

# Lester C. Thurow

Author of the National Bestsellers

**HEAD TO HEAD** and **THE ZERO-SUM SOCIETY**

# Building WEALTH

**The New Rules for  
Individuals, Companies, and  
Nations in a Knowledge-  
Based Economy**

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The New Rules for Individuals, Companies, and  
Nations in a Knowledge-Based Economy

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PUSTAKA PERDANA



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HarperCollins *Publishers*



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# Prologue

On the back of the dollar bill there is an unfinished pyramid with a brilliant glowing eye at the top. It comes from what had been the ignored back of the Great Seal of the United States, and it was placed on the dollar bill by President Roosevelt in 1935, in the middle of the Great Depression, when America's wealth was in sharp decline. The pyramid was meant to represent economic strength and durability. It is unfinished to symbolize the possibilities of ever-increasing American wealth. Americans needed hope, that an imploding economy would be replaced by an economy that would last forever, that America's best days were ahead—not behind it. One Latin inscription (*Annuit Coeptis*) tells Americans that God favors their undertakings. The other (*Novos Ordo Seclorum*) prophesies a new American order of wealth. Thus in their darkest economic days, Americans were both invoking man's oldest symbols of durable success and praying to the gods for help. Behind the glittering eye, a symbol of divine guidance, is the unfinished top of the pyramid, which has yet to be built. Americans could see what had to be done to achieve success. They just had to muster the resolve to be builders.<sup>1</sup>

Today Asians see a world very much like that seen by Americans in the 1930s. A boom has gone bust. Individual, corporate, and social wealth is rapidly disappearing. The Indonesian stock mar-

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that they believe will happen to their children is already to them.

The middle class is shrinking. Some are moving up, but a larger one is moving down—not surprising given what’s happening for midrange skills, but still disturbing. The financial reports report daily on a stock market boom, but the median family’s wealth is falling, not rising, and it has less than half as many financial assets. The bottom 20 percent of the population own less than they own.

In the midst of an economic boom, 500,000 to 700,000 workers are being laid off from profitable corporations every year—680,000 in 1982. Those whose jobs are downsized at over fifty-five years of age will not find new employment at good jobs. Those under fifty-five will take substantial pay cuts to be reemployed. Plotting a good lifetime career has become a major mystery—even for college graduates. How does one become a durable winner? Where is economic security to be found? The stock market acts are fun to watch, but it isn’t fun to actually be on the losing side. As in the Great Depression, it is far better to be at the top of the wealth pyramid that will last forever.

Disturbingly, productivity growth is down by a factor of two since the 1960s. For in the end, it is productivity growth (the ability to produce more output using fewer inputs) that ultimately drives real wealth creation. Temporary stock market bubbles can project great market wealth in the short run, but without vigorous productivity growth there are no long-run treasures of wealth to be

found. The dollar bill, the glittering eye at the top of the pyramid, draws attention from the base of the pyramid. So too the glittering wealth at the top of the wealth distribution—the new billionaires—obscures the base of the pyramid, upon which all rests. But even if the excitement lies in being at the top, pyramids are built from the base up, not from the top down. At the end of the twentieth and beginning of the twenty-first century, six new technologies—microelectronics, computers, telecom-

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ications, new man-made materials, robotics, and biotechnology—are interacting to create a new and very different economic world. Advances in the basic sciences underlying these six areas have yielded breakthrough technologies that have allowed the emergence of a whole set of big new industries: computers, semiconductors, telecommunications. These same technologies provide opportunities to reinvent old industries: Internet retailing supplants conventional retailing; cellular telephones are everywhere. New things can be done: genetically engineered plants and animals appear; a global economy becomes possible for the first time in human history. Descriptively it is an era of man-made brainpower industries.

The old foundations of success are gone. For all of human history, the source of success has been the control of natural resources—land, gold, oil. Suddenly the answer is “knowledge.” The world’s wealthiest man, Bill Gates, owns nothing tangible—and, no gold or oil, no factories, no industrial processes, no slaves. For the first time in human history the world’s wealthiest man owns only knowledge.

Knowledge is the new basis for wealth. This has never before been true. In the past when capitalists talked about their wealth they were talking about their ownership of plant and equipment and natural resources. In the future when capitalists talk about their wealth they will be talking about their control of knowledge. In the language of wealth generation changes. One can talk about “owning” capital equipment or natural resources. The concept of “owning” is clear. But one cannot talk in the same way about “owning” knowledge. Owning knowledge is a slippery concept. The human beings who possess knowledge cannot be made into slaves. Exactly how one controls (owns?) knowledge is in fact a central issue in a knowledge-based economy.

The current transformation is often misleadingly described as an information revolution or the information society. It is far more. Speedier or cheaper information by itself isn’t of much value. Information is only one of many new inputs used to build a

different economy populated with very different products and services. More information is no more important than the new materials, new biological entities, or new robots in building this new knowledge-based economy.

How do societies have to be reorganized to generate a wealth-enhancing knowledge environment? What causes the entrepreneurs necessary to effect changes and create wealth to sprout? How does knowledge-based wealth arise? What skills are needed? Where do natural and environmental resources fit into this new knowledge economy? What is the role of tool-building in a knowledge-based capitalistic economy where physical tools (capital) no longer lie at the heart of the system? What is the process whereby private marketable wealth emerges? Fundamentally, how does one use “knowledge” to build a new wealth pyramid for an individual, for a company, and for a society? These are the questions to be answered if success is to be found in a knowledge-based economy.

What is important about any pyramid is not found by climbing to the top, but by locating the tunnels that lead to the hidden treasures within. How does one take advantage of new technologies to revolutionize the production of old products and create revolutionary new ones? What are the new construction techniques that will allow even greater stones (higher productivity) to be lifted into place? How can we use these new technologies to build higher and wider wealth pyramids in the future?

Building a durable wealth pyramid requires that we first explore the new economic landscape that is being created. Somewhere within this landscape there is a new wealth pyramid. Once found, the pyramid’s archaeology must be clearly understood. How was it constructed? Where are the entrances? Without this information, treasure hunters cannot find the economic riches buried within.

And only after being explorers, archaeologists, and treasure hunters can humans turn to the real task—learning how to build for ourselves, our companies, and our societies a great new, durable wealth pyramid.