



iaTECH 2018

End-to-End Technology Solutions for Managing Internal Audit

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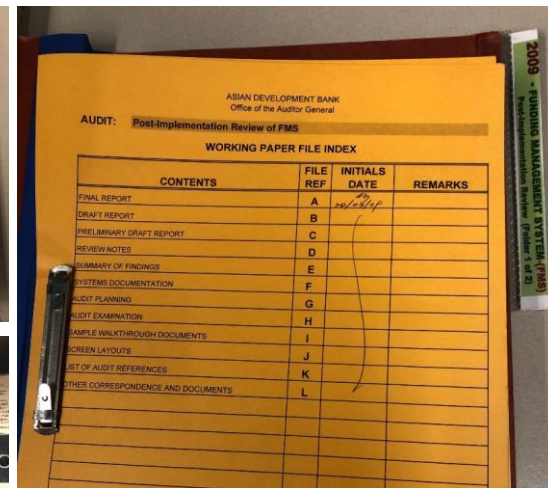
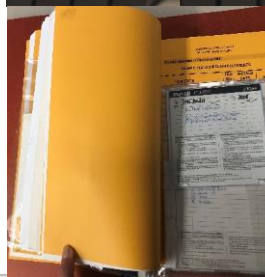
Agenda

- OAG's experience
- Challenges
- Solutions
- Conclusion
- Q&A

OAG Experience:

