

Mobile Device Trends In 2017

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By Brian Albright, Field Technologies

The honeymoon with consumer-grade devices may be over as companies turn to lighter, more user-friendly, and affordable rugged mobile computers.



Matt Miller
president,
MobileDemand

Screen size, ergonomics, and ruggedization will continue to be driving factors in the mobile device market, according to leading vendors that Field Technologies spoke to about trends to watch for in 2017. There will continue to be some uncertainty when it comes to OS platforms, while users look to device manufacturers to provide more flexibility, larger touch screens, and links to the Internet of Things (IoT).

According to VDC Research, the market for tablet devices is still expanding, albeit at a much slower pace and largely at the expense of the notebook/laptop segment. Field Technologies' own field mobility survey (published in our December issue) found an increasing interest in handheld devices, with the majority of respondents using handheld devices.



Michael Petersen
senior director
of global
product marketing,
Zebra Technologies

Among the important trends that will emerge in 2017, Matt Miller, president of MobileDemand, says that more field service companies will look to mobile devices as a gateway into IoT. "The goal of IoT in field service is to enable an intelligent and preventative — not reactive — approach to productivity and customer service," Miller says. "That includes being able to collect data in real time from a variety of devices."

End users are looking for lighter devices with bigger screens and, in some cases, are expanding their use of voice technologies. A number of companies that deployed consumer-style devices are also shifting back to rugged computers. "As a point in fact, we are seeing that today," says Michael Petersen, senior director of global product marketing at Zebra Technologies. "Businesses are returning to the proven enterprise characteristics required by their use cases. However, along with that recognition is a requirement for long device life cycle support and pragmatic security updates."



Mark Holleran
president and COO,
Xplore

Tablet devices that can be transformed into notebook/desktop-style devices are emerging, and field service organizations are realizing the full utility of tablets as pen- and touch-based application software has advanced and evolved. "Additionally, as the millennial workforce continues to increase, the number of workers who grew up with touch-based applications expands. In turn, there is an increasing expectation that applications will support this user-machine interface," says Mark Holleran, president and COO at Xplore.

Tablet Deployments Grow At The Expense Of Laptops

While growth in the tablet space has flattened out, tablets have expanded their presence, commonly supplanting notebooks/ laptops. Rugged tablets are gaining traction in field service markets where screen size is critical; while in mixed use cases, the smartphone all-touch form factor may be preferred.



Bruce Stubbs
director of
supply chain marketing,
Honeywell

"Don't underestimate the influence of millennials who will drive more than ever the importance of a handheld form factor closer to a consumer smartphone," Petersen says. "Business leaders will adopt and maintain solutions that support enterprise-grade security and manageability, and in scan-intensive environments, the pistolgrip form factor will remain, but with a shift to more vertically orientated displays as they further speed up the operation."

There is increasing demand for handheld devices with larger screens (or touch screens) that are rugged, while mimicking smartphone interfaces. "People are looking for more ergonomic form factors because they have to carry these things around all day," says Bruce Stubbs, director of supply chain marketing at Honeywell. "They need a screen size large enough to quickly and easily access what they need, but without having to move up to a larger form factor."

Miller sees tablets further cementing their lead in the field service space. "To effectively have a firm grasp on companywide productivity, full-screen tablets should be the form factor of choice," Miller says. "It allows for fullscreen access to a wider variety of mission-critical documents, software, and applications. The device usage can be extended into customer-facing scenarios, increasing the service satisfaction of new and returning clients."

Field service companies will also continue to experiment with wearable devices as they look for ways to keep technicians' hands free while capturing or accessing critical data. "In the field service space, we would expect this to come in the form of data capture devices for bar codes, RFID tags, and, of course, video capture," Holleran says. "We see a variety of implementations as well, such as pinning devices to clothing, attaching to a ring on a user's

finger, and embedding in special purpose gloves.”

Petersen expects next-generation wearable glasses/ augmented reality technology to play an important role once there are sufficient advancements in weight, battery life, connectivity, and application development. “Highly experienced technicians will be able to remotely direct and educate the younger field staff in real time,” Petersen says. “It will deliver a better quality of life to the workforce, improved in-field problem resolution, and better overall customer services. It becomes a win-win-win. The technical challenge is that delivering the power, energy capacity, and touch-free capabilities in a lightweight, wearable design is tough. We will get there eventually, but it will take time for the technology stacks to catch up. In the short term, the current definition of ‘wearables’ in field service will continue to be for niche applications.”

Second Thoughts On Consumer Devices

A number of field service and delivery companies have deployed consumer-style phones or tablets for sales and service applications, sometimes using rugged cases. Some of these early adopters, however, may spend 2017 reevaluating rugged devices for their solutions because of the high cost of consumer-style device failure and downtime.

