Session 054: Implications of GAAP Targeted Improvements on Data, Reporting, Resourcing and Governance

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Agenda

1   Implications for data and reporting processes

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2   Deep dive into LDTI impacts on actuarial data architecture

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3   Case studies - Output and reporting

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4   Q&A and wrap-up

Implications for data and reporting processes

Considerations of flexibility in the level of rigor for implementing LDTI
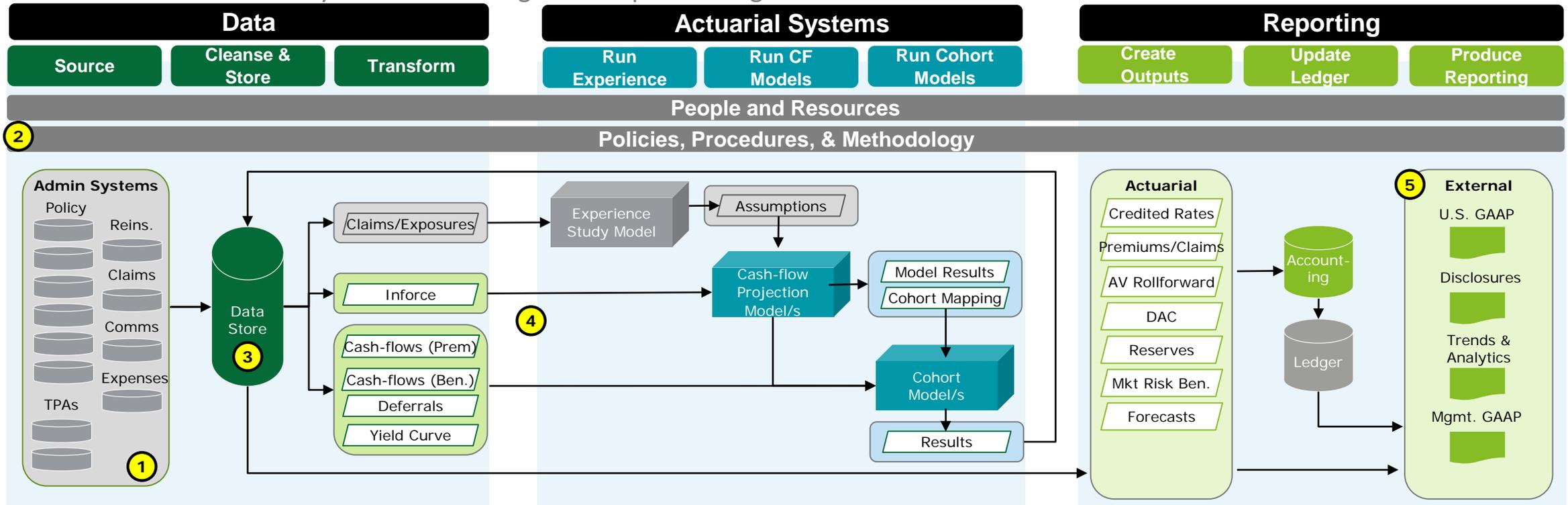
Success Factors

1. **Additional data sourcing** at the appropriate level of granularity
2. **Robust data governance and controls** to manage, govern and control data quality and transformations
3. **Strategic data store** to consolidate and standardize actuarial source and model output data to generate reporting and analytical outputs
4. **Flexible data integration** to provision data for models, analysis, and reporting
5. **Reporting and disclosures to support** GAAP valuation, analytics, KPIs, and forecasts

Implications for data and reporting processes

Data Governance and Controls

Blockers:
- Outdated policies
- Inconsistent use of data granularity, definitions, and metrics
- Limited holistic governance

