Chapter-2
Layers and the Evolution of Communications Networks

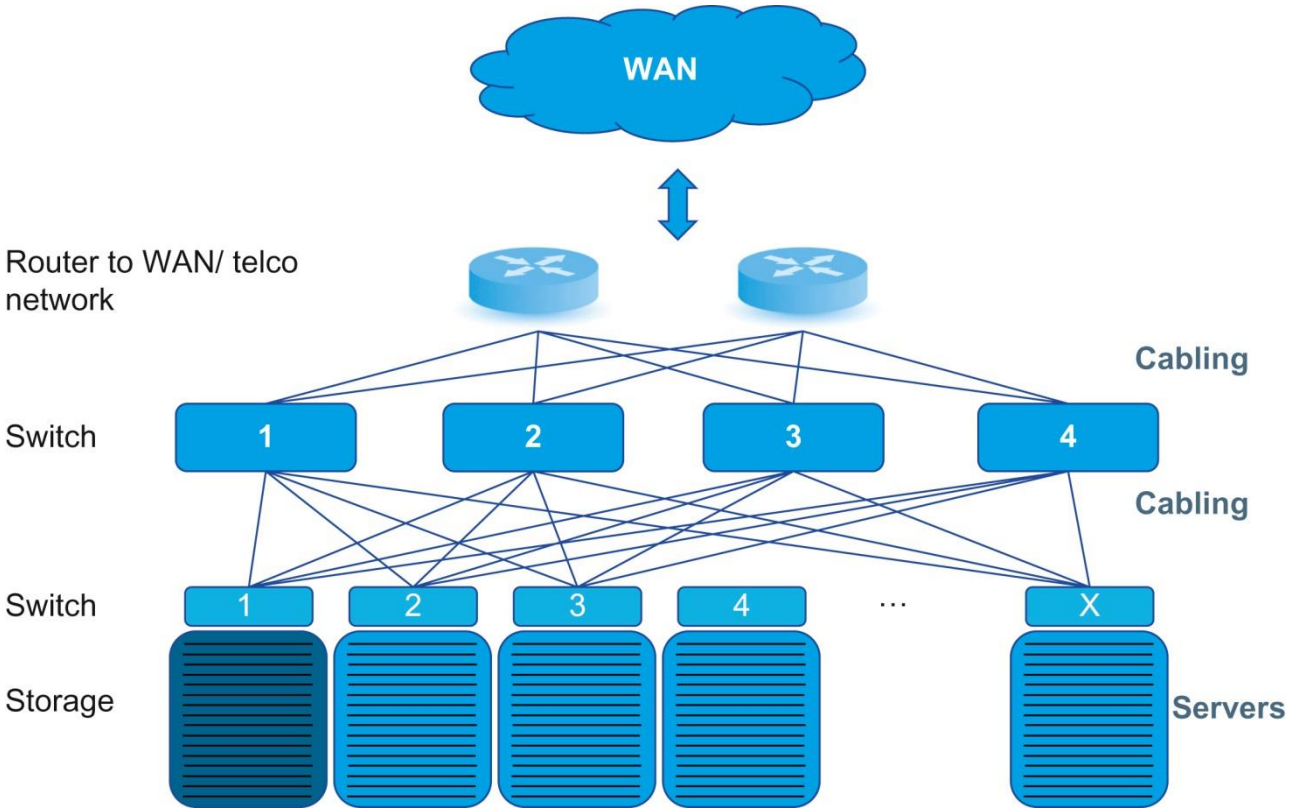

Figure 2.1: Data center networking schematic showing servers, routers, and storage networked with cables and switches.

