

THE GOOD & EVIL OF THE INTERNET AND WHY YOU SHOULD KNOW ABOUT THEM

WEEK 6

- OLLI WINTER 2020 COURSES
- Mondays, January 27—March 2
 - 9:30—11:30 a.m.
 - @Cooperage
 - Dr. Farid Farahmand

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A Quick Check-in.....

- Thank you for completing the survey

THE GOOD & EVIL OF THE INTERNET AND WHY YOU SHOULD KNOW ABOUT THEM

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Please help us improve our lectures.....

What is the week number?

1 2 3 4 5 6

Week 1 Week 6

A Quick Check-in.....

- Check the web page:

Course Title: The Good & Evil of the Internet and Why You Should Know About Them

OLLI WINTER 2020 COURSES

Mondays, January 27—March 2

9:30—11:30 a.m. @Cooperage

Course Instructor:

- Dr. Farid Farahmand (farid.farahmand@sonoma.edu)
- Web page: <http://web.sonoma.edu/users/f/farahman/>
- LinkedIn Page: <https://www.linkedin.com/in/farid-farahmand-823b9b19/>

Course Webpage:

- <http://web.sonoma.edu/users/f/farahman/OLLI/default.html>

Course Information:

We start this course with a brief history of the Internet and the World Wide Web technologies, their evolutions, how they operate, and how they are used. We then explore contradictions of these technologies. We first explain the tremendous innovations they have created over the past several decades. We then point out how these technologies are increasingly being embraced as instruments of control, monitoring, cybercrime, and oppression by powerful institutions and governments. We look at how the leading high-tech companies, including Amazon, Google, and Facebook focus on providing greater conveniences for users, and how such data personalization techniques can contribute to more isolation, less tolerance, and limited diverse perspective. Using live demonstrations, we conclude by showing examples of cyber-attacks.

A Quick Check-in.....

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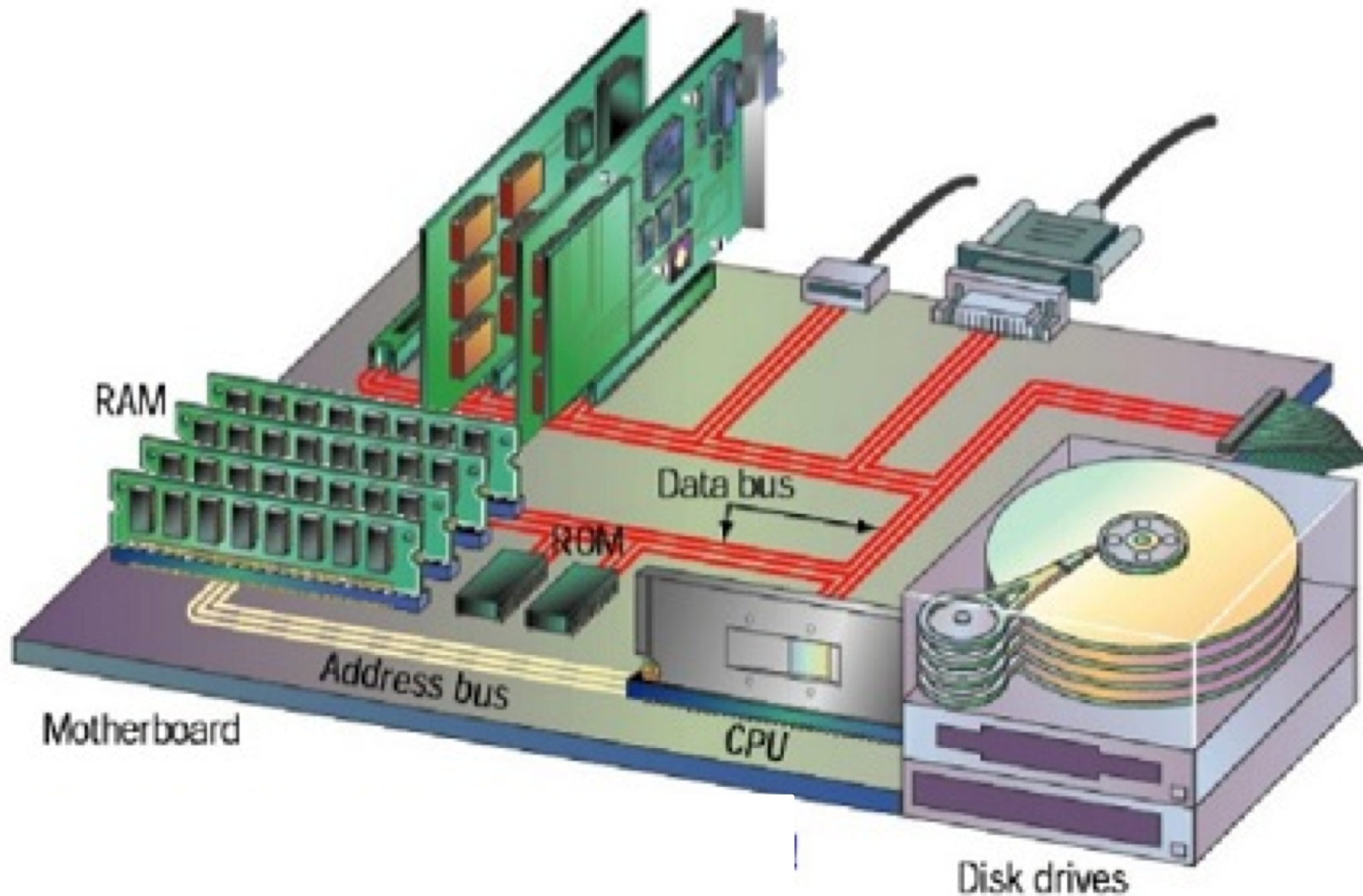


