ISSA JOURNAL

August 2020
Volume 18 Issue 8

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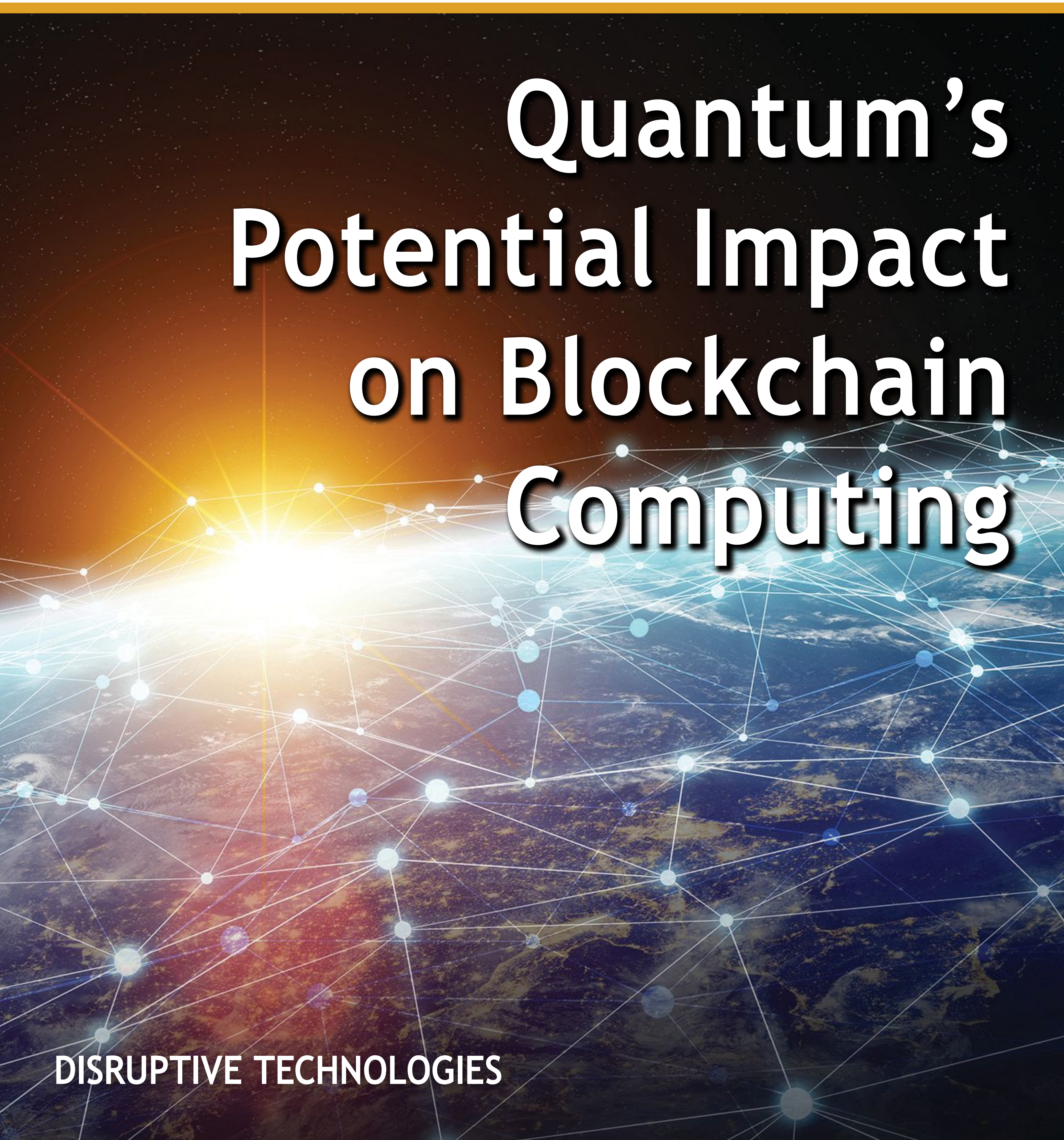

DISRUPTIVE TECHNOLOGIES

Disrupting the Talk about Privacy and Security "Disruption"

By **Barry S. Herrin** – ISSA member, Atlanta Chapter

This article is meant to sensitize the reader to the overbroad and ubiquitous use of the term "disruption" in the technology context, particularly with reference to technologies for computer data privacy and security, and the diminution in credibility that such overuse may cause in the minds of certain listeners.

