

# Maximising value in your business

AFM Annual Conference  
7<sup>th</sup> October 2024

# Zenith Actuarial Limited

- Founded in 2016 in Manchester
- Senior practitioners, actuaries and graduates
- Covering Life and P&C
- Outsourcing, Consulting and Technology
- Clients in UK, Crown Dependencies, Bermuda, Malta, Mainland Europe and North America
- Ongoing expansion of our *evo-insight* technology platform



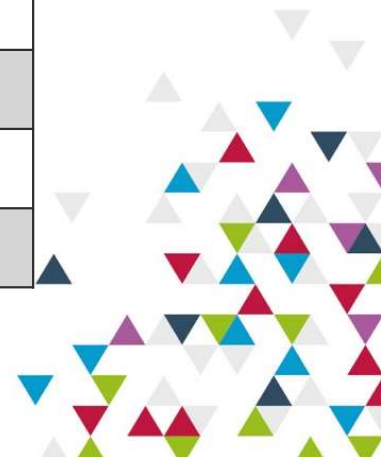
Above: Some of the Zenith Actuarial team at a recent Training Event.



# Agenda

You can maximise value in different ways. We will explore the following:

<b>Reinsurance</b>	<b>AI and Machine Learning</b>
Risk Management Tool	Intro to AI
Capital Management Tool	Every-day AI and Fusion Skills
Cash Injection	The Trusty Assistant
For Other Reasons	Product Development
	Risk Pricing and Market Pricing
Maximising Value - Take Away	
Questions	



# Maximising Value using Reinsurance

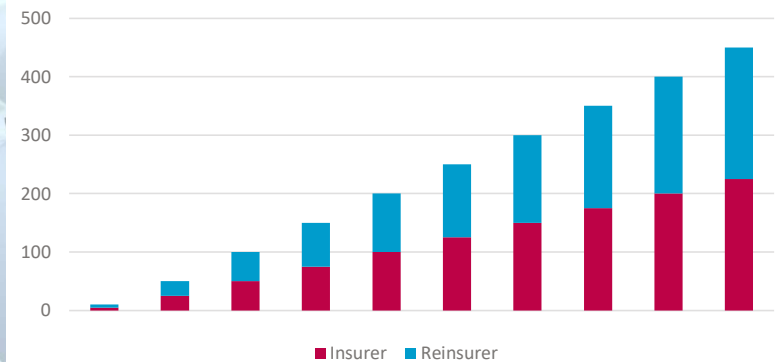


# Reinsurance as a Risk Management Tool

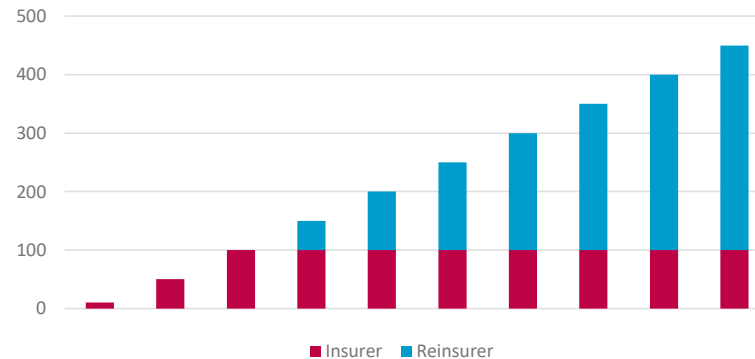
- Managing your insurance risks with:
  - Quota-Share
  - Surplus
- Why use these cover types?
- Which is appropriate for you?



### Quota Share Reinsurance



### Surplus Reinsurance



# Reinsurance as a Capital Management Tool

- Out-of-the-money protection against tail risks
- Manage cover ratio by reducing Solvency Capital Requirement (SCR)
- Diversification
- Risk Appetite
- Efficient use of limited financial resources



# Reinsurance as a Cash Injection

- Increase Liquidity
- Fund New Business Expansion
- Improve Solvency Position
- Capital Relief



