Surfing the Tsunami

The next 10 years of technology innovation will be unlike anything our world has ever seen. Corporations need to paddle like hell to catch this wave – or they might just be ripped asunder.

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Surfing the Tsunami

By Jonas Lamis
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It's another drop-dead gorgeous day here off the coast of Global 2000 beach. I'm sitting on my surfboard, a wicked short-board, custom crafted by Tim Bessell in San Diego a few years back, legs dangling in the warm water. Small rollers glide past occasionally punctuated by an eight- footer that one of my colleagues or I might hop on. To my left is the big man – CEO of our little global venture. To my right is our CFO. I'm the Chief Strategist.

The three of us like to surf, but we don't get out as much as we wish. Corporate board meetings, the occasional regulatory filing, and trying to hold conference calls with those employees on the other side of the world take precedence. But when we do, there is nothing better than hopping on a big roller and riding it in.

We caught a couple over the last few years that were quite memorable -- a big wave of mergers that we rode a couple years back. We had the right skills to surf those to shore, and our shareholders were rewarded nicely.

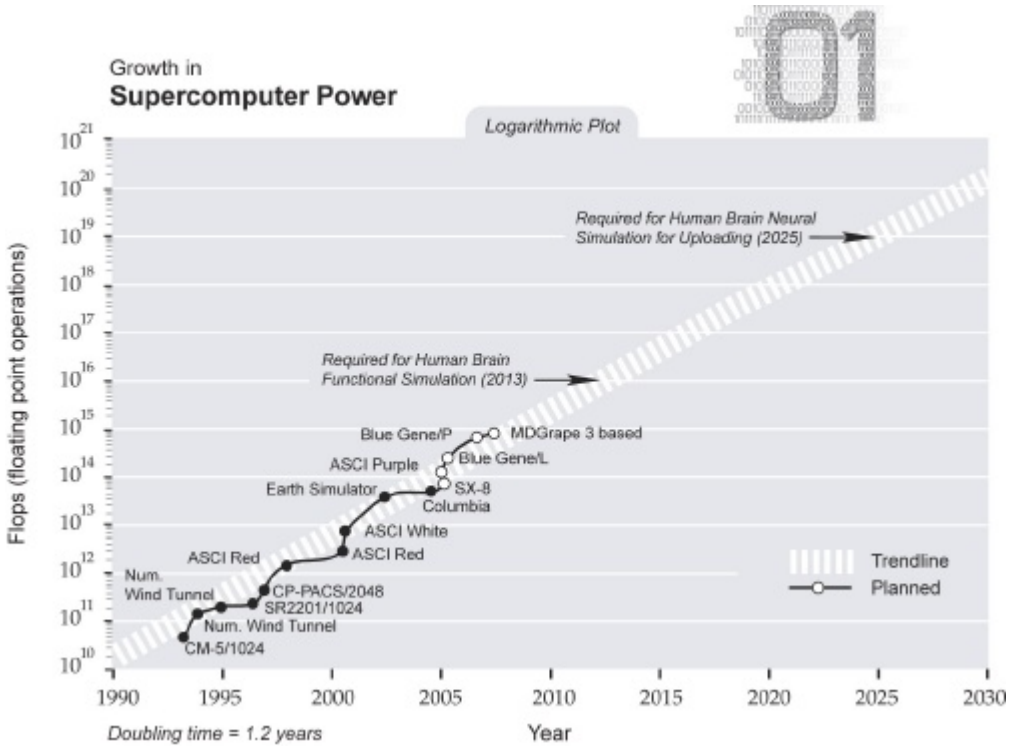
Then there was that IT outsourcing roller that I deftly thrashed. Having a short-board is great for making the quick cuts that define a life in Strategy. What's on the horizon? It's hard to say. There is a lot of buzz about crowdsourcing. And I am thinking about giving the Persian Gulf States a go. Whatever is coming, I know I am looking forward to the next industry analyst event in San Diego so I can catch up. And maybe even catch some waves.

