OliverWyman

ACTUARIAL TRANSFORMATION

Trends and insights across data, processes, and people

May 2021

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INTRODUCTION TO ACTUARIAL TRANSFORMATION

ACTUARIAL TRANSFORMATION – VISION

CURRENT STATE

Majority of time spent on manual runs and data manipulation

FUTURE STATE

75% of actuarial time is spent on analysis and insight

ACTUARIAL TRANSFORMATION – OVERVIEW

CHALLENGES

Significant manual time to prepare and adjust data; issues with source systems leading to frequent data errors

Underlying model structure concerns resulting in **duplicated efforts** for model development and use

Actuaries spend **substantial time on routine reporting** including "pressing run" on models

Resources spending time on tasks not aligned to their skillset

OPPORTUNITIES

1 **DATA & TECHNOLOGY**

On-demand insights powered by easily accessible data from a single enterprise data solution

2 **ACTUARIAL MODELS**

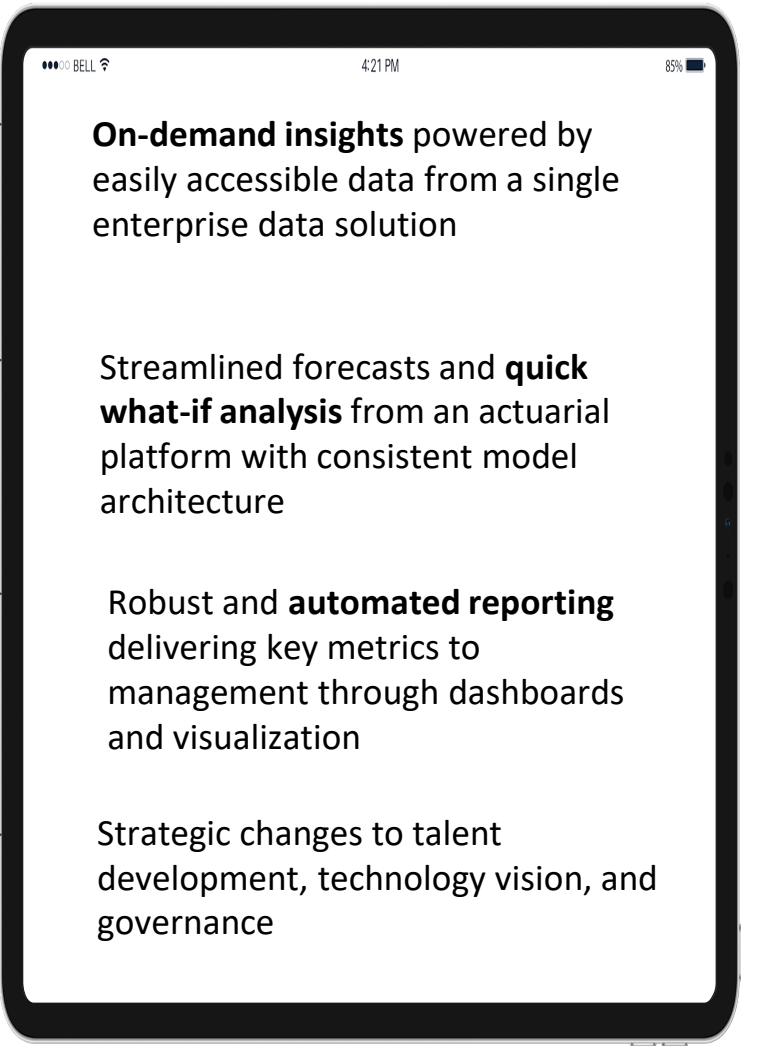
Streamlined forecasts and **quick what-if analysis** from an actuarial platform with consistent model architecture

3 **PROCESS OPTIMIZATION**

Robust and **automated reporting** delivering key metrics to management through dashboards and visualization

4 **ORGANIZATIONAL EFFECTIVENESS**

Strategic changes to talent development, technology vision, and governance



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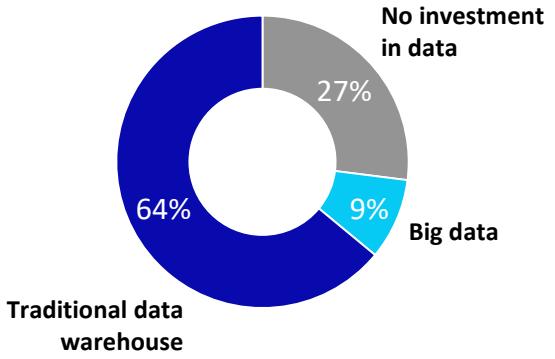
DATA TRANSFORMATION

DATA & TECHNOLOGY

Leading companies will harness data to drive business development rather than making business decisions and dealing with data as an afterthought

