



Consumer Federation of America

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703-528-0062

March 21, 2014

To: Joseph Murphy, Chair
Auto Insurance (C/D) Study Group
c/o Aaron Brandenburg, NAIC
(Via email to: ABrandenburg@naic.org)

Re: Price Optimization and Earnix Presentation

Dear Commissioner Murphy and Members of the Study Group:

Thank you for allowing us to submit comments and ask questions related to the Earnix presentation of March 17, 2014 before the Study Group.

This letter first presents why we feel Earnix's presentation was misleading and offers a series of questions based on the presentation and earlier Earnix documents. I appreciate your willingness to ask Earnix to respond to these questions.

As you will see, CFA concludes that insurer use of Earnix's price optimization tool harms consumers, particularly the 40 percent of Americans in low- and moderate-income populations. CFA believes that there is sufficient knowledge about price optimization to call upon NAIC to ban its use, or, at the very least, the NAIC should call for a moratorium on the use of Earnix's and other vendors' price optimization software until regulators have had the opportunity to fully review the models and truly understand their full impact.

How Earnix Tried To Mislead The Study Group

The St. Patrick's Day presentation by Earnix's General Manager in North America Meryl Golden before the National Association of Insurance Commissioners (NAIC) Auto Insurance (C/D) Study Group was astonishing in its divergence from statements made in advertisements and documents produced by Earnix prior to March 17, 2014. Given the suddenness of this transformation, we believe their presentation represents political spin rather than an authentic change in what price optimization is designed to achieve

Here are but three examples of the Earnix spin:

1. The company attempted to redefine "price optimization."

Prior to St. Patrick's Day: Earnix promised prospective American insurance company customers that price optimization was a profit-maximizing tool:

"Price optimization is defined as using mathematical algorithms to determine optimal values of rating factors to meet business goals and constraints (e.g., maximizing profitability while achieving X% of policy growth.)"

Source: 2013 North America Auto Insurance Pricing Benchmark Survey

St. Patrick's Day: price optimization was described as a minor adjustment to rating factor selections:

"Price optimization helps inform an insurer's judgment when setting rates by providing suggested competitive adjustments to indicated costs using advanced analytic techniques" and

"Price optimization is a systematic and statistical way to help an insurer determine a rate plan that better fits the competitive environment, within actuarial and regulatory standards."

2. Previously presented as a money making tool, price optimization became a technical refinement to the ratemaking process for the purposes of the NAIC presentation.

Prior to St. Patrick's Day: Besides the above-quoted use of price optimization to "maximize profits," there are numerous other references to the financial benefits from price optimization in the Earnix literature.

In a Best's Review 2012 advertisement featuring Ms. Golden, Earnix promises "Companies that adopt price optimization realize substantial financial benefits...Late adopters will be at a competitive disadvantage."

Source: "Price Optimization at the Tipping Point," Bests Review [See Appendix 2]

Another company document explained: "The financial benefits of price optimization can be significant. Companies that adopt optimization as a pricing strategy can realize improvement of 1-4 points in the combined ratio and/or as much as a 10-20% increase in new business conversion rates." Source: "Price Optimization in North America: Myth vs. Reality," September 2012

St. Patrick's Day: Ms. Golden hardly makes mention of "profits" or the previously promised "financial benefits" of price optimization tools except to deny that price optimization is about profits in U.S. insurance markets. Unlike her company's profit promises prior to this presentation, on St. Patrick's Day Ms. Golden described the idea that profit-maximization was a purpose of price of price optimization as a "misconception," claiming:

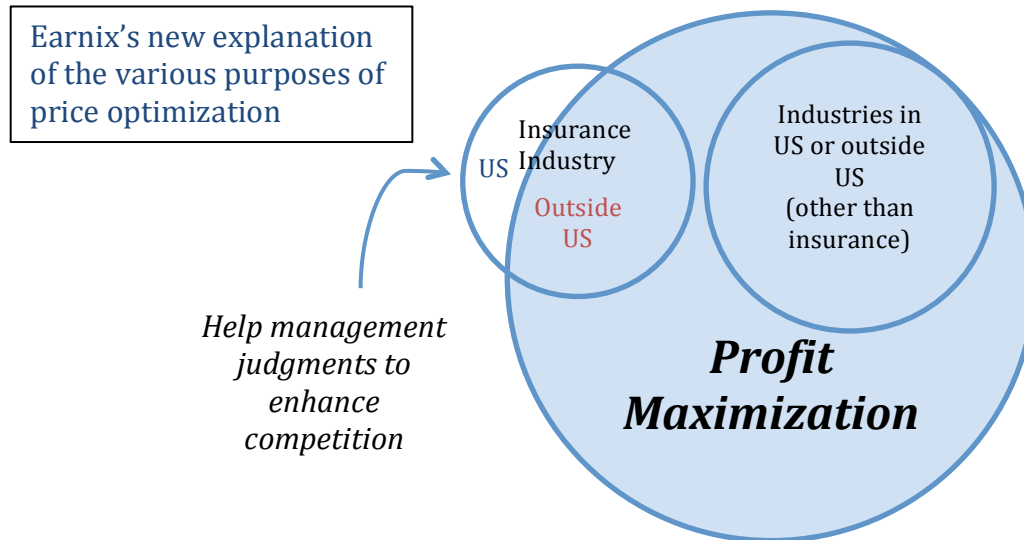
[The misconception] is that price optimization is all about profit maximization.

While this might be the case in other industries or within our industry for other countries but it is not the case for the US insurance market.

This is quite a statement. Ms. Golden asks regulators to accept that while profit maximizing is the objective of price optimization in other industries and for the insurance industry outside of the U.S., the software her company itself has previously marketed to U.S. insurers as a tool for "maximizing profitability" is not, in fact, a tool for maximizing profit.

3. Consider the use of the word “elasticity,” wherein prices can be raised on those groups of people who do not shop as much as other groups might.

Prior to St. Patrick’s Day: Earnix has repeatedly touted its product as an advanced predictor



of a customer’s likely reaction to price increases – what economists call “price elasticity of demand.” Earnix even referred to price optimization as an “elasticity model.”

Referring to its own report that nearly half of America’s largest insurers “currently optimize their prices,” Earnix claimed that “[t]he most common use of elasticity models is for factor selection, mentioned by 58% of the companies that use such models.” Earnix added that “[w]hen asked to rate the top challenges in their pricing processes, respondents pointed out the following challenges: (1) Effectively incorporating knowledge of consumer price elasticity...”

