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Microsoft

Microsoft Services

Digital transformation in law enforcement

Forces at work driving change in policing

Imagine if you could provide responsive and personalized information and services to victims, witnesses, neighborhood communities, and businesses.

Imagine if information flowed securely, within and across the public safety and justice ecosystem, enabling you to adapt to the needs of individuals and communities.

Imagine if you knew how your services were used so citizens and law enforcement could collaborate to improve existing services and develop new ones.

Citizen experience journey map

DIGITAL HOTSPOTS

PRE-INCIDENT

Obtain information online
Receive information from authorities and local team
Meet officers and staff in person

INCIDENT

Report a crime online
Talk to the contact center
Receive support from 3rd parties (victim support)
Track progress of the incident
Deal with 3rd parties (insurers, etc.)

POST-INCIDENT

Receive updates
Attend a physical location
Attend a virtual meeting or hearing
Citizen survey to provide feedback
Share experience with others

Officer experience journey map

DIGITAL HOTSPOTS

PROACTIVE

Manage resource requirements, duties, and skills/training
Provide briefing information to officers
Citizens book appointments with officers
Share information at community meetings

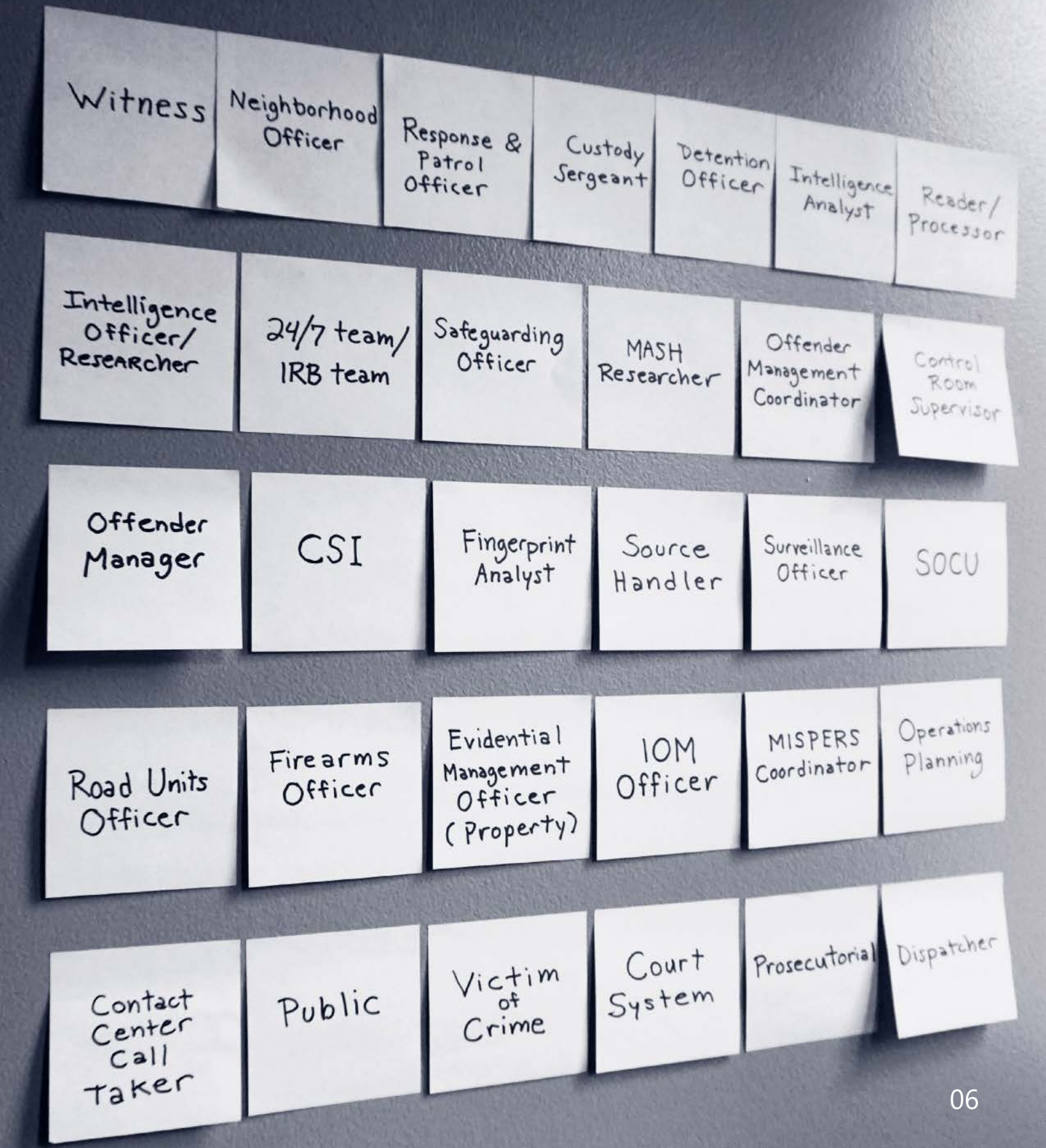
RESPONSE

Task an officer
Capture physical and digital evidence at a scene
Provide case and process information to the victim
Build a rich picture from police and open information sources

POST-INCIDENT

Seek advice and charging decisions from prosecutors office
Develop and managing the case and associated file
Support victims and witnesses, engaging victim support

