



The Future of Public Safety and Justice

How technology can help increase community security, transparency, inclusion, judicial efficiency, and the equal application of justice

Introduction

Creating safer, more equitable communities depends on a complex and interconnected network of services. From disaster response, border security, and law enforcement to courts and correctional systems, a range of different agencies and stakeholders must be able to come together to respond flexibly and efficiently to their community's needs. To accomplish this, more agencies are now recognizing the need for digital transformation.

By putting data at the center of public safety and justice organization operations, Microsoft is helping them meet this goal, for example, by using data to inform coordinated first-response efforts, or

judicial outcomes to re-entry. It's about embracing end-to-end digital experiences and operational efficiencies so they can continue delivering the services their communities rely on in response to increasingly complex and global challenges. With access to a fully connected ecosystem, agencies can extend their investments and realize new efficiencies and cost savings, allowing them to better address the needs of the people they serve.

Let's look at how digital transformation can address the challenges faced by today's public safety and justice agencies, as well as how these advancements can help you overcome new risks and challenges as you work to improve services in your community.

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enabling collaboration, developing stronger community relationships, and maintaining public trust. Using cloud-based analytics, integrating disparate systems, modernizing communication platforms, and automating processes that increase community engagement, you can improve operational efficiency across agencies while increasing situational awareness. This can help law enforcement officials identify emerging trends, help fire services deploy equipment dynamically, and allow emergency medical personnel to be more responsive.

Working together to help ensure safe communities

Modern [emergency-response systems](#) and proactive crime-reduction systems take advantage of expanded data analytics, cloud technology, and community partnerships to achieve more, both for planned and unplanned events.

The right digital tools can help agencies accomplish goals such as uncovering crime trends, accelerating response times, minimizing risk to first responders,

In response to the COVID-19 health crisis, the Los Angeles Police Department relies on Microsoft Teams to continue running operations and sharing vital information. Once dependent on face-to-face meetings and hand-carried paperwork, Teams enables the organization's more than 10,000 officers to carry out their work far more efficiently. Beyond meetings, it also allows officers to share crime reports in near real-time, making it possible to communicate information and coordinate operations across the sprawling LA metropolis almost instantaneously.

Crime and fire prevention

Analyze, recognize, and appraise risk effectively

Real-time situational awareness is a powerful tool for first responders—and not just when responding to an incident. Proactive capabilities can reduce crime- and fire-related risks. Smart cloud tools can evaluate multiple datapoints across jurisdictions to find and assess patterns in criminal activity, fire statistics, and community crowdsourcing, offering insights into situations before, during, and after they occur.

Governments can use this approach to predict, prepare, and respond to natural disasters like wildfires and floods. Historical fire patterns, weather projection data models, and environmental impact studies can help determine the best areas to backburn and stage equipment. By understanding historical fire trends, agencies can identify and mitigate root causes.

Integrating disparate systems and combining data sources enables public safety officials to allocate resources based on risk, while modernizing communication platforms and automating processes helps free up time to focus on serving the community through their own stated priorities.



I can sum up the value of having Microsoft Teams in two words: **situational awareness.** There's nothing more important to an Incident Commander, or even the people on the ground, than to know what's going on in all aspects."

Brad Ingersoll, Deputy Chief
[Western Lakes Fire District](#)

Incident response

Expand capabilities that help anticipate and respond to public needs

Coordinated responses are critical for law enforcement, paramedics/EMTs, and firefighters. Agencies must collect, process, and disseminate critical information quickly to responding personnel to optimize their response posture and assign the appropriate personnel and equipment.

For command staff, maintaining operational oversight is paramount to a successful resolution. Connecting data from different departmental systems allows command staff to adjust tactics and better manage a situation.

Firefighters and ambulance crews that leverage cloud-based geographic information systems (GIS) can optimize their route based on real-time traffic data, making it possible for them to deliver more effective services without increasing their risk.



When you're looking for a missing person, every second counts. Now distributed members of a search mission stay connected through Teams... There's nothing more rewarding than finding a child, safe and sound."