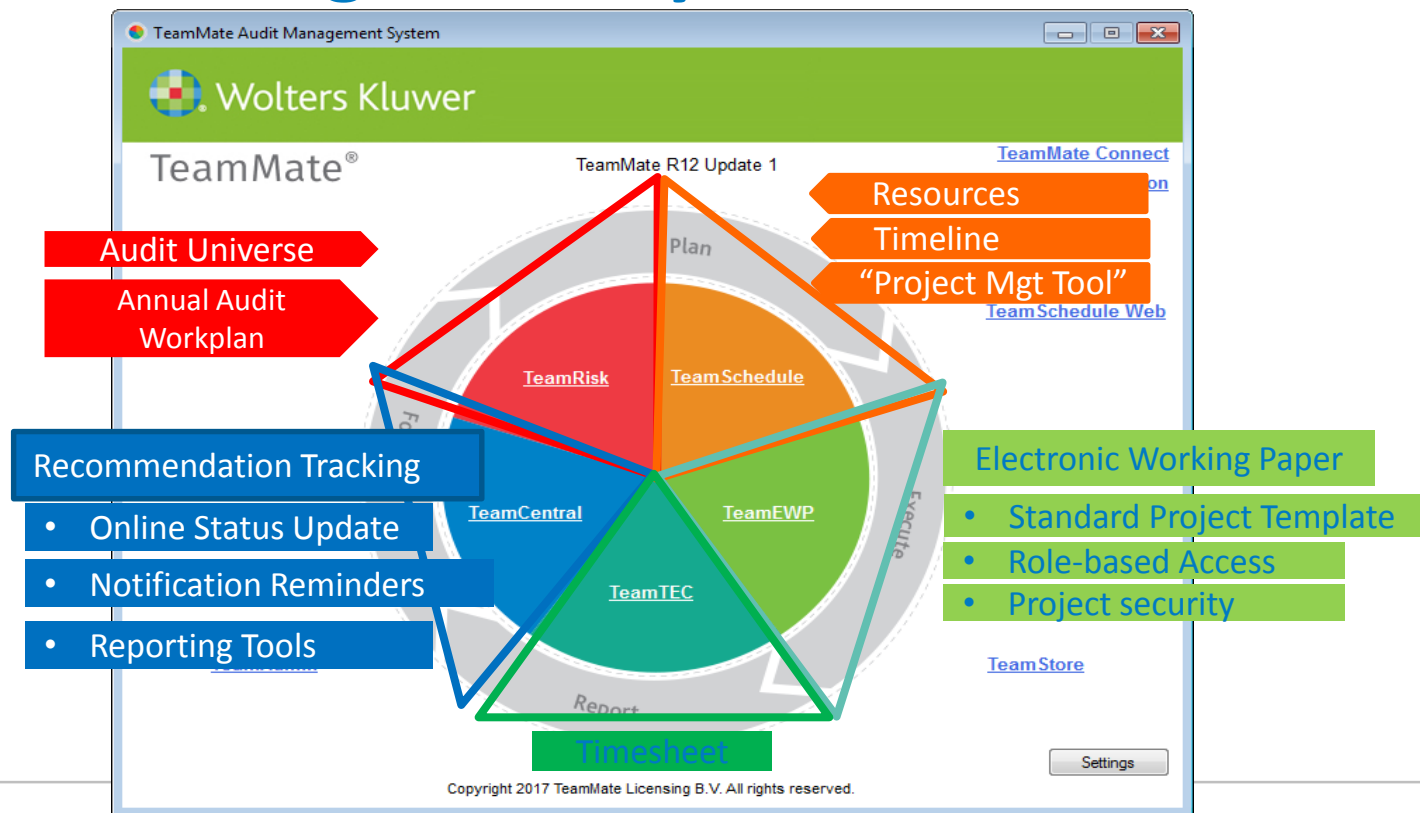
Before Automation

- 2 big filing rooms of working papers
- Tedious document indexing/referencing/sign-off
- Manual collection of data for management reporting
- No effective platform for information sharing

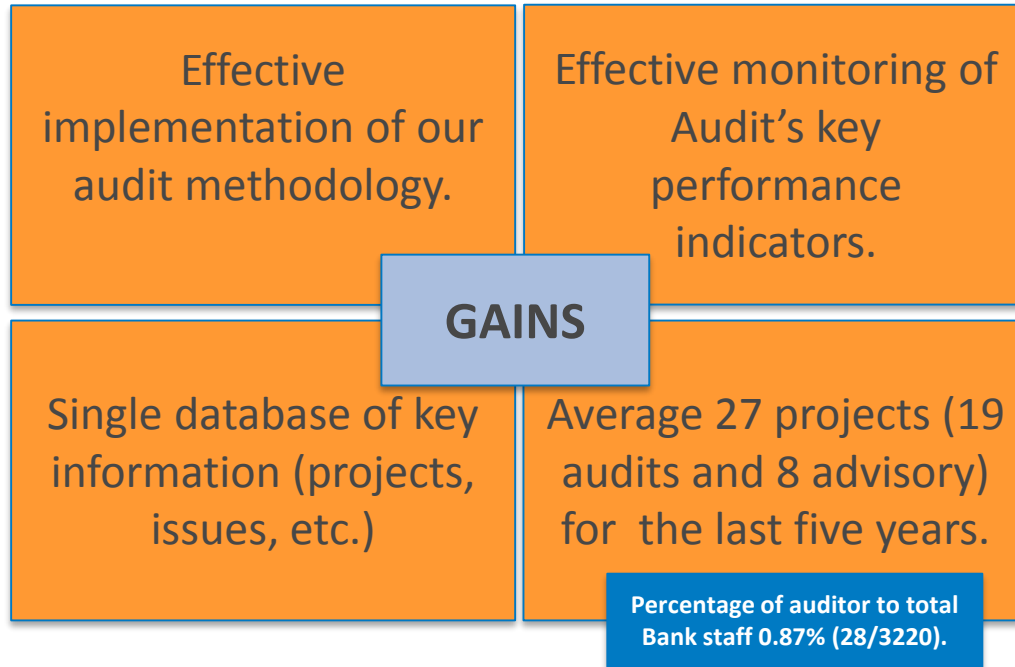


OAG Experience:

Audit Management System



Example of Benefits



Part I: Challenges



Strategy



Methodology



Tools



Resources

1. Challenges - Strategy



- Internal audit must strive to meet, and exceed management's expectations
- Internal audit will need to look forward instead of backward
- Internal audit will need to get a “seat at the table”, and be a peer of other C-level management
- Internal audit will need to be courageous, and tackle the big, complex and challenging issues
- Internal audit will need to be fighting on the battlefield, not coming in to clean up the mess

