



BARCODE LABELING

Optimizing Your SMB Barcode Labeling Process

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INTRODUCTION

How to Optimize Barcode Labeling

As a small to medium sized business, barcode labeling can seem overly complicated and overwhelming, especially when it's new to you.

Part of growth is winning contracts and expanding into new territory. Barcodes are more than just ink on paper or buying a random printer and software package.

A proper barcode label helps you and your clients ensure compliance standards are met within industry standards. Barcodes can help manage and track inventory from beginning to end. There are five areas to understand how to optimize barcode labeling for your SMB: barcode design, templates, hardware and supplies, printing, and management.

This eBook helps break down what may seem complicated to show you there are options available to help your business step forward while considering future possibilities.

Barcode labeling is a complete system that can help decrease costs, increase efficiency, and achieve higher levels of customer satisfaction.

Why Barcode Design Matters

The core function of a barcode label is to provide 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.

There are different forms of barcodes and sensors, 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.

Radio Frequency Identification (RFID) is commonly used in various applications for tracing, from production through the supply chain.

RFID uses a chip and tag combination for optimal reading, making it superior to barcodes with the ability to be read from long distances and storing significantly more information.

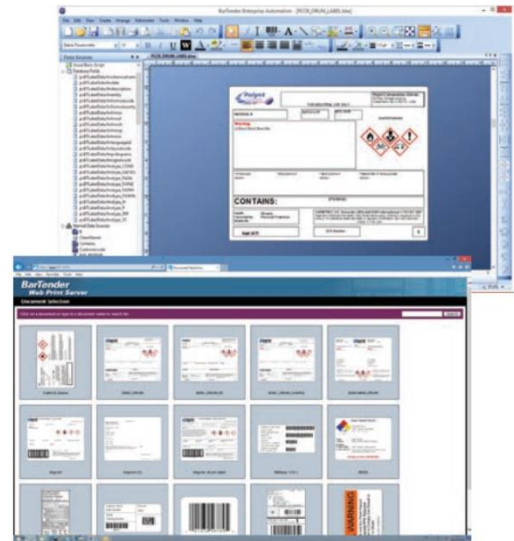
Zebra Technologies also has the options you need to monitor for temperature and humidity changes. From thermal transfer labels for on-demand printing with built-in temperature or humidity sensors, to high-heat visual representation for autoclaves and sterilization processes, to thermal sensor labels for reducing the risk of damaged products with monitoring during shipping.



Barcode Labeling Template Software Can Improve Operations

Barcode labeling templates and software help manage barcode labels consistently and effectively. Template options can range depending upon your company needs, growth possibilities, and how much information is needed in a barcode. From a simple spreadsheet to a database to an Enterprise Resource Planning (ERP) system, there is something for everyone.

Different industries will have different compliance requirements, including pharmaceuticals and retail supply chains. Incorporating a barcode template software system can help create, automate, and manage barcode labels, printers, and more. The larger your company gets, the more complex your needs may become. Learning how to use a system does not have to be as complex as your needs.



Zebra Quality is Top of the Line for Barcoding Hardware and Supplies

Zebra Technologies 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. Using the right ribbon for barcode labeling will improve the imaging on labels for proper scanning and prolong the life of the printhead in the barcode printer.

Printing barcode labels or tags in-house can increase productivity. DecisionPoint has wide selection of Zebra barcode printers to choose from. These printer models offer various features that enhance their usability, performance, and durability. There are industrial barcode printers, mobile label printers, and more. Zebra's top-quality enterprise-ready printers are easy to integrate, set up, and configure.



There's More Than One Way to have Barcode Labels Printed

There are many ways to get barcode labels printed, depending upon your company needs. You can get set up to do everything in-house, so that you can manage your own printer forms using your database, QuickBooks, an ERP system, or a software program like **BarTender 12**. Printing barcode labels from your facility provides 24/7 reliability to eliminate downtime.



If managing the software and hardware yourself doesn't suit your company needs, you can have labels custom made and shipped to your company as needed.

There is a program with DecisionPoint that can have customized barcode labels made and shipped to you as you need, and before you run out.

Barcode Labeling Management to Suit Your Needs

When many people across a company have access to barcode labeling programs, equipment, and templates, problems can accidentally interrupt the flow of processes. Access to software and hardware programming can be easily managed with password protection and centralized management programs. Management systems also provide peace of mind to see when problems arise and decrease downtime.

Zebra's Printer Profile Manager Enterprise, part of their Print DNA suite of tools, can manage all barcode label printers from one location, no matter where they are located. Security access to change templates and configurations are safeguarded, minimizing error-prone manual processes.

