

Moving from the Use of Analytics to Being Analytics Driven

2012 CAS RPM Seminar

Philadelphia, PA

March 19-21, 2012

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Analytics Driven

- Analytics has been used in several areas of insurance companies
- Use of analytics has had a significant impact on insurance companies
- As analytics mature, successful companies will move from the use of analytics to being analytics driven in an incremental process

Uses of Analytics

Pricing

- Rating enhancements
 - Class refinement
 - Vehicle classification
 - Territory definition
- Custom insurance scores and scorecards
- Tiering plans
- Expanded use of customer related data
- Usage based insurance (commercial auto)

Underwriting

Analyses

- Straight through processing
- Selection/rejection
- Target report ordering (MVR, CL CLUE)
- Action indicators
 - Audit rules
 - Loss control/prevention

Data

- Historical underwriting actions
- Underwriting criteria
- Credit reports/scores
- MVR report data
- CL CLUE report data
- Loss control inspection reports
- Other external data feeds
 - Property characteristics
 - Demographic

Marketing Analysis

Analyses

- Model the likelihood of a potential risk contacting company for a quote (“shopping”)
- Measure characteristics of shoppers/quoters
- Measure likelihood of insureds responding to marketing initiatives
- Measure the likelihood of a risk responding to a cross-sell contact
- Measure advertising effectiveness
- Agency management

Data

- Internal company information
- Agency characteristics
- External demographic information
 - ZIP code level
 - Business/Building level demographics
- Credit profiles
- Marketing efforts
- Focus groups
- Internet/social media data

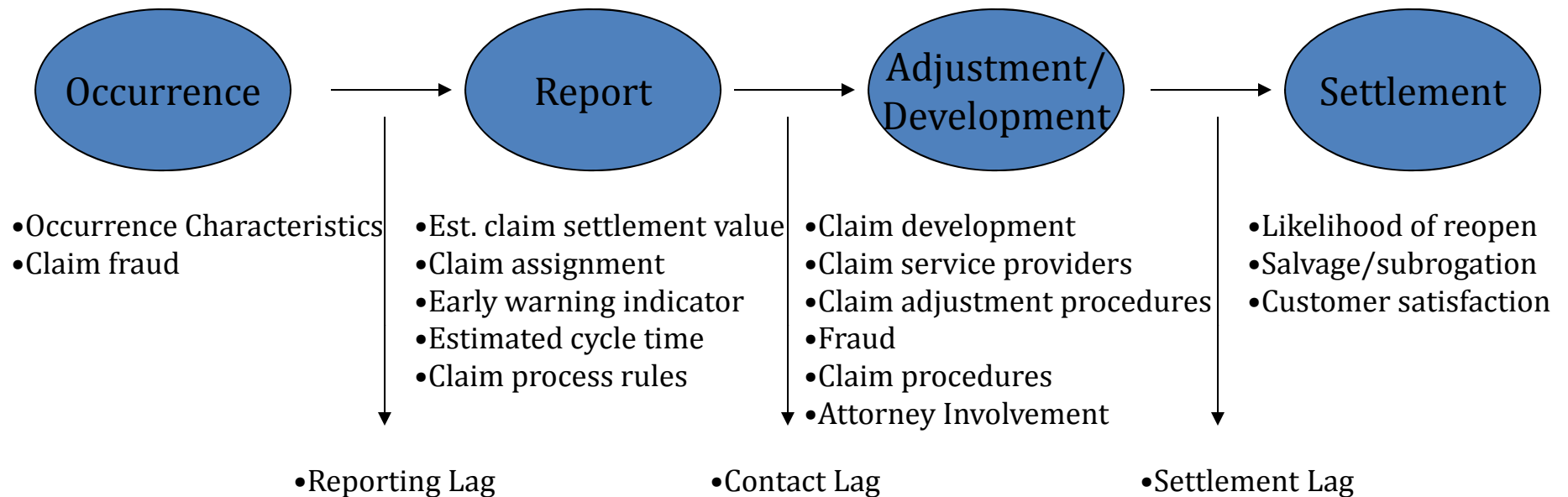
Goal: Determine which potential customers to target, how to effectively target them

Customer Response Analyses



- Quoting analysis: analysis of the likelihood of a prospective insured obtaining an insurance quote from you
- Conversion analysis: analysis of the likelihood of a insured that has received a quote purchasing insurance from you
- Retention analysis: analysis of the likelihood of a current insured renewing with you
- Cross sell analysis: analysis of the likelihood of a current insured purchasing additional products with you

