

Mobile Device 5G Network Risks



Team: Mario A Peraza

Fullerton College, Computer Information Systems
Cal Poly Pomona Cybersecurity and Awareness Fair 2021
Cybersecurity Awareness Category

Problem

The fifth generation mobile network (5G) has the capability to be one hundred times faster than that of its 4G predecessor, has a stronger connection and a lower rate in the time it takes to capture, transmit and process data (latency). 5G networks allow the use of new mobile applications like those installed in your vehicle or those installed on your mobile phone to monitor your health. Faster speeds over 5G also mean that malicious attackers can deploy more attacks against our devices. Increased compatibility with applications also means that attackers have access to more data and sensitive information than ever before. As with all aspects of mobile security the human factor plays a huge role. People inadvertently aid attackers in obtaining access to information.



Source:
<https://www.youtube.com/watch?v=Xby7duC6RVo>

Analysis

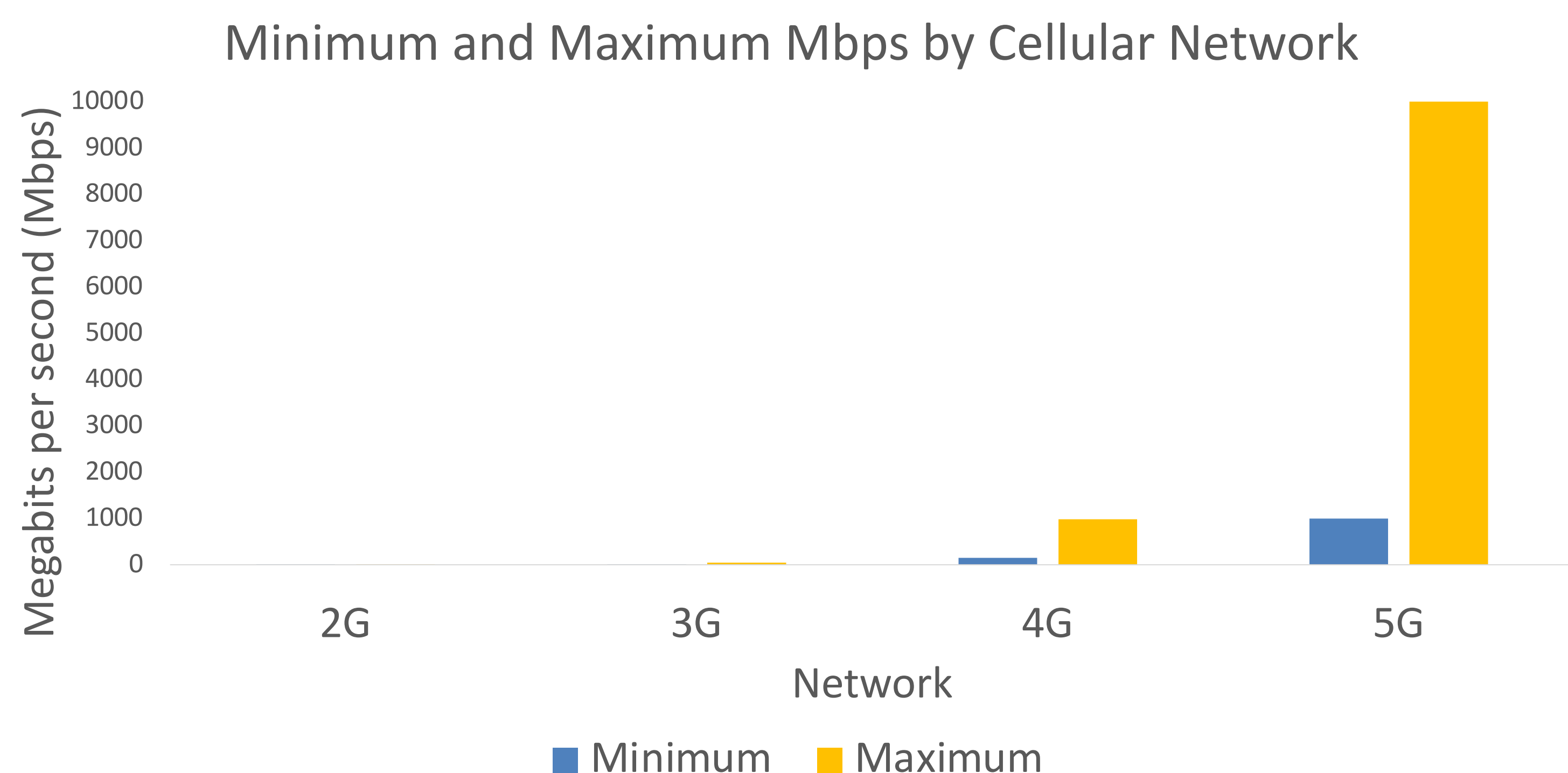


Figure 1: Minimum and maximum speeds achievable by each cellular network generation.

