Zebra Technologies for SMBs: A Roadmap for Digital Data Management in Consumer Goods

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INTRODUCTION

Optimizing Your Consumer Goods Barcode Labeling with Zebra Technologies

Consumer Goods SMBs are growing and want help understanding the equipment for printing barcodes, scanning barcodes, and terminals that can help make business easier. Barcoding technology helps bring your consumer goods company into the future with easier fulfillment of orders, greater processing of materials and items, and helping maintain industry compliances.

Zebra Technologies & Imprint Enterprises have over 30 years of experience each to help move your SMB consumer goods company into a technological future that is more efficient. Zebra is an expert in the barcoding technology field with their rigorous testing of their own products. Zebra has multiple R&D facilities to test their products and is one of the largest converters in the USA for barcode labels.

Imprint Enterprises is a Premiere Solution Partner **with Zebra Technologies.** Imprint is a company that grows with you, providing your consumer goods business with a total, competitively priced solution. Imprint builds a lifelong relationship with you and your company that is based on quality and trust..

With Zebra & Imprint, there are multiple options to suit your growing needs and your budgetary requirements. From just starting out to a long-lasting solution, Imprint's specialists can help you determine what it will take to get you where you want to go. You can have a comprehensive barcoding solution that will decrease overall costs, increase efficiency, and achieve higher levels of customer satisfaction.

Incorporating Barcode Technology That Makes Sense

As a small to medium sized consumer goods business, why would you want to incorporate barcoding technology? Your success is in the details, and those details include accuracy and productivity to meet customer demands. Keeping to a pen and paper system increases opportunities for input error and expends valuable time and energy that can be applied elsewhere in your business.

Over the past few decades, technology has continually advanced. Moving into the future and growing your business includes embracing this advancing technology.

Enhance Business Operations

Incorporating barcode technology provides greater accuracy in real-time. You can grow your business with the ability to process more inventory and data to create more orders in less amount of time. *Why wouldn't you want to speed up processes to gain more clients and grow your business?*

Consumer goods businesses must be able to keep up with the technological advances and increasing omnichannel shopping. In fact, in today's climate, productivity and effectiveness are greatly affected by their ability to keep up with the demands of clients and the economy. Barcode technology can be focused for internal or external purposes.

External Efficiency

A pickle manufacturer gained commercial contracts and needed a better system to create labels with various levels of information for each jar, each case, and each pallet that was shipping out to customers. Incorporating barcode technology helped ease this process for the pickle manufacturer..

The pickle manufacturer could easily create barcode labels for each jar, printing the labels in house. Each individual jar is then scanned before going into a case, creating one label for each case. Each case is then scanned, creating one barcode label for each pallet. Each label contains pertinent information for easier processing and tracking of orders all the way to the customer.

Internal Efficiency

A hummus manufacturer gained a large commercial contract that required immediate hiring to facilitate the demand of that contract. Their company went from 10 employees to 150 employees with that one contract. With that many employees, a manual entry system can quickly become flawed and filled with errors. Incorporating barcode technology can easily manage the data to minimize data entry errors and speed up processing in house.

Compliance Matters

While you're growing your business and building your clientele list, it's important to know if there are specific barcode label industry compliance standards that your consumer goods company must adhere to. If labels are not done to specific standards, your company can be liable for more than just fines and chargebacks, there is a possibility of a legal exposure as well..

The US Food and Drug Administration (FDA) requires using a unique device identifier (UDI) on barcode labels in food, beverage, and medical fields. The United States, European Union, China, and Brazil have specific serialization requirements for pharmaceuticals, with more countries joining to include this requirement. The Automotive Industry Action Group (AIAG) created industry standards to improve efficiency and accuracy. ANSI and ISO are barcode label grading systems based on a letter or a numerical score.

The Drug Supply Chain Security Act (DSCSA) enacted in 2013 requires the use of 2D barcodes on pharmaceuticals throughout the U.S. supply chain by 2023. The FDA requires the 2D barcodes to enhance consumer protection by monitoring the movement of prescription drugs from manufacturing to dispensation. 2D barcodes must contain the National Drug Code, Serial Number, Lot Number, and Expiration date. This level of traceability improves recall capabilities and authentic validation of pharmaceutical products.

