

TRENDSJOURNAL

HISTORY BEFORE IT HAPPENS®

Global economies on the edge What will crash markets, how to prepare

► Rough ride ahead for cryptocurrencies

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HISTORY BEFORE
IT HAPPENS®

TRENDSJOURNAL®

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disease sensors

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WHAT IN THE WORLD IS GOING ON?

Each new day seems to bring with it a new geopolitical crisis, one more political debacle, more dire economic warnings, increasing social disturbance or another environmental threat. What does it all mean? What can be done? How will it end?

Gerald Celente's **Trends Journal®** is the only magazine in the world that pinpoints how today's current events form future trends and how they will affect your business, career, family and future...your life.

Founded by a political atheist, agenda- and advertising-free, and beholden to no one, the *Trends Journal* provides unbiased insights, analysis and forecasts of critical socioeconomic, financial, political, economic, business, consumer/retail, entertainment, technology, science and other trends that are fact-based, data-driven and on the cutting edge.

Gerald Celente's track record speaks for itself. He's been forecasting worldwide since 1980.

No one has been so right, on so many issues, so often! If you want to anticipate change, take proactive measures to seize opportunities and develop profit strategies, subscribe to **Trends Journal**. Read about "History Before It Happens" from the world leader in trend forecasting.

Gerald Celente ("Global economics on the edge," p. 3; "Hate war? Love peace? Occupy Peace!" p. 15) is the publisher of the *Trends Journal* and director of the Trends Research Institute, which he founded in 1980. The pioneer trends forecaster is a best-selling author and known throughout the world as a trends analyst with expertise in a variety of areas.

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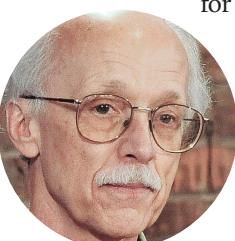
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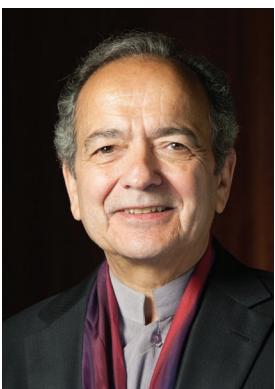




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Global economies on the edge

Celente's "Five-O" formula to fuel Populist Movement



Trends Research Institute Staff

Each time the Gross Domestic Product numbers are reported in a country near you, economists are “puzzled” why the GDP keeps rising but wages keep falling.

It’s no surprise. It’s a decades old “Five-O” formula trend that conventional economists fail to understand and Banksters and multi-nationals benefit from.

To understand the emerging trends in today’s global economy and what they will soon mean to your bottom line, we take you back to 1999, when global forecaster Gerald Celente introduced his “Five-O” economic formula and directly predicted today’s state of the economy.

For example, with second quarter GDP in the United States at 4.1 percent, unemployment at 3.9 percent, the Dow Jones up about 15 percent year

to date – the message from Washington and Wall Street: “The economy is strong, with full employment and high satisfaction.”

On Main Street, however, the vast majority of the United States’ working population, and much of the world’s, have been living through decades of wage stagnation.

While the extremely wealthy 1 percent are much more wealthy, and the top 10 percent are astonishingly more wealthy, working families are living under the same purchasing power ranges of 40 years ago, when factoring inflation.

While many economists and business media “ex-

perts" are searching to understand why waves of "good" economic news — favorable job and GDP reports, strong corporate profits — are not resulting in higher wages for the average worker, to Celente, the answer is clear. And it has been clear since he forecast the "Five-O" formula that would shape the economy in the 21st Century.

Based on our trend tracking and analysis, we are at the moment when the Five-O model has come to fruition.

As Celente wrote in the *Trends Journal*, Fall, 1999:

"The so-called experts and those holding out hope that at some point the strong financial performance on Wall Street, solid corporate earnings and hollowed out promises from political leaders that average workers will soon see higher wages, are all wrong...wages won't rise appreciably and the middle class will be the losers."

WHAT ARE THE FIVE-OS?

Celente, using his patented Globalnomic® formula, predicted five socioeconomic, high-tech and geopolitical dynamics would merge to create today's era of low wages, job consolidation, loss of middle manager jobs, declining entrepreneurial opportunities and, absent wild card events, restrained inflation.

"The 21st century economy will operate off a new set of equations defined by market forces that did not exist in the 20th".

Celente defined those factors as:

Overproduction—there are more products and services than can be consumed.

Overcapacity—there is a glut of advanced facilities and excess service capabilities to supply the world market place with more than can be con-

Celente predicted five socioeconomic, high-tech and geopolitical dynamics would merge to create today's era.

sumed.

Open Markets—a borderless new millennial marketplace provides products and services free from traditional economic channels.

Overpopulation—companies are now positioned to exploit a 6-billion-plus labor pool without geographic constraints.

Online—a planet full of browsers will enable and drive a universal economic culture of cheap product and service production supported by cheap labor expenses.

Remember, this was forecast long before the days of massive online shopping and Amazon's monopolization of the Internet retail sector.

It was before China was initiated into the World Trade Organization that opened up the global cheap labor stream.

In that short time, another 1.6 billion people were added to the planet ... and ultimately the workforce.

Now, as the second half of 2018 unfolds, we observe the state of the economy with an eye on the emerging economic trends that demonstrate how the Five-Os will continue to transform how we live and work. **TJ**

Ever growing populations provide a nearly limitless work force.

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State of middle class: Standing still

Twenty years ago, the Five-O model predicted that the middle class would devolve. At the crux of Celente's forecast was the wage and purchasing power trend line that would emerge early in the 21st century as the global economy adapted to the Five-Os.

As evidenced by a series of economic reports, from unemployment rates to GDP numbers that show roaring growth and a U.S. economy that is on a sustained growth path since 2010, is the simple fact that the "wealth" is not seeping into the disappearing middle class.

For example, in the U.S., its labor market added 157,000 jobs in July while the unemployment rate ticked down to 3.9 percent, which is honing in on what is statistically full employment.

At this stage in a record stretch of job growth that began in 2010, however, all eyes are on wages because they've been much slower to recover from the Great Recession.

Yes, wages were up as well. Average hourly pay increased by 7 cents, or 0.3 percent to \$27.05. That increase built on the 4-cent gain in June. And looking at the broader trend, wages increased 2.7 percent for the 12-month period that ended July 31.

But what is under-reported and poorly analyzed when these reports are published, is how wage growth, when adjusted for inflation, is actually slowing.

In fact, while average hourly earnings may be growing at 2.7 percent a year, the consumer price index has increased 2.9 percent. And that number is a politically concocted fraud, purposely lowered to deny social security and other inflation-based ben-



efits.

Moreover, the data clearly show that the sharpest category of wage increase spikes are coming from low-wage sectors, where wages have increased 0.7 percent over the last decade, largely because several big low-wage employers, such as Walmart, Costco, McDonald's and others, raised their minimum pay levels.

These increases amount to a mere pittance. In fact, in America, since hourly wages are so low, taxpay- ers are subsidizing Walmart and other workers with some \$6.2B a year in public assistance since many of their workers are living below the poverty level.

And weak wage growth isn't just a problem in America.

Workers in Japan, the U.K., Germany, Australia, Italy, Spain and other countries are experiencing similar trend lines.

In the United Kingdom, for example, the wage average in May fell to the lowest level in six months, while the number of workers increased. The UK's National Statistics Bureau said average weekly earnings rose by 2.5 percent on the year in the three months to May, slowing down from the previous three months when they grew by 2.6 percent. Pay growth excluding bonuses slowed to 2.7 percent. **TJ**

TREND FORECAST

Across the globe in most civilized countries, the story is the same: More workers in the labor forces than jobs available. This is one of the major factors driving the massive migrant trend: People fleeing their countries looking for work.

And, as populations continue to increase, there will be a greater supply of workers than the demand for jobs, thus adding further downward pressure on wages.

And in the new world of high-tech innovations such as robotics, Artificial Intelligence, online retail and services, etc., from top to bottom, jobs will be replaced and the pay scale will continue to be lowered.

Three trends that can change it all

Beyond the hyped-up business media headlines on what drives markets and economies on any given day, when the noise clears, there are three trend indicators that are among the major determinants of economic performance: Interest rates, the U.S. dollar and oil.

Interest Rates. It was record low interest rates that juiced global equity markets since 2009, and it was aggressively rising rates that drove the markets into correction territory in February.

In our assessment, markets are overvalued and overleveraged, and stock buybacks, now estimated to hit over \$1 trillion in 2018, is a major driver pushing equities higher.

As the stock buyback fever breaks, and should the U.S. Federal Reserve follow through on its stated plan to aggressively raise interest rates – two more times this year, three more next year – it will push U.S. equities into correction territory and the nation's Gross Domestic Product back to the two percent or lower.

And, as interest rates rise, the dollar grows stronger and other nations' currencies weaken, where will the money come from to pay the global debt that will hit

an all time high of \$247 trillion this year?

The dollar. As U.S. interest rates rise and the dollar gets stronger, currencies, especially in Emerging Markets, will decline. The cost burden to EMs to service their \$11 trillion sovereign debt, much of it dollar based, significantly increases.

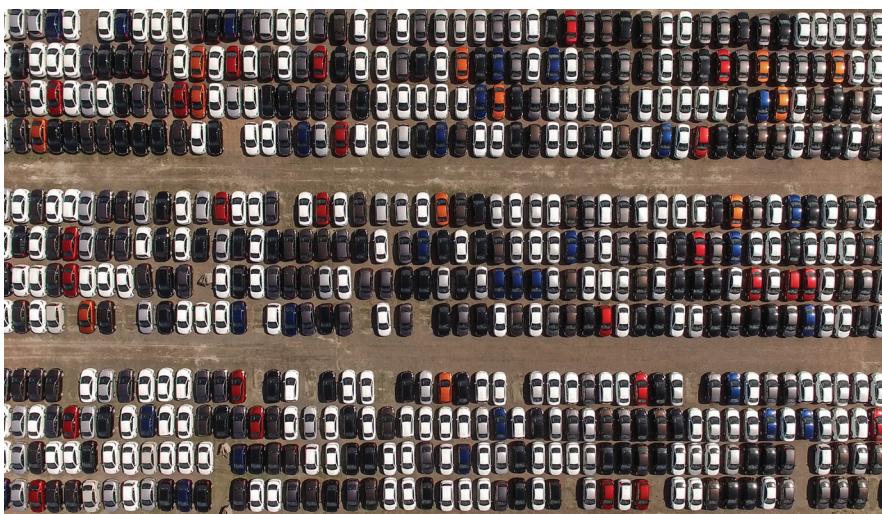
Not only have EM currencies dropped 8.8 per cent against the dollar in the second quarter, the MSCI's 24-country EM index, down 17 percent from its year's high, is approaching bear territory.

Oil. While oil prices suffered in July their biggest monthly declines since 2016, should tensions increase in the Middle East, and oil (dollar based) soar above \$100 per barrel, it will deal a devastating blow to equity markets and economies worldwide.

Oil prices, as are many commodities, are dollar based. As the dollar rises and currencies of countries weaken, the pressure of higher oil prices, particularly of those in oil dependent countries, will face powerful downward economic pressures far greater than tariff threats that the media claims. **TJ**

A hyper oil dependent populace is liable to suffer at the slightest, let alone significant, increases in oil prices.

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TREND FORECAST:

These three trend lines need only a trigger point to ignite significant economic turmoil across the globe.

As the Trump Administration ramps up significant sanctions against Iran, essentially waging economic warfare, Iran and escalating tensions in the Middle East could be that trigger point location.

Among the other hot spots to closely watch are Saudi Arabia, Yemen, Israel, Lebanon and Syria.

As interest rates rise, the dollar grows stronger and other nations' currencies weaken, where will the money come from to pay the global debt that will hit an all time high of \$247 trillion this year?

Debt striking close to home

U.S. household debt is at an all-time high.