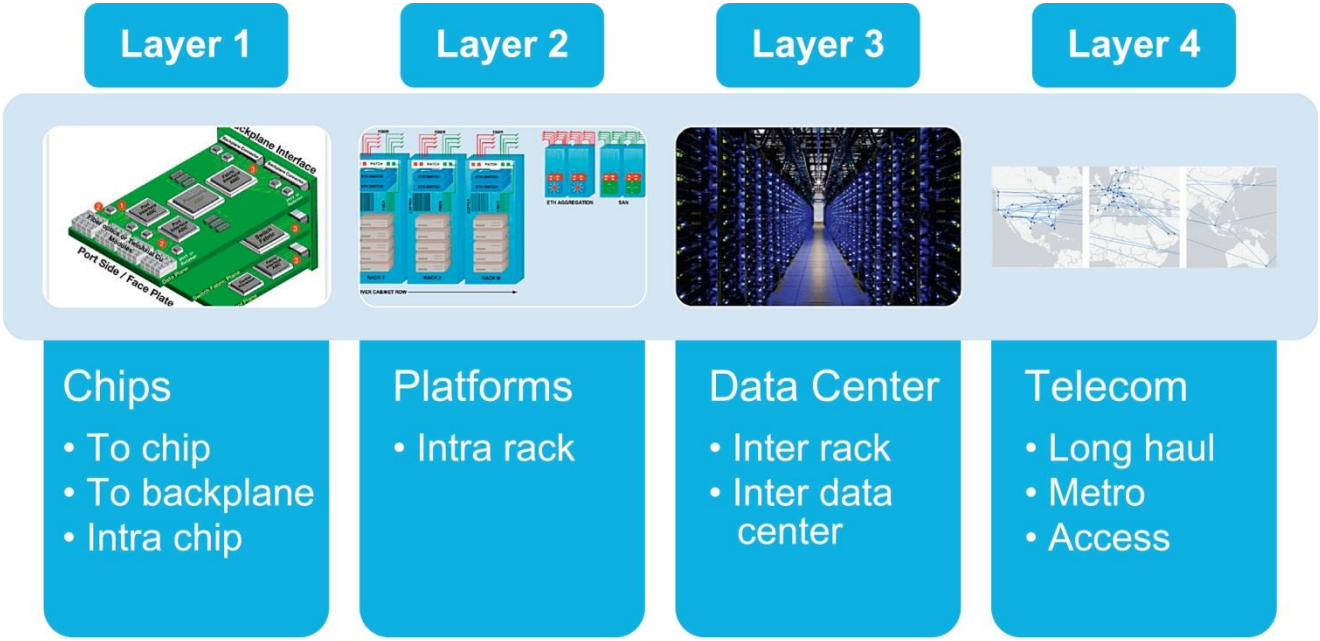

Figure 2.2: The four-layered model for cloud and telecoms: chips, platforms, the data center, and telecommunications networks. From: Layer 1 Synopsys, Layer 2 Cisco, Layer 3 Google, and Layer 4 GTT Communications.

