Article from

NewsDirect

September 2015
Issue 71

The New Marriage: Actuaries and Marketers

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I remember in my college years being forced to take marketing classes because the actuarial science major was attained through the business school at my university. I remember thinking how most of the content in those courses was too "fluffy" and I would never need to apply any of it for a career as an actuary. Why was I wasting my time learning about targeting, cross-selling and segmentation while I could be learning more about decrements, stochastic processes, or at least anything that would help me get through those grueling exams?

Times have changed. The opportunities for actuaries are expanding. With data scientists among the most sought-after professionals in Silicon Valley and around the world, now more than ever it's time for actuaries to step up their game and apply their analytical skillsets not just as financial, product, and risk managers, but also as marketing partners to help grow and sustain profitable businesses and meet increasing customer demands. This became crystal clear to me last year when I transitioned from the actuarial pricing and product development world to the marketing and customer analytics domain.

In this article I'm going to walk you through the five steps of our multinational company's journey towards advanced customer intelligence and data driven marketing. Some readers may work for companies that are already quite advanced in this area, while others are at the very beginning. My hope is that you will take away something from this article that will either validate your current path, or help you move forward in your own journey.

1. SPEED DATING: GET STARTED WITH SMALL PILOTS TO PROVE VALUE

Prior to my transition from the actuarial world to the marketing domain, the customer intelligence journey at our company had already begun as a series of small pilot projects to meet the growing demands of the sales force. The agents needed more high quality leads in order to generate enough sales to make a decent living. Because the statistical modeling expertise did not yet exist within our marketing departments, a trusted consultancy was partnered with for guidance and speed to market.

The first lead generation campaign was launched in Romania. The initial step of the process was a manual transfer of depersonalized data from our many disconnected databases to the partner's data warehouse. This included policy data, CRM data, claims data, and basically everything we could unlock and upload. Once uploaded, our partner organized all the data so that there was one single 360-degree view at a customer level, and then delivered a customized report of portfolio insights. The whole process took about three to four weeks.

Based on these initial insights, the Romanian team decided upon a life insurance cross-sell campaign for their pension database, and set up the campaign structure, channel, and timeline. In this initial phase of our customer intelligence journey, the "hardcore" analytics, modeling, and lead generation were temporarily outsourced to our trusted partner, based on the depersonalized databases that had been shared with them. This temporary set-up would begin to change, however, once I joined the team and demonstrated that these hardcore skills already resided within other pockets of the company: the actuaries.

The Romanian campaign and similar pilots quickly began to show their value, and more countries expressed an interest to follow the same path. We began to pilot other types of data-driven campaigns and analysis and saw significant results:

- Romania: 50 percent increase in cross-sell conversion rate

- Poland: 91 percent increase in cross-sell conversion rate

- Turkey: 100 percent increase in cross-sell conversion rate

- Spain: Retention model identified €20 million in annual premiums with high lapse risk

- Spain and Turkey: Segmentation of client base on Customer Lifetime Value used to develop new client contact strategy

It was quite amazing to me what a significant and direct impact could be achieved with basic statistical models. And this really wasn't rocket science. Basically, the look-a-like models we built (usually logistic regression or decision trees) would look at existing customers who had product A, and determine the factors that had the strongest influence on whether those customers bought product B. The model algorithm would then be applied on a set of customers with only Product A, rank them based on their predicted likelihood of buying product B (or how much those customers "looked like" customers who had also bought product B). The customers with the highest propensity to buy product B would then be the targeted leads delivered to the agents.

At this point it became clear that the data-driven marketing initiative was on a successful path. The success of the pilots was critical to gaining senior management buy-in to further support the rollout of a larger customer intelligence program within our company. The customer intelligence program would aim to transform our company into a much more data-driven operation, delivering

the right offers and experiences at every step along the customer journey.

2. THE COURTSHIP: BRING TOGETHER MARKETING ANALYSTS AND ACTUARIES IN A TRAINING PROGRAM

Customer Intelligence was identified as a core long-term strategic priority, and as such it would be necessary to develop the analytical expertise and modelling capabilities in-house in a sustainable way, rather than continue to rely on outsourced solutions. The question soon came up—"Who from the marketing teams should be trained?"

Fortunately I was in a position to influence this decision, and it was quite obvious to me that now was the time to tap into the existing actuarial resources from the risk side of the company who already had strong statistical and modeling expertise. In the end we had a selected class of 35 participants from 11 countries, six of which were actuaries and the rest were marketing analysts. Thus began our delightful courtship of actuaries and marketers.