Showing steady declines between 2008 and 2013, consumer debt hit an astounding \$13.2 trillion at the end of the first quarter 2018. And household debt is rising at a rate 60 percent higher than the increase in wages.

Moreover, personal loans are the fastest growing consumer debt category, according to a report by TransUnion, the credit tracking

agency. And outstanding personal loan balances now stand at \$120 billion.

This stat shows that consumers are looking for ways to consolidate and pay off their debt, which will come at the expense of buying homes, cars, etc.

Indeed, housing demand recorded its biggest drop in two years, with a 9.6 percent decline in June year over year. And auto sales, according to the latest numbers, dropped 3.7 percent in July.

Further, Americans today owe 26 percent of their income to revolving credit debt, they have less and less cash to spend. Especially if gas prices increase sharply, money spent on retail or entertainment and leisure, will go into the gas tank.

Today, four in every ten adults are not able to cover a \$400 emergency expense. And more than 50 percent of all consumers are struggling to cover such basic expenses as rent and food. **TJ**



As Americans accrue more and more debt, existing loans will be increasingly difficult to manage leaving little in the way of disposable or emergency cash.

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How vulnerable are equity markets?

Very.

As trend forecasters, we stay focused on facts. We track the current events that form future trends and make our forecasts based on qualitative data, and not the static that drives business news cycles.

How will markets perform?

It's not about trade wars and tariff threats. It's not about porn stars or playboy models allegedly having affairs with the president years ago. It's not about Russian collusion in the 2016 elections, as the media would lead you to believe.

It's about overleveraged, overvalued equity markets that have been riding waves of profitability off of stock buybacks, Trump's generous corporate tax plan and historically low interest rates that have increased their profits and stimulated the economy.

The Trends Journal was the first magazine to call the Trump Rally in November of 2016; the first,

in December 2017, to forecast a market correction would occur in 2018; and the first to declare the end of the Trump Rally in February 2018. **TJ**

TREND FORECAST

The nine-year bull market was built and sustained by historically negative/zero/low interest rate policies and unprecedented Quantitative Easing monetary measures.

As noted, the Federal Reserve is expected to raise interest rates two more times this year and three in 2019. Thus, we forecast that with rate hikes hitting when major markets, such as China's and Europe's are slowing – and with global debt at an all-time high – a ticking economic time bomb is set to crash economies and markets worldwide.

Has gold hit bottom? Here's the trend.

It's no mystery. Gold, which has lost nearly 14 percent of its value since mid-April, has been declining sharply as U.S. interest rates rise and the U.S. dollar strengthens.

Also, the Federal Reserve has signaled two more interest rate hikes this year and possibly three next year. Thus, higher rates will push up bond yields, making gold a less attractive investment because it does not bear interest ... and it costs to store gold.

And since gold is dollar denominated, it makes it more expensive for holders of declining currencies.



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Possession of physical gold can provide a powerful and relatively stable hedge against an ever fluctuating economy.

The Federal Reserve has signaled two more interest rate hikes this year and possibly three next year. Thus, higher rates will push up bond yields, making gold a less attractive investment.

For example, India, a prime buyer of gold, saw its imports fall 25 percent in the second quarter as the value of its rupee had declined 9 percent against the dollar.

And in China, traditionally another strong gold market, with its yuan down more than 8 percent against the dollar since April, gold bullion sales plunged 15.65 percent year-on-year and gold coin purchases slumped 18 percent.

When gold hit \$1,285 per ounce, we had forecast the downside risk would be around \$1,200. As we go to press, it has fallen to \$1,182, an 18-month low. However, we forecast gold is at the bottom range, and for investors and speculators, the downside risk will prove marginal.

And, while we are trends analysts and do not provide financial advice, we forecast gold will spike as powerful geo-political forces emerge that will offset the effects of higher interest rates and a strong dollar that pushed gold lower.

Specifically, escalating tensions in the Middle East, particularly in Iran, can be that trigger point.

Recently, President Trump restarted a series of crippling sanctions on Iran, including actions that inhibit international gold trading with Iran.

And, as the Iranian rial, which has lost 50 percent of its value against the dollar, dives to record lows, Iranians have been buying and hoarding gold as a safe haven asset against a collapsing currency and soaring cost of living made significantly worse by the U.S. sanctions. **T**

TREND FORECAST

President Trump declared war on Iran...economic war. Thus, Iran is the epicenter of Middle East tensions. An escalation can lead to spiking oil prices, which will hit global economies and markets hard and sharply boost gold prices.

Moreover, should the current Emerging Markets currency crash escalate, the U.S. Federal Reserve may lessen its aggressive interest rate policy, which in turn will weaken the dollar and be more bullish for gold.

CRYPTOMANIA



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Crash? Recovery?

The charts say rough ride ahead for cryptos

Jonathan Cho

CONTRIBUTING WRITER

Blockchain. Distributed ledger. Crypto.

These have become the new sexy words for the past year. They promise outsized gains so long as you're willing to HODL, which either means "hold on for dear life" or was a typo in a crypto online forum turned into an industry-wide meme — a joke essentially.

But that a joke meme has become a seriously taken investment philosophy is a sign of just how absurd things have become.

A more accurate description for HODL is "hold, and don't think." The promise is you'll get rich by ignoring downside risk and closing your mind off to anything that might refute the bull case. This worked in the past, but back then, investors were taking real risks — the mainstream public hadn't yet jumped in, and most were skeptical. And investors tended to understand what they were investing in.

THE NUMBERS TELL THE STORY

Today, most people don't — they have little real technological understanding of what they're buying. Cryptos have become lottery tickets, and most holders seem to believe that the historic gains of the past can be repeated, even after Bitcoin went from less than a penny well into the thousands.

They think, or secretly hope, cryptos will go to

the moon, when they don't understand that cryptos already are on the moon. Bitcoin is the largest bubble in history, and despite the crash since December, Bitcoin hasn't even dropped to its November prices, one month before the top in December at \$20,000.

It's important to understand that cryptos are financial assets, and however much you may believe in distributed ledger technology (DLT), there is more to price movements than however bright the future of DLT may be.

REMEMBER DOT.COMS?

The internet promised to change everything, and it did. But the financial assets associated with it, like the companies in the Nasdaq, crashed by over 90 percent in 2000, forcing most of them to close up entirely. As this happened, internet usage didn't decline at all, and even increased.

However highly you may think of the future of DLT, it's important to separate cryptos, the financial



assets like internet stocks, from DLT itself, and understand that this same thing can happen again, and is already starting to happen now.

Before going into why, it is important to dispel the notion that “this time it’s different.” No, it’s never different, because regardless of the asset, it’s always humans who are doing the buying and selling, and human nature doesn’t change. Even HODL isn’t new.

In the 1920s, Americans believed the US was entering a “permanent plateau of prosperity,” in which American goods would be exported all over the world, so stocks couldn’t crash. In the 1960s/70s, people were told to buy and hold the “Nifty 50,” a major stock index that would rise for the rest of their lives, only for it to crash by two-thirds.

The 1990s were a “new age” in which everyone could get rich buying and holding tech stocks. In the 2000s, it was real estate, the false belief that “real estate doesn’t go down.” All these are various forms of HODL, and we are at the point in the Bitcoin cycle of large bull runs followed by large corrections, that the current “correction” will prove not to be a correction at all but a complete market meltdown.

CHARTS SEE THE FUTURE

On the chart displayed here you’ll see Ethereum has broken through the trendline that supported its rise from May 2017 to July 2018.

This alone is bearish, because it shows buying dried up at the point where buying should have been strongest, but if you look at the drawn pattern, you’ll see a head-and-shoulders reversal pattern that’s completely broken down.

It forecasts a downside target below \$0, so the only way to get a target above \$0 is to view the chart on a logarithmic scale, which still projects a target well below \$100.

Compounding this is that nearly every major crypto across the board has similarly bearish breakdowns. It’s important to understand that charts show the buying and selling behavior of everyone, not just technical traders, but fundamental investors, moms and pops, and institutions.

This means that regardless of your beliefs about DLT, the market is not interested in taking Bitcoin from the moon to Mars at this time. **TJ**

TRENDPOST

For those who have held Bitcoin and cryptos, it can be hard to consider that the party is over. But it's important to be as objective as possible, and understand that the greed and fear of missing out that vaulted cryptos up in 2017 have begun

to turn back to panic and fear, and given Bitcoin is still well over its November prices, the crypto meltdown that started in December likely still has a ways to go.

BEYOND CRYPTOS



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Links in the chain grow

Across the globe, and countless fields, Blockchain technology is changing just about 'everything'

Trends Research Institute staff

It began as a permanent, reputedly hack-proof bookkeeping system to record Bitcoin transactions. But it quickly was seized upon by lawyers as a way to guarantee the authenticity of contract signatures; by medical care providers to ensure the integrity of electronic medical records; and by jewelers to prove that a particular diamond didn't come from an African war zone, among other uses.

Now blockchains are making their way into more new areas.

For example, some day you might be turning to a blockchain to guarantee the used car you're buying.

The nation of Belarus has hired the Estonian company HashCoins to create a blockchain-based registry not just of vehicles, but also of their parts and history. Serial numbers of engines and other parts will be stored on the blockchain so you can tell if original equipment has been replaced. The registry

also would hold an indelible history of any accidents the vehicle has been involved in.

Brendan Eich, who created the programming language Javascript, is building a blockchain to clean up your Internet experiences. His blockchain is a new browser called "Brave." It blocks ads, cookies, and other interlopers designed to track your on-line behavior. But if, for example, you choose to download music or an ad and decide you like it enough to pay for it, Brave will make sure that most of your pay-

TRENDPOST

Think of something and you can bet that someone's fashioning a blockchain for it.

Corporations have been slow in adopting blockchain technology, in part because it requires rethinking business models. But any process that requires the storage or transfer of information will be testing blockchains sooner or later. Not all will endure, but enough will to make blockchains a building block of the future.

ment goes to the musicians or product makers, not to the companies that try to litter your screen with banners and pop-ups.

KodakCoin, created by the camera company, is a blockchain protecting photographers' livelihoods.

Many photographers make a portion of their incomes selling the same image several times. But, in the Internet age, it's easy to see that image hijacked and used by someone who doesn't pay. Picture-takers have no way to know when that happens or who to send a bill to.

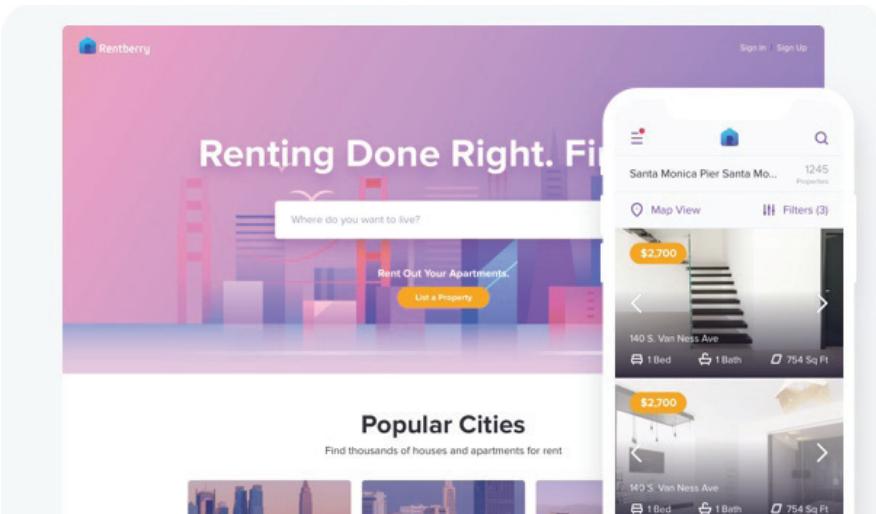
The KodakCoin blockchain keeps a record of who bought rights to use a photo. It also sends bots out to find unauthorized uses of the image and helps the photographer learn who owes him money.

There's even talk of landlords in any given area creating a blockchain to record details about tenants — who paid the rent on time or who disappeared, leaving a broken lease and trashed apartment behind.

