

THE **DESCARTES**
SYSTEMS GROUP INC.

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BUSINESS WHITE PAPER

Wireless Capabilities a
Must-Have For Fleet
Operators

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Wireless technology has become a mainstay for today's distribution, wholesale and retail fleet operators delivering goods to the end user – especially in the area of last-mile delivery. A key to maintaining efficient operations on the road and controlling costs lies with the ability to access accurate, relevant and timely information. In particular, the ability to communicate information in real-time contributes to a more efficient delivery process.

While wireless technology has had its challenges in the past, the features and options – and the cost of service and devices – continue to improve. There are now a range of affordable devices that make real-time communications on the road much more viable for operators of all sizes. Organizations whose only option was once expensive satellite or batch applications can now easily provide every driver on the road with highly effective, feature-rich wireless devices - from cell phones to Web-enabled mobile computers - at a fraction of the cost.

Today's devices not only facilitate voice communications with field service personnel and dispatch, many now provide a broad base of field data capture features that include electronic signature capture and bar code scanning. The more comprehensive the data capture, the easier it is for operators to achieve efficiencies throughout their delivery cycles. Drivers can input changes and exceptions directly into the device and update delivery information in real-time, capture routine data for downloading to central operations, run multiple applications during delivery routes and interact more effectively with customers. When combined with Web-based on demand logistics services, wireless technology can become an incredibly powerful business tool.

Getting a Real-Time Perspective

Wireless technology has evolved significantly in recent years. Historically, fleet operators could purchase proprietary technology that entailed installing hardware devices in vehicles and capturing data in the field, which was then uploaded in batches.

These came with a number of limitations, including the high cost of installation and maintenance; limitation in terms of the type of software that could run on the system; and lengthy lease terms that left little flexibility to upgrade or change over the course of three to five years, leading to systems obsolescence. Breakdowns presented an additional challenge. If the hardware device or software failed, the driver of the vehicle carrying the device would have to resort to manual intervention until the device could be serviced and reinstalled.

In addition, typical routing, planning and tracking applications don't process real-time data, which means that plans can be outdated as soon as there is a truck breakdown, delivery delay, or a new order or pickup inserted into the schedule. A batch system allows no flexibility to make changes on-the-fly or receive any real-time feedback from the field. Yet this real-time information exchange is critical for achieving operational excellence, whether the goal is improved customer service or reducing operational costs – or both. The ability to capture data from the field in real-time provides visibility across the entire delivery operations, and greatly enhances the decision making process.

Today, many organizations are exploring wireless solutions to replace historical batch offerings. The Internet has matured as a stable and secure method of opening lines of communication. Wireless-to-web technology and the decreasing price points and availability of more robust wireless devices, translates into a much greater return on investment, while providing the foundation for companies to increase service levels without adding to their capital costs.

The Wireless Advantage

The benefits of real-time wireless communications are many, from greater visibility for better decision-making, to lower cost of operations.

With real-time visibility fleet operators can improve service in a number of ways, including:

- Rapid processing of order update information for end customers and customer service representatives.
- Greater accuracy in estimated time of arrival (ETA) to the end customer
- Improved field exception management and tracking of field inventory
- Empowerment or control by always knowing where drivers are

Overall, real-time visibility provides predictability and empowers dispatchers, customer service representatives, and even executive management to provide immediate information and feedback to drivers and/or the end customer. Real time visibility allows managers to monitor all driver activity, from stops, departures and breaks, to timecards and mileage, as well as onboard inventory. The flexibility of wireless communications means operators can gain greater control of their fleet, regardless of whether it is their own, or contracted through third party suppliers.

Operators can also enjoy significant cost savings through real-time communications. These savings can be realized in a number of areas, such as:

- Reduction in driver hours by comparing an actual performance to plan
- Accountability for AM/PM time, break time and service time
- Increased stops per paid hour
- Reduced data entry costs
- Lower customer service costs by empowering front-line workers and reducing call-ins

Selecting the Right Wireless Device

Selecting the right device for the job is not a trivial task. There are countless wireless devices available in the market offering varying levels of functionality. The decision is ultimately driven by application requirements, functionality and network compatibility. The diagram below provides a snapshot of some of the different devices available and key features offered.

