

# Hot Topics in IT Audit

August 7, 2015



# We are Sunera

- Sunera is one of the largest risk advisory firms in Florida.
- The firm's two largest offices are both in Florida (Tampa and Miami)
- Sunera's Tampa office serves as the national headquarters, and is also home to the Controls Testing Center, large internal and IT audit teams, and the national Information Security practice.
- Technology is at the core of everything we do. From cutting-edge data analytics to sophisticated vulnerability assessments, our clients know we bring the industry's top professionals to their technology challenges.
- Our sole focus is the customer. Our services protect businesses from inefficiency and external threats, resulting in cost savings and the confidence that their business, customers, and reputation are secure.



# Sunera Team



## Spring Phillips – Senior Manager, Tampa

- Spring leads the Tampa audit team on internal audits, operational audits, Sarbanes-Oxley 404 compliance projects, forensic investigations, and segregation of duties audits.
- Spring is a developer for Sunera's national training model and has performed training at numerous local organizations.
- **Industry Experience:** Restaurant, government, financial services and insurance, technology, and consumer/industrial products industries
- **Technical Expertise:** Oracle, Great Plains, SAP, PeopleSoft, Solomon, Lawson, MS Dynamics, JD Edwards, Xcelys, and Meditech
- **Education:** MBA and MS in Accounting from the University of Tampa
- **Certifications:** Certified Information Systems Auditor (CISA) and a licensed Certified Public Accountant (CPA) in Florida

# Sunera Team



## Heather Brink – Consultant, Tampa

- Heather performs IT and internal audits and SOX compliance engagements for Sunera clients and leads the training of new internal audit staff and interns.
  - **Industry Experience:** Technology, telecommunications, government, restaurant, education, utilities, and financial services
  - **Education:** MS in Accounting (Audit/Systems) and BS in Accounting with a minor in Information Systems from the University of South Florida
  - **Certifications:** Pursuing her Certified Internal Auditor (CIA) certification
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## Patrick Nunes – Consultant, Tampa

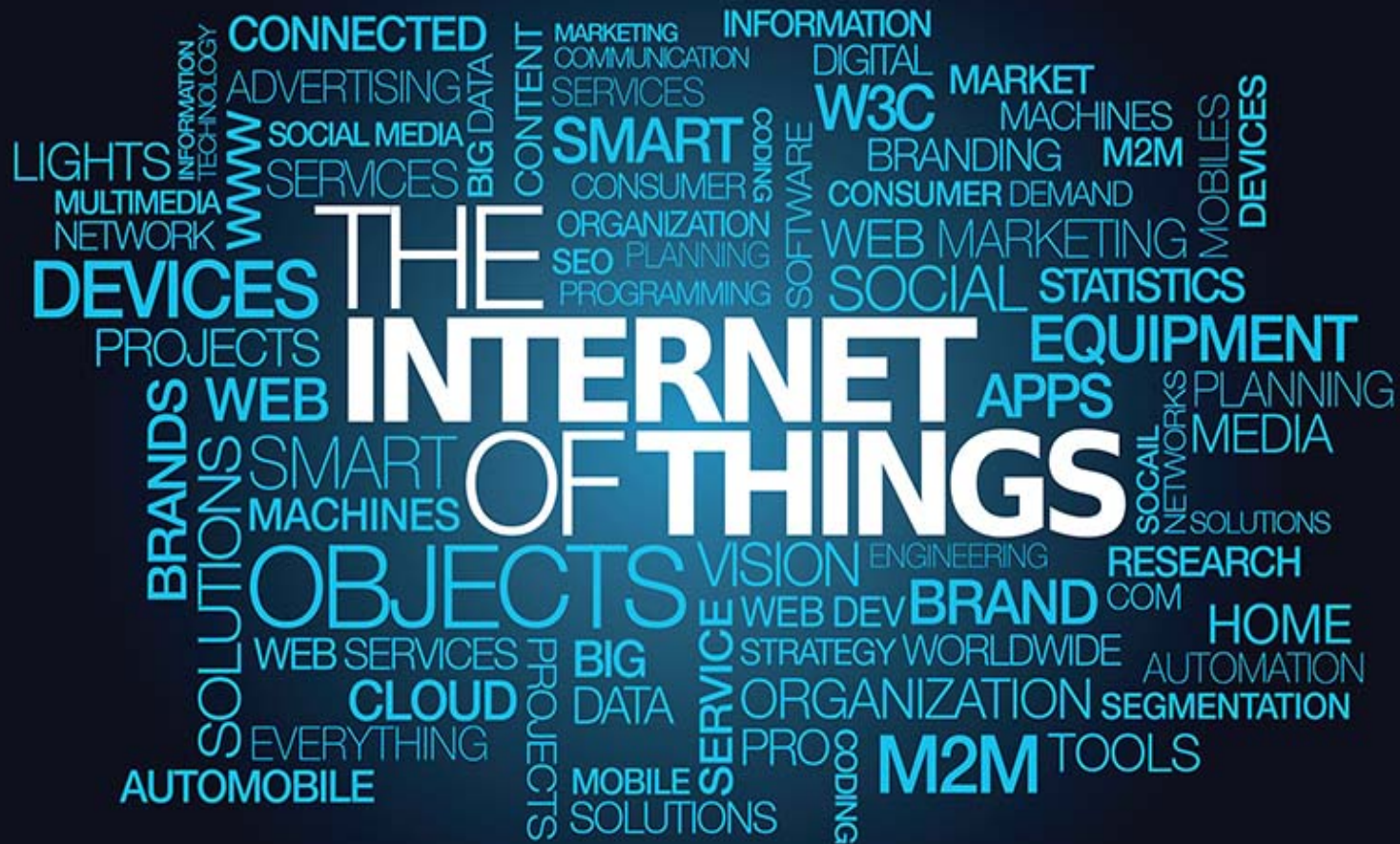
- Pat performs financial and IT controls testing related SOX compliance and internal audit projects for Sunera clients.
- **Industry Experience:** Restaurant, retail, and financial services
- **Education:** Master of Science in Finance from the University of South Florida and a BA in Anthropology from the University of Florida
- **Certifications:** Pursuing his Certified Fraud Examiner (CFE) certification