- Uploaded the slides
- Let's hold on to your questions for the first 45 min

What We Cover Today

- Quick review.....
 - Big Data
- This week
 - Computer memory and cloud storage
 - 5G and big players
 - Securing your computer
 - Discussion

Computer Memory – Storing everything Locally



Storage

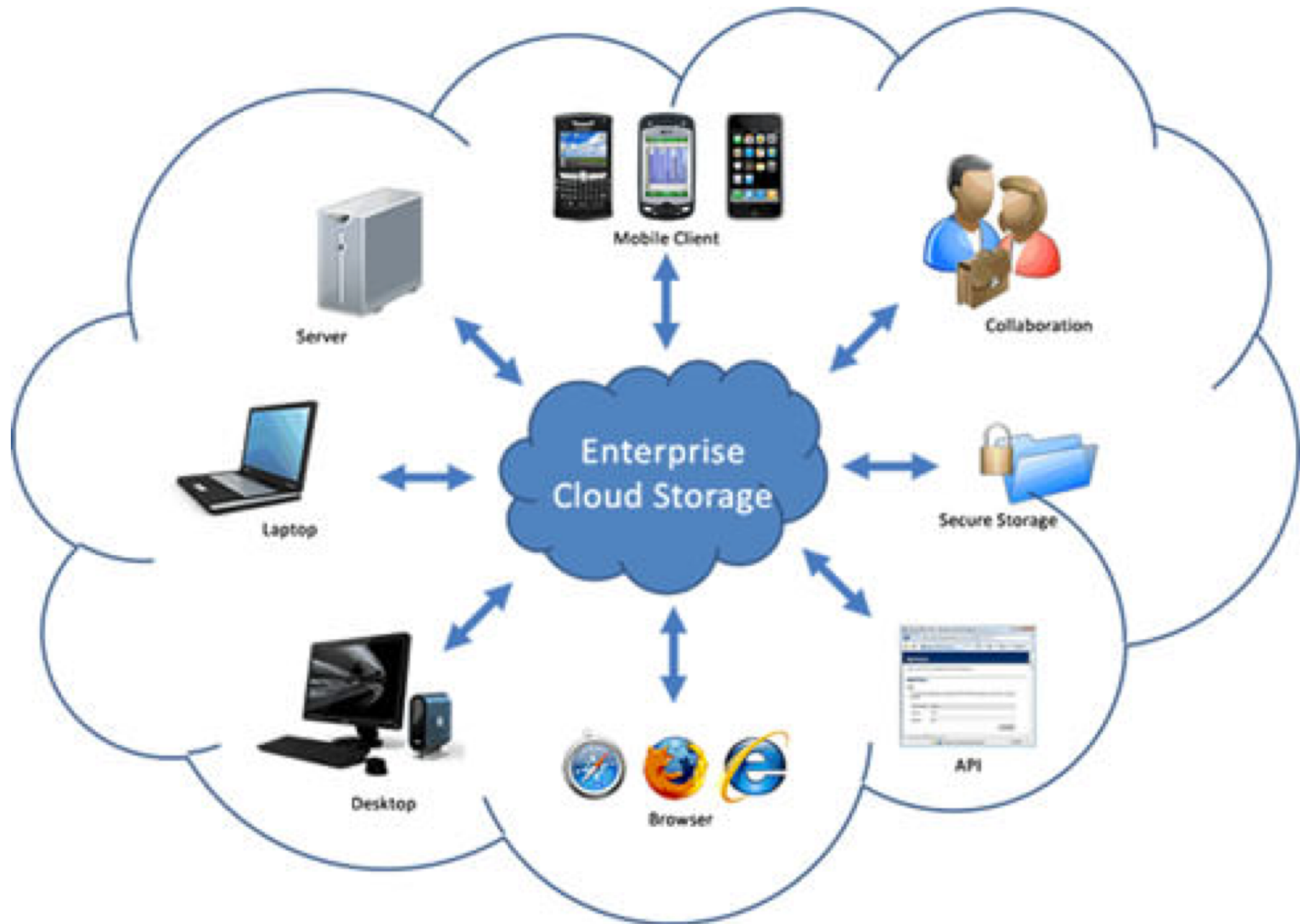
Cloud



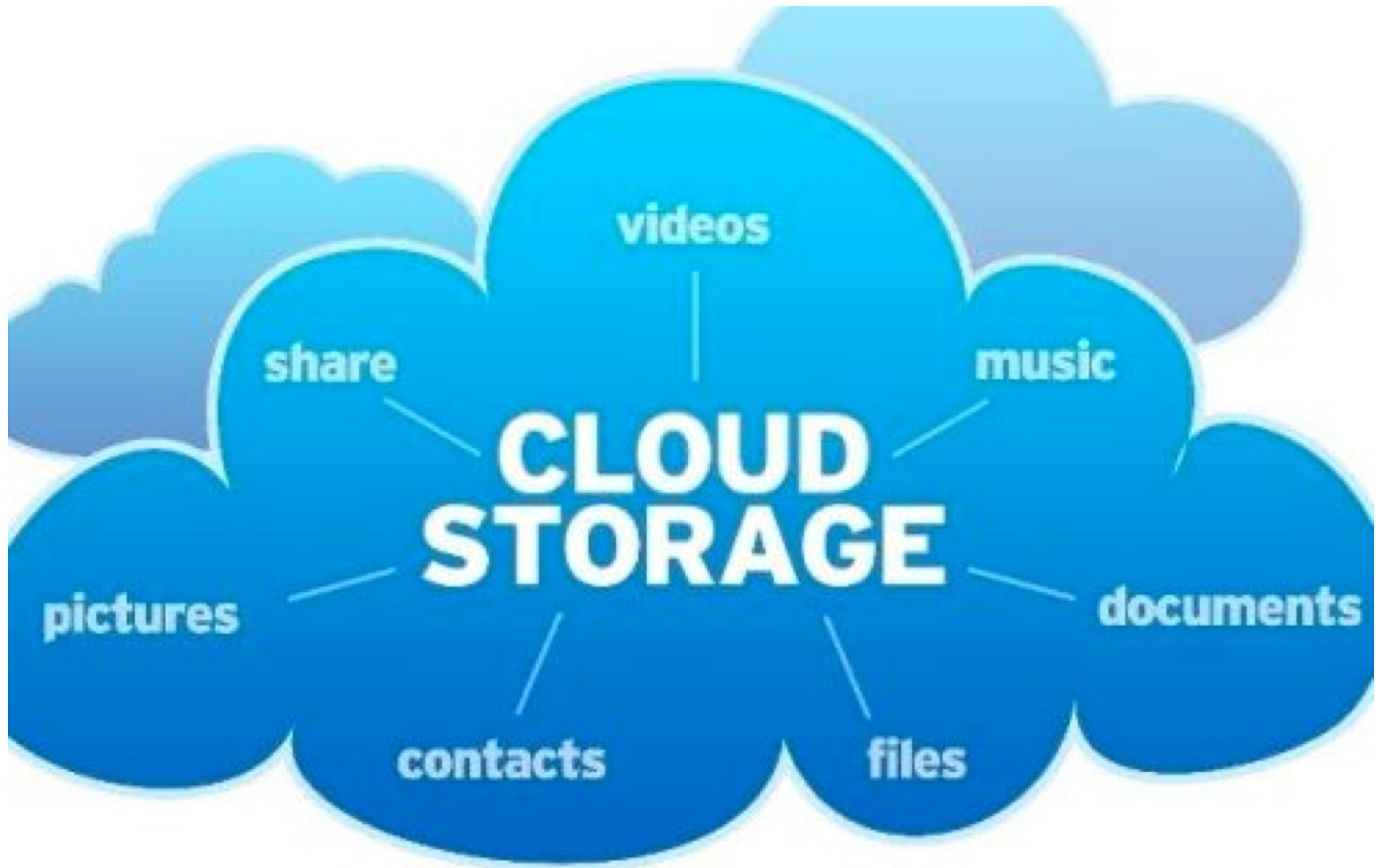
Local



Cloud Storage



