



January 2014

TRENDEVENTS

Welcome to the January issue of TrendEvents, featuring reviews on medicine, robotics, big data, as well as excerpts from William Knight's "A Program".

TECHNOCRACY—ON THE AIR!

Hart Stringfellow, Ron Miller and Jeremy Laury were featured guests this January on the Guerrilla Radio show, on Freedomizer Radio. While on air, they explained Technocracy and deftly answered the host's barrage of questions. Topics included Technocracy's design for the future as well as issues of freedom under a TechNet. The delivery by all three guests was impressive. They should be on the air more often!



JANUARY'S FEATURED VIDEO

Speaking of media, Technocracy has a full set of online introductory videos. Since it is the beginning of the year, this month's featured video is "About Technocracy" by Ron Miller at: <http://www.technocracy.org/about-technocracy>

MONEY & BANKING RIGHTS

TAKING BACK POWER WITH COMMUNITY BANKS

Op-ed; December 30, 2013: "[Overthrow the Speculators](#)"

“The establishment of city, regional and state banks, such as the state public bank in North Dakota, permits localities to invest money in community projects rather than hand it to speculators. It keeps property and sales taxes, along with payrolls for public employees and pension funds, from lining the pockets of speculators such as Jamie Dimon and Lloyd Blankfein. Money, instead of engorging the bank accounts of the few, is leveraged to fund schools, restore infrastructure, sustain systems of mass transit and develop energy self-reliance.”

Public banks also protect us from the worst forms of predatory capitalism. “The potential windfall for communities through the establishment of public banks is huge. [In a study](#) prepared in Vermont in support of establishing a public bank it was estimated that a public bank could make loans equal to 66 percent of state funds on deposits, or \$236.2 million in credit for economic development in the state. This would expand the total credit supply available for state lending agencies by \$236.2 million.”

ENERGY

CHALLENGES FOR NEW ENERGY SOURCES

Mathew Wald, *New York Times*; December 27, 2013:

“New Energy Struggles on Its Way to Markets”

Wind power is becoming squeezed by the recent glut of natural gas. However, natural gas has a carbon footprint that is at least three times as large” as the goal of reducing greenhouse gas emissions. Yet, “In the Pacific Northwest, wind and hydroelectricity—neither of which produce carbon—are sparring to push each other off the regional power grid.” In 2012 “production of electricity from natural gas rose 10 times as fast as production from wind.”

HEALTH

MEDICATIONS

From an article by Marie McCullough in the Philadelphia Inquirer as reprinted in the Oregonian. “Rationing medical care is denounced as immoral in the United States, yet it goes on daily in hospitals, clinics, nursing homes, ambulances and pharmacies.

Since 2006, this country has had worsening shortages of sterile generic injectables: drugs given by shots or intravenously. Currently, more than 300 medicines crucial to

treating cancer, infections, cardiac arrest, premature infants, pain and more are in short supply.

The scope is clear from surveys of medical and trade groups. The latest, a University of Pennsylvania poll of oncologists released last month found 83 percent had dealt with shortages by delaying cancer treatments, omitting doses, and using second-choice drugs or sending patients elsewhere.

“Oncologists are facing wrenching decisions about how to allocate lifesaving drugs,” said cancer specialist Keerthi Gogineni, who led the Penn survey.

People may not realize their care was compromised or complicated by a shortage unless their caregivers are unusually candid.

“Patients in an intensive care unit often don’t know they’ve been impacted,” said pharmacist Erin Fox, who tracks shortages as manager of the University of Utah’s drug-information service. “And the hospitals don’t want folks to talk about it.” They don’t want to admit, “We had a patient who died because we didn’t have this drug.”

The secret human toll is rising. In the past three years, dozens of deaths due to contaminated drugs have been linked to producers and vendors who have capitalized on shortages. The Institute for Safe Medication Practices in Horsham received hundreds of reports of medication errors, near-disasters, and 15 deaths related to shortages when it surveyed 1,800 health care practitioners in 2010.

Though shortages occur in other developed countries, the U.S. is especially vulnerable, experts agree.

In a recent analysis, Food and Drug Administration officials cited a root problem: U.S. factories that make sterile injectables are few, ageing and inadequate, and manufacturers have no economic incentives to upgrade. When equipment breaks or inspectors find problems, it’s often easier to quit making the injectables, which have high production costs and low profit margins, and divert the capacity to more lucrative products.

