

TechTrends

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Howdy from TEEX and the Division of Knowledge Engineering

Knowledge Engineering is committed to reaching out to fulfill our mission of making a difference by providing training, practical solutions and information that help make your work and life better. One of the ways we plan to achieve this is to provide a forum for you to ask questions, get information and advice on cybersecurity issues and solutions practical tips. The most important way you can help us succeed at this is to ask questions; ask early, ask often, and don't worry that it's a "dumb question." We want to know what you're thinking about, what worries you and where you are running into roadblocks.

E-mail us at:
ke@teex.tamu.edu

I think you'll agree that we have a lot to offer each other.

Sincerely,
Catherine Gibson, Editor

Free Training and Employee Development Resources

By Catherine Gibson

Cybersecurity and the government response to and focus on cyber training has been a hot topic in the news lately, and for good reason. Every day brings a new and frightening tale of hacks, explains, malware and data breaches that are enough to make you want to unplug your computer and disconnect from the network. And while you may not be willing to go "off the grid" entirely, it can be a tempting daydream when you start to think about how deeply interconnected our lives and the nation's welfare are connected to the cyber infrastructure.

What you may not know is that, The Department of Homeland Security, through the Federal Emergency Management Agency has for years now, supported and funded a collaborative effort through Texas A&M Engineering Extension Service (TEEX) and the National Emergency Response and Rescue Training Center (NERRTC) to provide totally free no obligation awareness level cyber security training to the nation. 10 Cybersecurity classes are available

online, on demand and offer a through grounding in the basic concepts of computing, networking and cybersecurity. Register and login to our eCampus to take the classes. Log on and off as often as you need to finish the class within 6 months. Enrollment and registration is ongoing so you never have to wait to start the self-paced classes.

Earn IAECT Continuing Education Units (CEU) or complete one of the three groupings (tracks) of courses to earn college credits through the American Council on Education (ACE.)

Classes include: Information for Everyone, Secure Software, Network Assurance, Digital Forensics Basics, Cyber Ethics, Cyber Law & White Collar Crime, Business Information Continuity, Information Risk Management, Cyber Incident Analysis & Response, and Information Security Basics

Signing up is easy and free. Simply go to www.teex.org/cyber and select one of our 10 classes.



Customer Centric Software Design

Successful projects are the outcome of the relationship between people who will be using the software and the software developer

By John Romero

You've probably heard the old phrase – "The customer is always right." This model of customer relations is flawed, but still retains a key component for success. Clients pay premiums for services and goods that meet their particular needs. In order to remain competitive and relevant in the software development world, client satisfaction is vital.

For about 20 years, I've been developing software for people. (Notice I didn't say users - they're not drug addicts.) Over that course of time, I've seen and been part of developing some outstanding software application programs, as well as some fairly unsuccessful software projects. Although there are many reasons why software development projects either succeed or fail, it is my opinion that successful projects are the outcome of the relationship between the people who will be using the application and the software developer or developer manager. Great relationships produce fantastic projects. Poor relationships produce unsuccessful projects. Developing that key understanding for the person using your application will make the project successful.

Methodology is a vital tool that can make or break a software project. What type does your programming team typically use over the course of the project development? My team uses [Agile software development](#) which is a very



customer centric software methodology. This type of approach offers a multitude of benefits to the clients. Throughout the entire development process, the voice and opinions of the client are shared with the development team. This helps to ensure that the client expectations of the software come to fruition.

Agile software development methodology emphasizes incremental short bursts of development called sprints. These sprints usually last one to two weeks. A sprint should result in a working product so the clients can view the changes as they happen. The first few days of a sprint consist of planning, creating tasks and time estimates needed to get these few tasks completed. After a sprint, typically the client can see real progress. The spirit of collaboration between client and developer ensues.

With client input and feedback guiding the software process, the software developers have the opportunity to verify their concepts and functionality with the client throughout the process.

This is drastically different than the older [waterfall methods](#), where software projects can go for weeks or months with little to no communication, only to find that the client had a totally different idea of the outcome. If you have been a part of a software development project where the end result is that no one is happy, you know how devastating that can be for both the client and the software developers.

By following an agile method throughout the entire process of the project development, you will have meaningful, 2-way communication between clients and the software developers. This will help ensure that your next software project will have a happy outcome for both your development team and your clients.

John Romero is the Program Director of TEEX Knowledge Engineering Center and brings more than 20 years experience designing, developing and directing software application database development. He holds a B.A. in Computer Science from Texas A&M University.

Cyber Incident Analysis and Response in Phoenix

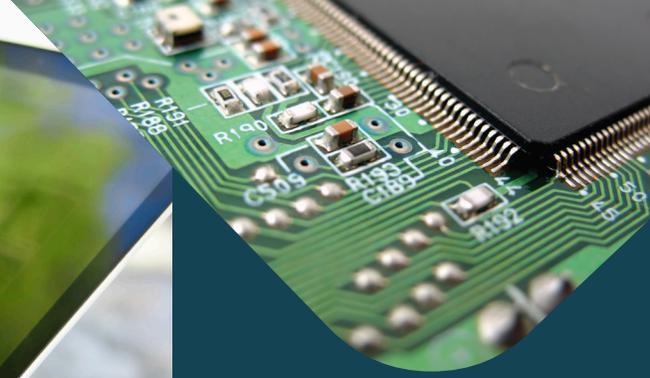
What are the real world repercussions of a community being attacked and what measures can be implemented to build resiliency for a community against a cyber-attack?

