

## Purposeful Innovation and the Seven Sources for Innovative Opportunity

Entrepreneurs innovate. Innovation is the specific instrument of entrepreneurship. It is the act that endows resources with a new capacity to create wealth. Innovation, indeed, creates a resource. There is no such thing as a "resource" until man finds a use for something in nature and thus endows it with economic value. Until then, every plant is a weed and every mineral just another rock. Not much more than a century ago, neither mineral oil seeping out of the ground nor bauxite, the ore of aluminum, were resources. They were nuisances; both render the soil infertile. The penicillin mold was a pest, not a resource. Bacteriologists went to great lengths to protect their bacterial cultures against contamination by it. Then in the 1920s, a London doctor, Alexander Fleming, realized that this "pest" was exactly the bacterial killer bacteriologists had been looking for—and the penicillin mold became a valuable resource.

The same holds just as true in the social and economic spheres. There is no greater resource in an economy than "purchasing power." But purchasing power is the creation of the innovating entrepreneur.

The American farmer had virtually no purchasing power in the early nineteenth century; he therefore could not buy farm machinery. There were dozens of harvesting machines on the market, but however much he might have wanted them, the farmer could not pay for them. Then one of the many harvesting-machine inventors, Cyrus McCormick, invented installment buying. This enabled the farmer to pay for a harvesting machine out of his future earnings rather than out of past savings—and suddenly the farmer had "purchasing power" to buy farm equipment.



Equally, whatever changes the wealth-producing potential of already existing resources constitutes innovation.

There was not much new technology involved in the idea of moving a truck body off its wheels and onto a cargo vessel. This "innovation," the container, did not grow out of technology at all but out of a new perception of the "cargo vessel" as a materials-handling device rather than a "ship," which meant that what really mattered was to make the time in port as short as possible. But this humdrum innovation roughly quadrupled the productivity of the ocean-going freighter and probably saved shipping. Without it, the tremendous expansion of world trade in the last forty years—the fastest growth in any major economic activity ever recorded—could not possibly have taken place.

What really made universal schooling possible—more so than the popular commitment to the value of education, the systematic training of teachers in schools of education, or pedagogic theory—was that lowly innovation, the textbook. (The textbook was probably the invention of the great Czech educational reformer Johann Amos Comenius, who designed and used the first Latin primers in the mid-seventeenth century.) Without the textbook, even a very good teacher cannot teach more than one or two children at a time; with it, even a pretty poor teacher can get a little learning into the heads of thirty or thirty-five students.

Innovation, as these examples show, does not have to be technical, does not indeed have to be a "thing" altogether. Few technical innovations can compete in terms of impact with such social innovations as the newspaper or insurance. Installment buying literally transforms economies. Wherever introduced, it changes the economy from supply-driven to demand-driven, regardless almost of the productive level of the economy (which explains why installment buying is the first practice that any Marxist government coming to power immediately suppresses: as the Communists did in Czechoslovakia in 1948, and again in Cuba in 1959). The hospital, in its modern form a social innovation of the Enlightenment of the eighteenth century, has had greater impact on health care than many advances in medicine. Management, that is, the "useful knowledge" that enables man for the first time to render productive people of different skills and knowledge working together in an "organization," is an innovation of this century. It has converted modern society into something brand new, something, by the way, for