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Reimagining the Internet

1. Vint Cerf has described the InterNet as a homogenous network that connects heterogeneous computers. What did he mean by that?

Cerf means that the network connects a variety of heterogeneous (different) devices and operating together, but they communicate together under the same protocol (a homogeneous network).

2. What is Metcalfe's law? (Hint: Use Google.)

Metcalfe's law states that the value of a telecommunications network is proportional to the square of the number of connected users of the system (n^2).

3. Where geographically are the majority of Internet Users located?

The majority of Internet Users are located in Asia.

4. Concerning the percentage of a country's population that uses the Internet, with what are mobiles helping?

Mobiles allow a greater percentage of users to connect to the internet.

5. In design terms, what differentiates the Internet from earlier networks such as the Telephone and Telegraph networks?

Older networks like the Telephone and Telegraph networks needed long lines to connect users while the Internet can connect users with other technologies like microwave and satellites.

6. Was there a particular logic in Vint Cerf's choice of a 32 bit address space for IP addresses?

No there was not any particular logic in selecting 32 bits for IP addresses.

7. How do digital signatures relate to closing an important vulnerability in the DNS system?

Digital signatures can bind the domain name and IP address together.

8. What is a sensor network? Give an example.

A sensor network is a network that collects and sends information from various devices.

9. What does Vint Cerf describe as one of the hardest problems that he can imagine?

Vint describes troubleshooting configuration as one of the hardest problems he can imagine.

10. Why is cloud collaboration important?

Cloud collaboration is important because there is not currently a standard model for clouds to communicate together.

11. How does Vint Cerf describe the job that his Internet Design did with mobile? Specifically, what was the problem?

Cerf describes his Internet Design as a rotten one for dealing with mobility. The problem was that he didn't realize that the nodes would have to change at times depending on the location.

12. How does Vint Cerf describe the job that his Internet Design did with broadcast? Specifically, what was the problem?

Cerf described his design as an imperfection for dealing with broadcast media. The problem was that he used a point-to-point link for broadcast media.

13. What is strong authentication? Why is the lack of this an issue?

Strong authentication confirms the identity of who or what is interacting with it. The lack of strong authentication is an issue because the users need to be convinced that their information is secure on the cloud.

14. In an Internet context, what is the overrun problem?

The overrun problem is the issue where someone uses your assets and uses them against you.

15. What does Cerf cite as a problem with the Internet and copyright?

Cerf believes that the government sometimes goes too far with the control over the Internet and copyright laws.

16. What does Cerf mean when he talks about rotten bits? Give an example.

Cerf is referring to data decay. An example would be some data created today that could not be interpreted in the future.

17. Briefly describe the InterPlanetary Internet. In your description, describe how this solves the point to point InterPlanetary communications problem.

The InterPlanetary Internet would be an Internet that allows communication across different planets. This would use a DTN (delay and disruption tolerant) protocols that would reduce the long delay that there would be through communication over long distances that point-to-point would not be able to.

18. In an Internet context, what is common carriage? What implications does this have for Internet billing?

Common carriage means that the same rules are applied to everyone. For internet billing, this means that you should pay the same as anyone else on the same contract and that the Internet should not be charged on a per-use model that would hinder growth.

19. What does Cerf mean when he says that in the future, the network will disappear?

Cerf means that everything will be network capable in the future and function together.

Internet Resources

1. What is the Internet Society?

The Internet Society is an international non-profit organization that provides Internet-related standards, education, and policies.

2. Who is Vint Cerf?

Vint Cerf is known as one of the fathers of the internet and was one of the co-creators of TCP/IP protocols and the basic architecture of the internet.

3. Who is Bob Kahn?

Bob Kahn was also known as one of the fathers of the internet. Along with Cerf, he created TCP/IP and was responsible for creating DARPA's Internet program.

4. As articulated by Lynn St. Amour, what is ISOC's hope for the future?

ISOC's hope for the future is that everyone in the world will have equal access to a ubiquitous, reliable, and open Internet and that all countries of the world will be equal.