Source: “2013 North America Auto Insurance Pricing Benchmark Survey”

Earnix explained that price optimization allows insurers to “[a]nalyze the price elasticity of each customer profile and uncover the efficient pricing frontier for each product in your portfolio.”

Source: Earnix.com “Price Optimization: Insurance Price/Rate Optimization”

“Earnix best-in-class analytics and patent-awarded optimization technology empowers insurers to implement pricing strategies that go beyond traditional risk cost pricing, incorporating demand elasticity models to maximize profit and growth objectives.” (Emphasis added)

Source: Earnix.com “Insurance Pricing and Customer Value Optimization”

St. Patrick's Day: When the company presented its product to regulators, however, elasticity was never mentioned. In the presentation the word “elasticity” was replaced by the word “competitive,” as if raising the rate for some increases competition.

The move away from actuarially sound rates

Earnix has also changed its tone, though not its substance on the relationship between price optimization and cost-based ratemaking. Prior to the St. Patrick's Day presentation, Earnix marketed its software as an iconoclastic tool to get past the tradition of actuarially based rates.

Prior to the presentation, the company claimed: “Earnix best-in-class analytics and patent-awarded optimization technology empowers insurers to implement pricing strategies that go beyond traditional risk cost pricing, incorporating demand elasticity models to maximize profit and growth objectives...In today's competitive insurance market, traditional ratemaking based on risk and cost alone is no longer sufficient. The answer to the needs of insurers in the customer-driven age is incorporating demand and risk cost considerations to optimize pricing and customer value.” (Emphasis added) Source: Earnix.com “Insurance Pricing and Customer Value Optimization”

The company's attack on the ratemaking process was much less aggressive in the St. Patrick's Day presentation, during which its product was described, less dramatically, as merely a tool for “suggesting” minor adjustments that “helps inform an insurer's judgment.”

Notably, Earnix did acknowledge that price optimization is a tool to move rates and rating factors away from the actuarially determined cost-based price levels. As the company's consulting actuary Mike Miller put it, price optimization “is not an actuarial tool at all...It provides no input regarding expected costs; it provides nothing actuarial in nature in terms of projected losses and expenses.”

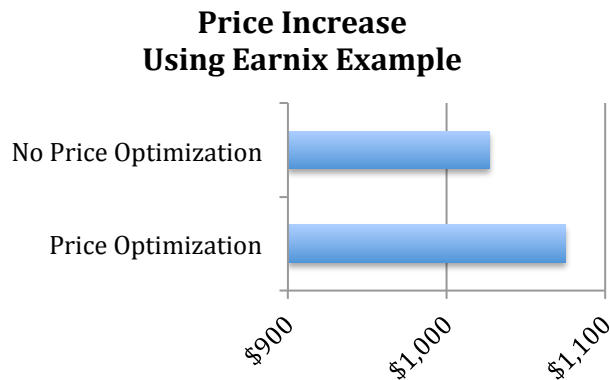
Though without the buzzwords of its marketing material, Earnix's actuary admitted that price optimization changes prices from those based on actuarial principles to prices that are less actuarially sound than before price optimization techniques are applied. This is a huge change in ratemaking, taking us systematically away from cost-based rates, and it raises many serious questions that must be addressed by regulation.

The magnitude of the changes from price optimization can be large

In Earnix's price optimization example (Presentation, Slide 8) they show factors rising above and below the traditional rating factor for selected factors. Aside from the fact that this appears to be a fabricated example that leaves the false impression that upward adjustments to prices are rare, the method of presentation also attempts to obscure the overall impact of this non-actuarial technique.

Using the example on Slide 8, for an under 21 year old driver of a 5 year old Ford, the combined rating factor for this risk prior to price optimization was 2.0544 ($2.40 * 1.07 * .80$) while the factor after price optimization would be 2.1496 ($2.45 * 1.07 * .82$), an increase of 4.6%.

Using only these three factors, the premium for this driver – assuming a \$500 base rate – increases by approximately fifty dollars based on Earnix’s price optimization example. There is no actuarial justification for this increase.



But the example provided by Earnix only incorporates three of dozens, and often hundreds, of factors insurers use to price auto insurance today. Therefore, if other factors were also changed by price optimization for this driver, for instance miles driven from 1.00 to 1.025, occupation from .975 to 1.00, education from .95 to 1.01, credit score from 1.00 to 1.035 and territory from 1.25 to 1.29 just to list a few of many possible hypothetical factor changes, the overall factor for the driver would rise from the pre-price optimization level of 2.3786 ($2.40 * 1.07 * .80 * 1.00 * .975 * .95 * 1.00 * 1.25$) to 2.9712 ($2.45 * 1.07 * .82 * 1.025 * 1.00 * 1.01 * 1.035 * 1.29$) after price optimization, an increase due just to the use of price optimization of 24.9%. In this scenario, the driver would be quoted a premium approximately \$300 higher than his or her cost-basis determined by actuarially sound methods.

Actuarial standards require that “A rate is an estimate of the expected value of future costs.” Earnix should explain how premiums adjusted by price optimization meets that standard given that price optimization alters the price away from the calculation of expected value of future costs?

The only explanation Earnix gave at the St. Patrick’s Day presentation seems to be that there is some unknown (and undisclosed) “confidence interval” around each factor and rate that allows rates to vary from the factor indicated by the cost-based calculation. Earnix put it like this: “Loss costs are the foundation of rate setting. With price optimization, factors are typically constrained to stay within the confidence interval of cost estimates.” (Page 9 of the PowerPoint) “Typically constrained” is not a very reassuring standard for regulators to accept, even if one were to accept the confidence interval argument.