Enablers:
- Assessment of controls across process components to determine enhancements needed or redesign
- Design of preventative controls not just detective
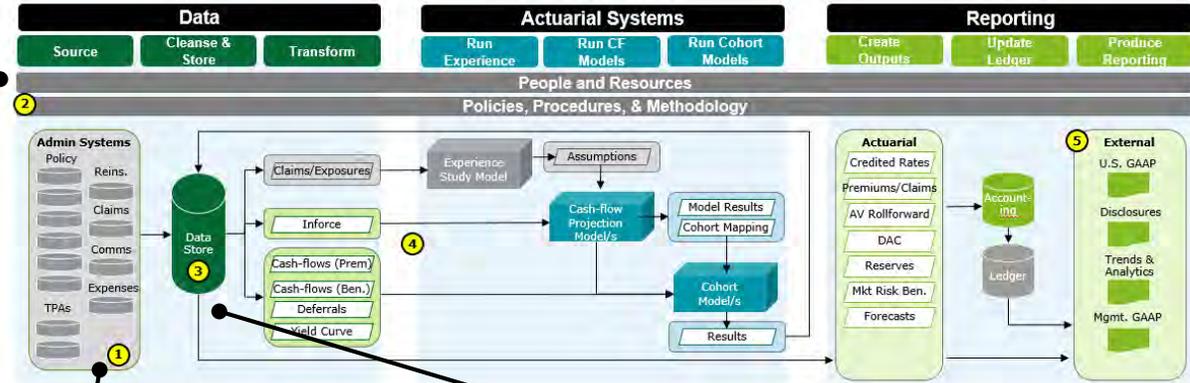
Data Sourcing and Granularity

Blockers:
- Fragmented source systems
- Aggregated transaction and/or policy data
- Lack of historic economic and non-economic data

Enablers:
- A detailed understanding of data requirements and current gaps at source

Data Store

Blockers:
- Multiple inconsistent and non-standardized data stores
- Separate data stores for inputs vs. outputs
- Low capacity data stores

Enablers:
- Conformed data across end to end architecture
- Early analysis of likely data volumes

Implications for data and reporting processes

Data Integration

Blockers:
- Manual aggregation processes
- Multiple transformations to prepare source data for models

Enablers:
- Introduce greater level of automation
- Apply changes to data aggregations and provisioning tools, providing the new data or reporting bases required
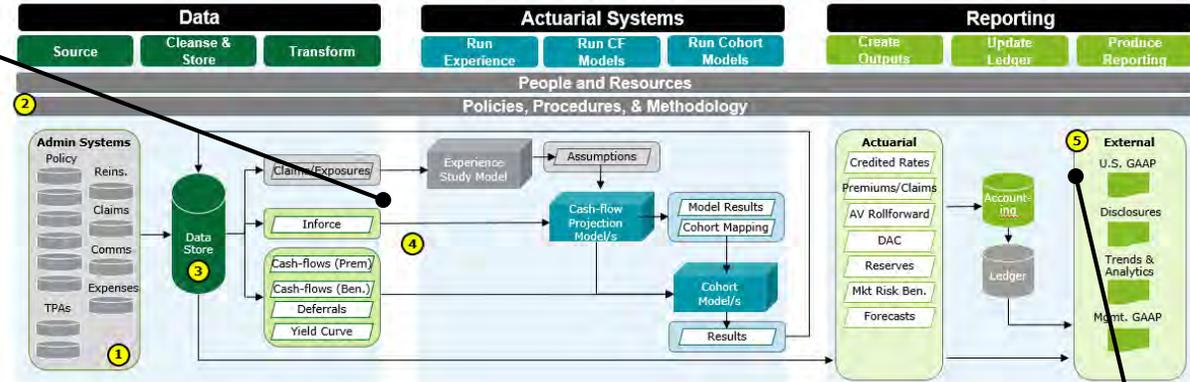
Reporting and Disclosures

Blockers:
- Manual intensive effort
- No single version of the truth for Close & Consolidation
- Lack of efficient monitoring against the working day timetable

Enablers:
- Extension to reporting tools or sourcing of new tools that are adapted to the regulation
- Robust working day timetable and monitoring systems across reporting streams

Implications for data and reporting processes

Considerations of flexibility in the level of rigor for implementing LDTI

Run rate costs and time decrease as modernization increases

Full Modernization
Leverage previous finance transformation projects to modernize current IT architecture to facilitate further modernization opportunities and move closer to the "North Star Vision".

Smart Compliance
Leverage previous finance transformation projects to modernize current IT architecture and gain scales of systems and solutions.

Minimum-Manual Compliance
Adapt current systems to LDTI without consideration for modernization of IT architecture – manual effort is higher.

