Consumer Insights for Tokio Marine Asia

Project Proposal

ANLY482 Analytics Practicum
AY16/17 Term 1

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Introduction

Project Background

The pace of change in the global insurance industry is occurring more rapidly than what experts have envisaged. It is at a pivotal juncture as it grapples with adopting new technologies, new distribution and business models as well as changing consumer behaviour. In particular, Singapore has introduced a number of regulatory changes that has caused some insurance companies to wrap up their Singapore arm, while others have found ways to innovate and dominate in Singapore. One main change within the industry is the sudden presence of exclusive bancassurance contracts between banking institutions and insurance companies. The exclusivity has resulted in lack of avenues for sale for a number of key insurance companies.

Insurance walks a delicate balance between assuming new risk and developing new policies, but this high-wire act becomes less of a concern when companies are able to grow sales from the existing pool of customers. The regulatory changes, coupled with increasing changes within the industry, has led to many insurance companies exploring avenues for increasing their profit margin. One such avenue is exploring the use of analytics to better understand their business. However, such exploration has typically only been in its infancy for the insurance industry.

Tokio Marine Asia

Tokio Marine were established as the first insurance company in Japan in 1879. Today, they offer an extension selection of General and Life insurance products and solutions with a presence in 37 countries and expanding. Tokio Marine is one of the world's most globally diversified and financially secure insurance groups, with portfolios in Marine Cargo Insurance, Engineering, Personal Lines, and Life Insurance.

In 1945, Tokio Marine re-entered the Asian market as Tokio Marine Asia providing a comprehensive range of Life and General Insurance solutions in multiple Asian countries. Tokio Marine Asia has set up a regional base of operations in Singapore to manage the Group Companies (GC) in Hong Kong, Singapore, Indonesia, India, Australia, Philippines, Malaysia, Thailand, Taiwan, China, and Vietnam. In the Singapore market, they focused their offering in two specific areas, Life Insurance and General Insurance, under Tokio Marine Life Insurance Singapore Pte Ltd and Tokio Marine Insurance Singapore Pte Ltd respectively.

Business Problem and Motivation

Tokio Marine Asia manages the different Group Companies (GC) in the region, collecting a lot of data required for underwriting products at the time of the sale. The data has mostly been stored and kept for compliance purposes. With the increased competition in the industry, it has become more important to be efficient in ensuring that the effort spent to acquire a new customer is justified. The cost to acquire a customer is extremely high, as compared to growing sales from the current customer pool.

Customer Profiling

Tokio Marine has always prided themselves on understanding consumers, however, traditionally this is being done by intuition. The only "data-centric" approach was the feedback obtained by the customers from the agents. Having face intensive competition in the industry, it is even more

important to look at what are some of the identifiers which Tokio Marine can use to target certain customer segments in order to ensure better profit in the long run. This analysis should allow Tokio Marine to determine which customer segment has a greater customer life-time value, which should provide insights into which group of customers are more profitable to target.

<u>Default Rate</u>

There is always a risk of a customer defaulting on the periodic premium payments or cancelling their policies altogether. Understanding the customer's behaviour behind their action would be beneficial to the product management team who can then tweak the products accordingly to better service the needs of the customers. In order to investigate this issue, we would look at the average product holdings per customer as well as the average length of time a customer continues to hold a product. The primary techniques used for such an analysis would be survival analysis.

<u>Agent Performance</u>

Although Tokio Marine has diversified distribution channels to include independent financial advisors (IFA), bancassurance, brokers, and agencies, they are traditionally reliant on an agency force. As such, it is important to be able to see an agent's performance not only by their sales and commission. There is a need to look at what are the factors which will increase an agent's performance and draw out learnings so Tokio Marine can share with all their agents to increase overall performance.

Project Objectives

Therefore, the objective of the project is to understand the consumer and agent behaviour to derive recommendations for Tokio Marine to increase its KPIs – mainly in the area of understanding their consumer, exploring reasons for default rates, and visualising the agent's performance.
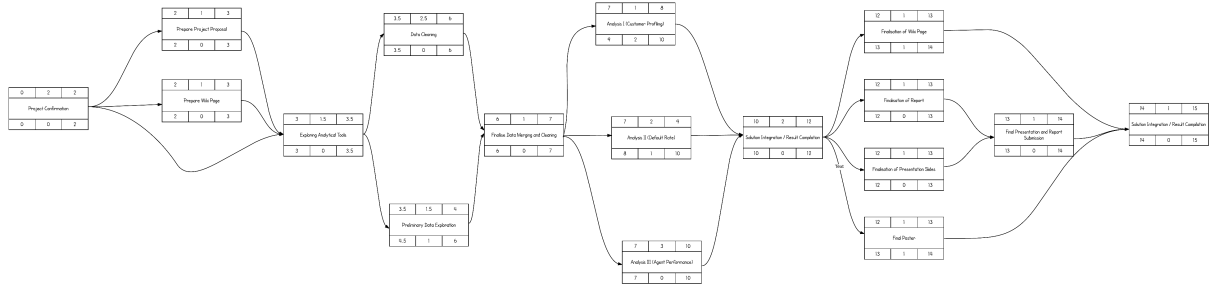
Scope of Project

The scope of our project includes the follow:

- Data collection
- Data Preparation
- Model Planning
- Model Building

Project Timeline and Schedule

Project Timeline Flow (PERT Chart)

Gantt Chart

Task		Members	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8	Week 9	Week 10	Week 11	Week 12	Week 13	Week 14	Week 15	Week 16
Proposal Preparation	Client Confirmation	All	✓													
	Prepare Project Proposal	Joshua, Justin	✓													
	Update Wiki Page	Joshua, Justin	✓													
Milestone 1	Project Proposal															
Data Preparation	Preliminary Data Exploration	All														
	Sourcing of Additional Data	All														
	Exploring Analytical Tools	All														
	Data Cleaning	All														
	Data Merging & Cleaning	All														
Model Planning	Analysis I (Customer Profiling)	Manas, Joshua														
	Analysis II (Default Rate)	Joshua, Justin														
	Analysis III (Agents' Performance)	Justin, Manas														
Midterm Preparation	Update Wiki page	Joshua, Justin														
	Prepare Midterm Report	All														
	Prepare Midterm Presentation	Manas, Joshua														
Milestone 2	Midterm Report & Presentation															
Solution Refinement and Client Reviews	Analysis I (Cust. Profiling) Refinement	Manas, Joshua														
	Analysis II (Default Rate) Refinement	Joshua, Justin														
	Analysis I (Agents' Perf.) Refinement	Justin, Manas														
	Solution Integration / Compilation	All														
	Additional Buffer Time	All														
Final Preparation	Update Wiki Page	Joshua, Justin														
	Prepare Final Report	All														
	Prepare Final Presentation	All														
	Prepare Final Poster	All														
Milestone 3	Final Report & Presentation															
Milestone 4	Poster Presentation															

Note: Set "1" if completed, "0" if uncompleted.

Deliverables

- Project Proposal
- Mid-term Presentation
- Mid-term Report
- Final Presentation
- Final Report
- Project Poster

Stakeholders

Project Supervisor

- Prof KAM Tin Seong
Associate Professor of Information System (Practice)

Sponsor

- LIM Meng Chiang
Senior Manager, New Opportunities
Tokio Marine Asia Pte Ltd

Project Members

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