have deployed 5G alongside broader network changes aimed at virtualizing equipment and automating functions, in search of cost savings.

Further, telcos continue to change how they manage their passive network infrastructure assets, in particular towers. Many mobile telcos have simply sold off their towers over the years, a trend which continues. Telefonica's Telxius division, for instance, just sold off its Europe and Latin American tower business to American Towers; CK Hutch sold its European towers to Cellnex late last year. Other telcos search for value in their passive portfolio by creating stand-alone tower companies, such as Vodafone (Vantage) and Orange (TOTEM). Fiber continues to be seen as more of a strategic asset, and a costly one to build and maintain.

Comparing 1Q21 and 1Q20 capex, companies that stand out as bigger spenders either on a dollar change or capital intensity basis include Airtel (India), Charter Communications, China Unicom, Globe Telecom (Philippines), MTS (Russia & CIS), Telecom Italia, Telkom South Africa, True (Thailand), Vodafone, and Zain. For some of these, 5G network costs are a main factor, as with Unicom, Telecom Italia, True and Zain, for instance. Reinforcing 4G networks to support faster speeds and broader coverage is also a factor for several, though, such as Airtel, Globe, MTS, and Telkom South Africa. In addition, many telcos recently are citing the need for increased transport network investments, especially those that have already invested in an initial wave of 5G network capacity. The biggest telcos in this category are the Chinese providers, most of which have upped their expected transport spend for 2021 (as a percentage of total). Huawei will benefit from this shift. In Europe, 2021 is seeing relatively high capex but most is dedicated to 5G builds.

Headcount falling but labor costs are rising

Telco industry headcount peaked, in our estimation, at 5.226 million in 3Q18. Since then it has declined fairly steadily, ending 1Q21 at approximately 4.856 million. A number of large telcos have been cutting staff gradually, some by attrition and some through voluntary retirement schemes. As an example, headcount for AT&T and Verizon dropped in the last quarter by 16K and 5.4K, respectively. The goal has been to do more with less and benefit fully from the software platforms being deployed across the business. DT's CEO addressed this trend at a recent investor event:

> "Our view of digitalization is full stack. It's not just about the front end. The principles of digitization apply across the entire stack…But it equally applies to the back end. It applies to our IT. And it applies above all to our network through disaggregation, cloudification and automation…When you pull all of the digitalization stuff together, what's the payoff? Pretty impressive in the next 4 years. We will take out EUR 700 million in indirect cost. Now a lot of that will come through directly through the digital tools. Some of it will be the knock-on effect of the nature of the organization we will have, a slimmer, smaller organization, but also some real big knock-on indirect cost effects. We will give up about 300,000 square meters of real estate, 50% reduction in real estate because of this whole process."

MTN Consulting's current expectation is that headcount will decline over the next few years, but that labor costs will rise as a percentage of opex (ex-D&A), as the average telco employee salary rises. First quarter 2021 results are consistent with this outlook.

Labor costs totaled to $76.9B in 1Q21, up 8% YoY. On an annualized basis, 1Q21 labor costs were $290.4B or nearly as much as capex in the same period. Labor costs per employee on an annualized basis were $59.8K in 1Q21, up from $58.1K in 1Q20. Not a dramatic increase, but enough to make labor costs as a share of opex (ex-D&A) rise slightly, from 23.9% to 24.1%.