A Framework for Identifying Potential Synergistic Combinations of Continuous Auditing and XBRL

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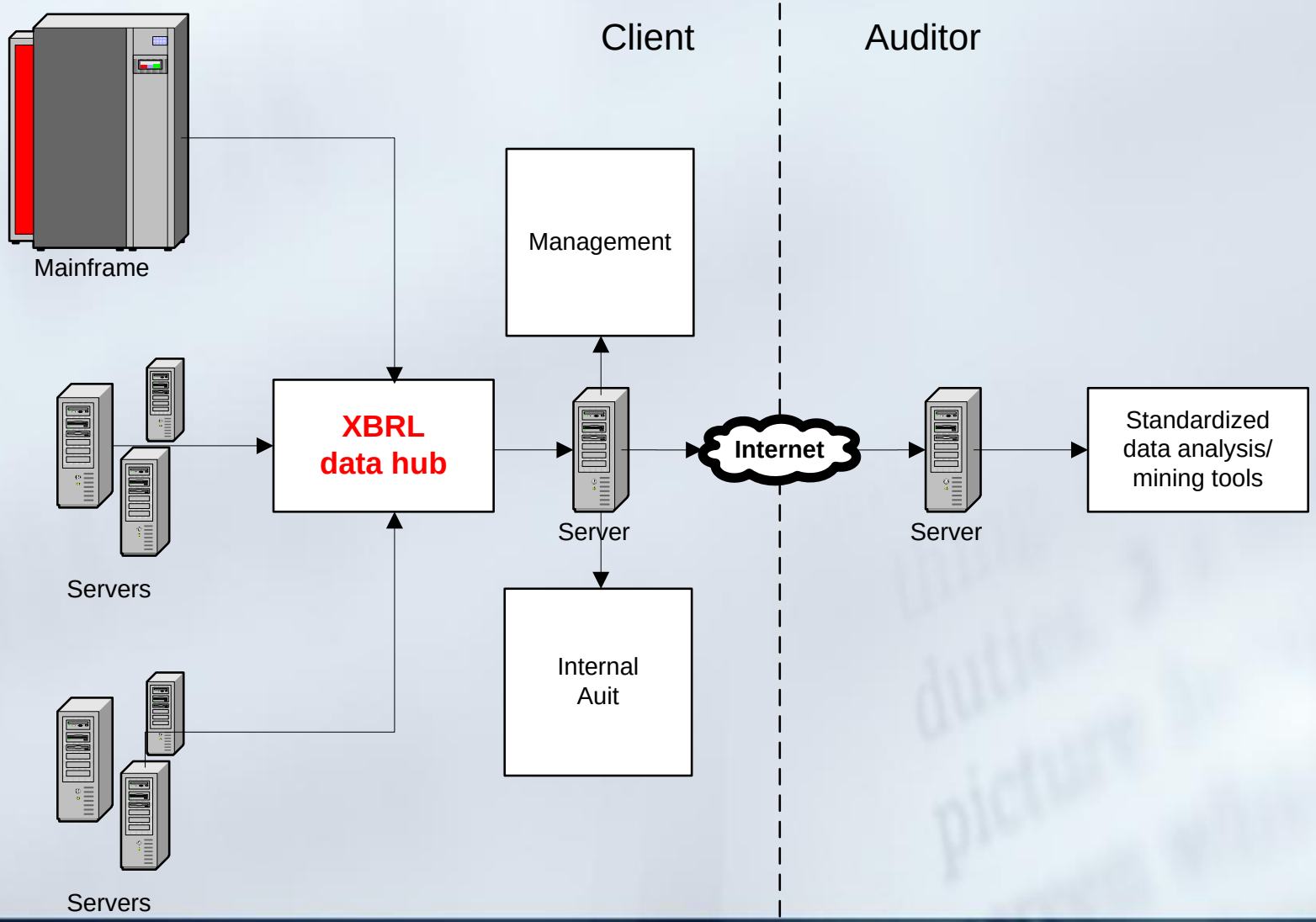
Simple Question/Complex Answer