# Agenda

**Part One:** Internet of Things

**Part Two:** Big Data

**Part Three:** Millennials



# Internet of Things – What is it?

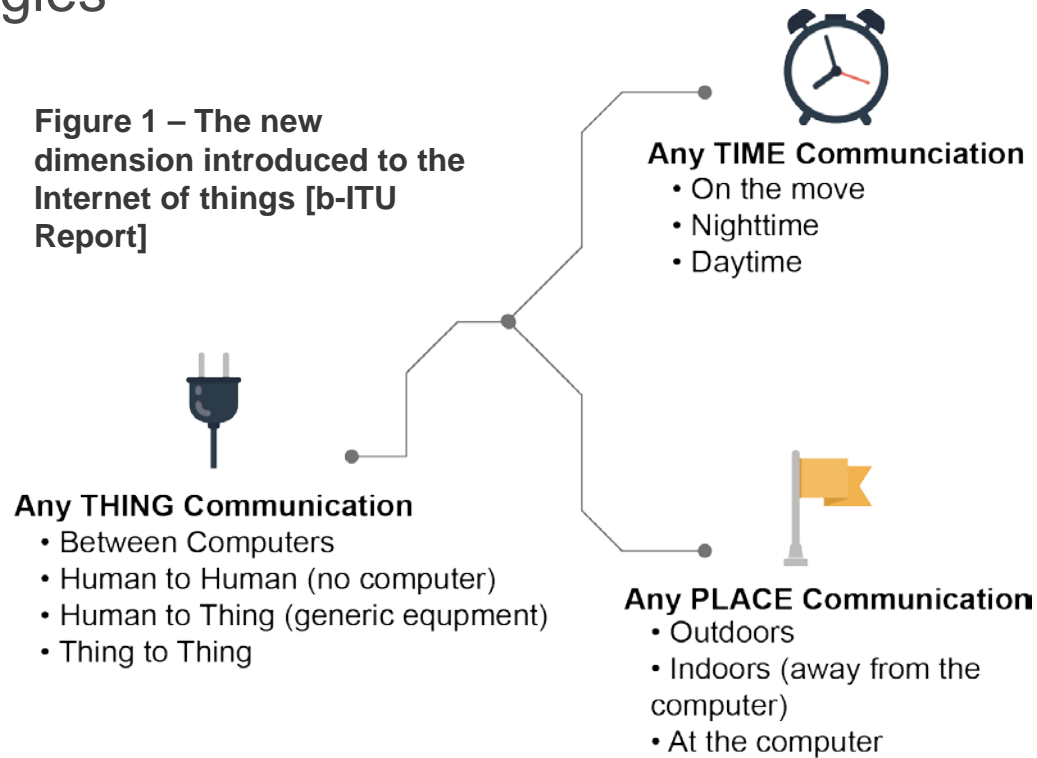
- The concept that every device can be connected to the Internet or each other
- The network of “things” with software, sensors, and network connectivity that enables the exchange of data



# Internet of Things – What is it?

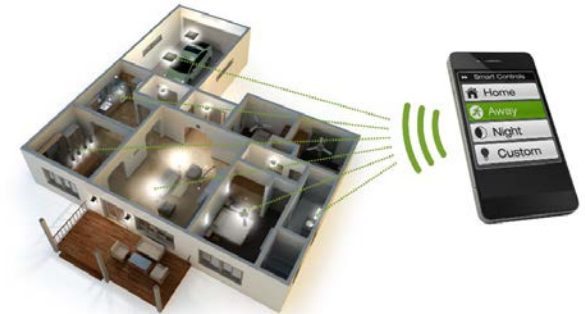
- A new third dimension in current information communication technologies

Figure 1 – The new dimension introduced to the Internet of things [b-ITU Report]

