Customer Service and Client Engagement

How Strong Vendor Relationships Drive Customer Satisfaction

VDC | Research

Insights for the Connected World

Executive Summary

First-line mobile workers represent the crucial backbone of service delivery, critical response to emergencies and customer engagement. From EMTs and public safety officers to delivery drivers and service technicians, these essential workers rely on having the right information at the right time and the right place to perform their jobs. Being highly mobile workers, the use of secure and reliable mobile computing and communications technologies to support their jobs and outcomes is imperative.

Following up on research initially conducted in 2017, VDC Research conducted a customer satisfaction study among organizations equipping their first-line workforce with mobile solutions to support their daily workflows. The objective of the research was to measure how vendors that offer mobile devices to the rugged market were performing addressing customer requirements and providing services and support. The research updated research originally conducted by VDC Research in 2017 and included a survey fielded among over 800 mobile technology decision makers across various industries and regional markets. Customers from all leading mobile hardware OEMs are represented by the sample. In addition, VDC Research conducted in-depth interviews among similar technology decision makers and partner organizations. The research was conducted blind and did not disclose Panasonic as sponsor.

Mobility is transformational in how organizations operate and represents a crucial channel for interfacing and interacting with customers and employees. While investments in enterprise mobility solutions can result in significant improvements to workforce productivity, poorly designed and supported solutions can have an adverse impact. With workflows closely tied to mobile solutions, the impact of device failure or a poorly performing application can substantially disrupt operations. Also, when failures do happen as they invariably do, the ability for vendors and their partners to quickly diagnose and address issues is equally important. Thus, the focus of the research is not only to highlight the capabilities and performance of the mobile device, but also how it is deployed and the life-cycle services tied to the solution.

One of the key measures used in this research to evaluate a mobile device vendor's performance is customer loyalty and more specifically their Net Promoter Score (NPS). In this study, one vendor clearly stood out. Panasonic received higher-than-average mobile hardware performance ratings, and these were cited as Panasonic's strengths and competitive differentiators: technical support, knowledge of customers' requirements, ability to match needs with the proper solution and post-sales relationship management. Specifically, in 2017 the average NPS among rugged mobile computing vendors excluding Panasonic was 25. In 2019 the average NPS among the same group of vendors dropped to 21. Panasonic's NPS was 33 in 2017 and 37 in 2019—a 12.1% increase—and the highest ranked vendor.

Exhibit 1: Mobile Computer Vendor NPS
Average NPS: Rugged mobile computer vendors and nonrugged mobile computer vendors supporting line-of-business applications
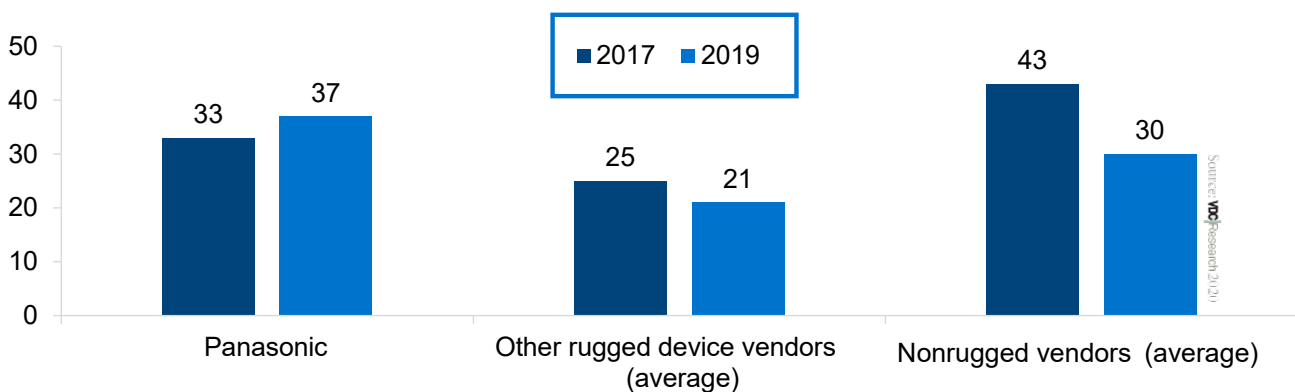
Net Promoter Score (NPS) measures the loyalty that exists between a provider and a customer. The NPS is calculated based on responses to a single question: How likely is it that you would recommend our company/product/service to a friend or colleague? The NPS is calculated by subtracting the percentage of customers who are Detractors from the percentage of customers who are Promoters.

