CONVENTION A 2022

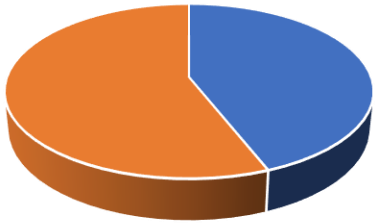
European Actuarial Academy & actuview

AI/ML – CURRENT POSITION

01

Survey Results: Understanding of the current position

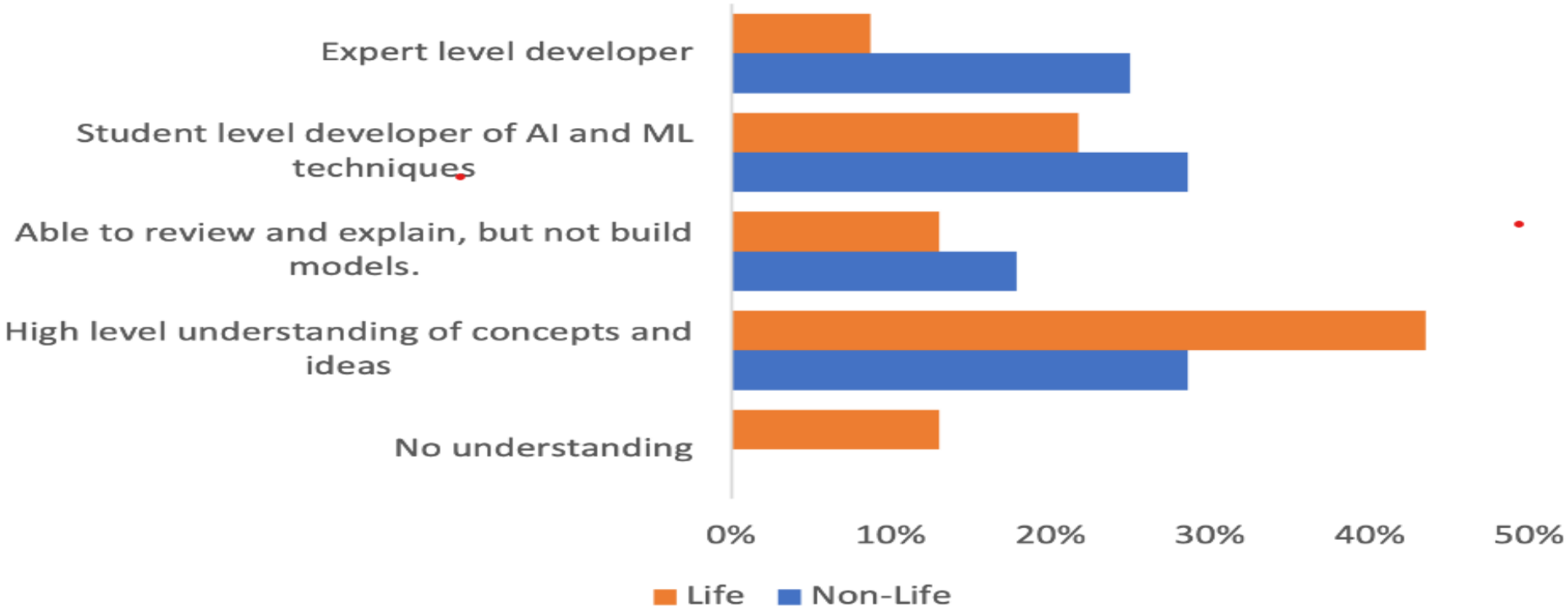
More than 94% of actuaries responded saying they have some level of understanding with AI/ML techniques



Less than half of the responded were confident in applying the techniques and building AI/ML model

There was a substantial gap reported in AI/ML skills between non-life and life insurance.

Survey Results: Understanding of the current position



Survey Results: Understanding of the current position

There were three areas in which more than 60% of respondents wanted to improve their skills, with a consistent picture across life and non-life:

1. Understanding concepts, opportunities and limitations from a commercial point of view.

2. Understanding features of AI/ML systems from an actuarial point of view, particularly focusing on their risk and how to review them.