Claims



Data

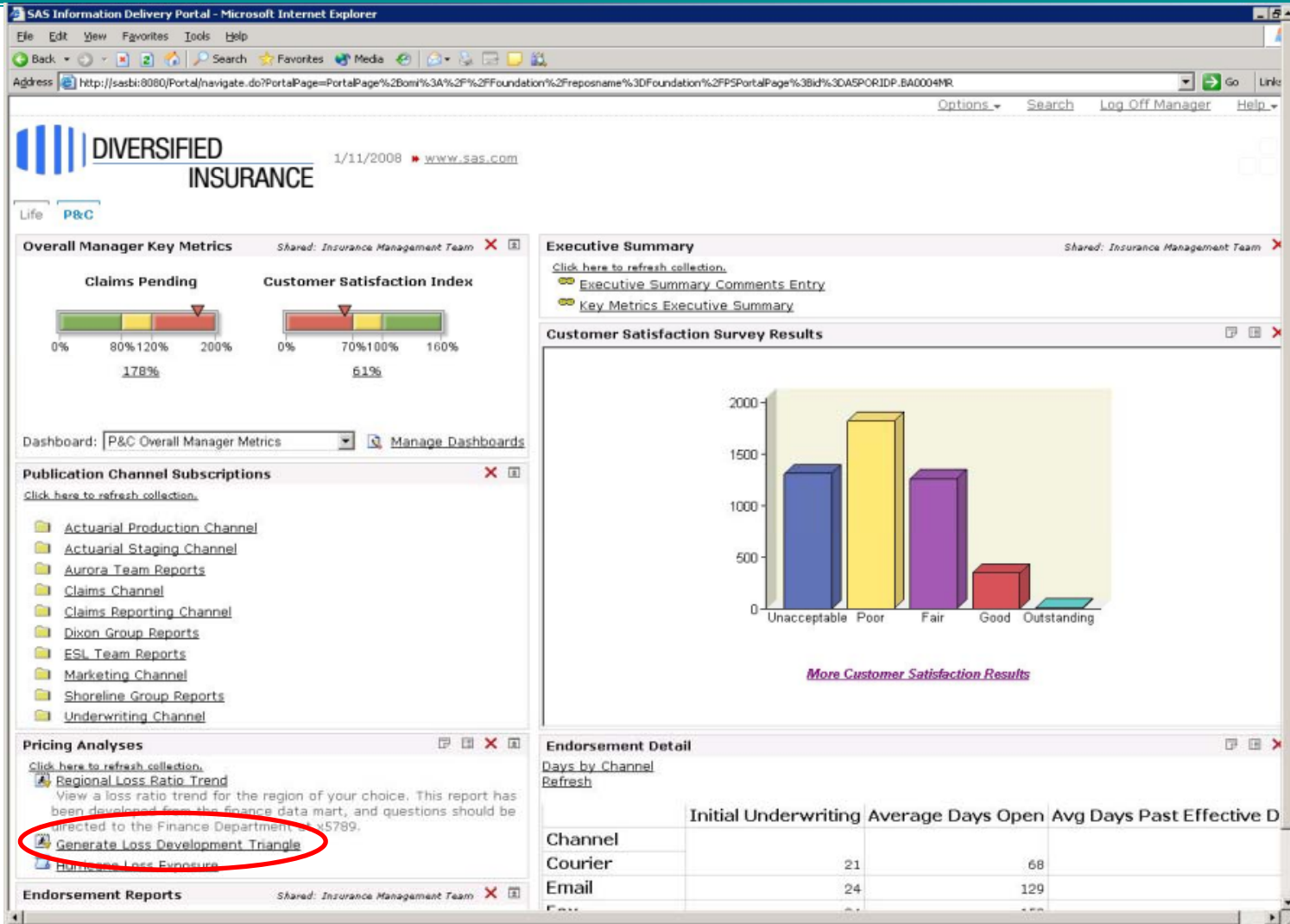
- Geography (State or Regional Courts)
- Time (Inflation, Settlement Lags)
- Claimant Characteristics (Age, Class)
- Insured Characteristics (Vehicle Weight)
- Attorney Involvement
- Preferred Claim Network (Medical, Glass, Auto Repair, Attorney)
- Other Claims Features (Arbitration/ADR, Settlement Lag)

Results Monitoring/Dashboards

- How are our agents reacting to our decisions?
- How is the market reacting to our decisions?
- How is our book of business performing?
- Are there discernable trends emerging?

- Decision makers need:
 - Access to the right data
 - In an understandable format
 - Agreement on the relative importance of the various metrics being monitored

