



TurnKey Solutions

PRESENTS

THE CRITICAL ROLE OF
CYBER SECURITY IN HEALTHCARE

PRESENTED BY HENRY D. OVERTON
PRESIDENT, CO-FOUNDER, TURN KEY SOLUTIONS, LLC



ABOUT TURN KEY SOLUTIONS

- STARTED IN 1999
- SUPPORT CLIENTS OF EVERY SIZE AND INDUSTRY
- PROVIDE 24 x 7 I.T. SUPPORT FOR CLIENTS ACROSS USA
- FOCUS AREA: LOUISIANA
- FOCUS SPECIALTY: HEALTHCARE



WHAT DOES TURN KEY SOLUTIONS DO??

CHIEF INFORMATION OFFICER

Sales & Service
strategy

backups cloud VIRTUALIZATION

PACS Administration

PHONES

HIPAA Compliance Computers

support

Chief Technical Officer

OFFICE365

HEALTHCARE I.T. SOLUTIONS

WIRING

EMR

Internet service

HELPDESK

PCI COMPLIANCE

DISASTER
RECOVERY

MAC / APPLE SUPPORT

SECURITY

ANTIVIRUS

CONSULTING

 **TurnKey Solutions**

TOPICS FOR THIS MORNING

- WHY?
- VALUE PROPOSITION (THE R.O.I.)
- THE ESSENTIAL STEPS TO CYBERSECURITY
- HOW TO START (OR RE-START)

TO GET
GOOD
RESULTS:

BEGIN
WITH
THE END
IN MIND.

START
WITH
WHY



HOW THINGS
TURN OUT
WITHOUT A
A PLAN,
THE RIGHT
INGREDIENTS,
AND A
GOOD BAKER



“PEOPLE DON’T BUY *WHAT* YOU
DO, THEY BUY *WHY* YOU DO IT.”

~ SIMON SINEK

START WITH WHY: THE DIFFERENCE

WHAT

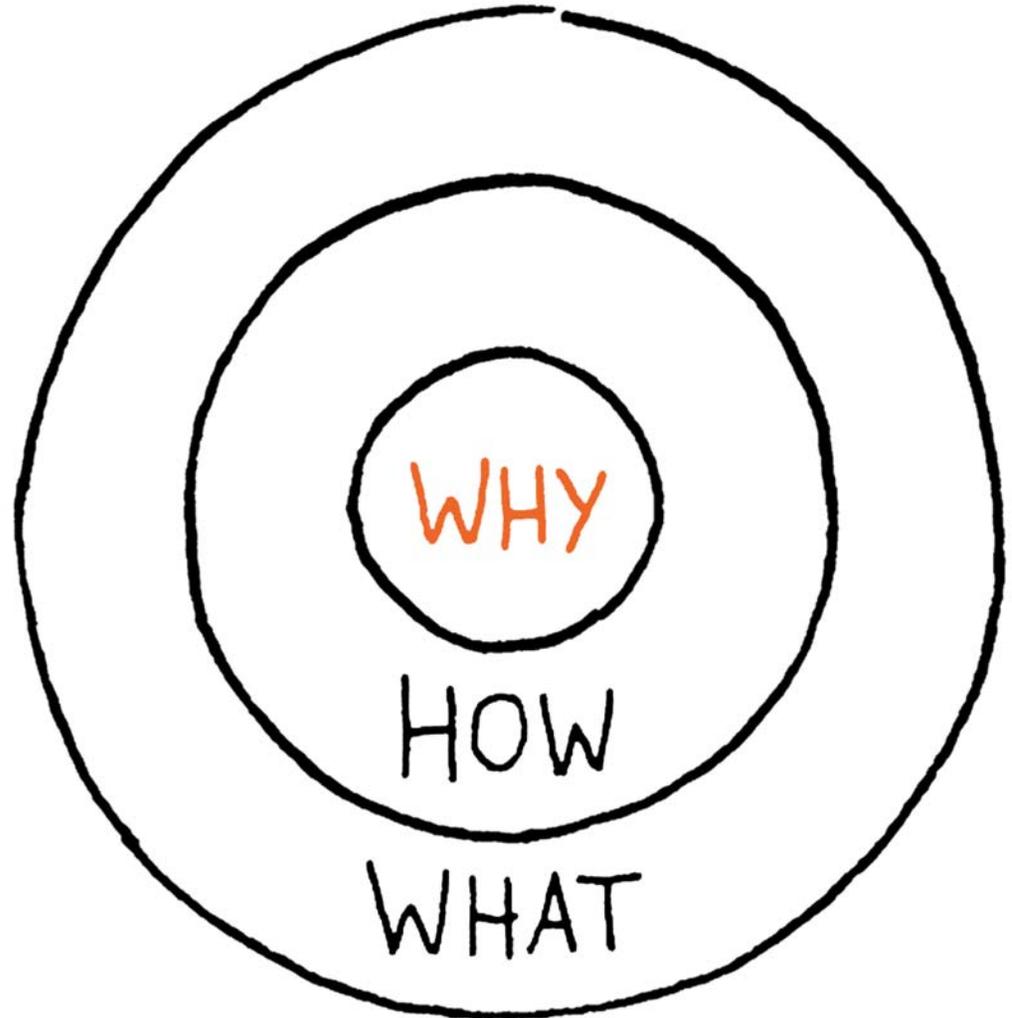
Critical Role of Cybersecurity
in Healthcare

