The Need to Monitor Customer Loyalty and Business Risk in the European Insurance Industry

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Policy cancellations directly influence daily business operations and have an impact on the risk assumed by insurance companies. In this paper, we describe the reasons why insurance companies should perform customer loyalty and business risk monitoring and develop guidelines for the implementation of this procedure. We emphasize the advantages of this practice for the operation of the company.

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Significance of customer loyalty and business risk monitoring

Insurance companies have to manage a great number of risks, which can be classified in many different ways. One possibility is to distinguish between financial risk and operational risk.¹ Financial risk is either classified as liability risk, the risk that the insurance company is assuming by selling insurance contracts, or as asset risk, associated with an insurer's asset management. These two types of risks are directly related to the business activity of the insurance company and are therefore well known and easily managed by means of various quantitative techniques.

The risk that cannot be classified as either asset or liability risk is called operational risk, and it is subdivided into business risk, driven by the competitive environment, and event risk, such as, for instance, the computer system having errors or breakdowns. Business risk is defined as the variability of intrinsic business value due to business volumes and margins fluctuations triggered by the competitive environment.² Operational risk in general has been rarely taken into account by the insurance industry. However, the Solvency II project in Europe requires that business risk be monitored in order to improve the control and measurement of all sources of risk. The difficulties in managing operational risk stem from the lack of empirical data about the sources of this newly recognized hazard.

We will develop guidelines for the implementation of customer loyalty and business risk monitoring in the insurance industry, based on our previous research. We realize that European insurance companies operate in a highly competitive market. Customers, who may want to switch from one insurer to another can easily, and at

¹ Dhaene *et al.* (2004); Nakada *et al.* (1999).

² Nakada *et al.* (1999).

low cost, obtain all the information they need about various companies via the Internet. They can compare policy prices offered by different insurance companies just by accessing their homepages or by using websites that specialize in comparing prices of several companies. This is mainly the case in property and casualty insurance, but not health and life insurance (for instance in Germany) because of the specific calculations. Therefore, information from life and health insurance contracts may lead to a false measurement of the customer loyalty because the termination of these contracts has high costs for the insurance customers.

Overall, the insurance market is becoming more and more aggressive, and companies experience fluctuations in business volumes and margins, and in the quantity and quality of existing policies. As a result, they become quite concerned about business risk as well.

Insurance companies need to monitor customer loyalty and business risk for the following reasons:

(a) To collect information about the quality of the portfolio.

The quality of the portfolio depends on the level of a customer's profitability. The quality of a portfolio is higher when the level of profitability is higher. High-profitability customers are those customers whose observed claims behaviour is below the expectations (less cost and/or smaller variability). As new policies are constantly being underwritten or cancelled, the quality of the portfolio keeps changing as well. Customer loyalty monitoring allows insurers to capture these changes, and thus, to prevent potential profit losses by the company.

(b) To successfully address customer recruitment and retention strategies.

Different marketing strategies are usually applied to different categories of customers. Therefore, it is necessary to generate particular data about the loyalty and profitability of each customer. Classifying customers by their loyalty and profitability levels (this is actually part of the risk selection at the beginning of the contract and it is considered a financial risk) allows the company to design the most efficient marketing procedure for each individual customer, and thus, to maximize the positive impact on overall business margins. To maximize benefits, the most common course of action is to keep good, high-profitability customers and to identify bad, low-profitability customers and to persuade the latter to leave the company.

(c) To assess the competitiveness of the insurance market.

Highly competitive insurance markets cause high fluctuations in the composition of portfolios. The company is able to assess the impact of the competitiveness of the market on insurance business risk by analysing these fluctuations and the evolution of customer profitability. Unfavourable fluctuations of portfolio quality and customer profitability may affect the insurance company's stability and solvency. Therefore, by monitoring these fluctuations and the business risk, the company protects itself against potential losses.

(d) To gather information about the position of the company in the market.