Another key outcome from the research addresses the impact of non-rugged mobile devices used to support similar applications typically supported by rugged devices. This is a common tactic by organizations looking to limit their upfront investment by acquiring less expensive non-rugged mobile devices. However, according to research VDC conducts around total cost of ownership and the cost of workflow disruption when mobile devices fail in the field, frequently the adoption of non-rugged devices leads to higher overall costs over the life cycle of the device and heightened frustration and dissatisfaction among mobile workers and the technical staff providing support services. When looking at the NPS scores of mobile device vendors supporting business-critical frontline mobility applications, the largest drop in overall NPS was among non-rugged device vendors whose average score declined from 43 in 2017 to 30 in 2019. This is potentially reflective of the challenges organizations have faced with these devices that are not intended to be mounted into vehicles, exposed to extreme temperatures, used in high ambient light conditions, used with gloved hands or exposed to water, for example. Please note that this research specifically addressed the use of mobile computers for frontline mobility applications and did not include more general office-based use cases.

What Is Front-Line Mobility?

The ubiquity of mobile devices extends well into the enterprise. Be it enterprise issued/corporate liable or personally owned/BYO devices, mobile devices are very much a part of the average worker's daily routine. However, requirements differ significantly for mobile workers who require access to critical customer or asset information in real time at the point of interaction. For these workers, reliability of their mobile solutions comes at a premium. These workers are frequently dispatched to remote locations to provide acute care or services, and for many organizations represent their primary connection or interface with customers. Mobile solutions support a variety of applications including public safety and first response, field service dispatching, customer relationship management, asset management, mobile point of service (POS), medication administration and warehouse management to name a few. The benefits associated with these investments are equally diverse including increasing workforce performance efficiencies (first-time fix rate, for example), increasing sales (for example, enabling technicians to cross- or upsell other services), improving decision making speed and scale, and ultimately improving competitive advantage.
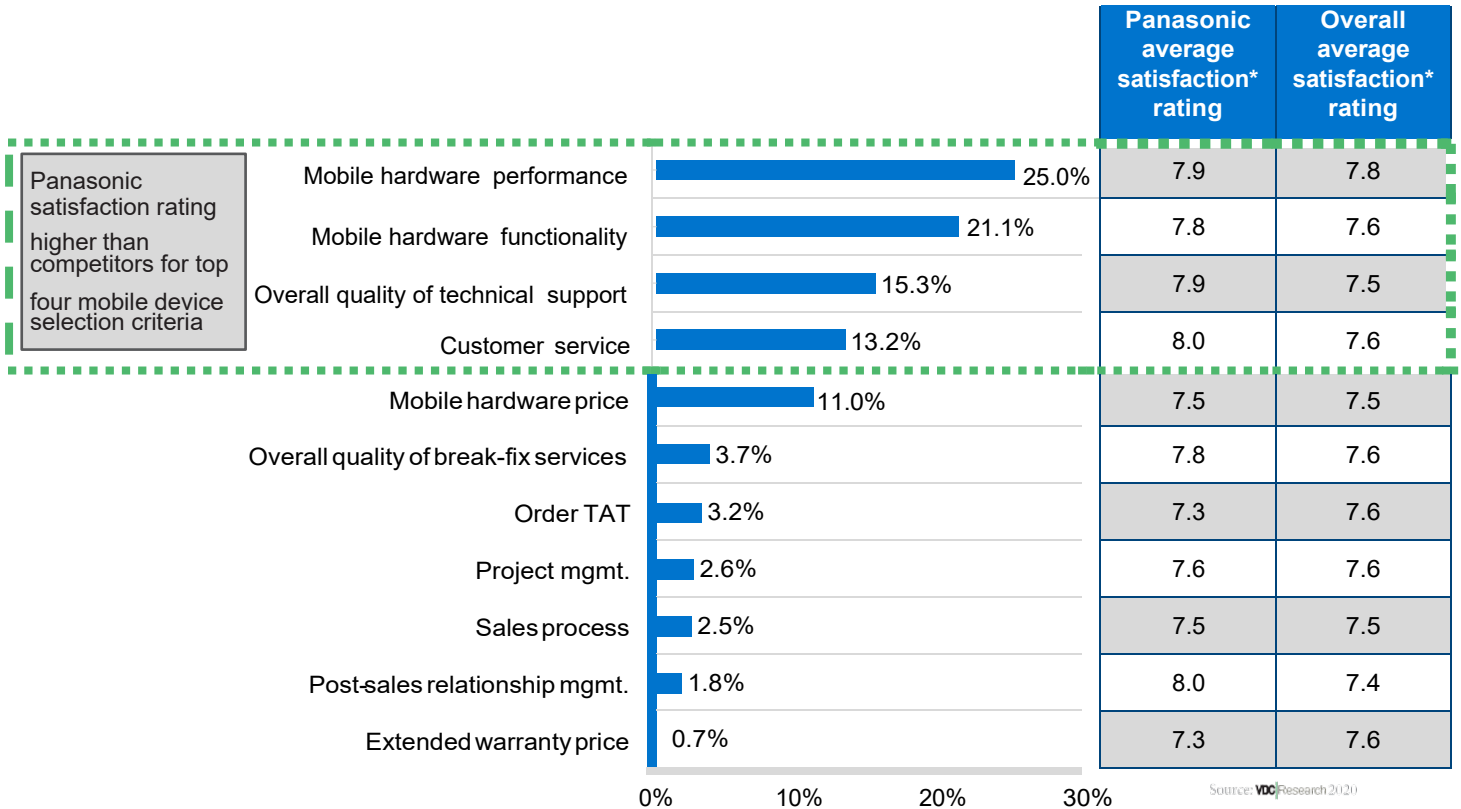
Exhibit 2: Leading First-Line Mobility Investment Drivers

