

April 2021
VOL. XXXVIII, NO. 4

Daniel Burrus'

Celebrating 30+ Years of Publication

TECHNOTRENDS[®]

NEWSLETTER

*The biggest ideas that are
changing everything*

IN THIS ISSUE

Digital Currency Versus Bitcoin
and the Future of Money

Semitransparent Solar Cells

National Electronic Currency

Warehouse Robot

World's Largest Jet Engine

The Next Level of AI

Upcycling Cell Phones

RF Satellites

Hydrogen-Producing Boat

www.DanielBurrus.com





Digital Currency Versus Bitcoin and the Future of Money

By Daniel Burrus, CEO of Burrus Research

If money, and the future of money, is important to you, and I hope it is, you need to read this article. There is a misconception occurring surrounding the concepts of digital currency. Understanding what digital currency actually is, how it can be used and potentially misused, and, most important, how it is drastically different from the likes of Bitcoin and cryptocurrency, is paramount in shaping the future of global and local financial systems.

The first cryptocurrency, Bitcoin, as well as the first use of blockchain, the technology that enables cryptocurrency to exist, occurred in January 2009. I published an article at that time making a few predictions using my Hard Trend Methodology that have proven to be highly accurate, and I'm going to make a few more in this article.

the American dollar continues to be seen as the gold standard of currency value around the world

What were my predictions in 2009? That cryptocurrency and the underlying blockchain technology represented a Hard Trend (Future Fact) that will grow exponentially and that there would be many more new cryptocurrencies other than Bitcoin as well as many more blockchains created.

I also predicted that blockchain represented a major disruptive business opportunity and that Bitcoin's domination as a cryptocurrency was a Soft Trend, but likely not a Future Fact since there will be more variations on the crypto theme. Bitcoin and other cryptocurrencies, as well as blockchain technology,

set into motion the potential disruption of banks, credit card companies, and other financial entities that play middleman between you and your liquidity.

This article is about the next Hard Trend, digital currency, and it's already well on its way as a global disruption and opportunity. From China and its digital yuan set to be released in 2022, to the Bahamian Sand Dollar's debut during the 2020 coronavirus pandemic, you need to know the difference now.

After all, when it comes to money, the American dollar continues to be seen as the gold standard of currency value around the world, and this long-standing trend has always *been* a Soft Trend – a future “maybe” that has always been open to influence.

Banking Apps, Cryptocurrency, and Digital Currency

While many individuals of different socioeconomic statuses may view the use of their digital banking app or even their credit card as a “cashless, digital way to pay,” that is *not* digital currency. The digital nature of your savings or checking account is tied to physical cash and a ledger system owned by your specific financial institution.

Cryptocurrency (crypto) is not run by banks or the Federal Reserve; it is run by private companies and organizations and is highly decentralized. Crypto itself is a concept, built on software that essentially eliminates the need for a middleman like a bank or

continued on page 8

TECHNOLOGY NEWS HIGHLIGHTS

Semitransparent Solar Cells

A new type of organic solar cell (OSC) could make solar-powered greenhouses the wave of the future. The key lies in the fact that they are semitransparent, allowing enough light to penetrate to sustain healthy plant growth.

In addition, they can be “tuned” to absorb different wavelengths so that whatever the plants require for pollination, photosynthesis, and crop production is made available while the rest is used to generate power.

The technology was tested on lettuce – exposing one group to full-spectrum light and three others to filtered light in which the ratio of blue to red light was varied, while all other variables remained the same.

No significant difference was found among the groups in any of the key measurements including size, weight, antioxidant levels, and CO₂ absorption. The next step will be to run similar tests on other plants such as tomatoes.

The semitransparent organic solar cells (ST-OSCs) could enable more widespread use of greenhouse farming by providing a more cost-effective way to control internal temperatures. The technology could also be adapted to create energy-generating windows for homes, retail centers, airports, and office buildings.

