

Data Mining

Implementation & Applications

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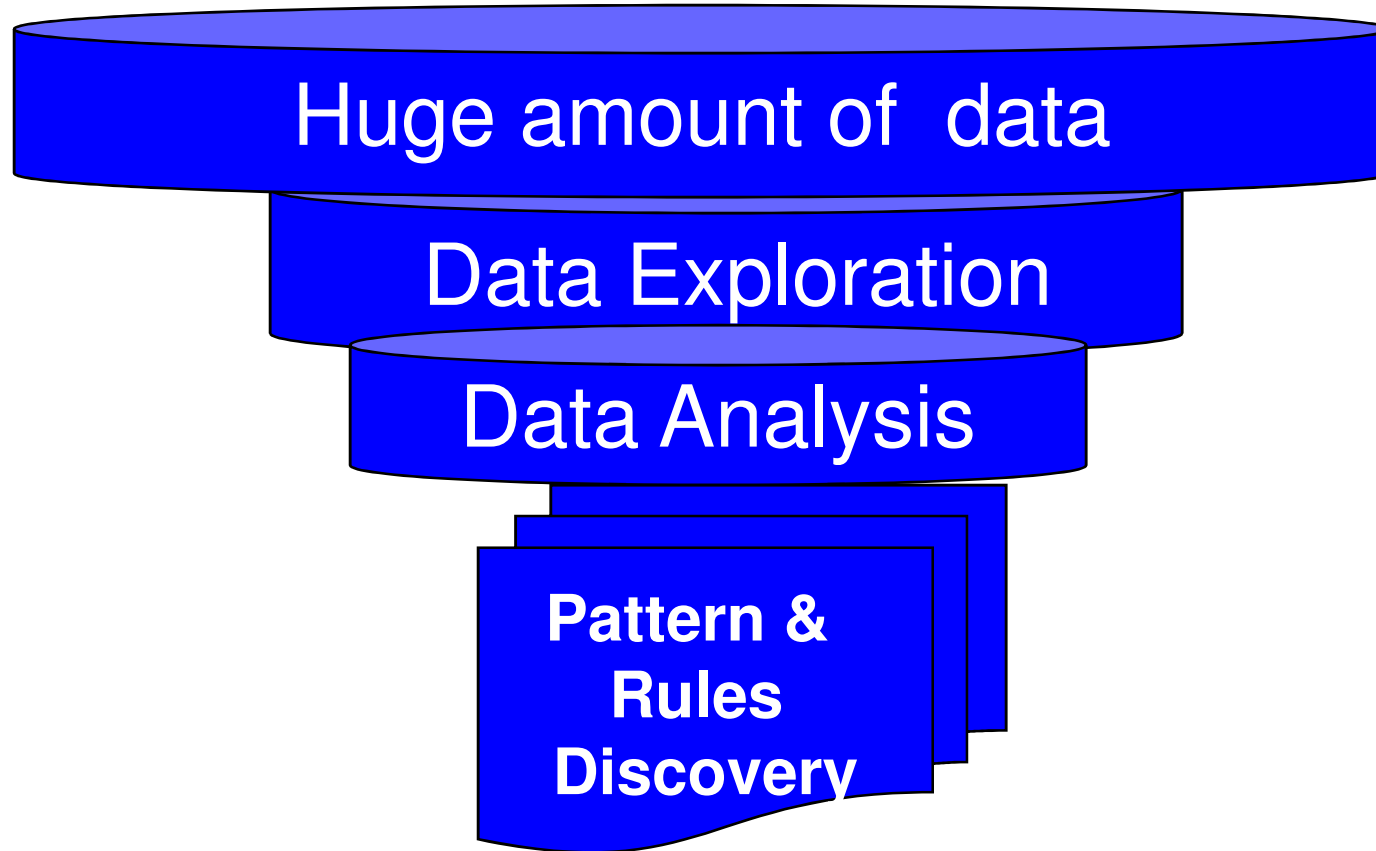
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Agenda

- ❑ Data Mining & BI Vision
- ❑ Implementation : Success Criteria
- ❑ Knowledge Maturity :Data Analysis phases
- ❑ Data Mining Techniques
- ❑ Case Study : Segmentation & Sales Coverage Optimization
- ❑ Takeaways

Data Mining Vision

What Is Data Mining ?



Data Mining Vision

What Is Data Mining?

Data mining is the exploration and analysis by automatic or semiautomatic means ,of large quantities of data in order to discover meaningful patterns and rules.

For example a pattern might indicate that married males with children are more likely to drive a particular sport cars than married males with no children.
For a Marketing manger for an auto company this pattern could be quite valuable could be .

Data Mining Vision

Why Data Mining?

*“You have no choice but to operate in a world shaped by globalisation and information revolution .There are two options:
Adapt or die”*

- Andy Grove, Chairman ,Intel (May 1997-May 2005)

Your customers are not really your customers you are merely their care-taker until one of your competitors can provide and communicate a better offer.

Data mining is the cornerstone to optimize Customer Relationship Management by enabling:

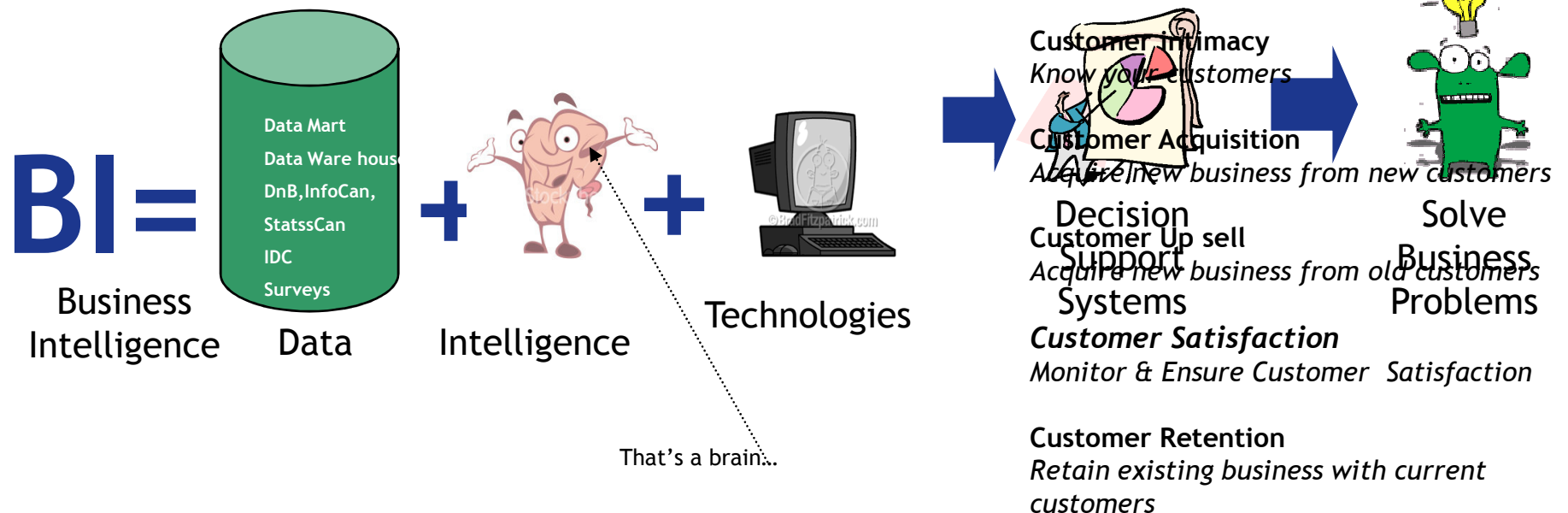
- ☐ Customer Intimacy
- ☐ Customer Satisfaction
- ☐ Customer Retention
- ☐ Customer Up-sell Cross
- ☐ Customer Acquisition

Data Mining & BI Vision

Data Mining & BI Vision:

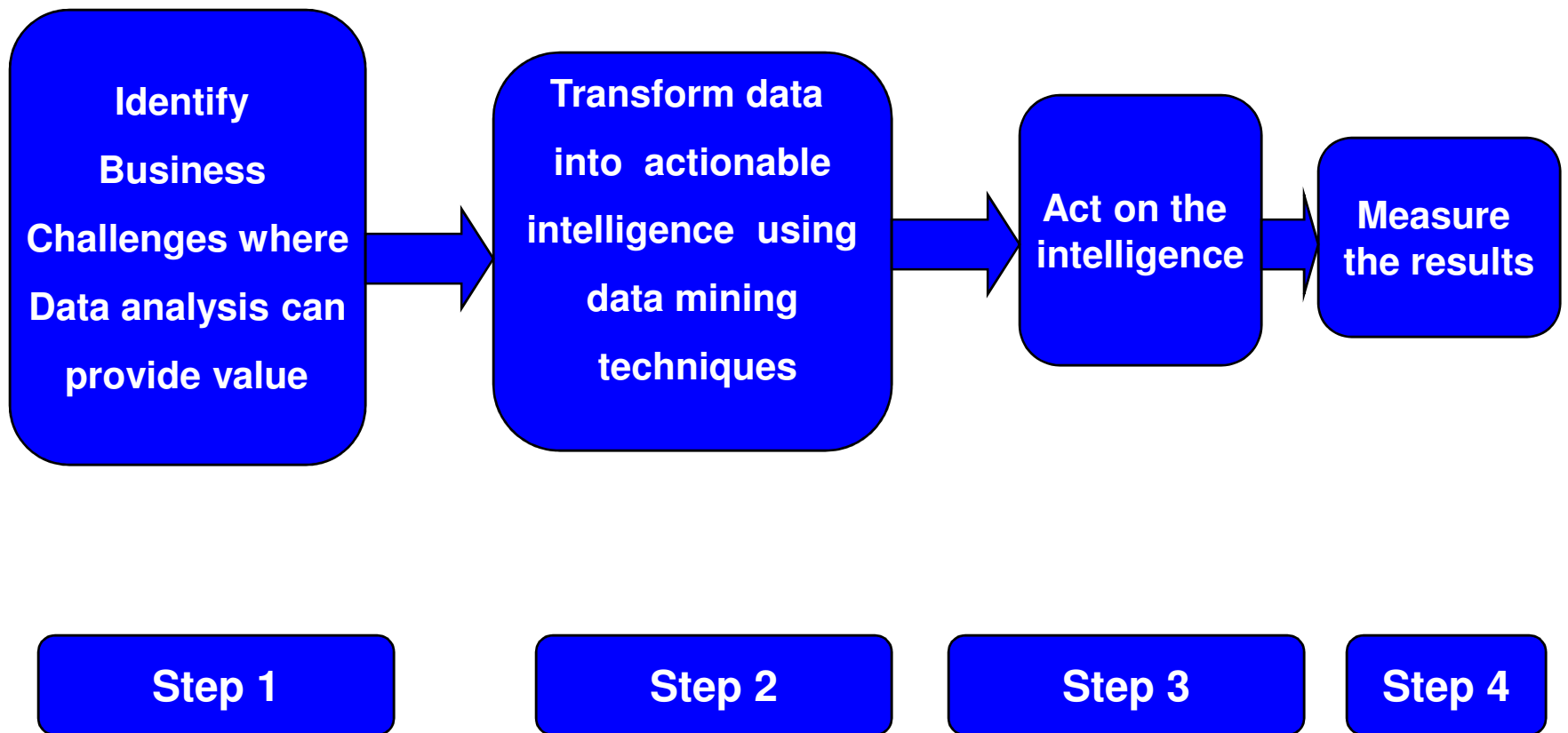
Develop & Implement Customers and Market knowledge to provide Strategic Intelligence to the Business for Best Practices and Profitable Actions

Business Objectives



Data Mining Vision

Data Mining Virtuous Process



Implementation :Success Criteria

To be successful Data Mining & BI need to have:

1. Clear Vision

The High Management Team must take the leadership in creating and sharing the data driven vision for the company. And this vision will be the guideline of BI strategy

2. Strategy

The strategy is all about how to build and develop master components:
(The market and competitive knowledge, consumer and customer knowledge.)
This strategy must define objectives and metrics for attaining that goal.
It directs the objectives of other operational and sales strategies and the CRM implementation strategy

3. Customer & /users Experience

The customer experience must be in line with the data driven vision and must be constantly reviewed, refined, and adjusted based on actively south interaction with customer.