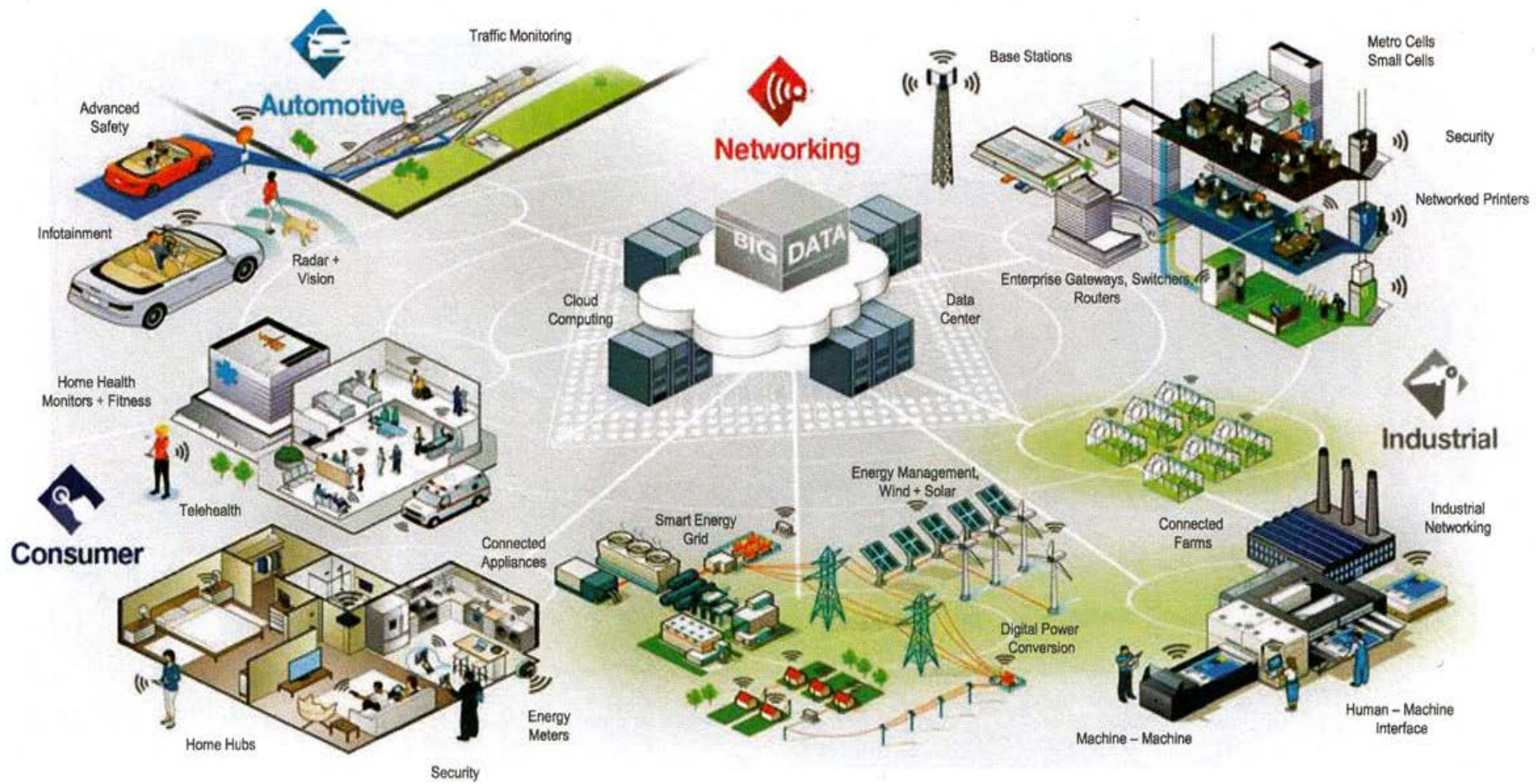




# What is in the Internet of Things?



# The Internet of Things (IoT)





# Characteristics of the IoT

- Interconnected
- Different
- Dynamic
- Enormous

**15B**

CONNECTED  
DEVICES IN **2015**



**40B**

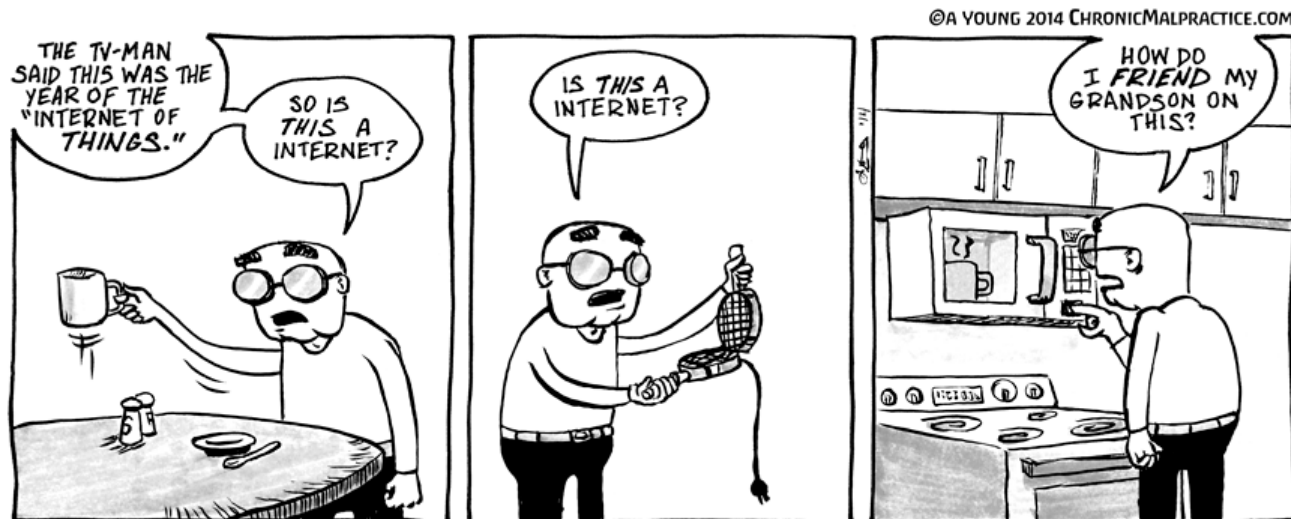
CONNECTED  
DEVICES BY **2020**



= 1B DEVICES

# Conditions of the IoT

- Location-based capabilities
- Privacy
- Security
- Manageability





# Determining Risk

- How will the device be used from a business perspective?
- What value is expected?
- What threats are there?
- How can they be mitigated?
- Who will have access to the device?
- How will access be managed?
- Who is responsible for monitoring security of the device?







# Determining Risk

- Have risk scenarios been evaluated and compared to anticipated business value?
- What personal information is collected, stored, and processed by the device?
- Are the individuals whose information is being collected aware? Have they given consent?
- With whom will the data be shared?



# Controlling Risk

- Each risk a company faces should be considered and addressed through policies/procedures or controls.
- Types of controls/policies:
  - Access Controls
  - BYOD Policies
  - Data Ownership
  - Network Management

