

A wide-angle photograph of a city skyline at sunset. The sky is a mix of orange, pink, and purple, with scattered clouds. Several bright, glowing white arcs, resembling network connections or orbits, crisscross the sky. The city buildings are silhouetted against the bright horizon, with some lights beginning to glow.

READY FOR CHANGE

4 CIOs Talk Tech in Government



Interviews with the Nation's Leading Technologists

As the world changes, government is required to follow suit. And in no place has that change been more evident—or consequential—than the topic of technology in government. On the front lines of it all are public sector chief information officers and chief technology officers.

Granicus brought together four of these CIO/CTOs from state and local governments across the country to ask them about the trends shaping the government IT sector, what best practices they're using to implement technology, and how topics like cybersecurity and change management are bringing about an evolution in their roles.



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“The Latitude to Innovate”

An Interview with Suma Nallapati, Secretary of Pathology
and Chief Information Officer for the Governor’s Office of
Information Technology at the State of Colorado



How is the State of Colorado approaching digital engagement, customer experience, and innovation?

Everything we do in the Governor's Office of Technology revolves around innovation and engagement – especially as it pertains to IT service delivery for customers. Citizens need to trust government, and—from an IT perspective—we can do that by deploying secure, reliable, efficient, effective, and elegant technology that is designed with human use in mind.

The State of Colorado is a “cloud first” state, which we've found to be highly effective. We were the first to put our Medicare/Medicaid eligibility program in AWS [Amazon's cloud-based server system]. We were the first to introduce an Office of Digital Transformation. We're one of the biggest users of Google G-Suite [business productivity software]—more than 35,000—and Google Cloud. We're also embracing blockchain, because we want to make Colorado the nation's

blockchain capital. Not just the technology aspects, but also the legislation around the technology, the distributed ledger, the cryptocurrency side, the banking side, the token—all of it.

We're using tech to streamline our unemployment insurance to process claims faster; we're improving wait times at the DMV. Everything we do with technology is meant to improve the lives of Coloradans.

How do you prioritize change? What makes replacing visits to the DMV a higher priority than, for instance, bringing corrections facilities into a SaaS environment versus any of the other things that need to change?

There's much we want to change, but obviously you need priorities. We look for projects that maximize return on value from a citizen perspective. We have an IT steering committee that looks through the projects and helps determine an order to execute them.

Colorado clearly puts an emphasis on citizen and stakeholder input. How do you handle the volume that's coming in?

We want to hear from our customers, so we ensure that they have many avenues of access to us. There's no reason to be restrictive. You need to build that ethic into your organization to ensure you're making the right change.

What's helped you kickstart technological innovation within the State of Colorado?

I think there's a lot of excitement around really embracing technology to improve lives for people. Why should the government lag behind the private sector? In reality, we have much more latitude to leapfrog and innovate. Government doesn't need to be old and slow.



“A Holistic Approach to Technological Change”

An Interview with Bob Samson, Chief Information Officer for the State of New York’s Office of Information Technology Services



How is New York handling technological change?

It's helpful to first jump back a little bit. Back in 2011, the state of our technology was a mess. Forty-six different state agencies had their hand in its management. We had 53 data centers, 27 different email systems and 37 CIOs. Gov. Andrew Cuomo rightly recognized that this just wasn't going to work, so in 2012, the state created the Office of Information Technology Services.

Today, that office serves as a hub for digital change. We've moved nearly all of our core functionality to our own private cloud, which we call the Excelsior Cloud. We still use other cloud providers opportunistically where it makes sense.

What are some of the trends you're seeing in govtech?

There are a number of megatrends that I think are affecting the work we do

and how citizens interact with government.

The first is that we are now in the age of ubiquitous computing—some people call this the age of IOT (Internet of Things), though I think that term is a bit stale. We're coming into an era when computing is becoming instrumented, interconnected and intelligent. For instance, we have a bridge here called the Mario Cuomo Bridge (formerly the Tappan Zee Bridge). It's a \$4-billion construction project that is one of the most automated bridges in the world. It's packed with billions of transistors that manage its health every day. Our snow plows have sensors that detect road temperature and adjust the amount of salt they put out. We can monitor agricultural output such as milk production with technology outfitted for cows. The point is that it's ubiquitous and deployment is accelerating.

The second trend is that data is the new oil. With all this

new technology monitoring everything, we're entering a whole new paradigm for predictive analytics, machine learning, and artificial intelligence. Oil is what props up a lot of governments today. Data is what will keep them going tomorrow.

Next, we certainly are in an era of cloud computing. And I mean that not just as in cloud computing as a service but also the underpinnings of it all. I'm thinking of things like containerization, which is driving a whole new era of rapid application development, or the blockchain, which is introducing a new level of security.

Finally, all IT is cybersecurity. We spend close to \$60 million on cyber, and that number is growing pretty much daily. Threats and attacks are emerging on a daily basis, so it's something that you really need to stay on top of.



All of these trends have shifted the role of IT from setting up computers and printers to a more holistic, change-making agency.

How are you working across government to make positive change for citizens?