HOW

Firewalls, antivirus,
backups, people,
process, insurance

WHY

What is at stake?



CYBERSECURITY IN HEALTHCARE : OVERVIEW

- WHY?
- **VALUE PROPOSITION (THE R.O.I.)**
- THE ESSENTIAL STEPS TO CYBERSECURITY
- HOW TO START (OR RE-START)



THE ASSETS

WHAT WE'RE PROTECTING

THE LANDSCAPE: WHAT ARE THE ASSETS



- PATIENT DATA, IDENTITY
- REPUTATION
- FUTURE BUSINESS
- CASH, FUTURE INCOME
- WHAT'S ALL THAT WORTH, THOUGH???

THE LANDSCAPE: WHAT ARE THE ASSETS WORTH



- PARTIAL ELECTRONIC HEALTH RECORDS ARE BEING SOLD FOR 10 – 50 X SSN & CREDIT CARD #
 - MOST DATA IN A CHART IS PERMANENT – PATIENTS WILL HAVE LIFE-LONG IDENTITY THEFT ISSUES.



THE LANDSCAPE: WHAT'S A BREACH COST?



- AVERAGE COST OF BREACH OVER 2014-2015
 - HEALTHCARE ORGANIZATIONS = OVER \$2.2 MILLION
 - BUSINESS ASSOCIATES = OVER \$1 MILLION
- PER BREACH

THE LANDSCAPE: EXAMPLES & DETAILS OF REAL THREATS



THE THREAT LANDSCAPE: SPEARFISHING

SPEAR PHISHING: EXPLAINED



From: henry@turnkysol.com

To: mary@turnkeysol.com

Subject: Mary, I need something quick

Mary, I need you to make a wire transfer to this routing number 091812714 right away for a deal we're closing this afternoon. It's pretty urgent that it go through before lunch.

Thank you! ~Henry

THE THREAT

SPEAR PHISHING: EXPLAINED

mary



THE THREAT LANDSCAPE: SPEARFISHING

SPEAR PHISHING: EXPLAINED

The logo for Wire Transfer is centered within a white rounded rectangle with a blue border. It features the word "WIRE" in a bold, blue, sans-serif font, with a green graphic of three horizontal bars to its left. Below "WIRE" is the word "TRANSFER" in a bold, blue, sans-serif font.

**WIRE
TRANSFER**

THE THREAT LANDSCAPE: SPEARFISHING

SPEAR PHISHING: EXPLAINED



From: mary@turnkeysol.com

To: henry@turnkysol.com

Subject: re: Mary, I need something quick

Done. I gotta go. Picking kids up on my 12 minute lunch break. Thanks.

