



BCNET
CONNECT
HIGHER ED & RESEARCH TECH SUMMIT



BCNET
CONNECT
HIGHER ED & RESEARCH TECH SUMMIT

Navigating Ongoing Audio-Visual Supply Chain Disruption in Uncertain Times

AV Industry changes happening

- What has been happening over the past 5 years?
- What are the changes in the Industry since COVID?
- What are we encountering today?
- What are we seeing in 5 years from now?
- Our Changes in Technology are presently changing due to higher demands required and needed more higher quality technology to replace what we have been using in the past.

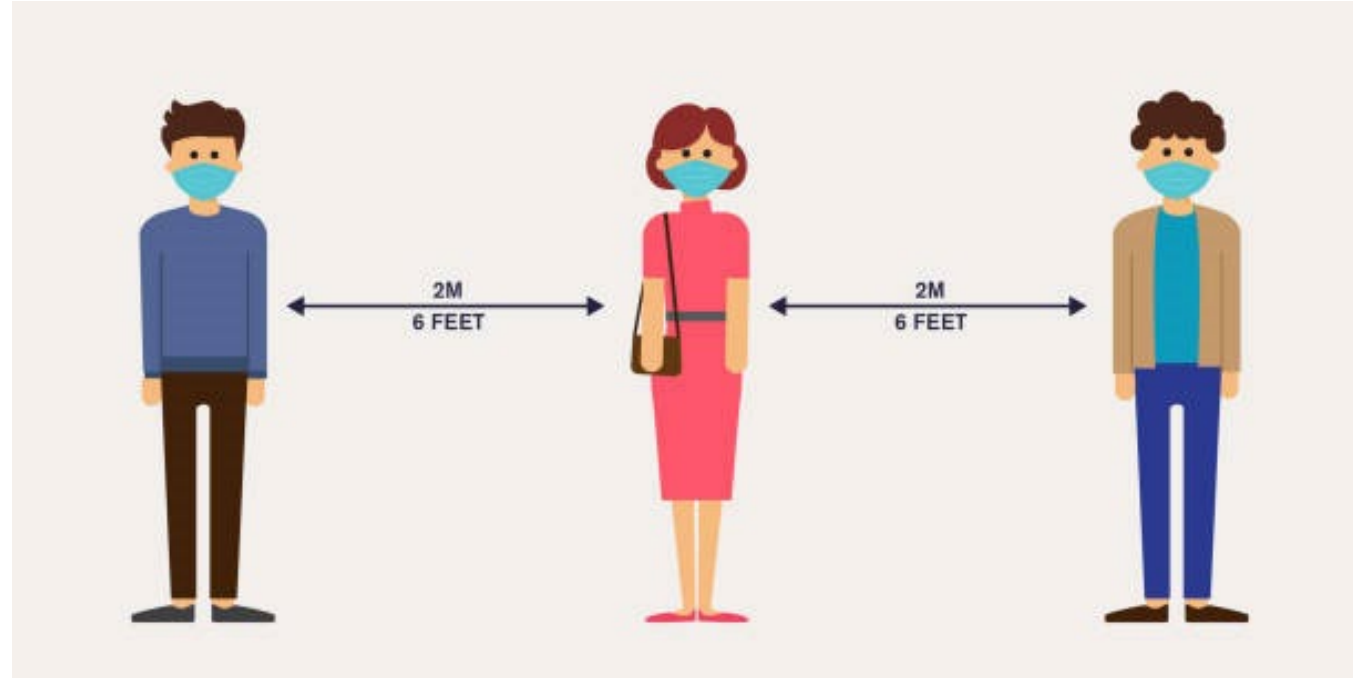
Early 2020 with COVID

- Basically in a nutshell the world got hit by the worlds biggest **Title Wave**.
- COVID Changed the entire technology industry that we have not experienced before.
- Based from my experience in the industry the AV and IT Technology world drastically changed from December 2019 and the first half of 2020



