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SQL SCRIPTS FOR STATE REPORTING CONTINUITY

HOW TEXAS A&M UNIVERSITY AUTOMATED THECB CBM COMPLIANCE

Texas A&M University

Austin Saenz

TAIR 2026 Annual Conference

Office of Academic and Business Performance Analytics
STRATEGY AND BUSINESS SERVICES

Agenda

I. Introduction & Context: Importance of CBM Reporting
II. The Challenges: Business Continuity & Processing Hardships
III. Fragmented Foundations: The Risk of Non - Source Data Dependencies
IV. The Solution: Automation Architecture & HelioCampus Partnership
V. New CBM Workflow & Outcomes
VI. Conclusion: Q&A

Audience Poll

- Is your institution's CBM logic passed down informally? Is there an opportunity for better documentation?
- Do one or two staff members fully understand the CBM processes? Rely on institutional knowledge of a handful of key people?
- Worried about turnover during CBM season? Ever wondered if there's a better way?
- Feeling like you are 'surviving' each reporting period, rather than 'thriving' with a sustainable system/workflow?

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IMPORTANCE OF CBM REPORTING

High Stakes: Why Accuracy Matters

Reliable Formula Funding Allocation

Correct Outcome-Based Success Points

State Accountability & Compliance

Support for Education Research

Program Performance Validation

Complexity of Statutory Reporting

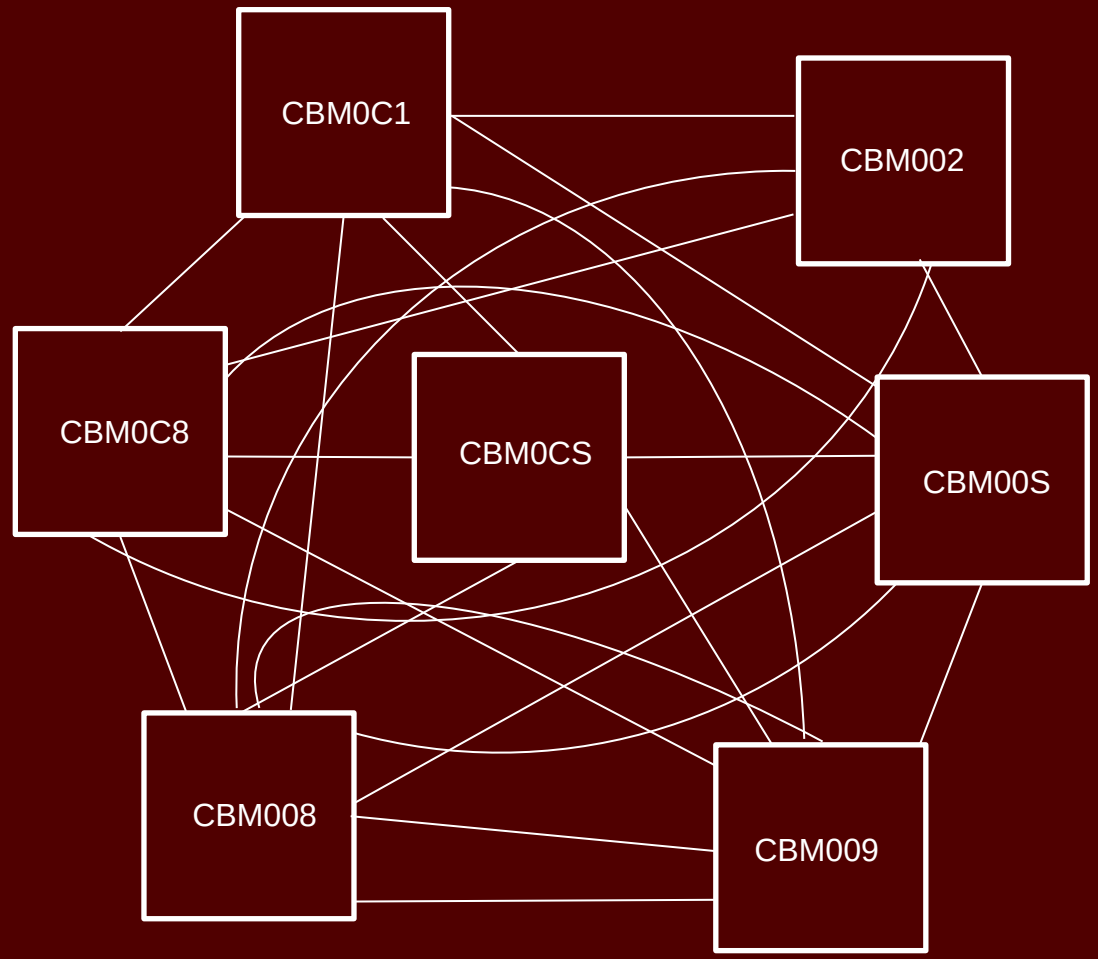
Several Individual Reports
Generating numerous time-sensitive files like CBM0C1, CBM002, CBM0CS, CBM00S, CBM008, CBM009.

Rigid Layouts
Reports demand precise character lengths.

- CBM0C1 is 163 characters long
- CBM002 is 108 characters long

Intricate Matching Rules
Cross-report validation is mandatory.

