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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)

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Change Behavior. Reduce Risk.

Technology Alone Won't Work

- Tempting to just buy software or hardware that promises to solve these problems
  - How
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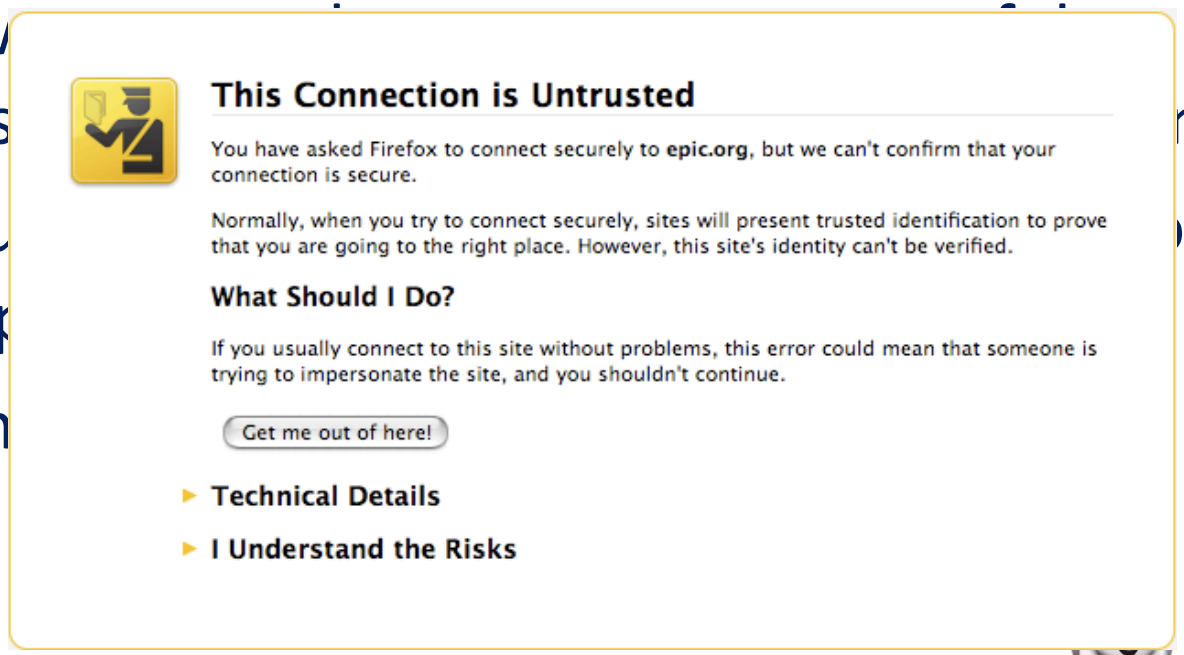
  - Secu
    adop
  - Tech



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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)

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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)

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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.

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10 Commandments of Effective Training

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

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10 Commandments of Effective Training

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

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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

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10 Commandments of Effective Training

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

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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

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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

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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

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10 Commandments of Effective Training

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

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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

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Conceptual and Procedural - Tell a Story

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Safer Web Browsing

Lesson 1 - *Building Blocks of Safer Browsing*

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!

Safer Web Browsing

Conceptual and Procedural

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Safer Web Browsing

Lesson 1 - *Building Blocks of Safer Browsing*

To Click or Not to Click

2/4

Decide whether or not to click...

