



#2

THE CYBER HERO ADVENTURES

DEFENDERS OF THE DIGITAL UNIVERSE

FOLLOW THE MONEY!



NICE
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CYBERSECURITY EDUCATION

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National Cybersecurity Career Awareness Week

Inspiring and promoting awareness & exploration of cybersecurity careers

Objectives

- Create excitement around increasing public awareness and engagement in building a strong cybersecurity workforce
- Highlight the numerous pathways to enter the cybersecurity career field
- Showcase programs that increase participation of underserved populations in the cybersecurity workforce



Cybersecurity Workforce Demand

Currently in the US, there are over 300,000 unfilled cybersecurity positions.
June 2018, CyberSeek.org

The NICE Cybersecurity Workforce Framework categorizes and describes cybersecurity work. Learn more about the numerous pathways to obtain a position in one of these 7 cybersecurity job categories.
nist.gov/nice/framework



SECURELY
PROVISION



OPERATE &
MAINTAIN



OVERSEE &
GOVERN



PROTECT &
DEFEND



ANALYZE



COLLECT &
OPERATE



INVESTIGATE

How to Get Involved

For K12 Audiences

- Invite speakers to your school to present lectures and demonstrations about cybersecurity careers
- Create and Display a bulletin board about cybersecurity in your school
- Start a cybersecurity club or competition team
- Partner with a science museum to present hands-on-exhibits about the field of cybersecurity
- Use one of NICE's downloadable resources as a classroom activity

For Adult Audiences

- Coordinate a lecture, workshop, or activity on careers in cybersecurity
- Set up and staff an exhibit table at a local office or community center to distribute resources
- Launch a social media campaign to spread the word
- Contact local radio or television stations to incorporate a career in cybersecurity segment
- Volunteer to assist or coach a cybersecurity competition team

When?



2nd Week
of November

Want to Learn

More? Visit...

nist.gov/nice/nccaw

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email: nccaw@nist.gov



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The CyberHero Adventures
Defenders of the Digital Universe



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PROJECTS, COLLABORATE WITH MULTIPLE
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THE CYBERHERO ADVENTURES

FOLLOW THE MONEY!

ISSUE 2



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THESE PAST
COUPLE OF YEARS
HAVE BEEN AWFUL
FOR US AS VICTIMS
OF CYBER
CRIME!

YOU AIN'T KIDDIN'!
BUT WE PULLED THROUGH,
IF A BIT SCRATCHED AND
BRUISED. I JUST HOPE THAT
THIS HACKING NIGHTMARE
IS OVER! *

AAAAAAH!
BLOOD CLOTS

THE FOLLOWING IS BASED
ON A TRUE STORY...

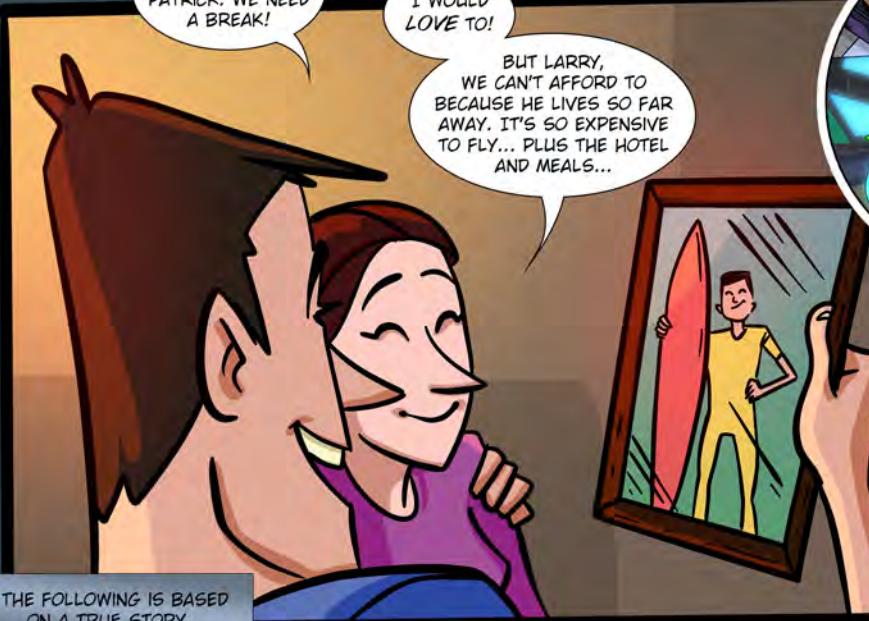
LARRY WISHES THAT THEIR SON,
WHO MOVED TO A FAR EXOTIC
ISLAND OFF THE COAST OF
AUSTRALIA, WAS CLOSER BECAUSE
THEY HAVE NOT SEEN HIM FOR A
LONG TIME. BUT THANKS TO THE
INTERNET AND SOCIAL MEDIA, THEY
KEEP IN TOUCH WITH HIM ALMOST
EVERY DAY. THE TIME DIFFERENCE
IS A KILLER THOUGH!

IT WOULD
BE NICE TO VISIT
PATRICK. WE NEED
A BREAK!

I WOULD
LOVE TO!

BUT LARRY,
WE CAN'T AFFORD TO
BECAUSE HE LIVES SO FAR
AWAY. IT'S SO EXPENSIVE
TO FLY... PLUS THE HOTEL
AND MEALS...

WOOOOOOOOOSHHHH!



*REFER TO THE CYBERHERO ADVENTURES: DEFENDERS
OF THE DIGITAL UNIVERSE ISSUE #1 FOR THE EXCITING
ADVENTURES OF LARRY JONES AND THE CYBERHEROES
AS THEY TAKE ON THEIR FIRST BATTLE AGAINST THE
TREACHEROUS CYBER VILLAINS AND BLACK HAT HACKERS!



THE MANY FACES OF SONNY THE SOCIAL ENGINEER...



FRAUDSTER, SCAMMER,
CONFIDENCE ARTIST, GRIFTER,
HUSTLER, CHAMELEON. HE
GOES BY MANY NAMES...



THEY ALL ADD UP TO ONE THING:
SONNY THE SOCIAL ENGINEER IS
A MASTER MANIPULATOR
OF HUMAN BEHAVIOR AND HE
HOLDS A PH.D. IN DECEIT!



THE TRANSACTION IS COMPLETED...

C'MON! JUST ONE DRINK TO CELEBRATE!

AND THE DEAL IS SEALED!

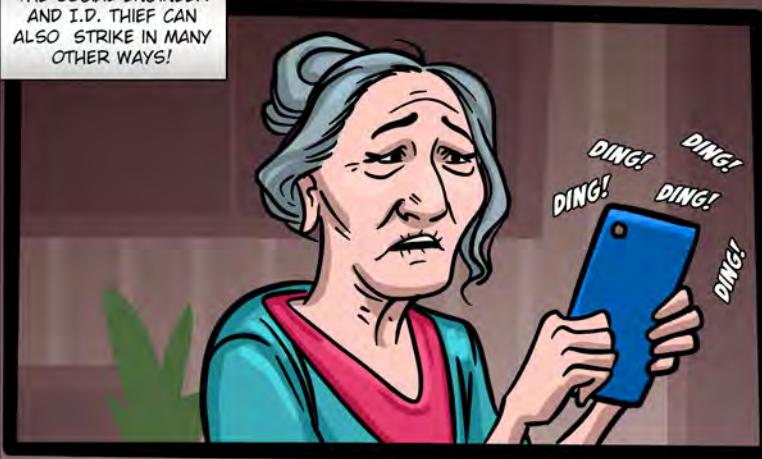
BUT HE ALSO WIELDS FEAR LIKE A WHIP. HE PREYS ON ANY PERCEIVED WEAKNESS TO BRING DOWN HIS TARGETS AND ENRICH HIMSELF...

...WHILE RUINING CAREERS, MARRIAGES, AND FAMILIES IN THE PROCESS.

ONCE THE TRAP IS SET, HIS EXIT IS QUICK... NEVER TO BE SEEN AGAIN!

WHILE ALL THIS MAY SEEM LIKE THE MACHINATIONS OF A BYGONE ERA, NOW ALL OF IT HAPPENS ONLINE WITHOUT THE SCAMMER EVER MEETING HIS MARK!

THE SOCIAL ENGINEER AND I.D. THIEF CAN ALSO STRIKE IN MANY OTHER WAYS!



HI GRANDMA, I BLEW OUT A TIRE ON I-95 AND I NEED TO BORROW \$200 TO PAY FOR A NEW ONE.

MY PHONE IS DEAD SO I TEXTED YOU FROM THE PHONE OF THE NICE MAN WHO TOWED ME OFF THE HIGHWAY.

ANYWAY, HE'S LEAVING NOW ON A JOB SO I WON'T BE ABLE TO TALK TO YOU FOR A COUPLE HOURS.

CAN YOU CASH APP ME THE MONEY TO "YS258@BLAHOO.COM"? I'LL PAY IT BACK THIS FRIDAY, I PROMISE!

THANKS GRANDMA, YOU'RE THE BEST!

TWO HOURS AND ONE FINANCIAL TRANSACTION LATER...



BACK TO THE JONES FAMILY MISADVENTURES...

MOM, DAD,
I THINK YOU
COMING TO VISIT
IS A GREAT
IDEA!

MAYBE
NEXT YEAR,
SON. YOU
SEE...

WE HAVEN'T TOTALLY
RECOVERED FROM
WHAT HAPPENED WITH
THESE FRAUDSTERS.

YOU CAN
STAY AT MY
PLACE, FOR FREE
OF COURSE, IF
THAT'LL HELP!

