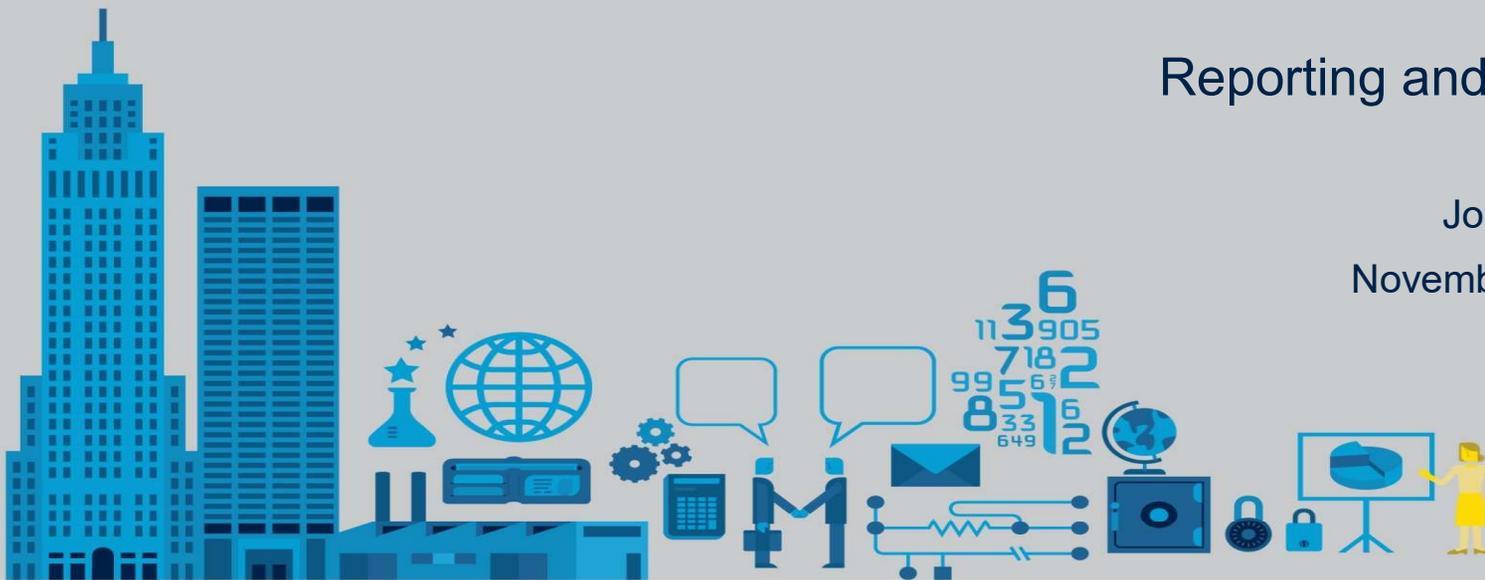


# ACHS Reporting and Analysis

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# Implementation of PBR

## Model Build Phase

Tables Loaded



Calculations Coded



Output Set



Model Run



Development

Assumptions

Compliance

Product Development



Pricing/Costing



Implementation/Launch



Asset



Liability



Input

VM-20 / PBR



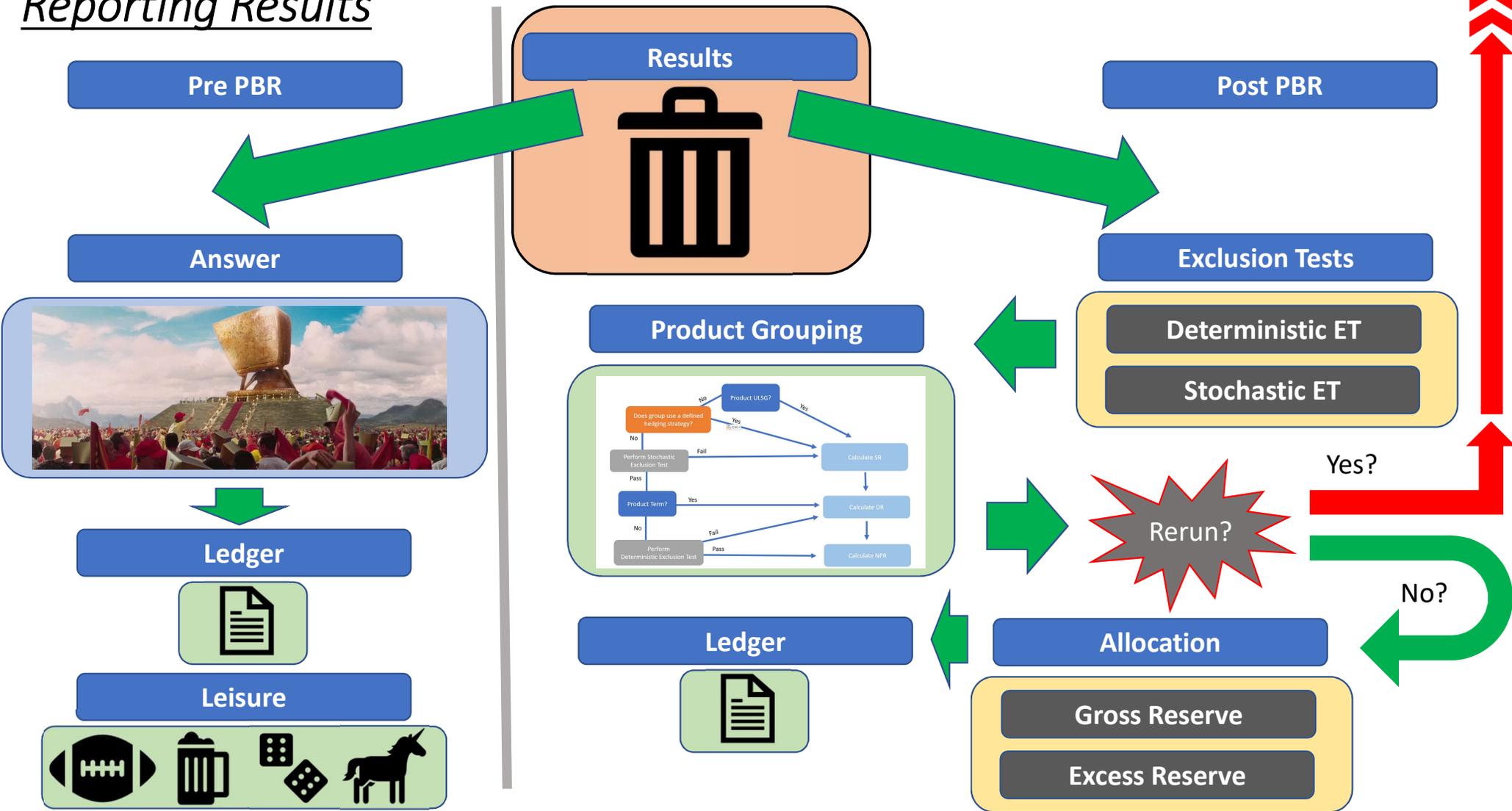
Internal Interpretation



Regulators



# Reporting Results



## PBR Reporting- Business Day X

- **Overview**
  - ❑ PBR components will present challenges in predicting results, but the numbers need to go out on BDx.
- **Advantages**
  - ❑ PBR allows companies to create products that generates reserves that follow the characteristics of the products
  - ❑ More fluid communication between business units
  - ❑ Deepen understanding of risks inherent in the business
- **Challenges**
  - ❑ Will take time to get a handle on reserve movements
  - ❑ More responsibility resides in the Stat Valuation area to keep up with requirements
  - ❑ More flexibility means more decisions
  - ❑ More calculations means more complexity
  - ❑ PBR is still new

### **PBR Stakeholders:**



Assumptions



Forecasting



VM-31



Tax



Senior Management



Pricing



# Comprehensive Analysis

## Attribution Model Runs

- Demographic Changes 
- Economic Changes 
- Non-Economic Changes 
- Risk Management 