Implementation :Success Criteria

4. Organizational collaboration

Changes to organizational practices, process, metrics, incentives, skills must be made to deliver the required customer experience. Ongoing change management and mindset will be the masterpiece.

5. Metrics

Company should set measurable BI objectives and monitor all levels of CRM indicators to turn customer into assets..

6. Integrated Process

Successful customer process reengineering should create integrated processes. These processes should meet customer expectation ,support customer value proposal and provide competitive intelligence to optimize customer experience and profitability

Implementation :Success Criteria

7. Information.

The be successful BI & Data mining requires the creation of market and customers information chain that flows around the company. This also requires a strong integration and communication between operational and analytical systems

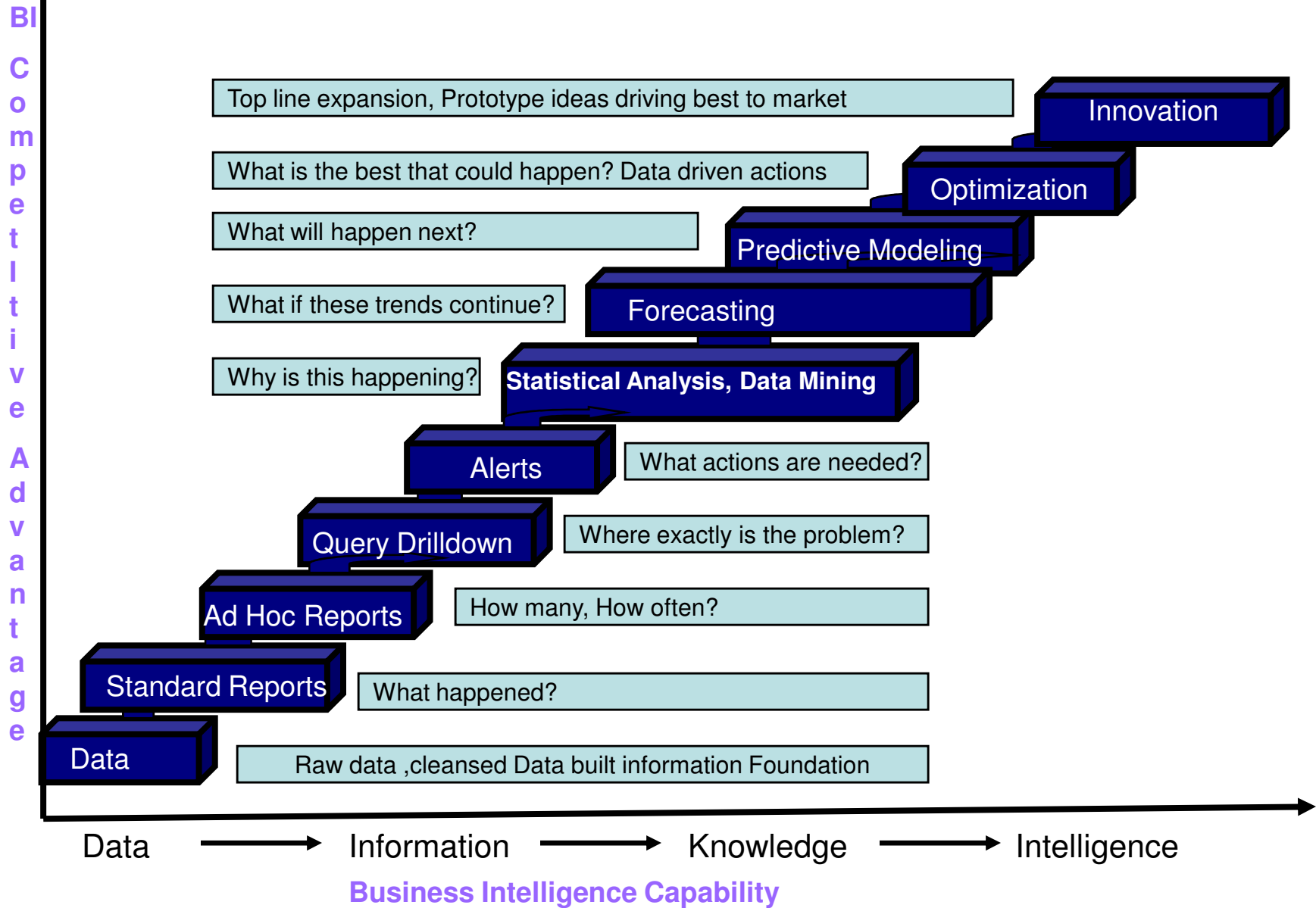
8. Technology and Tools

Technologies and tools represent the key part of the company portfolio and architecture. CRM application needs should be considered as the provision of the integrated functionality that support seamless customer centric processes across all area of the company and it partners

9. Training & Implementation

Sales Representatives and every end user should be trained to leverage the power of strategic knowledge. The implementation will take place after change management and training completion

Knowledge Maturity: Analysis Phases



Data Mining Techniques

The 3 boxes approach : 1-Goal 2-Model 3-Data

1-Defining your Data mining goal:

- Profile Analysis
- Segmentation
- Response
- Risk
- Conversion
- Churn/Attrition
- NPV
- CLTV

