HOW-TO GUIDE

HOW TO PICK THE RIGHT IN-VEHICLE DEVICE
In-vehicle Technology Produces a 23% improvement in productivity

In the modern world of technology and connectivity, there's no question about how in-vehicle technology will transform and improve your entire operation. You'll see immediate benefits, such as: safer drivers, happier customers, lower fuel costs, reduced liability, greater competitiveness and a solid return on investment.

There are two choices when it comes to the actual hardware: a rugged computer and a consumer-brand non-rugged device (smartphone or tablet). Both will allow you to run the software you need to connect dispatch with drivers and to track vehicles in real time. Each has benefits that are specific to different transportation operations. Let's examine them both to see which is the best bet for a best fit.
Total Cost of Ownership (TCO)

 replacement regularly. On average around 83% of devices need to be replaced about once every 3 years. Whether it’s a screen failure or it breaks or gets misplaced, this is a cost you need to consider.

“One of the most substantial [to overall TCO] is device replacement and upgrade cycles.” (Source)

Additional Hardware/Software Costs
Costs can accrue when adding card swiping functionality, RFID readers, vehicle mounting solutions and engine data diagnostics. Having applications specifically written for your unique fleet’s requirements is also an expense.

Employee Acceptance Rates
Having a device that is built specifically for their unique operation gives employees confidence in learning and mastering that technology. In other words, the easier a device is to use, the more employees will use it. This lowers time to train and recruit.

“Each device failure can cost an organization in upwards of 200 minutes of labor.” (Source)

Message Transmission Rates
Commercial devices tend to experience a wireless transmission failure. This can lead to 5-10 minutes in lost productivity for each instance. Rugged computers continue to transmit data or information until it is received in the office or vehicle, ensuring accurate reporting and less frustration.

Disposal Costs
Having to replace commercial devices will increase your carbon footprint. You may wish to consider your operation’s “green initiative” and the resulting impression this may have on your customers.

Rugged computers can withstand extreme temperatures, vibration, shock and dust. Most smartphones shouldn’t even get wet.

“Failure rates of rugged devices dropped.” – David Krebs, VP for VDC (Source)

Just because a disposable razor is cost-effective, doesn’t mean that it’s the best razor for you. When you consider the cost averaged out over a lifetime, disposable may not be the way to go. When it comes to in-vehicle technology, you need to consider how often a replacement will be needed. While consumer tablets and smartphones may appear more affordable up front, consider how many you’re going to need over the next 10 years. These consumer-grade devices tend to break, get misplaced, have a failure of displays and hard drives, get stolen, slow down performance over time, etc. The same issues that affect your own mobile devices (tablets, smartphones) will affect your operation.

Rugged computers can withstand extreme temperatures, vibration, shock and dust. Most smartphones shouldn’t even get wet.

“Failure rates of mobile devices used for line of business applications increases substantially for non-rugged devices.” (Source)
How Much Functionality do You Need?

**Single Point of Logon**
A rugged computer will allow drivers the ability to sign in quickly. They don’t have to charge it, or care for it, or turn it on. They simply log on and all their work schedule, route and peripheral devices are all synchronized automatically. But it also gives you more control by reducing human error. Annunciation, passenger counting, electronic fareboxes, headsigns, are triggered automatically by your office scheduling and dispatching software. This makes it easier for drivers to focus on customer service and safety.

**Onboard Connectivity**
As you decide to expand your technology system, you’ll want the ability to add new components easily. A rugged device has the capacity to add multiple peripheral devices such as headsigns, annuncicators, automated passenger counters, electronic fareboxes, cameras, and more. Each device can not only connect to a professional-grade data terminal, it can integrate with your office scheduling software. Consumer devices don’t have this ability and many don’t even have data connectors apart from a headphone jack and a charging dock connector.

**Driver and Vehicle Monitoring**
Rugged computers have significant computing power. They’re specifically designed to work in a transportation setting. This means they can not only handle work order management but also process vehicle telematics data, including speed, idling, RPM and OBDII messages. This enhances your ability to monitor and correct driver behaviors such as speeding and unnecessary idling, in order to reduce fuel and vehicle maintenance expenses.

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*“Dispatchers love the onscreen map.”*
— Luis Pino, Hill Country Transit District

*“Our contractor is asking for the data that only our MDTs can provide and it helps to maintain our relationship.”*
— Matt Lundgren, Cook DuPage Transportation

Read Matt’s Story
Read the HOP’s Story

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Reducing Driver Distraction

Regardless of the type of device you choose, it should have a simple interface. This way, drivers aren’t faced with too much distraction on the screen. Take advantage of the canned text messaging. This way, drivers can receive important information, but only when it’s safe. The same is true for turn-by-turn directions. Rugged devices are engineered to be driver friendly, while tablets and smartphones may not. They have screens designed to be read quickly with color-coding and large fonts.

No Need to Charge

Since consumer-oriented devices regularly need to update their operating systems, you need to consider the time taken to perform this task. Rugged computers can be updated remotely, which allows IT to focus on more pressing matters. Because consumer-brand devices need to be charged outside of the vehicle, this can cause problems during the day. A built-in rugged computer is charged by the vehicle, thereby making it less likely to fail.

Long-term Support is Included

Added functionality comes with added support. Rugged computers are backed by companies that understand fleet-based industries. Commercial device manufacturers are more likely to support their products better than a consumer-focused company.
Conclusion

Savings can be significant when going the life-cycle of a ruggedized device. Depending upon the level of service you're currently providing, saving 10 or 15 minutes on each trip or route can make a major impact on your operation. Both types of in-vehicle technologies allow you to transmit and record data digitally to improve quickly and safely. Both will help you to identify and eliminate key areas of inefficiencies for both fixed route and paratransit agencies.

However, the clear difference in ROI appears to be long-term costs associated with having to replace consumer-brand devices. Like anything disposable, you need to weigh your current needs and budgetary requirements and your long-term plans.

Initially, you may be able to find success simply implementing tablets and smartphones with specifically developed transportation software. But if your business objective is to grow your operation, develop a long-term plan for the future and add on new devices in order to expand service and ridership, then the ruggedized option is the best.