Weekly Wireless Report



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This Week's Stories

Comcast Seeks \$153 Million In Patent Legal Feud With Sprint

September 28, 2017

Comcast is appealing an earlier verdict in a patent litigation suit against Sprint in which a Pennsylvania jury awarded the cable operator \$1.5 million in damages.

Comcast purchased text and multimedia messaging patents from Nokia in 2005. The cable operator took legal action against Sprint in 2012, filing a suit in the U.S. District Court for the Eastern District of Pennsylvania, alleging Sprint violated the patents with its wireless picture mail and mobile email capabilities. Last February, the Pennsylvania jury found sufficient evidence of Sprint violating the patents, but only awarded Comcast \$1.5 million based on the patents' value when they were sold by Nokia.

In a Monday filing in the U.S. Court of Appeals for the Federal Circuit, Comcast said it should be awarded \$153 million in compensatory damages based on royalties for more than 2.66 trillion text and multimedia messages sent by Sprint customers.

In addition to Comcast having issues with the award being well below the \$7.3 million median payout for these kinds of patent litigation cases, the company also asserted the damages it was initially awarded were miscalculated. According to Comcast, instead of costs of the patents being considered when calculating the sum of compensatory money, the damages should have been calculated based on what the company described as Sprint's "rampant years" of infringing use.

Comcast initially filed a motion for a new trial back in March, however its request was denied by a Pennsylvania judge on August 16. Comcast appealed the ruling nine days later, and made its first court appearance pertaining to the appeal earlier this month.

It's worth noting this isn't the first time these two companies have engaged in legal battle. In 2014, Comcast was awarded \$7.5 million against Sprint when a jury determined Comcast's VoIP and other telecommunications technology patents were violated.

Opening arguments for the appeal will take place on December 5.

wirelessweek.com

AT&T's Rural Wireless Internet Is Now Available In 18 States

September 27, 2017

If you've been waiting for AT&T's rural wireless internet to show up in your state, there's now a good chance you can sign up. The telecom has launched the service in nine more states, or twice as many as it had just a few months ago. And this includes some of the most populous states in the country --California and Texas are included along with Arkansas, Illinois, Indiana, Kansas, Michigan, Ohio and Wisconsin. AT&T says about 160,000 locations are covered (more than double what it could manage in June), and it's reportedly still on track to serve 400,000 locations before 2017 is over.

As always, you're not going to be blown away by the performance. You're paying \$60 per month for 10Mbps downloads and 1Mbps uploads, which doesn't meet the FCC's definition of broadband.









However, it's still better than the slow speeds of dial-up and entry DSL, and it's likely to be more affordable than satellite. This is about getting reasonably fast internet in places that carriers normally won't touch due to the relatively steep cost of wiring customers' homes.

engadget.com

Following AWS, Google Compute Engine Also Moves To Per-Second Billing

September 26, 2017

A week ago, AWS announced that it would soon move to per-second billing for users of its EC2 service. It doesn't come as a huge surprise, then, that Google today announced a very similar move.

Google Compute Engine, Container Engine, Cloud Dataproc, and App Engine's flexible environment virtual machines (VMs) will now feature per-second billing, starting immediately (AWS users still have to wait until October 2). This new pricing scheme extends to preemptible machines and VMs that run premium operating systems, including Windows Server, Red Hat Enterprise Linux and SUSE Enterprise Linux Server. With that, it one-ups AWS, which only offers per-second billing for basic Linux instances and not for Windows Server and other Linux distributions on its platform that currently feature a separate hourly charge. Like AWS, Google will charge for a minimum of one minute.

It's worth noting that Google already featured per-second billing for its Persistent Disks, GPUs and committed use discounts. While Google argues that, for most use cases, per-second billing will only result in very small billing changes, the company also notes there are plenty of applications where being able to quickly scale up and down makes a lot of sense (websites, mobile apps and data processing jobs, for example).

"This is probably why we haven't heard many customers asking for per-second," Paul Nash, Group Product Manager for Compute Engine, writes in today's announcement. "But, we don't want to make you choose between your morning coffee and your core hours, so we're pleased to bring per-second billing to your VMs, with a one-minute minimum."