2-Choosing the Modeling Approach

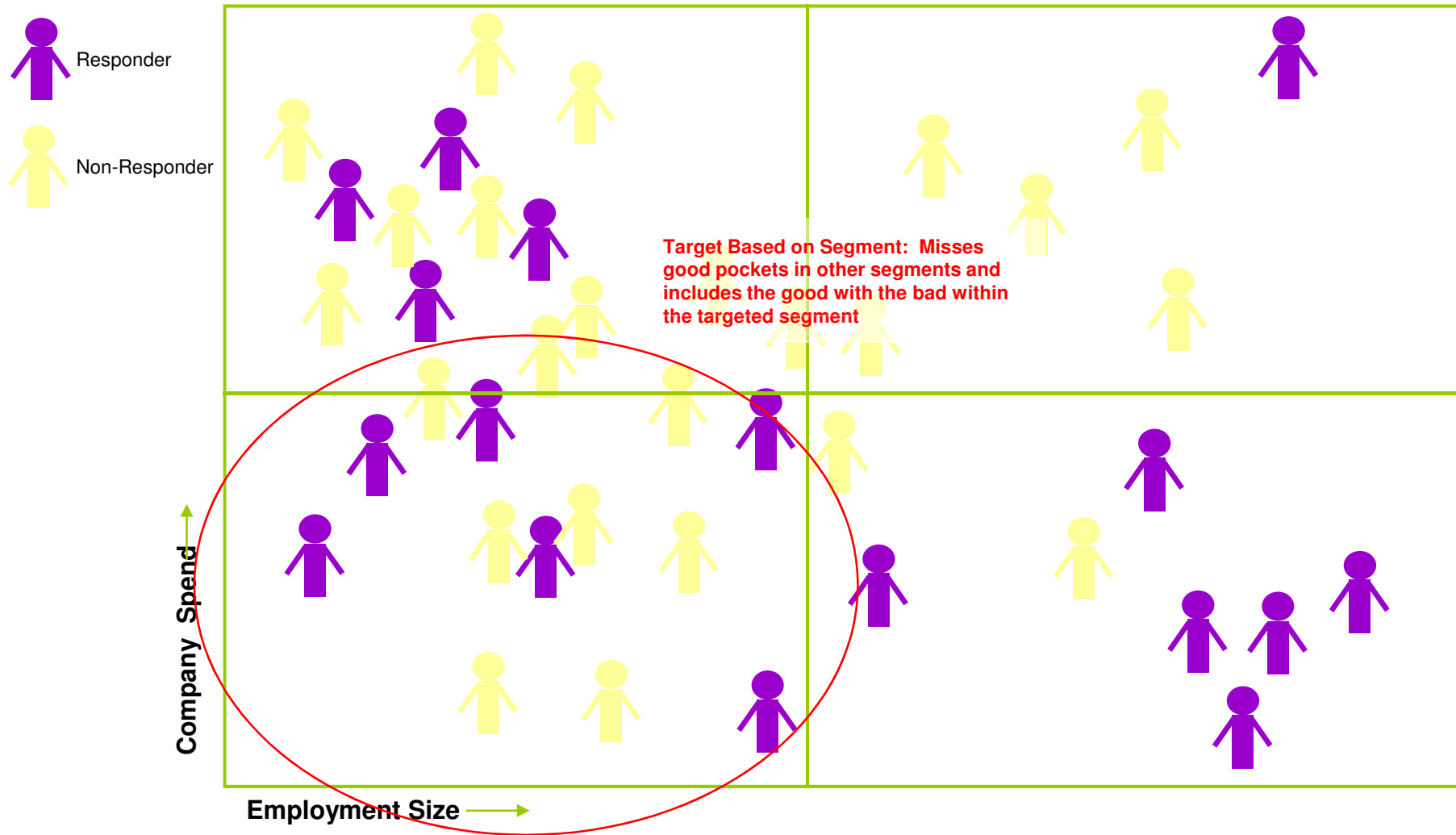
- Linear Regression
- Logistics Regression
- Poisson Regression
- Neural Networks
- Classification Tree
- Genetic Algorithms

3-Data Sources

- Internal Data Source
- External Data
- Surveys Data

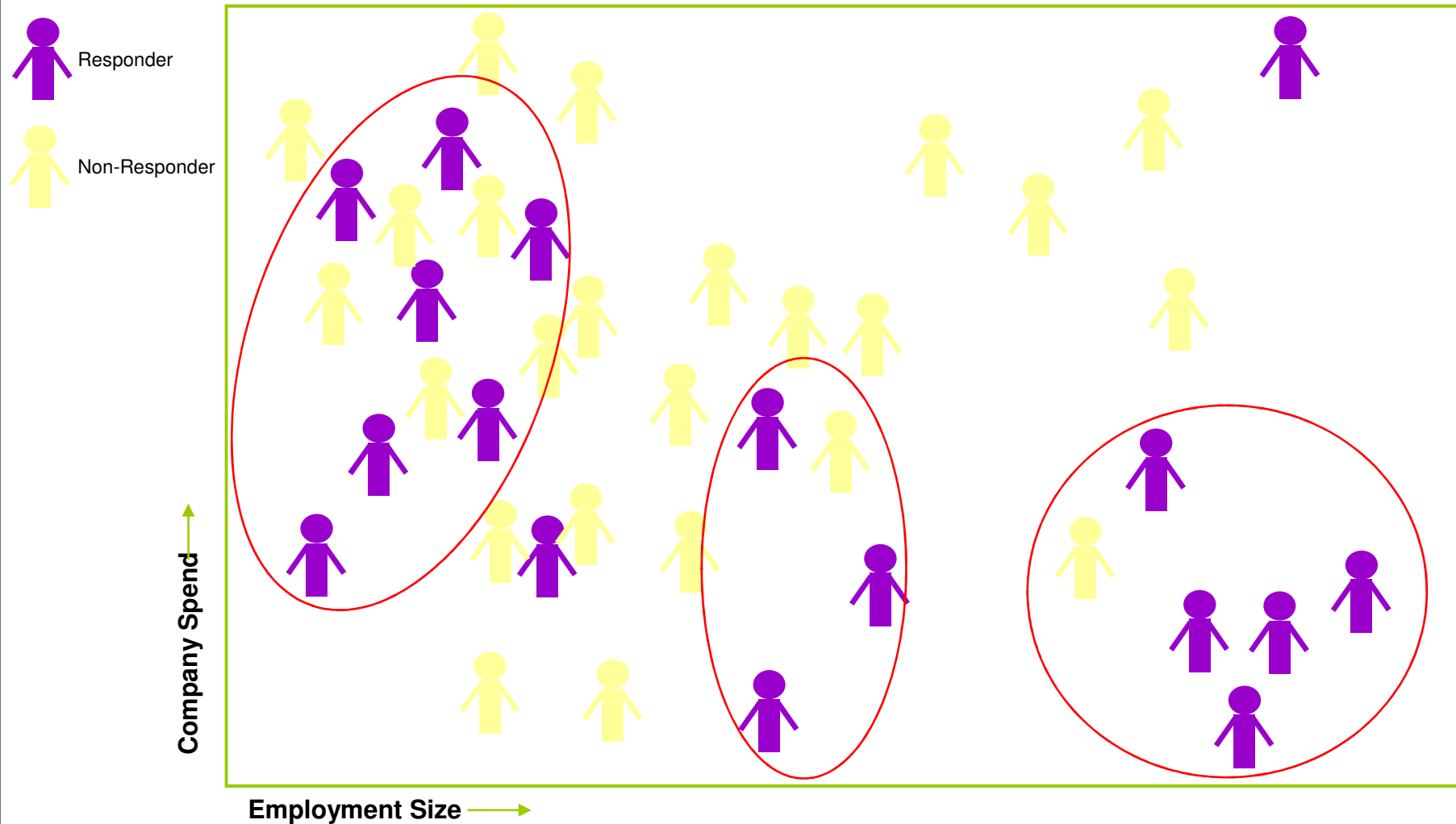
Data Mining Techniques: Target assignment using Segmentation