Driver	Percentage
Improve worker productivity	36.4%
Increase sales/revenues	28.6%
Improve real-time decision making	27.0%
Reduce paperwork	26.2%
Improve competitive advantage	26.2%
Improve customer loyalty and repeat business	24.4%
Improve employee collaboration	24.4%
Improve employee satisfaction	23.6%
Support compliance mandates/reduce risk of litigation	22.3%
Improve worker safety	21.0%
Reduce asset failures	12.7%

Source: VDC Research 2020

Customer Service and Technical Support Feature Prominently When Selecting Mobile Devices

Hardware performance and functionality are understandably the two single most important selection criteria when evaluating mobile devices for first-line mobile workers according to the research. However, and at least somewhat surprisingly, overall quality of technical support and customer service were the next highest ranked criteria, above hardware price. This reflects the solution-based nature of these applications and the value of the partnership between the technology vendors, their partners and the end user/customer.

Exhibit 3: Single Greatest Mobile Device Selection Requirements

		Panasonic average satisfaction* rating	Overall average satisfaction* rating
Mobile hardware performance	25.0%	7.9	7.8
Mobile hardware functionality	21.1%	7.8	7.6
Overall quality of technical support	15.3%	7.9	7.5
Customer service	13.2%	8.0	7.6
Mobile hardware price	11.0%	7.5	7.5
Overall quality of break-fix services	3.7%	7.8	7.6
Order TAT	3.2%	7.3	7.6
Project mgmt.	2.6%	7.6	7.6
Sales process	2.5%	7.5	7.5
Post-sales relationship mgmt.	1.8%	8.0	7.4
Extended warranty price	0.7%	7.3	7.6

Panasonic satisfaction rating higher than competitors for top four mobile device selection criteria

0%   10%   20%   30%

Source: VDC Research 2020

* Satisfaction rating score on a 10-point scale where 10 = extremely satisfied and 1 = extremely dissatisfied

When evaluating customer satisfaction against those top four criteria, Panasonic was rated slightly higher by its customers in comparison to peers for overall mobile hardware performance and functionality. For the customer service and technical support criteria, Panasonic was rated measurably higher than the industry benchmark. That combination of hardware performance and innovation and customer service and engineering support has enabled Panasonic to develop leadership positions in key customer segments such as public safety and law enforcement, utilities field service and military/MOD.

