

DATA ANALYTICS

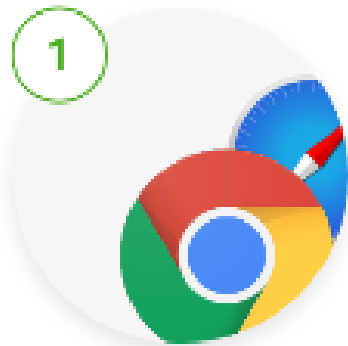
YOUR WAY OUT OF THE SHARK TANK

Grazielly Costa, Manager of Internal Audit, Calpine
Jay Qatato, CIA, CCSA, Director of Internal Audit, Calpine

PARTICIPATION: POLLING INFORMATION

WWW.SLIDO.COM: CODE – L595

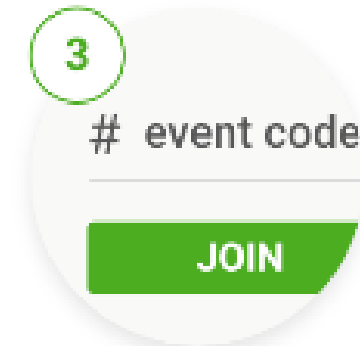
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“Data analytics and risk assessment capabilities are top focus areas for Audit teams next year, according to our recent survey of 100+ Audit leaders. These issues are also some of the most challenging to address.” CEB

Have you applied Data Analytics in your audits?

0 0 0

Not yet, considering if valuable

0%

Yes, just in few projects

0%

Yes, whenever applicable

0%

Yes, in every project

0%

PARTICIPATION: POLLING QUESTION

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AGENDA

Setting the stage	<ul style="list-style-type: none">• The relevance of Data Analysis in Internal Audit• Influence of Data Analysis in Internal Audit's current environment• The biggest challenges to Data Analytics for Internal Audit
Resources Assessment	<ul style="list-style-type: none">• Available tools used to create insightful Data Analytics• Appropriate resources and skills to produce valued added Data Analytics
Successful Stories	<ul style="list-style-type: none">• The benefit and return from Data Analytics• Efficient delivery approaches of Data Analysis• Insightful analytics and delivery formats
Dashboards Live Demo	
Question and Answers	

SETTING THE STAGE



**THE RELEVANCE
OF DATA ANALYSIS
IN
INTERNAL AUDIT**

SHARK TANK with out Data Analytics

THE RELEVANCE OF DATA ANALYSIS IN INTERNAL AUDIT (CONTINUE)

According to CEB's survey, this year's audit plan hot spots are:

Data Privacy

Cloud Computing

Strategic Workforce Planning

Information Security Behaviors

Digitization Preparedness

Corporate Culture

Business Continuity and Disaster Recovery

Fraud

Shareholder Intervention

Growth and Innovation Pressures

Geopolitical Volatility

Revenue Recognition

THE RELEVANCE OF DATA ANALYSIS IN INTERNAL AUDIT (CONTINUE): DATA IS THE NEW CURRENCY

“Data is a precious thing
and will last longer than
the systems themselves.”

Tim Berners-Lee

(Inventor of the World Wide
Web)

“It is one thing to analyze
data and put it together,
and is another to apply it.”

Tom Brady

(2017 MVP New England Patriots
Quarterback)

“What gets
measured,
gets managed.”

Peter Drucker

(described as "the founder of
modern management")

“Errors using
inadequate data are
much less than those
using no data at all.”

Charles Babbage,

(Mathematician, first
computer scientist with the
idea of the programmable
computer)

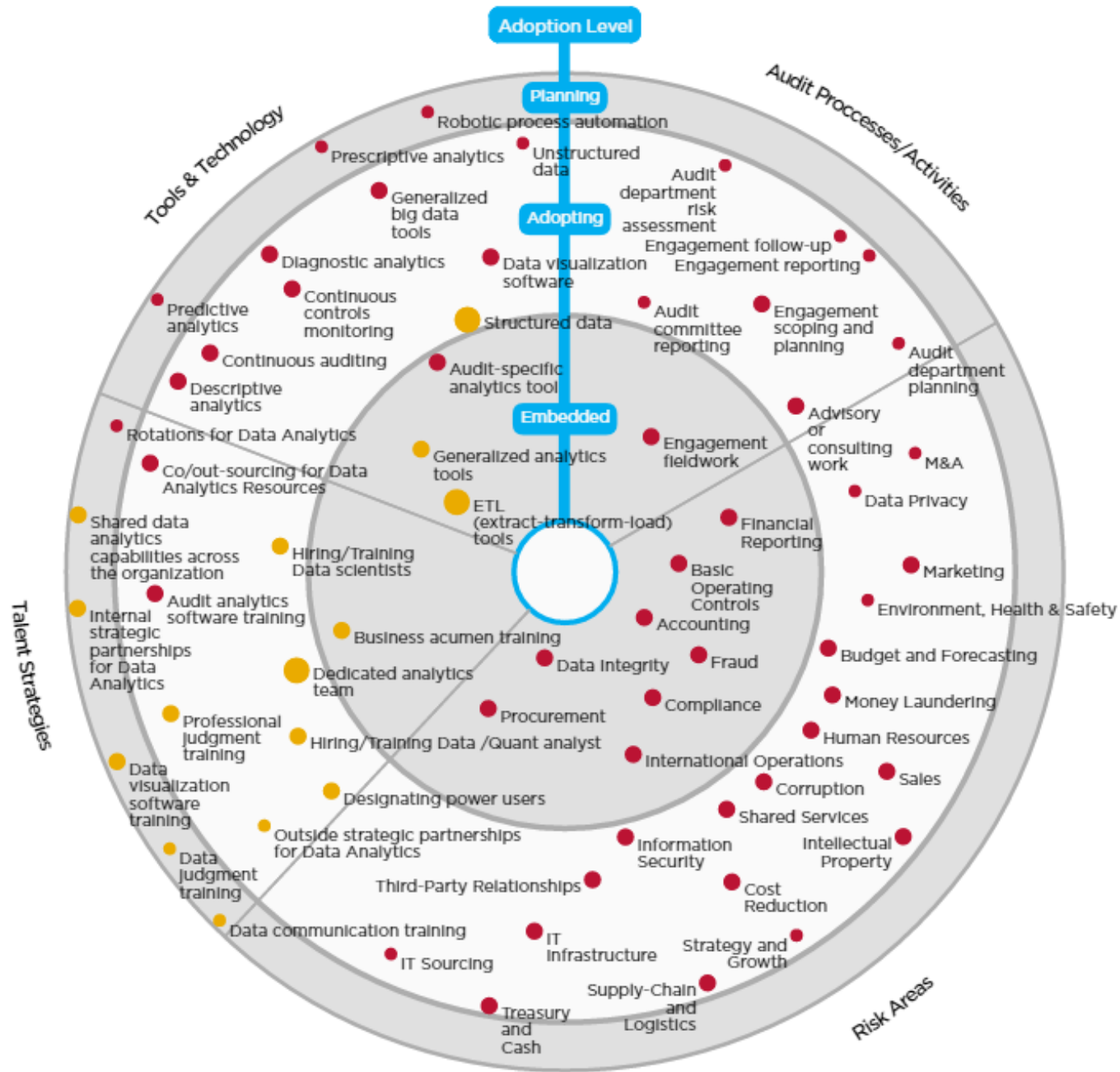
“If we have data, let's
look at data. If all we
have are opinions,
let's go with mine.”

