Real Time Networks

New Approaches for Improving Law Enforcement Equipment & Accessories Management

Using Next-Generation Smart Systems to Reduce Overhead and Costs

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Executive Summary

This whitepaper examines law enforcement agencies' operational challenges in managing their organizations' growing equipment, accessory, and personal protective equipment (PPE) volume. This challenge has become increasingly pronounced due to the widespread proliferation of new electronic mobile equipment in law enforcement and the need for each officer to be fully equipped with that equipment to face the contemporary challenges of serving and protecting the public.

Comprehensive studies have shown mobile electronics' positive effects on law enforcement. But their introduction and widespread use have created new management burdens for station duty officers and other operational staff.

By examining external research on device management and internal performance metrics generated by Real Time Networks' law enforcement customers, this whitepaper shows that electronic "smart" management systems can help reduce this particular increased operational burden placed on law enforcement agencies. This whitepaper concludes with several examples of different agencies using smart equipment and key management systems to streamline operations.

Introduction

Year after year, law enforcement agencies (LEAs) in North America are asked to do more with less. Smaller budgets, less personnel, and fewer resources of all kinds. Out of necessity, agencies have had to find creative solutions to many of the challenges they face.

Some of those challenges are high profile, such as new criminal threats to the community, sweeping funding cuts, or widespread public emergencies, such as the COVID-19 pandemic and its ensuing lockdowns. However, successful law enforcement agencies have found ways to navigate these challenges with the resources at hand.

Positive outcomes to these challenges are equally high profile, usually obvious to all involved, and benefit law enforcement agencies and the communities they protect. This whitepaper argues that law enforcement agencies should take an equally thorough look at one often overlooked operational challenge: equipment and accessory management.

The value of addressing day-to-day operational challenges may not grab headlines. Still, the return in saved labor, money, and other resources, in the long run, can have as significant an impact on LEAs as the outcomes to more high-profile challenges. Using cost analyses, this whitepaper demonstrates that electronic smart management systems should have a substantial role in many agencies' improving equipment and accessory management.

This whitepaper will present the scope of the challenge of equipment and accessory management for LEA. First, it will detail both direct and indirect costs many leaders in law enforcement may not immediately recognize stemming from this challenge. It will then describe the value of improving equipment and accessory management by reducing time spent performing various tasks and procedures in each LEA's daily, weekly, or monthly routines. This time savings will translate to overall labor savings and better tracking of equipment and accessories. Finally, it will close by detailing some use cases for improving law enforcement equipment and accessory management.

The Proliferation of Electronic Devices in Law Enforcement

Today, personnel in law enforcement agencies use more mobile electronics and other technology-enabled tools to perform their duties than just ten years ago. These devices have many benefits, including:

Enhanced communication and reporting capabilities

Consider the rapid introduction of smartphones in the New York Police Department in 2017. The NYPD reported that the widespread use of iPhones among officers helped reduce response times by 14 percent.[1] The primary benefit officers reported was receiving 911 dispatches on smartphones faster than dispatchers could communicate over departmental radio.

Smartphones also supported better note-taking and reporting capabilities. For example, NYPD Officer Christopher Clampitt reported officers extensively used departmental iPhones "to fill out

summonses, accident reports, aided cards, and domestic violence reports."

Improved access to police data

As another example, consider the proliferation of electronic devices in the Peel Regional Police force in Ontario, Canada. The Peel Regional Police serves 1.4 million residents. In 2021 they undertook a Digital Officer Transformation Program to provide a new inventory of 2,000 iPhones and 1,200 body cameras to its officers.[2]

In a pilot program with PriceWaterhouseCoopers, they identified seven areas to improve. Putting smartphones in the hands of officers helped them improve three in particular: data collection, monitoring, and accountability. Smartphones provided officers with easier access to various social welfare agency records and their own "[Record management system] RMS and [Computer aided dispatch] CAD data, as well as translation and real-time community support services."

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Mobile device use has proven to enhance police performance

The two previous examples are recent and noteworthy, but each is confined to individual metropolitan areas. Broader research also shows the benefits of expanded mobile device use.

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The most comprehensive study of its kind, completed in 2016 by the US Department of Justice, found a broad range of benefits to the adoption of mobile technology by LEAs. It noted benefits for LEA leadership, investigative units, and frontline officers. In particular, the study found "increased access to timely information, increased information flow, and increased quality of reports."[3]

However, this same study noted some specific challenges created by the widespread introduction of mobile electronics. The major concern was increased management and reporting burdens on station duty officers and frontline officers. One of the report's conclusions was that LEAs adopting new mobile technology should identify additional resources for training personnel and managing devices on an ongoing basis. For example, storage, security, maintenance, and repair or replacement were issues for each LEA to address.