According to McCullough, only seven companies now make virtually all sterile injectables in the U.S., their plants running round-the-clock. Six have received repeated warnings about safety lapses. The FDA cannot order firms to make drugs, but recent legislation and a presidential order gave the agency more muscle. Last year it began requiring companies to give early warnings of permanent and temporary drug discontinuations. The agency also allowed temporary importation of key ovarian cancer chemotherapy, as it did the year before for a leukemia drug. But importation is not ideal. Many foreign factories do not meet FDA standards. And global transport of heavy glass vials adds to costs.

Last month an industry group, the International Society for Pharmaceutical Engineering released the first global survey of companies and others. The intent was to see whether steps already taken by industry and regulators were working.

The answer was ‘not so well.’

Of 142 respondents with a shortage-prevention program, more than half said “the company was still unable to prevent a drug shortage.”

GENERICS

Oregonians have paid on average 10 times more for top-selling prescription drugs because of deals between drug manufacturers to delay production of generics, according to a study.

The makers of 20 top prescription drugs paid off rivals to keep generics off the market, resulting in average delays of five years that left patients paying up to 33 times as much for brand names, according to a report released Thursday from the Oregon State Public Interest Research Group and Community Catalyst.

At first a company is awarded a patent that prevents generics from entering the market. That lets the company recoup research costs, and it encourages innovation. But after the patents expire, some pharmaceutical manufacturers have paid other companies to not produce generics. Brand name drugs accounted for 18 percent of the total prescriptions written by doctors but 73 percent of consumer spending, according to IMS Health, a leading information, services and technology company.

As many as 142 generics have been prevented from coming to the market, according to OSPIRG. Five of the 20 drugs listed in the report have no generics out yet because their payoff delays have not yet expired.

The Supreme Court ruled last month that the Federal Trade Commission can sue companies for paying rivals to keep generic drugs off the shelves.

COMMENTS BY RON MILLER:

Few things show more clearly the twisted machinations of price system operation than this. Money is all that matters. People’s lives do not. Without a degree of outrage within the medical community does anyone believe that any of this would have ever come to light?

ROBOTS

In a three part series of newspaper articles from Associated Press, economists have pointed out that automation earlier replaced human muscle. Now it is replacing what

previously required human brains. “The AP found that almost all jobs disappearing are in the mid-skill, mid-pay jobs—jobs with salaries ranging from \$38,000 to \$68,000 in the U.S. —that form the backbone of the middle class.”

“In the United States, half of the 7.5 million jobs lost during the great recession paid middle-class wages, and the numbers are even grimmer in the 17 European countries that use the euro as their currency. A total of 7.6 million mid-pay jobs disappeared in those countries from January 2008 through last June (2012).”

“Those jobs are being replaced in many cases by machines and software that can do the same work better and cheaper.”

“In the U.S., more than 1.1 million secretaries vanished from the job market between 2000 and 2010, their job security shattered by software that lets bosses field their own calls themselves and arrange their own meetings and trips. Over the same period, the number of telephone operators plunged by 64 percent, word processors and typists by 63 percent, travel agents by 46 percent and bookkeepers by 26 percent, according to Labor Department statistics.”

“Does technology also create jobs? Of course! But at nowhere near the rate that it’s killing them off.”

“At the heart of the biggest technological changes today is what computer scientists call ‘big data’. Computers thrive on information, and they’re feasting on an unprecedented amount of it—from the internet, from Twitter messages and other social media sources, from the barcodes and sensors being slapped on everything from boxes of Huggies diapers to stamping machines in car plants.”

“From a Harvard Business Review article the authors noted that every hour Wal-Mart collects 50 million filing cabinets worth of information from its dealings with customers.”

“No human could make sense of so much data. But computers can. They can sift through mountains of information and deliver valuable insights to decision-makers in businesses and government agencies.”

“Organizations are collecting huge amounts of data about their internal operations and about what their employees are doing,” software entrepreneur Martin Ford says. The computers can use that information to “figure out how to do a great many jobs that humans do now.”

