



By recognizing early the key sources and drivers of technology trends, organizational leaders can be equipped to wisely deploy resources.

by **H. Lee Martin**

Have you ever wondered what are the forces behind globalization, mass customization, just-in-time delivery, virtual companies, and perfect information? Would you like to have the ability to spot and capitalize on economic trends before they reach the masses? Do you realize that throughout history, military development of technology has been the leading indicator of future commercial applications? Technomics explains the significant relationship between technology, economy, and organizations, providing a world-view for understanding and navigating the rapidly advancing world. Technomics, the theory of organizational evolution, parallels Darwin's theory of organic evolution.

Technological best practices tested by free-market competition determine successful organizations, as favorable mutations in a competitive natural environment select the fittest organisms.

H. Lee Martin presents the ideas behind his book on innovation: Technomics: The Theory of Industrial Evolution.

TECHONOMICS

THE IMPACT OF TECHNOLOGY ON SOCIETY

This technomic mindset provides a platform for observing the rapid changes in our economy and insight into the wise deployment of limited resources.

By recognizing early the key sources and drivers of technology trends, organizational leaders can be equipped to wisely deploy resources. William Danforth's classic, *I Dare You*, lists foundations for the success of an individual: attention to physical health, mental development, relational strength, and spiritual understanding. Technomics expands these to foundations for organizations.

Organizational balance in four performance foundations—capital, communications, computations and community—is key to success. Exponential technology advancements are profoundly impacting these foundations. A method of tracking progress and improvement, the technomic metric based on measuring both technology performance and economic cost provides a tool to consistently monitor advancement of any endeavor.

Three contemporary trends that are forcefully driving organizations in the 21st century are the first three laws of technomics. These form the basis of the emerging opera-

tional business models used by such successful companies as Dell and WalMart and are based on

- computational advancement, or Moore's Law for exponentially diminishing computational production costs;
- network expansion, Metcalf's Law for exponentially increasing communication interconnection;
- increasing productivity (Coase-Downes-Mui Law: diminishing organization size as information on product availability proliferates).

Adam Smith's laws of supply and demand are being challenged by a world productive capacity that can overproduce manufactured goods and create infinite supplies of information. Technomics points to the dawning of the "Virtual Age," in which continually increasing productivity creates more output with less labor and resources in the most effective organizations. In the Virtual Age more and more can be produced from less and less until almost anything can be done from anywhere at any time with almost nothing. Endeavors that supplant the tangible face-to-face with the virtual via electronic networks will create the wealth of the future. This future is being revealed at an exponentially increasing rate. ■

Technomics predicts the "Virtual Age": Doing more and more with less and less until you can do just about anything from anywhere at anytime with just about nothing.

H. Lee Martin wrote Technomics: The Theory of Industrial Evolution. A member of the MTSU University Honors College Board of Visitors, he and his brother, Paul W. Martin Jr., provided the challenge dollars that made the college's building a reality. A successful entrepreneur, he holds 20 U.S. patents and has received two Research and Development R&D 100 awards for innovation in product design. His company that created technology for virtual Internet home tours went public on the NASDAQ. A clinical professor at the University of Tennessee Knoxville, Martin created and heads the Engineering Entrepreneurship Minor curriculum.

Video presentation

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