Jim Barksdale

(Former Netscape CEO)

INFLUENCE OF DATA ANALYSIS IN INTERNAL AUDIT'S CURRENT ENVIRONMENT (CONTINUE)

- **Tools & Technology:**
 - How often is this tool or technique used in your audit activities?
 - **Audit Processes/Activities:**
 - How consistently is analytics used in this activity?
 - **Risk Areas:**
 - How much of your Audit work in this risk area uses data analytics?
 - **Talent Strategy:**
 - How much do you plan to invest in this talent-related tactic to support data analytics compared to other types of investments?
-



INFLUENCE OF DATA ANALYSIS IN INTERNAL AUDIT'S CURRENT ENVIRONMENT (CONTINUE)

Source: CEB (2017)

Population: over 200 audit leads

INFLUENCE OF DATA ANALYSIS IN INTERNAL AUDIT'S CURRENT ENVIRONMENT (CONTINUE)

- [CEB Library](#) – Audit Data Analytics in Practice
- [CEB White Paper](#) – Research Summary: Advancing Audit's Use of Data Analytics

“Only 16% of Audit departments have achieved embedded use of data analytics—meaning they use it in all phases of applicable audit engagements. Yet data analytics’ effectiveness roughly doubles when it is embedded. Thus, to achieve Audit’s goals, deliver on its mandate, and maximize its impact on the business, Audit must embed data analytics in its methodology and reinforce the methodology changes through the right guidance and signals.”

INFLUENCE OF DATA ANALYSIS IN INTERNAL AUDIT'S CURRENT ENVIRONMENT (CONTINUE)

- **PARTICIPATION:**

- **Polling Question**

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CAN YOU BE A "TRUSTED ADVISOR" WITHOUT DATA? 000

Yes, I'm doing just fine without data.

0%

No, I need to leverage data to provide meaningful insight.

0%

Maybe, it will depend on Company's culture and data appetite.

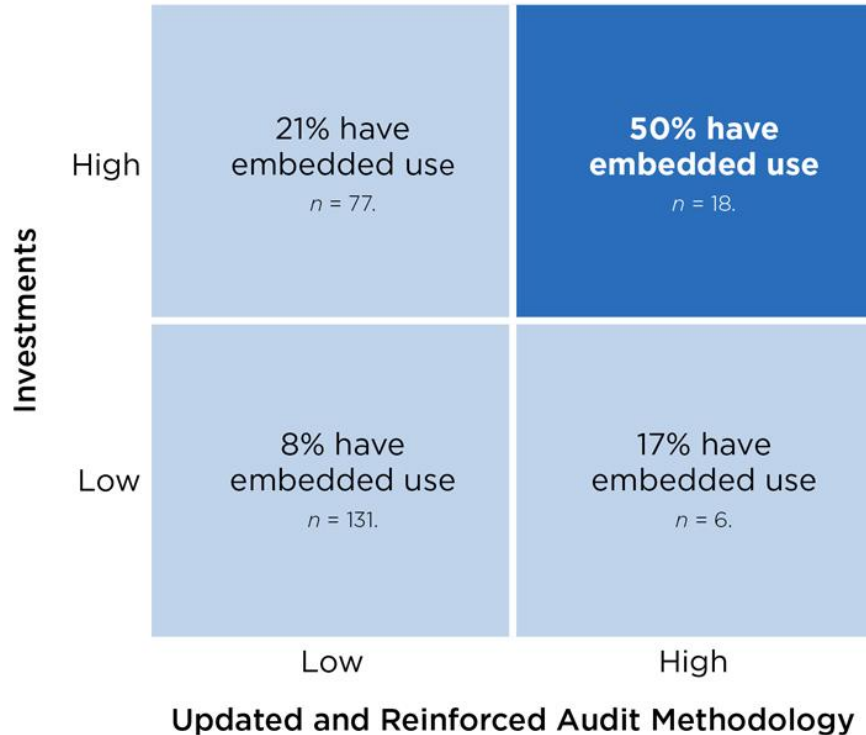
0%

I have no idea.