Compliance with mandates can also affect your businesses growth. Large retail chains such as Wal-Mart, Target, Nordstrom, Macy's, and more have been requiring consumer goods to incorporate RFID technology into their products. RFID can provide a more automated, hands-off approach, reducing the amount of physical touch or individual scanning of items. There are many benefits to including RFID, including improved inventory accuracy, tracking, and loss prevention.

These standards play key roles in identifying, tracking, and tracing products as they move through supply chains across the world. Whether it is a simple traceability requirement or a complex regulatory compliance code, incorporating barcode technology can help your consumer goods company minimize fines and exposure.

Zebra has Options to Match Your Needs

With Zebra Technologies, there are affordable options for just starting out, options that provide more flexibility and durability, and options that provide professional long-lasting solutions. **Imprint Enterprises has a team of specialists** that will understand where you are today and where you want to go in the future.

The next few chapters help explain some differences in the parts to barcode technology and Zebra's options to match your needs.

PART 2

What's Important to Know About Printing

A proper barcode label helps you and your clients ensure compliance standards are met within industry standards. A barcode label provides information on what a product is and where it goes. Labels are used to track inventory, which is vital to supply chains, inventory management, transportation, asset management, sales, and more.

When printing your own barcode labels, there are certain factors to consider. Printing requirements involve determining the parameters of your barcode printer setup:

> How big of a label do you need to print?
>
> How many labels do you want or need to print at any one time?
>
> Will the labels be printed in a centralized method or a distributed method?
>
> How many work areas will need printer capabilities, or will there be one printer room?
>
> Does my company need to incorporate RFID printing capabilities?
>
> Are there mandates my company must comply with?

Font Size Matters

Once you know how your company will be printing labels, the next factors to consider involve the font size on the labels and the size of the barcode itself. The smaller the font size, the higher the resolution the printhead of the barcode printer needs to be. Printheads come in 203, 300, or 600 DPI (dots per inch). The smaller a label needs to be, the higher the DPI resolution must be to accommodate the size of the label.

A Printer for Any Function

Barcode printers typically come in three varieties: desktop, tabletop, and mobile. Desktop printers are typically smaller and lighter than tabletop printers. Tabletop printers are more durable and can do more functions than a desktop, such as label rewinding and peel and present. If your company needs to print a thousand labels at a time and rewind them back into a roll (label rewinding), then a tabletop printer is the way to go.

Peel and present label printing is a method of sending a label job of, for example, a thousand labels to a printer where the job sits in a queue so that one label can be printed at a time, peeled off, and applied. Then it repeats until the queue is emptied.

Another option is using a **mobile barcode label printer** that can print barcodes as employees are walking around working. This is a good option for mobile workflows to minimize interruptions of walking back and forth to a centralized printing location.

An Option for Any Stage of Business

No matter what stage your business is at, Zebra has the options to support your growth. From just starting out to knowing your business will expand into the future, Imprint can help walk you through Zebra's barcode printer options.

Starting Out Options

For consumer goods SMBs that are just starting out, the following printers are good options:

Zebra [Desktop ZD600 Series](#) Thermal Printers

- Durable with premium quality printing
- Full-color touch display
- Remote management capability with
  increased security measures

Zebra [Desktop ZD500 Printer](#)

- Print user-defined fonts, graphics, and custom logos
- Operates in direct thermal or thermal transfer mode
- Print linear and 2D barcodes
- Print width of up to 4"
- Print speed of 6" per second at 203 DPI or
  4" per second at 300 DPI
- Multiple connectivity options
- Optional UHF RFID capabilities

Durable and Flexible Options

For consumer goods SMBs that are looking for options that provide greater flexibility and durability, the following printers some of the better options:

Zebra [ZT111 Industrial Printer](#)

- Easy integration and backwards compatible
- Printer Emulation capabilities
- Operates in direct thermal or thermal transfer mode
- Print speed of up to 10" per second at 203 DPI
- Three button keypad
- Connectivity options include Serial, Ethernet,
  and USB Host

Zebra [ZT231 Industrial Printer](#)

- Print speed of up to 12" per second at 203 DPI
- Optional 300 DPI resolution
- 4.3" full-color touchscreen
- Optional RFID capability
- Connectivity options include USB, Serial, Ethernet, and USB Host
- Pair and print with compatible mobile devices
- Operates in direct thermal or thermal transfer mode
- Backwards compatible with Printer Emulation capabilities

Long-Lasting Options

For consumer goods SMB's that are wanting professional and long-lasting solutions the following are the best options to choose from:

