WINCER Infotech Limited

Solutions for Data AnalyTIcs and Business Intelligence

Bangalore Branch of SIRC of

The Institute of Chartered Accountants of India

One Day Seminar on Emerging Technologies - Navigating the Future

Organized by : Bangalore Branch of SIRC of ICAI

on 17th November 2018

Venue : Vasanthnagar Branch Premises

Session-1: 10.00 am – 11.15 am

Harnessing power of Audit Intelligence (AI) in the era of Artificial intelligence (AI)

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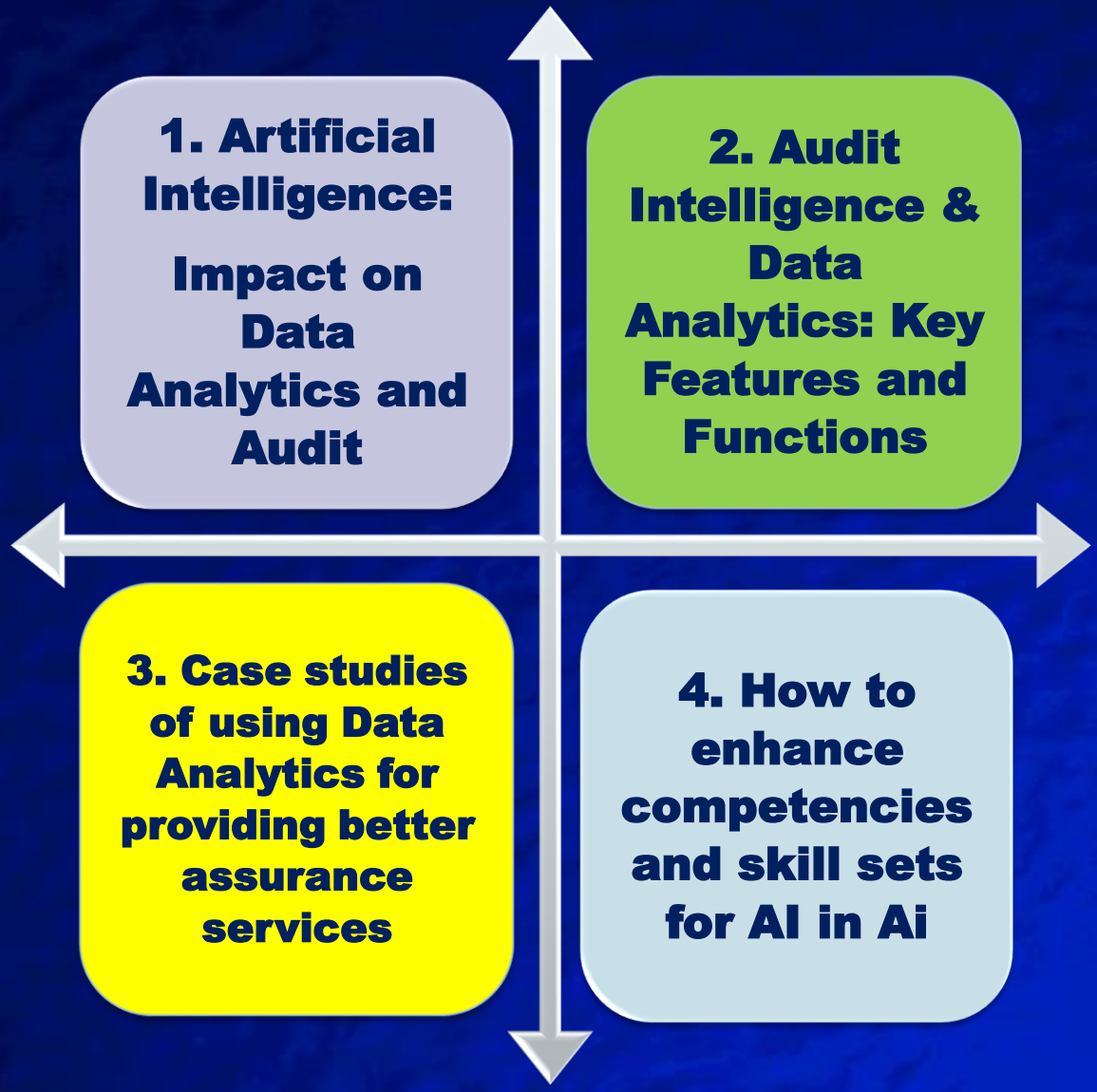
Harnessing power of Audit Intelligence (AI) in the era of Artificial intelligence (AI)



Fundamental Questions?

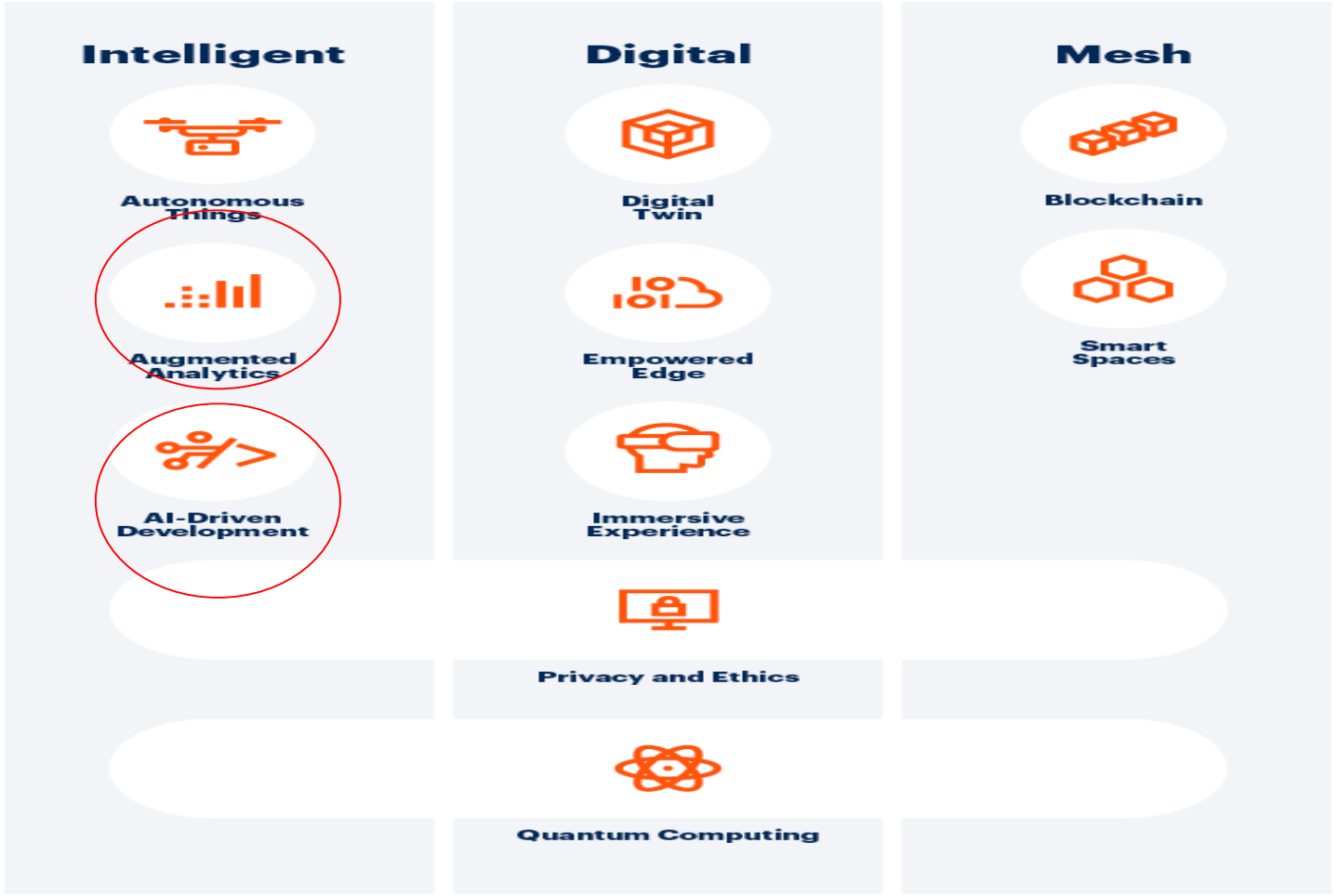
1. **What, why, who, when, where, HOW?**
    1. Audit
    2. Intelligence
    3. Audit Intelligence
    4. Artificial
    5. Artificial Intelligence
    6. Auditor: Technology driven, IT-Enabled, Process-oriented?
    7. Automation of Audit

What do you see here? **Seeing the Big picture**

A big picture always helps in understanding Enterprise Better

1. Artificial Intelligence: Impact on Data Analytics and Audit

Top 10 Strategic Technology Trends for 2019



gartner.com/SmarterWithGartner

Source: Gartner

Gartner

Machines are becoming increasingly capable
and taking on more & more tasks that were once
Exclusive Province of Human Professionals

This will lead to steady decline of Traditional Flesh and Blood professionals

This calls for Fundamental Re-thinking on the Future of White-Collar Work of Professionals

The days of trusted advisor are numbered

Recipients of professional service are in face seeking reliable solution or outcome rather than trusted advisor per se.