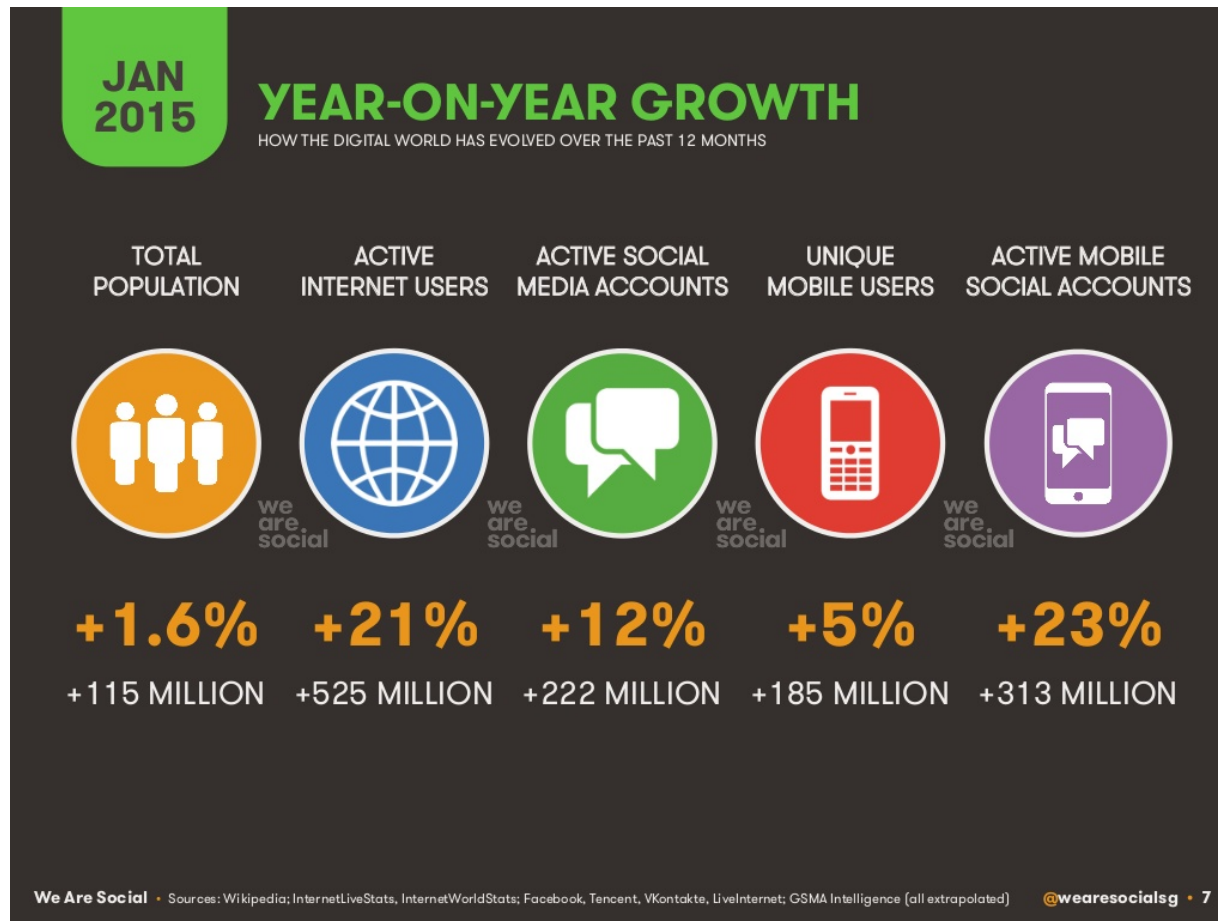




# Internet of Things & Audit

- Auditors must become familiar with the Internet of Things and the technological risks associated with it.
- IT and Financial audit will become further intertwined.
- The need for continuous monitoring will increase.
- Traditional IT auditing processes will still address these risks.

# More Internet, More Data





# Big Data

What is “Big Data”?

Advantages vs. Disadvantages

Risk and Big Data

Data Valuation

Data Protection/Data Privacy

Big Data Governance



# What is Big Data?

- Big Data (ISACA): Data that is too large or too quickly changing to be analyzed by traditional methods
- Big Data has been around for many years, but why all the attention now?
- Volume, Velocity, & Variety
  - Volume – Total amount of data
  - Velocity – Speed at which data is created
  - Variety – Evolution from simple files and databases to audio/video files
- By 2018, the U.S. will need 60% more individuals with data analytics capabilities than the workforce can currently supply.