THAT'S
SO NICE! WE'LL
SAVE UP AND
WE'LL MAKE IT
HAPPEN...

WE
PROMISE!

O.K. MOM
& DAD, I HAVE TO
GO TO WORK. CAN'T
WAIT TO SEE YOU
AGAIN! WE'LL TALK
SOON!

MEANWHILE, THE EVIL VILLAINS
ARE BUSY SETTING UP WEBSITES
AND EMAIL ACCOUNTS FOR THEIR
NEXT NEFARIOUS PLOT...



FAST FORWARD...
ONE WEEK LATER...



OH GOSH
LARRY... LOOK!
LOOK!



SO YOU MEAN TO TELL ME YOUR COMPANY IS OFFERING A TRIP TO SURFERS PARADISE ISLAND NEXT MONTH - ALL EXPENSES PAID, INCLUDING:

FLIGHTS, HOTEL, LIMO PICKUP TO & FROM THE AIRPORT & HOTELS, AS WELL AS FREE LUGGAGE?

WHAT'S THE CATCH?

LARRY, THIS IS UNBELIEVABLE!

MR. JONES, WHAT'S THE CODE ON THE LETTER?

LET ME SEE... IT'S HRG882-299WQ.

Call (800) 862-9286 NOW!
You may be a...

WINNER!!!

confirmation code:
HRG882-299WQ

SIR, YOU & YOUR SPOUSE HAVE BEEN CHOSEN TO RECEIVE THE FREE OFFER DETAILED IN THE MAILING!

EVERYTHING IS INCLUDED! ALL YOU NEED TO DO IS PROVIDE YOUR INFORMATION TO OUR TRAVEL AGENCY.

I CAN COLLECT IT NOW OR YOU CAN GO TO OUR SECURE WEBSITE LISTED IN THE LETTER & INPUT IT THERE!

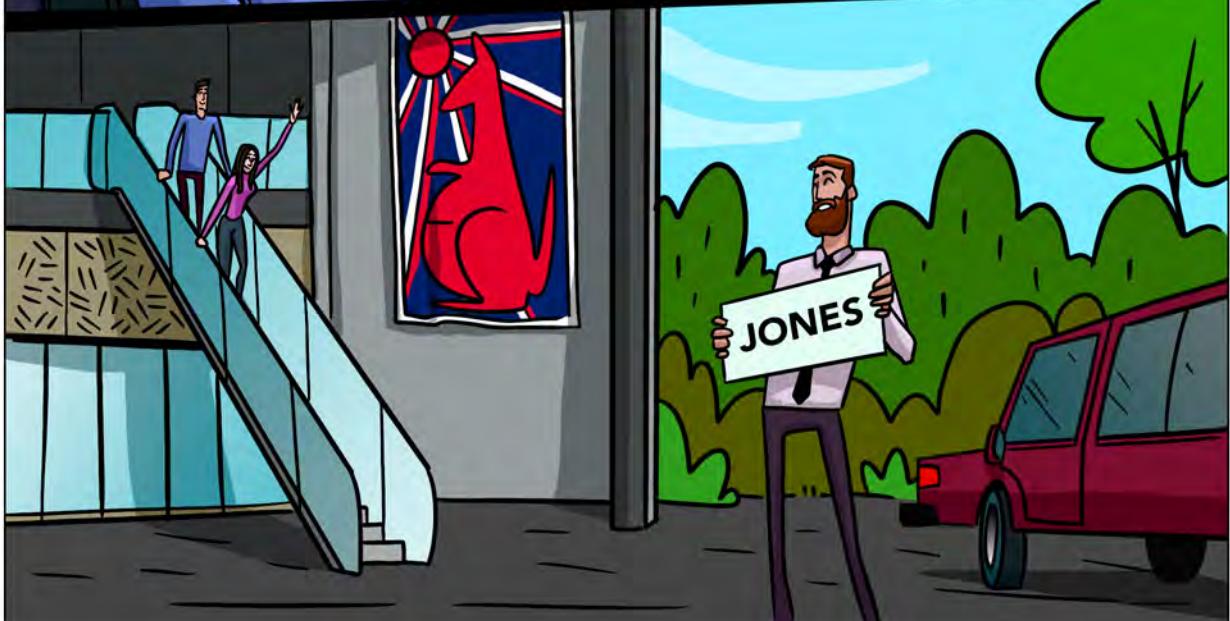
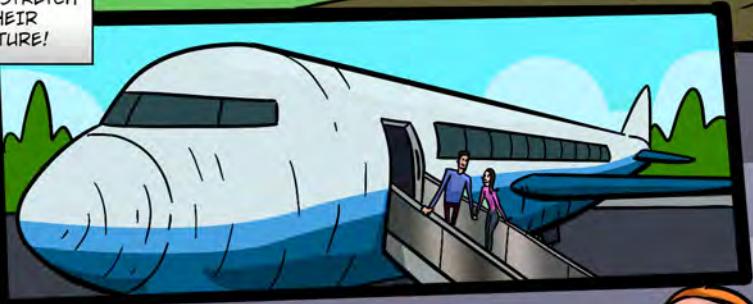
YES, THANK YOU.
I'LL GO TO THE WEBSITE.

OKAY SIR!
YOU HAVE 48 HOURS TO DO SO, OTHERWISE THE FREE OFFER WILL EXPIRE.

GOOD TO KNOW!
THAT MUST HAVE BEEN IN THE FINE PRINT IN THE LETTER.

I UNDERSTAND
MR. JONES, MOST PEOPLE ARE SKEPTICAL. THIS OFFER IS SIMPLY PART OF A MARKETING CAMPAIGN TO LET PEOPLE KNOW ABOUT THIS GEM OF AN ISLAND!

A FEW WEEKS LATER...







THE NEXT DAY...

DING DONG

HI LARRY!
IT'S GOLD E
LOCKS FROM
NEXT DOOR!

BILL AND I
WANTED TO SEE IF YOU
AND SUE WOULD LIKE
TO COME OVER FOR
KARAOKE NIGHT.

SOUNDS LIKE
A LAUGH BUT I'M
AFRAID WE WON'T BE
GREAT COMPANY
TONIGHT.

WHAT
HAPPENED?

15 MINUTES LATER...

...AND TO MAKE
A LONG STORY
EVEN LONGER...

YOU WERE
USED AS "MULES"
TO TRANSPORT
URANIUM.

IT TURNS OUT
THAT WE'RE VICTIMS OF THIS
ELABORATE, WELL-PLANNED AND
EXECUTED SCAM! AND AT THE END
OF IT ALL, SUE AND I END UP
IN CUSTODY!

WE HAD TO HIRE
CYBER SECURITY EXPERTS
AND AN ATTORNEY TO DEFEND
OURSELVES AGAINST
THE CHARGES!

IS THAT
JUST THE CRAZIEST
THING YOU'VE EVER
HEARD?

WE NEED TO KNOW
ABOUT THESE CRIMES
IF WE'RE GOING TO BE
SUCCESSFUL DEFENDING
OURSELVES AGAINST
THEM!

WELL, IT'S A
LONG STORY WITH
LOTS OF COLORFUL
CHARACTERS!

SOME JUST
ENJOY THE THRILL
OF HACKING.

SOME COUNTRIES TRY
TO GAIN INFORMATION TO
ALLOW THEM TO DISRUPT
CRITICAL INFRASTRUCTURE
SUCH AS FINANCIAL
SERVICES.

LET ME USE
AN ANALOGY...

LET'S TAKE IT BACK TO THE 1849 CALIFORNIA GOLD RUSH IN THE WILD WEST.



PROSPECTORS AND PIONEERS RISKED EVERYTHING TO STRIKE IT RICH BY MINING GOLD. THERE ARE MANY SIMILARITIES FROM THE GOLD RUSH TO TODAY. FOR EXAMPLE...

fakeboo

TODAY, WE HAVE DIGITAL PIONEERS AND PROSPECTORS WHO ARE MINING DATA. SOME DO IT WITH YOUR CONSENT...

THANK YOU!

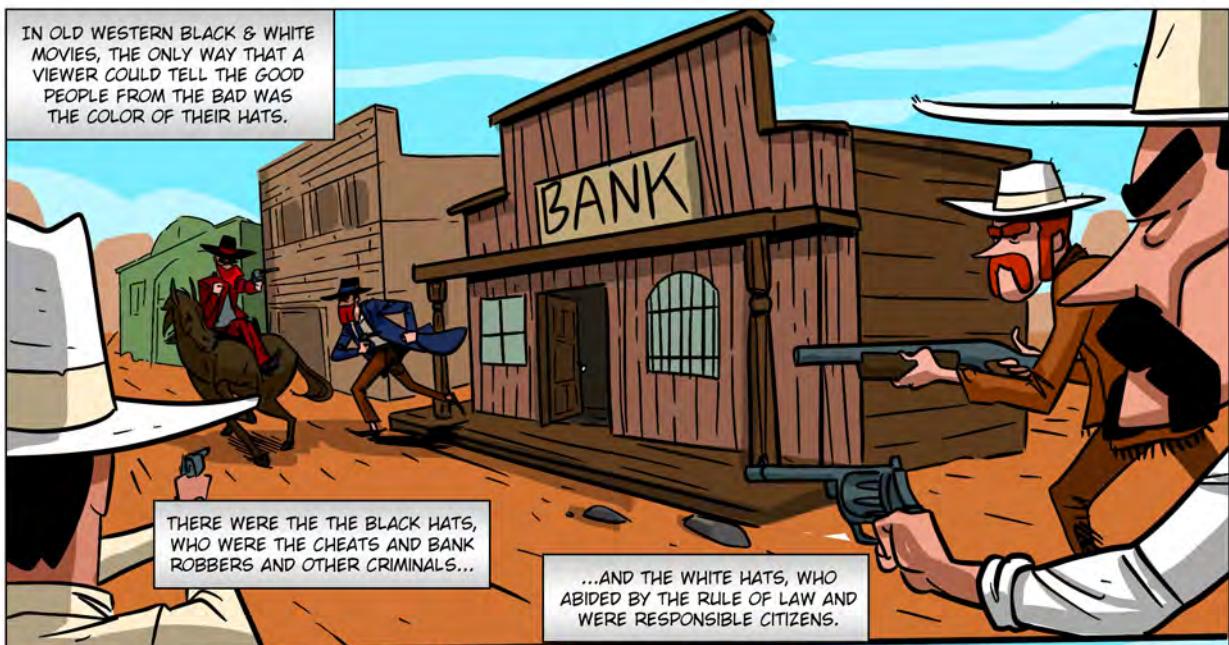


AND MANY HAVE THE POTENTIAL TO DO IT WITHOUT YOUR CONSENT.

