The drive for innovation has never been greater than it is today. The topic permeates corporate board rooms, business school classrooms, sovereign-wealth and municipal-pension-fund investment committees, government policy meetings on tax codes, immigration quotas, spending programs, and education reform. The discussion takes place at all levels, all around the world: individuals, private-sector enterprises, and philanthropic organizations. Every one of these groups has the need and desire to keep from getting stale and hopes to open up new possibilities for expansion and improvement. They all recognize that in an increasingly competitive world, standing still is tantamount to giving up. It is not an option.

Welcome to the Innovation Age

Since the late eighteenth century, historic advances in technology have ushered in five distinct economic revolutions, each spurring step-function improvements in the standard of living of those countries fortunate enough to enjoy and deploy these breakthroughs. The First Industrial Revolution began in 1771 when the advent of Arkwright’s water-powered textile mill brought mechanization and factory automation to a hand-made world. The “Rocket” steam locomotive in 1829 initiated the second industrial revolution, propelling Britain to the forefront of global economic leadership. The age of steel and electricity produced by Andrew Carnegie’s steel plant and Thomas Edison’s numerous inventions for producing and using electricity commencing
in the mid-1870s started a third: the transition to American economic leadership, and a tremendous leap forward in the standard of living. The fourth was the age of oil and automobiles, primarily initiated by Henry Ford’s Model T in 1908, which furthered the United States manufacturing-led prowess that carried through World War II and beyond. The Information Age, also commercialized first in the United States, that began in the early 1970s with the introduction of Intel’s microprocessor and was supplemented by inventions in optoelectronics, fiber optics, and computer software led the transformation to a postindustrial economy in which services outstripped manufacturing, and knowledge workers have replaced factory labor. The Internet, an outgrowth of the fifth wave of technology advancement, moved from academic, military, and scientific networks in the 1980s to become a commercial powerhouse in the mid-1990s. Today, it forms the primary backbone supporting the current wave of innovation. With the construction of new applications still in the early innings, both for consumers and businesses, Internet-enabled services herald even greater fortunes ahead by continuing to attract tremendous entrepreneurial activity all over the world, and massive corporate spending on new product and services development that will exploit the shifting living, communications, and purchasing practices of the populace.

The technology breakthroughs behind each of these revolutions were not obvious or foreseeable much before they happened. Although such breakthroughs are not pre-announced, they seem to come about every fifty years or so, igniting an entirely new round of improvements and a step-change in the global economy that is mostly fostered by entrepreneurs who carry little baggage in terms of rigid business models, existing businesses to protect, or organizational silos.

Each technology-led revolution over the past two hundred and fifty years has had a profound impact on society, lifting productivity, improving efficiencies, and leading to radical reductions in the cost structures of associated goods and services. The cornerstone technologies that instigated each of these revolutions unleashed over the subsequent thirty to forty years a constant flow of disruption to the way people worked and lived, as innovators learned how to harness these new tools and create new business models, and encouraged governments to invest in new infrastructure.

Although each technology revolution got its start in one locale the businesses spawned subsequently spread to other countries and markets. The pace of proliferation has quickened over the years, perhaps