

# SEIZING THE WHITE SPACE

BUSINESS MODEL INNOVATION *for* GROWTH AND RENEWAL ■■ MARK W. JOHNSON

## ■■ THE INDUSTRIES + INFRASTRUCTURES OF EACH TECHNOLOGICAL REVOLUTION

TECHNOLOGICAL REVOLUTION	NEW TECHNOLOGIES + NEW OR REDEFINED INDUSTRIES	NEW OR REDEFINED INFRASTRUCTURES
<b>FIRST</b> From 1771—The Industrial Revolution	<ul style="list-style-type: none"><li>• Mechanized cotton industry</li><li>• Wrought iron</li><li>• Machinery</li></ul>	<ul style="list-style-type: none"><li>• Canals and waterways</li><li>• Turnpike roads</li><li>• Water power</li></ul>
<b>SECOND</b> From 1829—Age of steam and railways	<ul style="list-style-type: none"><li>• Steam engines and machinery</li><li>• Iron and coal mining</li><li>• Railway construction</li><li>• Rolling stock production</li><li>• Steam power for many industries</li></ul>	<ul style="list-style-type: none"><li>• Railways</li><li>• Universal postal service</li><li>• Telegraph</li><li>• Ports, depots, and worldwide sailing ships</li><li>• City gas</li></ul>
<b>THIRD</b> From 1875—Age of steel, electricity, and heavy engineering	<ul style="list-style-type: none"><li>• Cheap steel</li><li>• Full development of steam engine for steel ships</li><li>• Heavy chemistry and civil engineering</li><li>• Electrical equipment industry</li><li>• Copper and cables</li><li>• Canned and bottled food</li><li>• Paper and packaging</li></ul>	<ul style="list-style-type: none"><li>• Worldwide shipping in rapid steel steamships</li><li>• Transcontinental railways</li><li>• Great bridges and tunnels</li><li>• Worldwide telegraph</li><li>• Telephone</li><li>• Electrical networks</li></ul>
<b>FOURTH</b> From 1908—Age of oil, the automobile, and mass production	<ul style="list-style-type: none"><li>• Mass-produced automobiles</li><li>• Cheap oil and oil fuels</li><li>• Petrochemicals</li><li>• Internal combustion engines</li><li>• Home electrical appliances</li><li>• Refrigerated and frozen foods</li></ul>	<ul style="list-style-type: none"><li>• Networks of roads, highways, ports, and airports</li><li>• Networks of oil wells</li><li>• Universal electricity</li><li>• Worldwide analog telecommunications</li></ul>
<b>FIFTH</b> From 1971—Age of information and telecommunications	<ul style="list-style-type: none"><li>• Cheap microelectronics</li><li>• Computers, software</li><li>• Telecommunications</li><li>• Control instruments</li><li>• Computer-aided biotechnology and new materials</li></ul>	<ul style="list-style-type: none"><li>• World digital telecommunications</li><li>• Internet, e-mail, and other e-services</li><li>• Electricity networks</li><li>• High-speed physical transport links</li></ul>
<b>SIXTH</b> From 2003—Age of cleantech and biotech	<ul style="list-style-type: none"><li>• Renewable energy led by solar, wind, and biofuels</li><li>• Energy efficiency</li><li>• Energy storage technologies</li><li>• Electric vehicles</li><li>• Nano materials</li><li>• Synthetic biology</li></ul>	<ul style="list-style-type: none"><li>• Enhanced electricity transmission capabilities</li><li>• Decentralization of power generation</li><li>• Connection of electricity and transportation energy infrastructures</li><li>• Increased availability of water and electricity</li><li>• Extensive gene data bank links</li></ul>

SOURCE: Carlota Perez, *Technological Revolutions and Financial Capital: The Dynamics of Bubbles and Golden Ages* (Northampton, MA: Edward Elgar Publishing, 2003), 14.

[www.seizingthewhitespace.com](http://www.seizingthewhitespace.com)