CREDIT CARD SCAMS ARE SO COMMON THAT YOUR CREDIT CARD IS ONLY WORTH ONE DOLLAR ON THE DARK WEB!



IN OLD WESTERN BLACK & WHITE MOVIES, THE ONLY WAY THAT A VIEWER COULD TELL THE GOOD PEOPLE FROM THE BAD WAS THE COLOR OF THEIR HATS.

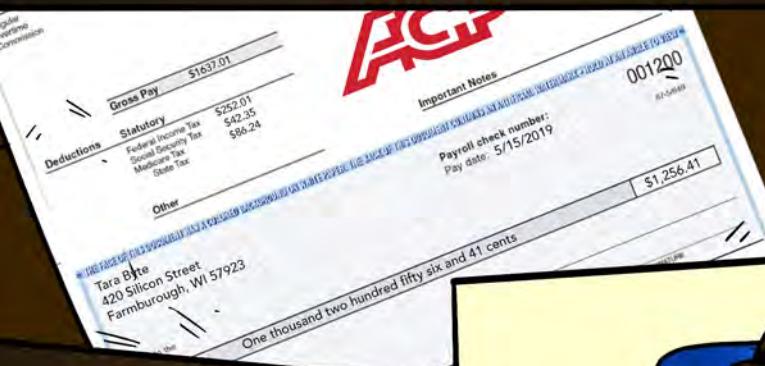


TODAY, A COMPUTER HACKER IS ANY SKILLED COMPUTER EXPERT WHO USES THEIR TECHNICAL KNOWLEDGE TO OVERCOME A PROBLEM.



WHITE HATS ARE HACKERS WHO WORK TO KEEP DATA SAFE FROM OTHER HACKERS BY FINDING SYSTEM VULNERABILITIES THAT CAN BE MITIGATED AND FIXED.

WHITE HATS ARE USUALLY EMPLOYED BY THE TARGET SYSTEM'S OWNER...



AND ARE TYPICALLY PAID (SOMETIMES QUITE WELL) FOR THEIR WORK.

THEIR WORK IS NOT ILLEGAL BECAUSE IT IS DONE WITH THE SYSTEM OWNER'S CONSENT.

WHITE HAT HACKERS ARE THE "DEFENDERS OF THE DIGITAL UNIVERSE"!

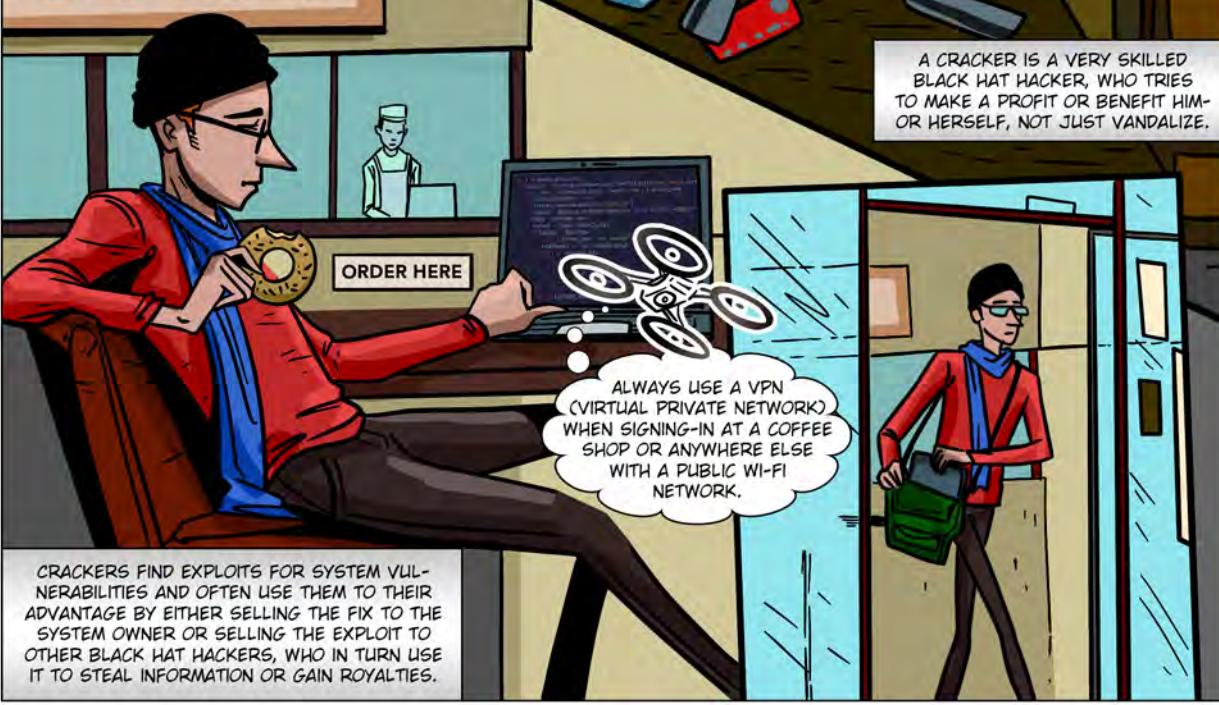


BLACK HATS OR CRACKERS, ON THE OTHER HAND, ARE HACKERS WITH MALICIOUS INTENTIONS.

THEY OFTEN STEAL, EXPLOIT, AND SELL DATA, AND ARE USUALLY MOTIVATED BY PERSONAL GAIN. THEIR WORK IS USUALLY ILLEGAL.

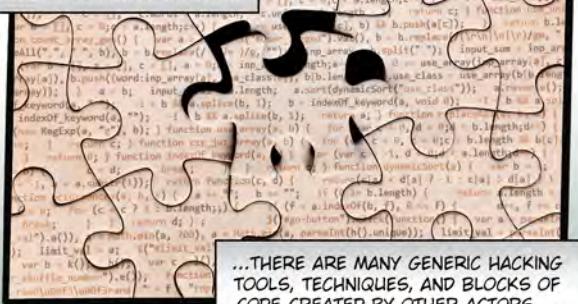


A CRACKER IS A VERY SKILLED BLACK HAT HACKER, WHO TRIES TO MAKE A PROFIT OR BENEFIT HIMSELF OR HERSELF, NOT JUST VANDALIZE.



CRACKERS FIND EXPLOITS FOR SYSTEM VULNERABILITIES AND OFTEN USE THEM TO THEIR ADVANTAGE BY EITHER SELLING THE FIX TO THE SYSTEM OWNER OR SELLING THE EXPLOIT TO OTHER BLACK HAT HACKERS, WHO IN TURN USE IT TO STEAL INFORMATION OR GAIN ROYALTIES.

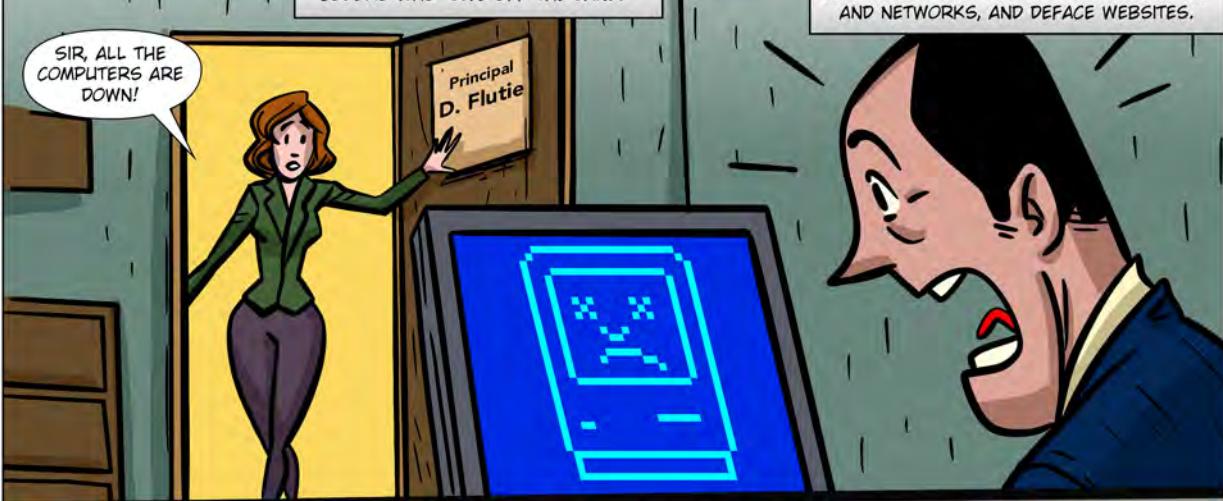
TO MINIMIZE DEVELOPMENT TIME AND COSTS, WHILE ALSO MAKING IT HARDER TO IDENTIFY AND TRACK THE CODE'S MOVEMENTS...



