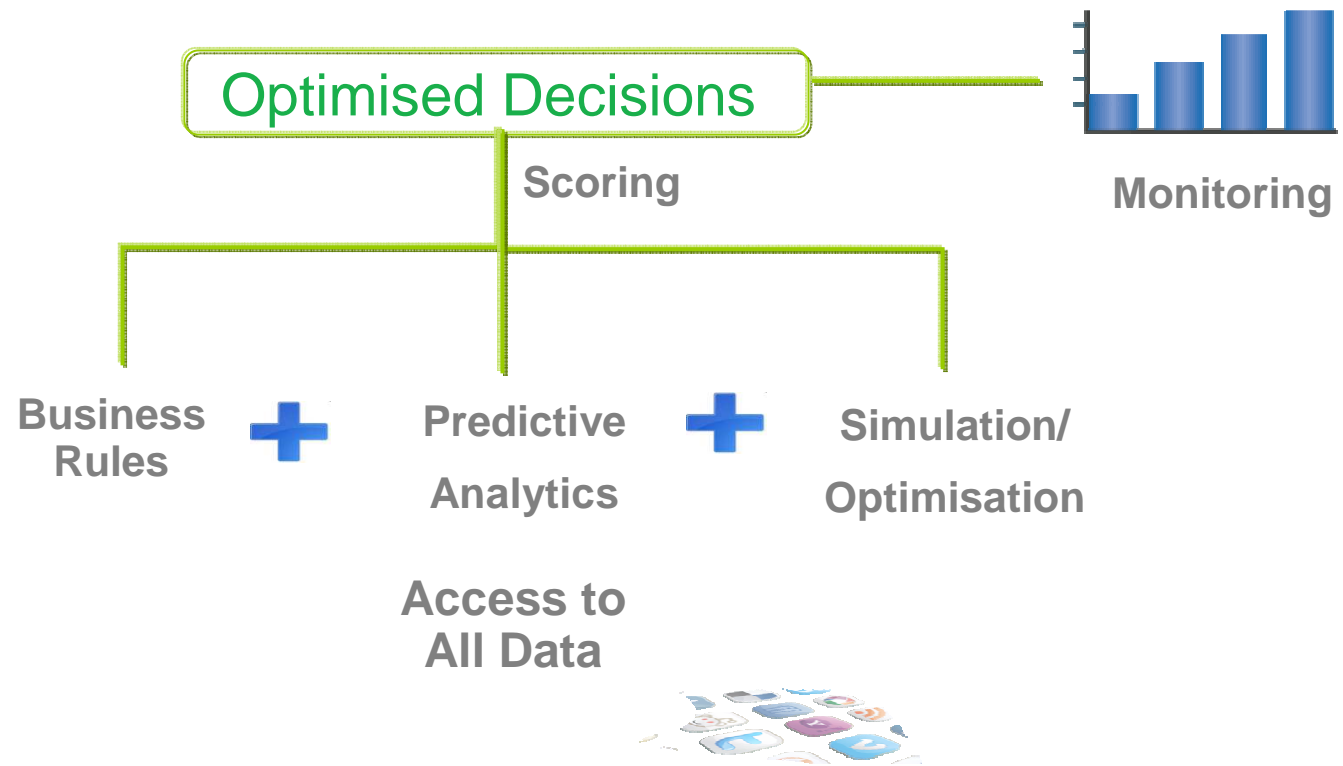
Key Feature: Combine Predictive Analytics with Business Rules

Predictive Models

What we are **uncertain** of

What we **do not know**

What is **likely to happen**

- Risk
- Segmentation
- Propensity
- Associations

Business Rules

What we are **certain** of

What we **know**

What to **do**

- *Policy*
- *Regulation*
- *Best Practices*
- *Know-how*

Case Study: Consumer lending

Local Bankers

Centralised
Credit Scoring

**Analytical Decision
Management**
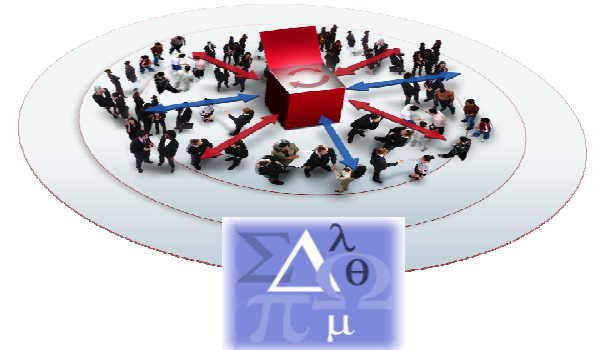
Key Feature: Optimisation

Eligibility Assessment for Each Customer

Possible campaigns	Business rules	Response Probability	Revenue	Cost	(Prob * Rev) - Cost
A	✕				
B	✓	50%	100	20	30
C	✓	25%	200	10	40