Grayson Edwards,
Criminal Apprehension Team
[North Carolina State](#)
[Bureau of Investigation](#)



Modernizing tools to better serve and protect citizens

Reconstructing the events of a crime, recovering evidence, and building a case are all essential aspects of ensuring a safe community. The increased adoption of technology around the world has added further complexity for investigators who must capture, process, and disseminate an ever-growing digital evidence landscape

that often delays the progress of investigations.

Automated, highly integrated data acquisition systems can significantly reduce the investigation and analysis effort, helping police and other agencies locate and process evidence more efficiently. For example, machine learning and AI can draw reliable and secure correlations for investigators, providing them with leads and dramatically reducing the discovery time for digital evidence.

With access to information such as first-hand accounts, arson reports, and officer insights, intelligence-led analytics can also search through investigation data for connections among suspects, cases, and incidents. Police can then quickly develop lines of inquiry, assign investigative tasks, and collaborate interdepartmentally and across agencies. The result is a [more expedited—and effective—criminal justice system](#).

Investigative data

Increasing actionable intelligence

Digital tools are making it possible for police and other agencies to move beyond the burdensome systems that previously defined investigations.

For instance, rather than rely on manual, labor-intensive processes for collecting, analyzing, visualizing, and distributing investigative data, solutions such as automated data capture can help coordinate entire teams of investigators and ensure evidence is properly acquired, organized, and synthesized—even across multiple data sources, types, and locations.

Field personnel can quickly log information, take photos, or record interviews, then upload them to the cloud, where investigators can apply analytical tools to extract insights in near real time. This evidence can also be efficiently shared across multiple jurisdictions, making it possible to digitally transform investigative processes across entire agencies.

Preemptive response

Identifying threats beforehand

Investigatory data and analytics is not only useful after a crime. Using the right digital approach, this data can also help agencies identify and proactively respond to community threats.

By synthesizing and standardizing how data is collected and stored, investigators gain access to a rich set of information. In order to turn this data into insights, they can

then use artificial intelligence and machine learning to analyze patterns, comb through records, and discover key linkages between suspects and crimes. It is also possible to monitor open-source intelligence (OSINT) data to identify and explore hidden insights beyond the evidence they collected themselves.

Leveraging these additional resources and analytical tools makes it possible to deliver more effective services and create safer communities by potentially intervening before an event occurs.

The Derbyshire Constabulary had already begun working with Microsoft 365 when the pandemic hit. Suddenly unable to conduct interviews or share information as easily as before, they relied on digital solutions to help investigate crimes and keep their community safe. After building a data platform on Azure cloud, the constabulary used Power BI to provide self-serve data analytics to officers, staff, investigators, and leadership. The result has helped save up to two hours a day for each officer—or 166,000 hours per year.¹

¹ ["Policing during COVID-19: using digital tools in Microsoft 365 to improve operational efficiency and protect communities,"](#) Microsoft, 2020.



Embracing a hybrid approach

Driven by a global pandemic, court systems are undergoing rapid and dramatic changes. In response, many court systems are now shifting their focus

to a hybrid court model where hearings can be carried out either virtually or in person.² Digital transformation is no longer a future objective, but a requirement to enable remote work and meet procedural timelines.

As court systems adopt transformative technologies and mandate digital filings, they uncover new capabilities and solutions to traditional challenges. For example, delivering services efficiently is no longer a struggle, as new digital-by-default solutions like e-filing and e-portals replace or improve labor-intensive, manual, paper-based processes that rely on rigid case management programs built on old workflows.

Applying best-in-class operations from the business community to the justice process [facilitates a digital evolution](#), driving new self-service experiences and efficiencies for public interaction, reducing trial time and processes using virtual hearings, and providing court staff with user-friendly mobile access to shared data.

² ["Legal Technology Trends 2020: Digital Courts,"](#) High-Tech Trends, 2020.