Segmentation often yields large gains in lift and total conversions, but it is still a blunt tool that learns only partially from actual results



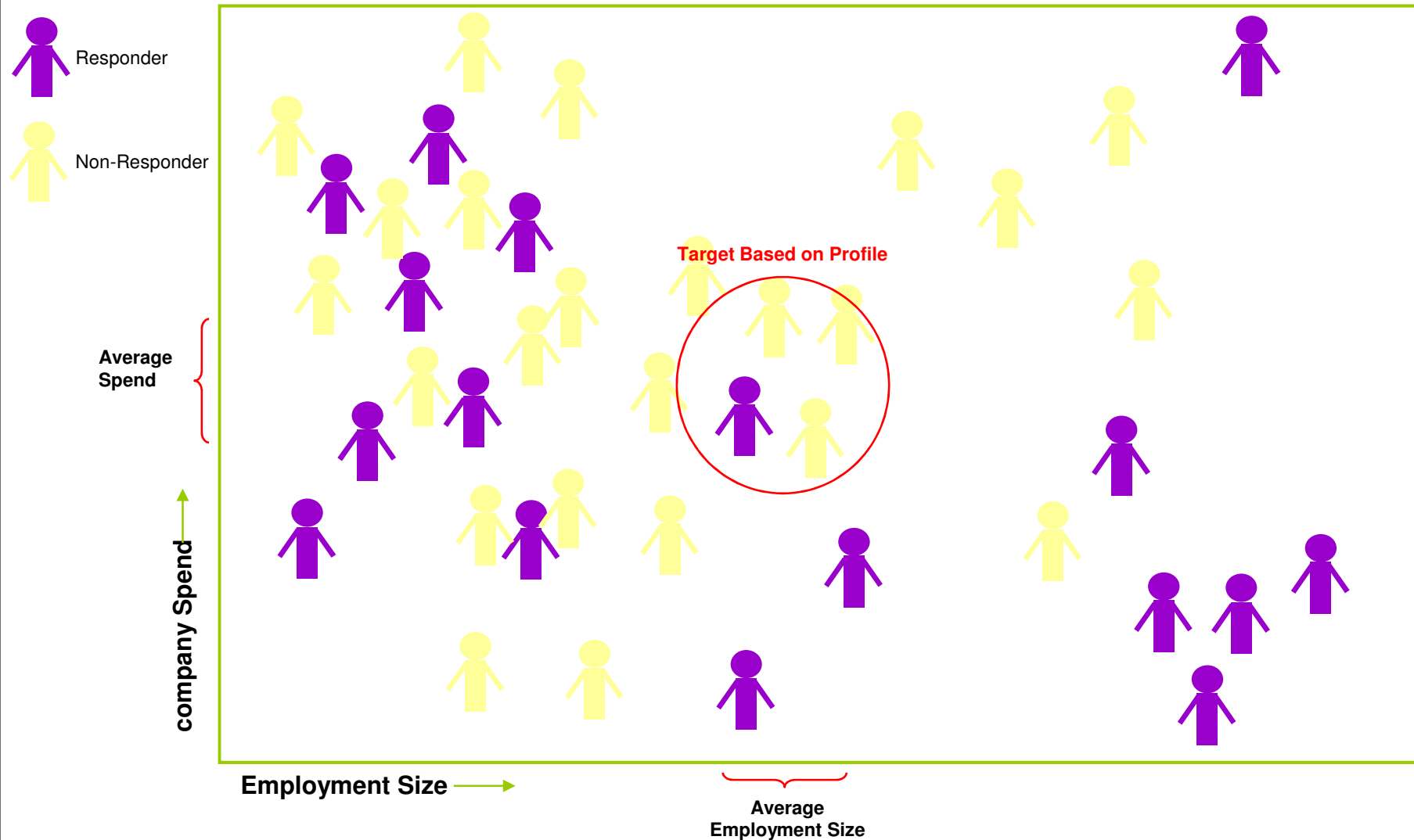
Data Mining Techniques : Target Assignment using scoring Models