Optimisation for Overall Constraints

Possible campaigns	
A	42 ✕
B	✕
C	✕

Constraint:
Budget Exceeded

27

IBM Analytical Decision Management – Technology Components

Cognos software

**Attitudinal Data
Descriptive Data
Behavioral Data
Interaction
Data**

WebSphere software
ILOG JRULE BRMS

**Business
Rules**

Predictive
Modeling

Modeler

•Define Decision
Options
•Combine Models
and Rules
• What If Simulation

Analytical
Decision Mgt

SPSS

Collaboration and Deployment Services

•Asset Management
•Scoring

**Decisions &
Recommendations**

IBM Research
Etc…

Time to look forwards? IBM SPSS Predictive Analytics

Predictive Workbench – IBM SPSS Modeler

Easy to learn: no programming approach to data mining
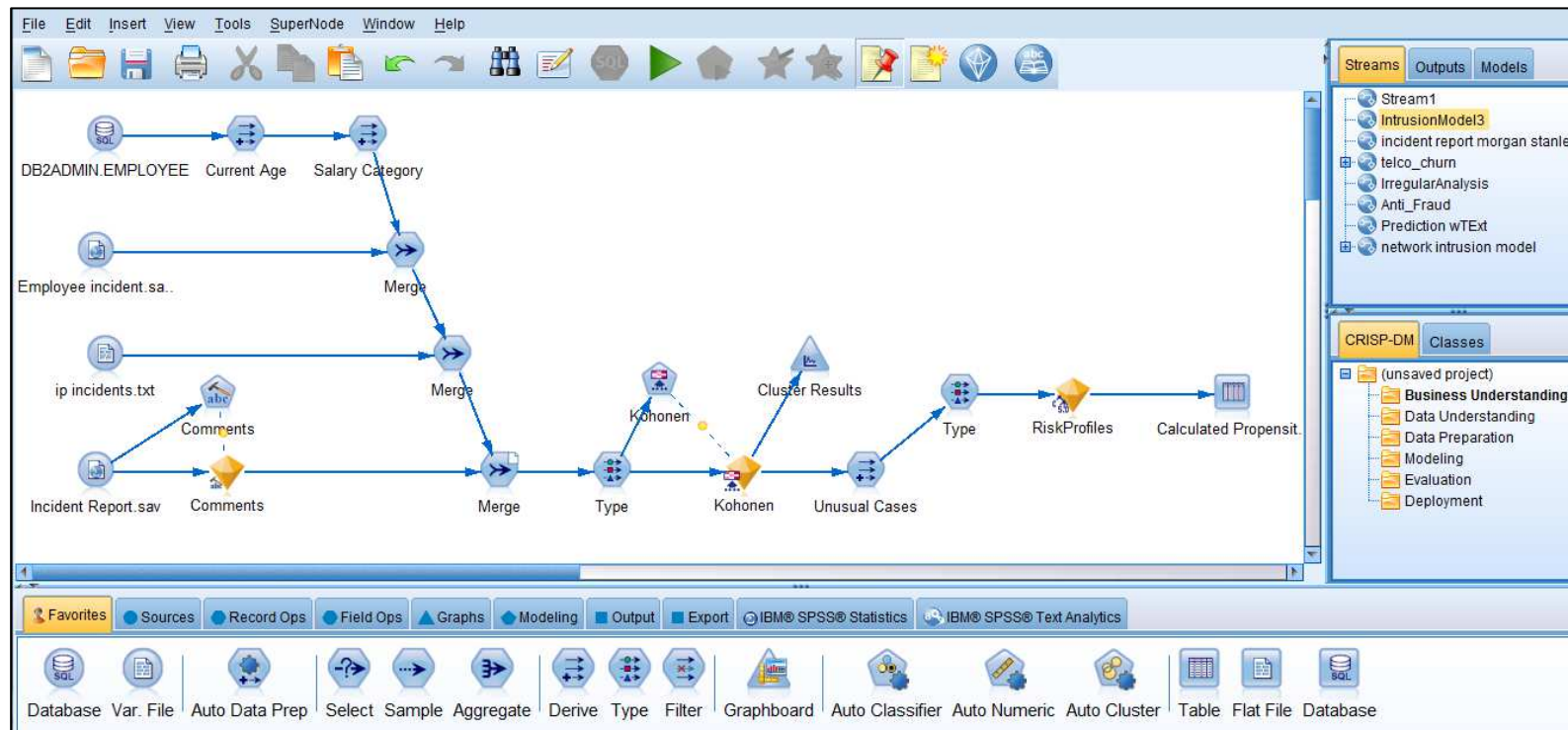
Predictive Workbench – IBM SPSS Modeler