Centralizing data

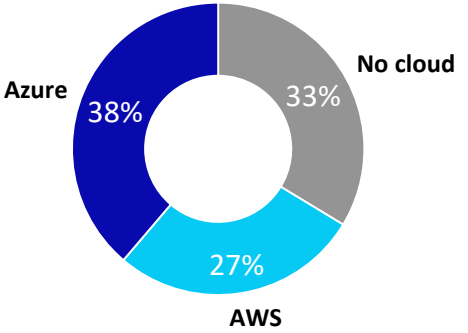
Access to consistently structured central data can reveal underlying relationships and profit drivers



3 out of 4 insurers are implementing a centralized data solution

Deploying the cloud

Processing power from the cloud unlocks new capabilities to analyze data

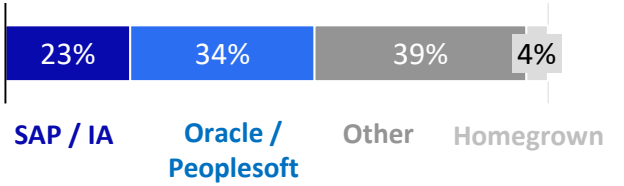


Economies of scale is driving **2 out of every 3 insurers** to the cloud

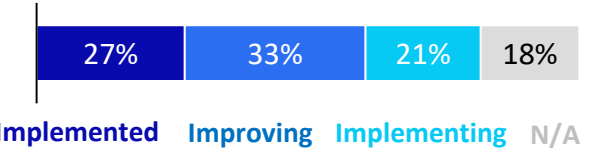
Streamlining and accounting

Drill-down capabilities in the ledger can connect trends in financials back to source data

60% of insurers are hooking up a data repository to a standardized accounting engine



80% of insurers are implementing streamlined solutions to feed data to actuarial models