When a policy is cancelled the insurance company often knows to which competitor the customer has switched the policy because when the customer decides to transfer

a given policy very often the new insurance company communicates the cancellation to the previous insurer on behalf of the customer. Thus, by simply monitoring its own records of new contracts and cancellations, the company learns about how it compares to its competitors in terms of customer recruitment effectiveness, as well as about its position in the insurance market. In this sense, the role of the agent is very important. Most people do not have any experience with the insurance company but have occasionally contact with the agent (if the agent changes insurance company many of his customers will follow, even if the old insurance company has good products).

Multiline approach

Putting the customer at the centre of the organization (customer centricity) is a crucial approach for the insurance management, as satisfied customers are the ones who create value for the company (they remain with you, they refer the company to their friends and families and they are usually prepared to buy new products).³ Therefore, the assessment of customer loyalty should be based on a comprehensive understanding of the customer. Any approach limited only to some specific aspects of the link between the customer and the insurance company (insurance relationship) results in the construction of an incomplete picture of a customer's loyalty.

The global approach to customer retention needs to take into account two factors:

- (a) Since the household should constitute the unit of analysis in customer loyalty monitoring,⁴ it is necessary to consider all policies underwritten by members of the same household as policies of one decision-maker.
- (b) If one household holds several policies in the same insurance company, factors affecting one of the policies may have an impact on the remaining policies underwritten by the same household. Therefore, even though some aspects of these policies may be managed separately, customer loyalty monitoring always needs to incorporate all the available information, in order to generate one comprehensive picture of the customer's relationship with the insurance company.⁵

After drawing attention to these two factors, we can now proceed to a more detailed presentation of the customer loyalty monitoring process. Our experience in the European market drives our analysis and so we will start focussing on three types of contracts which are among the most popular for European consumers: household contents insurance, homeowner's insurance, and motor vehicle insurance. Household contents insurance covers the items inside the house subject to loss, such as furniture, silver and gold, paintings, clothes, audiovisual equipment, etc. Homeowner's insurance covers the building itself against damage, generally caused by phenomena such as fire, storm, or water. Motor vehicle insurance covers bodily injury and property liability. In this sense, it would be interesting to research customer loyalty in fully comprehensive insurance because some aspects of the insurance company's service are very important in this product line but unimportant in liability insurance.

³ See Harvey (2006).

⁴ Szybillo *et al.* (1979).

⁵ Donkers *et al.* (2007).

Figure 1. Ownership of household contents, homeowner's and motor vehicle policies a customer holds at a particular moment in time. Black dot represents a contract start; white dot means that the customer announces no renewal. Dashed lines represent the period when the risk is covered although the cancellation notification has already been submitted.

Insurance cancellation notification works differently in European countries than in the U.S. In Europe, policies are automatically renewed unless otherwise stated by the insured, generally for yearly periods. All notifications of cancellation of homeowner's, household contents, and motor vehicle policies occur close to the policy renewal date. Before a policy is cancelled, the customer has to notify the insurance company, and if a customer does not want to renew a particular policy on the due date, the notification has to be made at least 1 month prior to the renewal date. If the company is notified within the last month before the renewal date, the policy will not be cancelled any sooner than almost 13 months after the notification (except when the customer would finally decide not to pay the next premium). Therefore, there is a period of up to 13 months from the time of the notification of cancellation to the actual termination of the policy.

Thus, if a customer presents several cancellation notices, the first policy to be actually cancelled is not necessarily the one that the customer submitted as the first one for cancellation, since the actual termination depends on the specific renewal date. Figure 1 presents several policies – household contents, homeowner's, and motor vehicle – held by a particular customer at a given point in time.

The customer shown in Figure 1 has three risks covered (represented by three parallel lines). Each policy starting point is represented by a black dot. The customer represented in Figure 1 first purchased a homeowner's policy, and shortly afterwards he purchased a motor vehicle policy and a household contents policy. A white dot means that the customer has notified the company that he is not willing to renew the contract. So the dashed line indicates the period of time when the risk is covered by the company, even though the insurer has already been notified of the cancellation. Note that the first notification refers to the homeowner's policy, but the first policy that is terminated is the motor vehicle policy, possibly because its renewal date occurs before the other policy renewal date.

