

How Big of a Threat is 5G Fixed Wireless to Cable?

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I've written about cable a lot on this blog, and Charter represents, by far, my largest position (which I'm long through GLIBA / LBRDA), so it's no surprise that a lot of the inbound contacts / questions I get relate to cable (I sometimes worry that I live in a cable bull echo chamber, since most of the people I talk to consistently tend to be similarly bullish, but that's a worry for another time). Over the past few weeks (likely driven by the continued roll out of Verizon's fixed wireless product), a lot of people have circled back with questions on 5G / fixed wireless's competitive impact on cable, so I figured I'd put some more structured thoughts up on a blog post.

I'll start with the bottom line here: I continue to think that wireless companies have more to fear from cable companies than cable companies do from wireless companies.

I think the 5G / fixed wireless concerns can be broken into two separate concerns:

1. In the short term, will Verizon's fixed wireless rollout have any competitive impact?
2. In the medium to longer term, will the full roll out of 5G have any competitive impact (this can range the gamut of competitive impacts from 5G enabling more fixed wireless products to consumers deciding they really only need internet / broadband connection from their cellphone and dropping their home broadband).

While I think the later concern is much more relevant / interesting, let's start with the first concern (Verizon's 5G fixed wireless product), because it's easiest to address. I

think there are plenty of signs that the impact of this fixed wireless rollout is going to be pretty limited. The biggest clues that the rollout isn't going great come from Verizon. Yesterday Verizon presented at SCWS; I'm just going to quote three "announcements" they made there.

1. "Verizon plans to double the speeds available through its 5G Home service in the next six months."
2. "Verizon won't build any more locations with its 5GTF equipment, and will instead wait for 3GPP equipment to become available before expanding to additional neighborhoods and cities."
3. "Verizon ultimately expects to expand 5G Home to 30 million households at some unspecified time in the future, though Dunne said the carrier may revisit that figure as the company's rollout progresses."

Here's the takeaway from those "announcements". Verizon literally launched their 5G fixed wireless service two months ago. They already are planning to double the speeds they offer, declining to rollout the service to new cities until they get new equipment on a different standard (likely ~a year away), and slowly walking back their plans to hit thirty million households with the product. Maybe I'm looking at this too much through my "cable bull" lens, but to me it looks like the initial response to the product has been way below Verizon's expectations and in response they are planning a speed increase (increasing speeds while keeping cost constant is a stealth price cut) while slowing plans for further expansion.

If you look around, you can find plenty of other signs that Verizon isn't thrilled with how the product rollout is going. For example, here's their CFO at a conference in late November. When the response to a question on how a product launch is going is that "it's great to have a product out there" and "there's been a lot of good learning", you can probably guess the product is deeply in the red / not

performing that well.

So that's a Verizon specific perspective. But maybe they're just being humble / cautious on how the product is performing. Verizon's fixed wireless product has been in the market for ~two months, so you'd expect their competitors (mainly the cable guys, but also other wireless companies who would have some interest in how the product performs / if it's a viable product for them to consider) to have some idea on how the roll out is going. If Verizon's product was performing well / taking any share, I'd expect the competitors would be a bit guarded in how they talked about competing against it. But none of them have been guarded; across the board, the reaction to Verizon's product has been absolutely savage*.

- T-Mobile has been pretty consistent on Verizon's offering since it was announced: it's a non-standards based copycat product.
- Here's Altice's CEO ripping Verizon in early November.
- Here's Comcast earlier this month noting nothing they've seen so far has made them think 5G will be a threat

Anyway, most of the questions I get tend to be on the risk from Verizon's fixed rollout. And everywhere I look, there are signs that the chances of Verizon's current product being a long-term threat are pretty low (one last thing here: I've linked to this before, but this article highlights how, after a customer shows interest in Verizon's product, a technician needs to go out to people's houses to determine if they get a strong enough signal to subscribe. For a whole host of reasons, that process is an absolute disaster and would never work on a sustainable / national basis).

The more interesting / pertinent risk to cable is if 5G poses a longer-term risk to cable, whether from increased wireless substitution (people dropping their broadband completely and just using their phone / wireless for everything) or because 5G enables a truly competitive fixed wireless product (which

T-Mobile is promising to roll out if their Sprint deal is approved).

