LIMA Programme
Renewal Data

11 May 2023
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Munich RE
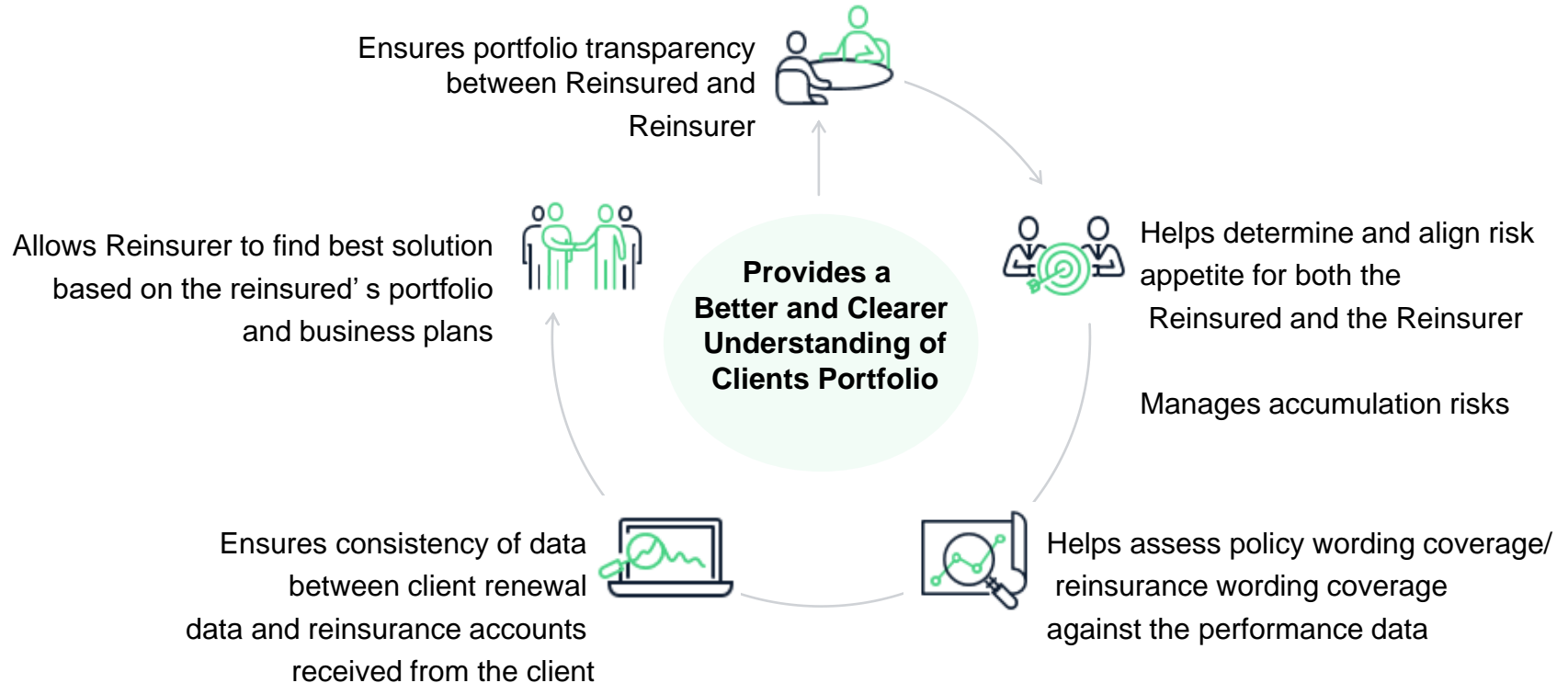
Agenda

01 Purpose of Renewal Data

02 Data Requirements

03 Benefits to the Reinsurer

04 Benefits to the Reinsured

05 Solutions provided by MunichRe

Purpose of Renewal Data

01

Purpose of Renewal Data

Provides a Better and Clearer Understanding of Clients Portfolio

Ensures portfolio transparency between Reinsured and Reinsurer

Helps determine and align risk appetite for both the Reinsured and the Reinsurer

Manages accumulation risks

Helps assess policy wording coverage/ reinsurance wording coverage against the performance data

