Executive Predictions 2021

Leadership strategies and trends in a faster, more disruptive world.

splunk>

Embracing the Impossible Future

Imagine that on Jan. 1, 2020, you'd said, "You know what? We're going to flip your entire 12,000 or 20,000 or 100,000-person office workforce to virtual. In a week." Every exec in the world would have answered, "You're out of your mind. That is literally impossible. It can never be done." But we did it. It was hard, it was bumpy, and lots of people worked very long hours. But when our backs were up against the wall, we found a way to do it.

2020 was a uniquely unique year, with tremendous disruption, hardship and loss. But this was also a time of heroism and possibility, of things beginning and dramatically accelerating. Through this landscape of massive change, one of 2020's most important, and still untold, stories is that technology and the data that supports and surrounds it have become an essential service. IT and technical professionals across the globe worked tirelessly to maintain, adapt and expand critical online infrastructure.

It's astounding that the internet didn't totally melt down.

I don't believe there has ever been a period in history when critical infrastructure has been tested with as much volume and intensity. And none of this would have been possible without the data technologies that enabled our technical heroes to do the impossible.

There is a lot left to do. We've largely found a way to allow our office workers to adapt and perform, but we haven't solved the restaurant economy, or in-person schooling, to say nothing of the larger healthcare questions. With so much uncertainty, so much left to do, how can we approach "2021 Predictions" without a sense of cynicism or exhaustion? I have found inspiration in the leaders around me; in talking to my peers in the tech industry and at the organizations that are our customers, and among the leadership team at Splunk, who provide many of the insights in this year's report.

I have always tried to lead from a place of optimism, imagination and re-creation, and have actually found that the COVID-19 pandemic has created a heightened opportunity to carry people in that direction. Across the board, I hear much less "We can't do that," and much more "Well, why can't we do that? How could we make that work?"

One of the most profound lessons that I've wrestled with since leaving college is that there is no one right answer to a complex problem. And beyond that, getting to the right answer is just the very, very beginning of the work that needs to be done. Over our 12-to-18-year academic careers, it's all about getting the right answer, and showing how you figured it out. In the real world, once you find that answer, you have to implement it. You have to lead people toward a goal, and you have to continually assess the goal and the processes to get there. That's the real work.

Which is how we can approach a collection of predictions around data technology with hope and excitement. These technologies are going to be essential to navigating the challenges ahead. I can't wait to see what's next.

Doug Merritt
CEO, Splunk

"During the pandemic, I hear much less 'We can't do that,' and much more 'Well, why *can't* we do that?'"

Predicting a Post-COVID World

The COVID-19 pandemic disrupted nearly every human activity and endeavor on the planet. As we prepare this report in late 2020, it appears that the virus will continue to actively disrupt daily life at least into the third quarter of 2021. It's very difficult to predict trends in a world with so much uncertainty, with so little sense of what, exactly, a post-COVID "normal" will look like.

Predictions and Survival Strategies for 2021

A focus on data and data-enabled technologies, however, provides us with some clear themes. When the coronavirus pandemic emerged, the world was already on the cusp of profound change. We were entering the Data Age. We'd reached a point at which data is not just discretely applied to individual processes, but is becoming part of a holistic approach to business, life and society. The Data Age will bring greater interconnectedness through ubiquitous digital technologies, using data to enable and enrich every decision. And the pandemic gave us a hard shove into the new era.

"COVID-19 has been a catalyst, greatly accelerating digital transformation," says Ammar Maraqa, Splunk's senior vice president and chief strategy officer. "For business and IT leaders, the strategic long view has been dramatically compressed. Disruptions anticipated in five or 10 years have been compressed to a horizon of months or weeks."

Leading Through Turbulent Times

Leading through multifaceted disruption is an astonishing challenge. Before considering the individual technologies that will shape our future, we asked senior leaders to discuss the essential elements of leadership that will determine success in this moment.

Prediction

Successful organizations will focus their business on what matters. (The customer matters.)

In an uncertain economy, companies and public sector organizations naturally look to cut spending. But an immediate bunker mentality doesn't pay off in the long run. Multiple studies of past recessions (here's Bain & Co.; here's the Harvard Business Review) have found that companies that increase investment in initiatives that strengthen their core market position make more dramatic and enduring gains than they do with such moves in a bull market.

Splunk CFO Jason Child, a veteran of Amazon's mad-growth early days (including the dot-com bust), says turbulent times are full of opportunity. But, being a CFO, he starts in a defensive stance.

"The CFO's job is to look at the worst-case scenario, and ask, 'How do I ensure I have enough cash to ride that out?'" he says. "Most companies' cashflow is reduced in this environment, even if the business is doing well. You might be gathering more market share at the same time that your cashflow profits are down."

Cash is the lifeblood of a company, of course, but within margins of safety, he says, now can be a time for aggressive action.

