Institute
and Faculty
of Actuaries

Getting the Proportions right:
Life Lessons from a General Perspective

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The description of our talk in the brochure

Proportional/Quota share reinsurance has been widely used in recent years in the life industry. We consider the reasons for its prevalence, and look to the alternatives more widely used in general lines. We consider the use of non-proportional lines including CAT XL, Stop Loss, XOL and Dynamic Quota Share reinsurance to manage life insurance risk, and focus on the advantages under various regulatory frameworks including Solvency II and MCEV.

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How did we get here?

- Ancient Pre History “the M&G ratebook”
- 1997: an important demutualisation
- 1998: a response
- 2003: the great guaranteed CI rates famine
- 2006: a regulatory change
- 2010: trading risk

And where are we now?

- Outsize life reinsurance market – despite retail decline
- Evolutionary dead ends – zero retention, no recapture, No collateral for reserve credit, 40 year CI pricing.
- No new entrants - non-concurrent terms and awful data formats
- Incredibly competitive - margins measured in microns
- No one has run screaming with their balance sheet on fire
- No structuring innovation in almost 20 years

When change is forced upon you....

- Look around for inspiration:
  - wider insurance market – specifically non life
  - other countries
  - see what has been done

- Ask: what is really going on?
  - design drivers, not just clone of end product

- Ask more from your reinsurers, advisors, brokers
  - solving future issues
  - structuring

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Generally speaking, life is different

Life

- Broker distributed
- Optional
- Long term (lapse risk)
- Single claim
- Living, dying
- Independent events
- Frequency

General

- Direct sales
- Mandatory (e.g. motor)
- Annual renewal
- Multi-claim
- Property
- Correlated claim events
- Frequency and severity

Life

Funeral Plan

Dental

Property

CI

Travel

Life

General

Unemployment

IP

Motor

LTC

Accident

Or should we be thinking and talking about short term vs. long term business?

- Why is life regarded as being long term?
  - Anti-selection when unhealthy
  - Cover may not be available later
- Nature of the contract
- Annual renewal vs lapse risk
  - means service and customer management is important to increase retention

Hospital cash is almost CI and unemployment insurance is almost IP

Life can learn from General

- Big data
  - More rating factors
  - More granular pricing buckets
- Online sales
- Price on comparison portals
- Product differentiation
- More segmentation and targeting
- Look at existing customers for up-sells & on-sells

Convergence is happening

- Both are seeing an increase in direct sales
- Both are covered by Solvency II
- Both are seeing market concentration
- Both are seeing a rise in the use of technology, focusing on improving the customer journey

New non-traditional entrants are the biggest threats

Risk pooling and granular underwriting

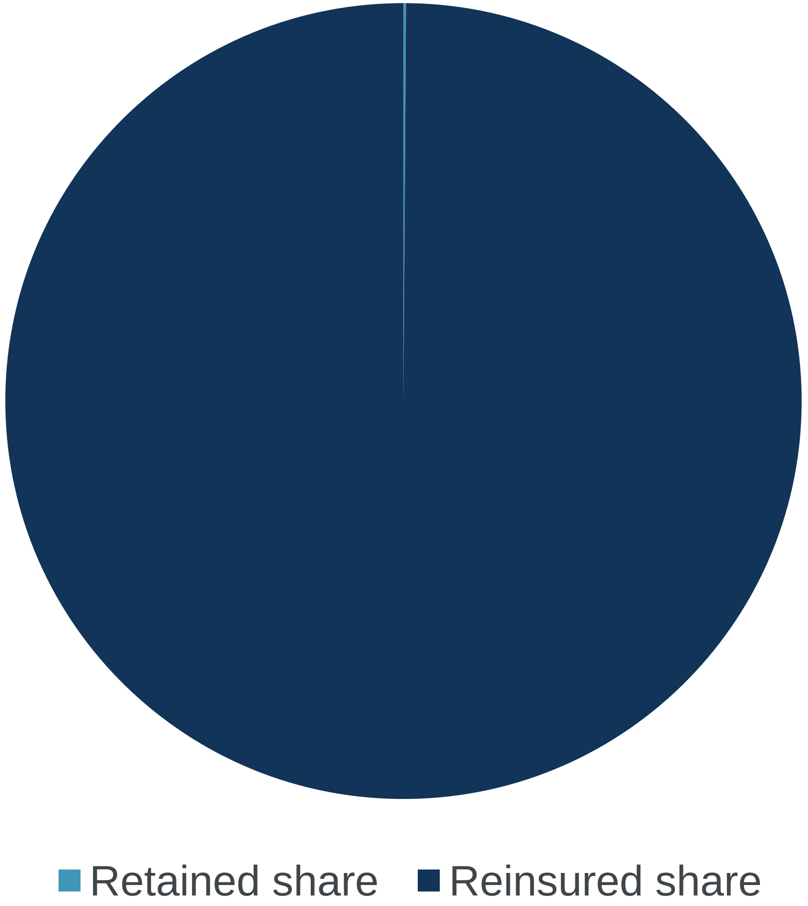
- Electronic underwriting for years vs only coming now
- Snapshot for a long period vs annual underwriting for annual risk
- Post code and model based underwriting
  - Straight through processing from the license number to a quote
  - Additional sources (driving records, claims histories)
- More buckets