> ❝ *We ran into problems with screen visibility in bright ambient lighting. Panasonic immediately sent an engineer out to the testing facility in order to gather reading and bring them back to the engineers so they could help address the problem. This level of customer service commitment is what sets Panasonic apart.* ❞
>
> —Tier 1 Defense Contractor

When considering the key success criteria when supporting the unique first-line mobility requirements, decision makers cited the following:

> **Remote control and solution visibility.** End users looking to take a more proactive approach to managing their mobile estates increasingly adopt the use of advanced telemetry capabilities to monitor, for example, battery performance. Moreover, forward-looking organizations are beginning to harness device-side analytics to support machine learning/artificial intelligence algorithms. In addition to battery health and performance, data relating to device utilization, location and inventory are key where improved visibility can enhance the business value of mobile assets. In addition, identifying devices that are not being utilized offers the opportunity to redeploy devices where they are needed rather than purchasing additional devices needlessly.

> **Accessory ecosystem.** Accessories—from docking and mounting solutions to charging bays, carry options and data capture technologies—are critical to the design of complete solutions. Ensuring complete alignment between mobile device portfolios and roadmaps with branded and third-party accessories—including backward compatibility—are essential selection criteria.

> **Configurability.** Modularity and the ability to make field-based adjustments to mobile devices provide customers with the necessary flexibility and life-cycle support. Moreover, addressing unique requirements—such as the need to fully remove wireless modems for military customers or the continued need for serial ports for utilities and telecommunications field service applications—is what sets apart leading rugged mobile computer OEMs. Finally, many rugged mobile applications require customization to address specific I/O requirements—for example, integrating with unmanned aircraft vehicle (UAV) navigation and control systems.

> **Life-cycle support.** The pace of consumer technology innovation and change is often at odds with the enterprise market. While the fundamental technologies supporting both enterprise and consumer-focused mobile devices are increasingly similar, enterprise decision makers favor longer life cycles and support consistency across product generations. Especially when leveraging consumer-first platforms such as Android™, rugged device OEMs need to offer consistency in support and life cycles that mimic enterprise purchasing and upgrade habits.