Empathy


Witness
Neighborhood Officer
Response & Patrol Officer
Custody Sergeant
Detention Officer
Intelligence Analyst
Reader/ Processor
Intelligence Officer/ Researcher
24/7 team/ IRB team
Safeguarding Officer
MASH Researcher
Offender Management Coordinator
Control Room Supervisor
Offender Manager
CSI
Fingerprint Analyst
Source Handler
Surveillance Officer
SOCU
Road Units Officer
Firearms Officer
Evidential Management Officer (Property)
IOM Officer
MISPERS Coordinator
Operations Planning
Contact Center Call Taker
Public
Victim of Crime
Court System
Prosecutorial
Dispatcher

Response and Patrol Officer

KEY TASKS

Attend in-person or virtual briefing
Patrol and respond to incidents
Progress and deal with crime allocations
Record incident details
Capture and record statements and evidence
Prepare case file
View and progress assigned tasks
Access information about people, locations, vehicles and events in local and national crime and intelligence systems
Communicate with control room and other units
Submit intelligence reports

WORK ENVIRONMENT

Police premises
In police car
Duty belt with mobile radio/phone
At scene
Out in community
Offender/victim residence
Court

CURRENT CHALLENGES

Budget constraints
Aging CAD and RMS systems
Duplication of data entry
Difficult to capture information digitally from outside of police premises
Difficult to capture digital images and media from the field
Need to spend time on premises at end of shift to enter data into electronic systems and catch up on administration tasks
No visibility of incident details and situational information in a mobile environment
Need to carry lots of paper forms
Need to scan forms into records management system
Systems contain unstructured data that can't be searched
Need to search for information held in multiple data sources
Difficult to access existing systems from mobile devices
Existing systems have poor user interfaces
Difficult to remember vast amount of information disseminated at briefings
Awkward devices
Bad connectivity
Multiple log-ons

EXPECTED BENEFITS

SEARCH

Ability to search and surface relevant information from multiple data sources including local and national crime and intelligence systems

DATA & INFORMATION

Capture data once, use many times
Structured data capture
Contextual guidance
Incident details and situational information from control room available to officers in field
Warning markers automatically surfaced
Access to documents (briefings etc.) in the field
Ability to access and search knowledge base
Use of voice technology to capture information

MOBILE DEVICES

Ability to capture structured and unstructured data, digital images, and media from the field
Data automatically associated with incident
Metadata automatically added to information (user, geolocation, time)

DIGITAL MEDIA

Ability to tag and retrieve digital media quickly for a case

COMMUNICATION & COLLABORATION

Ability to communicate and collaborate on documents and cases, and share information with relevant teams
Presence capability

Devices

SMARTPHONE

TABLET

COMPANION DEVICE

HEADSET

RADIO

VIDEO

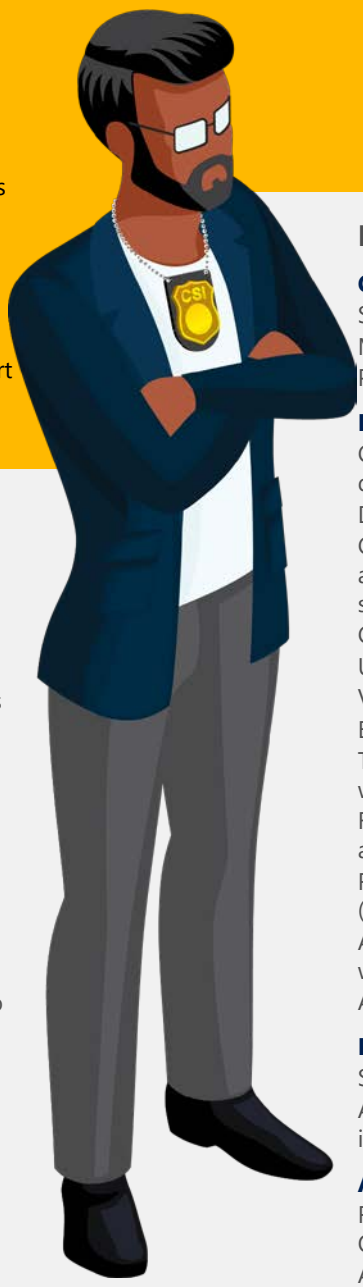
CSI Crime Scene Investigation

KEY TASKS

Check tasks for the day
Book out equipment
Research case before scene attendance
Arrange scene visit
Attend crime scene
Record notes, photos, videos, exhibits from scene
Retrieve and log exhibits
Record information collected from scene in systems back at police premises
Record information in records management systems
Book exhibits into case management and evidence handling systems
Managing photos and other digital media in Digital Asset Management system
Scanning and uploading fingerprints
Produce forensic reports and other material for court
Manage forensics submissions including DNA profiling, toxicology work and glass analysis

WORK ENVIRONMENT

Police premises
CSI vehicle
At scene of crime



CURRENT CHALLENGES

Time spent on police premises preparing for shift
Time spent on police premises at end of shift to update systems and complete admin
Information resides in 2 or more systems
Duplicate data entry
No ability to capture sketches or record annotations digitally
Unable to annotate images with measurements and notes – rely on imaging team
Cannot determine if photos exist for a case in the records management system
Connectivity and access to police systems when away from police premises
Need to remember multiple passwords for different systems
Automatically logged out after a set period (need to restart painful log-on process)
Unable to access systems and information from the scene
Reliant on info provided before attending scene
No real-time access to information
Research is time consuming – information is held in multiple systems and user interfaces are unfriendly
CSIs may need to cover a large geographical area
Many references for a case
Property book in process – can be paper based, slow, same information entered multiple times