So while Google doesn't quite come out and say it, this is clearly a reaction to Amazon's move, even though the company mostly sees it as another checkbox in a feature comparison between the two cloud computing services.

So What About Microsoft?

So far, Microsoft hasn't made a similar move. "With Azure Container Instances we've actually led the way for per-second billing, with a service that spins up in seconds and spins down in seconds, we realized it was incredibly critical to give customers this granularity in costs," Corey Sanders, Microsoft's head of product for Azure Compute, told me at the Microsoft Ignite conference when I asked him about his company's plans. "I'm excited to see other clouds follow suit and offer customers the best flexibility for their pricing."

As for regular virtual machines, Sanders stayed on message and noted that Microsoft wanted to focus on containers because it's there that per-second billing makes the most sense. "We're always looking to improve billing constructs across our platform and to make it easier and more agile for our customers to use," he said. I'd be very surprised if Microsoft didn't make a move to also check the per-second billing checkbox in the near future, though

techcrunch.com

"This new pricing scheme extends to preemptible machines and VMs that run premium operating systems, including Windows Server, Red Hat Enterprise Linux and SUSE Enterprise Linux Server."









Products & Services

Microsoft Puts Your Data In A Box For Easy Shipment To Azure Cloud

September 26, 2017

Hey it's no tractor-trailer, but it's a start. Microsoft has introduced Azure Data Box, a hardware appliance that companies can use to load their data for shipping to the closest Microsoft Azure data center.

The 45-lb box, which is said to be tamper proof, holds up to 100 terabytes (TB) of data. It plugs into a corporate network for downloads, and then into Azure's own high-speed networks to upload its contents. Companies will be able to rent it, fill it, and ship it while tracking its progress. Data on the device will be encrypted throughout the journey.

If that sounds familiar, it's because cloud rival Amazon Web Services started down this path two years ago with Snowball—an Amazon appliance that initially handled 50TB of data before being upgraded to 80TB. In 2016, AWS went even bigger with the 45-foot long Snowmobile, a shipping container that requires a tractor-trailer to move. Snowmobile can carry up to 100 petabytes of data to Amazon's cloud data centers. In July, Google announced its Snowball competitor the Google Transfer Appliance, which handles 480 TB of uncompressed data (or 1PB compressed data.)

It's difficult to conceptualize these big amounts of data, but consider this: As of 2014, the U.S. Library of Congress said it had 525 TB of data and that it was adding 5TB more each month. Thus a single Azure Data Box could hold about 20% of the library's initial content trove circa 2014—that's a lot of data. Going a step further, a petabyte (or 1PB) equals 1,000 TB—or nearly two Libraries of Congress.

There's a very good reason why it makes sense to physically ship data instead of using fast network connections. When it comes to big quantities of data, it is faster and easier to hand deliver it than send it online? When Snowmobile debuted, for example, Amazon said, excluding travel time, it could move 100 PB of data into Amazon servers in a few weeks. That may not sound very fast, but moving that same amount of information over a single 1 gigabit-per-second (Gbps) line would take 20 years. What Microsoft, Amazon, and Google are doing is trying to make it drop-dead easy to move your corporate data into their respective clouds, Azure Data Box to Azure, AWS Snowball/Snowmobile to AWS, and Google GTA to Google Cloud Platform.

Microsoft announced the Azure Data Box preview at its Ignite tech conference in Orlando. Customers can sign up for it now. A spokeswoman said the boxes would be available by the end of the second calendar quarter 2018 in the U.S., Europe and some parts of Asia. Pricing is still a mystery.

fortune.com

Google And Levi's 'Connected' Jacket That Lets You Answer Calls, Use Maps And More Is Going On Sale

September 25, 2017

Over a year after Google showed off its "connected" jean jacket designed for bike commuters at last year's Google I/O developer conference, the company today is unveiling the final product, which goes on sale on Wednesday for \$350. Designed in partnership with Levi's, the new smart jacket takes advantage of technology from Google's Advanced Technology and Projects group (ATAP), which involves weaving multi-touch sensors into clothing.