1. Challenges - Strategy (cont.)

First Line of Defense

Management

Second Line of Defense

**Risk
Management**

Compliance

Others

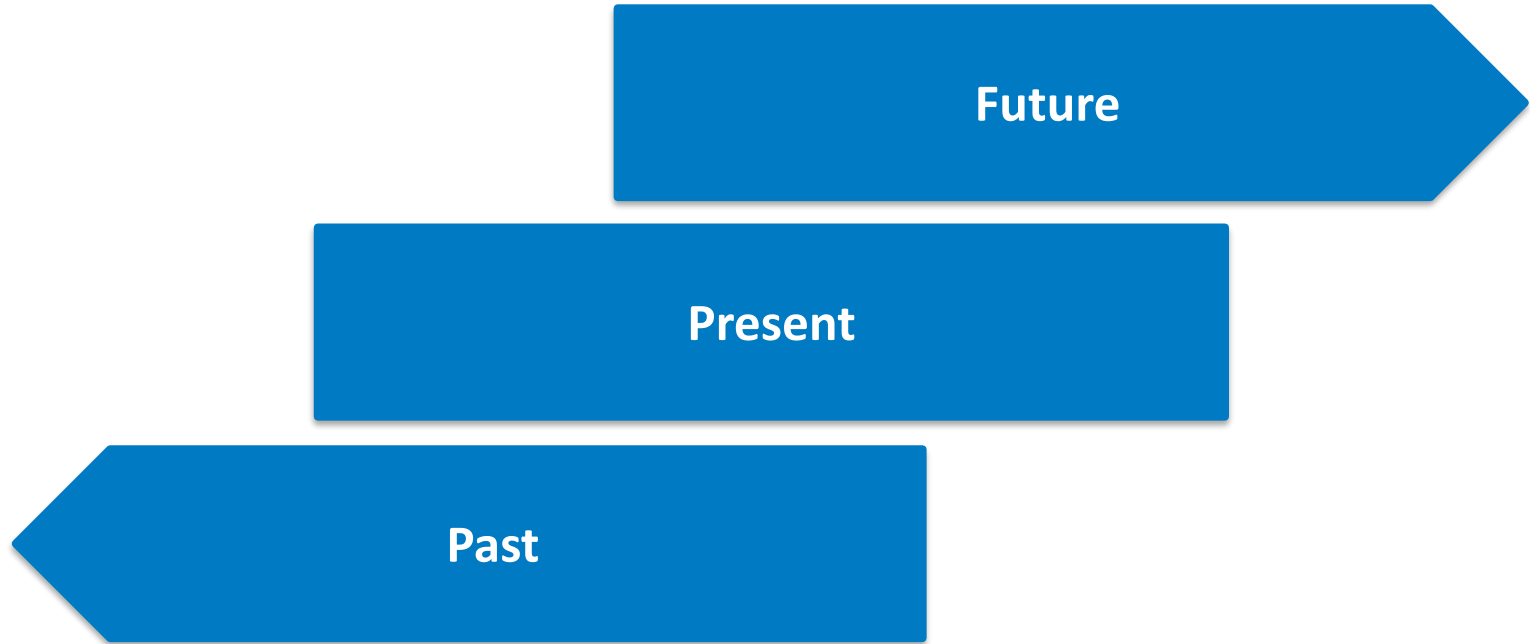
Third Line of Defense

Internal Audit

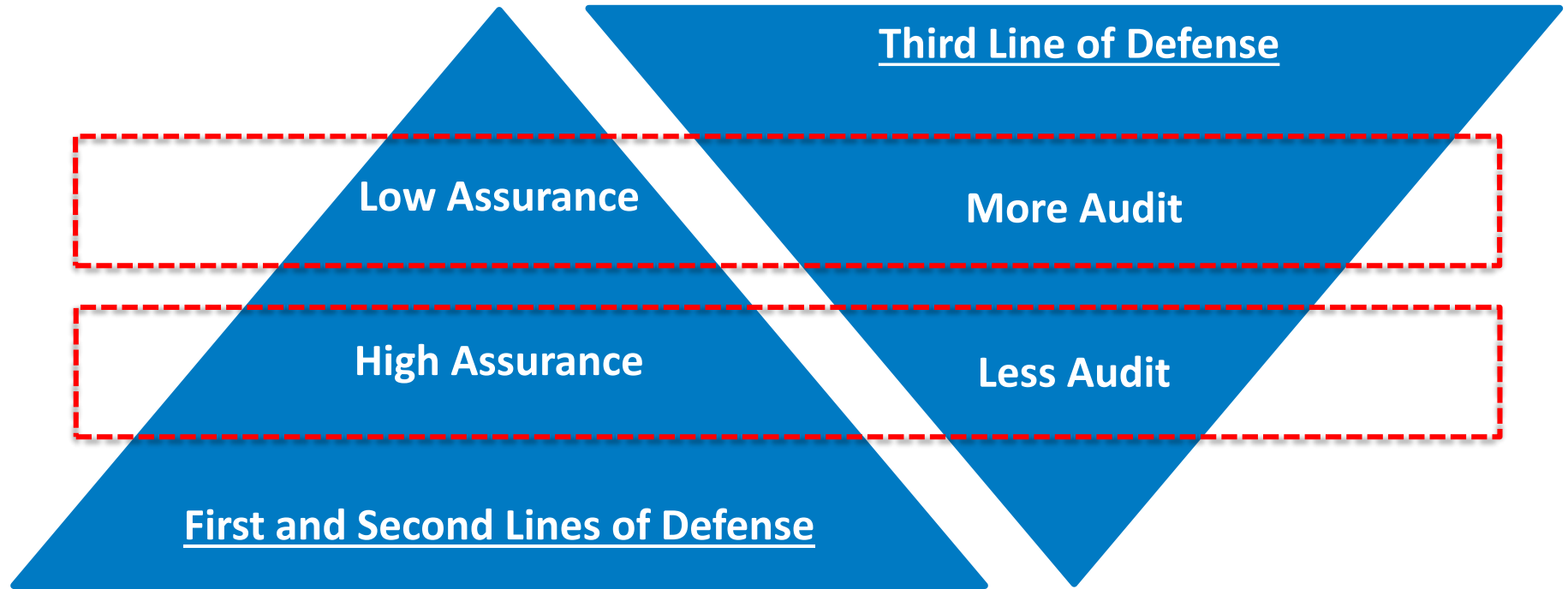
1. Challenges - Strategy (cont.)



1. Challenges - Strategy (cont.)



1. Challenges - Strategy (cont.)



2. Challenges -Methodology



- Internal audit must be risk centric
- Internal audit will need to become more effective and efficient
- Internal audit will need to understand emerging risks, and their impact on their organization

2. Challenges - Methodology (cont.)

Technology Risks



- Cybersecurity
- Information security
- IT system development projects
- IT governance
- Outsourced IT services
- Social media
- Mobile computing
- IT skills among internal auditors
- Emerging technologies
- Board/audit committee technology awareness

2. Challenges - Methodology (cont.)

Disruptive Technologies



amazon.com

facebook



NETFLIX



UBER



3. Challenges - Tools



- Internal audit must be smarter, better and faster
- Internal audit will need to seriously consider technology tools, including audit management systems and data analytics
- Internal audit will need to look at emerging technologies, including robotics and artificial intelligence