But blockchains aren't all about business. The Texas city of Austin is testing a blockchain that stores the identities of homeless people.

When their identity or Social Security cards are stolen or lost, people living on the streets have no way to prove who they are, leaving them unable to get needed services or to replace the missing documents. Austin's blockchain could store a person's photo or fingerprint to prove identity. In addition, the ledger can track the public services the person has used.

In the Middle East, the UN's World Food Program is trying out a blockchain that lets Syrian refugees in a Jordanian camp pay for food using credits recorded in a blockchain. **TJ**



Above: Rentberry has a long-term rental platform that uses blockchain to eliminate the need for a middleman, making it possible for tenants and landlords to complete all rental tasks in one place.

Rentberry



United Nations World Food Program

Syrian refugees in a Jordanian camp are taking part in a pilot program that lets them pay for food using credits recorded in a blockchain.



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An incalculable price in both soldier and civilian lives has been paid since the U.S. entered Afghanistan in 2001.

The Trump wild card

Afghan war ending: Trump to embrace Celente's troop plan

By Trends Research Institute Staff

The American media, transfixed on Russian meddling and a varied assortment of junk news, rarely mentions the longest war in U.S. history: its illegal invasion of Afghanistan. Gerald Celente now forecasts the war will begin to wind down before the November U.S. midterm elections.

Beginning in late July, Celente, on various media and in his Trends In The News broadcasts, has forecast that President Trump will play a Trump card, fulfilling his campaign promise to end the Afghan War.

Mr. Trump has repeatedly called the Afghan War, "A terrible mistake ... it's a mess," and said it was, "time to come home and stop wasting billions" and instead use the money to "rebuild the USA."

It's now reported that the President has been expressing more frustration with the war, wants to see it end, and has pressured senior staff to meet with

the Taliban. Subsequently, American officials have gone to Afghanistan and Pakistan and are in talks with Taliban operatives.

LIED INTO WAR

President George W. Bush started the war in 2001, under the pretext of finding "those evil doers, those barbaric people who attacked our country ... to smoke them out ... get them running, find them and hunt them down." At that time, Celente correctly forecast strategic failure, which has amounted to massive loss of life, at a cost of trillions of dollars.

President George W. Bush addressing reporters on Sept. 11, 2001.

Wikipedia



Some 2,400 U.S. troops have been killed, with an estimated 110,000 Afghan causalities. And the cost of the long Afghan war: nearly \$2 trillion.

And 17 years later, according to a just-released Rasmussen poll, 42 percent of respondents either incorrectly said the U.S. is still not at war in Afghanistan, or said they were not sure. **TJ**

TREND FORECAST

Prior to the 2018 Midterm elections, President Trump will announce a wind-down of the Afghan war. He will also announce the closure of many of the 800-plus U.S. military bases in over 80 countries, including in South Korea, bringing hundreds of thousands of U.S. troops back home.

The President's desire for the troops to come home and stop "wasting billions", instead using war money to "rebuild the USA," will fulfil key elements of Celente's Occupy Peace Action Plan: End the Afghan war; close military bases overseas; bring home the troops; use the dollars to rebuild America's rotted infrastructure.

To date, President Trump has not fulfilled his campaign promise to rebuild America's "crumbling" infrastructure. In his State of the Union Address in 2018, he said, "We will build gleaming new roads, bridges, railways and waterways all across our land."

And when he brings home the troops, his goal to "do it with American heart, and American hands and American grit," will be achieved.

In doing so, Trump will actualize Celente's Troops Progress Administration Action Plan: a 21st Century version of President Franklin D. Roosevelt's 1935 Works Progress Administration, which put millions of Americans to work during the Great Depression, to build the country's infrastructure.

PUBLISHER'S NOTE: Despite President Trump's advances toward peace with North Korea and Afghanistan, a pro-war and largely anti-Trump mainstream media, rather than applauding the peace plan, will put a negative spin on it ... deriding, dismissing and attempting to sabotage those efforts.

And as exemplified by 41 Democratic Senators voting for, and only 8 against the National Defense Authorization Act, a blueprint for \$708 billion in Pentagon spending, and a landslide 139-49 Democratic vote in the House of Representatives for the bill, they too will protest Trump's peace plans.

And, ratcheting up the war hawk talk, Adam Smith of Washington State, the ranking democrat on the House Armed Services Committee who championed the Defense bill, gushed: "This bill does set us up to confront our adversaries in Russia and China.

Clearly, in America, the pro Military/Industrial/Spy Network is fully supported by the media and the political parties, with scant opposition against it.



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U.S.-led coalition airstrike on Kobane, Syria, is just one of many that play out throughout much of the Middle East with regularity.

Hate war? Love peace? Occupy Peace!

The anti-war movement with an Action Plan

By Gerald Celente

PUBLISHER

A vital element of trends forecasting is objectively analyzing hard data and substantiated facts.

Here's some hard data and substantiated facts:

1. The United States military has not won a war since World War II. Korean War, Vietnam War, Afghan War, Iraq War, Libyan War, Syrian War, Yemen War, plus, plus ... tens of trillions spent, tens of millions killed and not one victory.

Jeff Bezos, the richest man in the world said, when he hires people, he looks at their track record of success. With America's military we have nothing but a track record of failure. Would Bezos hire America to win a war? Would he hire Pentagon Brass to run Amazon?

2. The Korean War, Vietnam War, Afghan War,

Iraq War, Libyan War, Syrian War, Yemen War, plus, plus ... all of them launched by mentally deranged Presidents and politicians based on lies.

Remember the Maine? How about the Gulf of Tonkin lie? Surely you remember that Saddam Hussein had weapons of mass destruction?

Just ask the CIA and all the Prostitutes and politicians who swore to their god he did.

And according to the Toilet Paper of Record, The New York Times, Hussein was loaded with uranium tubes and baking up enough yellow cake to destroy the planet.



John DeSanto

Ralph Nader speaking at the 2015 Occupy Peace rally in Kingston, NY.

Remember the Nobel Peace of Crap Prize Winner, Barack “I’m Really Good at Killing People” Obama who, along with Hillary, “We came, we saw, he died” Clinton, Samantha Power, Susan Rice, and sick sons of bitches David Cameron of the U.K and Sarkozy of France, who decided Muammar Qaddafi “Has to go,” so they destroyed the oil-rich and most prosperous nation in Africa, turning it into rubble, despair and a war zone.

Not satisfied with that, they paid for hire the same radical Islamist factions that destroyed Libya to make sure “Assad has to go” in Syria. The once prosperous nation is now in rubble with some 500,000 civilians dead and 11 million refugees.

3. And who in the United States voted to go to these wars? No one!

In direct violation of the Constitution, Article I, Section 8, Clause 11, only Congress has the power to declare war. Not since the U.S military had its last victory, World War II, has Congress voted to go to war.

Instead, the Senate and House have given el Presi-

dente of Los Estados Unidos the power to do so. In fact, Congress has again renewed the Authorization to Use Military Force, the bullshit doctrine they drew up following 9/11, in direct defiance of the Constitution, for el Presidente to launch war anytime and anywhere he wishes.

OCCUPY PEACE IS BORN

These are among the reasons why I launched Occupy Peace. I am an American. I honor the Founding Fathers, beginning with George Washington, a true warrior, who, in his farewell address clearly stated that America should not be involved in foreign entanglements.

I am heartbroken seeing the misery of human life, animal life and Mother Nature caused by the massive bombings and slaughter. And, as a man who has worked all my life, I am sick and tired of my hard-earned money being stolen, to fulfill the desires of psychopaths and to enrich the military/industrial/security complex.

In 2015, I launched Occupy Peace in Kingston, New

I am sick and tired of my hard-earned money being stolen, to fulfill the desires of psychopaths and to enrich the military/industrial/security complex.

occupy peace



John DeSanto

Gerald Celente outlined his Action Plan for Peace at the Occupy Peace rally.

York, the only movement worldwide with a definitive Action Plan for Peace.

Our future is being robbed from us by murderous thieves, whose dreams of a never-ending War on Terror has created a living nightmare. Not only has the military/industrial/security complex hijacked our nation's wealth, as We the People income levels keep falling, their "destroy and degrade" military mentality is depriving us of joy, beauty, peace, and freedom that are our inalienable and god-given rights.

In a continuous fear of terrorism and a military

police state of mind, love, joy, unity and creativity are suppressed, as are the freedoms of the soul and the state of mind.

More than a peace rally, a 2015 event brought together world renowned speakers: Ralph Nader, Dr. Paul Craig Roberts, Cindy Sheehan, Dr. Robert Thurman, Gary Null and others. They joined me in launching a new movement. What makes Occupy Peace unique is its five-step Action Plan that will bring peace and prosperity:

- Close foreign bases, bring troops home.
- Secure the Homeland.
- Troops Progress Administration: Put Troops to work to rebuild and build America's infrastructure.
- Congress must abide by the Constitution and vote to go to War.
- Put referendums on each state ballot so We the People will tell Congress how to vote since we pay for war with our money and our lives.

That rally inspired us to push the movement forward by understanding that peace means more than just an anti-war movement, and that Occupying Peace is about embracing Liberty, Love, Joy and Beauty.

How will this be achieved?

Easy.

Here is the answer. Join the Evolution. See, "Feast on Peace" in this *Trends Journal*. **TJ**

Support Peace. Support our festival.

Liberty, love, joy & beauty. Join the evolution!

Occupy Peace is becoming a formal not-for-profit organization. We are building an operational structure to advance our Action Plan, infusing a pro-peace agenda into the global dialogue.

A key part of our strategy, building nationwide and global anti-war awareness, while raising funds via local participation, is to launch a series of Occupy Peace Festivals. And the inaugural Occupy Peace Festival will be in historic Kingston, New York, next year!

Gerald Celente and his Occupy Peace Team have been developing the concept behind the scenes and will soon be prepared to launch...

"The Occupy Peace Festival: Liberty, Love, Joy and Beauty. Join the Evolution!"

The Team is securing the necessary permits and insurance, to close the streets, book musical acts, create posters and festival merchandise, line up vendors, develop a promotional campaign and attract major speakers, like Ron Paul, a contemporary of Celente's, to make the event a great success.

The Occupy Peace organization is being created. Once the midterm elections are over, Gerald Celente forecasts that anti-war sentiments will find a receptive national audience. Let the Festivals begin!

The festival approach, once successfully launched in Kingston, can be replicated around the country



as a fun, community-driven experience, supporting the core tenets of Occupy Peace without getting wrangled in political divisiveness. Participants can then bask in Peace and enjoy the festivities at the same time. **TJ**

Contributions to Occupy Peace will help get this initiative off the ground.
Go to www.Occupypeace.com and find out how you can help today.

Gerald Celente to speak at Ron Paul's prestigious media and war conference

Global trend forecaster Gerald Celente will speak on the media's role in sustaining an endless cycle of war during the Ron Paul Institute's annual Peace and Prosperity Conference in Washington, D.C., this August

"Media and War," the third annual Ron Paul Institute conference set for August 18 includes a special focus on the symbiosis between the mainstream media and the warfare state.

For decades, Celente, who coined the term Presstitute to describe mainstream media puppets who peddle corporate or political agendas instead of fact-based reporting, has built a global reputation for being a fearless teller of the truth and the world's leading trend forecaster.

In announcing Celente as one of the conference's prominent speakers, the institute's Daniel McAdams referred to the Trends Journal publisher as one of "our heroes... the brilliant trends observer and forecaster who hits all the right notes on freedom, liberty, foreign policy, the war machine, the sycophantic

media, and so on."

The day-long conference, held at the Marriott Hotel at Dulles Airport, will explore how the media promote war and, conversely, how the war machine promotes the mainstream media.

Top experts on the subject address how the militarist interventionists collude with the mainstream media to prevent alternative media from having a voice? How does the US government misuse its citizens' money to propagandize them into supporting endless, winless, pointless wars? To propagandize them into viewing any alternative media questioning the permanent warfare state as "unpatriotic" or even "agents of a foreign power?"

Celente said he was honored to be invited to speak at the prestigious conference.

