Your Speakers

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Can you keep up with changing times?

- IDK - I Don’t Know
- LOL - Laugh Out Loud
- ROTFL - Rolling on the Floor Laughing
- YMMD - You Made My Day
- NOYB - None Of Your Business
- B3 – Blah, Blah, Blah
- NVM – Never mind
Can you keep up with changing times?

17 ZADDY
An exceptionally attractive, appealing and fashionable guy, with swag and success.

The word became popular with the release of Tyga’s 2012 track “Zaddy”, in which he raps: “Check me out, he’s a zaddy”.

For others, it has also been used to reference a person with swag drunk on alcohol.

“Last night, the party was in all night. I was in there again, you must have seen me dancing,” said someone.

13 MANSPLAINING
A man explaining something to a woman in a patronising manner, often without relevant knowledge or experience.

Popularised during the 2010s in writing and social media.

“Stop mansplaining things to me!”

16 STAN
The combination of the words stalker and fan. A devoted fan who goes to great lengths to obsess over their idol.

The term was based on the name of the central character “Stan” in the Eminem song.

“I stan the entire cast of Avengers.”
INDUSTRY TRENDS AND THEIR IMPACT
**TREND 1: More Offsite Construction**

**Contractor Side:** Prefabricated and Modular Construction*
- 72% of GCs Report Using Prefabricated Components
- Helps Achieve Goals—More Projects Completed:
  - On Time
    - Reduced Weather Impact due to Controlled Environments
  - Within Budget
    - 65% of AEC Firms Report Project Budgets Decreased**
    - 77% of AEC Firms Report Construction Site Waste Decreased**
    - Reduces the Number of Skilled Workers Needed, where Cost is on the Increase***
    - Starts to Address Large Construction Projects being up to 80% over budget***

TREND 1: More Offsite Construction

**Potential Design Professional Impact:**
- More Demand for Repeatable Designs
- Less Demand for Construction Phase Services
- Warranties and Guarantees?

*Source: TrueLook Construction Cameras  ***Source: McKinsey Institute  **Source: McGraw-Hill Construction*
TREND 2: Smarter, Greener Buildings

Contractor Side:

- 20% of Global Emissions Now Directly Attributable to Construction**
- Buildings account for up to 70% of Energy Consumption in Major Cities and 30% of Greenhouse Gas Emissions Globally**
- More Pressure to Use Green Technology and Achieve Sustainability

*Source: TrueLook Construction Cameras  **Source: The Balance Small Business
TREND 2: Smarter, Greener Buildings

Potential Design Professional Impact:

- Data Protection for Building Management Systems
  - Hacking
  - Privacy
- Owners Expect Savings in:
  - Energy
  - Water
  - Maintenance
  - Waste
- Increased Complexity of Contracts

*Source: TrueLook Construction Cameras  **Source: The Balance Small Business
**TREND 3: Construction Cameras**

**Contractor Side:**
- 360-degree/365-day/24-hour Photo/Video “Walkthroughs”
- Info Accessible to Remote Project Stakeholders (and the Public?)
- Documentation Time—including Organization of Data—Reduced 50%
- Facilitates Faster Decision-making and Approvals

https://www.truelook.com/

*Source: TrueLook Construction Cameras*
**Potential Design Professional Impact:**

- Cameras are a Substitute for/Supplement to Human Monitoring and Documentation—Fewer Construction Phase Services
- Drones and Other Robotic Surveying Equipment Make it Easier to Spot Problems
- Increased Standard of Care?

*Source: TrueLook Construction Cameras*
**Contractor Side:** Improvements in:

- Jobsite Efficiencies
- Sensors Identify:
  - Patterns
  - Areas of Concern
  - Opportunities for Cost Savings
- Drone Data Detects Errors
- Office-Based Efficiencies
  - Data Collection is Automatically Fed

*Source: TrueLook Construction Cameras*
TREND 4: Artificial Intelligence & Machine Learning

**Potential Design Professional Impact:**
- Data Protection Concerns
- Owners Expect Savings
- Increased Complexity of Contracts

*Source: TrueLook Construction Cameras*
TREND 5: Talent is One of the Biggest Challenges

**Contractor Side:**
- US Construction Industry Employs 7.2 Million Professionals
- Industry Unemployment is at an 18-year Low
- May Lead to Inability to Respond to Market Needs or Innovate Unless:
  - Workers Forego Retirement
  - Training Increases through:
    - Technical Schools
    - Apprenticeship Programs

***Source: Deloitte 2019 Engineering and Construction Industry Outlook***
TREND 5: Talent is One of the Biggest Challenges

**Potential Design Professional Impact:**
- Lack of Skilled Labor Leads to Construction Errors
- Similar Employment Deficits may Exist for Design Firms

***Source: Deloitte 2019 Engineering and Construction Industry Outlook***
Can you keep up with changing times?

3 of the 5 Market Trends involve technology and data

- Cyber Attacks
- Data Protection
- Confidentiality

Are you Prepared??
What We’ll Cover

- Latest in cyber security threat landscape
- Building BOTH a practical and effective cyber security program
- Ground or Air Combat: Cloud or managing on-prem
Worker's are too nice!