CAN'T WAIT TO SEE THE PRINCIPAL'S FACE TOMORROW MORNING!



IN HACKING CULTURE, A "SKIDDIE" (SCRIPT KIDDIE) IS AN UNSKILLED INDIVIDUAL WHO USES SCRIPTS OR PROGRAMS DEVELOPED BY OTHERS TO ATTACK COMPUTER SYSTEMS AND NETWORKS, AND DEFACE WEBSITES.



GREY HATS INCLUDE THOSE WHO HACK FOR FUN OR TO TROLL. THEY MAY BOTH FIX AND EXPLOIT VULNERABILITIES, BUT USUALLY NOT FOR FINANCIAL GAIN.



1861

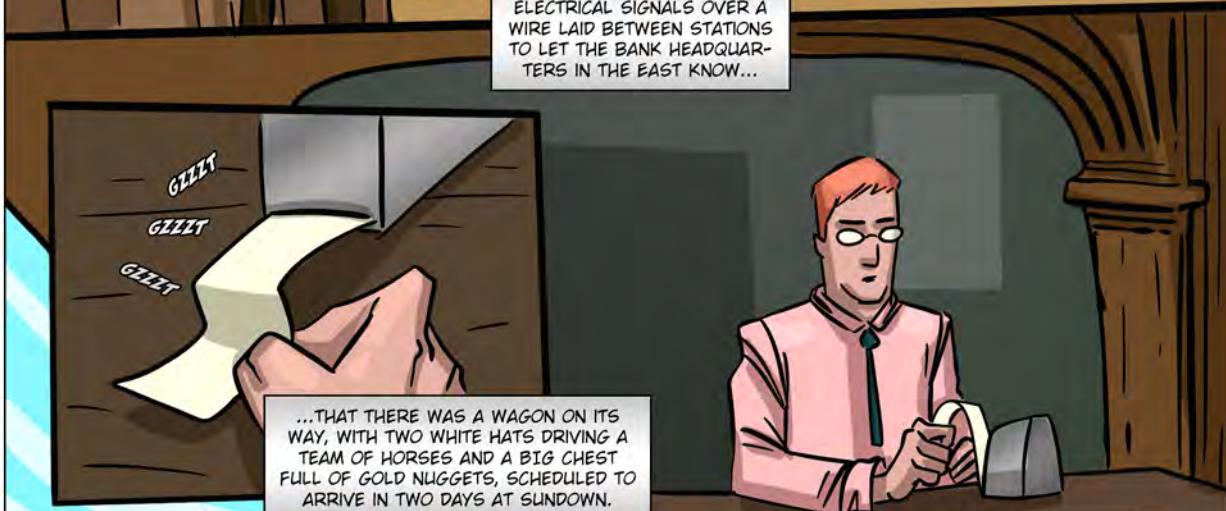


THE TELEGRAPH, DEVELOPED IN THE 1830'S AND 1840'S BY SAMUEL MORSE AND ALFRED VAIL, REVOLUTIONIZED LONG-DISTANCE COMMUNICATION.

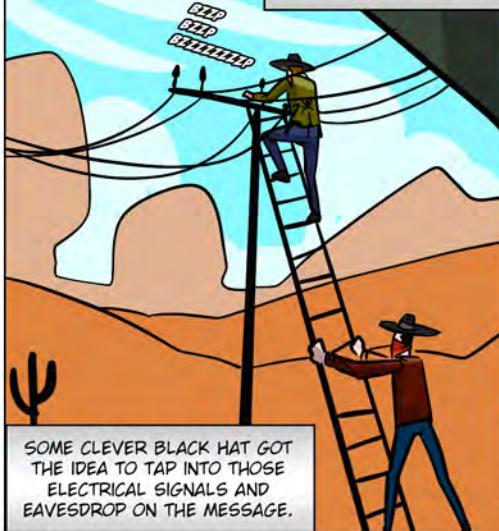


IT WORKED BY TRANSMITTING ELECTRICAL SIGNALS OVER A WIRE LAID BETWEEN STATIONS TO LET THE BANK HEADQUARTERS IN THE EAST KNOW...

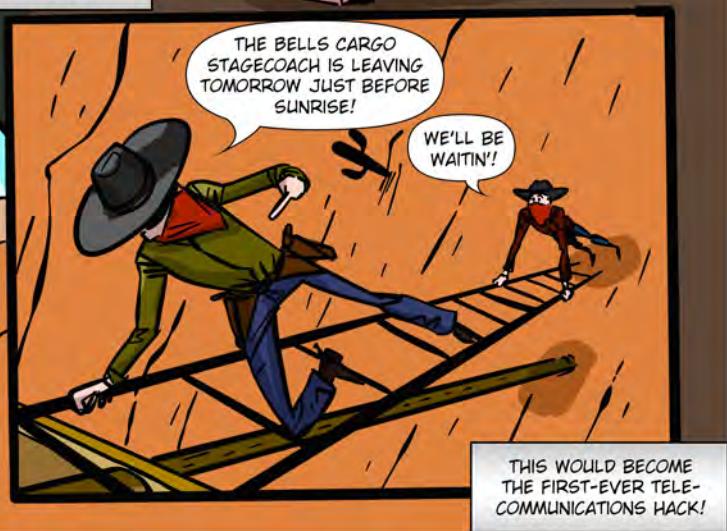
BLEEP
BLEEP
BLEEEEEEPEP



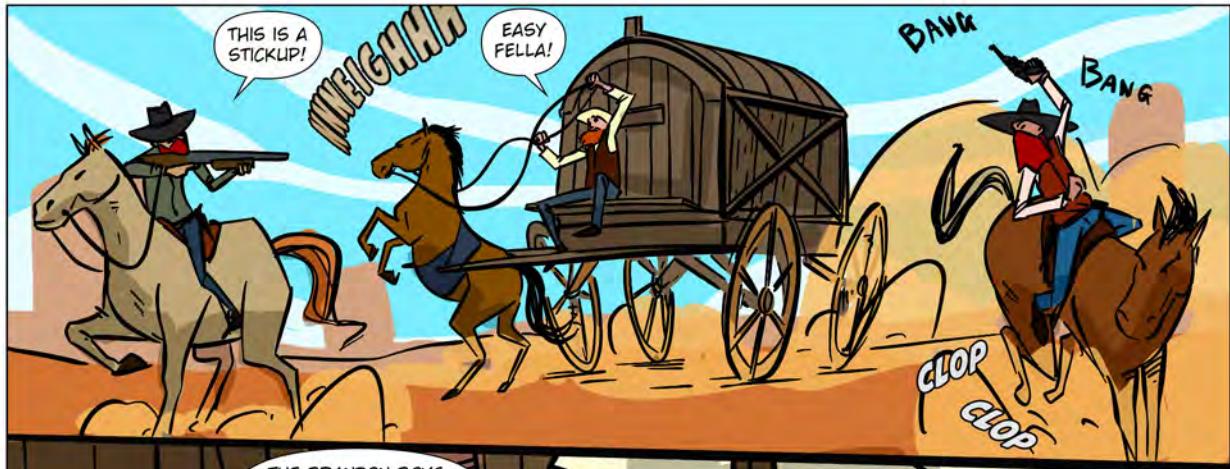
...THAT THERE WAS A WAGON ON ITS WAY, WITH TWO WHITE HATS DRIVING A TEAM OF HORSES AND A BIG CHEST FULL OF GOLD NUGGETS, SCHEDULED TO ARRIVE IN TWO DAYS AT SUNDOWN.



