Mobile Workforce Automation:

Achieve measurable improvements and productivity gains through mobility innovations

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Executive Summary

Whether in harsh environments, such as remote rural locations, or less hostile environments, such as homes and other in-premise facilities, service and sales companies are facing common process improvement objectives:

- Automate tasks to reduce the use of paper and non-productive form filling

- Ensure on-time arrival and update field worker schedules in real-time

- Optimise worker assignment and asset uptime to achieve service level agreement (SLA) compliance

- Perform more asset inspections and achieve regulatory compliance with existing resources

- Support reactive-, preventive-, predictive- and reliability-centered service models

- Increase revenues through up-selling and cross-selling

- Reduce re-visits due to wrong inventory

- Obtain real-time performance data for continuous improvement

- Meet lone worker safety obligations

- Capture and store proof of location, attendance, identity and condition

- Capture and store proof of compliance, performance, service, safety and payment

Innovation in the field of mobility technology has enabled significant improvement in mobile workforce management. This paper will discuss critical technology elements of a successful mobile deployment, providing field sales and field service organisations with insight on how to achieve measurable improvement and productivity gains.

Recent mobility technology advances have significantly improved the way mobile workforces are managed. Service level agreement compliance, worker duty of care, and accuracy of service/sales/asset records are some of the key investment drivers in mobile workforce solutions. The following critical technology elements of a successful mobility deployment are covered in this paper:

- Real-time data for decision support

- Intelligent worker routing and alerting

- Instant remote worker communication

- Simple capture of asset and inventory data

- Mobile device reliability in the field

- Ease of use through ergonomic design

- High-quality imaging, photography and video

- Remote mobile estate device management

Real-time data for decision support

Innovations in mobile workforce technology today go well beyond simple data capture and information retrieval in the field and on the road. The core benefits of class-leading solutions are enhanced efficiency and productivity, faster customer response times and a higher level of customer satisfaction.

Improvements start with workforces that are equipped with mobile computers that provide instant access to each customer's order history, service records, and product service history, as well as inventory technical data and the ability to be directed to the next appointment or task without manual intervention.

Having dependable wireless communication with sufficient speed and bandwidth brings the desktop to the mobile worker, allowing them to access relevant systems in the field and trouble-shoot via

online databases. Providing these enhanced service levels conveys to the customer that the service or sales company is driving for excellence, which in turn builds trust for up-sell and cross-sell opportunities.

In the event that network coverage is unavailable, robust operating platforms and sufficient storage capacity must be provided. It is crucial for workforce management application providers to offer a disconnected service for users to be able to continue to store, manage and retrieve information in the event that connectivity has failed.

Further, pocket-sized mobile computers provide the ability to contact customers directly by phone, text or instant message where required, for example to confirm arrival time or delays. Similar to courier and parcel delivery companies, best-in-class field service organisations have implemented location-based services such as 'geo-fencing.' This functionality will be explained in more detail in the next section.

Finally, service and sales organisations can improve cash cycles by recording work completion, service ticket closing and order confirmation using on-screen customer signature capture, which immediately updates enterprise systems. Consider also the positive effects of both accurate and timely invoicing to maximise cash collection and improve cash flows.

Intelligent worker routing and alerting

Intelligent routing is a business necessity to ensure sales and service organisations are optimising their mobile assets and providing first-class customer service.

Leveraging GPS integration allows solution providers to identify the current location of a field worker, asset or vehicle; identify the closest technician or sales agent for an appointment; and factor in a worker's current location when scheduling the next appointment. Also, current traffic conditions can be included in routing instructions to ensure the next appointment is reached as soon as possible.

Location awareness naturally increases efficiency by reducing the 'blind spots' of dispatchers, workforce controllers and service centres. However, we find that our customers value the associated benefits of fuel

reduction and environmental sustainability at least as high. Think about the potential savings of reduced journey times and re-visits in organisations.

Geo-fencing allows a service- or sales-driven business to draw specific boundaries within a mapping application. If the boundary is crossed, alerts can be generated. For example, if a mobile worker in a vehicle enters or leaves a particular zone, an SMS or e-mail can be forwarded to the customer.

Customer satisfaction and repeat business is increased by providing a more accurate ETA (estimated time of arrival), or alerting customers of delays when they occur. In either case, the customer experience is enhanced due to information provision, be it positive or negative. If there is a delay or postponement, the customer is made aware as early as possible and alternative arrangements can be made.