- CBM0C1 must match CBM0CS
- CBM0CS must match with CBM0C8



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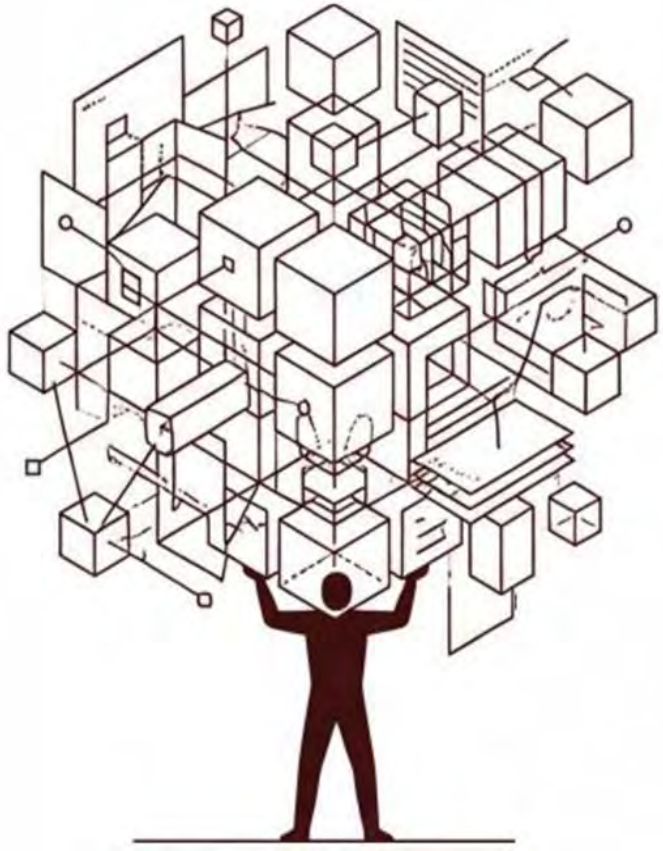
BUSINESS CONTINUITY AND PROCESSING HARDSHIPS

The Human Single Point of Failure

Unwritten, informal expertise of a small number of staff created profound sustainability concerns for future operations.



Heavy reliance on a small number of staff has increased risk as institutional knowledge is lost through turnover and role changes.

The Anatomy of Institutional Risk

This dependence on select key staff members, created multiple interconnected points of vulnerability for the university:

1. Dependence on “Tribal Knowledge”

Key CBM workflows were passed down informally rather than being documented, making them nearly impossible to replicate or audit.

2. Limited Cross-Training

Bottlenecks were common, as only a few individuals fully understood critical systems or CBM processes.

3. Sustainability Concerns

Without clean, documented processes, adapting to new THECB rules or growing institutional needs was slow, difficult, and dependent on the same overburdened experts.

4. Risk to Compliance & Accuracy

High-stakes reporting depended on expertise that was not widely distributed, increasing the chance of submission delays or critical errors if key personnel were unavailable.

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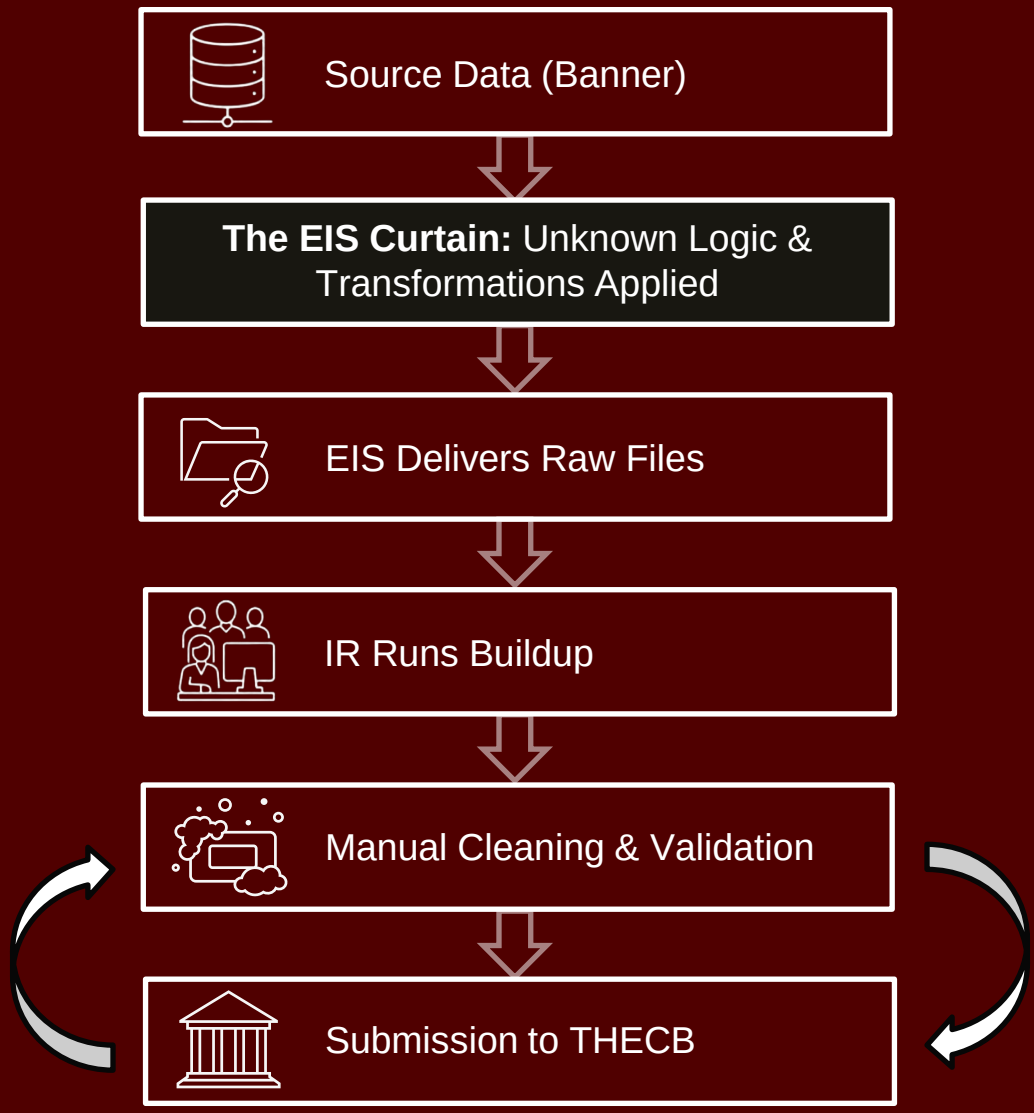
FRAGMENTED FOUNDATIONS & INSTITUTIONAL RISKS