# Data Usage Statistics

 **65 billion**

Location-tagged payments  
made in the U.S. annually

**154 billion**



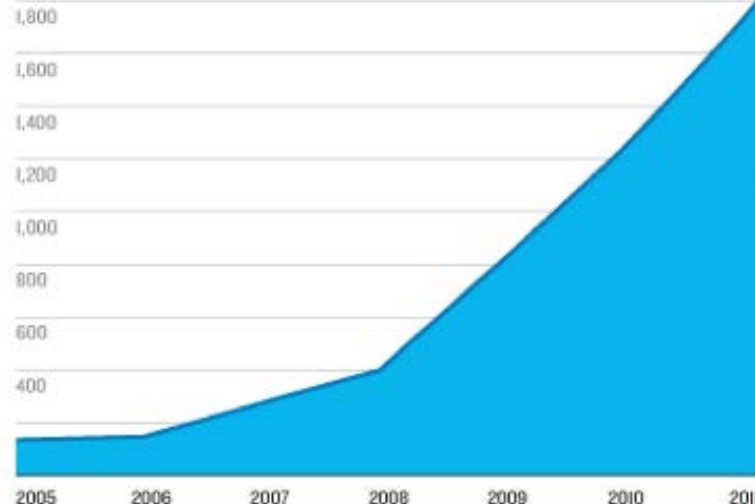
E-mails sent per day

 **87%**

U.S. adults whose location is  
known via their mobile phone

## Digital Information Created Each Year, Globally

2,000 BILLION GIGABYTES



**2,000%**

Expected increase in  
global data by 2020

**111  
Megabytes**

Video and photos stored  
by Facebook, per user

**75%**

Percentage of all digital  
data created by consumers

Sources: IDC, Radicati Group, Facebook, TR research, Pew Internet



# Predictive Analysis Opportunities



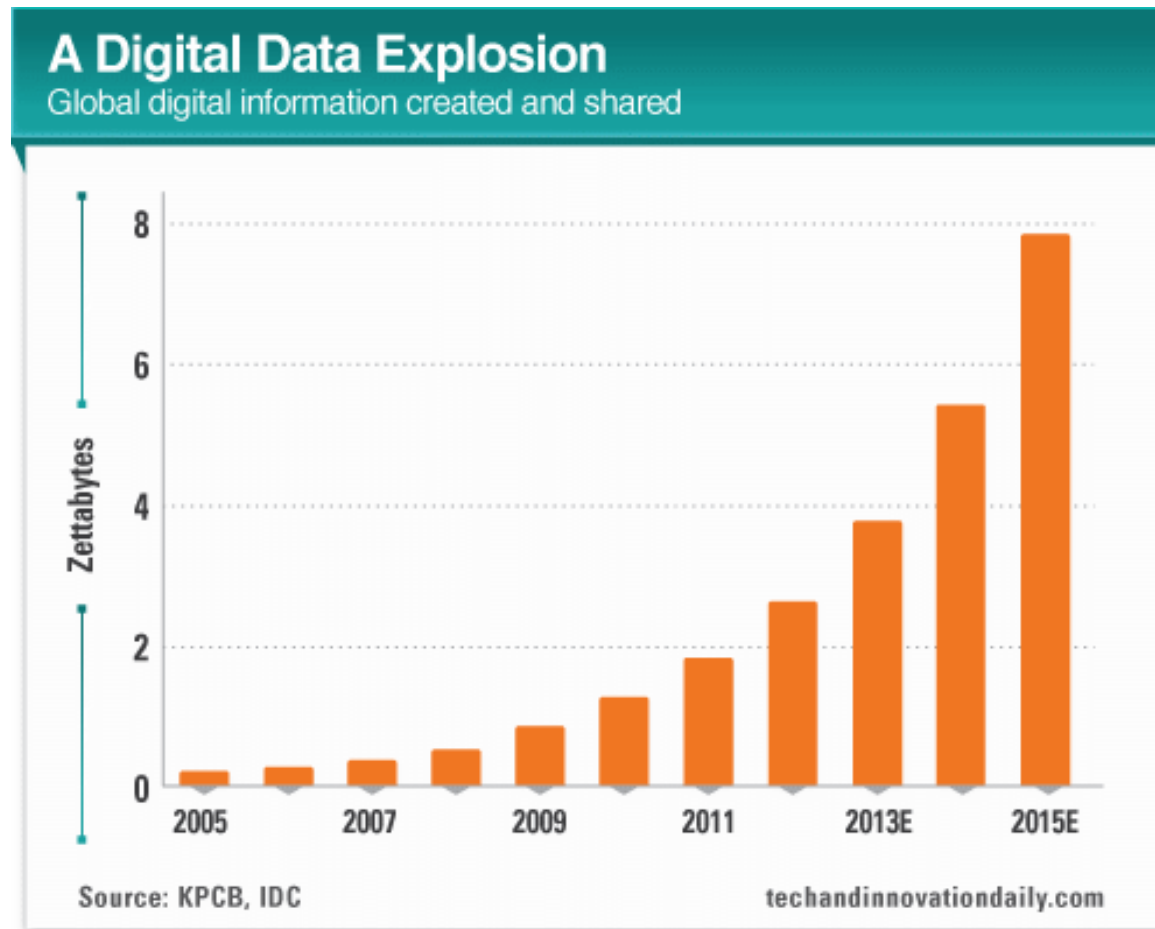


# Considerations

- Cost reduction
- Increased business agility
- New business/growth
- With proper risk management, medium-level risks could be considered low.
- Low cost:
  - Capital investment may be required.
  - Some additional employees may be needed.
- Low disruption to business operations
- Big data analytics is great for dealing with unstructured data.
- Existing technology investments must be upgraded along with the increase of risk of impacting existing investments (cost/value).
- Privacy risks related to confidential data leaks or hacks
- Impact of regulatory obligations
- Integrity of data can be compromised.
- Traditional databases are more cost effective for simply structured data analysis.



# Data Usage Statistics





# Risk and Big Data

## Operational

- Internal/external factors that include geopolitical risk:
  - Privacy laws in the US
  - Cross-border sharing laws in European Union
  - HIPAA policies not enforced or clearly documented
- Pressure from upper management to implement big data before proper risk controls are in place