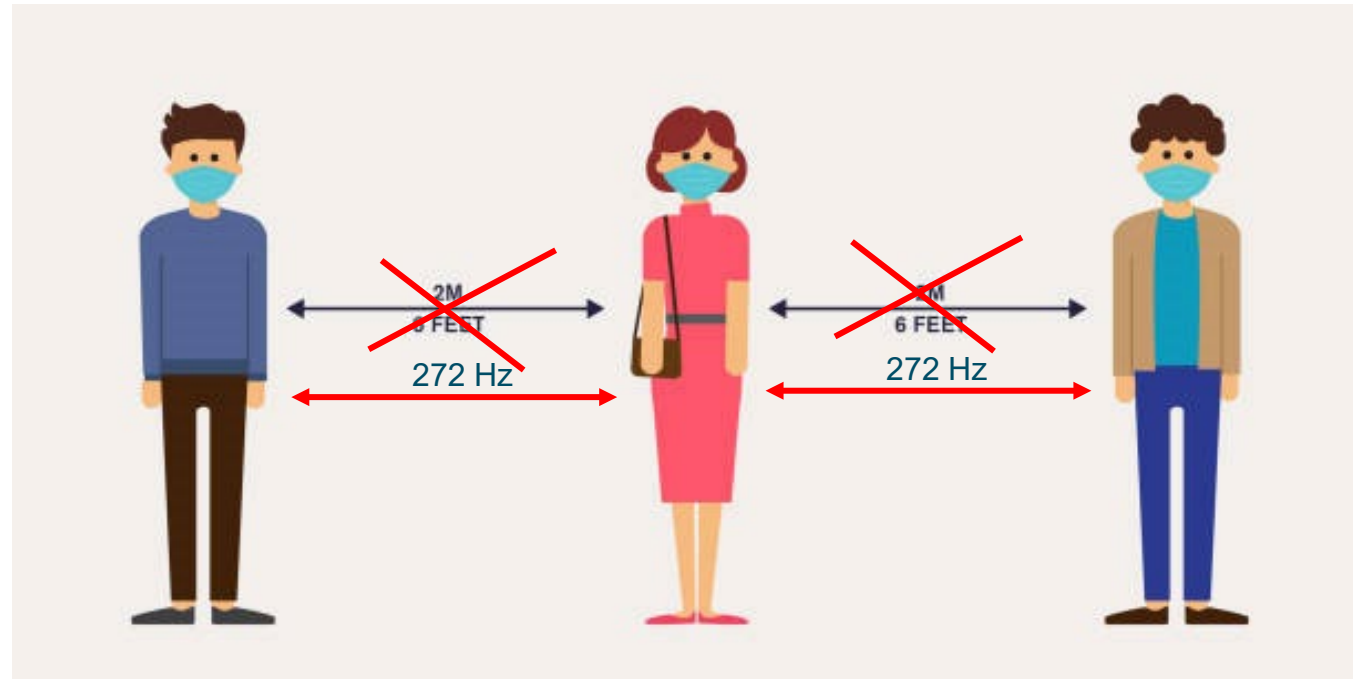
The New Social Distance Rule

Social Distance – 2 Meter Rule



The New Social Distance “Pun” Rule – AV Technician

Social Distance – **Audio Technician Rule 272Hz full wave**



AV and Technology History In A Nutshell

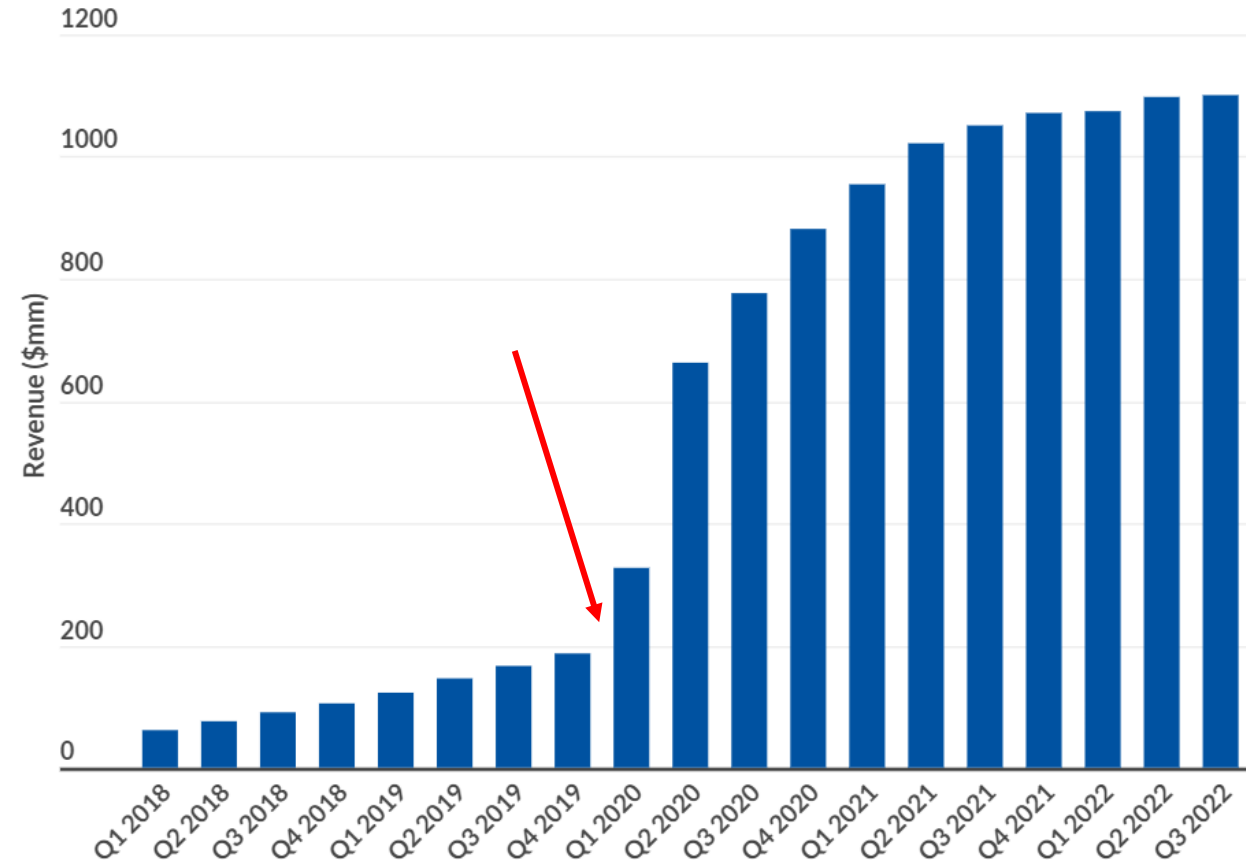
What is drastically happening in the AV and Technologies world?

- World Chip Shortage – its everywhere
- World Manufacturer Factories damaged on a number of crises world wide causing manufacturer delays overseas
- Fuel costs expensive
- Delivery Overhead Costs Soaring
- Contractors have a shortage of experienced workers to perform work causing delays.
- Manufacturers trying cheaper alternate ways to mass produce but quality control now severely fails on deliveries.
- Political world crises - Countries at war – effecting world export/imports and manufacturers

Zoom Customer Base since start of COVID

- December 2019 - Zoom recorded an average daily meetings of Zoom participants was 20 million
- January to April grew from 2020 to 100 million daily participants
- April 2020 – 100 Million
- May 2020 – 200 Million
- June 2020 – 300 Million
- Zoom today is the most popular tool used for online meetings

Zoom quarterly revenue 2018 to 2021 (\$mm)



Zoom Fun Facts:

Over 90,000 schools used Zoom at the height of the pandemic

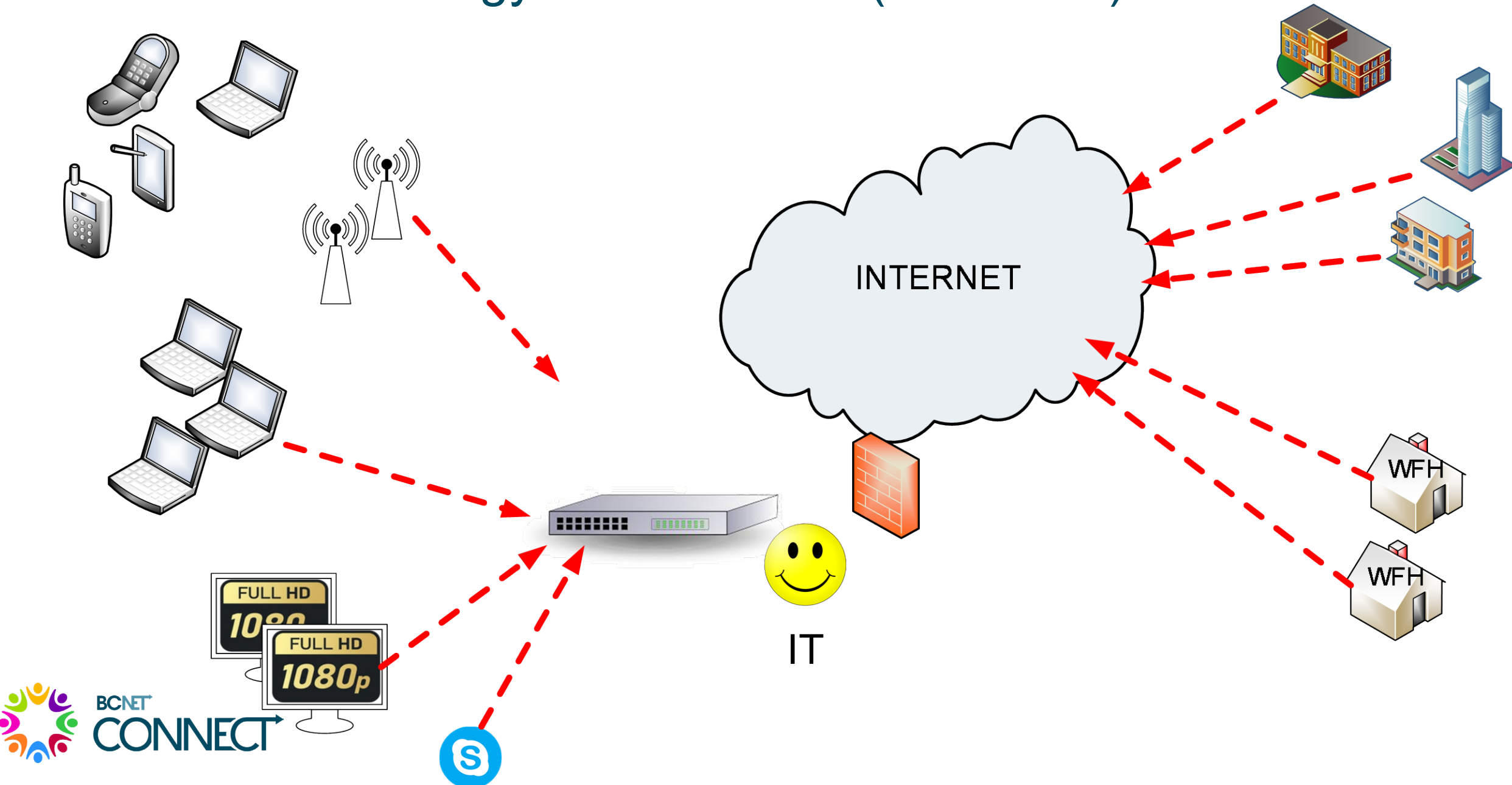
Zoom was downloaded 485 million times in 2020