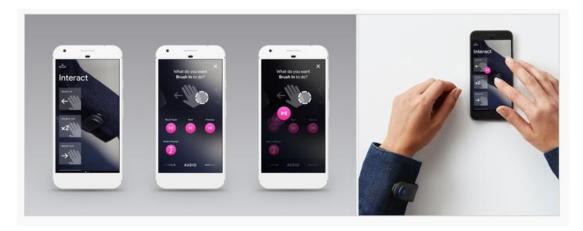
"It plugs into a corporate network for downloads, and then into Azure's own highspeed networks to upload its contents."

"This works because the gesture-sensing sensors are woven into the jacket's cuff, and are then wirelessly connected to the wearer's mobile phone using tiny electronics embedded inside the sleeve in a flexible snap tag, Google explains."



At Google I/O, the companies demonstrated how a bike commuter could instead touch their jacket's cuff and use gestures to control various functions that they would otherwise have needed to pull out their phone for – like handling calls and messages, adjusting the volume, or navigating with Google Maps, for instance.

In today's announcement, Google says the new Levi's Commuter Trucker Jacket will allow its wearers to do things like stopping or starting their music, getting directions, or reading incoming text messages just by swiping or tapping on the jacket's sleeve.



This works because the gesture-sensing sensors ("Jacquard Threads") are woven into the jacket's cuff, and are then wirelessly connected to the wearer's mobile phone using tiny electronics embedded inside the sleeve in a flexible snap tag, Google explains. This tag will also alert you to incoming calls and texts using haptic feedback and light.

The gestures you use to do things like start or stop the music, get your ETA or next direction, receive updates on calls or texts, and other tasks are configurable using an accompanying mobile app, so you can customize the jacket to your needs.

The jacket works with iOS or Android devices, even though it's from Google.

On Levi's website, the apparel maker notes that when you remove the tag from the cuff, the entire jacket itself is washable – just like regular denim.

However, you can tell there's a bit of stiffness to the cuff where the sensors are woven in which could be uncomfortable. But the jacket's denim nature – also a tough, sturdy fabric – keeps this from being too obvious, at least compared with a softer fabric, like cotton. Yet the tag appears to be more than a bit obtrusive, and not all that fashionable.

Despite the interesting use of technology here, it's unclear at launch if there will be high demand for this jacket, given that much of what it can do - like taking calls, listening to music, or getting directions – can be replicated using a smartphone and a pair of bluetooth earbuds. (Apple's AirPods, for example, can invoke Siri who can aid with a number of tasks, hands-free.)

Of course, fiddling with your phone while on your bike can be difficult, but using one hand to swipe and tap the sleeve on the other arm is only a bit better. And perhaps it's not \$350 worth of improvement over the current experience.

That being said, the Levi's Commuter Trucker jacket is maybe less about selling a product in large numbers, and more about proving the concept can be brought to market. It's a sort of beta test to









see how people will react to wearable technology embedded in their clothing, and whether they'll actually adopt such a thing.

At Google I/O, the company had said it would work with other apparel makers in the future to expand Jacquard's reach, including athletic clothing companies and those who design business wear. Its presentation then saw the Cinta's brand logo appear on a slide, but Google didn't mention them by name.

There's no word today on future plans as today's focus is all on the Levi's launch.

"We'll learn a lot from this launch, and that's what we're most excited about right now," a Google spokesperson said. "What's next is right now – we're going to listen to feedback. From those learnings, we have the opportunity to evolve abilities within the jacket since Jacquard is a platform and to consider the next version of the jacket, or other items."

The jacket itself will be sold in select shops starting on Wednesday, including Kinfolk in Brooklyn, NY, Fred Segal in West Hollywood, CA and Concepts in Boston. On October 2nd, it will be sold online and in select Levi's stores (Santa Monica store in CA; Michigan Ave. store in Chicago; Meatpacking district store in NY; and Market St. store in SF).

techcrunch.com

Lyft Ups Its Driver Game, Adds 24/7 Phone Support

September 25, 2017

In its bid to gain on rival Uber, the ride-hailing company updates its driver app with new features like immediate assistance.

In its push to be the nice guy, Lyft is rolling out new driver initiatives.