Cloud Storage – What we store



Cloud Providers

Cloud storage for free



2GB



15GB



5GB



5GB



50GB



10GB



2TB



10GB



10GB



15GB



2GB



5GB



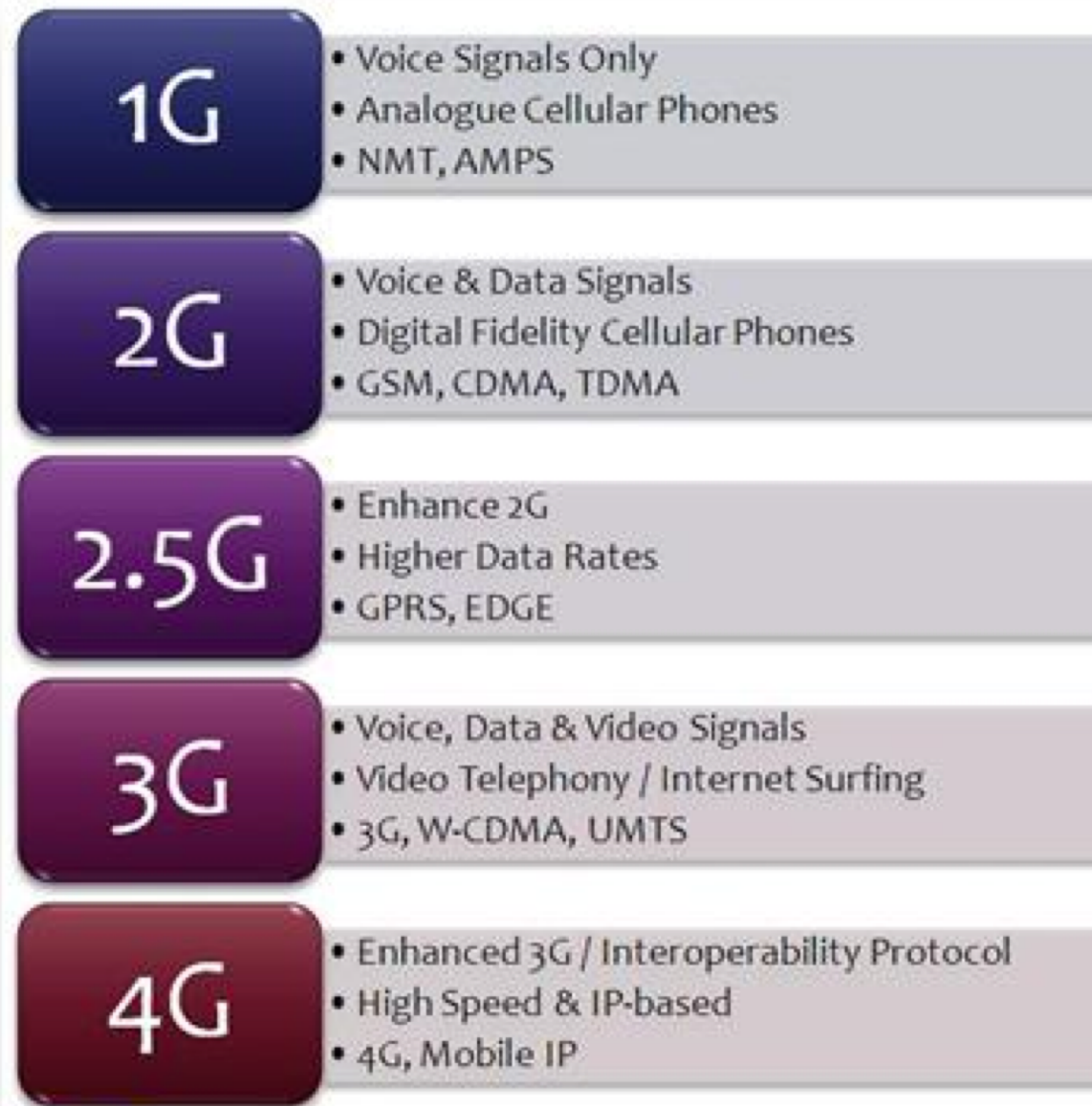
10GB

<http://blog.odrive.com/blog/2014/9/30/50-shades-of-free-cloud-storage>

Cloud Storage

- Video: <https://www.youtube.com/watch?v=HZ-2gYd1Ces>
- Google Data Center:
<https://www.youtube.com/watch?v=XZmGGAbHqa0>

Evolution of Mobile Systems



Cell Phone Generations

4 Cell Phone Generations Compared

	Standards	Technology	SMS	Voice Switching	Data Switching	Data Rates
1G	AMPS, TACS	Analog	No	Circuit	Circuit	N/A
2G	GSM, CDMA, EDGE, GPRS	Digital	Yes	Circuit	Circuit	236.8 kbps
3G	UTMS, CDMA2000, HSPDA, EVDO	Digital	Yes	Circuit	Packet	384 kbps
4G	LTE Advanced, IEEE 802.16 (WiMax)	Digital	Yes	Packet	Packet	up to 1 Gbps