Ensures consistency of data between client renewal data and reinsurance accounts received from the client

Allows Reinsurer to find best solution based on the reinsured' s portfolio and business plans

Data Requirements

02

Data Requirements

1. Performance statistics

2. GNPI / EPI (last 5-10 years & projection for coming year)

3. Underwriting limits

4. Risk profile

5. Large loss list

6. Triangulations

7. Special acceptance list

8. Geospatial data (Natural Catastrophe Aggregates)

9. Cat loss list

10. Market general data vs client specific data

Performance Statistics
Proportional Treaty

Data as at: Sept 2021

Underwriting Year Treaty Stats

Underwriting Year	Ceded Premium	Commision	Paid Claims	Outstanding Claims	Incurred Claims	Technical Result
2005					-	-
2006					-	-
2007					-	-
2008					-	-
2009					-	-
2010					-	-
2011					-	-
`2012					-	-
2013					-	-
2014						
2015						

Accounting Year Treaty Stats

	2005	2006	2007	2008	2009	2010	2011
Written Premium	100,000.00	110,000.00	125,000.00	150,000.00	155,000.00	200,000.00	215,000.00
Premium Portfolio Out	40,000.00	44,000.00	50,000.00	60,000.00	62,000.00	80,000.00	0
Premium Portfolio in	0.00	40,000.00	44,000.00	50,000.00	60,000.00	62,000.00	80,000.00
Earned Premiums	*60,000.00*	*106,000.00*	*119,000.00*	*140,000.00*	*153,000.00*	*182,000.00*	*295,000.00*
Commission	*25,000.00*	*27,500.00*	*31,250.00*	*45,000.00*	*46,500.00*	*60,000.00*	*64,500.00*
Paid losses	25,000.00	33,000.00	45,000.00	32,000.00	56,000.00	55,000.00	43,000.00
Loss Portfolio out	16,000.00	9,000.00	26,000.00	5,000.00	63,100.00	22,000.00	0
Loss Portfolio in	0.00	16,000.00	9,000.00	26,000.00	5,000.00	63,100.00	22,000.00
Incurred Losses	*41,000.00*	*26,000.00*	*62,000.00*	*11,000.00*	*114,100.00*	*13,900.00*	*21,000.00*
Result	**-6,000.00**	**52,500.00**	**25,750.00**	**84,000.00**	**-7,600.00**	**108,100.00**	**209,500.00**

Performance Statistics
Non-Proportional Treaty

Data as at: Sept 2021

LAYER 1

YEAR	LIMIT	DEDUCTIBLE	M&DP	GNPI	PREMIUM RATE %	PREMIUM TO LAYER	RI PREMIUM	PAID LOSSES	OUTSTANDING LOSSES	INCURRED LOSSES	BALANCE	LR
2014	4,700,000	300,000	1,063,935	36,229,250	3.1736%	1,149,771	905,139	3,700,000	-	3,700,000	- 1,645,089	**180%**
2015	4,700,000	300,000	1,276,722	41,476,359	3.6076%	1,496,301	-	-	-	-	1,496,301	**0%**
2016	5,000,000	300,000	1,276,722	41,893,077	3.5720%	1,496,421	1,197,136.57	2,000,000	2,000,000	4,000,000	- 1,306,443	**149%**
2017	5,000,000	1,000,000	1,152,008	42,804,891	2.9254%	1,252,214	1,001,771.41	-	4,000,000	4,000,000	- 1,746,014	**177%**
2018	5,000,000	1,000,000	1,382,400	44,879,964	3.4225%	1,536,017	-	-	-	-	1,536,017	**0%**
2019	4,000,000	1,000,000	1,439,879	53,926,815	2.8871%	1,556,921	-	-	-	-	1,556,921	**0%**
2020	4,000,000	1,000,000	1,547,805	50,216,353	3.0172%	1,515,109	-	-	-	-	1,515,109	**0%**
2021	4,000,000	1,000,000	1,641,576	60,833,597	2.9983%	1,823,974	-	-	-	-	1,823,974	**0%**
TOTAL						**11,826,728**	**3,104,047**	**5,700,000**	**6,000,000**	**11,700,000**	**3,230,776**	**78%**