To support secure, centralized barcode labeling at scale, organizations need real-time asset visibility and device optimization across both printing and mobility environments so mobile workers can stay productive and printers operate reliably wherever work happens.

These capabilities are commonly delivered through centralized analytics platforms and managed services that cover mobile devices, peripherals, and printers, including solutions such as **Zebra's VisibilityIQ™ DNA** alongside **DecisionPoint's IntelliTrack® platform**.



PART 1

A Barcode Design is About Functionality

The core function of a barcode label is to provide information on what a product is and where it goes.

It is functionality over prettiness. Barcode labels are used to track inventory, which is vital to supply chains, inventory management, transportation, asset management, sales, and more.

There are different forms of barcodes and sensors, depending on the product it is placed on, how it is placed on the product, and the lifecycle requirements of the barcode itself. Labels also come in a variety of sizes, shapes, colors, and materials. From 1D barcodes, 2D barcodes, RFID, and Environmental labels and sensors, each serves a purpose.

1D/2D Barcodes

1D, or linear, barcodes have a linear black and white line pattern with variable-width lines and spaces for encoding information. The horizontally encoded numbers and characters, from left to right, typically holds only 20-25 characters. The most familiar 1D barcode is that of the common UPC code on grocery and consumer items.

2D barcodes can have a higher data density in a smaller space, creating a faster and more efficient method of tracking stock and inventory. 2D barcodes use patterns, shapes, and dots to encrypt more data information and can include images, website addresses, and binary data, and are scannable up to 50 feet away.

RFID

Radio Frequency Identification (RFID) is commonly used in various applications for tracing, from production through the supply chain and on to the end user. RFID uses a chip and tag combination for optimal reading either singularly or as a group of items, making it superior to barcodes with the ability to be read from long distances and storing significantly more information using encryption and password protection features.

RFID is becoming more prevalent with the advancement of geo-location, security, and automation. Hundreds of tagged items can be quickly located, authenticated, and tracked all at once by waving a handheld reader or automatically with a fixed reader. This can reduce the amount of time needed for a manual labor and routine tasks, such as an inventory count, or locating the exact item needed in a sea of similar items.

RFID is also used for tracking high value products throughout an entire workflow, as it's being manufactured through the supply chain, or providing the ability to serialize individual units because of the nature of the RFID tag. In essence, each RFID tag is a mobile database that you can encode data.

Environmental Labels and Sensors

Zebra Technologies also has the options you need to monitor for temperature and humidity changes using labels and sensors. From thermal transfer labels for in-house printing or ordering customized labels and sensors, they help monitor fluctuations in temperature and environmental fluctuations that can impact your products and your company profits.

Increase profitability with an easy to integrate solution to reduce loss and increase accountability during shipping with built-in temperature or humidity sensors. There are also high-heat visual representations for autoclaves and sterilization processes.



Environmental Labels and Sensors for Specialty Meal Services

Your company started off as a small, local meal prep service that could easily control the temperatures required to keep meals frozen for customers. Now that your company has grown to a national level, specialty meals are shipped from your manufacturing facility directly to customers. Your company takes great care in packaging the products so they can stay frozen from your warehouse to the recipient.

You know your products are good when they leave your facility. Now it seems you are constantly replacing damaged and thawed products, managing angry customer calls while paying for restocking and new shipments. Zebra Technologies environmental labels and sensors can detect exposures at packaging, shipping, and recipient levels. This can increase accountability during shipping and optimize operational efficiency.

Environmental Labels and Sensors for Pharmaceuticals

Medications can be shipped to various facilities or even straight to a consumer. Often, medications need to be environmentally regulated to ensure their integrity. Reduce the risk of product damage with electronic temperature sensors from Zebra Technologies.

Electronic temperature sensors record cold storage temperatures throughout a products journey. The electronic sensor from Zebra is compatible with IT networks and uses Bluetooth, cellular, Wi-Fi, or ethernet to upload the information. They can be easily integrated into your existing systems and processes to gain expanded control over product quality.



The Design is About What Your Company Needs

The barcode label designs your company needs for your products is about the purpose of the barcode. Most retailers still use 1D or 2D barcodes, depending upon the data density that the barcodes need to contain. 1D/2D barcodes are a visual concept and requires a line of sight for scanning.

RFID is great for products that are similar in nature and are difficult to scan individually, reducing the amount of time spent tracking inventory. RFID can make e-commerce more efficient and visible, reducing the amount of physical touching or scanning of individual units.



Whichever barcode design your company needs, it's always best to consult with an expert that can help answer any questions you have on the use of the different barcode designs. The barcode label itself is just the first part of creating a functional system your company needs.



