

# Uranus-Neptune: The Technology Revolution *Part Two*

by Bill Herbst

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A couple of months ago, I saw the CEO of YouTube interviewed on PBS' Charley Rose show. I'm not a big fan of Charley Rose, but he does have access to the American and global elites, and I like to keep abreast of the narratives put out by the mainstream media. So, I watch his show from time to time.

The CEO of YouTube is a 49-year-old American woman named Susan Wojcicki. She was among the original handful of employees at Google, back when it was just another tiny Silicon Valley start-up. Ms. Wojcicki has risen through the insider Google ranks as the company morphed into a gargantuan tech power, and now, as CEO of YouTube (which is owned by Google), she is the epitome of an entire class of Silicon Valley execs/entrepreneurs.

My reaction to the interview was that Ms. Wojcicki is personable, intelligent, sincere, and devoted to making the world better. All those qualities are commonplace among Silicon Valley bigwigs. What impressed me, however, was the last minute of the interview, where Charley Rose asked Ms. Wojcicki if she was optimistic about our collective future. Instantly, she beamed with enthusiasm and answered emphatically in the positive. I found that very revealing.

Among the public, Google has become the 21st-century equivalent of Kleenex, a product that became in the past century a commonplace synonym for facial tissues. *"Give me a Kleenex."* Now we say, *"Just Google it,"* meaning *"Do an internet search for whatever you want to know or learn about."* Google may not have invented searches on the internet, but they refined that process into the ubiquitous presence it has become in our lives. Google also came up with a way to track all of our searches — to mine, collect, and store that data from everyone. AND, Google was among the very first companies to package that data and sell it to advertisers. Now, hundreds of tech companies do that.

Do you ever wonder why, when you go to almost any commercial web site, pop-up ads appear for products that are custom-tailored to web sites you've visited recently on the internet, and sometimes quite literally to your personal

purchasing history? It's because of Google and the many other data-mining tech companies. They know everywhere we've been on the internet — every web site we've opened, every page we've viewed, every mouse click and button press. And they've packaged and sold that information to companies that sell products to consumers and want to target more accurately, with greater focus, who might be a more likely prospective customer. This is called "target marketing," and unimaginable amounts of money are spent to do it.

This is not, however, a commentary about privacy. Nor secrecy. Nor corporate and government intrusion into our lives. Those are topics worth discussing, but they're not my intention here. What I want to comment on is our faith in technology, especially in light of what's coming in the decades ahead.

Over the past two centuries, the Industrial and Technological Revolutions have dramatically changed the face of civilization. That's obvious to anyone who is the least bit perceptive or thoughtful. I need not go into detail about any of the literally millions of inventions and innovations that have cascaded into our lives.

The Whiz-Bang innovations of Science and Technology are a significant part of the Uranus-Neptune cycle — not the only meaning, for sure, since the arts and spirituality are also included in the cycle's symbolism, but, during the past two Uranus-Neptune cycles, Science and Technology have played a huge role in the real-life correspondences.

Science began to develop as the Middle Ages closed out, first as a "natural philosophy," then later as the "scientific method." This gradual evolution occurred during Uranus-Neptune cycles that began in 1136, 1307, 1479, and 1650. Then, as another Uranus-Neptune cycle began in 1821, Science and Technology accelerated, first in harmony with the 19th century's Industrial Revolution, and then later, in the 20th century, by standing on its shoulders. By the time the current Uranus-Neptune cycle began in 1993, Science had become an immensely powerful force — an extraordinary means to better decipher, understand, and manipulate reality — and Technology had begun to make larger and more dramatic inroads into the marketplace of inventions and products.

Over the past century, we've seen electricity turn night into day; automobiles and airplanes shrink the earth dramatically, making long-distance travel commonplace; and we've let the nuclear genie out of the bottle. All these and many other scientific and technological developments are part of the meme of "progress." Especially here in America, most of us grew up thinking that every successive generation would be better off because of the stunning march of progress. Belief in American "can-do know-how" carried with it an implicit faith in the unquestioned benefits of technology.

Among the questions I want to address in this Uranus-Neptune commentary series are these: *Can technological development continue at its current dizzying*

*pace, or is the tech sector at risk because of economic uncertainties? Is our faith in technology justified? Can technology solve our serious problems and effectively save us from ourselves?*

Many people believe that our faith in technology is, indeed, justified, and that future solutions to problems will emerge, specifically because of extraordinary developments in both science and technology. YouTube CEO Susan Wojcicki is not alone in her enthusiasm for what technology can and soon will be able to do, nor is she alone in her unbridled optimism concerning our collective future. Ms. Wojcicki is a member-in-great-standing of a whole generation of Silicon Valley entrepreneurs who fervently believe in the power and goodness of technological “progress.”

I disagree.

While I’m sure that technology will continue to make huge strides forward over the coming decades, I worry that the overall effects may be less positive and beneficial than the “true believers” feel. My disagreement has two significant underpinnings.

The first is that technology is not the same as (or a substitute for) energy.

Over the past two centuries, civilization has been throwing a wild, drunken party, based primarily on the discovery of a one-time cache of cheap energy. While the early phases of the Industrial Revolution, from the late-18th to the mid-19th centuries, were driven in part by a critical mass of discoveries that allowed rapid development of commerce and heavy industry, the greatest single boon to civilization’s extraordinary leap of sudden growth was the easy availability of so-called fossil fuels, basically oil and, to a lesser extent, natural gas. Had we been forced to rely on coal, water and steam power, or whale oil, the 20th century would never have been able to take the shape it did. Those other sources of power were neither sufficiently abundant nor cheap enough to literally change the face of civilization.