LAYER 2

YEAR	LIMIT	DEDUCTIBLE	M&DP	GNPI	PREMIUM RATE %	PREMIUM TO LAYER	RI PREMIUM	PAID LOSSES	OUTSTANDING LOSSES	INCURRED LOSSES	BALANCE	LR
2014	5,000,000	5,000,000	540,088	36,229,250	1.6110%	583,653	307,914	2,637,814	-	2,637,814	- 1,746,247	**296%**
TOTAL						**583,653**	**307,914**	**2,637,814**	**-**	**2,637,814**	**-1,746,247**	**296%**

Alignment of interest, Retention rate
Rate Development
Changes in RI Structure, Limit and Priority
Reinstatement Premium

Expected Gross Net Premiums Income (EGNPI) / Expected Premium Income (EPI)

Year	Estimated EPI	Actual EPI	Diff. in Premium (Rate Change)	Growth in Premiums Year on Year
2014	36,229,250	40,000,000	10%	
2015	45,000,000	42,000,000	-7%	5%
2016	45,893,077	35,000,000	-24%	-17%
2017	42,804,891	20,000,000	-53%	-43%
2018	40,000,000	52,000,000	30%	160%
2019	60,000,000	53,926,815	-10%	4%
2020	80,000,000	29,000,000	-64%	-46%
2021	80,000,000	27,000,000	-66%	-50%
2022	80,000,000			
2021	100,000,000			

Changes in Premiums

- Premium Development
    - Changes in Exposure (Price Inflation), Coverage and Rates

- Market Conditions / Client Strategy Impact on Reduction or Increase in Premiums

    - E.g New Products Written. High Sensitivity on Price Inflation Covers

- Reasons for Premium Estimations vs Actuals
    - Increase in Market Share /Acquisitions
    - Key Underwriting Personnel Hired
    - New Business Development

- Exposure analysis
    - High/Low Risk Participation, Expected Loss Frequency, Accumulation loss amount for NatCat XL

- Not so obvious
    - Non-renewal of poor performing business / Reduction on Limits
    - Distribution
    - Competition
    - Change in the mix of business covered

Underwriting Limits

PERSONAL LINES TABLE OF LIMITS	
Currency: ZAR South African Rand	
Building / Houseowners	35,000,000
Contents / Householders	10,000,000
Buildings Operations	100,000
All Risks / Personal Computers	450,000
Personal Liability, Motor Liability, Watercraft Liability, Waterskiers Liability	5,000,000
Legal Costs & Expenses	100,000
Motor Own Damage	2,500,000
Caravan	500,000
Trailers	500,000
Motorcycles	600,000
Personal Accident any one life	1,200,000
Personal Accident Known Accumulation	6,000,000
Small / Pleasure Craft Own Damage (restricted to within 50 nautical miles of the coast line)	500,000

Changes in Underwriting Limits

- Development of UW Limits

- Market Conditions / Client Strategy Impact on Reduction or Increase in UW Limits

- Classification of Risk Taker e.g. SME, Large, Corporate etc.

- UW Limits vs Risk Profiles

- Need analysis for Facultative or Special Acceptance

Risk Profiles

TOTAL RISK PROFILE									
Band	Upper Band	Lower Band	Number of Risks	Sum Insured	Gross Premium	Average Sum Insured	Number of Claims	Claims Paid	Claims Outstanding
1	1	5,000,000	17,026	50,221,200,819	15,293,096	2,949,677	402	11,445,388	2,769,333
2	5,000,001	10,000,000	6,462	56,179,130,435	10,382,897	8,693,768	220	6,190,381	1,382,061
3	10,000,001	15,000,000	4	52,173,913	452,151	13,043,478	0	0	0
4	15,000,001	20,000,000	807	14,033,913,043	2,898,168	17,390,227	12	2,312,807	4,395
5	20,000,001	25,000,000	2	43,478,261	20,693	21,739,130	0	0	0

