

# METROPOLITAN INFORMATION EXCHANGE: SELECTED PRIORITIES AND CHALLENGES



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# INTRODUCTION

The Metropolitan Information Exchange (MIX) is a tight-knit membership community of Chief Information Officers and Information Technology Directors from cities and counties across the United States who engage in open and frequent dialog around common issues.

Although MIX members come from every size jurisdiction throughout the United States with varying organizational structures, governing bodies, and available resources, they experience many of the same competing priorities and challenges.

Each year MIX members convene for a four-day conference in a different U.S. city.

This year they met in Scottsdale Arizona, from September 23-27, to discuss a range of topics.

CTG UAlbany Program Director Meghan Cook facilitated workshops among the members to discuss priorities and challenges they face.

This summary presents the ideas discussed.

## MIX MEMBERS

- Jonathan Behnke, CIO, City of San Diego, CA
- Jack Belcher, CIO, Arlington, VA
- Michael Biagioli, IT Manager/CIO Waukesha County, WI
- Lisa Bobo, CIO, Rochester, NY
- David Bessen, CIO, Arapahoe County, CO
- Andy Brush, IT Manager, Washtenaw County, MI
- Dwayne Campbell, CIO, City of Fayetteville, NC
- Savita Chaudary, IT Director, City of Berkeley, CA
- Janet Claggett, CIO, Richland County, SC
- Ken Clark, CIO, City of Indianapolis and Marion County, IN
- Barry Condry, CIO, Chesterfield County, VA
- Mark Decker, CIO, Jackson County, OR
- Jerome Driessen CIO, Hennepin County, MN
- Sue Farni, CIO, City of Mobile, AL
- Jonathan Feldman, CIO, City of Ashville, NC
- Laura Fucci, CIO, City of Henderson, NV
- Linda Gerull, CIO, City of San Francisco, CA
- Wanda Gibson, CTO/CIO, Fairfax County, VA
- Bill Greeves, CIO, Wake County NC
- Mikel Haas, CIO, San Diego County, CA
- Charlie Haase, CIO, City of Modesto, CA
- Jim Hall, CIO, Ramsey County, MN
- Brad Hartig, CIO, City of Scottsdale, AZ
- Byron Horn, CIO, City of Fresno, CA
- Simon Huang, IT Director, St. Charles County, MO
- John Imig, IT Director, City of Peoria, AZ
- Aleta Jeffress, CIO, City of Aurora, CO
- Dennis John, CIO, City of Arlington, TX
- Frank Johnson, CDO/CIO, City of Baltimore, MD
- Bill Kehoe, CIO, LA County, CA
- Mike Lane, CIO, Clark County, NV
- Jeff Lewis, IT Director, City of Concord, CA
- Rob Lloyd, CIO, City of San Jose, CA
- Chris Mertens, IT Director, Hamilton County, IN
- Brent Messer, CIO, City of Chattanooga, TN
- Steve Monaghan, CIO, Nevada County, CA
- Carl Nehls, CIO, City of Colorado Springs, CO
- Beth Niblock, CIO, City of Detroit Michigan
- Steven Niekamp, CIO City of Garland, TX
- Stephen O'Meara, CIO, Ada County, ID
- Mark Pfaffinger, CIO, Larimer County, CO
- Vanetta Pledger, CIO, City of Alexandria, VA
- Mark Pray, CIO, City of Lakewood, CO
- David Puntteney, IT Director, City of Westminster, CO
- Michael Rodriguez, CIO, City of Memphis, TN
- Ted Ross, GM IT, City of Los Angeles, CA
- Tom Shewshuk, IT Director, City of Ann Arbor, MI
- Sonny Segal, CIO, Montgomery County, MD
- Chris Seidt, CIO, Louisville Jefferson County, KY
- Darnell Smith, CIO, City of Raleigh, NC
- Christopher Stathis CIO, El Paso County, TX
- Andy Stein, IT Director, City of Newport News, VA
- Mike Taylor, Deputy County Manager/CIO, Pitt County, NC
- Peter Wallace, CIO, City of Virginia Beach, VA
- Jon Walton, CIO, San Mateo County, CA
- Wendy Wickens, IT Director, Loudoun County VA

# SELECTED PRIORITIES OF MIX MEMBERS

City and County IT leaders have both the breadth and depth of knowledge of their governments.

Their job comes with a range of responsibilities across many domains. The following are a selected set of priorities that MIX members discussed at this year's conference.

## MANAGEMENT & OPERATIONS OF TECHNOLOGY INFRASTRUCTURE

Running operations for all government programs and services means managing the lifecycle of numerous systems (legacy, midlife, and new).

