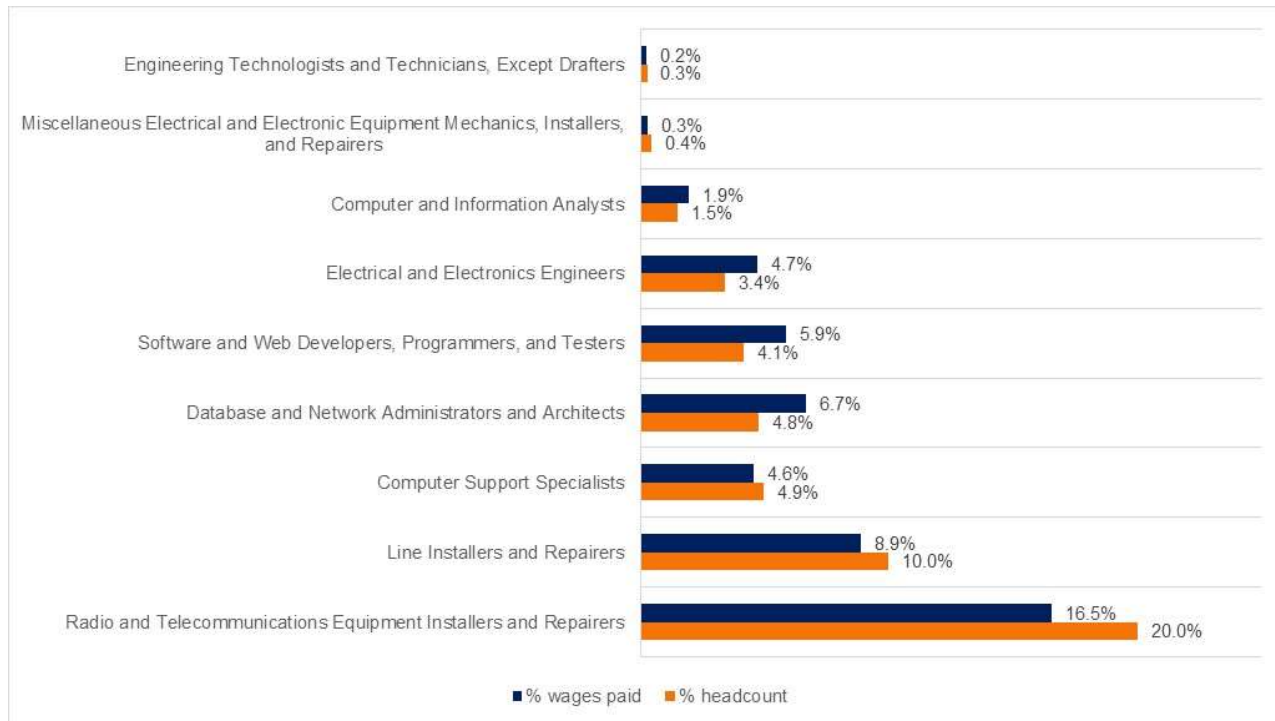


**Figure 3: Technical occupations in the U.S. telecom industry: % of employment and wages (May 2019)**

Source: U.S. Bureau of Labor Statistics

As shown above, installers and repairers account for a combined 30% of headcount: 10% focused on physical cabling, 20% on equipment and towers. Both of these specialties account for a lower percentage of total labor costs, as their salaries are below average. However, the computer, database, and software development specialists all get above-average wages, so they contribute much more to total labor costs than they do to headcount. Collectively, the technical job categories in Figure 3 above amount to roughly half of both total headcount and labor costs. This is a U.S.-specific figure, and for a specific time period (2019). However, the 50% ratio is a rule of thumb that can apply to large telecommunications markets elsewhere, at least those which are relatively mature, and have a large base of both fixed and wireless networks. The exact ratio will clearly differ by market and operator. However, most companies likely fluctuate within a 40-60% range unless management of their networks has been outsourced through managed services contracts.

### Labor cost burden as % total opex varies widely

Telco spending on their workforce amounted to 23.4% of opex (excluding depreciation and amortization, or D&A) for the four quarters ended 1Q20. That's a global average, across a diverse mix of markets. The trendline has been climbing modestly in the last few quarters, after many years of stability (Figure 4).