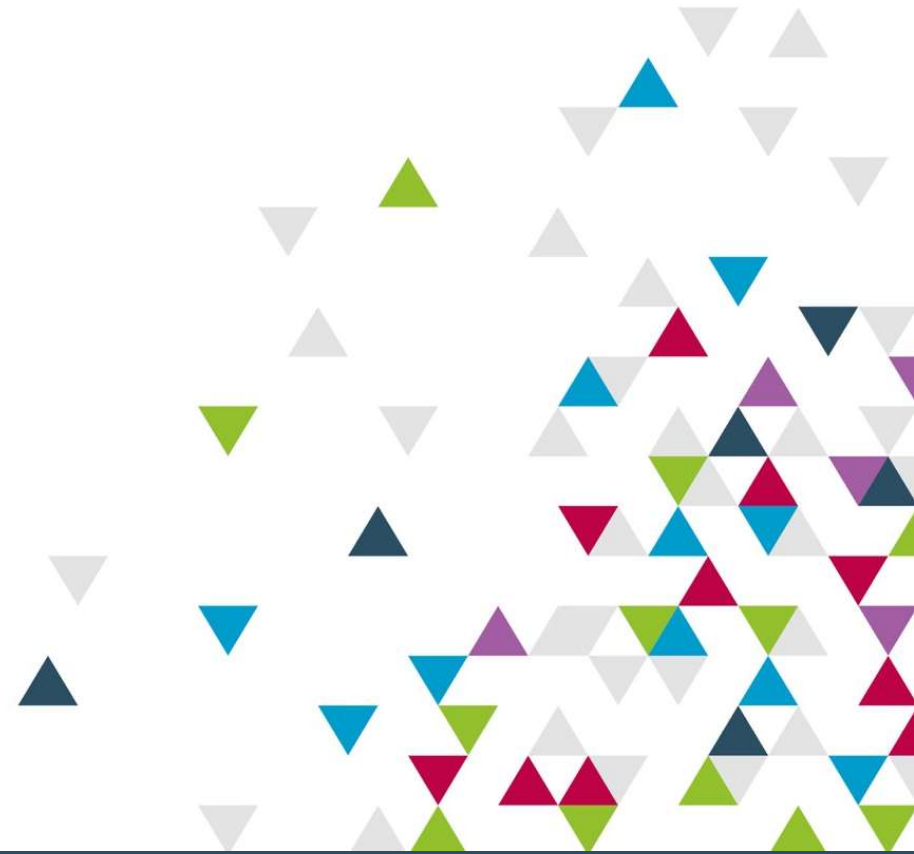
# Reinsurance for Other Reasons

- Access Expertise
- Product Development
- Pricing
- Expense Control





# Maximising Value using AI and Machine Learning



# Introduction to AI

- What is AI
- Types of AI
- Intro to Generative AI
- Benefits and Applications
- Practical Considerations



# Every-day AI and Fusion Skills



## Common Interactions with AI Models

Virtual assistants for daily tasks  
Chatbots for advice and support

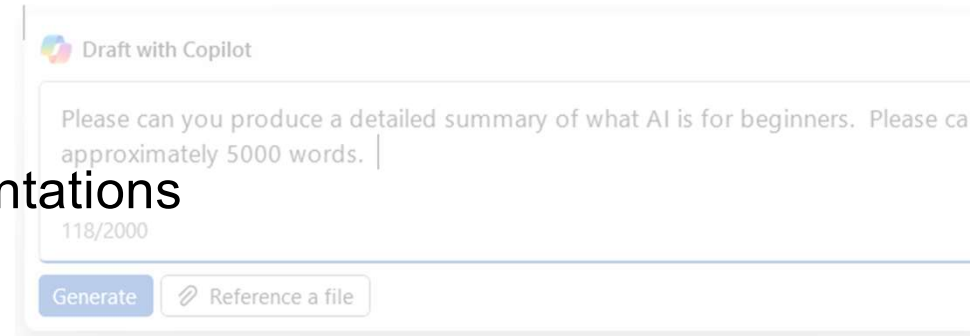


## Improving AI Responses

Effective prompting techniques  
Providing clear and concise instructions

# The Trusty Assistant

- Initial drafting of reports / emails / presentations
- Planning and review
- Ideas generation
- Supplementing / reinforcing knowledge
- Summarising reports / meeting transcripts
- Data checking and process improvements
- Code creation