Vendors might be more eager to discount a major technology deal. Often you can acquire whole companies in distress at considerable savings. For public companies, with the profit picture in disarray anyway, now can be the time to make a major shift to cloud, taking a near-term expense hit with the benefit of reduced cost in the future.

But the trick is to focus more sharply than ever on core, essential initiatives that improve your ability to compete or achieve your mission. John Sabino, Splunk's chief customer officer, says he sees the best companies framing their future squarely around their customers.

"Technologies that enable a closer connection with or a better experience for your customer, whether that's B2C or B2B, are the technologies you cannot afford to ignore," he says.

Splunk CIO Steve McMahon agrees that the successful delivery of IT services to the end user is important. "In a downturn, when dollars are even more scarce, I'm interested in speed and, particularly, scale. I'm not interested in a trivial upgrade to a user interface right now. For me, to achieve meaningful results, I'm laser-focused on automation."

"There's a lot coming at us," Sabino says. "At the end of the day, I prioritize technology that gets me closer to my customer, that delivers a richer experience, whether that's through velocity or scale or smarter insights. That's where I'm investing my resources."

"At the end of the day, I prioritize technology that gets me closer to my customer, that delivers a richer experience."

John Sabino, Chief Customer Officer, Splunk

Strategy

Too much communication is just about enough.

"COVID is not remote work," says Splunk CEO Doug Merritt. "Those of us who can maintain their jobs, and their businesses, from home are fortunate."

But the pressures are unique to this pandemic. In addition to making sure we have good WiFi, we're worried about our health and the economy. Many of us have children who can't attend school in-person, and need support throughout our workday. And even the most optimistic boosters of remote work didn't imagine we'd be all-remote, all the time.

"The inability to intermix face-to-face communication, in the office or at events, with remote work is a unique burden," Merritt says, "as is the energy and consistency and momentum that is necessary on a day-in, day-out basis."

The foundation of leadership, however, remains the same. "A leader's core task is to synthesize information and give consistent signal and direction to our teams. We interrogate key metrics, meet with customers and stakeholders, and then communicate the resulting direction," he says. "The challenge as we enter 2021 is that everything is heightened in the COVID environment, and we are called on to be more creative and daring, but also more communicative and empathetic."

To keep organizations moving forward, leaders have to put particular care into the emotional well-being of their teams.

"Everyone gets tapped out, we're all a little bit on edge. Leaders have to push through that, personally, to then support and reassure their teams," Merritt says. "We have to over-rotate on communication to provide as much certainty about the next week, the next quarter, the next 12 to 18 months as we can."

Which ain't easy. There are important questions that no leader can answer yet: the when and how of returning to offices, conferences and live events. And a million what-ifs as the global economy absorbs the strain of the pandemic. Leaders must do what they can — and listen, too.

"We're surveying our employees more than ever, and maintaining feedback mechanisms for all-hands and other meetings," says Splunk's chief people officer, Kristen Robinson. "It's harder to take the pulse of your organization when no one's ever in the same room. Since the pandemic, we've done surveys about wellness, pandemic-related stress, workload. … The data helps us identify needs and create solutions to support focus, productivity and wellness."

Prediction

A virtual-first talent strategy is the future.

