

THE FOLLOWING IS AN EXECUTIVE WHITE PAPER ON:

ENTERPRISE DIGITAL ASSISTANT LEVERAGE IN THE EMERGING MOBILE ENTERPRISE

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ENTERPRISE DIGITAL ASSISTANT LEVERAGE IN THE EMERGING MOBILE ENTERPRISE

In this paper, VDC Research will frame the current market environment and device segments. We will also define what the Enterprise Digital Assistant (EDA) class is, how it is different and what productivity enhancements an EDA might enable in traditional and emerging markets.

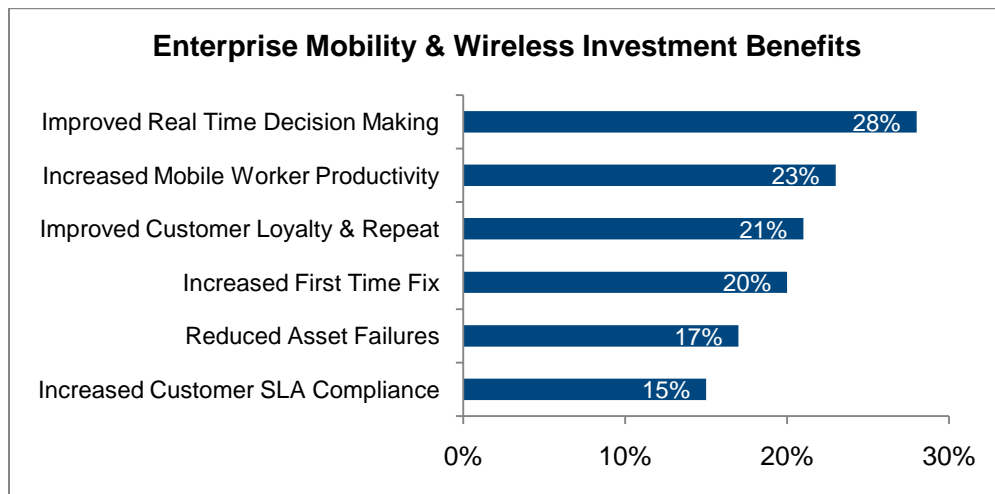
VDC Estimates the global mobile workforce at 200 million knowledge workers and over 500 million task workers.

THE CURRENT MARKET ENVIRONMENT

The fact that today's workforce is increasingly mobile or un-tethered is an understatement. Moreover, it would be hard to overstate the growing importance of the mobile workforce in most segments of the global economy.

VDC estimates the global mobile workforce at 200 million knowledge workers and over 500 million task workers. Furthermore, amid the paring of the overall workforce, the mobile workforce remains on a steady growth trajectory. This is not only a function of demand for inherently 'mobile' jobs, but more importantly a reflection of the changing habits of today's worker. One noticeable trend over the last couple of years was that as work forces were being trimmed, at the same time they were becoming more productive. While organizations are forced to do more with less (i.e. fewer workers), workforces became more fluid, more collaborative. 9 to 5 was no longer relevant. But mobility was.

Central to these developments has been the acceptance and proliferation of mobile and wireless solutions to advance real time decision making and transaction processing at the point of interaction. There is little reasonable doubt that mobile and wireless investments are strategic to enterprise growth, share and margin.



According to VDC's research, when implemented effectively, the returns enterprises realize from their mobile and wireless investments – in terms of improved productivity, customer service and real time decision making – are real and tangible.

Unfortunately many of the mobile devices deployed to support enterprise mobility applications – such as consumer/prosumer Smartphones – are not designed as enterprise class solutions. Deployers of these solutions are ‘challenged’ in terms of device failures, management and security limitations and ultimately lost productivity and revenue. A fair source of this challenge is the decision to deploy lowest-cost solutions that end-up being ill-suited for their operators, installation environments, applications and use cases.

In line with each of recession from the past 20 years, user demand increased for lower-cost solutions. Device price – as it relates to cost of entry – matters as much as total cost of ownership. In this environment, read consumer grade, lower-end, less functional. In some cases, these solutions fit the bill. In others, they proved to be less powerful, less reliable and less valuable.