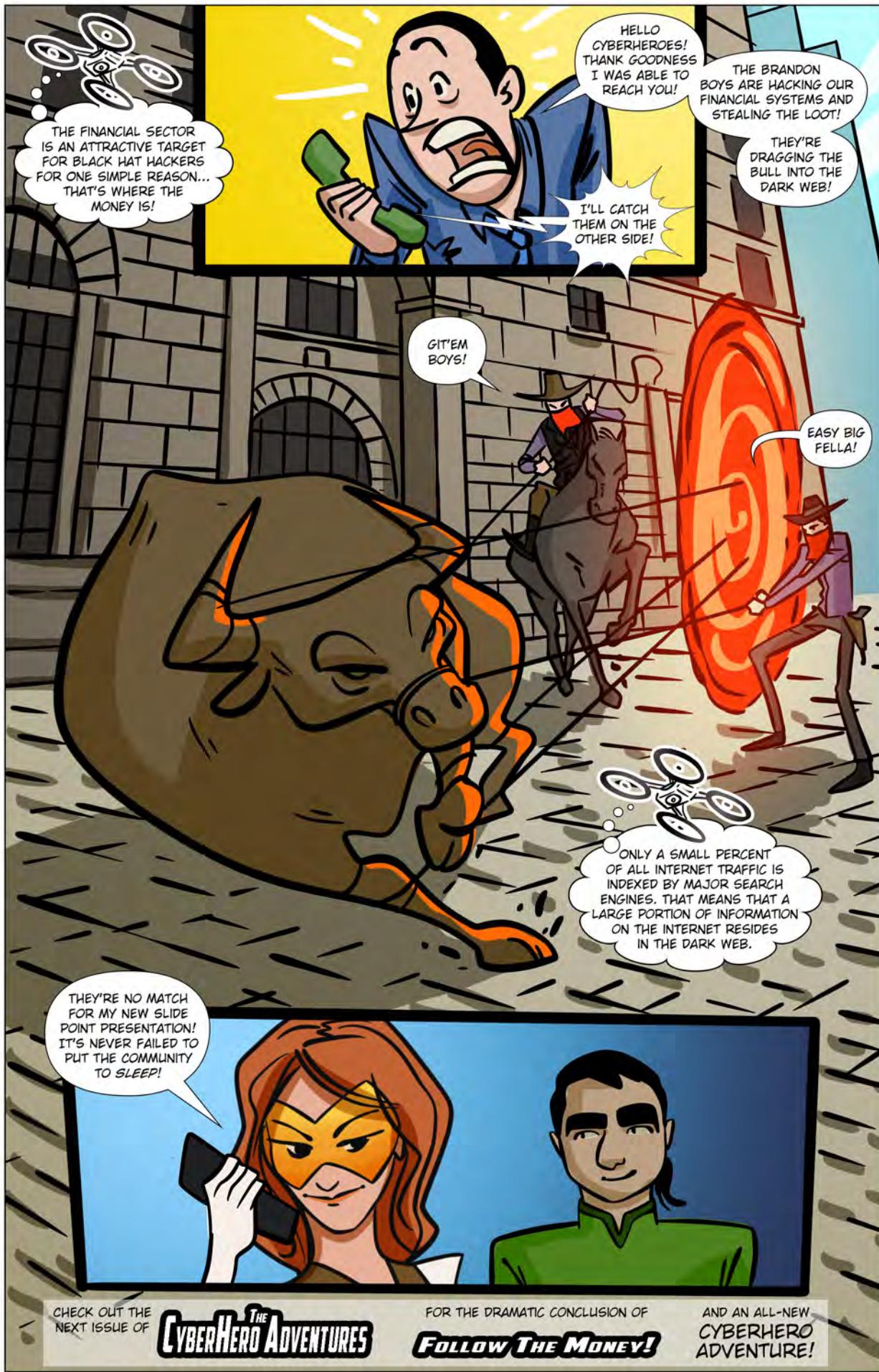
SOME CLEVER BLACK HAT GOT THE IDEA TO TAP INTO THOSE ELECTRICAL SIGNALS AND EAVESDROP ON THE MESSAGE.



THIS WOULD BECOME THE FIRST-EVER TELECOMMUNICATIONS HACK!







the cyberwire

I HEAR THE CYBERHEROES
GET THEIR NEWS FROM
THE CYBERWIRE!

YEAH, BRIEFINGS,
PODCASTS, EVEN
ALEXA. YOU SHOULD
CHECK IT OUT!

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MEET THE CYBER VILLAINS OF THE DARK WEB!



AND BEWARE... THEY LURK IN YOUR COMPUTER, NETWORK, SMARTPHONE, CAR, WEBCAM, THERMOSTAT, BABY MONITOR... EVEN YOUR VACUUM CLEANER! THEY LIVE IN A PLACE WHERE EVEN GOOGLE WON'T TREAD...

THE DARK WEB!

IVAN STEALS YOUR NAME, DATE OF BIRTH, SOCIAL SECURITY NUMBER, DRIVER'S LICENSE NUMBER, BANK ACCOUNT AND CREDIT CARD NUMBERS, PIN NUMBERS, ELECTRONIC SIGNATURES, FINGERPRINTS, AND PASSWORDS... ALL IN AN EFFORT TO BECOME YOU!

AT LEAST FOR THE PURPOSES OF STEALING YOUR MONEY AND APPLYING FOR LOANS CREDIT CARDS IN YOU'LL TYPICALLY A VARIETY OF

- RUMMAGING GARBAGE FOR PERSONAL DOCUMENTS AND PHONES.

- STEALING YOUR CREDIT CARDS, CARDS, PASSPORTS AND TOKENS.
- GUESSING COMMON QUESTIONS SUCH AS: NAME?", "FIRST CAR "FIRST PET'S

- SKIMMING CREDIT CARDS USING HAND-HELD CARD READERS.

YOUR FIND IVAN AT
ILLICIT ACTIVITIES:
THROUGH YOUR UN-SHREDDED
OR OLD HARD DRIVES

MAIL TO OBTAIN
IDENTIFICATION AUTHENTICATION

KNOWLEDGE
"MOTHER'S MAIDEN
MODEL?" OR
NAME?"

INFORMATION FROM

TY OR
HORSE
GRAMS.

- HACKING COMPUTER BASES TO OBTAIN LARGE QUANTITIES.

- BRUTE-FORCE WORDS.

- BROWSING SITES FOR PER- BY USERS.

- DIVERTING IN ORDER TO OBTAIN PERSONAL INFORMATION AND CREDIT CARDS, BILLING STATEMENTS, OR NEW ACCOUNTS MENTS OPENED THIEVES IN THE

- USING 'CONTACTLESS' CREDIT CARD READERS TO ACQUIRE DATA WIRELESSLY.

- DISCREETLY WATCHING OR HEARING OTHERS PROVIDING VALUABLE PERSONAL INFORMATION (SHOULDER-SURFING).

- STEALING PERSONAL INFORMATION FROM COMPUTERS USING BREACHES IN BROWSER SECUR- MALWARE SUCH AS ASTROJAN KEYSTROKE LOGGING PRO-

- PUTER NETWORKS AND DATA- PERSONAL DATA, OFTEN IN

- ATTACKING WEAK PASS-

SOCIAL NETWORKING SONAL DETAILS PUBLISHED

VICTIMS' EMAIL OR MAIL OBTAIN PERSONAL INFORMATION DENTIALS SUCH AS CREDIT AND BANK/CREDIT CARD TO DELAY THE DISCOVERY OF AND CREDIT AGRE- BY THE IDENTITY VICTIMS' NAMES.

IVAN THE IDENTITY THIEF



INTERPOL
case #
F-34937H-75U



WANNACRY IS AN INSIDIOUS FORM OF RANSOMWARE CRYPTOWORM THAT ATTACKED THE MICROSOFT WINDOWS OPERATING SYSTEMS OF INDIVIDUALS AND BUSINESSES AROUND THE WORLD BY ENCRYPTING THE USER'S DATA (LOCKING THEM OUT OF THEIR COMPUTER) AND DEMANDING RANSOM IN DIFFICULT-TO-TRACE DIGITAL CURRENCIES SUCH AS BITCOIN TO UNLOCK IT, MAKING APPREHENDING AND PROSECUTING THE PERPETRATORS DIFFICULT. THE ATTACK WAS UNPRECEDENTED IN SCALE, INFECTING MORE THAN 230,000 COMPUTERS IN OVER 150 COUNTRIES.

RANSOMWARE ATTACKS ARE TYPICALLY CARRIED OUT USING A TROJAN HORSE DISGUISED AS A LEGITIMATE FILE. THE USER IS DUPED INTO DOWNLOADING OR OPENING IT IN AN EMAIL ATTACHMENT. HOWEVER, THE WANNACRY WORM WAS ABLE TO TRAVEL AUTOMATICALLY BETWEEN COMPUTERS WITHOUT ANY USER INTERACTION.

THE CRIMINALS BEHIND WANNACRY ARE STILL OUT IN THE WORLD, DEVELOPING NEW TRICKS, CODING NEW MALWARE, PLANNING THEIR

NEXT BIG ATTACK!

WILBUR WANNACRY



HALF HUMAN, HALF INSECT, BORIS IS ABLE TO DETECT AND EXPLOIT VULNERABILITIES IN TECH DEVICES TO GAIN UNAUTHORIZED ACCESS PRIVILEGES, COMPROMISE DATA CONFIDENTIALITY AND INTEGRITY, AND WREAK HAVOC ON EVERYTHING HE TOUCHES.

BORIS HAS BEEN CREATING CHAOS FOR A LONG TIME. FOR EXAMPLE, IN 1996, A SOFTWARE BUG IN ITS GUIDANCE COMPUTER SOFTWARE FORCED THE EUROPEAN SPACE AGENCY TO DESTROY A \$1 BILLION ARIANE 5 PROTOTYPE ROCKET LESS THAN A MINUTE AFTER LAUNCH.

BORIS THE BUGGER



FRAUDSTER, SCAMMER, CONFIDENCE ARTIST, GRIFTER, HUSTLER, CHAMELEON. HE GOES BY MANY NAMES. THEY ALL ADD UP TO ONE THING: SONNY THE SOCIAL ENGINEER IS A MASTER MANIPULATOR OF HUMAN BEHAVIOR. HIS GAME IS TO TRICK YOU INTO BELIEVING WHATEVER HE WANTS IN ORDER TO STEAL YOUR MOST VALUABLE AND PERSONAL INFORMATION.

HIS WEAPONS ARE BASED ON EMOTIONAL INTELLIGENCE. HE DOES NOT HESITATE TO TAKE ADVANTAGE OF THE MOST EXCITING OR SAD MOMENTS. HE WIELDS FEAR LIKE A WHIP. HE PREYS ON ANY PERCEIVED WEAKNESS TO BRING DOWN HIS TARGETS AND ENRICH HIMSELF IN THE PROCESS.

