



# Current Uses and Trends in ACL and Data Mining

Weaver and Tidwell, L.L.P.

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Discuss recent trends in ACL and Data Mining, including continuous monitoring, exception reporting to the business, streamlining SOX procedures, and the concept of Big Data

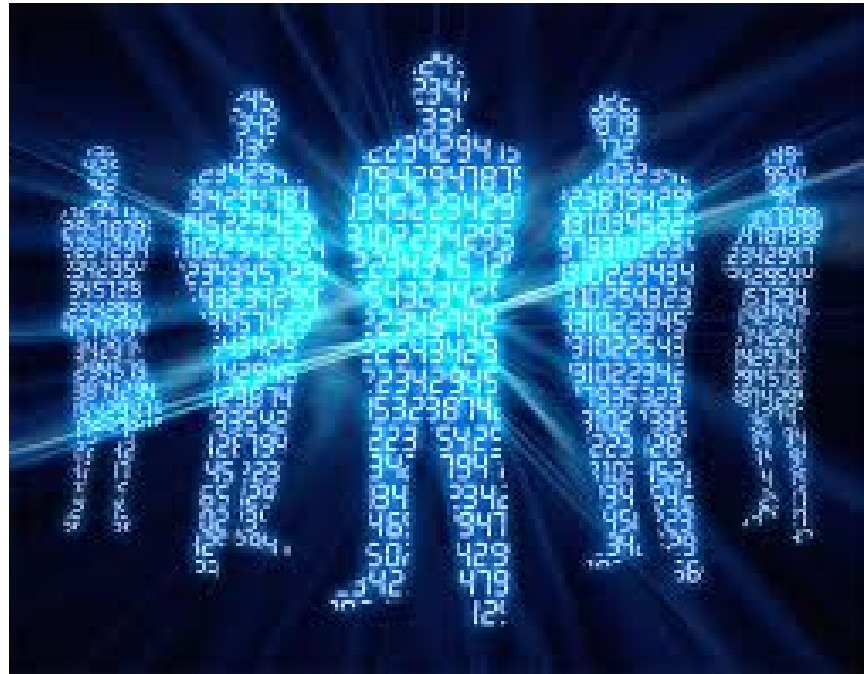




# Agenda

- Introduction
- Background
- Continuous Monitoring
- Exception Reporting
- Streamlining SOX Procedures
- Big Data
- Questions

# Introduction





# Who We Are Today

- Founded in 1950 in Fort Worth
- Over 500 people in 7 offices across Texas
- Largest independent firm in Texas and the Southwest, a Top 50 accounting firm nationally
- Assurance Services consists of over 250 personnel in all locations



## THE 2012 IPA 100 RANKED BY U.S. NET REVENUE



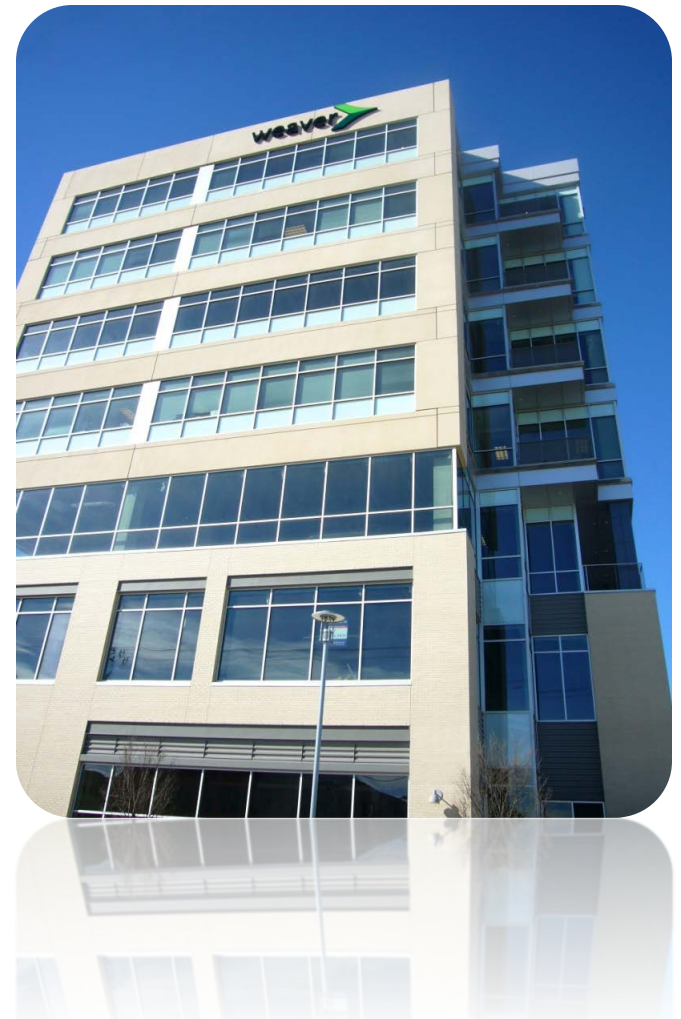
RANK		FIRM / HEADQUARTERS	MP / CEO	OFFICES	FYE	NET REVENUE	% CHG.
'12	'11						
36	70	Warren Averett LLC <sup>4</sup> / Birmingham, Ala.	James W. Cunningham	13	12/11	\$80,987,475	0.3
37	37	MBAF Certified Public Accountants LLP <sup>5</sup> / Miami	Antonio L. Argiz	9	12/11	\$80,200,000	0.0
38	36	Kearney & Company <sup>®</sup> / Alexandria, Va.	Ed Kearney	2	12/11	\$79,780,000	10.0
39	38	Weaver / Fort Worth, Texas	Tommy D. Lawler	7	5/12	\$73,568,220	9.3
40	44	O'Connor Davies LLP <sup>6</sup> / Harrison, N.Y.	Kevin J. Keane	7	12/11	\$72,500,000	14.0
41	40	Novogradac & Company LLP / San Francisco	Michael J. Novogradac	13	12/11	\$72,060,204	10.0
42	39	Burr Pilger Mayer Inc. / San Francisco	Stephen D. Mayer	6	12/11	\$70,693,718	6.0