## Additional Model Runs

- By Product Runs  
- Forecast Runs 
- Sensitivity Runs  

## Analytics & Metrics

- Scenario Analysis  
- Inforce Statistics 
- Investment Strategy 



## Additional Model Runs - By Product Runs

- **Overview**

- Calculate the NPR/DR/SR for each product/product type within the prescribed product groups (ULSG, Term, Other)

- **Advantages**

- Highlights risk profiles of different products within same product sub group
- Highlight materiality of certain cashflow items
- May indicate which products have a dominant/non-dominant effect on each reserve
- Test assumption impacts on individual products vs. in aggregate

- **Challenges**

- Model runtime/time for analysis
- Create additional questions/work
- Requires tools capable of granular analysis

### **Mainly supports analysis of:**



Demographic Changes



Economic Changes



Non-Economic Changes



Risk Management



## Additional Model Runs - Forecast Runs

- **Overview**

- Perform a model run to estimate future reserves using a sales forecast and current inforce

- **Advantages**

- Acts as an implicit feedback loop for how expected results compare to actual results
- Show the effect of a change in product distribution strategy
- Estimates the effect of future new business

- **Challenges**

- Model runtime/time for analysis
- May be difficult to incorporate forecast input data for model projections
- Creates additional questions/work to reconcile actual vs. expected results
- Forecast simplifications may be required

**Mainly supports analysis of:**



Demographic Changes



## Additional Model Runs - Sensitivity Runs

- **Overview**

- Perform a model run based on shocks to economic (starting treasury curve, projected scenarios, etc.) or non-economic projection components (mortality assumptions, lapse assumptions, etc.)

- **Advantages**

- Highlights which assumptions are key drivers of the final reserve
- Estimates the effect of future treasury curve changes
- Most assumptions can be sensitivity tested

- **Challenges**

- Model runtime/time for analysis
- Number and magnitude of the shocks to be run will require significant judgment
- Difficult to determine area of focus
- Creates additional work/questions

**Mainly supports analysis of:**

 Economic Changes

 Non-Economic Changes



# Analytics & Metrics - Scenario Analysis

- **Overview**

- Investigate patterns among the types of scenarios driving the aggregate/by product CTE70 calculation (falling rates, rising rates, etc.)

- **Advantages**

- Highlights sensitivity of results to different economic conditions
- Provides information into the risk profiles of different products
- Indicates patterns among the timing and severity of accumulated deficiencies for the stochastic reserve

- **Challenges**

- Patterns among stochastic scenarios may be difficult to determine
- Requires tools capable of granular analysis

## **Mainly supports analysis of:**



Demographic Changes



Economic Changes



Non-Economic Changes



Risk Management



# Analytics & Metrics - Inforce Statistics

- **Overview**

- Calculate different inforce statistics such as face amounts, cash values, net premium reserves, age distribution, etc.

- **Advantages**

- Will indicate any dominant products within the insured population
- Age distribution and cash values will inform period over period changes due to maturing business and account values

- **Challenges**

- Difficult to determine how detailed inforce analysis should be
- Not enough information alone to perform a dynamic validation/analysis

**Mainly supports analysis of:**



Demographic Changes



# Analytics & Metrics - Investment Strategy

- **Overview**

- Research the investment/reinvestment strategy used for model projections

- **Advantages**

- Explanation of the basic investment/reinvestment strategy will be informative for stakeholders unfamiliar with PBR
- Will help explain asset-liability interactions throughout projections

- **Challenges**

- Requires tools capable of granular analysis
- Patterns among stochastic scenarios may be difficult to determine

**Mainly supports analysis of:**

-  Economic Changes
-  Non-Economic Changes
-  Risk Management



## Key Points



Beware of model runtime



Be proactive rather than reactive



Make sure your models and analysis tools are flexible, but controlled



Use each step of your attribution analysis as an introduction, not a conclusion



Develop your framework early on and maintain it as necessary



In the early stages of PBR implementation, include educational material on PBR and/or model methodology with results to help further explain key drivers