And again, as with past economic slowdowns, many markets are looking for new ways to outfit their mobile workforce. They are looking for platforms that recombine the best attributes of the state-of-the-art rugged and consumer grade; small footprint application-optimized and full-featured scalable platforms; secure data transfer devices and high fidelity audio communicators.

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In much the same way that operators of enterprise mobility solutions must manage competing operational challenges, so too, must their enterprise mobility solutions alleviate the traditional ‘tensions’ between certain device and solution attributes:

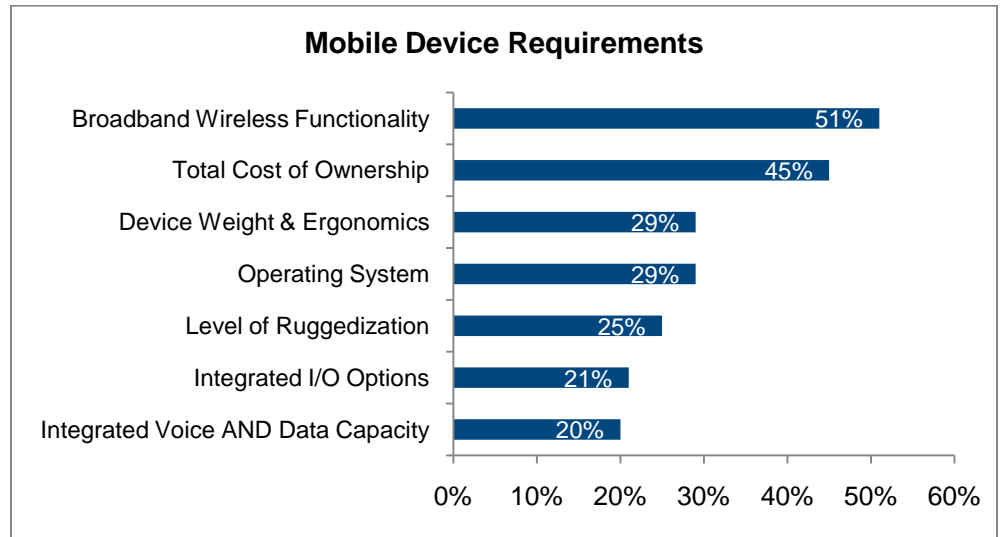
1. Smaller footprint, with larger display and multiple keypad options
2. Longer duty cycle battery life, 8 hours minimum, with reduced heat signature and no hot spots
3. Multi-spectrum, PAN, LAN and/or WAN, support with minimal radio overhead
4. Flexible, over the air (OTA), provisioning and management
5. Flexible input/output (I/O) configurations
6. An application ecosystem that includes real-time transaction processing and mobile enterprise apps

A new class of device – Enterprise Digital Assistants – is uniquely positioned to support these requirements.

ENTERPRISE DIGITAL ASSISTANTS DEFINED

Recent research conducted by VDC in mid 2009 validates this opportunity.

As deployers have experienced firsthand the fallout of poorly specified mobile solutions – i.e. high failure rates of devices in the field, limited device and security management capabilities and poor enterprise application integration – their approach to mobile solution specification has shifted. Today mobile enterprises with a wide range of business models are increasingly focused on total cost of ownership and lifecycle management as key decision criteria when evaluating next generation mobile solutions.



To support these requirements and the growing class of mobile workers – both task specific and otherwise – a new type of handheld device has emerged: the Enterprise Digital Assistant (EDA).

These devices are designed from the ground up to support enterprise mobile workers and address many of the real issues organizations are facing with ‘consumer’ devices. Specifically EDAs are designed to support mobile workers that require real time information on assets, customers, transactions, etc. in environments where device downtime or failure can be detrimental to their productivity.

Key features that separate EDAs from other types of handheld devices range from wireless support to durability and I/O capabilities.