**Workers would rather be “nice” than safe**

1 in 5 share passwords over text or email

45% would share their computer with colleagues

**Employees demonstrate risky behaviors**

55% admitted to clicking on links they didn’t recognize

49% have downloaded a web extension to their work device

**Data loss is a real problem**

7 in 10 respondents have accidentally deleted files

25% have lost data in G Suite or Microsoft Office 365
Norsk Hydro Is Hit by Ransomware Cyberattack

The company, one of the world’s largest aluminum producers, says its operations were crippled.

ECONOMY AND POLICY

Iranian Cyberattacks Are Coming, Security Experts Warn

Updated January 10, 2020 / Original January 6, 2020

COMMENTARY

Keith B. Alexander and Jamil N. Jaffer
Most Common Cyber Attacks Today:
1. Malware*
2. Phishing*
3. Man in the Middle*
4. Denial of Service*
5. Cyber Crime
   - Social Engineering
   - Ransomware

*CISCO 2019 NAS Cyber Claims Digest
Building BOTH a practical and effective cyber security program
Pop Quiz

- What is your technology “Master Plan” and how do you align budget with that plan?
- When was the last time you sat down and reviewed every technology application, solution, and subscription you pay for?
- How much technology expense has moved from the balance sheet (capital asset purchase) to the expense line (software subscriptions, cloud-based applications?)
This is a boardroom exercise based on your corporate vision and strategy. Incorporate firm wide initiatives for:

- Employee growth
- Remote and field workforce
- Addition of new disciplines
- Acquisitions & divestitures
- Digital transformation & moving to cloud
- Facility move and relocation
Building your IT Master Plan

- IT lifecycle management and upgrades
  - Infrastructure
  - Equipment
  - Applications
- IT Operations & Personnel – Internal and/ or External
- SECURITY & COMPLIANCE
CEOs, COOs, CIOs and firm leaders are charged with managing risk for their organization.

The method to evaluate risk cybercrime is the same as for other business risk.

This is a Board-level activity.
Risk Management Approach

- Jobsite Safety
- Employment related suites
- Facility security
- Competition
- Economic conditions
- Legislative and regulatory
- Government budget cycles
- Direct loss of revenue
- Claw backs
- Fines
- Penalties
- Civil damages
- Market share
- Reputation
- Legal
- Regulatory
- Financial
- Direct loss of revenue
What has changed?

- The risk of unintentional user-induced data exposure has always been present.
- Cloud environments give users unprecedented capabilities to rapidly create, access, distribute and externalize sensitive material.
- Outsourcing functions (e.g., business office) to third-party vendors.
- Clever spear phishing tactics catch executives.
- Tools used to compromise the OPM, the IRS, CENTCOM and the NSA.
- No longer for bragging rights, it is now a long-distance bank robbery.
Engineering 10 years ago is nothing like today.

Mobile access to most any and all data is expected and demanded.

With the proliferation of mobile devices, more of your staff are working away from the office.

Employees will work around a system they find to be slow or cumbersome. SHADOW IT.

They are operating “in the open” on public networks at coffee shops, or free networks in the park.

It is important to ensure that their mobile technology, often connected wirelessly, is as secure as possible.
Identifying your practice’s exposure to cybercrime

- Isn’t this IT’s job?
- We contract an IT Managed Service Provider - isn’t that enough?
- How can we evaluate this?
Five steps to managing cyber risk

- Require an impartial assessment
- Categorize and prioritize your risk
- Execute your mitigation strategy
- Evaluate your cyber liability insurance
- Educate your workforce
Getting the right diagnosis

- Use a vendor that does not sell security products
- Have IT own the project
- Prepare an RFP
- Require an internal and external test
- Do not announce date of test
- Provide any specific areas for intensive testing
Don’t succumb to FUD*

*Fear, Uncertainty, and Doubt
C.13. Project-Specific Indirect Cost Rate(s). Does the Company have any special, project-specific indirect cost rates negotiated with a State DOT?