In 2020, over 45 billion minutes of webinars were hosted on the platform

Supply Chain issue

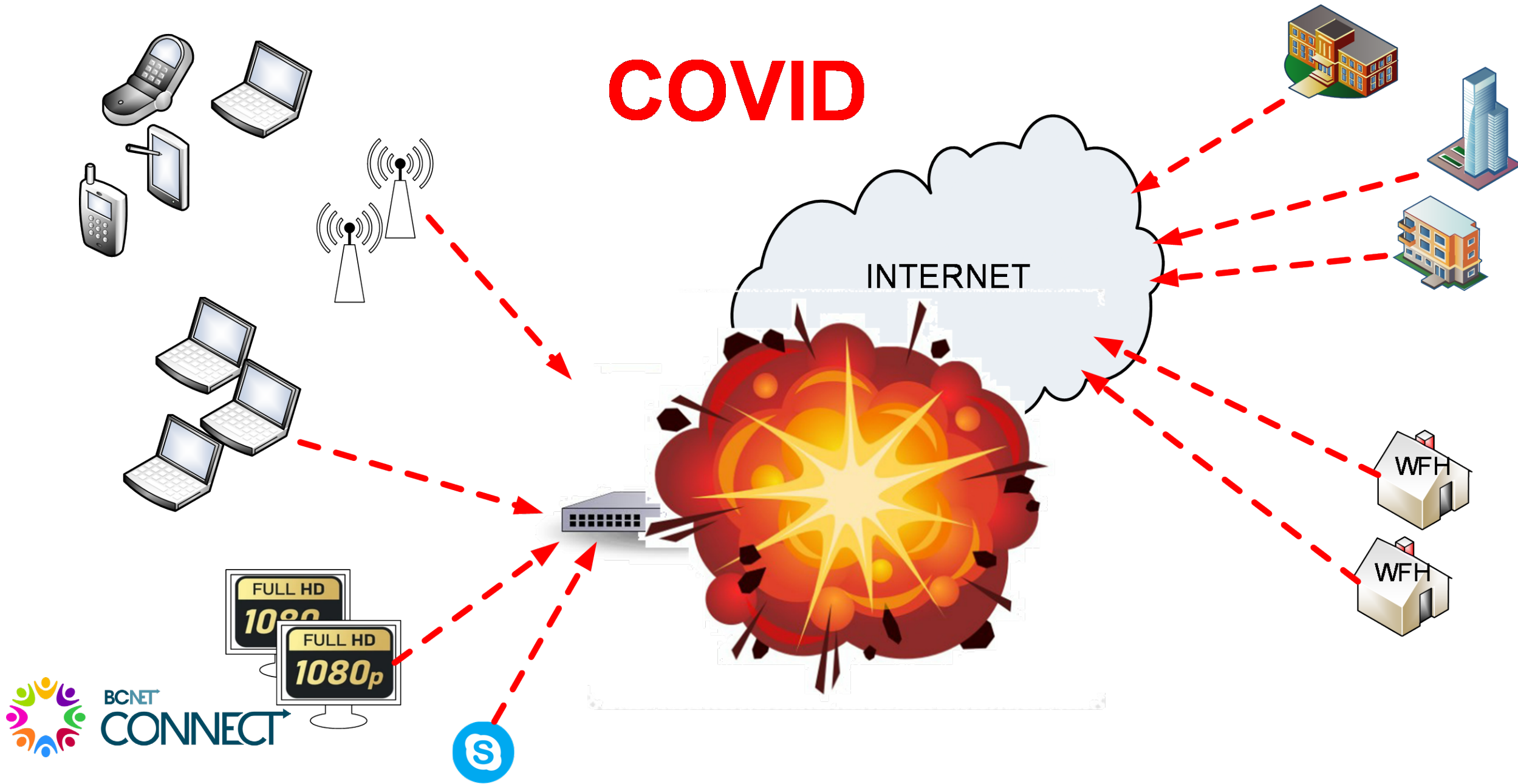
- Up until now there has been a change in the supply chain of technology.
- Manufacturer Products that were the leading edge of the industry now failing to end users on supply chain.
- Many Technology End Users now are resorting from original preference called Crestron to another brand to get the projects completed.
- Majority of Crestron items have a **2 year delay** to get the equipment in.
- Many post secondary education facilities are now dropping Crestron as they have to plan for their present year technologies upgrades
- As Project Management for these projects we have pressures from end customers in getting these projects completed in time and without delays

Pre-Covid Technology Infrastructure (Dec 2019)