EXPECTED BENEFITS

CONNECTIVITY & DEVICE

Single log-on process
More responsive, less cumbersome device
Personal issue laptops and devices

DATA, IMAGE AND VIDEO CAPTURE

Capture crime scene information only once, digitally, as the scene is being investigated
Digitally annotate pictures
Capture 3D models of the scene in order to be able to recreate later using augmented reality software and devices
Create line drawings
Upload photos from scene
Voice recognition for note transcription
Background upload of digital media
Time stamping, geo-location and digital signing will reduce/prevent court challenges to evidence
Free up CSI time to focus on investigation not administration
Reduce/remove double keying of information (e.g. exhibit lists) in different systems
Allow CSIs to access property risk assessments while in the field
Availability of digital content

PROPERTY BOOK IN

Simplify the property/exhibit book in process
Automatic creation of exhibit list from information captured in the field

ACCESS TO RESOURCES

Real time communication and interaction with OIC – can direct/guide via IM and video link
Ability to search and access records management systems and conduct research from field

Devices


SMARTPHONE


TABLET


COMPANION DEVICE


HEADSET


VIDEO


RFID TAG

Non-emergency Dispatch

Burglary

Jessie records the crime and alerts an Officer

Jessie Martin, in non-emergency dispatch, uses a **real-time deployment map** to identify an available community patrol officer to dispatch to the scene of a reported burglary.

As well as knowing where each officer is, **Jessie sees whether they are already deployed** to a different incident, and an estimate of the travel time to the incident location.

Jessie selects community patrol officer Luia Marr, who is currently patrolling near the incident location.

Luia is on patrol when she **receives an alert** of the reported burglary **on her mobile device.** She acknowledges the new task and opens the incident to view further details.

Luia immediately sees whether there are any **warnings or markers associated with the incident** and any **outstanding warrants** against people or property.

The location of the scene is included in the incident details. The mapping application on her mobile device gives her turn-by-turn directions to the home where the burglary took place.

On her mobile device, Luia sees a map of **similar recent incidents** reported in the area.

Crime Scene Appraisal

Burglary

Luia shares crime scene details with Britt

Luia arrives asks Kelly, the homeowner, if she can use her **body-worn video camera to record the scene** while she walks around the property.

Luia follows the tailored **guidance** based on the reported incident type, delivered by her mobile device for **examining a crime scene and capturing evidence**.

Luia **records video** of the scene and **adds audio commentary** to the video. The video and other information captured at the scene is **automatically transcribed and associated** with the incident record along with the **date, time, and location.**

Following the incident-specific crime scene guidance, Luia finds items and objects that might contain useful evidence. While recording the details she is notified that a CSI, Britt Madikane, has been assigned to the case.

Luia sends Britt **an instant message** asking her to look over the recorded footage. **Britt opens the incident record and watches the video.**

Britt examines the footage recorded by Luia at the scene for possible items of interest. She asks Luia to switch to live video on her camera.

Britt watches the live video stream and directs Luia to a broken window which shows traces of blood.

Luia mentions a muddy boot print just underneath the broken window, and Britt decides a CSI should visit the property and collect this important evidence.

Witness Statement

Burglary

Luia gets a signed statement from Kelly

Luia is waiting at the scene when Steve, the CSI assigned by Britt, arrives.

Luia takes notes and a signed statement from the homeowner about the incident, capturing it all on her mobile device.

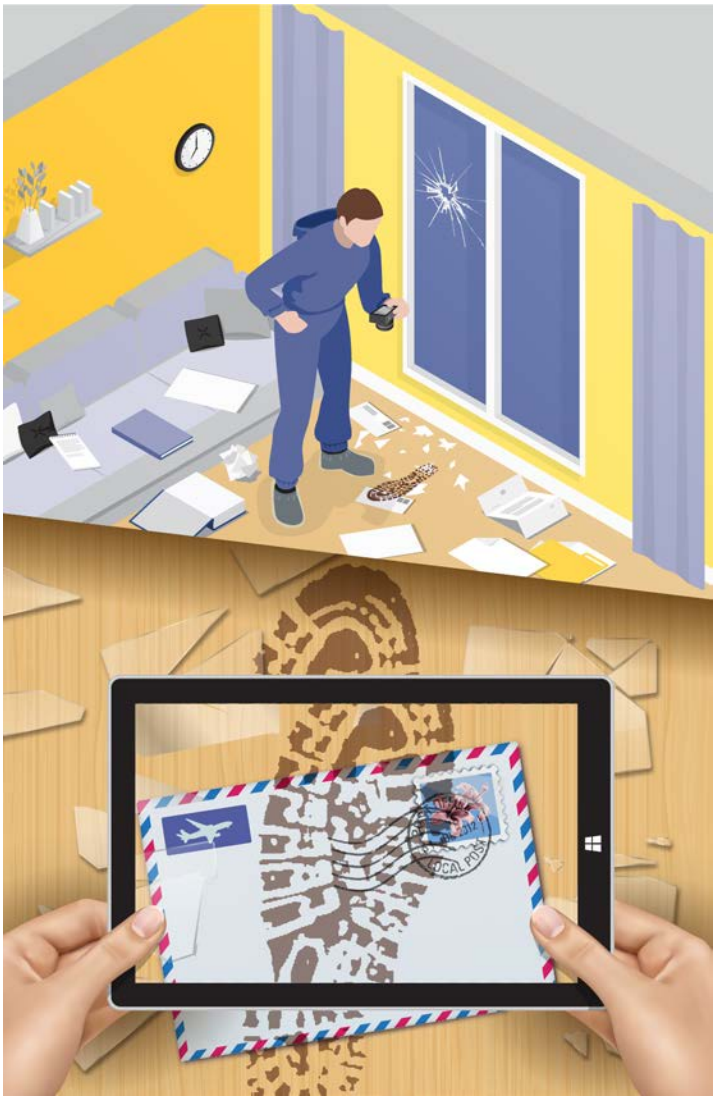
The digital evidence captured at the scene is tagged with incident details, date, time, and location.