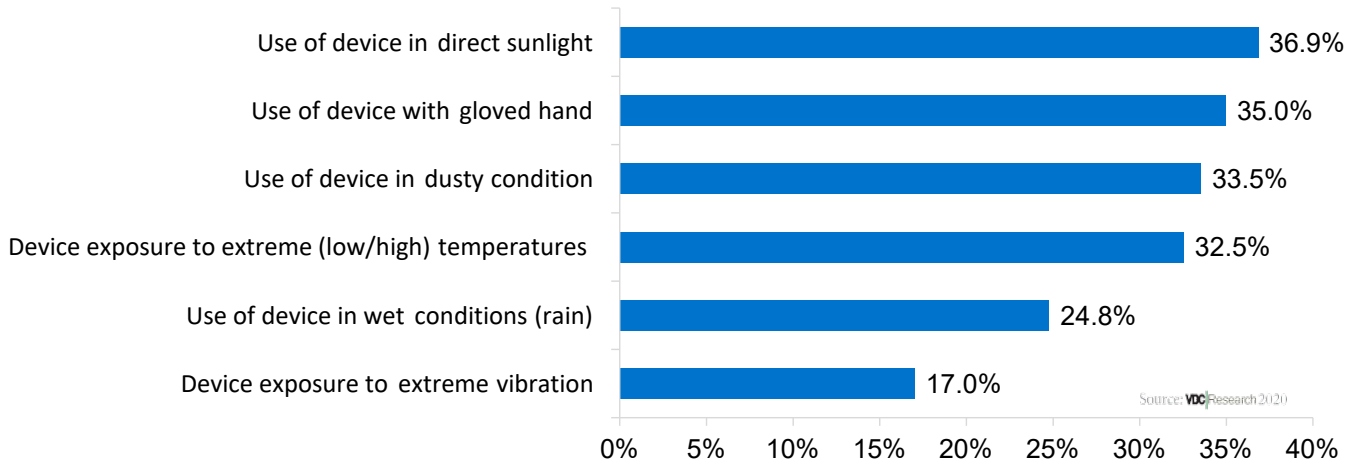*Exhibit 4: Mobile Vendor Device Performance—Rugged Criteria*
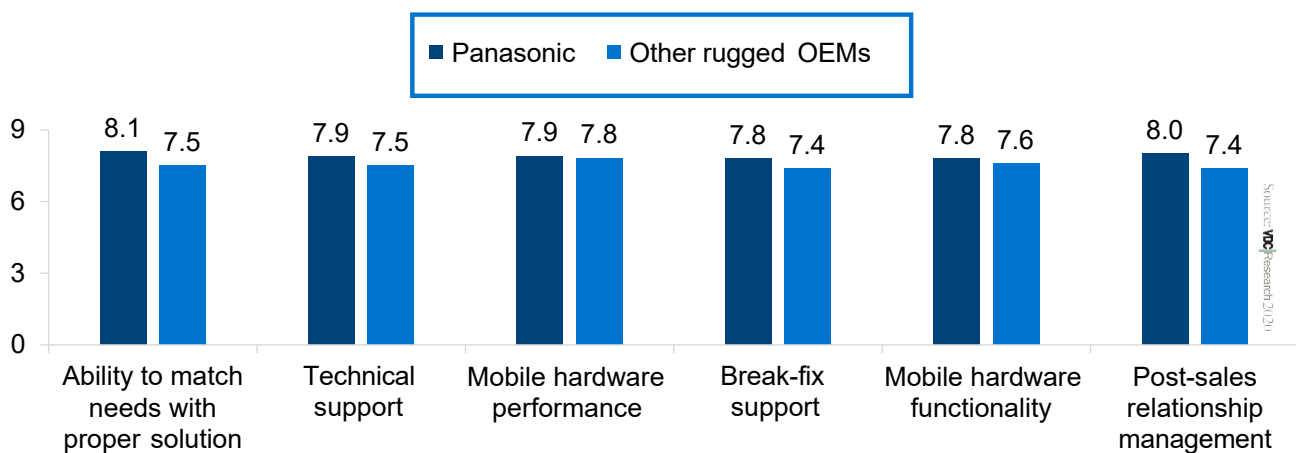
Rated on a 1 to 10 scale where 1 = extremely dissatisfied and 10 = extremely satisfied

According to the research conducted by VDC, mobile vendors were evaluated across a variety of performance metrics. Panasonic, the leading rugged notebook and tablet vendor in global market share,[1] outscored rugged competitors across various categories. Panasonic not only scored well on technical criteria—overall device performance, ruggedness, display daylight viewability—but also received strong ratings across leading service and support criteria.

Know Your Field Worker's Environment

The most successful enterprise mobile solutions take into account all of the key factors influencing performance—from mobile device and application capabilities to network performance and ultimately user experience. Understanding and addressing the key challenges that affect the success of mobile solutions in the field—from application performance to network latency and data throughput, among others—is similarly important. In addition, a critical element for any successful mobility solution is the analysis of business elements.

Exhibit 5: Environments or Scenarios Most Common to Fieldworkers

Environment/Scenario	Percentage
Use of device in direct sunlight	36.9%
Use of device with gloved hand	35.0%
Use of device in dusty condition	33.5%
Device exposure to extreme (low/high) temperatures	32.5%
Use of device in wet conditions (rain)	24.8%
Device exposure to extreme vibration	17.0%

Source: VDC Research 2020

Some of the critical considerations and key success requirements for business-critical mobility are:

> **Alignment of environmental considerations.** First-line mobile workers frequently expose their mobile devices to a variety of harsh conditions—from vehicle vibration to extreme temperature and frequent drops. Ensuring that the mobile device can withstand these conditions is critical to maintaining operations and avoiding potential points of disruption.

