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CYSE 406

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Overview of the Internet of Things (IoT) Cybersecurity Improvement Act of 2020.

Memorandum to Representative Tito Canduit.

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Representative Canduit,

As requested, I have investigated a major cybersecurity law you should include in your upcoming letter to constituents. The Internet of Things (IoT) Cybersecurity Improvement Act of 2020 would be a great way to show people you care about protecting Americans from cyber-attacks.

Overview of the Legislation

The IoT Cybersecurity Improvement Act of 2020 was passed on December 4, 2020. It is designed to secure IoT equipment purchased and operated by the federal government. The law is viewed as a positive step towards setting a benchmark in cybersecurity in the connected world of IoT (Farr et al.). Its text is available online at https://www.congress.gov/bill/116th-congress/house-bill/1668/text (Kelly).

Summary of the Law

The IoT Cybersecurity Improvement Act of 2020 mandates the National Institute of Standards and Technology (NIST) to create and publish standards and guidance for federal government deployment of IoT devices. These standards and guidelines include ensuring federally procured IoT devices provide safe software updates and patches, anti-vulnerability, and strong authentication. It also requires the Office of Management and Budget (OMB) to monitor and amend federal policies in accordance with NIST. Moreover, it prohibits federal agencies from purchasing devices that are not of this security standard (Farr et al.).

Background and Problem Addressed

IoT devices, ranging from smart thermostats to security cameras, are becoming increasingly common in our lives. However, most of these computers do not have basic security, so it is easy for hackers to hack them. These devices are highly dangerous when deployed on government

premises, exposing sensitive information or opening gateways for hackers into government networks. In 2016, for instance, a giant botnet called Mirai used vulnerable IoT devices to create a Distributed Denial-of-Service (DDoS) attack that shut down Twitter, Netflix, and CNN. This attack clarified that better IoT security is necessary (Antonakakis et al.).

Does the Law Fix the Problem?

Before this law, federal agencies did not have standard regulations for IoT security protection, resulting in fragmented security measures and greater vulnerability to cyber-attacks. The IoT Cybersecurity Improvement Act is a start in the right direction, as it sets minimum security standards for federally procured IoT devices, but only for federally procured devices. These security standards exclude millions of consumers, who are indeed your constituents, and private-sector IoT devices are still susceptible to this kind of attack. While it is an important precedent, the legislation does not make mandatory regulations for manufacturers or address any other commercial IoT device standards (Duffy).

Potential Areas for Improvement

The legislation might be enhanced by extending its application to IoT devices in critical infrastructure areas beyond the federal government. It could also provide incentives for private companies to implement similar security practices; and developing a certification scheme for IoT devices that conforms to these security standards could help consumers find secure products more easily. This certification scheme might make the IoT industry more secure since companies could adopt these standards for all their products, not just the ones that go to the government (Fagan et al.).

Additional Observations

Voters and constituents might like specific parts of this bill that protect their personal information and national security at the same time. Pointing out these features in your letter, like the act's call for proactive software updates and patch management, may help them feel safe that their government is taking action to protect against potential attacks on federal infrastructure. Also, clarifying that this legislation is only the beginning of expanded cybersecurity could further demonstrate your commitment to expanding protections. This can also be economically beneficial since encouraging cybersecurity might help to avoid costly cyberattacks that might hit taxpayers indirectly.

With this bill, that is a product of a bipartisan agreement, you will show that you are willing to cooperate across the aisle on major topics. Also, because the law targets IoT devices, it is in line with the rising trend of smart cities and connected infrastructure, and it puts you on the technological forefront. You could even make a proposal to expand this law to state and local governments, which may interest voters who are worried about local cybersecurity. To the constituents, you must break into simple terms what IoT is, and share some real-world applications of these devices; that could let voters see how this law affects their daily lives and why it matters.

The 2020 IoT Cybersecurity Improvement Act, basically, fixes an important hole in our country's cybersecurity posture; therefore, by reminding people about this law, you are showing them that you are working to keep government systems protected and, therefore, the American people safe from cyber-attacks.

I hope this helps with your upcoming letter to constituents. If you need any clarifications or details, please let me know.

Very respectfully,

Daniel Akpovi

Research Aide.

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