



data symphony

Creating Business Value, Driven by Data Intelligence



www.datasymphony.com



South Africa | Australia



OVERVIEW



Formation

- Founded in 2021
- Inspired by a Symphony Orchestra



Offerings

- Talent: Actuarial and Data Talent
- Software: Custom Finance and Actuarial



Partners



Community Upliftment

We support previously disadvantaged scholars with mathematics education and youth coaching through Symphony NPC and WeSolve4X.



**B-BBEE
LEVEL 1**

Proudly B-BBEE Level 1
Services Provider in SA



Mission

Connect businesses with skilled data and actuarial professionals, capable of delivering top-tier data solutions.



Vision

To become a global premier data solutions company.



Industry

- Insurance and Investments
- Banking
- FinTech
- Wider: Data and Automation Talent



Team

- 16+ Experienced Professionals
- Qualified Actuaries (FASSA, CERA)
- Credit Modelling Specialists
- Data Scientists, Engineers and Analysts

ACTUARIAL SERVICES

Modelling

- Life and General Insurance

Product Development

- Pricing
- Profit Testing

Investments

- Asset Liability Modelling
- Operations

Process Automation

- Actuarial and Finance

Modernization

- Cloud Migration
- Cloud Native Apps

Experience Investigations

- Life and General Insurance

Banking

- Credit Risk Modelling
- Predictive Analytics
- Value at Risk



DATA SERVICES

Data Engineering

Efficient setup and use of data



Business Intelligence

Utilize data to add business value



Data and Process Automation

Improve existing and new processes



Policyholder Admin Systems

Administration, testing and migration support



IT Systems Infrastructure

Support and Maintenance



Data Architecture

Components and Integrations

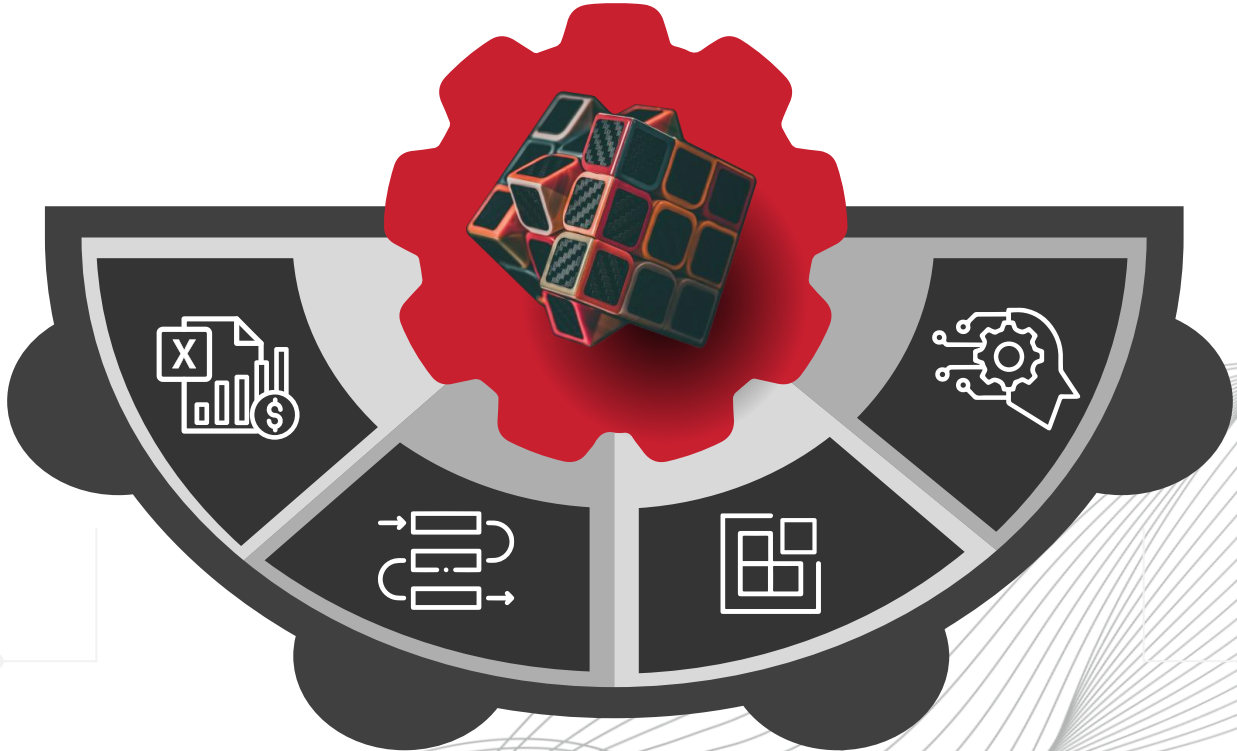


Finance and Actuarial Data Warehousing

Cost effective storage with robust governance



SOFTWARE SERVICES



Financial Modelling

- Excel User Interface
- Assumptions Management
- Cloud or On-Prem

Machine Learning & AI

- Predictive Analytics
- Outlier Identification
- LLM Integration

Orchestration

- Actuarial Automation
- Finance Automation

Containerize Apps

- Available Applications
- Custom Applications

CASE STUDY I

General Insurance Pricing for a South African Insurer



Overview

A South African insurer embarked on an initiative to understand experience and price at a more granular level. The project required grouping exposure and claims data at the required level, ensuring consistency.



Challenge

- General insurance pricing
- The insurer's pricing process was not granular enough and they had incomplete claims data, specifically:
 - Missing Member Information: The member who made the claim was often unrecorded.
 - Incomplete Benefit Information: The product benefit associated with the claim was sometimes not provided.



Outcomes

- Model Application and Data Correction: The trained model was applied across the dataset, identifying and correcting inaccuracies where claimants and benefits were missing recorded.