General Public Liability									
Band	Upper Band	Lower Band	Number of Risks	Sum Insured	Gross Premium	Average Sum Insured	Number of Claims	Claims Paid	Claims Outstanding
1	1	5,000,000	3,922	8,514,113,863	5,215,755	2,170,860	20	490,630	12,421
2	5,000,001	10,000,000	386	3,345,217,391	1,201,919	8,666,366			

D&O									
Band	Upper Band	Lower Band	Number of Risks	Sum Insured	Gross Premium	Average Sum Insured	Number of Claims	Claims Paid	Claims Outstanding
1	1	5,000,000	3	13,043,478	27,871	4,347,826			
2	5,000,001	10,000,000							
3	10,000,001	15,000,000							

Changes in Underwriting Risk Profiles

- A summary of the portfolio showing the number of risks, their sums insured and premiums by risk bands.
- There are 3 types of risk profiles:
  - Gross profile (including or excluding Fac)
  - Ceded profile
  - Net profile
- Allows for exposure pricing and reference based pricing
- Structuring and Fac placements
- Rate development / average premium monitoring
- UW philosophy changes
- UW limits applicable to treaty
- Aggregated Profiles / Risk Specific

  ❖ Quick check: Average SI should lie between SI Range

Large Losses

2023 SUBMISSON - REPORTING THRESHOLD > 1M										
Claim no.	Insured	Clas of Business	Policy Inception Date	Date of Loss	Gross Paid	Gross OS	Gross Incurred 2023	Incurred 2022	Reason for Loss	Comments
		Motor	01-06-90	29-03-10	1,377,201	-	1,377,201	1,377,201	Hit Third Party	
		Fire	01-01-20	31-07-10	1,073,292	-	1,073,292	1,073,292	Property caught fire	
		Liability	30-08-17	29-09-10	1,461,631	-	1,461,631	1,461,631	Slip and trip	
		Personal Accident	05-05-97	30-09-10	1,147,390	-	1,147,390	1,147,390	Injured in a sporting event	
		All Risks	09-03-12	12-10-10	1,870,636	-	1,870,636	1,870,636		
		Motor	30-04-11	12-10-20	1,451,561	-	1,451,561	1,451,561	Vehicle overturned	
		Motor	01-01-19	12-11-23	1,314,614	-	1,314,614	New Claim	Own damange	
		Liability	01-01-23	01-02-23	1,037,564	-	1,037,564	New Claim	Food poisoning	
		Property	30-09-20	04-03-22	1,028,004	-	1,028,004	New Claim		
		Liability	06-12-10	**06-10-21**	**1,737,968**	4,779,310	**6,517,278**	**6,398,687**		

- 5-10 Years (Ideally)
- Average Loss Amounts Development
- Frequency of Losses
- Late Loss Notifications
- CoB Loss Driver
- Claims Handling Policy
- Reserving Policy