Funding Restrictions

Law enforcement agencies across North America have seen a steady drop in funding over the last decade. The latest data available comes from the US Bureau of Justice Statistics which shows that total LEA funding in that country as a percent of GDP dropped steadily nationwide from 2009-2017.[4]

Understanding the Full Range of Costs Incurred by Manual Equipment Management

Many LEAs want or need to push ahead with new electronic device initiatives or other new equipment programs despite these management and storage challenges. That means they will need to find innovative means for managing their equipment as cost-effectively as possible within their smaller budgets. Therefore, they would be best served to understand the full scope of the costs incurred by their existing manual equipment management processes.

The US Office of Justice Programs (OJP) produced its last major study on the impact of technology on law enforcement agencies in 2017. It found that while larger agencies—defined in the study as those with 250 officers or more—are more likely to undertake programs of rapid technology adoption, they were also far more likely not to have any strategic plan for managing that technology.[5]

We will now take a closer look at the costs related to equipment and accessory management, which fundamentally break down into either personnel-related costs or equipment-related costs.

Personnel-related costs

First, LEAs incur labor and other costs related to the personnel who oversee and participate in a manual equipment management process. Consider all equipment management tasks a station duty officer must perform regularly. The basic duties of personnel utilizing a manual management system would include:

- Preparing equipment and accessories for officers

- Cleaning equipment

- Logging new equipment into inventory

- Updating logs and records

- Managing transactions

- Auditing inventory

- Recovering lost or missing equipment

- Ensuring devices are charged and available

- Ordering replacement equipment

- Filing departmental reports

- Filing state and federal compliance reports

Human errors

We want to additionally highlight one personnel-related cost: those stemming from human error. Human error is defined as the unintentional act of performing a task incorrectly, typically harming the management system. Manual inventory management systems are more prone to human error, resulting from several different causes, including stress, fatigue, multitasking, distraction, communication issues, or unexpected gaps in staffing.

For example, if an officer returns a departmental smartphone but forgets to charge it, it will not be ready for the next officer signing it out. Or worse, if that second officer fails to check the battery level, the device could power off in the middle of their shift.

Another example is if an officer forgets to return a piece of equipment at the scheduled time, it

will not be available for the next requesting officer. But the duty officer and other personnel will also spend time tracking down that missing item that they could otherwise have spent on more productive work.

Equipment costs

A recent survey from Deloitte found over 54 percent of all organizations still employ paper-based tracking methodologies.[6] Introducing a large volume of new police equipment into a manual management system will increase the administrative burden to both the officers and office staff. For example, keeping preventative maintenance schedules requires detailed usage tracking. Unfortunately, that process is incredibly time-intensive if the organization utilizes paper or spreadsheet-based tracking methods.

Many LEAs try to mitigate this concern by performing repairs and maintenance on their equipment at regularly scheduled intervals. However, this approach is only effective if equipment degrades steadily. Unfortunately, that is not the case for many types of equipment, especially expensive mobile electronics. If assets are used more frequently, software, hardware, and other usage-related problems will occur more regularly. So, without reliable transaction records or problems logs, existing maintenance schedules may not be cost-effective.

Manual Equipment Management Case Study

To see what these challenges all look like in context, let us look at representative law enforcement and its processes. Like most LEAs, it needs to track several different types of equipment, such as radios, laptops, MDTs, firearms, tasers, smartphones, video cameras, and

more. As a result, this agency finds it difficult to take a comprehensive approach to inventory management.

The station duty officer in our example LEA is responsible for all this equipment and consumables issued in the department. Like most agencies, our example LEA still operates using manual processes for tracking standard equipment requirements. While these manual processes provide the necessary control they seek, they do not offer comprehensive accountability, nor do they offer one unified platform for viewing the usage and location of all equipment and accessories. This manual approach can be cumbersome, expensive, and ineffective in managing all departmental assets.

Most patrol shifts are 10 to 12 hours long, overlapping with over shifts to ensure appropriate handover of cases, evidence, vehicles, and equipment. In addition, like most LEAs with budgetary constraints, our example LEA may be required to share various pieces of equipment, for instance, tasers, among its officers until they can issue units to each officer in future purchasing cycles.

Our example station duty officers facilitate equipment handling so frontline officers can focus on serving and protecting the public. Typically, the duty officers can deploy gear to patrol officers at the beginning or end of their shift within 30 minutes.

Representative Cost Analysis

For the balance of their shift, station duty officers ensure the LEA meets its regulatory requirements, updates records, and manages maintenance or replacement issues.