[Cue Jaws theme]

There is a tsunami forming in the ocean's depths, and it will crash upon the shores of society over the next 10 years. Traveling at the speed of a jet airplane as it races across the ocean floor, emerging to a height of hundreds of feet as it approaches the shallows of G2000 beach, this tsunami is the byproduct of a seismic shift in technology capability that is occurring even as you read this paper.

The Role of Accelerating Returns

We humans think of things in a fairly linear mindset. Progress happens over time, and we have always been able to adapt. When the telephone was invented in 1873, it took 35 years for one quarter of the US population to adopt its use. The PC arrived in 1975, and took only 16 years to reach a similar saturation, while the web only took seven years from its emergence in 1991. We are in midst of massive adoption waves today: from digital entertainment on demand to virtual reality gaming to open source education to a laptop for every child in Africa. Accelerating consumer demand is causing a ripple effect in the ability of the G2000 to optimize their investments to both meet customer and shareholder requirements.



[Courtesy of Ray Kurzweil and Kurzweil Technologies, Inc.]

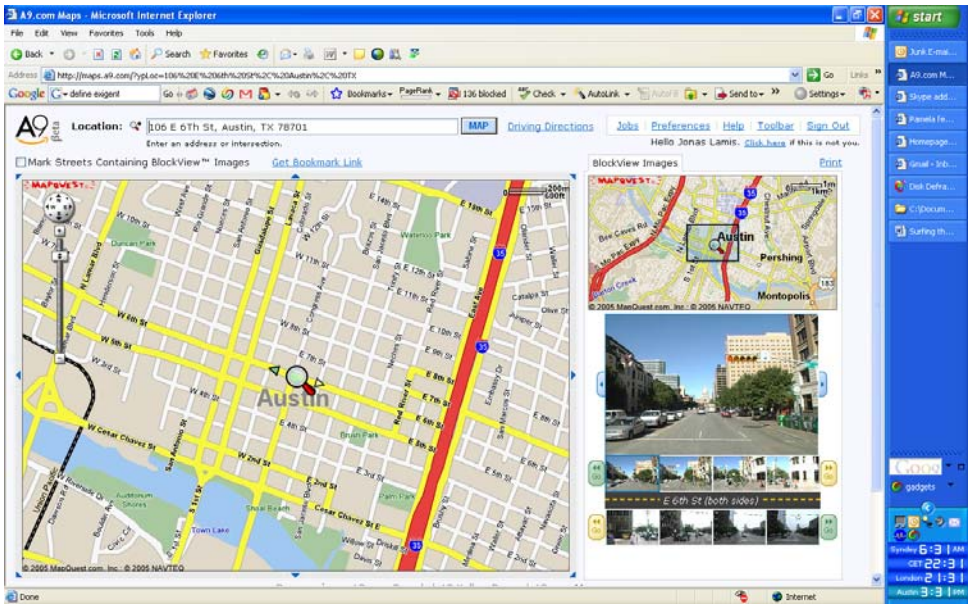
Moore's Law revisited

Think about Moore's Law: The complexity (and processing power) of an integrated circuit doubles approximately every 18 months while the cost remains constant. Intel pioneer Gordon Moore made this forecast more than 40 years ago (in 1965) and this trend has been inexorable. While the constant increase may appear linear, it really represents an exponential growth of capability – doubling with each iteration. The Dell laptop I write this article on has more processing power than the sum of all

computational devices in the world in 1965 when Moore made his forecast! Even more astounding, the next 6 doublings (over the next 10 years) will provide me with more personal processing power than exists globally today – all for less than $1000!

What will consumers do with that kind of power? How will it affect commerce? Education? Leisure time?

To start with, the processing power and bandwidth will make virtual reality a stronger competitor to actual reality. In 10 years, you will be able to take a stroll down your block, or into your local mall, or to go sightseeing, in fully immersive VR without leaving your home. You will be able to shop, interact and learn with visuals that are as clear as the real thing. Even today we see the underpinnings of this capability:



The view from 6th and Congress in Austin, courtesy of Amazon's A9.com – Is that a Starbucks I see?

With that kind of power, and associated gains in software logic, I might be able to get my computational device of the future to do a lot of things for me. Like write articles. Or read them. Or return my email, or do all my shopping by proxy. How does your typical Global 2000 retailer handle a world where all my purchases are negotiated by my computer and based on personal preferences combined with the wisdom of crowds?