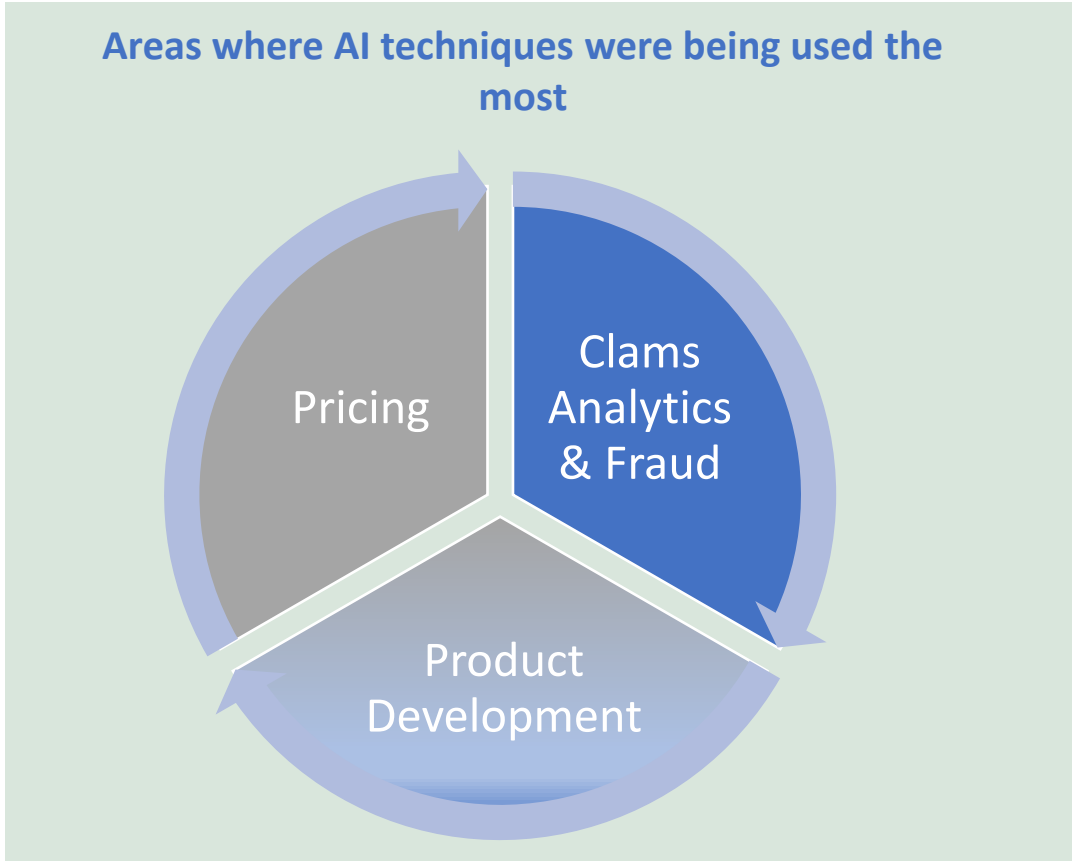
3. Learning relevant coding to create AI/ML models.