Zebra [ZT411 Industrial Printer](#)

- Durable for harsh industrial environments
- 3" full-color touch display
- Industry specific configurability
- Print speed of up to 14" per second at 203 DPI
- Operates in direct thermal or thermal transfer mode
- Connectivity options include USB, Serial, Ethernet, Bluetooth, and Dual USB Host
- RFID option

Zebra [ZT421 Industrial Printer](#)

- Durable for harsh industrial environments
- Metal frame with bi-fold door for accessibility
- 4.3" full-color touch display
- Print width up to 6"
- Print speed of up to 12" per second at 203 DPI
- Operates in direct thermal or thermal transfer mode
- Connectivity options include USB, Serial, Ethernet, Bluetooth, and Dual USB Host
- RFID option

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PART 3

What's Important to Know About Scanning

It's important to know what kind of barcodes your consumer goods SMB is needing to scan to determine what kind of Zebra scanners are best suited to your needs. There are different forms of barcodes, depending on the product it is placed on and the lifecycle requirements of the barcode itself.

> 1D, or linear, barcodes can only hold approximately 20-25 characters. 2D barcodes can have a higher data density in a smaller space. 2D barcode labels use patterns, shapes, and dots to encrypt more data information and can include images, website addresses, and binary data.

RFID tags are considered either active or passive, where the antenna is always waiting to receive a signal from the RFID reader. Active tags are always awake, have their own power source and transmitter, and respond to the RFID reader's signals. Passive tags are asleep until pinged by a signal, at which point it will then wake up and respond to the RFID reader. You can refer to Imprint's RFID technology FAQ for more information.

Once you know what kind of barcodes you will be scanning, it's important to determine if you will need tethered scanners or cordless scanners. Tethered scanners are typically connected to a host computer via USB cable, which powers the scanner. Cordless scanners are portable and typically connect via Bluetooth or Wi-Fi to host computers.

An Option for Any Stage of Business

Zebra has options to support any stage of business growth. From just starting out to facilitating a growing demand, Imprint can help walk you through Zebra's barcode scanner options.

Starting Out Options

For consumer goods SMBs that are just starting out, the following scanners are good options:

LI2208 Handheld Scanner

- Scans 1D barcodes only
- Reads 13 mil 100% UPC barcodes up to 30 in (76.2 cm) away
- Reads 26 mil 200% UPC barcodes up to 55 in (139.7 cm) away
- IP42 Sealing

DS8100 Series Handheld Imagers

- Tethered and cordless options
- Scan 1D/2D barcodes
- Reads 13 mil 100% UPC barcodes up to 24 in (61 cm) away
- High resolution imaging sensor
- Zebra's exclusive PRZM Intelligent Imaging technology
- IP52 Sealing

Durable and Flexible Options

For consumer goods SMBs that are looking for options that provide greater flexibility and durability, the **Zebra DS4600 series** provides a better option:

- Capture laser etched direct part marks, high density and low contrast codes, and 4-in wide barcodes
- Reads 13 mil 100% UPC barcodes up to 8.5 in (21.5 cm) away
- 800 MHz microprocessor, megapixel sensor
- Zebra's exclusive PRZM Intelligent Imaging technology
- IP52 Sealing

Long-Lasting Options

For consumer goods SMB's that are wanting professional and long-lasting solutions, the following are the best options to choose from:

Zebra DS3608

- Ultra-rugged tethered scanner
- Scan 1D/2D barcodes up to 5 ft (1.5 m) away
- High resolution imaging sensor scans damaged barcodes
- Zebra's exclusive PRZM Intelligent Imaging technology
- IP67 Sealing
- Drop Spec 8 ft (2.4 m) drop to concrete with 5,000 tumbles
- Extreme temperature rating

Zebra DS3678

- Ultra-rugged cordless scanner
- Scan 1D/2D barcodes up to 5 ft (1.5 m) away
- High resolution imaging sensor scans damaged barcodes
- Zebra's exclusive PRZM Intelligent Imaging technology
- IP67 Sealing
- Drop Spec 8 ft (2.4 m) drop to concrete with 5,000 tumbles
- Extreme temperature rating
- Sealed rugged cradle with IP65 sealing

Fixed RFID Readers

Fixed RFID readers are attached to warehouse doors, a production line, or within a warehouse for easy tracking and inventory automatically. Consider the following:

FX9600

- Requires no hard-wire connection.
- Best for warehouse, manufacturing, and loading dock environments with high-volume pallets and containers.