Cell Phone Evolution



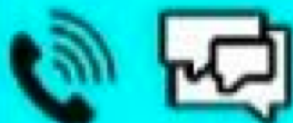
1G



2.4 Kb/s



2G



64 Kb/s

30 times
faster



3G



2 Mb/s

30 times
faster



4G



100 Mb/s

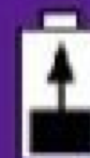
50 times
faster



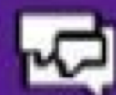
5G



IoT



High Speed



Ultra HD
3D Video

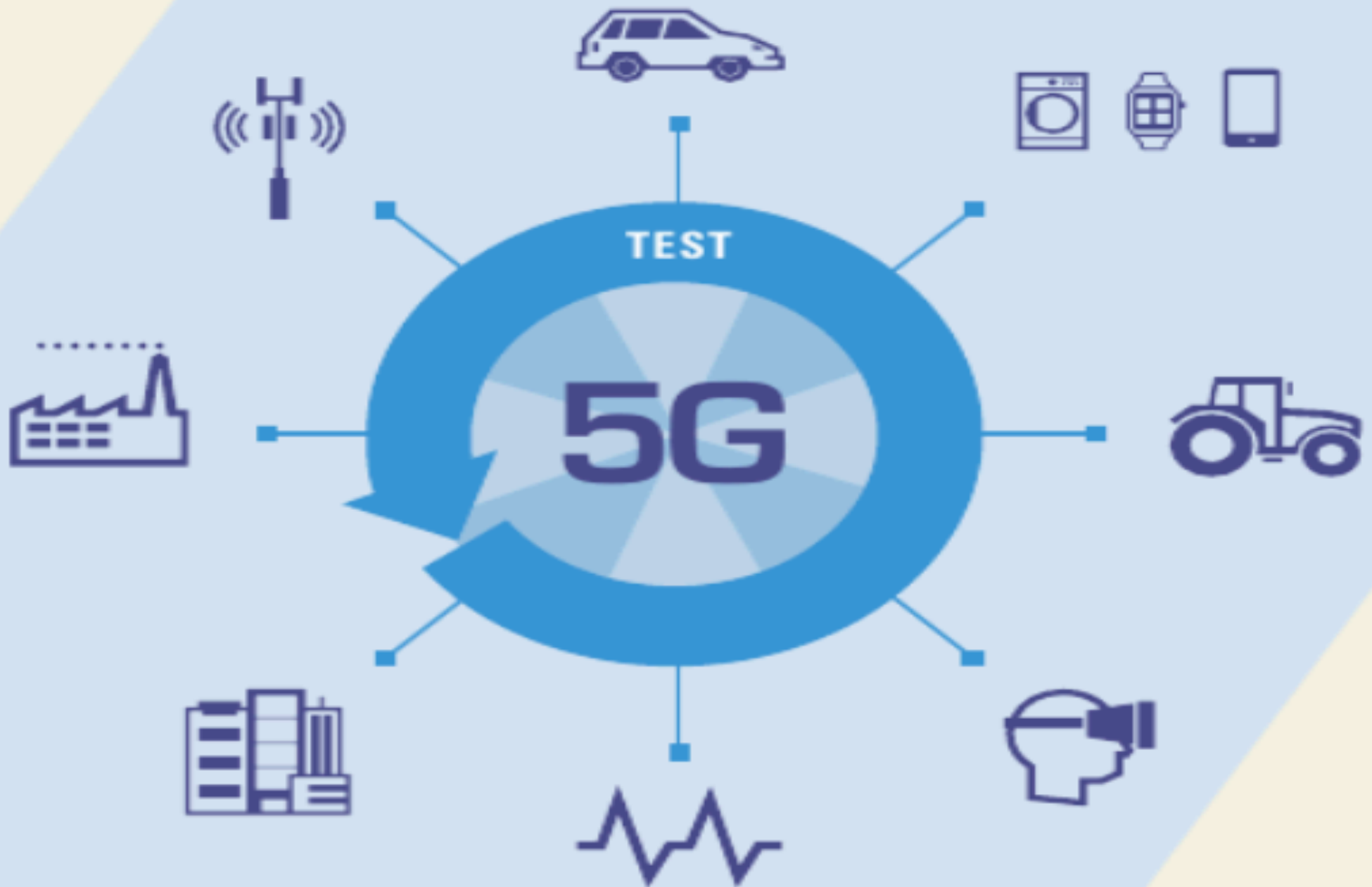
More than
1 Gb/s



5G Evolution

- Was supposed to appear in the market by 2020
- Features:
 - Faster speeds (a minimum of 1 Gbps and perhaps up to 10 Gbps)
 - Lower power requirements
 - Support for huge numbers of new devices
 - Faster dialing speeds
 - Faster access to cloud
 - Allow putting devices everywhere
 - Facilitates face recognitions, and IoT
 - and more....