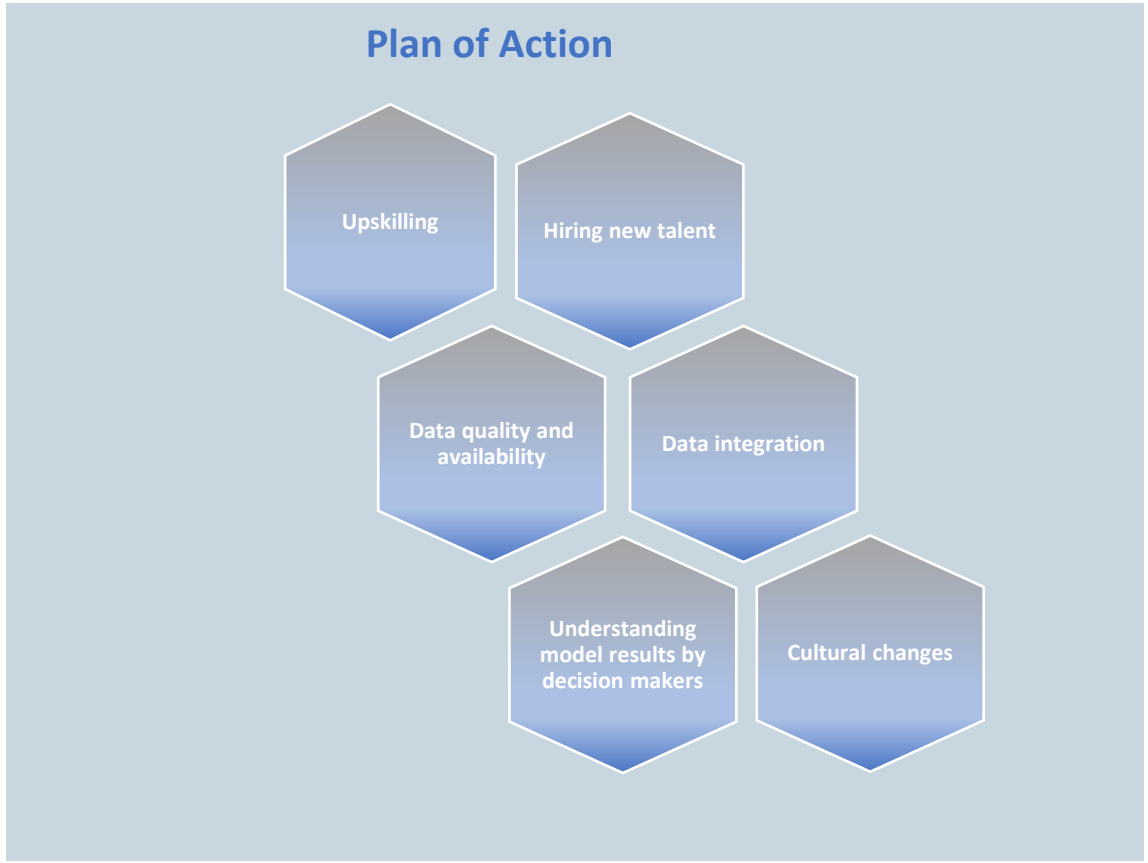
Survey Results: Understanding of the current position

- The biggest challenges to further use of AI, according to the survey, were the knowledge gap and lack of talent. This was especially true in life insurance, where fewer actuaries had the skills in question

- Further barriers to adoption included a lack of knowledge and understanding among decision-makers. This was related to the perceived low interpretability and explainability of models

Survey Results: Understanding of the current position





Survey Results: Understanding of the current position

- ML models, especially tree based models are widely being used, particularly in pricing and predictive analytics within UK non-life personal lines market