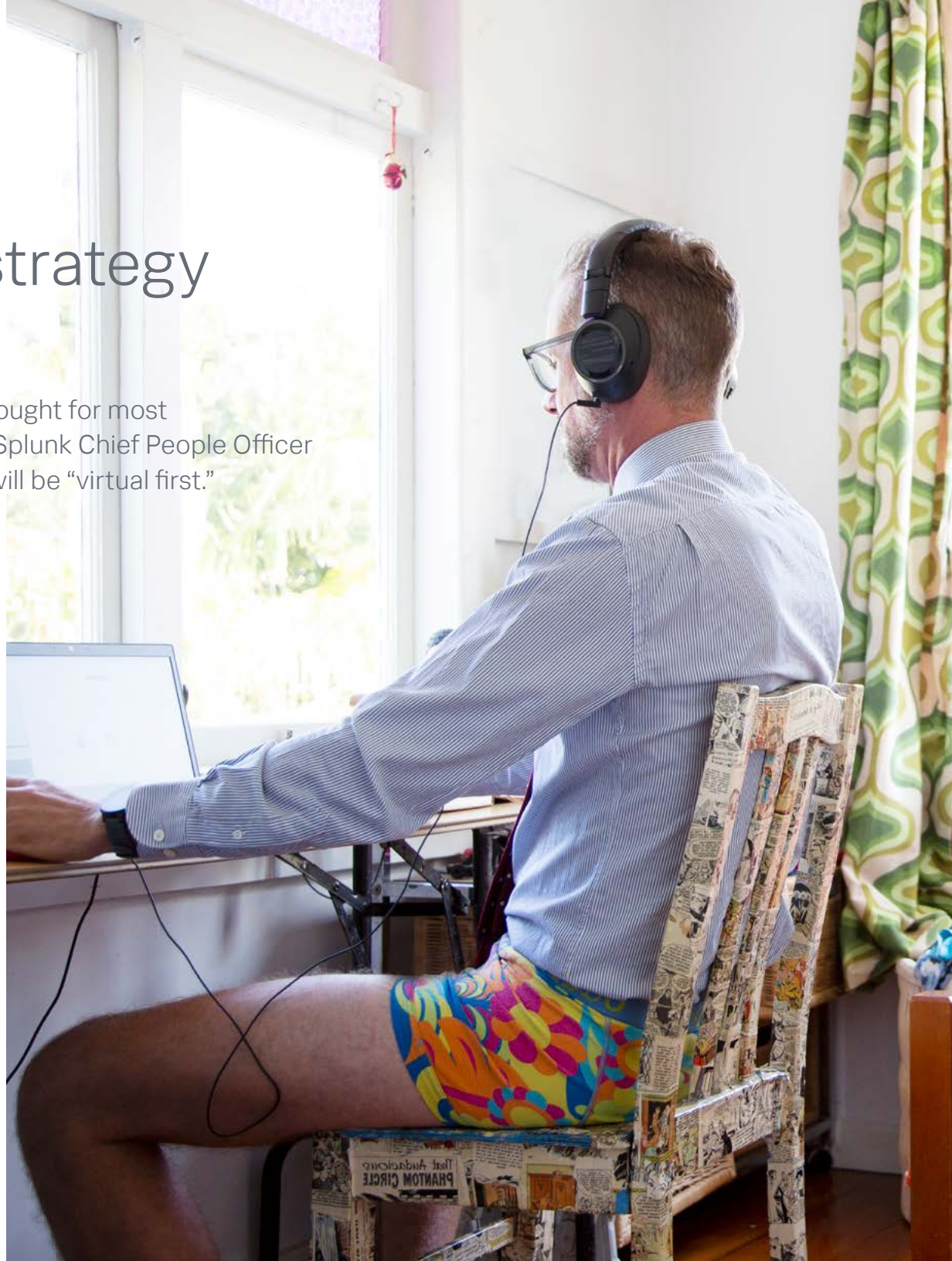
Before the pandemic, remote work was an afterthought for most organizations, a workaround. Going forward, says Splunk Chief People Officer Kristen Robinson, the new organizational mantra will be "virtual first."

"I think we're going to go through all of 2021 before people start coming back into offices in any quasi-normal way," she says. "And then, going forward, I think any of us who design, develop and deploy business and operational practices — in my case, talent solutions — must think about the remote employee experience first."

Expect to see more willingness to hire talented workers wherever they live. Earlier waves of outsourcing focused on lowering costs, but Splunk CTO Tim Tully sees more value in raising the bar on talent.

"I need to fill roles that require very specific, fairly rare skills, and it benefits me to be able to hire those folks from anywhere in the world they happen to live," he says. "And the other interesting thing that I'm seeing is more around-the-clock development. I'll wake up in the morning and see, oh, a bunch of really interesting fixes came in overnight from a super-sharp engineer in Europe."

"COVID has broken some of the long ingrained work routines that were frankly no longer fit for purpose," says Frederik Maris,



Splunk's vice president for Europe, the Middle East and Africa. "As EMEA recovers from COVID in 2021, I think we'll see the emergence of a much more empathetic management style that looks to embrace the new normal and empower employees to have a clearer work-life balance. This shift will drive productivity gains across the region."

Virtual first will mean a lot more than identifying decent videoconferencing and instant messaging platforms. It means understanding workflows, roles and management strategies in a different way. And when many of us can be in the office again, it means not designing everything for in-person work, and using video conferencing to nominally incorporate the remote contingent.

"I think you'll see more and more companies pounce on the opportunity to provide better tools to enable virtual and asynchronous workforces," Tully says (and discusses more in the Splunk IT Operations Predictions 2021 report). "Maybe the next level Slack or Google Drive is being built right now."

Tools, processes and practices will be important, Robinson adds, especially in a hybrid world, so that talented remote workers aren't marginalized because they are not as connected in the workplace.

"If we design everything for virtual first, we can be more inclusive and enable everyone to make their best contribution," she says. "It will be important to make sure everyone is heard, and has access to leaders and resources, to erase the barriers of distance even when many of us are in the office again."

The Immediate Challenges of Remote Work

Findings from a June report from ESG:

47%
of IT executives said cyberattacks have risen since the pandemic began.

36%
said they'd seen more security vulnerabilities due to remote work.

40%
of remote workers say that their home connectivity is worse than in the office.