When standard of output, of say, online service is very high and its branding is unimpeachable, this will offer its own level of comfort and assurance.

Technology is main driver of change

1. More people signed up for Harvard's online course in a single year, than have attended actual university course in its 377 years of existence

2. In the legal world, 3 times as many disagreements each year among eBay traders are resolved using 'online dispute resolution' than there are lawsuits filed in entire US court system.

3. On its 6th Birthday, Huffington Post had more unique monthly visitors than website of NewYork Times which is almost 164 years of age.

Technology is main driver of change

The British Tax authorities use a Fraud-Detection system that holds more data than the British Library (which has copies of every book every published in the UK)

In 2014, US Tax Authorities received Electronic Tax Returns from almost 48 million people who had used online Tax Preparation Software rather than a Tax Professional to help them.

In India: Online file is facing is rapidly increasing: CA Assisted Tax Filing Plans By ABC - Trusted by 25 Lakh Indians to file their taxes online. Helps Individuals file their Tax returns online via their website- all a user has to do is upload their Form-16 PDF & ABC software prepares the tax return instantly and automatically. It is basically a technology company that happens to be in 'tax' space.

What is Artificial Intelligence?

A. Artificial intelligence (AI)

- Computers with the ability to mimic or duplicate the functions of the human brain

B. Artificial intelligence systems

- The people, procedures, hardware, software, data, and knowledge needed to develop computer systems and machines that demonstrate the characteristics of intelligence

What is Intelligence?

A. **"Intelligence is a very general mental capability that, among other things, involves the ability to:**
   - reason
   - plan
   - solve problems
   - think abstractly
   - comprehend complex ideas
   - learn quickly and
   - learn from experience
   - Not merely book learning, a narrow academic skill, or test-taking smarts.
   - Reflects a broader and deeper capability for comprehending our surroundings - 'catching on,' 'making sense' of things, or 'figuring out' what to do."

What is Specialized Intelligence?

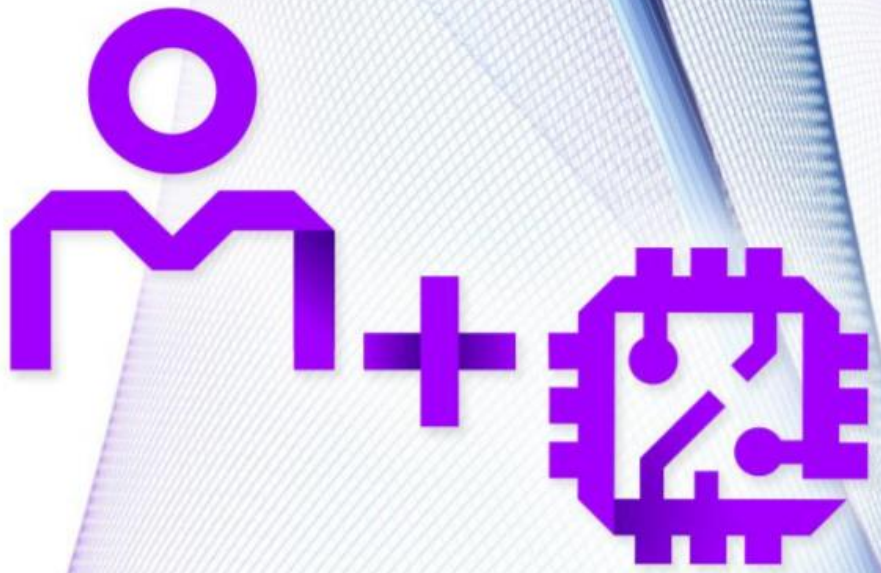
A. **Ability to**
   - Effectively address well-defined, specific goals in a given environment
   - Kind of task-oriented intelligence that's part of many human jobs

B. **In the past several years, machines have become quite proficient at handling a variety of such specialized intelligent tasks.**

accenture

Artificial Intelligence

What could your company achieve if every interaction with technology were intelligent?



What It Is

Artificial Intelligence is a collection of advanced technologies that allow machines to sense, comprehend, act and learn.

Why It Matters

AI is reinventing how businesses run, compete and thrive in ways we haven't seen since the Industrial Revolution.

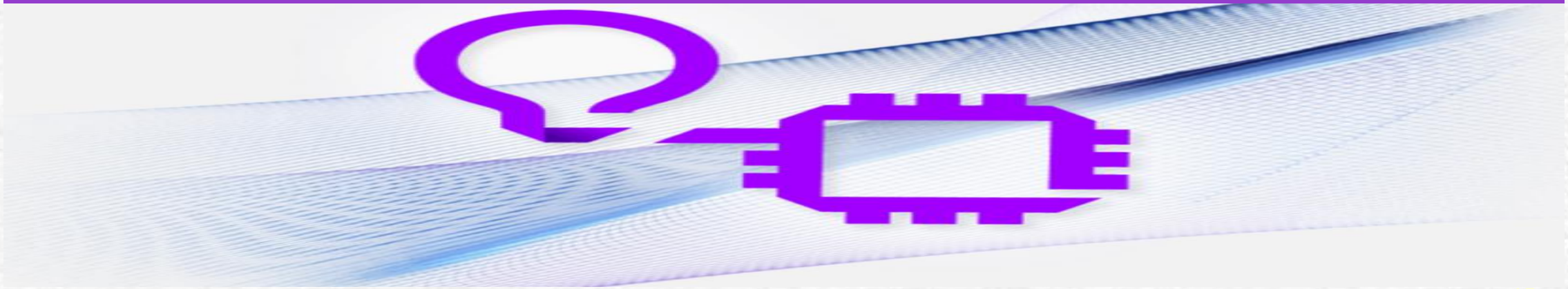
Where It's Going

AI will help leaders drive innovations to unlock trapped value — in the core businesses and beyond.

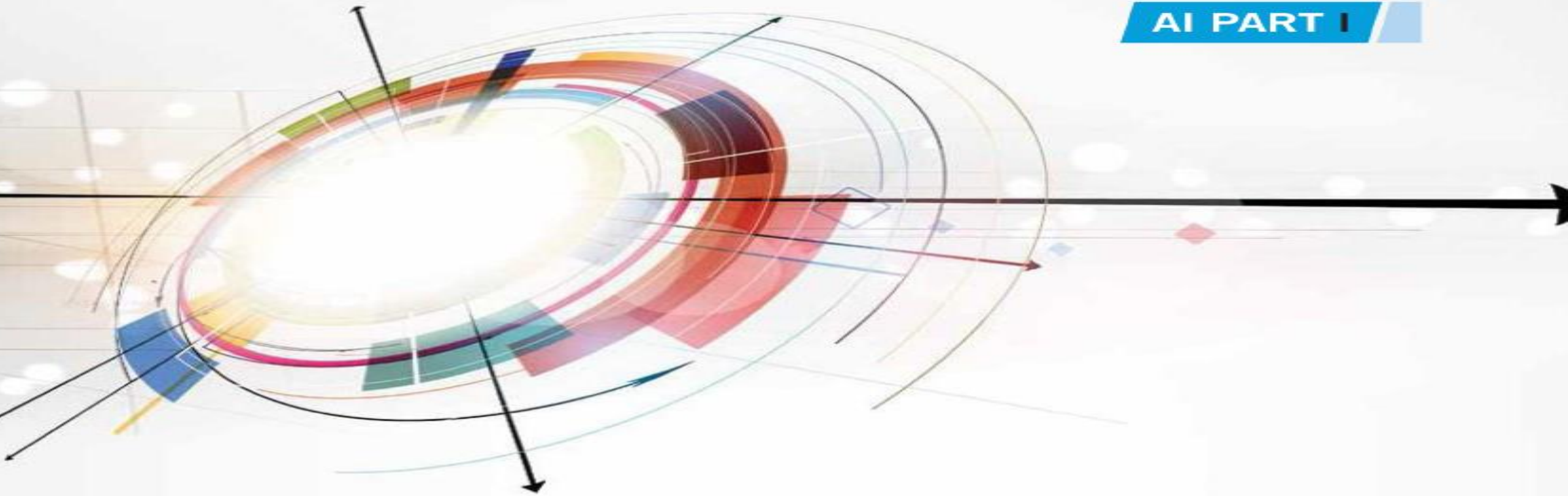
www.accenture.com/ai-insights

Machine learning

An AI technology that enables systems to learn without being programmed, machine learning is pushing the innovation boundaries across all industries, from healthcare to financial services.