FX7500

- Requires a hard wire connection but provides faster and more accurate reads.
- Best for back-end applications in retails, warehouse, manufacturing, transportation, and business-class or office environments.
- Paired with a Linux-based network.

Handheld RFID Readers

Need a portable RFID reader option? Handheld readers are an excellent option for carrying around:

MC3330R

- Built on the Android platform with a large touch screen and keypad for comfortable, all-day use.
- Best for omni-channel fulfillment, inventory management, automatic replenishment, control with receiving, trunk stock demo/sample inventory, and pharmaceutical and laboratory inventory.

MC3390R

- Requires no hard wire connection.
- Best for long-range, inventory management, item location and tracking, automatic replenishment, cross docking, and control with receiving.
- Paired with a Linux-based network.

FRD8500 Sled

- Easily adds UHF RFID tag reading, writing, and locating abilities compatible with your Zebra TC20 RFID-ready mobile computer.
- Best for inventory management.
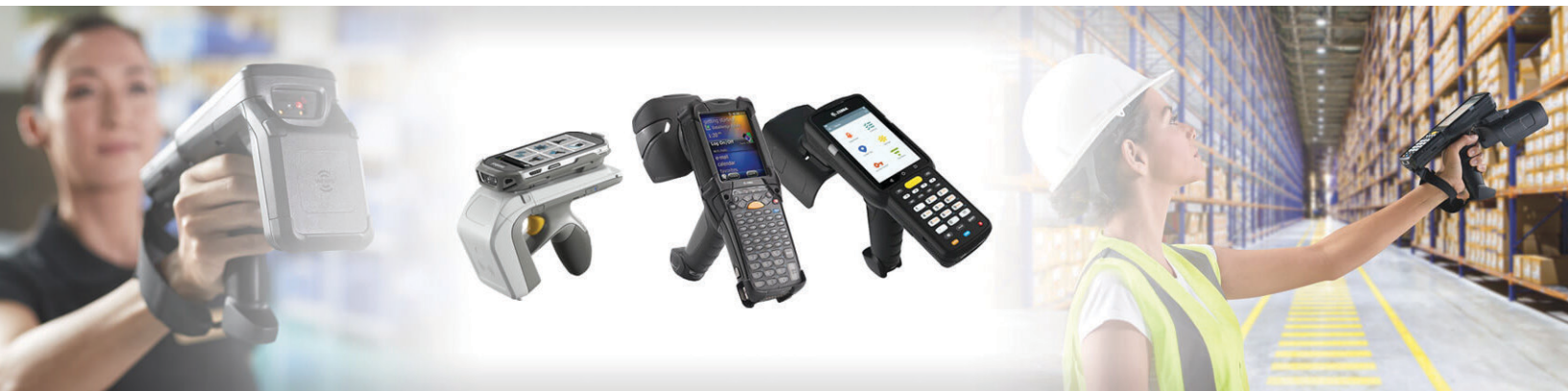
PART 4

What's Important to Know About Terminals

Terminals can be a vital component to your wireless infrastructure because of their mobility, ruggedness. Terminals are used when your employees need mobility to perform a function, scanning through a workflow for real-time information and data.

Imagine your employees are picking orders. Using a mobile device that enables access to a host interface provides immediate interaction with a database. The employees can see in real-time what orders need to be pulled and what items need to be scanned to the order. As the data is scanned, the host updates the inventory. Inventory problems can be minimized with real-time data.

An Option for Any Stage of Business

Whatever stage your consumer goods business is at, starting out or planning long-term future growth, Zebra has options to support you. Imprint's specialists are always available to help you understand the differences with Zebra's terminals.

Starting Out Options

For consumer goods SMBs that are just starting out, the following terminal are good options:

Zebra MC2200* and MC2700**

- Wi-Fi* or Cellular** connection
- 4-inch WVGA capacitive touch display
- Corning® Gorilla® scanner window
- 34-key numeric keypad
- Android OS
- PRZM Intelligent Imaging technology
- Drop spec 5 ft (1.52 m) drop to concrete with 500 tumbles*
- IP65 sealing*

Durable and Flexible Options

For consumer goods SMBs that are looking for a terminal option that provides greater flexibility and durability, the **Zebra MC3300** is a better option