Scoring models pick out the good pockets, and each time the models are re-fitted, they learn from actual results



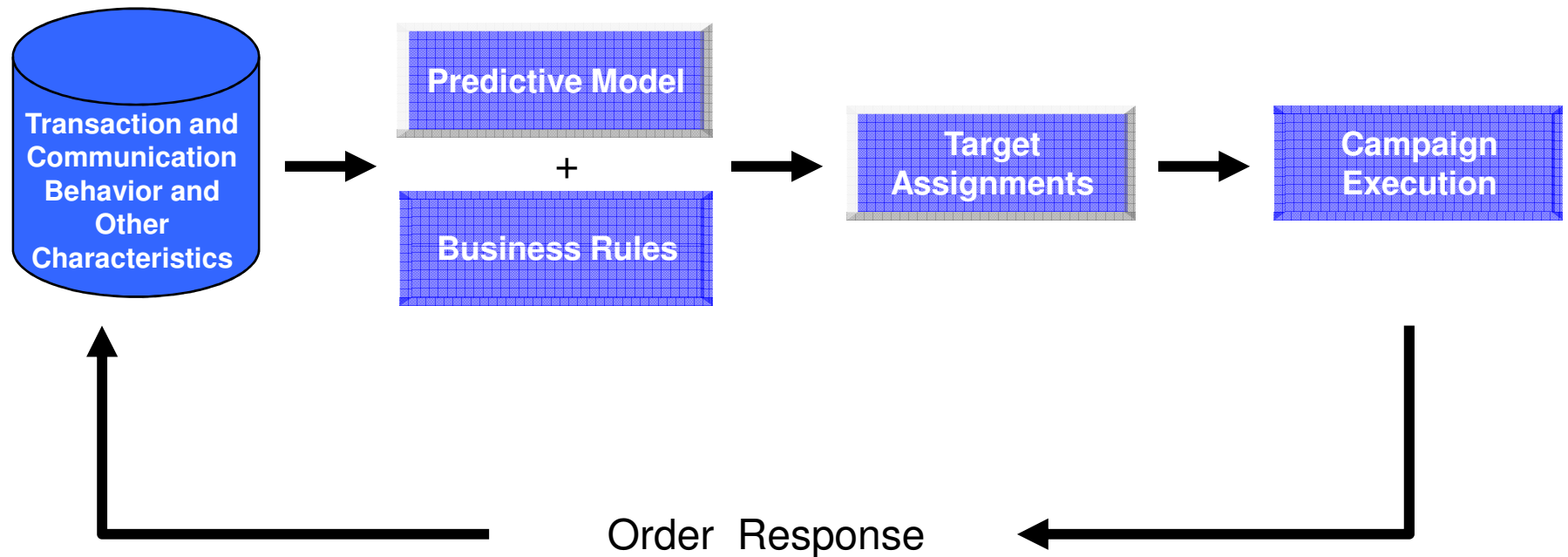
Data Mining Techniques :Target assignment using average

Targeting Employers with average characteristics may miss the diversity of Employers around the average

