Ten Commandments of Effective Security Awareness Training
Humans - The Weakest Link?

• 82% of large organizations had staff driven security breaches (1)
• 47% had employees lose or leak confidential information (1)
• 86% of companies cite humans as their greatest vulnerability (2)

Overlooking the human element is most common mistake in computer security

1 PWC Information Security Breaches Survey (April 2012)
2 Deloitte Global Security Survey (Feb 2009)
Technology Alone Won’t Work

• Tempting to just buy software or hardware that promises to solve these problems
  – However, attackers are very resourceful, constantly looking to circumvent your defenses
  – Security controls are lagging behind technology adoption
  – Technology alone can't motivate people
Training has a Big Role to Play

• Lack of understanding of risks
• Wide range of scenarios – web surfing, Wi-Fi, passwords, SMS, location, email, apps and much more
• Required knowledge is vast & growing
• Delivery methods & content must be compelling
• Practical strategies not always easy to articulate
• Security = secondary task (no motivation to learn)
Security Awareness is Essential

• “Root cause is often a failure to invest in educating staff about security risks” (1)

• Organizations with a security awareness program were 50% less likely to have staff-related security breaches (1)

• 38% of large organizations do not have a security awareness program in place (1)

1 PWC Information Security Breaches Survey (April 2012)
10 Commandments of Effective Training

1. **Offer conceptual and procedural knowledge**
   - Conceptual knowledge provides the big picture
   - Procedural knowledge focuses on specific actions to solve the problem

How to apply this

- Training should always describe why something is a threat before telling the trainee what to do about it.
- Give actionable information. Specific steps they should take to protect themselves.
2. **Serve small bites** – people learn better when they can focus on small pieces of information.

How to apply this

- Limit the time a lesson takes to 10 minutes or less
- Keep the lesson concepts very simple
3. **Reinforce lessons** – without frequent feedback and practice, even well-learned abilities go away. Security training should be ongoing, not a one-off.

How to apply this

- Have the users practice concepts immediately after learning them
- Repeat the same lessons multiple times throughout the year
- Repetition increases retention
10 Commandments of Effective Training

4. **Train in context** – Present lessons in the context which the person is most likely to be attacked.

How to apply this

• Create a situation that users can relate to
  • You’re sitting at your desk and an email comes in . . .
  • You receive an SMS from a number you don’t recognize .
• Simulate the user interface when possible
5. **Give immediate feedback** – “Calling it at the point of foul” creates teachable moments and increases impact.

How to apply this

- After each practice exercise explain why an answer is correct or incorrect to reinforce the lesson.
- This is best done on an individual basis but can be done in a group setting.
6. **Let them set the pace** – Different baseline knowledge requires a different learning pace

**How to apply this**

- Web-based training enables trainees to go at their own pace
- Allow users to take the training over and over again
10 Commandments of Effective training

7. **Tell a story**

People remember stories much better than facts and data

How to apply this principle:

- Keep one set of characters in a particular scenario throughout training or change them up to keep the stories more fresh
- Might want to have trainees provide a story and apply that throughout classroom training
10 Commandments of Effective Training

8. **Involve your students** – Being actively involved in learning helps students remember things better. If trainees can practice identifying phishing schemes or strong passwords, improvements can be dramatic.

How to apply this principle:
- Immediately after each lesson give trainees opportunity to practice what they’ve learned multiple times.
- Use multiple realistic scenarios
- Use classroom discussion
9. Make them think
People need to evaluate their performance before they improve.

How to apply this principle:
• Providing scenarios where people practice and make decisions based upon new knowledge helps them change performance.
• Review practice sessions and correct/incorrect answers to aid in evaluation
10 Commandments of Effective Training

10. Measure results
Collecting baseline data, and new data after each training campaign, provides positive reinforcement to trainees

How to apply this principle:

– Ensure that your training program supports more than just collection of completion data
– Perform annual, or more regular, assessments to measure knowledge, not to train
Al's Risky Browsing Story
How Al was tricked into downloading a virus

Al is browsing the internet when he sees a prompt telling him that he has a virus.

He clicks "OK," thinking he's downloading a virus scanner.

He doesn't realize that because the prompt is inside the content area, it is controlled by the website!
To Click or Not to Click

Decide whether or not to click...
Immediate Feedback

To Click or Not to Click

**Good job!** Don’t trust pop-ups that appear in your browser’s content area. Check for viruses using anti-virus software that is already installed.

Click or Don’t Click
Immediate Feedback

To Click or Not to Click

Good job! If you want to update your browser, either use the "Check for updates" menu option or your computer’s "Check for updates" function.

Click

Don’t Click

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Measurement & Reporting

**Most Missed Report**

- Max Results: 10
- Start Date: 09/05/2012
- End Date: 02/11/2013
- Module: Email Security

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Assessment

Social Engineering Assessments

PhishGuru®
Assess, teach, and drive employee behavior change by simulating email phishing attacks.

USBGuru™
Assess, teach, and drive employee behavior change by simulating memory device attacks.

Anti-Phishing Expert, Wombat Security Technologies, Unveils Social Engineering Security Training Module
Tuesday, January 15, 2013

Wombat Security Technologies (Wombat), a leading provider of cyber security awareness training solutions, today announced the release of its comprehensive Social Engineering training module to defend against the most up-to-date and sophisticated social engineering threats, including spear phishing and social media-based attacks. The Social Engineering security training module leverages Wombat’s award-winning anti-phishing expertise and proven learning techniques to arm employees with the

The Top 10 Tech Companies to Watch in 2013

Security Awareness Training: The Final Frontier in the Fight Against Cybercrime

Top 7 end-user security priorities for 2013

Smartphone snoops? How your phone data is being shared
10 Commandments Recap

1. Conceptual and Procedural
2. Serve small bites
3. Reinforce lessons
4. Train in context
5. Give immediate feedback
6. Let them set the pace
7. Tell a story
8. Involve your students
9. Make them think
10. Measure results
Summary

• Humans don’t have to be your weakest link
• A security awareness program reduces your risk
• Yes, security awareness training can work
• Training must be engaging, efficient & measurable
• Leverage learning science for the best results
• Knowledgeable users are your best defense
Questions?