- Data capture up to 70 ft (21.3 m)
- Configurable forms: pistol grip, turret with rotating head straight shooter
- IP54 sealing
- Wi-Fi enabled
- Backwards compatible with MC3200 accessories
- Android OS
- MC3300xR provides RFID capability

Long-Lasting Options

For consumer goods SMB's that are wanting professional and long-lasting solutions, the following are the best terminal options to choose from:

Zebra MC9300

- Ultra-rugged construction
- 3-inch WVGA touchscreen
- Corning® Gorilla® scanner window
- Drop spec 8 ft (2.4 m), 6 ft (1.8 m) drop to concrete
- IP67 and IP65 sealing per applicable IEC sealing specifications
- Standard operating temp -4°F (-20°C) to 122°F (50°C)
- Cold Storage operating temp -22°F (-30°C) to 122°F (50°C)
- Android OS with LifeGuard™ for Android

Zebra TC8300

- Rugged durability with ergonomic design elements
- Android OS with LifeGuard™ for Android
- Drop spec 8 ft (2.4 m) drop to concrete with 2,000 tumbles
- 4-inch touch-centric intuitive screens
- Corning® Gorilla® scanner window
- IP65 sealing
- Standard operating temp -4°F (-20°C) to 122°F (50°C)
- Cold Storage operating temp -40°F (-40°C) to 158°F (70°C)

PART 5

Integration Components for Success

Each section of the barcode scanning technologies is part of a greater whole. It is an entire system that feeds into each other. If you only invest in one part, the whole system will not properly function. It's a matter of the quality of your barcode labels that are printed out, the quality and function of the scanning and terminal equipment, and the information storage system.

Information Management Systems

When you create barcode labels and scan barcodes, the information they contain must go somewhere. Where that somewhere is, is a matter of preference. Starting out, SMB's have been known to use simple spreadsheets created manually, or scan barcode data into a QuickBooks software.

Manually inputting data can lead to erroneous information, which hinders effectiveness. It's also time consuming to manually input all the data. **Creating a a consumer goods company that will be functional for years to come has simple solutions that are integrated with your barcode labeling technologies.** These systems can store all the data in a centralized location, from inventory to work orders to item locations.
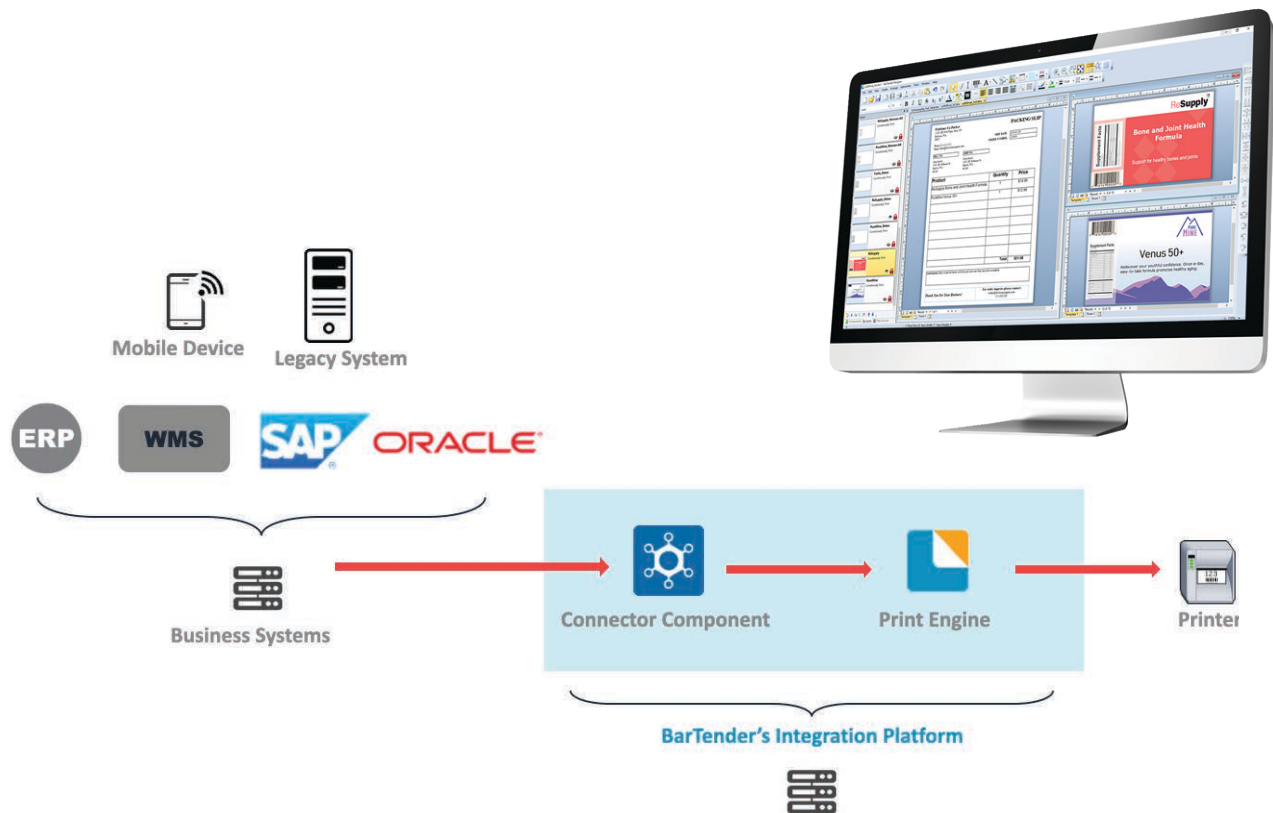
ERP Systems