Perform data mining with a rich array of techniques on structured data, text, web, survey data to meet every modelling application

Warning Area
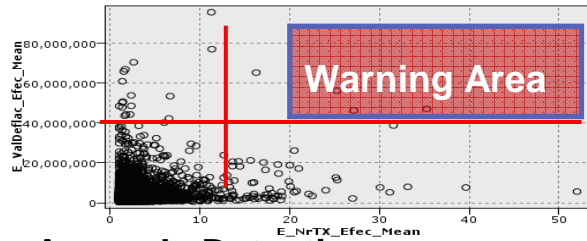
Anomaly Detection

Time Series
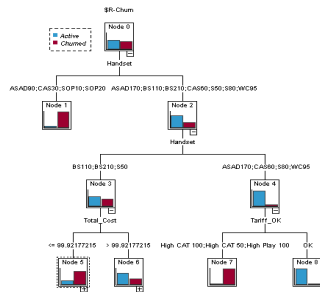
Classification
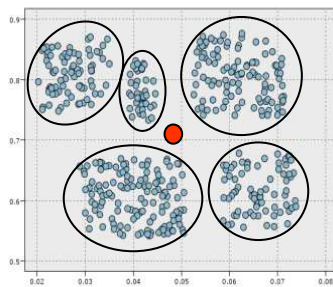
Segmentation
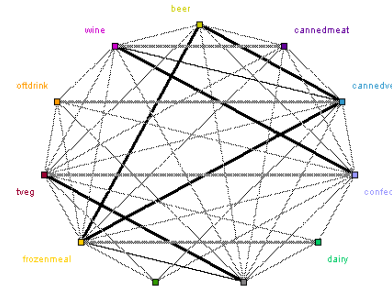
Association
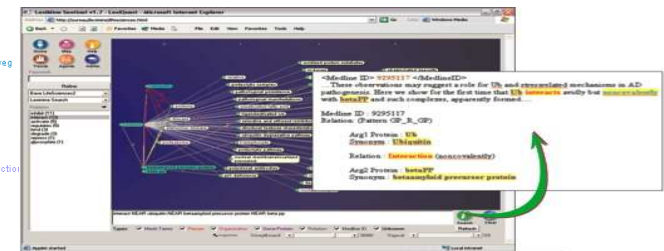
Text Mining

Entity Analytics Spots Fraud, Reduces Customer Duplicates, and Improves ROI by finding Non-obvious Relationships *New*
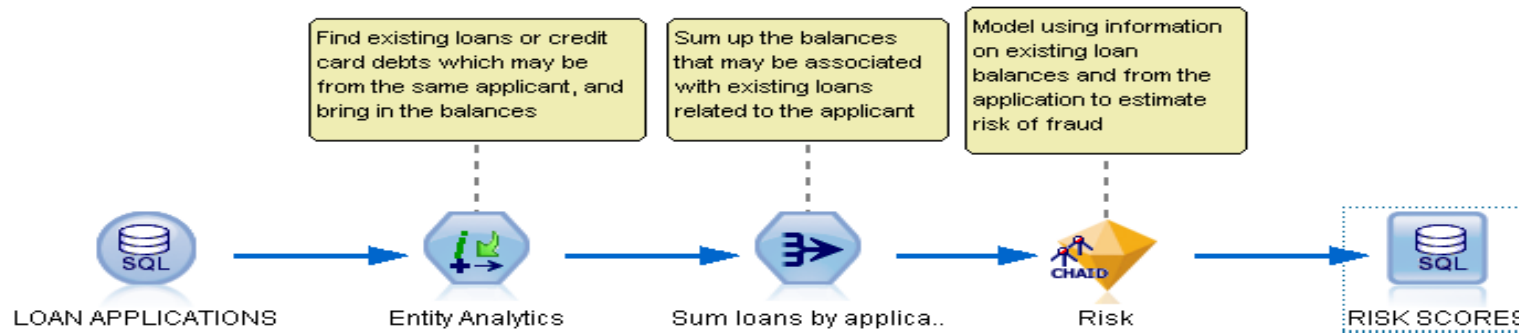
Social Network Analysis Reduces Customer Churn by Understanding Social Relationships

High Performing

Open & Efficient Architecture:

- Multithreading, clustering and use of embedded algorithms
- Perform **in-database analytics** with

leading databases.
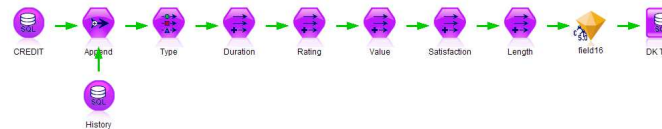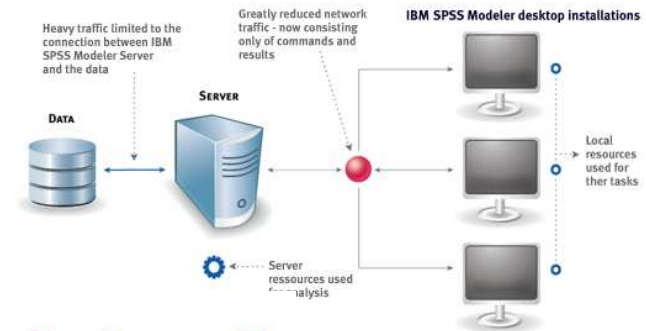
Big Data In Motion: provides in-memory analytics with high volume, low latency data with response times in the microseconds

Predictive Platform – IBM SPSS Collaboration & Deployment Services
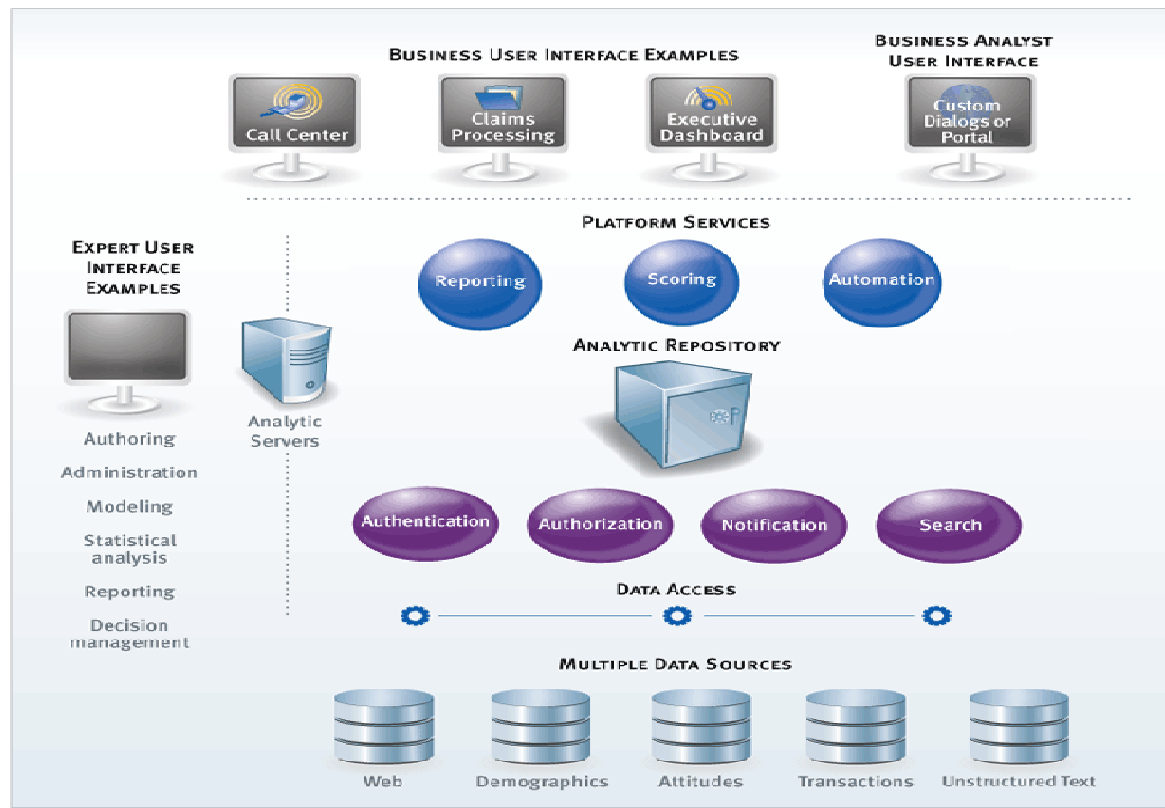
Session objectives
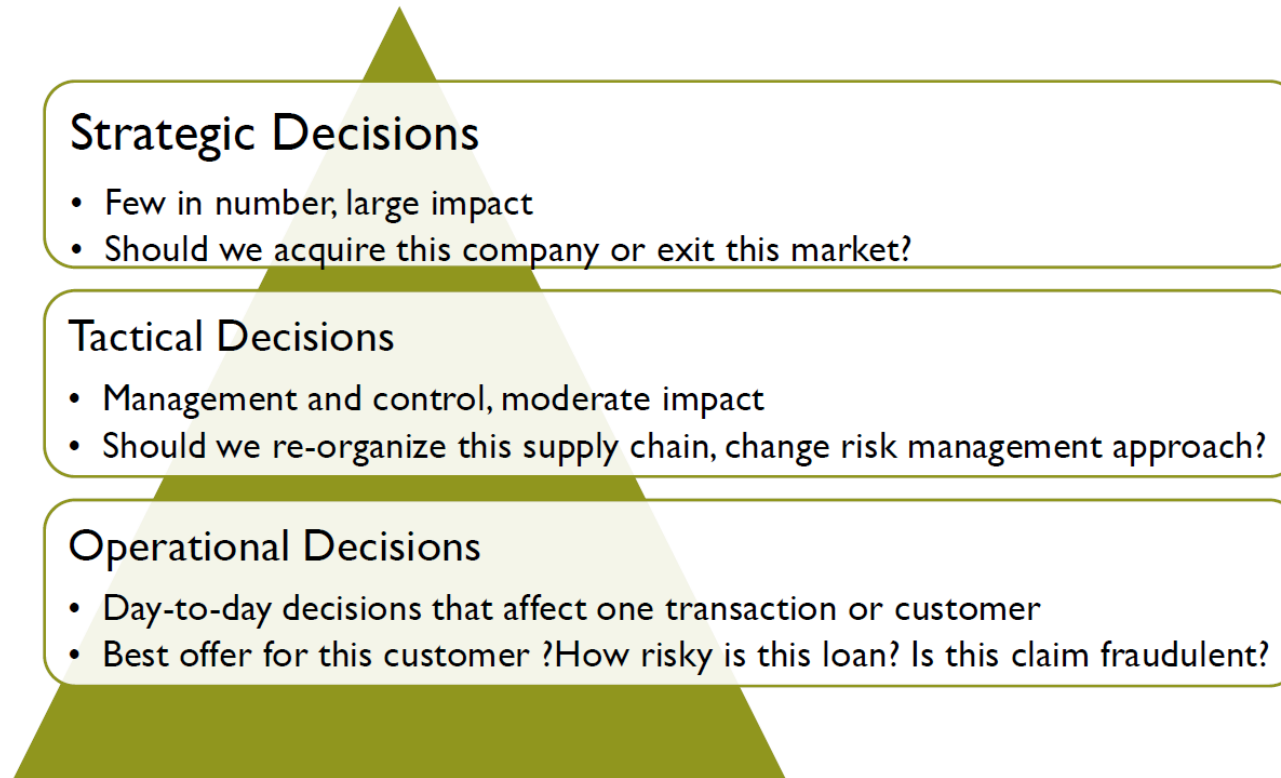
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Path to Decision Management with IBM Analytical Decision Management

