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January 20, 2021

New Tribunal Created for Unauthorized Streaming Services

By William P. Smith

On December 21, 2020, Congress passed the Copyright Alternative in Small-Claims Enforcement Act of 2020 and a law on penalties for certain digital transmission services that make unauthorized uses of copyright-protected works for profit.

Click **here** to read the full details.

How Far Can Facial Recognition Go in Finding Rioters in DC?

"Photos and videos from the riot are all over the internet, and law enforcement can use them to help find criminals; but one face doesn't make the case."

Why this is important: Facial recognition technology, while constantly improving, cannot be the basis for criminal conviction. Instead, the software can generate possibilities for law enforcement to further investigate. Between the leads generated by the algorithms and human eyewitness identification, criminals caught on camera or video can be identified and convicted for their crimes. Additional hurdles to using facial recognition software include limitations caused by the quality of the images and limitations caused by the size and contents of the database available for comparison. For the moment, facial recognition programs continue to serve as an investigative tool, but they are not expected to replace the investigative work of law enforcement professionals or the evidentiary value of eyewitness testimony. The 'jury is still out' on whether faulty facial recognitions used to obtain evidence could potentially poison the tree, and any evidence of wrongdoing recovered as a result, but the increasing reliance on the technology likely will lead to further legal precedents soon. --- Risa S. Katz-Albert

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Iran Among Five Pioneers of Nanotechnology

"Iran has been introduced as the 4th leading country in the world in the field of nanotechnology, publishing 11,546 scientific articles in 2020."

Why this is important: Nanotechnology is the science and engineering of items at a scale of 100 nanometers (100 billionths of a meter) or less. Iran probably is fourth or fifth in the world in terms of nanotech research and development. No matter your opinions of Iran, its government, and its danger (or not) to the rest of the world, a country of 84 million people, many of them in rural areas, is a world leader in a very important scientific field. Nanotech eventually will allow robots to do surgery in the bloodstream, produce drones the size of a small fly, and develop lightweight fabrics of incredible strength or ability. The potential destructive aspects of that scale of engineering are equally broad. --- Hugh B. Wellons

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'Bullet has Left the Chamber': Biden Will Not Likely Roll Back Trump Campaign Against China Tech

"U.S. President Donald Trump has looked to challenge China's technology industry through sanctions, executive orders and other actions."

Why this is important: The Trump administration took an aggressive, albeit at times chaotic, approach to curbing China's technology industry. In addition to limiting Chinese firms' access to critical technologies, the Trump administration moved to cut off Chinese vendors from critical semiconductor supplies and access to next-generation 5G networks. And it would be hard to forget the Trump administration's efforts to ban the popular smartphone applications TikTok and WeChat over their alleged ties to China. The incoming Biden administration is likely to make some changes, but despite trading campaign barbs about China policy, the core policies are expected to remain the same. Export controls and limitations on 5G access, in particular, are expected to be continued, even if somewhat refined. The upshot, then, is that the struggle between the United States and China for leadership in the technology sector is likely to continue for the foreseeable future. --- Joseph V. Schaeffer

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Hologram Technology Inspired by 'Star Wars' Could Bring 'New Dimension' to Smartphones

"'People for years have thought of holographic communication as sort of idealized magical future and that is actually 2021.'"

Why this is important: A San Diego-based company called IKIN is on the verge of making Star Wars technology into a reality. While lightsabers are likely to remain in the science fiction world for a while, hologram technology is upon us. IKIN's accessories create 3-D holograms viewable in daylight from Android or iOS smartphones with a specialized proprietary chemical polymer lens. Implications of such technology could have an impact on the gaming industry, photography, videoconferencing, video entertainment, and many others. The technology is currently being developed as a smartphone accessory, but if the technology is viable and becomes a success, companies like Apple and Android will almost certainly be incorporating it directly into their devices as a standard feature. --- P. Corey Bonasso

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Programmer has $240 Million of Bitcoin Locked on a Hard Drive, and Only 2 Password Guesses Left to Access It

"There is around $140 billion of Bitcoin that is either lost of left in wallets that cannot be accessed."