There are myriad problems with the idea of a “confidence interval” where the filing company can do whatever it wants to in dozens or hundreds of intervals around rating factors. Here are just a few of the problems:

- Insurers do not file a “confidence interval” around a price or a rating factor; insurers file a single figure for a price or a factor. Since no range is given, where does the “confidence interval” start and end? Does the insurer have the option to pick any number it chooses without declaring the range of the confidence interval? How does a regulator regulate that?
- What might appear to be reasonable selections within a confidence interval around rating factors can produce grossly excessive and unfair rates if the insurer selects the high end of the confidence interval for most factors. As shown above, just small changes in a few factors can produce prices that are hundreds of dollars above the actuarial price.
- It is a nightmare for regulators to “regulate” prices when “confidence intervals” are used rather than point estimates. How does a regulator keep track of all the selections to make sure that the combinations of factor selections do not produce unfair or excessive prices for all potential customers of the filing insurer?
- If confidence intervals are used, consumers surely must be given the information of where the price the insurer has chosen is in the range of prices the insurer could have selected. Consumers need to be able to ask, “Why am I paying more than the low end of the interval?” or “Why am I priced at the high end of the interval?”

Who Will Get Hurt By Price Optimization?

Though Earnix refused to discuss its methodology during the call (and, similarly, said it would not file its “black box” with regulators), it has been very clear in its marketing material that price optimization is an elasticity model that predicts how much of an increase different consumer classes will tolerate before non-renewing or not purchasing a company’s policy. Groups who tend to have fewer marketplace options for reasons of geography, time available, financial literacy or, more generally, tend to shop less than average are vulnerable to having premiums raised unfairly by price optimization.

Research shows that low- and moderate-income auto owners are struggling with affordability of state-required auto insurance. CFA has issued a series of six reports showing this serious problem. For instance, families in the lowest quintile of income in America only have an average income of \$10,000. Our research shows that these families, particularly in urban areas, have little opportunity to buy minimum state-required auto insurance for less than \$500 and frequently can’t buy it for less than \$1,000. Often, in places like Detroit and Baltimore, the price can be over \$2,000. Most of the uninsured motorists in America are lower-income but good drivers who simply cannot afford the coverage. Since research also indicates that the poor do not, for various reasons, shop as much as other consumers, it is likely that price optimization will make state-required auto insurance even more unaffordable for the poor in America.¹ The fact that price

¹ “In fact, nearly one in three low-income households reports that they do almost no shopping around; only about one in eight higher income households don’t. One might hear such figures and respond, ‘caveat emptor,’

optimization will severely impact lower-income people and increase the uninsured motorist populations around the country requires regulatory action.

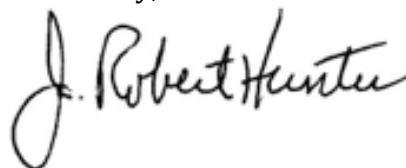
Conclusion

CFA believes that insurer use of Earnix's and other vendor's price optimization tools harms consumers, particularly the 40 percent of Americans in low- and moderate-income populations. For the reasons outlined herein, CFA concludes that there is sufficient knowledge about price optimization to call upon NAIC to ban its use. We therefore do request that the NAIC adopt a resolution calling on states to ban the use of price optimization.

It is clear at this point in the development of price optimization in insurance in America that, based on my discussions with this Study Group and several individual regulators, most regulators had (until very recently) no idea that price optimization was in use in their states, how it works or which insurers are using it. The states and the NAIC are at the very beginning of a steep learning curve on this subject. Given the lack of information and Earnix's unwillingness to disclose its models for public review, we encourage you to, at the very least, consider a moratorium on the use of price optimization until regulators can get up to speed. If the investigation regulators conduct (we propose several questions for Earnix in Appendix 1 as suggested paths of inquiry) comes out the way we at CFA anticipate, the moratorium will become a permanent ban on the use of price optimization products because of violation of actuarial standards and state laws against excessive and unfairly discriminatory prices.

We appreciate very much, Mr. Chairman, that you agreed to hold the record open to receive this statement and submit additional questions for Earnix to answer. We attach, as Appendix 1. A set of "Questions for Earnix." We look forward to getting their responses. Additionally, I have enclosed, as Appendix 3 the original letter I sent to regulators that Earnix's consulting actuary highlighted in his St. Patrick's Day presentation by saying: "I agree with every one of [Bob Hunter's] concerns and would have co-signed that letter if he had invited me to do so."

Yours truly,



J. Robert Hunter
Director of Insurance

but the fact is that many of these consumers are new to many of these markets and may not fully understand their options. That problem has grown worse as many of these markets have become more complicated over the past decade: From insurance plans to mortgage policies, consumers are often beset with large numbers of choices, making it more difficult to make smart decisions." Source: From Poverty, Opportunity: Putting the Market to Work for Lower Income Families. Washington, DC: The Brookings Institution, 2006, page 11.

QUESTIONS FOR EARNIX

These questions relate to the slide presentation provided by Earnix to the NAIC Auto Insurance (C/D) Study Group on March 17, 2014.

1. How is a commissioner going to assess the impact of price optimization unless he or she can review the models or, at least, a tabulation of the effect by rating factor and the aggregate effect for at least enough drivers to understand the overall impacts?
2. You say that price optimization analyzes “an insurer’s data and other considerations” [slide 4].
 - What insurance data do you analyze?
 - What are the “other considerations” you analyze?
3. You say that price optimization “improves the efficiency of the rate setting process.” Since you also say that it is not actuarial and only comes in after the cost-based ratemaking happens, how does that improve efficiency – it adds a layer of time and resources, right? Or do you suggest that it can trim down the amount of time and resources that go into the actuarial side of the process?
4. You claim to have different Earnix products in the USA and UK (slide 6). One of the differences is that the US has “Rate Regulation.” Explain exactly how the use of price optimization is described and detailed in a rate filing so that regulation can see what is happening. How does a commissioner find out exactly how price optimization impacted the traditional risk-based rate? Please provide examples of rate filings where price optimization is explained and the results disclosed to regulators.
5. You claim that “The same actuarial and regulatory standards apply to filed rates whether a company uses price optimization or not.” (Presentation Slide 9). That is true, but the question is whether price optimization allows rates to meet those standards. If the rate moves away from the traditional risk based rate, it can easily fail to meet either actuarial or regulatory standards. For example, two identically risky persons being charged different prices is the classic definition of unfair discrimination. How does a regulator know how much impact price optimization has on factor of a rate in the filing? How does Earnix make sure no two identically risky persons are not charged a different price? How does the Earnix price optimization product assure that there is no disparate impact on lower-income Americans by the use of the Product?
6. Slide 10 states: “Rate regulatory laws in the individual states generally permit the rate filer to consider management’s business judgment and competition to be considered in the determination of the rates to be filed and charged to insureds.” Judgment and competition are typically used to explain the selection of lower than indicated rates. Can you show examples of a filing where an insurer raised rates and the insurer

justified this by claiming the increase above the actuarially indicated price was because of competition? Is not the normal use of competition along this line: the indicated rate in a region is plus 10% but the insurer chooses to only ask for 6% because of competition? Should regulators allow an insurer with an indication of 10% to take 15% for “competitive reasons”? Put differently, how is raising the price a customer has to pay above the actuarially indicated level a “competitive” response to the market?