Fragmented Foundations and the ‘EIS Curtain’

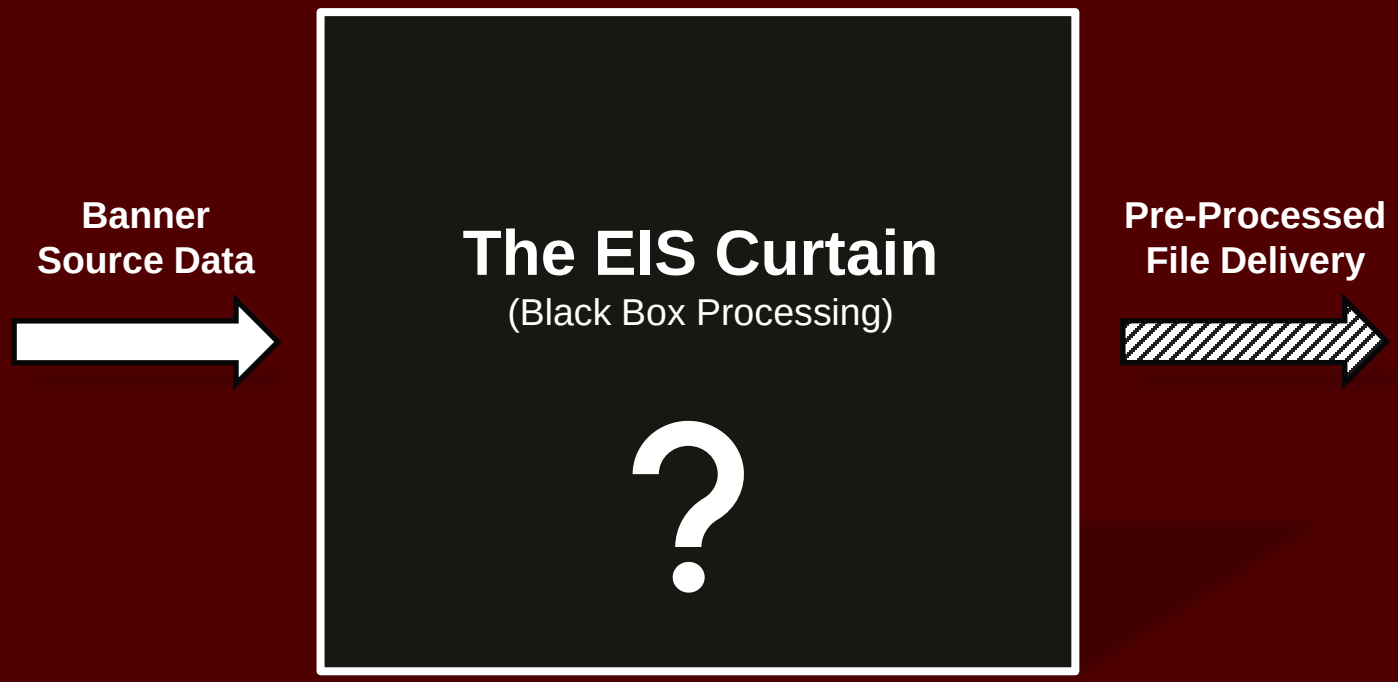


Black Box Processing

The Critical Flaw
The IR team lacked direct access to raw source data.

The Hidden Layer
Enterprise Information Systems (EIS) performed unknown transformations on data before delivery.

The Consequence
Reporting teams had no visibility into the logic applied behind the curtain, risking misconstrued data transformations.