The internet corporation Google takes photos of homes and businesses across the nation if not the world. It has developed a small fleet of driverless cars to do that job. A licensed driver sits behind the wheel but is there just as a safety measure. They have driven in all types of traffic conditions adding up to 300,000 miles thus far. There have been two accidents involving the cars. In one accident the car was rear

ended while waiting at a stop sign. The other accident happened when the driver was in control of the car.

From *New York Times* Oct. 9, 2010: “Robot drivers react faster than humans, have 360-degree perception and do not get distracted, sleepy or intoxicated, the engineers argue. They speak in terms of lives saved and injuries avoided. The engineers say the technology could double the capacity of roads by allowing cars to drive more safely while closer together. Because the robot cars would be less likely to crash, they could be built lighter, reducing fuel consumption. But of course, to be truly safer, the cars must be far more reliable than today’s personal computers, which crash on occasion and are frequently infected.” This was an expensive but highly successful experiment that (as far as is known) is still ongoing. There seems little doubt that costs will be reduced and the technology will be integrated into many types of vehicles.

There is now considerable discussion about allowing aircraft carrying freight to fly fully automated. Trains can’t be too far behind in that discussion. Some is already occurring.

From *Mother Jones* January/February 2013: “At 9:30 a.m. on August 1, a software executive in a spread collar shirt and a flashy watch pressed a button at the New York Stock Exchange, triggering a bell that signaled the start of the trading day. Milliseconds after the opening trade, buy and sell orders began zapping across the market’s servers with alarming speed. The trades were obviously unusual. They came in small batches of 100 shares that involved nearly 150 different financial products, including many stocks that normally don’t see anywhere near as much activity. Within three minutes, the trade volume had more than doubled from the previous week’s average.

Soon complex computer programs deployed by financial firms swooped in. They bought undervalued stocks as the unusual sales drove their prices down and sold overvalued ones as the purchases drove their prices up. The algorithms were making a killing, and human traders got in on the bounty too.

Within minutes, a wave of urgent email alerts deluged top officials at the Securities and Exchange Commission. On Wall Street, NYSE officials scrambled to isolate the source of the bizarre trades. Meanwhile, across the Hudson River, in the Jersey City offices of a midsize financial firm called Knight Capital, panic was setting in. A program that was supposed to have been deactivated had instead gone rogue, blasting out trade orders that were costing Knight nearly \$10 million per minute. And no one knew how to shut it down. At this rate the firm would be insolvent within an hour. Knight’s horrified employees spent an agonizing 45 minutes digging through eight sets of trading and routing software before they found the runaway code and neutralized it. The fact that Knight lost \$440 million and didn’t take the rest of the

financial sector down with it suggests that the market isn't nearly as fragile as detractors claim.

Despite efforts at reform, today's markets are wilder, less transparent, and, most importantly, faster than ever before. Stock exchangers can now execute trades in less than half a millionth of a second—more than a million times faster than the human mind can make a decision. Financial firms deploy sophisticated algorithms to battle for fractions of a cent. Designed by the physics nerds and math geniuses known as quants, these programs exploit minute movements and long-term patterns in the markets, buying a stock at \$1.00 and selling it at \$1.0001, for example. Do this 10,000 times a second and the proceeds add up. Constantly moving into and out of securities for those tiny slivers of profit—and ending the day owning nothing—is known as high-frequency trading.

This rapid churn has reduced the average holding period of a stock: Half a century ago it was eight years; today it is around five days. Most experts agree that high-speed trading algorithms are now responsible for half of US trading. Computer programs send and cancel orders tirelessly in a never-ending campaign to deceive and outrace each other, or sometimes just to slow each other down. They might also flood the market with bogus trade orders to throw off competitors, or stealthily liquidate a large stock position in a manner that doesn't provoke a price swing. It's a world where investing—if that's what you call buying and selling a company's stock within a matter of seconds—often comes down to how fast you can purchase or offload it, not how much the company is actually worth.

As market shaking episodes pile up, even some of the tech geniuses who helped usher in Wall Street 2.0 now worry about their innovations running amok. Wall Street Journal reporter Scott Paterson's book on high speed trading, *Dark Pools*, recounts the story of Spencer Greenberg, a young math genius who built a hugely successful trading algorithm named Star but later came to have reservations about what he had unleashed on the world. "In the hands of people who don't know what they are doing," Greenberg warned a gathering of algorithmic traders in 2011, "machine learning can be disastrous."