7. Slide 10 states: “It is the responsibility of the rate filer to ensure that filed rates meet the statutory rate standards of adequate, not excessive, and not unfairly discriminatory.” This is, as we have seen with other modelers, the escape clause from responsibility. Doesn’t this basically say that if the rates do turn out to violate the law, it is not Earnix’s fault? Does not Earnix have responsibility for creating a systematic way to overprice consumers that exposes the firm to liability?
8. Slide 10 states: “An actuary is able to opine that the filed rates meet the statutory rate standards if, and only if, the filed rates reflect projected costs which are reasonably close to the actuary’s projected costs.” Is it your intent that the liability for an improper charge, which occurred from the use of the Earnix price optimization tool, is shifted to the insurer’s actuary who is the one charged to meet Casualty Actuarial Society’s Standards of Practice? Does the CAS literature provide a standard for “reasonably close?” Does Earnix have any actuaries on staff? Do you have consulting actuaries other than Mr. Miller? When was Mr. Miller hired? Does he have any role other than attending this hearing and presenting the price optimization product to regulators?
9. How does Earnix assure that rates are not raised on the basis of income either directly or through proxies for income. This is particularly important to know since lower-income Americans are having trouble affording state required auto insurance and regulators need to know if lower-income people will be adversely impacted even further by price optimization.
10. During your presentation, you did not discuss price elasticity of demand even though it is discussed extensively in other Earnix documents. Does your algorithm include evaluation of consumers’ responsiveness to price changes? If so, under your algorithm, would a consumer (or class of consumers) found to be less responsive to price changes be identified for upward adjustments in premiums? How do you determine consumer (or class of consumers) responsiveness to price?
11. Has Earnix ever tested price elasticity by race or ethnicity? Have you tested it by income? Would it be OK to use race or income as a basis for your rate segmentation? Would it be OK to use proxies for race or income as a basis for your rate segmentation?
12. Since price optimization is marketed as a technique to increase profits for the insurer, are higher prices produced by price optimization excessive since they derive from prices above the indicated cost-based price?

13. If, as you say, the filing process for price optimized rates and non-price optimized rates are “identical,” how does a regulator determine if rates being presented are optimized or not?
14. The presentation suggests that price optimization need not be disclosed to regulators and that disclosing it might actually be worse for consumers. How can disclosure of price optimization harm consumers? Do you advise your clients to be sure to disclose to the regulators that your products have been used to optimize the rates being filed or do you advise them not to disclose it? Please supply documentation of any advice you give clients regarding the disclosure of information to regulators related to insurers’ use of price optimization.
15. Do you advise your clients to be sure to disclose to their consumers that your products have been used to optimize the rates being filed or do you advise them not to disclose it? Please supply documentation of any advice you give clients regarding the disclosure of information to consumers related to insurers’ use of price optimization.
16. Please provide the manual or other information you supply to insurers when they decide to use your price optimization product. This should cover not only the advice you give insurers on how to run the software but any advice you give them relative to how to interact with regulators when asked questions about the product. Do you ask to be involved if a regulator asks one of your clients about your price optimization product? Also, do you in any way restrict the insurers ability to disclose if and how price optimization is used when a consumer asks if it is used? Please supply all documents relative to this as well.
17. Is the place where rates are optimized in America always in a rate filing or is it, in some cases, in underwriting standards or in alternative product selection or at the point of sale in an algorithm? Please identify with precision all of the ways price optimization can be used to alter a price from the risk-based level in the United States. In places with open competition laws, like Illinois, does Earnix use a different price optimization model than in a place with tighter regulation, such as California? Please explain for each regulatory regime (prior approval, file and use, use and file, flex and open rating) how the Earnix model changes if at all.
18. Do you believe that small overcharges to consumers (above risk-based levels) meets regulatory standards but large ones, using the same methods, would not? Where is the point at which the increase fails to meet the standards?
19. Please give us examples, based on your experience, of segments most likely to be optimized upward in price. Would, for example, a 30-35 year old married woman’s premiums be a likely candidate?
20. Explain in detail the process of reverse engineering the prices in a rate structure to change them from risk-based to optimized. Is this reverse engineering disclosed in a rate filing? Please give us examples of filings where it was disclosed.

21. Should vendors of price optimization products be regulated as advisory organizations since their tools directly alter prices consumers pay for state required auto insurance?
22. Is one of the factors that price optimization is applied to territory? How does the Earnix optimizer protect the public from the possibility that price optimization could be used to “redline” territories through high prices?
23. “Individual Price Optimization. Where allowed by regulation, Earnix enables insurers to customize rates down to a ‘segment of one,’ offering each customer the best possible product and price combination...while optimizing company goals for retention and profitability. Individualized rate quotes can be provided in real-time over the web, the call center or delivered to an agent.” (Emphasis added) Is this done anywhere in the USA? If so, where? If used anywhere in the USA, how can rates that vary constantly based on changes in demand pass muster as not being unfairly discriminatory?
24. In your survey of who is using price optimization in America you state: “Of the companies with over \$1B GWP, 45% currently optimize their prices and an additional 29% are planning to adopt optimization in the near future. Only 3% of the companies with over \$1B have no plans for price optimization.” (Emphasis in the original) (Source: “2013 North America Auto Insurance Pricing Benchmark Survey” – A survey “collected online from 73 executives and pricing professionals representing insurance companies that sell auto coverage in Canada and the United States.”) Please supply the names of insurers that you know are using price optimization in America (by state, if possible).
25. Research suggests that low- and moderate-income auto owners might be struggling with affordability of state-required auto insurance. Since research also indicates that the poor do not shop as much as other consumers, isn’t it likely that price optimization will make state-required auto insurance even more unaffordable for the poor in America?

