WHITE PAPER

MOTOROLA

The ROI of eCitation:

Just the Ticket to Higher Revenues

Many states, provinces, counties, and municipalities are facing a budget crisis. As the economy contracts and tax bases are diminished, state and local governments will continue to experience severe budget shortfalls.

That's why it is more critical than ever that law enforcement organizations help their jurisdictions maximize the revenue they receive from other sources. For instance, fines collected from parking and traffic violations alone can represent up to three percent or more of a city's revenue. Unfortunately, today, many jurisdictions actually lose a significant portion of the revenue they could be collecting from parking and traffic citations.

For a city that issues 300,000 citations a year, the amount of additional revenue could be $2.25 million. A system deployed in January would pay for itself by December.

Why? Human error. When police departments issue tickets manually, errors are to be expected. Names can be misspelled. Addresses can be entered incorrectly. The wrong statute can be entered. Correct information can be entered illegibly, by an officer writing on a pad inside a car. And even after the ticket is issued, errors can still occur because clerks must enter that same handwritten citation into as many as three records systems, including the police record system, the court case management system and the state's citation tracking system. In most municipalities, errors on the tickets end up invalidating the citations.

By most estimates, between 10 and 15% of all traffic citations are dismissed due to errors related to spelling, legibility, and inconsistencies between violation codes and descriptions[1,2]. The chief traffic judge of one large jurisdiction estimated that on a given day, 35-40% of contested tickets are thrown out for being illegible or improperly filled out. That's a lot of bad drivers getting away with breaking the law—and a lot of lost revenue for the local government.

The Benefits of an Electronic Ticketing Solution

Fortunately, there's an alternative solution that reduces the errors and the time involved in the ticketing process. That solution is electronic ticketing, otherwise known as eCitation. Using an electronic ticketing system, police officers can enter most of the required citation information into an electronic form automatically. They can do this either by scanning the bar code or magnetic stripe on the violator's driver's license or through a real-time connection to the state's Department of Motor Vehicles (DMV) or National Crime Information Center (NCIC) databases.

Officers can use drop down menus for violations and vehicle information and can automatically populate information such as statute violated, fine amount and court information. After the ticket is completed, a wireless printer with a WiFi or Bluetooth connection enables on-the-spot printing of the citation. The violator's signature can be captured on the mobile computer's touch screen—and if the mobile computer is equipped with a camera, evidentiary photos can also be captured and appended to the citation records.

If the device has a real-time wireless connection, citation information can be immediately transmitted to the appropriate databases. For mobile devices without a real-time connection, the citation information can be uploaded via the in-vehicle Mobile Data Terminal (MDT), or, in the office at the end of the day by simply docking the device in its cradle—or if a WiFi network is in place, the device can upload records automatically as soon as the officer enters the station.

eCitation Systems Allow Departments to Recapture Millions of Dollars in Lost Revenue

The results of the electronic ticketing system are impressive: One major city recaptured several millions of dollars in lost revenue in just the first year after implementing an eCitation solution.

Take a look at the potential eCitation solutions have to increase a city's revenue: A mid-size city in the Midwest issues 300,000 citations a year. Traffic fines in the state start at $73, with most violations fined at $83 and higher. Conservatively, let's assume the average citation brings $75 in revenue. If the city reduces its error rate on issued citations by 10 percentage points, the city would collect revenue from 30,000 additional citations per year. The additional revenue collected each year would amount to $2.25 million.

The department has about 350 vehicles. Assuming each vehicle is equipped with an eCitation system at the cost of $6,000, the total spend is approximately $2.1 million.

In other words, the city spends $2.1 million to get a revenue increase of $2.25 million—meaning that a system deployed in January would pay for itself by December, with enough revenue left over to pay the salary of one or two officers.