The ride-hailing company said Monday it's adding features like 24/7 phone support, faster online assistance and Spanish language support. Lyft said these new additions came at drivers' requests.

"It's really been around listening and continually listening to our drivers," said Mary Winfield, Lyft's vice president of Trust and Safety, who is tasked with improving driver and passenger experience. "For many of our drivers, they want more immediate support."

Lyft has seen a surge in ridership over the last few months after it's rival Uber has been embroiled in scandals. But now, as Uber is cleaning up its act with a new CEO and initiatives like 180 days of change to help drivers, Lyft may need to work harder to gain on its competitor.

Compared with Uber, Lyft has long been the small dog in the ride-hailing world. It's received \$2.6 billion in venture funding and is valued at \$7.5 billion, whereas Uber has received \$12.9 billion and is valued at \$68 billion.

But, Lyft has quietly amassed US market share over the last year. Since January, it's launched in dozens of new cities and now is nearly as ubiquitous as its rival. Lyft is currently available in 49 states, with South Dakota being the lone state without the ride-hailing service. Lyft is also reportedly eyeing international expansion.

"We are just so focused on our game," Winfield said. "We don't want to get distracted by others."









Lyft currently has more than 700,000 US drivers and is known for being more driver-friendly than Uber. For instance, it introduced in-app tipping and immediate driver payout years before Uber rolled out such features.

"We did tipping before tipping was cool," Winfield said. "To date we've had over \$250 million dollars in tips that have been paid out."

cnet.com

Emerging Technology

New LG Smartphone Keeps Mosquitos Away

September 29, 2017

LG hopes its latest smartphone could stop you catching malaria.

The LG K7i, launched by the South Korean firm at the India Mobile Congress this week, is embedded with technology that it says will keep mosquitoes away.

It emits ultrasonic waves from a mesh grid on the back of the phone. The waves should repel the pests and are "absolutely safe and harmless for humans," the company said.

Some other LG products such air conditioners and TVs are already available with the "mosquitoaway" technology.

There are also apps that claim to use similar technology with similar results, but LG says this is the first time it has been embedded in a smartphone.

The K7i Android phone has a price tag of 7,990 rupees (\$122). LG says it is considering plans to roll it out in other countries.

India has long struggled with diseases like malaria and dengue that spread through mosquitoes, with tens of thousands of cases and hundreds of deaths recorded by the government every year.

"The company has set a benchmark for ensuring the health of Indian consumers," Amit Gujral, LG's chief marketing officer in India, told CNNMoney.

Scientists have questioned the effectiveness of ultrasonic mosquito repellents. The American Mosquito Control Association says at least 10 studies in the past 15 years have "unanimously denounced" them.

"The fact is that these devices just do not work," the association says.

LG said it conducted multiple tests of the technology that were certified by India's International Institute of Biotechnology and Toxicology, adding that the K7i repelled on average 72% of diseasespreading mosquitoes.

Indians spent \$733 million last year on home insecticides, according to a recent study by Euromonitor International.

money.cnn.com

"It emits ultrasonic waves from a mesh grid on the back of the phone. The waves should repel the pests and are 'absolutely safe and harmless for humans,' the company said."







ZTE's Rumored Dual-Screen Folding Smartphone Seems To Be Real

September 28, 2017

ZTE is apparently working on a new flagship smartphone called the Axon M, with the unique headline feature of dual screens that can unfold into a combined 6.8-inch display, according to Android Authority.

The new phone was rumored early in September by Evan Blass over at VentureBeat, who provided the additional details that the new device would feature a Snapdragon 820 processor, 4GB of RAM, 32GB of storage, a 3,120mAh battery, and a single 20-megapixel camera.



Photo: Android Authority

But the biggest feature is still the form factor: two 1080p displays that make up the front and back of the device, which can unfold with a centrally located hinge to create one tablet-sized screen that's twice as wide.

According to Android Authority, the two screens will also be able to run two different apps at once, for expanded multitasking beyond what's currently capable even in Android Oreo.

It's worth pointing out that the Axon M isn't the first Android smartphone to try to make the dualscreen concept work in this form factor.