The information is digitally signed and uploaded to the incident repository.

Luia shows Steve the footprint and the broken window, and Steve takes over the scene.

Evidence Gathering

Burglary



Steve gathers evidence at the crime scene

Steve records images of the scene on his 3D camera. Using his mixed reality headset he is able to place virtual markers within the crime scene without disturbing the physical evidence. The information Steve captures is combined into a 3D virtual model of the crime scene.

This model will later be used to reconstruct the crime scene virtually, allowing officers to revisit and explore the scene with mixed reality devices and applications.

Additionally, Steve annotates photographs and the 3D model of the crime scene on his tablet to indicate the location of the footprint.

Steve takes audio notes and makes a sketch on his mobile device of the general room layout.

Evidence Gathering

Burglary

Steve records and collects physical evidence at the scene

Steve takes blood samples from the broken glass and photographs the fingerprints on the windowsill and footprints on the floor. He collects the empty jewelry box to test for fingerprints at the crime lab.

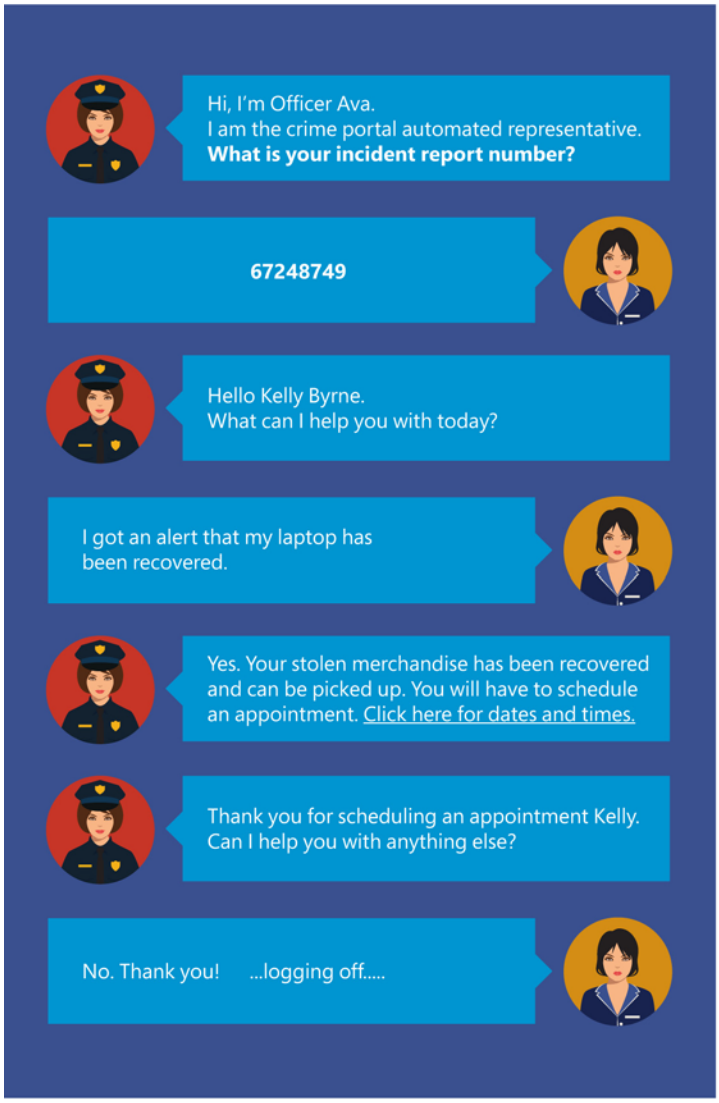
Steve **attaches RFID tags** to all the physical evidence he gathers at the scene. These are **automatically associated with the incident record** and GPS location when he **scans the RFID tags with his mobile device**.

Steve **photographs** every piece of physical evidence as he scans it. The photos are **automatically associated** with the physical evidence that has been scanned.

Steve returns to the police station with the physical evidence from the scene and places it in the temporary storage locker. Scanners detect the RFID tags, register the change of location, and **automatically update the incident record and evidence logs** to show that the physical evidence is now in police custody.

Self-service Crime Portal

Burglary



Kelly logs into an automated system to make an appointment to pick up stolen property

A few days after the incident, Kelly, the homeowner, recalls some of the items that are missing. She clicks the link emailed to her by Jessie and logs in to **the crime portal**.

She sees a summary of the details of her report and Luia's name as the case officer. She clicks the link and follows the guided process to record information about the items that are missing, including photographs.

The information that Kelly enters in the portal is captured in a structured manner and **flows seamlessly to the back-office crime recording systems**, avoiding the need for re-keying. Reference numbers and descriptions of stolen property are checked automatically against inventories of recovered lost and stolen goods to speed item recovery.

