

ABA Smart Cities Conference

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Section of Science & Technology Law

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Center for Law, Science and Innovation

The Center for Law, Science and Innovation has been an established leader for over 30 years in addressing the extraordinary legal and regulatory problems caused by rapid developments in science and technology. The Sandra Day O'Connor College of Law at Arizona State University was the first in the country to create a center to address these challenges. As technology increasingly assumes a central role in our lives, the center is uniquely positioned to be an innovator and leader in the teaching and application of 21st century law and policy.

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Conference Agenda

- 8:00-8:10 **Welcoming Remarks**
Bob Carlson, *President, American Bar Association*
- 8:10-8:30 **Keynote Address**
Bill Gates, *Chairman, Maricopa County Board of Supervisors*
- 8:30-9:45 **Smart Cities – What’s Happening Now**
Moderator: Diana Bowman, *Sandra Day O’Connor College of Law*
Stephane Frijia, *Greater Phoenix Economic Council*
Tod Caflisch, *CenturyLink*
Erik Johnston, *ASU School for the Future of Innovation in Society*
- 9:45-11:00 **Smart Transportation and CleanTech**
Moderator: Lois Mermelstein, *Law Offices of Lois D. Mermelstein*
Mike Widener, *Bonnett, Fairbourn, Friedman & Balint, P.C.*
Lina Karam, *ASU Engineering, Institute for Autonomous Mobility*
Greg Rodriguez, *Best Best & Krieger*
Monica Barone, *Qualcomm*
- 11:15-12:30 **Smart Construction: Buildings, Stadiums, and Campuses**
Moderator: Matt Henshon, *Henshon Klein LLP*
Adam Klein, *Katten Muchin Rosenman LLP*
Tod Caflisch, *CenturyLink*
Chris Richardson, *Deputy CIO–IT Development, ASU*
- 1:30-2:45 **Data Privacy and Cybersecurity in Smart Cities**
Moderator: William Baker, *Potomac Law Group*
Kristin Madigan, *Crowell & Moring*
Jamie Winterton, *ASU Global Security Initiative*
Hoyt Kesterson, *Terre Verde*
- 3:00-4:15 **What to Expect Next: Planning Goals, AI, and Big Data**
Moderator: Josh Abbott, *Center for Law, Science and Innovation*
Diana Bowman, *Sandra Day O’Connor College of Law*
K Royal, *TrustArc*
Katina Michael, *ASU School for the Future of Innovation in Society*

ABA Smart Cities Conference Report

The Center for Law, Science, and Innovation hosted the first American Bar Association Smart Cities Conference on February 22, 2019 at the Sandra Day O'Connor College of Law in Phoenix. The conference created a forum for collaboration in integrating emerging technology and the law to enhance quality of life.

I. Welcoming Remarks

Bob Carlson, *President, American Bar Association*

The ABA's goals include providing member services, advancing the legal profession, ensuring diversity inclusion, and defending the rule of law. These goals are met through policies adopted by the ABA House of Delegates, the policy-making body of the association that represents over one million lawyers in the country. The ABA promotes the nation's democratic values through defending and upholding the rule of law. Members of the legal profession must stand together to promote professional excellence in the face of an ever-evolving economy and judicial landscape. The association provides leadership within the legal profession to advance America's culture of justice and due process under the law.

II. Maricopa County's Applications of Smart City Technology

Bill Gates, *Chairman, Maricopa County Board of Supervisors*

Five supervisors sit on the Maricopa County Board of Supervisors representing the residents of the fourth largest county in the nation. The Board's priorities include furthering the concept of smart cities and incorporating smart technologies into the region. The Board hopes to bring together Phoenix and the surrounding cities to create the world's first smart region.

Maricopa County manages a significant amount of data. For example, about 10,000 deaths occur in Maricopa County each year, some of which are investigated by the Office of the Medical Examiner. Maricopa County used data from these investigations to reveal an opioid epidemic, and as a result filed a lawsuit in 2018 against the manufacturers of the drugs that are at the heart of the crisis.¹ Big data can also be used to solve everyday issues. Maricopa County gathers and interprets data via an interactive map that helps pet owners reunite with their missing pets. In light of these everyday applications, the Maricopa County Board of Supervisors is seeking out additional uses for big data to enhance the lives of county residents.