PART 2

Enhance Operations with Template Software

Barcode printing templates and software help manage barcode labels consistently and effectively.

Software options can range depending upon your industry, company needs, growth possibilities, and how much information is needed in a barcode. Different industries will have different compliance requirements, including pharmaceuticals and retail supply chains.

Incorporating a barcode template software system can help create, automate, and manage barcode labels, printers, and more. The larger your company gets, the more complex your needs may become. Learning how to use a system does not have to be as complex as your needs.

Many small businesses start off using a spreadsheet to track their barcodes and templates. For just starting out, that may seem optimal. As a company grows, that spreadsheet can become more complex, and manual entries can unintentionally create errors, resulting in delays and redoing work.

Deciding which software template program to use will depend upon if you have compliance standards within your industry. Most templates are easy to learn, maintain, and update.

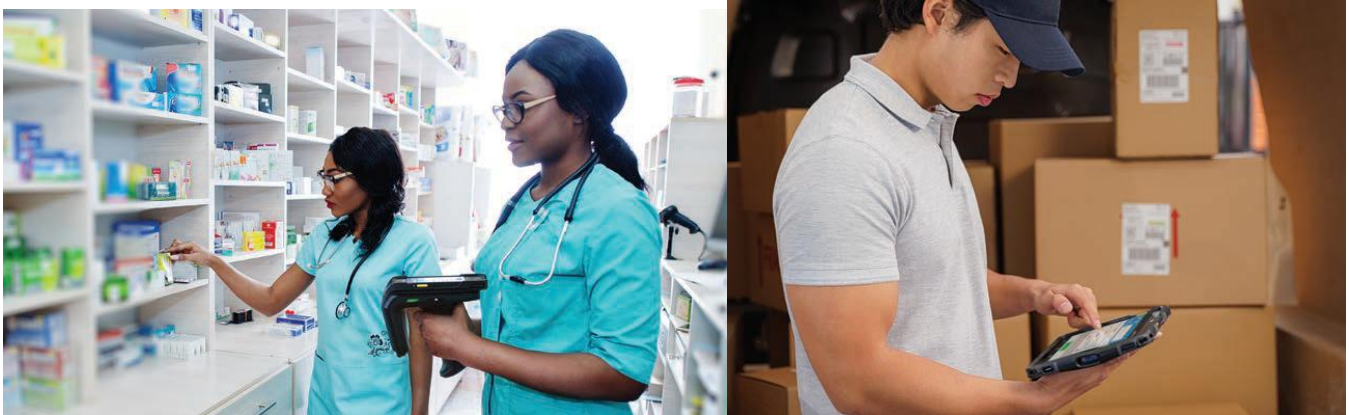
Compliance Labeling

Different industries have different compliance requirements, specific standards that must be adhered to for multiple reasons. Your company worked hard to obtain contracts; this information is what can help maintain compliance of the barcode labels.

DOD / UID

The [Department of Defense \(DOD\)](#) requires unique identification (UID) markings on everything. This provides for item management and accountability throughout the entire supply chain. The DOD uses a Military Shipment Label with linear barcodes on outer containers. Bad barcodes can delay critical missions.

Pharmaceuticals and Healthcare / UDI



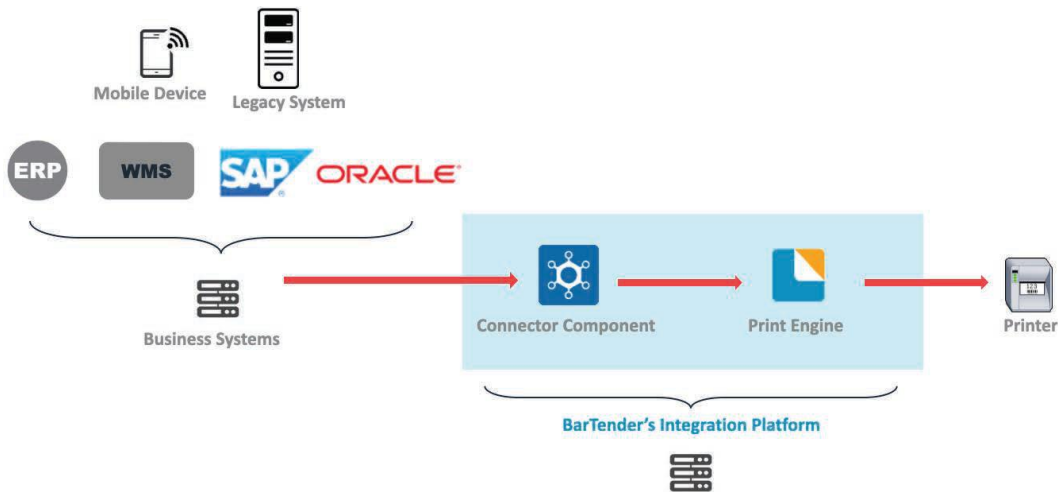
The US Food & Drug Administration (FDA) requires a [unique device identifier \(UDI\)](#) on every label that is readable by man and machine, from manufacturing through distribution and on to patient use. These labels help manage patient safety.