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Special Advertising Section

Price Optimization at The Tipping Point

Meryl Golden said companies that adopt price optimization realize substantial financial benefits. "Although some insurers have misconceptions about price optimization, adoption in the United States and Canada is well underway. Late adopters will be at a competitive disadvantage."

EARNIX



MERYL GOLDEN

General Manager North America Operations, Earnix

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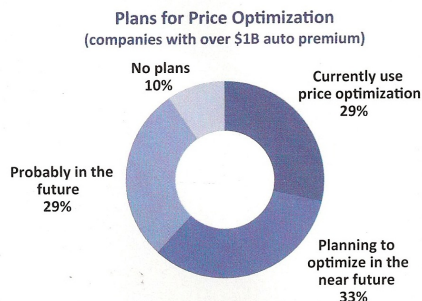
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Price Optimization in North America:
Myth vs. Reality

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How do you define price optimization? Insurance price optimization combines the best of the three traditional pricing approaches (cost plus, value-based, and market-based). It incorporates variables related to direct operating costs, consumer behavior, and the competitive environment to determine the best pricing strategy in order to achieve specific business goals.

What are some of the misconceptions about price optimization? There are many myths about price optimization. A common misconception is that companies need a huge number of observations to build robust demand models. Our experience shows that in most cases as few as 50 to 100,000 observations are enough to construct robust models of consumer demand.

Which insurers are using price optimization in North America? A survey conducted by Earnix shows the adoption of price optimization by insurers in the United States and Canada is well underway. Among companies with over \$1 billion in auto insurance premium, 29% of the survey respondents currently use price optimization, while an additional 33% are planning to use it in the near future. These numbers match up with what we are seeing first hand in the field.

What is driving the rapid adoption of price optimization? Companies that adopt price optimization realize substantial financial benefits. These companies can see improvement of 1-4 points in the combined ratio and/or as much as 10-20% of a lift in new business conversion rates.

What can we expect next? The adoption trends of price optimization are analogous in many ways to the introduction of credit scoring in auto pricing. At first, most companies were skeptical, but within a few years virtually every insurer was using credit information. We are seeing a similar trajectory in price optimization today. Given the significant benefits realized by those that already use price optimization, we can only expect the pace of adoption to accelerate. Insurers that are late to adopt pricing optimization will be at a competitive disadvantage just like those that were late to incorporate credit scoring.

Best's Review

Special Section

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Consumer Federation of America

August 29, 2013

RE: Many Auto Insurers Filing Unfairly Discriminatory Auto Insurance Rates
Price Optimization Used to Raise Rates Above the Cost-based Level

Dear Director or Commissioner:

I am writing on behalf of the Consumer Federation of America to express concern about the practice of Price Optimization (PO), a practice where premiums are set based on the maximum amount a consumer is willing to pay, rather than the traditionally accepted methods of calculating premiums based on projected costs, such as claims, overhead and profit. We are particularly concerned about the use of PO in determining premiums for auto insurance.

There is considerable evidence that the practice of Price Optimization is widespread, actuarially unsound and unfairly discriminatory. We request any information you are able to provide on the use of PO in your state. If PO is in use, please provide any information on the steps you are taking to end this practice, which produces unfairly discriminatory auto insurance premiums, illegal in every state.

Background

According to a recent survey of 78 major insurance companies, 45 percent of insurers with gross written premiums over \$1 billion currently optimize their prices for auto insurance and an additional 29 percent are planning such action in the near future. Among smaller insurers, 12 percent are now using price optimization for auto insurance with 41 percent planning adoption of Price Optimization soon.¹ The survey finds that 55 percent of insurers “consider price elasticity” in setting prices.²

Another study found that pricing strategies like PO weaken the buyer’s position when shopping for cars, may make them more susceptible to overpaying for car insurance since many lower income consumers are less likely to compare prices before buying goods and services.³

Towers Perrin defines Price Optimization as follows:

Traditionally, many industries, including the insurance industry, have priced their goods and services based on supply-side factors (cost to produce the product plus a margin for profit). However, this cost-plus-profit approach leaves a lot of money on the table in the form of lower margins from existing customers and lost revenue from prospective customers.

¹ “2013 North America Auto Insurance Pricing Benchmark Survey,” Earnix, Slide 19.

² Ibid, Slide 14.

³ *From Poverty, Opportunity: Putting the Market to Work for Lower Income Families*. Washington, DC: The Brookings Institution, 2006.

According to AMR Research, between 1% and 5% of value is lost across all industries because companies do not know enough about their customers' willingness to pay or don't have the ability to profit from this knowledge. Pricing can be the most potent weapon companies have. When a more sophisticated pricing approach is implemented, operating profit increases significantly, much more than when other factors such as variable cost, volumes or fixed costs are adjusted.... Effective price optimization allows a property/casualty insurer to increase and decrease premium prices based on a combination of marketplace variables, including (but not limited to) product demand, certain customer characteristics and the competitive landscape.... The final step and culmination of this work is to develop a new pricing structure that optimizes profit per customer — in other words, that maximizes profitability subject to a minimum volume of business.... Having established the optimal load for base profit, the impact of varying profit loadings on certain segments of the portfolio can be tested in subsequent iterations. For example, the company may wish to target segments that show above-average conversion rates and/or lower-than-average competitiveness, which may benefit from increased profit loadings and vice versa.⁴

In other words, by using price elasticity models, an insurer can raise the price of auto insurance for some segments of the population who are unlikely to change insurers if the premium price goes up above the cost-based level through application of Price Optimization.

In a webinar “Insurance Price Optimization: Keys to Success,”⁵ a presenter states that “The traditional pricing methodology was cost-centric” and proceeded to explain how to change that. “Pricing optimization engines allow for daily pricing scheme changes...” One example of Price Optimization, using samples to test the price, suggested the insurer could take a 1% sample:

EXAMPLE: On 1% of customers apply the following test model:

- 1st 10% increase price 0.5%
- 2nd 10% increase price 1.0%
- 3rd 10% increase price 1.5%
- Etc....”

Price Optimization Produces Illegal, Unfairly Discriminatory Prices for Auto Insurance

Under Price Optimization, after prices are established using cost-based ratemaking methods, the prices are adjusted within rating segments based on such factors as the competitive situation for that segment. If a segment is unlikely to change insurers if prices go up more, the prices are raised to the “optimum” level. Thus, two policyholders with identical risks as determined by cost-based methods would pay different prices for the same policy. This is classic unfair discrimination. For instance, the NAIC Property and Casualty Model Rating Law states the following as the primary rating standard “Rates shall not be excessive, inadequate or unfairly discriminatory.” All states prohibit unfair discrimination in insurance pricing.

