What is going on with Price Optimization?

Update on regulatory response and discussion of Actuarial Principles

A presentation to CANE

by Brent Petzoldt

September 30, 2015

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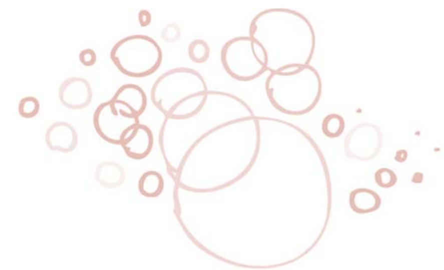
- This presentation is intended solely for the CANE 2015 Fall Meeting for discussing and understanding regulatory response to price optimization
- The document is incomplete without the accompanying discussion
- It is not intended nor necessarily suitable for any other purpose



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Agenda

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Today's pricing environment

Brief intro on the price optimization routine

Regulatory update

Discussion

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Today's Pricing Environment

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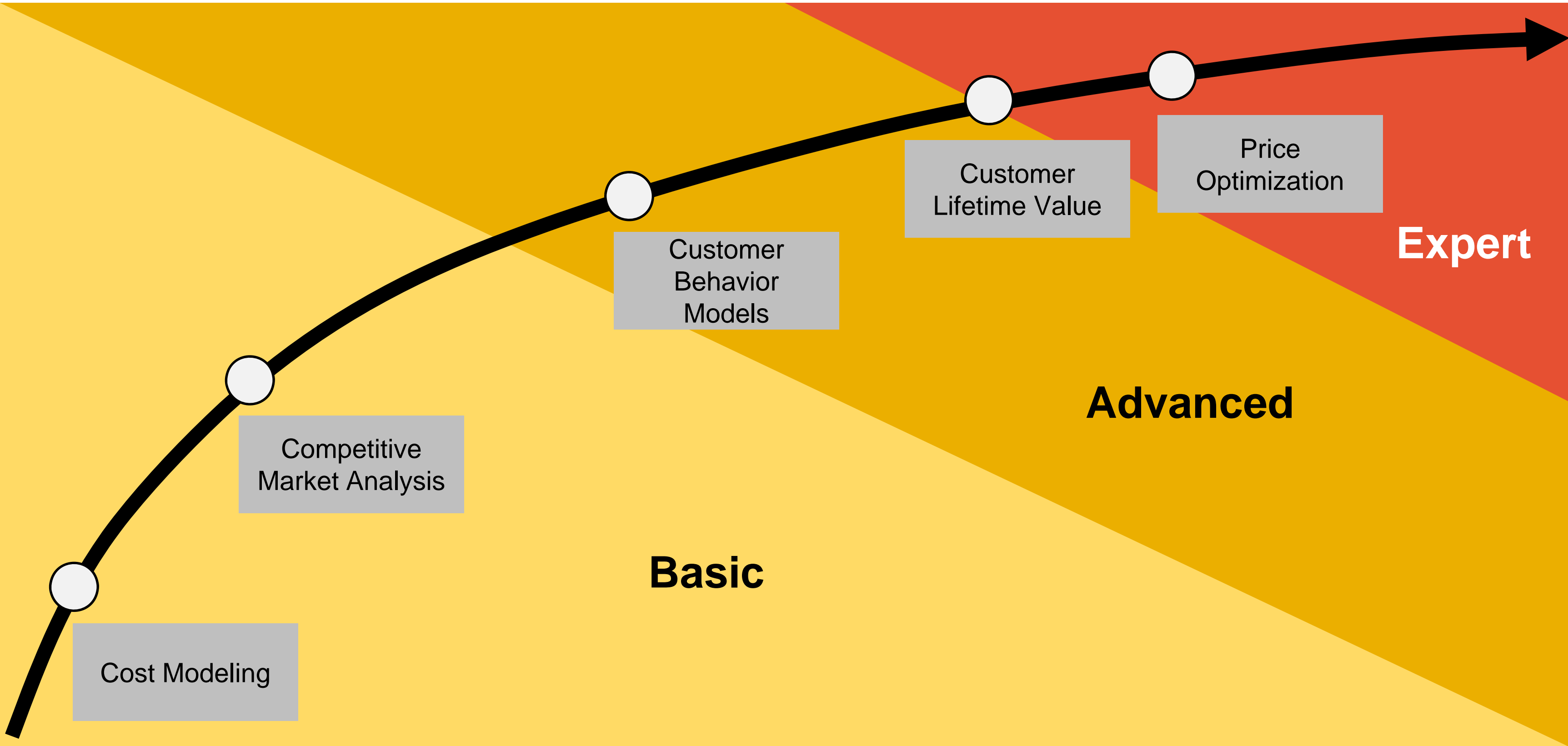
The Industry's Journey of Pricing Sophistication



