

## CHAPTER TWELVE



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# Leading the Cities of the Future

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Marc Ott, Lee Feldman,  
and Tad McGalliard

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# LEADING THE CITIES OF THE FUTURE

*Marc Ott, Lee Feldman, and Tad McGalliard*

## **Excerpt from 2040 Edition of ICMA's *Effective Local Government Manager***

Like its predecessor, this edition concentrates on how local government managers continue to lead effectively in a complex and rapidly changing environment. When the 2020 edition was published, managers of local governments were leading the push for what was then known as “smart” cities, counties, and regional governments. This was the dawn of artificial intelligence and machine learning, big data, autonomous vehicles, advanced sensors and more—all of which were promising a new day of technological enhancements for city and county management. Today, 2040, those elements that seemed so futuristic twenty years ago are commonplace.

Local government professionals in 2040 will possess the leadership vision that can peer around corners and see past the event horizon to create organizational cultures that embrace a dizzying pace of change and technology innovation. In an op-ed for *Governing Magazine* in 2015, the former executive director of the International City/County Management Association (ICMA), Robert O’Neill, suggested that “technology + governance” is the formula for “smart” cities, writing:

... as the trend towards urbanization increases, the need for smarter communities becomes more imperative. Local government service-delivery responsibilities will continue to expand and diversify. To meet those challenges, local officials will need to seek out the right combination of technology and governance.<sup>1</sup>

In tomorrow’s world, we believe that a more effective equation for the future divides the “governance” component into “leadership” and “management,” with leadership as the dominant variable.

In this chapter, we describe the key characteristics that local government leaders in 2040 will need to effectively lead the smart cities, counties, and regional government of the future. Before we do that, we offer some thoughts on creating “even smarter cities.”

## **Speech by Marc Ott, Executive Director, ICMA, at the 2024 ICMA Annual Conference**

For many local government professionals, the future often feels far more present than the past or any given moment at hand. New challenges and opportunities are always barreling pell-mell from different directions to intersect with local government. Such is the case with the growing movement towards smarter cities and communities. With expanding interest in smart cities, it is clear that local governments are at an innovative moment and many are in an innovative mood. It is also clear that the smart cities movement has not only started, but the pace of change is accelerating with an ever-increasing number of opportunities lurking over the horizon.

## **BUILDING TOWARD THE “EVEN SMARTER” CITIES OF TOMORROW**

With ongoing technology advancements underway in many local governments, it is not hard to imagine that there will be disruptions to the long-held assumptions and practices within local government. Technology has always influenced organizational culture and how professional public administrators lead, manage, and staff their organizations. Since the 1990s, technologies have altered the strategies, approaches, and outputs of local service delivery. For example, access to video information has had a major impact on public safety, including speed monitoring, traffic control, and crime solving. Body-worn camera usage is on the rise in police departments across the United States. Other disrupting technologies are bringing about change on an almost daily basis that will serve as platforms for the cities of tomorrow. Following are examples of disruptive technologies in play.

### **Leveraging Digital Platforms for E-Commerce**

The use of websites to share information about local government administration is now widespread in the United States and other parts of the developed world. Many places have turned their sites into digital platforms for e-commerce, allowing residents and businesses to secure permits for new construction or pay taxes, fines, and fees. Looking forward, blockchain and related technologies of the future will change local-level transactions for property titling, survey plats, legal documents, and other transactions facilitated with support from the local government.

## Expanding Sensor-Based Smart Traffic Networks and Autonomous Vehicles

Sensors embedded in, or suspended above, roadways help local government planners and engineers understand the conditions of their transportation networks. Intelligent transportation systems can provide real-time information such as incident detection, adaptive signal control, weather-related conditions, roadway volume information, and useful updates for travelers.

Sensors will be linked to autonomous vehicles—a game-changing approach for transportation and related services, which will raise many practical questions for local leaders:

- Will the roadways of the future be dominated by vehicles with advanced sensors and artificial intelligence, creating conditions where the most dangerous thing on the road is a car driven by an actual human?
- Will public parking evolve so that cities no longer need parking garages and meters?
- Will roadways still require traffic signs and stop lights?

In a near-term future, advanced roadway sensors and counterpart technologies in vehicles will optimize the flow of traffic through an efficient and elegant flow of vehicles that will reduce congestion, minimize idling, slash the number of accidents, and improve air quality.

## Managing Local Skyways and Drone-based Transit

One can also imagine a transportation network where local roads are not the only mobility pathway. Drones are already being used by some communities, including Fort Lauderdale, Florida, where the technology has been deployed to help with emergency management situations including distressed swimmers, missing or malfunctioning boat locations, shark sightings, and greater awareness about structural fires.<sup>2</sup> In 2040, local governments will have the sole or shared responsibilities of managing skyways where small as well as larger drones capable of much greater carrying capacity—including passengers—operate in increasingly crowded airspace.

