

Methods to Restrict Access to Sensitive Information in Continuous Reporting Systems

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19th World Continuous Auditing and Reporting
Symposium



ISENBERG SCHOOL OF MANAGEMENT

Presentation Outline

- Review
 - General Problem
 - Approaches
- Modeling Query Histories and Restricting Further Disclosure
- Collusion Issue

Review

- Continuous Reporting Characteristics
 - Expanded Information Set
 - Expanded Level of Detail
 - Time Lag
 - Query Language
- Definition of Sensitive Information
- Materiality issues
- Adequate Disclosure

Examples

- Time Based Inferences
 - What are the total salaries for Dept A?
 - Person is hired in Dept A
 - What are the total salaries for Dept A?
- Inference Chains
 - How much sugar was on hand Monday?
 - How much Coke Syrup was on hand Monday?
 - How much flavoring was on hand Monday?
 - How much

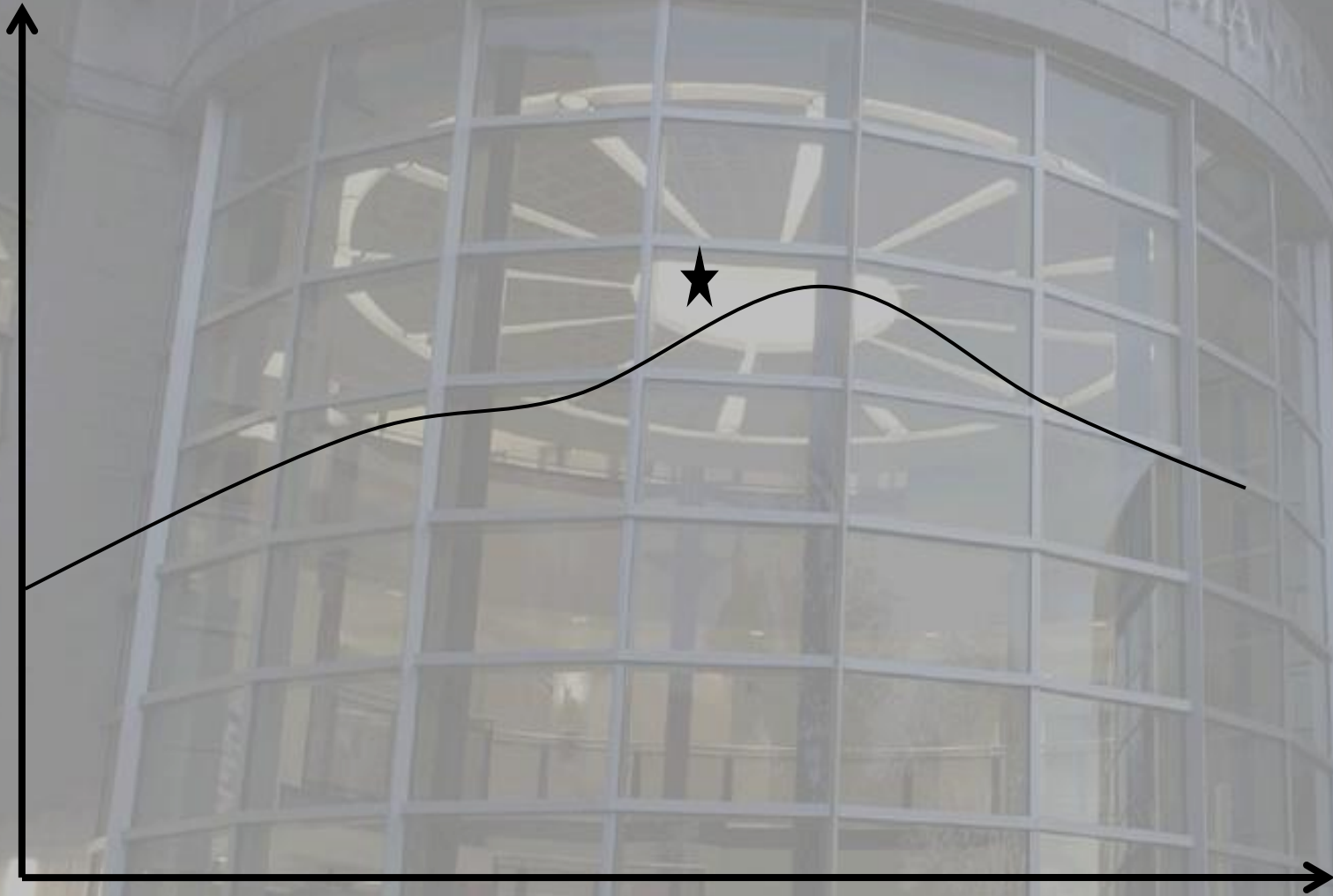
Auditor's Challenge

- Restricting Access to Sensitive Information
- Maintain Adequate Disclosure
 - What is appropriate release of information
 - What level of detail should be restricted
 - Requires knowledge of semantics of the underlying data
- Expression of a stopping function
- Restricting collusion

Stopping Function

- Requirements
 - Identification of what is known – history
 - What constitutes “knowing” sensitive information
 - How long until you do not “know” some piece of information

