Remarks of FCC Commissioner Michael O'Rielly
Before Silicon Flatirons'
"Technology Optimism and Pessimism" Conference
February 10, 2020

Thank you, Amie, for that very kind introduction and for inviting me to Silicon Flatirons' annual flagship event. This organization always convenes conferences with all-star line-ups—apart from yours truly, of course—to consider and debate the most important technology and telecommunications issues of the day. There must be something about heading to the beautiful state of Colorado—and I can only guess what it might be—that helps some participants and attendees to delve deeper, introspect a bit more, challenge competing arguments further, and maybe even critique others' work without causing excessive offense. That's certainly a rare occurrence in today's hyper-charged, easily-slighted society.

Amie, you also deserve much credit for what appears to be an effort to maintain the bipartisan nature of this important organization. When Phil transitioned out, no one was quite sure whether it would continue along the same path that brought it such success. Early indications are that it will, and I am pleased to see that be the case.

Skepticism of Technology Is Highly Appropriate

Also, I regret having missed the first day, and what must have been quite a thought-provoking discussion, based on the agenda and panelists. The underlying premise behind the discussion topic, that advancements in technology may lead to some negative consequences, is undoubtedly correct.
Not to get too metaphysical, but the evolution of man is defined by the harsh effects and unintended realities resulting from beneficial discoveries and inventions, often attributable to questionable or nefarious applications. With the discovery of fire giving rise to arson-generated wildfires, the invention of the wheel resulting in drunk driving deaths, and the development of air flight in enabling the awful events of 9/11, just to name a few examples, it is hard to examine any major advancement and not see man's corrosive misuse. So, it should not be completely unexpected that there is a healthy skepticism towards technological developments. That is not to suggest that we should halt progress or stymie innovation, but only that we recognize that there will likely be fear of the potential, tangible downsides from any technology.

The challenge for those of us charged with regulatory authority over certain technologies is to explain, educate, and, to some degree, manage expectations. Added to that is the obligation to enable the proper environment for innovation, and only take regulatory action when absolutely necessary, and only to the extent that doing so produces greater benefits relative to costs. In other words, our concern about any potential downside cannot be an automatic bar to further innovation, lest we expect to return to the days of dwelling in caves without fire.

Accordingly, I think the fundamental question for this conference is: Should one be an optimist or pessimist with regard to current and future technological advancement, or both? In expressing the need for a nuanced perspective, noted lyricist Bruce Springsteen probably said it best: "Pessimism and optimism are slammed up against each other in my records, the tension is where it's all at, lights the fire." Ahhh, Springsteen. As for me, I am truly and whole-heartedly optimistic that society will benefit and advance from technology. On the other hand, the pessimist in me knows there will be noteworthy downsides, exposing humans to, in some cases, unforeseeable strife and pain. At the same time, I'm also confident that government, in trying to predict the future and prevent such consequences, can

screw up any potential successes with improper and heavy-handed regulation. With your indulgence, I'd like to explore where some of these pressure points are more likely to develop.

The Right to Be an Optimist

It doesn't take a technologist or futurist to see where technology eventually may take society. Next-generation technology not far on the horizon may provide full or partial solutions to the problems—ranging from the mundane to the monumental—that have plagued mankind for generations. Food supply, potable water, livable housing, weather prediction, transportation safety, sustainable energy, and health care are just some of the major areas in which technology will transform the globe, minimizing our suffering, lengthening our lifespan, improving our overall enjoyment, and allowing mankind to progress forward.

1. Artificial Intelligence

Top of the list of prominent technology advances must be the endless possibilities brought forth by Artificial Intelligence (AI). While we are merely at the infancy of AI, its promise is truly breathtaking. Essentially, it consists of software and computer code, which isn't necessarily all that exciting, but, when combined with the ability—or the magic if you will—to essentially "learn" as time passes, the necessary ingredients are available to address significant problems facing our world. Can AI, perhaps when combined with quantum computing, surpass the brainpower of man? That is currently unclear, but we'll eventually find out.

With appropriate capacity, AI has the ability to replace teams of humans working on the most complex projects. Consider having 100 or 1000 or 10,000 individuals of Albert Einstein's intellect working 24 hours a day, 7 days a week, 52 weeks a year, to develop a detection method for some type of cancer before it even reaches Stage One, along with determining the appropriate treatment to prevent its harmful effects from materializing. Just imagine the economic, societal, and emotional benefits of halting recalcitrant cancers in their tracks. It is possible that a team of scientists could replicate this effort, but at what cost, in what time frame, and with what degree of mental fatigue?