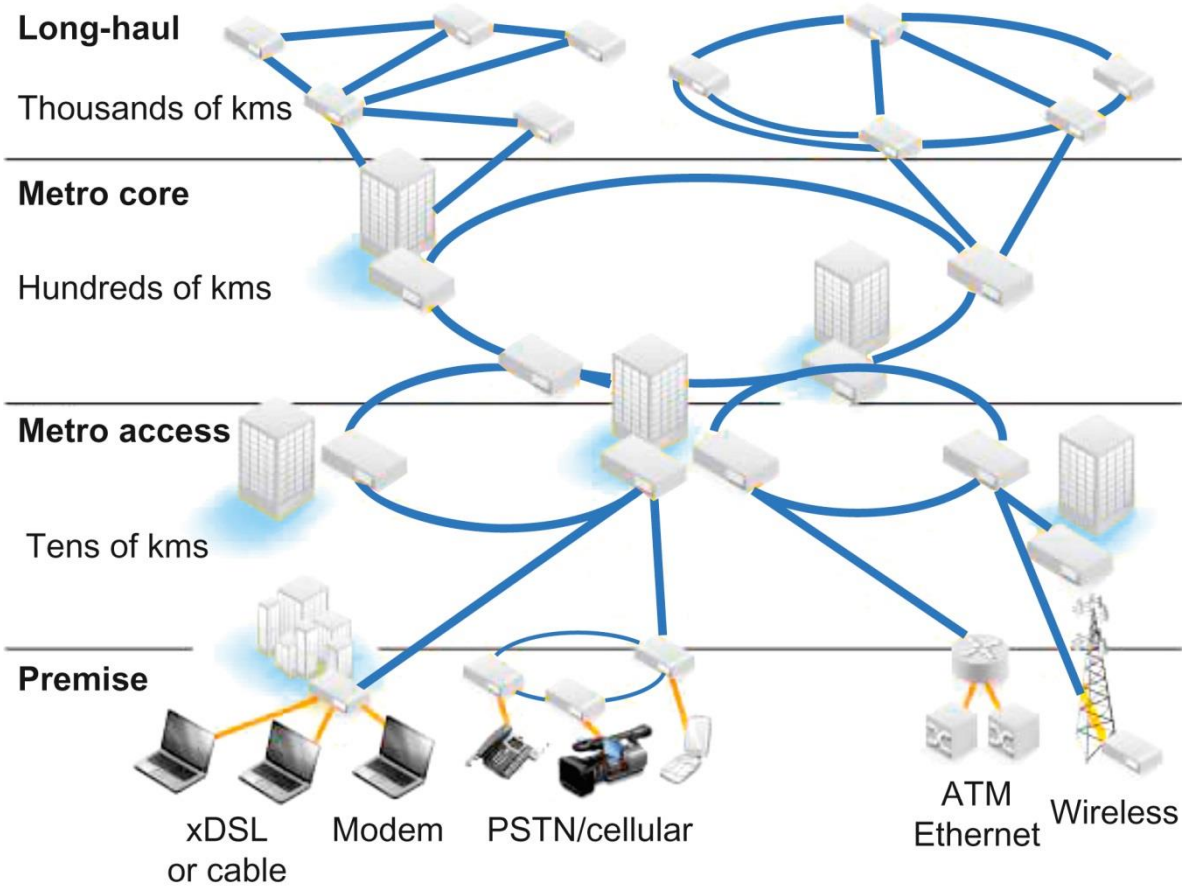

Figure 2.3: A telco network including long-haul, metro core, metro access, and premises, and their typical reaches. Exfo. “From EXFO, http://www.exfo.com/solutions/metro-core-networks/bu2-bu3-packet-optical-transport/technology-overview”.

Figure 2.4: Equipment inside a Facebook data center. r Copyright Facebook & Steve Tague Studios.

Figure 2.5: Cisco Systems' Nexus 7700 switch rack. From Cisco.