Digital case management tools

Faster case proceedings thanks to digitized access

Despite the recent shift toward hybrid courtrooms, many court systems are still paper-based. This poses a substantive threat to the continuity of these proceedings. In fact, a failure to provide adequate technology support for remote court cases could result in the reversal of over 25% of cases by 2024.³

Fortunately, modern case management solutions can give everyone faster access to electronic documents on secured devices without losing a physical piece of evidence. When the latest information arrives, it can be captured and shared with all necessary parties in a central location. Secure electronic documentation also reduces accidental or intentional data tampering, which can lead to the dismissal of a case.

These are lessons the [Supreme Court of the Philippines](#) has already learned. After partnering with Microsoft to transition to virtual court rooms shortly after the pandemic began, the court also allowed complaints, petitions for bail, and other documents to be filed electronically.

As a result of this work, the Filipino courts were able to not only continue providing justice to the community, but to do so more efficiently than before.



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of cases by 2024.³

Trials

Ensuring that justice is served

People deserve justice and resolution, even in the midst of a global pandemic or a natural disaster. That means keeping courts open and enabling people to attend court proceedings without risking their health or safety. The virtual courtroom can do just that—and more.

³ "Predicts 2022: Decision Points Loom for Digital Innovation in Public Safety and Justice," Gartner, 2021.

Beyond enabling continuity of operations in difficult circumstances, the impact of a virtual courtroom can be felt throughout the entire judicial process as the pace, quality, and convenience of justice improve.

Thousands of court cases adjourn early every day because officers aren't available to give their testimony. With a virtual courtroom, conducting hearings that support witness, defendant, or plaintiff testimony can be much easier. Parties can participate in the field, or from their home or office, and more trials can proceed at the same time without restrictions to a courtroom or courthouse. In addition, live translation and transcription with Microsoft Teams and Azure Cognitive Services can improve and expedite transparency and accessibility for those involved.

Court systems can also reduce costs by eliminating the need to physically transport detainees to hearings and trials, which also decreases security risks to staff and the community.



We wanted to generate more transparency internally and, on top of that, let the citizens have access to legal information in real-time.

Judge Francisco Jerez,
President of the Criminal Chamber
[Supreme Court of Justice](#)

Sentencing

Judgments that are productive, thoughtful, and effective

Judges want to ensure their decisions are fair and based on the foundations of law and prescribed, measured sentencing. But sentencing can vary due to unconscious bias, a lack of easily accessible information about the defendant's history, data from other cases, and legal precedents.

Judges can take advantage of insights from similar cases to ensure that penalties align with modern ethical expectations. With more avenues to information, judges need fast, user-friendly access to existing case law to help inform their decisions (e.g., sentencing for similar offenses and defendant backgrounds). Judges can also interact with specialty courts and advise on sentences and conditions that promote more rehabilitative behavior and address root problems.



In order to keep work going during the COVID-19 pandemic, the New Jersey Courts transitioned its **9,000 employees to remote work with Microsoft Teams.**



Over the next three months, backed by a highly secure digital workspace featuring Microsoft Defender Advanced Threat Protection and better mobile device management with Microsoft Intune, more than **300,000 members of the public took part in more than 36,000 virtual legal proceedings.**



Today, more than **10,000 virtual meetings have replaced hours of face-to-face meetings** and thousands of emails, accelerating the behind-the-scenes teamwork required to move legal matters forward.⁴

⁴ ["New Jersey Courts makes the case for virtual proceedings with Microsoft Teams, provides vital legal services during COVID-19,"](#) Microsoft, 2020.



A secure digital and people-centric approach

Now is the best time for corrections to [embrace modern digital approaches](#) for more informed management and safer communities. Using secure platforms can help create alignment across the entire justice spectrum, enabling people to better predict and mitigate risks—and not just at correctional facilities.

This alignment causes a positive ripple effect in your ecosystem that travels to law enforcement, the court system, and downstream to the public.

Corrections procedures are burdened by traditional, siloed, and costly approaches to rehabilitation. Populations change over time. The same treatments don't work for ever-changing populations. The handoff from courts to corrections facilities is—to this day—still mostly manual. Relying on paper-based methods increases the risk of incomplete files and lost sensitive penitentiary [pen] packets.

As society and digital tools change and age, it's crucial to use secure, user-friendly technology to optimize processes while reducing costs. Yet fear remains that change is too frustrating, and that modern digital tools are too complex and often have unforeseen side effects.