Clearly, the computing capabilities of AI can, and likely will, produce societal benefits. Its applications are limited only by our imagination, whether we can train coders fast enough, and the speed at which AI systems actually "learn" the right lessons from the data to obtain accurate results. Nonetheless, humans will need to trust in AI for it to succeed and prove its worth, but I am optimistic that will happen.

2. Sharing of Information/Knowledge

Turning topics ever so slightly, it is impossible to examine where technology may go and whether its impact will be positive without considering the past. Take the last twenty years of the Internet's existence, which has provided access to an avalanche of information now available to every individual, both the sophisticate and the layman, and related to every facet of life, both current and historical. Literally at our keyboard-touching fingertips exists the greatest human data dump ever known to man. It's like everyone was given their own magnifying glass and time travel machine, along with unlimited funds, and told to go research and explore whatever in the entire world meets their interests or needs.

The information available in the next twenty years is likely to far, far surpass even what is online today, and will change human behavior accordingly. If this explosion of knowledge was once limited by capacity and transmission speeds, neither will be a problem in a cloud universe, with uber-fast wireless 5G networks or next-generation fiber or satellite technologies. Moreover, how we use this vast wealth of information will change. Rather than merely serving as a depository of data and facts, for instance, to look up which film won the 1996 Best Picture Oscar or resolve "senior" moments—not that I ever have any, of course—in the future, the Internet will provide the means to acquire real *knowledge*. Having the ability to obtain all the data in the world, like holding the key to a library, is an incredible benefit, but enabling people to conquer the material and make it useful is what will be transformative. What if we could program the metaphorical library itself to read and analyze all of its own books, synthesize that data with all the other libraries in the world, and offer new perspectives that have previously eluded human minds?

Being able to organize this information and create value for "web surfers" that we haven't yet conceived of will convert every seat with an Internet connection into a college classroom. Higher institutions may have to offer courses and lectures for next to nothing. While today, distance learning is an option or add-on, future iterations will be far more compelling and provide a more desired pathway to enlightenment. The hallowed halls of today may become virtual campuses full of simulated classrooms, if they remain at all, though this institution will never go. Technology can allow the elements that make the classroom and campus so unique today to exist anywhere in the world. How is that for a disruptive prognosis?

3. Communications Technologies of the Future

Technology advances also are likely to further expand the ways in which we communicate with each other. Over the last decade or so, we have enjoyed an explosion of communications tools, much of which is Internet application-based, that allow individuals to talk, text, video conference, post thoughts and photos, et cetera, in order to share their experiences with loved ones located across the world, or sometimes in the next room. One prominent feature of this development has been the obliteration of old-school pricing models based on costs per-minute or antiquated local versus long distance labels. As a result, while fixed connectivity costs may always exist to some extent, the real marginal cost to communicate has been driven down to practically zero. Those unwilling to accept this fate have seen their subscribers and their corresponding traffic decline as users switch to other options. For example, why would anyone use SMS texting with some associated cost per message component added to their bill or live with artificial caps when there are more popular, more trendy, and more advanced options available for free? In an SMS versus WhatsApp fight, SMS doesn't stand a chance.

I am optimistic that this trend will continue and accelerate to include more and newer technologies. Once limited to the Star Wars or Star Trek franchises, holograms and 3-D video communications are not far away. Moreover, I have heard serious thinkers outline the case for why eSports will dominate all earthly activity, not just entertainment. This perspective may require a bit of unpacking. The concept, which boasts a huge investment following, is that there are likely to be computer generated, augmented reality rooms or centers to serve as a substitute for many human experiences today. Thus, instead of traveling to a foreign country or joining a business meeting in person, everyone will be able to do so through virtual portals located wherever the person happens to be at that moment. The disruptive effects could be staggering to large, traditional economic sectors. While this may seem farfetched, such technologies do exist and certainly have the ability to devour existing communications platforms.

Yet, what occupies the time of so many at the Commission? Access charges and cost accounting for circuit-switched copper networks? Media ownership? Issues like these are all going to rightfully evaporate, and I fully expect the role of the Commission to diminish exponentially. We have little role, if any, to play in many of these newer platforms, and there appears to be little interest in giving the Commission any new authority to regulate in this space. Almost 100 years of regulatory work should eventually disappear like a puff of smoke on a windy day. Without something to fill in the void, the Commission will—and should—shrink considerably.

A Healthy Dose of Pessimism Is Cool Too

On the other side of the coin, there is good reason to be pessimistic regarding certain areas of technological progress.