¹ *Maricopa County v. Purdue Pharma, L.P.*, Case No. 2:18-cv-04866 (D. Ariz. 2018) (transferred to *In Re: National Prescription Opiate Litigation*, Case No. 1:17-MD-2804, MDL No. 2804 (N.D. Ohio centralized Dec. 12, 2017)).

One particular tool that will prove invaluable in making Maricopa County smarter is the next generation of network technology—5G. The rollout of 5G in the next year will have a significant impact on the community, increasing the availability of telemedicine and expanding the use of autonomous vehicles and smart appliances. Maricopa County is one of the first areas where wireless carriers will deploy 5G.

Many legal hurdles are in the way of 5G deployment, yet Maricopa County is uniquely positioned handle these issues. Under the Maricopa County Bill of Rights, when local jurisdictions fail to timely respond to license applications, the applications are automatically deemed to be administratively complete, ensuring speedy permit approvals at the local level.²

In 2007, Maricopa County initiated the SMARTDrive program,³ which implemented vehicle prioritization technology to improve the safety of emergency responders. This technology allows for communication between emergency vehicles and traffic signals with the goal of decreasing emergency vehicle travel time and preventing collisions. Another example of smart city technology is Maricopa County's Loop 101 Mobility Project, which aims to address traffic challenges by developing traffic management technology that enables traffic lights on surface streets to communicate traffic patterns. Using this information to impact how traffic arrives at the Loop 101 Freeway ensures a steady traffic flow with fewer points of congestion.

Maricopa County's Innovation Studio helps individual departments tackle difficult challenges to improve their efficiency.⁴ For example, the studio helped the Human Services Department's Head Start programs by decreasing hiring time by 68 percent, and increased Fleet Management staff productivity by nearly 500 percent. In 2018 alone the studio helped to identify over \$1.5 million in efficiency saving.

The Board is also focused on connecting young adults with the government. Younger generations are unlikely to travel to a board of supervisors meeting to speak out about issues. To provide easy access to Government business, the Maricopa County Board of Supervisors streams all of their meetings on YouTube and allows remote participation.⁵ In another example of the government getting smarter, the Maricopa County court system implemented a program that sends text message reminders to ensure that litigants do not miss a court date. Utilizing innovative ideas and embracing new technology in every aspect of government increases efficiency and benefits the lives of the community.

² A.R.S. § 11-1605.

³ *Connected Vehicles Program*, MARICOPA COUNTY DEP'T OF TRANSP., <https://www.mcdot.maricopa.gov/640/Connected-Vehicles-Program> (last visited Apr. 23, 2019).

⁴ *The Innovation Studio at Maricopa County*, LINKEDIN, <https://www.linkedin.com/company/maricopa-county-continuous-improvement-and-innovation-team/> (last visited Apr. 18, 2019).

⁵ *Maricopa County*, YOUTUBE, <https://www.youtube.com/user/MaricopaVideo/> (last visited Apr. 18, 2019).

III. Smart Cities – What’s Happening Now

Moderator: Diana Bowman, *Sandra Day O’Connor College of Law*
Panelists: Stephane Frijia, *Greater Phoenix Economic Council*
Tod Caflisch, *CenturyLink*
Erik Johnston, *ASU School for the Future of Innovation in Society*

Key considerations in smart city development include coordinating municipalities, creating predictability for private industry, learning from the success and failures of others, anticipating ethical and policy issues, and avoiding data and institutional silos. There are varying definitions of what a smart city or region is. One understanding of a smart city is using big data to enhance the “smartness” of city services. Smart cities have also been defined as innovations that automate the inconveniences of city life and inform municipal governance through the collection of data. Smart cities will provide new opportunities to debate how local governments should operate and discuss data collection practices.

Various barriers exist to adopting smart city and region technologies. If left unaddressed, the collective weight of these obstacles could slow the realization of smart cities and potentially halt implementation altogether. Two of the largest barriers are fiscal and budgetary constraints, which may be attributed to uncertainty of the benefits and potential risks smart cities pose. An emphasis on collaboration among city departments, officials, and private service providers will naturally improve the public sector’s understanding of smart cities and consequently its willingness to fund their development.

