

“WINNER TAKE ALL:

How Competitiveness Shapes the Fate of Nations”

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The Derivative Debacle

- **Derivatives are financial products initially designed to reduce investment risk in value added markets thus encouraging investment.**
- **Derivatives became highly complicated, secretive products designed to make money in their own right. They became trading vehicles, tied to the rapid expansion of debt, but with no real value to the financial system in general.**
- **The market for these trading vehicles grew exponentially.**

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The Derivative Debacle

- The debt worldwide represented by these derivatives reached amounts estimated between 600 trillion and one thousand trillion dollars.
- The GDP of the world is approximately 60 trillion dollars.
- The collapse of the derivative market wiped out cash and equity and created a huge increase in sovereign debt created to offset the weight of private debt that the private sector could not support. This massive loss of resources created by the collapse in the derivative market has substantially reduced remaining funds needed to invest in the competitiveness of the nation.

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The Derivative Debacle

- The result today is a two-fold problem for the United States of America. On the one hand it must pay off the debts accumulated as a result of gambling on these financial instruments and on the other hand it must invest potentially hundreds of billions of dollars to reestablish an industrial base that was traded away through excessive consumption and the pursuit of short-term gains associated with the strategy of stars, cash cows, and dogs: a strategy that began in 1965, forty-five years ago.

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Chronology of Global Competitiveness

- 1945 - World War II ends. United States of America becomes the greatest Economic power the world had ever seen.
- 1948 - William Shockley & team invent the Transistor. Dr. Shannon was instrumental in the discovery of digital electronics. All were employees of ATT/Bell Laboratories.
- 1953 - Sony takes a License from ATT/Bell Laboratories to produce the Transistor.
- 1956 - Ampex Corp. invents Video Recording (the first broadcast video recorder prototype costs \$15,000).
- 1956 - William Shockley wins Nobel Prize and establishes Shockley Transistor Corp.

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Chronology of Global Competitiveness

- 1965 - Bruce Henderson and Gordon Moore introduce substantively different empirical analysis affecting Global competitiveness.
 - a. Stars, Cash Cows & Dogs (Opportunistic – Henderson).
 - b. Exponential Acceleration of convergence, infrastructure & investment (Long-term – Moore).
 - c. The U.S. follows Henderson's lead. Asia follows Moore's Law. Asia understood fully the significance of CONVERGENCE.

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Chronology of Global Competitiveness

- 1970 - Ampex introduces InstaVideo to media acclamation (Sept 2.). Total worldwide demand for Video Recording is 14k units per year.
- 1970 - A single television manufacturing facility costs approx. \$2 million. A manufacturing facility to produce video tape recorders was projected to cost a few million dollars.
- 1970 - Ampex establishes a joint venture with Toshiba to manufacture InstaVideo.
- 1973 - Motorola introduces the cell phone.

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Chronology of Global Competitiveness

- 1973 - Financial problems cause Ampex to halt work on the VCR.
- 1974 - Motorola sells Quasar Television division to Panasonic in Japan. U.S. Consumer electronics becoming known as “a dog industry”.
- 1975 - Kodak introduces the first digital camera, but does not pursue it.

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Chronology of Global Competitiveness

- 1975 - The VCR (Beta/VHS) is introduced in Japan.
- 1980 - A manufacturing facility to produce VCR tape decks can cost in excess of \$600 million. From this type of automated facility comes the term “lights out fabrication”.
- 1981 - IBM introduces PC. The PC becomes a cornerstone of the business of Intel and Microsoft.
- 1981 - Japanese electronics and automated manufacturing facilities frighten Roger Smith, CEO of General Motors, resulting in GM’s expenditure of \$90 billion to become more competitive.

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Chronology of Global Competitiveness

- 1983 - A Semiconductor manufacturing facility costs approx. \$50 million.
- 1985 - As sales of the VCR approach 50 million units per year, the VCR begins to use more semiconductors than any other product on earth. The semiconductor industry begins to shift from U.S. to Asia.
- 1988 - U.S. & the World begin to take notice of Japan’s developments in high-definition television (HDTV).
- 1989 - Toshiba introduces Nand Flash Memory, a semiconductor device, that ultimately allows a cell phone to replicate a VCR.