Author's note: This article is meant to sensitize the reader to the overbroad and ubiquitous use of the term "disruption" in the technology context, particularly with reference to technologies for computer data privacy and security, and the diminution in credibility that such overuse may cause in the minds of certain listeners. It is not a technical article vetting any particular technology or claims. If this were a technical article, it wouldn't be nearly as snarky or as much fun to read.

How many are weary of all of the hype around this or that "disruptive technology" or "disruptive business strategy"? I see plenty of hands, and mine could not be raised any higher. As a person with a quality liberal arts education (in history, no less), I can both cite the definition of disruptive technology and provide plenty of examples, all of which you intuitively know.

Clayton M. Christensen used the phrase "disruptive technologies" in a series of writings beginning in 1995 [2] to describe business models that are enabled by technologies to create disruptive impact, sometimes eliminating the industry that was "disrupted." In fact, Christensen later used the term "disruptive innovation" because much of the disruption in modern business used existing technologies combined in new or different ways to create the disruption.

There are plenty of examples of new technology disrupting and destroying older businesses. The telegraph outran the Pony Express; transcontinental air travel steamed the luxury steamship industry AND the passenger train industry (at least in the US); computers double-punched typewriters; compact disc (CD) technology outspun eight tracks and cassettes in consumer music; cellphones rung the compact camera industry's bell; and email has all but eliminated the use of postal mail for routine business and social correspondence, while significantly lessening the use of telex[1] and faxing. There are hundreds of other technological advances that have transformed or eliminated other businesses and technologies that we probably don't even appreciate in our present-ism. Just think of our newer household appliances, which created the free time that American families used to help create entire industries in travel, hospitality, and the like. But, as an historian, I challenge you to look up fuller's earth, an earthy substance that naphtha replaced in rapid-cycle commercial dry cleaning.[2] Accenture cites a statistic that 52 percent of the Fortune 500 companies that existed in 2000 have disappeared due to bankruptcy, merger, acquisition, or some other cause [1].

However, the continual use of the term "disruption" in connection with modern technology, especially when applied to privacy and security constructs, has diluted the term into everyday jargon; so much so that the word "is often used out of context and lost its power" [6]. I couldn't agree more. Let's look at some claims of "disruption" in privacy and security. As we begin our journey, it's important for you, dear reader, to remember that we are not being critical of the content of

[1] Direct customer-to-customer telegraphy, removing the need for a courier to bring the message (like you see in old movies).

[2] No, I'm not going to give you the easy way out. Do your own investigating.

the various claims; we are simply applying the lens of true disruption to the content and trying to bend the “hype curve” [7] back to some semblance of normal dialogue.

We’ll start with the low-hanging fruit: articles that confuse evolution with revolution. You can tell the author wants to push the hype button when the article itself talks about “disruptive *trends*.” An online article in the “Edge” section of DARKReading [3] falls into this trap, citing in one portion a study that “some 56 percent of organizations today are poised to explore software-defined perimeter technology within the next 18 months.” What does that really mean? In English, slightly more than half of some businesses are considering technology that creates non-kinetic system boundaries that would, in the author’s own words, simply expand on zero trust strategies. Even a viciously slanted reading of this part of the article would not call any of it disruptive.

Then there is the portion of the article that claims “almost a Copernican revolution” [4] in the expanding use of microservices and the application program interfaces (or APIs) used to create interoperability in computing environments. For those among you without a quality liberal arts education, Copernicus was the astronomer who used mathematics to show that the Earth revolved around the Sun, and not the other way around, upending centuries of Church teaching on the subject.

