

Enterprise Mobility Solutions Deliver Increased Efficiency and Security to Parcel & Post Operations

Executive Summary

Around the globe, postal and parcel services have long been among the most trusted third parties, reliably delivering millions of letters and packages to homes and businesses each day. Today, economic and competitive pressures are forcing postal services and parcel shipping companies to streamline existing processes and invest in technologies to meet customer demands for faster, definite delivery, expanded services and lower costs. This must be achieved while meeting the mandates of Universal Service and protecting the system from those who would use it for illegal or dangerous activities. In addition to recouping revenues lost to other means of delivery, these organizations are looking to provide value-added products and services that generate new sources of revenue and reduce operating costs. To meet this challenge, postal enterprises require detailed information about the materials and assets moving through their supply chains. To capture and analyze this data, the mailing industry (comprised of postal enterprises, their suppliers, service providers and customer base) must work together to implement the technologies that will enable them to make proper business decisions.

Over the last 20 years Symbol has been a leading global provider and partner to more than 70 postal systems and dozens of parcel, package and express companies around the world. Symbol has recently joined with other technology leaders to provide a course of action that can enhance the mailing industry's ability to compete and thrive. Symbol enterprise mobility solutions, which include advanced data capture technologies, ruggedized mobile computers, wireless infrastructure, mobility management software and high ROI applications from business partners, bring considerable expertise to parcel and post operations, increasing efficiencies, reducing costs and speeding the flow of mail and packages to every customer.

From wearable scanning systems worn by package sorters in processing hubs to point-of-sale scanners that speed lines at the post office counter to rugged mobile computers used by delivery drivers, Symbol solutions provide the necessary visibility to monitor every piece of mail and package as it moves through the system. In the hands of carriers, Symbol enterprise mobility solutions capture signatures for priority mail, accept COD payments, move route completion data to managers for improvements in delivery processes and manage the deployment of software to thousands of devices. Two-dimensional bar codes, like the PDF417 symbology pioneered by Symbol, are used for digital postage and tracing mail from its entry point into the system through to delivery. Each of these applications is grounded in proven, low-cost technology solutions. Each represents business opportunities for Symbol and its business partners on a global scale. Each is necessary to keep pace with a changing world, while safeguarding the integrity of the mail and packages—and the parcel and post industry itself.



A Changing Industry Landscape

Several factors contribute to the parcel and postal industry's need to adopt new technologies to remain competitive:

- ▶ Many international postal organizations are transitioning from state-owned institutions to privately managed entities. As a result, postal systems are exploring ways to streamline operations and generate profits. New rules come into play, as former state-owned agencies are disconnected from government subsidies. For example, although the U.S. Postal Service remains a public agency, it too is facing pressures to hold the line on costs and increase revenues.
- ▶ With the privatization of postal services, many face competition for the first time. Shifting from state-endorsed monopolies into the competitive market space reinforces the need for profit-based business models.
- ▶ Traditionally, most postal services are primarily concerned with delivering domestic mail. Now they are evolving into international couriers, confronting infrastructure issues that will enable them to reach a global market—while satisfying every customer.

In addition, the changing world economic climate is driving the need to implement technologies that boost productivity and security:

- ▶ The threat of substitution—either by private enterprise or electronic communication—is affecting first class mail volumes and revenues. Customers now have several choices for delivery and payment alternatives. In Holland, any item weighing more than 100 grams (approximately 4 ounces) can be handled by any carrier. E-mail, e-billing and automatic checking account withdrawals are draining volume from every postal entity.
- ▶ The increased use of the Internet and catalog/direct mail for home shopping has resulted in an explosion in the volume of small parcel shipments—most of which are handled by private carriers such as UPS, Federal Express and DHL. This means post offices are losing opportunities to capture the premiums shop-at-home customers are willing to pay for fast delivery.
- ▶ An offshoot of this is the subcontracting of parcel and priority mail delivery by post offices to private carriers. One example is the use of Federal Express to provide air transport and cargo service for the U.S. Postal Service. However, this necessitates increased accountability to track shipments originally entrusted to the USPS and detailed information to determine the proper costing of outsourcing.
- ▶ In recent years, the world has discovered the vulnerability of mail as an open and porous communications channel. The wave of anthrax attacks in the U.S. and abroad has many people worried about the safety of their household mail, business mail and even the neighborhood post office. It is now clear that postal services can be transformed into effective weapons delivery systems—with stealth capability. As in the case of the tainted mail sent to the U.S. Senate, it might have gone through one of 46 local mail depots before reaching the Trenton, New Jersey, regional postal center where it was postmarked before being shipped to Washington, DC. While security experts agree it is impossible to protect every entry point in the system, technologies that can increase accountability will go a long way towards removing anonymity and safeguarding the mail.