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Chronology of Global Competitiveness

- 1991 - Elkus writes article for Automobile Magazine, "The Seamless Product", pointing out that with convergence, Japan's consumer electronics industry would become a significant competitive advantage for the Japanese automobile industry.
- 1995 - Digital electronics enables the internet.
- 1996 - Zenith, the last U.S. TV manufacturer, is sold to L.G. Electronics in Korea. The price: approx. \$360 million.
- 1996 - The U.S. Telecommunications Act of 1996 completes the final breakup of AT&T. At the same time, 26 European telecom firms establish a coordinated standard (GSM). Nokia is a major beneficiary.
- 1998 - IBM establishes a joint venture with Sony & Toshiba to design and manufacture a microprocessor called the "Cell Processor".

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Chronology of Global Competitiveness

- 2004 - IBM sells PC division to Lenovo in China.
- 2006 - Consumer Electronics Show (CES) dominated by HDTV in all its forms. Overwhelming majority of HDTV products manufactured in Asia.
- 2006 - The infrastructure of the U.S. Automobile industry begins to collapse.
- 2007 - Apple introduces the iPhone (Jan 2007). Designed in California. Assembled in China.

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Chronology of Global Competitiveness

- 2008 - A facility to manufacture Flat Screen Displays for Television costs approx \$3.5 billion.
- 2008 - An advanced fabrication facility to manufacture semiconductor devices can cost between \$6-10 billion.
- 2008 - Ampex files for Chapter 11.
- 2008 - AT&T/Western Electric, now Alcatel/Lucent (a French company) and the parent of Bell Laboratories, announces the cessation of semiconductor R&D.
- 2009 - The U.S. Digital Television Act signals the end of Analog television broadcasting in U.S. As of Feb. 2009, the U.S. will be required to replace Analog Television with Digital Displays manufactured in Asia.

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The Virtuous Circle

1. Digital Electronics
2. The Internet
3. Digital electronic products that enable the Internet
4. The next killer app: Bandwidth

These four components of the Virtuous Circle, expand exponentially in accordance with Moore's Law.

This Virtuous Circle infuses the expansion and efficiency of all other products & markets.

The Virtuous Circle has become the foundation of the Information Age.

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Where the Money came from...

In 2007,

US Consumers spent an amount equal to 72% of the GDP of the United States. An amount equal to 25% of the combined GDP of the rest of the world.

US Consumers financed a significant portion of their consumption by borrowing against assets, borrowing from their suppliers, and eliminating savings.

The cumulative U.S. Trade Deficit was created in large part by the American consumer, financed by vendor countries as they built competitive infrastructure.

Consumption, on the one hand, was traded for the creation of productive assets on the other.

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Winner Take All THE PRINCIPLES OF COMPETITION IN A TECHNOLOGICAL WORLD

1. As end-use products, markets, and related technologies evolve, they become increasingly interrelated, interdependent, and integrated.
2. Growth of products and markets is always evolutionary, never revolutionary.
3. As the cost of building an infrastructure rises exponentially, the price of reentry to those who have lost that infrastructure becomes overwhelming.
4. The nation's political and economic strategy is primary in establishing its educational agenda. The educational agenda seldom establishes the nation's political and economic strategy.

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Winner Take All

THE PRINCIPLES OF COMPETITION IN A TECHNOLOGICAL WORLD

5. Certain technologies, products, and markets are strategic to a nation's industrial base and ability to compete.
6. Weakness in one sector may cause weakness in dependent sectors.
7. A substantial loss of strategic infrastructure will ultimately impair a nation's ability to develop meaningful economic and political relationships with other nations.
8. Significant losses in the infrastructure of strategic technologies, products, and markets reduce a nation's ability to influence its economic and political destiny.

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Winner Take All

THE PRINCIPLES OF COMPETITION IN A TECHNOLOGICAL WORLD

9. If the nation as a whole is not competitive, it is difficult for any business or industry within that nation to remain competitive.
10. To be competitive, a nation must have a national strategy for competitiveness.

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