Local municipalities should coordinate with each other when implementing smart city technology to avoid “reinventing the wheel.” City officials stand to benefit from employing experts to consult and lead the development of smart city projects, as well as developing relationships with other local governments interested in developing smart cities. These strategies will both accelerate the development of smart cities and provide forums for considering ethical, equity, and policy issues raised by these tools.

Data privacy and management standards should be informed by best practices already experimented with by cities around the world—for governments to use as starting points when negotiating with big technology companies. Because big data represents a competitive advantage in the marketplace, it may be difficult to convince technology companies to share the data they collect with their partners in the public sector—underlining the challenges of breaking down information silos. Additional issues include questions of security, privacy, access, and ownership of data from a citizen’s perspective. Smart cities must be designed with cybersecurity and public policy concerns in mind—instead of as afterthoughts.

IV. Smart Transportation and CleanTech

Moderator: Lois Mermelstein, *Law Offices of Lois D. Mermelstein*
Panelists: Mike Widener, *Bonnett, Fairbourn, Friedman & Balint, P.C.*
Lina Karam, *ASU Engineering, Institute for Autonomous Mobility*
Greg Rodriguez, *Best Best & Krieger*
Monica Barone, *Qualcomm*

The future of autonomous vehicles is just around the corner. Widespread autonomous vehicle adoption will decrease road traffic injuries (the leading cause of death for children and young adults) and eliminate traffic congestion, which is responsible for \$305 billion in productivity costs and 23% of the world's greenhouse gas emissions every year. Public and private 5G partnerships are a crucial prerequisite to widespread autonomous vehicle adoption.

There are six levels of automation standardized by the Society of Automotive Engineers.⁶ Levels 0-2 are found in many modern cars today and include driver assistance systems, such as adaptive cruise control, collision avoidance, and lane departure warning systems. Levels 3-5 are increasingly automated driving systems. At level 3, the driver and car share equal control of the vehicle, but at levels 4 and 5, the driver is no longer a necessity. Higher levels of automation are becoming increasingly common today. Waymo, a self-driving technology development company is an example of level 3 automation – and Nuro, an autonomous goods transportation service is an example of level 4 automation.

There are several challenges hindering the development of smart infrastructure. There is not yet interagency or public-private coordination on autonomous vehicle development and oversight. Interagency coordination (i.e., breaking down information silos) is important because local governments may not necessarily take the lead on incorporating autonomous vehicles into their states and cities.

While the intersection of 5G, the Internet of Things, and artificial intelligence offers unprecedented convenience and efficiency, government agencies are lagging behind the rapid rate of technological development and failing to realize their full potential. This disparity can be remedied through public-private partnerships and interagency coordination. Education and trust between the public sector, private sector, and the general public are critical to achieve this.

⁶ Society of Automotive Engineers International, On-Road Automated Vehicle Standards Committee, *Taxonomy and Definitions for Terms Related to Driving Automation Systems for On-Road Motor Vehicles*, Surface Vehicle Recommended Practice J3016 (2018). https://www.sae.org/standards/content/j3016_201806/

V. Smart Construction: Buildings, Stadiums, and Campuses

Moderator: Matt Henshon, *Henshon Klein LLP*
Panelists: Adam Klein, *Katten Muchin Rosenman LLP*
Tod Caflisch, *CenturyLink*
Chris Richardson, *Deputy CIO-IT Development, ASU*

With the rapid evolution of technology, infrastructure, and the economy, older stadiums have become quickly outdated. Industry experts play a pivotal role in assessing the needs of stadiums and arenas from a business perspective. Discussions between team owners and city officials on state-of-the-art sports complexes and their integration into the community are important for persuading teams not to relocate. Stadiums and arenas are usually municipally owned. After thirty to forty years, municipalities will be re-negotiating terms for development and land-use agreements to set standards for the design, operation, and development of the venue and its amenities.