It all starts with dialogue, and it depends on the agency. For instance, we just wrapped up an innovation summit with the state's Office of Alcohol and Substance Abuse that was centered around the opioid crisis. It's not intuitively the job of technology to solve this issue. There are a lot of other departments and teams working as the first lines of defense on this. But we can use technology to help tackle this issue. Yes, we can help build websites that direct people to resources for help, but we can also use big data to build systems for predictive modeling where the opioid crisis might be about to get worse or if a potential solution is likely to actually work when it's deployed.

Do you think citizens should expect an experience similar to the private sector in their interactions with government?

Of course! I can go on Amazon and, in two clicks, I get something delivered the next day to my house. That's the way citizens expect their services to be delivered by their government as well. Citizens should absolutely demand it.

Several states are in the process of implementing modules with interstate dependencies. Is the State of New York willing to work with other states in sharing their non-PHI data with other states?

Absolutely. In fact, our governor recently announced a five-state initiative for sharing data about firearm permit applicants' mental health. We're certainly interested in getting more agreements like this done, though it can take some time to break down silos – some agencies or different states are a little protective of the data they have, so it's important to

build relationships to get buy-in and trust.

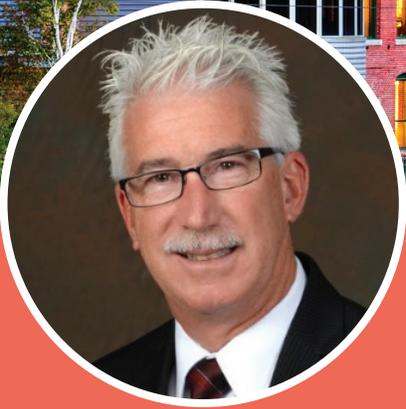
How do you train your staff to make usability and accessibility core to the digital experience?

This is a wonderful question, because it's the oft-forgotten part of IT. I worked really closely with an organization called Blind Spot, which helps ensure that our website is accessible to people who have visual impairment. We have an accessibility leader that ensures we're testing and tweaking and doing all the right things to improve how what we do serves everyone. But that sort of work can't be done in a vacuum. It can't be an afterthought – it needs to be built into everything you do from the start.



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“A Centralized Approach to Modernization”

An Interview with Denis Goulet, Commissioner for the Department of Information Technology for the State of New Hampshire



How does the State of New Hampshire approach IT infrastructure?

When I talk about New Hampshire's IT infrastructure journey, I need to go back to 2003, when the founder of a technology company, Craig Benson, was elected governor. At the time, all of our IT function was decentralized—each agency had their own team. When Gov. Benson came on board, he immediately centralized it all. So we've been centralized for quite some time, and that has been a huge advantage for our infrastructure modernization efforts. As the state CIO, I've also been granted legal authority to implement policy without going through a lot of hurdles. While I rarely use it, it's been helpful to apply intelligently when change is needed.

What is your approach to cybersecurity?

Similar to infrastructure, being centralized means cybersecurity is much easier to handle. We used to approach it with a one-size-fits-all strategy, but

we were constantly granting exceptions to different people and organizations when it didn't work for them. Now we use what we call a "baseline-plus" system. Essentially, what is the minimum we need to be secure? That baseline gets implemented across the board. But different departments and agencies can now layer extra security on top of that.

At Granicus, we spend a great deal of time with our security team building cloud-based solutions that are extremely secure and meeting the FedRAMP standard, ISO standards, etc. Where do you stand on these standards, especially with respect to your "baseline-plus" approach?

We use NIST [a federally published set of standards related to cybersecurity] as our guiding light on this. Our standards are currently about three years old, which is a bit behind in the world of cyber, so we're rewriting them right now. The new strategy aligns with NIST principles and activities. So anywhere we fall short of those standards, we are finding ways

to improve upon them.

How do you get everyone on the same page about uptime, 24/7 support, and IT availability?

We're finding that tolerance for any downtime at all is plummeting quickly across state government. That means we really need to work with our cloud vendors to ensure they understand what they need to deliver. Uptime can't be an afterthought – it needs to be baked in from the beginning. We're only budgeted by the legislature for one person to ensure availability, which just isn't going to cut it – that person takes vacations, they get sick, they need to sleep. That means managed services are just better suited for us. But when you hand over your service to an outside organization, you absolutely need to have a conversation with them about expectations, a talk with IT about expectations, etc. Everyone needs to know their role, and they need to deliver. Because, if they don't, citizens will be quick to point out the failure.



“Building an Airplane As It Flies”

An Interview with Rob Lloyd, Chief Information Officer for the
City of San Jose, California



CIOs have much to wrestle with regarding IT infrastructure and security. How are you approaching these topics in San Jose?

There's much to becoming a modern government agency around structure and how we're going to make it one that works across boundaries and domains. We've focused on building something you might call "Smart Communities" – sometimes known as "Responsive Communities" or "Intelligent Communities." The purpose of this is to create better services from the customer point of view, and then building technology that supports that. It's a whole different model than some of the monolithic technology approaches that we've had in the past. Instead, the new structure requires breaking down old silos and getting cooperation; it makes us step outside of our organization to see where we can partner with others, and it asks us how we can improve skills and build capacity without our

organization. This customer centralism is a new model that we're building around—restructuring ourselves, really—to get these new cross-domain projects.