0%

INFLUENCE OF DATA ANALYSIS IN INTERNAL AUDIT'S CURRENT ENVIRONMENT (CONTINUE)

By Investments and Methodology Changes^a



n = 232.

Source: CEB 2017 Data Analytics in Audit Benchmark.

^aTypes of investments include tools, training and talent. High investment = fully implemented five or more items; low investment = fully implemented four or fewer items.

ADR173343

- The key to successfully embedding data analytics in Audit and achieving Audit's goals requires:
 - Changing and reinforcing the Audit methodology to make it natural for auditors to adopt data analytics throughout audit processes, and
 - Preventing auditors from reverting to old ways of working.

THE BIGGEST CHALLENGES TO DATA ANALYTICS FOR INTERNAL AUDIT

Commitment
to Change

Skills &
Experience

Data Volume
and
Reliability

Technology
Dependency

Resources
Constraints

THE BIGGEST CHALLENGES TO DATA ANALYTICS FOR INTERNAL AUDIT (CONTINUE)

Data Analysis Brave obstacles – CFO.com	
Obstacles	Experienced in Implementation
Overcoming resistance/Corporate culture	Yes – Very common, Requires persistence.
Individual/Team Technical Skills and Tools	Yes
Trust in the Data	Yes – Requires diligence and testing.
Technology and Systems: <ul style="list-style-type: none"> • Finance vs Operational Data • Structure and delivery of information • Multiple Systems into a consolidated view • Data Warehouse 	Yes – Not a ‘one stop shop’ for all data
Agreement on Priorities and Measurements	Yes – Look for small wins. (i.e. PCard Metrics)
Time Constraints – Everyone has a ‘day’ job	Yes – Lunch and Learns, Use of DA in projects, Extra time investment, as needed

“While the interests in analytics and resulting benefits are increasing by the day, some businesses are challenged by the complexity and confusion that analytics can generate.”

Narendra Mulani, Harvard Business Review

What is the biggest challenge to apply Data Analytics in your Audit Projects?

000

Data reliability and availability

0%

Lack of resources

0%

Lack of team members knowledge and experience

0%

Cost of business intelligence and analytics tools

0%

Dependency on IT or other departments

0%

THE BIGGEST CHALLENGES TO DATA ANALYTICS FOR INTERNAL AUDIT (CONTINUE)

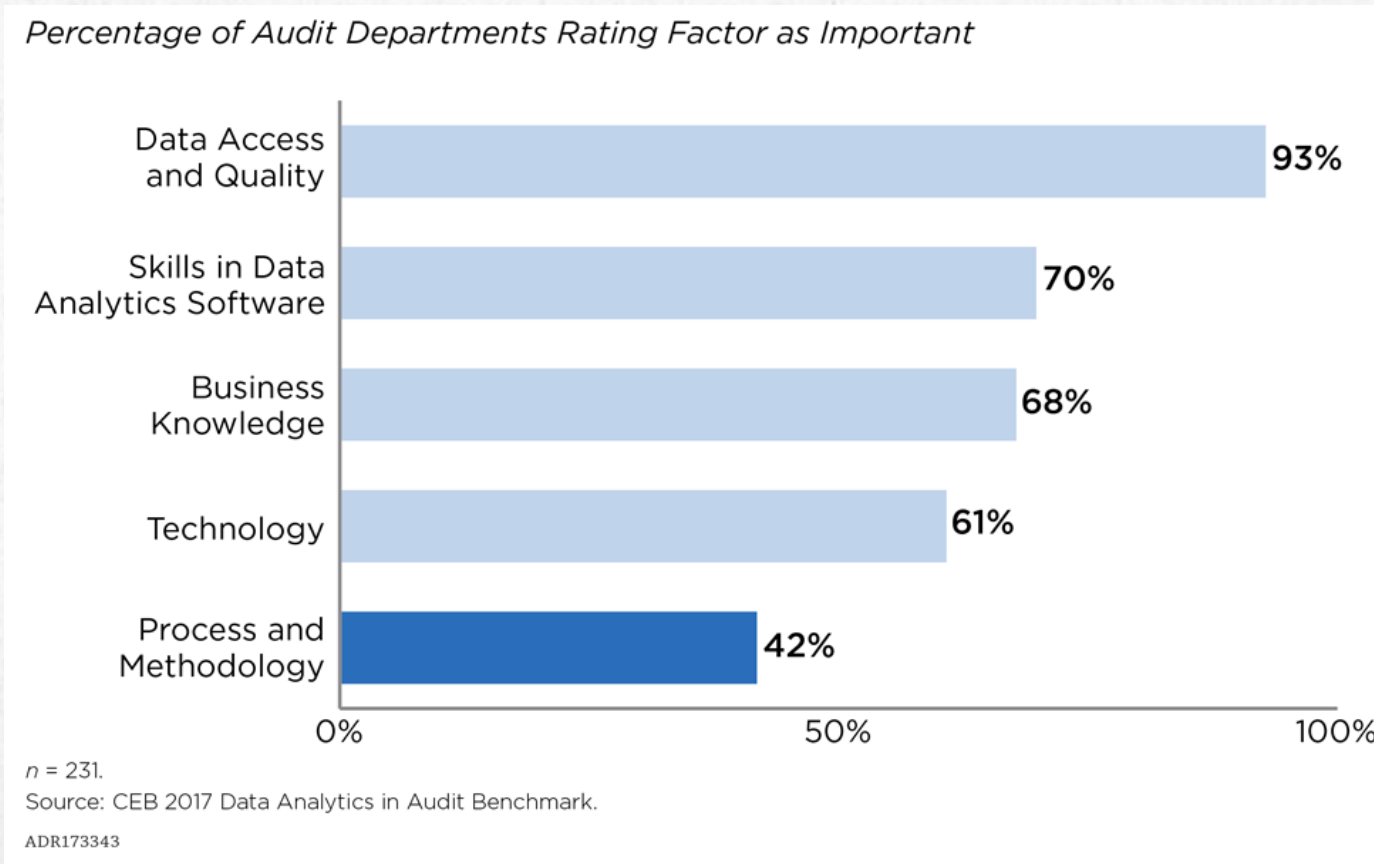
PARTICIPATION: Polling Question

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THE BIGGEST CHALLENGES TO DATA ANALYTICS FOR INTERNAL AUDIT (CONTINUE)