It also means adapting to changing departmental needs, building and maintaining networks, and securing information and communication infrastructures.

Managing technology foundation is necessary to ensure that all government programs continue to provide services to citizens.

## PREVENTING AND MITIGATING CYBERSECURITY INCIDENTS

Protecting the city and county physical infrastructure is a major function of a CIO or a Chief Information Security Officer (CISO).

Cybersecurity functions include: technical monitoring, assessing risk, securing insurance, user training, mitigation planning, procuring tools, developing and testing security controls, and responding and recovering from cyber incidents.

Another critical responsibility is building awareness among city and county leadership the need to manage the cyber health of the organization.

## FOSTERING IT ORGANIZATION TRANSFORMATION

CIOs are continually considering the structure of their IT organizations in order to meet the needs of their city or county.

Some IT organizations are centralized, some are decentralized, and many are hybrids.

Creating an agile IT organization means having a mix of staff with technical, analytical, strategic, networking, architectural, and cybersecurity skills and capabilities and then organizing them in a way that allows their department to be responsive while providing the most value.

## LEADING GOVERNANCE

IT investments can be some of the most significant decisions for a city or county, therefore, developing sound governance is a priority for many CIOs.

A governance framework typically includes a cross-department governance board carrying out an agreed upon set of processes and criteria to review, discuss, and decide on investments that make up the organization's portfolio.

Maintaining interest in and adherence to these processes can be challenging and require continual education and awareness.

# SELECTED PRIORITIES OF MIX MEMBERS

## SPEARHEADING IT SYSTEM MODERNIZATION

Moving off of older technology is a necessary consideration, especially when systems are no longer supported or running efficiently. Modernization can be an enormous undertaking, encompassing requirements gathering, decision making, procurement, deployment, change management, and training. It can mean moving to new platforms (i.e software as a service) to achieve a more cost-efficient and inter-operable architecture for the entire city or county.

## DEFINING AND MANAGING SOCIAL MEDIA PRESENCE

Not every government entity uses social media and as a result, there can be a range in organizational maturity with respect to how to use social media to support government programs and services.

Sometimes the CIO is tapped to lead these efforts, or co-lead with a public information office. CIOs might help inform the selection of a platform, bring together staff to develop and implement policies, and also provide intermittent support and guidance.

## LEADING AND SUPPORTING INNOVATION AND SMART CITY PROGRAMS

For cities that have established innovation and “Smart City” programs, it can be challenging if the program is not set up under the purview of the CIO. A common theme of many smart city programs is to leverage data and technology to achieve a social impact. IT departments usually play a key role in those initiatives and as a result, the CIO must work in partnership with the smart city lead to help meet the overall goals of the city.

## BUILDING AND MAINTAINING A ROBUST DATA ENVIRONMENT

Cities and counties are becoming more aware of the importance of data collection and management within their organizations.

Building a robust data environment can include several components including: building a technical infrastructure, developing data management processes and competencies, defining and implementing data literacy within the departments, identifying and supporting critical data collection points, and fostering an overall data centric culture.

## RECRUITING AND MAINTAINING A SKILLED WORKFORCE

Recruiting IT staff in local government can be challenging. Individuals with technical and analytical capabilities are in demand, but getting them to work in local government is difficult because of issues such as salary discrepancies with the private sector, civil service and residency requirements and work policies (no working from home). CIOs are responsible for continuity of operations, but they are finding it challenging to build a team with the necessary skills and capabilities when they are facing such challenges to workforce recruitment and development.

# SELECTED PRIORITIES OF MIX MEMBERS

## ENSURING BUSINESS CONTINUITY AND DISASTER RECOVERY

Any interruption in government operations and services, no matter how small, can be a potential setback.

Cyber, weather and man-made incidents are becoming more frequent, and in some cases, more extensive, and CIOs are working to develop and test business continuity and disaster recovery plans in case of such incidents.

To do this, CIOs must work with department leaders to identify recovery goals, and assemble a government-wide plan to bring government operations back online as quickly as possible.

## SUPPORTING CIVIC ENGAGEMENT

Some city and county governments have adopted aspects of civic engagement to inform their investment decision making.

For a CIO, this may mean acquiring a platform to support an active and intentional dialogue between citizens and the decision makers.

CIOs may also weigh in on policy and procedures around civic engagement and to generally build an awareness within the organization.

## PREPARING FOR EMERGING TECHNOLOGIES

Integrating emerging technologies into existing infrastructure and processes can be challenging for CIOs.