> **Visibility and analytics.** While organizations are making significant investments in enterprise mobility solutions, too few are supporting these investments with the requisite visibility and analytics. Being able to monitor performance and track mobile assets through their life cycle can significantly enhance the user experience while lowering the total support costs of these investments.

> **Application development.** Many organizations today are facing an uphill battle in their attempts to keep up with demand for mobile applications in a timely and budget-friendly manner. According to the research, mobile applications can take an average of five months to develop and cost an average of $55K per application. Leveraging tools that can rapidly develop and deploy minimum viable products offers organizations an opportunity to streamline this process and stay ahead of application demands.

> **Application management.** With the number of mobile applications only increasing, ensuring disciplined application version control and providing access to the "right" applications by the "right" employees is an important capability.

> **Help-desk integration.** Traditional PC help desk solutions are not designed to support business-critical mobile assets. Seamless integration of EMM/MDM support tools with existing help desk platforms will provide service and support technicians with the necessary tools and information to quickly diagnose and address any points of failure.
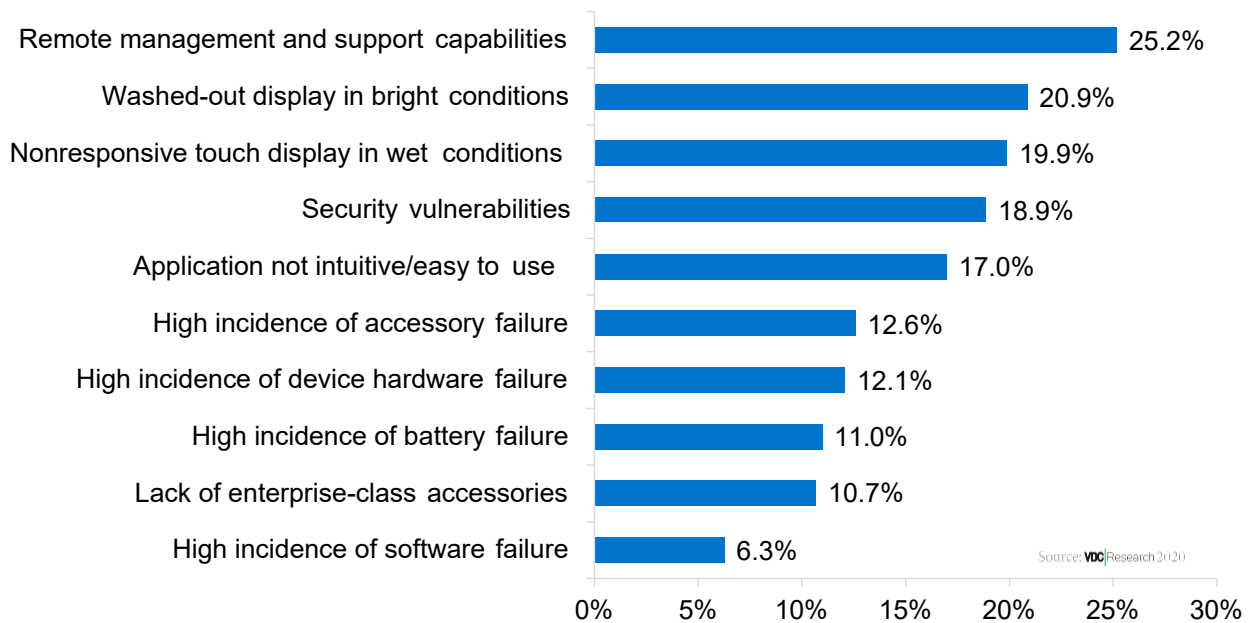
> **Battery performance.** According to VDC's research, over 35% of respondents claim that batteries do not last the entire shift. Batteries are an all too common point of failure while also representing a significant expense for organizations to manage. Providing visibility into battery health and inventory vastly reduces the challenges of this frequent point of failure. With batteries failing to support a full shift occasionally or frequently 75%+ of the time, organizations overcompensate for this issue with substantial spare pools of batteries. However, with only 54.4% of organizations today with real-time visibility into the health and status of their mobile device batteries, the impact on operations of battery failure and spare pool mismanagement can be substantial.