- The factors CAEs rated as most important for achieving their desired data analytics outcomes:



RESOURCES ASSESSMENT

AVAILABLE TOOLS USED TO CREATE INSIGHTFUL DATA ANALYTICS

- Is this your tool box?



- Is this your tool box?



AVAILABLE TOOLS USED TO CREATE INSIGHTFUL DATA ANALYTICS (CONTINUE)



Power Pivot Vs. Power Query

User Power Query if:

- Data is difficult to access
- Manual process
- Data quality issues
- Discover and document a process

User Power Pivot if:

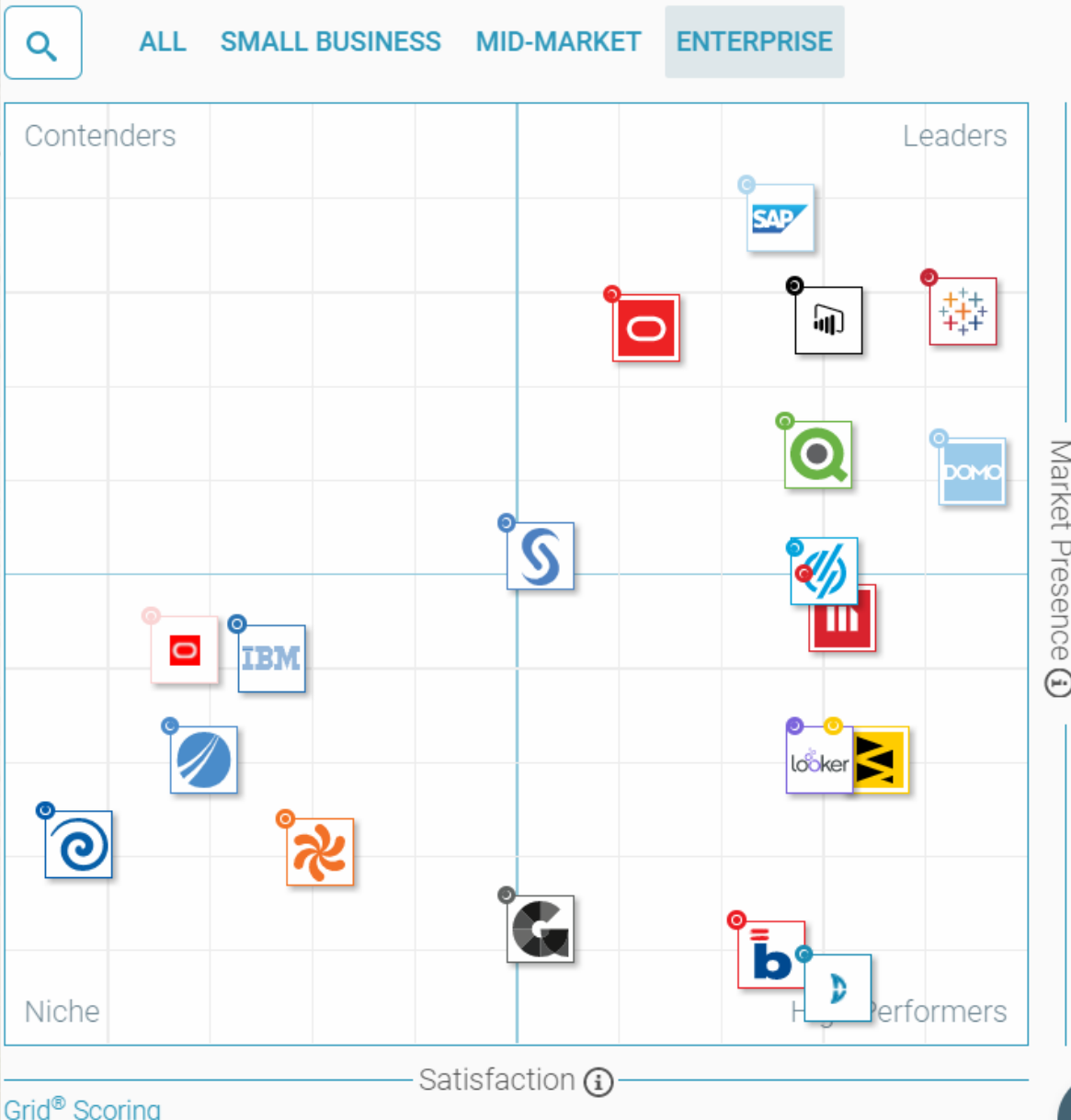
- Have clean and automated data
- Need an amazing analysis tool
- Need to analyze big data sizes

User Power BI if:

- Engage others with interactive reports and dashboards
- Answer thousands of questions rather than one



G2 Crowd Grid[®] for Business Intelligence Platforms



**AVAILABLE TOOLS
USED TO CREATE
INSIGHTFUL DATA
ANALYTICS
(CONTINUE)**

APPROPRIATE RESOURCES AND SKILLS TO PRODUCE VALUED ADDED DATA ANALYTICS

- Well-structured data analytics program that:
 - test controls,
 - identify anomalies,
 - predict potential issues, and
 - automate repeatable processes;
- Ability to interpret and analyze data;
- Determine the kinds of audit engagements that are well-suited for data analytics.