Based on interviews with law enforcement members, the administrative portion of such a shift can vary between 25 and 40 percent. That is 3 to almost 5 hours a day, each shift, two shifts per year, 365 days a year. That represents a commitment of approximately 2,200 to 3,500 hours a

year to manage just the administration of its equipment, and that is when no issues arise that could disrupt the flow of equipment. Based on an assumed wage of $25/hour, the cost of this administration alone costs our representative law enforcement agency $55,000 to $88,000 annually.

The approximate figures of 2,200 to 3,500 hours per year are just for routine administration. The total time spent on equipment administration increases drastically for every issue that station duty officers must address, such as equipment not working, not returned, or searching for lost or misplaced equipment. These incidents reduce the duty officer's time and cost the patrol officers time.

Manually administering equipment means an agency has less time available to do tasks that may generate more value. They do not have time to plan or conduct actual law enforcement as a group. Instead, personnel are stuck doing reactionary tasks all day long. That can even harm morale, leading to human error, inefficiency, and lost time and money.

Smart Equipment Management Solutions Help Manage Costs

Deploying a smart equipment management solution can help law enforcement agencies reduce costs and boost their performance. It would allow for easier and more manageable tracking in the following areas:

- Alerting the appropriate staff of any issues, such as equipment not returned or requiring repair

- Avoiding out of stock situations for consumables such as PPE, protective gear, or medical supplies

- Managing the cost of inventory and tracked assets by ensuring they are accounted for, available, and ready for use at all time

- Better accountability in equipment transactions by offering complete, human error-free monitoring and logging

- Eliminating paper-based tracking, and automating inventory management responsibilities

- Serialized tracking of equipment ensuring accountability at its highest level

- Better equipment maintenance tracking and control

The additional value generated by data collection

Beyond the immediate improvements to equipment management, smart systems also generate a large volume of data that can generate significant value for LEAs. The value of large data sets has long been recognized in policing, but more often when the source of that data is external to the LEA, such as in predictive policing work.

Smart management systems provide LEA with data about their internal operations. For example, the systems can collect data on transaction times, transaction volumes, transacting personnel, and identify performance trends across all these metrics.[7]

Analyses generated by the smart systems can reveal opportunities to rebalance equipment distribution across precincts or inform future purchasing budgets. These analyses can also reveal problem patterns, such as equipment failures, or more serious patterns, such as internal theft or drug diversion. In addition, a smart equipment management solution helps you review and update your procurement plans to align with your agency's emerging needs.

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Best Practices for Using a Smart Equipment Management System

Equipment management describes the processes that the law enforcement agency uses to:

- Record the receipt of equipment

- Record the source of the equipment

- Issue equipment to an organizational element or individual

- Track equipment check-in or checkout

User LEAs may facilitate the management and tracking of equipment by integrating barcoding equipment, a Radio Frequency Identification Device (RFID), or similar technology. In addition, the system should have the ability to store photographs of the equipment.

Reporting best practices

The system should generate reports to support the physical inventory and audits, which will assist in managing the repair, disposal, and maintenance of equipment. At a high level, system reporting capabilities should include:

- Physical inventory report, based on varying search criteria (e.g., category, age, unit, and location)

- Physical inventory exception report

- Check-in/checkout log

- Equipment history

At a more granular level, LEAs should consider using a smart management system with reporting on:

- **Equipment Receipt**

  Allow the capture of descriptive characteristics of the equipment, associated identifiers on the equipment, and any agency-specific unique identifier, such as an inventory control number.

- **Equipment Issuance**

  Equipment may be assigned to an organizational element (e.g., unit, division, or group) of the agency, a physical location, or an individual. In addition, equipment may be assigned on a check-in/checkout basis (e.g., daily basis, for patrol). The system should maintain a log of all activities. Equipment may be authorized but not issued (e.g., a personally owned weapon). The authorization to carry that equipment should be captured.

- **Equipment Checkout**

  When equipment is checked out to a unit or authorized person, information about the checkout (e.g., individual receiving equipment, date and time of equipment checkout, and equipment condition) is recorded for tracking purposes. Use of barcode or RFID equipment may be employed to make this process easier.

• Equipment Check-In

The return of equipment will include an evaluation of the item's condition, the performance of maintenance procedures, disposition of equipment deemed unfit for service, and the return of functional equipment. In addition, the system should generate overdue, lost, stolen, or destroyed equipment reports.

• Physical Inventory/Audit

The system should generate reports about the physical whereabouts of agency equipment. The physical inventory will result in the identification of missing equipment and equipment recommended for repair, replacement, or disposal.

• Equipment Maintenance

The system should record information about equipment conditions and maintenance. The information recorded in this module includes the reason for repair, cost of repair, date of repair, maintenance location, date expected back in service, date returned to service, and date of next scheduled maintenance.