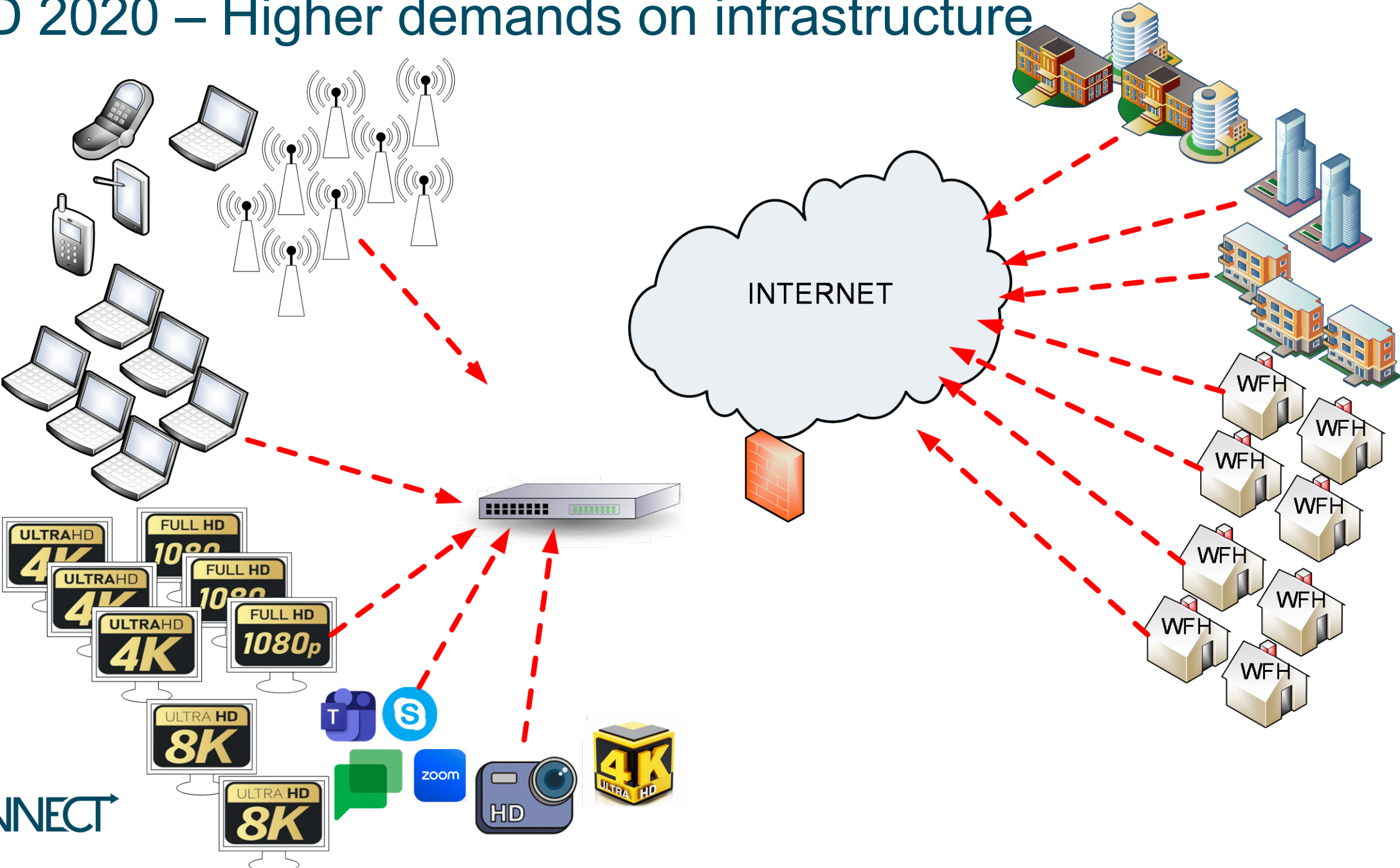


COVID March 2020

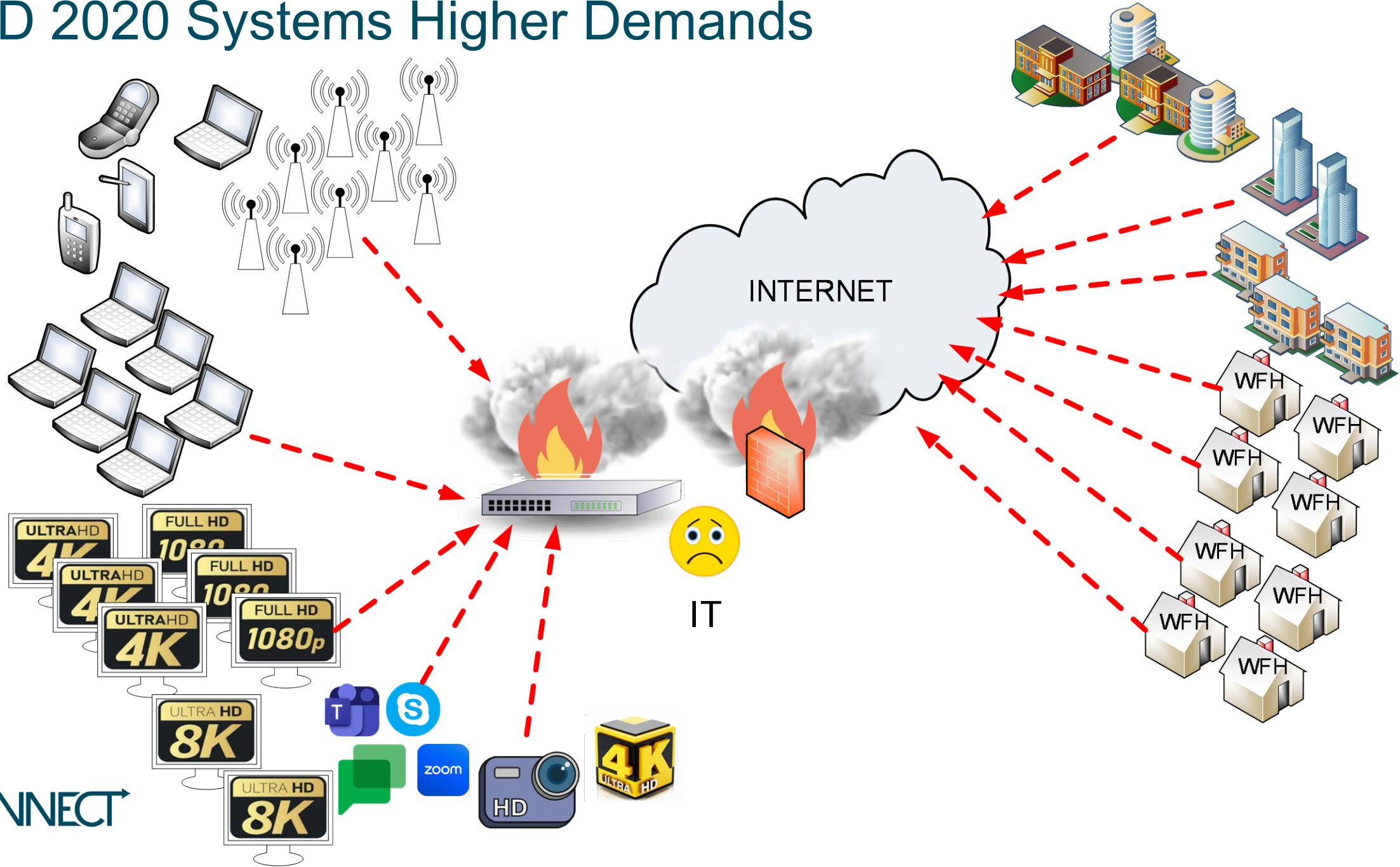