That honor goes to the ill-fated Kyocera Echo, a Sprint-exclusive device from 2011 that tried and failed to make the concept work, due to a host of technical issues that held back the concept. But maybe with the benefit of time and more powerful hardware, ZTE can get it right.

And at the very least, it's certainly something different than the slew of similar-looking flagship phones that we've seen this year.

theverge.com









Mergers and Acquisitions

Ford Gets A Lyft In Self-Driving-Car, Ride-Hailing Development

September 27, 2017

"The idea is that, one day in the

through the Lyft app and have a self-driving Ford arrive at

your doorstep to shuffle you off

future, you can order a car

to wherever."

Ford will use Lyft's open platform to create a service based around on-demand autonomous rides.

GM and Lyft might already have a partnership in place, but that doesn't mean Lyft can't work with its competitors.

Lyft and Ford have announced that the two will team up on the development and deployment of selfdriving cars. The agreement will see Ford putting self-driving vehicles on Lyft's open platform, which will not only allow Ford to integrate into Lyft's ride-hailing system, but it will also allow Ford to access a number of real-life driving scenarios from which Ford's self-driving cars can learn how to act and react.

"We strongly believe that leaders across industries should work collaboratively to introduce selfdriving technology in a way that positively impacts our cities," Lyft said in a blog post. "Our two companies share a core belief that the future of transportation will meaningfully reshape how cities are designed, and improve the lives of people who live there."

The idea is that, one day in the future, you can order a car through the Lyft app and have a selfdriving Ford arrive at your doorstep to shuffle you off to wherever.

There's plenty of work to do before that happens, though.

Ford and Lyft will work together to figure out where these kinds of services are needed and determine what kind of infrastructure is necessary for such a deployment. Before any self-driving vehicles enter Lyft's ranks, Ford will first deploy human-driven vehicles to test interfaces and platform integration.

While there is no specific timeline for the deployment of its self-driving cars on Lyft's network, Reuters reports that Ford wants deployment "in large numbers" by 2021.

"We expect that our partnership with Lyft will accelerate our efforts to build a profitable and viable self-driving vehicle business," Ford said in a blog post.

"With Lyft's network and respected brand experience, we expect our ability to scale self-driving vehicles will play a critical role in safely bringing this technology -- and its many benefits -- to mainstream consumers."

Ford is also working to gauge consumer reaction to self-driving vehicles through a partnership that will see "self-driving" Fusion sedans delivering pizzas to customers in Ann Arbor, Michigan.

Lyft has a number of other partners, too, including General Motors, Drive.ai and Waymo.

cnet com

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September 25, 2017

A tie-up between T-Mobile and Sprint wouldn't be rubber stamped by federal regulators, Barclays analysts wrote this morning, but the timing may never be better. And confirmation could happen within weeks after any deal is announced.

Merger talks between the nation's No. 3 and 4 wireless network operators have gone on for weeks, and one report last week had the carriers reaching "a major breakthrough" in negotiations. That breakthrough may have been Sprint's willingness to accept a stock-for-stock merger that values Sprint at or near its current price, according to a separate report that emerged Friday night.

Sprint's market capitalization at the time was \$34 billion, but shares of the company fell more than 7% as the market opened Monday, apparently on investors' disappointment that the deal wouldn't bring a higher valuation. The news appears to mark the latest sign of progress in active merger talks, however. And just as a deal seems more likely than ever, regulatory approval—though no slam dunk—might be more plausible than previously thought.

"While this is not the first time we have heard that the two carriers are in discussions, the pace of reported developments (if correct) seems to suggest that both companies may be getting close to decision time on whether it makes sense to move forward with a transaction," Amir Rozwadowski of Barclays wrote in a note to investors this morning.

"By no means is the regulatory approval of such a deal guaranteed. However, in our view, now could provide the best window of opportunity to take a shot at getting what would be a financially and strategically viable transaction done."

Speculation of a merger between the two U.S. wireless operators has heated up throughout the year, due to both the end of the quiet period following the incentive auction of 600 MHz airwaves and the likelihood of a lighter regulatory stance of Donald Trump's administration compared to the Obama White House.