AI PART I



GLOBAL PERSPECTIVES AND INSIGHTS

Artificial Intelligence – Considerations for the Profession of Internal Auditing

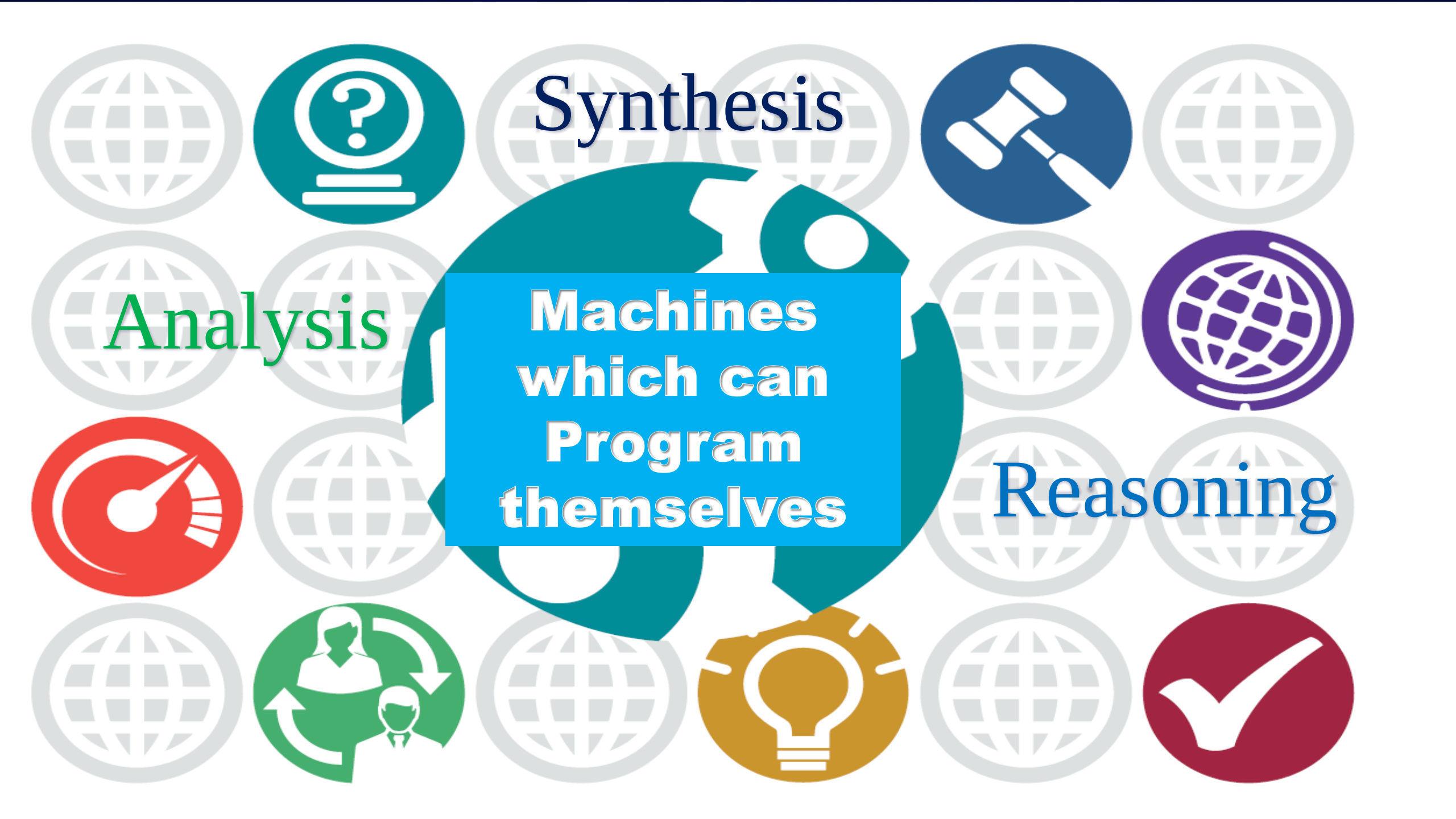
Special Edition

The Audit Is Changing

How accountancy can thrive in the age of AI

AI in Accounting: Moving beyond Compliance

- AI in accounting will rapidly move from a tool for compliance and towards the delivery of advice, but will never replace a human accountant.
- AI is on the path of moving the administration task and rapid developments would be made in 2019.
- AI will provide suggestions to accountants instead of driving compliance
- AI would progress beyond “showing you anomalies” and develop new abilities to focus on accounting and business issues “which could be more problematic.”


Synthesis
Analysis
Machines which can Program themselves
Reasoning

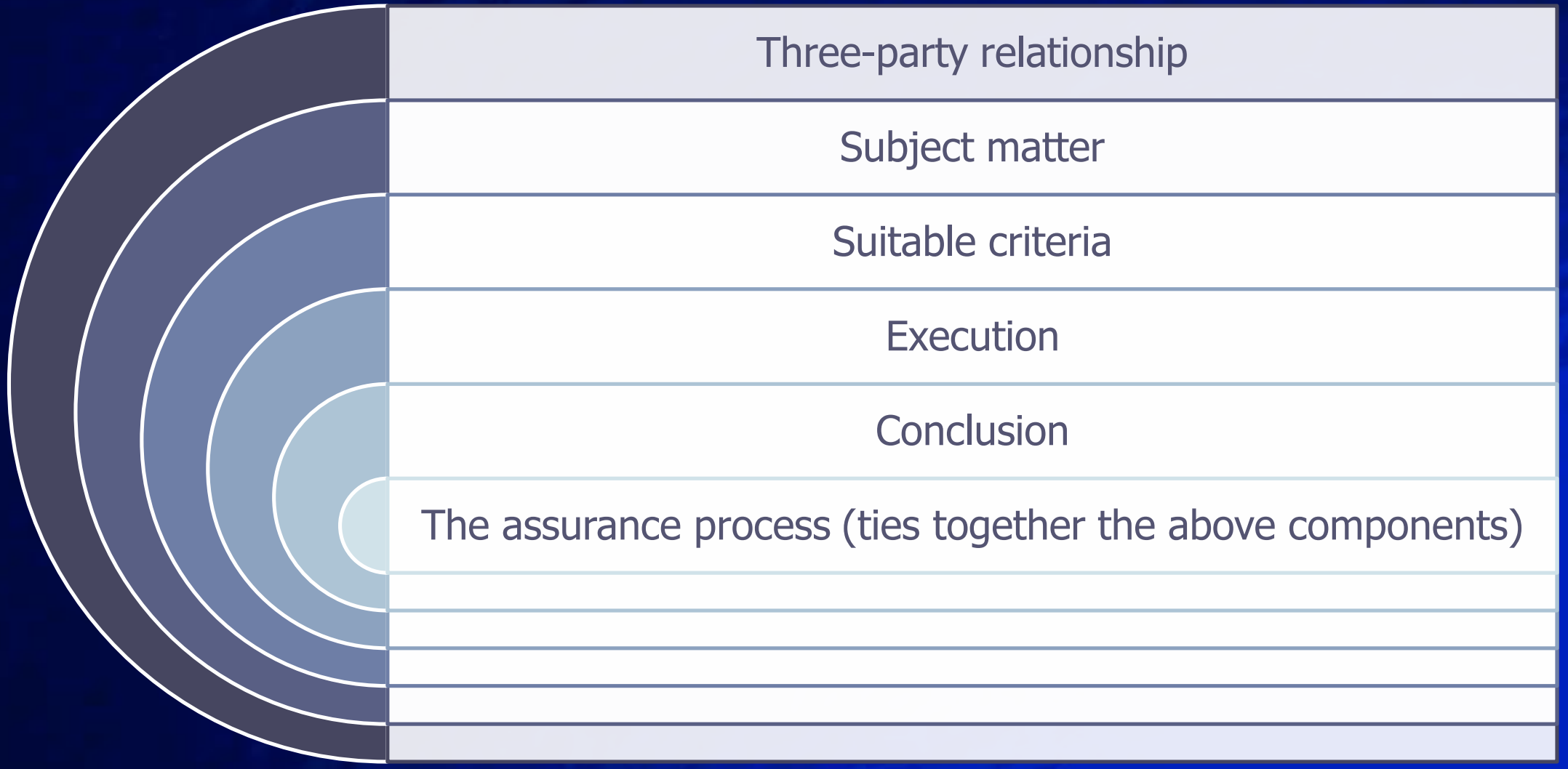
2. Audit Intelligence and Data Analytics


Technology handicap is the Headwinds which is constraining the current generation of CAs.
Techno-literacy will be the Tailwinds which will empower new GenCAs to transition to new orbits as professionals.

