Case Study: AI drives customer and business benefits for NRMA Insurance

AMBIATA
SCIENTIFIC RETURN-ON-DATA

Project highlights

- Successfully enabled NRMA Insurance's AI journey through the deployment of a 'Real-Time Decision Engine' (RTDE), which uses state-of-the-art closed-loop Machine Learning (ML) algorithms.

- First Use Case - Hyper personalisation of comprehensive motor new business quotes by leveraging existing customer data, lifting quote conversion by more than 10% and providing a more efficient customer experience.

- Second Use Case – ML driven total loss prediction for motor claims reduced claims processing time from two weeks to just a few days, increasing customer satisfaction (net promoter score) by 25%.

- Four use cases already enabled and deployed via the RTDE solution with a further four in the pipeline.

RTDE solution at a glance

- Deploys multiple real-time AI algorithms activated in diverse digital platforms.

- Kubernetes based infrastructure built on Amazon Web Services (AWS) and deployed both in AWS and on-premise.

- Supports state-of-the-art closed-loop ML algorithms which learn continuously from customer responses.

- Enables experimentation in production, allowing champion-challenger and uplift model deployments.

- User Interface (UI) capability enabling Data Scientists to measure performance and bias within models in production.

- 100% production release success.

NRMA | INSURANCE

Enhancing customer experience to drive growth

Australia's general insurance sector is fiercely competitive, and organisations are always looking to implement improvements to the customer experience, particularly through innovation in the digital channel.

Choosing and tailoring an insurance policy can also be complex and time-consuming for a customer. With lots of variables to consider – policy options, payment frequency and the preferred excess – it can be difficult for new customers to find the best match for their circumstances.

Moreover, policy options a customer selects along the way can materially affect the 'suitability' of their final product recommendations. When choosing car insurance, for example, policies in which a vehicle is given an 'agreed' versus a 'market' value can look very different. So too can those that offer monthly versus annual payment frequencies.

Insurers have a raft of legal and compliance obligations which leads to the average insurance policy containing 25,669 words of explanation and associated disclosures, with most customers reading just 15% before making the decision to purchase a policy. In turn, these factors can affect customer conversion, satisfaction, and insurer revenue - irrespective of how valuable the product range is.

Background

Insurance Australia Group (IAG) is the largest general insurer in Australia and New Zealand. The Group's businesses underwrite over $12.6 billion of premium per annum, selling insurance under many leading brands including NRMA Insurance, CGU, SGIO, SGIC and WFI.

NRMA Insurance's corporate purpose of 'Help is who we are' was used by its Customer Journeys team to identify how they could further enhance the customer experience. Specifically, the team was after enhancements to its web platform to help make it more 'intuitive' – helping customers make the best possible decision when selecting a policy, as efficiently as possible, while also supporting its commercial objective for growth in customer numbers.

NRMA Insurance's ambition centred around three key items:

a) Deploying a tailored real-time AI/ML solution that enabled advanced algorithms and experimentation, so that it could trade-off multiple business outcomes, including quote conversion and policy mix. It was also expected to deliver commercial outcomes more quickly than traditional feature based or segmentation driven A/B testing campaigns;

b) The solution would need to leverage its internal customer data to support any AI/ML driven decisions and although data could not be initially shared outside the organisation, it would need to be cloud ready; and

c) Flexibility and scalability were important so that future use cases could be enabled as NRMA Insurance continued its AI/ML capability journey.

Implementing a Real-time Decision Engine using Closed-Loop ML

Over a six-month period, Ambiata's data scientists and engineers provided advanced AI advisory and delivery support to NRMA Insurance's internal data science and delivery teams.