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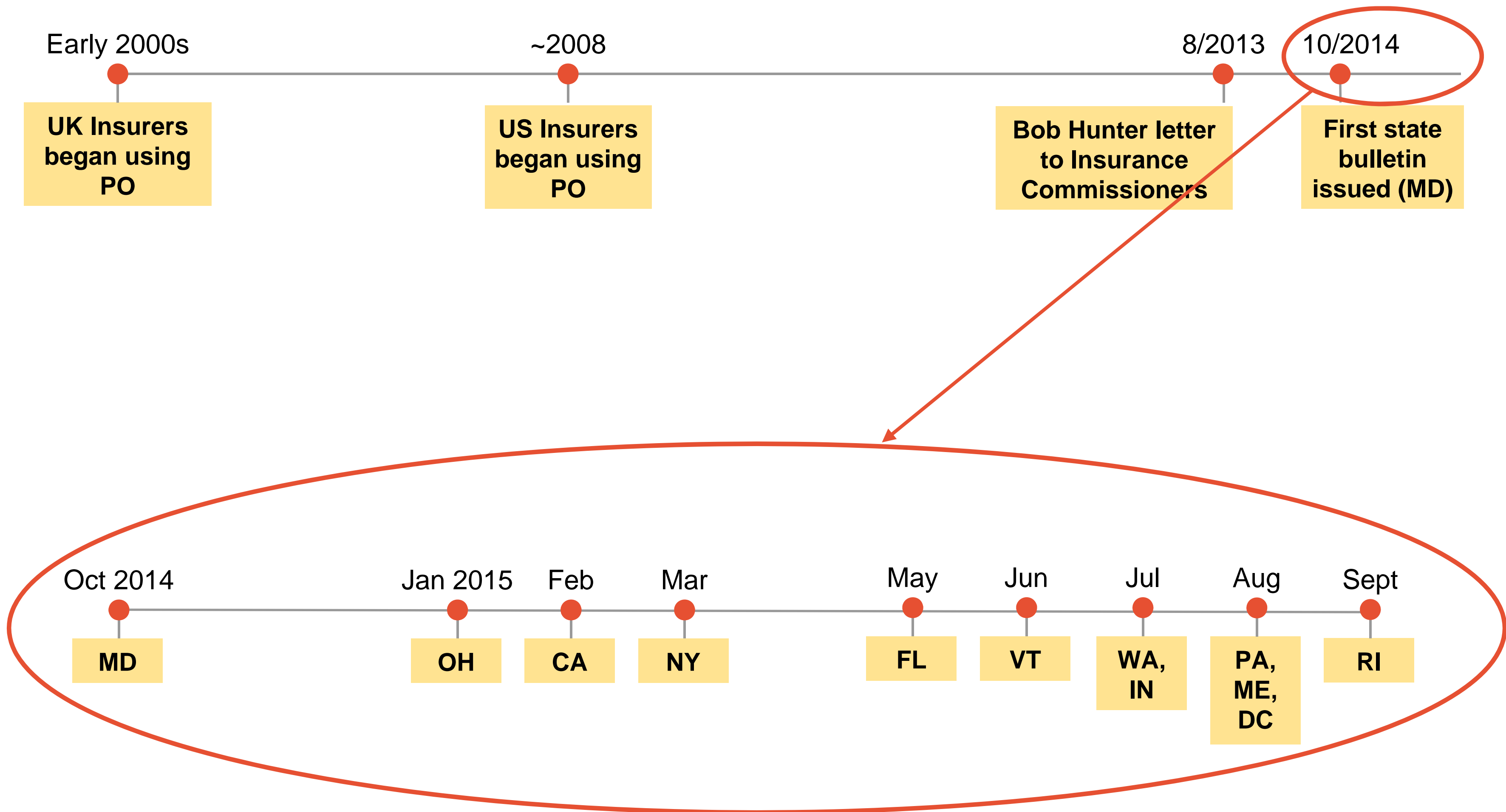
Price Optimization History



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Defining Price Optimization

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Three Considerations

What data / inputs are being used?

The math / procedure / routine

How are the outputs used and deployed?

