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CYBR 340-342N

Week 1 – Module 1

History of Chrome OS

Google’s Chrome OS is a linux kernel based operating system with a heavy tilt towards being native to the cloud. What this means is that the user’s application and data would exist in the cloud primarily. This is due to Google conceiving as this lightweight OS being used by devices who’s primary usage pattern would be web connected tasks. In the 11-ish years of Chrome OS existence, Google built upon emerging best practices and then infused a heavy dose of bleeding edge feature development.

The first announcement for Chrome OS occurred in 2009. The intent was to take the Google Chrome browser’s experience and expand it down the tech stack to the underlying OS layer. This vertical integration allowed for Google to better control the user experience, drive a tighter integration to the G Suite properties, and better control the security profile. (Pichai, 2009)

The first layer of this onion is the control of the hardware ecosystem. Google dictated that all machines were to not only be referred to as Chromebooks but that they would need to meet some minimum standards. The biggest one would be that the defacto hard drive technology would be SSD’s. This made the Chromebooks more durable and greatly decreased the boot and wake up time needed.

The end user experience is another key focus of the development philosophy. The target demographic was the netbook niche of users. People who just needed a means to connect to the internet to use cloud-based resources. Local computing power was rarely needed. The same with local storage. The paradigm of dumb client terminals connecting to powerful servers but repurposed for the more modern usage. This yielded a focus on enabling a single solution for a given user task and ensuring that solution was optimal. No need to wonder if the user was going to try to install OpenOffice or Microsoft Office. Adobe Photoshop. InDesign. These items just were not going to be part of the requirements. Instead any and every application beyond some very trivial ones must work as a web app. Conveniently this helped drive adoption of the other Google properties such as Google Docs and the rest of the G Suite tools. Within the business realm or academic realm Chrome OS and the ecosystem was touted as being a total solution. (Forrester Consulting, 2018)

The more relevant aspect to this class is the security design and the shift in the posture this enabled. By making the OS nothing more than a lightweight tool to get access to cloud it reduced the client computer as a target. Read only operating systems make it rather hard for ransomware to attack a Chromebook. Building upon the collective learnings of the IT industry they started with the a sandboxing approach to the user space rather than having that bolted in as an afterthought. Finally, the supply chain integration allowed for several hardware based solutions to be implemented. The Titan C security chip being a great recent example. Focusing on the production and implementation of this chip gave Google the ability to implement several layers of security that just couldn’t be easily done through software. Hardware locking for drive encryption. Enforced two factor authorization. Verified boot process. Etc, etc… (Titan C. The Nucleus of Trust, n.d.)

# Works Cited

Forrester Consulting. (2018, September). *The Total Economic Impact™ Of Google Chrome OS With G Suite*. Retrieved from Chrome Enterprise: https://services.google.com/fh/files/misc/forrester\_tei\_google\_chrome\_os\_with\_g\_suite.pdf

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