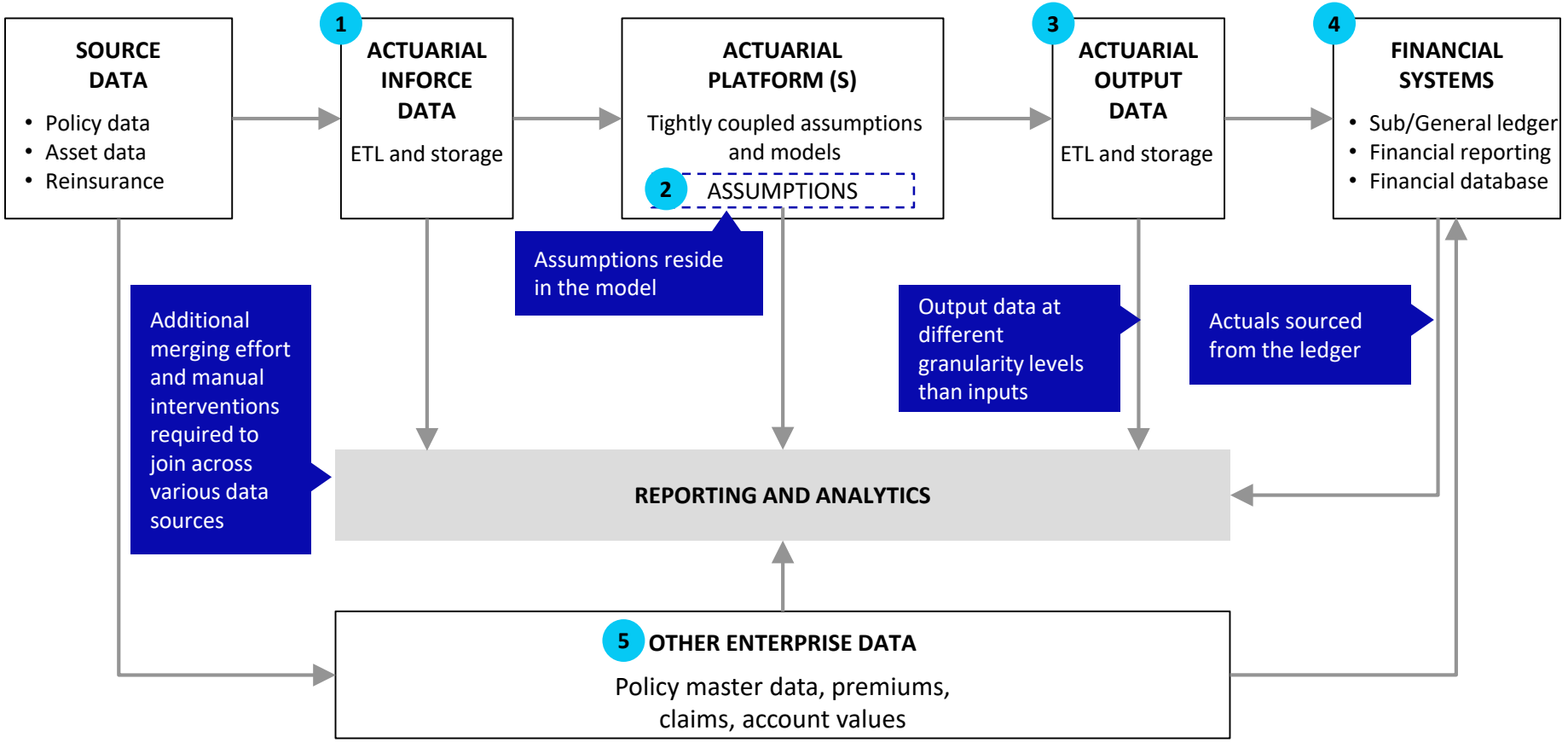
MARKET INDICATORS

Prudential spent **$2.35 B** to acquire AssuranceIQ

MetLife is partnered with **10** Insurtech startups

CASE STUDY 1 – CENTRALIZED DATA WAREHOUSE

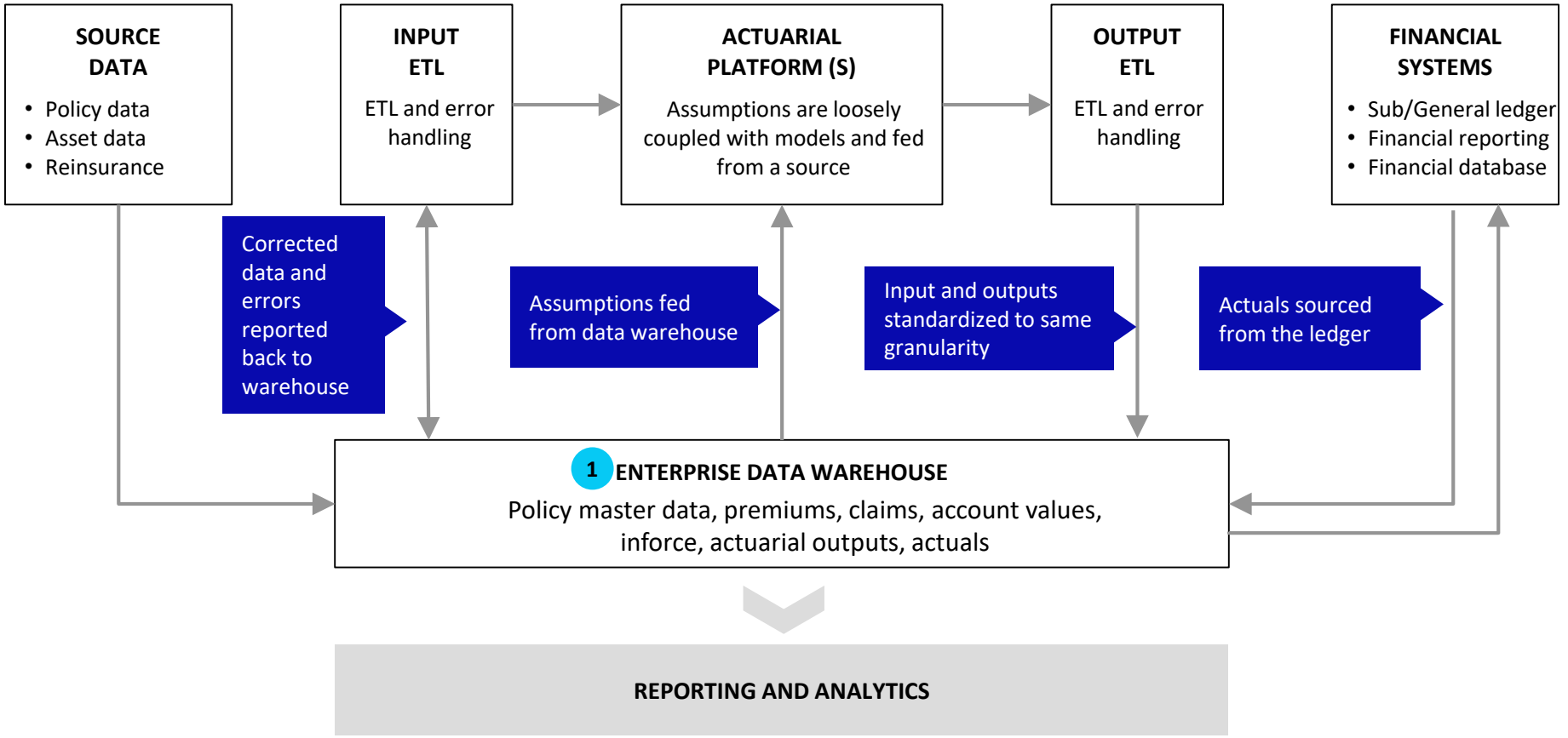
Lesson learned: data ownership and training issues must be proactively addressed because individuals who own inforce, assumptions, outputs, and actuals may resist centralizing if they feel a loss of ownership or capability