	EDA Specifications
Design/Form Factor	<ul style="list-style-type: none"> ▪ Candybar form factor ▪ 5-6 ounces
Durability	At least IP 42 sealing
Drop Specification	At least 3ft drop to til
Display	3-4" transfective VGA
Wireless Functionality	<ul style="list-style-type: none"> ▪ Multi-mode radio (Bluetooth; WiFi; WWAN) ▪ Assisted GPS ▪ Field upgradeable or frequency agile solution ▪ Full duplex voice and push to talk (PTT)
I/O	<ul style="list-style-type: none"> ▪ Integrated data capture imager ▪ Integrated camera (minimum 2MP) ▪ Integrated RFID/NFC (optional)
Keypad	Full QWERTY keypad
Device Management	Remote management compatible

As with many other critical enterprise investments, the final decision often comes down to cost of ownership. While the appeal of many lower cost consumer devices is apparent – especially during times of extreme budget pressures – post deployment costs of poorly selected mobile solutions can quickly eradicate that lower deployment cost advantage.

Of equal importance to the actual device design and specifications to the value of the EDA is its ease of deployment and use in enterprise environments and its extended lifecycle over consumer platforms. Enterprises need to ensure that devices deployed to support mobile workers conform to traditional enterprise life-cycles as opposed to the more rapid and fickle consumer oriented replacement cycles.

Feature	Benefit
Speed & Ease of Deployment	Reliable system performance out-of-the-box
Ease of Control & Support of Mobile Systems	<ul style="list-style-type: none"> ▪ Optimize uptime of devices in the field ▪ Remotely manageable
Life Cycle Management	Device life cycle aligned to enterprise requirements
Enterprise-Class UI	Enhance user productivity in the field
Platform Flexibility	<ul style="list-style-type: none"> ▪ Deliver multiple integrated input/output options ▪ Field-swappable WAN connectivity
Lowest Total Cost of Ownership	Device designed to optimize uptime in inclement field environments

As with many other critical enterprise investments the final decision often comes down to cost of ownership. While the appeal of many lower cost consumer devices is apparent – especially during times of extreme budget pressures – post deployment costs of poorly selected mobile solutions can quickly eradicate that lower deployment cost advantage. Recent VDC research takes a close look at the impact of field-based failures of mobile devices on worker productivity and IT support costs. Not surprisingly, the research indicates a high correlation between device failure rates and an increase in total cost of ownership.

Moreover, the annual failure rates of devices not designed to operate in many traditional enterprise mobile worker environments frequently exceeds 20% if not more. This can translate into an increase in TCO of over 50%. Finally, in addition to the actual design of the device in terms of specification, of equal importance is how it is managed in the field. Effective use of device management solutions – for remote diagnostics, software upgrades, etc. – can reduce the average annual support costs per mobile worker by as much as 85%.

	Rugged Handheld Device	Non-Rugged (Consumer Grade) Handheld Device	Percent Increase
Annual Cost	\$2,356	\$3,568	51%
Five Year Cost	\$11,778	\$17,841	

Source: VDC Mobile TCO Research conducted in 2009. Total research sample size of 1100 respondents.

EDA LEVERAGE

A number of segments of the enterprise mobility deployer markets are on the cusp of the post-recession era recovery. Many income statements from Q4 2009 are revealing strong bookings and revenue growth sequentially and year-over-year. While the future remains completely uncertain, there exists a fair amount of cautious – very cautious – optimism regarding the next 12 months of 2010.

Talk to any enterprise operations executive managing a mobile workforce, and they will tell you that while that may be true, their business was changed forever by the recession. While their customer roles, revenues, and headcount may return to pre-recession levels, it will require new tools and approaches to get there. As for the enterprise mobility market, they are in it and prepared to expand their investment in these solutions if they can help them meet the new requirements of the 'new reality' of their business.

That new reality is the requirement to reach higher levels of performance on a number of metrics – at the heart of which is a more productive and more informed mobile worker. Providing mobile workers with the right device to access information, make informed decisions and transact business in real time is the cost of entry.