SONNY THE SOCIAL ENGINEER



THE **RAT** IS AN INSIDIOUS CREATURE WHO IS VERY CLEVER AND STEALTHY. PAY NO ATTENTION TO HIS HORSE-LIKE BODY OR HIS GARNERLY RAT FACE... BUT TO THE LENGTH OF HIS TAIL. IT'S SINEWY AND ABLE TO INSERT ITSELF, WITHOUT DETECTION, INTO ANY DEVICE ON THE INTERNET. MOST-COMMONLY IN

PARTNERSHIP WITH THE PHISHER, A SIMPLE CLICK ON A LINK IN AN OFFICIAL-LOOKING EMAIL LETS THE **RAT** AND HIS CREW INTO YOUR LIFE TO TURN IT UPSIDE-DOWN. ONCE INSIDE, HE COMPLETELY TAKES CONTROL OF YOUR ONLINE EXISTENCE, WHICH HE CAN THEN MANIPULATE, DESTROY, AND DELETE.

RANDALL R.A.T.



THIS SICKLY CREATURE SPREADS ITS DISEASE AND CONTAMINATES EVERYTHING IT TOUCHES. A COMPUTER VIRUS IS MALICIOUS SOFTWARE ("MALWARE") THAT REPLICATES ITSELF BY MODIFYING OTHER COMPUTER PROGRAMS AND INSERTING ITS OWN CODE.

VERNAN THE VIRUS TEAMS UP WITH SONNY THE SOCIAL ENGINEER, EMPLOYING A VARIETY OF MECHANISMS AND DECEPTIONS, COMPLEX ANTI-DETECTION STEALTH STRATEGIES TO EVADE ANTIVIRUS SOFTWARE, AND DETAILED KNOWLEDGE OF SECURITY VULNERABILITIES TO INFECT NEW HOSTS AND SPREAD THE DISASTROUS VIRUS. THEY ARE A DANGEROUS DUO INDEED!

CAUSING SYSTEM FAILURE, WASTING COMPUTER RESOURCES, CORRUPTING DATA, AND GREATLY INCREASING MAINTENANCE COSTS, VERNAN CAUSES BILLIONS OF DOLLARS' WORTH OF ECONOMIC DAMAGE EVERY YEAR. THE MOTIVES FOR THESE CRIMES VARY - FROM SEEKING PROFIT TO SENDING A POLITICAL MESSAGE, SABOTAGE OR REVENGE, OR SIMPLY FOR PERSONAL AMUSEMENT.

VERNAN THE VIRUS



THE PHISHER
HUNTS ITS PREY
BY PRETENDING
TO BE
LEGITIMATE
COMMUNICATION
FROM A TRUSTED
COMPANY (OF WHICH
OFTEN THE VICTIM IS A
CUSTOMER) - OR -
FROM THE HIJACKED
IDENTITY OF A FRIEND,
COLLEAGUE, OR FAMILY
MEMBER.

USING ONE OF
MANY RUSES
(USUALLY
INVOLVING SOME
"PROBLEM" WITH THE
ACCOUNT), THE PHISHER
ENCOURAGES THE POTENTIAL
VICTIM TO DIVULGE SENSITIVE
INFORMATION, SUCH AS LOG-IN
IDS, PASSWORDS, PINs,
SOCIAL SECURITY NUMBERS,
ETC.

THIS INFORMATION IS QUICKLY USED TO STEAL
MONEY FROM ACCOUNTS AND TO APPLY FOR
FRAUDULENT LOANS AND CREDIT CARDS. UNDOING
THE DAMAGE CAUSED BY IDENTITY THEFT USUALLY
TAKES MONTHS OF PHONE CALLS, WRITTEN
COMMUNICATION, AND LOTS OF LEGAL AND
FINANCIAL RED TAPE. KNOWING HOW TO SPOT
THE SIGNS OF A PHISHING ATTACK (LOOKING
AT THE SENDER'S ACTUAL EMAIL ADDRESS, FOR
EXAMPLE) CAN BE THE DIFFERENCE BETWEEN
AN ODYSSEY OF FRUSTRATION AND THE
SIMPLE ACTION OF DELETING THE
EMAIL AND BEING DONE WITH IT.

AS A GENERAL RULE, NO LEGITIMATE
COMPANY WILL EVER ASK A
CUSTOMER TO DIVULGE SENSITIVE
INFORMATION VIA EMAIL. WHEN IN
DOUBT, INSTEAD OF CLICKING THE
LINK PROVIDED IN THE EMAIL, TYPE
THE COMPANY'S URL DIRECTLY INTO
YOUR BROWSER OR CALL A
COMPANY

REPRESENTATIVE USING
A KNOWN OR PUBLISHED
PHONE NUMBER INSTEAD OF A PHONE NUMBER
PROVIDED IN THE EMAIL.

PHOEBE THE PHISHER

NOW MEET THE GOOD PEOPLE!



THE CYBERHEROES

DEFENDERS OF THE
DIGITAL UNIVERSE!

MARSHAL MARLON

6

DEPUTY ABBY

LAW ENFORCEMENT OFFICERS AND CYBER INVESTIGATORS ARE EMPLOYED BY SEVERAL GOVERNMENT AGENCIES, INCLUDING THE:

FEDERAL BUREAU OF INVESTIGATION

FEDERAL TRADE COMMISSION

U.S. SECRET SERVICE

DEPARTMENT OF HOMELAND SECURITY

NATIONAL INSTITUTE OF STANDARDS AND TECHNOLOGY (NIST)

MARSHALL MARLON AND HIS RIGHT-HAND OFFICER DEPUTY ABBY REPRESENT THE FINEST LAW ENFORCERS THIS SIDE OF SILICON VALLEY! THEY ARE THE FOLKS WHO WORK HARD EVERY DAY TO TRACK DOWN CYBER CRIMINALS IN ORDER TO KEEP US SURFING SAFE AT WORK AND AT HOME!





LARRY JONES (A.K.A. CYBER HERO) KNEW THAT HE NEEDED HELP TO LEARN ABOUT TECHNOLOGY AND HACKING. THE MOST IMPORTANT THING THAT HE NEEDED TO UNDERSTAND WAS: WHY DO HACKERS DO WHAT THEY DO? AFTER LISTENING AND LEARNING ABOUT HACKING AND CYBER SECURITY FROM THE AMAZING PEOPLE IN LAW ENFORCEMENT, SUCH AS THE FBI, CYBER SECURITY EXPERTS, THE DEPARTMENT OF DEFENSE, THE DEPARTMENT OF HOMELAND SECURITY AND ACADEMIA, LARRY BEGAN TO UNDERSTAND THAT ALMOST ALL OF THE HACKERS WERE ACTUALLY TRYING TO HELP (WHITE HATS) BY PROGRAMMING AND HER DESTINY WAS DEFENDING THE WORLD AGAINST CYBER CRIMINALS (BLACK HATS).

THERE WERE ALSO MANY GREAT PEOPLE WHO WERE THREAT RESEARCHERS WHO DISCOVERED VULNERABILITIES IN COMPUTERS AND CONNECTED DEVICES TO HELP PROTECT US ALL (GREY HATS). LARRY KEPT HEARING THE NAME OF ONE PERSON WHO WAS CONSISTENTLY MENTIONED AS BEING THE BEST HACKER IN THE UNIVERSE: QUEEN JIO. FROM THE MOMENT THAT SHE WAS BORN, HER PARENTS KNEW THAT SHE WAS DESTINED TO BECOME A POWERFUL LEADER AND ROLE MODEL AND TO SHED SUNLIGHT ON A DARK WORLD, SO THEY NAMED HER JIO (AN ANCIENT TERM FOR "SUN"). HER FIRST WORDS WERE: WHO, WHAT, WHERE, WHEN AND MOST IMPORTANTLY...HOW? SHE QUICKLY DISCOVERED COMPUTERS AND SEALED TO SPREAD SUNSHINE ON A DIVERSE AND INCLUSIVE WORLD.

QUEEN JIO

TM



LARRY IS A "REGULAR GUY" WHO IS AN EXPERT AT MARKETING COMMUNICATIONS AND CORPORATE TRAINING. HE RAN A SUCCESSFUL COMPANY THAT WAS SUBSEQUENTLY SOLD TO GLOBALCOMM. EVERYTHING WAS GOING GREAT UNTIL ONE DAY HE RECEIVED A FATEFUL CALL. UNBEKNOWNST TO HIM, ONE OF LARRY'S EXECUTIVES PHONED GLOBALCOMM PRETENDING TO BE A WHISTLE-BLOWER AND SPREAD A RUMOR THAT THERE WAS RAMPANT FRAUD THROUGHOUT LARRY'S COMPANY AND THAT ALL CLIENTS SHOULD STOP ALL COMMUNICATIONS!

LARRY LOST MILLIONS OF DOLLARS AND HIS HOME. HE WAS FORCED TO FIRE ONE HUNDRED EMPLOYEES. ONLY YEARS LATER, LIKE PEELING THE LAYERS OF AN ONION, LARRY BEGAN TO UNDERSTAND THAT HE WAS BEING

VICTIMIZED BY A SERIES OF INSIDER CYBER ATTACKS THAT FUNNELED HIS BUSINESS INTO A SHADOW COMPANY CONTROLLED BY SEVERAL FORMER EXECUTIVES. THEY SPOOFED HIS WEBSITE, RE-DIRECTED CALLS TO THE SHADOW COMPANY AND DESTROYED HIS REPUTATION.