Knowledge Function

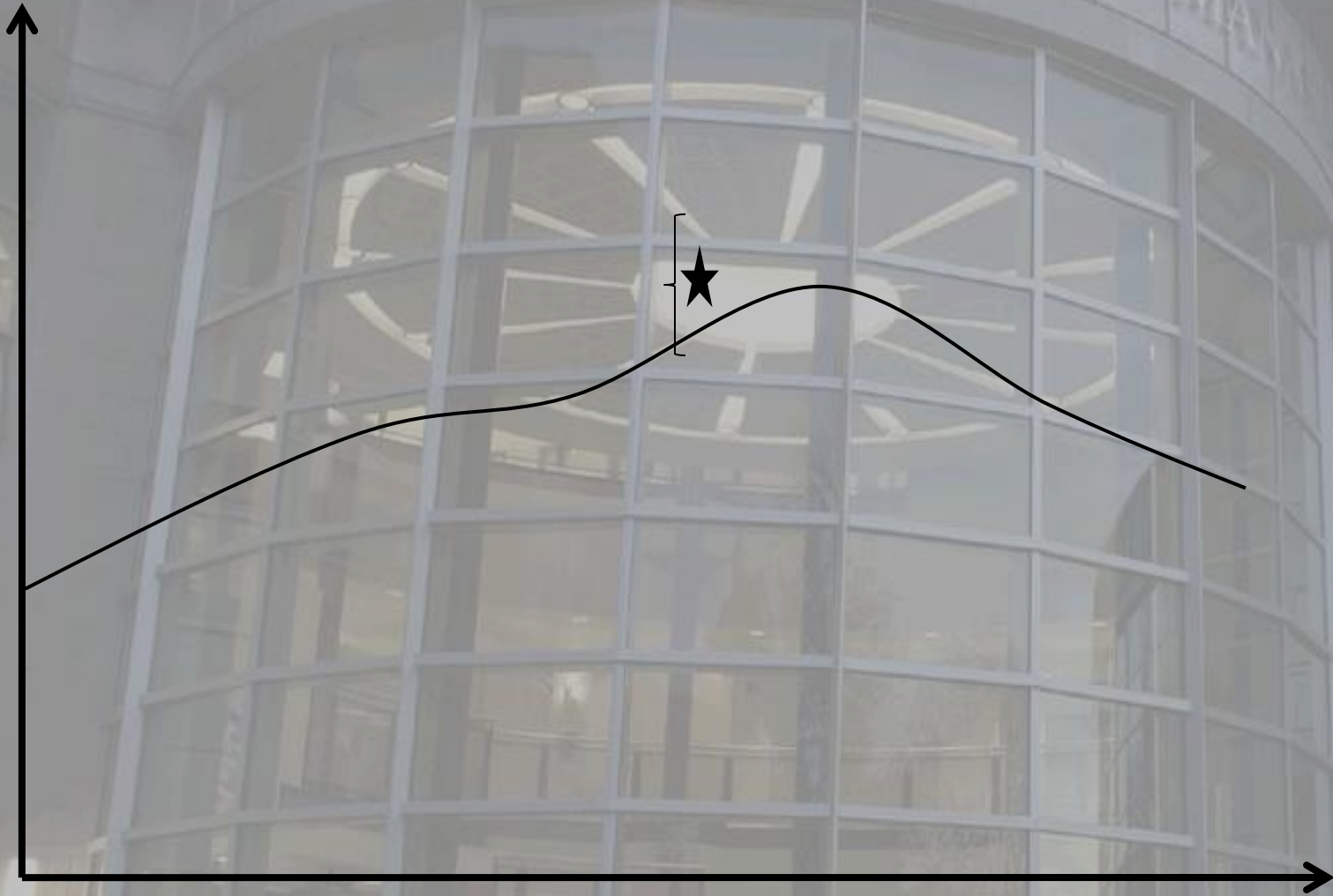


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Stopping Function

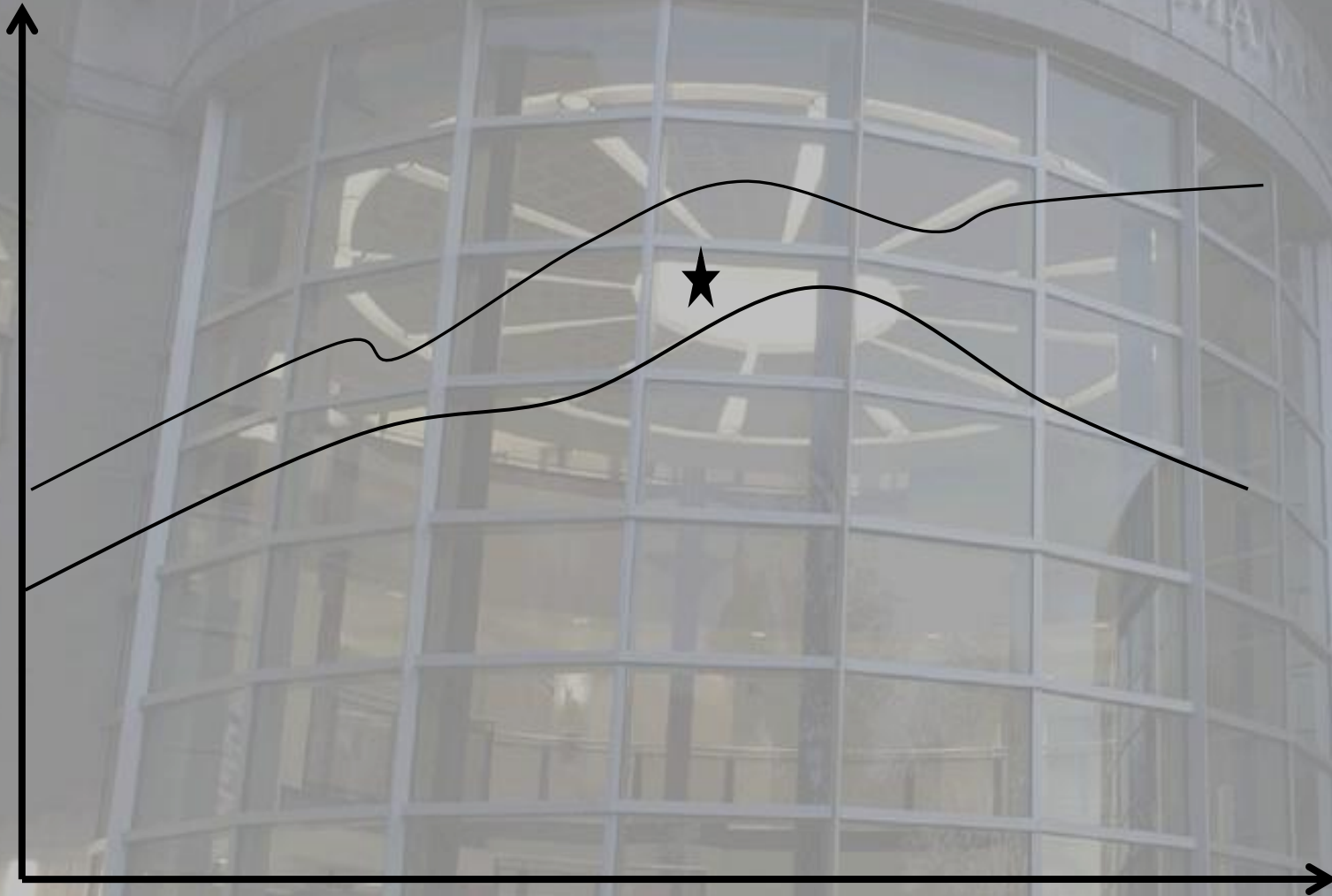


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New Knowledge Function



Collusion Issue