~Mary

THE THREAT LANDSCAPE: SPEARFISHING



SPEAR PHISHING: EXPLAINED

A screenshot of a CNN Money article. The top navigation bar includes "CNN Money u.s. +", "Business", "Markets", "Tech", "Media", "Personal Finance", "Small Biz", "Luxury", and "sto". The article title is "Hackers siphon \$47 million out of tech company's accounts" with a "Cyber-Safe" tag. The author is "by David Goldman @DavidGoldmanCNN" and the date is "August 10, 2015: 1:19 PM ET". A "Recommend" button shows 280 recommendations, and there are icons for social media and email.

CNN Money u.s. + Business Markets Tech Media Personal Finance Small Biz Luxury sto

Cyber-Safe

Hackers siphon \$47 million out of tech company's accounts

by David Goldman @DavidGoldmanCNN

August 10, 2015: 1:19 PM ET

Recommend 280

THE FBI SAID THAT IN 2014, BUSINESSES LOST \$215 MILLION TO SIMILAR EMAIL SCAMS.



THREAT EXAMPLE:
DENIAL OF SERVICE ATTACKS



DENIAL OF SERVICE ATTACKS: EXPLAINED

hackers



Your
firewall



THE THREAT LANDSCAPE: MALVERTISING

MALVERTISING: EXPLAINED

LINKS TO CRIMINAL WEBSITES AND VIRUSES, EMBEDDED IN TRUSTED SITES THROUGH ADVERTISING NETWORKS.

HIGHLY TARGETED, EFFECTIVE, AND RIDICULOUSLY SIMPLE.

CNET › Security › New York Times, BBC and others inadvertently serve up dangerous ads

New York Times, BBC and others inadvertently serve up dangerous ads

Major websites were hit by a "malvertising" attack that hijacked people's computers and demanded ransom.

 Manning Solutions

THE THREAT LANDSCAPE: INTERNET OF THINGS

INTERNET OF THINGS

- SMART THERMOSTATS, TV'S, REFRIGERATORS, CAMERAS ETC ARE ALL LITTLE COMPUTERS
 - THEY ARE ALL POTENTIAL BEACON ATTACKS FROM
- DOES ANYONE HERE HAVE A
 - 2014 JEEP CHEROKEE?
 - 2015 CADILLAC ESCALADE?
 - 2014 INFINITI Q50?
 - 2014 FORD FUSION?
 - 2014 CHRYSLER 300?
 - MITSUBISHI OUTLANDER PHEV?



THE THREAT LANDSCAPE: RANSOMWARE

RANSOMWARE

- RANSOMWARE STEALS OR ENCRYPTS DATA, DISABLES SYSTEMS UNTIL THE USER PAYS A FINE TO THE CRIMINALS BEHIND IT.
- PAYING THE FEE MAY OR MAY NOT GET THE CRIMINALS TO UNLOCK YOUR SYSTEMS.
- SOMETIMES THE ONLY PATH IS RESTORE FROM BACKUP.



Hollywood hackers; FBI



TARGETING EVE

KrebsonSecurity

In-depth security news and investigation

22 Hospital Declares 'Internal State of Emergency' After Ransomware Infection

MAR 16

A Kentucky hospital says it is operating in an "internal state of emergency" after a ransomware attack rattled around inside its networks, encrypting files on computer systems and holding the data on them hostage unless and until the hospital pays up.

www.methodisthospital.net

Internal State of Emergency due to a computer virus. [Click here for additional information.](#)

ethodist Hospital is currently working in an Internal State of Emergency due to a Computer Virus that has limited our use of ele



1305 North Elm Street
Henderson, Kentucky 42420
270-827-7700

Google Custom Search Search

Home Nursing Residency Program Services Corporate Health MyHealth

THE THREAT LANDSCAPE: SUPPLY CHAIN HACK

THE SUPPLY CHAIN HACK: EXPLAINED



Nov 30 2013: majority of Targets infected, 40 million cards breached by 12/15/2013



Nov 15 – Nov 28 2013: attackers get to small number of Target Store cash register computers.