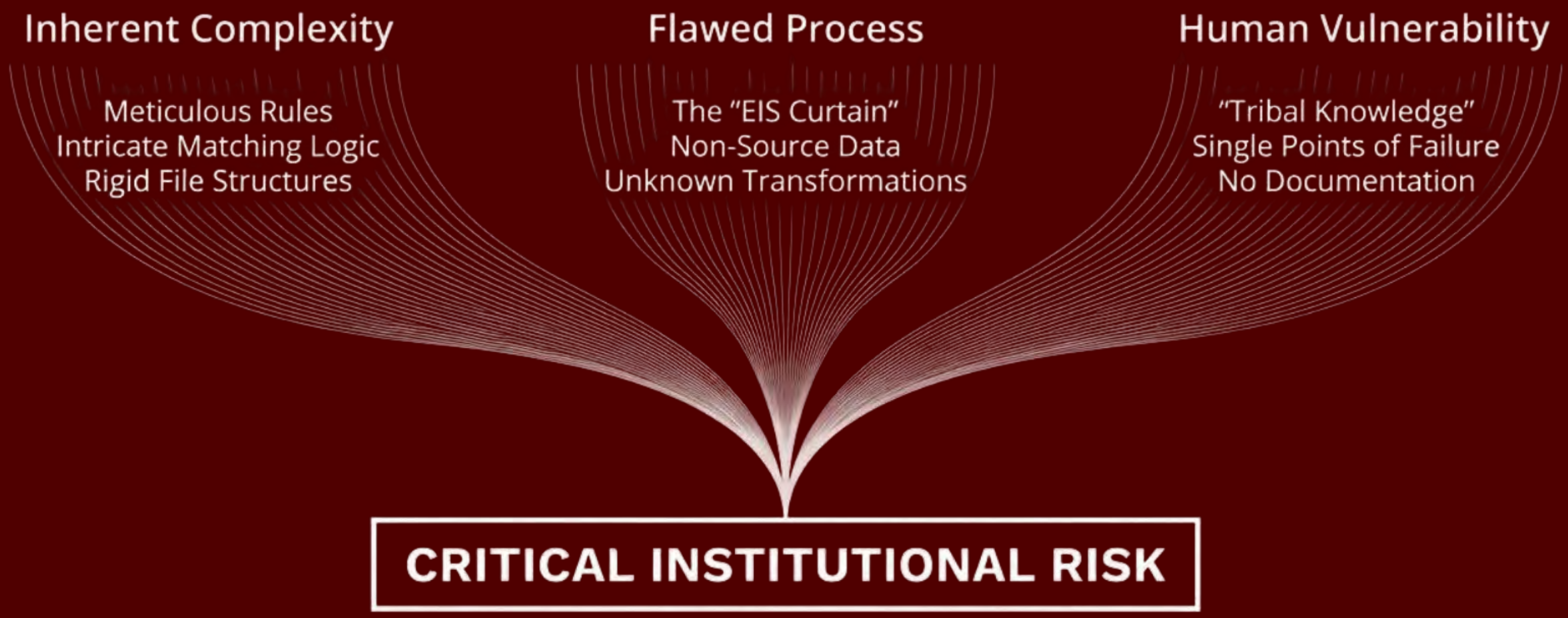
Result: TAMU CBM reporting teams held no insight into the data manipulation within EIS, creating a high-risk environment where the true source of data could easily be misconstrued.

Severe Risk to Data Integrity and Compliance

The dependency on non-source data created a foundation where the accuracy of our statutory reporting could not be guaranteed with ease.

- **Misconstrued Data:** Without visibility into EIS logic, fields could be misinterpreted or having differing logic, leading to flawed reports.
- **Increased Processing Time:** Errors originating from either Banner or EIS transformations were difficult to trace and correct, leading to prolonged correction cycles.
- **Audit & Certification Risk:** A lack of a clear data lineage from the source of truth increased the risk of failing audits and delayed certifications.
- **Inconsistent Logic Application:** Changes in THECB rules were difficult to verify against the unknown transformations within EIS, creating a constant state of compliance uncertainty.

The Unacceptable Status Quo: A System Primed for Failure



The need for a new approach was not just strategic, it was existential. We were not thriving; we were SURVIVING!

Texas A&M's Core Challenges

1

Mitigate Loss of Institutional Knowledge
Counter the risk from employees who retire, change roles, or leave the university.

2

Codify "Tribal Knowledge"
Move away from key workflows and methods being passed down informally and without documentation

3

Eliminate Bottlenecks
Address the vulnerability caused by limited cross-training and a few individuals understanding entire systems.

4

Ensure Future Sustainability & Scalable Solutions
Create a structure that can be sustained as systems evolve and workloads grow. Redesign processes to withstand staffing changes and support future growth.

5

Modernize Outdated & Flawed Processing
Build a transparent working model, built on logic and enhanced for sustainability, connected directly to the source of truth.

6

Protect Compliance & Accuracy
Reduce the risk of delays or errors when key personnel are unavailable for high-stakes reporting

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TRANSFORMING NEEDS INTO ACTIONABLE INSIGHTS

The Solution: Automation Architecture & HelioCampus Partnership

Converting Tribal Knowledge to Automated SQL Logic

Raw Database

TAMU Banner

SQL Logic Engine

SQL Logic Engine

Published Report

THECB Submission

Objective

Transforming CBM reporting from a vulnerability into a scalable, state-aligned best practice.