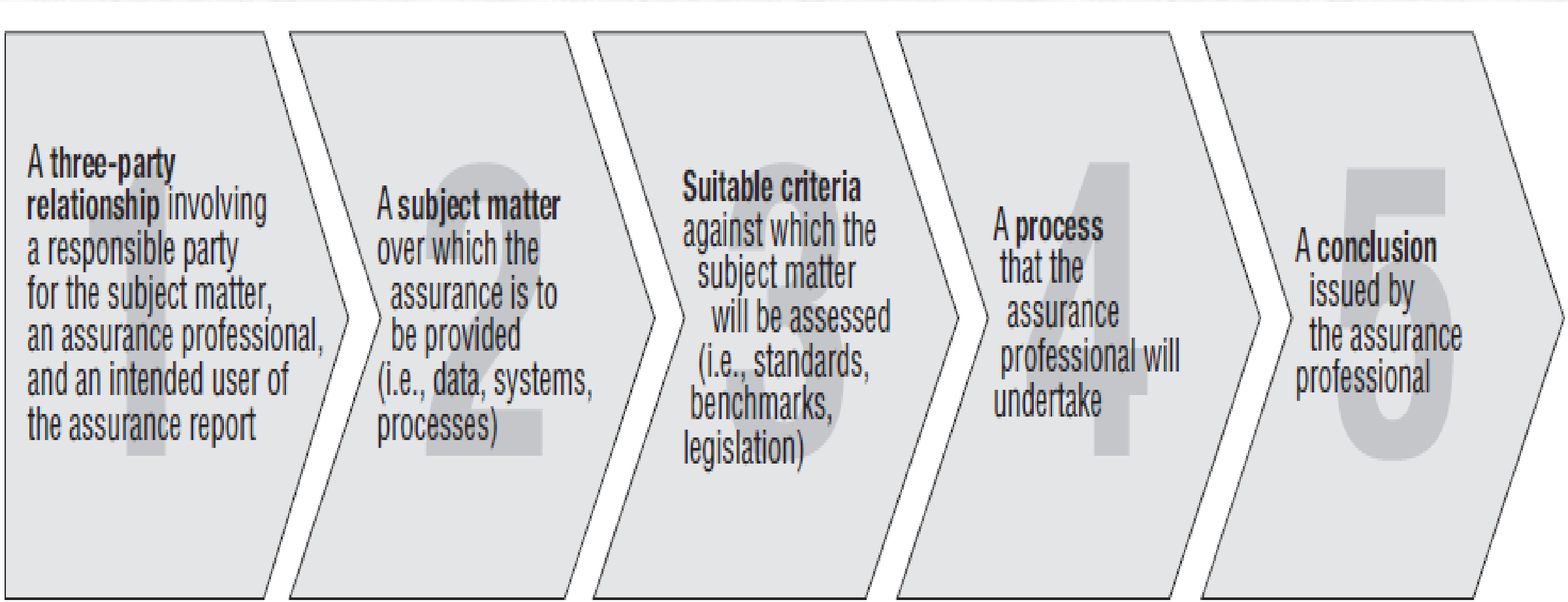
Audit Body of Knowledge

- Audit Charter
- Audit Scope & Objectives
- Audit Deliverables
- Audit Period & Deadlines
- Audit Standards, Guidelines and Frameworks
- Audit Plan
- Audit Program
- Audit Steps
- Audit Procedures
- Audit Approach
- Audit Tests
- Audit Quality
- Audit Software
- Audit Evidence/Documentation
- Audit Tools
- Audit Skills
- Audit Techniques
- Audit Logs
- Audit Reports….

