9-1-1 MAGAZINE .com
MANAGING EMERGENCY COMMUNICATIONS

Not All "Mobile" PCs are Mobile - and Not All Rugged Tablets are the Same

Author: Bob Ashenbrenner, Vertical Solutions Architect, Xplore

Date: 2016-01-27

Real-World Emergency Response, Real-Time Data Needs Create a Shift in Mobility Strategies...

Learn How to Build a Cohesive End-to-End Mobile Solution with These Simple Steps - Without Having to Abandon All of Your Current Hardware or Software in the Process.

For years now, the Public Safety sector has been on the forefront of real-time data use. But, unlike most other industries, the intent has not only been to enhance productivity or shorten response times – though both have been welcome impacts of new technologies.

The first – and perhaps most important – goal has been to keep law enforcement, EMS, and fire and rescue teams safe while simultaneously protecting the people and interests of the communities they serve. That requires better preparedness and situational awareness; both of which are contingent on the availability and proper utilization of real-time data. Real-life emergency response demands real-time data sharing, whether via dispatch communications or jurisdiction-wide records systems. Where older installed-in-vehicle systems delivered these advantages until the officers left their seats, new mobility tools allow the officers to maintain a connection anywhere they go.

But time, IT mandates, and budget resources don't always allow for trial and error testing of mobility tools. Many agencies are at a crossroads as they add mobile devices. Vehicle-mounted laptops and notebooks have long been connected to cellular data networks in patrol cars, fire trucks, and ambulances to communicate with dispatch, access the Criminal Justice Information System (CJIS), or patient electronic health records (EHR), and provide GPS navigation for fast incident response. However, the benefits of these "portable" PCs are restricted to the vehicle. They aren't mobile by definition and certainly aren't conducive to easy data capture or retrieval outside the vehicle with their bulky size and keyboard-only entry method.

For law enforcement, fire, and EMS professionals, the majority of their work – and arguably their most critical work – is completed outside the vehicle in what can be extreme environmental conditions. Yet many of their deployed "field computing technologies" are not really built for their type of field work. They're neither rugged nor mobile. But attempting to mobilize with a piecemeal compilation of legacy PCs, new mobile and IP devices, high security info systems, and accessories is wasteful and ineffective – which does not deliver enhanced safety.

Fortunately, you can rectify the situation by resetting your mobility strategy and building a cohesive end-to-end mobile solution with these simple steps. (No, you will not have to abandon all of your current hardware or software in the process.):

1. Formulate a mobility strategy that represents your own workflow and daily flow.

During the RFP process, the daily flows of each end-user in the office/vehicle/field drive the criteria for a mobile PC. Think through many of the mobile workflows and start building a solution to support each: Dispatch, inspection, e-Citations, CJIS access, incident reporting, inter-agency coordination, etc.

2. Know your exact mobile device needs before you start shopping.

Just like a detailed grocery list prevents you from forgetting necessities during a shopping trip, building a minimum requirements checklist before you start researching mobile technology options will ensure you don't overlook any key ingredients for your mobile strategy. Choosing a mobile device that doesn't have the right feature set – or can't fulfill all of your requirements in a single device – will only lead to disappointment and result in multiple "shopping trips" that waste time and money.

Many mid-size cities, towns, and counties have similar workflows and, therefore, similar mobile device requirements. Identify jurisdictions that mirror yours, and understand the lessons they've learned in their mobile journeys thus far. Their list of do's and don'ts will help you focus your requirements and conduct a SWOT analysis of your own current technology portfolio to make early decisions regarding:

- Operating system preference – The applications you choose will drive your OS decision. Most public safety agencies choose to run Windows for compatibility and security. Though there are new applications arriving on Android today that may benefit some organizations. Fortunately, fully rugged Android tablets are now available.
- Mobile data and mobile device security – This may include VPN access, multi-f (CAC) readers, TPM, Kensington physical locks, and other internal and external measures.
- Data entry tools – Do you need the flexibility of keyboard and touch for data entry? Do you need a digitizer pen (which is much more accurate than a stylus)?
- Size and weight – Do you prefer a larger 10-12" screen for easy, full-page viewing of documents and apps? Or can you make do with a 5" screen? Can your EMS techs juggle a 5+ lb notebook and patient care in the field? Or do they need a more lightweight 2-4 lb solution?
- Wired and wireless connectivity – How many I/O ports do you need? Which I/O ports do you need? Will your teams have access to Wi-Fi hotspots at all times, or do they need multiple wireless network and ancillary device connectivity options such as 4G LTE, Wi-Fi, Bluetooth, IP, Gobi 3000, etc.?
- Rugged requirements – Which MII-STD-810G and Ingress Protection (IP) rating levels are enough – and how much is too much? It depends on how often your mobile device will be exposed to water, dust, humidity, or corrosive elements, for example, and how prevalent shock or vibration will be in the vehicle. Will the device be used in potentially explosive environments? Make sure it's also ATEX or C1D2/C1Z2 compliant for Hazardous Locations.