UNABLE TO PROVE HIS CASE AND RECEIVE JUSTICE DUE TO THE DIFFICULTY OF IDENTIFYING THE PLOT AND THE HACKER, LARRY DECIDED TO PIVOT FROM BEING A VICTIM TO BECOMING AN ADVOCATE. HE LEARNED EVERYTHING HE COULD ABOUT CYBER SECURITY. LIKE DOROTHY IN THE WIZARD OF OZ, LARRY MEETS WONDERFUL CYBERHEROES ALONG THE WAY, WHO ARE MISSION-DRIVEN CHARACTERS JOINING HIM ON HIS QUEST TO RAISE AWARENESS OF CYBERCRIME AND TO DEFEND THE DIGITAL UNIVERSE!

LARRY JONES, THE CYBERHERO!

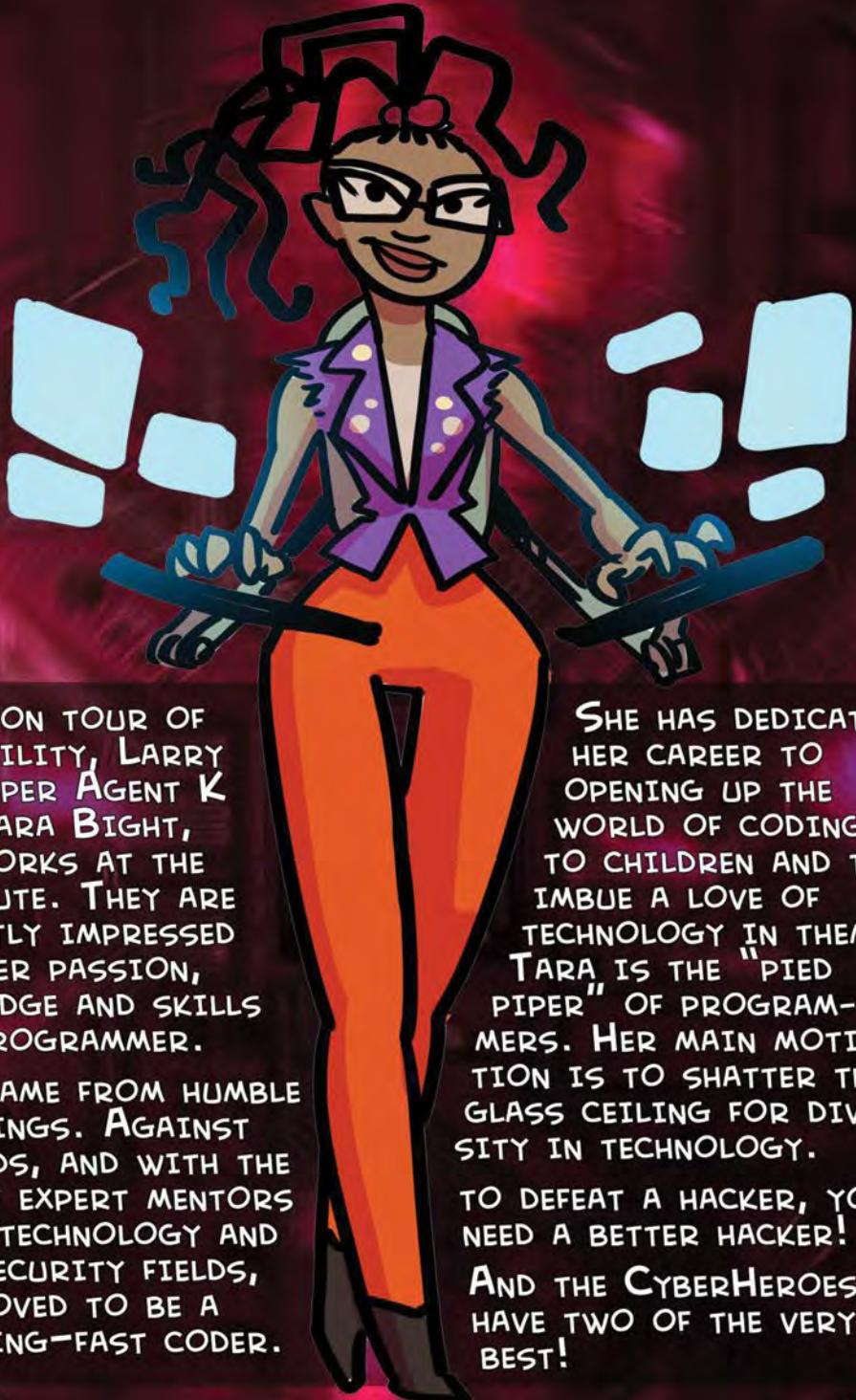


SHE IS ALWAYS READY TO INFORM
USING HER METICULOUSLY
RESEARCHED POWER PRESENTATION
SLIDES THAT PROJECT FROM A
LENS IN HER COSTUME. SHE
SUBDUES HER ADVERSARIES WITH
SLIDES SO DENSE WITH DATA THAT
THEY ARE OVERCOME BY
INSTANT SLUMBER!

THE PRESENTER IS A SKILLED WHITE-HAT
EX-HACKER, WHO NOW SPENDS HER TIME
PROMOTING CYBERSECURITY EDUCATION AND
FACILITATING PARTNERSHIPS BETWEEN
GOVERNMENT, ACADEMIA, AND THE PRIVATE SECTOR
FOCUSED ON SUPPORTING PEOPLE'S ABILITY TO
ADDRESS CURRENT AND FUTURE CYBERSECURITY
ISSUES AND WORKFORCE CHALLENGES THROUGH
STANDARDS AND BEST PRACTICES.

EVEN HER JOB DESCRIPTION PUTS YOU TO SLEEP!

PRESENTER



WHILE ON TOUR OF THE FACILITY, LARRY AND SUPER AGENT K MEET TARA BIGHT, WHO WORKS AT THE INSTITUTE. THEY ARE INSTANTLY IMPRESSED WITH HER PASSION, KNOWLEDGE AND SKILLS AS A PROGRAMMER.

TARA CAME FROM HUMBLE BEGINNINGS. AGAINST ALL ODDS, AND WITH THE HELP OF EXPERT MENTORS IN THE TECHNOLOGY AND CYBERSECURITY FIELDS, SHE PROVED TO BE A LIGHTNING-FAST CODER.

SHE HAS DEDICATED HER CAREER TO OPENING UP THE WORLD OF CODING TO CHILDREN AND TO IMBUE A LOVE OF TECHNOLOGY IN THEM. TARA IS THE "PIED PIPER" OF PROGRAMMERS. HER MAIN MOTIVATION IS TO SHATTER THE GLASS CEILING FOR DIVERSITY IN TECHNOLOGY.

TO DEFEAT A HACKER, YOU NEED A BETTER HACKER! AND THE CYBERHEROES HAVE TWO OF THE VERY BEST!

TARA BIGHT THE SUPERCODER



JACK THE FIREWALL LOVES RULES. HE LIVES BY RULES. HE DENIES AND ALLOWS ENTRY BY RULES. HE DOES HIS JOB QUIETLY AND UNDER THE RADAR. MOST OF THE TIME, YOU DON'T EVEN KNOW HE IS THERE. HE'S ONE OF THE MOST CHALLENGING OBSTACLES THAT HACKERS HAVE TO BYPASS. A FORMIDABLE OPPONENT TO THOSE WHO WANT TO MERELY SNOOP OR THOSE WHO MEAN TO DO HARM!

HE WORKS IN PARALLEL WITH OTHER FIREWALLS AND TEAMMATES TO FORM DATA DMZ'S AND COMPARTMENTAL AREAS TO PROTECT VALUABLE ASSETS, SYSTEMS, AND INFORMATION. HIS ONLY WEAKNESS? STALE, OLD RULES. IN A CONSTANTLY-CHANGING CYBER LANDSCAPE, JACK MUST ENSURE THAT HIS RULES ARE ALWAYS UP-TO-DATE AND ONE STEP AHEAD OF HIS ADVERSARIES!

JACK THE FIREWALL



JUSTINA IS A FIRST-GENERATION AMERICAN OF MEXICAN HERITAGE. FROM A YOUNG AGE, SHE DEFENDED THE DEFENSELESS. SINCE THEN, SHE ALWAYS KNEW SHE WOULD BE A LAWYER.

SHE SET OUT TO LEARN ALL SHE COULD ABOUT THE JUDICIAL SYSTEM. MANY YEARS LATER SHE BECAME A PUBLIC DEFENDER, DEFENDING THE RIGHTS OF THE ACCUSED. ONE DAY, SOMETHING SHOCKING HAPPENED TO JUSTINA AND HER COLLEAGUES, WHEN SHE CLICKED ON AN EMAIL AND ALL THE COMPUTERS IN THE OFFICE FROZE.

SHE LATER LEARNED HER OFFICE WAS BEING HELD FOR RANSOM. THEY HAD TO DECIDE: SHOULD THEY PAY? OR SHOULD THEY FIGHT?