[1] Mantena, Sitaramaju, *Computerization and Automation of Affordable Traffic Data Collection System for the State of Florida*, Florida State University College of Engineering, 2004

[2] "New Carrollton police lead state in technology," Gazette.net, December 13, 2007. Retrieved January 2009 from http://www.gazette.net/stories/121307/newcnew175824_32366.shtml.

eCitation – Calculating the ROI

Assume a mid-size city…	
Number of sworn officers:	1400
Number of vehicles:	350
Tickets issued per year:	300,000
Percentage of tickets dismissed for errors / illegibility:	10%
Average fine:	$75
Revenue lost to errors / illegibility:	**300,000 x 10% x $75 = $2.25 million / year**
Cost to deploy eCitation system: (includes handheld computer, software, wireless printer)	$6,000 / vehicle
Total cost to deploy:	$6000 x 350 = $2.10 million
Time until system pays for itself:	**less than 12 months**
Net revenue gain over 4 years:	($2.25 million x 4 years) – $2.10 million = $6.90 million
Return on Investment (ROI) over 4 years:	**$6.90 million ÷ $2.10 million = 329%**

A rugged handheld computer has a life expectancy of 4 years or more. With the system paid off in the first year, the subsequent three years' revenue is pure net gain. This means an ROI of over 300% over the expected life of the hardware. (The use of consumer-grade handhelds is not recommended. While cheaper to purchase, they have higher support costs and a substantially lower life expectancy[3], increasing the Total Cost of Ownership and reducing ROI.)

Citation Processing Reduced from Days to Seconds

Automating the ticketing process improves cash flow as well. A study done at Florida State University[1] reports that a manual citation takes an average of 12 days to process (which of course delays the final payment of fines), while automated solutions can reduce that time to hours or even seconds.

Increased Productivity Can Result in 1,600 Additional Patrol Hours

With manual ticketing systems, it takes about 10 to 15 minutes for officers to issue a citation. In contrast, electronic systems allow officers to issue a ticket within just two to three minutes. Bar code scanning and magnetic-stripe reading have been credited with eliminating up to 200 keystrokes per traffic citation by automating and ensuring the accurate entry of the information contained on a driver's license.

Even the smallest departments can realize big savings from eCitation. Let's say an agency has 20 patrol officers who each issue five traffic citations a day. With just a five-minute time-savings per citation, the productivity savings in one year is more than 1,600 hours of patrol time—nearly equivalent to having another officer on patrol.

And municipalities save on the back end too—through a reduced need for data entry clerks to enter the citation information into multiple systems. Assuming that cities could redeploy two data entry personnel with salaries of $60,000 a year into other jobs, that's another $120,000 in savings each year.

Improved Officer Safety

Given that an electronic ticketing solution enables officers to clear traffic stops three to five times faster, it increases officer safety as well—particularly given that the third leading case of death for on-duty police officers is being struck by a vehicle[4]. Every minute spent sitting on the side of the road writing out a ticket, the officer is at risk. Speeding up the citation process allows the officer to get back on the road and out of harm's way.

A handheld computer also helps protect the officer from the violator. The officer can verify a violator's identity against criminal-history databases—before they turn their back to return to their patrol car.

eCitation: Highly Useful for a Variety of Municipal Needs

It is not just law enforcement officials who can benefit from electronic citation technology. From building and bridge to food safety inspections, personnel using automated citation technology can access electronic customer records, enter inspection results, and issue violation notices using a series of drop down boxes and notes fields for additional comments. Some systems even allow for photo capture to document the violation.

There's no longer a need to complete a paper form and later enter the information captured on that form into the computer. And this helps to eliminate the errors inherent in the 'double touch' of data. Plus the resulting productivity boost allows the same number of inspectors to handle more inspections each day, reducing intervals between inspections and helping to protect public health and safety.

[3] "Government TCO Analysis," *Total Cost of Ownership Models for Mobile Computing and Communications Platforms*, VDC Research Group, 2007

[4] IACP and NHTSA, Law Enforcement Stops & Safety Subcommittee Staff Study 2004, p.5.

ABOUT MOTOROLA MOBILITY SOLUTIONS

With a decades-long legacy of leadership in providing advanced communications and computing technology to government customers, Motorola is the logical partner for government organizations looking into eCitation solutions. With a portfolio that includes rugged handheld, notebook, and vehicle-mounted workstations, private and public data network expertise, and world-class software partners, it's no wonder government and public safety agencies turn to Motorola.

Mobile computers from Motorola offer support for image capture, bar-code scanning, mag-stripe reading, signature capture, and fingerprint identification. Data connectivity options include secure connections over public wireless broadband, private data networks, as well as WiFi and Bluetooth®.

For more information, contact your Motorola representative, or see motorola.com/eCitation.

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Motorola, Inc.
1301 E. Algonquin Road
Schaumburg, Illinois 60196 U.S.A.
www.motorola.com/ecitation
1-800-367-2346

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