TOWERS PERRIN

TILLINGHAST

Using Predictive Models for Competitive Advantage in the Market

The Business Case for Predictive Modeling

Session C 5

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Market leaders took advantage of the prevailing economic dynamics to change the rules of the game

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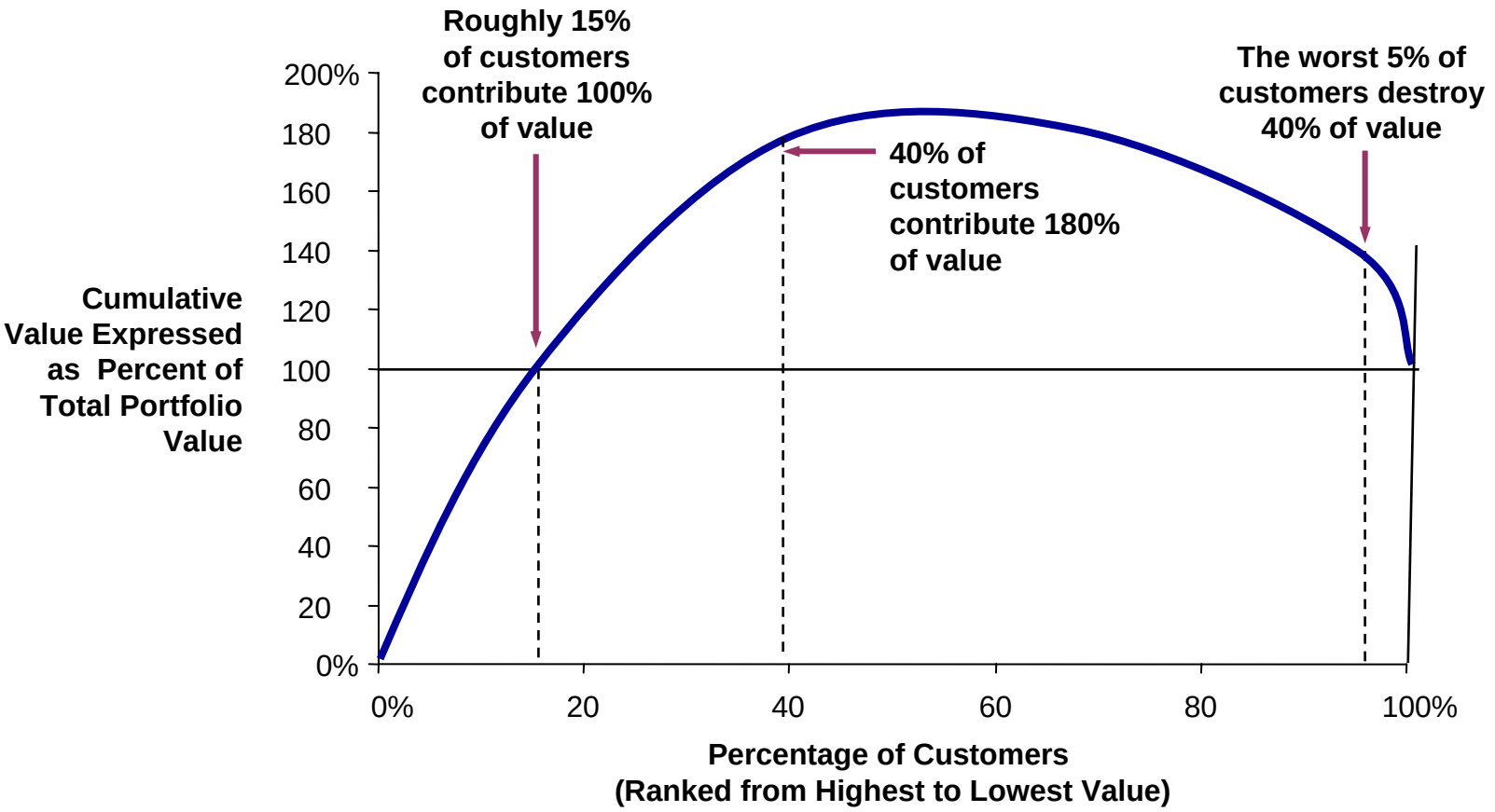