Analytics Dashboards

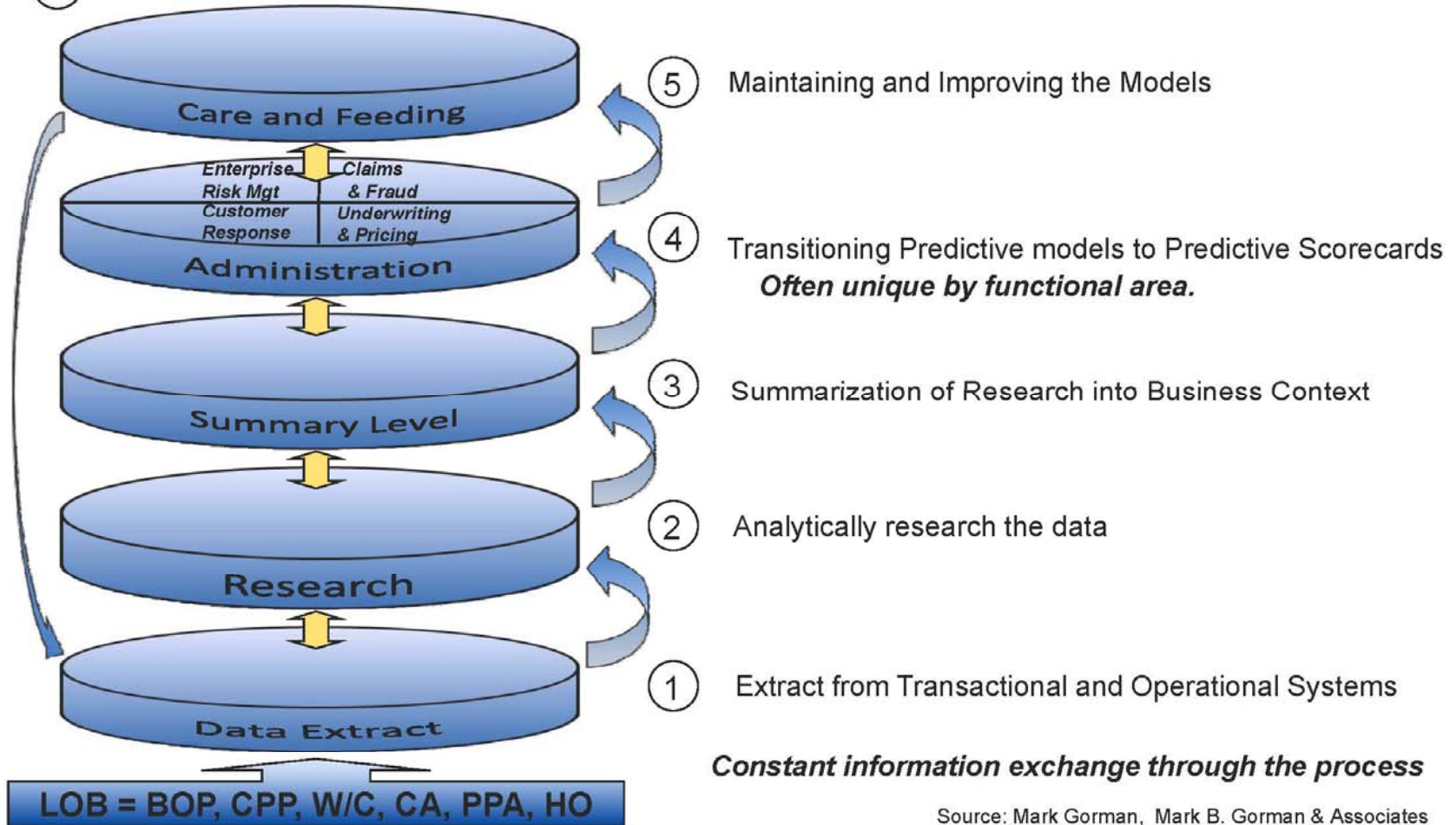


Enterprise Risk Management

- Companies that use analytics extensively need to recognize the model risk inherent in their business model
- The analytics and monitoring processes themselves can be a tremendous source of information for ERM development and documentation
- Coordination between the data used for analytics, monitoring and ERM creates a cohesive data platform

Solution Overview

⑥ Leverage new findings to provide feedback to the requirements of data extraction for improved models.



Source: Mark Gorman, Mark B. Gorman & Associates

Benefits of Analytics

- Present a truer representation of business realities using data and information
- Smarter decisions
- Identify profitable long term customers
- Continually improve business fundamentals
 - Claims, audit
- Competitive advantage
 - Improved financial results
 - Profitable growth

Tangible Results

- Benefits
 - Increased production
 - Improved loss experience
 - Improved customer insight
 - Knowledge transfer
- Dependent on:
 - Scope/penetration
 - Implementation plan
 - Buy-In
 - Corporate culture

The Transition: Analytics Driven

Analytics Driven

- Intentional
 - Begin with the end in mind
 - Data collection, data processing, analytics, and implementation all reflect purpose
- Complete
 - Across all departments in an insurance company
 - Translation of analytics to application
 - Allow data to define analytics as well
- Consistent/Cohesive
 - Analytics should be moving company in the same direction
 - Analytics by different areas should be coordinated

Analytics Driven Companies...

1. Process data intentionally

Process Data Intentionally

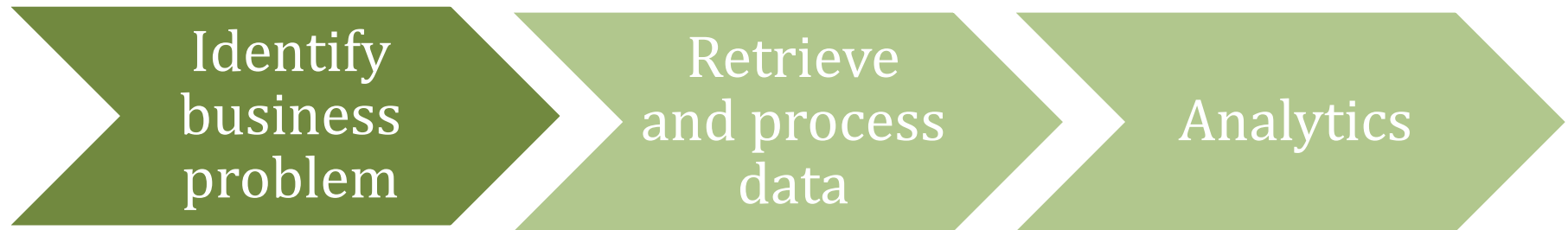
- Data historically collected for a number of different purposes – not analytics
- Creates challenges
 - Missing information
 - Incorrect data
- Intentional data processing
 - Identify the right data
 - Collect and store data consistently and accurately
 - Prepare data once for multiple applications

Analytics Driven Companies...