- Closed/Re-opened Claims
- Recoveries
- Comments

Triangulations

Accident Year	1m	2m	3m	4m	5m	6m	7m	8m	15m	22m	23m	24m	25m	26m	27m	38m	39m	50m	51m	52m	53m
2013	111,433	795,471	1,543,312	2,427,910	3,206,065	4,313,152	5,783,381	7,194,435	18,620,026	19,932,848	19,994,262	20,017,827	20,051,023	20,168,985	20,192,926	20,313,085	20,316,604	20,319,892	20,308,632	20,308,632	20,308,632
2014	336,631	1,755,526	3,656,357	5,446,307	7,789,874	9,897,169	12,365,430	14,342,541	30,233,142	32,553,754	32,638,586	32,689,712	32,695,431	32,699,215	32,798,810	32,972,310	32,946,135	33,088,797	33,112,187	33,112,187	33,112,187
2015	420,194	1,747,699	4,100,123	6,866,108	9,670,944	12,414,735	15,294,095	21,075,040	41,894,025	43,474,444	43,491,542	43,503,971	43,519,552	43,548,501	43,574,407	43,837,688	43,854,750	43,883,495	43,896,965	43,896,965	43,896,965
2016	836,960	3,374,783	6,297,908	10,402,073	14,074,789	16,892,008	19,857,060	23,312,898	41,785,483	43,885,003	43,942,264	44,013,948	44,042,418	44,052,258	44,105,167	44,333,872	44,336,064	44,362,468	44,362,468	44,362,468	44,362,468
2017	514,864	2,696,678	5,387,787	8,194,779	11,962,149	14,991,974	18,776,887	22,047,111	41,005,749	43,181,049	43,254,480	43,248,508	43,299,729	43,311,308	43,332,937	43,426,634	43,428,231	43,475,730	43,475,730	43,475,730	43,475,730
2018	914,372	3,594,837	7,240,704	9,921,369	13,911,953	17,842,561	21,786,150	25,634,586	47,026,452	51,365,721	51,433,024	51,494,198	51,636,171	51,678,847	51,736,904	51,888,176	51,888,176	51,894,032	51,894,032	51,914,750	51,930,185
2019	1,380,349	4,820,301	8,326,542	12,466,648	17,000,262	20,074,614	23,533,217	27,801,880	51,993,026	53,244,902	53,297,336	53,382,794	53,389,948	53,411,127	53,424,755	53,554,944	53,554,944	53,603,795	53,643,498		
2020	951,352	4,196,737	9,158,897	11,747,635	15,961,226	19,238,492	23,053,450	27,743,086	51,716,369	54,731,166	54,791,251	54,836,013	55,090,298	55,108,206	55,118,063	55,190,501	55,190,501				
2021	1,309,658	4,976,846	10,057,424	13,914,305	19,157,068	25,853,388	32,266,354	38,248,536	71,372,206	74,255,426	74,337,334	74,350,385	74,393,699	74,403,136	74,451,204						
2022	1,538,319	5,505,465	9,874,414	13,249,530	17,275,105	21,095,066	25,185,945	29,342,348	49,315,509												
2023	1,117,909	3,198,492	5,888,992																		
Total	9,432,041	36,662,835	71,532,460	94,636,664	130,009,435	162,613,159	197,901,969	236,742,461	444,961,987	416,624,313	417,180,079	417,537,356	418,118,269	418,381,583	418,735,173	345,517,210	########	290,693,512	########	########	

- Preferred to monitor loss development
- Assess historic performance to the ultimate
- Provide insight into Future development on Outstanding Claims reserves = determining the Incurred but not reported losses
- Both paid and incurred values to be provided including the unique claim numbers
- Client specific patterns can be derived from this

Special Acceptances

2023 SPECIAL ACCEPTANCE LIST

Policy No.	Insured	Class of Business	Policy Inception Date	Premium Charged	Loss Ratio	Reason for Special Acceptance
		Motor	01-01-22	56,000.00	20%	Limit exceed Underwriting Limit
		Fire	01-01-20	20,000.00	5%	Operations excluded by treatyt
		Liability	15-03-23	89,000.00	45%	Incidental exposure but of 25% of T/O
		Personal Accident	05-05-97	150,000.00	16%	Exposure only limited to 5 days from 11th May 2023

Summary Data Requirements for Different Treaty Types

Munich RE

Required information:	Proportional	RXL	CatXL
Performance statistics for the last 5-10 years (Surplus: cession basis, QS: cession or gross, RXL underlying business gross statistics)	x	x	
EPI for the coming year (Surplus: cession basis)	x		
GNPI (last 5-10 years + projection for the coming year)		x	x
Development of original gross UW limits (over last 5-10 years) and current UW limits	x	x	
Risk profile (last year)	x	x	
Risk profile current year	x	x	
Aggregates per Cresta zone	x		x
Rate change index for the last 5-10 years and current or anticipated rate change	x	x	
List of large losses per year in excess of X (last 5-10 years: paid/outstanding, cause of loss, date of loss, UW year)	x	x	
List of all catastrophe losses in excess of Y (last 10-20 years: paid/outstanding, cause of loss, date of loss)	x		x
Existing reinsurance structure	x	x	x
Detailed information about portfolio composition, underwriting philosophy and business plan for next year (UW narrative)	x	x	x
Engineering: Triangulations for premiums, paid and incurred losses	x	x	