60% of audit departments have or plan to create a dedicated data analytics team!

APPROPRIATE RESOURCES AND SKILLS TO PRODUCE VALUED ADDED DATA ANALYTICS (CONTINUE)

**Sense of
wonder**

**A certain
quantitative
knack**

Persistence

**Technical
skills**

SUCCESSFUL STORIES

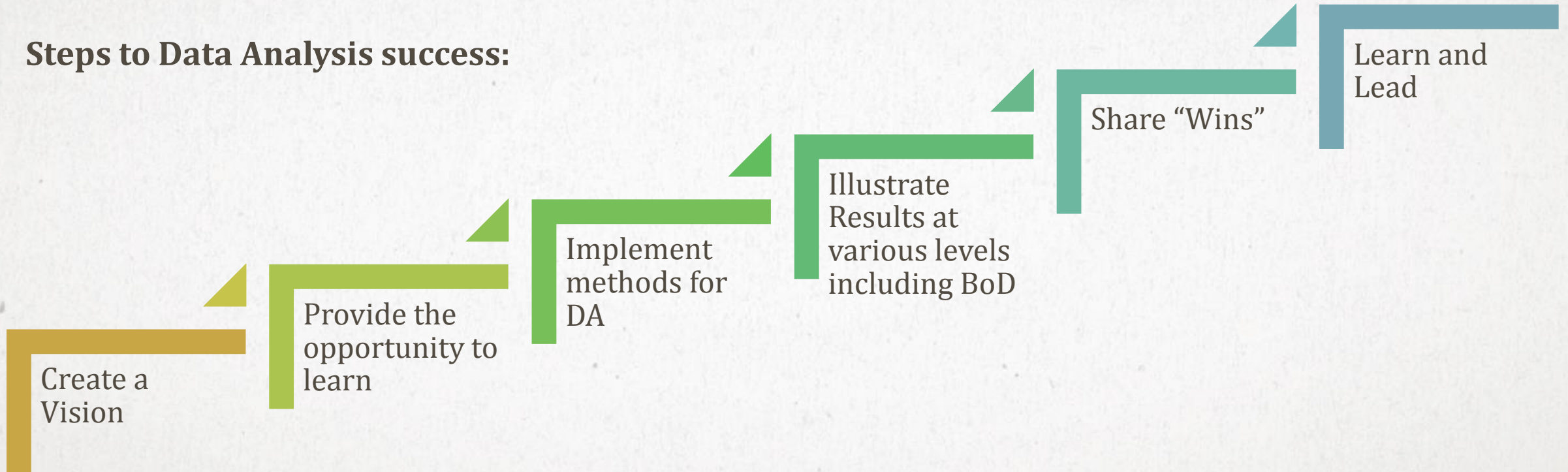
SUCCESSFUL STORIES

- Look only for data that affect your organization's key metrics
- Present data so that everyone can grasp the insights
- Return to the data with new questions

Data gives you the *what*, but humans know the *why*.

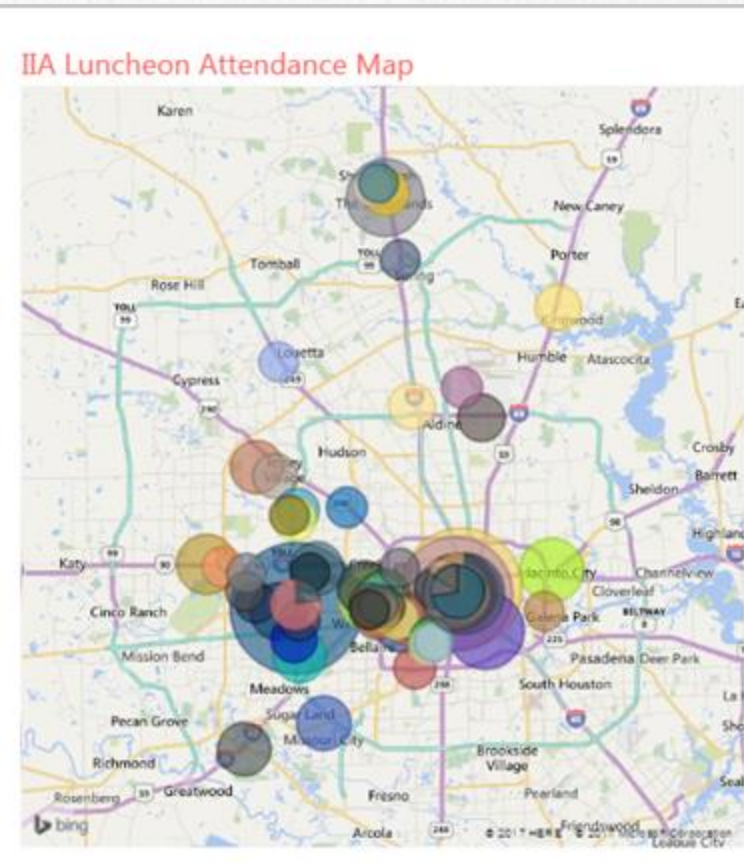
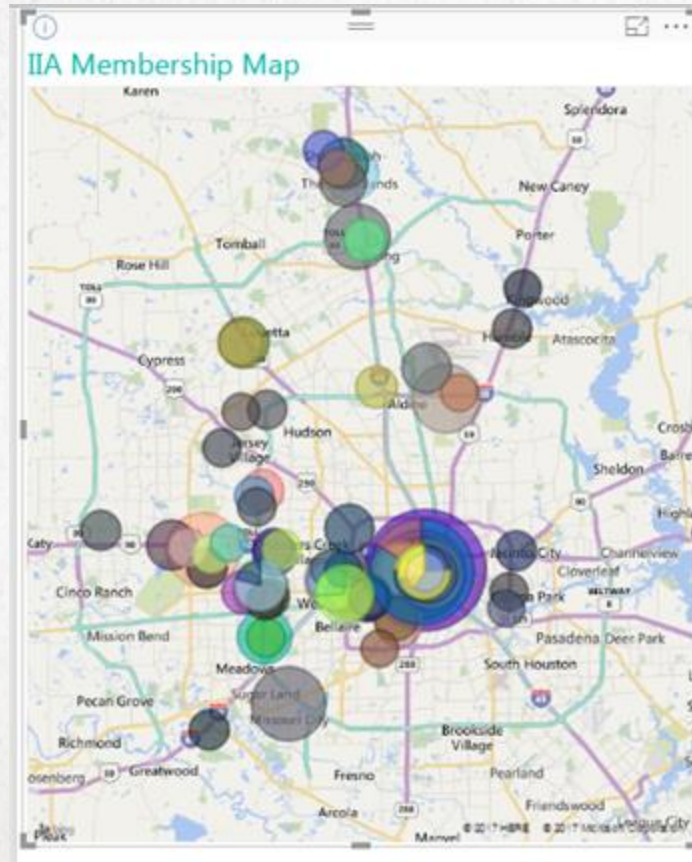
SUCCESSFUL STORIES (CONTINUE)