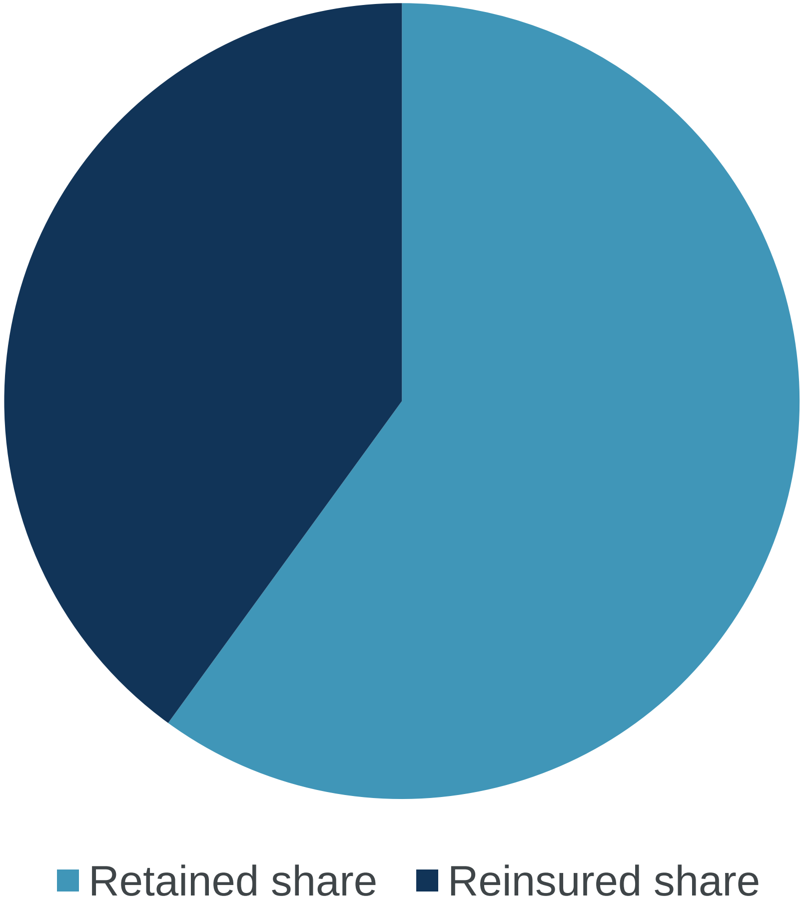
Proportional vs non-proportional

- 100% quota share
- 99.9% quota share
- Leader and follower
  - Leader and multiple followers?

