WHEN INNOVATION FAILS

MODERN SOCIETIES ARE OBSESSED WITH INNOVATION. In June 2015, Google searches returned 389 million hits for "innovation," easily beating "terrorism" (92 million), "economic growth" (91 million), and "global warming" (58 million). We are to believe that innovation will open every conceivable door: to life expectancies far beyond 100 years, to the merging of human and machine consciousness, to essentially free solar energy. ● This uncritical genuflection before the altar of innovation is wrong on two counts: It ignores those big, fundamental quests that have failed after spending huge sums on research. And it has little to say about why we so often stick to an inferior practice even when we know there's a superior course of action. ● The fast breeder reactor, so called because it produces more nuclear fuel than it consumes, is one of the most remarkable examples of a prolonged and costly innovation failure. In 1974 General Electric predicted that by 2000 about 90 percent of the United States' electricity would come from fast breeders. GE merely reflected a widespread expectation: During the 1970s, the governments of France, Japan, the Soviet Union, the United Kingdom, and the United States were all investing heavily in the development of breeders. But high costs, technical problems, and environmental concerns led to shutdowns of British, French, Japanese, U.S. (and also smaller German and Italian) programs, while China, India, Japan, and Russia are still operating experimental reactors. After the world as a whole has spent well above US $100 billion in

today's money over some six decades of effort, there is no real commercial payoff.

Other promised fundamental innovations that still are not commercial concerns include supersonic passenger flight, magnetic levitation trains, and thermonuclear energy. The last one is perhaps the most notorious example of an ever-receding innovative achievement.

The second category of failed innovations–things we keep on doing even though we know we shouldn't–range from quotidian practices to theoretical concepts. Why are we boarding flights from back to front when we know of better ways? And there's no need to go for the best but organizationally tricky Steffen method, in which passengers fill a plane from the back to the front, windows first, skipping every other row so that everyone has more space to get settled. We might do even better by seating people in a reverse pyramid, alternately boarding them at the back and at the front simultaneously (spreading things out to minimize bottlenecks), or simply by abolishing assigned seating.

Why do we keep imposing "daylight saving time" changes semiannually when we know they don't really save anything?

And why do we measure the progress of economies by gross domestic product? GDP is simply the total annual value of all goods and services transacted in a country. It rises not only when lives get better and economies progress but also when bad things happen to people or to the environment. Higher alcohol sales, more driving under the influence, more accidents, more emergency-room admissions, more injuries, more people in jail–GDP goes up; more illegal logging in the tropics, more deforestation and biodiversity loss, higher timber sales–again, GDP goes up. We know better, but we still worship high annual GDP growth rate, regardless of where it comes from.

Why do we love wild and crazy innovation when there is so much practical innovation waiting to be implemented? Why do we not improve the boarding of planes rather than delude ourselves with visions of hyperloop trains and eternal life? ■

PHOTO-ILLUSTRATION BY **Sean McCabe**