COVID



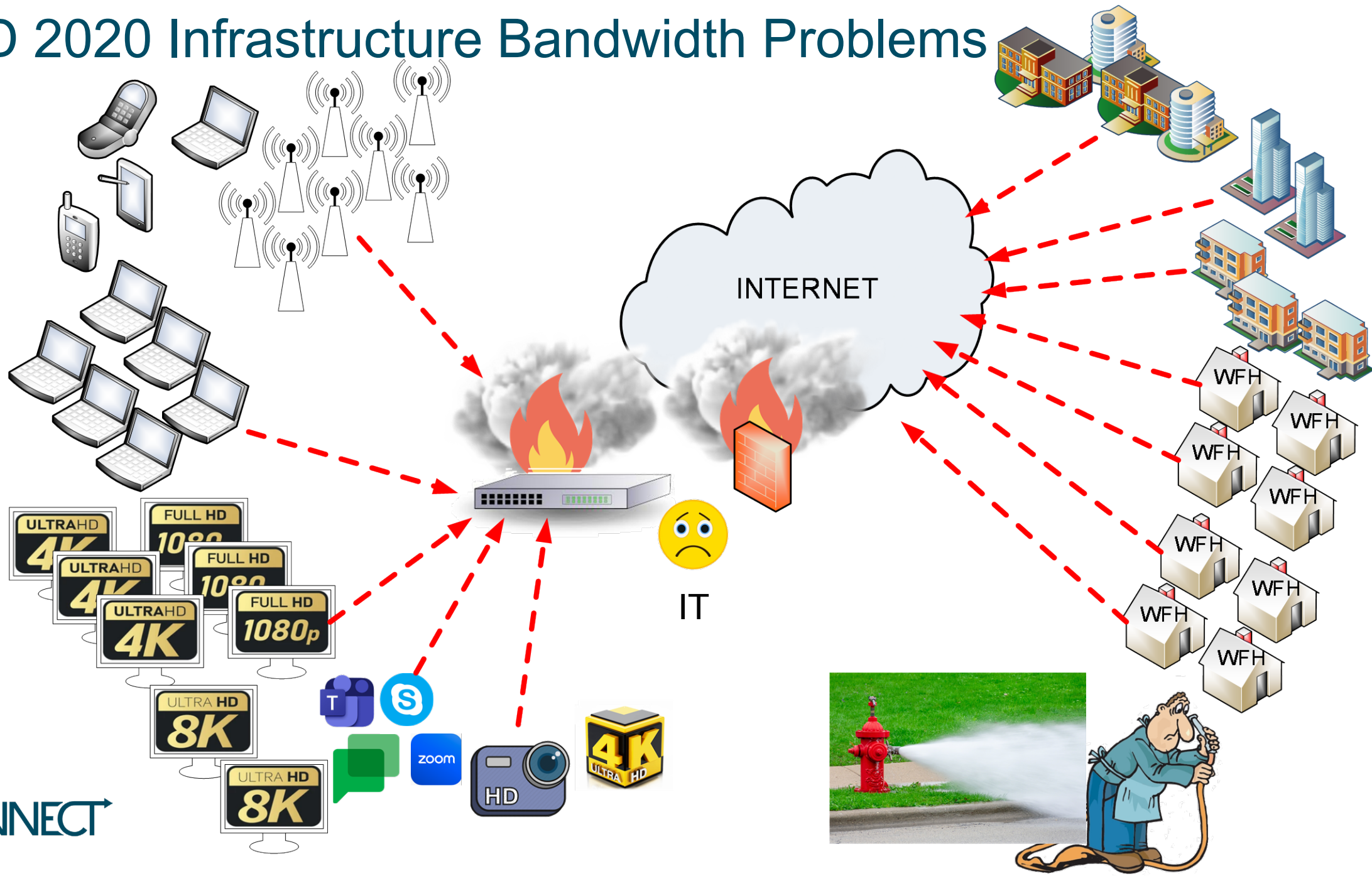
COVID 2020 – Higher demands on infrastructure