1. Process data intentionally
- 2. Spend time investigating data**

Spend Time Investigating Data

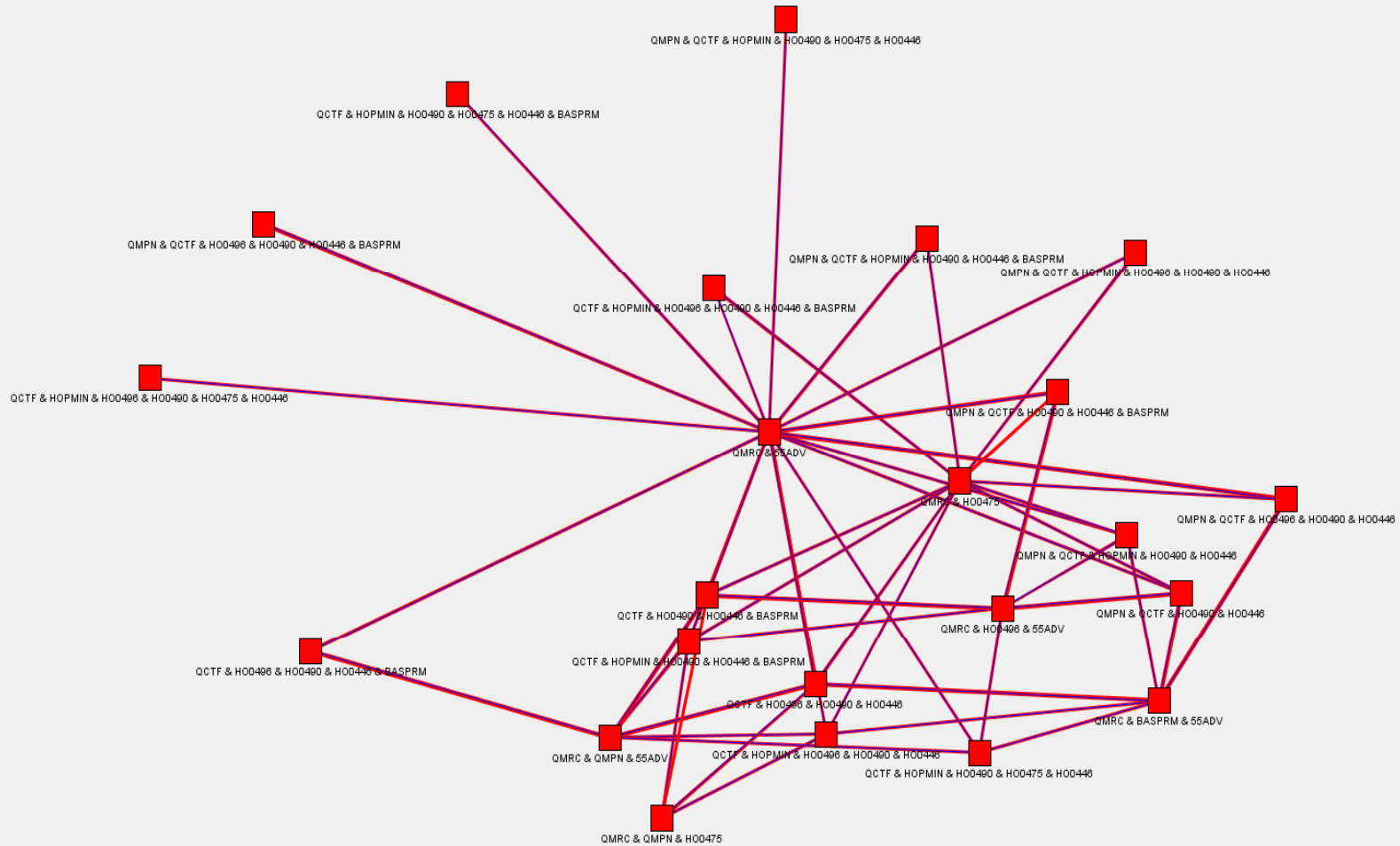
Typical Analytics Process



Let the Data Lead You



Example of Association Analysis - Businessowners Policy Endorsements



Analytics Driven Companies...