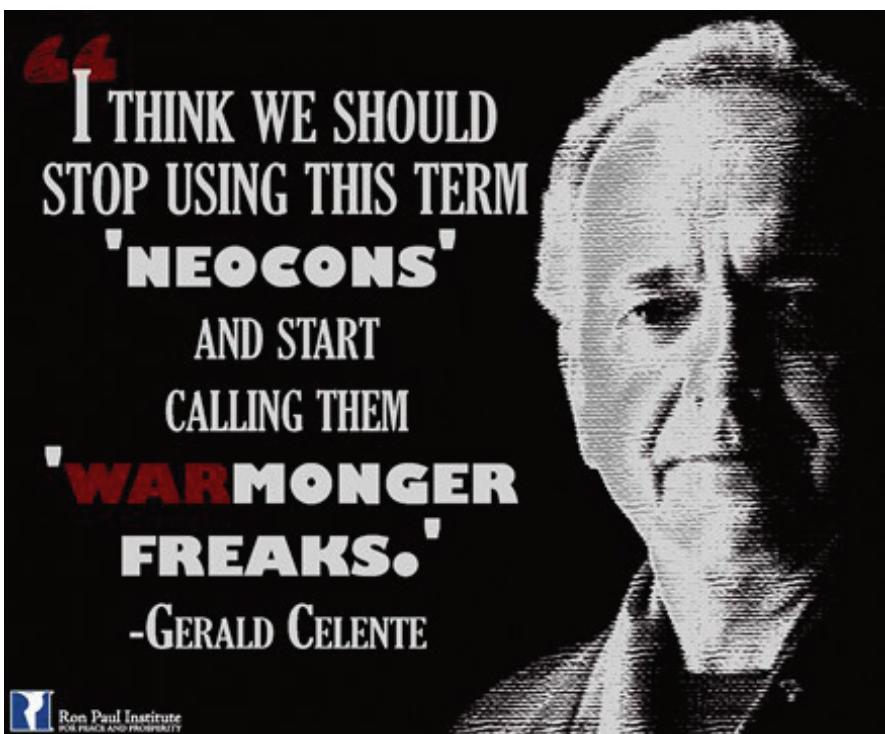
"I have long admired Ron and share much of his world view, especially as it relates to the decades of senseless wars the United States has engaged at the expense of our own peace and prosperity."

Indeed, Celente in 2015, formed Occupy Peace (occupypeace.com). Launched with a rally that featured Ralph Nader, Cindy Sheehan, Dr. Robert Thurman and other speakers who joined Celente, Occupy Peace is the only peace movement backed by a detailed, specific plan for peace and prosperity.

The Ron Paul Institute is the creation of the former US Representative and three-time US Presidential candidate. The Institute's aim is to create a broad, beyond Left/Right coalition to educate, advocate, and innovate for fundamental changes in our foreign and domestic policy.

Headlined by former US Representative and three-time US presidential candidate Ron Paul, and his former Congressional Chief-of-Staff and founder of the Ludwig Von Mises Institute, Lew Rockwell, Celente will be among the prominent speakers making the case for peace and prosperity.

To attend or for more information, visit www.ron-paulinstitute.org. 





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Zug, a lakeside city in Switzerland, used a blockchain-based voting system to poll residents. Most found the process easy, and officials are now analyzing whether the votes were recorded accurately and whether the system is vulnerable to hacking.

Online voting's future brighter?

As forecast, Blockchain technology is becoming the future of digital voting

By Trends Research Institute Staff

The Swiss city of Zug has declared its experiment in blockchain-based voting (*Trends Journal*, July 2018) a success.

Because it was a test, the vote didn't elect any officials. The result wasn't binding, because the ballot only asked for opinions — about whether "voters" found the process easy, and if they would pay city taxes via smartphone, for example. But the trial run gave evidence that blockchain voting works.

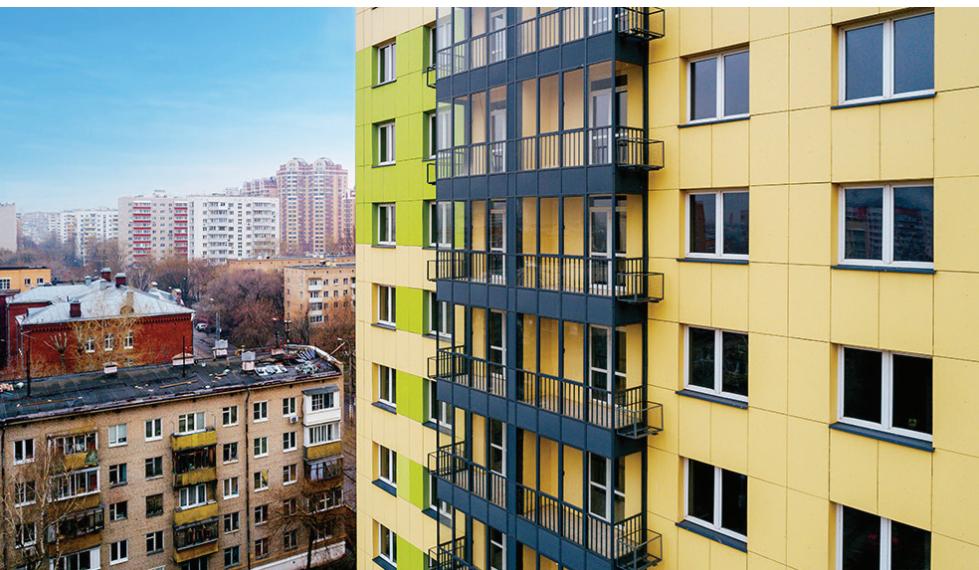
Zug residents were able to register with the city's e-identity system, then download a voting app to their

smartphones. Of the 240 people who registered, 72 voted — a 30 percent "turnout," higher than most U.S. municipal elections.

Most who voted reported that they found the process easy.

Over the next several months, Zug officials will analyze the results to see if votes were recorded accurately, and whether the blockchain can be hacked.

blockchain



Moscow has a blockchain-based program that lets residents vote on local issues.

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Other Swiss blockchain fans aren't waiting.

The Federal Institute of Technology in Lausanne is making its blockchain voting system available to municipalities now. And the Swiss government is moving ahead with plans to shift national elections to blockchain-based e-voting in the near future.

Recently, Sierra Leone's presidential election was monitored by a blockchain, furnished by Agora, a Swiss foundation devoted to "digital democracy." However, the country's paper ballots still had to

be counted by hand, under the watchful eyes of observers, and then entered into a blockchain for final results.

In developing nations, where elections are notoriously corrupt, Sierra Leone's experiment could be a step toward protecting the integrity of the vote.

Perhaps surprisingly, Moscow has become a leader in local blockchain-based voting. Its "Active Citizen" program has drawn residents into questions usually decided by officials. Typically, however, the issues being

In developing nations, where elections are notoriously corrupt, Sierra Leone's experiment could be a step toward protecting the integrity of the vote.

decided aren't consequential, such as the naming of a new subway stop.

Pricewaterhouse Cooper, the international accounting firm, audited the Russian blockchain and certified it as hack-proof by city officials.

Moscow also has debuted a "Digital Home" blockchain, allowing residents of high-rise buildings to vote on issues, such as whether to replace a building manager.

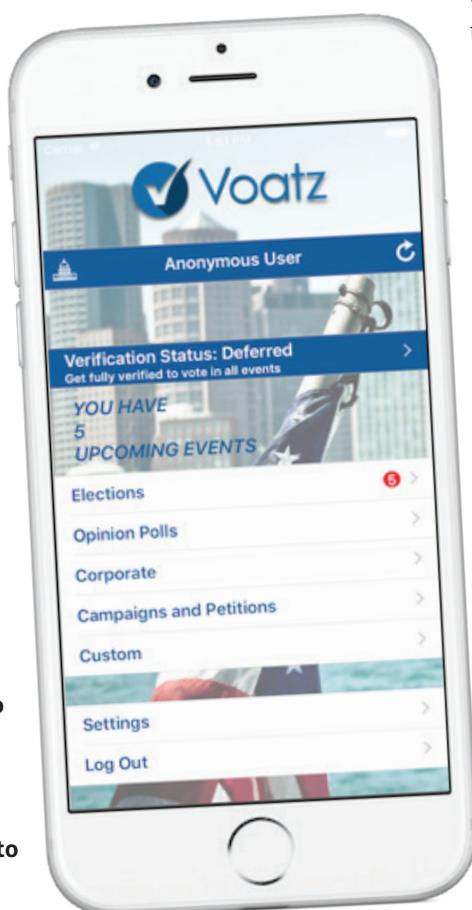
The US isn't being left behind in blockchain voting.

In May, West Virginia allowed residents of two counties stationed overseas in the military to use their smartphones to send primary election ballots to a blockchain. The service was supplied by Voatz, a Boston company. If the experiment is judged a success, the state will consider allowing all military residents overseas to vote via blockchain, in November's mid-term elections.

In many US states, blockchain voting has been proposed. Alec Ross, a former State Department technology policy advisor ran for the Democratic nomination for Maryland's governor in June. "I'm running for governor," he said, "and I believe in the blockchain." He got only 2%. But blockchain voting is winning converts globally. 

In May, West Virginia allowed residents of two counties stationed overseas in the military to send primary election ballots from their smartphones to a blockchain.

Voatz



TRENDPOST

As we have forecast, blockchain-based digital democracy will continue to spread worldwide, fueled by anxiety about "voter fraud," and well documented international hacking.

The integrity of democratic institutions, in developing countries and in the West, is at stake. The younger generation, for whom digital voting is a routine aspect of their lives, is accepting of innovative technologies such as blockchain to restore integrity in the ballot box.

CLEAN PHONES



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Tobacco use is now understood to be deadly. Will cell phones follow the same path?

Death by cell phone. Celente is calling it... Cash in on the “Clean” Phones

By Derek Osenenko
EXECUTIVE EDITOR

Global trend forecaster Gerald Celente warned for decades that despite scientific evidence showing cell phones to be a serious health hazard, even cancer-causing, the industry profiteers would deny it. In fact “Clean Phones” was one of our Top Trends for 2016.

He noted that just as tobacco industry leaders only admitted cigarettes caused cancer in the late 1990s despite the overwhelming proof, so too will profiteers deny the physical and mental risks of cell phones.

And even with the fact that 6 million people worldwide die annually from smoking – and for every death, 30 others deal with the horrific effects of tobacco-related cancers and disease – like the cell phone addicted, cigarette smokers can’t, or won’t, kick the deadly habit.

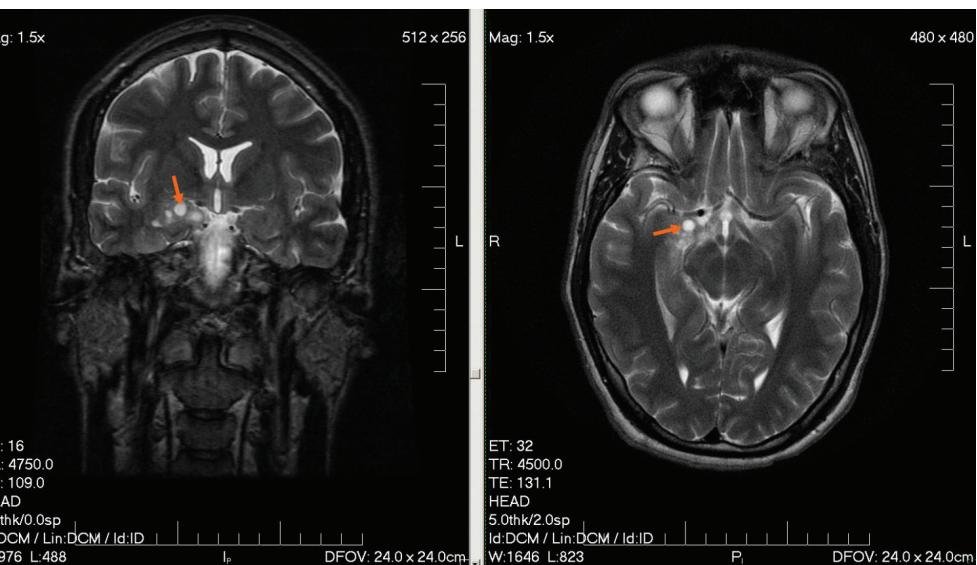
In the “money counts, lives don’t matter” mentality that drives profit margins at any cost, thirty years ago, scientific evidence was mounting that many

chemicals used to grow food posed major health risks, cancer among them.