Discovery: Begin with the Decision in mind

Strategic Decisions
- Few in number, large impact
- Should we acquire this company or exit this market?

Tactical Decisions
- Management and control, moderate impact
- Should we re-organize this supply chain, change risk management approach?

Operational Decisions
- Day-to-day decisions that affect one transaction or customer
- Best offer for this customer ?How risky is this loan? Is this claim fraudulent?

Find the decisions that matter to your business and model them

Source: James Taylor: Decision Management Solutions

Suitable Decisions

Repeatable

Non trivial

Measurable business impact

Candidate for automation

Decision Management Systems
A Practical Guide to Using Business Rules and Predictive Analytics
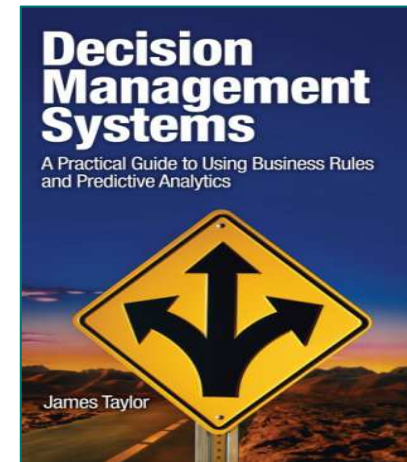
James Taylor

Source: James Taylor: Decision Management Solutions

Build: Start with a configurable solution accelerator – Template or Blueprint

IBM® SPSS® Decision Management for Claims

Intelligent risk management in real time

Assess the overall risk level for incoming claims and recommend the specific action to take.

