The Changing Nature of Cybersecurity

CYBERSECURITY. IT'S A RECENT ADDITION TO OUR LEXICON, ONE THAT IS OFTEN MISUNDERSTOOD AND UNDERRATED. The Oxford English Dictionary defines cybersecurity as "security relating to computer systems or the Internet, especially that intended to protect against viruses or fraud." The need to protect against viruses and fraud has increased at a staggering rate. The demand for technicians trained to meet that need has also increased rapidly.

February 2015 saw a heist of 78.8 million records at Blue Cross Blue Shield Anthem, followed by intrusions at Premera and other BCBS companies. "In more recent months, financially-motivated crooks have barraged medical centers, like Hollywood Presbyterian Hospital, with malicious "ransomware" programs that encrypt data and trigger messages demanding money in exchange for a decryption code," reported Nextgov.

While stories about massive cybersecurity hacks against companies like Target and Sony have captured recent news attention, cybersecurity attacks also affect individual users and local small businesses. Centex Technologies has seen a major increase in cyberattacks against its clients in recent months. Just paying bills online without checking to make sure you are on a secure network or accessing a secure page on your bank's website can be a problem.

According to a 2015 study by Cisco, there are more than 1 million cybersecurity job openings worldwide. This number is expected to increase to 6 million by 2019, with a projected shortfall of 1.5 million, according to Michael Brown, CEO at Symantec. This is due to a shortage of qualified workers, as well as an increase in the number and effectiveness of cyberattacks. As a result, "the sophistication of the technology and tactics used by criminals has outpaced the ability of IT and security professionals to address these threats."

Burning Glass Technologies, a Boston-based job-matching company, reported that cybersecurity job postings have grown three times as fast as postings for all IT jobs. High demand means high pay: cybersecurity workers can make up to $6,500 per year (9%) more than other IT workers. The report lists several key trends in cybersecurity jobs:

- Cybersecurity jobs are in demand and growing across the economy
- Positions calling for financial skills or a security clearance are even harder to fill than other cybersecurity jobs
- Cybersecurity positions are more likely to require certifications than other IT jobs
- Cybersecurity employers demand a highly educated, highly experienced workforce
- Geographically, cybersecurity jobs are concentrated in government and defense hubs, but are growing most quickly in secondary markets

Widespread misconceptions about security risks among businesses and individuals exacerbate the increasingly challenging problem of online security. Many believe they have taken the correct precautions to protect against threats, when in fact they are ineffective or out of date. Conversely, many do not even realize what threats exist or the actions they can take to protect their online presence.

To address these shortfalls, the Department of Homeland Security has started a campaign called Stop.Think.Connect. to inform the public about cybersecurity threats and how to practice safe online behavior. The campaign is "aimed at increasing the understanding of cyber threats and empowering the American public to be safer and more secure online." This public-private partnership emphasizes that internet safety is a shared responsibility, and that the federal government cannot address it alone-individual citizens and the business community must also participate.

Cybersecurity is a complex field that has grown and continues to change quickly. The threats we face today could not have been imagined 50, 20, or even 5 years ago. The threats we will face tomorrow and in years to come will likely be unlike anything we can imagine, yet somehow we must prepare for them. This will only be possible with an informed population and a trained workforce.

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