“With increasing competition, elevated customer needs and expectations, and pressure for productivity, field technicians cannot afford to have device downtime due to the tablet not performing under harsh environmental conditions,” Miller says. “Value-priced rugged, in my opinion, will stand out among the crowd. The devices are rugged for outdoor field services but with a sub-\$1,000 price tag. That form factor, combined with vehicle mounting, is an ideal solution for field service organizations seeking productivity enhancements on a budget.”

These devices will be even more appealing as the number of rugged Android devices expands. “Rugged products have most of the same benefits as consumer products but bring in the enterprise requirements necessary for successful business operations,” Petersen says. “This includes longevity, durability, long-term availability, serviceability, and manageability. Thus, organizations get the best of both worlds. The market is now fully recognizing that specific aspects of an enterprise-class mobile computer are required more often for mission-critical applications.”

Rugged devices have also increasingly adopted touch screens and graphical user interfaces that mimic consumer devices. “We’re going to see the rugged space really driven by consumer technologies, and that will continue to increase,” Stubbs says. “There are always applications that require more rugged devices. If you think of oil and gas or other field service repair applications, you need a device that can be used in the weather and in harsh conditions.”

VDC Research expects the rugged tablet market to expand from \$589.7 million in 2016 to \$623.6 million by 2020 (while the consumer tablet market continues to shrink). “The debate then really becomes about which products are purpose-built for which use cases,” Holleran says. “To this end, I think business buyers will start to expand their ROI models beyond hardware acquisition costs and focus on the ability of the user to get the work done, uninterrupted by a mismatch of device vs. use case.”

Enhanced Displays, Image Capture Both In Demand

In terms of specific features, the experts we spoke to indicated there would be more interest in touch screens, as well as hands-free functionality. Scanning and image capture are also in demand, and Stubbs sees that increasing as companies deal with a more multilingual workforce. “It’s a very multilingual world we live in, and if you take away the need to do so much reading and allow people to scan or capture images with optical character recognition, it makes that much easier,” Stubbs says. “You can improve the accuracy and productivity of employees who might not speak the primary language of a facility.”

Holleran believes organic light-emitting diode display technology will provide real advancements in mobile computing. “The notion of having very thin, flexible displays has significant implications on weight and display durability — two attributes that are of particular importance to mobile users,” he says.

Oil and gas, mining, and chemical processing companies are seeking devices that are C1D1/ATEX Zone 1 rated, while the direct-store-delivery/retail space will adopt more devices with DEX compatibility thanks to Bluetooth-enabled DEX connectors.

Windows Looks To Make A Comeback

Microsoft Windows 10 is expected to gain ground in the rugged mobile space, despite some hurdles to transitioning existing legacy applications, as well as competition from Android and even devices based on Apple’s iOS. “Windows 10 takes full advantage of state-of-the-art hardware technologies to help protect user identities, information, and devices against hacking and malware threats,” Miller says. “Depending on the needs of the enterprise, Android and iOS have historically lacked robust productivity software and applications.”

Still, Android continues to expand its share of the enterprise market, and Google’s Android for Work release has demonstrated the platform’s investment in this space. “Microsoft’s latest release of Windows 10 IoT Mobile Enterprise is their first viable OS for the handheld that many legacy-embedded customers have been waiting for,” Petersen says. “It will be difficult for Microsoft to quickly gain the consumer share and scale necessary to become a legitimate longterm mobile OS, but with their historical expertise in enterprise, they are fast becoming a realistic wild-card option.”

“It will be based on customer preference,” Stubbs says. “Our customers are really looking for flexibility. As a supplier, we need to make sure we provide that flexibility. Some customers may use one operating system for their field service operation and another for their distribution center workers, just because of the advantages they can gain within those operating systems.”

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Holleran notes that much of Android's momentum is not so much at Microsoft's expense, but as the result of a rapidly expanding market. "Many of our users continue to invest in their Microsoft infrastructure, and we would expect this to continue, particularly as new Microsoft OSs continue to enhance the touch and pen user experience," Holleran says. "We find ourselves competing less and less against iOS. This may be more a function of reaching some equilibrium around what use cases are appropriate for iOS versus rugged tablet operating systems."

Finally, Stubbs expects to see more integration between mobile computers and IoT applications, both through the ability of handhelds to reach sensors on connected devices and in the mobile devices themselves. "Having sensors in the handheld devices allows you to automatically collect and send information about the health of the mobile device and other equipment around it," Stubbs says. "You can automatically hand off the information to a cloud-based environment, where multiple assets can have access to it. You can subscribe to the bits of information that are important to you. It will be a much more automated and connected world going forward."