

ERNA SCHNEIDER HOOVER

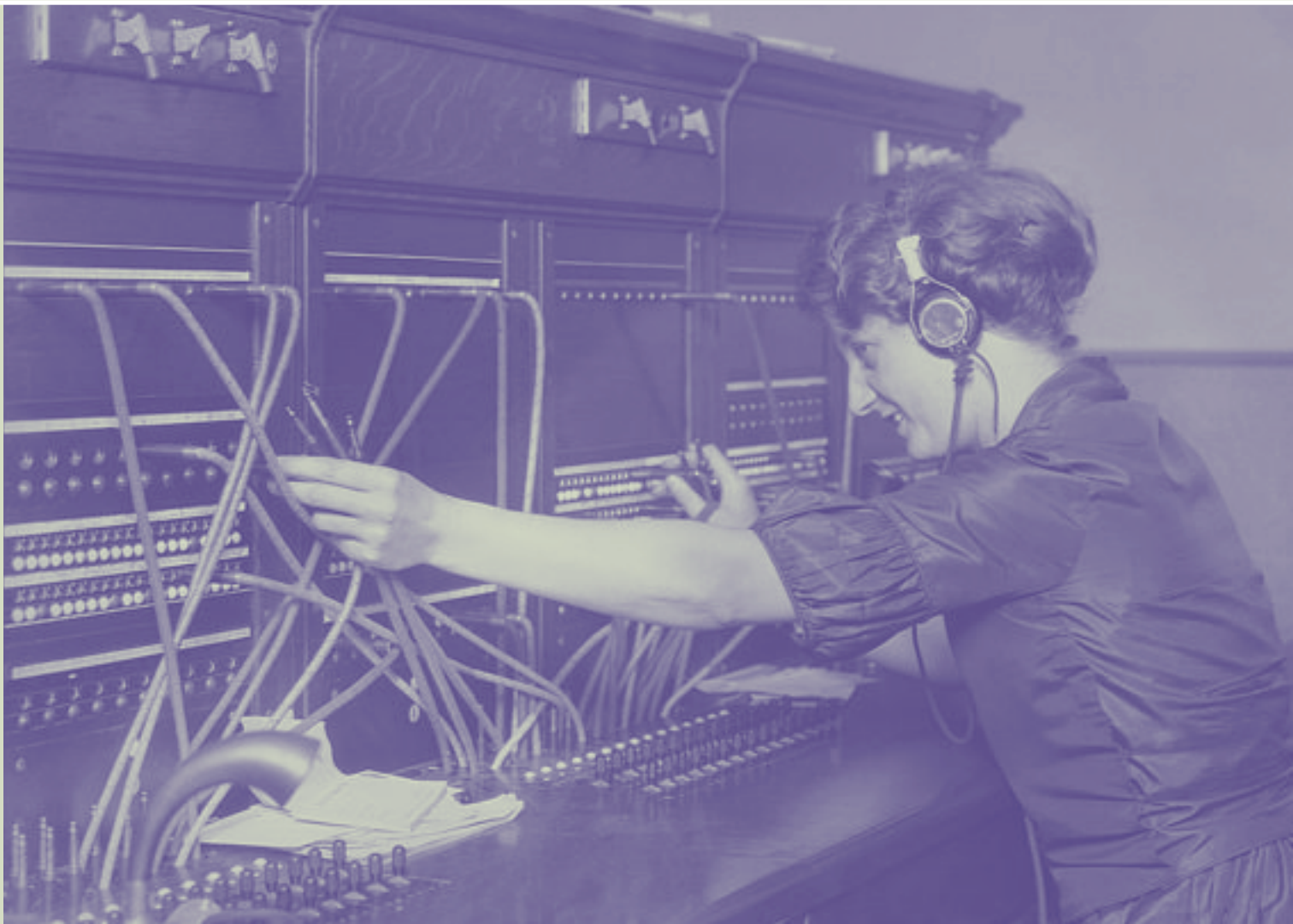


Before the 1950s, the process of making a telephone call often involved simple personal contact. In many places, when you picked up the telephone, an operator would ask, “Number please?” After you responded, the operator would make a physical connection with a wire to the switchboard and your call would go through. It was a comforting, human aspect to a relatively new technology, and it worked pretty well, at least for a while.

As the U.S. economy boomed in the decade following World War II, people and businesses began to use the telephone more and more. Technological advances increased the load on the system: Beginning in 1951, microwave relay stations increased long distance service, and in 1956 the first transatlantic telephone cables started carrying international calls. Bell Telephone’s own projections made it clear that the continually increasing demand for telephone service would one day—and probably soon—overwhelm the system. The answer to this looming problem was the same as in many other industries at the time: computerized automation. Around 1954, Bell Labs, the research arm of the Bell Telephone company, began working on automating the process of connecting calls, known as switching.

More than 10 years and \$500 million later, Bell Telephone unveiled the first large-scale electronic switching system, or ESS. Although the company advertised that “more than 2,000 man-years of research” had gone into ESS, one of the key figures in its development was a woman, Dr. Erna Schneider Hoover. A medievalist, logistician, working mother, and computer programmer, Hoover designed the basic architecture of the switching system, which could automatically route hundreds (and later, thousands) of calls in a few seconds. This work earned her one of the first patents ever awarded for software and a job as a research supervisor at Bell Labs, the first time a woman had held such a position.

Erna Schneider grew up in Irvington, New Jersey, where she was born in 1926, and moved to Massachusetts in 1944 to attend Wellesley College. She studied medieval history and philosophy there, earning her bachelor’s degree in 1948. Since Hoover intended to both work and raise a family, she focused



The process of "switching" (connecting) calls before automation depended on operators working at switchboards. In the 1950s, Bell Telephone introduced direct dial, and in the 1960s it added completely automated service.