- **Question**: Where can synergy best be achieved between XBRL and continuous auditing?
- **Answer**: Complex *m* x *n* problem space, where *m* is the alternative dimensions of continuous auditing implementations and *n* is the alternative characteristics of XBRL implementations.
- *Continuous auditing* can be *m1* x *m2*, where *m1* is many definitions of *continuous* and *m2* is many definitions of *auditing*
- "…'continuous' is a malapropism." McCann (2009)

Simple Question/Complex Answer

- The missing word: *population*
- Continuous auditing is almost always 100% population sample
- Hidden cost: What about massive false positives?
- Hidden risk: What about missed smoking gun?
- 2-step process: (1) CA, then (2) sample CA results

Client-side XBRL Data Hub



Populating the XBRL Data Hub

- Centralized Conversions
  - Conversion at data hub
  - Data hub holds legacy and XBRL data
- Distributed Local Conversions
  - Conversion at/near source
  - Data hub holds XBRL data
- Native XBRL
  - No conversion
  - Data hub holds XBRL data

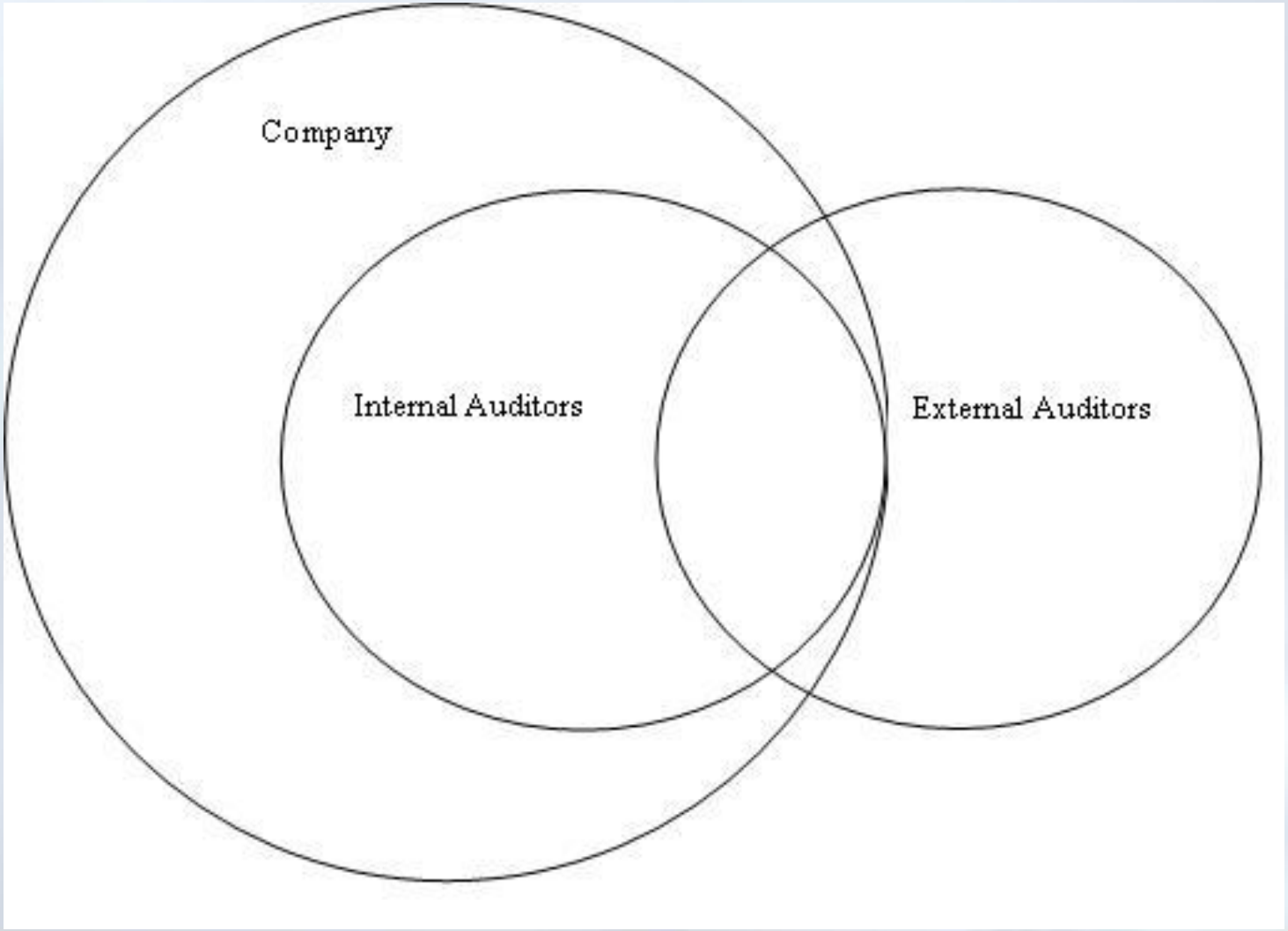
Benefits/Costs Dimensions

- Implement any CA: Benefits > Costs
- Benefits
  - Tangibles
    - Increase revenue
    - Reduce costs (efficiency)
      - XBRL = economy of scale
      - Shifting skill level of auditors [Reduce specialists]
  - Intangibles
    - Audit *through* vs. *around* the computer
    - Internal audit effectiveness [Direct data access]
    - External audit effectiveness [Indirect data access]