4. Challenges - Resources

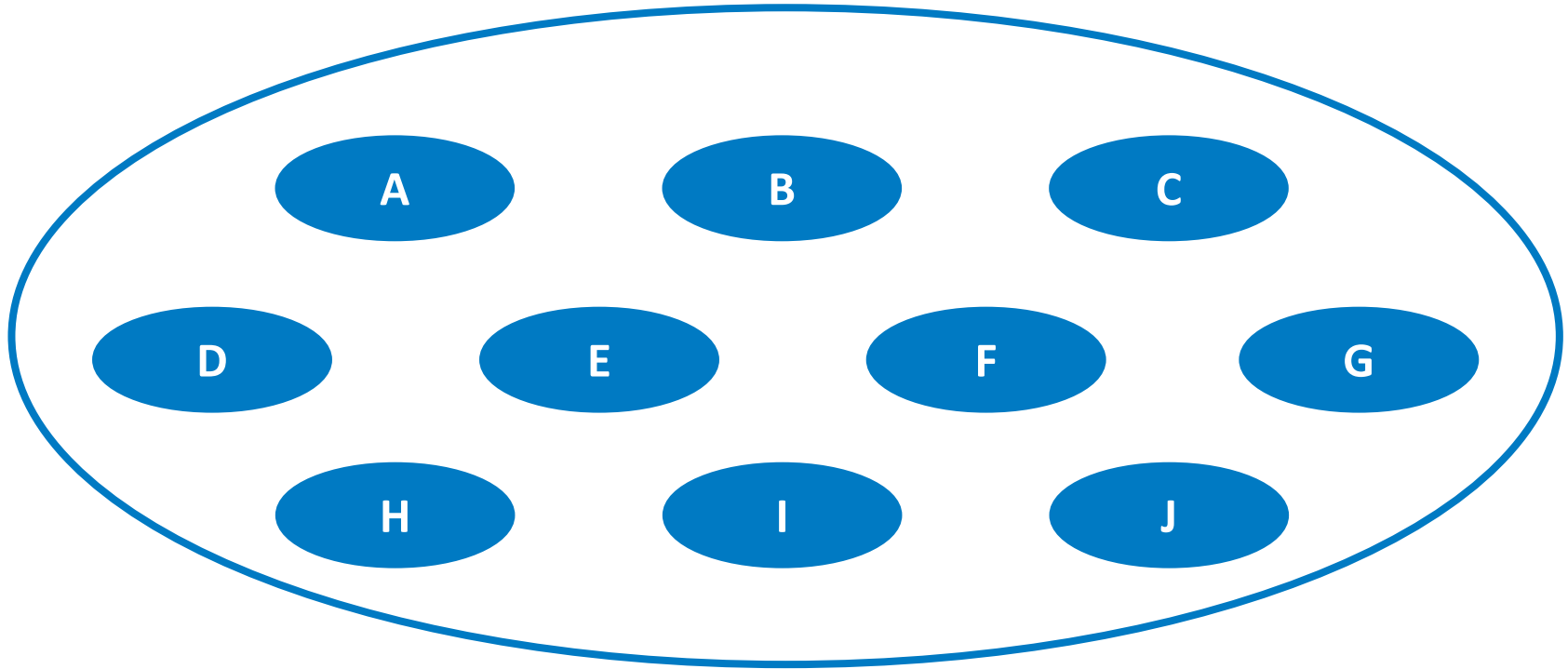


- Internal audit must compete with other functions for the best resources
- Internal audit will need to look for resources from non-accounting backgrounds
- Internal audit will need to address the changing expectations of millennials

Part II: Solutions



1. Solutions - Plan



1. Solutions - Plan (cont.)

Risk Factors Approach

- Define risk factors
- Determine relative importance of risk factors – add weightings
- Measure risk factors – assign risk scores
- Determine total score

1. Solutions - Plan (cont.)

| Risk Factors | Weighting | Score | Total |
|---------------|-----------|-------|-------------|
| Risk factor 1 | 50% | 5 | 2.5 |
| Risk factor 2 | 25% | 3 | 0.75 |
| Risk factor 3 | 25% | 2 | 0.5 |
| Total | | | 3.75 |

1. Solutions - Plan (cont.)

Specific Risks Approach

- Define specific risks
- Determine relative importance of specific risks – add weightings
- Measure specific risks – assign impacts and probabilities
- Determine total score

1. Solutions - Plan (cont.)

| Specific Risks | Weighting | Impact | Probability | Total |
|-----------------|-----------|--------|-------------|-----------|
| Specific risk 1 | 2 | 5 | 5 | 50 |
| Specific risk 2 | 1 | 3 | 3 | 9 |
| Specific risk 3 | 1 | 2 | 2 | 4 |
| Total | | | | 63 |

1. Solutions - Plan (cont.)










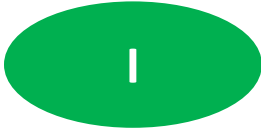
Risk Factors Approach

- Simpler
- Easier to develop
- Easier to maintain

Specific Risks Approach

- More complex
- More difficult to conduct
- More difficult to maintain
- Automates link to risks in audit execution

