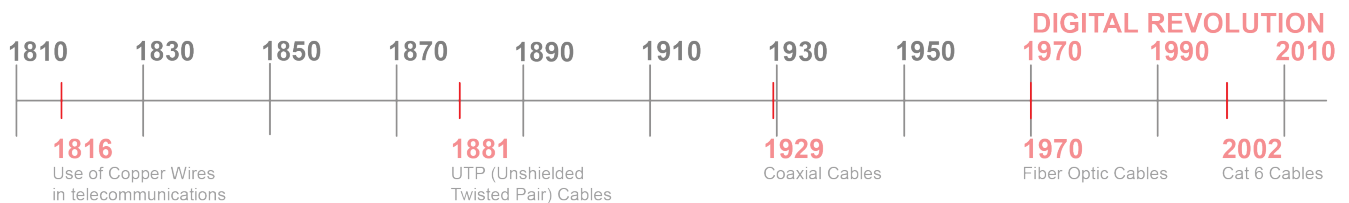
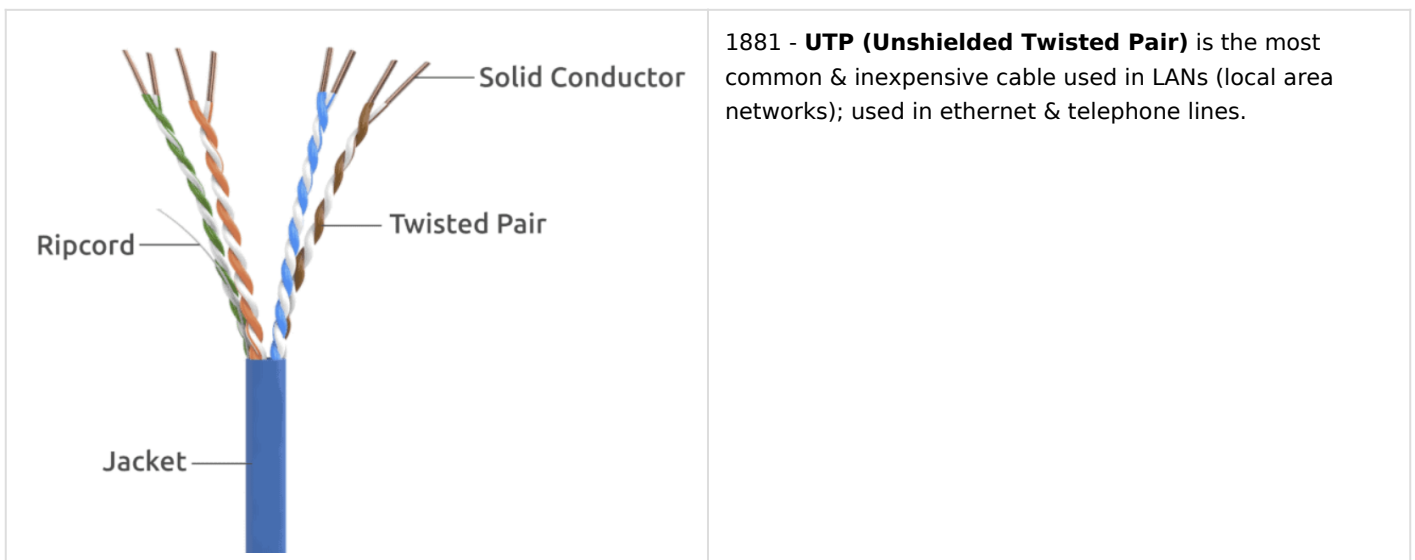


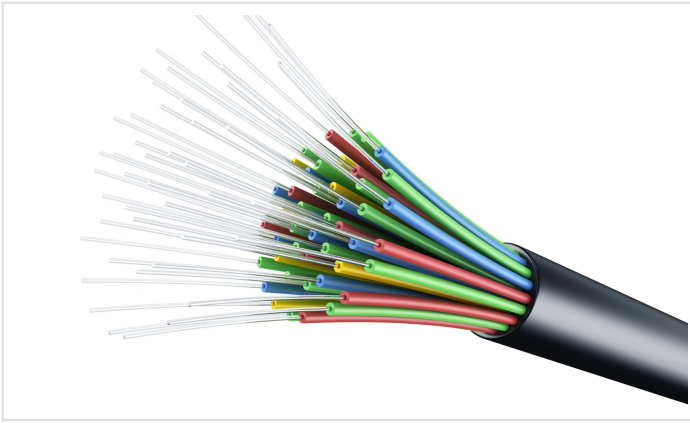
Material of Data and Optimization of Cables