Previously a tense relationship existed between many of these performance requirements:

1. Improve customer service in a field service fleet or increase the number of customer visits per shift
2. Improve customer response and interaction time in apparel, retail or enhancing merchandising effectiveness
3. Decrease inventory levels/ associated with carrying costs or reducing out of stock and partial shipment incidents

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Before the recession, perhaps, many b-to-b and b-to-c enterprises could afford to excel in one of these initiatives, at the expense of other. This is not the case in 2010. While the credit markets may be easing, competing, gaining share and generating margin are not. To defend existing accounts and win new business, to grow consistently, generate margin and shareholder value, enterprises must do better than the zero sum gains described above.

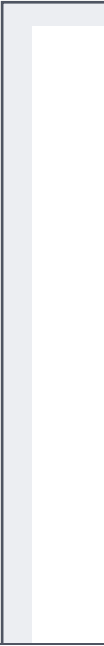
Additionally, enterprises must do it with their ever more important mobile workforce. For as these operating requirements and competitive pressures increase, so, too, does the success enterprise depend on their mobile workforce.

Simply stated, success in the coming years will require enterprises to craft and manage more efficient training programs and more powerful decision support tools for their more critical mobile workforce.

For the adage *'the face of the company'* has never been truer. In the emerging post-recession reality, the face of the company has never been under more pressure.

The new reality is that successful b-to-b and b-to-c enterprises must regain leverage that they have been losing slowly – more quickly due to the recession – with customers. Let's look at five specific developments that are posing a challenge to enterprises – and an opportunity – to do more and better for their customers:

1. The rapid rise of mobile broadband is enabling a new collection of mobile marketing, merchandising and transaction opportunities. As consumer and enterprise mobile broadband penetration grows, so, too will the ability of customers to put more real-time information at their point of decision, sale or service.
2. Those expanding requirements now go far beyond the traditional functional definitions. The point of decision is no longer so heavily weighted to the on-premise location. Consumer and business customers are making decisions – thanks to their ever-more powerful mobile devices – everywhere.
3. What is more, customers are not seeing their decision, purchase and service experiences as discrete events anymore. Customers are merging their pre-sales service experiences with their decision-making process, forcing enterprises to bring their best-in-class service forward in the customer lifecycle in order to win customers, not to just keep them.
4. Customers are impatient – consumers because they can be, and business customers because they have their own transaction velocities to think about. The enterprise associates tasked with supporting those customers and prospects in real time will also need more information in order to engage customers expanding requirements.
5. Customer's online experiences have been advancing and improving rapidly for years. They have also been changing customer expectations. Visionary enterprises recognize the need to link key elements of the online experience with the real-world associate engagement.



So what does this all mean?

Enterprises must meet customers' requirements in this post-recession '*new reality*'. Successful business must regain some of the leverage they lost overnight due to the recession and during the past decade due to a number of larger changes globally.

There exist innumerable approaches to regaining this leverage. Within these choices are powerful opportunities. However, where potential for improvement in one metric exists, so too does tension to degrade performance on another metric. Tactics must be balanced with the inherent tensions in the new operating plans. We cannot trade leverage in the supply chain for leverage with customers. We need to preserve leverage in the supply chain and regain some with customers.

A cornerstone to do that is fielding a workforce that is highly trained, mobile, informed and empowered.

Mobile workers – retail associates, transportation couriers, and industrial equipment field service personnel – now more than ever will carry the flag for regaining leverage. They will do it through performance improvement in a broader range of initiatives that run the gambit. That performance improvement will require a combination of tools, tactics and resources including more heavily armed – EDA armed – mobile workers.

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ABOUT VDC RESEARCH

VDC Research (VDC) is an independent technology market research and strategy consulting firm that specializes in a number of retail automation, RFID, AIDC, embedded, component, industrial, and defense markets. VDC has been operating since 1971, when the firm was founded by graduates of the Harvard Business School and Massachusetts Institute of Technology. Today, we employ a talented collection of analysts and consultants who offer a rare combination of expertise in the market research process; experience in technology product and program management; and formal training in engineering and marketing. VDC's clients include thousands of the largest and fastest-growing technology suppliers in the world and the most successful investors participating in the markets we cover.

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