Additionally, geo-fencing can be used to enhance worker safety so that dispatchers and controllers can be instantly alerted if a vehicle or individual moves beyond a location boundary in which they should be working. This is particularly necessary in hazardous working environments where a field worker's location is critical to both safety and job completion.

Instant remote worker communication

Duty of care is a primary concern of enterprise-class businesses, especially at the executive level, due to the prevalence of corporate manslaughter cases in lone worker situations in Europe.

Instant communication at the press of a button (push to talk) is primarily a productivity and duty of care function. However, it is also a platform for time-dependent up-selling and cross-selling of offers to customers. For example, an extended warranty or additional product offer can be initiated from a control centre in one-to-one or one-to-many preset groups, through instant talk or instant message, as an offer becomes available. The natural result is an increase in revenue generation, if the customer commits to the additional product or service.

An integral benefit of real-time communication enabled by a mobile device is the ability for the field worker or agent to receive an approval signature at the point of work and process the transaction in real time. This not

only increases the ability to complete the up-sell or cross-sell opportunity, compared to call centre follow ups, but also confirms work completion in real-time and collects purchase trend information for future targeted offers.

Taking worker presence into account, supervisors can also instantly speak to a group of workers in a particular location or geography, to inform them of traffic issues, incidents, or specific task-related instructions, all at the touch of a button, eliminating the wasted time associated with dialing up multiple address book entries. This again leads to greater workforce efficiencies and reduced operational cost.

Worker safety is a primary concern of professional organisations. To increase mobile worker security, instant communications, including talk and alert, removes the need for and cost of separate mobile phones, pagers, PMR (walkie-talkie radios) and panic alert devices, as all these functions are unified in a single, pocketable in many cases, mobile computer.

This convergence of technologies into one platform increases call speed, reduces cellular network costs (by using data rather than voice channels), and provides instant alerts with worker location confirmation in the event of a lone worker incident.

Ensuring compliance with lone worker duty of care legislation and obligations, incidents can be recorded by an open voice channel if a panic button is pressed. Additionally, stealth listening can be used to put remedial actions in place if an assailant is involved. This recording can be used as evidence in a court case, which is particularly relevant to organisations that can be prosecuted for corporate manslaughter or homicide as a result of serious management failures. In the United Kingdom and several other countries, courts can impose unlimited fines, a publicity order and up to two years in prison.

Simple capture of asset and inventory data

Two of the major benefits commonly cited for field mobility investments are improved real-time decision-making and improved inventory accuracy. Fast and efficient bar code data capture ensures inventory usage is recorded immediately at the source and that inventory replenishment can be tightly managed. High inventory levels are a cost to any business in terms of tying up capital and potential depreciation. By recording accurate usage at the source, including the usage of specific parts or parts under warranty, inventory data can be reported to ensure proper replenishment and billing. This in turn leads to accurate service/sales history and asset records.

Organisations can meet both service and profitability goals by making it easy to track supplies going onto vehicles with fast and efficient bar code scanning, providing the mobile workforce with what they need to deliver service and sales, whilst making sure payments are received on time.

Mobile device reliability in the field

Mobile computers deployed in remote workforce management applications must be designed for years of dependability under harsh conditions. Enterprises using fit for purpose rugged and semi-rugged devices benefit from the reliability offered in hot, cold and wet environments and protection against the inevitable hard knocks.

Downtime due to damaged devices or dead batteries will also be significantly reduced. These issues are usually associated with deployments of consumer-grade devices, which have become prevalent in some mobile workforce applications. Improvement starts with an assessment of your workforce downtime today.

Until recently it has been a binary decision, 'consumer or rugged', with price being polar and often a critical decision factor. Now with semi-rugged devices in the market, such as Honeywell's Dolphin® 6000 Scanphone, compromise is no longer necessary.

When selecting a mobile computer for remote workforce applications, it is imperative that employees have full battery life for their entire shift of 8 hours or more. The result is continuous worker productivity and connectivity whilst reducing valuable minutes lost on changing batteries in the field.

Consider the potential time and cost savings associated with mobile worker charging issues. An additional

benefit of choosing a mobile computer with great battery performance is a lower investment in charging equipment and spare batteries over the lifetime of the devices.

Ease of use through ergonomic design

A user-friendly form factor is critical to keeping employees productive. This is the case in unforgiving in-field environments, as well as less harsh in-home or in-premise locations.

Over time, lightweight, well-balanced devices that allow single-handed operation have emerged as leaders.

Today's portable enterprise mobile computers may have an integrated finger saddle for user comfort and ergonomics. Combined with a bar code scanner that is positioned at an angle, this important product design proves to optimise wrist posture, reducing fatigue and stress, whilst enhancing the speed of data capture.