There are important considerations to keep in mind when working with municipalities to implement smart technology in stadiums and arenas. Municipalities matter because they will be providing the land for which the stadium or arena is built, and those municipalities will likely subsidize the project. Additionally, the image of the building reflects on the image of the municipality. Forward thinking cities should consider having state-of-the-art technology and functionality at these venues. Forward-thinking design and planning includes the surrounding community. For example, recent stadium developments have implemented entertainment districts adjoining the arenas with mixed-use retail, residential, parking, and more.⁷

Stadiums can provide a comfortable and frictionless experience while keeping fans connected. The largest revenue stream for stadiums is revenue sharing in television and broadcast rights. Games are broadcast in high definition. Stadiums should be up to par in connectivity and be interactive to accommodate fans' needs. For example, finding an easier way to use tickets, mobile ordering from seats, cashless venues, enhancement to LED jumbotron boards, exterior signage, and solar panels.⁸ Attendance in all major leagues has declined over the years.⁹ To fight this drop in attendance, enhancing fan experience through technology and artificial intelligence has become a focus.

⁷ See, e.g., The Star - Dallas Cowboys Headquarter and Training Facility, <https://www.thestarinfrisco.com/> (last visited Mar. 25, 2019); Los Angeles Rams Stadium and Entertainment District, <https://lastadiumseats.com/rams/landing> (last visited Mar. 25, 2019).

⁸ See, e.g., Golden 1 Center, <https://www.golden1center.com/> (last visited Apr. 18, 2019) (huge 4k video board, interactive area app, command center monitoring real time data, certified LEED platinum, solar powered, security robot, high-tech preview center); Fiserv Forum, <https://www.fiservforum.com/> (last visited Apr. 18, 2019) (player stats tracking in concourse, hundreds of LED screens, central technology center, high speed connectivity, state-of-the-art adjacent training facility); State Farm Arena, <https://www.statefarmarena.com/> (last visited Apr. 18, 2019) (improved premium seating, TopGolf suites, barber shop, continuous 360 degree videoboard).

⁹ Chris Scott & Gerald Masterson, *Empty Seats: Analyzing Declining Attendance at Sporting Events*, 2014 INSIGHT TO A CHANGING WORLD 2, 17-26.

In 2018, ASU launched the “ASU Mobile App” to enhance student experience on campus. The project encompassed a mobile strategy designed to meet student expectations, evolve with student needs, and scale to meet a potential population of over 100,000 students and faculty. The application features smart city-like features. For example, real-time location of inter-campus shuttles and display of shuttle stops are available based on a student’s current location and time, and campus parking lot availability is displayed in an overlay that provides parking capacity information. The application also allows for way-finding navigation to student classes or nearby events. ASU plans to use the data through this digital experience to find out how the students are using it and to increase efficiency.

VI. Data Privacy and Cybersecurity in Smart Cities

Moderator: William Baker, *Potomac Law Group*
Panelists: Kristin Madigan, *Crowell & Moring*
 Jamie Winterton, *ASU Global Security Initiative*
 Hoyt Kesterson, *Terre Verde*

Smart cities hold promise to increase operational efficiency and information sharing to improve the provision of government services and enhance citizen welfare. However, the same interconnectivity poses significant data privacy and cybersecurity challenges and risks. When designing a smart city, planners should start by agreeing upon a definition of personally identifiable information (PII). At present, there is no such PII definition consensus. Some types of information (e.g., an individual’s location data) may qualify as PII if the location data is paired with additional information that facilitates the identification of the individual, so adopting a conservative PII definition may be appropriate. How information is collected and for how long it is stored raises additional issues. Data collectors should only collect data they deem necessary. In the context of private companies, the Federal Trade Commission (FTC) currently defers to businesses to be “reasonable” in their collection of data with the idea that businesses know their own operations best, including what PII is required to optimize the product/service.