1816 - **Copper wires** were first used underground to relay a telegraph; copper is good electric conductor



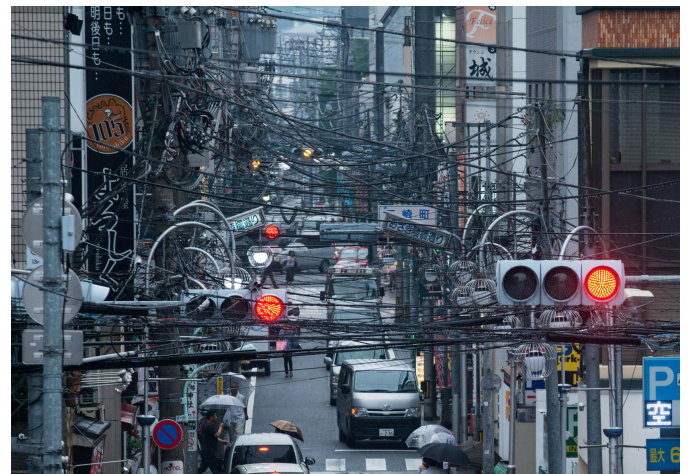
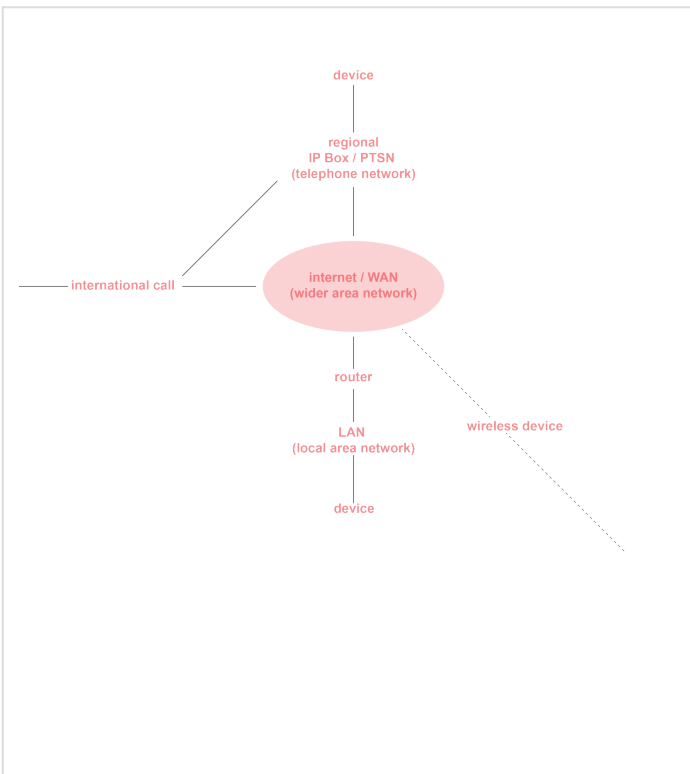
1929 - **Coaxial cables** include a central wire that carries the signal. The wire is protected by braided metal guard, often made of copper. Made using twisted copper wires & plastic polymer (polyethylene) outer jacket.



1970 - **Fiber optic cables** began to have widespread usability in telecommunications. They were able to carry signals greater distance than copper & are now widely used in high-speed internet & telecom as well as data centers as we know them today. Revolutionized the use of purified glass to transmit light signals very fast.

2002 - **Cat 6** is a reliable, fast ethernet cable that has good resistance to cross talk (electromagnetic interference from another set of wires). It is made with 4 pairs of twisted copper wire & protective outer jacket made from materials such as PVC.

Conclusion: Conductive materials have been pushed to their physical limits to most effectively and quickly transfer data over a range of distances. The trend towards longer distances begins to signal the push towards *globalization*.



The physicality of these cables begin to have real-world implications on our landscapes as the overlap and connect. Typically fiber optic cables and copper wire-based cables such as Cat 6 form into webbed networks that connect people regionally, nationally, and internationally. This brings our city landscapes to accommodate to the sea of cables formed by these connections.

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