For information: Heike Sederoff, North Carolina State University, Plant and Microbial Biology, Campus Box 7612, Raleigh, NC 27695; phone: 919-515-2727; email: hwsedero@ncsu.edu; Web site: [NC State University \(ncsu.edu\) or Plant and Microbial Biology | NC State University \(ncsu.edu\)](http://NC State University (ncsu.edu) or Plant and Microbial Biology | NC State University (ncsu.edu)



in **DANIEL BURRUS'**
**BUSINESS
LEADER
IMPERATIVES**

How Anticipatory Leaders are turning disruption and change into opportunity and advantage.

Click here to SUBSCRIBE

National Electronic Currency

China has developed its own cryptocurrency that's now being tested in Shanghai, Beijing, and other large cities throughout the country. The electronic yuan (eCNY) makes China a leader among major powers in introducing a totally digital national currency.

Unlike Bitcoin, which is decentralized by design, electronic currencies created through central banks give governments greater control over direct payments by tracking where the money is spent and even assigning expiration dates to certain disbursements.

Other countries that have already experimented with a government-backed cryptocurrency include Sweden (where tests of the digital krona are already underway) and the Bahamas (whose digital Sand Dollar has been made available to all citizens).

For information: Web site: [Yuan Pay Group Official Website 2021](https://yuanpaygroup.org) | [Yuanpaygroup.org](https://yuanpaygroup.org)TM

Warehouse Robot

A new robot named "Stretch" was recently introduced to address the skyrocketing demand for warehouse automation. With a reach of 10 feet and a load-bearing capacity of 50 pounds, the computer vision enabled robot can do all the "heavy lifting" – loading and unloading boxes from inside a truck while maneuvering in virtually any direction.

Stretch runs on a machine learning algorithm that enables it to recognize different sizes, colors, textures, and materials of packages, so it doesn't need to be explicitly trained.

The goal is to shift away from manually handling boxes by having multiple robots moving through a warehouse to pick up items and place them on a pallet automatically.

It's been estimated that more than 500 billion boxes are shipped every year. As warehouse worker shortages, high turnover rates, and social distancing requirements are leading companies to utilize robotics more and more, there will undoubtedly be an increased demand for systems such as this.

For information: Boston Dynamics, 78 4th Avenue, Waltham, MA 02451; phone: 617-868-5600; Web site: [Home](https://www.bostondynamics.com) | [Boston Dynamics](https://www.bostondynamics.com)



Burrus Research

Become a Positive Disruptor.

You pay for shipping (\$8), we pay for the hardcover book.

Your Name Here...

Your Email Address...

Yes, I Want One!

*Outside the USA? [Click here](#) to receive our eBook version.



World's Largest Jet Engine

The first in a new line of gas turbine turbofan aircraft engines is due to be ready for testing by the end of the year.

Known as UltraFan, the huge prop is more than 11 feet in diameter, making it the largest ever built. Although it runs on traditional jet fuel, the new engine is also being designed for sustainable fuels as the industry transitions to zero net greenhouse gasses over the next decade.

In spite of its size, UltraFan actually reduces overall weight of an aircraft by 1,500 pounds, owing to the fact that it is constructed of lighter but stronger materials like carbon titanium fan blades and advanced ceramic matrix composites. As a result, fuel efficiency is increased by 25 percent compared to conventional engines.

The engine is designed with an array of sensors that can record up to 10,000 parameters at a sample rate of 200,000 samples per second. Each fan also has a “digital twin” to store data that is predictive of in-use performance.

For information: Rolls-Royce plc; Web site: [Civil Aerospace – Rolls-Royce \(rolls-royce.com\)](#) or [Press releases - Rolls-Royce reaches new milestone as world's largest aero-engine build starts –Rolls-Royce \(rolls-royce.com\)](#)



The Next Level of AI

Since it was introduced in June 2020, the new application programming interface known as GPT-3 has expanded to more than 300 applications and tens of thousands of developers. The language-model-based artificial intelligence platform now generates more than 4.5 billion words per day in a variety of industries and categories, including productivity, education, and entertainment.