> **Security from the ground up.** While there is no perfect security and all organizations have vulnerabilities in one form or another, security has become an economic imperative for every organization. Security attacks have taken many forms and can enter an organization through a variety of techniques, making detection particularly difficult. The attack surface on mobile platforms is broad (Bluetooth, NFC, Wi-Fi, GPS, etc.), and the pocketable nature of mobile devices makes possessing the ability to remotely lock down and wipe devices critical, particularly for end users with access to corporate data and applications. Moreover, security solutions need to extend beyond traditional mobile endpoints and encompass other networked endpoints such as printers, kiosks, remote sensors, etc.

Service Capabilities

Mobile technologies are being leveraged for a variety of integrated business and mission-critical workflows. A key point of differentiation for top vendors from rugged and non-rugged peers is the ability to understand customer requirements and identify opportunities to align their technologies to support these applications. Panasonic excels in pre-deployment consulting and solution design. A particularly critical and competitive service capability for Panasonic is their post-deployment professional services, including addressing any unique requirements or adjustments required once their solutions have been fielded.

Exhibit 6: Most Significant Mobile Device Issues

Issue	Percentage
Remote management and support capabilities	25.2%
Washed-out display in bright conditions	20.9%
Nonresponsive touch display in wet conditions	19.9%
Security vulnerabilities	18.9%
Application not intuitive/easy to use	17.0%
High incidence of accessory failure	12.6%
High incidence of device hardware failure	12.1%
High incidence of battery failure	11.0%
Lack of enterprise-class accessories	10.7%
High incidence of software failure	6.3%

Source: VDC Research 2020

The support requirements associated with business-critical mobility solutions introduce challenges and complexities. These complexities range from device selection and provisioning to application and security management. Selecting the right support solution partner is critical as they can reduce the cost and complexity of managing and securing mobile deployments while delivering the level of service required for business-critical deployments. One of the clear challenges for many organizations—beyond technical or funding concerns—is the lack of internal resources to fully support their organization's mobility initiatives.

Exhibit 7: Mobile Device Vendor Service Capabilities

Rated on a 1 to 10 scale where 1 = extremely dissatisfied and 10 = extremely satisfied
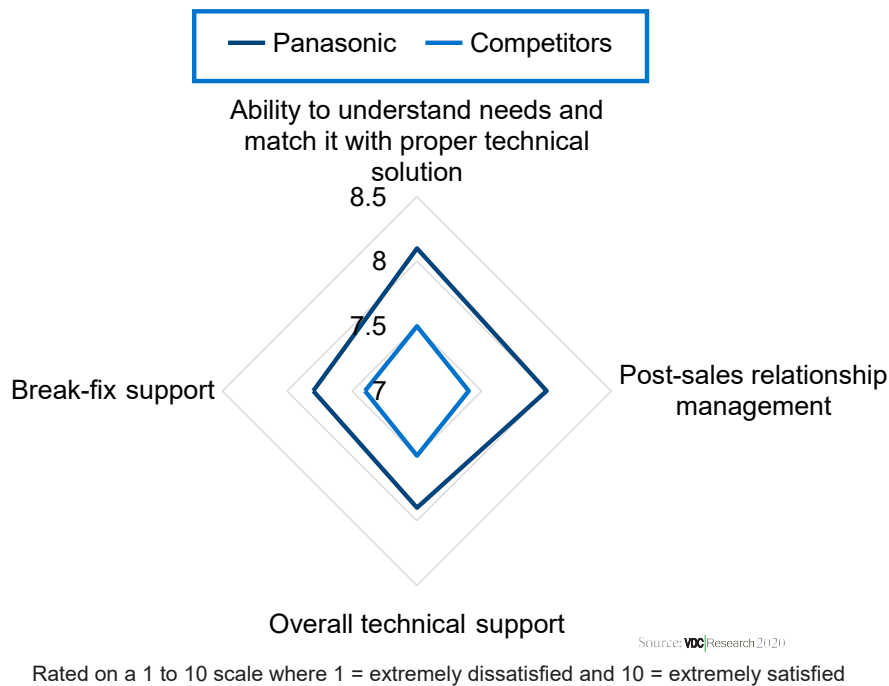
Conclusions and Recommendations