The transition from what we in the DOS era used to call “graphical user interfaces” or “GUI programming” for systems as a whole (think drop-down boxes in Windows) to individual interfaces for iPhone programs, which when you look back on it has been pretty amazing. And I don’t for one second doubt the truth of the statement that security challenges in working with all of these microprogram interfaces in the same big-box operating systems we use for most business functions will increase, especially in the “bring your own application” [11] rush that has plagued healthcare systems with tech-savvy physicians.

But Apple has already figured this out on the computers we all carry around in our pockets and call “phones.” That just means that the revolution has happened elsewhere and has spilled over into different environments. As articles have been talking about this application proliferation and troubles with integration for at least six years, there’s nothing “disruptive” here – except maybe to people that haven’t been thinking about it. The REAL shattering of the worldview occurred when we created those “windows” into DOS that we now just think of as what our desktop screen looks like. No user has to look at a screen of code-based commands any more to get basic work done – THAT was disruptive.

Next, I couldn’t really deliver on the snark this subject deserves without looking at disruptionhub.com – I mean, really. The focus here is on an honestly-named article discussing five cybersecurity trends presenting themselves as of two years ago [5]. The focus of the article is on ways that cybercrime will evolve based on technologies and challenges now (meaning then) present in systems. In addition to the usual warnings about smarter criminals and the unchecked proliferation of connected devices in what has been called the “Internet of things,” there is a remark about failure to adopt the draconian [8] privacy rules in the looming European General Data Protection Regulation (GDPR) as facilitating cybercrime. The article posits that failure to comply will “open up reams of consumer data to cyberattack” [5]. Um, no, it won’t. The data was already exposed to attack, and the jury is still out on whether the regulations will improve *security*, though I think there is a consensus that *privacy* has been strengthened. Understanding that this article is written from a Eurocentric perspective makes it easier to understand (government action equals protection), but it doesn’t make it correct, and it certainly doesn’t create the kind of revolutionary change in system security that the website touts in its handle.

Finally, I have to mention the poorly-named article from BizCatalyst360 titled “Disruptive Technologies – a Challenge for Cybersecurity” [10] if for no other reasons than the author quotes Oscar Wilde [12] and correctly defines what a disruptive technology is. However, he then goes on to talk about proliferating threats to *privacy* (not security) that are growing – not exploding – in the environment. The traditional bugaboos are here: Internet-of-things proliferation, artificial intelligence, cloud computing, virtual reality. It’s really a form of Luddite [9] clarion call against technology outstripping our ability or desire to keep data secure and, therefore, private. I completely agree that the proliferation of information-using technology is challenging our traditional notions of privacy. However, any person who reads what his friends post on Facebook or delves into the narcissistic realms of Instagram already knows that our attitudes about privacy have changed. The Facebook/Instagram/Snapchat “disruption” has already occurred: it’s just spreading.

Conclusion

Conclusions? It’s simply too easy to conflate privacy with security and then claim that the decrease in one is caused by gaps in the other. It’s also easy to claim that technologies that have evolved since before you were born (like Windows and Apple’s Macintosh platforms) are “disruptive” simply because we don’t understand the history. If we return to our high school pre-calculus class and graph the area between the steady growth of technology over time and the “hype curve,” that area is what we’ll refer to here as the “credibility gap.”[3] Overusing or overselling the expansion of technology as a solution for the problem of the day just makes you look and sound like a sales weasel and not a credible security professional. Discerning trends over time and seeing areas of growth in risk (or declines in risk response) are where the smart money is in increasing your cybersecurity posture. Anticipating these trends would be even better. But don’t act surprised: we are all witnessing a series of evolutionary changes, not an endless parade of Chicxulub asteroids.[4]

Now, put a mask on and disrupt that coronavirus so it won’t continue to disrupt our economy.

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[3] Represented by the formula $a \int b\, f(x)dx$.

[4] That’s the one that wiped out the dinosaurs – https://www.earth.com/news/asteroid-dinosaurs/#:~:text=Asteroid%20that%20killed%20the%20dinosaurs%20hit%20worst%20possible,percent%20of%20the%20planet%E2%80%99s%20species%2C%20including%20the%20dinosaurs.