Kelly can also view the crime reference number provided earlier in the process, which she can use to make insurance claims for the missing items.

A few days later, Kelly receives an **automated alert** that her laptop has been recovered and identified by its serial number. She logs in to the crime portal and schedules an appointment to collect it from the police station.

Luia's office hours status indicator shows that she is available for web chat, voice, and video calls from the portal. When Luia is available, Kelly can chat with her by IM and talk to her by video link over the website or by phone. Kelly can also schedule an appointment to meet with Luia, either virtually or in person.

All communications are routed over a **common communications platform** and are subject to policy-based recording for auditing and compliance purposes.

Contact Center and Control Room

Assault

Jessie records the incident and alerts the Control Room

A member of the public calls the police to report a fight outside a pub on a busy Saturday night.

Jessie, the Call Taker receives the incoming call, captures call details and information about the caller. She uses information provided by the caller and the **contextual map display** to determine that this incident has already been reported by another caller. She captures details from the caller and links the call record to the existing incident.

Neil, the control room dispatcher, receives a notification that additional information has been received in relation to an ongoing incident. Neil can see updates to the incident in real-time as Jessie captures information from the caller. Neil notes that the caller has identified one of the involved parties as Mark Dylan. The caller reports that Mr. Dylan has assaulted another individual with a broken bottle.

Neil searches the system for Mark Dylan and links his record to the incident. Information about Mr. Dylan is appended to the **contextual network graph of the incident**. Neil can see that there is a warning marker associated with Mr. Dylan that indicates that he has a history of violent behavior and has been known to carry a concealed weapon.

Neil is presented with a list of nearby units that can respond the incident. The list order changes based on the type of incident, the type of unit and travel time to the incident location, however Neil is able to dispatch any of the available resources. He is also able to view the locations of nearby units using the contextual map display.

Neil elects to dispatch a response unit to the scene.

Incident Response

Assault

Xavier responds to an incident alert

Xavier Cantona and his partner are on patrol when they receive an **incident alert on the in-car screen:** a disturbance at a local pub involving Mark Dylan, a known trouble-maker.

The incident details include **linked information about Mr. Dylan from the crime and intel system**. Xavier also sees recent custody photographs of the suspect.

Xavier notes a warning about Mr. Dylan's violent behavior and that he has been known to carry a concealed weapon.

Xavier and his partner drive to the scene.

Identification of Suspects

Assault

Xavier establishes who is involved and how he should deal with them

Xavier and his partner are **simultaneously capturing information** from people at the scene.

One of those involved, Trey Ferguson, is bleeding from a cut on his head, so Xavier uses **the app on his mobile device** to request a paramedic.

While the officers take notes and record witness statements, **automatic searches are combing through other police records**, including crime records and intel systems.

The information provided by these automatic searches, along with process guidance that takes into account other factors, Xavier and his partner are able to make an informed decision about whether to take Mr. Ferguson or Mr. Dylan into custody.

Mr. Ferguson has no criminal record, and there are no aggravating factors, so following the guidance provided via his mobile device, Xavier is able to release him with a caution.

As Mr. Dylan has a previous record for assault, Xavier arrests him. Xavier also notices that Mr. Dylan's left hand has been recently bandaged. He takes a photograph with his mobile device; it is **automatically associated with the incident**.

Custody Management

Assault

Rudy arranges for the suspect to be processed

Xavier returns to the station with Mr. Dylan, who is under arrest.

Using his mobile device, Xavier checks for cell space and selects Central Station. **The system automatically notifies Rudy Donovan, the booking officer, that Xavier will be arriving soon with Mr. Dylan.**

Having all the necessary information, Rudy immediately **begins a risk assessment** for Mr. Dylan in advance of his arrival at the holding area, reducing processing time.

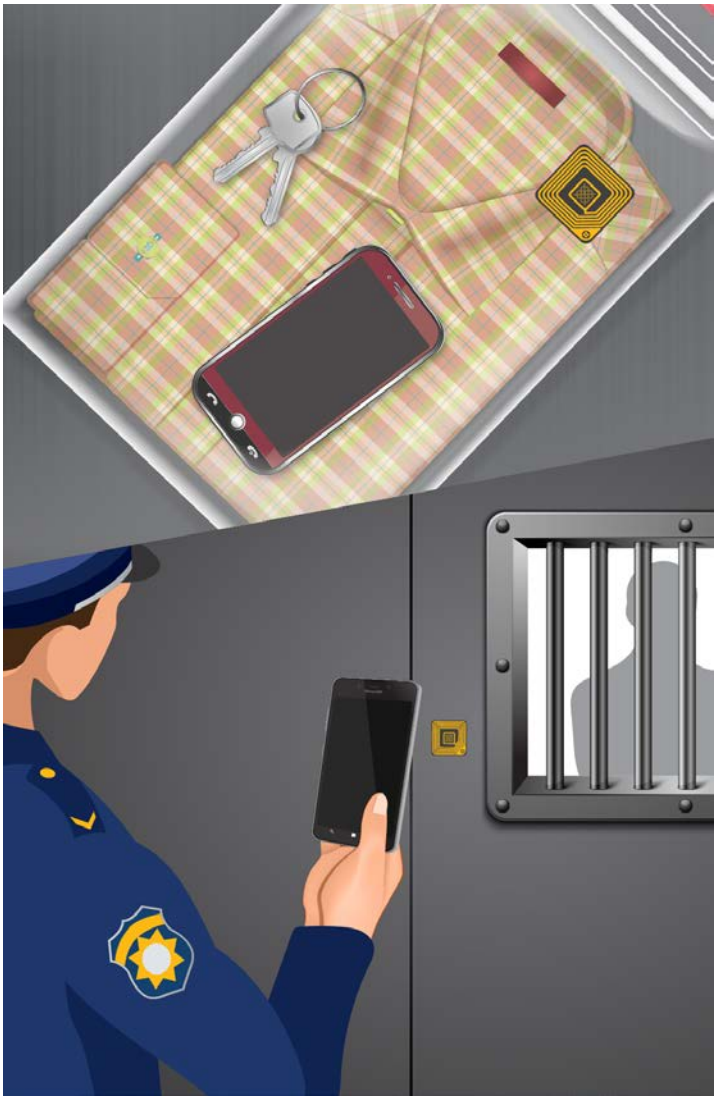
When Xavier arrives with Mr. Dylan, Rudy processes Mr. Dylan before taking him to one of the cells.