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What is price optimization

"A process for adjusting prices away from a cost-based benchmark to better achieve business objectives"

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What are the business objectives

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What drives the adjustments to cost-based prices

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Integration

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Integration

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Optimization

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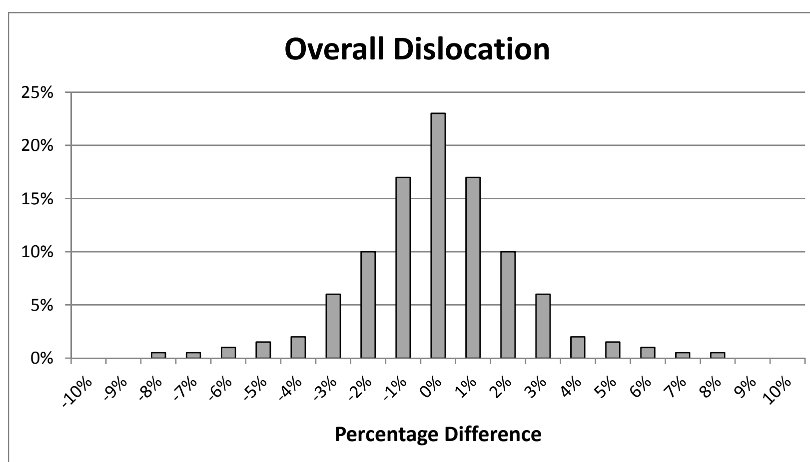
Constraints

- Constraints include both internal (e.g., brand considerations) and external constraints (e.g., compliance with state regulations)
- Constraints may be at the portfolio level or by individual class or risk
  - Portfolio level
    - Targeting a total premium volume
    - Targeting a maximum variance between current and optimized prices
  - Risk level
    - No customer gets more than +/- 8% change from current premium
    - Altering this constraint by uncertainty level in cost estimate



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Regulatory Context

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Many involved parties

- Actuarial ratemaking principles and standards of practice are being updated
- Initially, consumer advocates were vocal that consideration of consumer demand (more specifically – shopping habits) in pricing strategy is harmful to certain classes (low-income insureds), although recent attention has been “unfair discrimination” from a broad perspective
- Some state departments of insurance have responded by issuing bulletins declaring that “price optimization” is unfairly discriminatory
- Class action suit vs Allstate in Washington filed but later dropped
- NAIC and actuarial societies (CAS, AAA) have formed task forces to educate on the topic

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CA Bulletin (Feb 2015)

*For purposes of this Notice, "Price Optimization" is defined as **any method of taking into account an individual's or class's willingness to pay a higher premium relative to other individuals or classes**.*

*Price Optimization does not seek to arrive at an actuarially sound estimate of the risk of loss and other future costs of a risk transfer. Therefore, **any use of Price Optimization in the ratemaking/pricing process** or in a rating plan is unfairly discriminatory in violation of California law.*

Any insurer currently using Price Optimization to adjust its rates in California shall cease this practice.

1. Any insurer that has employed Price Optimization to adjust its rates in the ratemaking/pricing process shall remove the effect of any such adjustments from any filing to be submitted subsequent to the date of this Notice.

2. Any insurer that has a factor or factors based on Price Optimization in its rating plan shall remove the factor or factors in its next filing. The insurer shall submit this filing no later than six months from the date of this Notice.

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RI Bulletin (Aug 2015)

*This Bulletin is applicable to all property and casualty insurers issuing **personal lines** policies in Rhode Island.*

*The NAIC Casualty Actuarial and Statistical (C) Task Force is currently in the process of drafting a “white paper” analyzing price optimization and its use in insurance ratemaking. While there is no universally accepted definition of price optimization, the practice, in some of its applications, **involves the judgmental use of factors not specifically related to a policyholder’s risk profile to help determine or adjust his or her insurance premium**. An example would be using an individual policyholder’s response to previous premium increases to determine how much of a premium increase the policyholder will tolerate at renewal before engaging in comparison shopping or switching to a different insurer. **This practice can result in two policyholders receiving different premium increases even though they have the same loss history and risk profile.***

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RI Bulletin Continued (Aug 2015)

- Property and casualty insurers doing business in Rhode Island are reminded that all ratemaking must conform to the statutory requirements contained in R.I. Gen. Laws §§ 27-6-1, 27-9-1 and 27-44-1. Specifically insurers are reminded that rates must not be "…excessive, inadequate or unfairly discriminatory…"
- A rate will be considered unfairly discriminatory if price differentials fail to reflect equitably the differences in expected losses and expenses for different classes of policyholders.
- *Both base rates and rating classes must be based on factors specifically related to an insurer's expected losses and expenses*. While insurers may employ judgment in setting their rates, judgmental adjustments to a rate may not be based on **non-risk related factors** such as "price elasticity of demand" which seek to predict how much of a price increase a policyholder will tolerate before switching to a different insurer. The use of such factors not only unfairly discriminates between policyholders of the same risk profile, *but is also directly in conflict with the statutory principles that underlie Rhode Island's "open and competitive" property and casualty marketplace*.