Querying data from various sources into a single reporting interface requires substantial effort to merge, join, and analyze

CASE STUDY 1 – CENTRALIZED DATA WAREHOUSE

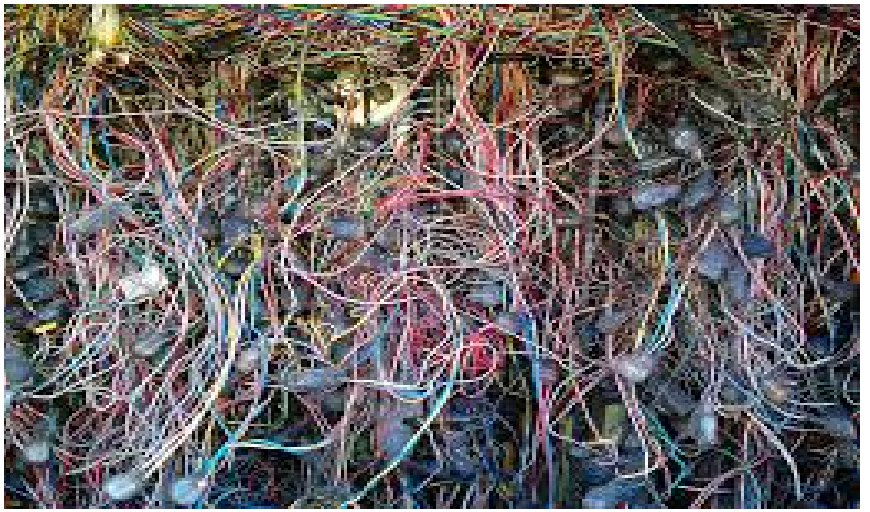
Impact: time is spent on analysis and insight rather than chasing and merging data when an enterprise data warehouse is the single source of truth



CASE STUDY 2 – SCALABLE DATA MODEL

Lesson learned: build the data model strategically so that it can evolve as requirements change

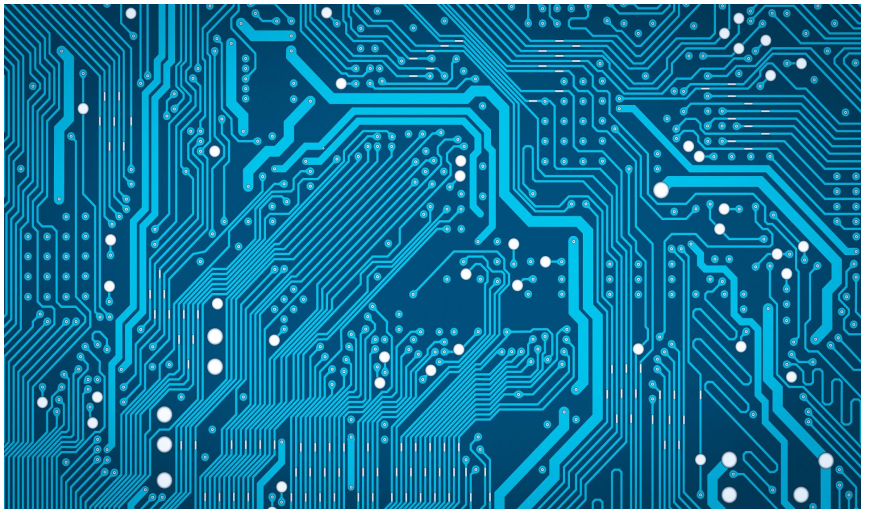
When you **do not** think strategically and keep bolting-on



Bolting new structures to a data model each time there is new requirement leads to an unmanageable and complex structure. Reasons include:

- New guidelines from governing bodies
- Acquisitions
- New products
- Increase in analytical needs

When you **do** think strategically and allow for scaling



Creating a scalable data model with the right allows adding more data across dimensions. Data modelers should plan for:

- Right granularity
- Reference data management
- Field naming standard
- Hierarchical data management
- Modularity

3

PROCESS TRANSFORMATION

PROCESS OPTIMIZATION

Automation and reporting improvements are a relatively small cost with a significant return if implemented alongside required regulatory changes