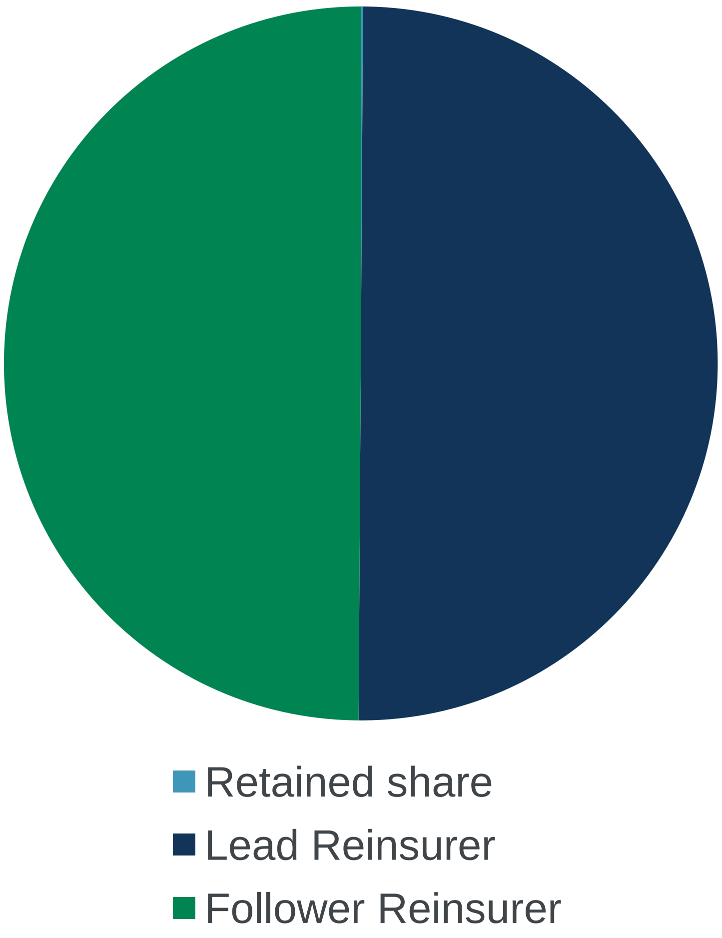
- Working layer
- Extreme event
- Leader and many followers
- Different reinsurers at different layers
  - Working layers vs cat cover

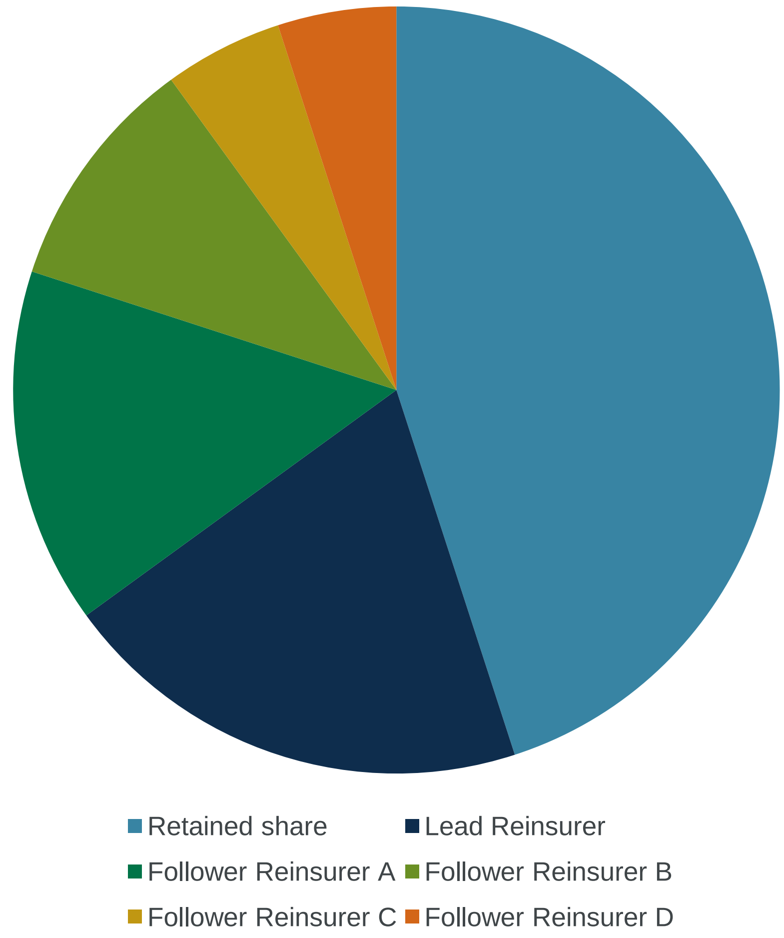
Quota share…


Retained share
Reinsured share


Retained share
Reinsured share

Quota share: lead/follower





Who are the underwriting experts?