⁴ Price Optimization: A Potent Weapon for Innovative Insurers, 2007.

⁵Nicholas Michellod, Insurance Analyst, Celent, May, 2011. Webinar hosted by Earnix

Price Optimization Clearly Violates Current Casualty Actuarial Society Ratemaking Principles

It is clear that Price Optimization is not actuarially sound and is unfairly discriminatory in that it moves pricing away from its historic cost-based approach. This cost-based approach has been widely accepted as the basis of proper ratemaking. For example, in the Casualty Actuarial Society (CAS) Forum of winter 2009, Mike Miller, FCAS, wrote an article, “Disparate Impact and Unfairly Discriminatory Insurance Rates” Finding that:

Historic actuarial literature, general insurance literature, and legislative histories reveal ‘unfairly discriminatory rates’ to be a cost-based concept. A rate structure is unfairly discriminatory if the insurance premium differences between insureds do not reasonably correspond to differences in expected insurance costs.

But this historic requirement is under attack by those seeking to set rates using PO, rather than cost-based considerations.

Attempts by Insurers to Surreptitiously Change CAS Principles Have Failed

Using Price Optimization, rather than the cost-based approach fails to meet actuarial standards. On October 18, 2012, the CAS presented an aptly named webinar, “Price Optimization vs. Actuarial Standards” where questions were raised on the practice of adding things to “cost-based analytics,” things such as demand considerations (how much can rates be raised above cost-based price to reflect inertia in certain market segments) and competition.

The panel addressed the following questions:

- “Price Optimization – How does it fit with the actuarial profession?” (Noting that “cost-based analyses are clearly actuarial,” but not saying the same about demand and competitive considerations.)
- “Is putting the three considerations together an actuarial exercise?”
- “Is it ratemaking?”
- “Is it in compliance with the Statements of Principles and Actuarial Standards of Practice?”
- Do the ratemaking standards cited above “mean that Price Optimization is NOT ratemaking” (Emphasis in original)
- “Should (or may) an actuary consider outcomes other than cost when making rates?”

One panelist said that insurance regulators have a duty to control the use of Price Optimization but that the CAS and the industry do not have a duty to warn them that it is developing PO or that PO is currently in use. One panelist noted that state insurance regulators are “at an incredible disadvantage” when they attempt to analyze things like Price Optimization.

Another panelist said (twice) that the use of Price Optimization “could be unethical.” Another said state laws requiring that rates not be unfairly discriminatory leads to tension since “Price Optimization does advantage one segment over another...”

Some of the panelists admitted that there is a tension between the CAS Standards and the use of Price Optimization. One said that the CAS must revisit the Standards to “get up to date.” When

asked if the actuarial Standards had to be changed so Price Optimization could comply, one panelist answered, “Yes. The tension is there and must be relieved. We need a safe harbor.”

So, without explaining that PO was involved, The CAS proposed changes to the Statement of Principles Regarding Property and Casualty Ratemaking, with comments due from members of the CAS by June 10, 2013.

CFA filed a statement in Opposition to the CAS Move to Alter the Actuarial Principles

I filed the attached comments with the CAS President on May 17, 2013, copies to the NAIC President and CEO and some leaders of the C and D Committees. In it, I explain in detail why the proposed changes to the Principles open the door to making PO meet actuarial Standards' muster, though this goal is not stated in the draft or other materials I have read pertaining to the release of the draft.

California Commissioner Jones Has Termed PO to Be Unfairly Discriminatory and the CAS Actuarial and Statistical Task Force Has Expressed Concern That PO Could Conflict with State Laws

On May 21, 2013, Commissioner Jones of California sent the attached letter to the CAS in which he highlighted that the proposed language “appears to open the door to allow new pricing schemes such as ‘price optimization’ to enter the discussion of actuarially sound ratemaking.” Commissioner Jones went on to say that “There are no differentials allowed (in California) based on whether the applicant or insured is more or less likely to look elsewhere for a lower price; we would consider such distinctions to be unfairly discriminatory” (Emphasis added).

On May 22, 2013, the Chair of NAIC’s Casualty Actuarial and Statistical (C) Task Force, Richard Piazza (LA), wrote to the CAS President regarding the proposed Principles as follows: “Many on the Task Force are concerned with the shift of emphasis from loss based ratemaking principles to principles that encompass subjective market driven ratemaking.” He also questioned, “how this concept would not conflict with state rating laws that require rates not to be excessive, inadequate and unfairly discriminatory.”

The CAS has indicated to me that it is reconsidering the changes in Principles and will reissue any changes for further comment.

Half of Large Insurers Are Already Using PO, Requiring Immediate, Strong State Action

The survey quoted above tells us that almost half of large insurers are already using PO in this country. So we ask you:

- Is PO in use in your state?
- Have you approved any such use of PO?
- Have you researched any behind-the-scenes, unapproved use of PO in your state?

In addition, please send us copies of any filings you have received where PO is proposed for use, including any action you have taken on such filings.

In the insurer survey, insurers listed the seven “top challenges in their pricing process.” The first (most important) challenge is “Effectively Incorporating Knowledge of Consumer Price Elasticity.” The sixth challenge is “Ensuring Regulatory Compliance.”⁶ It is time to make “ensuring regulatory compliance” number one. You must act to stop the use of PO in your state since it is both actuarially unsound under current CAS Principles and produces rates that clearly are unfairly discriminatory.

Sincerely:

A handwritten signature in black ink that reads "J. Robert Hunter". The signature is written in a cursive style with a large, stylized initial "J".

J. Robert Hunter
Director of Insurance

attachments

⁶ “2013 North America Auto Insurance Pricing Benchmark Survey,” Earnix, Slide 16.

May 17, 2013

Gary R. Josephson, President
Casualty Actuarial Society
4350 North Fairfax Drive (Suite 250)
Arlington, VA 22207

(By Email to Diane Tremblay at CAS)

Comments of J. Robert Hunter, FCAS
on the Discussion Draft of Statement of Principles
Regarding Property and Casualty Insurance Ratemaking

This is in response to the captioned Discussion Draft for which comments are due on June 10, 2013.