Partners

Texas A&M University
HelioCampus

Scope

Architectural & Cultural Shift
Operational Workflow
Strategic Continuity

Two Pillars of Our Solution

HelioCampus Integration

Leveraging a best-in-class partner with deep expertise in higher education data. HelioCampus provides the platform and direct data integration that serves as the engine for our automation.

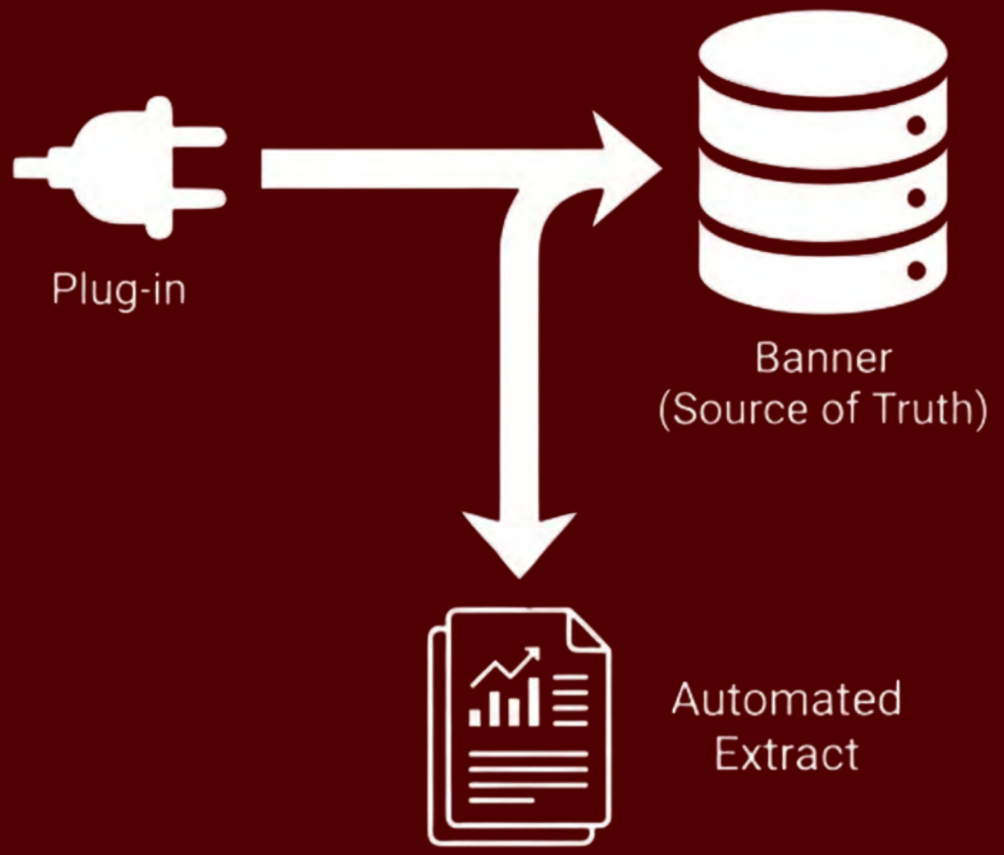
Automated Architecture

Developing a robust set of version-controlled SQL scripts that embed complex THECB business logic directly into a verifiable, reusable framework. Texas A&M institutional knowledge, codified.

The HelioCampus Engine: Direct from the Source

Direct Banner Integration
HelioCampus has a direct ‘plug-in’ to TAMU’s Banner data, bypassing the ambiguous ‘EIS-Curtain’ and ensuring we work with true source data.

Ready-Made CBM Reports
The platform helps to provide an already fully generated report ready for submission, drastically reducing the manual buildup and processing time previously required.