Other challenges included distractions in the home (cited by 32%), limited privacy to work (24%), hassles with video conferencing (24%) and other productivity tools (24%), and work/life balance (23%).

Digital Transformation

Digital transformation is old news. For about a quarter century, we have been incorporating digital technologies into our businesses, our homes and our personal lives as we evolved toward the deeply networked, highly connective Data Age. Now that shift is picking up extra momentum from a pandemic that is forcing everyone to be more remote, more digital, more automated.

Prediction

Digital transformation is in overdrive, and won't slow down.

So here are all of our technology predictions in a sentence: Everything software-driven is happening much, much faster than you thought. (Conversely, major hardware efforts, such as 5G network installation, may be slowed by the pandemic.) That means that the bulk of what we'll see in the next year or two falls under the umbrella of hyper-energized digital transformation.

"We've seen that having a strong digital strategy in place was essential to surviving COVID," says John Sabino, Splunk's chief customer officer. "And if you had that strong digital strategy, you're now pursuing it at warp speed."

As Microsoft CEO Satya Nadella put it at the end of April, "We've seen two years' worth of digital transformation in two months. From remote teamwork and learning, to sales and customer service, to critical cloud infrastructure and security."

We've seen that ourselves, and Sabino says he's seeing companies grapple with IT being stuck on fast forward. "The winners are going to be the ones that had something under way," he says, "or that had an agile, growth-oriented culture could adjust, adapt and adopt the minute this hit."

"Cloud adoption has accelerated in EMEA in 2020, and it's quickly breaking down barriers that have long stifled innovation," says Frederik Maris, Splunk's vice president for EMEA. "We've seen this already in financial services, where the bigger players have started launching new brands that are more agile and can adapt to changing consumer habits, and we are likely to see it in other industries."

Digital technologies are driven by data, and another challenge to transformation initiatives is the high percentage of organizations' data that is dark — unknown, orphaned, unused, perhaps unsecured or out of compliance. According to Splunk-sponsored research by TRUE Global Intelligence released in September, a global average of 66% of an organization's data is dark, up 10% from the previous year. New digital initiatives will have to reckon with the data that's already been sidelined, and make sure not to build more silos.

Ten Intensified

The World Economic Forum identified 10 technology trends that would particularly be accelerated by the disruption of the COVID-19 pandemic:

1. Online Shopping and Robot Deliveries
2. Digital and Contactless Payments
3. Remote Work
4. Distance Learning
5. Telehealth
6. Online Entertainment
7. Supply Chain 4.0 (incorporating core technologies of the Fourth Industrial Revolution, such as Big Data, cloud computing, IoT and blockchain)
8. 3D Printing
9. Robotics and Drones
10. 5G and Information and Communications Technology (ICT)

Strategy

Real-world IT architecture must blend the ideal and the real.

Splunk CIO Steve McMahon says that successful digital transformation will hinge on enterprise architects who can adapt to real-world challenges.

"To me, the biggest challenge is going to be enterprise architecture that is not academic," he says. "IT shops often have a very organic infrastructure that has evolved over time. Not always wisely, not always deliberately. But that's where you are."

With that reality, he says, the most successful transitions require an ability to draw an effective line from an idiosyncratic today to a better tomorrow. "And now, COVID has put extra pressure on that transition," he says. "If IT can't tell the story about what is important to fix, someone else will tell IT. At which point, your architecture is again something that just happens to you.

"I think of enterprise architecture as a business consulting function," he says. "You have to understand how IT systems are implemented and be able to talk to the business, in language it understands, to influence and drive change. And that's not a traditional IT skill set."

Prediction

Talent strategy will be a key differentiator of digital transformation success.

Another element of digital transformation and the Data Age is the effect on workforce needs.

"We need people who can learn fast," says Kristen Robinson, Splunk's chief people officer. "People who are agile, people who can sort of reinvent themselves. That's been understood for a while, but companies have not necessarily assessed that formally or rigorously."

There is a lot of fear around automation and machine learning eliminating jobs because a worker's skill set becomes unnecessary. But for some time, corporate HR leaders have understood that skills go stale quickly in a world of rapid digital evolution. Which is why growth mindset, engagement and cultural fit have become more essential criteria.

She says that the benefit of retraining good workers for new roles is that you've already identified a good performer, a cultural fit, and educated that person about your company's business. All of that is much harder to find than simply teaching an engineer a new programming language, or upleveling a marketer's ability to work with an analytics tool.

But to be successful, she says, companies must be much more forthright about the path and pace of change. "To grow successfully, you have to help people understand, 'Here's where the world, and our organization, are going in the next two or three years,'" she says. "And you let them know, 'If you want to keep up, both with this company and this economy, you have to develop new skills. And we have some resources …'"

IT Operations

A summary of our report for ITOps leaders.