The first notice of cancellation is the time when the insurer is informed that one or several policies are going to be cancelled. The notification date clearly shows the customer's intentions with respect to the insurance relationship, while the policy lapse date only describes the risk being covered. The customer's intent is accurately reflected only by the type of the first notification of cancellation (what policy or policies are involved, who contacts the insurer, etc.) and the time of that notification rather than the time when the first policy has actually lapsed.

Customer loyalty

There are very few examples of empirical research on customer loyalty in the insurance industry. Some authors⁶ have studied the level of satisfaction with the insurance service provider, and their results have suggested that non-lapsing customers, that is, those who did not cancel contracts, reported higher satisfaction than lapsed customers. However, in these studies, the insureds' behaviour was observed only during a few months.

Demand-side factors have also been addressed by several authors who investigated consumer perceptions of service quality. However, they always considered only one type of insurance product.⁷ On the other hand, the demand of insurance products in the presence of specific risk factors has also been analysed.⁸

In other studies, more than one type of policy is taken into consideration simultaneously.⁹ As an example, the probability of a policy cancellation in a 3-month period is estimated for customers who held at least one of the three types of non-life insurance contracts with one insurance company: household contents, homeowner's and motor vehicle insurance. This research was based on actual policy cancellation data provided by a European insurance company and it identified some factors that are associated with a higher risk of policy cancellation, such as the existence of recent claims and a premium increase. It confirmed the importance of studying several categories of policies simultaneously. On the other hand, customer lifetime duration with a company has also been estimated by simultaneously considering different types of policies the customer may have held with the same insurer (household contents, homeowner's and motor vehicle insurance) and expanding the study to better understand the cancellation process.¹⁰

Customer loyalty and business risk monitoring

Customer loyalty monitoring should help insurers to lower the risk of policy cancellation by customers and allow them to develop a course of action that would minimize the negative impact of that risk on business margins.

Thus, customer loyalty monitoring is a procedure that allows insurers to simultaneously follow the behaviour of a particular customer and of the company to safeguard the overall positive operation of the company.

In Figure 2, we present the general guidelines for the implementation of customer loyalty monitoring, although each particular company needs to develop its own specific procedure.

⁶ Crosby and Stephens (1987).

⁷ Schlesinger and Schulenburg (1993); Ben-Arab *et al.* (1996); Kuo *et al.* (2003); Wells and Stafford (1995); Stafford *et al.* (1998).

⁸ Doherty and Schlesinger (1983); Schlesinger and Doherty (1985); Gollier and Scarmure (1994).

⁹ Guillén *et al.* (2003).

¹⁰ Brockett *et al.* (2008).

Figure 2. Customer loyalty and business risk monitoring flowchart.

First stage: objectives

The implementation of any monitoring process should start with a definition of objectives, which can change depending on the insurance company and particular circumstances. Some examples are:

- to measure the loyalty and profitability of customers in the portfolio;
- to classify customers according to the level of loyalty and profitability in order to develop different marketing strategies for various categories of customers;
- to control the fluctuation of customer loyalty and profitability in such a way that each relevant occurrence that has some effect on the operation of the company is automatically identified, and an appropriate course of action designed to address the behaviour of a particular customer;
- to increase the profitability of existing and new customers and to retain them for a longer period of time, and thus, to increase overall business profitability;
- to control the impact of the competitive environment on the solvency of the insurance company.