1. Tech Naïveté

First and foremost, we should all acknowledge that the brilliant minds behind innovative products and services are often obtuse when it comes to the social policy and consumer protection implications of certain practices and functionalities, and thus are prone to some shocking blind spots. I tend to refer to this phenomenon as "tech naïveté." Let me provide you with an example. Many years ago, I visited Silicon Valley and spoke to a technology company that was preparing a new drone product. The senior management of the company was completely caught off guard by the mere suggestion that their new offering may create a privacy concern for many individuals, and that the government might react poorly to every Jimmy and Janie flying their own drones throughout America's towns and countryside, taking photos and videos of their neighbors. How is it possible that they didn't see the potential red flags that I saw almost immediately? Perhaps, by focusing so much energy and effort on producing a great technological advancement, the company hadn't taken the time to consider other factors, the social and regulatory context, as it were.

This phenomenon is surprisingly not that out of the ordinary. When I was last here at Silicon Flatirons, I raised the fact that disability advocates had urged technology developers to consider the disabled community's needs from the very start of any new project. While a laudable goal, I explained that I found that to be somewhat unrealistic. The process of thinking of and building a better widget or software program is typically focused on the functions of the technology or code itself, without necessarily stopping to consider all its potential uses or applications and the attendant impact it might have on particular groups, such as those in the disabled community. Instead, that usually comes far after considerations such as proof of concept, design, and marketability.

That is not to say that such policy implications *should* be ignored, only that such considerations often are not a forethought with creative. While I do not see changes coming organically in the ingenuity process, there should be every expectation that those who market, sell, or distribute the next whizzbang thingamajig will conduct such an analysis. Failing to do so may be "merely" inconsiderate from a societal perspective, but from a business perspective it's naïve and downright foolhardy. The ability to forecast such consequences is why many of my friends and enemies—and some in this audience—are actually employable in Washington. Technology advocates have the responsibility to listen to these incredibly smart people, who are brilliant in their own right at seeing potential blind spots.

2. Government Screwing It Up

Secondly, never underestimate the ability of government entities to screw up the great American success story that is the technology industry. There is a natural tendency for every government department and agency with a tangential relationship to tech issues to want to grow its authority or power base. This is not a matter of those with proper authority seeking to perform their jobs, but rather, reflects a penchant for empire building and remaining relevant in a changing world. The desire of some to want to be involved with every shiny new toy often supersedes their real authority. Nowhere is this more true than the debates brewing in the tech space. Few government employees are willing to admit that an issue before them is someone else's responsibility. Not only does this mean that companies oftentimes need to file and appear before multiple agencies, but also, not surprisingly, it is why, for every current tech probe, there are four or five to follow. And, these all come with costs in terms of time, money, and economic productivity. Every such effort means company staff needs to talk and strategize internally, consider hiring outside counsel, submit tons of paper, potentially prepare company leaders for multiple rounds of hearings, and so much more, thereby redirecting resources from innovators.

Consider AI. I just read about a federal department with no real oversight or authority over AI appointing a new person to oversee AI within its regulatory space. Is it likely that AI may have an impact on a heavily regulated, highly important industry? Absolutely. But, in the absence of direct regulatory authority, a rather outlier role such as this would traditionally, and appropriately, be added to the portfolio of some individual already within the existing multi-layered bureaucracy, not established as a new specialized, highly-sensationalized slot.

3. FCC Regulation World

Along these lines, I also am pessimistic that the usual suspects will refrain from trying to ensconce many technology offerings within the existing, but dying, vestiges of the Commission's own authority. We have seen this in the past with the profoundly flawed efforts to adopt net neutrality regulations and the effort to apply Title II to broadband offerings. Moreover, we have heard calls to subject online video platforms to the same rules that are suffocating traditional broadcasters and cable providers. In fact, there will unfortunately never be a shortage of socialist soothsayers and sages claiming the dusty legacy rules must be applied to the business offerings of certain technology companies. Memories are surprisingly short in our universe, and many lessons repeatedly go unlearned. Failures to provide legislative guidance on certain matters will result in regulators' sensationalist attempts to capture technology companies in the byzantine regulatory environment once reserved for communications providers.

* * *

Maybe I should have started with the bad news and ended on a high note. In any case, hopefully, that provides a picture of some of the tension between optimism and pessimism, at least as I see it, that policymakers struggle to deal with on a daily basis, and, to which Springsteen so presciently alluded. With that, I would be pleased to answer any questions you may have.