From *New Scientist* March 30, 2013: "The next industrial revolution could be biological. Think living machines that produce energy from landfill waste, biological sensors that detect dirty water or bacterial production lines that churn out drugs.

These are just some of the applications that synthetic biology—applying engineering principles to biological parts—could make possible. That goal is looking more likely now that, for the first time, researchers have established a set of rules that could allow parts to be assembled with industrial rigor. Libraries of these standardized high-quality parts will let engineers pick components knowing how they will behave.

The behavior of all living matter is governed by gene expression, the process by which biological material such as proteins are made. So synthetic biology's "parts" are the DNA sequences that contain certain manufacturing instructions. When these parts are stuck together, the genes are expressed and the required protein is made."

From a recent newspaper column titled: "American reality, remanufactured" by Robert J. Samuelson. "In 2010, Levinson report, U.S. manufacturing production of nearly \$1.8 trillion was the largest in the world; it was slightly ahead of China's, about two-thirds higher than Japan's and nearly triples Germany's. China may now be No. 1, but the U.S. remains a manufacturing powerhouse. In 2011, near-record output was 72 percent more than in 1990 and six times greater than in 1950....

Manufacturing's "decline" refers mostly to job loss, which is stark and long-term. In 1970, the 17.8 million manufacturing jobs represented 25 percent of all 71 million U.S. jobs. By 2012, the 11.9 million manufacturing jobs were only 9 percent of the 133.7 million total...In 2011, Levinson notes, 97,000 steelworkers produced nearly 10 percent more than the 399,000 did in 1980."

From Popular Mechanics January 2013: "The next generation of robots will work closely with humans, augmenting our capabilities and compensating for our weaknesses. That's why the National Robotics Initiative is pouring up to \$50 million a year into co-robotics. The initiative is backed by agencies ranging from NASA and the National Institutes of Health (robot surgery for everyone and home care for the elderly) to the Department of Agriculture (robots that can deworm animals and sense fruit ripeness). A key first step to robot-human interaction: full-size humanoids such as UPenn and Virginia Tech's SAFFiR which will help fight forest fires."

One of the newspaper articles wondered out loud how well the U.S. economy would do with 75% unemployment.

A PROGRAM

By William Knight

(The late William Knight, member of Technocracy Inc., an aeronautical engineer and one time associate of Charles P. Steinmetz, compiled the following program decades before Senator Mark Hatfield's suggestion.)

The following are excerpts. For the full article, see:

<http://www.technocracy.org/component/content/article/71-archives/434-a-program>

It is proposed to organize a "National Advisory Committee on Social and Technological Trends" composed of American Scientists, Engineers, and

Technologists, who are competent to undertake and are in sympathy with the work outlined below. ... The objective of this International Board shall be to conduct a survey, the scope of which is briefly stated as follows:

To investigate the order of magnitude and the rate of scientific discovery and technological progression achieved ..., whether or not the corresponding evolution of the social-economic mechanism of production and distribution of all goods and services in each continental area has progressed at the maximum possible rate compatible with the physical set-up of climatic conditions, mineral resources and population existing in that area. ...

To find out whether or not, and to what extent, the ever increasing use of extraneous energy (extraneous to the muscular energy conversion mechanism of humans and domesticated animals) ... dictates today the mode of operation of a social mechanism. If so, define its basic operating characteristics.

To define to what extent and within which limits of energy conversion rates, and the rate of depletion of non-replaceable natural resources, the operating characteristics mentioned above can be partially or totally ignored, for a time, by one or all political divisions of a continental area, without impairing the continuity of the operation of the social mechanism of that continental area and the stability of the social institutions of all continental areas of the world. ...

To find out whether or not the present economic system, based upon the use of a currency measured in terms of a commodity (gold, silver, paper, etc.) entirely unrelated to the physical process of production and distribution, and endowed with an arbitrary and variable exchange value, can be so amended as to provide, at any time and at any place, an accurate and uniform measurement of the physical cost of production and distribution of any and all goods and services, a cost exclusively based upon the exact measurement of the energy degraded in the technological process of production and distribution used. If not, design an economic system and a currency that will do so. ...

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