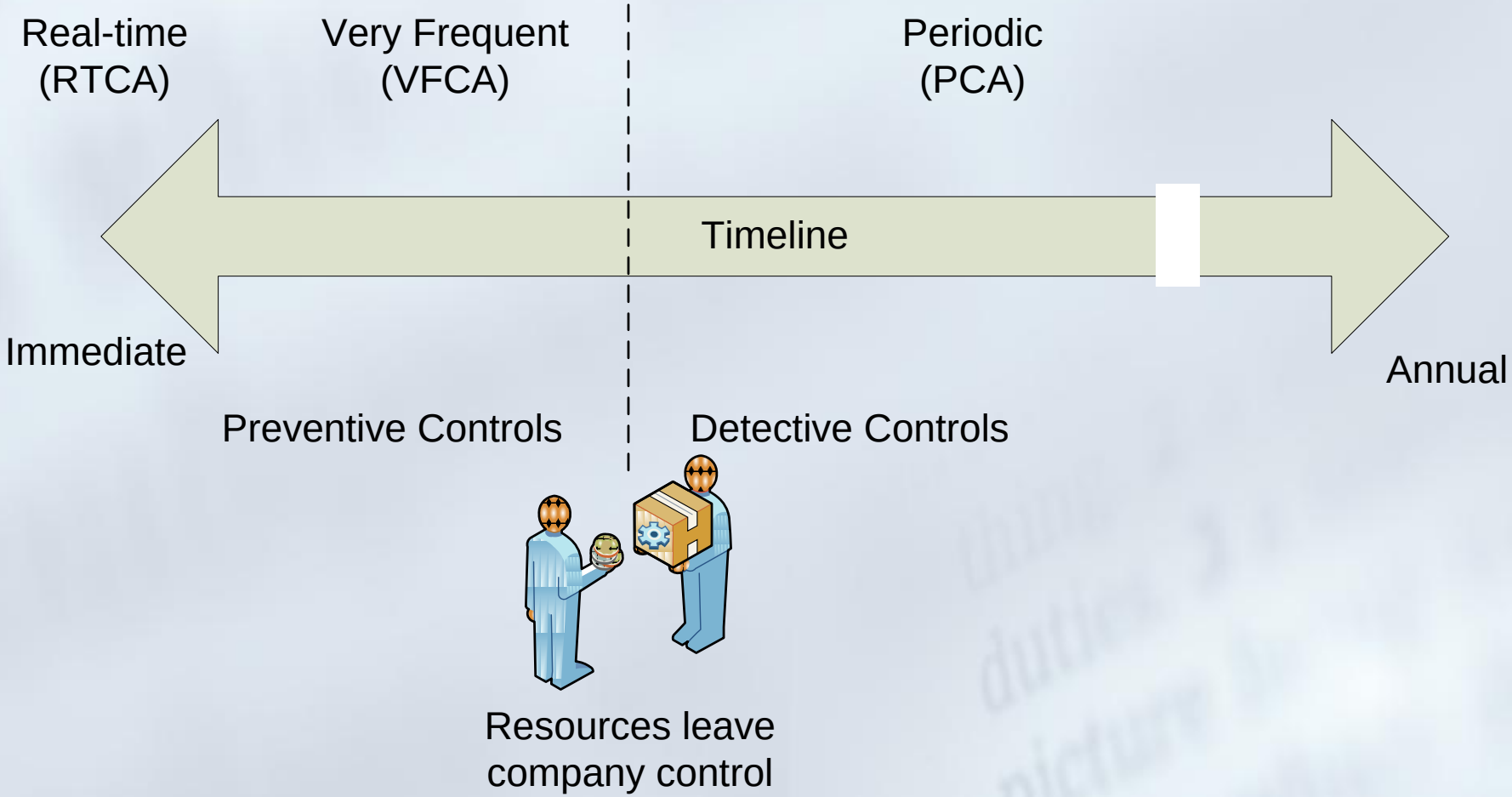
Benefits/Costs Dimensions

- SOX Paradigm Shift
  - Both companies and auditors
  - Impacts cost-benefit equations
  - Section 302
    - Cascade approach
  - Section 404
    - Fees drive search for productivity

Benefits Who?



Time Dimension



Other Dimensions

- Integration Dimension
  - Bolt-on, after-the-fact
    - XBRL-FR & XBRL-GL
  - Native
    - XBRL-GL
- Push vs. Pull
  - Push = information automatically sent
  - Pull = information sent on-demand