Why this is important: Have you ever lost anything? Your car keys? Your glasses? Imagine losing the password to $220 million. This is the position Stefan Thomas is in. He secured his cryptocurrencies by storing them on a hardware device that requires a password to access them. His device permits him 10 tries to input his password. After the tenth wrong input, the contents of the device are encrypted forever. This means his Bitcoin, which have risen to a value of $220 million, will be encrypted and gone forever if he inputs 10 wrong passwords. The problem is Thomas has forgotten his password. And, he's already made eight wrong guesses. Thomas isn't alone. It's estimated that around 20 percent (or currently about $140 billion worth) of Bitcoin "appear to be in lost or otherwise abandoned wallets." This brings the discussion to one of Bitcoin's central features, be it a feature or a bug. A user has the option to keep his or her Bitcoin in an exchange that can help if a password is forgotten. A user also has the option to go it

alone, opting for what appears to be a more secure way to go, where the user is the only person who knows his or her passwords. The problem, obviously, is there's no backup if he or she forgets the password. Some have touted that one of the features of cryptocurrencies is that it allows you to "be your own bank." Thomas' dilemma is one of the consequences of a system like this. --- Nicholas P. Mooney II

Governor Cuomo Signs Legislation Suspending Use and Directing Study of Facial Recognition Technology in Schools

"The legislation places a moratorium on schools purchasing and using biometric identifying technology until at least July 1, 2022 or until the report is completed and the State Education Commissioner authorizes its use, whichever occurs later."

Why this is important: One of the clear trends in 2020 was the pushback against the use of facial recognition technology and biometric data. New York is now carrying that trend into 2021 by adopting legislation that places a moratorium on the acquisition or use of these technologies in the public schools until at least July 1, 2022. Particularly interesting is the explicit reference to high rates of misidentification of women, young people, and people of color in Governor Cuomo's comments to his signature. This has been a particularly pointed criticism by civil rights and privacy activists, and its use here as partial justification for the legislation shows that their messaging has been making inroads. What remains to be seen is if technology improvements addressing these concerns will be enough to remove the moratoria, or if this is just one step on the path to a permanent ban. --- Joseph V. Schaeffer

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Researchers Use Nanotechnology to Develop New Coronavirus Mask Model

"A US-based research team from The George Washington University and the University of California Riverside designed and fabricated electrospun nanofibrous air filters that hold promise for applications in personal protective equipment and indoor environments."

Why this is important: Nano-fibers were expected to be among the earliest products developed in this growing industry. The George Washington University and the University of California Riverside developed a nano-fiber and a process for confirming its filtration efficiency. This fiber appears effective in preventing transmission of 99.9 percent of a number of airborne pathogens, including coronavirus. Masks made of this material might reduce substantially the effect of future pandemics. --- Hugh B. Wellons

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Slouch or Slack Off, This 'Smart' Office Chair Cushion Will Record It

"A Chinese tech company designed a way to track employees' health, but sensors were also monitoring when they were away from their desks, setting off a debate about privacy and surveillance."

Why this is important: After getting employees' written consent to participate in a study, Health Boost IoT Technology Company commenced a test of its new "smart" office chair cushion that monitors health including heart rates and signs of fatigue shown in poor posture so what could go wrong? A human resources manager obtained the data reports and decided to inquire as to why employees are not, in fact, sitting on the cushions at their desks working for long periods of time. Some employees are facing disciplinary action for participating in a health study. The company is feeling the heat, but not stepping back from use of the cushions to measure productivity. The lessons learned here are that any time you are monitoring your employees -- whether for health or to test a company product -- think about all the ways that the gathered data can be used, consider how it should be used and then make sure that the written consents disclose those uses and establish protocols to ensure that the data is used only for the approved purposes. --- Lori D. Thompson

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As Global Acceptance Booms, Bitcoin Must Consider Tax Implications

"While each and every country that has had the foresight to enact crypto regulation has their own set of rules regarding how crypto assets are to be classified, the overwhelming majority seem to agree on one thing- Crypto is property, not currency."