Coordination among individuals with network, security, device, application and budgetary responsibilities represents a critical first step any successful mobility initiative must undertake. In addition—and often overlooked—is the inclusion of actual end users in the testing and validation stages. Included among the most significant mobile investment requirements to ensure a successful solution are:

> **Wireless coverage issues.** Network coverage is not a given for many mobile workers who operate in remote locations. Designing solutions with this reality is a critical yet often overlooked requirement. Ensuring that applications perform in an offline state in addition to addressing performance and session persistence in areas with limited coverage all need to be taken into consideration to minimize downtime or disruption events.

> **Application performance.** Many applications are not well designed and are very chatty, often making the same service calls repeatedly. While chattiness of applications is not always avoidable, it can be optimized. Leveraging the necessary tools to at first diagnose application performance issues and then addressing them to minimize network congestion is crucial for business-critical mobile solutions. According to VDC's research, application and network performance issues are the top two contributors driving help desk calls and creating trouble tickets by mobile workforces.[2]

> **Security concerns.** A critical building block requirement for any field mobility solution. However, with the growing number of connected endpoints managed by enterprises, the points of vulnerability are only increasing. Almost one in two organizations admitted being the victim of a recent cyberattack or data breach. According to respondents, the greatest points of vulnerability are communication protocols, remote access and mobile devices. However, organizations struggle staying current with new threats and developing/maintaining appropriate cybersecurity personnel to effectively address these issues.

> **Time to market.** Industrial mobility applications are by definition complex and challenging to develop and support. However, organizations are struggling with keeping up with demand for industrial mobility application demand, creating an internal "app gap." On average organizations cite a minimum of five months to develop and deploy industrial mobile applications and are looking for ways to reuse code and invest in new tools and standard development platforms. In addition, while the majority of organizations rely on internal development teams to support their mobility efforts, many are opening their doors to third-party solution providers to help streamline these efforts.

About the Author

David Krebs has more than 10 years of experience covering the markets for enterprise and government mobility solutions, wireless data communication technologies, and automatic data-capture research and consulting. David focuses on identifying the key drivers and enablers in the adoption of mobile and wireless

David Krebs

Contact David:

davidk@vdcresearch.com

solutions among mobile workers in the extended enterprise. David's consulting and strategic advisory experience is far reaching and includes technology and market opportunity assessments, technology penetration and adoption enablers, partner profiling and development, new product development, and M&A due diligence support. David has extensive primary market research management and execution experience to support market sizing and forecasting, total cost of ownership (TCO), comparative product performance evaluation, competitive benchmarking and end-user requirements analysis. David is a graduate of Boston University (BSBA).

About VDC Research

Founded in 1971, VDC Research provides in-depth insights to technology vendors, end-users and investors across the globe. As a market research and consulting firm, VDC's coverage of AutoID, enterprise mobility, industrial automation, and IoT and embedded technologies is among the most advanced in the industry, helping our clients make critical decisions with confidence. Offering syndicated reports and custom consultation, our methodologies consistently provide accurate forecasts and unmatched thought leadership for deeply technical markets. Located in Natick, Massachusetts, VDC prides itself on its close, personal relationships with clients, delivering an attention to detail and a unique perspective that is second to none.

[1] VDC 2020 Mobile Device Dataset (Panasonic rugged notebook market share of 55.1% in 2019).

[2] VDC Enterprise Mobility TCO Analysis, 2018.