5G Connectivity



More about 5G

- Video:
- <https://www.youtube.com/watch?v=2DG3pMcNNlw&list=P LmHdJRGZS3izGZtBj9p8-xM5sX7PdaJxM&index=33>

5G Evolution – Players

....the future is moving toward 5G



ISPs

Operators

**Suppliers &
Vendors:**

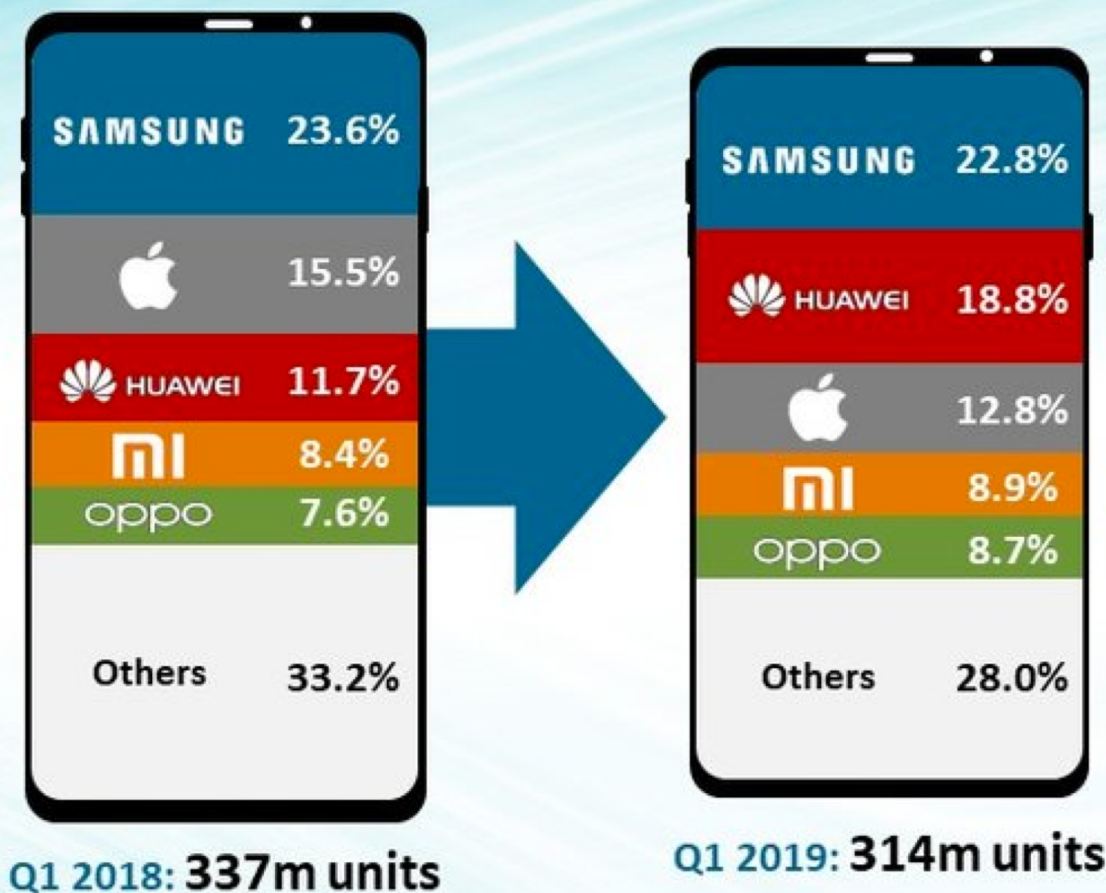
- Nokia
- Cisco
- Ericson
- Huawei

What is the issue with Huawei?

- Owns vast number of 4G equipment
- Has a greater domination in 5G market than its competitors – leading the 5G tech race!
- During the last decade or so it has stormed into the consumer market as a smartphone manufacturer and now owns 16% of the market.
- Five Eyes countries have accused the company of major network security breaches
- For these countries having a dominant company that owns all the networking equipment is rightly troubling
- So what is the solution:
 - Find an alternative company
 - Stop the company!
-

How Huawei is growing....