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RI Bulletin Continued (Aug 2015)

- The Department does not intend this Bulletin to prohibit or restrict such practices as capping or transitional pricing if applied on a group basis.
- Insurers should group individual policyholders into credible risk-based classifications and treat similarly situated policyholders the same with respect to insurance pricing. Likewise, the use of sophisticated data analysis to develop finely tuned methodologies with a multiplicity of possible rating cells is not, in and of itself, necessarily a violation of Rhode Island's rating laws as long as the classifications are based strictly on risk of loss and not on willingness to pay or "elasticity of demand."

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Regulatory Bulletin Highlights

- Most try to define price optimization
  - "Charging most market will bear w/o losing customers by utilizing elasticity"
  - "Involves collecting/analyzing data ***specific to particular policyholder***…unrelated to risk…"
  - "Varying rates based on ***factors*** other than risk of loss/expense"
  - "Any method of setting prices that takes into account elasticity"
- All assert that prices based on "price optimization" are ***unfairly discriminatory***
  - Some try to define this as "charging different premiums to different individuals of the same ***class*** and of ***essentially the same hazard***"
  - Some seem to assert that two identical individuals could get different prices
  - Some state PO produces prices that are not ***actuarially sound estimate*** of risk of loss/expense
- Many talk about classification/granularity
- Some ignore expenses as a cost, others recognize explicitly
- Action items range from requiring disclosure on future/pending filings to "correcting" any rates based on price optimization by a certain deadline

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What are the regulatory intentions?

- Are some only calling out premiums that are selected to “charge the most that the market will bear”?
- Are they attempting to ban the use of specific rating variables that have no correlation to loss / expense?
- Are they banning extremely granular rating elements that can essentially identify unique individuals?
- Are they going as far to disallow adjusting in any way the “actuarial rate / best estimate of cost + expense” (perhaps other than transitional pricing)?

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Ambiguous terms

- “rate” vs “price”
- “non-risk related factor”
- “unfairly discriminatory”
- “granularity” / “credibility”
- “same risk profile / class / hazard”

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Key Considerations

- Question 1: can rates deviate from expected cost or not?
  - Historically, yes (young driver subsidies, marketing discounts, rate capping)
- Question 2: if so, how far is appropriate?
  - And how should this be addressed in actuarial standards?

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What next?

- No crystal ball … *and it may take a while*
- NAIC White Paper, and model bulletin in particular
- Carriers will strengthen internal governance of how rates are set
- May see changes regarding actuary's role in rate regulation
- May see changes in documentation and disclosure requirements

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Appendix: NAIC Draft White Paper “Potential Bulletin”

This Bulletin is applicable to all property and casualty insurers issuing personal lines policies in [STATE].

While there is no universally accepted definition of price optimization, the practice, in some of its applications, involves the use of factors not specifically related to a policyholder’s risk profile to help determine or adjust his or her insurance premium. An example would be using an individual policyholder’s response to previous premium increases to determine how much of a premium increase the policyholder will tolerate at renewal before switching to a different insurer. This practice can result in two policyholders receiving different premium increases even though they have the same loss history and risk profile.

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Appendix: NAIC Draft White Paper "Potential Bulletin"

Property and casualty insurers doing business in [STATE] are reminded that all ratemaking must conform to the statutory requirements contained in [STATUTE(S)]. Rates must not be "…excessive, inadequate or unfairly discriminatory…" A rate will be considered unfairly discriminatory if price differentials fail to reflect equitably the differences in expected losses and expenses for different classes of policyholders. *Both base rates and rating classes must be based on factors specifically related to an insurer's expected losses, expenses, or policyholders' risk*. While insurers may employ judgment in setting their rates, judgmental adjustments to a rate may not be based solely on non-risk related factors such as an individual's "price elasticity of demand" which seek to predict how much of a price increase a policyholder will tolerate before switching to a different insurer.

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Appendix: NAIC Draft White Paper "Potential Bulletin"

The Department does not intend this Bulletin to prohibit or restrict such practices as capping or transitional pricing when applied on a group basis. Insurers should group individual policyholders into justifiable, supportable, risk-based classifications and treat similarly situated policyholders the same with respect to insurance pricing. Likewise, the use of sophisticated data analysis to develop finely tuned methodologies with a multiplicity of possible rating cells is not, in and of itself, necessarily a violation of rating laws as long as the classifications are based strictly on expected losses, expenses, or other justifiable, supportable risk characteristics.

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Q&A

TOWERS WATSON

Brent Petzoldt
Consultant

101 South Hanley
Saint Louis, MO 63105

T 314-719-5813

brent.petzoldt@towerswatson.com

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