Fazio gets hacked / infected



Billing & Project management vpn w/ Target

THE THREAT LANDSCAPE: SUPPLY CHAIN HACK

THE SUPPLY CHAIN HACK: MORE EXAMPLES

The image is a screenshot of a Reuters news article. At the top, the Reuters logo and name are on the left, and navigation links for Business, Markets, World, Politics, Tech, Commentary, Breakingviews, Money, and Life are in the center. On the right, there are icons for a camera, a mobile device, and a search icon. Below the navigation is a secondary menu with links for Audit, Tax, Consulting, Advisory, performance., and Financial Transactions. The main article title is "Bangladesh Bank has warning issued" by Jim Finkle, dated Monday, April 25, 2016, at 11:06am EDT. Below the title are social media sharing icons for Twitter, Facebook, LinkedIn, Reddit, Google+, and Email. To the right of the article is a separate section titled "Hilton Worldwide Has Identified and Taken Action to Eradicate Malware" dated November 24, 2015, with a note that the information originated in American English. This section features the Hilton Worldwide logo and a "Photo Caption" dropdown menu. Below the caption, the text reads: "MCLEAN, Va. - Hilton Worldwide (NYSE: HLT) has identified and taken action to eradicate unauthorized malware that targeted payment card information in some point-of-sale systems. Hilton immediately launched an investigation and has further strengthened its systems."

REUTERS Business Markets World Politics Tech Commentary Breakingviews Money Life

Audit | Tax | Consulting | Advisory performance. Financial Transactions

Homepage | Mon Apr 25, 2016 11:06am EDT

Bangladesh Bank has warning issued

BY JIM FINKLE

Twitter Facebook LinkedIn Reddit Google+ Email

Hilton Worldwide Has Identified and Taken Action to Eradicate Malware

November 24, 2015 | This information originated in American English.



Photo Caption ▾

MCLEAN, Va. - Hilton Worldwide (NYSE: HLT) has identified and taken action to eradicate unauthorized malware that targeted payment card information in some point-of-sale systems. Hilton immediately launched an investigation and has further strengthened its systems.

THE THREAT FACTS
FOR COVERED ENTITIES
& BUSINESS ASSOCIATES



THE LANDSCAPE: SOURCES & FACTS

- 2014-2015, FOR HEALTHCARE ORGANIZATIONS
 - 50% OF BREACHES COME FROM CRIMINAL ATTACK
 - 13% OF BREACHES COME FROM MALICIOUS INSIDERS
- 2014-2015, FOR BA'S
 - 41% OF BREACHES COME FROM CRIMINAL ATTACK
 - 9% OF BREACHES COME FROM MALICIOUS INSIDERS



~ Sixth Annual
Benchmark
Study on Privacy
& Security of
Healthcare Data



THE LANDSCAPE: SOURCES & FACTS

- DETECTION TIME OF ATTACKS IS GETTING SLOWER
- EXFILTRATION TIME IS GETTING FASTER
- 2015: 63 % OF CONFIRMED DATA BREACHES INVOLVED WEAK, DEFAULT OR STOLEN PASSWORDS
- 2015: 89% OF BREACHES HAD A FINANCIAL OR ESPIONAGE MOTIVE.

The Verizon logo, featuring the word "verizon" in white lowercase letters with a red checkmark above the "n", set against a dark background.

~ 2016 Data
Breach
Investigations
Report

The TurnKey Solutions logo, featuring a circular icon with "Turn" and "Key" in blue and white, followed by the text "TurnKey Solutions" in a white, italicized sans-serif font.



FINDING THE VALUE PROPOSITION OF SECURITY

WHAT'S IT GOING TO COST?

ON AVERAGE, 1-2 CUPS OF COFFEE PER EMPLOYEE PER MONTH FOR MOST ORGANIZATIONS.