Huawei's
smartphone
shipments grew
50.2% in Q1
2019 to cement
its position as
the world's #2
smartphone
vendor

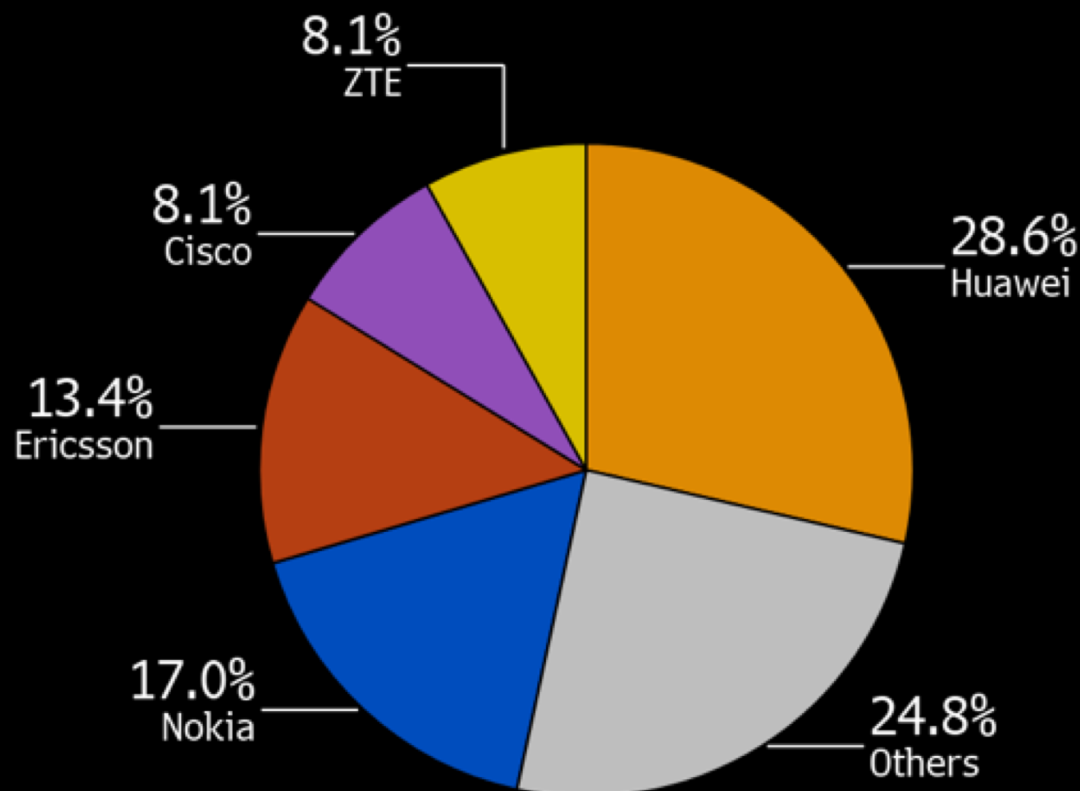


Source: Canalys estimates, Smartphone Analysis, May 2019

Huawei's position in 5G

Pulling Ahead

Between 2013 and 2018, Huawei increased its telecom market share by 8 percentage points



2018 market share
Source: Dell'Oro

What is the issue with Huawei?

The Senate passed a bill that would prohibit the use of federal funds to purchase equipment from Huawei and provide \$1 billion for rural telecom companies to replace equipment from the Chinese tech giant that [the U.S. has blacklisted](#).

Bipartisan lawmakers on the House Committee on Energy and Commerce, including Chairman Frank Pallone Jr., D-N.J., ranking member Greg Walden, R-Ore., and Reps. Doris Matsui, D-Calif., and Brett Guthrie, R-Ky., sponsored the bill.

How to protect your computer and your data

Protect yourself & your data

- Pay attention to your passwords:
 - Use strong passwords (BOA_Char!sandMag92)
 - Don't use trivial names
 - Don't
- Emails:
 - Do not email important information in one single email: add password
 - Don't click on email attachments you don't know the sender
 - Be careful with any email that isn't addressed to you personally
 - Don't ever send important information via email – call them
 - Avoid Phishing Emails - Be Alert to Impersonators
- Keep your software updated
- Manage your social media settings
- Make sure your WIFI has a strong password
- Use Antivirus software such as [Bitdefender](#), [Norton](#), or [Kaspersky](#), and more....
- Logout if you use any public computer for checking your email
- Back up your important files
- Don't save important information on the cloud!