## Expanding Use of 3-D Printing

“Tea. Earl Grey. Hot.” was a familiar line from character Captain Jean-Luc Picard, made famous by actor Patrick Stewart, on *Star Trek: the Next Generation*. Captain Picard used the ship’s “replicator” to satisfy his culinary need for a taste of home. While starships aren’t hovering in orbit...yet...3-D printers are now capable of building not only small prototypes and molds, but much larger and diverse products. For example, a non-profit and a technology firm are now using 3-D printing to build affordable housing, currently for under

\$4,000 per unit.<sup>3</sup> This disruptive technology will be dramatically expanded in the future to solve the chronic shortage of safe and affordable housing. In addition, a more massively scaled 3-D printing technology will be used to build public infrastructure such as roads, sidewalks, and more.

## **Artificial Intelligence Replacing Routine Jobs**

Artificial intelligence is on the rise in everyday usage through devices like Google Home, Siri, and Alexa, that provide information, product ordering, directions, and much more. Facilities management devices like Nest help to control building conditions by learning a user's preferences for temperature. Already, "chatbots" provide customer services in industries of all kinds, from answering questions about wireless services to purchasing shoes and even the delivery of local government services. Similarly, while not at all in widespread use, some futurists speculate that routine activities may one day be performed by artificially intelligent robotics. If the ultimate innovation is to replace humans doing routine or mundane jobs with artificially intelligent technologies, the city hall of 2040 will be more of a cyber city hall, open 24-7.

# **THE EFFECTIVE LOCAL GOVERNMENT LEADER OF 2040**

Technology advances of the last generation have already disrupted the ways in which local governments are managed and operated. If we expect similar disruption over the next twenty years, what will the future require of its government leaders? It is clear to us that the core competencies of the effective local government leader in 2040 will substantially differ from those of today, and the organizational models in which they work will continue to stray further away from those where only public service organizations serve the public good.

For decades, ICMA has monitored and reported on the core attributes that effective local government leaders need to be successful. As technologies continue to advance and provide benefits—many of which are not yet imagined—we believe that governance elements of the smart city equation will remain equally as important as the technology tools with which they will work. We also believe it is imperative that the evolution in management and administration necessary for the next-generation smart city begin immediately. After all, the leaders of 2040 are graduating from colleges today.

Looking forward, elected and appointed leaders of 2040 will need to be a combination of the following types of managers:

- **Facilitative Leaders** create partnerships with public sector, private sector, and non-profit actors, working to continuously improve communities and serving as an advocate for updating obsolete laws and regulations.
- **Technology Champions** are more technologically aware than today's public administrators.
- **Data-Driven Leaders** are capable of accessing and incorporating data and analytics into decision-making and data-driven performance management.
- **Cyber Generals** are proactive and effective decision makers against the continuing threat of cyber-attacks.

## The Facilitative Leader

Private sector and non-profit organizations are now essential partners in meeting the service needs of local government stakeholders. We believe that this trend will indeed continue, because the necessity to do it better, faster, and cheaper is not a hallmark of bureaucracy. The implementation of smart city technologies and approaches will need to keep pace with innovation and change, in creating new products and services designed to meet the treadmill of needs for which local governments are responsible. As a result, we expect that local governments will continue moving away from the procurement of technology and toward the procurement of “smart technologies as a service” that can be more quickly improved, tested, updated, and replicated in partnership with the private sector.

Other sectors of society are also filling in the gaps of local needs and service delivery. Non-profit organizations like Cities of Service work with local governments to organize local resident and business volunteers to help confront community needs.<sup>4</sup> Another nonprofit, PulsePoint, activates community volunteers to respond to cardiac events near their current location, providing potentially life-saving cardiac care in the critical minutes before even first responders can arrive on scene.<sup>5</sup> Airbnb supports local and regional disaster response by activating their community of clients to provide shelter for first responders and others deployed to recovery zones.<sup>6</sup> There is power in the crowd. The smarter cities and communities of 2040 will welcome these kinds of game-changing innovations to augment local service delivery. The effective local government leader must be able to identify and quickly assess the value partnerships that mix the skills and talents of different sectors to achieve community benefit goals.

The facilitative manager will also be active in reexamining the 2040 system of laws, regulations, ordinances, permitting process, and other interventions that federal, state, and local governments will have put in place to respond to disruptive technologies. By 2040, the disruption presented by new technology will run headlong into the rules and values of a community, and require reevaluation of those rules and values. The threat of technology

racing ahead of community rules and values will require city managers to be facilitators in resolving any differences that may arise.

