The best defence

New program teaches students of all ages safe online behaviour, how to improve cyber security

As a professional who has recently experienced a very severe laptop computer virus in spite of all the firewalls possible, I’m suddenly much more aware and much more appreciative of the work being done in the area of cyber security.

Cyber security is the body of technologies, processes and practices designed to protect networks, computers, programs and data from attack, damage or unauthorized access. In a computing context, the term security implies cybersecurity.

With the ever-increasing number and severity of cyber attacks coupled with the dramatic expansion in computer interconnectivity including desktops, laptops, tablets, and smart phones, cyber security has become a national concern and key agenda to governments at all levels. As was stated by the Honourable Vic Toews, P.C., Q.C., M.P for public safety, “every year there are more attackers trying to infiltrate, exploit or attack our cyber systems and they are getting much more sophisticated and better resourced than the year before.”

In response to this growing threat, governments are significantly increasing cyber security spending, the cyber security market is rapidly expanding and a whole new industry sector of cybersecurity professionals is quickly becoming the “sought after” job and career path for the next generation.

Cyber security is not only a technology and business issue but it is also of increasing concern to the public, schools and parents who are concerned about
cyber bullying amongst teenagers. Parents and police alike are becoming more and more concerned about finding new ways to protect our children’s personal safety while using technology. There are so many new and unexplored challenges in this area. How exactly do we deal with this problem? How do we keep up?

One creative response directed at young people was recently announced. This is the Canadian Cyber Defence Challenge (CDC) sponsored by a consortia of three professional organizations including the Canadian Information Processing Society (CIPS) of Manitoba, the International Information Systems Security Certification Consortium (ISC²) Manitoba/ Saskatchewan Chapter, and the Information Systems Audit and Control Association (ISACA) Winnipeg.

The consortia has aligned itself with the National Cyber Security Alliance (NCSA) whose entire mission is developing educational programs through private/public partnerships. According to Kerry Augustine, Regional Director of the Canadian Information Processing Society (CIPS) and co-chair of this newly created organization, the goal of the CDC is to educate and empower the local community to use the internet safely and securely at home, work and at school. A second goal is to help protect the networks individuals connect to as well as Canada’s shared digital assets.

Based on this goal, the group developed a multi-faceted education program that not only teaches students about cyber security but is also designed to interest young people in the multitude of careers available in the science, technology, engineering and mathematics (STEM) fields. The first CDC pilot program was successfully launched in Winnipeg with over 300 students in September 2012 and has a number of unique components.

The first component of the program was a cyber security awareness and education program called Safe Online developed in concert with McAfee, a well known global security technology and services organization. The Safe Online Program leveraged the expertise of industry professionals to develop and present age-appropriate online security education for school children K-12.

Through positive engaging presentations, videos, and online resources, students are taught safe online behaviors including how to deal with cyber bullying. Recognizing that peer to peer teaching is a powerful tool, groups of high school
students are in turn, trained to teach the Safe Online knowledge to elementary students. This investment in student trainers also helps to build valuable peer leadership skills.

The second and very exciting program element is an intensive six week “real time” training program directed at high school students called the Cyber Defence Challenge. This introduces students to the basic fundamentals of internet and computer security through a combination of classroom instruction, hands-on simulation and technology experience. Students experience network technologies and system images and an opportunity to solve real-time system vulnerabilities in a simulated setting.

Once the program is complete, students are eligible to enter an annual team based competition. The competition combines interactive events and exercises that test the students’ cyber security skills in a simulated real-time business/technology setting. Students present their results and findings to a panel of industry executives who serve as judges and points are scored on how quickly and accurately students are able to mitigate the security risks and system vulnerabilities.

This year’s Second Annual Cyber Defence Challenge competition is taking place on Saturday, May 11, 2013 at Red River College (main floor, Princess Street Campus). Fifty-five (55) students representing 11 teams from four Manitoba high schools including Louis Riel Arts and Technology Centre, Sisler High School, TEC Voc High School, and Garden Valley Collegiate in Winkler are participating. The teams will be competing for recognition and scholarship awards sponsored by local industry organizations.

With the goal of encouraging students to enter the fields of science, technology, engineering and mathematics, the third and final component of the CDC is the Young Professionals Mentorship Program. The program builds on the success of the first two components beginning with general cyber security awareness followed by a comprehensive cyber security applied learning program.

The mentorship program provides education mentoring and support for those students who choose to pursue post-secondary studies in the information technology and security fields. Support comes in the form of one-on-one mentoring as well as introductions to organizations through a professional network
base that may be interested in recruiting and/or providing contractual opportunities to young professionals who have graduated from secondary and post-secondary education.

In previous years, some of CDC’s corporate sponsors have directly hired Cyber Defence Challenge competition participants for part-time and summer employment as these students prepare for post-secondary studies in computer science and information technology.

Although the Cyber Defence Challenge is new to Canada and is being piloted right here in Manitoba, it has already received recognition as a 2013 Computerworld Honors Laureate. This award recognizes organizations for achieving measureable results in applying technology for humanitarian benefits and/or a specific social or business need. The CDC program was selected from more than 700 nominations to become one of 269 Laureates from 29 countries. The award will be given at a black tie event in Washington D.C. on June 3rd, 2013.

As each year brings us increasingly challenging cybersecurity issues, utilizing education at all levels of the system will not only help keep our children safe but at the same time, it will hopefully encourage students to investigate careers in this new and growing field.

Source: Canadian Cyber Defence Challenge program overview

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