The draft does not impact Principle 1, which says “a rate is an estimate of the expected value of future costs.” Principle 2 is similar and also unchanged, “a rate provides for all costs associated with the transfer of risk.” These are the traditional requirements that an actuarially sound rate be “cost-based.”

This cost-based approach has been widely accepted as the basis of proper ratemaking. For example, in the CAS W-Forum of Winter 2009, Mike Miller, FCAS, wrote an article, “Disparate Impact and Unfairly Discriminatory Insurance Rates.” Here is a portion of the first part of the Abstract: “Historic actuarial literature, general insurance literature, and legislative histories reveal ‘unfairly discriminatory rates’ to be a cost-based concept. A rate structure is unfairly discriminatory if the insurance premium differences between insureds do not reasonably correspond to differences in expected insurance costs.”

But this historic requirement is under attack by those seeking to make rates in a new way, a way in which rates are not cost-based but based on other than cost-based considerations and, indeed, move the rate away from being cost-based. The prime example of such a trend is in the growing use of “Price Optimization.” Towers Perrin explains this new idea: “Traditionally, many industries, including the insurance industry, have priced their goods and services based on supply-side factors (cost to produce the product plus a margin for profit). However, this cost-plus-profit approach leaves a lot of money on the table in the form of lower margins from existing customers and lost revenue from prospective customers. According to AMR Research, between 1% and 5% of value is lost across all industries because companies do not know enough about their customers’ willingness to pay or don’t have the ability to profit from this knowledge. Pricing can be the most potent weapon companies have. When a more sophisticated pricing approach is implemented, operating profit increases significantly, much more than when other factors such as variable cost, volumes or fixed costs are adjusted...”¹ In other words, you can gouge some segments if you use Price Optimization.

¹ Price Optimization: A Potent Weapon for Innovative Insurers, 2007.

One insurer in Europe (where Price Optimization is more developed) used a sample of one percent of a particular market segment within a line of insurance to test Price Optimization. It used a test like this:

“EXAMPLE: On 1% of customers apply the following test model:

- 1st 10% increase price 0.5%
- 2nd 10% increase price 1.0%
- 3rd 10% increase price 1.5%”
- Etc....

This was used to see how much rates could go up over the cost-based level to find the maximum profit level from the mix of higher than cost-based prices and the level of consumers opting to leave as the price rises. This is obviously a long way from traditional pricing approaches.

There is great inertia in the personal lines insurance market. People tend to not shop much. A recent survey of American personal lines policyholders showed that 24 percent of auto insureds had never shopped for auto insurance (27 percent never did for home insurance), 34 percent had rarely shopped for auto insurance (33 percent for home insurance) and only 27 percent shopped within every other year for auto insurance (20 percent for home insurance)². Price Optimization tries to find these inert policyholders and jack up their prices.

On October 18, 2012, the CAS presented an aptly named webinar, “Price Optimization vs. Actuarial Standards” where questions were raised on the practice of adding things to “cost-based analytics,” things such as demand considerations (how much can rates be raised above cost-based to reflect inertia in certain market segments) and competition. The panel wrestled with questions like:

- “Price Optimization – How does it fit with the actuarial profession?” (Noting that “cost-based analyses are clearly actuarial,” but not saying the same about demand and competitive considerations.)
- “Is putting the three considerations together an actuarial exercise?”
- “Is it ratemaking?”
- “Is it in compliance with the Statements of Principles and Actuarial Standards of Practice?”
- Do the ratemaking standards cited above “mean that Price Optimization is NOT ratemaking” (Emphasis in original)
- “Should (or may) an actuary consider outcomes other than cost when making rates?”

The participants in the webinar were:

² The Voice of the Personal Lines Consumer, Deloitte, 2012

- Jeff Kucera, moderator. He was with Allstate and Tower-Watson before retiring.
- Mike McPhail, USAA
- Chet Szczepanski, with Donegal Insurance.

They did a good job and the discussion was lively and interesting.

One panelist said the regulators have a duty to control the use of Price Optimization but that the CAS and the industry has no duty to warn them that it is developing or in use. (Even though one of the panelists said that regulators are “at an incredible disadvantage” when they attempt to analyze things like Price Optimization.)

One panelist said (twice) that the use of Price Optimization “could be unethical.” Another said that the laws in the states requiring that rates be fair leads to tension since “Price Optimization does advantage one segment over another...”

Some of the panelists admitted that there is a tension between the CAS Standards and the use of Price Optimization. One said that the CAS must revisit the Standards to “get up to date.” When asked if the actuarial Standards had to be changed so Price Optimization could comply, one panelist answered, “Yes. The tension is there and must be relieved. We need a safe harbor.”

And that is what this draft change to the Statement of Principles Regarding Property and Casualty Ratemaking seems to me to be all about, although this goal is not stated in the draft or other materials I have read pertaining to the release of the draft. It would be really inappropriate if the CAS put out a draft without stating the real intent of the changes if the intent is to allow Price Optimization to pass muster under the SOP.

Here is the language, part of the “Conclusion” section, which I think explodes the historic principles of cost-based ratemaking (underlined language new, struck through language deleted):

The actuary, by applying the ratemaking Principles in this Statement, will derive an estimation of the future costs associated with the transfer of risk. Other business considerations including marketing goals, competition and legal restrictions are also a part of ~~ratemaking~~ determining the final price. By interacting with professionals from various fields including underwriting, marketing, law, claims, and finance, the actuary has a key role in the ratemaking process and determining the final price.

Note that the draft subtly introduces “determining the final price” as distinct from “ratemaking.” This change by itself is shocking since the actuaries apparently thereby relinquish the role of determining insurance prices. Worse, this language, combined with the addition of using unlimited “marketing goals and competition” in

“determining the final price,” opens the door to full-fledged Price Optimization. Marketing goals and competition are mentioned in the current Statement of Principles as follows: “This process involves a number of considerations including marketing goals, competition and legal restrictions to the extent they affect the estimation of future costs associated with the transfer of risk.” Note that marketing goals and competition can, under the current SOP, be used only “to the extent they affect the estimation of future costs associated with the transfer of risk,” thereby not allowing the things that Price Optimization does like raising prices above costs to maximize profit of insurance companies.

I oppose this change. If CAS does not intend to open the door for Price Optimization, it should immediately say so, withdraw the draft and fix the language.