• Equipment Disposal

The system should allow taking a piece of equipment out of service and disposing of it. In addition, the system should change the equipment status but not delete or remove historical records associated with that item.

Smart Equipment Management System Use Cases in Law Enforcement

This whitepaper so far has analyzed the costs incurred by manual equipment management and the potential value generated by implementing smart asset management systems in their place. This final section reviews some smart system use cases among Real Time Networks' law enforcement customers.

Garland County increases key security and accountability

The Garland County Sheriff's Office in Arkansas turned to Real Time Networks to help address issues with manual key management. Deputies would report to work and obtain keys in a locked key box behind their booking desk. The key to this key box was on a ring beside the supervisor's desk. The facility used paper logs to record keys issued and returned. Unfortunately, this process was time-consuming, inefficient, and error prone.

The Sheriff's Office implemented a smart key management system to track their operational keys. The Office's Chief, Mark Chamberlain, reported that "the ability to determine who can check out what keys enhances facility security with the added benefit of not having to rely on a staff member to issue and track key exchanges.

"At the start of every shift, a report is generated to ensure that keys were returned from the previous shift. Before, if someone did not return their keys, there was no way to tell which keys were missing and who had them. Now, supervisors can check the status of all keys from their workstations or offices. Security is enhanced by knowing what keyrings are checked out and by whom at any given time.

"Original plans called for the Control Room Deputy to issue and track keys. Upon our purchase of the KeyTracer system, this plan went away, and that deputy now can pay full attention to operating the control room and monitoring the facility's cameras and focus on the primary mission of staff safety and the overall security of the facility."

Mobile device management: an unexpected problem going paperless

Many law enforcement agencies—especially correctional facilities—want to digitize their record-keeping and go paperless. "Being able to pull [paperwork] up quickly is a real advantage," according to a supervising officer at one US-based LEA customer. For example, they often needed to locate a specific page with a recorded incident from months earlier for court cases. Going digital would reduce finding one of these papers in storage from 30 minutes to 30 seconds.

But for this correctional facility's officers and administrators to work paperless as they moved around the facility or with inmates, they were going to need tablets. Digital forms could be used everywhere, from inmate classification and segregation filings, urgent protective custody submissions, and fugitive paperwork processing.

They instituted a smart asset management solution to track tablets and other mobile electronics. Corrections staff were held accountable for devices they signed out and returned on time. Supervising officers were able to pull up real-time reports and identify who was using which devices, where they were, and when they were required to return their signed-out devices.

Police division uses smart management systems to improve fleet efficiency

Many law enforcement agencies struggle with cost-effectively managing motor pools without compromising operations. In 2017, the Fleet Management Coordinator at a police division headquarters in a small, coastal city contacted Real Time Networks about developing an improved asset and key management program.

He had been tasked with managing fifty vehicles used by detectives, forensic teams, and other investigative units that needed to cover the local city and the entire surrounding rural region. Budget constraints meant that he alone would be the only staff member managing their expanding motor pool. "The difficulty [was going to lie] in ensuring oversight and accountability of all the keys," the Fleet Coordinator said.

The Fleet Coordinator for this LEA deployed a 64 key KeyTracer smart system. With Real Time Networks' help, the Fleet Coordinator conducted training sessions on the new system for his office's personnel.

"[Setting up] KeyTracer made my job easier, as I now had complete control over fleet keys," the Fleet Coordinator said. Previously long and complicated tasks, like tracking maintenance and servicing schedules, managing reservations, and getting notifications for unreturned keys, were handled automatically.

The Fleet Coordinator was able to rotate key sign-outs to distribute vehicle usage and reduce maintenance. In addition, drivers could log fault codes and incidents to aid mechanics when problems did occur, so their cars were back in service faster.

KeyTracer was critical to this law enforcement office's performance improvements. Costs dropped, efficiency ticked up, workflows improved. KeyTracer let this small regional office continue to grow cost-effectively.

Conclusion

Year after year, law enforcement agencies have found novel solutions to the new challenges they face. As we move further into the era of digital technology, many are turning to smart management platforms to solve operational challenges within their organizations. Smart management systems can be a cornerstone of the next generation of technology-supported police operations.

Smart technology's proven track record for addressing external challenges in law enforcement is well-earned, and one of the challenges they will now address internally is equipment management. Smart management systems provide a return on investment in saved labor, money, and other resources.

Electronic smart management systems will have a role in many agencies. LEAs of many sizes can generate value by implementing smart management systems to manage manual administrative tasks and streamline complex workflows. The time regained by station duty officers and frontline staff using the system can then be turned to more important law enforcement activities.

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