- Successful Continuation of Pricing Exercise: The correction of data issues allowed us to proceed with the pricing exercise with greater confidence and accuracy, ensuring a more robust pricing strategy moving forward.
 - Achieved **89%** accuracy in predicting missing members.
 - Achieved **90%** accuracy in predicting missing benefits.

CASE STUDY II

Predictive Modeling for Future Profitability at Policy Inception



Overview

Under the International Financial Reporting Standard 17 (IFRS17), the Contractual Service Margin (CSM) is calculated at policy inception. The CSM serves as a measure of expected profitability and is computed as the present value of net cash flows (inflows minus outflows) with an adjustment for risk.

The requirements included:

- Demonstrate that a machine learning (ML) model can be accurately trained to predict the profitability of insurance policies at the inception stage.
- Evaluate the accuracy of various predictive models.
- Identify and explain the key drivers of policy profitability.



Outcomes

- The linear regression model provided insight on the most important policy and demographic drivers, e.g. premium, cover, term, age, gender, smoker status and occupation class.
- The neural network model with boosting showed exceptional performance with **96%** accuracy with early profitability predictions.
- The other models included decision trees, random forests and differently parameterised neural networks and provided useful inputs into the exercise.

CASE STUDY III

Orchestrating IFRS 17 Financial Results with Advanced Workflow Integration



Overview

The objective was to create a comprehensive and scalable solution for orchestrating IFRS17 financial results. The solution needed to enable the business to do IFRS17 reporting with all financial outputs delivered on time.

The aim was to:

- Enable ingesting multiple data sources (model, accounting, manuals and others)
- Allow for user approvals of sources
- Set up logical steps and automate the generation of output and journals
- Provide clear visibility into the entire reporting lifecycle, from data ingestion to final journal adjustments.



Outcomes

- **Data Management:** The engine facilitated efficient data ingestion, review, and approval, ensuring all data sources were accurate and ready for reporting.
- **Automated Workflow:** The solution automates key steps in the financial reporting process, including the generation of financial journals and adjustments, which minimized manual intervention and reduced errors.
- **Process Monitoring:** With integrated monitoring tools, stakeholders can easily oversee the entire reporting process.
- **Reporting and Visualization:** The use of SSRS and Power BI enabled the generation of detailed reports and dynamic visualizations, providing insights and supporting decision-making.

CLIENTS



Investments Modelling
Actuarial Process Automation
Bespoke Software
Modelling
IFRS17 Implementation



Subsidiary Experience
Investigations



Rewards Programme
Modelling
Finance Transformation



Experience Investigations and
Pricing



Data Architecture and
Engineering



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