

Cybersecurity and the Internet of Things:

Section Three - Systemic Reactions to IoT Insecurity

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The internet of things presents a unique cybersecurity challenge, one that has been exacerbated by a lack of emphasis on security from both vendors and buyers. In a 2016 AT&T survey of businesses, 85% of respondents had or planned to deploy IoT products, but only 10% felt confident they could secure them. This implies a vast increase in vulnerable attack surfaces for criminals to compromise.

The IoT industry's lack of emphasis on cybersecurity has caused its capabilities to lag behind traditional cybersecurity. A 2017 submission to the National Institute of Standards and Technology (NIST) by the CTO of Security Innovations asserts that a lack of support for existing security tools and the patchwork of software used to run devices has set security back a decade. In a statement before the U.S. House of Representatives Subcommittee on Communications and Technology, Bruce Schneier, CTO of Resilient (IBM), described this situation as both a "market failure" and a growing threat:

"The more we connect things to each other, the more vulnerabilities in one thing affect other things... and vulnerabilities like these are hard to fix because no one system might be at fault. There might be two secure things come together and create insecurity." (28)

Schneier's stance is typical. In 2017, HP described a U.S. Homeland Security report as "Confronting Negligent IoT Security", and there are a growing number of calls for both stronger industry standards and for government regulation. While the technology industry is normally averse to regulation, fear of the potential severity of IoT-driven attacks has made the topic more salable.

Regulation has been advocated for by major firms across multiple industries, including professional service firms (KPMG), technology providers (Microsoft), and manufacturers (Johnson & Johnson). The Internet of Things (IoT) Cybersecurity Improvement Act (2017), recently introduced to Congress with bipartisan support, is the first major U.S. attempt at regulation. Although it is unlikely to pass, reaction to the bill by stakeholder firms such as Symantec and Mozilla has been broadly positive.

IoT regulation is more advanced in the European Union, which is currently updating its telecommunications rules. The EU's General Data Protection Regulation (GDPR), which enters force May 2018, includes compliance obligations related to devices that collect personal



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data, and these obligations could eventually be expected to machine-to-machine communication as well. Another proposed regulation would create a certification system that imposes minimum technical and security standards on IoT devices.

These compliance obligations are wide-ranging and will have global impact. The GDPR applies to all data concerning EU residents, regardless of where that data is located. Per Microsoft President Brad Smith: “If you have customers in the EU, this matters to you. If you have employees in the EU, this matters to you. If you’ve even heard of the EU, this matters to you.” The EU’s reach and market strength will drive global change as companies adapt to avoid penalties.

It is not possible to know if these regulations will be effective; however, it is important to understand that they are a reaction to widespread recognition that IoT’s security flaws could become structurally-embedded into the economy if the current status quo continues. If the installation base of vulnerable devices grows large enough, IoT insecurity will become a systemic flaw in the internet for years to come.

About Daubenspeck and Associates

Ken Daubenspeck is the founder and President of Daubenspeck and Associates: an international recruiting firm. Daubenspeck specializes in the recruitment of the CIO, CISO, and the building of their capabilities.

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