The benefits of pricing enhancements fall into two main areas

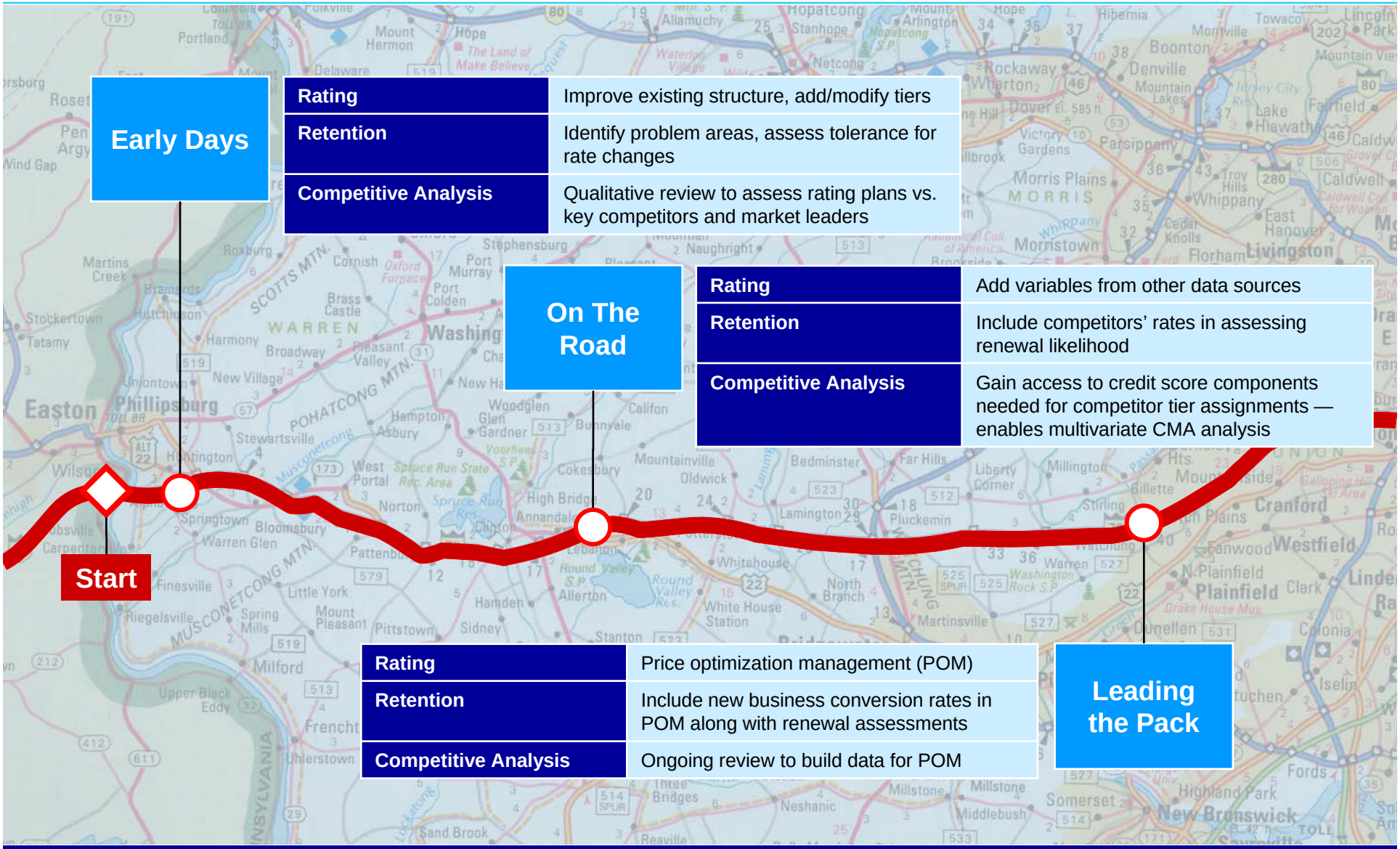
Top-Line Growth

- Opportunity to grow premium and market share (and/or prevent deterioration in market share/position)
  - Partly reflects ability to compete across broader spectrum of risks

