Generously supported by TC Trustee Joyce B. Cowin

Topic: insurance

Case Study: CEO at 22 Years Old

How do you put a price on risk?

Background

You can't believe it. For nearly a year, you've been worried about what you were going to do once you graduated college. You are now just 1 month away, and were really starting to stress when a lawyer gives you a call. He lets you know that an aunt you didn't even know you had has just given you an insurance company to run. The aunt is retiring from the business and decided that she wanted a college graduate to take over things—and lucky for you, you're the first among your cousins to graduate. Awesome. CEO, here you come!

The insurance company, InsureRight, is a five-person business insuring a variety of products in a suburban town of about 100,000 people. The company primarily insures cars and homes, though it has recently started to look at other products such as insuring people against losing their jobs or getting hurt, and thus losing the ability to work. InsureRight has been steadily growing since its founding over 20 years ago, but has recently hit a plateau. It is in need of new ideas and new ways of making a profit, while still being a positive member of the community.

Your aunt's lawyer has also informed you that many of the details about how the business is run, especially how much people have to pay for certain types of insurance, are not written down or documented. Instead, the calculations were done by your aunt based on her “gut feelings.” You suddenly realize that you have a lot to learn, and not much time to learn it. How much do you charge people? Do you charge different people differently? What kinds of things should you think about when you price out an insurance policy for someone? How do you also make sure you make enough money to stay in business and make a living for you and your four employees?

Although you’re happy to be able to own and operate your own business, you’re now starting to stress about how to both make money and not charge people too much. You’ve reached out to the lawyer and have been provided with a list of customer information. Unluckily for you, the prices on the list are incomplete, and you have no idea how the prices were calculated. What do you charge the others? You are quickly finding out that your aunt was really good at interacting with people, but not so good at record keeping! Here’s a sample of what you find for car insurance policies.

ID#	AGE	GENDER	ADDITIONAL INFO	YEARS AS CUSTOMER	CLAIMS*	CAR INFO AND VALUE	ANNUAL PRICE OF INSURANCE
1	18	Female	High school valedictorian; about to head to college	2	0	Sedan; $20,000	$ ________
2	45	Male	Father of 3; plant manager for 20 years	14	4	Minivan; $30,000	$1,500
3	33	Male	Local factory worker	5	0	Compact; $5,000	$ _________
4	75	Female	Retired and married	20	2	Luxury sedan; $100,000	$1,000
5	23	Male	Recent college graduate; working full time for bank	1 month	0	Coupe; $40,000	$ ________
6	40	Female	Superior court judge	10	3	Convertible; $50,000	$ 2,500

*The claims column details the number of times the insured (the customer) lets the insurance company know they’ve had some type of accident or damage to the car. The insurance company may then pay to fix the damage. Noteworthy is that some types of damages are covered whereas others are not.

Task: Part I

You stare at the sheet and start to wonder about risk and what insurance is all about. You need to figure out the likelihood that your customers will incur damage to their cars and then need to have your insurance company pay. You also are starting to think about what is fair. Lastly, you know that if you charge too much, your customers will simply go somewhere else to get their insurance.

Based on the prices you do have, what should you charge the other customers? Why? What information weighs most heavily in your decision to charge a certain amount?

Additional Background

As you're working out the prices for the other customers, the lawyer sends you an email with additional information about the pricing sheet. This information was handwritten by your aunt on the back of a piece of paper.

- ID #1: This customer is the daughter of customer ID #2.
- ID #2: Each of the four claims are from hail damage from storms. Each of the claims has never been for more than $250. The last claim was 5 years ago. This customer also has a home insurance policy with InsureRight.
- ID #3: No additional information.
- ID #4: The two claims happened in the last 6 months. Each of them were for accidents in parking lots (backing up) and resulted in damage to your customer's car and another person's car. Your customer was at fault and InsureRight had to pay for all damages. The total amount paid for both claims was $50,000.
- ID #5: This customer lives just outside of New York City and commutes by train every day to work. The only time the car is used is on the weekends when the customer goes for trips in the mountains to go camping every month or so.
- ID #6: It is noted that this customer (a friend of your aunt, and the daughter of the Chief of Police) had been pulled over five times for speeding in the last month, but has only been warned each time. Thus, her driving record is clean.

Task: Part II

You sit back in your chair and realize that this insurance business is not so simple after all. There are many factors to consider, and you wonder which ones you should prioritize. These additional details also make you think about other information you wish you had, but do not. For example, have any of the drivers received speeding tickets? When were their claims? How much were those claims?

Now that you have additional information, what prices do you charge? If you changed from your original prices, why did you do so?

Task: Part III

You quickly realize that to grow InsureRight, you need to figure out a simpler way to provide prices for people. You decide that you want to develop an automatic structure that will charge people based on a number of different factors. You realize that this structure has to be fair and, most importantly, needs to be able predict the risk of any one customer. If you charge too much to a safe driver who never submits a claim, they may go somewhere where they receive a better rate. If you charge too little for a high risk customer, you may lose money because they make a lot of claims.

As you are looking through the paperwork provided by the lawyer, you find a short note from your mysterious aunt with two principles/terms to help you think about the insurance business:

> *Congratulations on graduation—and congratulations on becoming the owner and CEO of InsureRight! Here are two helpful theories that might shape how you think about insurance and risk:*
>
> 1. *Adverse selection: Individuals who want really good insurance policies (that provide the most coverage) may also be the ones who are riskier in their behavior. This is why we have different policies that cover different amounts and do not cover damage from certain types of driving behavior.*
> 2. *Moral hazard: Individuals who have insurance and do not have any consequences for risky behavior may be less careful. This is why we maintain the right to change the amount customers pay, but try our best to let them know what those price changes will be based on their actions.*
>
> *Good luck!!*

You now have even more to think about. Although helpful, the note also isn't perfectly clear about what types of "actions" or "behaviors" your aunt is discussing. You think to yourself how glad you are that you took an economics and personal finance class.

Develop a framework/tool that you can give to your four employees showing how much to charge customers. Do these prices change over time (e.g., the longer they are your customer) or if they make claims?

Epilogue

What other information do you wish you had about the driving patterns of customers (e.g., when they drive, how fast, how long, to where, with whom) or even about the customers themselves (e.g., in debt, own a house, level of education, medical issues such as risk for stroke or seizures)? You also have to ask yourself whether these additional details are fair to have. What customer information is private and should not be asked? What would happen if you did ask them for that information and they refused? What would that tell you about those customers, and how might you use that information to provide quotes? Explain your thinking.

Terms

- Adverse selection
- Automobile insurance
- Budgeting
- Claim
- Credit score
- Insurance score
- Moral hazard
- Premium
- Profit
- Risk

Resources

National Association of Insurance Commissioners

Portal proving access to the insurance commissioner of each state and jurisdiction. State web portals then provide applicable state laws about multiple types of insurance, including auto.

http://www.naic.org/state_web_map.htm

New York State Department of Financial Services

Automobile insurance information for consumers.

http://www.dfs.ny.gov/insurance/cauto.htm

Investopedia

Tips for decreasing the cost of auto insurance.

http://www.investopedia.com/articles/pf/08/car-insurance-costs.asp

Consumer Reports

Car insurance buying guide.

http://www.consumerreports.org/cro/car-insurance.htm