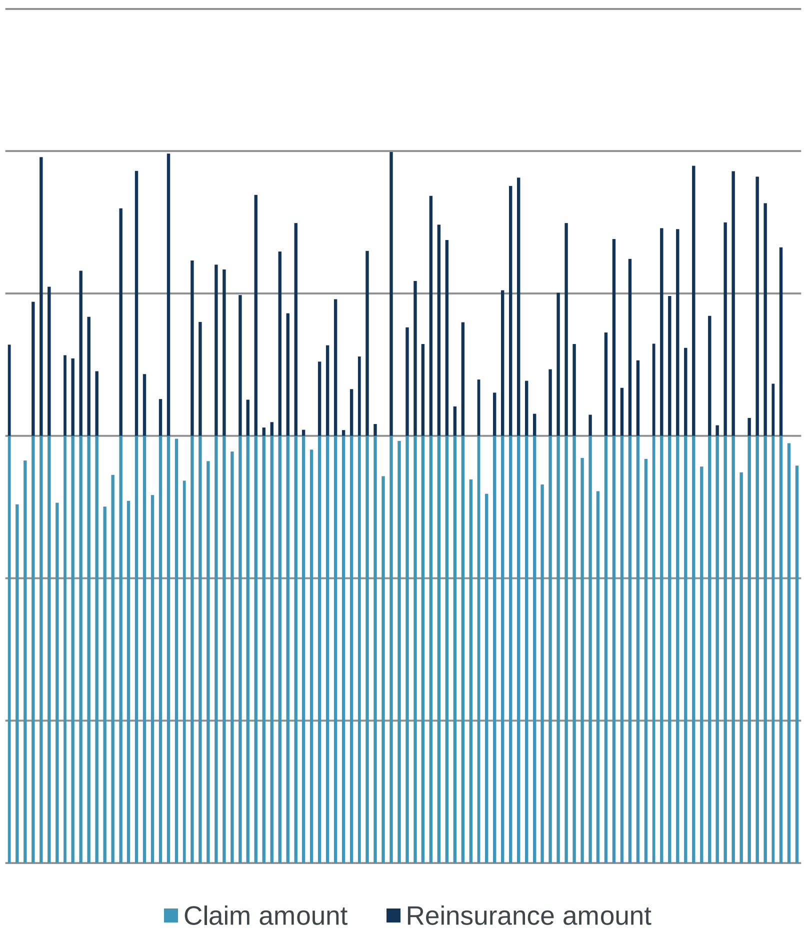
- Reinsurers
- Standardisation facilitates tenders
  - Manual is an input

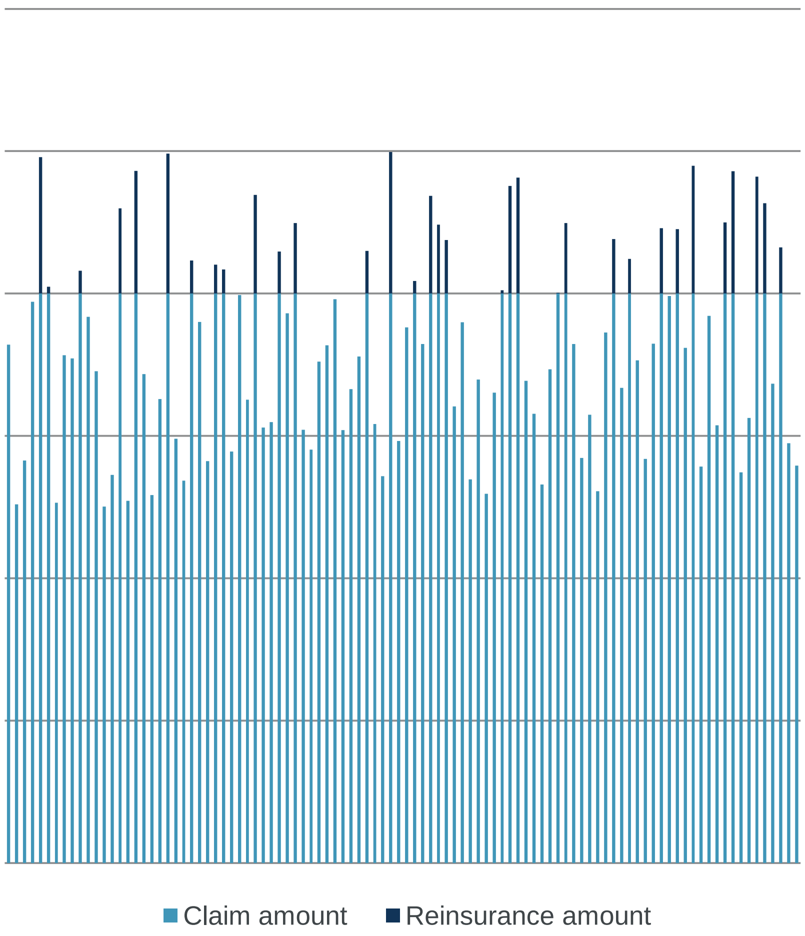
- Insurers
- Underwriting is a differentiator
- New underwriting factors are introduced