Loss Ratio Improvement

- Our experience suggests the potential for a 2% to 6% improvement in loss ratio

Enhancing pricing sophistication and competitiveness is a journey



Start

Early Days

Rating	Improve existing structure, add/modify tiers
Retention	Identify problem areas, assess tolerance for rate changes
Competitive Analysis	Qualitative review to assess rating plans vs. key competitors and market leaders

On The Road

Rating	Add variables from other data sources
Retention	Include competitors' rates in assessing renewal likelihood
Competitive Analysis	Gain access to credit score components needed for competitor tier assignments — enables multivariate CMA analysis

Leading the Pack

Rating	Price optimization management (POM)
Retention	Include new business conversion rates in POM along with renewal assessments
Competitive Analysis	Ongoing review to build data for POM

Inaccurate rates make it difficult to attract and retain the business you want

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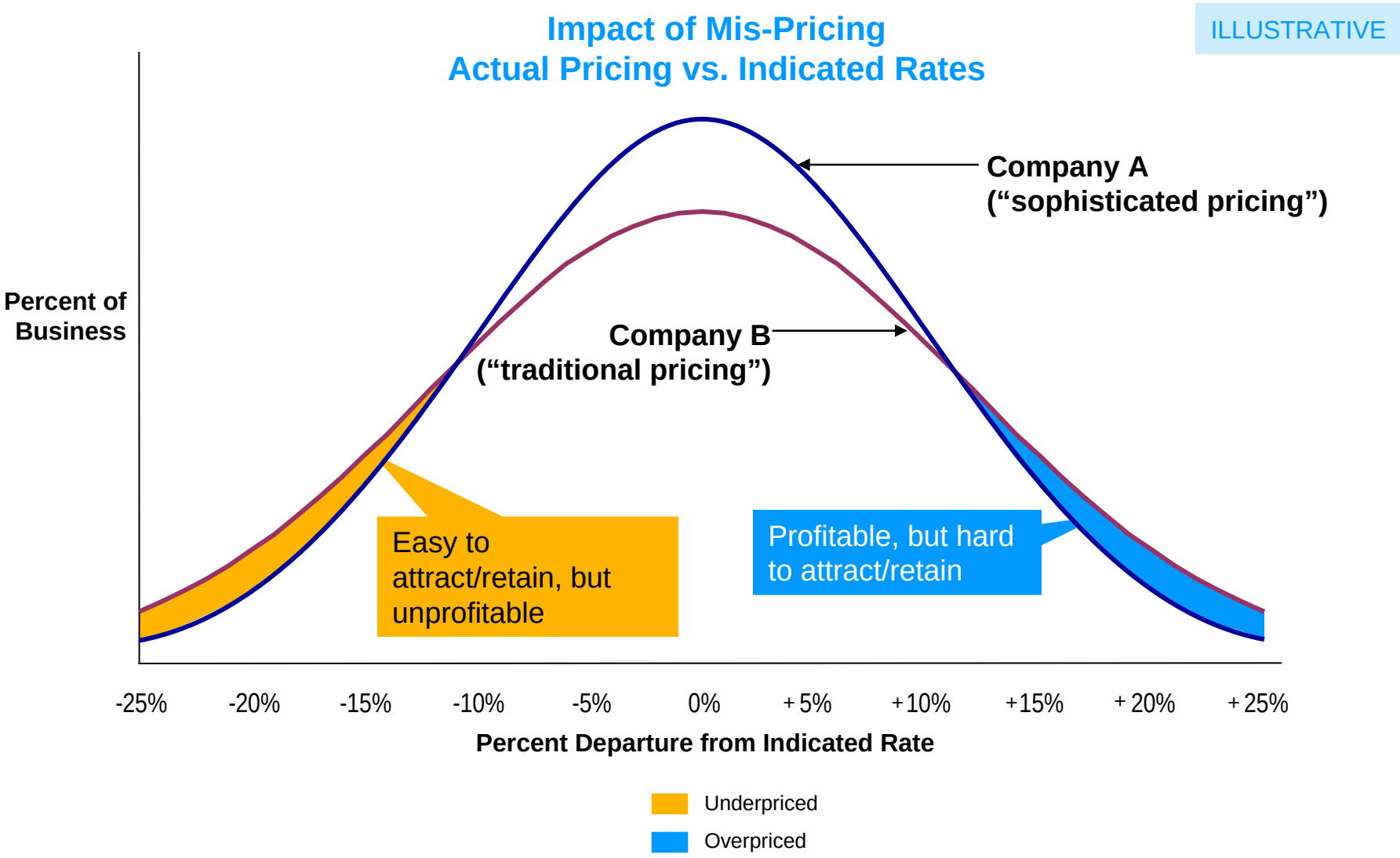

