The Quantum Advantage

Why dealers should start paying attention now

by: Jonathan Blakey, Technology Assurance Group (TAG)

Remember when the cloud showed up and half of the industry yawned? Back in the early 2000s, a few companies started talking about this strange thing called "the cloud," but most people ignored it. After all, why would a business move its data to some invisible internet place when it could have a server in a closet and feel in control?

Fast forward a few years. The companies that dismissed the cloud found themselves scrambling. Their competitors were offering remote workforce support, automated backups, no on-site maintenance and, most importantly, they started stacking recurring revenue streams wrapped in monthly service models.

The ones who saw the opportunity early did not just win; they owned the future. If you had caught the future early and had been benefiting from all of that recurring revenue for the last 10 to 20 years, where would your organization be today?

Here is the good news: You have another opportunity like this on the horizon. It is called quantum computing and it is about to be that same kind of shift — only bigger. If you are an office technology dealer with dreams of breaking into managed IT, you will want to get ahead of this curve.

So, what is quantum computing and why should you care? Today, we live in a world built on binary. Computers, phones and printers all use bits — 1s and 0s — to do calculations. However, quantum computers use qubits, which can be 1s, 0s or both at the same time (thanks to some wild quantum physics "magic," like superposition and entanglement). This lets them perform calculations faster than any computer you have ever seen.

And not just "a little faster." The speed increases are dramatic. For example, Google's 70-qubit Sycamore chip outpaces the world's top supercomputers; tasks it completed in approximately six seconds would take the Frontier supercomputer (currently the world's second-fastest supercomputer) 47 years to match — demonstrating a 241-millionfold increase in computational capacity.

For scale, snails move at 0.03 mph. If a snail went through the same growth curve, it would be moving at 7.23 million mph. Rockets escape Earth's gravity and leave the planet at only 25,030 mph. So, it is safe to say that snails, computers and cybersecurity are about to go through seismic changes. For office technology dealers, these changes could create the opportunity of a lifetime.

Encryption is facing a major disruption. Right now, your business — and your clients' businesses — rely on encryption to keep things safe. Banking, email, file transfers, VPNs, health records, contracts, etc., are all protected by mathematical locks that take 120 years, on average, for a traditional computer to crack. But a quantum computer? It could break those same locks in as little as 12 days (and researchers are already proving it in simulations). That means nearly every cybersecurity protocol people rely on today will become obsolete.

What happens to markets when an existing solution — that is an absolute necessity — becomes obsolete? Those who position themselves with the solution will see tremendous financial gain.

Here is the good news: You do not need to panic. You do not need to start coding quantum-safe algorithms or buying IBM's superconducting machines — yet. Right now, the cost is too prohibitive and, if I had to guess, I suspect it will be another five to 10 years before this even begins to reach the mainstream. But you do need to be aware — and position yourself as someone who is paying attention — because when clients start hearing about "post-quantum security" and "quantum-resistant encryption," they are going to go to their managed IT services providers and ask, "Hey, are you guys on top of this?"

Whoever tells them, "Yes, of course we are," will become their trusted advisor. That is how you become the default provider — the one they buy from over and over again. Be the one who saw it coming — just like the cloud, artificial intelligence (AI) and every major leap in technology.

When it comes to cybersecurity, it is all about ROI — for the hacker. The most obvious thing everyone will need when quantum computing finally starts to saturate markets is cybersecurity. Consider the following metaphor, which makes it easy to understand.

Imagine a parking lot full of cars. Most thieves will not smash a window or take a lot of time with an alarm bypass to break in and start trying to hotwire an engine. Instead, they will just check door handles until they find an unlocked car. That is what hacking is today. Cybercriminals largely aren't targeting Fort Knox — they are looking for open doors and soft targets. Quantum computers will let them try those doors faster than ever before.

So, what is the best strategy? Make your systems too inaccessible to bother with. Right now, that means multifactor authentication, smart password management, patching, etc. Soon, it will mean quantum-resistant encryption.

Managed IT and office technology are shifting, and here is your pivot. Let's be real: The office technology space is tightening. Margins are thinner, hardware is commoditized and everyone wants to go paperless. But your clients still trust you, and that trust can be expanded into other aspects of their office technology infrastructures — whether that is managed IT services, the cloud, cybersecurity and, yes, quantum-resistant encryption, too.

What should office technology dealers be doing now?

■ **Stay Informed:** Begin learning the basics of postquantum cryptography. Do not overcomplicate it — just keep your ear to the ground. This trend is still early and, again, we do not anticipate it reaching the mass market for another five to 10 years, but you do need to know about it.

■ **Position Yourself as Forward Thinking:** You do not have to be the expert — yet. You just need to show clients that you are tracking the changes and can guide them.

■ **Network With Others:** One option is to get plugged into a network of more than 100 companies just like yours with Technology Assurance Group (TAG). Our members are tracking these changes and collectively investing millions every year in R&D, emerging tech and strategic positioning. One hundred heads are better than one.

Do not be the last domino. Remember what happened with AI? For years it was a cool concept. Then ChatGPT hit. Suddenly, AI was embedded in everything. Quantum will be the same. Not this year. Maybe not next year. But when it hits, business will flood toward companies that already speak the language. So, if you want to break into managed IT and sustain that competitive advantage for the next 20 years, I strongly advise you to use quantum as your differentiator. The future is coming. ■

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