Considered to be a major advancement in the quest for a general artificial intelligence, GPT-3 can respond to simple prompts and generate precise text in whatever format is needed using natural language processing. For example, given a few simple guidelines, GPT-3 can compose text for a Web site, answer questions, write an article and even generate computer code.

By providing deeper contextual information, GPT-3 has the capability to produce solutions to complex problems that might otherwise take years to research. All applications that utilize the platform are verified, tested, and monitored to prevent bias and misuse, and to identify potential vulnerabilities.

For information: OpenAI; Web site: [OpenAI](#) or [GPT-3 Powers the Next Generation of Apps \(openai.com\)](#)



Upcycling Cell Phones

Used Galaxy smartphones are being given a new lease on life as low-cost diagnostic equipment that can image the human eye to screen for potential ophthalmic disease. Paired with the EYELIKE™ handheld fundus camera, the Galaxy device utilizes an artificial intelligence (AI) algorithm to analyze the images and suggest a treatment protocol. Conditions that can be detected include age-related macular degeneration, glaucoma, and diabetic retinopathy.

The World Health Organization (WHO) has estimated that at least 2.2 billion people suffer from some form of vision impairment, almost half of which are preventable or simply undiagnosed. But there is a large disparity of care based on income levels. An affordable and portable system such as this can break down some of these barriers, particularly in low-income regions of the world. The program started in Vietnam in 2018 and has since expanded to India, Morocco, and Papua New Guinea.

The initiative is also part of Samsung's corporate-wide commitment to building environmental sustainability into their products through purposeful innovation. To that end, the system is made with 35 percent recycled materials and designed to be easily repurposed.

For information: Samsung; Web site: [Samsung Global Newsroom](#) – All the latest news, key facts and inspiring stories about Samsung Electronics. or Samsung's EYELIKE™ Fundus Camera Repurposes Galaxy Smartphones To Improve Access To Eye Care – [Samsung Global Newsroom](#)



RF Satellites

A new generation of satellites is making it easier to track human activity on the ground using timestamped radio signals. Known as cubesats, the satellites are a standard design that can be outfitted with whatever electronics are needed for the job, and their small size greatly reduces the cost of deployment.

One example is a constellation of three satellites that was launched in 2018. They fly in a triangular formation, covering a path about 1,200 miles (2,000 km) wide in an orbit that takes them over both poles, so as the Earth revolves, every point on the surface passes beneath them several times a day. The satellites use a combination of trilateration (measuring small differences in the time it takes for a signal to reach each member of the cluster) and the Doppler effect (the change in signal frequency as it moves relative to a receiver) to pinpoint the origin of a signal to within 500 meters (less than one-third of a mile).

In addition to cost, a major advantage of RF satellites over those equipped with high-resolution cameras is that they can “see” through clouds by picking up satellite phone signals, walkie-talkies, and all types of radar. This enables them to track, for example, unauthorized ships, fishing boats, and other marine craft even if they have turned off their automatic identification systems to avoid being detected. The technology will also be instrumental in cataloging radar-pulse fingerprints for all types of vessels, since small differences in components can generate a unique radio signature that would otherwise be imperceptible.

For information: Hawkeye 360, 196 Van Buren Street, Suite 450, Herndon, VA 20170; phone: 571-203-0360; email: sales@he360.com; Web site: [HawkEye 360 - Satellite-based GEOINT Technology, AIS Ship Tracking RF \(he360.com\)](http://HawkEye 360 - Satellite-based GEOINT Technology, AIS Ship Tracking RF (he360.com))



Hydrogen-Producing Boat

Energy Observer is the first oceangoing vessel that is totally energy self-sufficient. It draws from wind, solar, water, and fuel cell power – and even produces its own hydrogen from seawater.

The developer started with an award-winning catamaran and equipped it with cutting-edge technologies to harness all of its power from nature.

Solar cells cover the vessel top and bottom to collect light not only from above, but also as it is reflected off the water.

The power from these is stored in lithium-ion batteries for short-term use during the day.

Excess energy is used to power an onboard electrolysis system that converts seawater into hydrogen gas, which can be compressed and stored until it is needed.