Our marketing partner offered to run the Customer Intelligence Academy (CIA) in a series of five one-week modules at their campus in Amsterdam, spread out over 18 months with hands-on assignments and training provided along the way. The modules covered the following topics:

Module 1: Creating insights from data; Data visualization; Presentation skills

Module 2: Basic statistics; Data Cleansing; Basic training in SQL, SPSS, and R; Customer Lifetime Value

Module 3: Predictive modeling techniques; Machine learning in R

Module 4: Campaign Management & Monitoring

Module 5: Making Impact with Presentations

The decision to mix participants with completely different professional backgrounds led to some entertaining weeks. I remember during the module on predictive modelling (where we practiced coding in R for logistic regression, decision trees, random forest, and neural networks) many of the marketers were exhausted, brains completely fried. For the actuaries, this was our favorite module, our comfort zone, and we helped our colleagues work through the challenging exercises. Other modules focused on presentation skills and persuasion. The marketers excelled during this week and passionately presented creative results. Meanwhile many of the actuaries were depleted of energy by the end of the week after being taken out of their comfort zone. Luckily years of Toastmasters made me more comfortable, but that's a tale for another day. This mix of strengths and weaknesses led to a very fun and collaborative atmosphere, and a greater overall appreciation for each other's complementary talents.

3. THE NEW MARRIAGE: EMBED ACTUARIES IN MARKETING TEAMS

Now more than ever actuaries are needed in the marketing domain. In addition to the analytical and statistical expertise required for predictive modeling, actuaries have a deep understanding of the underlying product mechanics and profit drivers. Implementing a cross-sell campaign based on propensity-to-buy models may increase premium inflows; however, if we are not concurrently targeting the right risk profiles we may be doing more harm than good by attracting undesirable risks. Similarly, a retention campaign designed to retain those customers with the highest propensity to lapse must also include an element to ensure we're not encouraging highly unprofitable customers to stay on the books.

For a segmentation project in Spain, I developed a model for Customer Lifetime Value (CLV), which is basically the actuarial present value of future profits one would expect to earn from a single customer, across all his current and potential future product holdings. We used CLV to divide the client base into high/low current and potential value customers, and align contact strategies accordingly, allocating more scarce resources to service high

current/high potential customers. I was able to show the value in using a more sophisticated CLV calculation in place of Annual Premiums or Assets Under Management, because the CLV takes into account the fact that some products are actually loss making and therefore diminish the customer's financial value to the company.

Marketing teams are recognizing the growing need for strong data scientists to drive the decision making process. With a deep understanding of profit drivers and statistical modeling, actuaries with a passion for data science, behavioral economics, and the business frontline are the perfect addition to meet this demand.

would need links to sophisticated CRM tooling, while the actuaries and modelers would be most interested in predictive modeling capabilities. Once having organized our internal "small data," we would want to have capabilities to draw insights from big data sources like wearable devices and social media. Having everything cloud-based would allow for easier cross-country cooperation, more flexibility to adapt to new (big) data sources, and a more scalable cost model. Our "People First, Cloud First" approach was a conscious decision to first invest in our own people rather than expensive platforms and tools, which allowed us to make more informed decisions

to improve the underwriting journey and effectiveness—for example, using the Customer Intelligence analytical platform for predictive underwriting to pre-approve customers for additional coverage. Our pricing actuaries see opportunities for developing more segmented and tailored pricing, as well as using more sophisticated methods for setting best estimate assumptions. And finally, our Investment Management colleagues see opportunities to use the platform for analyzing and predicting customer behavior in relation to market movements. Rather than re-invent the wheel, we can adapt our developing analytical platform and training programs to meet these additional requirements.

SUMMARY

Over the past 18 months I've lived through our company's gradual transformation into a more data-driven enterprise. We started small, step-by-step, with a series of small pilots to prove the value. We organically increased the knowledge, capabilities and collaboration of our own actuaries and marketers in a combined training program. Applying lessons learned from the small-scale pilots and understanding requirements from all departments, we were able to make informed decisions to develop our own multinational and cross-functional analytical data platform. What started as a small marketing and sales pilot has grown to a core strategic initiative touching all areas of the company.

Marketing isn't so fluffy anymore after all. ∎

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4. INVEST FOR THE FUTURE: BUILD A SUSTAINABLE ANALYTICAL PLATFORM

The valuable lessons learned from the outsourcing, pilots and training program gave us the necessary experience and time to define requirements from all departments for our own company-wide data infrastructure. We knew we would need to have a common data model across all business units in order to be able to share statistical models and best practices, as well as access to automatically and frequently refreshed data. Sales and marketing

later on, such as investing in a scalable and cost effective cloud-based solution.

5. GO FORTH AND MULTIPLY: SPREAD TO OTHER AREAS OF THE COMPANY

The success of our Customer Intelligence program is beginning to resonate with departments outside of Marketing and Sales, as they also increasingly see the need to be more data-driven in their operations in a consistent and scalable way. The risk and underwriting departments are investigating ways to intelligently use data