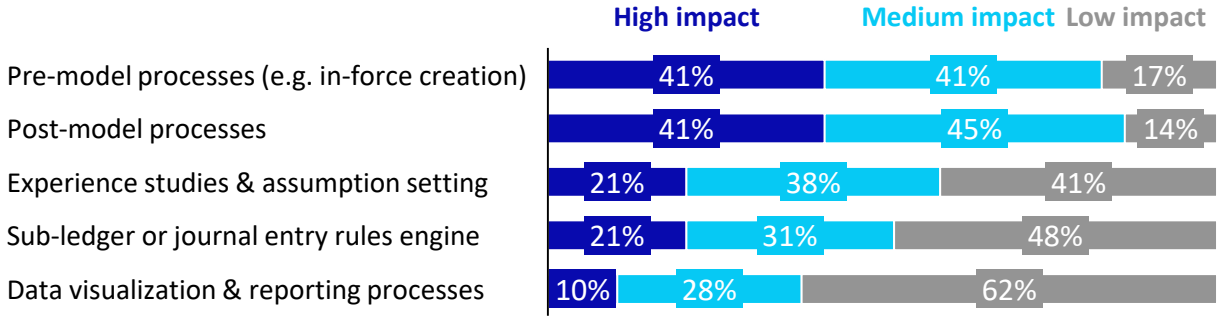
Current state

Excel remains a primary tool for most insurers despite appetite for automation and greater analytics capabilities

Microsoft Excel	Microsoft Access	Automated IT workflows	Analytical tools (e.g., Tableau, Power BI, Alteryx, Python, R)
73%	21%	25%	14%

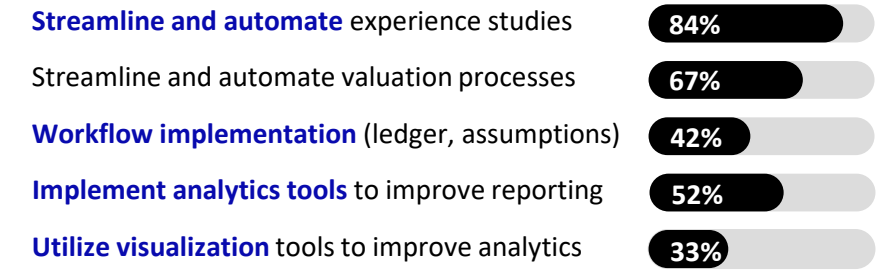
Regulatory impacts

80% of companies expect to materially change processes for LDTI



Future state

85% of insurers are planning to automate repetitive processes



IMPACT

A recent transformation project determined that **~10 FTEs of capacity could be released** through automation and streamlining alongside LDTI

PROCESS DESIGN PRINCIPLES

Right size process and technology

- Balance flexibility and scalability of a process against simplicity and user experience
- Select a consistent technology toolkit that helps drive business value and can be accepted widely within the organization

Decouple “user” from “process”

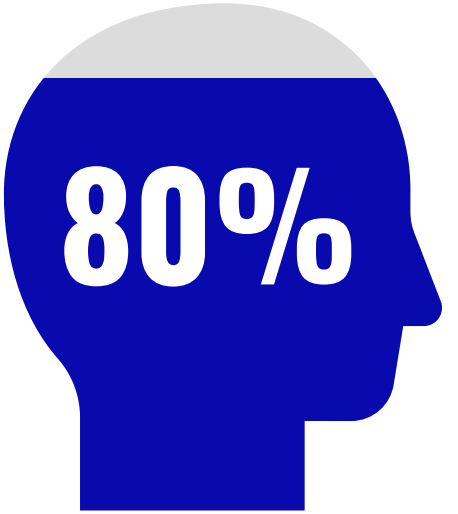
- Create a front-end interface to allow users to query and analyze without extensive technical training
- Let workflow tools take the first step: they track progress and notify users when results are ready for review or when unforeseeable issues arise
- Leverage dev-ops framework for back-end processes to make them portable (technology agnostic)

Use modular design

- Create standalone components that can be updated and enhanced with no downstream impact
- All processes that operate on data report back to the centralized data store to minimize interdependencies and redundant data mappings
- Separate data transformation logic from business logic