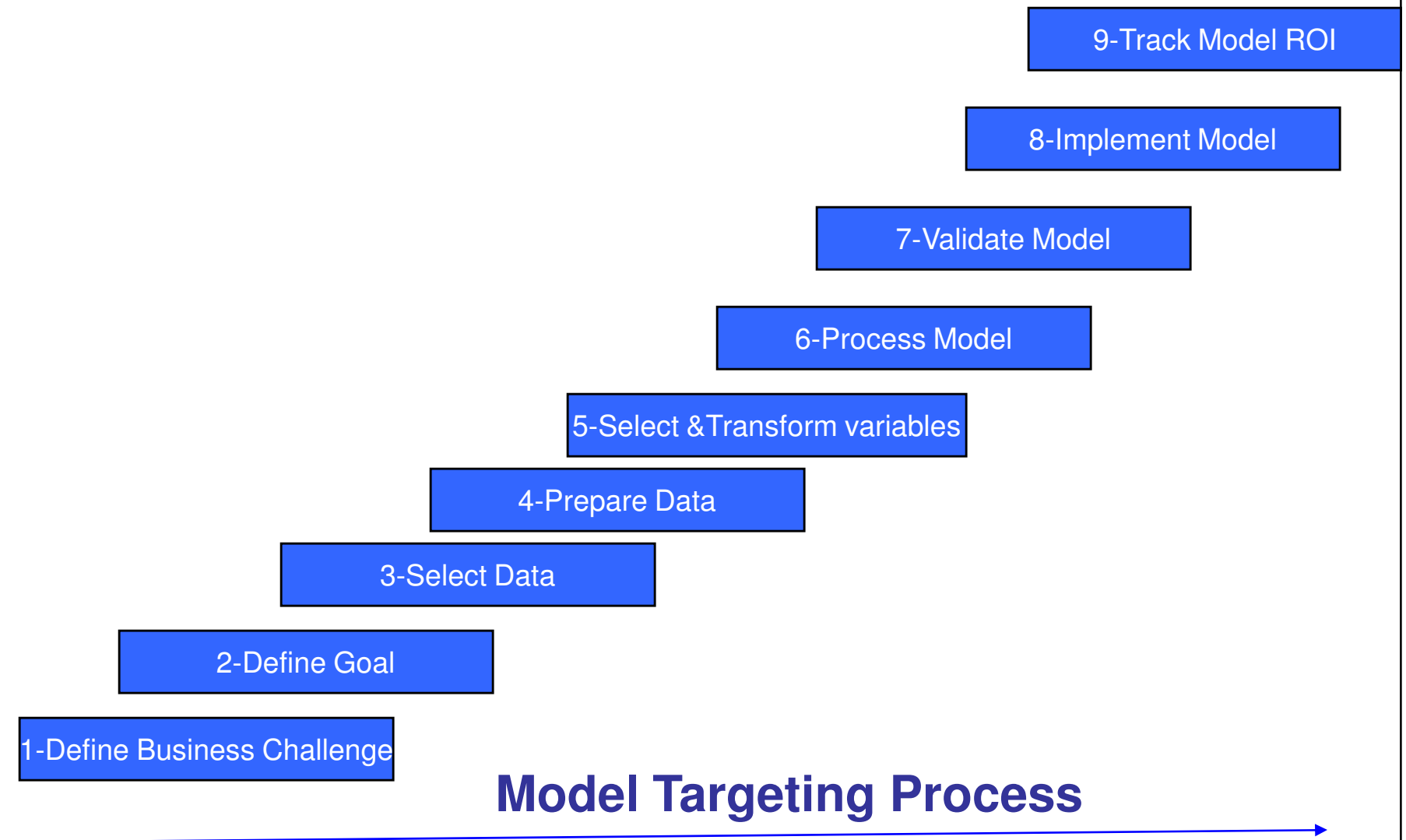


Data Mining Techniques

Where Modeling Fits In



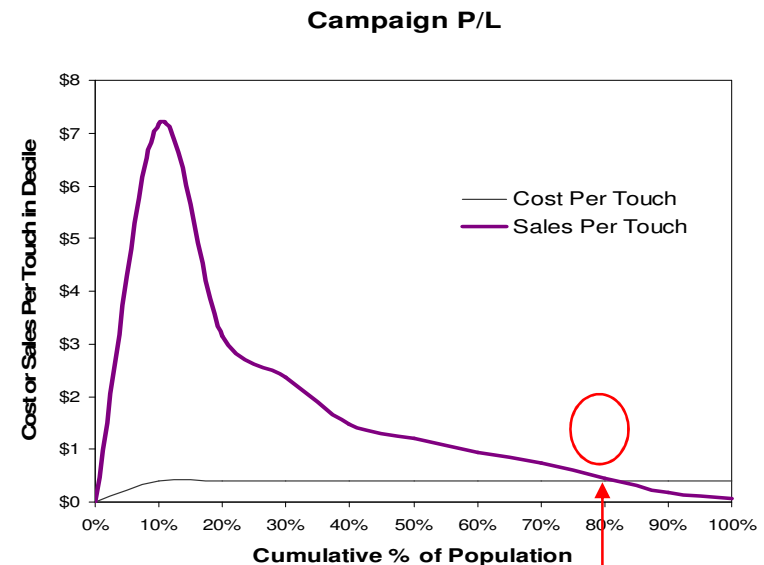
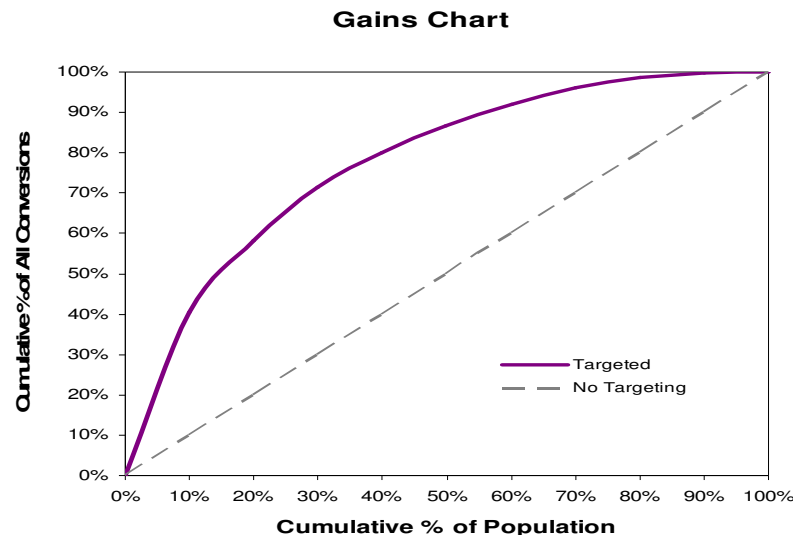
Data Mining Techniques



Data Mining Techniques Optimal List Penetration

Statistical models score and rank a list, but the optimum percent of the list to target depends on P/L and other goals of the campaign

- **Maximum conversions are achieved when 100% of the list is targeted**
- **Maximum profit is achieved at the threshold where cost per touch equals sales per touch**
- **Optimizing across channels (media mix) and campaigns means selecting for each potential target the channel and campaign with the largest expected profit**



P/L illustration assumes \$300 AOS and \$0.41 cost per touch

Maximum Profit

Data Mining Techniques

Recipes' Matrix

Business Challenges	Data Mining Solutions	Benefits
Understand the Characteristics of your customers	Segmentation and Profiling Analysis	Customer profitability and CRM optimization .
Attract new Customers	Target Response Model	Bring more customer for the same marketing costs
Up sell new Customers	CLTV Model	Identify long term profitability
Avoid High risk Customers	Risk and Approval Model	Avoid loss for the company
Make unprofitable customers become more profitable	Up-sell and cross-sell targeting model	Increase profit from existing customers
Retain your profitable Customers	Retention or Churn models	Increase wallet share growth and overall profitability
Increase Customer Satisfaction	Market Research and customer profiling	Increase Retention and Dollar to dollar renewal
Increase Sales	Acquisition & Up-sell models	
Reduce Costs/expenses	Target Models	
Win-back your lost customers	Win back Models	Increase Sales and profitability

Case Study: Segmentation & Sales Coverage Optimization

Business Objectives

- ☐ **Score and Segment the Canadian universe of 1.7M Companies**
- ☐ **Build Calibrated portfolios for Territory Assignment by Employee size by Regions and by industries**
- ☐ **Build the Segmentation Matrix (Customers and Prospects)**
- ☐ **Define CRM Activities for each segment**

Case Study: Segmentation & Sales Coverage Optimization

Purpose

Score & Segment Canadian universe of 1.7M companies

Goal

Identify best customers for growth and equip sales with product & marketing support to capture high value potential