Natural Catastrophe Aggregates

Munich RE

SOUTH AFRICA CRESTA 1/2

Accumulation Assessment Zones Earthquake / Windstorm / Flood

1 Transvaal
Bushveld (0200-0399)
Transvaal North (0400-0999)
Transvaal East (1000-1399)
Rand West (1700-1799)
Transvaal South (1800-1999)
Highveld (2200-2399)

3 Natal
Natal 1 (2900-3199)
Natal 2 (3200-3399)
Umvoti (3400-3599)
Natal 3 (3600-3799)
Zululand (3800-3999)
South Coast (4100-4299)

Historical Cat Losses		
Date of loss	Peril	Loss Amount
07 April 2022	KZN Floods/ Storms	XXXXXX
06 June 2022	Knysna Fires	XXXXXX
13 November 2013	Hail Storms	XXXXXX
20 October 2012	Hail Storms	XXXXXX

- Experience Pricing Key = Pricing of Cat exposure of a portfolio in relation to the Cat Claim experience
  - Note historical exposure info required (Aggregates or Premium of the portfolio)

- No sufficient claims experience in portfolio = Exposure Pricing using the detailed Aggregates.

EQ or Flood or etc							
	Values at Risk (VAR)			Premium			
Location	100% Aggregates	Retained Aggregates	Ceded Aggregates	100% Nat Cat Premium	Retained Nat Cat Premium	Ceded Nat Cat Premium	Average Rate

- Aggregates used to reinsurers calculate:
  - Reasonability of treaty event limits (Return Periods and PMLs).
  - Expected loss amounts for coverages

- If treaty covers more than one (1) CoB, provide aggregates separately for each class

Market Cycle Data Questionnaires

Underwriting Standards

- How do the current guidelines compare to the previous guidelines also accounting for general inflation?
- Changes in loss control usage
- Changes in risk appetites, risk selection, declinature ratios, Key Personnel..?

Wording / Legal Framework

- Grid Failure Topics
- Property Damage Proviso's
- War Risk / SRCC / Passive War
- Pandemics

Climate Change

- Clients' involvement and our cedents involvement as well in thermal coal-related business (Mining & Power generation)
- Oil & gas exploration & production?
- Client strategies – carbon emission / environmental related strategy / reduction targets etc.
- What underwriting policies / reduction plans (if any) regarding thermal coal- / oil&gas production related business (regarding "new" and "already in-force" risks)?

Inflationary

- How are inflationary developments addressed in your portfolio?
- Reflect impact on 2022 actual loss ratio and the loss ratio estimation for 2023?
- Do expect an increase in loss costs due to that development?
- Do you adjust loss estimates accordingly?
- How much of the premium increase is due to inflation vs rate change?
- Client specific impact i.e.MOD spare parts, labor, vehicle values..?

Benefits to the Reinsurer & Reinsured

03

Benefits for Reinsurer and Reinsured

Adequate Pricing & Reinsurance Solutions

Data	Expertise	Technology
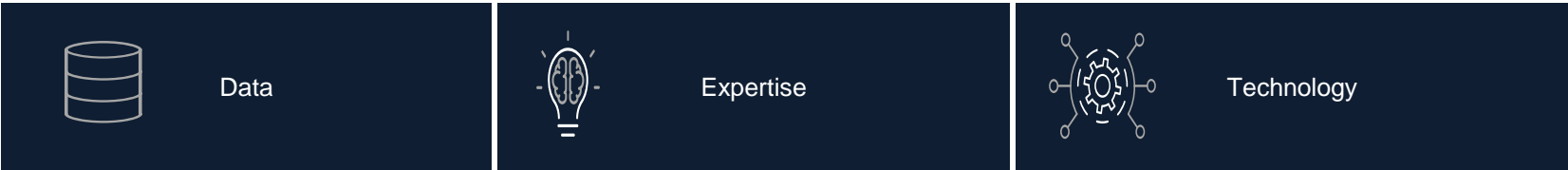
Data as asset	Bench-marking	Int. Best Practices	Knowledge of the portfolio	Analytical Capabilities	Broad MR Expertise	Automation	Platforms	Strategic Partnerships