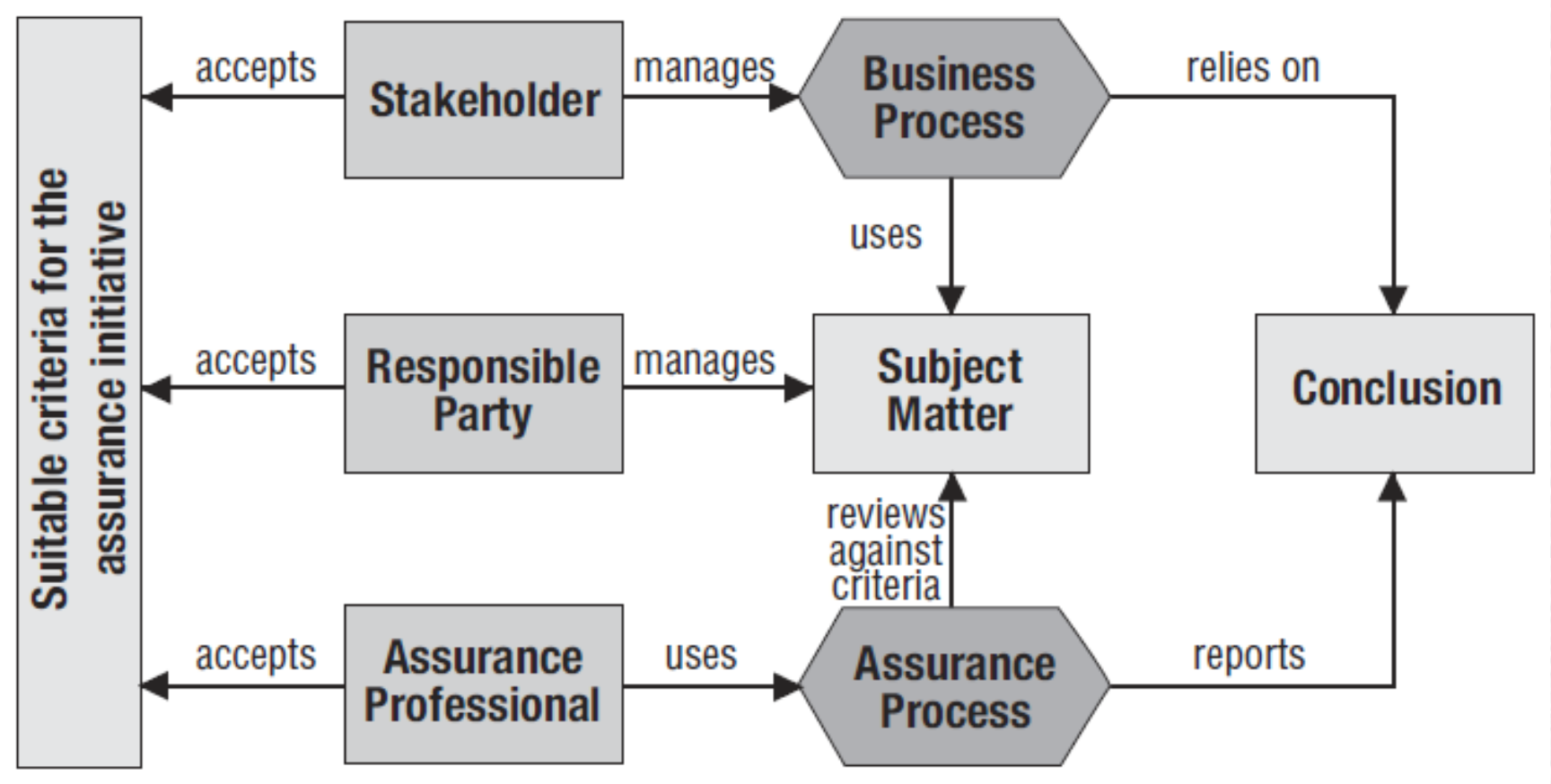
Assurance Components



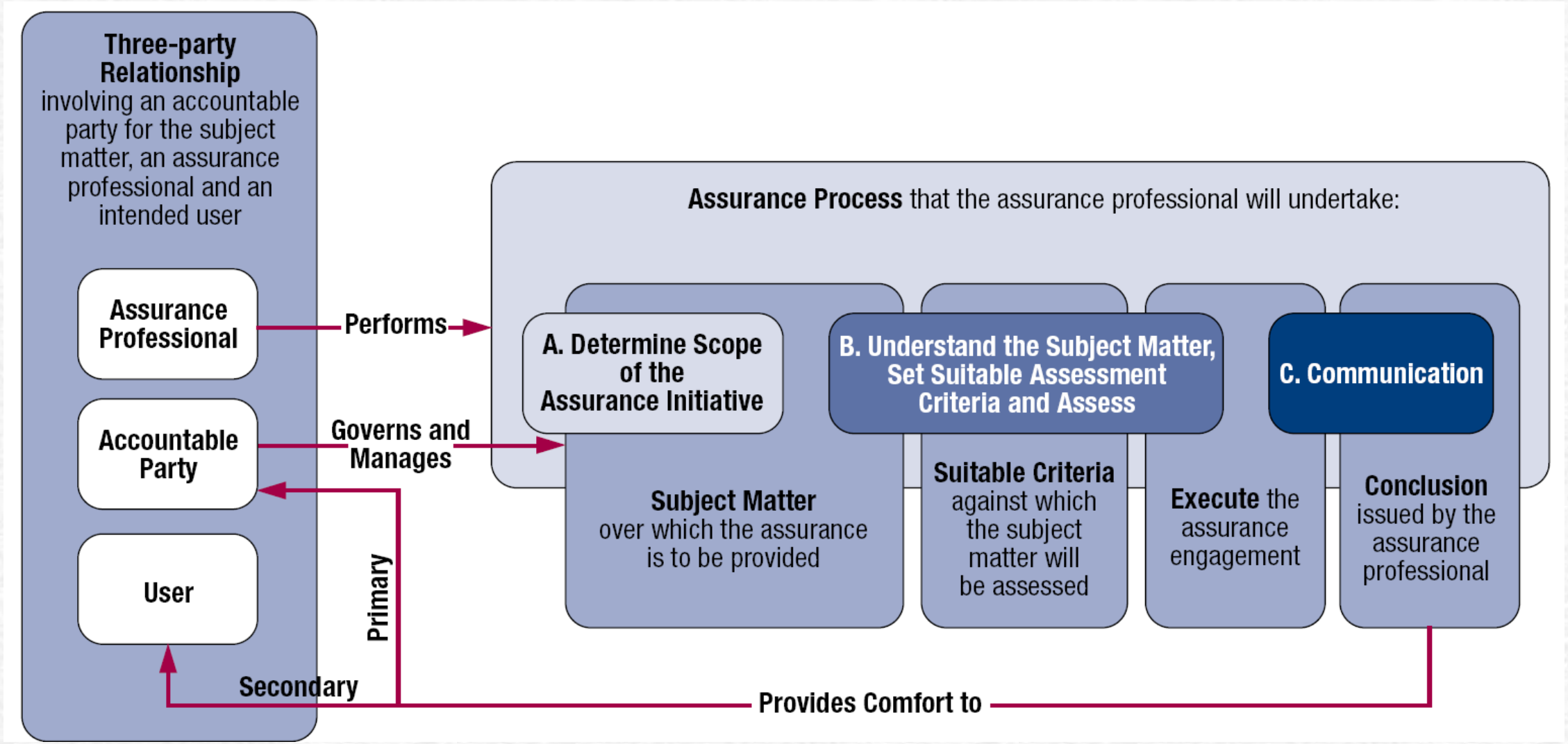
Five Components of Assurance Initiative



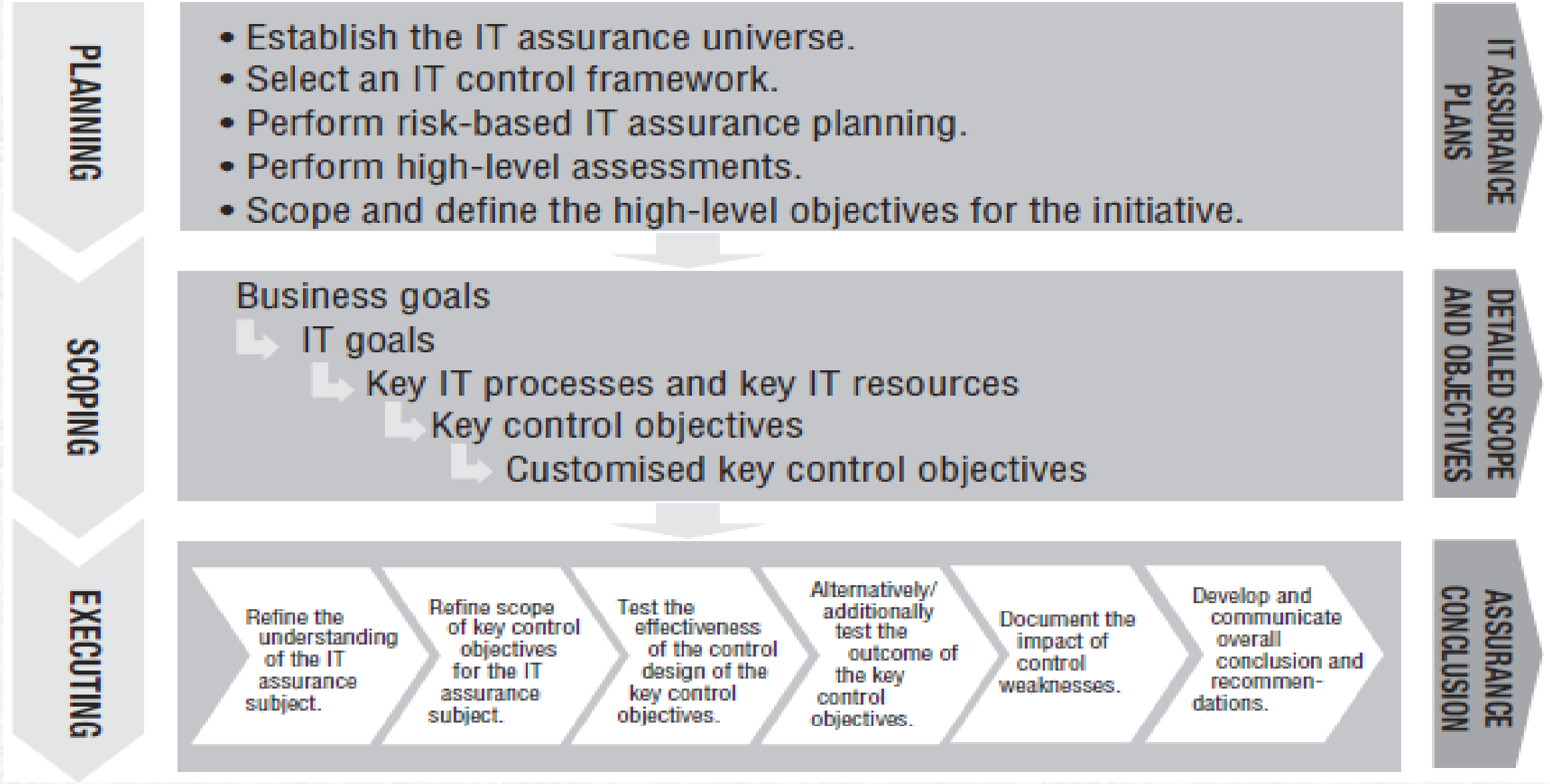
Relationships in Assurance Initiative



Assurance Components



3 Stages of Assurance Roadmap



What is our approach to Audit Digital Data?

Unprocessed, collection of numbers, characters, images, raw data, research data, field data (may be collected by observation and recording)

Is there a Better Way to Audit Digital Data using Technology?

There is a Better Way to:

- Provide Assurance
- Ensure Compliance
- Provide Value Addition
- Be more Productive
- Be more Effective
- Be more Timely

Chartered Institute of Internal Auditors

DATA ANALYTICS

Is it time to take the first step?


Assurance professionals must be ahead of the curve in implementing Data Analytics as an assurance imperative to improve effectiveness of deliverables and provide value addition.