The big story for IT operations in a post-COVID world is the massive acceleration of digital transformation into the Data Age. In this era, IT leaders have to finally live up to a decade's worth of promises to evolve from maintaining a basic utility to being a strategic partner who provides innovative IT services.

Here are the quick takeaways from our IT Operations trends report. For the full perspective, download "Splunk ITOps Predictions 2021."

CIOs who don't nail down instrumentation and automation are going to lose their jobs.

Splunk CIO Steve McMahon wants to know what's happening right now, and he wants to do something about it right now. Fundamentally, he says, that drives IT toward observability.

"If you lack the instrumentation to know what your service is doing, how could you operate?" he asks. "CIOs who aren't planning for their rapid transformation and changing their organizational structure and trying to drive a service-oriented mindset won't have a job in three years."

Ultimate success with automation will depend on a surprising factor: The human element.

Automation drives innovation as well as efficiency. And innovation, even in a highly automated world, is a human discipline, says Ram Sriharsha, Splunk's head of machine learning. "Ultimately, your business value proposition is in people who have your domain expertise, and can ask the right questions … and interpret the results correctly."

RPA finds its footing fast or fades out

"Robotic process automation and business process automation were hot buzzwords three or four years ago," says McMahon. "If it doesn't prove itself soon, it will turn out to have been like any fad: Everybody was talking about it and then nobody's talking about it."

Cloud complexity will drive a rush to better, more integrated monitoring tools.

IT needs integrated tools that work across complex hybrid multicloud environments, regardless of underlying infrastructure. “It’s an issue we hear about when we talk to customers and investors,” says Splunk CTO Tim Tully. “And the need for an integrated approach is only growing.”

The pandemic will inspire a new generation of immersive tools for digital collaboration.

Tully sees a startup opportunity in the growth of remote work and long-distance collaboration. “In the coming year, we’ll start to see better collaboration tools start to pop up,” he says. “With so much remote work, the hunger for that kind of solution will be huge.”

Moving fast breaks things. There will be a lot of failure and waste in 2021.

Our rapid response to COVID’s shutdown of in-person reality included a pell-mell rush to digital environments. In terms of both security and performance, expect chaos will ensue.

Cloud will cost many organizations more than they expect.

The celebrated beauty of the cloud is that you can spin up resources as you need them, and then decommission — and stop paying for — them when you don’t. But a Gartner analyst warns that “through 2024, 80% of companies that are unaware of the mistakes made in their cloud adoption will overspend by 20 to 50%.” Yikes.

The combination of AI/MR and cloud will significantly enhance customer experience for heretofore less sophisticated businesses.

User experience is a big deal, especially in an increasingly digital reality. With the acceleration of digital transformation, and cloud adoption in particular, expect more companies to modernize their customer experience. Especially now that public cloud providers offer out-of-the-box ML tools.

Leading organizations will learn to "fail fast."

The agile, DevOps approach to IT, as enabled by nimble, scalable cloud services, encourages incremental wins and daring experimentation. Organizations are going to find that their increasing adoption of cloud will enable — and instigate — a more experimental mindset. Cloud-based digital transformation will drive that "fail fast" mentality beyond the venture capitalist ZIP codes.

Successful organizations will blur (or erase) the line between ITOps and DevOps.

DevOps is not an inevitable destination for every IT organization. "It's a different way of adopting," says Sendur Sellakumar, Splunk's chief product officer and SVP of cloud, "and it increases the heterogeneity of the operating model for our companies." In other words, for most organizations, DevOps will coexist with traditional IT operations — and it will be a learning process.

Cloud transformation takes talent.

When you're responding to a global disruption, or as we come out of that crisis to find everyone moving faster as a rule, smart, effective digital transformation will be all the harder. Sellakumar says the first thing leaders need to do is make sure they have the right talent on their teams. Second thing? "Don't over-engineer the solution." Third: Your rapid cloud transformation isn't over when you flip the switch. Integration and process realignment take time and skill.

Data Security

A summary of our report for CISOs and security analysts.

The massive disruption of the COVID-19 pandemic and faster-than-ever digital transformation, says Splunk CISO Yassir Abousselham, have put incredible pressure on security teams.

"We have to deliver the same level of security protection to employees and business partners regardless of location: office, home, a coffee shop hotspot," he says. "We need to protect data exactly as well, wherever our employees, partners or customers are."

Here are the quick takeaways from our Security trends report. For the full perspective, download "Splunk Data Security Predictions 2021."

Pandemic workforce disruption will drive a greater focus on endpoint security and the zero trust model.

The baseline for IT security has been network security, but the idea of a solid, defensible castle wall has fallen apart. More than ever, endpoint protection is essential. Zero trust doesn't rely on network protection to keep data secure. Instead, if you secure endpoints and backend applications, the safety of your network becomes a secondary, rather than primary, line of defense.