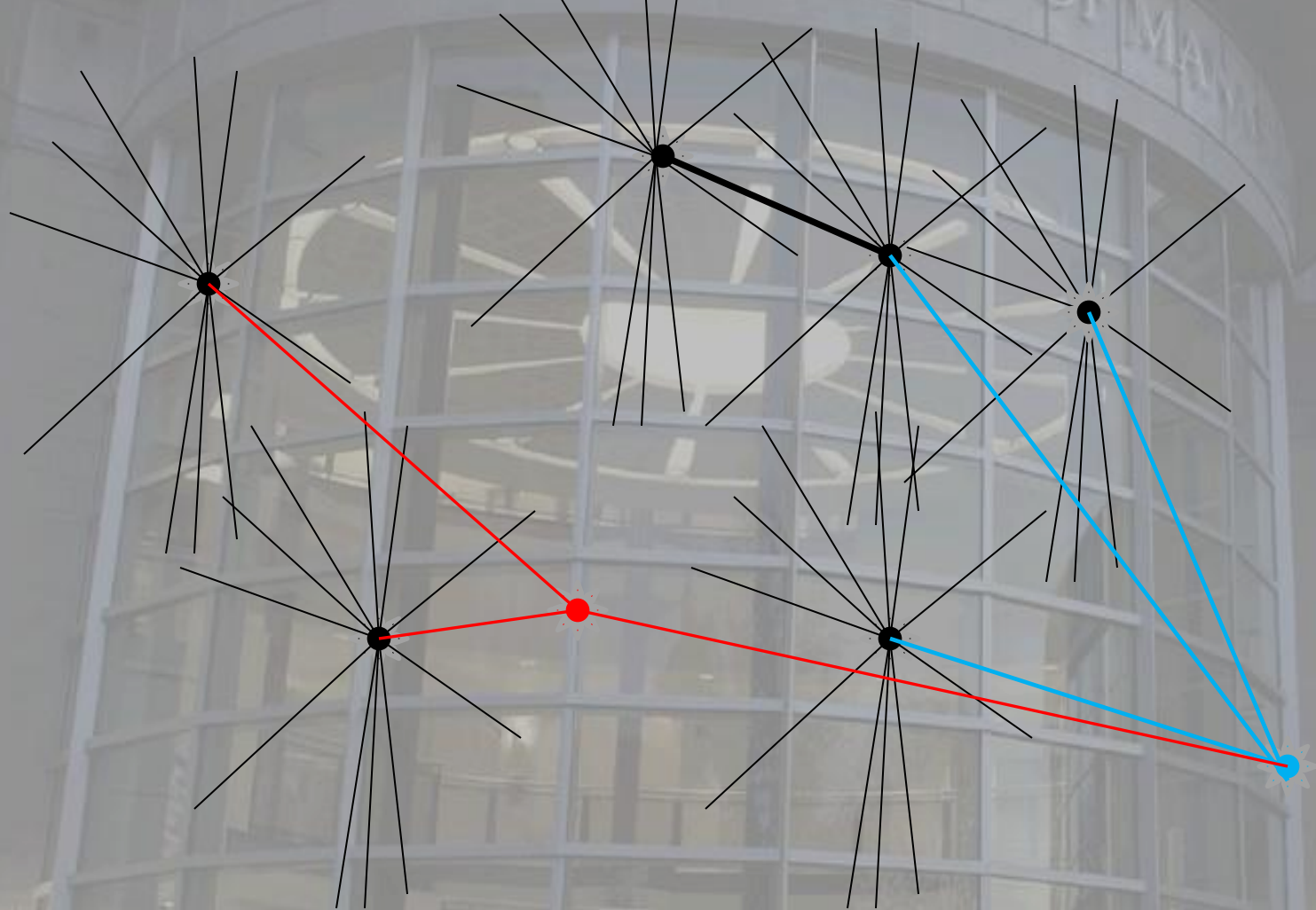
Should we assume that everyone has all information?

What information is shared?

Can be expressed and monitored as the P2P network problem.

Introduce chaos into the network.

Collusion



Conclusions

Providing more information seems to be a good thing

Can we audit or even review this approach to disclosure

Can we just assume that availability is disclosure

Can we keep sensitive information secure

Other applications

Terrorist Networks

Do they know enough to make a wmd ?