Source: INSIDE Public Accounting [www.insidepublicaccounting.com](http://www.insidepublicaccounting.com)



RANK		Firm	Headquarters	Chief executive	Year end	REVENUE		Offices	PERSONNEL		FEE SPLIT (in percent)							
'12	'11					\$ mn.	% chg.		Partners	% chg.	Professionals	% chg.	Total emp.	% chg.	A&A	Tax	MAS	Other
42	43	Burr, Pilger & Mayer	San Francisco	Stephen Mayer	Dec	70.20	9.04	7	57	7.55	264	2.72	411	5.38	36	43	13	8
43	44	Friedman	New York City	Bruce Madrick	Dec	69.20	7.79	6	53	15.22	241	7.59	337	10.13	63	35	2	0
44	40	Holthouse Carlin & Van Trigt	W. Los Angeles, Calif.	Philip Holthouse	Dec	69.00	6.15	7	27	-3.57	187	8.09	274	5.79	20	71	0	9
45	39	Weaver	Fort Worth, Texas	Tommy Lawler	May	66.40	1.68	6	35	-7.89	301	-4.44	399	-9.93	40	47	5	8
46	45	Schenck	Appleton, Wis.	William Goodman	Sept	65.45	3.14	9	57	-3.39	317	-3.65	466	-2.92	38	38	19	5
47	48	Sikich	Naperville, Ill.	James Sikich	Dec	64.50	16.22	7	62	67.57	271	-4.58	373	3.90	40	15	40	5
48	52	RubinBrown	St. Louis	John Herber	May	61.72	13.73	3	28	16.67	280	13.82	362	14.92	50	35	15	0

- Services
  - Assurance
    - Audit Practice
    - Advisory Services
      - Risk Advisory Services
      - Financial Institutions Compliance
      - IT Advisory Services
      - Transaction Advisory Services
      - Forensics
      - Energy Compliance Services
  - Tax and Business Services
    - Tax Consulting
    - Financial Statement Preparation
- Industry Practices
  - Technology
  - Energy
  - Manufacturing
  - Public Sector
  - Financial Services
  - Construction



