iPad vs. Rugged Tablets: Know Their Roles

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The last few years have seen a revolution in the consumer-grade device market and their associated apps. Since Apple successfully introduced its first consumer-grade tablet, the iPad, in 2010 there has been a succession of competitors to throw their hat in the ring: Lenovo, Microsoft and Samsung to name a few.

Interestingly, the mass adoption of these devices has not been limited merely to the personal consumer space but has spilled over to the business world as well. It is projected there will be continued growth in line-of-business deployments to enterprise and government contexts. They have found to be particularly useful in storefront, front office, sales and other applications where the device isn't likely to be dropped, jostled, mishandled, used in inclement or dusty environments, or operated with gloves. For media consumption, these tablets are hard to beat, but they are not designed to be treated roughly.

When Rugged Is Required

However, there are some tablet deployments being announced in the waste industry now that are outside the parameters of the capability of these type of devices. Consumer and enterprise are two distinct customer sets with very different needs. Here are a few things to consider when you are looking at purchasing tablets for your hauling operation:

1. **Environmental considerations**. Consumer grade tablets were created for environments that are stable, clean, non-disruptive and indoors. Anyone that has spent time in the cab of a garbage truck understands that there is nothing about that could be considered "stable and clean":

a. The vibration alone from the truck (idling, rough roads, lifts) not only takes a toll on the human body, it has an impact on the life of the tablets.
b. Temperatures in the cab can reach 160+ degrees, wreaking havoc on non-ruggedized screens and hardware.
c. The constant touching with dirty gloves and greasy hands from the drivers will certainly cause screen failures.
d. Consumer-grade tablets will not be able to withstand the treatment that is typical with a driver. They will be thrown around the cab and handled like any other piece of equipment in the truck. In addition, ports and peripherals connected to this tablet will not be able to bear the rugged environment and will fail.

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2. **Initial costs vs. total costs of ownership.** Many companies are more concerned with initial acquisition costs than they are with the total cost of ownership. Certainly, the price point of an iPad (or its competitors) is much more attractive than a ruggedized tablets, but what other costs should be considered?

a. Replacement costs-With the failure rate of consumer-grade tablets as they are, how many times are you willing to buy a new tablet? What isn't being done while that device is down?

b. Downtime costs-Studies have shown that the failure rate in the non-rugged consumer-grade tablets is 16.6% in the first few months of operation...that is in a normal work environment **not** in a challenging environment like the waste industry! Studies also show the loss of productivity with such devices represents as much as 41% of their total cost of ownership. In other words, one of the biggest factors that leads to downtime is trying to use a consumer-grade device in an environment that is too rough. What does it cost you when a tablet goes down in the field? Important data lost, communication down, time spent on fixing tablet or bringing online a new tablet are just a few costs of downtime. As hauling operations finally make the switch to utilizing in-cab computers and paperless routes what happens when tablets fail? Does the driver then run his route from memory? Do you send someone from the office with a replacement tablet or a paper route list? These are concerns that should be considered.

c. Other considerations- Consumer-grade tablets do not have the needs that enterprise-level devices do. For instance, does the device support RFID scanners and the ability to connect with printers or other peripherals? Are they compatible with standard operating systems? Does the device have an option for hardware-based encryption and provide a layer of protection while on the go? Can you remotely wipe the device if it is lost or stolen? Finally, do you have the IT resources to dedicate to support a network that speaks to a fleet of devices running a phone OS?

Why Do Ruggedized Tablets Cost More?

There's no doubt the low sticker price is attractive for companies considering consumer-grade tablets for their business. However, the sticker price can be deceiving. When you dig deeper and understand the total cost of ownership, the ruggedized tablets are actually a better deal. To meet the needs of a challenging environment means the tablet needs to be Military Grade, have a full Windows OS, Intel processing power, long-life batteries, and accessories that also can withstand the environmental challenges. Also, don't forget, Enterprise-level devices tend to have a product life cycle of three to five years with support beyond that as well as backward and forward compatibility for accessories, business-level support, and user-replaceable batteries. All the aforementioned items add to the initial purchase price of the tablet, but saves money over time.

> "…both desktop and web applications will continue to coexist for a long time so you need to make the decision based on your business needs."

Understanding ratings and "rugged cases"

Many software providers trying to make the price point of the tablets more palatable offer these consumer-grade tablets in a "rugged" case. However, will these cases allow the tablets to match the capabilities of the Military Grade, ruggedized tablets in a waste collection environment?

Apart from many of the concerns mentioned above regarding the different needs of the enterprise customer vs. consumer there are also still physical limitations to the consumer-grade tablets, even in a "rugged" case, which will cause failure in an extreme environment.

MIL and IP Specifications

"Military grade," when used to describe phone cases, refers to MIL-STD-810G (military standard 810G), the latest version of a set of tests developed by the US Department of Defense to determine the "environmental worthiness and overall durability of material system design" of certain types of objects. These tests were designed to measure the durability of objects in use by the military.

IP ratings, on the other hand, are those ratings that look like IP57 or IP68; these ratings do not originate with the military or government. They are "ingress protection" ratings measured according to standards

developed by the International Electrotechnical Commission. Ingress protection is basically how protected a device is against outside elements like dust or water getting inside. Dust is extremely harmful to electronics and its small particle size makes it difficult to see just how harmful. Dust can get inside the case easily on most devices with an IP rating less than IP65.

While the rugged cases for consumer-grade tablets have similar IP and MIL specifications as the ruggedized tablets, the tablets in them do not. For instance the iPad is only rated to work between -20º and 45º C (-4º to 113º F). On the dashboard on any given summer day, it could be as hot as 140 º in some areas of the country. The hardware and screens on these tablets are simply not built for that type of stressful environment. While these cases are good for occasional vibration and shock (drops and impact), the consistent vibration of a waste truck and the adverse handling from the driver will ultimately cause consumer-grade devices to fail; whether or not they have a rugged case surrounding them.

In-cab computing systems are becoming necessary to haulers around the globe to provide an adequate level of transparency, accountability, efficiency, profitability and customer service. Over the past 11 years of providing in-cab solutions, the single most common point of failure we have found is not the drivers acceptance or the software…it is the hardware itself. In a recent conversation with one of the largest software providers for the Waste Industry, the salesman said, “We provide the software that can fit on any tablet but want to stay away from the hardware…too many problems inherent with managing the tablets.” Truly the success of one depends on the other. Your selection of software (office and truck) is an investment that should last you the life of your company. Do not compromise the success of your investment by “cutting corners” on the hardware. Up front it may cost more, but the total cost of ownership will be much less if you choose ruggedized tablets that are made for the extreme environmental conditions of your hauling operation.

Both the consumer-grade and enterprise-level tablets have their place and provide value to their users. Each have their distinct strengths and challenges depending on how users intend on applying them. Do your homework and make sure you understand their specific application **and** total cost of ownership before you purchase them.

Alpine Technology Corporation has been serving the Waste and Recycling Industry for over 38 years with industry-leading software. Their flagship software, Visual RAMS-Pro, is currently used all over the globe with haulers, municipalities and large corporations helping their business operate more efficiently and profitably. Alpine’s in-cab solution, Visual On-Route, is transforming the industry with its seamless integration with VRP and your office, its extensive tracking and reporting capabilities, and its user-friendly driver interface.