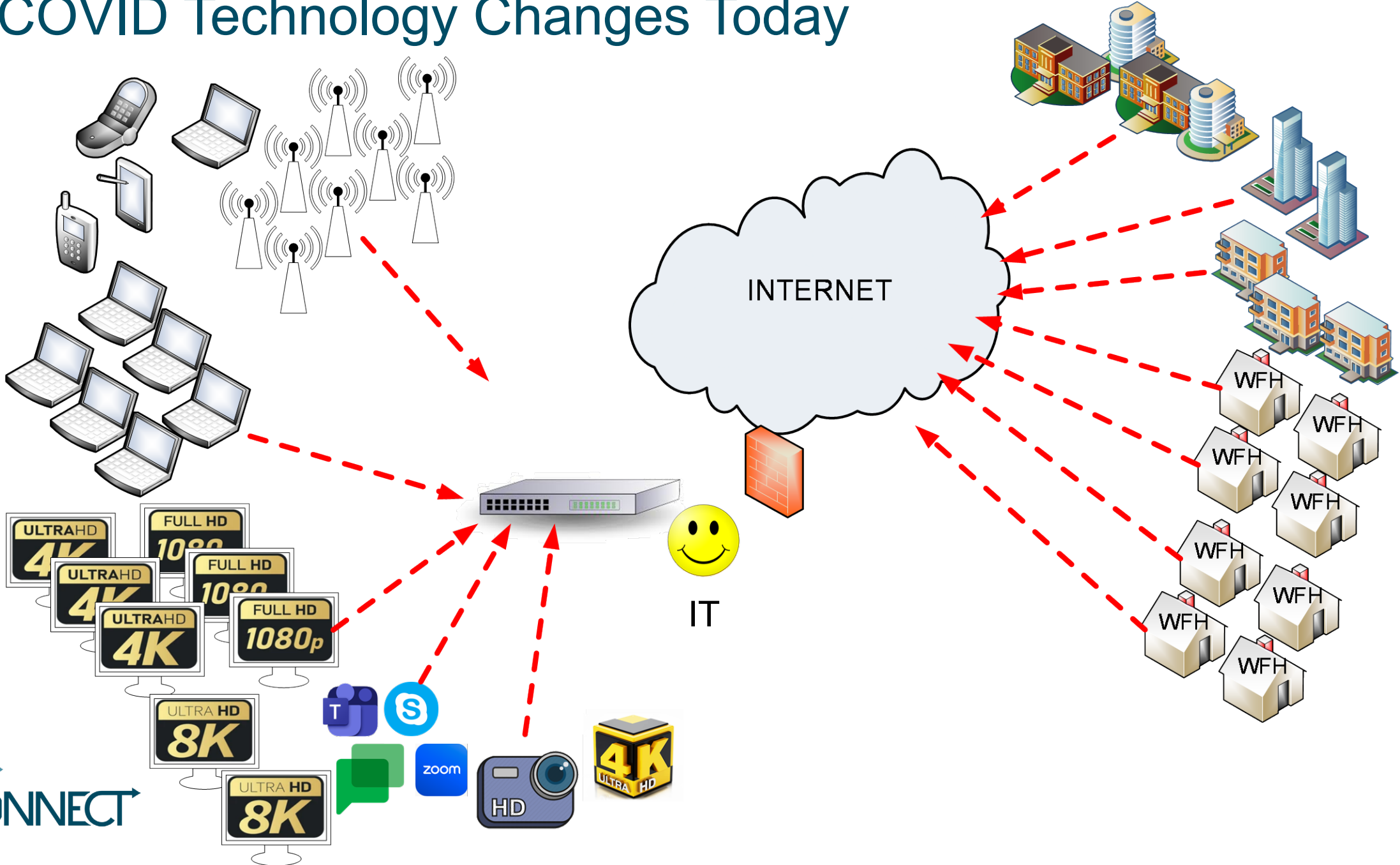
COVID 2020 Systems Higher Demands



COVID 2020 Infrastructure Bandwidth Problems



Post COVID Technology Changes Today





BCNET
CONNECT

AV Supply Chain News Clippings

Canadian supply chains scramble to avoid coronavirus shutdowns

What happens if closed factories and transport restrictions in China mean all those products stop shipping to North America for a while?

CBC, March 8, 2020



Out of Stock: A look at the AV supply chain

The AV supply chain has been struck by an unprecedented series of incidents in the last 18 months, and things are set to get worse before they get better says Paul Milligan.

Inavate 16/06/2021



Out of Stock: A look at the AV supply chain

And it's not just one product suffering these delays. As the AV world becomes ever more indistinguishable from the IT world, every part of the AV ecosystem has been affected, from speakers to switchers, from flat panels to PTZ cameras, no one is immune.

Inavate 16/06/2021



Out of Stock: A look at the AV supply chain

The chip shortage, dubbed 'chipageddon' is also driving fears it could slow economic recovery after Covid-19 has gone away. "It takes about 18 to 24 months for a plant to open after they break ground, and even once you've built one, you have to tune it and get the yield up, which also takes a bit of time. This isn't something you can simply switch on and switch off."

Inavate 16/06/2021

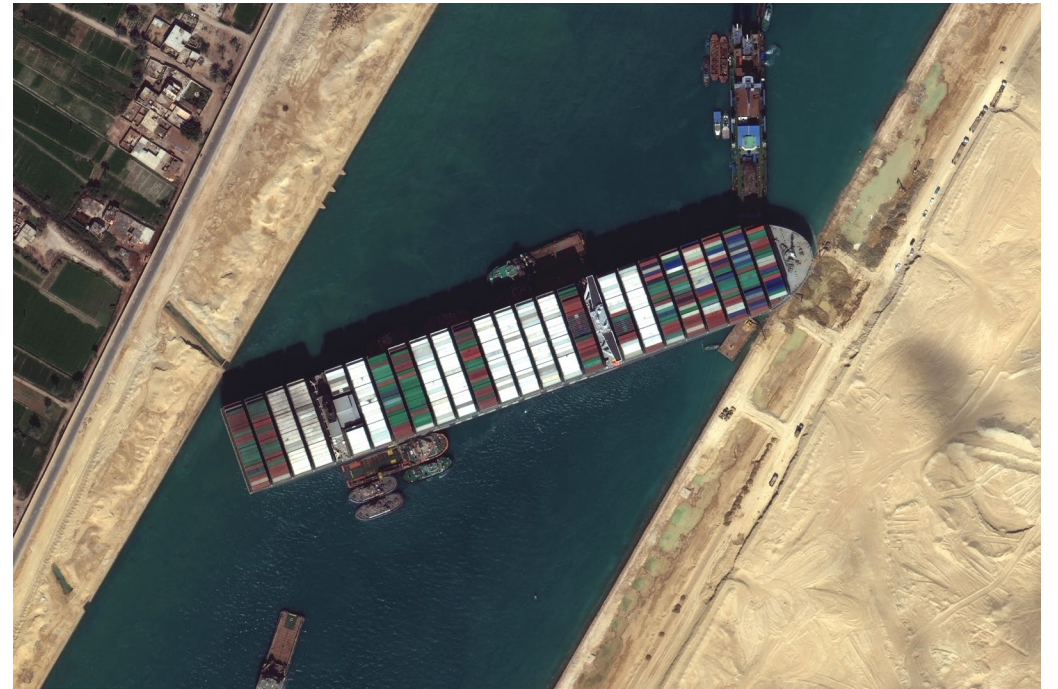


Out of Stock: A look at the AV supply chain

In what has rapidly become a 'it never rains but it pours' 12 months for those working to keep the supply chain going, the blocking of the Suez Canal, which carries 12% of global trade through it every day, was another hugely unfortunate and unwelcome event. The grounding of the Ever Given container ship for six days in March held up an estimated \$9.6bn of trade along the waterway each day (according to data from Lloyd's List).

Inavate June 16, 2021

Pic: NBC News, June 23,2021



China's zero-Covid policy is so strict that it shut down a whole shipping terminal after just one case

China has shut down a key terminal at its Ningbo-Zhoushan port, the third busiest port in the world, after one worker was found to be infected by Covid — a move that will likely put further pressure on already stretched supply networks.

CNBC, August 12, 2021



Latest China Covid outbreak poses supply chain threat

Supply chains managers eye latest China Covid lockdowns with dread as huge tracts of country are shut down, threatening manufacturing and container ports.

SupplyChain, Nov 24, 2022
Pic: BBC, Nov 28, 2022



Crestron Addresses 'Perfect Storm' of Supply Chain Problems

“It pains me when we are not able to provide you with the products you need. We are not here to tell you everything is wonderful and that we solved all the world’s problems. We decided to be as transparent and open as possible, even to a fault.”

DAN FELDSTEIN, CEO, CRESTRON

CEPro, Aug 29, 2022



It Ain't Over Till It's Over, And It Ain't Over, Yet

In NFIB's Small Business Economic Trends February 2023 survey 3 years later, owners were asked once again about supply chain disruptions. Eighty-seven percent reported that supply chain problems still plagued their businesses, 20 percent significantly and 33 percent moderately. Owners were asked to specifically identify the issue. Five percent reported chip-related product shortage problems.