Second stage: data collection

The implementation of customer loyalty monitoring requires the gathering of data about customers. At this stage, and carried out on a product-basis, it is necessary to

analyse the circumstances of past policy terminations, because not all policy terminations are cancellations. A termination means that risk does not exist any longer for the policy holder. A cancellation means that the risk is covered by another insurance company. For instance, when a car is sold, the policy terminates, but when the customer keeps a car but underwrites a contract with another insurer, then the original policy is cancelled. Each product data set should comprise the following information:

- customer identification: the policyholder must be identified by a specific code. This is the identification of the unit of analysis, and it allows the insurer to match information about all contracts held by a single household. The procedure allows the insurer to move from a policy-based approach to a customer-based approach;
- customer characteristics: duration of insurance relationship with the company, city/region of residence. We also include the number of household members, income, age and sex of the policyholder (for simplicity, some analysis may be based only on the characteristics of one policyholder that represents the household);
- product description: for each contract the customer has with the insurer, it is necessary to collect information about type of coverage, premiums, etc.;
- longitudinal information regarding the risk factors that could influence the customer's behaviour. The analysis of the longitudinal information about claims, premium increases, bonuses, etc., in connection with the analysis of the changes of the policies in force, held by each customer with the insurance company, helps the insurer to understand the customer's decision-making process;
- information regarding non-renewed policies (in order to classify them as policy terminations or cancellations).

In Table 1, we present a more comprehensive list of potential risk factors. This list is a compilation of risk factors taken into account in previous research on this topic.¹¹ Nevertheless, we need to emphasize that any additional information about the customer that is available or has been generated by the company, should be incorporated into the study, since it may appear helpful for the control and enhancing of customer loyalty.

Third stage: the multiline data set

The third stage in the implementation of the customer loyalty monitoring system requires the transition from a product-based to a customer-based approach. This is done by merging all contracts belonging to members of the same household in order to produce the multiline data set. This new data set integrates all information about a single customer or household relevant to the assessment of customer loyalty. In order to do that, the input data sets need to be matched by the customer identification code conveniently introduced to each of them. Thus, all the information pertaining to one

¹¹ Schlesinger and Schulenburg (1993); Guillen *et al.* (2003); Perez-Marin (2006); Brockett *et al.* (2008).

Table 1 Variables in the household data set that can be included in the analysis*Basic demographic data:*

Age of the policyholders
 Gender of the policyholders
 Address of the household
 Number of household members

Basic insurance information

Tenure of household with insurer (maximum duration of the older policy held by the members of the household)
 Number and type of policies in force at any moment
 Special advantages the customer receives from the company, such as bonuses, lower premium

Product-specific information

Coverage of each insurance contract
 Premiums and type of payment paid by the customer
 Indication of whether or not the premiums have been substantially increased by the insurer

Claims

Claims submitted for each type of policy
 Compensations paid by the insurer
 Dates of claims
 Circumstances in which the claims occurred

Cancellations

Reason why each policy was cancelled/terminated
 Number of days between notification and the renewal date
 External companies involved in the cancellation

The customer's level of satisfaction on

Premiums
 Bonus-system
 Overall service offered by insurer
 Claim handling process
 Customer care service
 Overall satisfaction

policyholder is put together and, if necessary, members of the same household are also identified by means of their address recorded in their contracts.

This procedure allows the insurer to create – for customer loyalty purposes – a multiline data set containing longitudinal information for each customer of the company. As a result, it is possible to identify two subsets of customers: those who have not cancelled any policy and those who have already cancelled one or more of the underwritten policies. Certainly, these two groups of customers are very different. Customers who have already cancelled a policy with the insurance company have already given clear evidence that from their point of view the insurance relationship has been changed. On the other hand, customers who have not made any policy cancellation must be analysed as well.

Fourth stage: policy cancellation risk monitoring

For all customers, we suggest that the policy cancellation risk monitoring is performed by estimating the probability of a policy cancellation by the household in different time-periods. This probability can be easily calculated as a function of the household characteristics and the events related to underwritten policies, such as claims or premium increases.¹² The data set should be continuously updated by adding new policy event information and by recalculating the probabilities either periodically or when a new event occurs. In this way, we can continuously rate customers according to their policy cancellation risk level, and very easily identify high-risk and low-risk customers.