I think the odds of wireless substitution in the form I described (dropping your broadband completely) is pretty low longer term outside of some lower income consumers. Yes, phone speeds in a 5G world will allow you to play video games or stream movies without a problem... but people's homes are getting more and more connected (the cable players note that most homes have 10-20 connected devices in them), and they're not going to be able to connect all of those devices all of the time simply by using their wireless device.

Note that saying wireless substitution isn't a big risk is interesting to think about over time as it shows just how big cable's infrastructure advantage is. Around 80% of monthly data usage comes from Wifi, not cellular data. Let's say that both cable companies and wireless companies want to be responsible for 100% of your data usage overtime (and charge you for it). If you're a cable company, you currently deliver that 80% through wifi connected to your network, and there are plenty of options for you to handle that other 20%: you can partner with a wireless company to offer an MVNO, you can build a ton of wireless hot spots to reduce the 20% by as much as you can, etc. But if you're a wireless company looking to eat into that 80%, really the only way to do it is to go and overbuild your cable competitors (either from a fiber to the home overbuild or a fixed wireless overbuild), as I'm not aware of any cable company that will rent out their broadband relationships (Altice is lending some of their infrastructure to Sprint as part of their MVNO deal, as I'll mention in a second, but they're not letting Sprint grab the actual broadband customer relationship).

So I think wireless substitution isn't a huge risk; to me, the more relevant risk is the risk 5G enables competitive fixed wireless products to launch. While Verizon's current product will almost certainly fail, the next gen of fixed wireless

products looms large. Starry's service, for example, seems to be working well and is set to expand to 16 cities, and both the T-Mobile / Sprint merger and the FCC's focus on freeing up new spectrum (in particular, the C-Band is perfectly suited for 5g and could come into play in the next few years) could lead to new and actually competitive fixed wireless services in the next few years.

When thinking about these risks, the first thing to note is that the risk is not new. Wireless players have unsuccessfully been targeting home broadband for years (see, for example, AT&T WiMax in 2006 or Verizon Fixed LTE in 2011). Building a successful wireless broadband product is tough! First, you need to get a signal strong enough to penetrate the house and deliver sufficient speed, and then you need to go win consumers one by one until you have enough to justify the huge fixed costs of having built that network. None of that is as easy as it sounds for multiple reasons, including:

1. Fixed wireless runs best over high frequency spectrum (which can handle higher speeds), but high frequency spectrum doesn't penetrate walls well and it doesn't travel very far. To provide good service, wireless companies need to build their infrastructure much deeper into suburban communities than they currently have built. That is a time consuming and expensive process, and consumers aren't always thrilled by it (turns out homeowners don't love having wireless towers in their backyard!).
2. Most homeowners already have a broadband provider. Fixed wireless is doing what's known as an overbuild, where once they build the infrastructure in a local community they need to go literally door to door and try to pry people from their current broadband provider. Yes, people don't love their cable companies... but trying to switch consumers from their current provider of anything where they are subscribed with an autopay is always

going to be a long and grueling process. It is true that versus a typical cable overbuilder (who starts with no existing customer relationship) a wireless overbuilder will at least have some preexisting relationships with their wireless customers to “build” off of, but it’s still a really tough haul to pry consumers off one by one to build out a fixed wireless business.

1. Why’s it such a slog? You need to market consumer by consumer and, effectively, say “Hey! Take a day out of your life to switch from your current internet provider (who you’re probably not having any issues with) and switch to us! Enjoy the hassle of returning your old equipment while waiting on us to install ours. Have a headache while you try to cancel your old autopay and set up ours. And maybe go without internet for a day or two between cancelling your old internet and ours getting set up (or, even better, pay for two internet services for a few days while waiting on your old service to cancel and ours to be set up!). Go through all of that hassle to save little or no money!”
2. I’ve seen a lot of cable companies say “fixed wireless is effectively a cable overbuild, and we’ve dealt with that issue before and know how to respond,” but I think a lot of investors think a fixed wireless buildout is somehow a unique / new threat. So let’s zoom out a bit to see how similar a fixed wireless overbuild is to a normal cable overbuild: An in-home cable broadband connection could be simplified to a cable company building a fiber product to a node in the neighborhood and then running coax fiber from that node to ~100 homes. Once the cable hits those homes, the coax fiber runs to a wifi router that projects the signal ~50 feet through your house., running a coax cable from the fiber to a wifi router in your

house, and then running a wifi signal that travels ~50 feet in your house. A 5G fixed wireless product is basically a wireless company running fiber to a small cell ~1000 feet from your house and then sending a 5G signal from that small cell to a wifi router in your home. Yes, that's a bit of a simplification.... But really there's not much difference!