What is Data Analytics?

- Collection of Tools, Techniques and Best Practices to Access and Analyse Digital Data.
- Data Analytics empowers professionals to Access to 100% of the Data and to Analyse Data as per scope & objectives of assignment.
- Involves Real Application of Thought to Data.
- Data analytics can process data to information but human intelligence with domain expertise is required to Infer Insights from this Information.

Examples of Data Analytics Software

1. **MS Excel**: Spread software of Microsoft has various features useful for auditors.
2. **General Audit Software**: Add-in for MS Excel with specific CAAT functions.
3. **General Audit Software**: Data Analysis Software with specific CAAT functions
4. **Application Software**: Standard and Ad-hoc Reporting and Query features available or specific functionalities designed for auditors.
5. **Specialised Audit Software**: Audit software designed to work in specific software

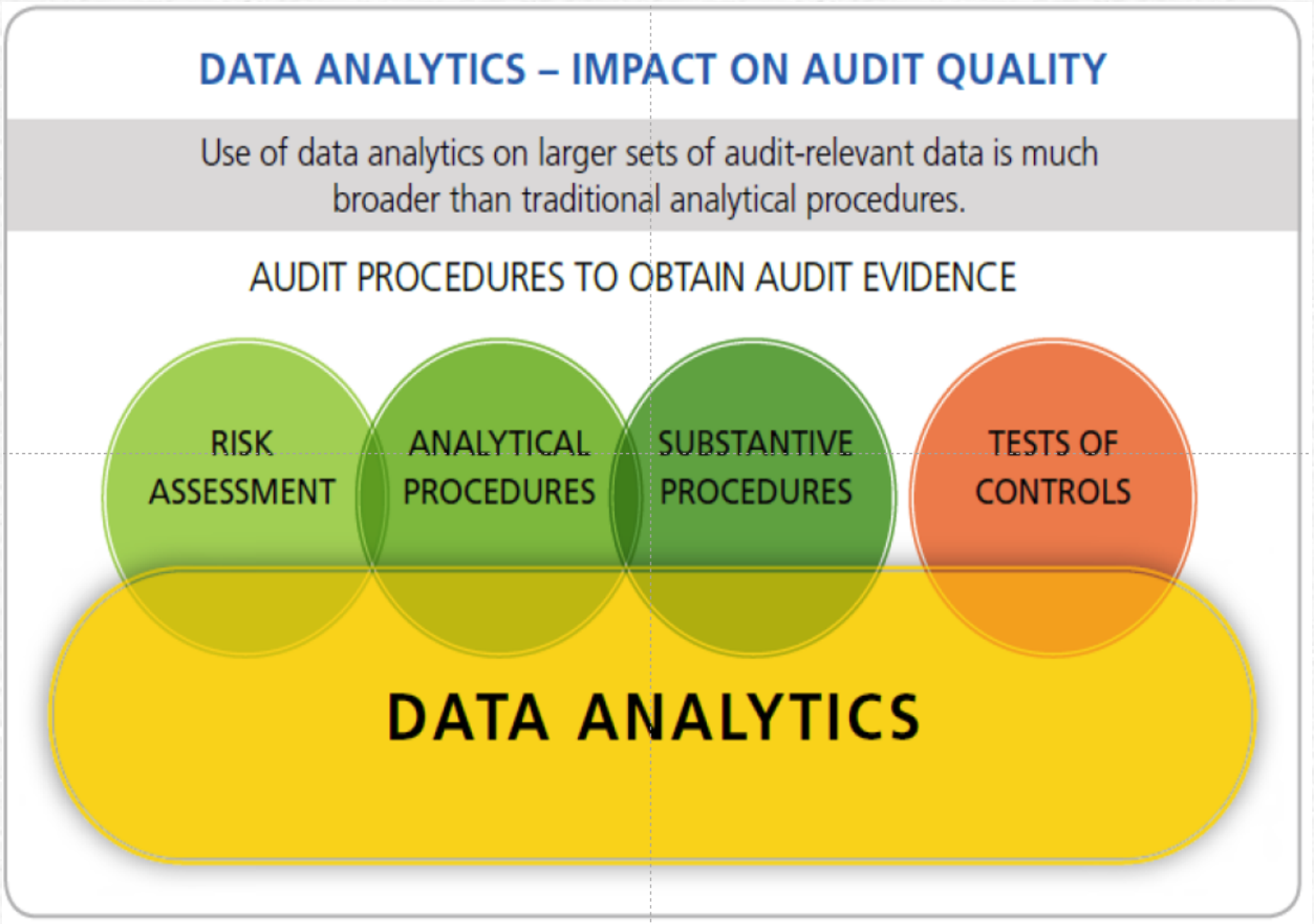
Value of Data Analytics is in what it brings through its Effective Implementation.

Using Data Analytics in Audit Planning

- **What**: Prepare list of specific objectives to be addressed by audit.
- **When**: Define period covered in audit and obtain data for that period.
- **Where**: Define sources and format of data required for analysis.
- **Why**: Prepare list of specific criteria to be applied for analysing data as applicable for audit: Tax audit, GST Audit, Internal Audit, etc.
- **How**: Prepare detailed list of different types of tests to be performed to meet audit objectives

DATA ANALYTICS – IMPACT ON AUDIT QUALITY

Use of data analytics on larger sets of audit-relevant data is much broader than traditional analytical procedures.



Seven Sutras of Data Analytics: Audit Intelligence Principles

1. Meet Stakeholder Requirements
2. Follow Holistic and Structured Process
3. Adapt Dynamic and Systematic Approach
4. Ensure Distinction of Governance, Controls, Risks and Compliance
5. Customise as per Business Process, Regulatory needs, Org. Structure & Tech. Deployed
6. Deliver Standard Deliverables as per agreed Scope & Objectives
7. Document to ensure Repeatability and Compliance

Data Analytics-3i: Inferring Insights from Information

Do MORE in less Time using Data Analytics!

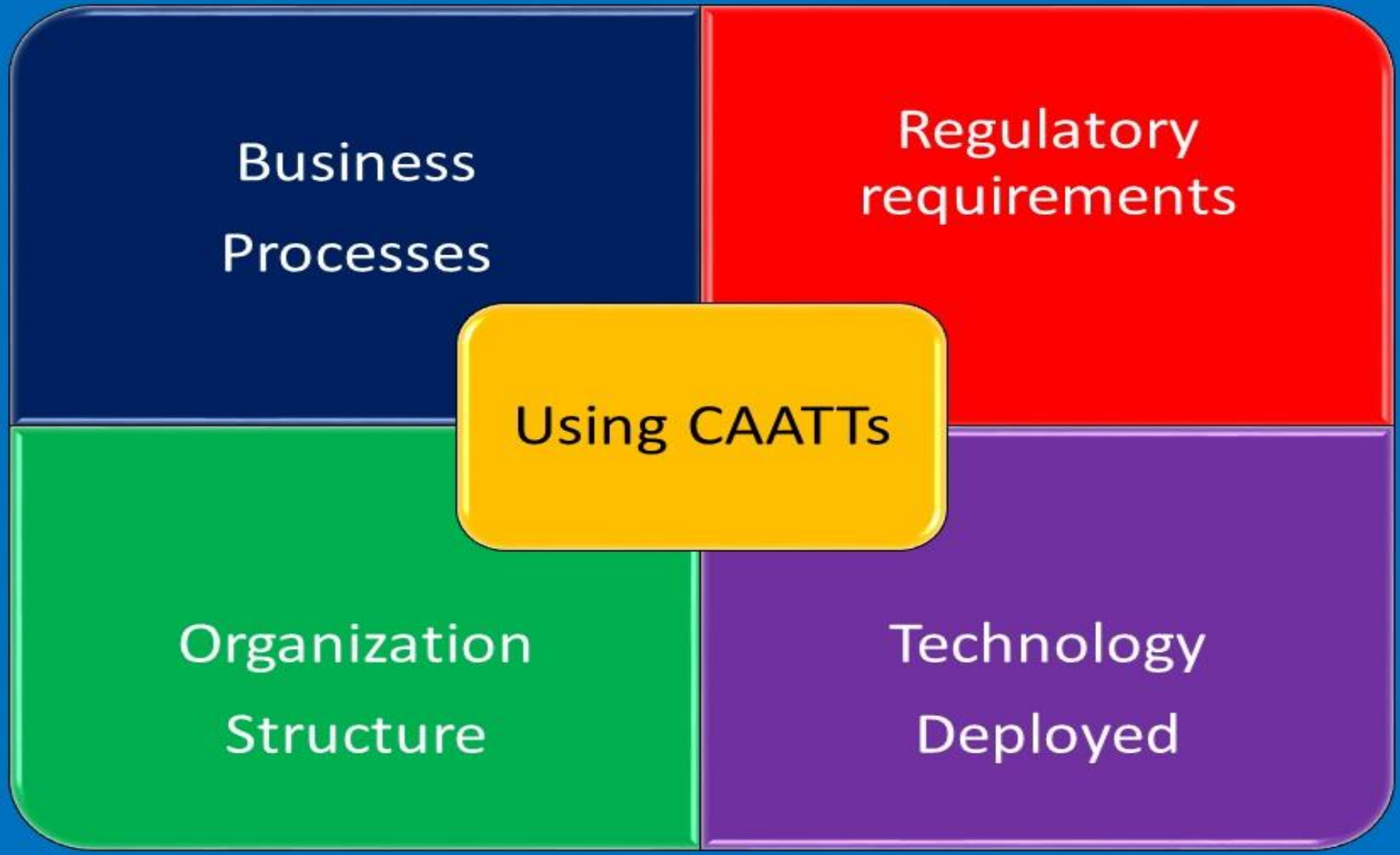
3. Case studies of using Data Analytics for providing better assurance services