3. Consider your mobile PC options.

Many law enforcement, fire, and EMS departments are public agencies operating under either federal, state, or municipal guidelines and, therefore, purchase from a pre-approved list of hardware and software vendors. While that list may ultimately dictate how you buy your rugged mobile PC, it shouldn't limit your research and evaluation efforts. Mobile technology investments have long life cycles, so it's imperative that you thoroughly understand the immediate mobility gains and future expansion options available with each rugged tablet, laptop, notebook, or smartphone under consideration. No two mobile PCs are created equal, and not all mobile PCs are truly mobile. Portability and mobility are not synonymous:

- In-Car Computer systems are permanent. They tradeoff on size since the PC is housed in the trunk, versus a notebook that takes up space mounted in the center console. But they only allow in-vehicle data access.
- Rugged laptops are technically portable, but require both hands to use outside the vehicle. Impractical really, since these heavy notebooks need a flat surface and consume both of the officer's hands – not the safest approach. That's why "portable" notebooks are almost always left in the car or truck.
- Rugged handhelds, such as smartphones, are definitely mobile. But the common issues are screen size and the oft-requirement that software apps be written specifically for the device. A costly proposition considering no device that small is designed to support a full-page view of a typical public safety document. In this case, simply fulfilling the "rugged" and "mobile" PC criteria aren't enough.
- Consumer-grade mobile devices, regardless of form factor, just aren't well suited for the public safety environment. In fact, a recent VDC Research survey found that 88% of public safety agencies believe that they need at least some rugged mobile devices – consumer tablets won't suffice, or survive, in many of their daily use cases. You want your team to worry about patient care – not special care of fragile devices in the field.
- Rugged tablets, on the other hand, easily satisfy all mobility, ruggedness, size, weight, and full computing requirements of these public safety environments. Beyond having the right-sized physical components (big enough screen to view full documents, but lightweight enough to carry in one hand), rugged tablets run all of the familiar software and apps in a mobile environment. They're also equipped with multiple I/O ports and compatible with a plethora of Wi-Fi, 4G LTE, Bluetooth, and GPS to provide a reliable connection throughout your jurisdiction.

Rugged tablets are purpose-built and scalable as your system-wide mobility expands and workflows demand. They are emerging as the preferred mobile device of choice for public safety agencies of all sizes and missions.

3. Don't stop at the device itself.

Choosing the right software, apps, and accessories is as mission-critical as the rugged mobile PC. If your handheld smartphone, for example, requires you to replace accessories as often as the device itself, then you will find the total cost of ownership accelerates quickly. Insufficient planning for software and accessory requirements will lead to cost creep and possible end-user adoption challenges, or even deployment delays. When evaluating mobile PC options, also consider:

- In-vehicle docking solutions – How will you mount the mobile PC safely in the patrol car/fire truck/ambulance? Does your fleet f ture multiple vehicle models and therefore need multiple docking/mounting options? Do you need to connect to a mobile gateway for in-vehicle data?

- Carrying assistance – When your job is hands-on and you're on your feet for long periods of time, you'll likely appreciate mobile devices that offer shoulder straps, hand straps, rubberized handle grips, and other carrying solutions.
- Battery charging options –How much battery power do you think you'll need to run your devices without interruption for an entire shift? Are hot swappable batteries available? How quickly do the batteries charge, and are multi-bay chargers available?
- Software compatibility – The Public Safety world needs mobile-f . Fortunately, many of the dozens of Independent Software Vendors (ISV) are adding mobile-f les to their offerings that enrich the end-user's experience with rugged tablet touch screens, for example. Unlike modules originally written for desktops or notebooks that are simply ported onto tablets, these new mobile apps are starting to support in-line insertion of photos taken with a rugged tablet's hi-res camera, and data entry after a driver's license is read by the built-in barcode scanner. These contextual apps also support records and reporting, CAD, criminal data lookup, and citation management, to name a few critical workflows.

4. Balance your budget – but give more weight to the benefits of your investment.

We are all price conscious and want to get the best bang for every buck. Public Safety has always been a money-constrained sector, but most agencies will sooner or later find that the total cost of ownership (TCO) of a consumer-grade device is at least double that of a rugged tablet. Even if the initial purchase cost is higher for a rugged tablet, its long-term durability and widespread compatibility with the rest of your mobile software, devices, and accessories will keep TCO down.

5. Remember that the future is mobile.

Impediments to true public safety mobility – inappropriate form-f le devices, heavy notebooks, weak data radios, limited mobile workflow software, etc. – are a thing of the past. The decision to go mobile today is just that – a decision to go mobile. Real-time information, streamlined reporting, and constant communication make your service to the community faster, better, and safer.

Make smart near-term buys that lay a foundation for a full mobility solution with long-term relevance. That may be just a handful of rugged tablets to power a new dispatch system. But it gives you time to fine tune your solution, define next best steps, and measure ROI. Then, as budgets allow, you can expeditiously deploy more tablets and workflows into the field with confidence. Don't worry if you're not able to leverage all of a rugged tablet's bells and whistles in the first 12 months. You will have all the necessary processing power, storage capacity, wireless network compatibility, and expansion modules available to support each incremental step you take toward full workforce mobility over the next 3-5 years.

Bob Ashenbrenner has more than 25 years of computer engineering and engineering management experience, with 18 of those specific to mobility and the field requirements that enable real work to happen. Since 2003, Bob has been with Motion Computing, now part of Xplore Technologies, a global mobility solutions company based in Austin Texas. During this time, Bob has become an expert in field technologies that support the service, public safety and utility sectors and led the development of a suite of rugged mobility products, services and software, with an emphasis on supporting the whole mobile work environment. F .xploretech.com

Photos courtesy Xplore Technologies.