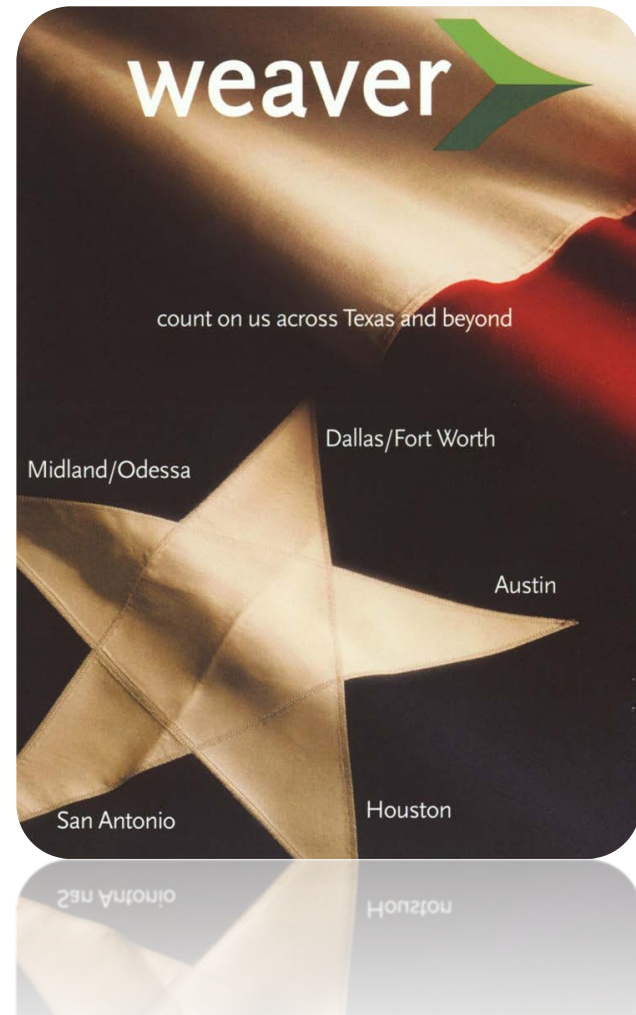


# Firm of Texas

In 2004, Weaver set out to become, “the firm of Texas”. Through a combination of strong organic growth and strategic mergers in multiple markets, Weaver has experienced significant revenue growth, despite challenging market conditions.

As we move into the next decade, our growth strategy will continue to evolve by deepening our market share in our home markets and looking for additional synergistic markets for continued office expansion.

*In just 8 years, Weaver has grown from under \$18 million in revenues, 150 employees and two offices to nearly \$75 million in revenue, over 500 employees and 7 offices across the State.*







# Baker Tilly International



As a member of Baker Tilly International, the world's 8th largest accounting firm network, we have the resources necessary to service our clients worldwide.

With 145 firms in 110 countries, the Baker Tilly connection provides clients with the assistance of local and regional accounting firms worldwide. A key benefit to our clients is the fact these services are provided by members of the local business community in each country, with people knowledgeable about the cultural, political and economic forces in the area, as well as the technical requirements of local tax law and professional accounting standards. Our partners attend conferences and visit locally with many of our Baker Tilly colleagues and can rely on their services to our clients.

## Baker Tilly International - Independent Member Firm Locations



North America	Latin America	Europe, Middle East and Africa		Asia Pacific
Bahamas	Argentina	Andorra	Israel	Australia
Belize	Bolivia	Armenia	Italy	Bangladesh
Bermuda	Brazil	Austria	Ivory Coast	Cambodia
British Virgin Islands	Chile	Azerbaijan	Jersey (Channel Islands)	China
Canada	Colombia	Bahrain	Jordan	Hong Kong
Cayman Islands	Dominican Republic	Belgium	Kenya	India
Netherlands Antilles	Ecuador	Bulgaria	Kuwait	Indonesia
Puerto Rico	Guatemala	Cameroon	Latvia	Japan
United States	Mexico	Croatia	Lebanon	Korea
	Panama	Cyprus	Liechtenstein	Macau
	Peru	Czech Republic	Lithuania	Malaysia
	Uruguay	Denmark	Luxembourg	Mauritius
	Venezuela	Egypt	Macedonia (FYR)	Mongolia
		Estonia	Madagascar	Nepal
		Finland	Malta	New Zealand
		France	Moldova	Pakistan
		Georgia	Morocco	Philippines
		Germany	The Netherlands	Seychelles
		Gibraltar	Nigeria	Singapore
		Greece	Norway	Sri Lanka
		Hungary	Oman	Taiwan
		Ireland	Poland	Thailand
		Isle of Man		Vietnam







- **Marlon Williams, CPA**
  - Partner, Assurance Services
  - Over 15 years of experience in public accounting in the manufacturing, wholesale/distribution, financial services and service industries and for closely-held businesses, nonprofit organizations, municipalities and independent school districts
  - Professional memberships include AICPA, the Texas Society of CPAs and the Texas ACL User Group
  - BBA in Accounting from Abilene Christian University