1. Process data intentionally
2. Spend time investigating data
- 3. Apply multiple analytics techniques**

Apply Multiple Analytics Techniques

Data Exploration

- Clustering/segmentation analysis
- Principal components
- Association analysis
- Self - organizing maps
- Variable clustering
- Variable selection

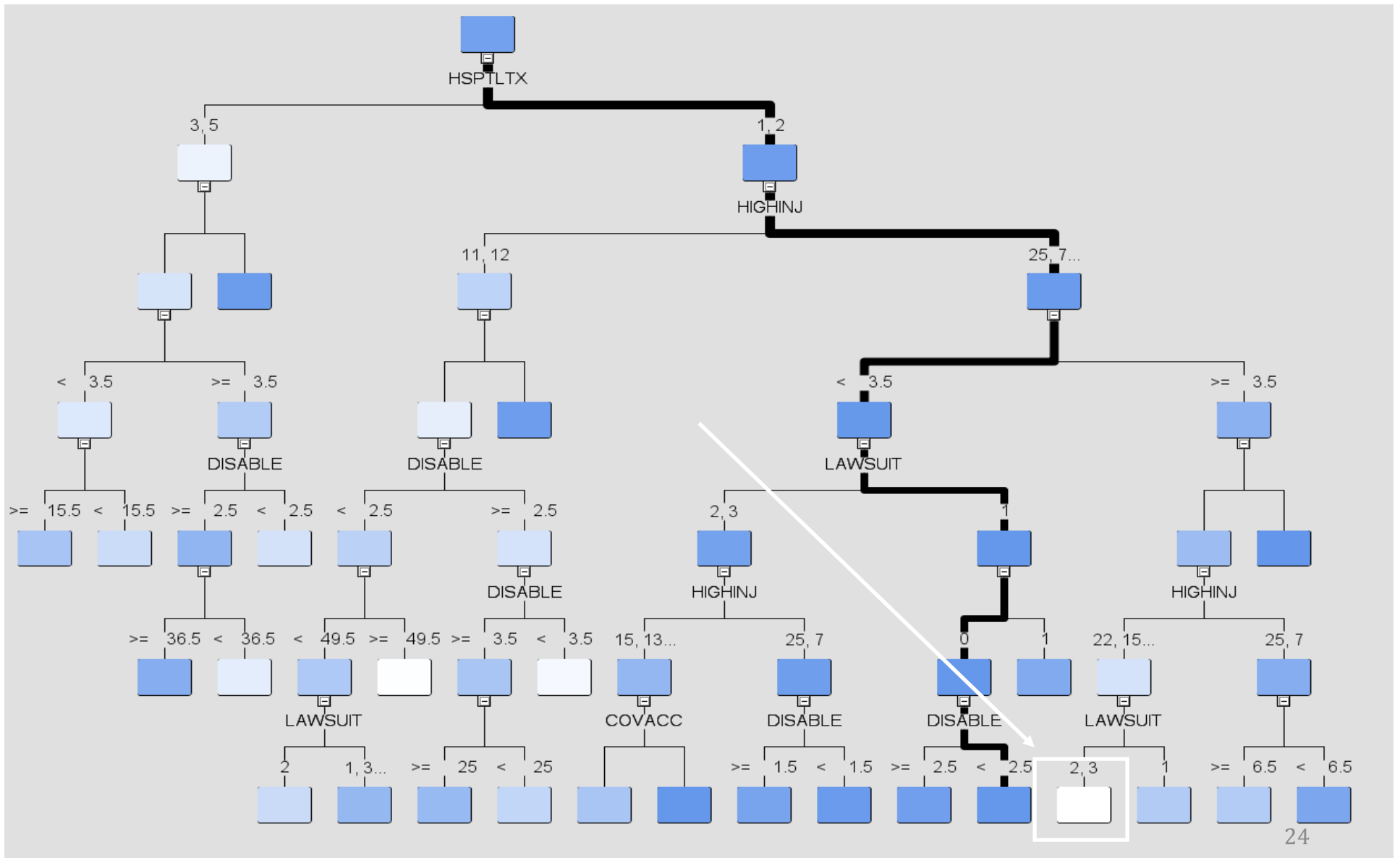
Predictive Models

- Decision trees
- Neural networks
- Clustering
- Principal components
- Association analysis
- Rule induction