New   Go

IBM® SPSS® Decision Management for Fraud Detection

Informed transactional decisions: Fraud Mitigation

Assess potential for fraud using rules and predictive models and apply predictive intelligence to real-time transactions to recommend actions that minimize impact of fraud to your organization.

New   Go

IBM® SPSS® Decision Management for Risk Assessment

Informed transactional decisions: Risk Assessment

Assess potential risk level for credit risk using rules and predictive models to recommend actions and inform risk-based decisions.

New   Go

IBM® SPSS® Decision Management for Customer Interactions

Recommendations where and when you need them

Decide what to offer customers when they contact your organization, and deliver recommendations to the call center or other interaction points.

New   Go

A Sample of IBM Analytical Decision Management Blueprints

✓**Customer Interaction** Management Application
✓**Claims Management** Application
✓**Retail Bank Fraud and Risk Management** Blueprint
✓**Retail Promotions** Blueprint
✓**Profitability and Customer Retention** for Telco
✓**Retail Promotions** with Coremetrics
✓**Chronic Disease Management** (Stroke Recurrence)
✓**Campaign Management**
✓**Insurance Retention**
✓**Predictive Debt Collection**
✓**Predictive Maintenance**
✓**Next Best Action** for Telco (for Signature Solution)
✓**Health Care Fraud** (for Signature Solution)

Build: Step by step analytical decision making
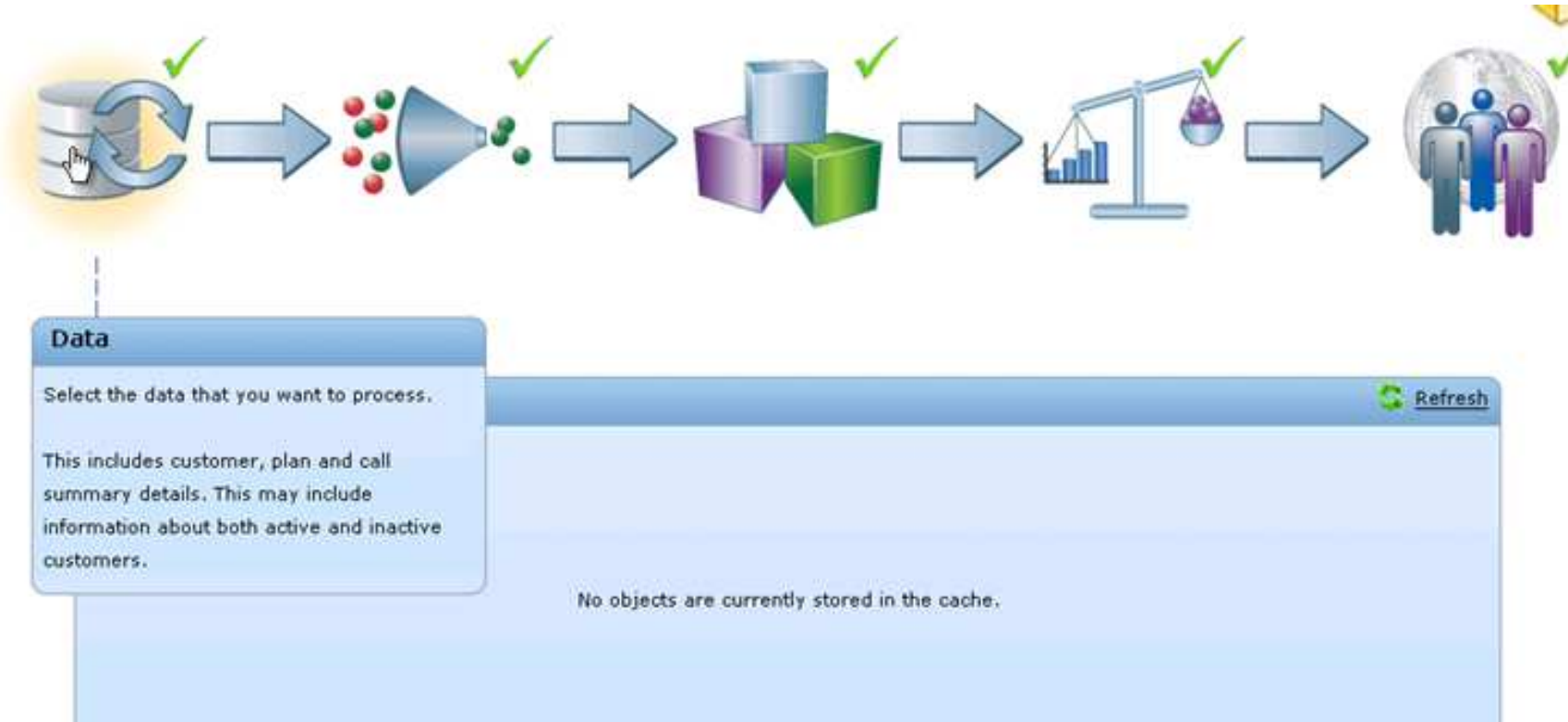
Define Global Selections to select the correct customer segments