No       Yes. If “yes,” please explain, and list the States that use these rates: __

D. Information Technology (IT) Systems

D.1. IT Policies. Does the firm have written IT system policies concerning the following topics?

(If “yes,” please provide a copy.)

- Hardware/Software
  a. Purchasing ........................................
  b. Inventory ........................................
  c. Maintenance .....................................
  d. Access ...........................................
  e. Use of In-house and off-site ......................
  f. Addition and removal/retirement/disposition of ........
- Business Continuation Plan ..........................
- Security Protocol .....................................
- Activation and deactivation of employees upon hiring or termination ..............................

D.2. IT Risk Assessment. Has the Company’s management conducted an IT system risk assessment within the past three years?

Yes     No

D.3. IT Security Review. Are system security and application access logs enabled and reviewed periodically?

Yes     No

Comment: __
Basic CIS Controls
1. Inventory and Control of Hardware Assets
2. Inventory and Control of Software Assets
3. Continuous Vulnerability Management
4. Controlled Use of Administrative Privileges
5. Secure Configuration for Hardware and Software on Mobile Devices, Laptops, Workstations and Servers
6. Maintenance, Monitoring and Analysis of Audit Logs

Foundational CIS Controls
7. Email and Web Browser Protections
8. Malware Defenses
9. Limitation and Control of Network Ports, Protocols and Services
10. Data Recovery Capabilities
11. Secure Configuration for Network Devices, such as Firewalls, Routers and Switches
12. Boundary Defense
13. Data Protection
14. Controlled Access Based on the Need to Know
15. Wireless Access Control
16. Account Monitoring and Control

Organizational CIS Controls
17. Implement a Security Awareness and Training Program
18. Application Software Security
19. Incident Response and Management
20. Penetration Tests and Red Team Exercises
Cyber Assessment
Categorizing Cyber Risk

- Highly likely/low impact
- Highly likely/high impact
- Not likely/Low impact
- Not likely/high impact
Cyber Liability Insurance

- Transfer of Risk
- Who do you call?
- Who Pays?
  - 1st and 3rd Party Payments/Coverages
  - Pay the Ransom
  - Pay the Forensics and Patch
  - Pay the lost Income
  - Pay to recreate Lost Data
  - Pay for Defense Costs
  - Pay for notification and Monitoring
  - Pay for loss of your funds due to voluntary transfer
  - Pay to help restore your reputation

Allocation of Cyber Claims Costs
Contractual Requirements

- Cyber Liability is being required in contracts on certain project types
  - Bank projects
  - Hospitals
  - Projects where the design team is around Personal Identifiable Information (PII)
- Cyber Liability is being required in contracts to protect the design documents for “x” amount of years.
- More extensive Confidentiality provisions that would bleed into a cyber exposure since we house project information electronically.
- Clients are revamping contracts and just making it a general requirement
How much cyber liability insurance coverage?

- Data loss may not be your largest exposure
- Calculate cost of notification to all patients
- Calculate cost of LifeLock
- Estimate legal fees
- Evaluate need for data recovery
- Estimate cost of PR campaign
Remediate and Review

- Use your Risk Assessment as you would any other audit
- Management response can be to implement (or not) recommendations
- Prioritize based on risk
- Vendor assessments for third parties
- Annual reviews to stay on track
- New risks can be evaluated within this framework
Employee Awareness

- Gain a baseline Phish Bait
- Be inconsistent. Don’t send the same phish bait to the entire organization on the same day and time.
- Make the message intriguing.
- Address repeat offenders
On Prem vs Cloud

- Apps that make sense to the cloud
  - Email – Outlook, G-Suite
  - Docs, spreadsheets
  - Accounting, Time&Billing – Acumatica, Deltek Vantagepoint, Ajera, Clearview
  - Project Management Software
    - Bentley Projectwise
    - Procore

- Files that remain on prem
  - Large design & bim files
    - Bentley - Openroads & Opendesign
    - Autodesk – Autocad, Revit,BIM360, Civil360

Don’t be a victim of Shiny Object Syndrome
Today’s shiny objects will be a part of tomorrow’s operational supported IT infrastructure plan.
Cloud

- Fewer Systems = More Security
- Redundency – Disaster Recovery
- More Integration
- Less Passwords and User Accounts
- Logging

Design Systems – Thin Clients/ Citrix
Shiny Object Syndrome
Thank You & Questions

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