

► BUILDING CAPACITY



Darryl Booth, MBA

Building Environmental Health Capacity in the Cloud

Editor's Note: A need exists within environmental health agencies to increase their capacity to perform in an environment of diminishing resources. With limited resources and increasing demands, we need to seek new approaches to the business of environmental health.

Acutely aware of these challenges, NEHA has initiated a partnership with Accela called *Building Capacity*. *Building Capacity* is a joint effort to educate, reinforce, and build upon successes within the profession, using technology to improve efficiency and extend the impact of environmental health agencies.

The *Journal* is pleased to publish this bimonthly column from Accela that will provide readers with insight into the *Building Capacity* initiative, as well as be a conduit for fostering the capacity building of environmental health agencies across the country.

The conclusions of this column are those of the author(s) and do not necessarily represent the views of NEHA.

Darryl Booth is senior vice president and general manager of environmental health at Accela and has been monitoring regulatory and data tracking needs of agencies across the U.S. for almost 20 years. He serves as technical advisor to NEHA's informatics and technology section.

I vividly recall taking apart and repairing a file server in the late 1980s. It was physically huge and terribly bulky with sharp steel corners. Its total storage was nothing compared to contemporary hardware. We “techie” waited around all night for the thing to come back to life so that staff could work the next morning without interruption. These repairs were exhilarating projects before the Internet was generally available.

As I began my career directing software solutions for health departments, I remember

meeting a customer who mounted their file server in the closet. Yes, there was a storage closet in their basement office (near the metal file cabinets) with unkempt network cables connecting that 4 ft² space through the ceiling tiles to the various IBM personal computers—you know, the ones with two big floppy drives in the front.

During that time (the mid-1990s), it was a boon to have one's own server. It meant that the health department was no longer beholden to the keepers of the mainframe

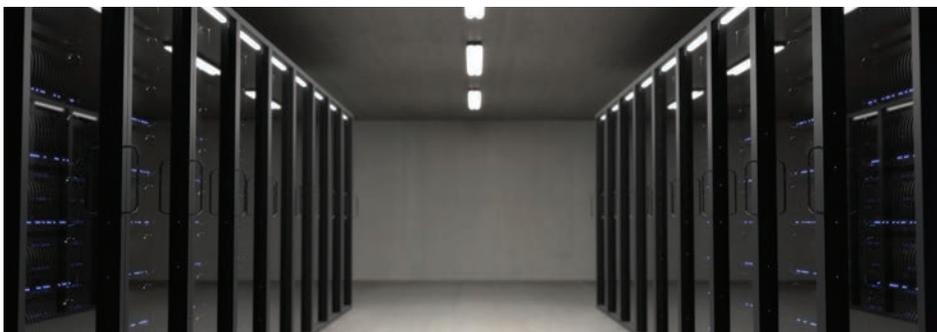
systems that dominated the statewide system at the time. It meant independence. It meant that the health department could add users, create new programs, change fees, and design reports without going (one of my favorite expressions) hat-in-hand to the programmers to beg for the enhancements!

For many years thereafter, health departments routinely maintained department-level equipment and systems to preserve that welcomed autonomy. Modern networking, the Internet, and data exchange standards all served to ease the local mandate to keep critical systems running, secure, and resistant to failure.

The Cloud

It occurs to me that not every reader has the same idea of the cloud. Some might say, “It's the Internet.” Others might guess, “It's all about storage—storing pictures, for example.”

Cloud computing indeed uses the Internet and brings virtually unlimited storage and throughput for transactions, historical reference, attachments, etc. The cloud also features active redundancy. For example, an inspection report might be automatically duplicated and stored in five different data centers across the world. I also like that operating in the cloud means you've got the smartest people and the most expensive tools working for you because your enterprise might be sitting beside one of Amazon's critical services. And you can bet that a power outage is not going to keep an Amazon service handicapped for long. In other words, we become part of something that is too important to fail. We're no longer a single server or a single app.