## The Technology Champion

For most of humanity's existence, it was safe to assume that the world in which you lived would be pretty much the same from birth to death. Today however, the pace of change almost surely guarantees the opposite is true. Will local government leaders directly manage significantly more technology, or will they oversee departments of staff who manage and understand different kinds of technologies?

While we don't expect a collapse of the local government workforce, continued resource pressures coupled with ever-increasing technology deployments will likely do away with some kinds of positions, while creating others that require new types of skills. Given the pace of change, it seems clear that the city and county managers of 2040 will be more widely versed in a wider range of technologies than simply desktop software applications, and these managers will require a human resources system that is flexible and agile enough to respond to the varied talent requirements of "even smarter cities."

## The Data-Driven Leader

The big data revolution is starting to make its way into local government. In her book, *A Practical Guide to Data and Analytics*, Marie Lowman suggests that:

To make the case for analytics—convince government and citizens of the need to change traditional business models, share data, and update IT infrastructures—government leaders must be able to show tangible beneficial evidence. They must be able to explain exactly how and why investment in analytics can save money, improve lives, avoid unnecessary future costs, and enhance operational efficiency and compliance.<sup>7</sup>

Compared to other units of government, local governments lag in the use of data and analytics for decision making. However, as the power of analytics and visualization tools penetrates further into the local government marketplace, local public managers of tomorrow will have far better information to support their decision making. It is safe to say that politics in 2040 will still influence priority setting, decision making, and program implementation, and of course data can be manipulated to justify different arguments. Nevertheless, leaders and managers will need to better understand the "collecting, communicating, and crunching" of far larger pools of data, compared to today's elected and appointed officials.<sup>8</sup>

## The Cyber General

In the future, the darker underbelly of smart city optimism will be the ongoing and growing threat of cyber-attacks against local governments. Each new technology connected as an Internet of Things (IoT) product will open a new front for cyber-attacks. Historically, ICMA survey data in 2017 suggested that many local governments were not aware of cyber risks, and were ill-prepared to meet cyber-attacks.<sup>9</sup> ICMA survey data and previous ransomware attacks on local governments found that localities are vulnerable to large-scale cyber-attacks. As ICMA staff suggested in a recent op-ed piece in the *New York Times*:

We must actively prepare for cyberthreats of the sort that have been demonstrated in places like Atlanta. If smart cities and communities are the brightly lit days of the increasingly connected world of local government technology, cyberattacks are the dark and stormy nights. We don't need to halt technological deployments and evolution, but we do need to recognize that cybersecurity is an essential counterpart.<sup>10</sup>

The smarter city managers of 2040 will lead an interconnected community of sensors, automation, data, IoT, and artificially intelligent technologies that will enable them to visualize issues and challenges in ways that today's managers cannot. With this level of operational intelligence and seamless interconnectivity comes the parallel risk of systemic failure if cybersecurity is not a core part of local government administration. The cyber-terrorist would just as easily disrupt local government services to make a political statement as to demand a ransom. The manager of tomorrow will need to lead from the front to ensure the safety and security of the underlying smart city systems.

### **A 2040 interview with former city manager Lee Feldman**

When I look back at how local government leadership evolved, I am struck by how many things we predicted that came true, and honestly how many things we feared that fortunately never materialized. It was an exciting time to be sure but, as a result of advances over the last quarter of a century, local government management today is better than it has ever been.



## FINAL THOUGHT

By 2040, the co-authors of this article will hopefully be enjoying retirement after long careers in city and county management (whether we will have genetically- or technology-strengthened organs and longer life spans is the subject of another article for which we claim no expertise). We are each hopeful for the future, while recognizing the challenges that future local government leaders, managers, staff, and stakeholders will face to realize the promise of smarter communities. We expect the next twenty years to be an exciting time for the next generation of local government professionals, where effective governance and leadership, coupled with the right technology solutions, continue to create increasingly smarter cities, counties, and regional governments across the United States.

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### Endnotes

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- 3 Adele Peters, "This House Can Be 3D-Printed for \$4,000," *Fast Company*, March 12, 2018.
- 4 "How We Work," Cities of Service, accessed June 8, 2018, <https://citiesofservice.org/how-we-work/>.
- 5 "Pulse Point" home page, accessed June 8, 2018, <http://www.pulsepoint.org/>.
- 6 "Disaster Resonse & Relief," Airbnb, accessed June 8, 2018, <https://www.airbnb.com/disaster-response/>.
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- 8 Smart Cities Council, *Smart Cities Readiness Guide*, 2014.
- 9 International City/County Management Association, *Cybersecurity: Protecting Local Government Digital Resources Report*, October 25, 2017, <https://icma.org/cyber-report>.
- 10 Tad McGalliard, "How Local Governments Can Prevent Cyberattacks," *New York Times*, March 30, 2018.