- **Reema Parappilly, CISA**
  - Senior Manager, IT Advisory Services at Weaver
  - IT regulatory compliance, SOC, IT audit, and process improvement consulting services
  - Over 7 years experience in IT auditing and consulting (KPMG, Weaver)
  - BBA in Finance/MIS & MS in Information Systems Technology from The George Washington University

# Background

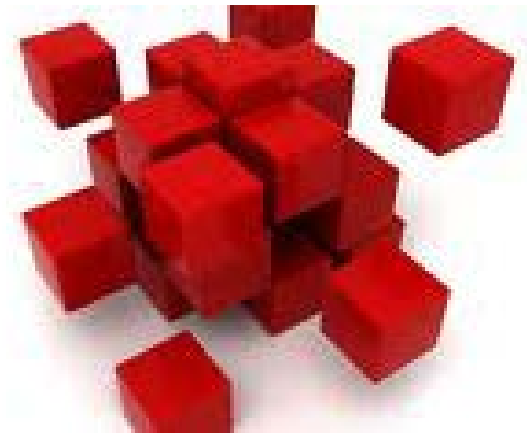


- **Data Mining Defined**

Wikipedia definition of data mining is the automatic or semi-automatic analysis of large quantities of data to extract previously unknown interesting patterns such as groups of data records ([cluster analysis](#)), unusual records ([anomaly detection](#)) and dependencies ([association rule mining](#))

- **Marlon Definition of Data Mining**

Utilizing the computer as an **assistant** to help you break down the **information** presented to you on a daily basis.



- Is the process of analyzing data from different perspectives and summarizing it into useful information
- **Criteria of Useful Information** - Information that can be used to increase revenue, cuts costs, or both
- Data mining allows users to analyze data from many different dimensions or angles, categorize it, and summarize the relationships identified such that **Useful Information** is provided
- This **Useful Information** must then be distributed to the “decision support system”



- Understanding your data is critical to the Data Mining process. If you don't know your data, you will not develop a successful program
- Key points to consider in designing a successful program:
  - Develop a plan
  - Identify the risks
  - Identify what you are looking for
  - Identify unusual patterns
  - Automate and Accelerate!





- ACL is a data mining tool
- Large user group
- Used by 80 % of the Fortune 500 companies
- Scripting language is easy to understand
- Marketable skill
- Historically used by Internal Audit
- Moving to include business users



- Major Trends in Data Mining that we will be discussing
  - Continuous Monitoring
  - Exception Reporting
  - Streamlining SOX
  - Big Data



# Continuous Monitoring



- **Computer Assisted Audit Technique (CAAT)**  
Scripts and functions of a data analysis program that automate the audit process
- **Continuous Monitoring Scripts (CMS)**  
Automated scripts run on a periodic basis which provide results to business owners and the Internal Audit function



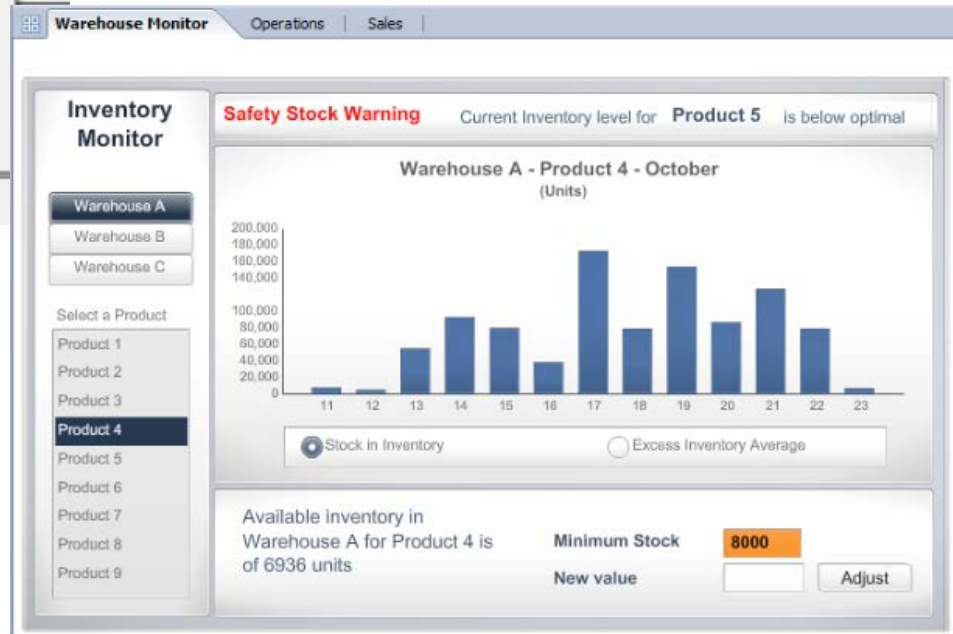
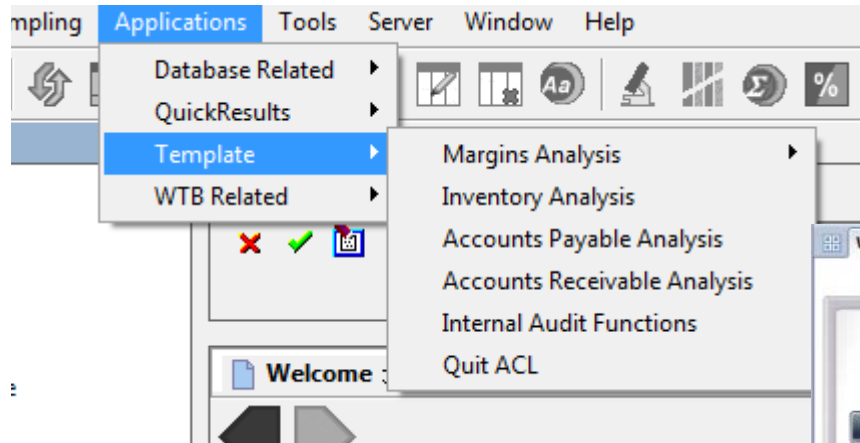
The real difference is the audience between CAAT and CMS  
(which includes identifying the appropriate fields/data to present to the different groups)