Data is a barrier to entry

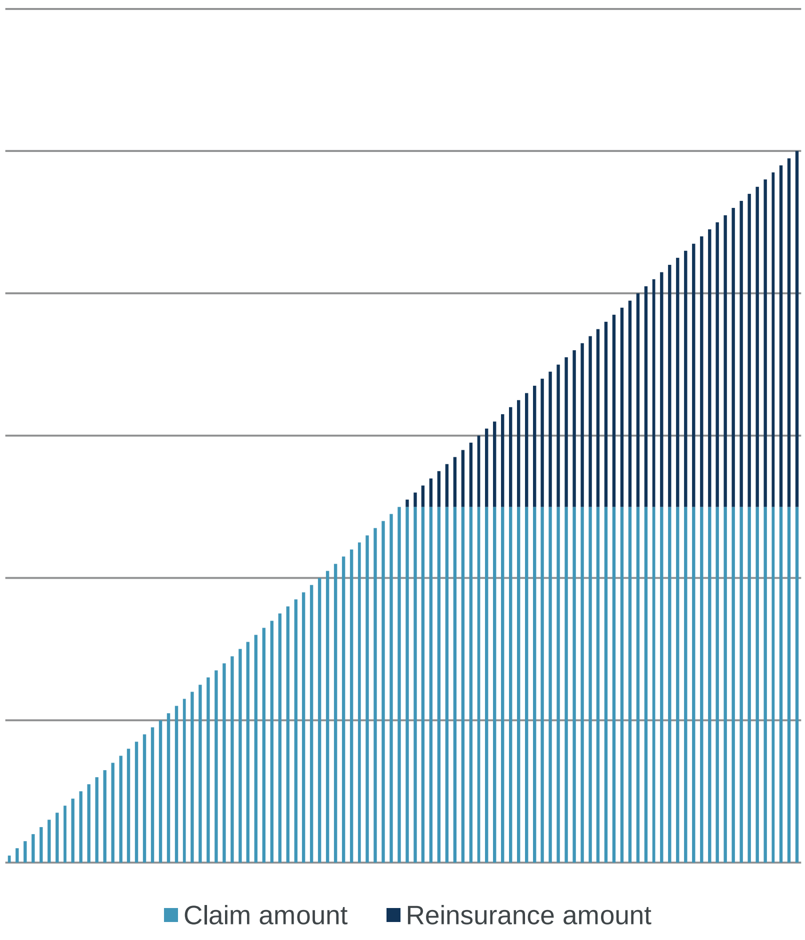
Things are changing… and underwriting flexibility is around the corner