Indeed, there can be no clearer proof of how Chemi-Kills than the clear evidence that persuaded jurors to award \$289 million to a U.S. victim this August who is dying of cancer that he claimed was a direct cause of his years of spraying Monsanto’s Roundup weed killer on crops that people eat. (Monsanto, formerly an American company, is being acquired by Bayer for \$66 billion.)

But while there was widespread awareness and acknowledgement, it was brushed aside and marginalized. Recognizing the implication of the trend, and how key demographic and psychographic sectors of

clean phones



Studies have linked cellphone use with a greater likelihood of developing brain cancer, such as the glioma shown here in the brain of a 28-year-old man.

Wikipedia

society were concerned with the findings, Celente focused on the market sectors that could serve the needs of those sectors.

Celente coined the phrase “clean food” in 1993 and predicted that health food stores and organic products would go mainstream at a time when mostly tiny shops in the rundown sections of towns were the standard ... selling a scant amount of products to a small customer base.

In 2017, the organic/clean-food industry represented 5.5 percent of food sales in the U.S. Though still a minority share of the total food market, it's now \$47 billion, steadily increasing every year for the last decade.

CLEAN FOODS, CLEAN PHONES

The health risks of chronic cell phone use follow the same trend. Scientific evidence is mounting that cell phones are hazardous to your health.

Studies have concluded that the radio frequency energy emitted by cell phones destroy soft tissue masses protecting the brain.

A study in 2017 by the National Toxicology Program (NTP), an initiative of the US Department of Health and Human Services found that a significant

percentage of rats exposed to doses of typical cell phone radio-frequency radiation either developed a form of brain cancer or susceptibility to related diseases.

A major study released in Italy this year replicated the results of the NTP research.

These join more than two dozen other studies over the past two decades indicating clear links between cellphone use and cancers, as well as other ills ranging from weakened memory to birth defects.

In 1999, Dr. George Carlo, who was hired by the Cellular Telecommunications Industry Association to study the effects of cellphone use on humans, sent a letter to the Chairman of AT&T expressing some of his serious concerns, including the occurrence of brain cancer and certain types of tumors among cellular phone users.

Since then, biologists at France's University of Bordeaux matched cellphone use with a greater likelihood of developing brain tumors. Scientists at China's Third Military Medical University confirmed that exposure to cellphone frequencies hobbled the proper development of brain cells.

In a third study, a team at India's National Chemical Laboratory saw the degeneration of brain cells caused by long-time exposure to cellphone frequencies.

In fact, dozens of studies have linked cellphones to a variety of cancers in the brain, skin and thyroid.

Heavy cellphone use has also been tied to damaged auditory cells, hormone disruption, weakened immunity. It's even been implicated in breast cancer in women, who kept cellphones in jacket pockets or tucked in bras.

In some studies, men who carried cellphones in their front pants pockets showed a higher rate of testicular cancer. And a study by the Hafia Technion in Israel found that male fertility rates were greatly reduced in men who used their cell phone for an hour or more a day.

In another, pregnant women regularly exposed to radio-frequency radiation showed a rate of miscarriage more than three times greater than women who weren't thus exposed.

In France, the country's National Frequency Agency, after being ordered by court to do so, disclosed in 2017 that most cell phones exceed government radiation limits when tested next to the body.

Further, multiple studies are showing heightened risk from cell phone use for children. These findings show that children absorb more radiation, quicker

TRENDPOST

Beyond the health risks of cell phone users, with the launch of the new 5G service than current data speeds, there will be new cellphone towers in a neighborhood near you.

Among the concerns of towers in neighborhoods is the closeness of these towers to people – in their homes on the street – are the high levels of radiation being emitted by them will cause cancer.



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The light emitted from cell phone screens is now well established to have negative impacts on a human body's ability to regulate sleep cycles and may have much farther reaching health impacts. These include damage to the eye's retina.

than adults. And other studies have reported that the bone marrow of children absorbs 10 times more radiation than that of adults.

CELL USE EXPLODES WORLDWIDE

In addition numerous studies, particularly one done in Los Angeles, found that teenagers are more likely to develop Attention Deficit Disorder because of their addiction to cell phone use.

Estimates vary widely, but even on the low end, there are at least 5 billion cell phones in use worldwide. In the U.S., there are more cell phones in use than there are people — about 340 million cell phones in a population of about 325 million. In China, the world's largest population of 1.4 billion, there are an equal number of cell phones.

The number of cell phone calls per day, the length

of each call, and the amount of time people use cell phone apps have dramatically increased, as have the potential health hazards.

That's why government agencies, including the U.S. Center for Disease Control, and the Food and Drug Administration are now issuing guidelines pertaining to the potential health risks of cell phone use.

Many countries – the U.S., Belgium, France, India and others – have developed government guidelines for cell phone use among children.

While there are those in the cell phone industry and among the scientific and medical communities debating what the actual health risks are, the data supporting the dangers of cellphone use is mounting.

Yet, even among the public who are aware of those findings, they can't kick the cellphone habit. **TJ**

TREND FORECAST

From toddlers to aging seniors, the digital addiction is pervasive throughout society, a trend that continues to boom with no end in sight.

But while a mass movement to give up cellphones won't materialize, we forecast that growing segments of the population will seek alternatives that minimize risk.

Just as the Trends Research Institute predicted the birth of the clean-food movement, we predict the rise of "clean phones" for essentially the same reason: A large market sector is ready to put its money where our health is. Thus, safer cellphone devices that are effective, and marketed with "clean phone" branding will corner a rich and growing market segment.



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More seniors are continuing to work well into their "golden years" having little to no savings to retire with.

Boomer bust 2020

Many in their Golden Years will work until they die

By Derek Osenenko
EXECUTIVE EDITOR

Bloated. Broke. Sick. Depressed.

It's a shocking but accurate portrayal of how much of the boomer generation are living their golden years.

Baby Boomers that once helped shape popular culture and societal norms are facing tough, often impossible, life choices... grappling with financial and personal hardships unimaginable in their idealistic youth.

In the 1960s and '70s, during a period of dramatic change, the first wave of boomers had joined the charge for social justice, fighting against war and racial, gender and economic inequality.

But the more money they made, the older they got, the more establishment they became, the Woodstock Generation shed its rebellious nature.

The "Shop Until You Drop" boomers not only

settled into McMansions to indulge in the comforts of modern life, they seeded the path of rapidly deteriorating ethical values that would help foster Wall Street greed, the utter absence of anti-war movements, declining liberties, media and political polarization and far lower aesthetic standards.

THE BOOMER STATE OF STATE

Just two years ago, the first wave of baby boomers, about 2.5 million of them born in 1946, turned 70. Instead of easing into a life of porch naps and walks at dusk on the beach, today, about a quarter of seniors between the ages of 70 and 74 are working – that's the highest rate of senior employment in nearly 60 years.

Since the Panic of '08, when a wave of boomers lost their homes, their savings and many were laid

Across the globe, economic conditions of the last decade have forced many aging boomers out of the work force early.

off prematurely from their life-long careers ... a sustained downward income trend has taken hold and it's not abating, only worsening.

Today, in the U.S., about 9 million senior citizens are in the work force, the vast majority of them in service jobs and many of those being progressively replaced by technology. That's more than double the 4 million seniors working in 2000.

Across the globe, economic conditions of the last decade have forced many aging boomers out of the work force early. Just a few years shy of retirement, those boomers found themselves without work,

without work prospects and with depleted savings, pensions that ran dry with the demise of unions and 401k accounts drained by the recession.

And nations hit hard by the Panic of '08 were penalized by their politicians, who

bailed out the Banksters who caused the crisis, by being forced to pay higher taxes, suffer loss of benefits and increase the retirement age.

In the U.S., some 79 million adults, 32 percent of the senior population, live in a "shared household" to make ends meet. Half of those are living with their children. 

For boomers: what recovery?

The nine-year economic recovery that ensued following the Great Recession was built on unprecedented cheap money – Quantitative Easing and zero/negative interest rates. While those schemes generously fueled equity markets and further enriched the world's one percent (eight billionaires have more money than half the world's population, according to Oxfam), little trickled down to boomers and much of the workforce.

And as evidenced by the generous tax cuts initiated by President Trump, that trend continues. According to the Tax Policy Center, the privileged one percent gained 82 percent of the benefits.

Moreover, closing in on a decade of zero to very low interest rates, boomers who had some savings earned no interest at all. And the dire financial straits of many seniors are hitting at a time when 10,000 baby boomers in the U.S. are turning 65 every day and Social Security benefits have lost about a third of their purchasing power since 2000.

Recent surveys found that only about half of boomers entering retirement age had any savings at all and three quarters of retirees are well underfunded for retirement. And about 20 percent are fully dependent on Social Security.

THE UNHEALTHY GENERATION

Among the aging boomers that need to work, many can't because of poor physical health. Many of the jobs that are available – those that have not yet been replaced by automation – often require some level of physical ability seniors can't attain...like standing on their feet for hours as cashiers, fast food workers and housekeeping attendants.

And this incoming generation of retirees is expected to be less healthy and more dependent on

Shutterstock

Service sector jobs provide many working seniors with employment, but for how long can those be counted on?

TRENDPOST

Trend lines show an increasing number of boomers, including those who have children and don't want to live with them, and for all those who have no family ties, are moving into shared residences ... previously known as boarding houses.



Shutterstock

America's again population is increasingly less healthy and more heavy, these trends have dangerous short and long term consequences for the populace itself along with the healthcare they rely on.

others to get through daily routines than any retirement generation before it.

America's once "Peace and Love" generation that fueled Wall Street greed, political and cultural divisiveness, and one war after another, also loves its fast food, indulgent lifestyles and love of Big Pharma to sell them a pill for every ill.

While cultivating those virtues during the last 40 years, boomers have ushered in an era of diabetes, heart disease, cancer and related illnesses at record pace. Study after study, confirms that the generation of boomers entering retirement age today suffer a record number of chronic diseases.

For example, about 25 percent of Americans over the age of 65 have been diagnosed with diabetes; the actual number is projected at 7 percent higher. Some 70 percent of boomers are overweight. And nearly 40 percent are obese.

By any measure, this trend is worsening, and it is hitting at time when many seniors are having serious struggles covering basic expenses, like food and rent, let alone covering medical costs.

In the United States, public health care expenses are expected to rise 5.3 percent this year as a direct result of increased spending necessary to cover the escalating number of boomers enrolling in Medicare health insurance programs.

And with prescription drug costs expected to rise 6.3 percent this year – an increase fueled in large part by drugs for cancer, arthritis, diabetes, high

TREND FORECAST

The rising cost of health care, diminished government assistance and shrinking income streams have so tarnished the Golden Years for growing segments of seniors, that "coping" and "dependency" have replaced "healthy" and "carefree" as retirement goals.

Businesses creating services and products that take aim at these priorities will see handsome returns. If they do it right!

Therefore, OnTrendpreneurs® with the passion and expertise to publish a meaningful and actionable magazine with content that can inspire and elevate the quality of life of seniors is a mega-trend waiting to be mined.

Boomer Bust is a macro and rapidly expanding trend. How seniors will house, feed and heal themselves are the three categories that demand creative, broad thinking. From shared living options for seniors who are not in need of assistance and don't want to live with family, to affordable, effective whole health healing alternatives, these are the OnTrendpreneur® golden opportunities.

blood pressure, etc. – the prescription drug addicted boomers will be further financially stretched, and many won't be able to buy them.