- CAATs can increase the efficiency of the Internal Audit function
  - Develop scripts to be run as needed for recurring test steps
  - Develop compliance scripts for automating tests of compliance requirements
  - Only need to review the parameters of the script reducing review time!





# CAAT Screenshots



**Allocated Vs Actual Hours** Page 1

6/7/2007

		1/2007	2/2007	3/2007	4/2007
<b>Total</b>	Allocated Hours	740.00	820.50	950.75	900.10
	Actual Hours	840.10	950.75	856.80	905.75
	Allocated Hours	740.00	820.50	950.75	900.10
	Actual Hours	840.10	950.15	856.80	905.75
Ashley Admin	Allocated Hours	100.00	110.00	105.50	95.50
	Actual Hours	106.00	126.00	116.00	105.00
Carlos Computer	Allocated Hours	120.50	110.50	105.75	110.75
	Actual Hours	110.75	100.70	120.50	130.50
Chris Fargo	Allocated Hours	90.00	100.00	95.00	95.00
	Actual Hours	100.50	90.50	105.50	95.50
Christine Ervine	Allocated Hours	105.75	100.75	110.75	120.75
	Actual Hours	120.75	115.55	105.55	115.75
David Tate	Allocated Hours	110.00	90.00	105.00	95.75

- Continuous Monitoring Scripts can be used to increase the effectiveness of business operations
- Payroll: Develop a script to track overtime and identify variances and abnormalities. Analyze by period to period comparisons, by department, and if within acceptable ranges. **This puts money back in the business' pocket!**



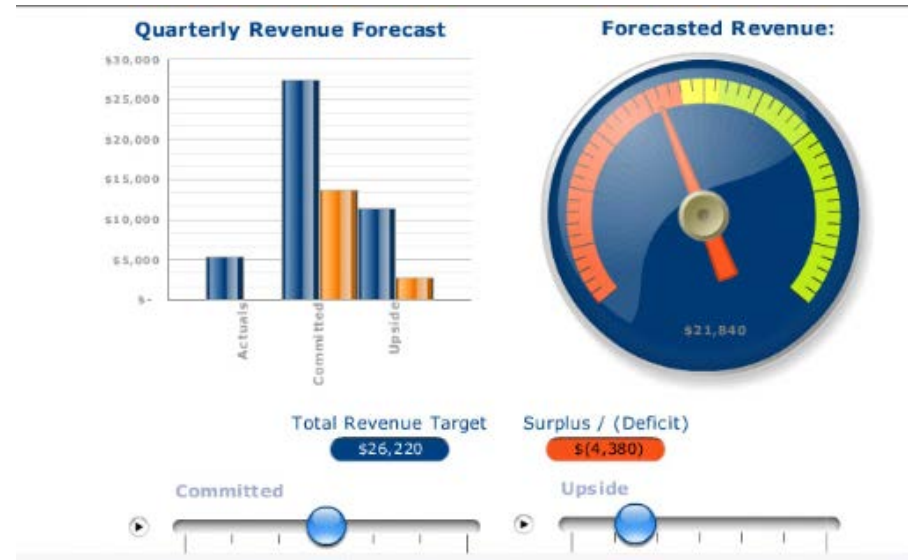




# CMS - Owner Reports



ACL can leverage Crystal Reports to present the **Useful Information** in the most effective manner for the business