When employed correctly, the opposite can be true. Technology can play a key role in transforming an aging system and giving the corrections industry the means to deliver innovative solutions that support inmate rehabilitation and decrease recidivism, while also helping maintain operational oversight.

Alternative rehabilitation

Driving down cost

Rehabilitation in the 21st century requires more than physical buildings. Advanced technology is needed to optimize processes, manage systems, and rehabilitate people effectively. It should come as no surprise that overpopulation in corrections facilities results in greater economic burdens and challenges to effective rehabilitation.

The cost of keeping an individual in a major institution in the United States is \$120.59 per day.⁵ In the UK, the cost of keeping one prisoner is £77.25 a day.⁶ In Ireland, the cost to detain one juvenile prisoner per day is €219.18.⁷ Alternative rehabilitation can lead to lasting judgments and decrease costs associated with overcrowded facilities. When agencies share data, rehabilitators gain access to more data to inform their decision-making process. Instead of using a one-size-fits-all approach, rehabilitation can personalize more effective and long-lasting plans.

Consider offenders who have a high rate of recidivism. Future methods can focus on proactive counseling to break the cycle

⁵ ["Annual Determination of Average Cost of Incarceration Fee \(COIF\),"](#) Department of Justice, 2021.

⁶ ["Costs per place and costs per prisoner by individual prison,"](#) Ministry of Justice, 2020.

⁷ ["Revealed: Cost of keeping a prisoner in Irish jails amounts to €80,000 with rise due to 'extraordinary once-off' reasons,"](#) Donegal Live, 2021.

versus physical buildings for offenders who may do poorly in a facility. Prison management can use analytics to place inmates in cells based on threat groups and other criteria to ensure an inmate can safely learn, reinforce counseling, and overcome addictions, reducing the probability to recidivate.

Economic opportunity can be a factor in leading the way out of a life of crime. Providing professional training for in-demand trades or skills to individuals while they are in custody can help reduce the likelihood of returning to prison.

Split sentencing—enabling offenders to complete the final part of their sentence though home detention or community confinement—reduces the costly burden of corrections facilities. And by using automated monitoring, the public can feel confident agencies have their safety in mind.



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Prison overcrowding is a global problem, with offenders exceeding capacity in at least 119 countries and with national prison systems in 22 countries holding more than double their capacity.⁸

Offender management

Driving effective reform

Digital technologies, such as automated prisoner processing and classification, are transforming how corrections systems approach managing and housing detainees entirely. The facility of the future will better meet inmate needs and prepare them more effectively for life after rehabilitation.

Correctional facilities can now make sure that the right support processes are in place to treat incoming offenders once they arrive. With the ability to automatically enter cases and files from the court's case management system, and with automated systems that distribute clothing and assign rooms, technology removes the time-consuming burden of doing these intake

tasks manually. In addition, technology can support services once the inmate enters the prison population, such as setting up health programs, tracking vocation training, or aligning an inmate within a facility to reduce violence.

Parole and release

Delivering personalized rehabilitation

Helping offenders adjust to life after corrections increases public safety. It's also critical to the offender's wellbeing when society looks drastically different on the day of release compared to the day of detainment.

Modernizing the corrections system can help with pre-release programs that offer vocation, socialization, and computer skills tailored to individuals. But even with such programs available, they still need a supportive network after release.

This is where enhanced technology plays a role. Modern approaches that use intelligent data networks can help former inmates find opportunities to succeed while freeing up taxpayer dollars and valuable case officer time. Shared, accessible data can help amplify knowledge sharing between parolee and parole officer.

⁸ ["Highest to Lowest – Occupancy level \(based on official capacity\),"](#) World Prison Brief, 2022.



Building a secure, compliant foundation for safer communities

Digitization is essential to not only providing more modern and efficient public safety and justice services, but also to protecting the privacy of public data and ensuring the continuity of mission-critical operations.