WHAT'S IT GOING TO SAVE?

ON AVERAGE,
\$2.2 MILLION / CE,
\$1 MILLION / BA'S

The VALUE
PROPOSITION for
CYBERSECURITY
HAS
NEVER
been stronger

CYBERSECURITY IN HEALTHCARE: OVERVIEW

- WHY?
- VALUE PROPOSITION (THE R.O.I.)
- **THE ESSENTIAL STEPS TO CYBERSECURITY**
- HOW TO START (OR RE-START)

CYBERSECURITY: THE RISK MANAGEMENT PROCESS

1. IDENTIFY RISK AREAS
2. ASSESS RISKS
3. CREATE A RISK MANAGEMENT PLAN
4. IMPLEMENT RISK CONTROLS
5. RE-EVALUATE & MEASURE SUCCESS
6. RINSE & REPEAT



CYBERSECURITY: THE RISK MANAGEMENT PROCESS

STEP 1: IDENTIFY RISK AREAS

- HIPAA AUDIT (+SOX, PCI...)
- INSUFFICIENT BACKUPS
- BROKEN PIPES
- INCOMPLETE ANTIVIRUS PROTECTION
- LOSS OF TRADE SECRETS
- AUTOMATED BUILDING HACKS
- MOBILE DEVICES!!!
- PAPER LOSS?
- GUEST INTERNET
- PATIENT PORTALS
- STUDIES ON CD
- DISGRUNTLED EMPLOYEES
- CLOUD – BASED SYSTEMS



What else???

CYBERSECURITY: THE RISK MANAGEMENT PROCESS

STEP 2: ASSESS RISKS

- DO A REAL RISK ASSESSMENT.
- INVOLVE PEOPLE WITH A TRACK HISTORY OF DOING RISK ASSESSMENTS
- INVOLVE YOUR STAFF



CYBERSECURITY: THE RISK MANAGEMENT PROCESS

STEP 3: CREATE A RISK MANAGEMENT PLAN

- PRIORITIZE THE EASIEST SOLVED RISKS
- OR, START WITH BIGGEST RISKS
- THEN CREATE A PLAN FOR THE REST



CYBERSECURITY: THE RISK MANAGEMENT PROCESS

4. IMPLEMENT RISK CONTROLS

- (START DOING YOUR PLAN)

“VISION WITHOUT ACTION IS A DAYDREAM
ACTION WITHOUT VISION IS NIGHTMARE”

~JAPANESE PROVERB



CYBERSECURITY: RISK CONTROLS



AT A MINIMUM, THESE ARE OUR UNIVERSAL RECOMMENDATIONS:

- CULTURE OF CONTINUING, PERVASIVE EDUCATION
- **MULTI-LAYER SECURITY**
- CHECKS & BALANCES
- BACKUP: CHECK, DOUBLE CHECK, TRIPLE CHECK. ONSITE & OFFSITE.
- AND...CYBERSECURITY INSURANCE



CYBERSECURITY: THE RISK MANAGEMENT PROCESS

STEP 5: RE-EVALUATE & MEASURE

- SET A DATE WHEN YOU WILL BE MEASURING & RE-EVALUATING.
- BE 100% HONEST WITH YOUR SELF AND YOUR TEAM IN THESE MEETINGS



CYBERSECURITY: THE RISK MANAGEMENT PROCESS

START OVER! IDENTIFY RISK AREAS AGAIN!

- THINGS CHANGE.
BUSINESS CHANGES.
RISKS CHANGE.
- SET A SCHEDULE THAT IS FEASIBLE,
BUT NO LONGER THAN 1 YEAR
FROM START TO FINISH.



