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Cybersecurity-The Internet of Things

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Cybersecurity: The Internet of Things Case and questions

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Hostos Community College

A stylized, teal-colored silhouette of a mountain range is located in the bottom right corner of the slide. The mountains are layered, with some appearing in front of others, creating a sense of depth. The colors range from a light teal to a darker teal.

Professor Amy Ramson, Esq.

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The Internet of Things

Description of the Internet of Things:

The Internet of things refers to the collection of devices and sensors that are connected to the Internet and are collecting and sharing data

It works like this:

- ◆ Sensors or devices (such as a smart thermostat) collect data from the surrounding environment such as the living room of your home
- ◆ This data may be simple or have various levels of complexities
- ◆ The collected data is sent to the cloud through a connection such as WiFi, networks, Bluetooth, WAN, etc.
- ◆ Once that data gets to the cloud, software performs processing on the collected data. This process can be simple for example checking the temperature of the room or more complex processes
- ◆ Ultimately, the information is made available to the user in some way such as by sounding an alarm on a phone or sending them email or text message notification or the temperature rises or falls

(Relied upon: <https://www.guru99.com/iot-tutorial.html>)

This is an article about the Internet of Things:

<https://www.wired.co.uk/article/internet-of-things-what-is-explained-iot>

Case: The Apple Ring Security Cameras

Apple provides home surveillance through security cameras. Consumers use the company app to monitor the cameras and speak to people inside their home

You tube video about hacking of cameras:

<https://www.youtube.com/watch?v=Ue4l8dLoyxQ>

Potential articles for case study:

<https://www.nytimes.com/2019/12/15/us/Hacked-ring-home-security-cameras.html>

<https://www.theguardian.com/technology/2019/dec/27/ring-camera-lawsuit-hackers-alabama>

Questions

1. Identify and describe four tools that Apple failed to provide which would protect consumers when they launched the Ring?
2. Identify and explain how consumers were harmed as a result of its omission?
3. Name three basic best practices that tech companies should institute?
4. Why didn't Apple institute these practices or safeguards?
5. Do you agree with Apple's stance that it was the fault of the consumer for the hacks because they created weak passwords? Why?
6. How can a consumer protect him/herself from being hacked? Name three ways.
7. Which US agency would be in charge of investigating and penalizing the hacker?
8. What laws were violated by the hacker?
9. Is there any US governmental mandate requiring companies to institute basic security practices
10. What power does the FTC have with regard to enforcing best practices?
11. Is Apple required to tell shareholders and users of this potential breach?

My Friend Cayla doll

Description:

- ◆ The My Friend Cayla and i-Que dolls accessed the Internet and transfer data via a Bluetooth connection with a smartphone. **My Friend Cayla** was a line of 18-inch (46 cm) dolls which used speech recognition technology in conjunction with an Android or iOS or mobile app to recognize the child's speech and have a conversation. The doll used the internet to search what the child said which then answers with what it collected online.
- ◆ It was discontinued in 2017.

Resources

<https://www.marketplace.org/2017/04/14/cayla-connected-doll-spy-must-be-destroyed/>

<https://www.npr.org/sections/alltechconsidered/2016/12/20/506208146/this-doll-may-be-recording-what-children-say-privacy-groups-charge>

<https://www.cnet.com/news/parents-told-to-destroy-connected-dolls-over-hacking-fears/>

<https://www.nytimes.com/2017/02/17/technology/cayla-talking-doll-hackers.html>

<https://nakedsecurity.sophos.com/2017/12/06/cayla-doll-too-eavesdroppy-to-put-under-the-christmas-tree-says-france/>

Questions

1. Describe how the doll works-how does the toy answer the child's questions.
2. Describe how hackers were able to communicate with children through the doll.
3. Describe how data could be collected about the children and family etc.
4. Describe the security issues associated with the Bluetooth connection?
5. Which countries have instituted privacy complaints against Genesis Toys the manufacturer?
6. Which US privacy laws and consumer protections are being violated by Genesis Toys?
7. Explain how the German authorities dealt with this toy?
8. Germany has some of the strongest protection laws in the world what caused this data protectionist attitude?
9. What is the Genesis Toys claiming about the doll?