The Future Is the Cloud

Government is at the tipping point in cloud conversion: 77% of local government agencies have up to 20% of their business operations in the cloud, according to the Center for Digital Government. For example, the city of McKinney, Texas, found improved efficiencies with Amazon Web Services, diverting resources that normally would have been spent on buying and maintaining information technology (IT) infrastructure to improve services.

Government still has a way to go to catch up with private industry, which embraced the cloud early having quickly realized its benefits, including the flexibility to meet dynamic operational needs. The whole world seems to be going to the cloud.

In fact, by 2020, Intuit estimates that more than 78% of U.S. small businesses will have adopted cloud computing with the top functions being office tools/productivity (56%) and operational uses (44%). Even large businesses with dedicated in-house IT resources, historically the cloud laggards, are quickly catching up with over half expecting to make the jump in the coming next few years, according to cloud migration and disaster recovery provider CloudEndure.

Objections to Cloud Strategies

If you haven't seen it already, prepare for two trends within your own organization. First, your organization's IT (or another centralized IT department) will move to consolidate and take over support of environmental health systems. This trend means moving servers to the "downtown" data center and creating a help desk to support all systems. Second, centralized IT will be keen to reduce the total number of servers (and expenses) by turning to cloud-based solutions.

Although you may not be the decision maker, if your department is considering the cloud, I suspect you'll hear some of the objections below.

- **Security:** "Our data is too sensitive to be in a server I can't protect." True, there are protected data in your care. Your provider and vendor must adhere to applicable Health Insurance Portability and Accountability Act (HIPAA) business associate agreements and should feature prominent certifications such as PCI, SOC 2, FISMA, and others that attest to the processes and safety measures needed for all sensitive transactions.
- **System access in a crisis:** During a local emergency, Internet access may be compromised. True, but in the cloud you can use Internet connections from the office, the library, home, Starbucks, or your smartphone. You actually have more backup systems compared to on premise systems.
- **Legacy apps:** When your legacy system interfaces nicely with that one piece of equipment (e.g., a thermal probe) and your processes are all built around that functionality, it's a challenge to navigate the path forward. Ask about an API (application program interface) that allows devices to connect and post data. In the end, weigh the value of that legacy feature against the larger list of benefits to your agency.
- **Territorial concerns:** "I don't want 'XYZ' to see my timesheets or set policy about my data." Similar to the security concern, these rules (if indeed valid) can be managed, configured, tested, and confirmed.
- **Direct accountability:** "Who can I turn to for urgent help?" No different from your current vendor or solution, formalize relationships and terms to ensure you have a service level agreement that mandates responsiveness.

Cloud Benefits

- **Disaster recovery:** Modern cloud offerings don't require traditional data backups because the cloud's redundancy means that your data are safe. Multiple data centers across the globe shelter us against most regional emergencies.
- **Automatic updates:** Typically, cloud software is updated incrementally without fanfare. So, instead of waiting 3 years to go from version 9 to version 10, you get small updates weekly or monthly.
- **Cutting the costs of hardware:** Not owning or maintaining hardware is a major time and cost saver. Check what your internal IT department charges your budget for each server.
- **Work from anywhere:** This benefit is great for inspections, obviously, but it also makes your office feel like more of a modern workplace.
- **Security:** The highest paid security experts center themselves around these big, ultra-secure data centers, so you can rest assured knowing the best are working on your behalf.
- **Predictable fees:** Pay as you go (moderate up-front costs) and only pay for what you use.
- **Naturally public facing:** When it's time to take forms online or push your data to the web, a cloud-based offering is already there!

Time to Consider the Cloud

You might be interested to know that my colleague and I are writing and editing this column using Google Docs. In real time, I see Kelly's contributions and she sees mine. We chat. We leave comments for one another. In the final stages of editing this column today, Kelly is on an international flight and I'm working at my desk in California.

Environmental health data management is ready for the same leaps forward. 🌐

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Corresponding Author: Darryl Booth, Senior Vice President and General Manager of Environmental Health, Accela, 2633 Camino Ramon #500, San Ramon, CA 94583. E-mail: dbooth@accela.com.