PRACTICE GUIDE | Health IT

NIST SP 1800-1a

CYBERSECURITY IN HEALTHCARE: OVERVIEW

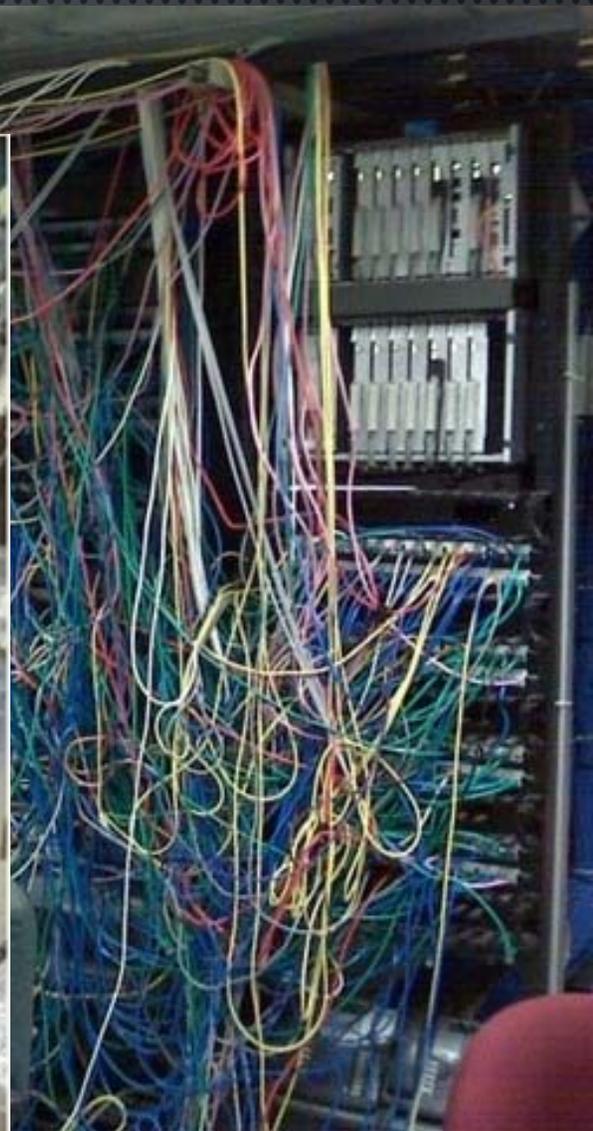
- WHY?
- VALUE PROPOSITION (THE R.O.I.)
- THE ESSENTIAL STEPS TO CYBERSECURITY
- **HOW TO START (OR RE-START)**