At this stage, we also need to address customer value, that is, the value that the customer represents for the insurance company.¹³ There are many ways to measure this value, and we believe that the most appropriate here is an indicator-type of assessment that summarizes the information about premiums, claims, and the duration of a customer's lifetime insurance relationship. Customer evaluation, in combination with the previously calculated risk of cancellation, provides us with a classification of customers into: low risk + low value, low risk + high value, high risk + low value and high risk + high value.

Unfortunately for the insurer, some customers fail to renew their contracts and at some point in time submit their first policy cancellation (a policy which is not renewed even though the risk still exists for the policyholder). The insurance company can always distinguish between a cancellation and a policy termination by considering the reason why the policy is not renewed. In case of a cancellation, in order to plan the marketing action that needs to be addressed to each particular customer, it is very useful for the insurer to try to anticipate the customer's behaviour (namely, by estimating the probability of a new policy cancellation as well as the remaining expected duration of the customer's insurance relationship).

Fifth stage: Customer lifetime duration of insurance relationship monitoring

Once a policy cancellation has occurred, we suggest the application of a two-fold monitoring system. We can estimate the probability of a new policy cancellation and the customer value, in the way previously described, and continuously update them as new information becomes available. However, we can also take into consideration an estimation of the customer's lifetime duration of insurance relationship. That indicator provides the long-term information about the insurance relationship from the customer's point of view. If a policy has been cancelled, this means that the policy cancellation risk monitoring and the loyalty strategies applied by the company failed to retain the customer, and therefore some additional loyalty measures should be implemented. Nevertheless, the economic perspective should always be considered

¹² Schlesinger and Schulenburg (1993); Brockett *et al.* (2008).

¹³ Dwyer (1997).

and, therefore, there must be a comparison between the cost of keeping the customer and the expected earnings.

The estimation of the expected duration, once the first policy has been cancelled, can be easily calculated by using survival analysis methods.¹⁴

When we combine all this information with the customer value, we obtain a new classification of customers: expected short lifetime duration of relationship + low value, expected short lifetime duration of relationship + high value, expected long customer lifetime duration of relationship + low value, expected long customer lifetime duration of relationship + high value. For these four groups of customers different marketing strategies may be designed, either long or short-term retention actions that could contribute to the maximalization of the overall gain.

Sixth stage: business risk monitoring

By including in the analysis all prospective information about all customers, it is possible to calculate the approximate distribution of potential losses. For those customers who have not cancelled policies, the risk of cancellation and the value indicator are taken into account. For those who have already cancelled at least one policy, the risk of further cancellations and the value indicator should be combined with an estimate of how long the customer is expected to stay in the company. The classical literature on risk management provides a sufficient basis for business risk monitoring in the insurance industry,¹⁵ but more applied research along the previous line should be developed.

Final recommendations

The competitive environment within which the insurance company operates influences daily business operations, as well as the risk assumed by the insurance company. Therefore, it is necessary to investigate customer behaviour and business risk in the insurance industry.

We have presented a number of reasons why insurance companies should perform customer loyalty and business risk monitoring and offered some guidelines regarding the implementation of this system in the company. We propose a five-stage process which includes the definition of objectives, followed by the collection of data, construction of the multiline data set, policy cancellation risk monitoring, customer lifetime duration of insurance relationship monitoring, and finally, business risk assessment. On the basis of previous research,¹⁶ we described the advantages this type of system can produce and we emphasized practical issues that an insurance company may encounter, once this monitoring procedure is implemented.

We believe that customer loyalty and business risk monitoring play a fundamental role in providing information about the changes in the quality of the portfolio, and

¹⁴ Brockett *et al.* (2008).

¹⁵ Kaas *et al.* (2004).

¹⁶ Guillen *et al.* (2003, 2007); Brockett *et al.* (2008); Perez-Marín (2006).

thus helps the company to avoid potential losses in profitability due to the fluctuation of contracts in force. Moreover, it makes it easier for the insurer to define the level of insurance market competitiveness and the effect it may have on the stability of the company. Additionally the monitoring provides information about the position of the company in the market and helps the insurer successfully address customer recruitment and retention strategies.

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