High

Cost to Implement

Low

Low   Level of Modernization   High

A

B

C

Full Modernization
$$$$$

Smart Compliance
$$$

Minimum-Manual Compliance
$

— Level of Modernization Costs

— Run Rate Cost

Role Play – Single version of truth

SCENARIO: Company ABC does not have consistent data used across experience studies, valuation, source of earnings analysis, and FP&A. The Company is considering how to address consistency and standardization of data while preparing to implement ASU 2018-12. Listen to the conversation between the CFO, the valuation actuary, and manager from FP&A.

Modern end-to-end architecture
Updates to the data infrastructure (in purple) has been cited as one of the primary challenges in implementing LDTI and is the focus of this presentation

- Data lake/unstructured data
- In-force creation/compression
- Data controls/exception handling

- Assumption manager
- Job scheduler/control center
- Calculation engine
- Local data store

- Data standardization
- Data transformation
- Accounting rules engine

- Sub/General ledger
- Financial statements

SOURCE DATA

2 **PRE-MODEL DATA/ETL**

ACTUARIAL PLATFORM (S)

3 **POST-MODEL DATA/ETL**

FINANCIAL SYSTEMS

4 **REPORTING/ VISUALIZATION PLATFORM**

1 **DATA WAREHOUSE**

- Liabilities data
- Assets data

- Structured data marts segmented by line of business
- Master data
- Reporting views

- Financial reports and exhibits
- Reconciliation
- Error and exception handling
- Analytics and trend analysis

Source/customer systems   Data infrastructure   Actuarial models

Traditional liabilities implications
Deriving NPR and unlocking of assumptions will require significant build to input ETL and experience analysis processes

Changes needed for the new accounting standards	Level of build required			
	Data warehouse	Pre model data	Post model data	Reporting tools
Liability measurement includes actual cashflows • Increased data volumes with retention of actual historical cashflows (to derive NPR) • Update ETL processes to fetch actual cashflows from admin or general ledger • Grouping and segregating input data by issue year cohorts • Other updates to assumption tables and input data feeds (e.g. separating maintenance expenses from claim costs)	High	High	Medium	Low
Assumption unlock • Storing two discount rates (at inception and current) • Update Input ETL processes to pull in both discount rates each valuation period • Automated or more robust experience analysis and assumption update process	Medium	High	None	Low
Changes in interest rates are reported through OCI • At transition, update subledger/ledger to remove OCI attributed to shadow reserves • Update rules engine to capture difference in liabilities (current vs locked in) in OCI	Medium	None	High	Low

IMPACT   ◯ None   ◔ Low   ◐ Medium   ◕ High

Deferred Acquisition Costs (DAC) implications
The simplification of the DAC measurement may provide an opportunity to move DAC calculations and reporting processes to more controlled platforms

Changes needed for the new accounting standards	Level of build required			
	Data warehouse	Pre model data	Post model data	Reporting tools

DAC amortization methodology is simplified
 	
• Update data feeds, Input ETL and data warehouse to include:
  – Inforce amount/NAR (constant level basis)
  – Terminations/persistency
  – Incurred DAC expenses
 	
• Update output ETL processes to exclude interest, shadow DAC
 	
• Move DAC models from Excel/Access databases to a more controlled IT environment
	Medium	Medium	Medium	High

Reporting and disclosures change due to new methodology
• At transition, update subledger/ledger to reverse shadow DAC from OCI and record as DAC adjustment
• Update accounting rules engine and output ETL processes to reflect changes for
  – Experience adjustment and incurred expenses
  – Exclusion of interest and shadow DAC
	Low	None	Medium	Low

IMPACT ◯ None ◔ Low ◑ Medium ◕ High

Market Risk Benefit implications
Implementing MRBs will require significant undertaking on data warehouse and rules engine applications

Changes needed for the new accounting standards	Level of build required			
	Data warehouse	**Pre model data**	**Post model data**	**Reporting tools**
Scope of guarantees at fair value increases • Update ESG applications and calibration processes for fair value (RN vs RW) • Update ETL processes with no cohort level requirement • Bundling of multiple MRBs in a contract may require additional handling	Low	Low	Medium	Medium
Inception-to-date restatement is required[1] • Gather data from disparate set of legacy applications and store in new databases • Process higher volumes of data in ETL processes	High	High	None	None

Changes to instrument specific credit risk are reported through AOCI
• Classify MRBs in post ETL processes, data warehouse and reference data sets
• Update accounting rules engine for:
  – Instrument specific credit risk flowing through OCI
  – Derecognition of MRBs/OCI reversals on annuitization
• Update financial system hierarchies and reference data to for B/S and I/S presentation
	Medium	None	High	Medium