- Considerations
  - Piloting CMS with an interested user group
  - Getting the business owners on board
  - Review and response time on questionable items
  - Data quality issues – lose faith and buy in regarding the initiative
  - How often do you send information – weekly, monthly, quarterly
  - Once you have buy in, how do you manage requests



# Exception Reporting

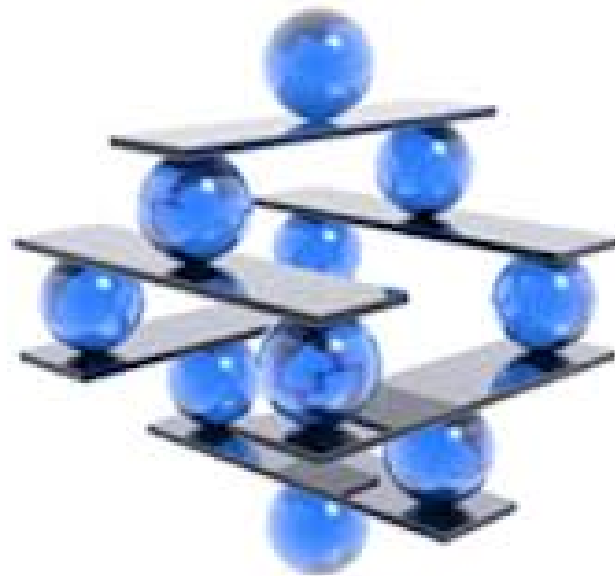


- Exception Reporting refines the Continuous Monitoring process and provides the outliers to the business owners for review
  - Can be through
    - Fully automated continuous monitoring scripts (easier to achieve)
    - Procedures performed by Internal Audit and submitted to business owners
- Gets the businesses involved
  - The continuous monitoring scripts should be theirs! Internal Audit is just the technical specialist to assist.
  - Develop a location for owners to review and address issues identified by continuous monitoring scripts (AX Core, Sharepoint, etc.)

- Building on the Continuous Monitoring Scripts
  - Business owners need to first get comfortable with the data that is provided, and that the exceptions reported are not false positives



# Streamlining SOX Procedures





- ACL can be used to reduce the hours necessary for SOX Controls
  - Implementing Continuous Monitoring Scripts so the business owners are able to understand the variances in the data, receive only exceptions to analyze, are provided smaller amounts of data in a timely manner to review and respond
  - Performing CAATs and testing/analyzing the outliers as part of SOX Monitoring
  - Developing scripts for entity level analytic controls that are direct and precise to potentially reduce process level controls



- Accounts Payable
  - Develop a monthly continuous monitoring script that matches payments to a vendor to the appropriate invoice. Send the results to the process owner. **The key control is now a monthly instead of a multiple daily!**
- Inventory
  - Develop a quarterly continuous monitoring script to compare sales to the period difference of the inventory and identify any variance. Send the results to the process owner
- **If the data is in the database, you can make a test for it!**



- External Audit Team agreement on changes to performance of control
- SOX Monitoring procedures will also include validation of the script and gaining an understanding of how script changes are made and who has access to make script changes



- Keep an ear to the ground on changes in the business that would impact the automated scripts that are developed and make sure they are updated as relevant
  - i.e., if there is a new system that needs to be incorporated into the analysis, or the table structure changes, how are you going to identify and modify your script



# Big Data



- **Big Data Defined**

Wikipedia definition is that **big data** is a collection of [data sets](#) so large and complex that it becomes difficult to process using on-hand database management tools or traditional data processing applications.

- **Marlon Definition of Big Data**

Sufficient data to freeze or reduce the operating effectiveness of Microsoft Excel



- ACL is used for Internal Audit procedures in analyzing big data sets (we just didn't call it Big Data before)
- ACL and computer processing speeds make analyzing Big Data easier and faster\*
- Large Data Sets
  - Easily handled by ACL
- Unstructured Data
  - ACL Importer



- Wrong questions
- Wrong assumptions
- Data Quality Issues
- Finding True Value
- How much data do you need to conclude?  
(Analysis Paralysis)







# Questions?

[www.Weaverllp.com](http://www.Weaverllp.com)

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