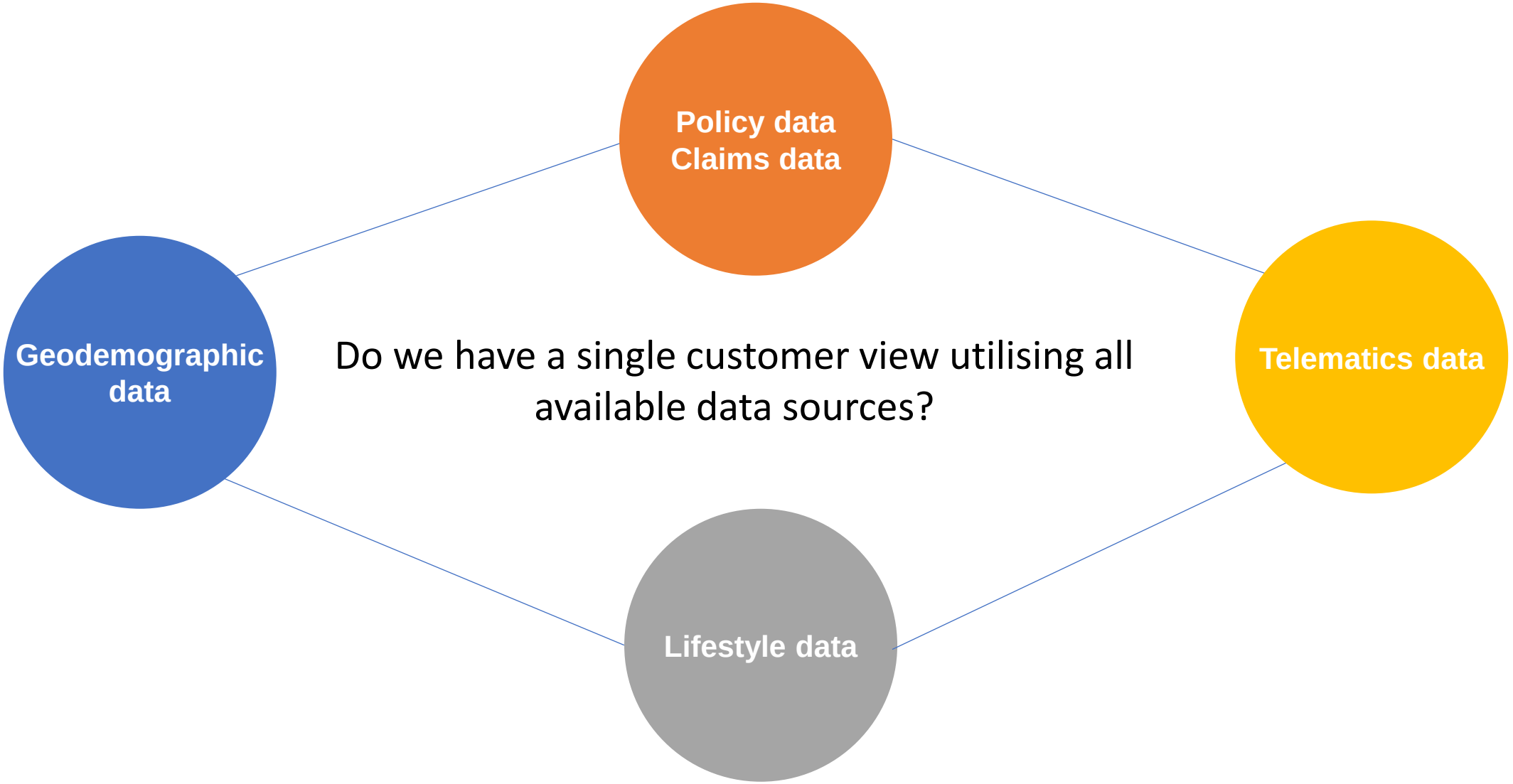
- Insurers are investing in newer infrastructure and a wide variety of granular data items are being sourced.

But where to from here?

FUTURE FOCUS & DEVELOPMENTS

02

Data


Policy data
Claims data
Geodemographic data
Do we have a single customer view utilising all available data sources?
Telematics data
Lifestyle data

Data

- Does the data infrastructure allow integration with latest technology?
- Does the platform use two way data flow, where necessary?
- Is the third party data integrated with policy and claims data?
- Is automation being used in data cleaning and getting the data ready for modelling?

Understanding and exploring algorithms

- Do we have deeper understanding of the model forms and hyperparameters used? Is the algorithm used suitable for the problem?
- Is there a robust model validation framework addressing model accuracy, interpretability, overfitting and model stability?
- Testing newer algorithms on real life data
- Development of bespoke algorithms targeted at the needs of the insurance industry

Expanding into broader areas of application

- So far in the actuarial area where wide application of AI/ML has been mostly adopted is predictive analytics and pricing.
- Applications are starting to widen to other areas as well and this trend is expected to continue
- For example, genetic algorithm is being used in grouping claim payments
- AI/ML would increasingly be used in optimising products, especially tiered products, which became prevalent in the market following the GIPP ruling and high inflation

Expanding into broader areas of application

Application of AI & automation techniques

Claims analytics and fraud	Underwriting	Optimising products	Ethical and professional considerations
Grouping claims	Footprint expansion	Optimisation of tiered products	Pricing fairness & Regulation
In house vs third party software	Predictive underwriting	Customised proposition	Data privacy
Expanding into commercial lines			Explainable AI
			Oversight & standards

Questions

Comments

Please feel free to reach out at
Atreyee.bhattacharyya@willistowerswatson.com