As a CIO, you're leading many transformation initiatives in San Jose. How are you seeing your own role evolve?

First, it's important to say that I devoutly adhere to the belief that a CIO is indispensable to a lot of organizational change, but their existence is not sufficient to successfully enact that change. If you truly believe in empowering smart and responsive communities, then a CIO needs to know that building up partnerships is the first area of focus.

In San Jose, that means working with the Chief Innovation Officer, who does a tremendous job aligning the values of internal policymakers and external partners. The CIO has the profound responsibility of executing and sustaining all the technology, process

changes, and digital services that emerge from that.

We also partner with the Deputy City Manager for Innovation, whose responsibility is making sure the priorities put forward are executed upon and any siloing that emerges is broken.

We're highly collaborative and collegial here in San Jose, so I think that's been the key to us being able to take on some of these projects that would otherwise be honestly quite difficult for a typical organization.

New technology often requires shifts in behavior and the nudging of employees to adopt them—something that has traditionally been outside the CIO's purview. How much is change management now a part of the role?

Change management is a massive part of the role, and it's something we incorporate into every project. For instance, our



311 app and portal data project was a huge lift. We told the city council that while the technical backend of these projects is tricky, the really hard part is the iteration, the re-engineering, getting more people involved and thinking through projects in a different way. You can create a pretty app and send out emails to get people to download it and increase demand, but if you haven't really transformed the organization and the way it aligns itself, you'll end up causing more problems than you solve in the long run.

What are some of the top-of-mind challenges that you're running up against right now as you work toward building a modern government agency?

I think there are four primary challenges:

The first is setting up a structure that's going to work for an organization to handle incoming challenges. If the conversations you're having aren't authentic, genuine, and

speaking to the organization's values, then you're never going to be able to execute anything that rises to the occasion. I definitely recommend not just bringing in a consultant who says, "Your organization needs to look like this."

Second, I think a lot of organizations struggle with becoming customer-centric at all levels – you need leadership that embraces it and messages it forward.

Third, a lot of IT struggles with influencing cross-domain efforts. That means conversations around technological change often end up being about what other departments or organizations involved perceive as the issue. IT doesn't need to control the conversation, but it does need to influence it.

Finally, I think there's a real need to communicate foundational needs on an active basis, because it's too easy to get distracted by what's cool, shiny, or sexy, but you really need to

make sure as a CIO that you're embracing what best serves the organization's values, its people, its processes. When you walk up to an architectural marvel, you never say, "Wow, what an awesome foundation they built this on!" But the beauty before your eyes—the flashiness, the sexiness—wouldn't be possible without that foundation.

To a certain extent, being a CIO means building the airplane as you're flying it. How do you balance the need to plan things out long term while having all the short-term changes in behavior and demands from citizens, employees, city council members, etc. for new technology now? What's the balance?

Government is judged as much by what it doesn't do as it is by what it does. There are so many new opportunities to change, it can be dizzying. That means having processes in place that prioritize change – both where change should go and in which way it should be implemented.



As a CIO, that means looking internally to find what the organization needs while also talking to the city council, as they have a vision for how the city should be and how it should work. Our job is to bridge that gap and do so constantly—and consistently. It's important to ask what's in line next, whether that item is still a priority, and if any shifts are needed.

What foundational components do you think need to be in place as we start to focus on building new systems that include technologies that enable us to work in different ways, such as artificial intelligence?

The first thing you need to have in place is the right culture and team, because without that there can be something of an organizational immune response to "innovation." You also need someone in place with the right decision-making capabilities – when budget is a concern, who is interfacing with elected officials and others to assuage them? It's also

important to think beyond the product launch. Government needs to embrace being as transformational and adaptive as peer organizations in the private sector. We need to ensure that when change arrives, we have the processes in place to integrate it, which is something the private sector does incredibly well.

Time to put on your CIO futurist hat: What does modern government look like in five years?

If you like change, now is a wonderful time to be in government. What the future holds is honestly going to vary based on geography, culture, etc. In some places, you'll likely see some new internet of things (IOT) technology or sensing tech that helps make government smarter through monitoring. But in other parts of the country, local values around privacy might trump the conveniences they bring. That's why it's important to be willing to test, to listen to citizens and stakeholders, and then to

implement changes as you go along. At the end of the day, citizen or customer centralism is about delivering what people in your community want—not what you think they should want.

“If you truly believe in empowering smart and responsive communities, then a CIO needs to know that building up partnerships is the first area to focus on.”



CIOs and CTOs are at the forefront of change in government. Granicus is proud to support these leaders as they modernize organizational strategies, embrace cloud technology and become change management champions – all in the name of improving the citizen experience. Granicus is the industry’s leading cloud-based solution for communications, meeting and agenda management, and digital services to more than 4,000 public sector organizations.



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