Cyberattacks are a pervasive threat to organizations of all types, but government agencies have become a particular target. In the first half of 2021, over 26 US government agencies were hit by ransomware attacks, including large police forces in Washington, DC, and even entire city governments such as Baltimore and New Orleans.⁹ The average cost of recovering from a ransomware attack on local government is now \$1.64 million.¹⁰

Communities depend on these agencies and the services they offer, which is why governments need to consider how to protect their services from unwanted threats to [deliver more robust, continuous operations](#).



Over

26

US government agencies were hit by ransomware attacks.

⁹ [“D.C. Police Department Data Is Leaked in a Cyberattack,”](#) New York Times, 2021.

¹⁰ [“The State of Ransomware in Government 2021,”](#) Sophos, June 2021.

Legacy systems

Modernize with more secure and resilient technology

Many governments still rely on outdated legacy systems that put their services and data at risk. As cyberattacks continue to become more sophisticated, it is vital for government agencies to deploy modern, cloud-based security solutions that can facilitate data integrity and availability.

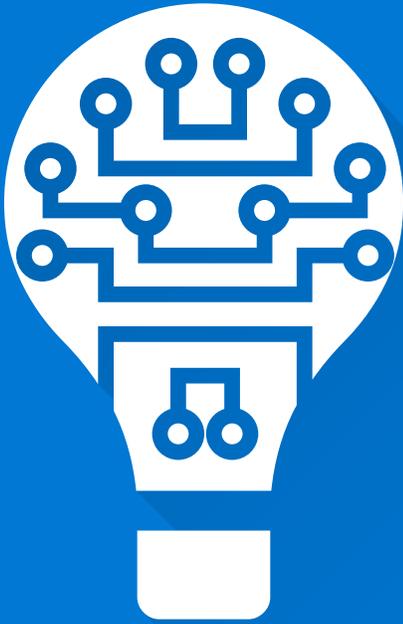
By leveraging innovative technology, agencies can respond faster and smarter to a greater variety of cyber threats. Automated updates ensure data remains untouched by novel attacks, while end-to-end encryption and security allow services to continue uninterrupted across the enterprise.

Taking these concepts a step further, the [Zero Trust security model](#) gives organizations comprehensive protection across complex hybrid hybrid environments—all without disrupting the end user experience. Based on a layered defense strategy that combines end-to-end visibility alongside threat intelligence, risk detection, and conditional access

policies, Zero Trust uses the most advanced cloud technology to ensure every access request is fully authenticated, authorized, and encrypted before granting access.

For first responders, judicial institutions, and other agencies that rely on data, mobile technology, and encrypted communications, this level of protection can help empower users, enabling operations to run much more effectively.

The National Enabling Programmes (NEP) were created to replace traditional policing systems in the UK with modern, connected cloud platforms. To give officers the right balance between data security and data access, NEP began implementing Microsoft 365 across the country. With this modernized system in place, officers no longer need to request permissions or wait for IT staff when accessing data. Instead, they can communicate in real time in order to develop coordinated responses that enable more responsive community policing, all without worrying about outside threats.



Responsible AI solutions that reflect principles rooted in timeless values

Microsoft is committed to the advancement of AI driven by ethical principles that put people first.

We put our [responsible AI principles into practice](#) through the AI, Ethics,

and Effects in Engineering and Research (Aether) Committee, as well as our Office of Responsible AI (ORA). The Aether Committee advises our leadership on the challenges and opportunities presented by AI innovations. ORA sets our rules and governance processes, working closely with teams across the company to support the effort.

[Microsoft AI](#) serves to extend human capabilities, not replace them. It is designed to embody ethical principles such as fairness, inclusivity, reliability and safety, transparency, privacy and security, and accountability. By using AI to optimize administrative functions and services, stakeholders are able to focus on what matters most: human-centered design, decision-making, and empathy.

In public safety and justice agencies, decision-makers should consider not just what AI can do, but what it should do to innovate in a reliable and trusted way. It's critical to understand the components of a holistic approach to AI that will help agencies turn meaningful innovation into actionable results for their communities. The [AI business school for government](#) learning path offers a blueprint and roadmap designed for decision-makers to realize the true transformational impact of AI in the public sector.