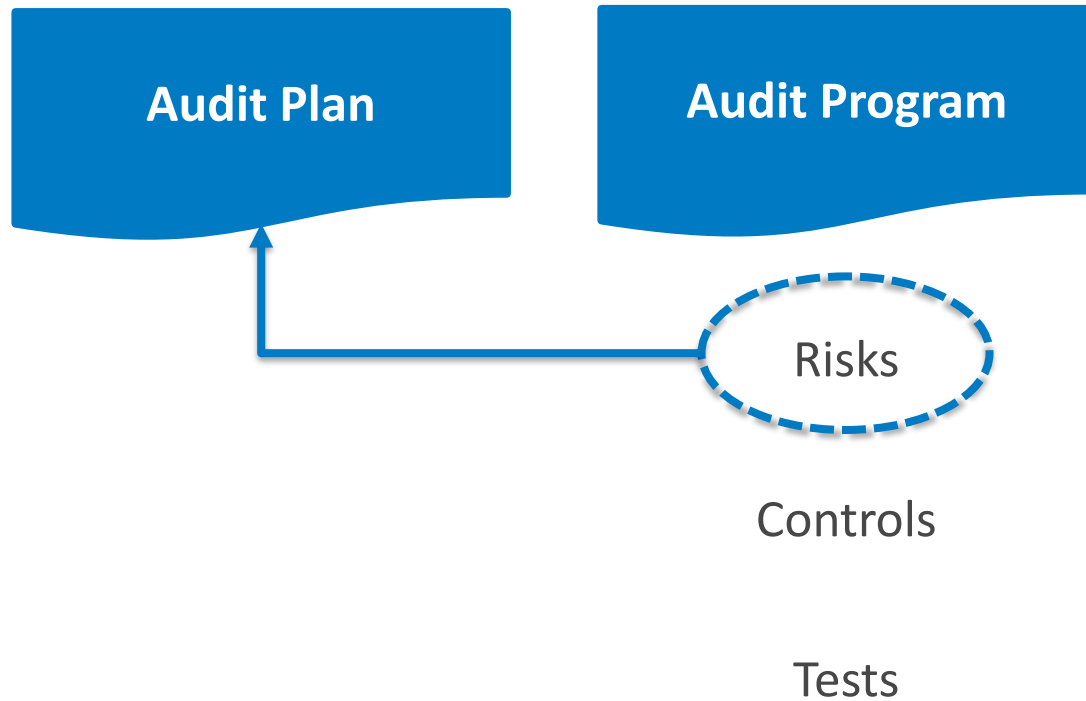
1. Solutions - Plan (cont.)

| High Priority | Medium Priority | Low Priority |
|---|--|---|
|    |     |    |