Rudy takes Mr. Dylan's fingerprints and arranges for the duty doctor to examine his injured hand. The doctor updates the custody record once he has seen the patient.

Mr. Dylan's prints match those on the crime system for a John Dylan, so Rudy **updates his record** to assign Mark Dylan as an alias for John Dylan.

Custody Management

Assault



Rudy checks on the prisoner at regular intervals

Mr. Dylan's belongings are bagged and an RFID tag attached. Rudy, the booking officer, scans and **associates the RFID with Mr. Dylan's custody record** before placing the items in storage.

Rudy sets a reminder on his mobile device to alert him to observe the prisoner at regular intervals.

Each time Rudy checks on Mr. Dylan, he **scans the RFID tag on the cell door to update the log and confirm that he has checked on the prisoner.**

Evidence Processing

Assault

Rathi matches scene fingerprints and informs all involved with the suspect

Rathi Khan, a forensic investigator, has collected the physical evidence gathered from the burglary at Kelly's home for analysis. The RFID tag **automatically records the movement of the items from temporary storage to the forensic lab.**

Rathi has examined the fingerprints, including two usable prints lifted from a jewelry box. She runs the prints through the system and comes up with a match for a John or Mark Dylan.

Rathi updates the burglary incident details to show a suspect match. **This information is automatically sent to everyone concerned** with incidents involving Mr. Dylan, including Luia (neighborhood patrol officer), Britt (CSI), Xavier (response officer) and Rudy (booking officer).

Pre-charging Interview

Assault

Xavier interviews Mr. Dylan and shows him evidence

As the arresting officer, Xavier arranges to interview Mr. Dylan at the police station where he is being held.

Xavier uses his **mobile device to retrieve crime scene details** from the system; he has previously collected the CCTV footage from the bar and shows it to Mr. Dylan.

Xavier asks Mr. Dylan how he cut his hand and mentions they have matched his fingerprints and footwear to the scene of a burglary.

Xavier now formally re-arrests Mr. Dylan for burglary and takes a full statement from him.

The statement, along with an audio record of the interview captured on Xavier's tablet device, are automatically stored, transcribed, and linked to the incident.

Investigation

Assault

Xavier and Luia collaborate on the investigation

Xavier works with Luia and other members of the police team to investigate the related incidents and develop the case against Mr. Dylan.

Instead of exchanging information by email, **they work with other team members in a secure virtualized collaboration workspace**, with shared documents, conversation threads, and a planner to track activities.

The workspace is accessible from mobile devices, laptops, and PCs, allowing team members to access and update information relating to the investigation without returning to police premises.

The collaboration workspace supports eDiscovery and legal hold capabilities across all documents, structured data, and communications.

Virtual workspace capabilities such as shared document editing, planner, and persistent messaging enable collaboration and allow new teams members to see the historical context while supporting auditing and compliance aspects through eDiscovery and legal hold.

Investigation

Assault

Xavier shares details with the prosecutor's office for charging Mr. Dylan

Xavier prepares a digital charging document set for the prosecutor's office in order to get permission to formally charge Mr. Dylan.