Click

Don't Click

Immediate Feedback

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Safer Web Browsing

Lesson 1 - *Building Blocks of Safer Browsing*

To Click or Not to Click

3/4

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 | Don't Click

? Review | Next

Immediate Feedback

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Safer Web Browsing

Lesson 1 - *Building Blocks of Safer Browsing*

To Click or Not to Click

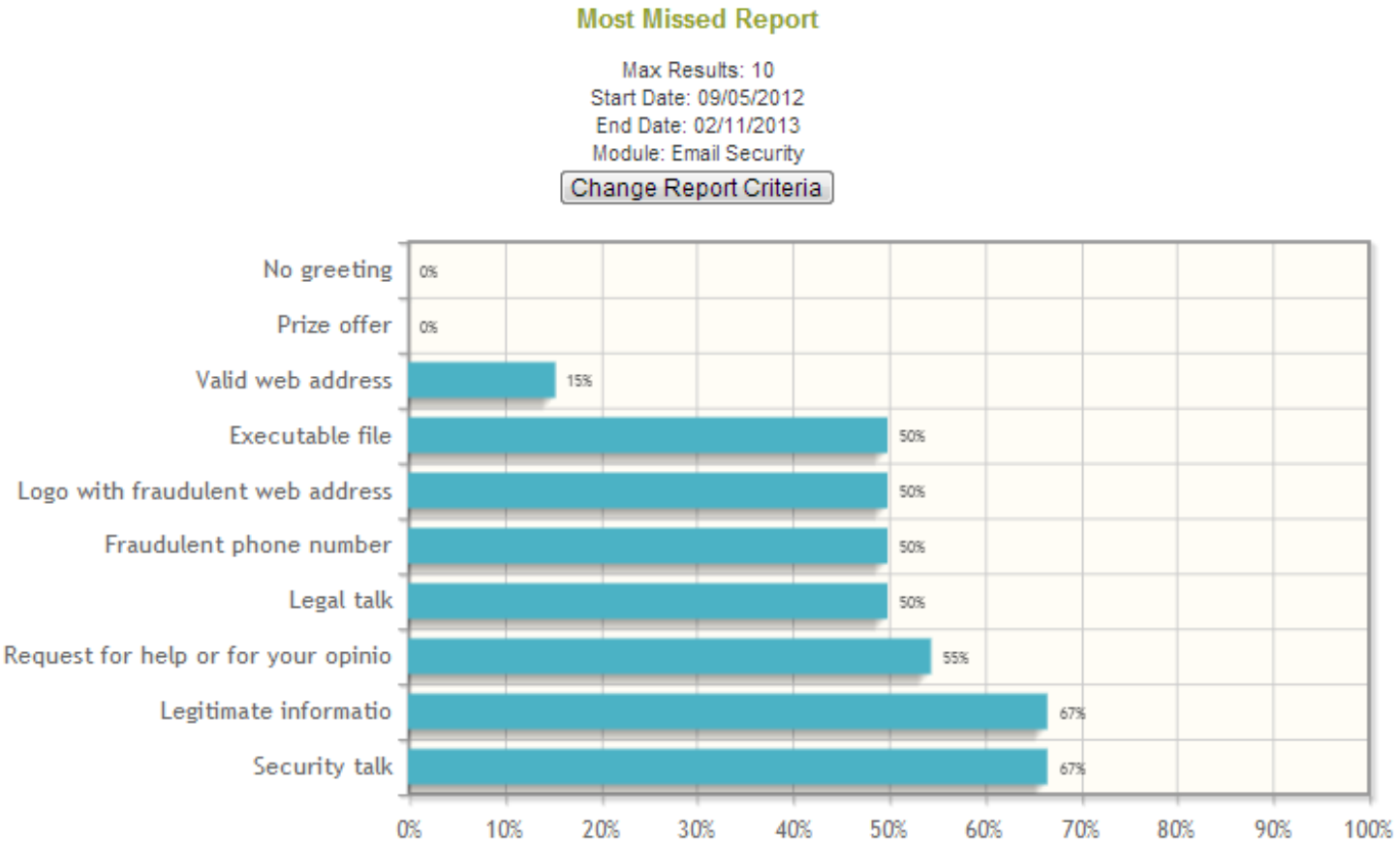
2/4

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

? Review | Next

Measurement & Reporting



Content	Percentage Correct
Prize offer	0.00%
No greeting	0.00%
Valid web address	15.38%
Legal talk	50.00%
Fraudulent phone number	50.00%

Assessment

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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

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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

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Questions?