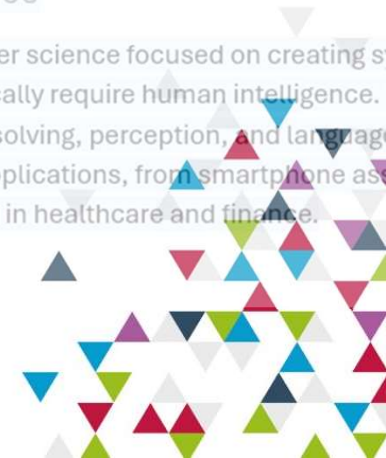


## Understanding Artificial Intelligence: Comprehensive Guide for Beginners

### Introduction to Artificial Intelligence

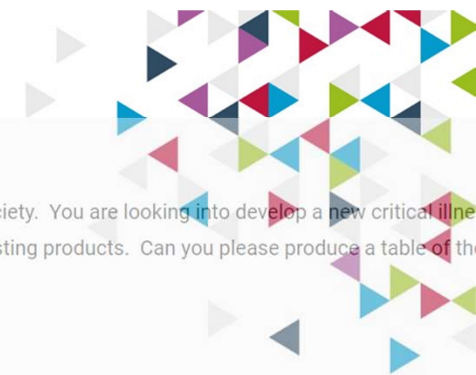
Artificial Intelligence (AI) is a field of computer science focused on creating systems capable of performing tasks that would typically require human intelligence. These tasks include learning, reasoning, problem-solving, perception, and language understanding. AI can be found in various applications, from smartphone assistants and chatbots to sophisticated systems used in healthcare and finance.

### Historical Overview of AI



# Product Development

- Reviewing market availability
- Retrieving and comparing product features
- Researching and performing target market analysis
- Drafting or proofing product literature / marketing material
- Model set up and rate creation process
- Tracking milestones



You

You are an actuary in the UK who works for a friendly society. You are looking into developing a new critical illness product and want to better understand the market of existing products. Can you please produce a table of the current providers and their products?

Copilot

Sure, I can help with that! Here's a table summarizing some of the current critical illness insurance providers and their products in the UK:

Table

Provider	Product Name	Number of Conditions Covered	Key Features
Aegon	Critical Illness Cover	39	Child-related cover, multiple awards, free health and wellbeing services
AIG	Critical Illness Insurance	100+	Covers over 100 illnesses, includes children's cover, free Smart Health consultations
Aviva	Critical Illness Plan	53	Large range of life and health insurance plans, high claim payout rate
Vitality Life	Serious Illness Cover	182	Highest number of conditions covered, rewards for healthy living
LV=	Critical Illness Insurance	87	Comprehensive cover, includes additional benefits for children

# Risk Pricing and Market Pricing

- Using machine learning for deeper insights
- Risk pricing
- Agile model development
- Extracting market data
- Scanning for price changes
- Searching for pricing methods



Home

Quick Actions

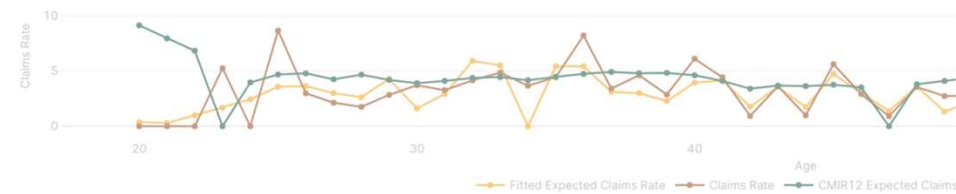
- Load Data
- Exposed to Risk
- Summarised Exposed to Risk
- Model Fitting
  - Logistic Regression
  - Decision Trees
  - XG Boost**
  - Neural Network
- Generate Report

Setup

## Demographic Assumptions Model Fitting

weighted avg	0.9651	0.9824
5 results		

### Claims Rate



### Fitted Model Data

A...	Lives etr claim incepti...	Lives lap...	Lives inceptions incident d...	Expected claim numb...	Fitted predictio...	Fitted expected claims r...	Lapse ra...	Cl
20	0.6872	0.0000	0.0000	0.0658	0.0025	0.3664	0.0000	
21	4.0520	2.0000	0.0000	0.3356	0.0119	0.2936	39.5881	
22	9.4292	2.0000	0.0000	0.6669	0.0230	0.9212	19.1770	

# Maximising Value - Key Take Away

- Effective Risk Reduction and Capital Management
- Expertise, Efficiencies and Cost Reductions
- Transformation of risk assessment, underwriting and pricing
- Enhancing customer experience
- Providing greater customer value

[tom.matthews@zenithactuarial.com](mailto:tom.matthews@zenithactuarial.com)

[tim.hill@zenithactuarial.com](mailto:tim.hill@zenithactuarial.com)



# Questions