While Medicare covers 80 percent of health care costs, a growing number of seniors are unable to pay for supplemental insurance coverage. And that 20 percent gap is hitting boomers hard.

The combination of these socioeconomic trend lines for seniors is resulting in a disturbing, rapidly intensifying trend: The number of people 65 and older filing for bankruptcy in the U.S. has tripled since 1991, according to the Consumer Bankruptcy Project.

Senior citizen bankruptcy filings have soared over 200 percent, while all other age categories either declined or stayed flat. Today, 12 percent of all filings each year are made by seniors.

Moreover, by all indicators, the financial determinants that are driving seniors to bankruptcy are – across the board – rising. □

Senior citizen bankruptcy filings have soared over 200 percent, while all other age categories either declined or stayed flat.



Youtube

James Corden and Paul McCartney driving and singing moved many viewers to tears.

Growing old... and lonely

The trend is clear, we're growing old by ourselves

By Ian Heinscke
CONTRIBUTING WRITER

Last month, a friend sent me a YouTube video. I found myself enthralled by it. It made me laugh and moved me to tears. It's of an old man in his late 70s and a cheerful chap half his age driving around having a chat and singing together.

They get out at various points and look at the sights and end up in a pub having a sing along with a hundred or so locals. The tour is of the elderly man's home town and he's mobbed by people everywhere he goes, as he takes a trip literally down memory lane. In fact, the memory lane they first stop at is one called Penny Lane.

Has the penny dropped? If it has you're probably one of the almost 30 million people who've now seen Paul McCartney driving around with James Corden in his most famous episode of what he calls Carpool Karaoke.

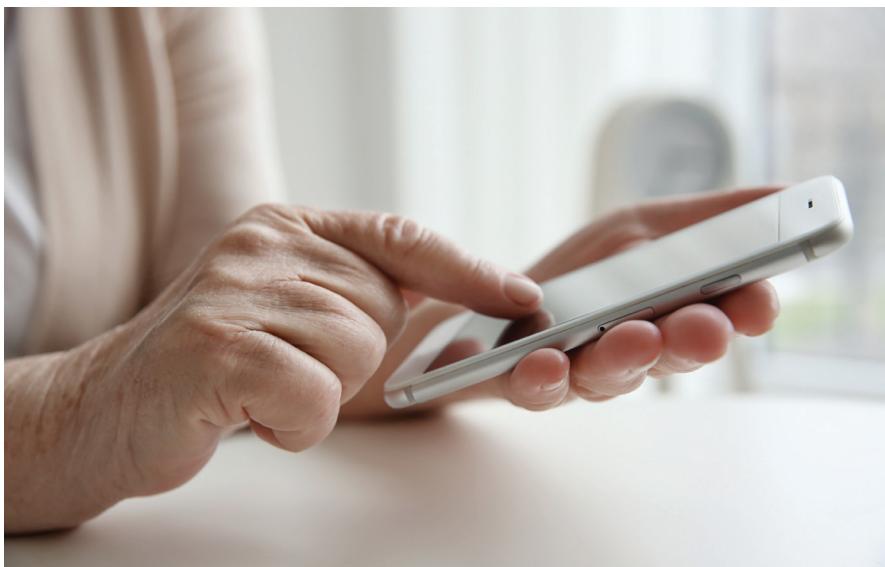
The songs Paul McCartney wrote in the Beatles are still magical. They bring joy and sadness. At one point on this mystery tour through Liverpool they

end up in the lounge room of his original modest family home.

WHEN I'M 64

Paul casually sits at the piano and gives a beautifully impromptu rendition of When I'm 64. I first heard that song when I was 13 and it made me think about what it must be like to be old. I'm 64 on my next birthday and so it's taken on a whole new meaning.

Paul wrote it when he was just 16 and it shows how he had a prodigious ability to create songs about the human condition. He didn't just write silly love songs; he wrote songs about loss, longing and loneliness.



Time spent online does not serve us the same way face-to-face interactions do.

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In this Carpool Karaoke we hear him sing Let It Be. He tells James Corden the story of how his mother, Mary, had died and he was suffering emotional turmoil. She came to him in a dream and said "It's going to be OK. Let it be." It was at this point I found myself awash with emotion.

James Corden also has tears well up in his eyes. He stops the car, wipes them away and tells Paul the song was his late grandfather's favourite, and adds he wishes he was here to sing along. Paul quietly and reassuringly says, "He is." It's an extraordinary moment.

This short film shows how important it is to be connected with the world emotionally. As they drive through the streets of Liverpool they sing the line from Eleanor Rigby: "All the lonely people, where do they all come from?" I suddenly thought of the growing problem of loneliness in supposedly highly connected society. The technology we thought would bring us together is holding us apart.

LOST IN OUR HANDHELDS

Social media didn't exist in the 1960's when Paul McCartney wrote his classic hits — hits that still resonate. He didn't have his head bowed over a phone. He was directly connected with his family, his friends and, through them, to the world.

It's clear he'll never be lonely. He's now 76 and

TRENDPOST

Loneliness is an emerging trend that will grow more powerful over time. Technology is a major reason why... face time is increasingly replacing face-to-face time. Immersed in our technology that connects across the globe, we are increasingly, and unconsciously, dismantling the need for regular human contact.

when people meet him on this back to Liverpool trip, they feel as if they know him. They know him through his music.

We may have more opportunities to meet and connect than ever before but, sadly, loneliness is on the rise. Teenagers now connect on social media. And it's not just teenagers.

One of the biggest groups on Facebook is the over 40s and it's starting to replace face-to-face friendship. But connecting on line is one thing; connecting in real life is the real thing.

Sporting and social clubs are reporting a drop in membership. Meanwhile mental and physical health problems are on the rise.

A study recently conducted in the UK found loneliness was equivalent to smoking 15 cigarettes a day. It tracked almost half a million adults over 7 years and found isolation and loneliness raised the risk of cardiovascular disease compared to those people who are more socially connected.

They now have a minister responsible for fighting loneliness and they've found every pound spent fighting loneliness saves £3 on health costs.

An Australian survey published in July this year found the number of friends that people say they have has halved in the past 13 years. It's a similar story in the USA.

The late University of Chicago Professor John Cacioppo was a leading expert on loneliness. He too recognized the life threatening consequences. In 2014 he gave a talk at the American Academy of Sciences that said extreme loneliness can increase an older person's chances of premature death by 14 per cent.

He and his colleagues showed the impact of loneliness is nearly as strong as disadvantaged socioeconomic status, and it has twice the impact on early death as obesity!

Canadian psychologist Susan Pinker also says the two strongest predictors of a long life are not exercise and diet but close relationships and social connection. Pinker says we now spend more time online than any other activity (including sleeping) and warns this does not serve us the same way face-to-face interactions do. "Face-to-face contact releases a whole cascade of neurotransmitters and like a vaccine, they protect you now in the present and well into the future"

So we do indeed get by with a little help from our friends. **TJ**



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Hot trend grows hotter

Millennials fueling the sharp rise in coffee consumption

Trends Research Institute staff

With over 400 billion cups of coffee consumed every year, coffee remains one of the world's most popular drinks. According to the International Coffee Organization, the consumer base is growing on a global scale, particularly in China, India, and Latin America. And java drinking continues to explode in the U.S.

While coffee is booming among all demographics, the trend is most marked by the millennials who are demanding high quality, exotic flavors, and ethical trade practices from the coffee spots they frequent.

Back in 1990, Gerald Celente, publisher of the *Trends Journal*, first predicted the rise of gourmet coffee at a time when Starbucks had just 35 outlets and when most consumers were satisfied with traditional brands.

Originally from Ethiopia, coffee spread to Yemen and came to Europe from the medieval seaport of Mocha, hence the name. By WW I, it was the most

consumed drink on the planet. Based on current consumer analyses worldwide, the current artisanal coffee trend has steadily picked up more momentum over the past 4 years.

HAVE A HEALTHY CUP

Influencing the rising cuppa joe trend are the hundreds of vetted medical studies in the U.S., Europe, and Japan, which revealed beneficial links between moderate coffee consumption and lower rates of certain diseases, such as cancer and heart issues. People who drink 2-5 cups a day were shown to live longer on average, as compared to those who drink

less than 2 cups daily, or no mud at all. How they survive with no coffee was not studied.

In the largest study ever conducted to evaluate the medical effects of coffee, over 500,000 people across 10 European countries were found to have a lower risk of death from general causes, and specifically for circulatory and digestive diseases. These results were published in the Annals of Internal Medicine journal.

The reason that jitter juice might be beneficial is not totally understood. But the likely core ingredient, caffeine, probably doesn't tell the whole story, as many studies have found similar health benefits with both regular and decaffeinated coffee.

According to a review in the British Medical Journal, many of the complex compounds in coffee likely provide anti-cancer and anti-inflammatory benefits. The bean has critical antioxidants, which appear to reduce free-radical damage that often leads to cancer.

Additional studies point to the health benefits of coffee as related to two of the fastest rising medical illnesses in the U.S. — diabetes and Alzheimer's. Researchers from Harvard have shown that drinking either regular or decaf appears to reduce the risk of Type 2 diabetes, and a study supported by the National Institute of Aging points to a reduced risk of dementia in subjects who drank moderate amounts daily.

The growing scientific evidence supporting health benefits in coffee has been a growing trend for



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several years. In 2015, an advisory group commissioned by the Secretaries of the U.S. Dept. of Health and Human Services and the U.S. Dept. of Agriculture published a report stating that 3-5 cups of joe a day can be part of a healthy diet.

In June 2016, the World Health Organization removed coffee from the list of potentially carcinogenic foods. WHO went even further, stating that it potentially protects against certain cancers.

This increasing evidence of coffee's benefits is ironic, given that just a few months ago a Los Angeles judge sent shock waves through the industry by ruling that companies like Starbucks must warn customers of a potentially harmful chemical, acrylamide, which can also be found in cigarette smoke.

The judge ruled that the coffee industry had not presented enough evidence that coffee was safe. And a nonprofit group, the Council for Education and Research on Toxics, sued over 90 companies for failing to warn consumers on labels about the possible harm acrylamide can cause.

The pro-java backlash was swift. John Ioannidis, Chairman of Disease Prevention and professor of medicine, health research, and policy at Stanford University stated in an interview that the judge's decision was a clear overreaction. Professor Ioannidis stated that he's "not the least concerned about coffee being a problem for causing cancer."

And according to the American Cancer Society,

Researchers from Harvard have shown that drinking either regular or decaf appears to reduce the risk of Type 2 diabetes, and a study supported by the National Institute of Aging points to a reduced risk of dementia in subjects who drank moderate amounts daily.



Companies that support Direct Trade, such as the Ethiopian beans above, work directly with farmers and focus on getting the highest-quality beans possible.

Intelligentsia Coffee

while the chemical acrylamide has been shown to increase risk of some types of cancer in rats and mice when exposed to very high doses, no such link has been confirmed in humans.

The research data clearly points to the significant benefits, and minor risks, of coffee. The study in the British Medical Journal was an “umbrella” study (also called a meta study), combining the outcomes of dozens of individual studies to arrive at an overall conclusion: Consumption of 2-4 cups of coffee a day showed positive results in reducing risk for cancer, diabetes, cardiovascular, liver and gastrointestinal disease, as well as Parkinson’s and Alzheimer’s.

DEMAND GROWS AMONG YOUNGER GENERATIONS

Millennials and Generation Z (those born after the year 2000) are the main driving forces behind the rise in coffee consumption. And they are clearly demanding higher quality, both in the coffee itself and in the experience of drinking it at hip venues outside the home. A few influential trade journals report that roasters and coffee shops are making 2018 the “year

of the new customer.”

Hipsters want to know more about the origin of their coffee and the trade practices used for supplying it. This has created the practice known as Direct Trade, which cuts out the middlemen between growers and retailers. Shops selling Direct Trade mocha get fresher, better tasting beans.

Direct Trade, while similar to Fair Trade, is not identical. Fair Trade is primarily focused on improving the lives of people growing the beans, while Direct Trade is based on getting the highest quality beans possible. Both trends are on the rise, with Direct Trade leading.