1. Statutory Audit: Verifying Compliances through Analytics
2. IT Audit: Providing Insights from Information
3. Forensic Audit: Connecting the Dots using data Analytics

Using Automated Audit Intelligence: Roadmap

1. Objectives	• What is the Audit Scope & Objectives and what are proposed deliverables and timelines?
2. Approach	• What needs to be done and how will it be done?
3. Execution	• How do we ensure that we use appropriate tools & deploy team with relevant skillsets to execute assignment?
4. Reporting	• How will reporting be done and how does it comply with expected deliverables?

Assurance using CAATTs: key factors



Financial Statement Assertions evaluated by auditors by using Data Analytics

A. **Completeness**: Whether all transactions and the resulting information are complete.
B. **Accuracy**: Whether all transactions are processed accurately and as intended and the resulting information is accurate.
C. **Validity**: Whether only valid transactions are processed, and the resulting information is valid.
D. **Authorization**: Whether only appropriately authorized transactions have been processed.
E. **Segregation of Duties**: Whether controls regarding appropriate segregation of duties and responsibilities as defined by management are working as envisaged.
F. **Compliance**: Whether all applicable compliances are complied with, within the required time-frame.
G. **Cut off**: Whether only the transactions for the period which they belong are accounted.

Examples of Specific Audit Tests

1. **Limit**: Test whether data is within specific limits
2. **Range**: Test whether data is within specified range
3. **Reasonableness**: Test whether data is within reasonableness applicable for each group of data.
4. **Duplicate**: Test whether data has duplicates and identify/list them.
5. **Sequence/Gap**: Test whether data is in sequence and identify/list gaps in data.
6. **Analysis**: Test overall profile of data to check conformance.

Examples of Specific Audit Tests

7. **Format**: Test whether data is in specified format & identify data which does not conform.
8. **Outlier**: Test whether data is beyond specified boundaries of data based on no. of times of average or standard deviation.
9. **Existence**: Test whether data exists in all rows/fields.
10. **Consistency**: Test whether data is consistently following same structure.
11. **Validity**: Test whether data is valid as per specified criteria.
12. **Link/Relationship**: Test whether data has link with another table based on unique field(s).

1. Audit steps in Audit of ICFR effectiveness

1. Planning the Audit
2. Developing a Top-Down Audit Approach
3. Testing Controls
4. Evaluating Identified Deficiencies
5. Wrapping Up the Audit
6. Reporting on Internal Control

Audit steps in audit of ICFR effectiveness

1. Planning the Audit

A. Obtain knowledge of internal controls and other matters.
B. Assess the role of risk assessment. Include a "what could go wrong" scenario.
C. Scale the audit to the size and complexity of the enterprise.
D. Address the risk of fraud.
E. Consider using work of others, such as internal audit and other client personnel.
F. Use the same materiality considerations as when planning a financial statement audit.

2. Developing a Top-Down Audit Approach

A. Identify entity-level controls.
B. Identify application controls.
C. Identify IT general controls.
D. Identify significant accounts and disclosures and their relevant assertions.
E. Understand likely sources of misstatement.
F. Select controls to test.

Audit steps in audit of ICFR effectiveness

3. Testing Controls

A. Consider the prior year's audit reports.
B. Test design effectiveness.
C. Test operating effectiveness.
D. Relate risk to the obtained testing evidence.

4. Evaluating Identified Deficiencies

A. Evaluate the severity of control deficiencies.
B. Evaluate whether control deficiencies, individually or collectively, rise to the level of significant deficiencies or material weaknesses.

5. Wrapping Up the Audit

A. Write the audit opinion.
B. Obtain written management representations.
C. Communicate matters to management and the audit committee.

6. Reporting on Internal Control

A. Issue a report with the auditor's opinion.
B. Report any material weaknesses.
C. Review for subsequent events.

2. Tasks performed by Auditor in IT Audit

1. Provide audit services in accordance with IS audit standards to assist the organization in protecting and controlling information systems.
2. Execute a risk-based IS audit strategy in compliance with IS audit standards to ensure that key risk areas are audited.
3. Plan specific audits to determine whether information systems are protected, controlled and provide value to the organization.
4. Conduct audits in accordance with IS audit standards to achieve planned audit objectives.
5. Communicate audit results and make recommendations to key stakeholders through meetings and audit reports to promote change when necessary.
6. Conduct audit follow-ups to determine whether appropriate actions have been taken by management in a timely manner.

Knowledge of:

1. ISACA IT Audit and Assurance Standards, Guidelines and Tools and Techniques, Code of Professional Ethics and other applicable standards
2. Risk assessment concepts and tools and techniques used in planning, examination, reporting and follow-up
3. Fundamental business processes (e.g., purchasing, payroll, accounts payable, accounts receivable) and the role of IS in these processes
4. Control principles related to controls in information systems risk-based audit planning and audit project management techniques, including follow-up
5. Applicable laws and regulations that affect the scope, evidence collection and preservation, and frequency of audits

Knowledge of:

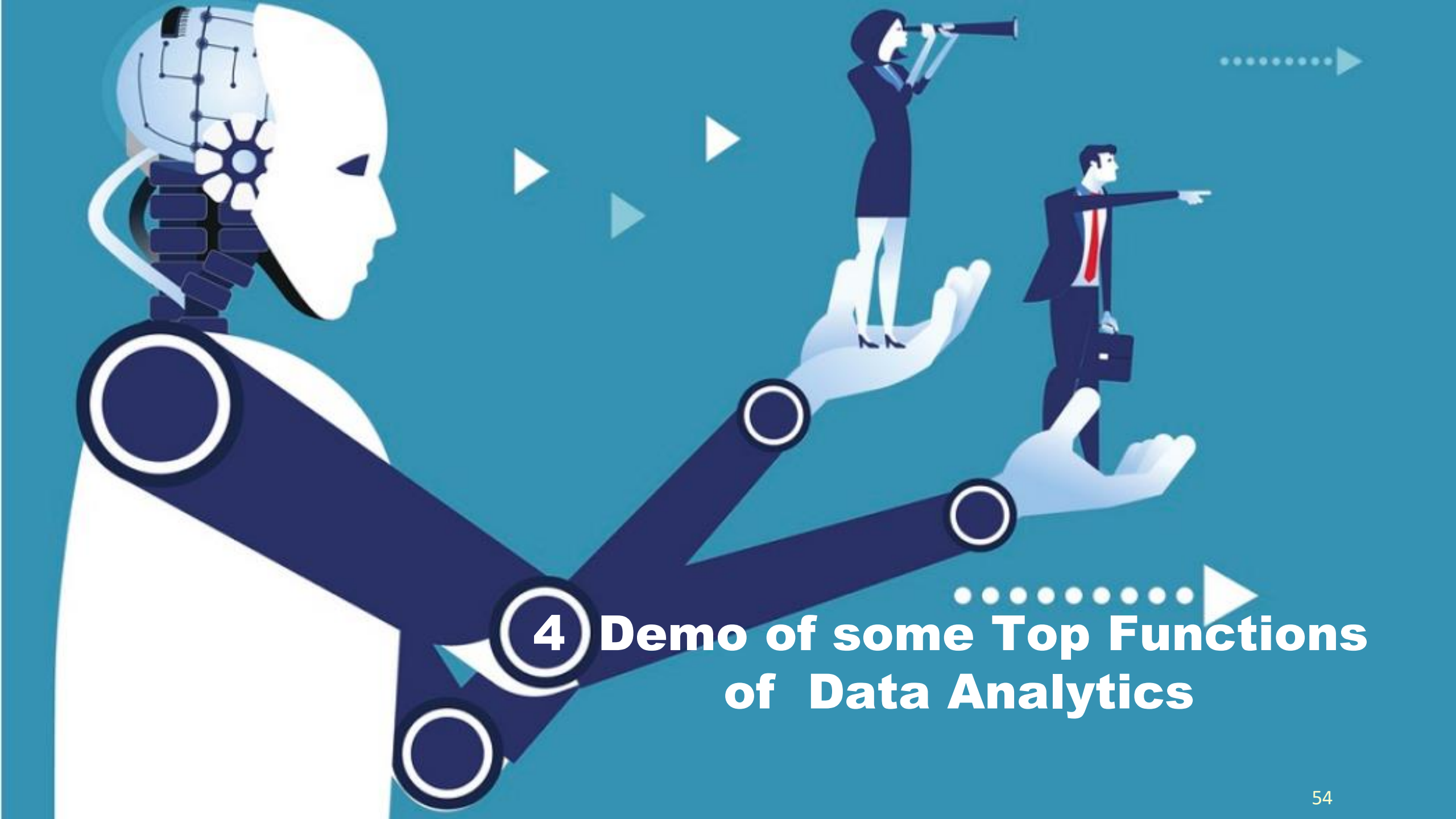
6. Evidence collection techniques (e.g., observation, inquiry, inspection, interview, data analysis, forensic investigation techniques, computer-assisted audit techniques [CAATs]) used to gather, protect and preserve audit evidence
7. Different sampling methodologies and other substantive/data analytical procedures
8. Reporting and communication techniques (e.g., facilitation, negotiation, conflict resolution, audit report structure, issue writing, management summary, result verification)
9. Audit quality assurance (QA) systems and frameworks
10. Various types of audits (e.g., internal, external, financial) and methods for assessing and placing reliance on the work of other auditors or control entities


Financial Loss – Known vs Unknown
3. Case study of Fraud Investigation Audit
~$200B Known annually
~$4T est. annually
= 5% of Global GDP going to fraudsters – not accounting for losses due to human error

3. How can Data Analytics be used in Forensic Audit?

Establish	Establish Facts
Explore	Explore Hunches
Draw	Draw Inferences
Obtain	Obtain Insights
Confirm	Confirm Hindsight
Validate	Validate Foresight

4. How to enhance competencies and skill sets for AI in AI?



4 Demo of some Top Functions of Data Analytics

Tools and Skills:
Of Yesterday or Tomorrow?

We can't do today's job with yesterday's tools and still be in business tomorrow

We can't do today's work with yesterday's skills and tools and expect to remain employed tomorrow

HI/AI and Data Analytics working together

Auditors	**Humans can supply the general intelligence and whatever other skills machines don't have.**
Technology	**Machines can supply the vast information, computational power and other specialized capabilities that people don't have.**
Data Analytics	**Use Data Analytics Tools & Techniques by integrating it with assurance process throughout its life cycle.**

Key Thoughts to Takeaway

Impact of Digital Transformation will continue to accelerate

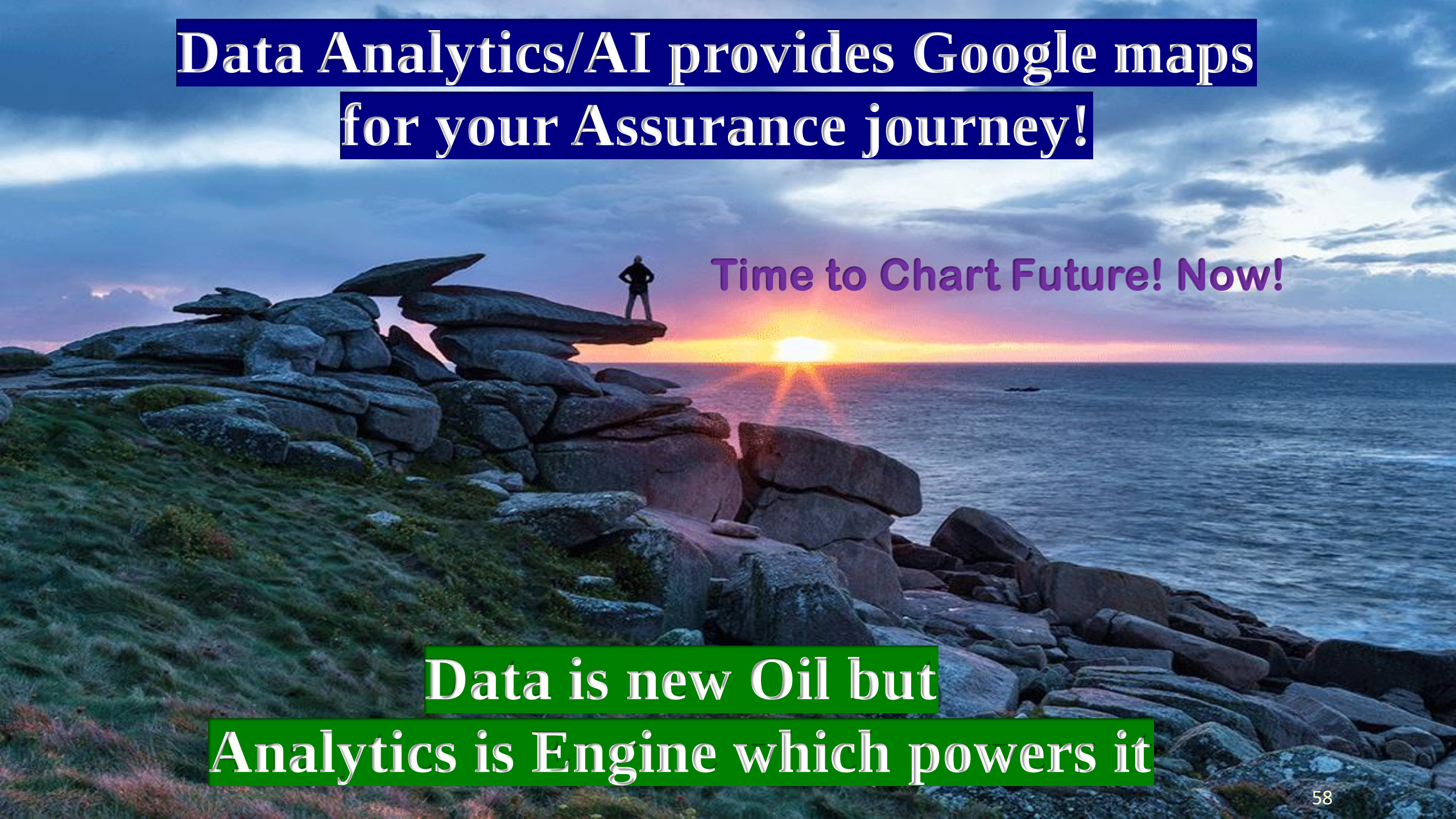
Data Analytics & AI are rapidly & dynamically evolving

Complementing HI with DA creates great opportunities

Professionals with right skill-sets are differentiator

CA have domain knowledge/expertise. Complement DA skills to remain updated & relevant

Data Analytics/AI provides Google maps for your Assurance journey!



Data is new Oil but
Analytics is Engine which powers it

THE AUDITOR OF DIGITAL AGE

- **Versatile:**
  - Maintaining a big-picture, proactive perspective on the entire organization-Value
- **Involved:**
  - Performing roles critical to organizational success-Integrated
- **Technologic:**
  - Using technological skills to mitigate risks, improve processes, and upgrade efficiencies
- **Advisory:**
  - Providing assurance, educational and consulting services
- **Leader:**
  - **Taking a leadership role in AI, DA, ABCD of Technology, Risk Management to Enhancing Organizational Effectiveness and provide Value Addition.**

Soch Badloo Thoo!
Taqdeer Bhi Badlegi!

When Machines Learn: How to run human lives
Humans have to Learn: How to run Machines!

Questions?

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Thank You!