Considerations

- Purpose
- Application
- Technical considerations

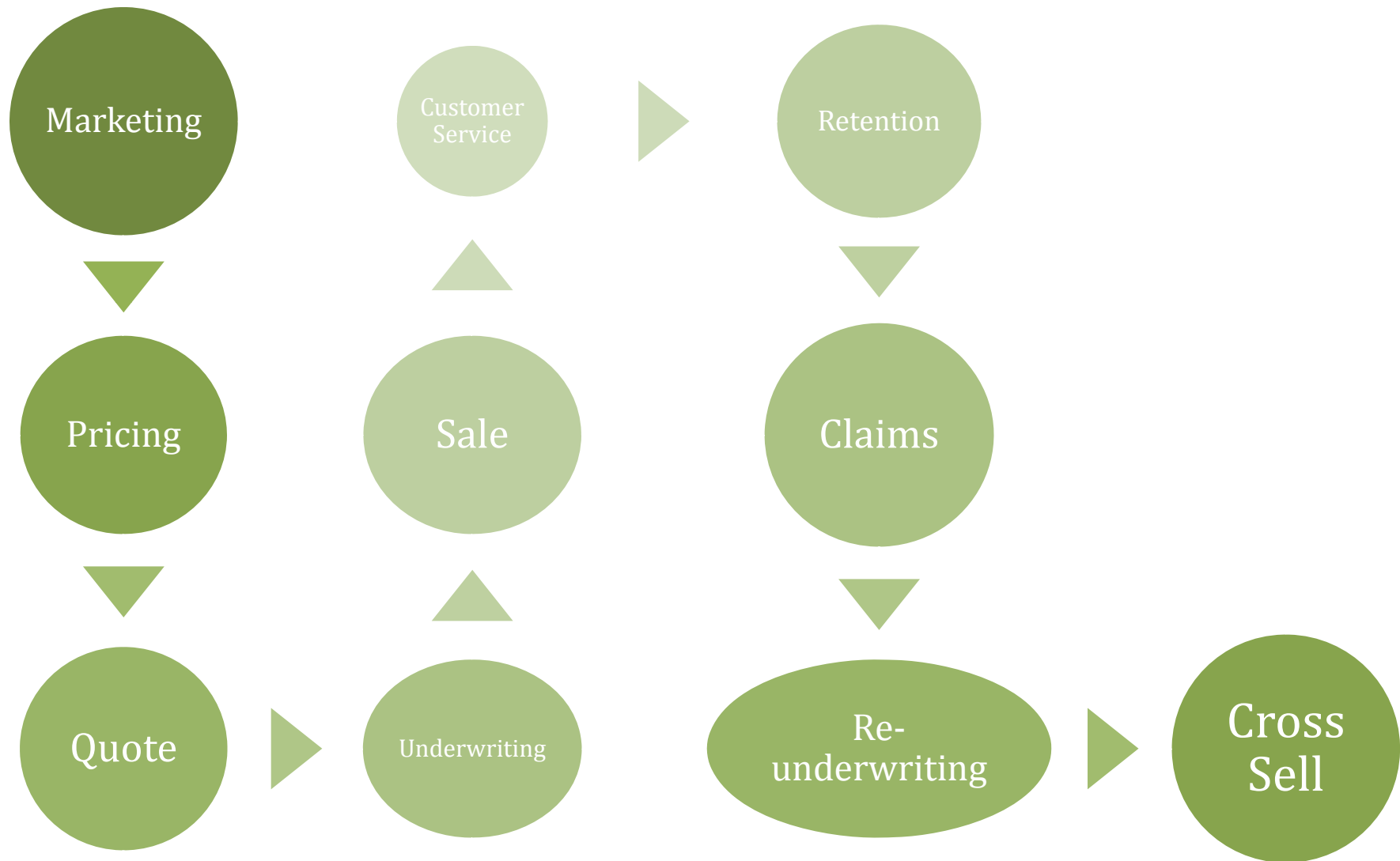
Decision Tree - Rules Engines



Analytics Driven Companies...

1. Process data intentionally
2. Spend time investigating data
3. Apply multiple analytics techniques
4. **Apply analytics to all insurance functions**

Apply Analytics to All Insurance Functions



All Insurance Functions?

- Customer service
- Agency placement/evaluation
- Social media
- Human resources
- Location based services

Analytics Driven Companies...

1. Process data intentionally
2. Spend time investigating data
3. Apply multiple analytics techniques
4. Apply analytics to all insurance functions
- 5. Ensure analytics consistency across organization**

Ensure Analytics Consistency



Ensure Analytics Consistency

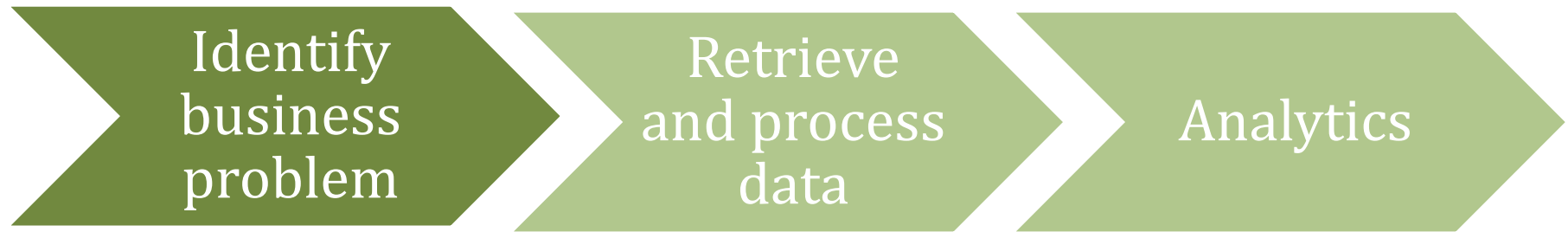
- Board level analytics commitment
- C-level analytics responsibility
- Consistency of analytics knowledge
 - Analytics research center
 - Internal analytics user group
 - Consistent data
 - Consistent metrics
- Sharing of analytics projects
 - No silos

Analytics Driven Companies...