The net result of all these converging factors is that virtually every post office in the world is under increased pressure to achieve profitability. Postal services must move quickly to embrace technologies that increase efficiency, reduce labor, offer better customer service and add new revenue generating services that offset the loss in first-class mail volume. All this must be achieved while maintaining the concept of Universal Service, ensuring that every citizen has access to the same level of mail delivery service at the same price. Whether mailing a letter across the street or across the country, availability, service and cost must remain constant.

Parcel and postal enterprises must therefore partner with technology providers to design and implement systems that accomplish these objectives. One example is Deutsche Post, which transitioned from a state-owned agency more than a decade ago. In the last 10 years, Deutsche Post, the second largest post office in the world behind the U.S. Postal Service, reduced its staffing by approximately 30 percent. Yet, despite a growing population and increased competitive pressures, a stunning 96 percent of all first-class mail is delivered the next day.

To achieve similar results in the U.S., the Postal Service organized the Mailing Industry Task Force that included a committee of business leaders. The Task Force was brought together to assess the current role and value of hard copy mail in business and consumer communications, evaluate the competitive environment affecting the industry's future and identify opportunities for future growth. The committee developed eight key recommendations. Among its suggestions is the creation of "intelligent mail," or Intelligent Mail, wherein a unique, digital stamp for each piece of mail would make it possible to track and trace mail from its exact entry point into the system through delivery.

The results would be improved processing and delivery performance as well as added security.

Other recommendations of the Task Force include development of enhanced consumer services with on-demand parcel pick-up and delivery, more efficient payment systems and alternative credit terms, mail preparation standardization, network optimization, a competitive pricing strategy, improved address quality and creation of an industry council. This paper highlights several of these initiatives that demonstrate Symbol Technologies' abilities to address the needs of the parcel and post industry on a global scale.

Advanced Data Capture

Data capture via bar code scanning and imaging is at the forefront of increased efficiencies in transportation and logistics, including parcel and post, and presents itself in several forms.



At post offices in the U.S., Australia, Canada, Italy, South Africa, Thailand and many other countries, Symbol point-of-sale scanners are used by clerks for a variety of retail tasks, including stamp and packaging material purchases. Over 350,000 Symbol rugged handheld scanning systems are used by U.S. postal carriers for accountable mail applications, such as Express Mail, Priority Mail Delivery Confirmation and Signature Confirmation. Their counterparts in Finland, Germany, Italy, and Sweden use similar devices for mail and package delivery, as well as COD collection applications.

Parcel companies, including United Parcel Service, Federal Express, TNT, and DHL, have deployed powerful wearable technology from Symbol. Each system contains miniature scanners and rugged, compact wireless mobile computers to speed operations in their processing hubs. Workers equipped with Symbol wearable ring scanners and wrist computers divert bulk mail containers —tagged bags, trays, boxes and racks —as they move through the facility to their final destinations. At UPS, a case study on a specific application found wearable solutions reduced labor by 30 percent, and increased data capture accuracy by 6 percent, enabling that company to reduce costs and improve services.

Parcel and post organizations, whose main business is to move goods from point-to-point achieve new levels of efficiency, productivity and customer satisfaction using mobile imaging systems. Drivers with ruggedized handheld mobile imaging computers can now capture high-quality still images of package contents, package condition, signatures, and specific sizes of bills of lading and manifests. By providing assurance with tangible and visible proof that deliveries are on time, accurate and in good condition (or not), you can save money through less errors and reshipments. Many companies already use Symbol mobile imaging technology to collect and communicate critical data and visual information, with powerful benefits that include increased accuracy and productivity, improved customer satisfaction and lower labor costs.



Mobile Computers and Wireless Technology

Symbol mobile computers play an increasingly powerful role in parcel and postal operations. In U.S. Postal Service logistics and operations areas, managers use Symbol mobile computers to better optimize assets and labor utilization, tracking route schedules to ensure each carrier is operating at peak performance. At airport ramps, U.S. postal clerks use scanner-equipped Symbol devices to track and trace mail containers as they roll on and off planes. And, in the United Kingdom and other European Union countries, letter carriers employ Symbol mobile computers to input the time of collection when they retrieve mail from public letterboxes. This information allows the post office to continually monitor and adjust performance to meet its service standards.



As wireless technology advances, batch data collection applications will migrate to real-time transactions at the point of activity, with mobile and wireless computing solutions playing an expanded role. For UPS —the world's largest express carrier and package delivery company —Symbol has developed, manufactured and maintained their fourth-generation Delivery Information Acquisition Device, or DIAD, which is currently being deployed internationally. The DIAD is a mobile computer used by UPS drivers to collect and transmit real-time package delivery information. The objective of DIAD, and similar real-time initiatives, is not only to speed delivery, but also to ensure parcels and accountable (e.g., registered, certified) mail arrives when the customer wants or needs it. One way this technology can improve efficiencies is by matching the appropriate delivery method with a specific package's requirements.