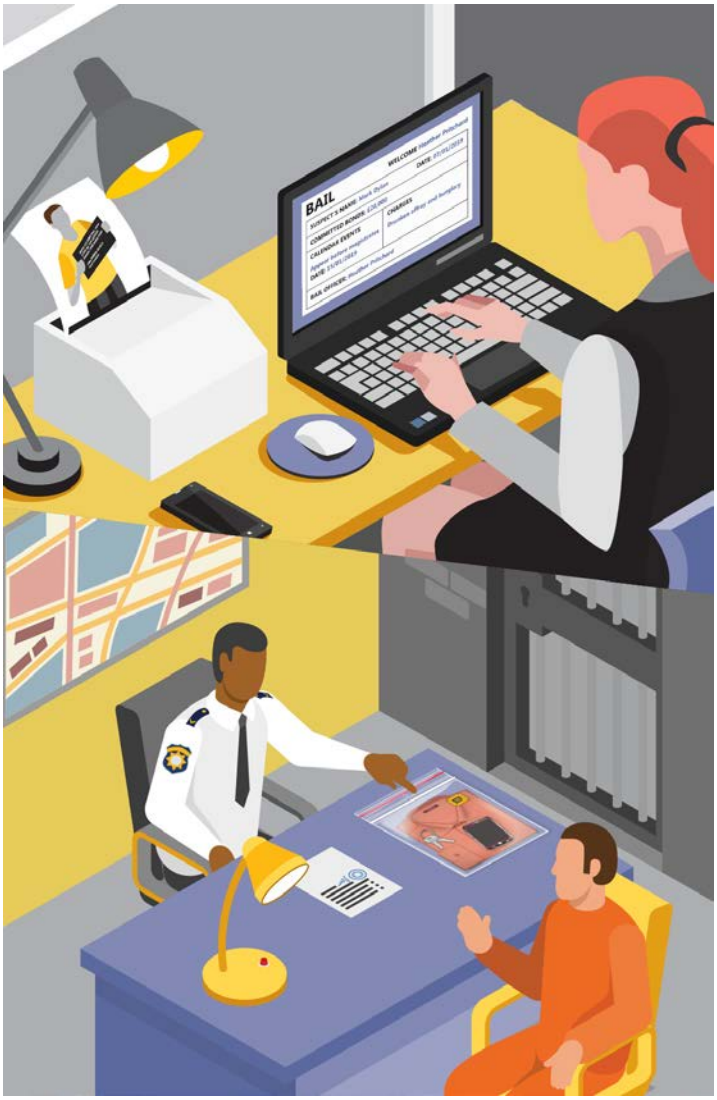
Xavier picks the appropriate incident content to include in the file, including bookmarked CCTV collected from the scene.

The system guides him through the process and ensures that all the required information is available for prosecutor's office to make a charging decision.

Xavier shares the case file with the prosecutor, who confirms that he may formally charge Mr. Dylan with burglary and assault. The case file has been updated by the prosecutor's office to reflect their decision.

Bail & First Hearing

Assault



Mr. Dylan is released on bail pending his court hearing

Heather Pritchard, a bail officer with the police department, bails Mr. Dylan to appear before the court, having been formally charged with both assault and burglary.

Heather checks the schedules of the relevant teams involved in Mr. Dylan's case and adds an appointment for the bail hearing.

The relevant officers will receive a calendar reminder to let them know when they should attend the hearing via video-link.

As there is a safeguarding warning against Mr. Dylan, those who may be vulnerable because of his release are notified. Mr. Dylan is then released on bail pending his hearing.

Virtual Bail Hearing

Assault

Mr. Dylan and the officers attend a virtual bail hearing

Heather Pritchard, Mr. Dylan, and the officers attend a virtual bail hearing with attorneys, joining the hearing video conference from home or the office.

The virtual court hearing is hosted online.

This avoids the need for officers to travel to court, reducing costs and improving efficiency.

Hearing Verdict

Assault

The officers and burglary victim are informed of the court's verdict

Once the hearing has been completed, the incident details are updated by the prosecutor's office to reflect the court's verdict.

Luia, the neighborhood patrol officer, receives a notification on her mobile device that Mr. Dylan has been sent to prison for three months for burglary.

Kelly, the homeowner, receives a notification that there's been an update to her case. She logs in to the crime portal to view the outcome.

Alongside the update, **Luia's status indicator shows that she is available**, so Kelly sends Luia a web chat message via the portal to thank her for her help.

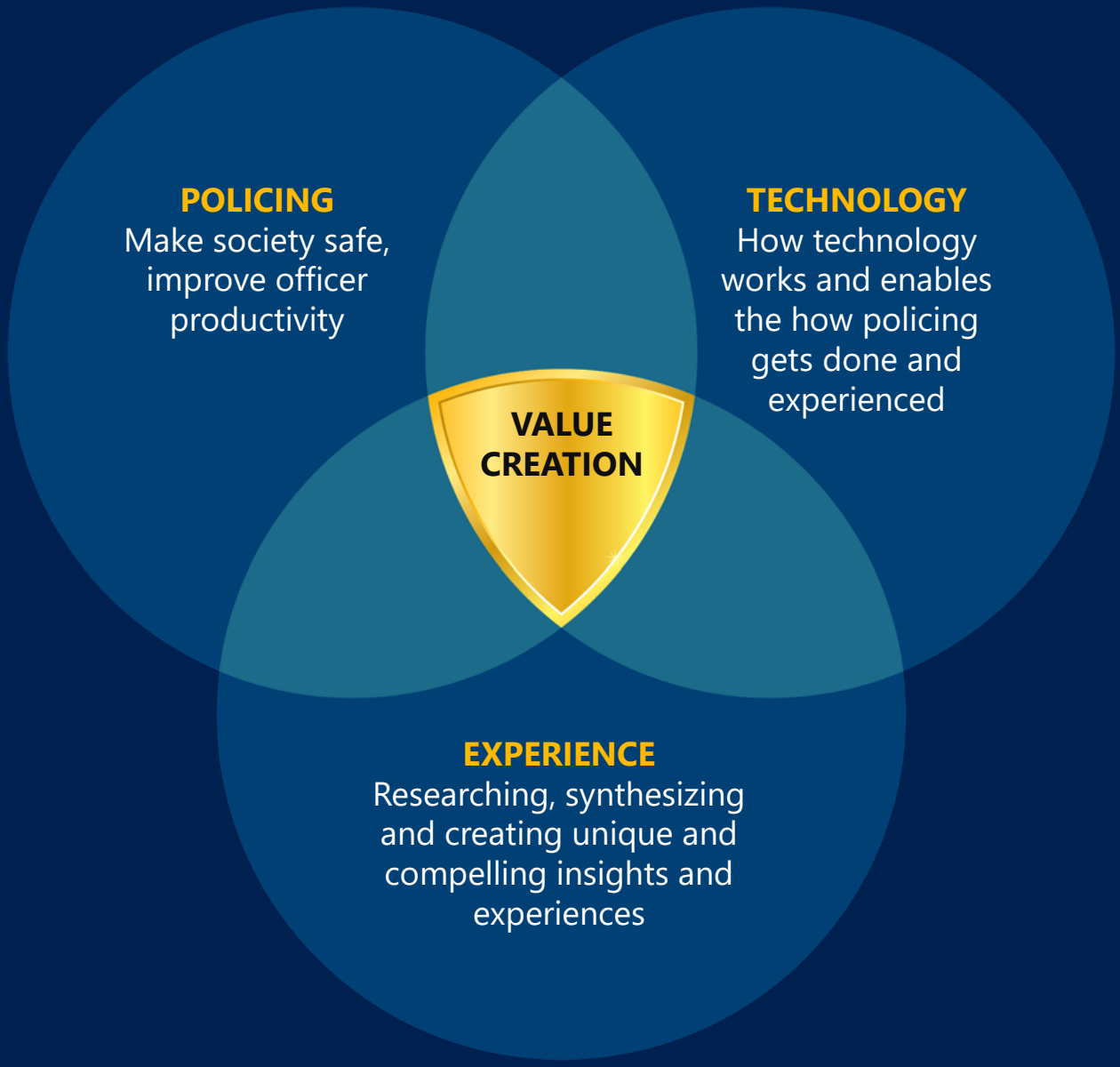
Unlocking opportunities at the nexus of crime management, officer productivity, and technology innovation