Public safety and justice agencies are beginning to align to an innovative digital approach that ensures sustainability now and in the future.

As they do so, five opportunities stand out:



Improving field communications and operations



Disrupting criminal trafficking networks with AI



Centralizing data for quicker investigative outcomes



Designing court operations for the future



Implementing alternative incarceration models

Our mission at Microsoft is to empower every person and every organization on the planet to achieve more, and that includes working with agencies worldwide to align technology to the drivers of change in public safety and justice. That's why our approach centers around a single identity structure, a strong, consistent, security-focused platform; and productivity solutions to transform collaboration and produce faster decision-making at any time and from anywhere.

It's this mission and these strategic partnerships that are helping change the way agencies engage with communities, and which have helped make Microsoft a trusted partner in these efforts.

Improving field communications and operations

Coordination of field-based personnel is critical to the successful outcome of an emergency response and requires the ability to communicate across jurisdictions. First responders need as much information as possible prior to arriving on scene

and incident commanders need to have a complete operational view in order to address static and dynamic situations. With advancements in today's technology, this is all attainable.

Disrupting criminal trafficking networks with AI

Human trafficking and smuggling contraband is a highly complex criminal activity that requires the use of existing supply chain networks across international organizations and border agencies. The complexity and international nature of these crimes makes them difficult for any one jurisdiction to investigate. In order to combat these criminal enterprises, investigative agencies must leverage command, control, communications, and intelligence (C3i) solutions in order to identify the supply source, trafficking networks, and end consumers. There is also a requirement to 'follow the money' by leveraging cloud-based financial forensics tools to identify the key beneficiaries of the criminal activity.

Centralizing data for quicker investigative outcomes

The continual growth of digital evidence has created an untenable operational environment for law enforcement agencies around the world. With a majority of crimes involving the use of a digital device, law enforcement agencies must leverage modern data & AI tools to better capture, process, and view evidence in order to file criminal charges. Further, law enforcement agencies need to develop a central repository of digital evidence for structured and unstructured data in order to maximize the benefits of using data & AI tools pursuant to a legal order. By doing this, law enforcement agencies will dramatically accelerate their investigations and be able to quickly identify key suspects and potential co-conspirators.

Designing court operations for the future

The disruption caused by the global COVID-19 pandemic had a significant impact on judicial systems around the world. These systems have recognized the need to implement a hybrid judicial process that allows for both in-person and online hearings where appropriate. Technology solutions today, such as Microsoft Teams and Azure Communications Services, allow for a comprehensive and compliant user experience for criminal, civil, family, and other judicial proceedings. Court officials around the world have vowed to never go back to an in-person-only model.



The future of incarceration: Alternative models

Correctional institutions are taking a much closer look at the effectiveness of a punitive approach to corrections. Rather, they are exploring alternative approaches for non-violent crimes where individuals are allowed to remain in their respective community on community-release. This allows them to maintain their familial and social support network, as well as to attend classes/training and maintain employment. This approach reduces the overhead cost of housing non-violent criminals and helps to reduce any unintended social consequences of removing them from the community.

Additionally, understanding the underlying factors leading to an individual's incarceration is critical in order to better address these unresolved issues for better outcomes. By identifying a potential learning disability, needed skilling/training, or unresolved mental health symptoms, correctional institutions can take a 'human-centric' approach to rehabilitation with the goal of reducing recidivism.



Take the next step

The COVID-19 health crisis has had an impact on every aspect of society. For public safety and justice organizations, the changes that have come as a result can be for the better. Digital transformation can empower agencies to be more efficient, scalable, and effective in delivering their mission.

With flexible, integrated, and trustworthy solutions, Microsoft accelerates digital transformation for public safety and justice organizations, helping them deliver more impactful actions to increase the safety of the people and the security of the communities they serve. Cloud and edge-enabled technology solutions serve as force multipliers to help reduce response times and improve operational efficiencies. Microsoft and our powerful

network of partners understand the needs of public safety and justice agencies and how to utilize the power of our innovative technologies to achieve more for the communities and people you serve.

[Learn more about public safety and justice](#) →

[Visit the Microsoft Trust Center](#) →

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