IMPACT   ○ None   ◔ Low   ◑ Medium   ◕ High

1. If data is available

Disclosure implications
New disclosure requirements have a substantial cross-system impact and is an opportunity to introduce or improve workflow and governance structures

Changes needed for the new accounting standards	Level of build required			
	Data warehouse	Pre model data	Post model data	Reporting tools
Disaggregated rollforwards are required • Inputs: Data feeds will require updates to introduce granularity • Outputs: ETL, reference data and rule engine updates for additional granularity	Medium	Low	Low	Low
Several other disclosures are introduced • Add and update data warehouse, master data/reference datasets and ETL processes to support new quantitative & qualitative disclosures • Automating qualitative disclosures may require special handling • Design additional reports and update/rationalize existing ones on BI platform	Medium	Medium	Low	Low

IMPACT   None   Low   Medium   High

Illustrative LDTI implementation timeline[1]
Implementing changes to comply with ASU 2018-12 will be a multi-year process that will require significant planning, development, and testing

Resourcing heatmap

9/1/2019   12/31/2019   6/30/2021   (Go live) 12/31/2021

Planning and requirements → **Implementation** → **Test, transition and go live**

PHASE 1	PHASE 2	PHASE 3

ACTIVITY TIMELINE

PHASE 1
- Scope overall technology and modeling effort/allocation of resources
- Make methodology decisions (e.g. transition, DAC)
- Document requirements
  - In/output data/assumptions
  - Model/calculation updates
  - Disclosures and reporting
  - Sub/general ledger updates
- Design technology architecture
- Kickoff implementation effort

PHASE 2
- Update models
  - Liability for future policy benefits
  - MRBs
  - DAC
  - Disclosures
- Update assumption inputs and in force data (including additional data needs)
- Implement post model ledger data feeds and accounting rules
- Plan for 2020/2021 comparable reporting

- Complete model and data implementation
- Develop expanded disclosure reporting processes
- Update sub/general ledger including B/S and I/S changes
- Prepare 2019/2020 comparable financial reports
- Prepare test strategy/unit test
  - Data feeds/assumptions
  - Liability/projection models
  - Disclosures reports
  - Sub/general ledger

PHASE 3
- Test integration of pre and post model processes
- Perform UAT for expanded disclosures, financial reports, financial statements
- Implement transition methodology and create transition financial statements
- Train resources and complete business readiness
- Go live with task calendar (all hands on deck)

Milestones

- Project plan & decisions
- Business requirements
- Technology architecture

- Model updates approved
- Integrated system feeds
- Financial systems updated
- Testing strategy and test case documented
- Attribution of LDTI impacts

- Transition plan and method
- Testing approved
- Training complete
- Procedures documented

1. Illustrative timeline assumes January 1st, 2022 effective date for SEC filers

End-to-end architecture

Post GAAP Targeted Improvements (planned)

8 models

11 non-model tools

2 passthrough tools

Legend: In-force / Admin data · Inputs · Models · Passthrough · Non-model tools

LDTI output and reporting updates

DAC	Traditional Liabilities	Market risk benefits

• Update model output, reporting processes and systems for DAC, unearned revenue and deferred sales inducement rollforwards
 	
• Remove shadow DAC AOCI related adjustments from ledger / sub ledger feeds (captured in catch-up adjustment)
	• Update model output, reporting processes and systems for reserve rollforwards
	
	• Update model output data processes to capture changes in the liability calculation due to
	
	  1) changes in the discount rate in OCI
	
	  2) changes in experience in remeasurement gain / loss
	
	  3) changes in reserve in benefit expense
		• Change processes and systems to show MRB liability and changes separately on B/S and I/S
		
		• Revise subledger / ledger feeds to report instrument-specific credit risk in Other Comprehensive Income
		
		• Produce model output data, reporting process and systems for rollforwards

You currently use Excel as a DAC calculation engine; this file feeds the ledger. With the LDTI DAC calculation updates, you plan to eliminate spreadsheets and instead calculate DAC directly in your modeling software.

What are the key risks, potential impacts, and controls that can help mitigate?

