

TECH & CYBER SOLUTIONS





Data Sovereignty: Next-Generation Encryption Technology Promises to Restore Consumer Privacy

For a long while, consumers have been aware that the private information they share commercially is not always safe. Large data breaches have led to the loss or disclosure of private consumer information by companies as diverse as Yahoo, Marriott, eBay, Equifax, Home Depot, Anthem, and J.P. Morgan Chase.

These data breaches, for the most part, arise when hackers exploit human error or system flaws. However, the actual transmittal of private information on the internet, largely protected by encryption algorithms such as RSA and Elliptic Curve, for now generally remains sound and secure from hacking. RSA, used worldwide by financial, governmental and other entities, is based on the idea that if you take two large prime numbers and multiply them, determining the product of those numbers is easy, but performing the operation in reverse – finding the two prime factors when you are only given the product – is extremely difficult.

That is about to change. Some experts predict that within the next ten to fifteen years, and perhaps sooner, advanced quantum computers will have the capability to break RSA encryption. The National Institute of Standards and Technology (NIST) has recognized this eventuality. NIST has solicited proposals for quantum-resistant solutions as a basis for developing an alternative to the RSA cryptography standard.

Yet the predicted rise of quantum computers seems to be perpetually in a state of being about a decade away. Meanwhile, advances in pure mathematics and physics may do more to accelerate the need for a new encryption paradigm than quantum computers.

Further, a truly quantum-resistant cryptography solution does not necessarily require massive computing capabilities. The problem may well be solved with a combination of new math and Artificial Intelligence.

The development of such a solution holds great promise for consumer privacy. An encryption solution driven by quantum computing could secure electronic data for the foreseeable future. But whereas a quantum computer-based solution could be made affordable only to governments and large businesses, a mathematical solution operating on today's binary computer systems, in contrast, can put advanced encryption technology in the hands of the consumer. This would result in an encryption revolution giving every person the means to secure personal data privacy.

The need for a consumer-based encryption capability is growing. That is because the types of private data that we need to protect is growing. The advent of companies like 23andMe, which collect and analyze genetic information, underscores this trend. Last week, BuzzFeed reported that FamilyTree DNA, a Houston-based genealogy company, confirmed it gave the FBI unfettered access to the genetic profiles of two million customers, "to assist in solving crimes faster." (Apparently, it takes the DNA profiles of just two percent of the population to map the entire country's DNA, including yours.) The collection and use of genetic information will only increase in the near future.

At the same time, smartphones – now ubiquitous throughout society – present a treasure trove of personal data, including for example, one's physical location at any time. Just last week, Motherboard published an article revealing that telecom companies, including AT&T, T-Mobile, and Sprint, have been selling customer "assisted GPS" data from emergency calls, intended for use by first responders, to bounty hunters. Technology exists today that can convert a handheld phone into an instrument of surveillance.

The fact is, we now live in an age where the capability to collect and store data has increased exponentially, as has data monetization and use. From this vantage point, the development of a true quantum-resistant cryptosystem that runs on today's technology and is available to businesses and consumers alike, holds the promise of restoring to each of us a greater measure of true data sovereignty.