PUBLIC SAFETY AS A DIGITAL SERVICE

LEADERSHIP	Lead the Organization		Develop Strategy, Policy and Plans	
	Manage Change		Manage Partnerships	
ASSURANCE	Manage Performance	Maintain Professional Standards		Manage Compliance
	Manage Risk		Provide Legal Services	
PUBLIC ENGAGEMENT & COMMUNICATION	Patrol Neighborhoods		Manage Public Relations	
	Manage Citizen Relationships	Report Performance		Manage Contact
PUBLIC PROTECTION	Manage High Risk Individuals	Protect Vulnerable People		Develop Communities
	Manage Operations	Licensing	Disrupt Criminality	Manage Road Safety
INCIDENT MANAGEMENT	Respond to Incidents	Manage Scenes		Investigate Incidents
	Manage Critical Incidents		Support Victims and Witnesses	
CRIMINAL JUSTICE	Investigate Crimes	Detain Suspects		Non-Judicial Disposal
	Develop Cases	Prosecute Cases		Support Prosecutions
OPERATIONAL SUPPORT	Manage Duties and Tasking	Manage Forensics	Provide Specialists	Policing Services
	Manage Policing Information	Manage Property and Evidence		Manage Intelligence
BUSINESS SUPPORT	Manage Suppliers	Manage Finances	Manage People	Manage IT
	Manage Fleet and Livestock	Manage Equipment		Manage Facilities

MICROSOFT CLOUD PLATFORM

Optimal impact happens at the intersection of these dimensions



Tools & techniques

SCENARIO PLANNING

OBSERVATIONAL ANALYSIS

SITUATIONAL LEADERSHIP

COMPETITIVE ANALYSIS

APPLIED ANTHROPOLOGY

IDEATION MANAGEMENT

SERVICE DESIGN

ETHNOGRAPHICS STUDIES

Co-creative people centered design-based approach to imagine the art of the possible and re-think how policing can be done

1 Research

Perform quantitative research and analysis using techniques such as anonymous studies, heuristics, scenario planning, and environmental analysis to better understand your organization, employees, industry, and citizens.

Document what your organization has done so far and in what ideas and processes it is currently investing.

Consider every situation from all angles: who the people are, what they want to become, what stories they are telling today, and what they want to be saying in the future.

Engage employees, citizens, and partners in multidisciplinary research.

Evaluate what others in your space are doing. Analyze the marketplace.

Determine relevant trends.

Identify key pain points and value drivers.

Use relevant strategic models, where appropriate, to frame the context, potential tactics, and alternatives.

2 Envision

Envision the potential, generating ideas by asking questions such as “Imagine if…?”, What if…?”, “How could we…?”, and “Wouldn’t it be incredible if…?”

Apply scenario-planning techniques to help build the target state and identify events that are likely to have an impact on your organization, and desired outcomes.

Identify underlying assumptions to develop potential solutions to problems or to unlock new opportunities.

Determine priorities that align to each scenario and key performance indicators (KPI’s).

Validate and compare your capabilities with industry-proven practices. Identify people, process, and technology improvements and anticipated business benefits.

Uncover new opportunities for immediate, near-term, or longer-term value creation.

3 Design

Design the service, solution or product from business, technology, and experience perspectives in parallel.

Designing from all three of these perspectives simultaneously can help realize sustainable breakthroughs.

Formulate strategic direction by determining the right performance levers and key tactics.

Set strategic vision and direction based on your goals and success factors.

Develop the building blocks to get to the desired state: the key people, process, and technology capability changes that are required to achieve the target vision.

Create a structured plan outlining the required activities to execute the strategy, including business-justified investments, key tactics required to implement the improvements, recommendations, and a roadmap.

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Realize.
Experience.

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