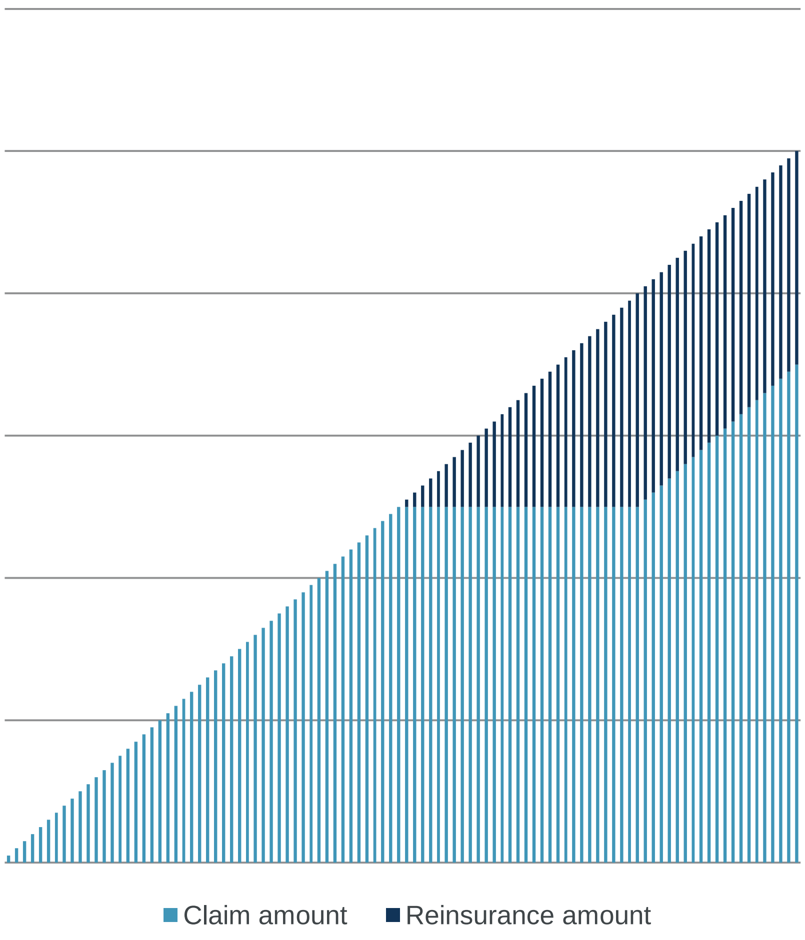
CAT XL pays less claims, so costs less…





Stop Loss:
with and without an upper limit





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Solvency II measures risk differently

- Risk is quantified using scenarios
- Different risk classes are modelled in combination
- Their correlation is captured in the diversification matrix
- Companies need to hold different levels of capital for a particular type of risk as a result of their existing risk exposure in this and other areas
  - Risk retention and diversification can be a competitive advantage
- Scale and geographic diversification help too...

Solvency II has already led to some changes

- Anyone subject to Solvency II is encouraged to manage all of their risks
- AVIVA has done a longevity swap to reduce the volatility on their DB staff pension plan
- Companies have also started to realise the marginal cost of capital in a diversified world

Aviva scheme secures ground-breaking £5bn longevity swap

Aviva completes £5bn record longevity swap

Aviva Staff Pension Scheme completes largest ever longevity deal

More headlines to follow...

Life companies should worry about...

- All types of risk
- Mortality, Morbidity and Longevity are the three that are most easily placed with a reinsurance partner e.g.
  - Mortality through a quota share
  - Morbidity through a quota share
  - Longevity through a longevity swap
- Lapse risk, market risk, reinvestment risk, operational risk...
  - All risks need to be managed
  - Companies should be careful not to introduce risk unintentionally
    - Changing to quickly
    - Trying exotic structures which don’t work

Theory says there are different ways to share the risk...

- The risk remains and never vanishes
- Reinsurance just moves risk
- Different structures move different amounts of risk
- Proportional and non-proportional structures can lead to the same outcome

Geographical diversification vs **Counterparty risk**

Does optimising for diversification imply retaining life risk?

- A composite – or even a life mono-line – may receive meaningful relief on their capital needed to back their life risk by retaining some risk
  - Geographic diversification
  - Investment risk
  - Longevity risk
  - Operational risk
- Less
  - Counterparty risk

4 questions:

If the products, forms of distribution, all encompassing regulation and strategic competencies are converging…

Why is there not a formal leader low-cost follower structure?

Why not retain more risk so you can have diversification benefits?

Why not use more than two reinsurers for a particular line?

Does the current structure constrain innovation?

Questions Comments

Expressions of individual views by members of the Institute and Faculty of Actuaries and its staff are encouraged.

The views expressed in this presentation are those of the presenter.

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Thank you

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