Forbes, April 11, 2023



BCNET
CONNECT

Client Communication

Supply chain shortages cause ‘five stages of grief’ in clients

End customers of AV projects that are delayed due to industry-wide product shortages are experiencing the five stages of grief:

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance

“If you think about it, from the standpoint of an AV project that’s not going well...you first get denial in the sense of ‘Well, you could still make this happen, right? I need this,’”

AV Magazine, July 20, 2022

Supply chain shortages cause ‘five stages of grief’ in clients

End customers of AV projects that are delayed due to industry-wide product shortages are experiencing the five stages of grief:

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance

“Then you get anger, where they just get really upset at you. They can’t believe that you are not competent enough to make this happen.”

AV Magazine, July 20, 2022

Supply chain shortages cause ‘five stages of grief’ in clients

End customers of AV projects that are delayed due to industry-wide product shortages are experiencing the five stages of grief:

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance

“The bargaining stage is where we’ve all been for the last 18 months, because we’ve just been doing what we can,” says Jamie Rinehart of the University of Missouri – Kansas City. “I’ve not completed a project in well over a year.”

AV Magazine, July 20, 2022

Supply chain shortages cause ‘five stages of grief’ in clients

End customers of AV projects that are delayed due to industry-wide product shortages are experiencing the five stages of grief:

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance

“This is where it actually starts to occur to them that this is going to be bad.”

AV Magazine, July 20, 2022

Supply chain shortages cause ‘five stages of grief’ in clients

End customers of AV projects that are delayed due to industry-wide product shortages are experiencing the five stages of grief:

1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance

“Or he might ask if someone who likes ketchup on their hamburgers would be prepared to accept one with mustard instead.”

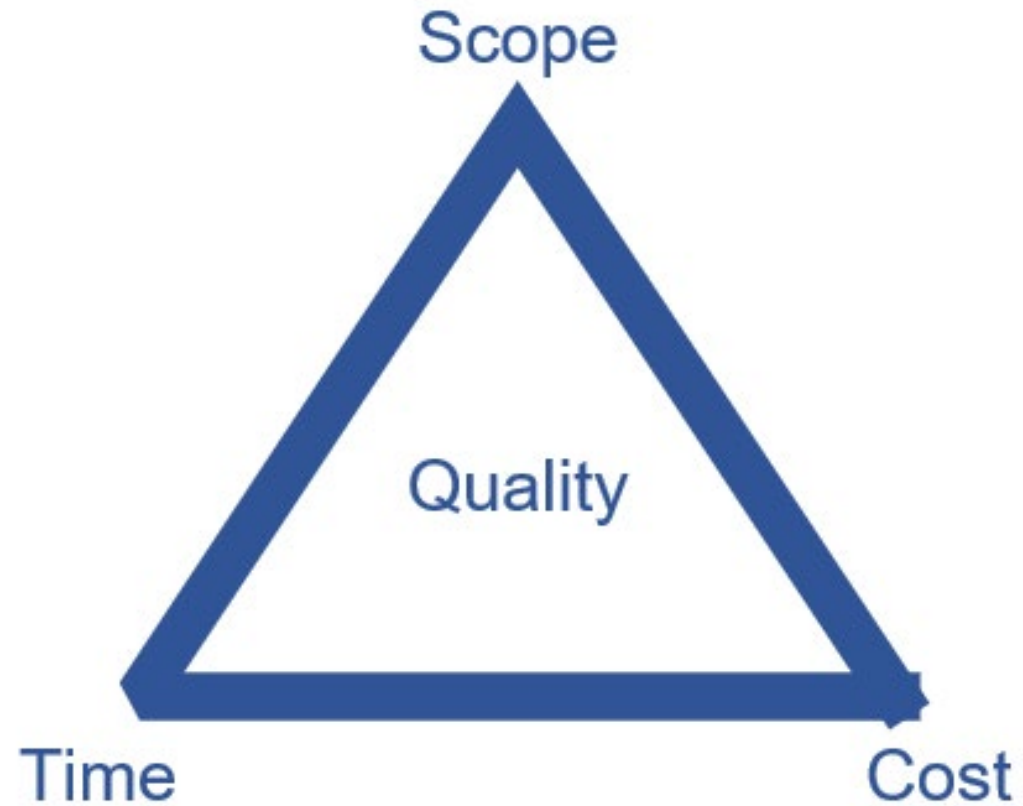
AV Magazine, July 20, 2022



BCNET
CONNECT

Project Management

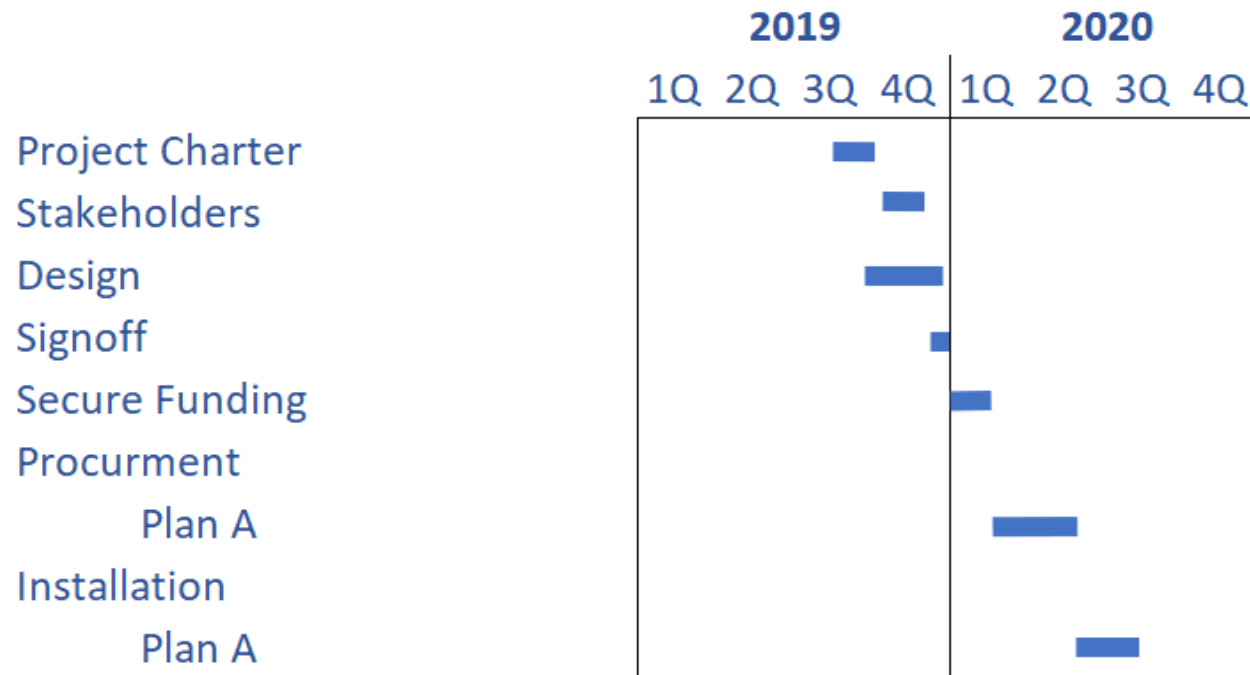
Project Management - What we were taught



