

## **Copper, a precious metal**

Until the advent of fibre optics, the conductor used in the manufacture of telecommunications cables was metal, mainly copper. The conductivity developed from this material was effective for more than a hundred years and adapted to the many communication needs.

A bundle of metallic wires or transmission lines formed a conductive core covered with an insulating layer and a protective sheath. There was an enormous range of copper cable types depending on their use. Three main types can be identified: twin cables, quad cables, and coaxial cables.

**Twin cable:** comprises two conductors twisted together to allow the transmission of information back and forth along each of the wires.

**Quad cable:** comprises four conductors bundled together, increasing the number of supported communications. These cables were normally used for long-distance trunk lines.

**Coaxial cable:** comprises a central copper wire conductor surrounded by a concentric conducting shield, which enables better signal transmission, as well as greater speed and volume of information.