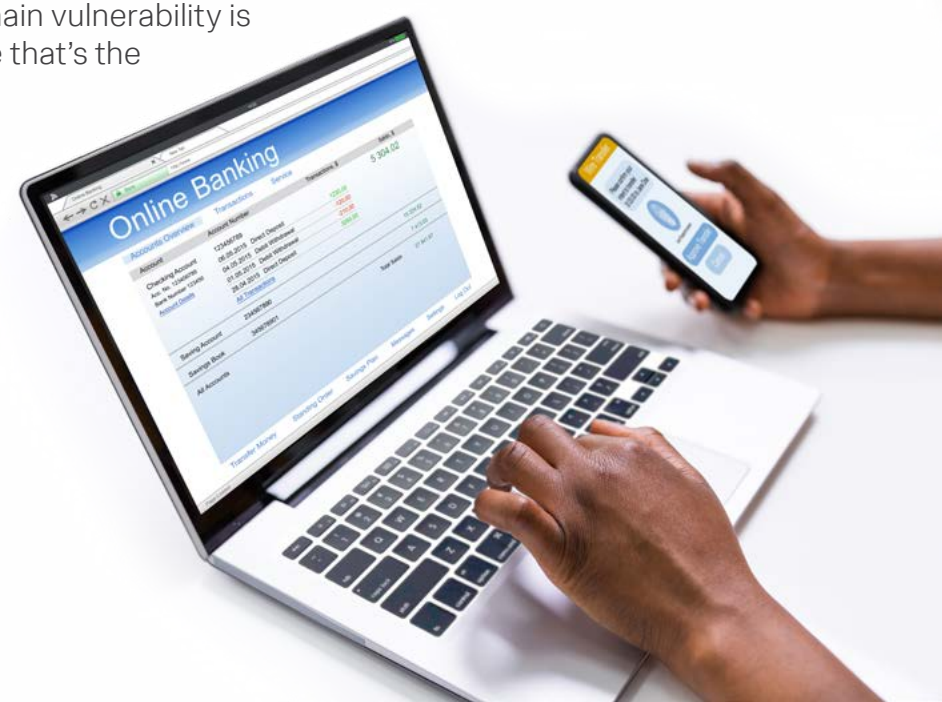
"It's a longstanding concept that has finally been put to paper: constant validation," says Splunk Security Analyst Mick Baccio.

Supply chain attacks mean that the bad guys won't just hack your organization. They'll hack your stuff.

IT secured your laptop and vetted the videoconferencing app. But who can vouch for the low-end peripherals you bought online for your MacGyver'd home office? "Supply chain vulnerability is very real. I don't attack you, I attack your supply chain," Baccio says. "Maybe that's the authenticator on your phone or some webcam you ordered online."

Attackers will capitalize on COVID-19 and WFH to tailor more effective phishing — and now vishing — emails and other scams.

That's right: vishing. Voice phishing. Last year we warned that deep fake phishing was on the horizon. Consider this an intermediate step. (And don't forget that familiar, boring old social engineering attacks are still the most successful. Stay vigilant!)



Faster-moving digital transformation will include more artificial intelligence in the security operations center (SOC).

Automation and machine learning help human security analysts separate the most urgent alerts from a sea of data, and take instant remedial action against certain threat profiles. Ram Sriharsha, Splunk's head of machine learning, expects AI/ML security tools to grow in their sophistication and capability, while Baccio warns that meaningful, practical application of AI is still a ways out.

You get two-factor authentication, and you get two-factor authentication and you ...

Everybody was accessing everything remotely in 2020. "Remote" was our status quo. That's driving an uptick in multifactor authentication, including phone apps, hardware tokens and biometrics. Bonus thought: If we're all authenticating via the same two mobile platforms, how attractive are those for all the hackers in the world?

Capitalizing on pandemic disruption, attackers will find more openings in newly adopted technologies and through imperfect M&A.

Quick solutions, quick integrations, quick purchases of distressed companies. All create ways for attackers to slip through the cracks. Cloud security is a whole new skill set.

Use the new remote work paradigm to ease your eternal shortage of security talent.

Splunk's chief people officer, Kristen Robinson, says that our COVID-imposed comfort with remote work means that more organizations will look further for talent. CISO Yassir Abousselham agrees. "Greater comfort with managing remote workers allows us to hire talented people worldwide when there is a skill shortage locally."

Emerging Technology

A summary of our predictions around the technologies that will define the dawning Data Age.

What we really want to see emerging in 2021 is all of us, from our homes. Besides that, a lot of powerful software is in our near future. This year's predictions for emerging technologies include AI/ML, 5G and WiFi 6, AR/VR, blockchain, edge computing, and a little bit more.