Why this is important: As 2021 begins, many people are starting to prepare their tax information for their 2020 tax returns. This could be an unusual tax season for many taxpayers because the economic shutdown caused by the COVID-19 pandemic has caused an accelerated spike of popularity of cryptocurrencies. Taxpayers who have begun using cryptocurrency as an investment vehicle may be showing some wisdom by diversifying their portfolio, but the tax implications are not as clear. Depending on which country a taxpayer lives in, he or she may have a new tax liability from their cryptocurrency investment. Most countries who have addressed the taxability of cryptocurrency have determined to tax cryptocurrency as property rather than currency. This is similar to the taxation of commodities such as gold. If you would like to learn more about some of the issues surrounding cryptocurrency, click here to view our video published in Issue 10 of *Decoded*. --- P. Corey Bonasso

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Iran Reportedly Seizes 45K Bitcoin Mining Machines After Closure of Illegal Operations

"The mostly ASIC devices used to mine bitcoin are said to have been consuming 95 megawatts per hour of electricity at a reduced rate."

Why this is important: Bitcoin mining, the process by which Bitcoin transactions are confirmed and new Bitcoins are produced, uses immense amounts of electricity through the running of complicated computer hardware. To be successful, one ingredient miners strive for is inexpensive electricity to power their machines. Iran is one of the countries where miners have been successful. China is another. And, we may see in the future certain parts of the United States offer the same type of inexpensive power needed for mining. The article is interesting because it reports on the seizure of 45,000 pieces of Bitcoin mining hardware that recently were seized by Iranian authorities on the charge that they were improperly consuming 95 megawatts per hour of electricity at a reduced rate. This seizure comes on the heels of Iranian authorities shutting down 1,620 cryptocurrency mining farms that they claimed were consuming 250 megawatts of electricity over the past 18 months. Although one researcher reported that cryptocurrency miners were not to blame for recent blackouts in major cities in Iran, the Iranian government has started requiring miners to disclose their identities, the size of their mining farms, and the type of mining equipment they are using. --- Nicholas P. Mooney II

Austin's SolarWinds Hit with Lawsuit in Wake of Cyberattack

"Austin-based software maker SolarWinds is being sued by an investor in the wake of a massive data breach that appears to have affected nearly every level of government, as well as potentially hundreds of private companies."

Why this is important: Buried in news of post-election disputes and litigation were reports of one of the most significant data breaches in United States history. Using a vulnerability in SolarWinds software, state-sponsored Russian hackers accessed data from every level of the United States government and hundreds of private companies. Now, an investor in SolarWinds has brought securities claims against the company, alleging that it omitted or included misleading statements about these potential vulnerabilities in its securities filings. Though the path to securities liability is potentially a long one, the suit itself demonstrates the potential for collateral consequences in the event of data breaches. --- Joseph V. Schaeffer

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Scientists Develop New Gene Therapy Strategy to Delay Aging and Extend Lifespan

"Cellular senescence, a state of permanent growth arrest, has emerged as a hallmark and fundamental driver of organismal aging."

Why this is important: Researchers from the Institute of Zoology of the Chinese Academy of Sciences, Peking University, and Beijing Institute of Genomics have developed a possible treatment to slow aging. It is in early stages of development and testing, so far attempted only on mice. The researchers

narrowed down the 50 genes that seemed to have the most effect on aging and finally to one. Altering that gene slowed aging in mice substantially. They also proved that they can alter the gene by an IV containing the appropriate viral vector (a modified virus with less symptoms but also containing the gene). This is important research, but no human treatment will be available soon. --- Hugh B. Wellons

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Parler Sues Amazon for Cutting Off Its Services

"Parler, the alternative social media platform favored by the far-right, sued Amazon in response to being deplatformed, alleging an antitrust violation, breach of contract and interference with the company's business relationships with users."

Why this is important: The social media platform "favored by the far-right," Parler, has sued Amazon after Amazon refused to provide its contractually obligated web hosting services. When Parler began in 2018, it retained Amazon's services and until recently, the two entities did not have problems. However, following the attack on the Capitol, Google and Apple pulled Parler from their respective app stores. Shortly after, Amazon decided that it too would distance itself from Parler. According to Amazon "in recent weeks it has reported 98 examples to Parler of 'posts that clearly encourage and incite violence.'" Parler sees this as another example of "deplatforming." In the social media context, deplatforming occurs when people are denied a social media presence due to their opinions and beliefs. Parler filed a lawsuit seeking a temporary restraining order and alleging that Amazon had interfered with its business relationships and had breached the contract between the parties because Amazon had not provided 30 days' notice of the termination of service. Additionally, Parler alleged that Amazon had committed an antitrust violation because it was trying to eliminate competition by removing them from the market. While no ruling has been made yet, it does not look like Parler will succeed in its request for a temporary restraining order. The federal judge in the case has said that she would consider issuing a preliminary injunction in lieu of the temporary restraining order. The preliminary injunction would essentially provide the same relief as a temporary restraining order. If successful, Amazon would have to continue providing web hosting services to Parler while the case is being litigated. Whatever the result, given the rise in deplatforming by social media companies, this case should be interesting to watch. --- Kellen M. Shearin