The ROI — business-speak for “Return on Investment” — of fossil fuels has been (until recently) astonishing. From the mid-19th through the late-20th centuries, crude oil in the ground was plentiful, easy to find, dense in its energy yield, and efficient, meaning that it was relatively inexpensive to extract, refine, and distribute throughout the burgeoning industrial marketplace. In short, fossil fuels powered everything and didn’t cost much, which supported incredible profitability for commerce. The wealth of industrial nations soared to unimagined heights (although that immense new wealth tended to remain concentrated in the business community, an unequal distribution that many people, especially conservatives, would call correct and justified). Over the short span of a single century, the sheer quantity of our industrial productivity and output increased

ten-fold, then hundred-fold, then thousand-fold. Suddenly we had the power to make our dreams as a builder-species come true.

Now, however, that power is waning. We've discovered that burning fossil fuels is not good for the environment and downright harmful to the biosphere, but that knowledge wasn't even remotely enough to slow us down. We kept gobbling up this natural energy as fast as we could, damn near hell-bent-for-leather. "Drill, baby, drill" isn't just a phrase people said. It's what we did for more than a century.

What finally began to put the brakes on the wild party of cheap energy is the fact that fossil fuels are no longer cheap. Is this form of energy still plentiful? Yes. Are we running out of oil? No. There is still a great deal of oil and gas stored in the earth's crust, more than we could use for centuries, but we've already plowed (er, drilled) through all the easy pickins and harvested the bulk of low-lying fruit. The days of hitting gusher after gusher are long gone. At this point, extracting fossil fuels is becoming more and more expensive with each passing decade — some energy experts say prohibitively expensive. If getting the energy stops being cheap, there go the profits for industry. AND there goes the global economy.

That's why we tried nuclear energy, despite the tragic foolhardiness of that decision. That's why we invest in wind power and solar energy. That's why we've fracked the hell out of this country over the past 20 years. It's not that we're running out of energy. We're just running out of cheap energy in the massive quantities that our current industrial and commercial appetites demand.

Beyond the question of energy costs is the fragile state of the global economy. Since America's decision in the 1970s to replace its manufacturing base with the **FIRE** economy (FIRE is an acronym for **F**inance, **I**nsurance, and **R**eal **E**state), we've off-shored much of American industry to countries with cheaper labor, even as we dismantled unions and collective bargaining here. America's intention was to sit atop the global economy as the "execs," who dealt with money and policy, assigning to the rest of the world the task of actually making things for businesses to sell.

While that apparently worked for awhile, the gargantuan size and inconceivable complexity of the global economy, combined with the unconscionable shenanigans of America's (and the world's) corrupt banking and financial industries, have left us at terrible risk.

The financial meltdown of 2008 — which signaled the initial eruption of systemic, institutional collapse (as indicated by the Uranus-Pluto square) — were remedied, but not reformed in any meaningful way, and the "Masters of the Universe" in banking and finance have gone right back to doing even more of what led to that first domino crash.

Meanwhile, the stock market has recovered and climbed to stratospheric heights, but it's completely disconnected now from the realities of economics. Stocks funnel more funny money into the pockets of the already-wealthy ownership class, while the rest of us are kept pacified with consumer toys while our standards of living decompose and steadily fall. The religious allegory of "The Rapture" — with the Chosen being taken up to Heaven while the remainder suffer the fire and brimstone of Judgment Day — is being played out in real life at the economic level.

The vaunted global economy is a massive shell game, with economic and social institutions devolving into corrupt racketeering for profit. Education and Healthcare are two examples of institutions that no longer serve the public welfare, but instead serve only themselves and their owners. The elites have been downright brilliant thus far in keeping that game going (much to the surprise of some people who anticipated that breakdown would occur much sooner...). Rather than overt collapse of the economy and society, what we've experienced over the years since 2008 is a mounting and now dramatic loss of trust and faith in our institutions on the part of people who feel betrayed and "left behind." That phenomenon resulted in the election of Donald Trump to the Presidency.

How much longer can the elites in power keep the economic shell game going? I don't know. Perhaps through the end of this decade and into the 2020s, but perhaps not. The slow-motion collapse that is already underway is vulnerable to many different aggravating and potentially fatal pressures (i.e., climate change, pandemics, nuclear war or accidents, cyber-attacks in all their many forms, etc.), any one of which could erupt and become the straw that breaks the camel's back and pulls out the rug from under the global economy.

If *anything* occurs that causes a major breakdown within the financial sector, causing chaos in global monetary systems, or a significant disruption to the industrial infrastructure, with its complex supply chains and dependence on the urgency of on-demand world-wide shipping, the development of technology (which is now occurring at breakneck speed) could slow to a crawl.

And yet, millions — perhaps even billions — of people continue to believe in the "magic" of technology, as if we create new technologies out of thin air.

End Part Two

*In Part Three of this commentary series — **The Uranus-Neptune Cycle: The Technological Revolution** — I'll discuss the second reason for my lack of faith in technology as our salvation, which is based on my perceptions about what technology can and cannot do.*