In addition, Energy Observer’s specially designed sails are twice as efficient as traditional sails, reducing overall energy needs by as much as 40 percent.

The proof-of-concept vessel began its trip around the world in 2017 in an effort to demonstrate that decarbonized and decentralized energy is achievable, and last year logged a record 10,000 miles. The crew hopes to complete their journey in 2023.

For information: Energy Observer; email: contact@energy-observer.org; Web site: [Energy Observer \(energy-observer.org\)](http://Energy Observer (energy-observer.org))

Digital Currency Versus Bitcoin and the Future of Money

continued from page 1

credit card company. Most of us learned about Bitcoin and cryptocurrency when the value of Bitcoin rose quickly in spectacularly volatile fashion back in late 2017.

If you bought thousands of dollars in Bitcoin around then and hung onto them over the past few years, you’re likely very happy with the concept.

However, cryptocurrency and Bitcoin are also not

digital currency, and it's rather easy to understand why.

Cryptocurrency is a digital coin created by a private entity not backed by the FDIC or any other government agency, is tremendously volatile, and – in the case of Bitcoin – has a finite amount that will ever exist. For example, there will eventually be no more Bitcoin, as it contains programming in its software limiting the existence of it.

Digital currency is similar in that it too has the high potential to eliminate the need for a middleman, but it is different in the sense that, much like printed cash, if the U.S. decides to create the digital dollar, and they are considering this now, it would be issued by central banks as an alternative to paper bills and approved by the Federal Reserve, backed by the FDIC, and represent a real replacement for physical cash.

My take on Bitcoin, which I do own, is that it's not like cash for purchasing things. Its best use is more like investing in gold as a way to hedge against inflation, as witnessed when Tesla and SpaceX founder Elon Musk recently purchased a large amount of Bitcoin.

Digital Yuan and More

As I indicated earlier, China is already testing out its digital currency, the digital yuan, in areas like Shenzhen, Shanghai, and Beijing and are expecting a countrywide launch in 2022.

Because many Chinese do not have a relationship with a bank for savings or checking accounts or credit cards, one of their goals is to use their digital yaun as a way to give the economically disadvantaged individuals access to better financial tools, allowing them a means to grow financially within their system rather than use the current system that keeps those individuals at a disadvantage.

Allowing for direct dispersion of earned money, China is not the only country adapting digital currency. As previously mentioned, the Bahamian Sand Dollar emerged during the coronavirus pandemic of 2020, again allowing individuals to receive their income quickly and securely, and both Visa and Mastercard are already working *with* that specific currency.

In addition to China and the Bahamas, Brazil is releasing its digital currency in 2022, along with Russia, Sweden, Europe, and several others. Yet in comparison to the United States, China is certainly leading the way, and that potential threat is one in a number of reasons we in the U.S. are reviewing the digital dollar concept and getting an Anticipatory plan in place.

Currently, the Federal Reserve in Boston is in fact working on a digital currency, which some have called the FedCoin, but I think we will use the “digital dollar” to maintain the same branding, so to speak. And of note, the Senate is urging banks in the United States to move forward with an action plan; however, nothing is set in stone yet.

The Benefits of Digital Currency

There is a downside to everything, but let's start by exploring the upside of a digital dollar. Aside from the concept of avoiding the need to carry dollars in your wallet or purse that comes with the risk of losing a twenty-dollar bill just as casually as losing your contact lens, there is an abundance of benefits that comes with working toward releasing a digital dollar of sorts in the United States.

As an aside, even those like myself who pay for things using my smartphone, I still carry a wallet with cash; old habits die hard, not to mention battery life.

Let's start with security and logistics. Not long ago, I was flying on a commercial airline, seated next to a

gentleman that appeared to be an official of sorts.

We spoke a bit, and he mentioned he was indeed traveling with a large shipment, several pallets, of newly printed one-hundred-dollar bills. He said he was armed and trained to fly every single day with newly printed currency across half the country from the printer to the central bank. He also mentioned that he was certainly not the only one doing this every day, and that there were many like him in action on a daily basis.