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Telegram's Popularity Soaring After Capitol Riots

"The app was downloaded 5.6M times worldwide from Wednesday through Sunday."

Why this important: Telegram, which was downloaded 5.6 million times in a five-day span last week, allows its users to send encrypted texts, videos and audio or picture messages. It isn't alone in offering these services to its users. However, its founders differentiate Telegram from other messaging apps by pointing out that it does not and never will give third parties access to users' data. This might set it apart as users have become increasingly worried about their privacy when using other messaging apps. An example of this is Facebook's WhatsApp, which some claim shares user data with Facebook, Instagram, and their native Messenger app. As users become increasingly concerned over privacy, it's possible we'll see more people flock to alternative messaging apps. Telegram, however, isn't without controversy. It's been linked as one of the sources of communication that may have been used in connection with a 2017 suicide bombing in Manchester, England. --- Nicholas P. Mooney II

CRISPR and the Splice to Survive

"New gene-editing technology could be used to save species from extinction—or to eliminate them."

Why this is important: This article describes, in simple terms, how CRISPR-cas9 enables medical researchers to cleave off and replace sections of the DNA, even single genes. It also explains how available the results of the process have become. The article discusses using this technology in both "recovering" extinct species and eliminating invasive species. If toads make you cringe, this may not be for you! --- Hugh B. Wellons

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Crypto is Now the World's Fifth-Most Circulated Currency by Value

"A week into the new year, the market value of all the world's cryptocurrencies surpassed $1 trillion."

Why this is important: If you've been in the cryptocurrency markets for more than the past six months, you're a happy HODLer. (Regardless of what you believe the acronym stands for - if it's an acronym at all - HODL is the rallying cry for cryptocurrency investors who purchase and hold onto their investments regardless of the rollercoaster ride of the markets.) For the past six months, investors have enjoyed a bull market that erased the losses of 2018, and then some. But, regardless of the recent clack-clack-clack as the market ascends another possible rollercoaster hill, the article reports on some important and serious points about cryptocurrencies. First, despite the ubiquity of Bitcoin, it isn't the only cryptocurrency. In fact, there are approximately 2,000 of them in existence today. Second, the combined market value of all of the world's cryptocurrencies recently surpassed $1 trillion. Third, where does that put it in relation to other currencies? It's now the fifth-most circulated currency in the world. --- Nicholas P. Mooney II

New Facial-Recognition Technology Can Accurately Identify Travelers Wearing Masks 96% of the Time

"Pre-pandemic facial-recognition algorithms had lower rates of identifying people wearing face masks."

Why this is important: As the pandemic continues to rage, transit authorities are facing additional security challenges caused by the mandatory face mask wearing in airports and other transportation hubs. The Department of Homeland Security is still tasked with utilizing a biometric system for tracking the coming and going of foreign nationals into our country. As a result, various biometric technologies, such as fingerprinting, iris scanning, and facial and body recognition, have been improved and tested rigorously. The efficacy of the solution must be tempered by its availability and risk profile - eliminating fingerprinting and mask removal (due to increased risks of COVID-19 transmission) and iris scanning (due to difficulty obtaining sufficient quality imaging on a large scale). Fortunately, facial recognition programs have come a long way from their introduction, and while some are not terribly accurate, many show remarkable accuracy even on crows of mask wearing people, allowing authorities to balance the interests of national security from bad actors with national security from COVID-19 exposure. --- Risa S. Katz-Albert

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You Can Now Spend China's Digital Currency at an Online Store

"JD.com now accepts digital yuan for some purchases at its site, making it the first online platform to take the virtual money."