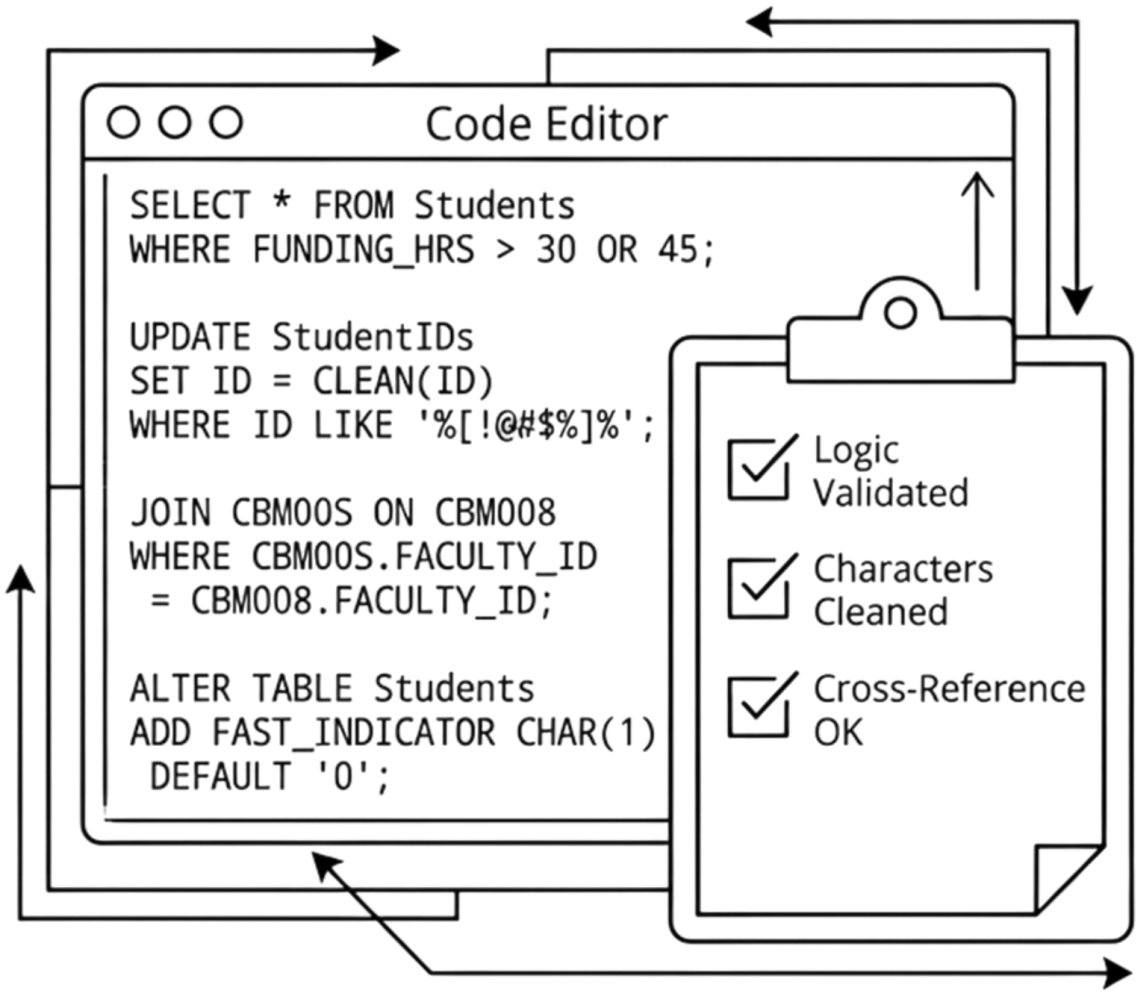
Codified Institutional Knowledge

Automating THECB Logic & Rules

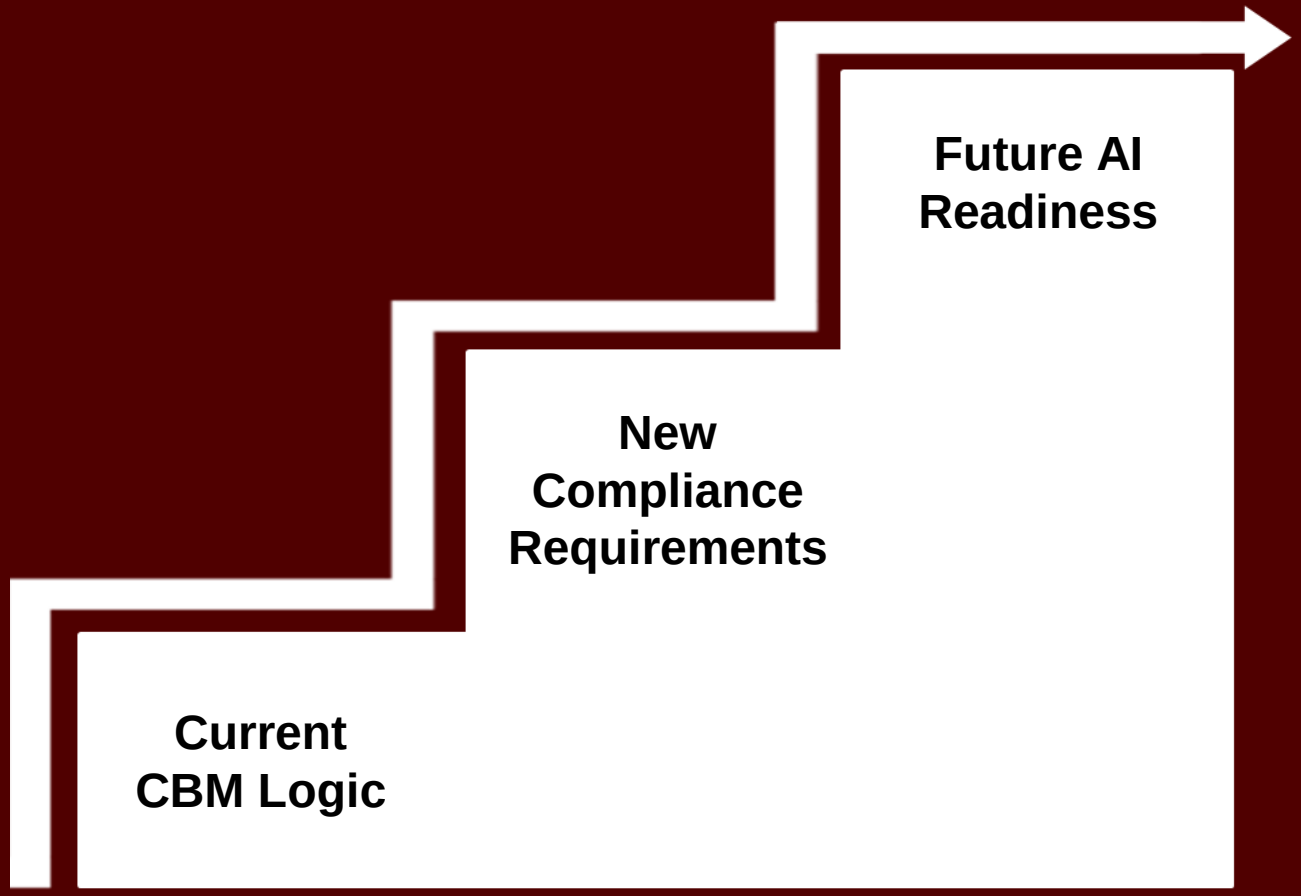
Embedding THECB Rules
- Funding limits on CBM0C1
- Doctoral hour limits on CBM0CS
- Report matching is built directly into the SQL