Here are the quick takeaways from our Emerging Technologies trends report. For the full perspective, download "Splunk Emerging Tech Predictions 2021."

AI/ML will be held back by its own limitations — until it can learn on its own.

It takes too long for humans to build models with cleanly structured data. A major near-term breakthrough will be automated, self-learning algorithms that can handle unstructured data.

Defense against adversarial learning will improve in the next few years. Because it has to.

Last year, our predictions report warned of the potential threat of AI sabotage: You can poison the outcomes of AI-driven automation by poisoning the data it learns from. Now it turns out you can disguise a fighter jet from AI with a small sticker. “Machine learning algorithms trust the data they learn from,” says Ram Sriharsha, Splunk’s head of machine learning. “But what happens if people are trying to hack you?” (Nothing good.)

Look beyond AI’s buzzword heat to get real, meaningful value from AI/ML.

Corporate customers get caught up in the ill-defined excitement of black box AI, but they’re driven by FOMO. Going forward, developing a real understanding of AI/ML capabilities will be essential to leapfrogging competition.

Increased attention to the challenges of ML bias will build ethical responsibilities into engineers' job descriptions.

Algorithms are identifying crime suspects (not necessarily accurately), deciding who gets a credit card, a home loan, and sometimes a job. To avoid biased outcomes when the stakes are that high, we'll rely on three things: Explainability, ethics training for engineers, and collaboration with economists, ethicists, sociologists and other outside experts.

Machine learning will help speed the discovery of new medicines — in part by looking at previous "failures."

A job for machine learning: Sifting through decades of failed or inconclusive medical research to find new treatments that can cure disease and improve our lives going forward. "If you want to see the biggest impact of AI in healthcare and life sciences in the next 10 years," Sriharsha says, "probably that is where it's going to happen."

Smarter AI will work wonders — and challenge human workers.

Humans will still have work to do in a world accelerated and transformed by AI. Ram Sriharsha says, "Companies are going to realize that it's a value-add for them to train their employees now. In-house training on new methodologies, new techniques and so on, is going to be important."

Contactless payment will rise faster than expected. (Like, really fast).

COVID has driven adoption of contactless digital payment apps. And after the pandemic recedes and we achieve a "new normal," expect the convenience and no-touch benefits to continue to gain traction, much faster than previously predicted.

Despite rising appetite, 5G won't hit in 2021.

Expect rollout to be held up by hardware challenges at least into 2022. But start planning now.

Expect 5G devices, such as an upcoming 5G iPhone, to increase demand for 5G services.

Expect pockets to show up on corporate campuses and industrial sites, driving consumer appetite. And while you're waiting, check out WiFi 6.

Bonus prediction

The outcome of this trend is that we all become Iron Man. But without the hand lasers.

AR/VR's breakthrough application will be immersive collaborative communication.

Think of it as Zoom on steroids. The next iterations of video conferencing will incorporate AR and VR technology.

We'll see a breakout hit in consumer/entertainment VR by early 2022, or virtual reality will drop off the radar.

Virtual reality has been around forever. Given the Oculus Quest, the hardware is finally there. Now we need the breakthrough game, and quick. Or it'll be another 10 years.

Biometrics will move up in the world. And into the cloud.

Because you always have your face or your thumb with you, expect biometrics to take off. (With a nod to significant controversies over facial recognition.) Also, expect the data to be stored and verified in the cloud, not on your device.

COVID will accelerate blockchain adoption.

Between 2010 and 2020, the conversation went from "What's blockchain?" to "How can I leverage it effectively?" We're seeing significant continued interest, and expect big things.

Successful blockchain implementations will focus on efficiencies.

That's where the use cases are today, says Splunk's head of blockchain, Nate McKervey. "If my supply chain is 10 times more efficient than yours," he says, "your vendors aren't going to want to work on your supply chain." (Along with financial services, he says supply chain is where blockchain is gonna be in 2021.)

In the short term, organizations will struggle to turn blockchain test projects into full-scale successes.

Blockchain initiatives will start with small proof-of-concept projects that prove value on a small scale, and success drives full implementation … which is where the trouble often starts. The problem? Lack of observability.

While blockchain consortiums are a leading model, they'll be hampered by coordination and visibility challenges.

A lot of enterprise blockchain experience right now is through consortiums, in which companies in a certain industry or supply chain collaborate via a digital ledger. The problem? Again, a lack of observability.

In about three years, blockchain really starts happening.