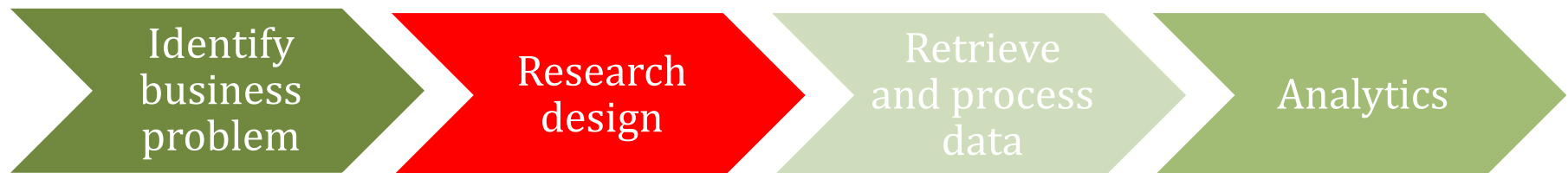
1. Process data intentionally
2. Spend time investigating data
3. Apply multiple analytics techniques
4. Apply analytics to all insurance functions
5. Ensure analytics consistency across organization
- 6. Design studies**

Study Design

Typical Analytics Process



True Statistical Studies



Study Design

- Examples
 - Capital One
 - Amazon
- Insurance application
 - Collect new data elements
 - Focus groups
 - Real life example – usage based insurance



Analytics Driven Companies...

1. Process data intentionally
2. Spend time investigating data
3. Apply multiple analytics techniques
4. Apply analytics to all insurance functions
5. Ensure analytics consistency across organization
6. Design studies
7. **Balance analytics and interpretation**

Balance Analytics and Interpretation

- Translate theoretical results to practical implementation steps
- Involve business units in study design and review of results
- Solicit input of those with practical experience
- Generate excitement, build consensus, achieve buy-in (sounds easy, right?!)

Balance Analytics and Interpretation

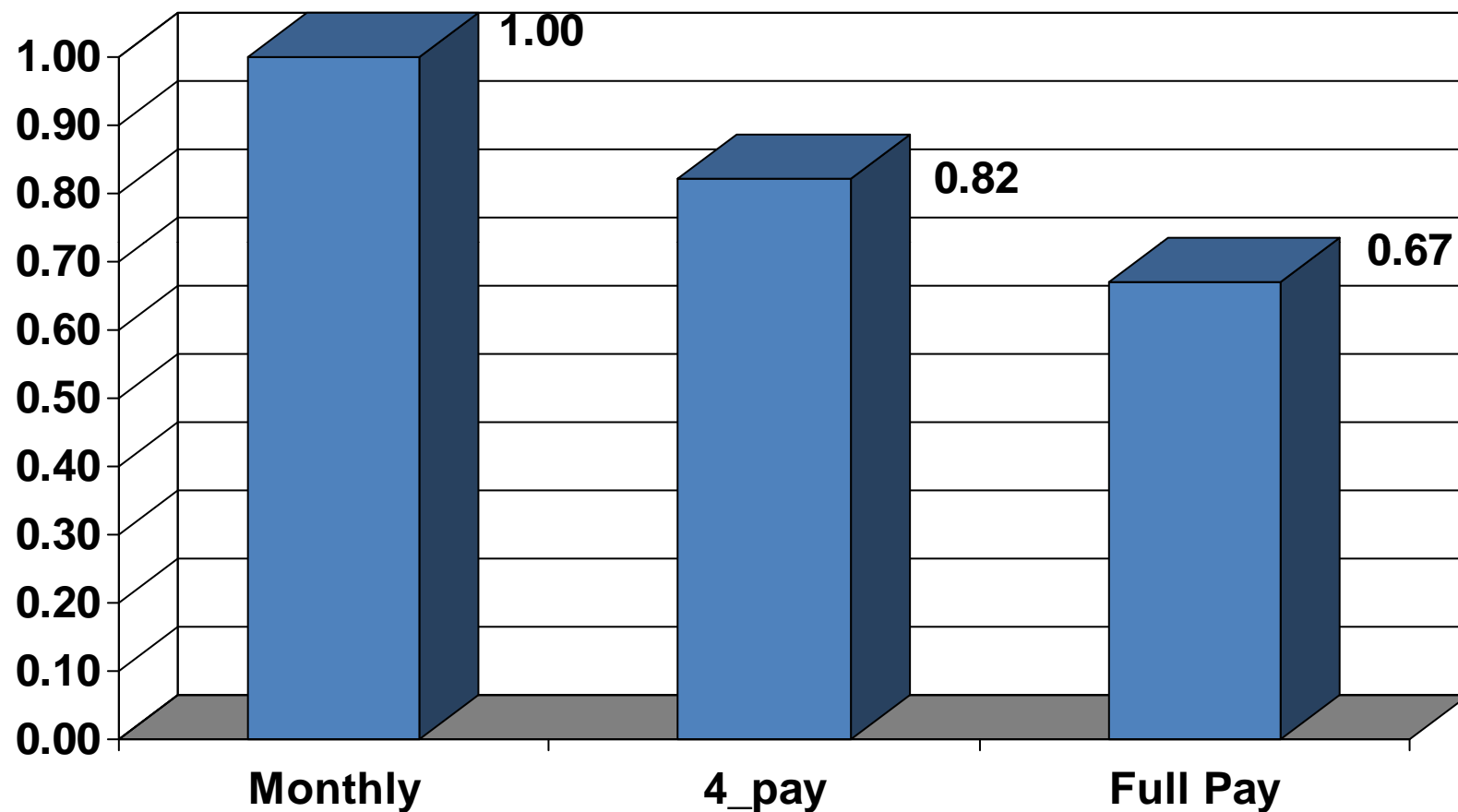
It is a capital mistake to theorize before one has data. Insensibly one begins to twist facts to suit theories, instead of theories to suit facts.