Steps to Data Analysis success:



SUCCESS STORIES (CONTINUE)

- Does Houston IIA use data analytics to help officers make decisions when planning events?



THE BENEFIT AND RETURN FROM DATA ANALYTICS



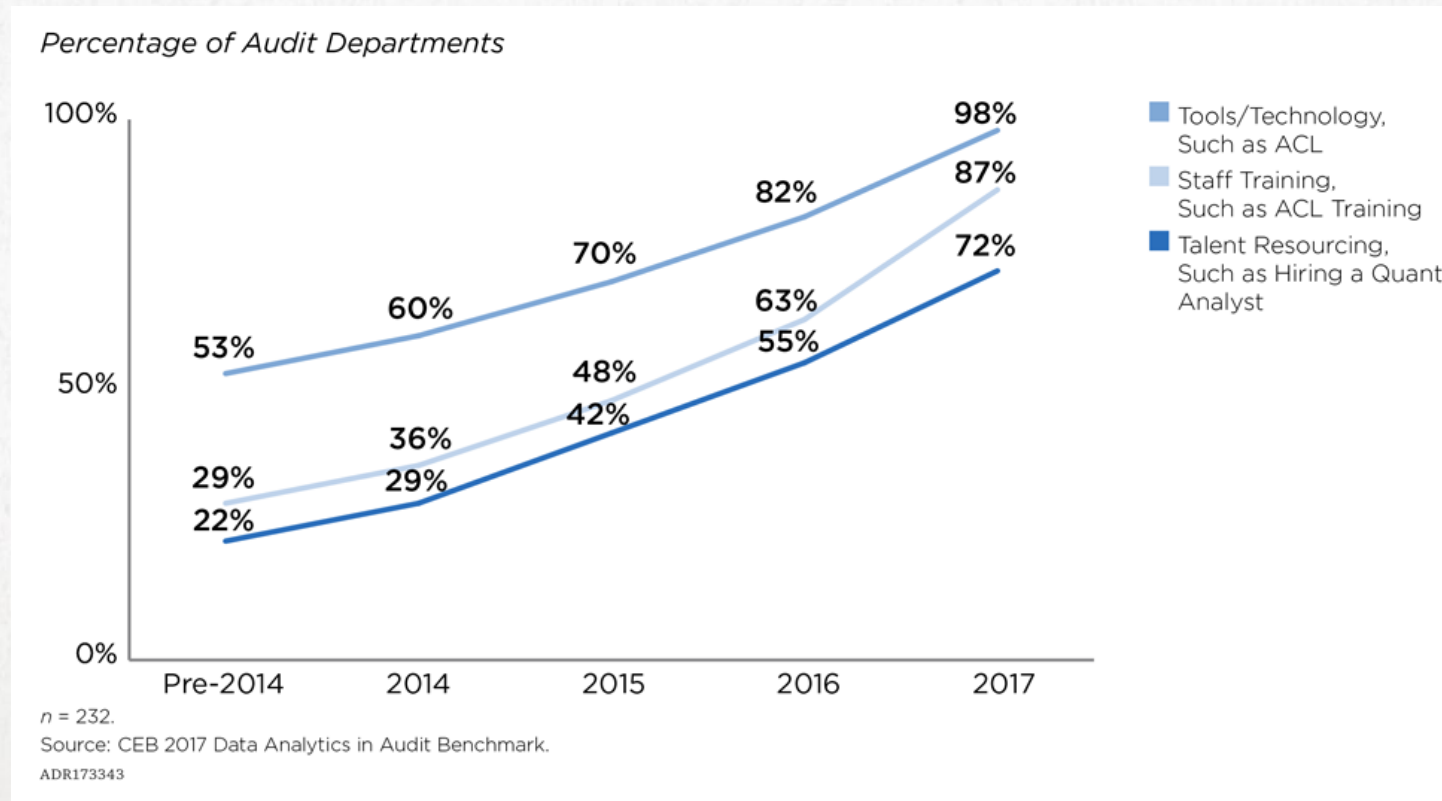
THE BENEFIT AND RETURN FROM DATA ANALYTICS (CONTINUE)

