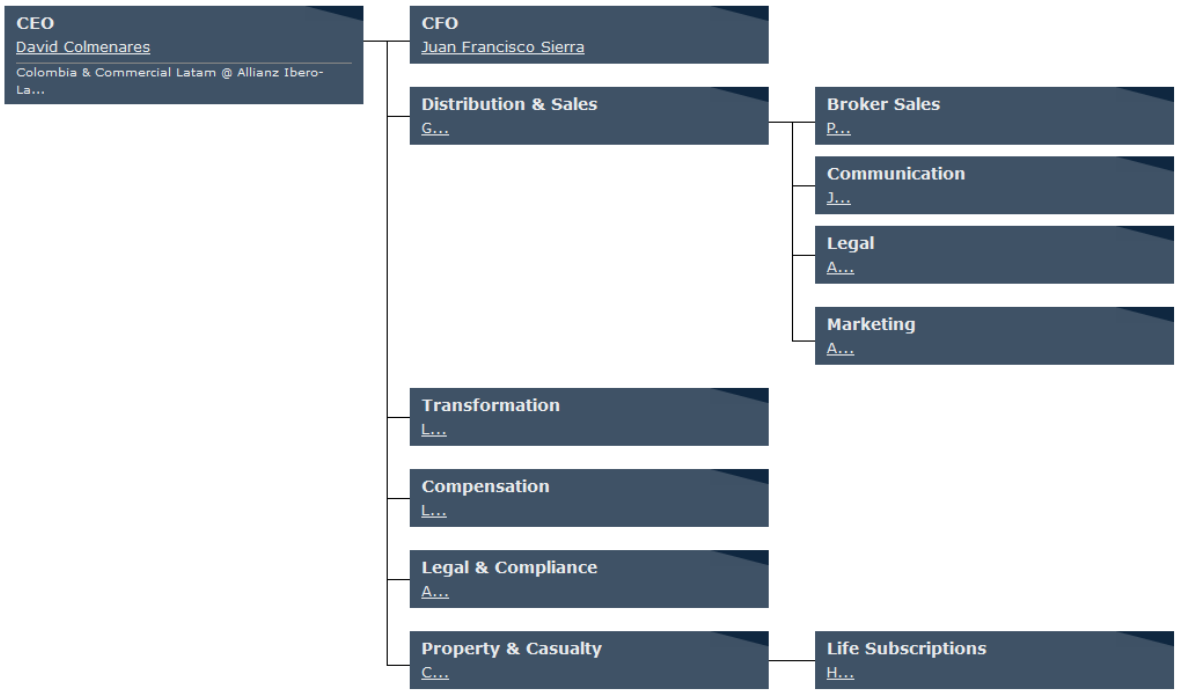
BUSINESS UNDERSTANDING OVERVIEW

1. Determining Business Objectives:

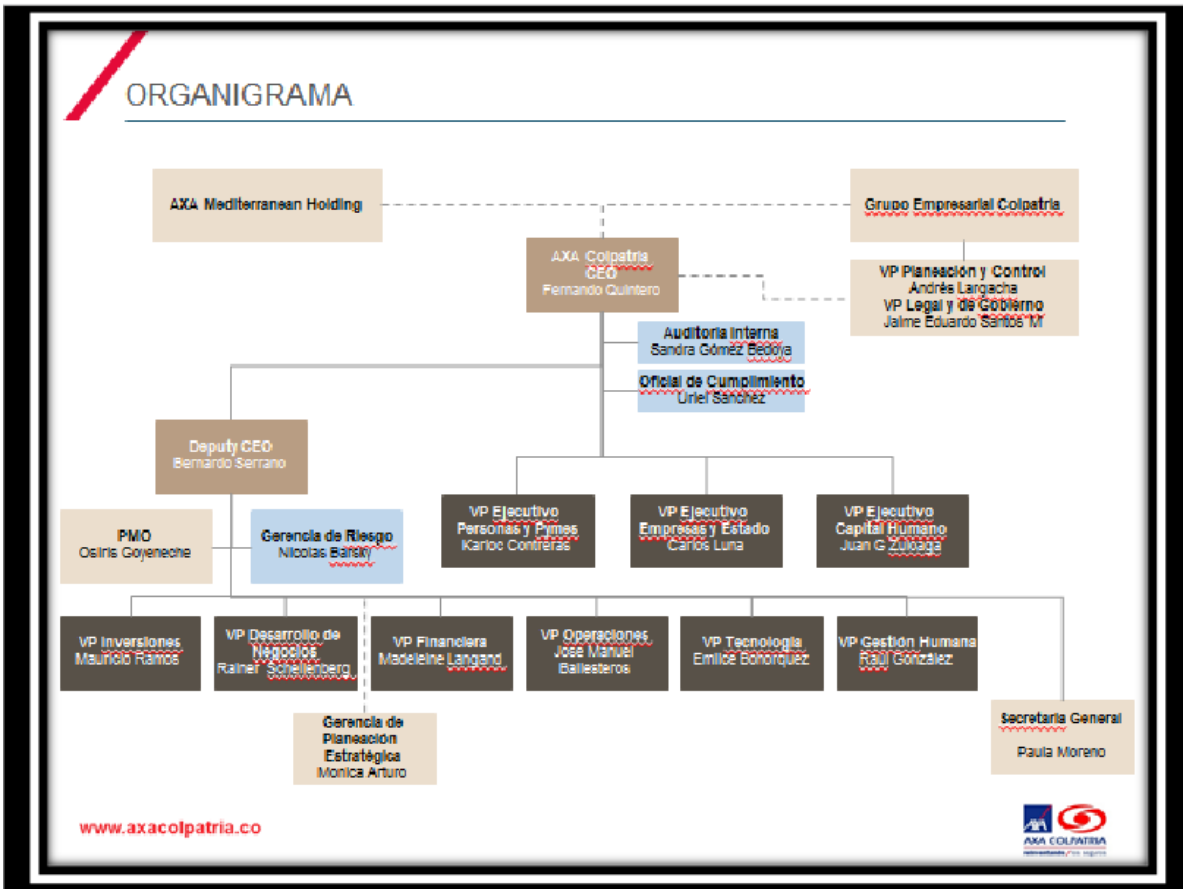
- Is required to deploy a model to predict the optimal outcome of the reserve's estimation using Data Sciences techniques or Deep Learning approaches. The expected benefits for the business are:
    - Meet compliance regulatory requirements regarding reserves estimation.
    - Allow the insurance company to decide on the optimal allocation of premiums to be invested and to obtain returns.