Direct Trade and Fair Trade are themselves the result of younger coffee drinkers insisting on knowing the story behind the coffee they are gulping down. Barrista Institute, an industry blog, reports, “In 2018, it goes without saying that coffee is all about the origin. The more stories one can share about the farmer, the bean, the process, the better. So the stories are the best way to bring the origin closer to the customer.” Consumers have shown they are willing to pay higher prices for the right story, innovative ways to brew, and high quality joe.

The 2018 World of Coffee, considered the Oscars of global coffee events, was recently held in Amsterdam. Featured were new methods of making coffee (Aeropress, Chemex and Hario) and new regions that export beans globally, including South Korea and Saudi Arabia. **T**

TRENDPOST

With more evidence of coffee's health benefits and the global demographics of coffee skewing younger, the trend of high quality, small batch, direct/fair trade brew is likely to continue for some time. There is also no end in sight to new retail java opportunities, coming soon to a location near you.



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What are we thinking?

The 21st century needs a new philosophy. Your computer says so.

By Doug Grunther
CONTRIBUTING WRITER

Our brains are being re-shaped. Make no mistake about it.

We humans have most likely invented our last great tool, computer intelligence.

This machine intelligence, known as AI, is now capable of teaching itself in ways computer engineers and neuroscientists can't fully anticipate. And, it's expanding at such exponentially high speeds that most of its manifestations are not yet visible.

We've seen it beat our best chess players and defeat the best "Go" player, shocking many AI experts, as "Go" requires intuitive skills only humans supposedly have, and out-diagnose our best physicians.

Machine intelligence is infiltrating our lives to such an extent that education, finance, work, communication, and our personal relationships are all being re-shaped. So are the very ways we perceive our own intelligence, and think about ourselves.

As billions of us continue to upload thoughts, per-

ceptions, affections, and preferences into cyberspace, this powerful trend of brain-machine interface puts us on the precipice of an evolutionary leap. The Internet gives us instant access to the world's knowledge and connects people around the globe more intricately than ever before. At the same time, the speed-up of constant informational flow generates uncertainty, anxiety, and emotional volatility.

If the 20th century was defined as the age of atomic power, the laser, and the transistor, the 21st will be defined as the age of the computer brain.

THE AI CURVE

How do we react to this new, fast-changing environment? We can become more passive and get

shoved behind the curve. Or we can choose to understand what's going on at a deeper level and get ahead of the curve.

For example, the biggest news story of 2018 having the greatest impact by far is not Mueller's investigation, the most recent natural disaster, or the stock market's latest gyration. It's Zuckerberg's Facebook concession, in response to public pressure, to give its 2 billion+ users more input into what news is being fed to them.

On-line users are finally waking up as to how computer algorithms, manipulated by a tight group of corporations and political interests, are force feeding biased information into our brains every day. The Internet is a two-way medium and users, more than any time in history, can actually push back.

CONGRESS FACES FACEBOOK

The NY Times headline of April 11 read, "Zuckerberg Faces Hostile Congress as Call for Regulation Mounts." Hostile? Really? Sure, a bunch of Representatives raised their voices and hurled accusations, but Zuckerberg, barely breaking a sweat, shrugged them off with ease, offering a combo plate of platitudes, mild mea culpas, and noncommittal promises.

The politicians clearly didn't have a clue how to rein in or regulate this totally new kind of media/corporate power force.

After all, if Congress isn't willing to take on banks which are too big to fail, why would it take on an entity even bigger and more influential than any bank, despite its proclivity to sell off the sensitive data of as many as 87 million users without consent?

While Congress will win a few battles with Facebook and force it to make some minor concessions regarding privacy issues, the media giant will continue to do business as it basically pleases here in the U.S.

Zuckerberg represents just one of the many hugely influential companies that governments are struggling to figure out how to regulate.

Youtube



In Europe, however, watch for a major fight as the European Union continues to insist that private data is inherently owned by the user. The EU claims that it's Facebook (and Google, Amazon, Microsoft) who have to pay users for use of their private information. In other words, the users are the product, and Facebook is the consumer.

The only reason Congress even agreed to put on their extended dog and pony show was due to public pressure, based on a crucial and timely issue. This was reflected in the question asked of Zuckerberg by Representative Marsha Blackburn, "Who do you think owns an individual's presence online? Who owns their virtual you? Is it you, or is it them?"

In a culture dominated by bottom line economic results, here is a U.S. Representative asking what is likely the most important philosophical question of our time. A question of existential identity.

And then at a point within the hours and hours of back and forth testimony between exasperated politicians and the CEO who really runs the show, came an even more basic philosophical question, which speaks to the most important trend influencing our day-to-day lives. Representative Greg Walden looked at Mark Zuckerberg and asked, "What exactly is Facebook?"

Not an easy question to answer. Walden was seeking to distinguish Facebook's role as publisher, advertiser, and telecommunications medium. Yet while the company's economic model, including the selling of private information is a key issue, the deeper answer to the question, "What is Facebook?", along with equally relevant "What is Google?", "What is Amazon?", and "What is Microsoft?", goes beyond economic and material issues to...

THE EXTENDED MIND TREND

Facebook, Google, Amazon, and Microsoft are both literally and virtually extensions of our human minds, in complex and important ways.

It used to be a criticism if told we had our heads in the clouds. Now our heads are literally in the technological "Cloud," as we upload what's in our heads — our preferences, opinions, emotional reactions, and self-images into Google, Apple, and Amazon algorithms. In fact, Google now processes over 40,000 search queries every second, over 3.5 billion searches per day and 1.2 trillion searches per year worldwide.

And since the Internet is a two-way media environment, what we input into the mosaic of super computer brains gets communicated back to us as news feeds, health guides, consumer come-ons, and

Our smart phones are in many ways more reliable than our often unreliable memories as to who we are in terms of the people we communicate with, what we are thinking about, and what our primary emotional concerns are.

preferences for altering our self-identities. The very nature of our own mind is being transmitted back to us every moment we're on the digital screen.

So, the anxiety surrounding Facebook's gathering and manipulating of our private data, while a legitimate issue to be addressed, misses the point. Which is: What will be the consequences of our human lives interacting microscopically closely, every second, with expanding computer intelligence?

That existential question should remain a deep concern to each of us, whether the CEO of Facebook is Mark Zuckerberg or Mother Theresa.

A number of influential philosophers and neuroscientists are making a strong case that our biological anatomy, the literal body and brain, is not entirely who we are. As thoughts, perceptions, opinions, and feelings are extended out into computer algorithms in the form of emails, blogs, searches, YouTube videos, and Instagram posts, where our minds begin and end is an open question.

This trend of 'Extended Mind Theory' is spreading out to the degree that even as pragmatic and conservative a mind as Chief Justice John Roberts has weighed in on, with a provocative opinion.

TRENDPOST

The trend going forward? The co-founder of Google, now Alphabet, Sergey Brin, said in an interview, "Certainly if you had all the world's information directly attached to your brain, or in an artificial brain that was smarter than your brain, you'd be better off. Perhaps in the future, we can attach a little version of Google that you just plug into your brain."

Google is spending over \$12 billion a year in research to develop what is referred to as "AI Complete," also referred to as "Strong AI", the next generation development of machines, to exceed human intelligence.

Zuckerberg, at the recent Congressional hearing, referred to the promise of AI to help Facebook sort through hate speech and other problematic posts. No doubt AI can do the sorting, but as we become more and more cyborg, part human, part computer intelligence, it will take the human brain's unique ability to contemplate and wrestle with cultural, ethical and existential issues if we humans are going to undertake the leadership role going forward.

A VISITOR FROM MARS?

In 2014 the U.S. Supreme Court ruled on a case based on the question of whether police must obtain a warrant before looking into anyone's smart phone. Writing for the majority opinion, Justice Roberts wrote that smart phones are, "...such a pervasive and insistent part of daily life, that the proverbial visitor from Mars might conclude they were an important feature of human anatomy."

Even now, our smart phones are in many ways more reliable than our often unreliable memories as to who we are in terms of the people we communicate with, what we are thinking about, and what our primary emotional concerns are.

From growing interest by public philosophers concerning the Extended Mind Theory, to the recent analysis of over 10,000 IP (Intellectual Property) filings by the market research firm SmartBrains, to prominent legal decisions such as that of Chief Justice John Roberts, the question of what constitutes the boundaries of the human mind will take on ever greater importance. Both the U.S. and Europe are investing billions of dollars in research into the workings of the human brain.

The positive dimension of the Expanded Mind Theory is that in many ways, our interaction with computer intelligence is providing significantly deeper insights into how our minds and brains work. Thanks to increasing interest, we are learning just how flexible and open to change our brains actually are when we are more fully conscious of the internal thought processes going on.

In addition to being the most complex biological tool known to us, with billions of neurons and trillions of syntactical connections, our brains are capable of continuously sensing, revising and remodeling our connection to the world around us. And as our digital devices take over more and more of our rote memory needs, this potentially opens up the more intuitive, creative, and spiritually oriented capabilities of our human, non-machine brains.

But this positive potential will be set against the growing personal and cultural anxiety created by a future coming at us faster and faster, due to increasing computer speeds generating the electronic screens we are attached to most of the day. Soon we will have smart homes, smart transportation, smart offices, and smart public venues. And underneath all of this is the key existential question "Who are we?" as the line where our minds begin and end continue to shift. **TJ**

BREEDING ROBOTS



Wikipedia

Robots palletizing bread.

Robots turn 100 soon...

What will the next century bring?

By Harv Hilowitz
CONTRIBUTING WRITER

In 2020, robots will be celebrating the centennial birth of their name, and their species. How they celebrate will be up to the humans that program the micro-computers which direct their actions. Or, it may be up to them.

Coined for a mechanical, science fiction character in a 1920 Czech play, the term Robot means “forced labor,” but has evolved to represent so much more in our technologically-based society.

Robots and their advanced offspring are used to perform jobs that are repetitious, dangerous to humans, or are in hazardous or small environments people can’t reach.

Originally used in heavy industry, robotic devices have become ubiquitous, operating in all facets

of daily life, including healthcare, aerospace, 3-D printing, self-driving vehicles, agriculture, food services, and the military.

Interestingly, the broad consensus in the robotics sector is that the “metal,” the physical nuts and bolts comprising the devices won’t change much going forward, but that the advanced micro-computer technology that drives robots into vast new applications will.

“A robot arm is a robot arm”, says Bernie Mu-

breeding robots

Hofmann Glastechnik uses two collaborative robot arms to automate the monotonous task of tending a glass lathe.

Universal Robots



citelli of Applied Robotics, a firm specializing in end-of-arm-tooling. "But, what the new computers tell the grippers to do, and the feedback the sensors detect, so that the gripper can do complimentary, varied tasks, well, that's where all this is going."

THINK, ACT HUMAN AND MORE

Software advances for robotics are heading down some interesting avenues, most notably into robot "flexibility," where multiple, diverse tasks are performed with one device.

Another innovation is in robotic feedback, sometimes called Artificial Intelligence, where a device can detect changes in its environment, then re-directing itself based on its "perceptions" to inform and perform a subsequent task.

Cobotics (collaborative robots) is also cutting edge, where devices are programmed to safely interact with their human co-workers in normally hazardous close quarters.

Robotic devices are also becoming more easily re-programmable, through relatively easy off-line apps and mobile devices. Carnegie Mellon University Professor of Computer Science Howie Choset said, "Robots are becoming re-purposable and more versatile. It's costly and time consuming to install new programs and integrate devices into the workplace. We are working to drive costs down and make more collaborative robots that can work with people on shared tasks."

Robotic off-line programmer Jake Harpell of Octopuz, a Canadian firm, has developed customizable software that can be simply downloaded like a phone app. "Our software allows for production to continue while the robot is being re-programmed. Its efficient and cost-effective. The next big thing in robotics is offline programming."

IT'S ECONOMICS, TOO

Economics is driving this burst of ingenuity. If companies want to stay viable and compete, they need to get on the robotics beam. Although it's estimated that the full sales cycle for new robotic devices can sometimes take between a year or two.