Imagine not only the security risk of flying around with physical currency, but also the flying costs, and the labor costs involved in having individuals fly *with* this cash, not to mention that he was in first class. It was easy to think that it be far more cost-effective for the U.S. government to digitize cash more and ship cash less?

Here is another interesting item. Consider the speed at which you get paid by your employer, and on an even larger scale, the speed at which your employer is paid for services rendered or products created.

On average, most if not all working Americans get paid weekly, biweekly, and monthly depending on the type of employment. What if you could get paid for your day's work right away? What if your company could be paid right away for products or services delivered or completed?

While there are certainly other elements that need figuring out about that, digital currency could certainly expedite the situation.

Finance Is a Both/And World

When new concepts are introduced to individuals who previously knew nothing about the technology involved or the concept in general, radical sides are taken. The second someone reads an article like this about a digital dollar, they grip their stack of

twenties and swear to themselves to use cash and cash alone.

Likewise, those who embraced Bitcoin might willingly *avoid* physical cash as an extreme stand *for* digital currency. But what I teach in my Anticipatory Leader System is a way to see the future accurately by using what I call the Both/And Principle. Will digital currency completely eliminate physical cash? Of course not! Will Bitcoin, Ethereum, and other initial iterations of cryptocurrency fall by the wayside if and when the U.S. government introduces the digital dollar? Not at all! They will all coexist, especially at the inception, and then they will evolve at an exponential rate.

Digital currency can be very disruptive to banks and other middlemen. That's why credit card companies like Visa and Mastercard, clients of mine, are being anticipatory and working with central banks to make sure the new currencies when implemented will work on their networks.

One idea I have shared is a way to buy time for legacy organizations to get their digital act together by limiting a digital dollar rollout to those in our culture that stand to benefit the most from digital currency.

There are millions who don't have a bank or a banking relationship because they don't earn enough, but they do have financial needs and buy things, and many have jobs. Some are migrant workers, some are waiters, waitresses, and bartenders who have a very low hourly wage and thrive on tips, or perhaps some are individuals who work mostly in cash.

Imagine a world where they can get paid the same day they complete their work instantly to their virtual wallet, where there is no waiting period for those earners.

I could see the government issuing a type of smart card equipped with a biometric ID such as a fingerprint reader or a small camera – today the smallest can be 3D printed and is the size of a fly's eye – capable of validating their identity and safeguarding their money.

For legacy organizations such as banks, it could create a pathway to having a bank account or a credit card. Digital currency in that fashion allows those individuals to have a greater participation in our economy, which in turn *helps* our economy grow.

This is beneficial for lower wage earners, but perhaps those who earn a middle to higher wage do not qualify for the digital dollar just yet.

That way, the federal government can roll out a smaller structure of digital currency first, helping those who can benefit from it, and eventually expand it beyond one demographic.

Banks and Institutions Must Adapt

So what happens to banks and credit institutions when digital currency is eventually offered to everyone in a country?