Two-Dimensional (2D) Bar Code Symbology



One of the most compelling opportunities for Symbol lies in 2D bar code data capture. The use of 2D indicia is a critical recommendation of the Mailing Industry Task Force. With more than 100 million digital stamps sold to date, for example, Symbol PDF417 symbology has proven itself to be a reliable means of creating "intelligent mail." Two-dimensional bar codes printed as postage make each piece of mail unique, carrying data that "lives" with the letter or package from its insertion into the mail system to delivery.

While offering tremendous commercial value in key applications such as track-and-trace, merchandise return and "day-certain" delivery, in the aftermath of the recent anthrax scares, it is clear that 2D-indicia mail's greatest benefit would be to help safeguard postal service employees, the general public and the mail itself.

Applicable not only to letters, but also to flat mail and parcels, encrypted 2D intelligent mail bearing digital indicia can contain detailed information about both the point of origin and the sender. In short, intelligent mail could be viewed as a Caller I.D. program for mail, conveying the who, where and when of the sender, reducing anonymity and increasing accountability.

E-mail is also expected to play a greater role in mailing services. Digital indicia will protect against forgery, and postal service databases can be programmed to reject duplicate e-mail stamps, protecting against copy-fraud while preserving revenues. Because all relevant data is self-contained and physically attached to the item, shipping information can be scanned and read instantly, eliminating the need to access another database while speeding processing.

Express and priority mail services are also natural candidates for secure digital postage and enhanced traceability. The more mail can be linked to the identity of the sender, the greater the chances of closing doors to threatening individuals who want to exploit the system. As executives at both UPS and FedEx have recognized, package information has become just as important as the package itself.



What the Future Holds

Moving forward, Symbol foresees its proven, low-cost advanced data and image capture solutions adding new services, generating new revenues and bringing added convenience to postal and parcel customers around the world. One vision now coming to fruition is the U.S. Postal Service's Automated Mail Pickup System (AMPS), now in pilot in three U.S. cities. AMPS is a self-service, standalone system that allows customers to conveniently and securely retrieve their mail or packages 24 hours a day, 7 days a week.

Symbol laser bar code scanners were selected as an integral part of AMPS, being developed by Northrop Grumman Corporation's Electronic Sensors and Systems sector for the USPS. When an item is stored in the system, customers are notified by a bar-coded hard-copy "attempted delivery" notice. The customer takes the notice to the designated postal facility, scans it using the Symbol-supplied laser bar code scanner at the AMPS station and automatically unlocks the system. Eventually, e-mail bar-coded notifications will be an option, as well as system expansion that allows merchandise returns.

Further out, Symbol sees a cluster of "consumer gateway services" such as 2D bar code labels to speed merchandise returns and delivery of mail order and e-commerce transactions. Other services may include postal carrier payment terminals for delivery confirmation and pay-at-the-door financial transactions, already in widespread use in Europe; and on-demand, on-line printing of encrypted, digitally secure 2D money orders, much like today's PC Postage via the IBIP program. In America, the USPS is also considering same-day, on-call parcel pickup and delivery, with the routing of carriers managed via wireless mobile computers, for home deliveries of items like emergency pharmaceuticals, or perhaps video rentals, groceries or dry cleaning.

The increased efficiencies offered by Symbol enterprise mobility systems helps recoup revenues lost to other delivery services. Consider the supermarket or home furnishings circulars, currently bundled for delivery with the daily newspaper to assure "day-certain" delivery. Post offices are losing millions in revenues because they cannot match the timely delivery long achieved by newspaper publishers and the paperboy delivery channel.

Conclusion

Technology is helping the world get smaller. E-commerce initiatives and the resulting explosion in shop-at-home purchases are impacting the type and volume of mail—and customer needs for timely delivery. One-to-one direct marketing is increasing the volumes of catalogs and the corresponding rise in mail order merchandise purchases and returns. International shipments are increasing, facilitated by the Internet as well as the use of standardized currency in Europe. Government mandates are forcing post offices and parcel couriers to maintain Universal Service levels while holding the line on costs. Many of these same technologies, driving change in how and when we communicate, can also be applied to the global delivery chain. Advanced data capture, ruggedized mobile computers and wireless infrastructure, along with application-specific software can help to move physical goods such as letters and parcels to their destinations with improved speed and accuracy. As the leader in these critical logistics areas, Symbol is uniquely positioned to deliver the proven, cost-effective systems needed by postal and parcel organizations worldwide.

For more details on solutions from Symbol Technologies, the Enterprise Mobility Company and its business partners. More information on transportation and logistics solutions is available at

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