Enhancing pricing sophistication to maintain competitiveness is a multi-faceted challenge

Sophistication of Rating Plans

	None	Low	Medium	High	Very High
Rating Plan Design	■ Traditional "ISO" type ■ Age, gender, marital status, etc.	■ Few tiers	*Low, plus:* ■ More tiers ■ Multiple new variables	*Medium, plus:* ■ Credit (proprietary) ■ Interactions between variables	*High, plus:* ■ Creative new variables ■ Cross-LOB variables ■ Vary expenses by segment
Territories	■ Follow historical ISO territories	■ County/city/ZIP variations	■ Independent territories (often ZIP based)	■ Different and complex territories varying by coverage/peril	■ Different rate for every ZIP; possibly for every location
Vehicle Symbols	■ Use ISO physical damage symbols and relativities ■ No liability symbols	■ Use ISO physical damage symbols and relativities ■ No liability symbols	■ Introduce liability symbols ■ Estimate relativities of ISO symbols using multivariate approach	■ Customized or proprietary symbols	■ Customized/proprietary symbols interact with other variables
Data	■ Limited (internal) ■ Bureau	■ Internal ■ Purchased credit	*Low plus:* ■ More internal data ■ Externally purchased info ■ Geo-demographic, weather, etc.	*Medium, plus:* ■ Components of credit score ■ More detailed insured data	*High, plus:* ■ Transformed variables (i.e., combinations of internal/external info)
Modeling Approach	■ None	■ Univariate	■ Simple multivariate	■ Complex models with significant variable interactions	■ More complex models

Pricing Strategy	■ Uniform rate changes by class
	■ Possible variations across territories
		■ Uniform rate changes by class
		■ Possible variations by tier to reduce cross subsidies
			■ Cost-based
			■ Limited cross-subsidy
				■ Cost-based with competitive/marketing consideration	■ Price optimization
					  ■ Competitor behavior
					  ■ Price elasticity (consumer behavior)
					■ Cycle management

Competitive Sensing	■ None	■ Qualitative agent-driven	■ Small sample/profile	■ Rating engine	■ Rating engine

Understanding market competitiveness is the key to pricing approach enhancement

The Challenge

- Understand how rates compare to the market and key competitors
- Understand rating differences with key competitors by tier and individual factors
- Understand the dispersion of competitors' rates and your position in the market
- Identify pricing adjustments that will increase profitability and/or market share

One Solution

Competitive Market Analysis (CMA)

- Comprehensive approach to improving market competitiveness
- Three-part approach
  - Rating plan analysis
  - Competitor rate dispersion analysis
  - Pricing adjustment recommendation

CMA compares pricing for the entire book against competitors...