- Sir Arthur Conan Doyle

You can use all the quantitative data you can get, but you still have to distrust it and use your own intelligence and judgment.

- Alvin Toffler

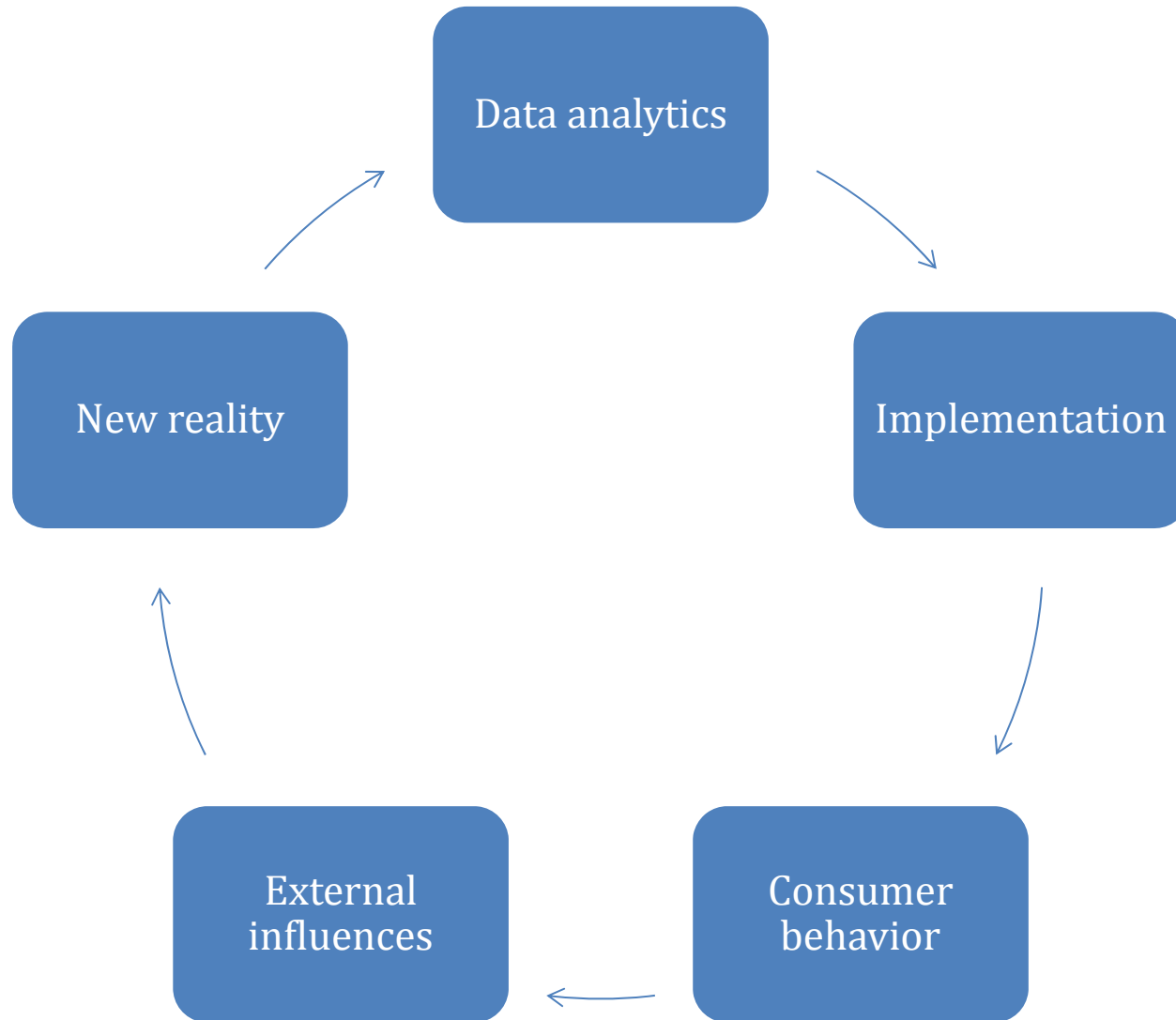
Theoretical Results vs. Practical Realities



Analytics Driven Companies...

1. Process data intentionally
2. Spend time investigating data
3. Apply multiple analytics techniques
4. Apply analytics to all insurance functions
5. Ensure analytics consistency across organization
6. Design studies
7. Balance analytics and interpretation
8. **Commit completely to analytics**

Complete Commitment



Analytics Driven Companies...

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6. Design studies
7. Balance analytics and interpretation
8. Commit completely to analytics

Thank You for Your Attention

Visit us at www.pinnacleactuaries.com

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