3. Broadband speeds are constantly improving. Let's hypothetical say you're Verizon and you're looking at launching a fixed wireless product in City X that Charter currently serves. Charter currently serves that market with 1 Gig speeds (as they do in basically their entire footprint), and you're confident you can do a wireless buildout in 18 months that will let you offer a 5g Fixed Wireless product at 500 Megs. That's a disaster! Your product is slower than Charter is currently offering, and in 18 months they could easily be offering 2 Gig speeds with a roadmap to 10 Gig in the near future. So while the "speed deficit" doesn't look that great when you compare your speed tomorrow to their speed today, the gap is really wide by the time the product actually launches.

1. Go back to the Altice quote on Verizon's product I gave earlier. Data usage and speed demands continue to explode. If you're planning to spend billions to launch a fixed wireless product in two years that meets today's speed standards, by the time you launch your product will be obsolete.

Anyway, there are lots of ways to frame the product / risk, and the competitive gives and takes vary depending on what market we're talking about (i.e. urban, suburban, or rural market), but every time I really back out and think about fixed wireless I think the worst case (from a cable perspective) is that fixed wireless is a competitive product (similar to FTTH overbuilds) that can take some share but

doesn't kill cable. In all likelihood though, cable broadband is a superior product to wherever fixed wireless ends up and the 5G fixed wireless rollouts go the same way as the 3G and 4G fixed wireless efforts. (PS- it's worth noting that AT&T has continually said they're not interested in fixed wireless 5G after testing it in 2017).

One more thing before I wrap this up: Sprint was at a conference recently and talked about how much their Altice partnership has helped them. As a cable bull, that's an incredibly encouraging quote. First, it shows just how large the synergies between a wireless company and a cable company are: Sprint, widely regarded as the nation's worst network, gets access to Altice's infrastructure and suddenly has best network in their area. When John Malone talked about turning down Verizon's Charter bid and said that the synergies would still be there (and may be even greater) in a few years, this type of network performance / improvement is exactly what he was talking about. Second, it further reinforces just how strong cable's infrastructure is and how well suited it is to supporting next gen wireless products. Finally, it suggests cable's infrastructure will provide them with significant optionality going forward (i.e. they can either use their infrastructure to support wireless players and get paid for it, or they can use their infrastructure to launch advantaged wireless products of their own).

Anyway, this post is a little long and a little rambling (I tend to get that way when talking about cable), but I wanted to put some thoughts to paper because I get tons of questions on the risk from Verizon's 5G product and I think there's a bit too much focus on the Verizon rollout (which I think is a dude) and too little focus on the longer term 5G threat (which I think is a real possible threat but more than manageable).

As always, I welcome comments / feedback / criticism!

*Note that the current reactions to Verizon's fixed ambitions

are not new. Just cherry picking from AT&T and T-Mobile, here are some of their earlier reactions to Verizon's plans

- AT&T

- CFO in June at Cowen Conference "The general residential broadband solution... economics for us don't seem to work"
- CEO in August at Goldman Conference, "We're watching it (replacing cable) closely, but right now that business case is not one we think is the first or best business case"

- T-Mobile

- CTO in March- Fixed wireless is "the toughest use case" because the spectrum Verizon is using "does not penetrate buildings well;" thinks Verizon will shift strategy away from fixed broadband by year end.
- CFO in February- The fixed story Verizon "has been touting... is plagued with challenges, and... everybody has woken up to that... they're committing to trying to deliver fixed broadband in the most unreliable fashion known to man".
- Earlier, T-Mobile's CEO called Verizon's 5G claims "pure horse shit"