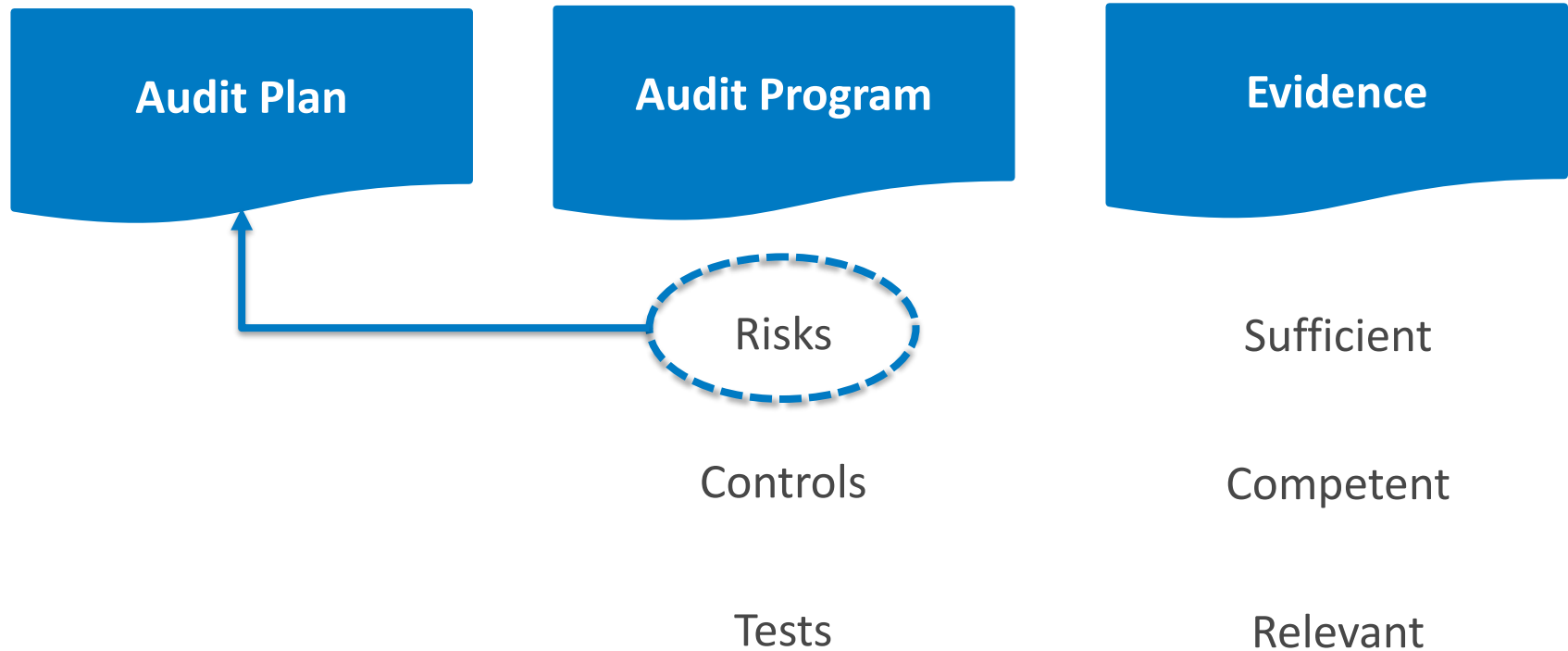
1. Solutions - Plan (cont.)

- Develop risk based audit plan
- Risk factors approach
- Specific risks approach
- Determine frequency of audits
- Influence time/effort of audits
- Maintain risk based audit plan – agile auditing