Indeed, Sprint parent SoftBank had tried to acquire T-Mobile and merge the carriers several years ago but dropped the effort after getting significant push-back from federal regulators.

Regulators are still sure to be wary of any deal that consolidates the current wireless market from four major carriers down to three, and at least one key Trump nominee—Makan Delrahim, who is set to become the assistant attorney general for antitrust in the U.S. Department of Justice—has yet to be confirmed.

Regardless, a merger could gain approval within weeks after a deal is announced, according to Barclays. "In other words, we still believe that the regulatory approval of a potential merger between T-Mobile and Sprint is not a layup," Rozwadowski wrote.

"However, prevailing industry dynamics, a potentially more lenient regulatory environment, and a reported willingness to be flexible in terms of ownership/deal structure lead us to believe that now could provide the best window of opportunity for a deal to materialize. While we continue to believe prudence would suggest waiting for the Antitrust AAG to be in place, our best estimate suggests that a conformation could happen in a manner of weeks."

fiercewireless.com



Industry Reports

AT&T Asks U.S. Supreme Court To Overturn Net Neutrality Rules

September 28, 2017

As the FCC prepares to roll back the controversial rules, AT&T and others appeal a lower court's ruling that upheld the rules to the Supreme Court.

AT&T is trying to take the fight over the Obama-era net neutrality rules to the US Supreme Court.

On Thursday, AT&T, the cable industry group NCTA, and CenturyLink filed separate appeals asking the court to overturn the controversial 2015 rules. A federal appeals court last year upheld the rules, which were passed by a Democrat-controlled FCC and supported by President Barack Obama.

The rules prohibit wireless and broadband companies from blocking or slowing traffic and prevents them from charging a fee to deliver services faster to consumers. It also reclassifies broadband as a utility service, subjecting it to many of the same regulations that govern the old telephone network.

The broadband industry says it has no problem with the idea of an open internet, but it argues the new classification applies outdated regulations that have stifled investment.

Republicans, who now control the FCC, have already begun the process of dismantling the rules. In May FCC Chairman Ajit Pai, appointed by President Donald Trump, opened a proceeding to rewrite the rules. The FCC could vote to repeal the rules as early as December.

Legal experts say this makes it less likely the Court will take the case.

"The Supreme Court isn't likely to play a starring role on net neutrality now," said Matt Schettenhelm, a litigation and government analyst with Bloomberg Intelligence. "The court's likely to take a back seat, letting the FCC move ahead with its work to undo the 2015 order."

This means the fight for net neutrality is likely to go on for several years as Democrats, consumer advocates and internet companies like Mozilla, which support the rules, have vowed to continue to fight.

"A court challenge is certain if the FCC overturns the existing rules," Matt Wood, policy director for the advocacy group Free Press, said in an interview earlier this year.

cnet.com

Instagram Now Has 800 Million Monthly And 500 Million Daily **Active Users**

September 25, 2017

Instagram's still growing at a rapid pace, having added 100 million new monthly active users in just a month since it last reported a new figure. It now has 800 million users engaging with the service on at least a monthly basis, the company revealed on Monday at an event in NYC, and it has 500 million using the service on a daily basis, too.

Instagram announced the 700 million monthly active user milestone in April, which grew from 600 million in four months, meaning it accrued its latest growth at around the same clip.

"The rules prohibit wireless and broadband companies from blocking or slowing traffic and prevents them from charging a fee to deliver services faster to consumers."









Despite the social network's huge user population, its growth isn't slowing down, putting it on a path to potentially catch up to parent network Facebook's user number down the road.

Instagram also told TechCrunch that it now has 2 million advertisers on the platform, which is up from 1 million in March. Most of that growth has come from SMBs, the company says.

The company also said that time spent by users viewing video on Instagram is up over 80 percent year over year. Further, users are producing more video – four times as many per day as they were last year, in fact.

These stats are encouraging for anyone investing in Instagram as a platform, and for Facebook's larger ambitions. But they're likely discouraging to Snapchat, one of Instagram's main rivals for user

Instagram's skyrocketing growth has come as the company copied and implemented a number of Snapchat product experiences, including Stories.

techcrunch.com



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