Solutions provided by Munich Re

04

Insurance Solutions: Delivering your competitive edge

Leveraging **your** data, technology and **our** expertise

Munich RE

Global domain expertise

Primary Insurance Professionals

Insurance Advisory

Product Development

Advanced Pricing & Analytics

Data

Technology

Claims Performance

Portfolio Management

Underwriting Excellence

Business Impact

300+ Success Stories

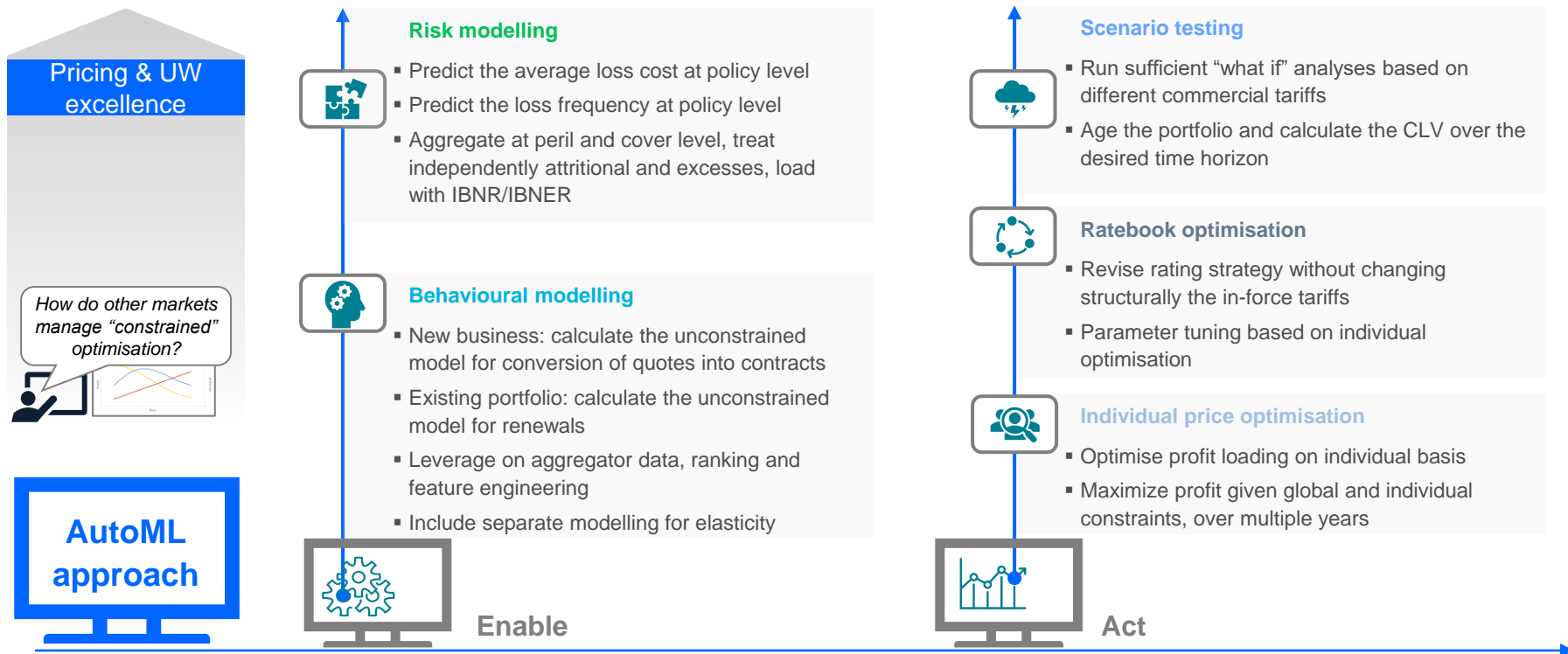**Alignment of Interest**

Joint Risk Sharing

Munich RE has a strong track record of retail pricing services

Overview of modules

Pricing & UW excellence

How do other markets manage "constrained" optimisation?