Define targeted actions

Define rules/predictive models to determine which actions are valid for any single customer

Simulation to see how campaigns and offers are allocated based on the sample data

Pick the optimised action from all the valid actions

Run What-If simulations to analyse the impact to the bottom line

Deploy for real-time scoring

Report

Monitor performance
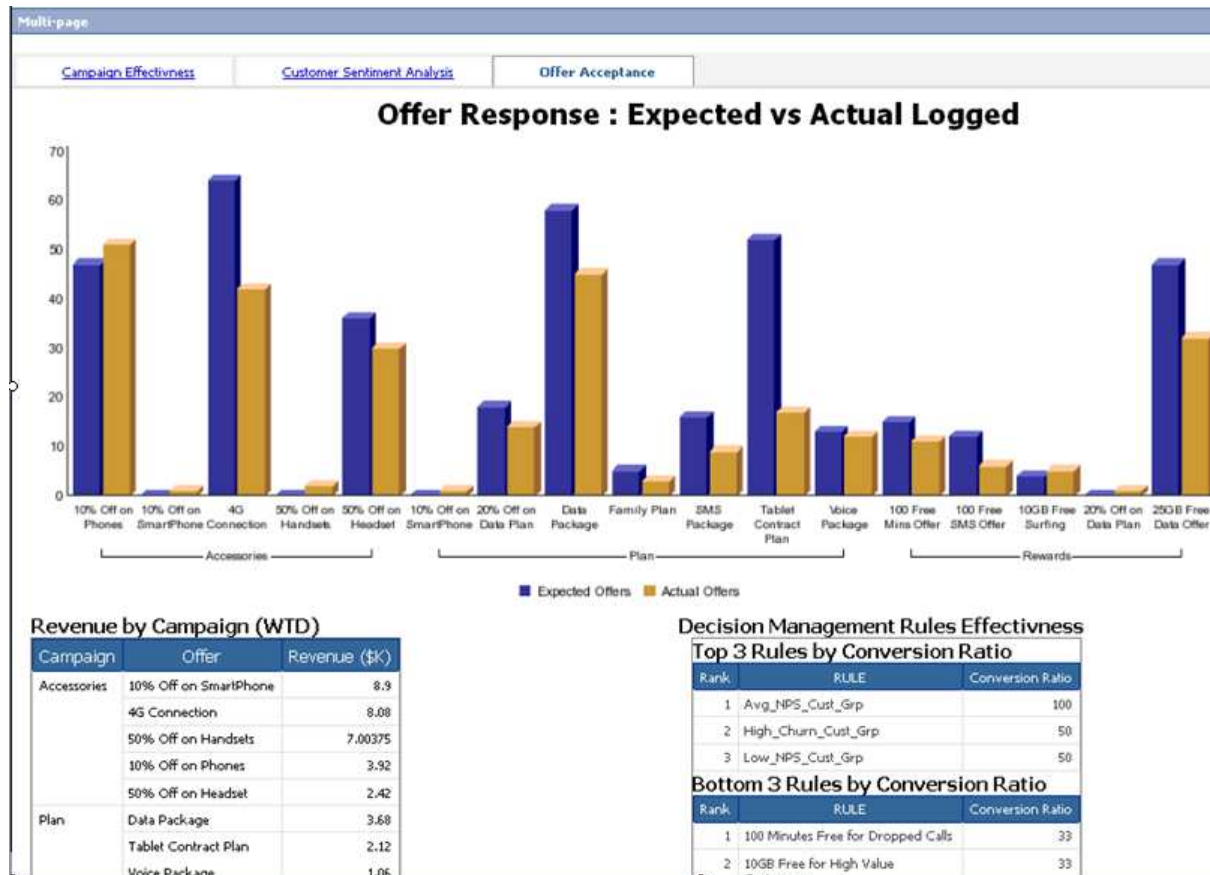
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Santam Insurance catches fraud early