Why this is important: We've discussed in previous issues of *Decoded* the efforts by many countries, including the United States, to create a Central Bank Digital Currency, an electronic version of a country's official currency. China has been in front of the pack with its development of a digital yuan. It previously tested its digital yuan by giving it to residents to spend in brick-and-mortar stores. Now, its digital yuan now can be used at JD.com, China's largest online retailer. Central Bank Digital Currencies are happening and will continue to happen in countries around the globe. This latest development with China's largest online retailer is another step toward their proliferation in China and elsewhere. --- Nicholas P. Mooney II

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mRNA Technology Gave Us the First COVID-19 Vaccines. It Could Also Upend the Drug Industry

"Up until last year, vaccines had not changed very much, at least in concept, for more than two centuries."

Why this is important: These mRNA vaccines, like the BioNTech-Pfizer and Moderna vaccines first available for COVID, have great promise to revolutionize vaccine development and possibly even cancer treatment. This development process is aided by CRISPR-cas9, which is described in another article featured above. --- Hugh B. Wellons

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Debate Looms Over Crypto Privacy, Security And Regulation

"And the debate, which has been in place for a long time, will likely be louder than ever, as cryptos strive to be ever more mainstream in consumer and commercial settings."

Why this is important: On a macro level, we're currently somewhere on the road to cryptocurrencies gaining more acceptance (as the article says, becoming more mainstream). With that comes the tug-of-war between regulators and industry participants. Last year, the OCC announced that banks could hold reserves on behalf of customers who deal in stablecoins (a type of virtual currency that is designed to minimize volatility and may be pegged to something seen as more stable, like some sort of fiat currency). More recently, FinCEN, an arm of the Treasury Department, proposed rules that would increase information gathering activities around the purchase and sale of cryptocurrencies. These moves by government actors can be seen as a maturing of digital and cryptocurrencies, or they can be seen as government coopting the original intention of these currencies. Over 7,000 crypto groups and advocates have filed public comments over FinCEN's proposed rule. What the final rule will require will play out over the coming months. However, if digital and cryptocurrencies are going to continue to "become more mainstream," expect more, not less, regulation and government oversight. --- Nicholas P. Mooney II

How is Technology and Data Helping Israel Become the First Country to Vanquish Covid-19?

"As part of the agreement between Pfizer and Israel, it was agreed that in exchange for the millions of vaccine doses, the state will provide the drugmakers with access to vast medical databases with digital information about the people who have been vaccinated."

Why this is important: Israeli Prime Minister Benjamin Netanyhau announced last week that Israel has already vaccinated more than 20 percent of its residents -- over 2 million people in under three weeks, thanks to a deal Israel struck with Pfizer. In return for receiving the number of doses required to vaccinate the entire Israeli population quickly, Israel agreed to serve as a "giant laboratory" for Pfizer by tracking and sharing detailed information about the vaccine's effectiveness, side effects and the time it takes to develop antibodies according to the age, gender, and medical history of the vaccine recipients. Israel is uniquely suited to serve in this role because all Israeli citizens are required to purchase health insurance from a limited pool of public healthcare providers, and all of the medical records of each citizen's doctor visits, vaccinations, health diagnoses and treatments are stored on computerized databases controlled by a small group of healthcare providers. Access to such an extensive database of healthcare information will allow Pfizer to maximize the use of artificial intelligence ("AI") and machine learning ("ML") to better understand how the vaccine impacts the virus and to develop new drugs and treatments. In that way, everyone benefits by Pfizer prioritizing provision of vaccinations to Israel, but this arrangement is concerning from a privacy standpoint. While Israel contends that the information shared with Pfizer will be on a macro level, will not have names attached to the data and will be similar to information-sharing routinely done to improve healthcare, privacy professionals are concerned that this is a slippery slope where the government of Israel has sold its citizens' health information. The benefit obtained by the Israeli government in this instance was expedited medical treatment for its citizens, but could the next information-sharing deal be for pure financial benefit and who decides? Israel's handling of its citizen's healthcare data serves, not just as a "giant laboratory" for Pfizer, but also for the U.S. and other nations to observe and consider how to balance privacy concerns with the goal of advancing healthcare using AI and ML. --- Lori D. Thompson

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