Normalize where possible

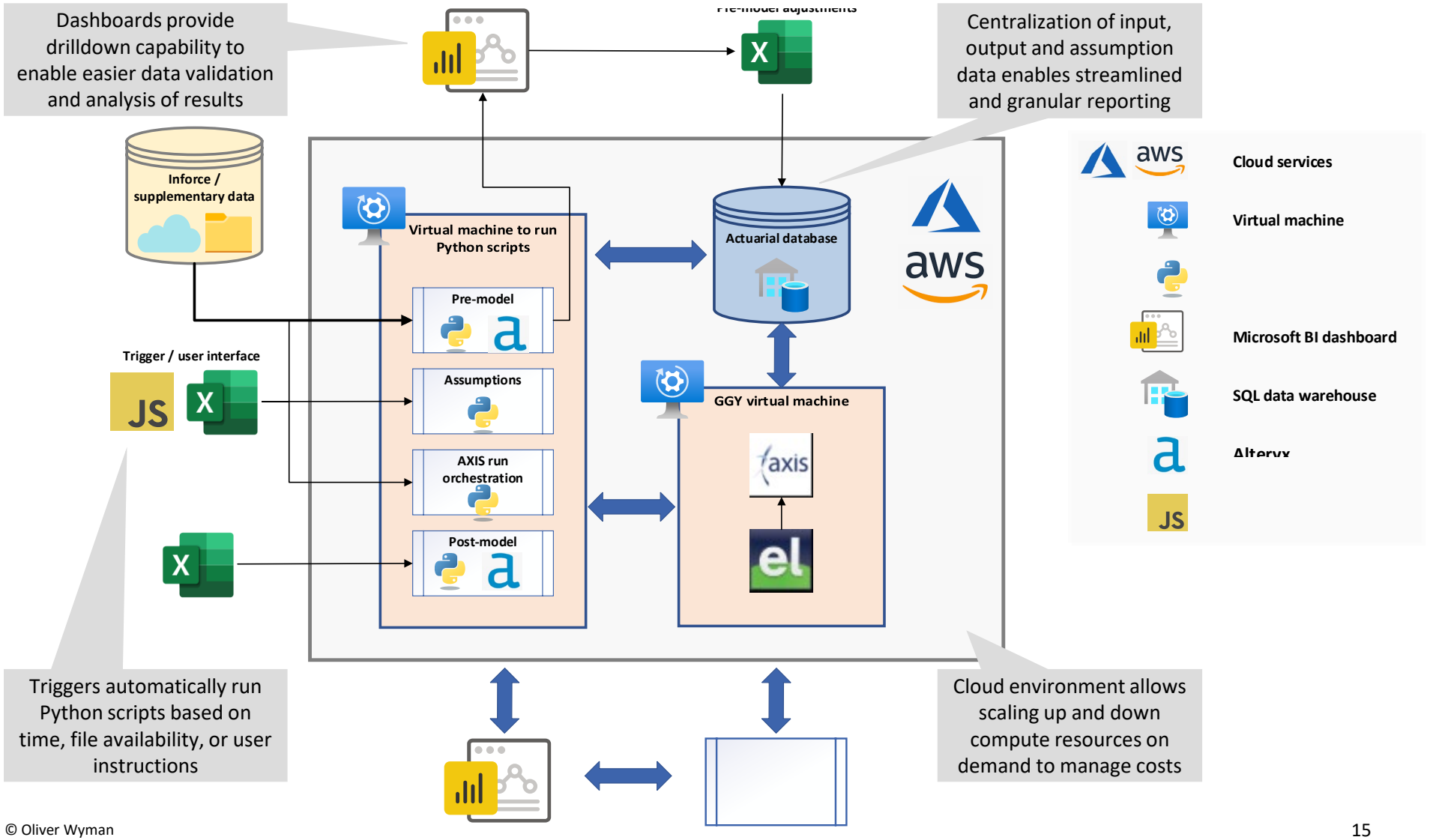
- Normalize data to suitable levels, scale storage for data formats that evolve over time, minimize complexity of the system
- Centralize most data types (i.e., model inputs, outputs, assumptions, product features) in the least number of tables via use of data normalization logic
- Consider use of non-relational data stores where appropriate