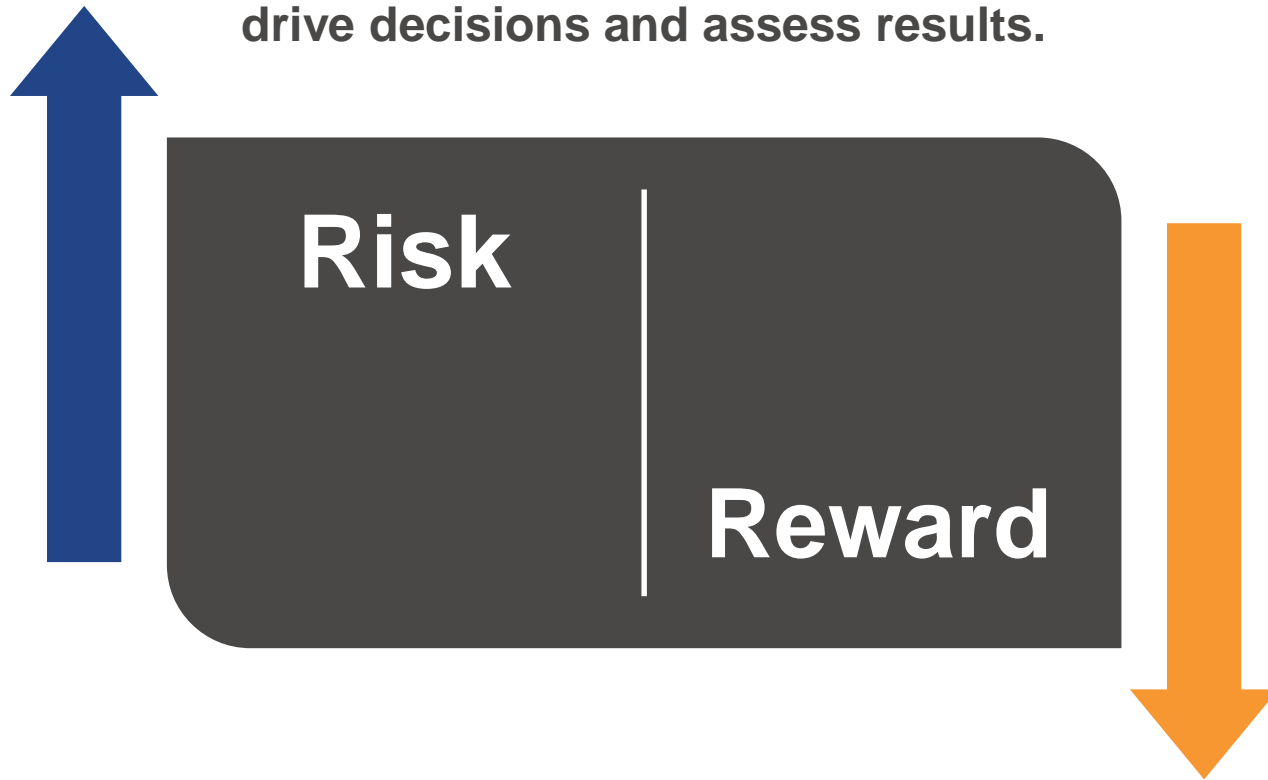
## Information Technology

- Business risk associated with the use, ownership, operation, and adoption of IT within an enterprise
- Safeguards are bypassed
- Data monitoring or safeguards not in place due to IT's focus on development and delivery of new products.



# Risk and Big Data

Inaccurate, incomplete, or fraudulently manipulated data poses an increasing risk as an enterprise becomes more dependent on the data to drive decisions and assess results.





# AICPA Survey

AICPA survey results for the top 5 issues facing CPAs in the next 2-5 years:

2014 ISSUES		2011 ISSUES	
Electronic data analysis	25%	Attracting and retaining qualified staff	25%
Increased complexity and scrutiny in engagements	20%	Keeping abreast of regulatory changes	14%
Competition and fee pressure	14%	The economy	13%
Regulatory changes	11%	Competition and fee pressure	11%
Attracting and retaining qualified staff	7%	Technology	9%



# Value of Big Data

- Collection of the data by itself is useless – it's not until the data is analyzed that it becomes of true value to a company.
- Top-Line Impact (Gross Profit)
  - Improved data intelligence
  - Increased sales
  - Targeted marketing
- Bottom Line Impacts (Net Profit)
  - Lower cost of operations
  - Reduced technical risk
  - Reduced competitive risk
- An ISACA trend report stated that 80% of enterprises can expect to see these direct benefits within 1-2 years of implementation.



# Data Protection

- Without comprehensive principles, policies, or frameworks, big data generates an enormous risk.
- COBIT5 enables enterprises to create value for their stakeholders from IT by maintaining balance between realizing benefits and optimizing risk levels and resources.
- As big data volume grows, enterprises need a data privacy solution that is both within a company's budget and is effective.
- There is no one solution to the protection of the data. Each country or region has different regulations in place to help protect the data.
- Suggestions have been presented to anonymize the data as soon as it is collected, no personal information stored. Big data privacy and security solutions must be implemented.
- Hadoop, EMC Greenplum Platform, Teradata, HP Vertica, or Palantir Technologies all have developed as big data analysis software.



# Big Data Governance

What can you do to ensure management is using big data appropriately?

- Data anatomization
- Adequate, relevant, and current big data privacy policies development
- Buy-in and continuous commitment from senior management  
Appropriate data destruction
- Compliance with legal and regulatory data requirements
- Continuous education/training in big data policies and procedures
- Big data solutions implementation using repeatable frameworks
- Complete and accurate data set

# Millennials

**Who are they are and what is  
their impact on how we audit?**



# In a Word or Two...

youth entitled  
selfish lucky  
TechSavvy  
spoiled  
young lazy  
ok  
learning  
time new  
generation  
future  
unemployment  
disrespectful  
children  
self-absorbed kids  
dreamers

# The Stereotypes

## Generation Me

- “Look at Me”, Selfies
- Life chronicled via websites and apps like MySpace, Facebook, Twitter
- Increased Narcissistic Tendencies

## Tech Savvy

- Grew up with a computer in the home
- Also grew up with cellular devices
- More familiar with Google than the Dewey Decimal System

## Spoiled Children

- Involved in many camps and extracurricular activities
- Do not know the word “No”, have never lost
- Encouraged to have an opinion and challenge authority

## The Future

- Forget work-life balance – they want work-life integration
- Less concerned with promotions and money, and more concerned with self-fulfillment
- Want to be in the loop no matter their level
- Prefer to work on teams
- Mobile office place