⚠ **Risk**   📊 **Impact**   🔒 **Controls**

Eliminating spreadsheets

You currently use Excel as a DAC calculation engine; this file feeds the ledger. With the LDTI DAC calculation updates, you plan to eliminate spreadsheets and instead calculate DAC directly in your modeling software.

⚠️ Risks

- Non-DAC feeds in spreadsheet could be dropped unintentionally
- New ledger feeds may be misinterpreted by accounting team
- Mishandling of existing topsides
- Users outside of valuation rely of spreadsheet for analysis

📊 Impact

- Misalignment between modelled and booked results

🔒 Controls

Preventative
- Develop end-to-end process flows
- Maintain model inventory that defines purpose, inputs, and outputs for each model
- Proactively work with accounting team to establish new and remove obsolete ledger feeds

Detective
- Validate ledger values against model output

⚠️ **Risk**   📊 **Impact**   🔒 **Controls**

Disclosure automation

To comply with the new disclosure requirements, you use an automated process to perform the necessary model runs and calculate rollforwards. Runs require current and prior period inforce, current and prior period assumptions, and results split by new and existing business. You use functionality developed by your modeling software vendor, but you have customized the output reports for rollforwards.

What are the key risks, potential impacts, and controls that can help mitigate?

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Disclosure automation

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⚠ Risks

- Automated process is not fully understood by users
- Customized rollforward report contains issues or do not comply with disclosure requirements
- System limitations prevent compliance

📊 Impact

- Mistakes flow through financials undetected
- Runs need to be re-processed from inadequate rollforwards

🔒 Controls

Preventative
- Test and document new vendor functionality before use in production model
- Obtain internal and external auditor buy-in for customized rollforwards

Detective
- Static and dynamic validations

⚠ **Risk**   📊 **Impact**   🔒 **Controls**

Analytics and reviewing results

You are developing new GAAP analytics packages to be reviewed by senior management on a quarterly basis. You take advantage of the LDTI disclosure rollforward requirements to strategically develop new consolidation groups and key performance indicators ("KPIs").

What are the key risks, potential impacts, and controls that can help mitigate?

⚠️ **Risk**　　📊 **Impact**　　🔒 **Controls**

Analytics and reviewing results

You are developing new GAAP analytics packages to be reviewed by senior management on a quarterly basis. You take advantage of the LDTI disclosure rollforward requirements to strategically develop new consolidation groups and key performance indicators ("KPIs").

⚠ Risks

- Aggregation is not at the right level of granularity, concealing key results
- KPIs do not align with LDTI earnings impacts
- Lack of consensus on reports from reviewers

📊 Impact

- Suboptimal business decisions are made (e.g., product development, management, and pricing)
- Data or modeling mistakes are missed during review

🔒 Controls

Preventative
- Forecast and/or mock-rollforward of LDTI results
- Test several potential aggregation definitions and KPIs
- Develop customized analytics packages for Valuation team review and management review

Detective
- Sensitivity testing of aggregation levels and KPIs

⚠ **Risk**   📊 **Impact**   🔒 **Controls**

Comparative financials

You have completed model development and validation steps and are now ready to productionalize your new LDTI GAAP model. You are required to produce 8 quarters of comparative financial results from LDTI transition date to adoption date. This necessitates developing results under prior GAAP regulations and the new LDTI framework for each quarter.

What are the key risks, potential impacts, and controls that can help mitigate?

⚠ **Risk**   📊 **Impact**   🔒 **Controls**

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⚠ Risks

- Results may not be reviewed under same scrutiny as normal production processes
- Movement of results may not align with parallel runs using prior GAAP methodologies

🔒 Controls

Preventative
- Apply same set of controls used for normal production process, including model change and assumption governance
- Proactively obtain auditor buy-in

Detective
- Sensitivity testing

📊 Impact

- Mistakes from rolling forward model impact future period results

⚠ Risk   📊 Impact   🔒 Controls

Output and reporting best practices

Automate and streamline

Reduce risk by automating processes and reducing hand-off steps and manual processes

Ledger controls

Validate model results to ledger values and have tracking system for outside-of-model adjustments

Analytics and KPIs

Develop standard analytics packages with appropriate review guidelines

Segregation of duties

Clearly define owners throughout process for proper accountability

Proactive Communication

Proactively communicate between upstream and downstream owners and with internal and external audit

Documentation

End-to-end process documentation illustrating all process inputs, outputs, and accounting bases