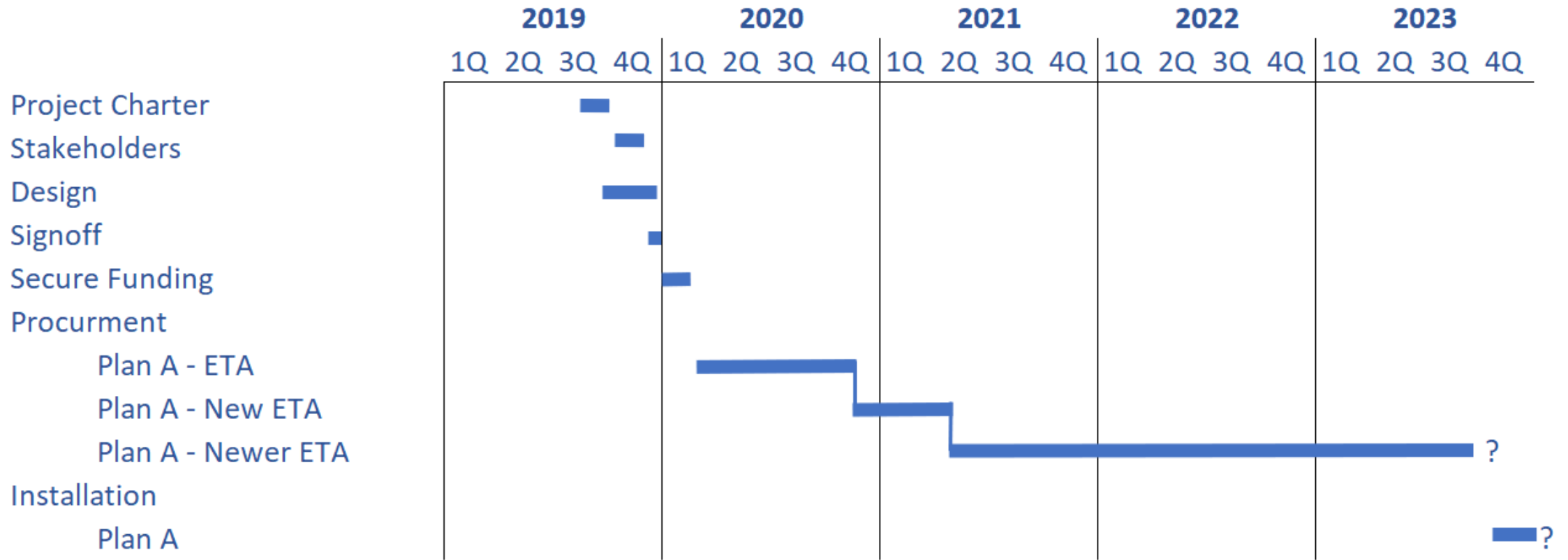
Project Management - Reality



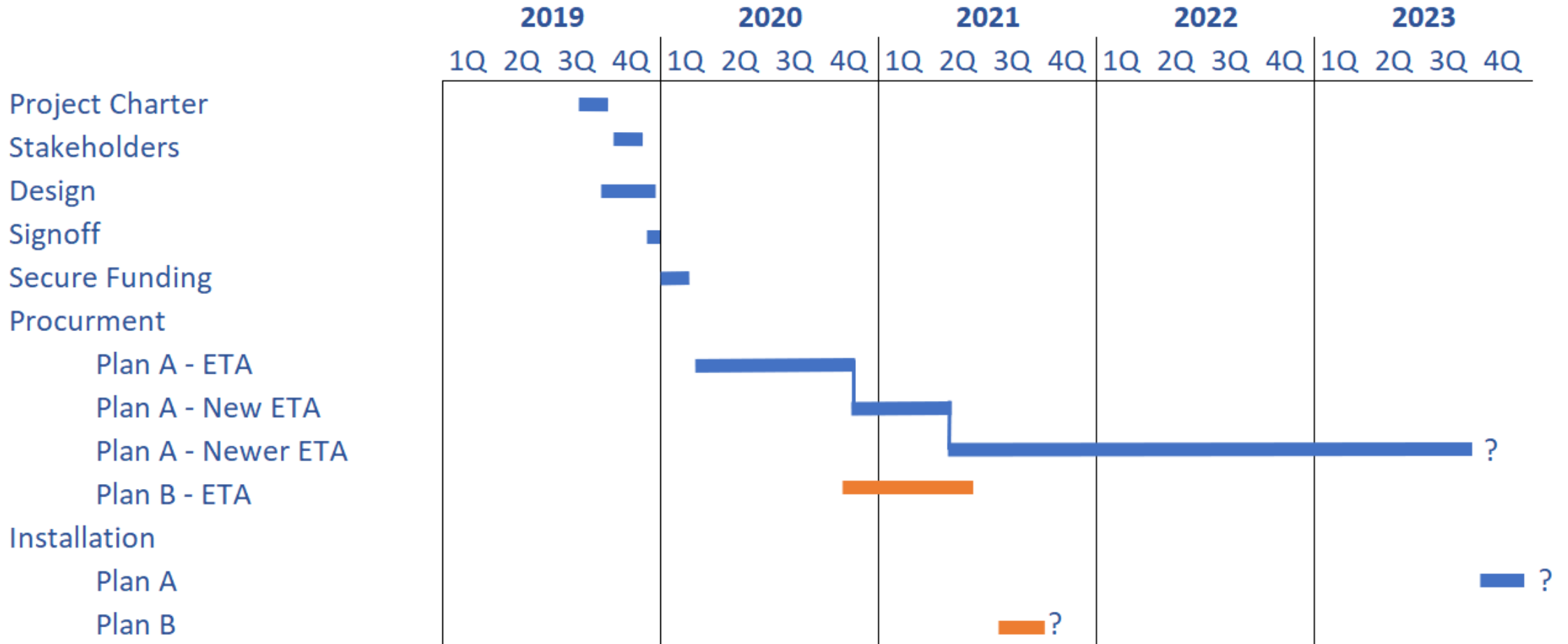
Project A - pre pandemic, all is good...



Project A – pandemic changes the supply chain



Plan B – Substitute preferred brand



Plan C – Repurpose old gear