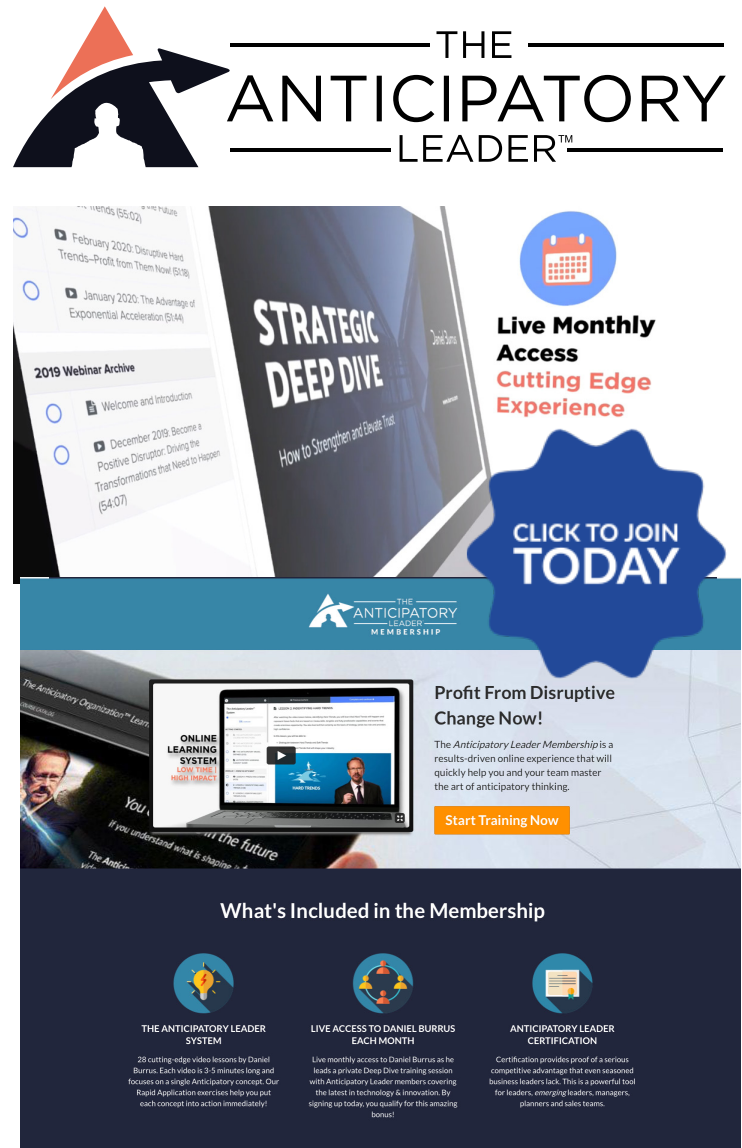
First it depends on the country and how reactionary or anticipatory they are. There are many things that could go wrong and many privacy issues that need to be pre-solved before the problem happens. That's one of the key tenants of being anticipatory.

Functionally, we already largely operate in a digital fashion as it is with Apple Pay, Zelle, and other apps created and endorsed by financial institutions. Being a fast reactor, no matter how agile you are, will not be good enough! The key is to become **Anticipatory** and learn how to use my Hard Trend Methodology to identify disruption before it occurs,

giving you the choice to be a positive disruptor before you become the disrupted.

In addition, becoming Anticipatory teaches you to identify and pre-solve the problems digital currency may cause before they occur, dramatically lowering the risk and allowing all of us to stay up to speed with the rest of the world as a growing list of other countries introduce their digital currencies as well.

Digital currency represents a growing Hard Trend that is here to stay. The Soft Trend is: Will the United States act on this Hard Trend?



The graphic is a promotional banner for 'THE ANTICIPATORY LEADER™' membership. At the top, a silhouette of a person with an upward-pointing arrow above their head is next to the title 'THE ANTICIPATORY LEADER™'. Below this, on the left, is a '2019 Webinar Archive' showing a list of topics and dates. In the center is a 'STRATEGIC DEEP DIVE' section with the subtitle 'How to Strengthen and Create Trust'. On the right, a calendar icon is next to the text 'Live Monthly Access Cutting Edge Experience'. A large blue starburst contains the text 'CLICK TO JOIN TODAY'. Below the main banner, a section titled 'Profit From Disruptive Change Now!' features a video player showing a man speaking and a 'Start Training Now' button. The bottom section, 'What's Included in the Membership', lists three benefits: 'THE ANTICIPATORY LEADER SYSTEM' (28 cutting-edge video lessons), 'LIVE ACCESS TO DANIEL BURRUS EACH MONTH' (monthly private Deep Dive training), and 'ANTICIPATORY LEADER CERTIFICATION' (proof of a serious competitive advantage).

Burrus Research®

Technotrends is published 12 times a year by Burrus Research, Inc., a research and consulting firm that monitors global advancements in science and technology and their direct impact on business and consumers. Mary Norby, Editor, 1860 Executive Drive, Suite E2, Oconomowoc, WI 53066. To subscribe, call 262-367-0949 or email office@burrus.com.

©2021 Burrus Research, Inc.