Pre-engineered robotics can go on line between four and eight months. Jim Mail, robotics business unit regional manager for ABB Inc., said, "Aerospace and medical applications have about a one-year ROI. General manufacturing ROI, about two years or more."

Robots are saving money by getting into smaller and smaller close-in work, allowing for "lean



Octopuz's software platform for the fine tuning/programming of automated robotic processes

Octopuz

breeding robots

ARM a government/privately funded initiative is investing in further training individuals in the field of robotics as well as normalizing the concept of robotics in the workplace.

Advanced Robotics for Manufacturing



manufacturing”, which accounts for every micro-grain of material used in an industrial process. Robotics are also leading the way in cost-saving soft-automation, which accounts for faster process and product changes, scalability, and the re-purposing or removal of redundant, aging equipment. It’s about the money.

Despite the initial high cost of installing robotics and fully integrating them into the workplace, it’s clear that they represent an imperative upgrade for firms whose only alternative may be to close up shop. As many small to mid-size firms have no experience buying or using robots, a class of human consultants called “Process Integrators” now assists companies in all phases of purchase, design and implementation. These integrators are a vital bridge between robot manufacturers and end-users, facilitating executive and workforce training, especially



ARM
ADVANCED ROBOTICS
FOR MANUFACTURING

critical in robot scenarios where people work in tandem with robotic devices on the factory floor.

ROBOTS TRAIN ROBOTS

The Federal government sees the value in developing advanced robotics for industry. ARM, the Advanced Robotics Manufacturing Institute, is

a public-private partnership launched by Carnegie Mellon and supported by the U.S. Defense Department.

A new \$250 million initiative was recently announced to support the second phase of robotics revolution with new technologies for innovative applications, offering robotics education and workforce training. Some of ARM’s efforts are to combat the deep-rooted notion that robots kill jobs.

Although much of traditional manufacturing has evaporated from America, some of it has gone to robotic industrial plants overseas, where low human labor costs and robotic production lines make everything from cars to shirts

ABB’s Jim Mail emphatically states, “The goal is not to replace people but to mitigate the shortage of skilled labor that can create high tech products. Robotics actually creates new, high-paying jobs, often beginning at \$250,000 right out of college.”

The old assembly line is dead and we’re replacing it with technical trades that are somewhere between blue collar and white collar. It’s a new economy.” 

TRENDPOST

By all measures, robotically produced products and enhanced services are booming. New, high-paying opportunities are opening for anyone with even basic training and aptitude. Colleges are offering majors in robotics, including repair, app program development, R & D, and advanced manufacturing.

Virtually every business sector, from aerospace to manufacturing to medical uses robotics in ever-expanding and more sophisticated capacities. This growth will require increasing numbers of technicians, sales force, consultants and administrators every year.



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Grim reaper's ETA

Know when you're going to die? Want to?

Want to get an idea of when you're going to die? Ask Google.

The omnivorous data-collecting company fed an artificial intelligence program 46 billion bits of data, including odd scraps such as notes written on patients' charts, on more than 216,000 patients in hospital.

The program can be used to double-check doctors' diagnoses. But its real purpose is to forecast the statistical probability of certain outcomes for any given patient, including how long that person would have to stay in the hospital, and how likely that person would be readmitted for further treatment.

In virtually all categories, the program was more accurate in its medical forecasts than conventional human methods.

In predicting death, for example, the program scored .95 accuracy out of a possible 1.00, compared to the .86 that traditional methods attain.

TRENDPOST

By predicting patient outcomes, Google's program can help hospitals better plan the allocation and use of its beds and other resources. It also can serve as a check on quality of care, to see if doctors' diagnoses and treatments solved patient illnesses on the first try.

More broadly, medical care is one of the largest targets for artificial intelligence. Other targets include speeding drug design, managing hospitals, and customizing care for individuals. Entrepreneurs and investors are lining up to cash in.

DNA in a bottle

Gene therapy about to go commercial

Gene therapy has gone into business. Two commercial plants are now manufacturing and selling therapeutic cells, derived from human stem cells, that could spark genetic fixes for a range of chronic conditions. Until now, these regenerative cells have only been lab creatures, not merchandise.

In March, Osaka-based Sumitomo Dainippon opened a 30,000 square foot, \$340-million plant that will produce three kinds of cells to treat three different conditions. The company says that the plant will

produce enough of each kind of cell to treat hundreds of patients every year.

And Swiss biotech company Lonza has opened a plant near Houston that's ten times the size of its Japanese competitor.

Lonza says the plant's 200 workers will produce enough cells to treat thousands of people a year, including those with rare genetic conditions, as well as treating patients with more common life-threatening illnesses.



This new plant in Houston will produce therapeutic cells for both rare genetic conditions and more common illnesses.

Lonza

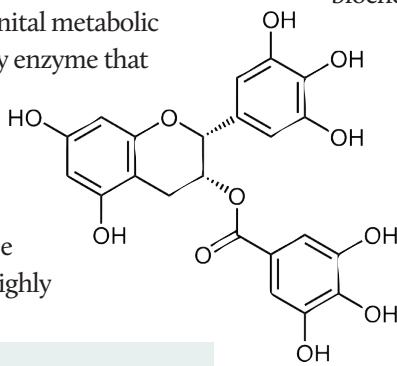
TRENDPOST

By making therapeutic cells available to biotech start-ups and other sectors, factories like these will speed research and the commercialization of gene-based treatments for a range of chronic conditions. Look for other biotech firms to set up their own manufacturing plants, to cash in on what could be an almost limitless market.

The buzz....

Green tea, red wine could be new medical prescription

People born with certain congenital metabolic disorders are unable to make a key enzyme that processes proteins. Those proteins can build up and become toxic, causing mental and developmental disorders. To avoid that fate, sufferers have to be diagnosed early and adhere to a highly



restricted diet.

Now researchers at Tel Aviv University have found that a compound in green tea, and another in red wine, can block the formation of these damaging biochemicals.

The scientists looked at something called epigallocatechin, or EGCG, found in green tea, and also in red wines' tannic acid, known to block the formation of amyloid protein conglomerates. Amyloids are signatures of Parkinson's and Alzheimer's diseases and resemble the protein pile-ups characteristic of congenital metabolic conditions. EGCG is

thought to have a range of health benefits, from lowering the risk of cancer and diabetes, to reducing inflammation and even stimulating hair growth.

Both green tea and red wine, tested apart from each other, blocked the formation of protein accumulations that endanger people with certain inborn metabolic disorders.

Epigallocatechin gallate, right, can block the formation of proteins in people with metabolic disorders.

Wikipedia

TRENDPOST

The trend to "functional medicine" and other cutting-edge movements in health care are turning increasingly to the medicinal powers of foods to prevent and cure illness. This complements the development of "nutraceuticals," foods engineered to contain health-giving compounds. Food increasingly will be recognized as a key to preventing illness, and also as a key element in curing it.

trending

Man vs. machine...

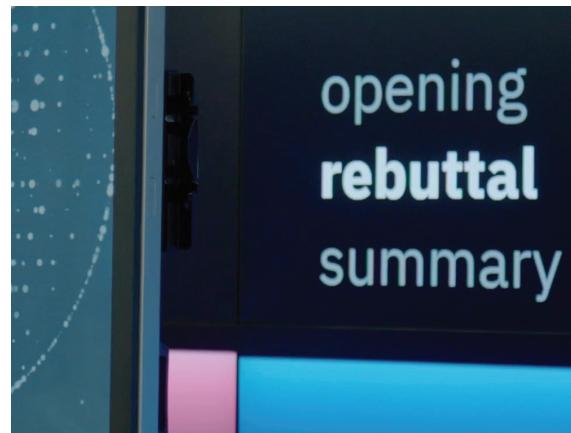
This program truly does the thinking for us

We've already seen artificial intelligence reason its way through data to make savvy medical diagnoses. Now IBM's Project Debater software has shown its ability to sort through information, to structure persuasive arguments and counter opposing ones.

In June, the software squared off with Dan Zafrir, Israel's national debate champion, to test two topics. The first: should governments subsidize space exploration; the second topic: should medical care providers make more use of telemedicine. The human and AI debaters delivered four-minute opening arguments, followed by a four-minute rebuttal and two-minute closing statements.

The audience, largely IBM staffers who might have had a bias for the company's creation, rated Project Debater worse in the first round than its human opponent, in its delivery style (it made some stumbles and seemed to free-associate at times) but better in the amount of information it could marshal to support its position.

In the second debate, a majority of the audience reported that Project Debater was more effective



IBM Project Debater sets out to program a computer system to tackle constructing and executing arguments against human opponents.

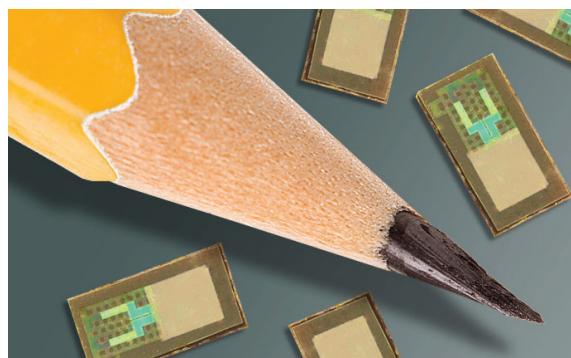
IBM

than Mr. Zafrir in persuading them to agree with its position.

IBM has spent six years developing Project Debater in its Israeli R&D center, training it not only to sort through millions of bits of information on a topic, but also to organize its "thoughts" in a logical way that respects the fact that persuasion is often a subjective art.

TRENDPOST

IBM sees its new software as both an able assistant and a devil's advocate. For example, it could listen to a lawyer's structure of a legal case and then poke holes in it. It could also listen to a boardroom discussion about corporate strategy and support or question facts or logic used to argue a position. The company hopes that the software can lead to better decisions, based on factual evidence and logic.



A tiny implantable sensor can signal periodontal disease.

Washington University

TRENDPOST

These early devices point to a future in which our bodies can be dotted with tiny implants to detect early warning signs of disease, including hormonal imbalances or neurodegenerative conditions. Instead of running a series of tests to determine whether we're getting sick, physicians will simply scan us and read the results.

can be implanted in the gum, denture, or artificial tooth. The sensor measures the presence of peptides known to be markers for periodontal disease.

The peptides' signals can be read by a wireless ultrasound scanner.



The first grain harvest of a field utilizing the agrophotovoltaics system is being gathered.

Fraunhofer Institute

Growing crops, farming energy... the multitasking solar panel

It's called agrophotovoltaics: putting solar panels on stilts above cropland and allowing farmers to gather energy while they grow crops. In experiments in Vietnam and Chile, it's working pretty well.

The method puts solar panels in rows above farm fields. The panels are high enough to let animals and farm equipment pass below, with enough space between the rows to allow sunlight to reach the plants.

When Germany's Fraunhofer Institute came up with the idea and tried it nearby, it found that the land's economic productivity rose an estimated 60%

beyond what it would have been, had the land been used only to grow crops or just to make solar power.

Encouraged, the Institute set up a series of test plots in Chile. On a farm growing broccoli and cauliflower, the solar electricity will be used to clean, package, and cool the produce. On another plot, the power will be used to warm an incubator to hatch chicken eggs, while also sharing the excess electricity among seven families.

In Vietnam, the solar panels were raised over the ponds of a shrimp farm. The panels make electricity and shade, keeping workers cooler while lowering the water temperature, which helps the shrimp grow faster.

The test sites also can sell leftover power back to an area's electrical grid, if one is present.

Fraunhofer will closely monitor the test plots for three years, but early indications are that the results will probably be similar to the first experiment in Germany.

TRENDPOST

Making energy and crops from the same tract of land doesn't just make farming more profitable. It also reduces competition for valuable, arable land. Additionally, having home-grown electricity makes it cheaper for farmers to consider setting up secondary, value-added operations on site, such as for making jams and other products from crops grown under the panels.