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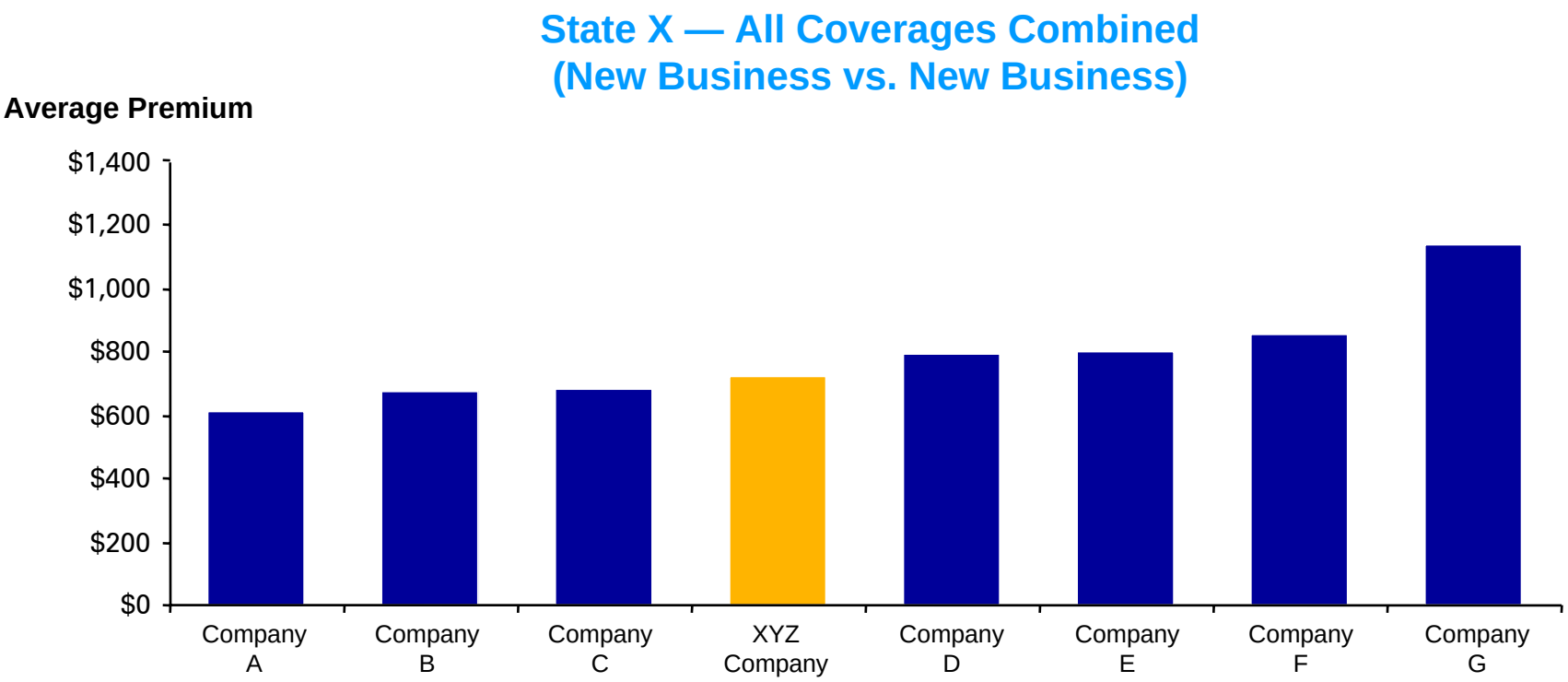

Source: Tillinghast analysis.

...and compares your price to individual competitors for clusters of risks

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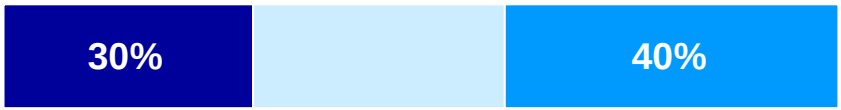
vs. Competitor A

vs. Competitor B

vs. Competitor C



Representative Types of Risks

- Tiers 1-5 and 15+, with drivers aged 16-18, 30-50 or above age 65
- Drivers aged 18-23, 31-35 and 50-65 with more drivers than cars

- More vehicles than drivers, ages 40-65, in tiers 10+
- Drivers aged <30 or above 65, more vehicles than drivers

- Drivers below age 20, one driver on the policy
- Drivers below 23, with three or more drivers on the policy

% of risks in State X where Your price is $50 or more below competitor

% of risks in State X where Your price is $50 or more above the competitor

Source: Tillinghast analysis.

CMA also identifies opportunities for adjusting prices by market cluster...