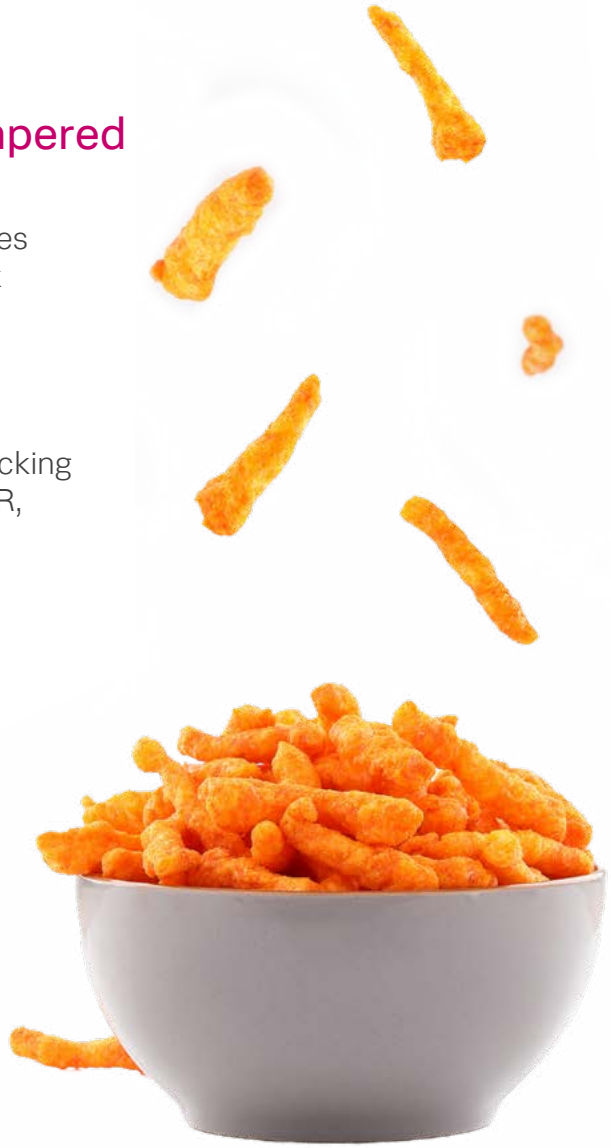
Uses being developed or piloted now include secure voting, tracking of political donations, tracking of disease outbreaks, and securing medical supply chains. Solutions are in development for HR, for smart cities and around decentralized identity. Hold onto your hats, folks.

Edge computing is where emerging technologies come together.

Synergy! says Splunk Chief Customer Officer John Sabino. He says that the real power in emerging technologies is not any one of them, but the combinations. "I think the keys are AI/ML and automation, and when you add them to IoT, edge computing and 5G, you can transform entire industries — logistics, manufacturing, healthcare, energy." And where will that happen? In increasingly powerful edge computing deployments.

Long-term prediction: We'll print food and medicine.

Today's 3D printers can handle machine parts and numerous consumer goods. Looking out 10+ years, expect them to print vaccines, medicines and the occasional snack.



Contributors

Jason Child
Jason Child is Splunk's CFO. He started his career at Amazon in 1999, and held various roles over almost a dozen years, including CFO for the Asia-Pacific region, and CFO-International. He was the CFO of Groupon, Jawbone and Opendoor before joining Splunk in 2019. The guy knows a thing or two about volatile times and explosive growth.

Doug Merritt
Doug has been Splunk's president, CEO and a board member since 2015, leading the company into high growth and multiple transformations. Previously, he held senior leadership roles in organizations across a wide range of disciplines, including product, sales, marketing and HR, for companies like Cisco, SAP and PeopleSoft. He's also an avid athlete.

Ammar Maraqa
Ammar is Splunk's senior vice president and chief strategy officer. He joined in 2015 as vice president of business operations, and has held several key leadership roles since. Back in the day, he led corporate development and strategy at Cisco, held product roles at Dell, and started his career as a growth-focused consultant with Bain & Co.

Kristen Robinson
As chief people officer, Kristen Robinson leads with her belief that people are the foundation of innovative, fast-growing companies. Before Splunk, she was chief human resources officer at Pandora, and SVP of HR at Yahoo.

Frederik Maris
Frederik Maris is Splunk's vice president for Europe, the Middle East and Africa. Previously, he ran the Western European business for Symantec/Veritas and held leadership roles at BMC and EMC. He has also played semi-pro tennis.

John Sabino
John is Splunk's customer success officer, which means he and his team help customers adopt industry best practices and Splunk technology to drive success through data. John was also senior vice president of commercial operations for both GE Capital and NBC Universal.

Steve McMahon
Splunk CIO Steve McMahon has 20+ years in the high-tech industry, having previously held transformative roles at Cisco, IBM and several startups. At Splunk, he has led the Business Transformation, Global Customer Support and Cloud Operations and Engineering organizations.

Tim Tully
Tim is our chief technology officer, responsible for Splunk's Products and Technology organization. Before that, he spent 14 years at Yahoo as chief data architect, VP of engineering and more. He's big on the intersection of data, design and mobile, and advises entrepreneurs, startups and universities.

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