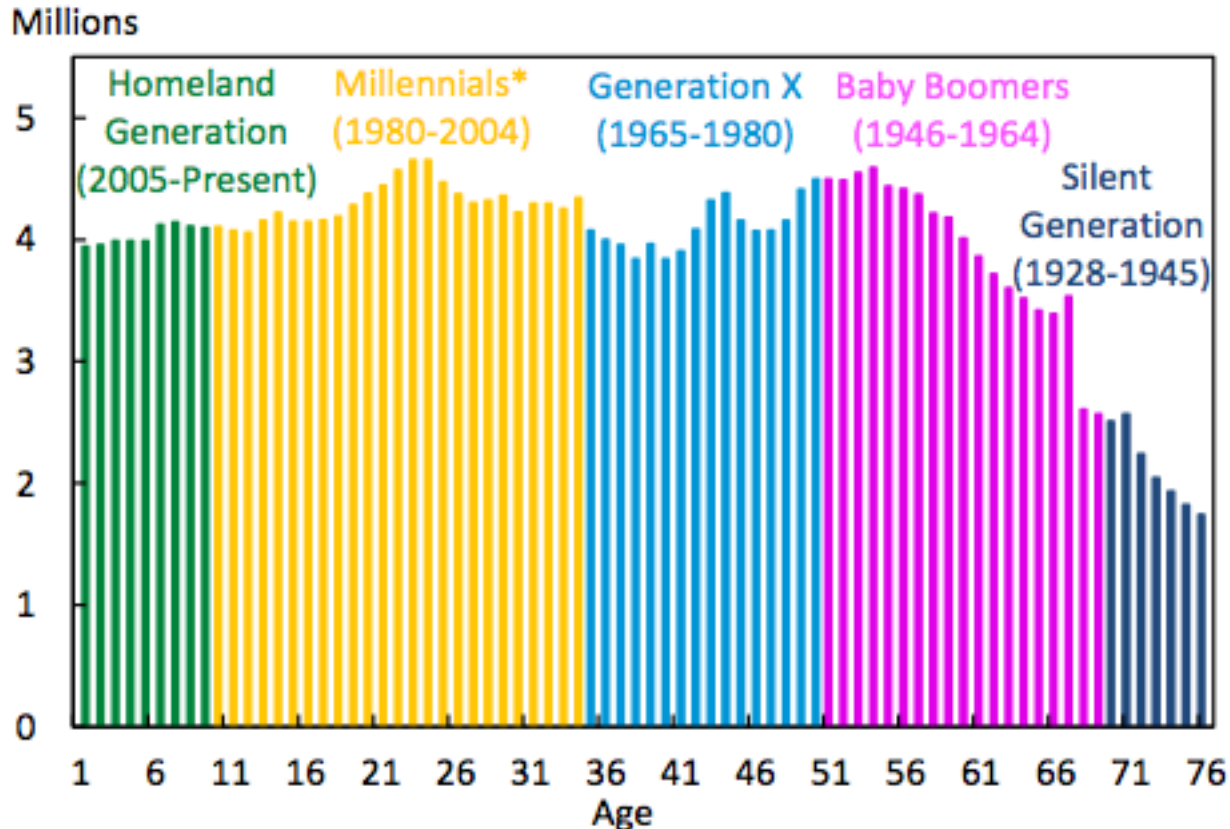
# Millennial Defined

“Millennial” is a term that gets tossed around frequently by major audit firms in seminars, news stories, and case studies. But what exactly does it mean?

- The Millennial generation consists of individuals born between 1980 and 1995 (as with all generations, these dates vary with each source).
- In many cases, the term “Millennial” is congruous with “Generation Y”.
- According to a White House report, Millennials are the largest generation in the U.S. and represent one third of the population.
- Millennials are set apart from other generations by a number of considerations, including their diversity and use of technology.

# U.S. Population Generation Breakdown

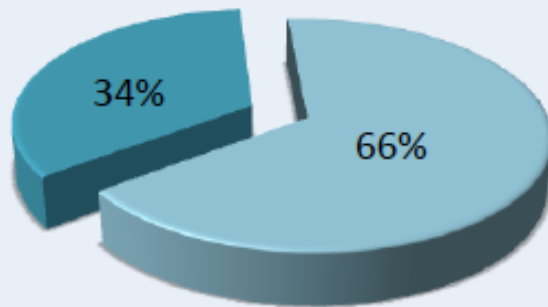
**Figure 1: US Population Distribution by Age, 2013**



# Impact to the Workforce

## Millennials in the Workforce - 2014

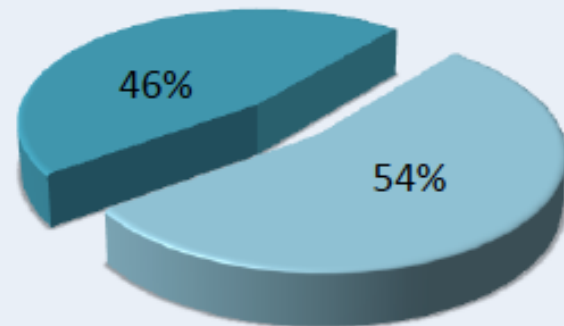
■ Millennials   ■ Older Generations



Source: Lynch, 2008

## Millennials in the Workforce - 2020

■ Millennials   ■ Older Generations



Source: Lynch, 2008

# So Why the Noise?

- Millennials have become a hot topic because of their increased presence in the workforce, and the way they present themselves.
- We, as a society, have encouraged Millennials to be themselves, to accept others, and to speak their minds. Yet when they enter the workforce, we suddenly change our expectations.
- So what have we traditionally taught Millennials?
  - Be yourself.
  - Ask questions.
  - You can do anything you put your mind to.
  - Everyone gets a trophy. There are no losers.
  - It is acceptable to text, email, instant message, Facebook, tweet, etc., rather than call someone or visit them in person.



# Side-by-Side in the Workplace

Cowboys	Millennials
Command and controls management style	Active, involved leadership
Individually focused work	Collaborative, teamwork
Managed flow of information	Unstructured flow of information
Job security	Employability
Work = Income	Work = Income and personal enrichment
Structure	No structure; flexibility is highly valued
Inward looking	Outward looking
Influence through organization, position	Influence through networks, communication

# More Differences

- Gursoy, Maier, and Chi (Washington State University) have conducted numerous studies on generational gaps in the workplace.
- They have identified key characteristics by generation, seen here.



## **Characteristics of each generation:**

### *Baby Boomers:*

- Live to work
- Respect authority and hierarchy in the work place
- Live large and are in charge

### *Generation X:*

- Respond to instant gratification
- Work to live
- Identify with the Lone Ranger
- Friends in high places

### *Millennial Generation*

- The more the merrier
- Rules are made to be broken
- Here today and gone tomorrow
- Show me the way