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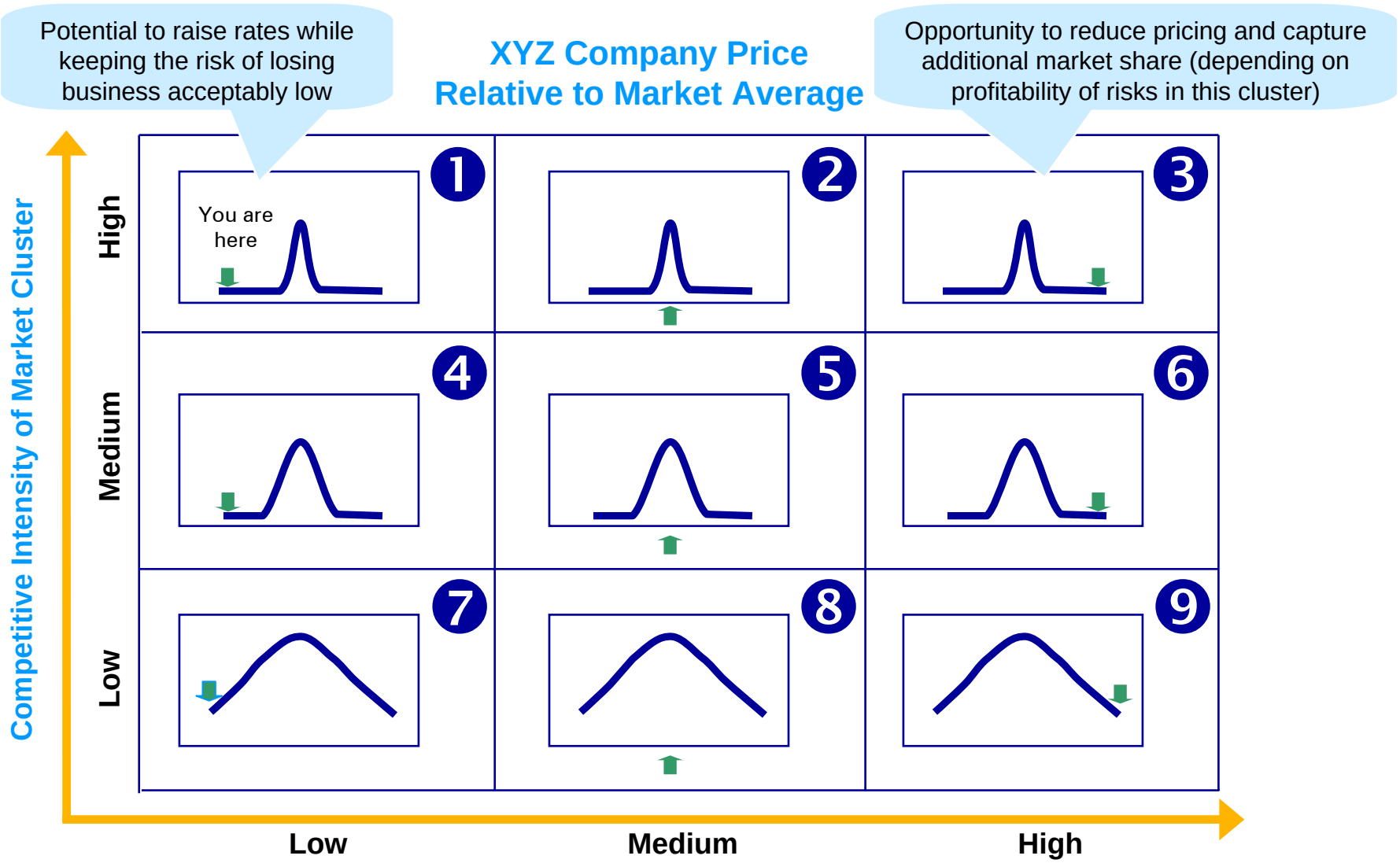
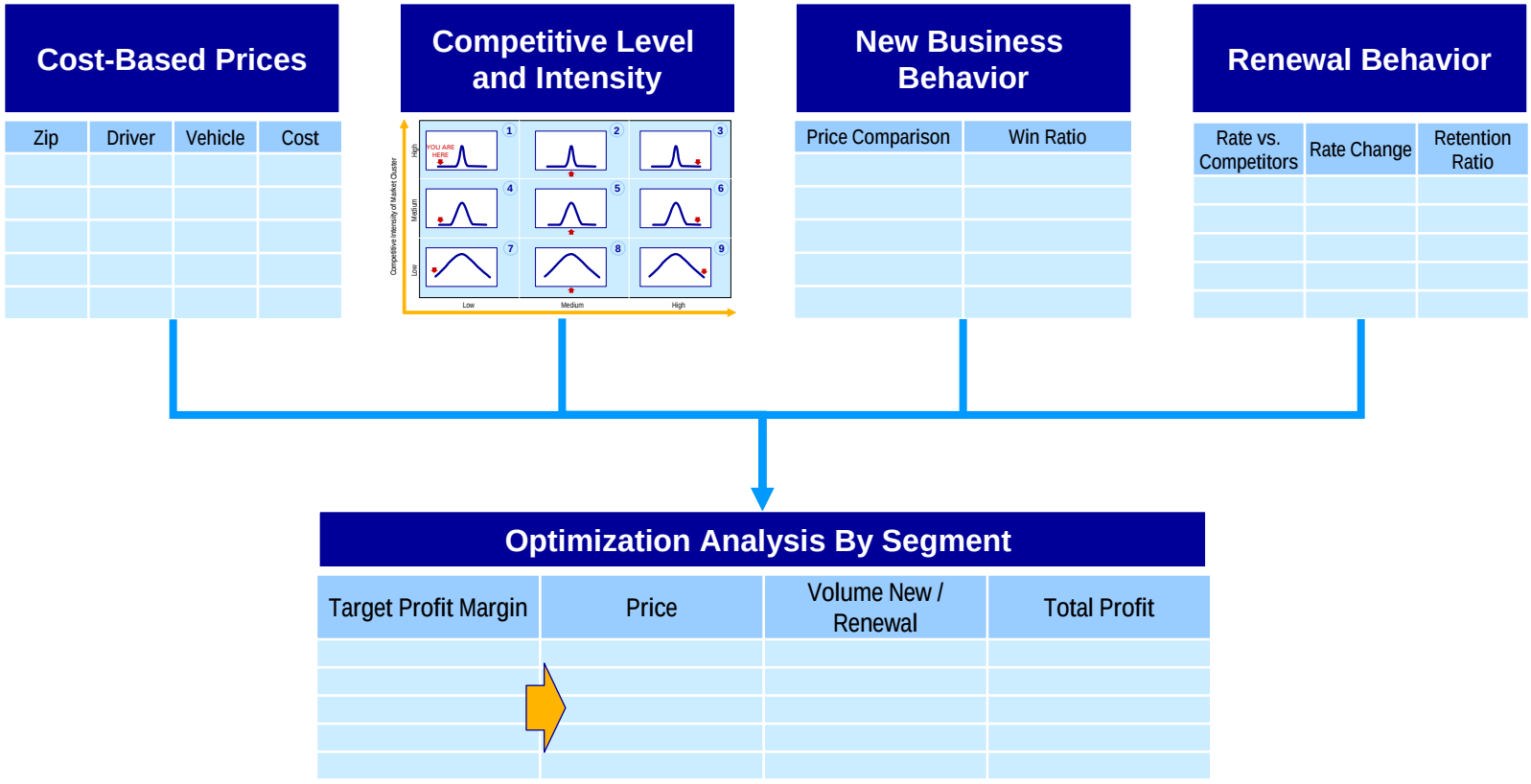


Source: Tillinghast analysis.

Price Optimization blends together predictive modeling, competitive market analysis, and customer behavior knowledge



Price optimization example

	Profit Margin ($)	New Business Win Ratio	New Policies per 1000 Quotes		Total Profit($)	
Segment With High Competitive Intensity						
	11	24.0%	240		2,640	
	13	21.0%	210		2,730	
	15	20.0%	200		3,000	
	17	19.0%	190		3,230	<--optimized
	19	16.0%	160		3,040	
	20	14.0%	140		2,800	<--traditional
	21	12.0%	120		2,520	
Segment With Low Competitive Intensity						
	13	30.0%	300		3,900	
	15	28.0%	280		4,200	
	17	27.0%	270		4,590	
	19	26.0%	260		4,940	
	20	25.5%	255		5,100	<--traditional
	21	25.0%	250		5,250	
	23	24.0%	240		5,520	<--optimized
	25	22.0%	220		5,500	
	27	20.0%	200		5,400	
TOTAL						
Traditional	20.0		395		7,900	
Optimized	20.3		430		8,750	

Before embarking on any new pricing journey, determine the strategic objectives against which the project can be measured