Mitigating Human Error
- Automated checks for questionable values
- Assuring inter-report dependencies before submission

Ensuring Consistency
The SQL framework guarantees that rules are applied the same way, every time, regardless of who is running the report.



A Future-Proof Framework for New State Initiatives



Adaptability

The architecture is built to handle legislative changes without rebuilding the system.

Real-World Example (FAST Program)

Flexible SQL framework allows easy integration of TSDS ID (10 digits) and HS District ID.

Innovation

Semantic layer is optimized for GenAI tools, keeping TAMU at the edtech forefront.

Outcome: The system is not just efficient, but also scalable and resilient to change.

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NEW CBM WORKFLOW

The New Workflow: From Generation to Submission

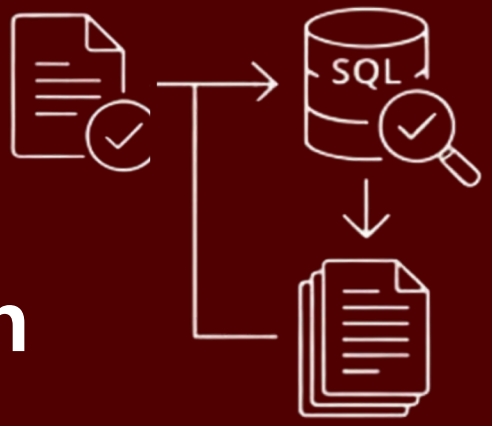
1

Freeze Generation

2

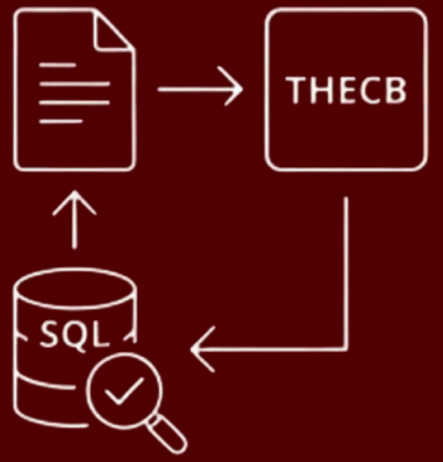
Download & Import

3



Validate & Clean

4



Submission Cycle

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OLD CBM PROCESS

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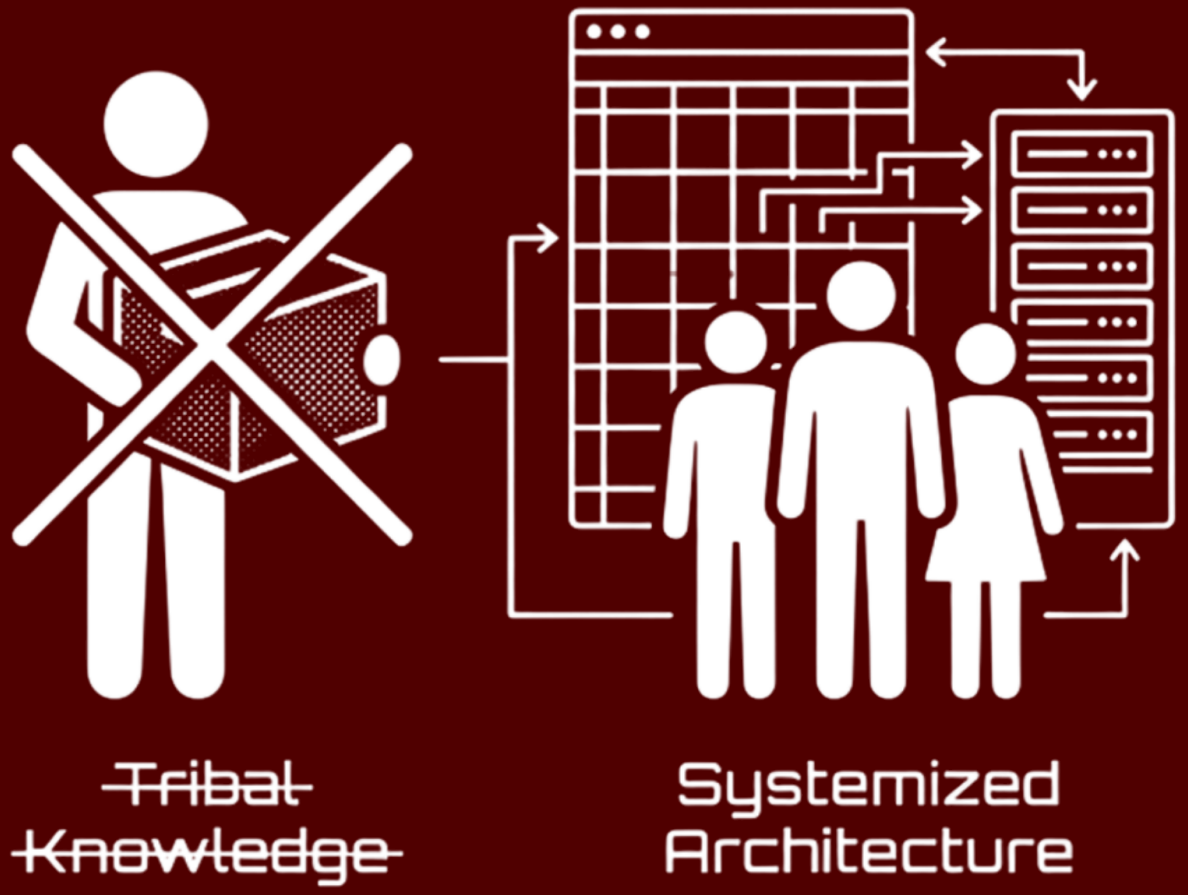
OUTCOMES & CONCLUSION