Technologies such as connected and autonomous vehicles, IoT sensors, body cameras, and artificial intelligence systems, all have the potential to provide benefit but can take a large amount of planning and preparation to explore where best to integrate those technologies into operations and then to do so.

This requires developing understanding for how such technologies will impact other parts of the network, as well as the overall work flow of the city departments and then where appropriate, planning for deployment.

## DEVELOPING INTEROPERABLE EMERGENCY COMMUNICATIONS

All city and county communication structures are important but all agree, emergency communications is particularly important.

An interoperable technical and organizational infrastructure requires working across levels of government and municipal boundaries.

CIOs usually work in partnership with public safety officials to fund, build, and maintain emergency communication systems.

# SELECTED CHALLENGES OF MIX MEMBERS

City and County CIOs also face a unique set of challenges.

The following are highlights from the member discussions around selected current challenges.

## EXPANDING PORTFOLIOS

Many city and county CIOs are finding that their portfolio has increased in both the number of, and types of, projects and activities.

As demand and diversity of task increases, CIOs are working to meet differing and increasing needs, often with just the resources available in their departments.

Specific challenges emerge when there is specific skill set required that isn't available in house, or if the nature of the task is changing such as taking on more external facing activities, including IoT smart city projects and fiber and broadband projects.

The increase in number of projects and a change in the types of projects has made the work of CIOs more challenging in recent years.

## SHADOW IT

When IT is purchased and implemented without the knowledge of the IT department it becomes part of the "Shadow IT" infrastructure.

Such shadow IT creates security, interoperability and long term sustainability problems.

Even governments with established governance processes find that technology is purchased, built and/or used without the IT department's knowledge. Consumerization of IT is a major reason that shadow IT continues to be a problem.

Many government officials believe that since facility have personal devices, they have the knowledge and expertise to select both hardware and software without expert advice. In reality, personal devices are different from the institutional technologies needed to run government operations and services.

Shadow IT is not just an IT department problem, it's an entire government problem.

## CYBER "BOOTS ON THE GROUND"

Cybersecurity prevention and mitigation requires a distinct set of skills for operational and strategic functions.

Many cities and counties, especially smaller ones, don't have skilled staff required to carry out these functions.

Some state governments have tried to fill this gap with tools and funding for local governments, but this does not get to the core of the problem - not enough of the right staff to carry out cybersecurity work.

Outsourcing can be an effective approach, but some CIOs have found, even with an outsourcing approach to cybersecurity, there is still a deficit of expertise on the ground in cities and counties.



# SELECTED CHALLENGES OF MIX MEMBERS

## IT GOVERNANCE

A government-wide IT investment governance body, structure, and process can be the cornerstone of sound decision making.

While many cities and counties have this type of governance structure in place, it does not always operate as envisioned.

One challenge many CIOs face is getting government leadership to invest in the process of shared governance of IT and then ensure that the process is used to review project plans, assess plans by agreed-upon criteria, and also assess the overall portfolio impact, among other necessary IT related planning and decision making activities.

Many CIOs have learned that their non-technical leaders want the IT department to make all IT related decisions, however, they have also learned that it is better for everyone involved for such decisions to be made by cross-department groups.

## INVESTMENTS IN INFRASTRUCTURE

The challenge of getting funding for back office and infrastructure projects is not new.

Typically, back office projects - while necessary to support a myriad of programs and services - are not eye catching nor well-understood.

Imagine a foundation that does not support a building.

The impact of such a, “weak foundation” is often not quickly or easily seen or understood.

CIOs have a responsibility to know when underlying structures are weakening and need to be patched, upgraded, or replaced.

However, such projects often get cut from budgets - even at the last minute.

Making investments in infrastructure means CIOs are often finding new ways to integrate these investments into other projects so they can keep the foundation strong.

# CTG UALBANY

CTG UAlbany works with governments worldwide transforming public services through innovations in technology, policy and management.

A research institute at the State University of New York (SUNY) at Albany, CTG UAlbany was established in 1993 to pursue new ways to use technology to address practical problems of government.

CTG UAlbany collaborates with hundreds of domestic and international researchers on understanding and applying emerging technologies.

At the same time, CTG UAlbany works with scores of local, state, federal, and international government bodies as a trusted advisor and facilitator of management and policy decisions to govern the use of new technologies as tools for public service transformation.

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At CTG, Meghan leads multi sector and interdisciplinary innovation initiatives that build capability in public sector organizations and agencies throughout the world.

Through a unique and collaborative process, Meghan works side by side with international, federal, state and local government leaders to produce new knowledge and actionable results.

With over 20 years of experience working on public sector innovation efforts, Meghan is an expert in digital government transformation.