Risk Level The Risk Value to the Whole Organization	High	Tread Lightly Description Strategic-level processes involving little electronic data exchange Goal Consider incorporating manual information feeds to complement automated control monitoring activities. Examples <ul style="list-style-type: none"> ▪ Acquisition Integration ▪ Strategic Planning ▪ New system development 	High Return Description Data rich processes critical to preventing fraud, ensuring accurate financial statements, and complying with regulatory requirements Goal Automate control monitoring of data to quickly identify and resolve control breakdowns, potential fraud, and regulatory infractions. Use data analysis to identify trends in risk information that is highly relevant to current business objectives. Examples <ul style="list-style-type: none"> ▪ Account Reconciliations ▪ IT Security ▪ Account Management 	Focusing your efforts on high-risk areas with high information quality achieves high reward.	
	Low	Avoid Description Manual processes that represent a relatively low risk to the firm Goal Avoid automated controls monitoring in favor of traditional audit methodology. Focus on uncovering new insights in low risk areas. Examples <ul style="list-style-type: none"> ▪ Corporate Communications ▪ Fixed Asset Spending ▪ Waste Management 	Easy Win Description High-volume and high-transaction processes that do not represent critical company risks Goal Focus on relieving auditors from lower value-add areas and redirecting efforts toward higher-risk areas that require more human judgment and analysis. Examples <ul style="list-style-type: none"> ▪ Cash ▪ Payroll Processing ▪ Travel and Entertainment Compliance ▪ Procurement 	If you find yourself struggling to apply data analytics or failing to get permission, focusing in low-risk, easily achieved tasks can help build momentum.	
		Low		High	
			Information Quality The Quality of Data and the Ability to Automate Analytic Processes		

- Making the most of your investment;
- Update your processes and methodology ;
- Facilitate its use across your team; and
- Integrate analytics considerations into the audit planning and risk assessment processes.

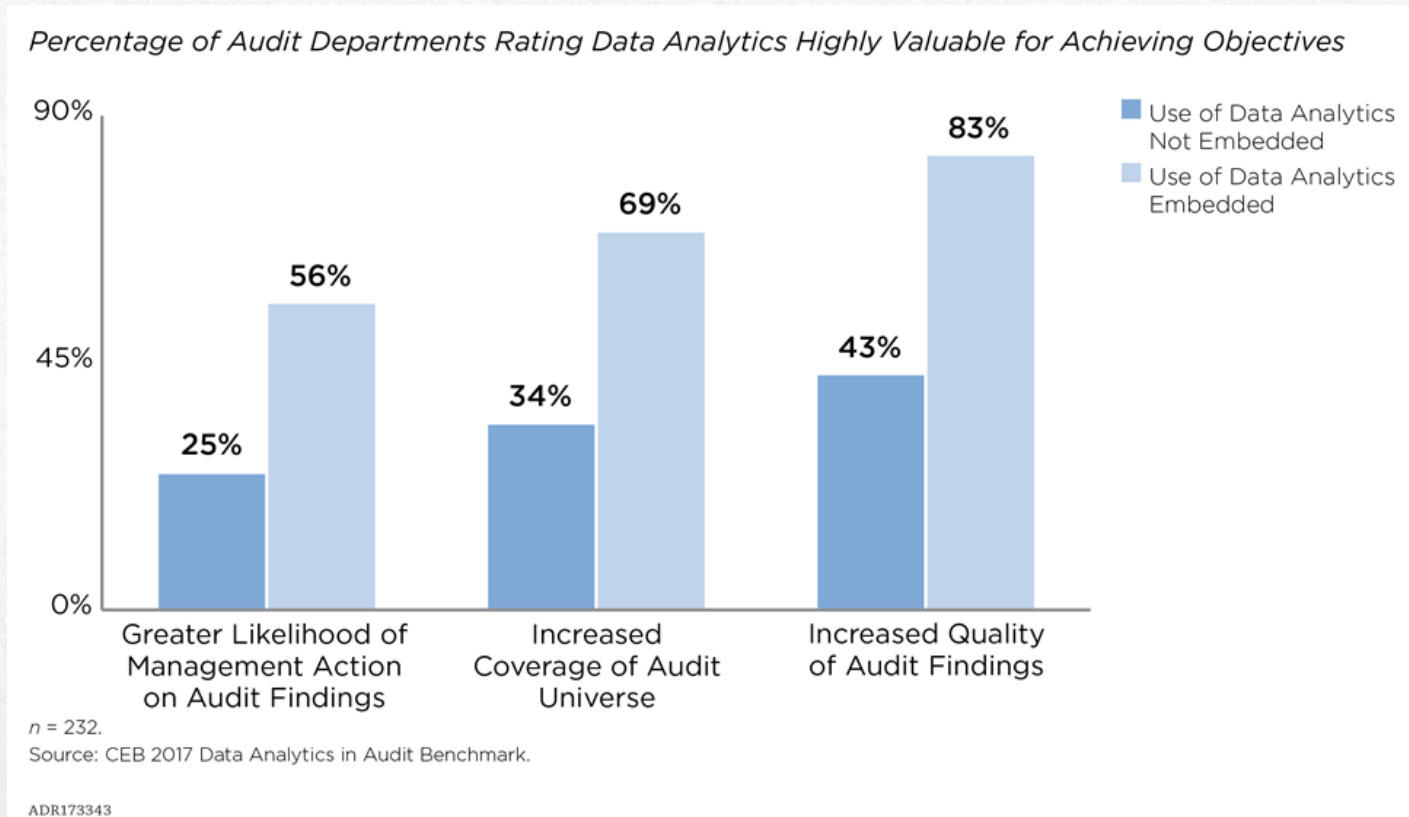
THE BENEFIT AND RETURN FROM DATA ANALYTICS (CONTINUE)

Audit departments are increasing investments in data analytics:



THE BENEFIT AND RETURN FROM DATA ANALYTICS (CONTINUE)

When data analytics use is embedded in much or all of Audit's activities:



EFFICIENT DELIVERY APPROACHES OF DATA ANALYSIS

Interview auditors, stakeholders, and other business leaders.