Significant value from a design based on design principles

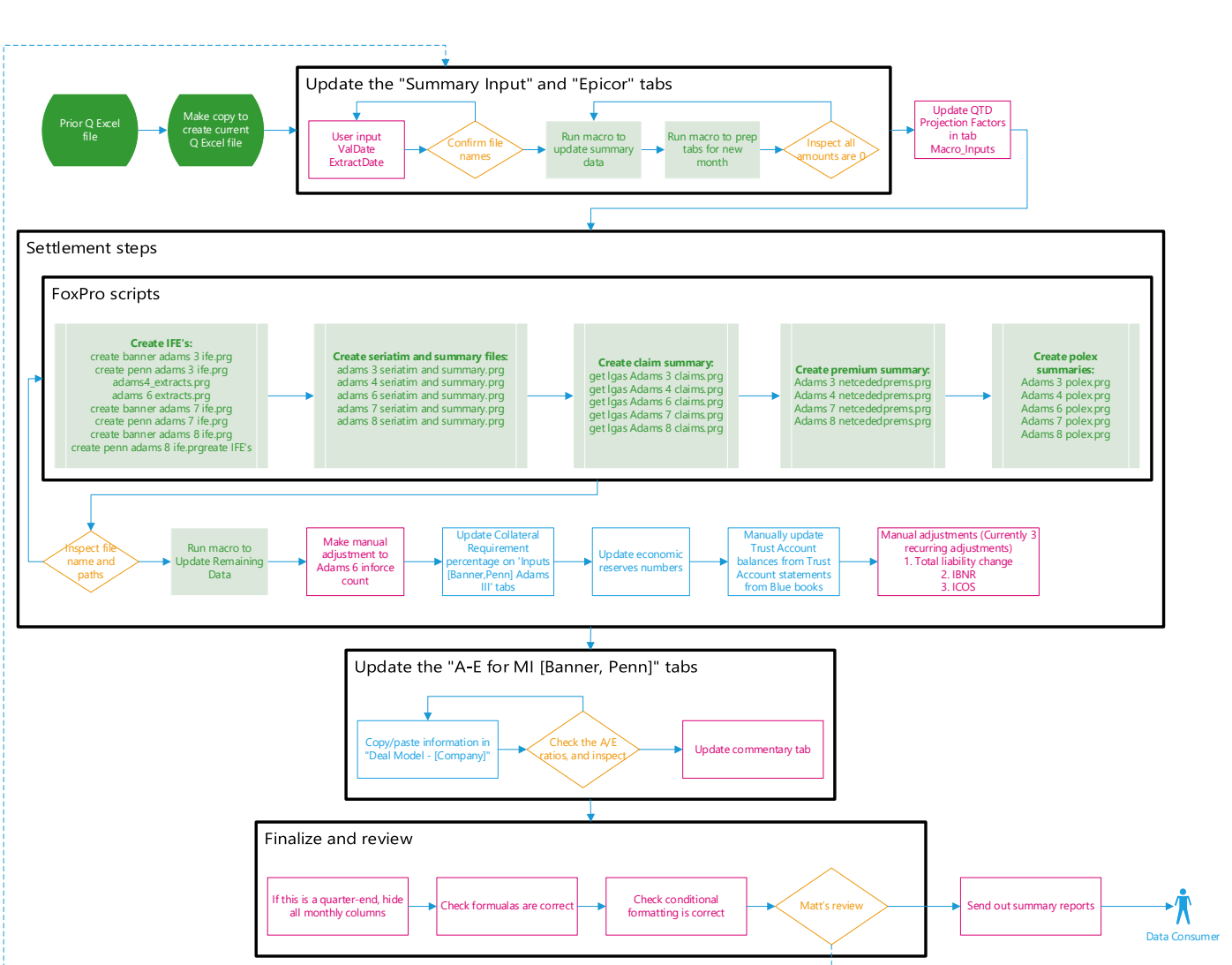
END-TO-END TRANSFORMATION

Combining Alteryx and Python scripts with cloud and centralized data storage (actuarial and supplemental data) can cut down manual effort while maintaining a comfortable level of supervision and interaction