Business challenges	Solution	Benefits
▪ Santam was losing millions of dollars paying out fraudulent claims every year. ▪ Low customer satisfaction due to higher premiums and longer waits to settle legitimate claims	▪ Helped to catch fraud early in the claim process with real-time decision making ▪ Used effective risk segmentation with a wide range of key factors to detect fraud with high accuracy	▪ Identified a major fraud ring in less than 30 days after implementation ▪ Saved more than USD 2.5 million in payouts to fraudulent customers, nearly USD 5 million in total repudiations in less than six months ▪ Improved customer service by enabling legitimate claims to be settled within an hour, more than 70 times faster than before

santam
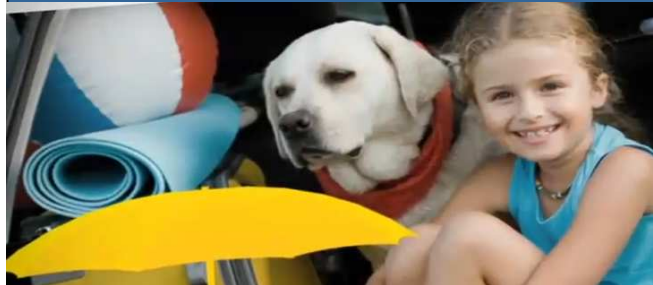
BMW improves web channel conversion

Business challenges	Solution	Benefits
▪ BMW concerned that its website was not successful at converting visitors to request dealer appointments due to lack of the customer personalisation	▪ Generated real-time scoring applied to anonymous or returning site visitors. ▪ The decision models driving the automated selection of teasers (banners) was built directly into the website ▪ Continuously learned, to steer display teasers becoming more accurate as additional live behavioural data was accumulated	▪ Significantly increased the value of the website to the company's overall sales process ▪ Turn anonymous users into customers by driving product selection through predictive modelling ▪ Created a level of intimacy between the user and the company that promoted a high degree of loyalty and, by extension, vehicle purchases

A leading US apparel & home furnishing creates customer intimacy

Business challenges	Solution	Benefits
▪ The company concerned about the lack of differentiation in a very competitive retail market through its e-commerce site and 1100 stores across US and Puerto Rico	▪ Generate real-time individualised cross-sell and up-sell offers and targeted promotions for store associates ▪ Deliver the optimal response to each customer interaction across channels	▪ Increased website revenue through improved channel conversion and larger basket sizes ▪ Made actionable data for day-to-day decision support accessible to key people throughout the enterprise, from the store associate to executives in Marketing, Merchandising and Supply Chain

layers of style at
great prices everyday

shop bedding sets ›

soho queen wall bed **$700**

stone strata queen comforter
set with coverlet **$130**

An European tax collector agency minimises tax evasions

Business challenges	Solution	Benefits
▪ This agency was significantly handicapped by manual and disconnected anti-fraud systems and risk detection techniques	▪ Real-time decision management to determine the fraud risk of each taxpayer ▪ Automatically apply risk profiles across the entire population based on a large volume of data ▪ Predict which individuals within that population represent a heightened risk for committing tax fraud	▪ Enabled profiling of all taxpayers across the nation based on demographic and behaviour factors through automated modelling capabilities ▪ Increased resource optimisation by predicting fraud risk associated with each profile and targeting audits to individuals at the highest risk of tax evasion ▪ Increased tax revenue collected

Session objectives
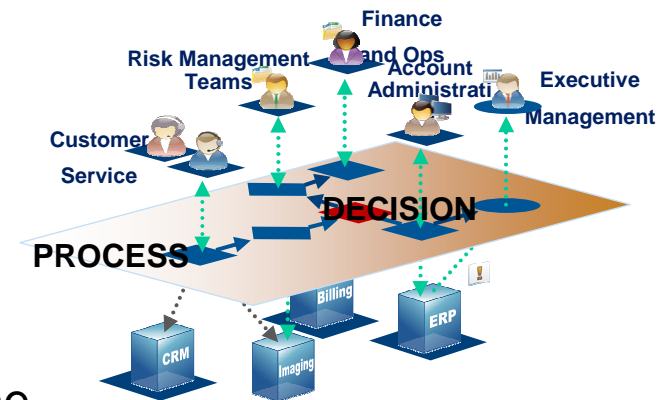
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Summary

IBM Analytical Decision Management revolutionises how organisations make decisions, empowering frontline workers and systems to make the right decision each time.

- Empowers real-time, adaptive decisions to accommodate changing conditions

- Provides recommended actions based on breadth and depth of predictive analytics, local rules, scoring and optimisation techniques at the point of impact

- Optimises transactional decisions with resource constraints

Thank You