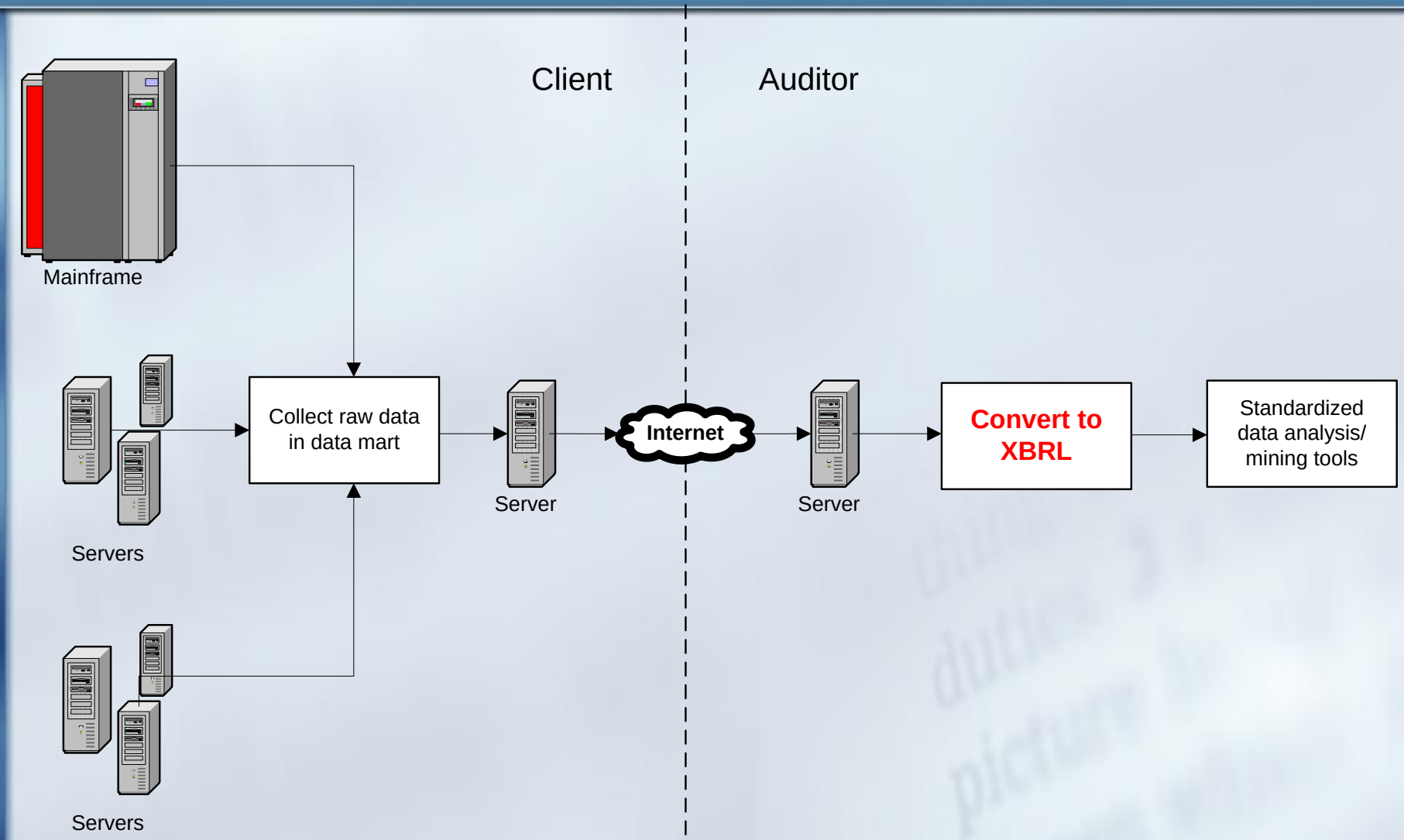
Other Dimensions

- Ownership dimension
  - The client
    - Built into current IT architecture
  - The external auditor
    - Built into CAAT toolbox
- Process vs. data dimension
  - XBRL = data representation
  - However: Bolt-on is a process

Other Dimensions

- Which time interval?
  - Time between event and CA transmits information
    - Embedded audit modules vs. periodic CA
  - Time between CA transmits information and someone reviews the information
    - Immediate vs. periodic
- System demands
  - One-table lookup vs. multiple-table lookups vs. calculations (e.g., average purchase)

Auditor-side XBRL Implementation



Preliminary Conclusions

- $CA_i = f(ET_i, RT_i, AA_i, AS_i, TD_i, SI_i, RU_i, PP_i, XI_i, XT_i, CB_i)$
  - ET_i = Extraction Timing interval
  - RT_i = Review Timing interval
  - AA_i = Audit Audience
  - AS_i = Audit Subject matter
  - TD_i = Test Demand on CPU
  - SI_i = System Integration
  - RU_i = Repeatable Utilization

Preliminary Conclusions

- $CA_i = f(ET_i, RT_i, AA_i, AS_i, TD_i, SI_i, RU_i, PP_i, XI_i, XT_i, CB_i)$
  - PP_i = Push or Pull approach
  - XI_i = XBRL Integration (bolt-on vs. native)
  - XT_i = XBRL Taxonomy
  - CB_i = the resulting Cost/Benefit analysis

Preliminary Conclusions

- XBRL Cherry Picking (Easy Hits)
  - SIi is low (many islands of technology)
  - AAi is wide (many CA users)
  - RUi is high (not ad hoc, one-time apps)
  - If XBRL is bolt-on: RTi is not real time (even if ETi is real time)
- Need real-world measures (cases/simulations)

Some Issues

- Getting XBRL on the radar (client buy-in) vs. SOX, HIPPA, PCI, Basel, etc.
- XBRL staffing and training--client & auditors
- Identifying and ameliorating any new security and data integrity issues
- Who pays front-end costs?
- Reaction plans for more-frequent red flags
  - Who pushes the STOP button?
  - When can the STOP button be pushed?

Questions?

Thank You

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