Clarify goals for communicating data visually.

Different audiences may require different kinds of information/visualizations.

Limit visual elements only to what is necessary.

Excluded information that could be confusing or distracting to the viewer.

Make this information impactful and easy to consume.

EFFICIENT DELIVERY APPROACHES OF DATA ANALYSIS (CONTINUE)

**Effective
visualizations**

**Socialize
information**

**Support-
telling a story**

**Only
necessary
information**

EFFICIENT DELIVERY APPROACHES OF DATA ANALYSIS (CONTINUE)

- Data visualization offers four benefits to Audit:

Socialization

Engagement

Comprehension

“Stickiness”

- Match Your Data Visualization Focus to Your Communication Goals:

Audience

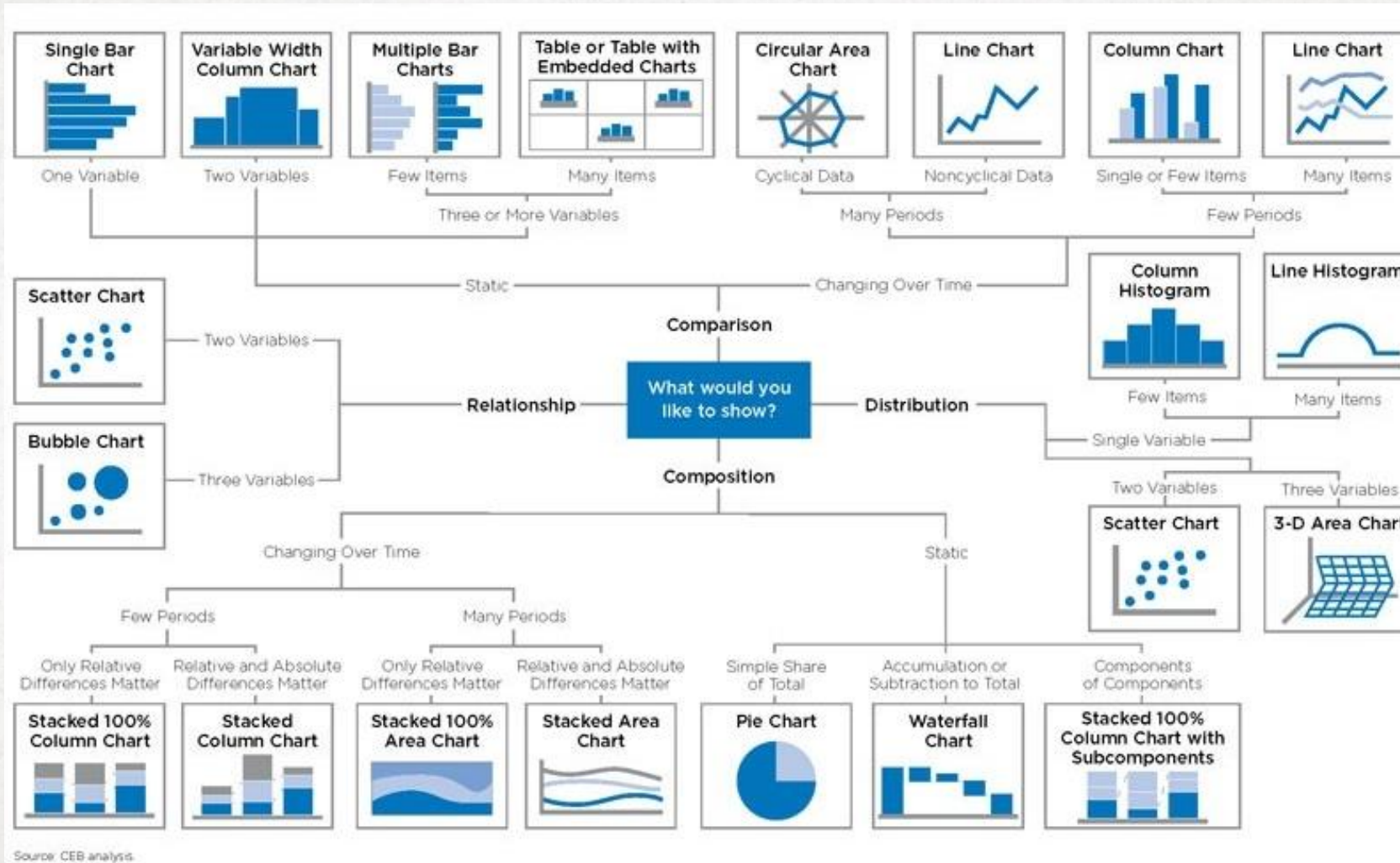
Type and Complexity of Data

Insight or Evidence

- Choose the Right Chart

Simplicity is Key

INSIGHTFUL ANALYTICS AND DELIVERY FORMATS



DASHBOARDS LIVE DEMO

- **IIA Membership Portfolio by Company Location**
 - **Journal Entries Analysis – PeopleSoft, ACL, Excel, Power BI**
 - **Disbursements Dashboard – PeopleSoft, Excel, Power BI**
 - PCard Analysis – Excel, Power BI
 - Risk Assessment – Excel, Power BI
 - Inventory analysis – Maximo, Excel, Power BI
 - SOX Audit Plan – Excel, Power BI
 - Audit Recommendations – TeamMate, Excel, Power BI
-

DEMO 1

Journal Entries

DEMO 2

Disbursements



QUESTIONS AND ANSWERS

THANK YOU