Device	Cell phone WAP	Cell phone Java	Cell Phone Java GPS	RIM Blackberry	Handheld or In-cab Computers
Feature					
GPRS network	✓	✓	✓	✓	✓
CDMA network	✓	✓	✓	✓	✓
iDen network	✓	✓	✓	✓	
GSM network	✓	✓	✓	✓	
Voice	✓	✓	✓	✓	
Push to Talk	✓	✓	✓	✓	
Full keyboard				✓	✓
Signature Capture					✓
Typed POD	✓	✓	✓	✓	✓
Barcode Scanner					✓
Cradle/Docking Station					✓
Printing					✓
Camera	✓	✓	✓	✓	✓
Ruggedized	✓	✓	✓		✓
Approximate Cost	\$0 - \$100	\$0 - \$100	\$0 - \$100	\$150 - \$500	\$500 +

Device options for wireless fleet operation solutions

Although only a sampling, this diagram gives an indication of the broad range of wireless options available - from a simplistic WAP (wireless application protocol) option that can run on the cell phone that you use today, to a more sophisticated Java-enabled cell phone with GPS (global positioning system) capabilities, right through to more robust handheld PC-based devices that can run multiple applications, interact with Bluetooth printers and run on multiple networks. The price points also vary from less than \$100 per phone up to greater than \$1,000 for a handheld device with peripherals such as scanners, printers and more.

The Technology Behind the Communications

Deciding on a communications device is only part of the equation. Consideration must also be paid to the supporting technology and applications that support them. For many operators today, a Web-based service, also known as software-as-a-service (SaaS), provides a faster time-to-value.

A SaaS solution leverages the power of the Internet to cost-effectively deliver rich logistics functionality on demand through a subscription-based model. It is an affordable alternative for companies that require a full-featured logistics application, yet want to eliminate the costs of purchasing, integrating, maintaining and supporting installed hardware and software.

Since it is offered on a pay-as-you-go subscription basis, a SaaS solution allows users to only pay for the service as they use it, and can be scaled up or down to meet changing needs. In addition, subscription-based services do not require up-front capital costs on the part of the user.

With this type of service model, organizations with fleets of delivery or service vehicles can easily and quickly gain visibility into the entire delivery process - from sequencing routes for optimal efficiency and tracking drivers in real-time, to analyzing and applying historical data to boost operational performance – at an affordable cost.

In addition, a subscription model can provide organizations with the flexibility to meet seasonal needs if the basis of payment is tied to an organization’s operation. For example, if the subscription service is based on the number of stops per month, and an organization operates a



business that is strongly tied to seasonal markets, then the cost of the service will fluctuate based on the volume of stops per month.

A web-based service can typically be rapidly deployed and includes the necessary operational support for the solution, including hardware infrastructure, software, security, systems integration and Internet costs and technical support staff.

Also, these new services have been developed to interact directly with wireless devices - from cell phones and PDAs to handheld scanners. As a Web-based service, they can integrate with a user's existing technology infrastructure and provide easy access for multiple authorized users within the supply chain – from customers to dispatchers to customer service. In addition, the user interface is intuitive and can be easily mastered with little training.

On-demand services are not just about technology. They also manage a business process, by combining comprehensive logistics capabilities with a variety of business process applications that can be customized to address users' specific requirements.

As more and more fleet operators are pressed to improve customer service while reducing costs to maintain their competitive edge, technology advancements are in-step to support this need. Combining wireless communications with Web-based logistics services is one way that operators can keep pace with the growing demand for efficiency – without the time, cost and effort of proprietary solutions.

About Descartes

Descartes (TSX: DSG) (NASDAQ: DSGX), a leading provider of software-as-a-service (SaaS) logistics solutions, is delivering results across the globe today for organizations that operate logistics-intensive businesses. Descartes' logistics management solutions combine a multi-modal network, the Descartes Global Logistics Network, with component-based 'nano' sized applications to provide messaging services between logistics trading partners, shipment management services to help manage third party carriers and private fleet management services for organizations of all sizes. These solutions and services help Descartes' customers reduce administrative costs, billing cycles, fleet size, contract carrier costs, and mileage driven and improve pickup and delivery reliability. Our hosted, transactional and packaged solutions deliver repeatable, measurable results and fast time-to-value. Descartes customers include an estimated 1,600 ground carriers and more than 90 airlines, 30 ocean carriers, 900 freight forwarders and third-party providers of logistics services, and hundreds of manufacturers, retailers, distributors, private fleet owners and regulatory agencies. The company has more than 300 employees and is based in Waterloo, Ontario, with operations in Atlanta, Pittsburgh, Minneapolis, Ottawa, Washington DC, Derby, London, Stockholm, Shanghai, Singapore and Melbourne. For more information, visit www.descartes.com.