HOW TO START OR RE-STAR YOUR CYBERSECURITY PLAN

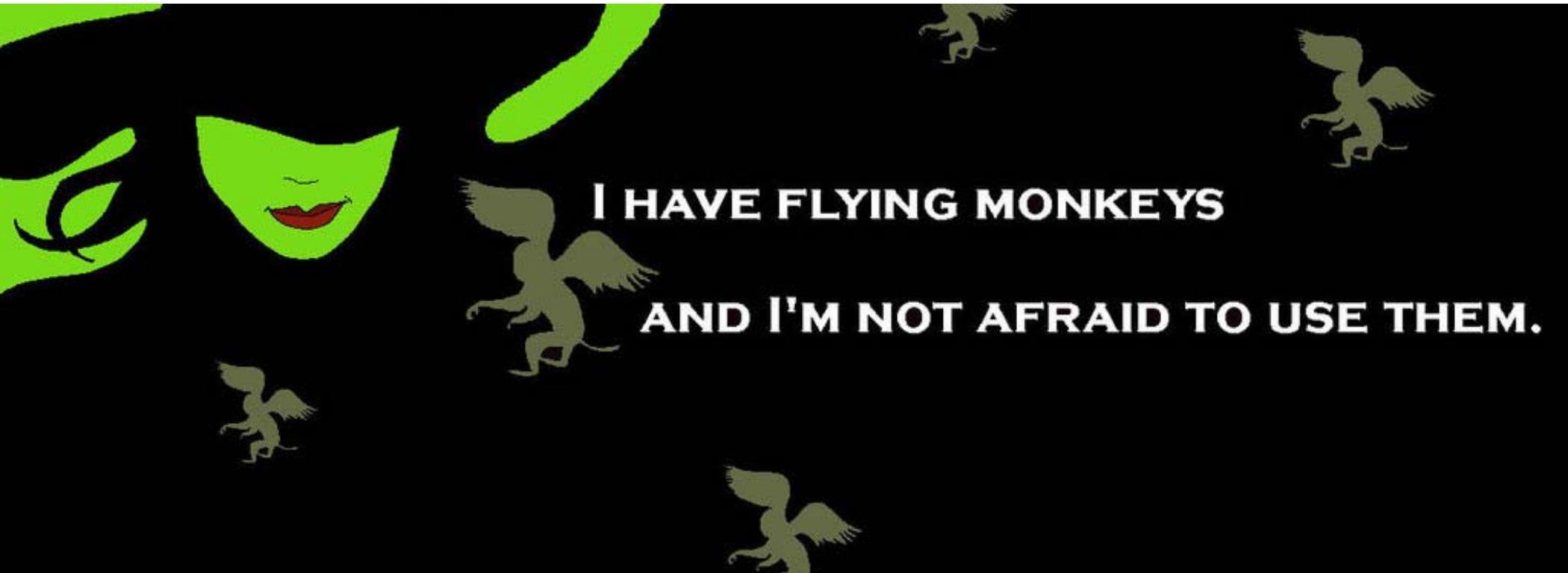
- **IT'S A MARATHON, NOT A SPRINT.**
- **ASSEMBLE YOUR TEAM**
 - **WORK WITH PEOPLE WHO DO THIS FOR A LIVING**
 - **INCLUDE YOUR STAFF LEADERS**
- **TRICKLE **Down** AND **UP** TO EVERY PERSON IN YOUR BUILDINGS**
- **DELEGATE WISELY BUT, STAY ENGAGED!**



IF YOU DON'T



POOR ENGAGEMENT LEAVES BUSINESS LEADERS SUSCEPTIBLE TO FEAR TACTICS:



I HAVE FLYING MONKEYS

AND I'M NOT AFRAID TO USE THEM.

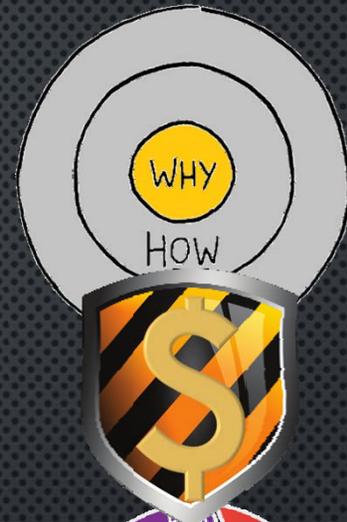
HOW TURN KEY SOLUTIONS USUALLY ENGAGES WITH CE'S AND BA'S ON CYBERSECURITY:



- SIMPLE & HIGH ROI: RISK ASSESSMENT
- SIMPLE & HIGH ROI: MULTI-LAYER SECURITY
- SIMPLE & HIGH ROI: DISASTER PREP

CYBERSECURITY IN HEALTHCARE: OVERVIEW

- ✓ • WHY?
- ✓ • VALUE PROPOSITION (THE R.O.I.)
- ✓ • THE ESSENTIAL STEPS TO CYBERSECURITY
- ✓ • HOW TO START (OR RE-START)



WHERE TO GET MORE MORE



- **TIPS, TRICKS & FREQUENT UPDATES:**
 - www.tks.la
- **NIST:** [HTTP://CSRC.NIST.GOV/PUBLICATIONS/PUBSDRAFTS.HTML](http://csrc.nist.gov/publications/pubsdrafts.html)
- **EMAIL / CALL HENRY OVERTON ANYTIME.**
 - 225-751-4444 HENRY@TKS.LA

 **Turn Key Solutions**



That's all Folks!



Turn Key Solutions

THANK YOU!

Q&A

 **TurnKey** Solutions