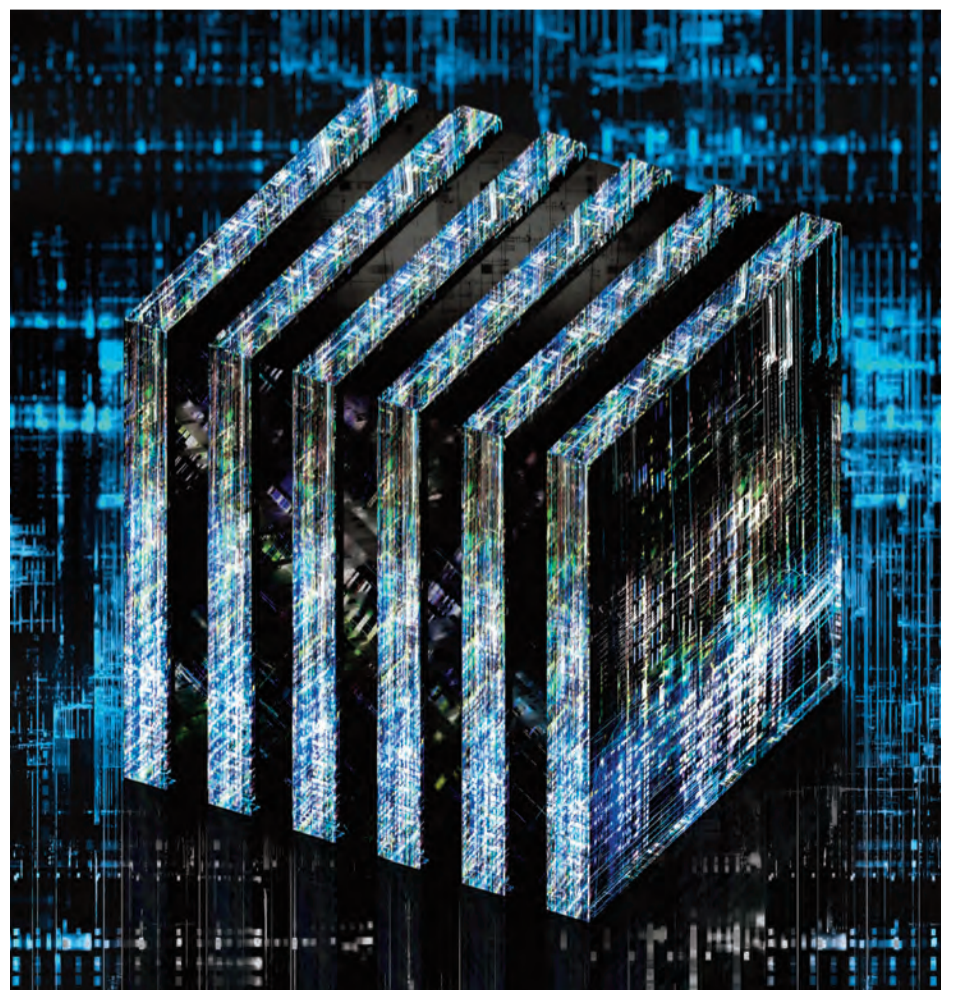
Christopher Hodson

Christopher Hodson is the VP, Legal for Crown Sterling, a Strathspey Crown Company. Crown Sterling's recent discoveries in Unified Mathematics and Physics have led to the development of its groundbreaking Quantum Chain AI™ technology, providing transformational cryptographic solutions to enable data protection and sovereignty for all.



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The 4 Top Emerging Technical Trends for HR in 2019

In 2018, we saw tech trends that had big effects on the HR world, as AI, machine learning and other applications moved into the mass market. Tech will continue to have an impact going forward in many ways, as HR professionals have to balance how to pair uniquely human skills with the abilities of machines.

Keeping an eye open for new tech that's just starting to affect HR is vital if you're going to stay up to date in 2019. Take a look at some of the tech trends likely to find a place in your world this year.

AI Gets Practical

We all heard a lot of talk about artificial intelligence, or AI, in 2018. In 2019, expect to see AI start to solve some problems and streamline your work processes.

Think about the amount of time you spend on repetitive tasks, especially when you're onboarding new employees. You have to add employee records to your database and payroll system. You have to gather documentation and verify it. Going forward, many of those time-consuming manual tasks may be shifted to automation, freeing you up to spend more time on the recruitment tasks that call for all your talents. (As a bonus, your new employees will also be able to spend more of their introductory days learning their jobs rather than dealing with paperwork.)

You can also expect to see more chatbots at work in the HR sphere, from applications to screening to employee service. The chatbots that are already handling introductory customer service for e-commerce retailers are ready to deal with your applicants as well. Chatbots can request resumes, conduct preliminary screenings to determine candidates' experience, and schedule interviews. They can also handle much of the back and forth with employees regarding routine paperwork, freeing up your time.

This AI-enabled communication uses natural language processing (NLP), which goes far beyond those clumsy Google Translate answers you've gotten when you tried to read a web page in another language. NLP tools, including chatbots, can understand not only the words your employees or applicants use, but the emotions behind the words, making it possible to provide responses that are amazingly close to human. Expect to see NLP-enabled programs taking over much of your employee self-service tasks ("How much overtime did I earn last month?") as well as real-time reporting tasks.

Analytics Levels Up

The use of analytics has already gained a foothold in HR, but 2019 may be the year in which data becomes truly helpful in making HR decisions. As you have more data available about employees and about HR tools, your ability to analyze and make use of that data will help you take giant leaps forward in making smart decisions.