Connecting and using an Enterprise Resource Planning (ERP) system can provide a direct interface between the barcode labeling system and the ERP system. Your business operations can benefit with real-time inventory information while maintaining the look and feel of your current systems and keep production flowing smoothly.

Inventory Management Systems

Inventory management affects a company's profitability and productivity. To process orders, employees need to know where items are, if there's enough to fill an order, and have accurate data. Linking your inventory management system to your barcode system provides real-time information that is accurate and reliable.

Warehouse Management Systems

Creating a smarter warehouse or your future will help your consumer goods business keep up with customer demands and your growing needs. When you look around at your warehouse, *do you have a highly efficient system?* Installing smart labels for easy scanning and enhancing the visibility of your signs will boost productivity and expedite order fulfillment. Barcode scanning increases efficiency as much as 67%.

CONCLUSION

Barcode Labeling is an Interconnected System

When you incorporate a complete Zebra Technologies barcode labeling system, the process becomes more simplified which enhances operational efficiency. Every aspect of barcode labeling technology, from barcode label printers to scanners to terminals, creates an interconnected system that can help your company thrive and grow into the future.

With 32 years of experience and product knowledge, Imprint Enterprises is an industry-leading provider and a Premiere Solution Partner for Zebra Technologies barcode printers, scanners, and terminals. Some clients have been with Imprint Enterprises from the start of the company. Every client is about building a lasting relationship to facilitate client growth and future sustainability.

Zebra Technologies also offers unique promotions that your business can benefit from. From minimizing downtime and printhead costs to upgrading outdated technology, Imprint can help you learn more and make the most of those opportunities.

Servicing helps maintain the integrity of your barcode technology. Service contracts are available to make sure your equipment and products are working and ready to go. Mobile and desktop printers are designed to be service at depots, while the bigger tabletop printers are serviced within your facility.

ZEBRA

If your business exclusively uses Zebra Genuine Supplies exclusively, Zebra will replace old, worn out printheads at no charge when you're enrolled in the Zebra Printhead Protection Program. This program removes the worry of downtime and unexpected costs when a printhead fails, while lowering the total cost of ownership of the printers.

IMPRINT ENTERPRISES SINCE 1975

Imprint understands where you are today and where you want to go in the future. Part of your future includes the long-term use of the barcode technology assets within your company. Some companies have been working with Imprint and Zebra for approximately 20 years.

Complete barcode labeling systems can help decrease costs, increase efficiency, and achieve higher levels of customer satisfaction while maintaining industry specific compliance.

Contact **Imprint Enterprises today** to discuss Zebra's barcode labeling solutions that are best for you!

Imprint Enterprises has been in business since 1975 and is focused on providing customers the highest quality products with the most comprehensive service. Whether you're looking to purchase new barcode equipment and supplies, or need best-in-class installation and service for your barcode products, we have a solution for you. We specialize in nationwide barcode printer service, site surveys and end-to-end barcode solutions. Imprint's Barcode and Custom Labeling Division focuses on the following industries: manufacturing, distribution, logistic centers, food processing, co-packagers, beverage, and pharmaceuticals.

Download Our Product Catalog

View our complete line of labeling, barcode, RFID, and mobility products.

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