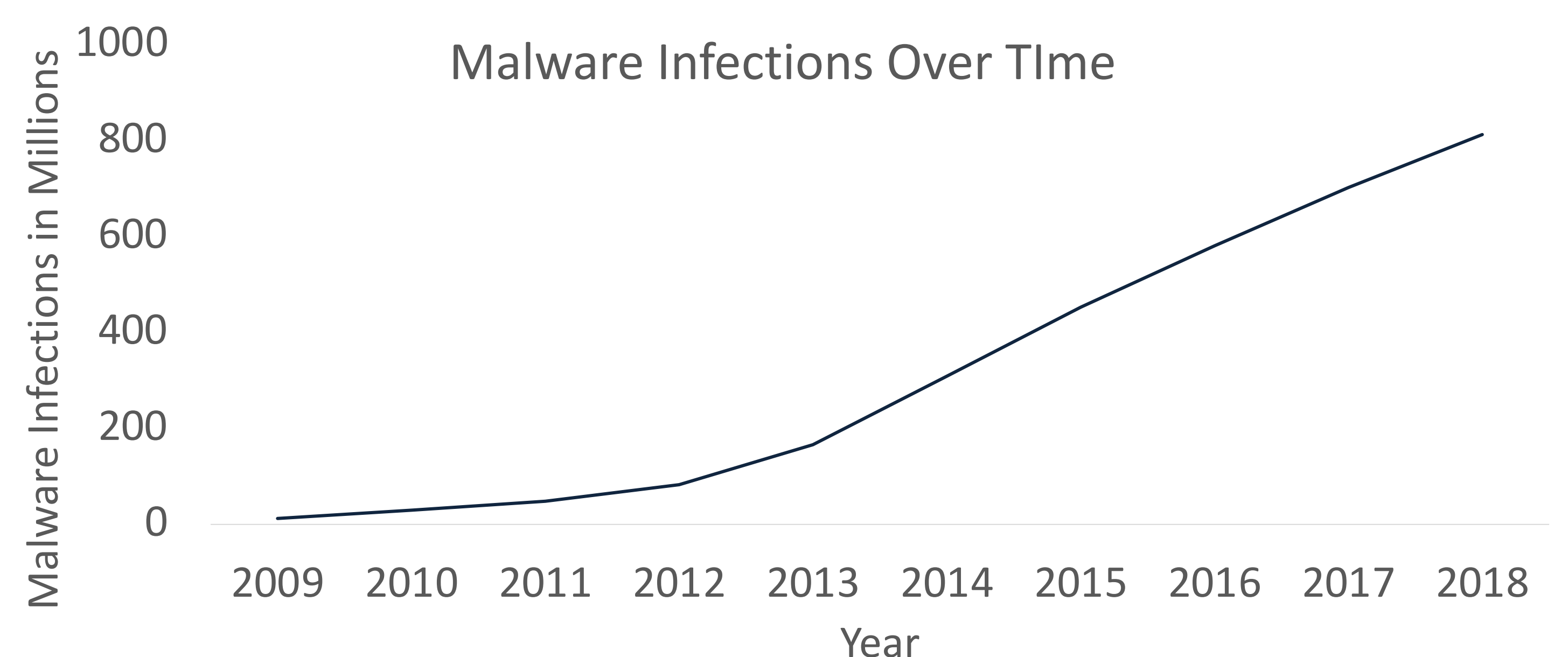
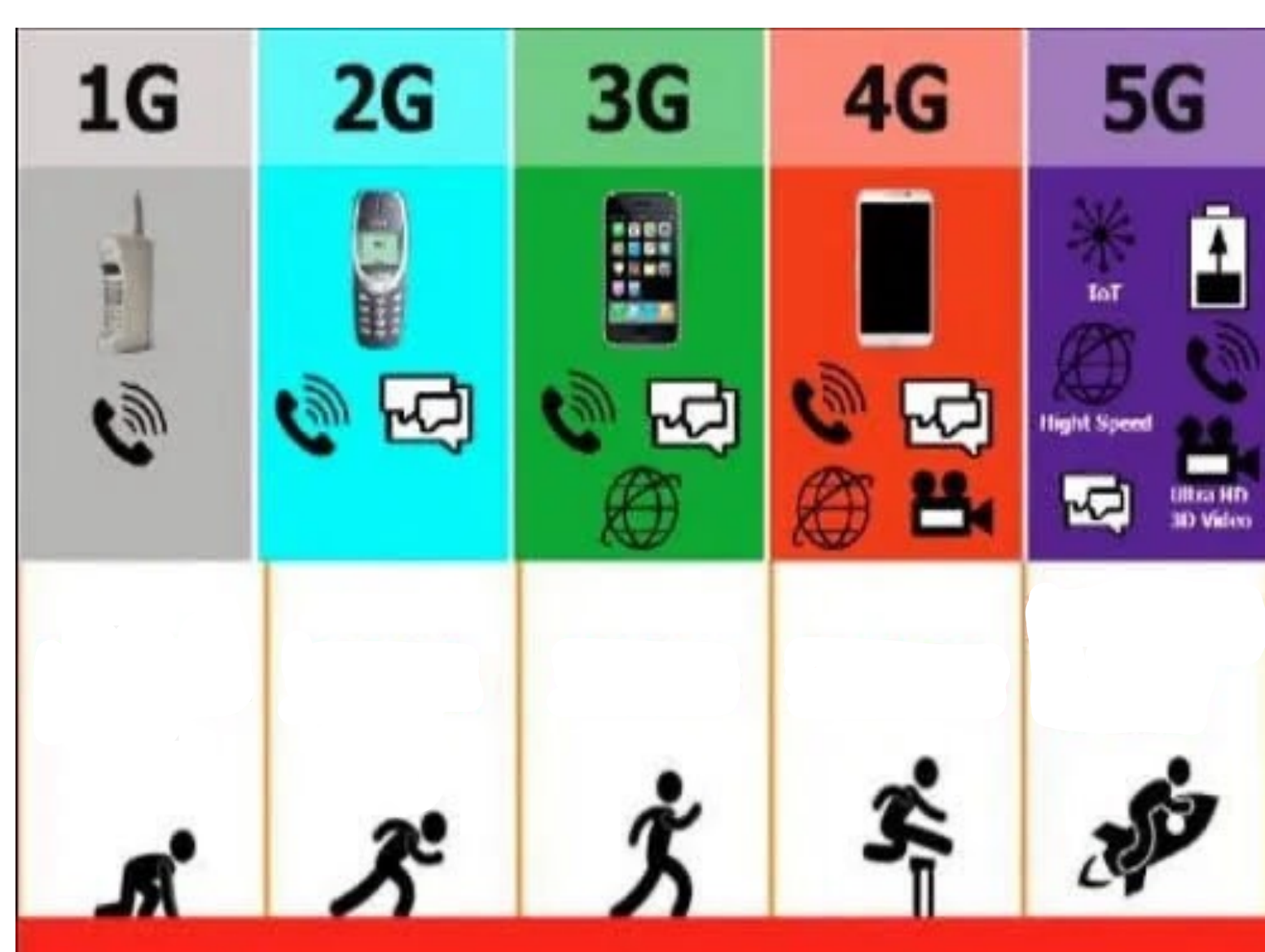