Inputs
Factors

D&B
Firm
Graphic
Data

Macro
Economic
Data

Transactional
Data

Online &
Off line
Posting
Data

Seeker
& Traffic
Data

Data
Mining

Regressions Models

Outputs
Score &
Segments

Score 0 to 100

Define Segments
High, Medium, Low

Outputs
Implications

Acquisition Retention & Up-sell prioritization

Case Study: Segmentation & Sales Coverage Optimization

Purpose **Build Calibrated portfolio for Acquisition and Retention**

Goal **Maximize Sales Coverage**

Constraints
Factors

Regions
Western
Ontario
QC-MAR

Employee
Size group

Same
Number of
records

Identical
industries
Distributions

Identical
Opportunity
Score

Data
Mining

 **Optimization Models**

Outputs :
Portfolios
Segments

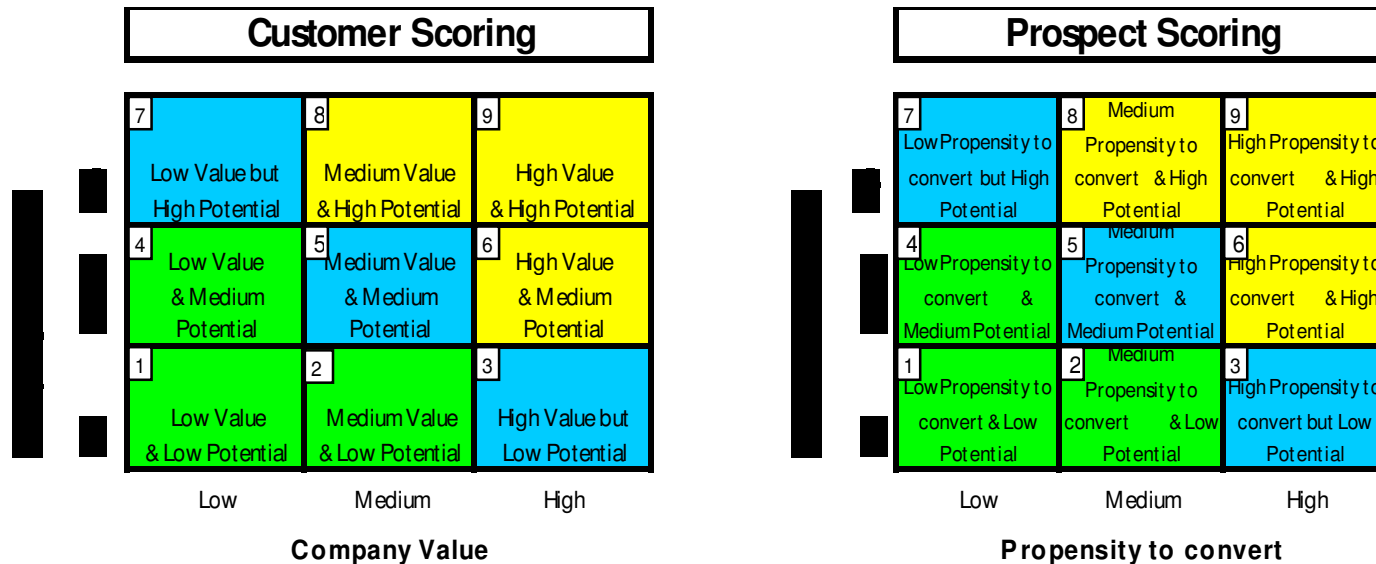
Calibrated portfolios

Outputs
Implications

Targeted
Acquisition, Retention
& Up-sell activities

Case Study: Segmentation & Sales Coverage Optimization

Build the Segmentation Matrix



Company Value :(last 12,24,36 months or life time spend)

Company Potential :Opportunity score from data mining scoring model

Propensity to convert : likelihood that a brand will purchase withn the next months

Scoring help Acquisition Retention and up-sell activities prioritization

Case Study: Segmentation & Sales Coverage Optimization

Define CRM strategies and activities for each segment

Segments

Strategies /Activities

Customers

9 -6- 3

8-5-2

7-4-1

High Retention efforts Keep & Protect

Medium Retention efforts
Grow & Up sell

Low Retention efforts Grow

Prospects

9-6-3

8-5-2

7-4-1

High acquisition efforts Tier1

Medium acquisition efforts Tier2

Low Acquisition Efforts Tier3

Case Study: Segmentation & Sales Coverage Optimization

Benefits /Virtuous Process Results

- 1. Customer Retention increase of 15 percent**
- 2. Sales force productivity increase of 40 percent**
- 3. Marketing efficiency increase of 40 percent**
- 4. Increased Market Share**
- 5. Increased Customer profitability**

Takeaways & Conclusion?

R1: Data Mining & BI Vision

R2: Knowledge Maturity Data Analysis

R3: Recipes" Matrix (What approach to use)

R4: Segmentation Matrix (Acquisition Retention Up-sell)

Questions Comments

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Appendixes

Territory Assignment Methodology

To ensure a good calibration of each portfolio:

- Same number of prospects
- Same company size across all territories/region
- Same opportunity (H,M,L) across all territories
- Same prospect potential (Score) across all territories
- Representative distribution of industries /territories

A Multi Stage Cluster Random Sampling methodology has been used to optimize the Territory Assignment.

Territory Assignment Optimization model

1-Objective : Build 19 calibrated portfolios

2-Constraints:

2-1 Assign Rep by tiers (size :1-40 and 40-999)

2-2 Build territory using 3 Regions/Time Zone .(ON, QC& Maritimes, Western Canada)

2-3 Calibrate the total number of prospects across territories in every region and tiers

2-3 Calibrate the total number of prospects (H,M,L) across territories in every region and tiers

2-4 Calibrate the Opportunity Score across all territories in every region and tiers

2-5 Calibrate the Company size across all territories in every region and tiers

2-6 Generate 6 portfolios for 40-999 employees size

3-Decision Variables:

3-1-Region/Time Zone

3-2 Opportunity Score

3-3 Opportunity Segment

3-4 Company size

3-5 Industries