AutoML approach

Risk modelling
- Predict the average loss cost at policy level
- Predict the loss frequency at policy level
- Aggregate at peril and cover level, treat independently attritional and excesses, load with IBNR/IBNER

Behavioural modelling
- New business: calculate the unconstrained model for conversion of quotes into contracts
- Existing portfolio: calculate the unconstrained model for renewals
- Leverage on aggregator data, ranking and feature engineering
- Include separate modelling for elasticity

Enable

Scenario testing
- Run sufficient "what if" analyses based on different commercial tariffs
- Age the portfolio and calculate the CLV over the desired time horizon

Ratebook optimisation
- Revise rating strategy without changing structurally the in-force tariffs
- Parameter tuning based on individual optimisation

Individual price optimisation
- Optimise profit loading on individual basis
- Maximize profit given global and individual constraints, over multiple years

Act

Model Review Content
Performance Diagnostics

Data

Policy database

+

Claim database

+

External database

=

Policy-claim database
- Frequency
- Severity
- Risk premium
- Average premium
- Loss Ratio
- Discounting
- Benchmarks
- …

Results

Detailed statistical description of the variables available.

Detailed analysis of the portfolio mix.

Trend comparison between risk premium and tariff premium.

One-way analysis.

Trend-way analysis.

Climate Solutions
Addressing both Strategic and Operational concerns

Strategy for the future

- Definition of risk appetite under various climate scenarios
- Build stakeholder confidence in climate change preparedness
- Respond confidently to stakeholder concerns

Underwriting the future

- Understanding changes to UW and risk selection criteria under climate change scenarios
- Risk mitigation and pricing for climate related perils
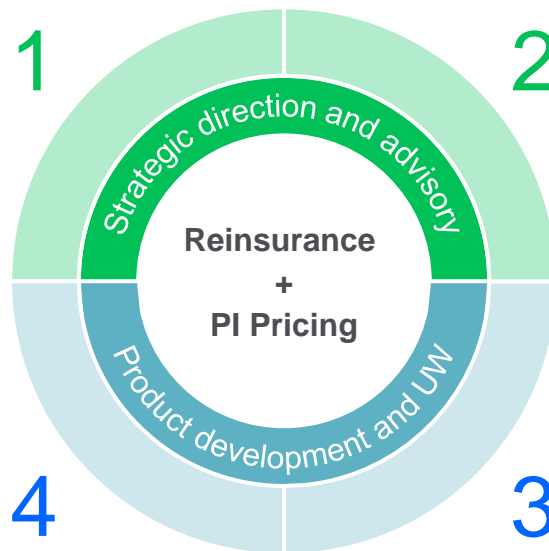
Steering the future

- Steering and monitoring of portfolio development to ensure efficient usage of capacity across catastrophe aggregations
- Anticipating future climate related loss frequency and severity

Writing the exposures of the future

- Product design and technical pricing for new risks presented by the transition to a low carbon economy e.g. EV and Green Energy
- Cross-subsidy and pricing framework for profitably increasing exposure to new business sectors and risk pools

1

2

4

3

Strategic direction and advisory

Product development and UW

Reinsurance
+
PI Pricing

Actionable advice for portfolio sustainability
Constructive next steps for your business

Munich RE

Value

Expertise

Risk & Underwriting

Actuarial analytics and Pricing

Portfolio Steering & Strategy

Data & Analytics

Proposition

- Detailed actuarial segment diagnostics
- Detailed review of pricing and UW against climate change scenarios
- Outside-in view on processes central to managing NatCat accumulation and climate change
- Benchmarking and MR proprietary climate and NatCat data
- Prioritised action list for portfolio sustainability

Identification of business segments and trends that could benefit from attention

Reference point on pricing methodology and validity for climate change

Exposure based validation of the strategic direction – e.g. growth plans

Clear path to portfolio performance and sustainability

Business development / steering decision quality

Review of UW guidelines & processes for accumulation management

Thank you for your attention!

11 May 2023
Karabelo Mashigo & Alexander Karvelas

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