However, if a change of this magnitude is intended, (i.e. a change in the fundamental cost-based nature of insurance pricing) the CAS should withdraw the draft and reissue the document with a clear explanation of the rationale and the anticipated impacts on policyholders, particularly on the poor who shop very rarely. Further, prior to any decision on a change of this magnitude, CAS should open the door widely for input to the NAIC, individual state commissioners, the FIO, consumer groups, insurers and other interested parties to aid in this historically important decision-making process. What CAS may be proposing ends the era of risk-based pricing forever in favor of a system that lets insurers charge what the market will bear. It should not be done stealthily in the dark recesses of the actuarial society alone.

I also have to ask one final, very basic question: What is the purpose of having principles at all if cost-based indications can be ignored by insurers by adding non-cost-based considerations to alter the actuarially-indicated rate?

Sincerely,

A handwritten signature in black ink that reads "J. Robert Hunter". The signature is written in a cursive, flowing style.

J. Robert Hunter, FCAS. MAAA

(Note: For identification, the writer is Director of Insurance at Consumer Federation of America and formerly served as Texas Insurance Commissioner)

cc: James J. Donelon, NAIC President and Chair of the Casualty Actuarial and Statistical Task Force; Ben Nelson, NAIC CEO; Kevin McCarty, Florida Insurance Commissioner, Immediate NAIC Past President; Mike Chaney, Mississippi Insurance Commissioner and Chair of the Property and Casualty Insurance (C) Committee; Sharon Clark, Kentucky Insurance Commissioner and Chair of the Market Regulation and Consumer Affairs (D) Committee; Dave Jones, California Insurance Commissioner; Benjamin Lawskey, Superintendent, New York Department of

Financial Services; Eric Nordman, Director of Regulatory Services, NAIC Staff; Aaron Brandenburg, Manager I, NAIC Staff; Mike McRaith, Director, Federal Insurance Office.



DAVE JONES
Insurance Commissioner

Mr. Richard N. Piazza, ACAS
Chief Actuary
Louisiana Department of Insurance
Post Office Box 94214
Baton Rouge, LA 70804

May 21, 2013

Re: Statement of Principles Regarding Property and Casualty Insurance
Ratemaking

Dear Mr. Piazza,

I am sending this to you in your capacity representing Commissioner Donelon as the Chair of the Casualty Actuarial and Statistical (C) Task Force. I am very concerned about the recent proposal for changes to the conclusion of the "Statement of Principles Regarding Property and Casualty Insurance Ratemaking" under consideration by the Casualty Actuarial Society (CAS). Certain of these changes were brought to my attention by Robert Hunter, Insurance Director for the Consumer Federation of America.

These are the proposed edits to the conclusion of that document that are of my concern:

The actuary, by applying the ratemaking Principles in this Statement, will derive an estimation of the future costs associated with the transfer of risk. Other business considerations including marketing goals, competition and legal restrictions are also a part of ratemaking determining the final price. By interacting with professionals from various fields including underwriting, marketing, law, claims, and finance, the actuary has a key role in the ratemaking process and determining the final price.

Mr. Hunter, who is a Fellow in the CAS, pointed out in his May 17 letter to the Society that these proposed changes to the conclusion of the Statement of Principles do not harmonize with a fundamental tenet of actuarial standards, that rates be based on the expected value of all future costs (as is stated in the four Principles listed earlier in the same Statement). I agree with Mr. Hunter that the

new language appears to open the door to allow new pricing schemes such as "price optimization" to enter into the discussion of actuarially sound ratemaking. In price optimization, price differentials are imposed into the determination of premium with the purpose of charging each insured the highest price expected to receive that consumer's acceptance.

In California, property-casualty insurance rates are set without regard to competition. There are no differentials allowed based on whether the applicant or insured is more or less likely to look elsewhere for a lower price; we would consider such distinctions to be unfairly discriminatory. It is our position that any such adjustments to the rates would be inconsistent with the actuarial principles. While the proposed edits to the Principles do not explicitly indicate that such pricing activities will reside within the actuarial realm, the language is sufficiently vague as to allow this interpretation. I am hopeful that the Casualty Actuarial and Statistical Task Force shares my position and that the Task Force will communicate this objection to the Casualty Actuarial Society regarding the proposed edits to the conclusion of the Statement of Principles.

Sincerely,



DAVE JONES
Insurance Commissioner

To: Gary R. Josephson, CAS President

From: Richard Piazza (LA), Chair, Casualty Actuarial and Statistical (C) Task Force

Date: May 22, 2013

Re: Discussion Draft of Statement of Principles Regarding Property and Casualty Insurance Ratemaking

Thank you for the opportunity to provide comment on the Casualty Actuarial Society's draft of the Statement of Principles Regarding Property and Casualty Insurance Ratemaking.

The Casualty Actuarial and Statistical (C) Task Force ("Task Force") discussed the proposed revisions ("Draft") to the existing Statement of Principles Regarding Property and Casualty Insurance Ratemaking ("Existing Principles") during a conference call on May 21, 2013. The Task Force, at a minimum, is concerned with the elimination of standards language from the Existing Principles prior to the release of proposed revisions to the Actuarial Standards of Practice for ratemaking. Also, many on the Task Force are concerned with the shift in emphasis from loss based ratemaking principles to principles that encompass subjective market driven ratemaking.

The Task Force is in support of retaining use of the Existing Principles, published in May 1988, until proposed revisions are exposed for the Actuarial Standards of Practice for ratemaking. The Task Force believes it appropriate to publish revised principles and revised standards for ratemaking simultaneously so they can be reviewed conjunctively. The Task Force requests that the Draft remain open for review to overlap the exposure period of a revised Actuarial Standards of Practice for ratemaking.

For transparency, the Task Force also requests that further explanation be provided of the proposed revisions including but not limited to elimination of the considerations section. And lastly, explain why the CAS finds it necessary to introduce the concept of the actuary's contribution to a "final rate" in the ratemaking principles and how this concept would not conflict with state rating laws that require rates not to be excessive, inadequate, and unfairly discriminatory.

If you have questions, please contact me at 225-342-4689 or RPiazza@ldi.la.gov or Jennifer Gardner at 816-783-8758 or jgardner@naic.org.

cc: Jennifer Gardner, Kris DeFrain (NAIC)

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