2. Organization Chart:

Allianz → Taken From: https://www.theofficialboard.es/organigrama/allianz-colombia



Axxa Colpatria → Taken from:
https://www.google.com/url?sa=i&url=https%3A%2F%2Frepository.usta.edu.co%2Fbitstream%2Fhandle%2F11634%2F3691%2FEchavarriacamilo2016.pdf%3Fsequence%3D1&psig=AOvVaw3euAFaXWEJJswZvk8Y6hFv&ust=1692993532213000&source=images&cd=vfe&opi=89978449&ved=0CBEQjhxqFwoTCOie5eWK9oADFQAAAAAdAAAAABAE



3. Selected Line of Business to test the model:
    a. Medical Malpractice

4. Relevant Stakeholders to involve in the project:
    a. Actuary VP
    b. CFO
    c. Operations
    d. Medical Malpractice UW
    e. Compliance Mngr.
    f. Transformation VP
    g. IT VP
5. Determining Data Mining Goals:
    a. Define Model: Deep Triangle (Deep Learning) or any Loss Reserving Using Bayesian MCMC Models
    b. Type of problem: Time series prediction
    c. Time span of each prediction: Year

6. Problem Statement (Summary elaborated by Bard)

Chapter 11 of **Loss Data Analytics introduces provisions (also known as loss reserves) for property and casualty (P&C) insurance. In particular, the chapter presents some essential basic analytical tools for evaluating the reserves of a portfolio of P&C insurance products.

In Section 11.1, the need for provisions is motivated. Insurance companies collect premiums in advance, but losses occur in the future. Therefore, insurance companies must have capital to settle losses that have not yet occurred.

In Section 11.2, the available data sources are studied and some formal notations are introduced to approach provisions as a forecasting challenge. Provision data is typically represented in a development triangle, which shows the amount of payments made for losses based on the year of occurrence and the payment delay.

Section 11.3 covers the chain-ladder method, which is a widely used predictive modeling technique for estimating reserves. The chain-ladder method is based on the idea that the payment rates of losses are similar for losses of the same age.

Section 11.4 develops a fully stochastic approach to determining the outstanding reserve with generalized linear models (GLMs). GLMs allow modeling the distribution of loss payments, which can improve the accuracy of provision estimates.

The following are the main points of the chapter:

- Provisions are necessary to cover the liabilities of insurance companies for losses that have not yet occurred.
- Provision data is typically represented in a development triangle.
- The chain-ladder method is a widely used predictive modeling technique for estimating reserves.
- GLMs allow modeling the distribution of loss payments, which can improve the accuracy of provision estimates.

7. Project Plan

Project Plan

Task	W1	W2	W3	W4	W5	W6	W7	W8	W9	W10	W11	W12	W13	W14
Project Definition														
Data Analysis														
Model Analysis														
Model Validation														
Implementation Stage														
Release and Monitoring														