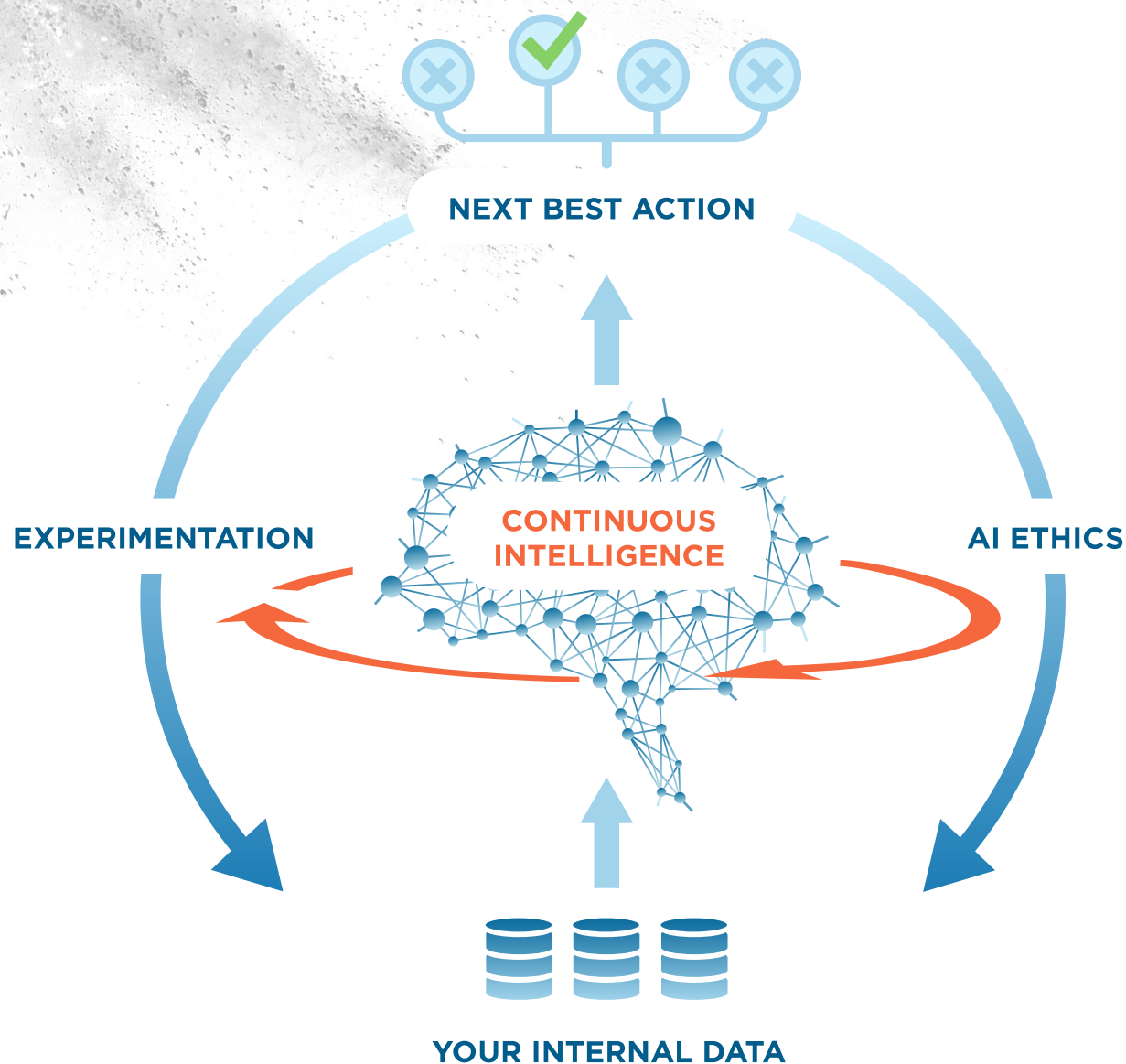As NRMA Insurance's initial Motor Quote Personalisation (MQP) use case centred on optimising its online motor quote funnel, Ambiata designed and deployed a Kubernetes based, on-premise RTDE. To enable efficient learning and adaption to changing market conditions, Ambiata's data scientists decided to adopt a similar approach to the recommendation systems used by Amazon and Netflix, building and deploying a real-time "contextual bandit" algorithm into the RTDE environment.

In the initial use case iteration, the algorithm was configured to optimise for quote conversion in order to produce an overall lift in digital conversion rates. Over a six-month period, the algorithm continuously learned how to optimise the quote presentation and NRMA Insurance observed a double digit increase in new business quote conversion for its comprehensive motor product.

"Ambiata were central to enabling our AI journey. They helped us harness the power of AI by implementing personalised recommendations, which delivered tangible improvements for both our customers and business performance",
Danielle Handley, EGM Customer Experience, IAG

NEXT BEST ACTION

EXPERIMENTATION

CONTINUOUS INTELLIGENCE

AI ETHICS

YOUR INTERNAL DATA

Key aspects of the solution included:

1) The algorithm was designed to observe the quote form details input by the potential customer.

2) Where previous data was held about the potential customer, for example, if they already held existing/past policies, this would be used to enrich the prediction ability of the algorithm.

3) Using closed-loop ML, the algorithm predicted the potential customer's preferences around agreed versus market value for the vehicle, and annual versus monthly premium payment and made a real-time recommendation.

4) RTDE was designed to learn in real-time. Where a presented option did not lead to the quote being converted into a purchase, RTDE was able to instantly self-learn from that outcome. This capability helped NRMA Insurance maximise business value and enhance its customer experience more quickly than by using traditional A/B methods.

5) Ambiata incorporated a UI with monitoring dashboards that helped NRMA Insurance's internal data science and delivery teams evaluate and control business outcomes while ensuring that the recommendations were fair to customers.

"I was really impressed with the flexibility in the design of the RTDE to ensure that that it supported our business need of progressing to a public-cloud future",
David Abrahams, EGM Data, Risk & Resilience, IAG

RTDE enablement continues to generate ongoing customer and business benefits for NRMA Insurance

Following the success of the RTDE deployment for the MQP use case, NRMA Insurance's team has subsequently expanded its use to other products and channels which has helped continue to improve customer outcomes and the broader return on investment.

For the second use case, a motor vehicle predictive total loss solution was deployed on the RTDE. By utilising the customer's claims lodgement information, a ML model was able to predict with over 90% accuracy whether or not the customer's vehicle would be a total loss. This enhancement was enabled to help customers by acting as an early warning system around whether their vehicle might be a total loss. Practically, once the solution identified a potential total loss outcome, it automatically sent a text message to the customer on the following day.

By eliminating the need for a vehicle to be towed to a repairer prior to its assessment, the solution drove a reduction in claims settlement times for motor vehicle write-offs from two and a half weeks to just a few days. One particular claim in December 2020 was settled in just 24 minutes!

"...increased speed to the resolution of a claim gives the client a sense of certainty sooner during what can be an emotional and stressful time", **Hannah Sakai, Analytics Director, IAG**

Following the deployment of the motor vehicle predictive total loss solution, NRMA Insurance observed double digit increases in customer net promoter scores. This reflected both improved customer communication and increasing business process automation which ultimately reduced claims processing and settlement times.

Inspired by the success of these use cases, NRMA Insurance has continued to push forward on its AI journey and is currently working on several other use cases across both underwriting and claims.