Solved: The Business Continuity Crisis



Outcome
Reporting methods are no longer passed down informally. The workflow is sustainable, scalable, and impervious to personnel changes. Automated SQL scripts and the HelioCampus platform document the logic within the code.

From Reactive Process to Proactive Ecosystem

FROM:

Manual & Labor-Intensive
Dependent on individual heroics, unwritten “tribal knowledge”, and time-consuming data manipulation.

Fragmented Data
Pulling from secondary sources like EIS, with an “unknown” layer of processing

Vulnerable to Disruption
High-stakes reporting was at risk from staff turnover, retirement, or role changes, threatening the loss of institutional knowledge.

TO:

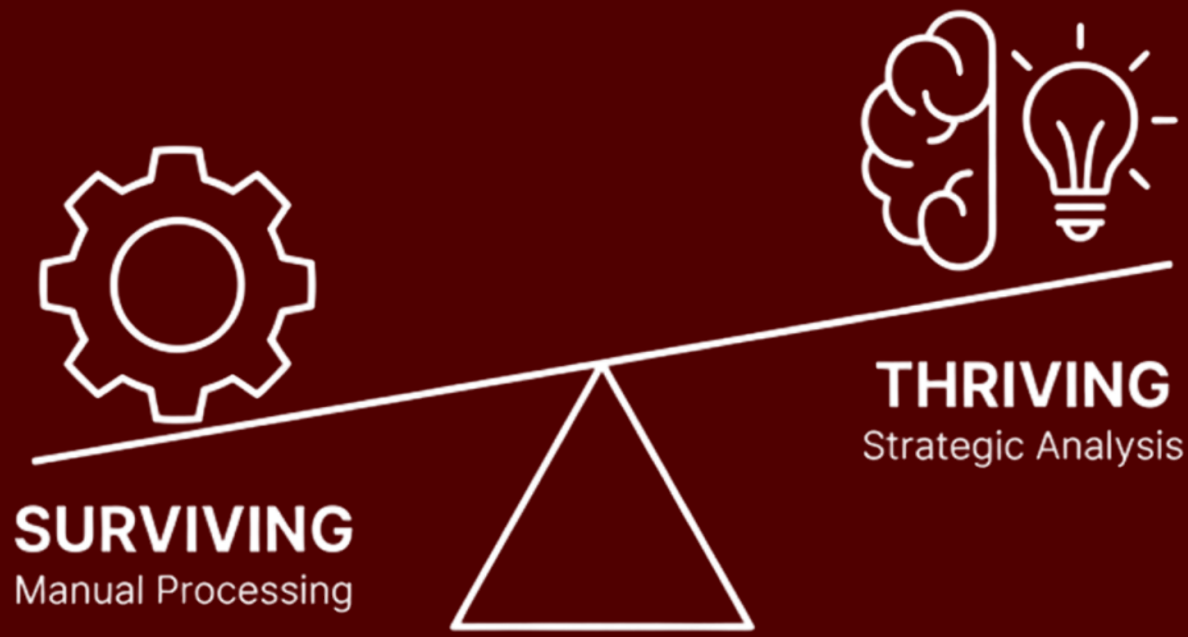
Automated Efficiency
Logic embedded in the system, reports are generated with a few clicks, and processes run overnight.

A Single Source of Truth
Direct integration with Banner ensures data integrity from the very beginning.

Built for Continuity
The system, not the person, holds the knowledge, guaranteeing accurate reporting for the future.

A New Paradigm for State Reporting

By embedding intricate state requirements into a verifiable, reusable SQL framework, Texas A&M's partnership with HelioCampus has transformed a vulnerable, labor-intensive process into a sustainable institutional strength.



Automation and new CBM workflow allows our experts to pro-actively shift focus from DESCRIPTIVE to PRESCRIPTIVE analysis.

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THANK YOU

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