The city of Phoenix battled a coordinated cyber-attack in October 2014. Persistent hackers overwhelmed the city's system with continued attempts to access internet based services.

"The purpose of the attack is to try to overwhelm our perimeter defenses and firewalls, the goal of the attacker is to try to gain access into our network generally to obtain personal identified information for financial gain," said Randal Smith, the cities Chief Security Officer.

One impact was police systems were interrupted and not accessible for a short period of time. Police officers were not able to obtain information such as driver's license, license plates, and criminal history information until the system was restored.

This attack brought to light a bigger concern which would be a cyber-attack impacting public safety systems such as communications with fire and police.



Not So Factory Fresh?

By Paul Wiggins

Recently, it was discovered that a computer and laptop manufacturer was pre-installing some rather questionable adware on to their systems. Adware is generally defined as software that generates ads, typically via the web browser. In this case, the software not only places ads based on Google search results of the user, but the adware also employs its own spoofed certificates for websites that use encryption (although browsers may not report the false certificates, as the software registers itself with the operating system as an unrestricted authoritative source). For example, if you were connected to a secure website such as your bank (using HTTPS), on an affected system, the SSL certificate will have been signed by the software maker, as opposed to a trusted SSL certificate service provider that the legitimate one would be.

It's also worth noting that the encryption used by the certificate has already had its password discovered (and published) by a security researcher, leading users of systems with the software installed being susceptible to man-in-the-middle attacks. This software came pre-installed on a new, in the box, system and may not fully disclose its purpose or security ramifications to the end-user/purchaser. Unfortunately, uninstalling the software did not fully undo all of what it does when it installs. This leaves the only option to fully get rid of adware is to perform a full wipe and re-install of the operating system.

The above underscores the notion of not implicitly trusting a computer with a pre-installed operating system. Unless you've performed a fresh install, using trusted installation media from the operating system vendor, unknown-to-you software may be installed, doing things that you may not expect. There are even cases in the past where systems sold by a rent-to-own company had remote control software installed on the systems they sold. It was argued that this allowed the company to help recover computer systems sold that were not paid on, but allowed employees, among other activities, to remotely view customers via webcam and record all of their keystrokes without their knowledge.

Keeping all of the above in mind, a reasonable conclusion could be that an out-of-the-box system may have software pre-installed that can detract from security and/or privacy. Therefore, wiping a system out and performing a fresh install of the operating system from media from the operating system vendor (not necessarily "recovery media" from the vendor, but possibly), may be your best option regarding peace of mind. This is a common practice for many enterprises, as they tend to install operating systems from trusted, and often customized, images. This not only ensures consistency, but also ensures that each system started with a trusted base operating system.

*Update: As of February 20, Microsoft has released an update to its Windows Defender to clean up the software in question.

EYE ON IT

There's an App for that

Talking about strong passwords always provokes the objections: but I have too many passwords and they are all too hard to remember. Also, there are a number of excellent password storage apps that work seamlessly with your smartphone, desktop, laptop and other connected devices. These feature the ability to track and match the system with the password, generate new random passwords for you and allow you to manage and file your passwords keeping personal and work password separate. These top rated picks might merit a good checking-out.



SOFTWARE Monthly Picks

Our research has found these 5 **highly rated apps** for password managers.

LastPass3.0: Free or premium

Dashlane 3: Free or premium

Roboform Everywhere

Intuitive Password 2.9

Keeper Password Manager & Digital Vault

Ask the TEEExpert: Q&A Technology

Q: How do I convince your subscribers and customers to submit questions?

A: Let them know that we have rounded up a group TEEExperts to field questions and pose topics that matter to you. From questions for individual users, to customers and clients looking for help navigating IT and security for their organization. Our first TEEExpert is Paul Wiggins, a Program Manager for the Knowledge Engineering Center.

Mr. Wiggins is a cybersecurity specialist and performs technical assistance, compliance work, and training for KEC. He has more than 18 years of professional experience in information technology-related fields, working with clients ranging from small businesses to Fortune 100 companies. Paul worked for one of the Big Four's Information Protection and Business Resiliency practices performing vulnerability assessments,

penetration tests and compliance work. Paul earned his BBA in Information and Operations Management and his MS in Management Information Systems from Texas A&M University. He has several certifications, including the Certified Information Systems Security Professional (CISSP) and Comp-TIA Advanced Security Practitioner (CASP).

Making a Difference



BUSINESS Solutions

Market Intelligence, Idea & Technology Validation, Market Assessments, Business Planning



WORKFORCE Solutions

Advanced Manufacturing Assistance, Processing and Supply Chain/Distribution Management; certified welders, CNC, Lean Champion, Motor & Industrial Control Circuits, Total Productive Maintenance, Semiconductor Processing



ECONOMIC Development

Strategic Planning, Economic Impact Studies, Community Baseline Assessments, Economic Development for Local Leaders



SOFTWARE Solutions

Training Management Solutions, Learning Management Systems, Web Application Development, iApp & Mobile development



CYBERSECURITY

Awareness and management level training, open to everyone, computer and networking background not needed, all expenses paid by FEMA as part of it's Homeland Security Preparedness programs and Cyber Vulnerability Assessments and Penetration Testing Services.

C15.8134.03



FEMA