

Experts discuss the intersection of the in-demand tablet form factor and the ruggedness necessary for field applications.

# Rugged Tablet PCs: Marrying Popularity With Strength

If you named one technology product most coveted today by both business and consumer users alike, it would probably be the Apple iPad. Nearly 15 million were sold last year after its introduction. Upwards of 500,000 additional units went out the door within days of the March 11, 2011, introduction of the iPad2. Besides the huge success of the iPad, smartphones, led by the Apple iPhone, are also helping spur tablet growth. Smartphones have made users more comfortable with touch screen input, which has lowered end user resistance to tablets.

While tablet PCs are white-hot, let's not forget they have been around for years, and field service workers have been carrying them around just as long. But Apple didn't build the iPad for heavy-duty fieldwork, which is why rugged tablet PCs have their place in certain situations.

Defining a "rugged tablet PC" is a challenge, as there is no universally accepted definition. According to Robert Fowler, ARMOR sales manager at DRS Technologies, "Rugged tablets are designed to keep out water and dust, blunt the effects of high and low temperatures, and protect against the harmful effects of shock and vibration — conditions that field service, utilities, transportation, and energy workers experience every day."

We are now living in the "Year of the Tablet," at least if your universe revolves around technology. Industry observers are predicting strong sales for tablets. "We believe tablets will be gaining market share as users and companies realize the significant productivity benefits that come from these devices," says Mike Stinson, VP of marketing for Motion Computing. "The growth rates will vary by vertical market, but analysts are forecasting above

50% growth rates for tablets in a number of industries."

Mark Holleran, president of Xplore Technologies, is another believer in strong tablet usage. "We see a shift in platform selection from traditional rugged notebooks to tablets. Tablets are more user-friendly and can be built stronger, more rugged than a notebook." Research firm Gartner predicts that tablet sales in 2011 will be about 55 million, nearly triple 2010's sales.

## Why A Tablet?

Why choose a tablet PC versus a laptop or handheld device? Many users believe tablets are more convenient and easier to navigate. "The tablet PC form factor enables point-of-service computing, where critical information can be input or output of the computer while the user stands face-to-face with a patient or walks a site with a customer during an inspection," says Stinson. "Laptops, while certainly portable, require the user to find a place to sit down or a surface on which to place the laptop. This interrupts workflows and isn't accommodating to highly mobile environments." With the growing popularity of tablets, touch interface has also become an attractive characteristic. "Tablets are also more compact than laptops, easier to mount, and easier to interact with via touch or pen rather than keyboard," notes Holleran.

There are certain information formats that just work better with the portability of tablets. "For example, tablets provide convenient ways to display a diagram or schematic on-site, rather than 'in the truck,'" comments Doug Brown, director of business development at LXE. Other uses include providing the ability to order parts from a diagram (rather than from a list), documenting damage



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by insurance claim adjusters, and tracking and recording information used by various types of inspectors.

The average screen size of tablets is another draw. “Three screens of data on a tablet or field computer might translate into 12 screens a user would need to view on a PDA,” says Brown. Unlike some smaller devices, most tablets allow a user to run a full-fledged version of their application. “A tablet’s large display and standard aspect ratio allow applications to be made portable without rewriting them,” observes Fowler. This means the full range of features and functionality of the application are made mobile, and less IT time and effort is required for deployment since there’s no rewriting of the application.

Common applications for rugged tablet PCs include on forklifts, for inventory management, and dispatch/ticketing systems. The military commonly uses them for vehicle monitoring and maintenance, mapping, and troop deployment. Utilities find rugged tablets useful for pole and line inspection, mobile data collection, asset tracking, dispatch, and customer maintenance. “A rugged tablet is practical in conditions where data protection is critical, because it can withstand extreme temperatures, shock, vibration, dust, and other conditions that can compromise data integrity,” says Fowler.

### What To Consider When Buying A Rugged Tablet

As with any piece of technology, choosing a rugged tablet involves factoring in numerous variables. “Let the workflow and business processes help determine the technology, not the other way around,” recommends Brown. “Map ‘a day in the life’ of your field worker and then conduct an objective, detailed analysis to see where inefficiencies exist that can be minimized with different technology.” From this, you will see recurring themes. For example, if your workers often access large graphic files at several stages of the process, a tablet may be beneficial.

Also consider the environment in which the tablet will be used — including user workflows, software already installed, and your IT infrastructure — to ensure a seamless fit into your business environment. “The right tablet deployment can show significant operational benefits, including improved revenue per transaction, increased productivity, and efficiency — but business integration is critical for these benefits to be recognized,” says Stinson.

While the needs of your field force are very important, you can’t focus entirely on the field force’s needs — IT has to be on board. “Your IT department needs to know how to work with the tablet, what it takes to reload when something goes wrong, and how to protect against viruses,” says Fowler. “And, because mobile employees are not often in the office, remote management capability is critical.” One more important piece of advice — don’t forget to thoroughly test your chosen solution. “Detail your product requirements, your must-haves, and nice-to-haves, and turn these into specifications,” recommends

Holleran. “Then deploy a pilot that tests the device with a small group before instituting a full rollout.”

### What About The iPad?

One cannot ignore the proverbial 800-pound gorilla in the room — the Apple iPad. Does it have a role in the field? Yes, but in limited situations. “Third-party vendors are making rugged coverings for the iPad, which help protect the case and display from small drops, but do not protect the inside components from the damaging effects of drops and vibration over time,” warns Fowler.

Many believe the iPad to be more suitable for white-collar-type use. “The iPad is suitable for Internet and email access, but in general lacks the computing power to run major back office applications,” notes Holleran. Brown draws attention to a TV commercial for the Kindle, Amazon.com’s e-reader, which shows a Kindle user reading by a pool while an iPad user on an adjacent chair struggles to read his tablet because of the sunlight. “That commercial highlights one of the iPad’s key limitations — a lack of outdoor viewability,” notes Brown. “The other is lack of ruggedness and the iPad’s inability to withstand abuse.” So, while the iPad is popular, it isn’t purpose-built for field service-type applications. “Tablets like the iPad are ideal for users that want to access information [the Internet, videos, photos, etc.] at home, in the office, or while traveling,” Stinson observes.

If you decide to deploy iPads for a field service application, be sure to have a plan for the mobile worker whose iPad does happen to fail in the field. A drive back to the office is a significant time waster. Pencil and paper may be the fallback position, but it requires a time investment in data entry at the end of the day. One or two such incidents could financially justify a rugged tablet purchase.

### The Future Of Tablet PCs

Demand for tablets is strong. This demand will drive rapid development of both consumer-focused and rugged device form factors. Observers predict tablets will lose weight, improve their readability in sunlight, support multitouch and gesturing navigation, have longer battery life, and sport enlarged memory capacity.

Rugged tablets will have new features such as built-in GPS, cameras, and integrated peripherals like bar code scanners and magnetic stripe readers. Look for multiple radios that allow the user to connect anywhere at the most efficient cost and even a biometric mouse.

Even if you think the iPad’s capabilities are too limited and the device too fragile, ignore its popularity at your peril. Apple has shown there is a strong demand for the device, and users are finding its size appealing and practical. The rugged tablet PC is a way to take the tablet’s strengths and translate them into a device capable of functioning well in various industrial environments. ●