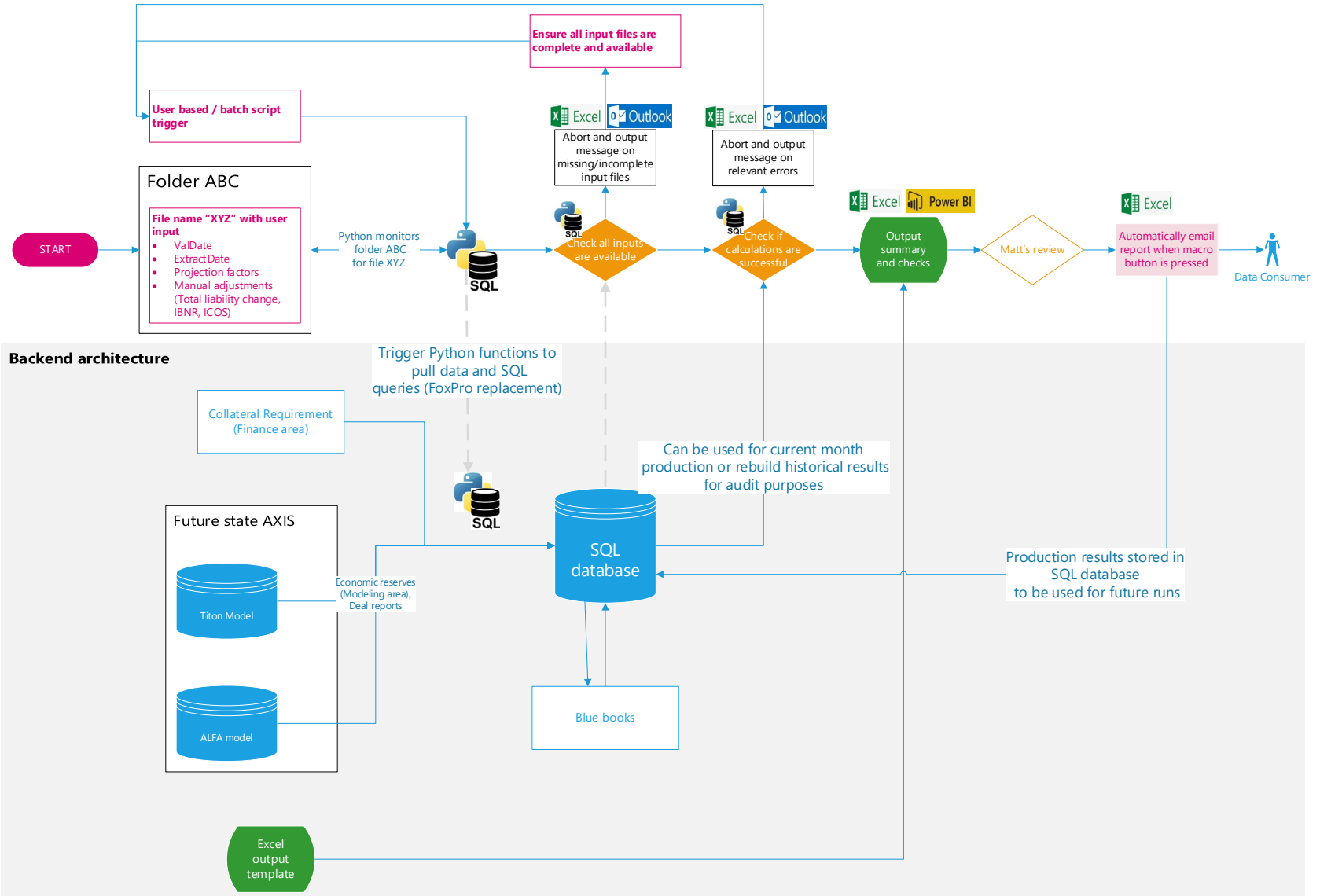
CASE STUDY: CURRENT STATE

Current state does not separate the user interaction from the underlying process, producing a process that: (1) requires the user handle each task manually, (2) is more prone to errors, and (3) is time and resource intensive



CASE STUDY: FUTURE STATE

Future state process eliminates manual data ETL (Extract, Transform, & Load) and **decouples the "user" from the "process"**, where the user is involved on an as-required-basis (e.g., status update if requested, correcting unforeseeable data issues, reviewing and finalizing results, etc.)



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CHANGE MANAGEMENT

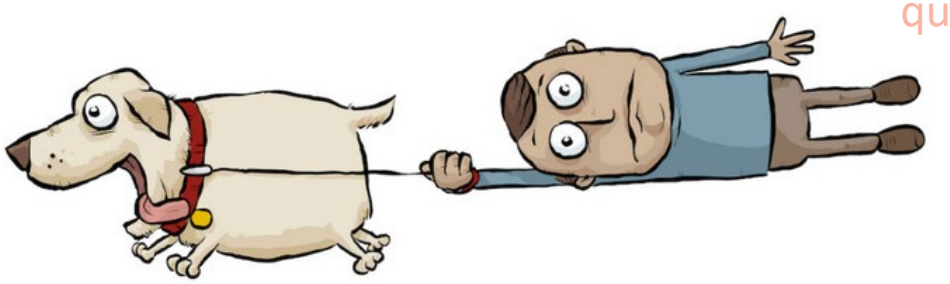
THE CASE FOR CHANGE

Embracing change correlates highly with performance and success of the organization; effective change management prevents disengaged employees and provides a competitive advantage

People have different needs depending on where they reside on the "change style" spectrum

Change averse

Change amenable



"Clearly answer my 27 questions and give me months to adapt."

"Sign me up!"

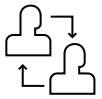
Ineffectively managing through change leads to **increased costs** and greater **implementation risks**

APPROACH TO CHANGE MANAGEMENT

Transformation efforts can be structured to naturally support change management goals

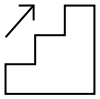
Function as a unit

- Less experienced learn from more experienced
- Involve as development occurs
- Identify supporting tools, best practices, and value-add analytics
- Make model decisions together -- relying on more experienced
- Review options (pros/cons) for to facilitate effective decision-making



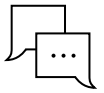
Learn through apprenticeship

- "Learn while doing" is more effective "learn by training"
- New users start with smaller and well-structured tasks, increasing responsibility and ownership at a manageable pace
  - Early on: Provide input
  - Later on: Take the lead



Encourage through progress

- Set measurable goals
- Establish methods to measure progress
  - Self-assessment
  - Manager feedback
- Agree on monitoring approach
- Solicit feedback



Communicate & participate

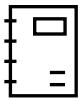
- Plan and communicate early and often
- Share in development
- People are more comfortable with change when they provide input and know what to expect
- Establish regular cadence for soliciting feedback and monitoring progress

Involvement reaps buy-in

People must subscribe and be "brought along", something that can't be forced

FACILITATING CHANGE MANAGEMENT

Many “deliverables” will have dual roles: (a) supporting documentation, controls, and training and (b) helping the team adapt to change



Training materials

Onboarding & development

Design documents

Informed decision making

Standards

Foundation for new heights

Testing

Seeing is believing

User guides

Modeling 101

Organizational structure

Optimal services to share

QUESTIONS

QUALIFICATIONS, ASSUMPTIONS, AND LIMITING CONDITIONS

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