(http://forums.worldofwarcraft.com/screenshots/screenshot.aspx?ImageIndex=29&Set=0)

Hanging out with the gang in World of Warcraft – Is that a Pizza Hut I see?

Living Healthy and Long Lives

Life expectancy at birth in the United States in 1901 was 49 years. At the end of the century it was 77 years, an increase of 57%. Similar gains have been enjoyed throughout the world. Life expectancy in India and the People's Republic of China was around 40 years at mid-century. At century's close it had risen to around 63 years. These gains were due largely to the eradication and control of numerous infectious diseases and to non-sustainable productivity gains in agricultural technology (such as chemical fertilizers).

The acceleration in computational power coupled with an accelerating understanding of human biology and genetic engineering is bringing a new wave of technology to bear on the issues of mortality.

Today's 50-year-old baby boomer is expected to live until 85, and a newborn in upper class USA could live well into the hundreds. New and novel therapies, treatments and preventative-care programs are emerging at a rapid pace for major ailments. As an example, United Therapeutics is working to develop a new generation of automated

EEG analysis for long-term unobtrusive monitoring of the early-warning signs of heart disease. For approximately $1000 today, you can also carry an AED (automatic electronic defibrillator) with you where ever you go. Having a defibrillator available at the time of heart-attack reduces the probability of death significantly. New drugs like the cervical cancer vaccine from Merck will save thousands of lives per year. Biotechnology companies such as Genentech and others have hundreds of new cancer drugs and vaccines in development and clinical trials.

Biomedical researcher Aubrey deGrey was recently featured on *60 Minutes* discussing the paths to extreme long life. His conclusion is that fundamental research in the next 10 years could lead to a lengthening of the lifespan to 500+ years in the coming decades.

The G2000 has serious planning and innovation to consider addressing these trends:

- What are your company's retirement policies? Is early retirement encouraged or discouraged?
- What mechanisms and programs must be put in place now to capture key competencies and critical work knowledge of employees who will be retiring?
- Demographic trends show that you may be faced with large groups of both very young workers and very old workers. Will these two groups have different learning needs? Are you prepared to customize your current programs?
- Will your organization need to increase its reliance on new immigrants? What about robots or AIs?
- If your organization is offshoring, what is the age breakdown of your overseas partners?
- Will your offshoring partners face a labor shortage that may impact their ability to provide services?
- Is your organization positioned to meet the need of the over-65 customer segment? The over-100 segment?? How will this change your business? What new skills and competencies will this change require?

The Opensource Economy

Recently, the FBI conducted a sting operation against several employees of Coca Cola who were trying to sell new product development secrets to Pepsi. While the trafficking of company confidential information has been the subject of intrigue for years, it has never been a more critical issue for corporations and their defense against the competition than now.

Technology has driven efficiency across the global supply-chain for most industries, and the ability to compete based on manufacturing prowess is virtually non-existent. Today, the value of a company lies in its ability to innovate and execute around new product and service delivery.

Unfortunately, that competency is under fire from technology as well. The opensource era in the software marketplace has dramatically changed the nature of competition there. Now, the large consulting firms are under fire by "crowdsourcing" - free agent experts who can promote themselves on the web and provide targeted services to companies at a fraction of the large firms' necessary overhead.

This opensource era may spread to other industries to the point where proprietary and opensource versions of every type of product and service will coexist in the next several decades. Microsoft has been a nimble innovator against the opensource stack, yet its stock has gone nowhere but down during the last five years. Can the rest of the Global 2000 fare better against an opensource economy?

From the shore here on G2000 beach, the view looks great. Interest rates are low, housing starts are up and consumers are buying! Gee, look at how the tide has pulled far from the shore… how unusual. What do you think that means?

About the Author

Jonas Lamis is founder and Executive Director of SciVestor, a research and advisory corporation. He serves as a director at the Singularity Institute for Artificial Intelligence, and he is also the founding editor of Architecture and Governance Magazine.

About SciVestor

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