HR professionals have traditionally had to rely on their instincts about people because data simply wasn't available. And while most HR pros have developed finely honed instincts, having data to confirm the validity of your hiring decisions (or, in some cases, push you in the opposite direction) will help you put the right people in the right positions, enhancing your company's growth.

Metrics about employee performance can also help you pinpoint the employee job changes that result in higher performance and greater employee retention, while also highlighting specific needs for training. Analytics models are being designed to advance your ability to make smart decisions regarding recruitment, promotion and employee management.

Learning and Development Get Gamified

Tech is changing HR's involvement with learning and development in a big way. Look for increased digitization of L&D, allowing employees to keep developing their own skills without the hassles of coordinating schedules to allow group training. AI will of course be a part of this, and AR/VR approaches to L&D are on the horizon as well.

Gamification of content is key to making online learning experiences engaging and fruitful. Employees who might roll their eyes at yet another run-of-the-mill training program are likely to be far more engaged when they have a chance to

earn points, top the leaderboard, get involved with their workplace community, and shine in front of their peers. Look for boosts in employee satisfaction numbers as a result.

In addition, gamified L&D is also expanding into the area of candidate assessment. It's also key to developing employee soft skills, such as collaboration and emotional intelligence.

Recruitment Goes Digital — and Mobile

You're likely already seeing the recruitment cycle go digital in terms of resumes, keyword searches, and even interviews. Look for this trend to continue and expand in 2019, with the candidate experience taking on some aspects of customer relationship management.

Techniques and tactics already used in digital marketing are now being applied to recruitment marketing — including the need to brand employers as a way of attaching value to companies and making them attractive to prospective candidates. In fact, with most applicants now researching potential employers online before submitting applications and resumes, your company's brand matters as much to HR as it does to consumers.

Look as well for increased recruiting on social media platforms — and not just on LinkedIn. Twitter, Facebook, even Instagram are now channels for promoting your company and its job openings.

And if you expect to reach Millennials (and even Gen Z, rapidly entering the job force behind them), your recruitment strategies had better have a healthy mobile component to them. Going mobile means you'll start storing data in the cloud, if you aren't already — which means you can hang on to all those video interviews for future assessments.

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- Lee's practice spans an array of disciplines, from corporate transactional work, M&A, to licensing, governance, intellectual property and litigation management and advice.
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Immigration Policy Affecting Technology Companies Ability to Recruit Immigrant Workers

Over the past year, the current administration's immigration policies and mandates have forced the transformation of how employers in the technology field need to approach their hiring and mobility practices. Through the implementation of the administration's Buy American and Hire American executive order, the United States Citizenship and Immigration Service (USCIS) has created a "Silent Wall" of heightened scrutiny resulting in increased denials, requests for evidence (RFEs), and backlogs in processing (H-1B visa denials between Q3 and Q4 2017 increased 41 percent, while RFEs for H-1Bs were issued for 63,184 out of 63,599 filed in Q1 to Q3 2017).

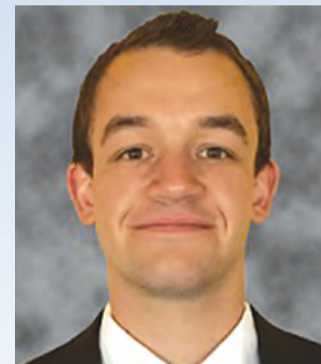
Standards that USCIS officers use to approve or deny visa petitions has never been more obscure, typically relying on boilerplate language and nonsensical interpretations of immigration regulations. Prior to this, technology companies filing for a systems developer position would be in the "safe zone" or had confidence that these cases would be approved fairly easily under old standards, but are now being questioned consistently. This in turn has resulted in technology firms having to provide granular level job descriptions, as well as additional materials about the position, which has delayed the approval process and increased the uncertainty and cost of obtaining a visa approval for highly-skilled workers.

Typically, technology companies would recruit from other technology firms, and would bring eligible candidates over by filing an H-1B "Change of Employer" (COE) petition. Upon filing, employees would be able to transfer and start working at the new company immediately, but due to the increased processing times and denial rates, more and more foreign nationals are unwilling to move from their current employers to the new employer until a visa is approved, thus causing recruitment processes to take upwards of six to nine months from the initial employee contact.

Therefore, information technology employers should reconsider the way they file petitions, applying more diligent standards to the applications process, rethinking the timing on visa extensions, including whether to use premium processing, and the overall effects on their recruiting processes. It is therefore more critical than ever for technology companies to design and execute a thoughtful recruitment program that involves foreign talent.



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