Retail Supply Chain

From manufacturer to customer, a readable barcode eases transportation and logistics. Each barcode is readable no matter what device is reading it. Employees can easily scan the material to see where it goes in the store without having to open items to figure out what it is.

Automotive

The [automotive industry](#) typically uses 2D barcode technology for fast and accurate shipping. These barcodes can also help manage parts to ease the stress of a recall by creating traceability.



Enterprise Resource Planning (ERP) Systems

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

Connecting an ERP system to a barcode labeling system can reduce costs, improve accuracy, and provide better inventory tracking and visibility. You can save a substantial amount of money in labor costs when barcode data is automatically gathered and immediately available. There is no more wasted time manually entering data or generating reports.

BarTender®

BarTender is an all-in-one barcode software solution from Seagull Scientific that is simple and cost-effective. This software program makes it easy for medium-sized businesses to create, automate, and manage barcodes, labels, RFID tags, and more.

BarTender 12 is a program that has been around for decades. It offers automation, integration, and database capabilities along with design tools and security features.

Create any barcode label you need from any network printer. BarTender can help any organization on a local or global scale to better manage their labeling lifecycle, increase label quality, integrate with existing business systems, and improve reliability, traceability, and compliance. With this integrated and network connected software program, labels can be printed anywhere anytime, by anyone with access.

BarTender 12 has the efficiency to design a single template that can be used across multiple customer bases, or the complexity for different templates for different customer bases.

Optimize Your Effectiveness

A common mistake with barcode labeling is creating a different label for each product. For some companies, this can be in the hundreds or thousands which is labor and time consuming. One small mistake can lead to mislabeled products, potential recalls, and waste. Using templates and software can optimize effectiveness with consistency.

Whichever barcode template software your company needs, it's always best to consult with an expert that can help answer any questions you have on the use of the different barcode software and template options that can be matched with the proper hardware and supplies needed.





PART 3

Top Quality Hardware & Supplies from Zebra

Printing barcode labels or tags in-house can increase productivity. Zebra Technologies is an expert in the barcoding technology field with their rigorous testing of their own products and multiple R&D facilities. Zebra is one of the largest converters in the USA for barcode labels.

Using the right combination of ribbon and printers for barcode labeling will improve the imaging on labels for proper scanning and prolong the life of the printhead in the barcode printer. DecisionPoint Technologies has wide selection of Zebra hardware and supplies to choose from.

The printer models listed offer various features that enhance their usability, performance, and durability. There are industrial barcode printers, mobile label printers, and more. Zebra's top-quality enterprise-ready printers are easy to integrate, set up, and configure.

Zebra Quality Labels & Ribbons

Barcode labels come in a variety of sizes, shapes, colors, and materials. There are also a variety of ribbons for barcode label printing. Thermal barcode ribbons come in wax, wax/resin, and resin material. Wax ribbon (paper-based material) is the most used material due to its low cost and ease of use. Direct thermal fuses ink onto the label material while the thermal transfer method prints images via wax or resin ribbons.



Food and beverage companies will need to consider pressure-sensitive prime labels.

These items leverage flexographic and digital offset printing technologies to deliver professional, polished graphic treatments. Digital printing for prime labels enables you to adjust specifications as needed, change labels according to seasonality, print multiple SKUs, and personalize offerings according to location or client.

Zebra Quality Printers

Zebra's top-quality enterprise-ready printers are easy to integrate, set up, and configure. Different printer models offer various features that enhance their usability, performance, and durability. There are industrial barcode printers, mobile label printers, and more.

Industrial Barcode Printers

Industrial barcode printers from Zebra support both light industrial and commercial needs, as well as more demanding environments that require compact form factors, rugged construction, and durable all-metal frames. These solutions are designed to deliver reliable performance, high print quality, and scalability to support growing operational requirements across manufacturing and warehouse settings.

Mobile Label Printers

Zebra's mobile label printers provide the convenience of printing barcode labels and receipts when and where they are needed. Built for printing on the move, these printers are ruggedized to withstand drops, extreme temperatures, and challenging environmental conditions, helping improve efficiency and productivity for mobile workers.