Figure 2: Amount of Malware infections over time.

Challenges

One of the challenges is the availability of data and research on 5G. It is estimated that mobile device carriers have collectively covered 75% of the United States with 5G., but thorough and global rollout of 5G will take a little more time.

The major challenge with mobile device security will continue to be the human factor. Even if software is in place with these advancements the general public must be willing and able to know how to protect themselves.

Recommendations

Mobile device carriers should not take this lightly as they are the ones that profit from this industry. We receive the benefits for better technology but it comes at a price. Carriers should also promote awareness when it comes to downloading third party apps and opening emails from unknown sources. Usually companies act after a major breach has happened. Awareness can help with prevention.

Sources

- Baillon, Aurélien, et al. "Informing, Simulating Experience, or Both: A Field Experiment on Phishing Risks." *PLoS ONE*, vol. 14, no. 12, Dec. 2019, pp. 1–15. EBSCOhost, doi:10.1371/journal.pone.0224216.
- ČISAR, Petar, and Sanja MARAVIĆ ČISAR. "Security Aspects of 5G Mobile Networks." *Annals of the Faculty of Engineering Hunedoara - International Journal of Engineering*, vol. 17, no. 4, Nov. 2019, pp. 137–143. EBSCOhost, search.ebscohost.com/login.aspx?direct=true&db=a9h&AN=141517184&site=eds-live&scope=site.
- Park, Seongmin, et al. "5G Security Threat Assessment in Real Networks." *Sensors (14248220)*, vol. 21, no. 16, Aug. 2021, p. 5524. EBSCOhost, doi:10.3390/s21165524.
- PurpleSec 2021 Cyber Security Statistics Trends & Data. PurpleSec. (2021, August 6). Retrieved October 24, 2021, from <https://purplesec.us/resources/cyber-security-statistics/>.