High-quality imaging, photography and video

Mobile computers that incorporate the latest in imaging technology allow field operatives to capture images of products, assets, work sites or post-job site cleanup, providing proof of condition and environmental records.

Recording images of utility meters, for example, can also provide proof of route coverage. In conjunction with wider captured data, high-quality images, taken via an area imager or a camera, provide a complete audit trail for analysis and performance reporting, in addition to proof of service for the customer.

Many customers value the benefits that arise from integrating image capture into their mobile applications. Field-based workers make less mistakes with clear and intuitive instructions, and the collective workforce saves precious time by eliminating the need to switch between software systems for image capture.

Video technology can be utilised for the 'virtual experience.' Previously captured location video can be provided to remote workers to enhance their location awareness. This feature may be especially useful in safety critical environments where visual terrain and

asset knowledge is imperative to complete a work order.

Additionally, video may be used to train field workers by providing 'how to' tutorials to assist with the completion of unfamiliar tasks. Simple videos can help mobile workers complete work accurately and efficiently, without costly intervention from a specialist.

Field sales and field service mobile workers can show product promotion videos, such as television commercials, to customers during up-sell opportunities.

Given appropriate network bandwidth, new 'push-to-video' technology will also provide the ability to share the worker experience with a supervisor or technical specialist, at the press of a button. This technology is similar to the push-to-talk voice capability, as detailed in the 'instant remote worker communication' section. It will allow remote fault diagnosis or repair assistance for remote field service technicians working in environments where an on-site solution may not be apparent. 'Push-to-video' is another example of mobile workforce technology that can be applied to compress the time-to-fix or time-to-install process for mobile technicians, leading to increased productivity and customer satisfaction.

Remote mobile estate device management

Remote mobile device management provides IT administrators with a convenient system to manage all mobile computers within their network from any single remote location. Typically, it is a browser-based stand alone solution that can be incorporated into any enterprise. Independent research indicates that the use of a mobile device management (MDM) solution can save an organisation over €160 per device per year in support costs. For a 100 unit deployment, MDM translates into savings of over €78,000 over a five year period. Benefits that arise from the use of MDM include:

- A large percentage of helpdesk calls are related to device configuration issues. MDM allows configurations to be updated without on-site visits
- Deploy security patches and system updates remotely
- Product efficiency in the form of reduced lock-ups and reboots can be achieved by ensuring operators are using equipment properly

- Asset management can lead to significant savings by finding lost devices
- The diagnostic function allows issues to be resolved remotely and reduces helpdesk call volume and duration

About Honeywell

Honeywell Scanning & Mobility leverages the technologies developed by Honeywell, a Fortune 100 diversified technology and manufacturing leader, to deliver the latest functionality needed to meet customer demands. Many global enterprises rely on Honeywell to provide them with innovative workforce mobility and advanced data capture solutions to enhance and improve business processes.

In collaboration with strategic business partners, and world-class independent software vendors, Honeywell provides comprehensive global and local service and support.

Remote MasterMind™

Honeywell's Remote MasterMind software manages mobile computers within a network, from any single remote location. It enables firmware and configuration updates, product diagnostics, performance metrics, and asset tracking. Remote MasterMind is a browser-based stand alone solution that can be incorporated into any enterprise.

Service Made Simple™

Service Made Simple is Honeywell's full comprehensive offering for repair of normal device wear and tear, as well as accidental breakage. Our mobile computer service plans offer a three-day turnaround promise. Additionally, the advanced exchange option allows customers to receive a replacement device before the faulty one is sent in for repair, minimizing downtime.

For more information visit:
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Dolphin® 6000

- Rugged Scanphone designed for voice-centric applications
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Dolphin® 9700

- Fully rugged device designed for mission-critical use cases that require more than a full shift of battery performance and a large, crisp display for outdoor use
- Features integrated GSM/GPRS, Wi-Fi, and GPS wireless technology
- Delivers aggressive 2D bar code scanning with Adaptus™ Imaging Technology 5.5

Dolphin® 99EX

- Fully rugged device designed for mission-critical use cases that require more than a full shift of battery performance and IP67 sealing against dust and rain
- Features integrated GSM/GPRS, Wi-Fi, and GPS wireless technology
- Delivers aggressive 2D bar code scanning with Adaptus™ Imaging Technology 6.0

Visit **www.honeywellaidc.com** for more information about our workforce automation solutions.

Request a live demonstration of one of our partner software solutions at **www.isvstore.com**.

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