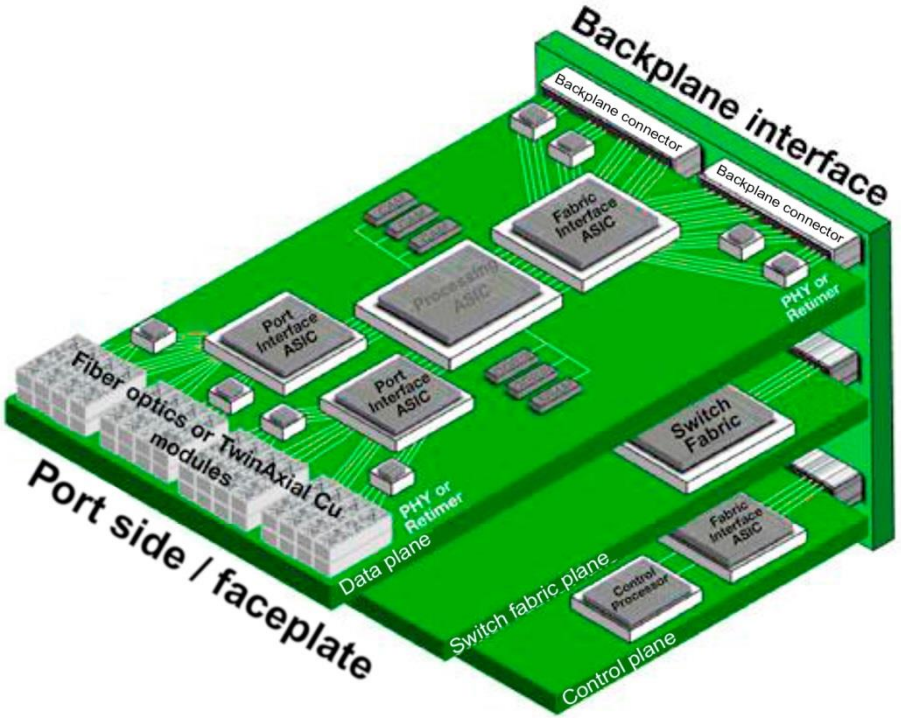

Figure 2.6: Line card showing connectivity to chips, faceplate, and backplane. Synopsys.

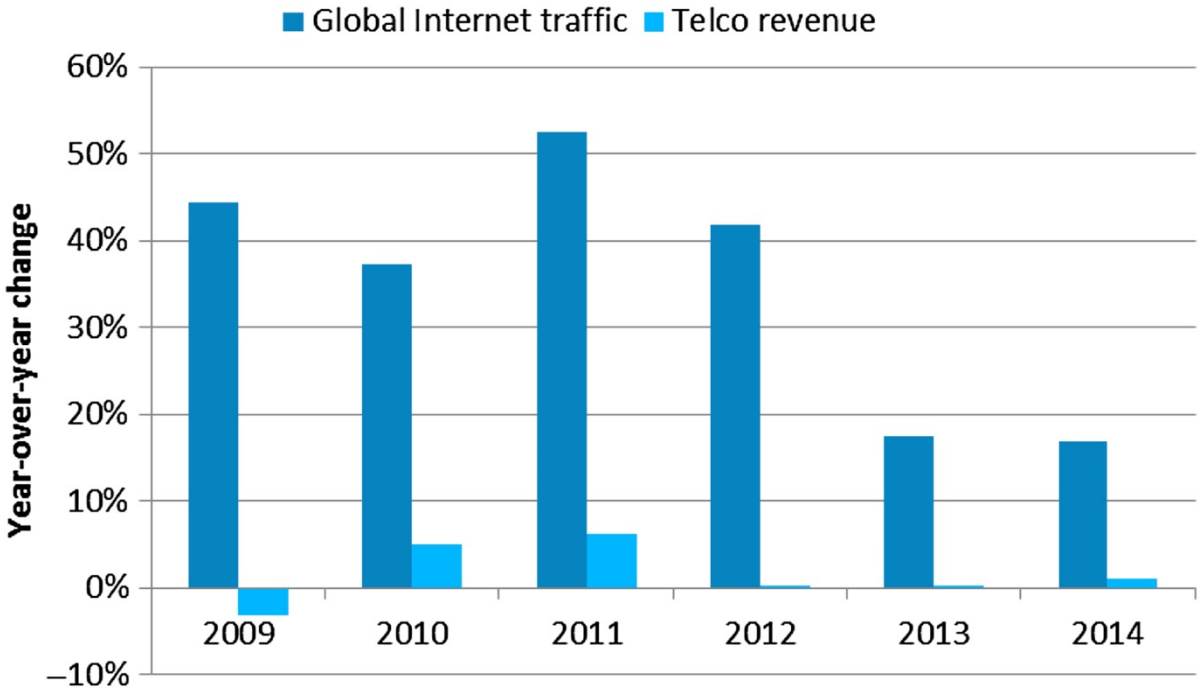

Figure 2.7 : Telco revenues are not growing as fast as Internet traffic. Based on revenue figures from Ovum, traffic volumes from Cisco.