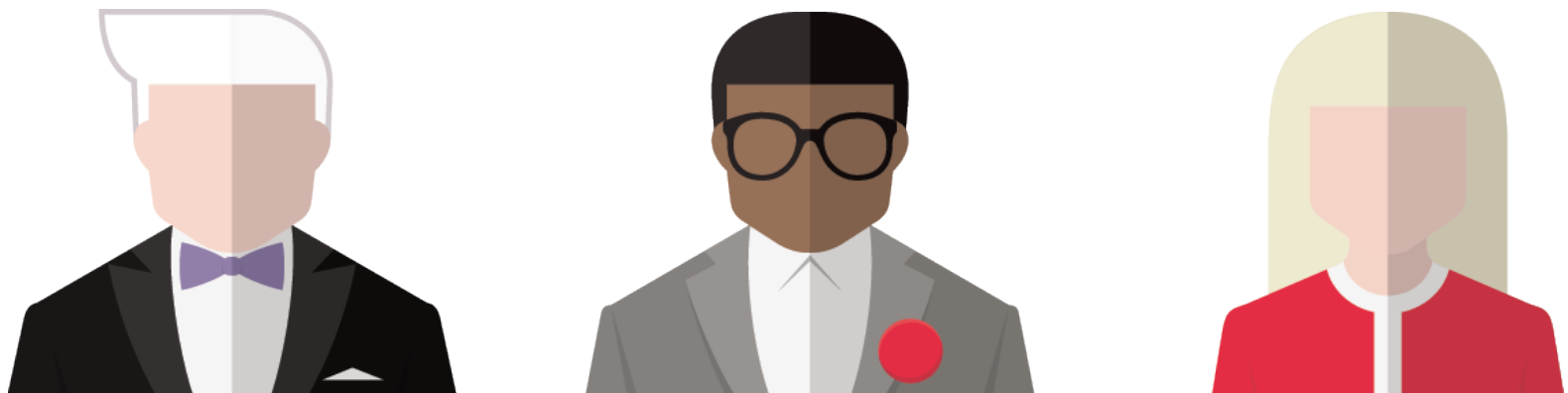


# The Millennial Perspective

- **Scenario: Manager asks employee to jump.**
  - The Gen X/Boomer jumps and asks, “High enough?”
  - The Millennial says, “Why?”
- **Scenario: Manager asks employee what their goals are.**
  - Gen X/Boomers live to work.
  - Millennials work to live.
- **Scenario: Manager asks employee what sort of work environment they prefer.**
  - The GenX/Boomer wants structure, prefers linear progression, and watches the clock.
  - The Millennial is available to work 24/7 but also expects ability to leave briefly.

# “All generations have similar values; they just express them differently.”

Jennifer Deal (Senior Research Scientist at the Center for Creative Leadership)





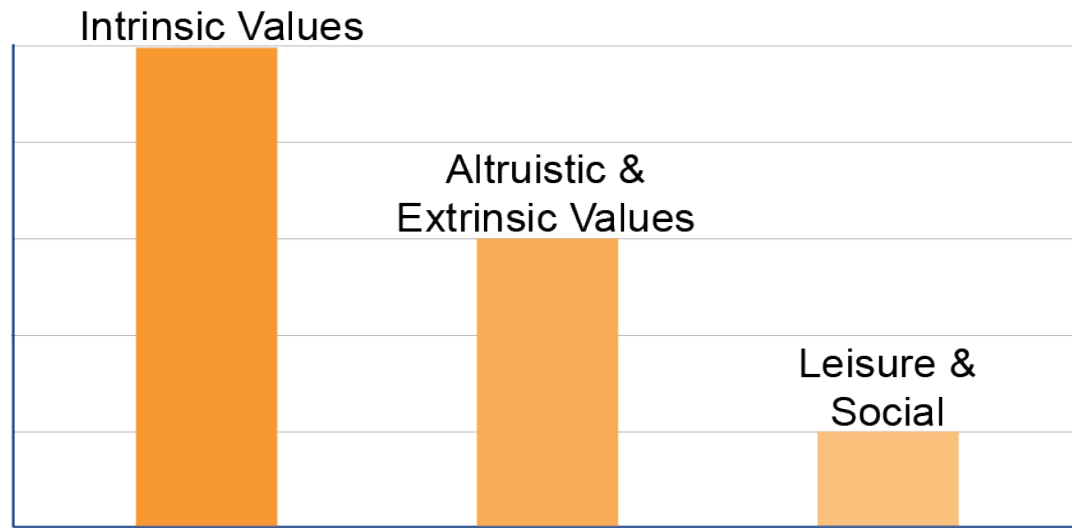
# Similarities

- We cannot draw conclusions about each generation when the individuals we are comparing are at different ages and have different life experiences
- What if we compare the generations at roughly the same age?
  - Team of professors obtained access to surveys of work values done among 16,000 US high school seniors in 1976 (Boomers), 1991 (Gen X), and 2006 (Millennials). Same questions asked, all ranked.
  - Categories to rank :
    - Intrinsic: interesting work, learning opportunities, being challenged
    - Extrinsic: pay, promotions, status
    - Altruistic: helping others, contributing to society
    - Leisure: vacation time, work-life balance
    - Social: interacting with others, making friends



# Study Results

- All three generations rated intrinsic values as highest.
- On average, all three rated the altruistic and extrinsic values in the middle.
- All three rated Leisure and Social at the bottom.
- Conclusion? Perhaps we are not so different after all.



# What's the Impact on IT Audit?

- **Training** – Although Millennials have grown up with technology, they do not always understand the infrastructure and more technical aspects.
- **Method of Communication** – Millennials tend to prefer electronic methods of communication. They will email, instant message, or text someone before they pick up a phone or walk to someone's desk.
- **Language** – Slang slang slang. These people think you are cray-cray if you think they, like, literally want to have a normal conversation.
- **Location** – Given the impact of technology and their preferred methods of communication, Millennials live in a world of mobile offices. They have so many tools at their disposal that they do not have to be onsite at a specific location to perform audit observations.
- **Quality of Audit** – They care. They will validate and look for any logical explanation; however, they have been exposed to much via the web. They take the audit mantra “Trust but verify” to the extreme.

# What's the Impact to an IT Audit?

- **Internet of Things** – Think back to the Internet of things. How many devices that connect to the Internet does a single given person have access to over the course of one day? Millennials tend to be early adopters, so how many more devices are they likely to use in a single day? Who owns that data? How do we track those devices?
- **Leasing of “Things”** – This is where the Internet of Things gets tricky. Millennials have been called the “cheapest generation” because they prefer not to make larger purchases – first with cars and homes and now the digital world. How does that impact our security and data ownership?
- **Big Data** – If Millennials do not view their managers as experts, where are they going for their information? The Internet. What sources of information are they using? How do they process the sources, identify which are relevant and trustworthy? These are the same questions we ask as we consider Big Data's implications.

# Questions?

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