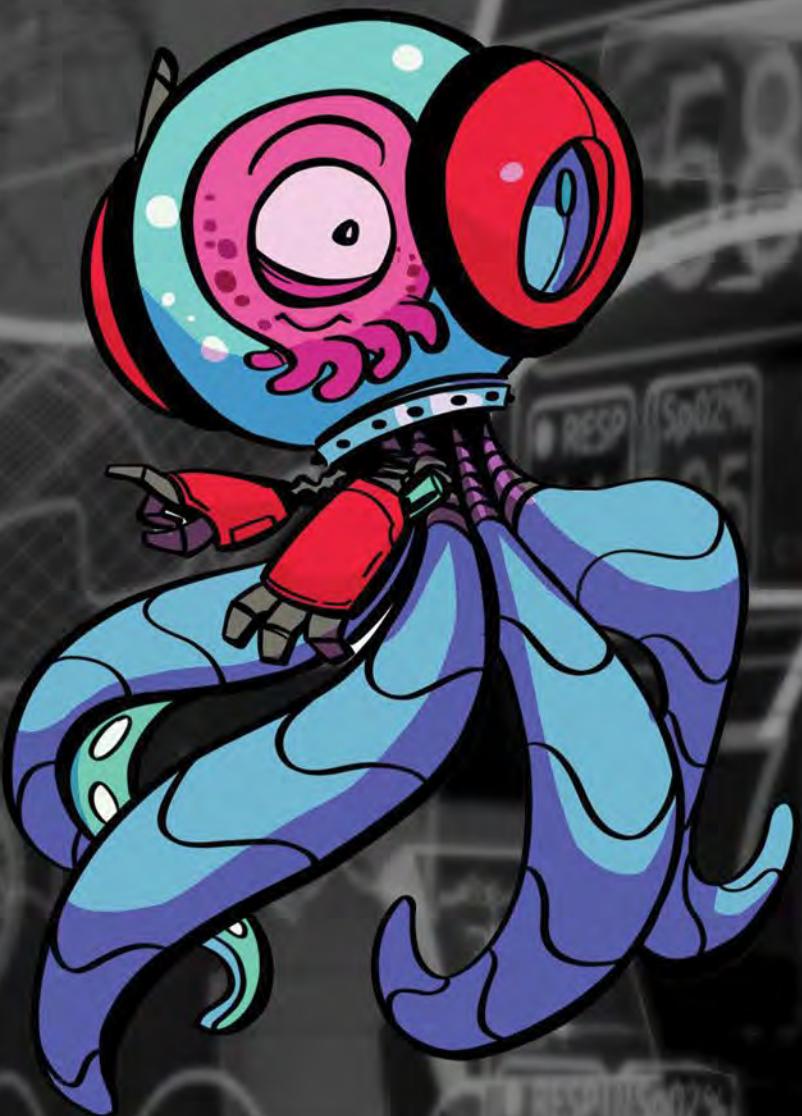
JUSTINA FOUGHT. HARD. EVENTUALLY, SHE EVEN IDENTIFIED THE HACKER... OR SO SHE THOUGHT. WORKING WITH LAW ENFORCEMENT, SHE REALIZED THAT THE LEGAL SYSTEM HAD NOT KEPT PACE WITH THE CHANGING WORLD OF TECHNOLOGY. IN TIME, JUSTINA WAS UNABLE TO BRING THE CRIMINAL TO JUSTICE.

WHEN THE CYBER HEROES SHARED THEIR STORIES, SHE INSTANTLY TOLD THEM:

"I'M IN!"

JUSTINA JASCO THE DEFENDER





THE INTERNET OF THINGS (IOT) IS A NETWORK OF PHYSICAL DEVICES THAT INCLUDES VEHICLES, HOME APPLIANCES, HEART MONITORING IMPLANTS, STREET LIGHTS, BIOCHIP TRANSPONDERS, CAMERAS STREAMING LIVE FEEDS, AND OTHER ELECTRONIC DEVICES EMBEDDED WITH SOFTWARE, SENSORS, AND ACTUATORS. EACH THING IS UNIQUELY IDENTIFIABLE BUT IS ABLE TO OPERATE WITHIN THE EXISTING INTERNET INFRASTRUCTURE.

Pretty much any object can be turned into an IoT device if it can be connected to the internet and controlled that way. The term 'IoT' is used for devices that wouldn't generally be expected to have an internet connection, and that can communicate with the network independently of human action. Therefore, PCs and smartphones aren't considered IoT devices.

IOT THE INTERNET OF THINGS

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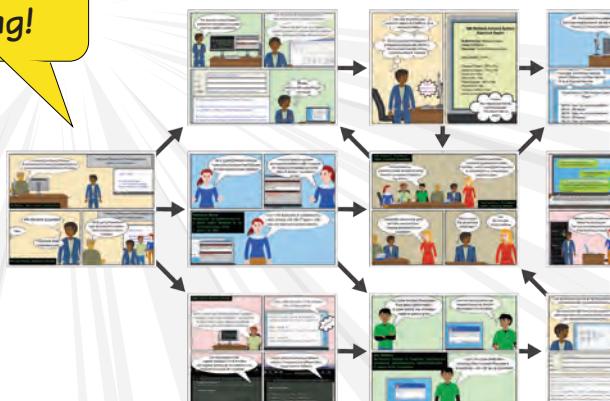
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"Samsung is excited to partner with Cyberman Security and their CEO, Gary Berman, to support a new wave of technical-security training that creates true collaboration between the Cyber Heroes of the world. Storytelling is the best way to explain, and audiences to retain, the real issues facing corporations during the current digital transformation."

– Keith Fuentes
Vice President, Knox Sales, Samsung Electronics America, Inc.

"Cyberspace needs a hero! In fact, it needs a League of Heroes. If phrases like that stir something within you... and, let's face it, you know that they do, then you will immediately understand the value of this series. CyberHeroes: Defenders of the Digital Universe allows organizations to tap into the global infatuation with superheroes. It's time to suit-up, empower your organization and your family, and advocate for victims."

– Perry Carpenter
Chief Evangelist and Strategy Officer, KnowBe4.com

"The CyberHero Adventures: Defenders of the Digital Universe is truly a game-changer in the rapidly evolving cyber security ecosystem. Depicting the on-going battle between White vs. Black Hats in a superhero world is incredibly educating, interesting, intelligent, intriguing, entertaining and engaging. This is a must-read for large enterprises, SME's, law enforcement, the military, academia, educators and family members who want to stay safe online."

– Dr. George Antoniou
Assistant Professor of Cyber Security Management, St. Thomas University

"I can't thank you enough for presenting your insights and tools to the Best Buddies staff today. Your personal story helped us see how cyber-invasion can happen to anyone at any level. This can be scary and tricky material, but your positive energy brought us out the other side."

"We're looking forward to collaborating with you in the future on the creation of a customized version of The CyberHero Adventures: Defenders of the Digital Universe to serve our community of people with and without special needs throughout the United States."

– Corey Yugler, Director
Training & Development, Best Buddies Global Headquarters

"Cyber security leads to cyber safety and as evolving technologies that connect the world continue to make their way into the hands of children, it is vital today's youth and families are armed with information to make them less vulnerable. Using super heros and storylines that children can relate to creates a unique and edu-taining resource that can be used to creatively introduce and educate the next generation of digital citizens about the importance of understanding cyber security. Kudos to Gary Berman for developing and delivering such an important resource to families across our now global neighborhood."

– Richard Guerry, Founder
Institute of Responsible Online & Cellphone Communications, Iroc2.org

"People, Process, and Technology can help protect what matters most. Cyber Hero's is an illustration of providing a light-hearted and simple way to communicate the message that can be easily digested, great job!"

– Tom Brennan, CTO Proactive Risk

THANK YOU!

ONE OF THE MANY LESSONS THAT I'VE LEARNED AS THE VICTIM OF A FIFTEEN YEAR SERIES OF INSIDER CYBER CRIMES IS THAT THE ONLY TIME PEOPLE HEAR ABOUT HACKS IS WHEN THE HACKERS ARE SUCCESSFUL. THIS LIFE-CHANGING ENDEAVOR IS DEDICATED TO ALL OF THE UNSUNG, REAL-LIFE CYBER HEROES AND LAW ENFORCEMENT PROFESSIONALS WHO TOIL WITHOUT FANFARE OR ACKNOWLEDGEMENT EVERY DAY TO DEFEND US ALL AT WORK, HOME AND SCHOOL.

THIS INCREDIBLE JOURNEY WOULD NOT HAVE BEEN POSSIBLE WITHOUT THE UNWAVERING SUPPORT OF MY BEAUTIFUL, INTELLIGENT, CHARMING AND FUNNY BETTER-HALF, VALERIE AND OUR TWO AMAZING DAUGHTERS, SARA AND ILANA. THEY HAVE AND WILL ALWAYS BE AN INSPIRATION TO ME AND TO EVERYONE WHOSE LIVES THEY TOUCH. TO MY 90-YEAR-YOUNG MOMMY... IT'S ONLY GOING TO GET BETTER!

WORDS CAN'T ADEQUATELY EXPRESS MY GRATITUDE TO THE MEMBERS OF THE CYBERMAN SECURITY, LLC ADVISORY BOARD. THEY HAVE HELD MY HAND AND SHARED THEIR MORE-THAN-100-YEARS OF COLLECTIVE EXPERIENCE IN CYBER SECURITY AND TECHNOLOGY WITH THE PATIENCE OF SAINTS. THEIR REAL-WORLD EXPERIENCES AS DEPICTED IN THE CYBER HERO ADVENTURES WILL ENLIGHTEN, EMPOWER, AND ENTERTAIN PEOPLE OF ALL AGES AND HELP KEEP EVERYONE SAFE WHILE ONLINE.

AND LAST, BUT NOT LEAST, TO JULIO ALVAREZ AND THE INCREDIBLY TALENTED TEAM AT CREATURE ENTERTAINMENT, THANK YOU FOR YOUR STUNNING CREATIVITY, INCREDIBLE TALENT AND FOR TURNING OUR DREAM INTO A REALITY!



- GARY L. BERMAN, CREATOR
THE CYBERHERO ADVENTURES:
DEFENDERS OF THE DIGITAL UNIVERSE
CEO, CYBERMAN SECURITY, LLC

TO LEARN MORE ABOUT
SPONSORSHIPS OR TO CREATE A
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