One challenge facing smart city planners is the lack of a comprehensive federal privacy law. While high-profile privacy scandals add pressure for a federal law that preempts the patchwork of state-based laws, the reality is the FTC must enforce privacy rights through Section 5 of the Federal Trade Commission Act, which prohibits “unfair or deceptive acts or practices in or affecting commerce.”¹⁰ The vagueness of Section 5 and related regulations has led to significant uncertainty in litigation, such as in the cases of *FTC v. Wyndham Worldwide Corporation*¹¹ and *LabMD, Inc. v. Federal Trade Commission*.¹² There is no consensus about what such a federal law may entail—what rights and standards are to be used. Part of the confusion derives from the various iterations previous federal privacy bills have undergone during their trips through different congressional committees.

Individuals do not always have control over the types of data collected on them and how various actors use that data. New methods of big data collection and analysis used in smart cities may allow the re-

¹⁰ 15 U.S.C. § 45(a)(1).

¹¹ *FTC v. Wyndham Worldwide Corp.*, 799 F.3d 236 (3rd Cir. 2015).

¹² *LabMD, Inc. v. FTC*, 894 F.3d 1221 (11th Cir. 2018).

identification of anonymized data or enable data-based inferences about individuals using data collected from their connections and associates. How smart cities will collect, process, and store data from residents, are relevant considerations. Additionally, consent to individual data collection may not be possible in the context of smart cities. These considerations extend not only to the types of data collected, but to which public or private actors have access to the data.

Smart city data collection raises serious security issues. Few economic incentives exist for the private industry to build security into their products and services. The cost of adding and maintaining appropriate security to smart city applications may disadvantage private actors in the market. Little evidence exists to suggest consumers seriously entertain data security when purchasing services, and regulatory fines for security failures are minor, further reducing the incentive to supply security. Increasing regulatory penalties and imposing criminal fines for noncompliance may promote data security in smart city technologies. Smart city technology should prepare for attempts by bad actors to infiltrate their systems. Many services anticipate mistakes, but not malicious action. For example, in 2017, a hacker was able to access the Office of Emergency Management's computer system and activate 156 emergency sirens around 11:40pm. It took the Office of Emergency Management until 1:20 a.m. the following day to turn off the sirens. During that time, emergency dispatchers received about 4,400 calls. The sheer number of calls caused a backlog, forcing some callers to wait up to six minutes to speak with emergency personnel.

VII. What to Expect Next: Planning Goals, AI, and Big Data

Moderator: Joshua Abbott, *Center for Law, Science and Innovation*
Panelists: Diana Bowman, *Sandra Day O'Connor College of Law*
K Royal, *TrustArc*
Katina Michael, *ASU School for the Future of Innovation in Society*

Regardless of individual feelings about the new technology, smart technology is being incorporated into our lives. When we invite the surveillance into our homes, we put our trust into the devices and companies. While smart systems have the potential to ensure the safety of our planet and enhance the lives of everyone, we must remain vigilant in monitoring the systems to ensure that the trust placed in the devices and companies is deserving. Companies must be transparent in their AI's capabilities, respect consumer privacy, and act with corporate social responsibility by supporting long term visions rather than corporate quarterly reports. We must incorporate big data governance and well-defined roles and responsibilities for data stewards. Individuals should own their information and uphold their rights on their data. Data should be placed in a big data common and be utilized for the furtherance of sustainable development goals.

The United States approach to data governance is the exact opposite of the rest of the world. Although the United States has some robust privacy laws, like the Health Insurance Portability and Accountability Act of 1996 (HIPPA), they are narrowly applied. Failure to implement broad privacy laws like the EU General Data Protection Regulation (GDPR) will inhibit the United States from being a leader on the global commercial level. We should learn from other countries' models, discover what is working, and incorporate those models into ours.

Government officials who are charged with rolling out the new systems are overwhelmed with procurement issues. Relaxing *some* regulatory standards to allow more rapid testing of new technologies can expedite incorporations of the new technologies that can enhance quality of life. For example, Arizona Governor Ducey issued an executive order relaxing regulatory framework around autonomous vehicles to allow for testing. Fast-forward to the recent fatality last year, and the public opinion on autonomous vehicle testing has shifted. There are over 2.5 million fatalities per year on the roads. While autonomous vehicles have the potential to decrease this category of deaths, this is not explained to the community. It is essential to tell consumers the possible benefits of the technology as well as the risks. We must bring the public into the discussion so they feel they have a role in the project to get them on board with the testing.