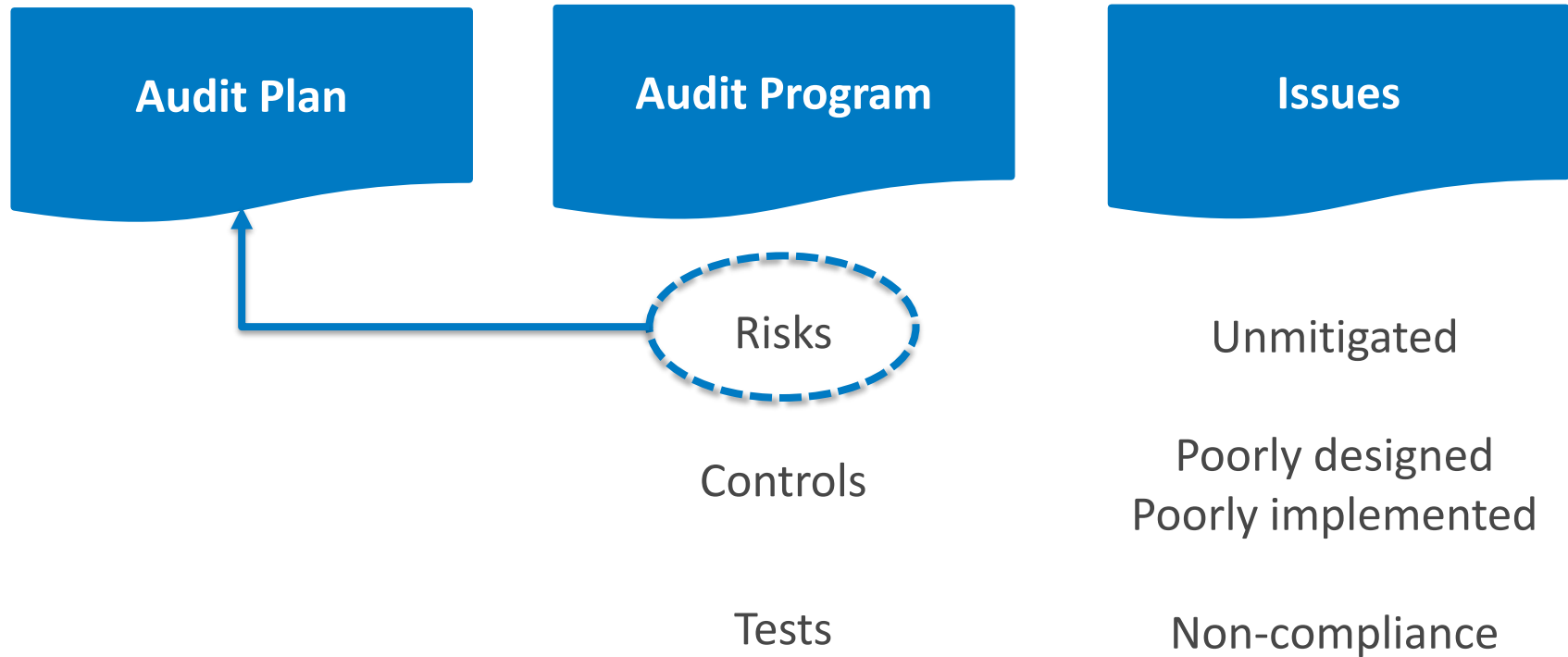
2. Solutions - Execute



2. Solutions - Execute (cont.)



2. Solutions - Execute (cont.)



2. Solutions - Execute (cont.)



2. Solutions - Execute (cont.)

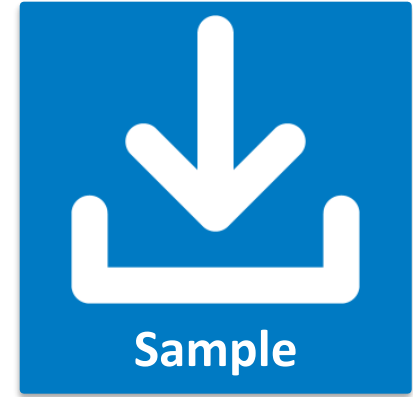
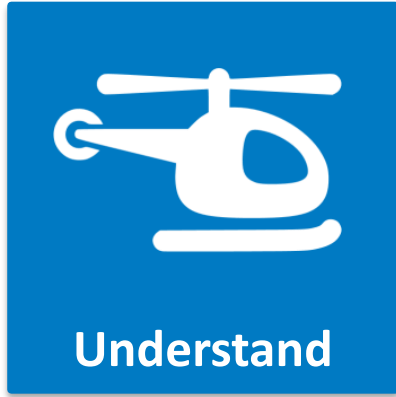
Traditional Approach

- Transactions = 100,000
- Number of errors = 10
- Sample size = 100 (which is big)
- Chance of finding error = 1%

Data Analytics Approach

- Transactions = 100,000
- Number of errors = 10
- Sample size = N/A
- Chance of finding error = 100%
(if you develop right tests)

2. Solutions - Execute (cont.)



2. Solutions - Execute (cont.)

Analyze Data

- Number analysis
- Analytical review
- Number checker
- Outliers
- Regression analysis
- Benford's test

Extract Data

- Exceptions
- Duplicates
- Gaps
- Words and phrases
- Tops and bottoms
- Out of masks

3. Solutions - Report



Audit Report

User friendly

Length

Format

Visual aids

Words

Risk centric

Strategic issues

Causes, not symptoms

Conclusion

Timing

4. Solutions - Follow Up

Audit Report

Implemented

Catalyst for change

Lessons learned

Part III: Conclusion

Tools - TeamMate Solutions



Strategy



Methodology



Resources

Conclusion (cont.)

TeamMate+ Audit

TeamMate+ Controls

TeamMate Analytics

www.teammatesolutions.com

Q&A

Any questions?

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