Zebra Technologies has industrial RFID printers that offer durability and flexibility, with high print speeds and media capacity for increased productivity.

Industrial RFID Printers

These solutions support on-demand RFID asset tagging across a variety of surfaces, including challenging materials, enabling organizations to address asset tracking, serialization, and compliance-driven workflows in industrial environments.

Print Engines

A print engine can be the heart of automated print-and-apply labeling systems, and Zebra print engines are designed for ease of use and maintenance. These components integrate directly into automated production lines to apply labels accurately and consistently, while helping minimize downtime in demanding industrial operations.



The Right Hardware & Supplies for the Job

The printing hardware and supplies your company uses can impact your bottom line. The right supplies will result in quality labels, minimizing waste and downtime, and prolonging the life of your printers. It's always best to consult with an expert that can help answer any questions you have on which products are best suited to your environment, volume of business, and future growth.





PART 4

More Options for Printing Barcode Labels

There are many ways to get barcode labels printed, depending upon your company needs.

You can get set up to do everything in-house, so that you can manage your own printer forms using your database, an ERP system, or a software program like **BarTender 12**.



Printing barcode labels from your facility can provide 24/7 reliability to eliminate downtime. Barcode labels can be printed out in sheets, entire rolls, or as needed with portable printers.

If managing the software and hardware yourself doesn't suit your company needs, you can have labels custom made and shipped to your company as needed. There is a program with DecisionPoint that can have customized barcode labels made and shipped to you as you need before you run out.

Label Template Systems

Printing barcode labels in-house can save time and minimize errors if the user interface is as simple and intuitive as possible. If not, it could increase errors. If your software allows, develop easy-to-use printer forms that are tailored to your processes and are intuitive to how your operators work.

Printer forms remove the need to manually enter data and information. Operators can select the correct template from a preview, select the data that is to be printed on the label from a database, spreadsheet, QuickBooks, or ERP, and preview before printing. Because it is a template, the design set cannot be altered.

BarTender 12 provides options for creating and printing barcode labels using an integrated system that allows anyone with permission to create and print commercial-quality designs with increase quality assurance measures. By using the template designs, you can save on the time it takes to manually enter all the information and replace thousands of printer code files with just one file.

Customized Orders

If printing barcode labels at your facility is not feasible, there are options to have labels made for you and shipped to you. Stock labels and customized labels are shipped in rolls and can be placed in advance so that they are sent to you before you run out. Stock labels are standard looking labels without any customization. They typically come in sizes of 4x6, 4x4, and 4x3.

Custom labels are for specific size and shape needs on any type of material. These labels can have colored panels, can have specialized and detailed logos, and have unique needs for label treatments, sizes, shapes, and colors. Blanket orders can be placed and put on hold in case your company has long lead times with raw materials and only need so many labels at a time.

Customized labels can also be ordered at an economy of scale concept. The greater the label order, the lower the cost of each label. For example, if you place an order of 10,000 labels, it'll be cheaper than ordering 1,000 labels each time. On top of that, you can set a pay as you go order so you're paying for each shipment of labels at a time instead of the entire order at once.

Your Options are Flexible

Printer forms and programs that feature a simple user interface means training new employees is faster and easier, and everyone can work more efficiently and accurately. The barcode label printing option that will work best for your company will depend on if you need the flexibility of creating your own templates and if you have the time to do so.



PART 5

Consider a Barcode Management System for Effectiveness

When many people across a company have access to barcode labeling programs, equipment, and templates, problems can accidentally interrupt the flow of processes.

Access to software and hardware programming can be easily managed with password protections and centralized management programs.

Management systems also provide peace of mind to see when problems arise, decreasing downtime while increasing effectiveness. The best management systems by Zebra are the Printer Profile Manager Enterprise and VisibilityIQ™ DNA. DecisionPoint Technologies also provides a remote device management service.

Printer Profile Management Enterprise

Zebra's Printer Profile Manager Enterprise (PPME), part of their Print DNA suite of tools, can manage all barcode label printers from one location, no matter where they are located. Security access to change templates and configurations are safeguarded, minimizing error-prone manual processes.



All networked Link-OS® printers can be managed from a single location, including updating printer software, creating and distributing configurations from your browser, and automatically updating WLAN security certificates for each printer.

This remote management can minimize time and cost and maximize printer uptime by scheduling updates at a time that minimizes disruptions.

Setting up PPME is fast and easy with the integrated self-installer. Every networked Link-OS printer is quickly discovered without having to physically locate it. Each printer, and even Link-OS card printers, can be organized with tag names you create. A quick press of a button can provide you a visual status on every printer connected to the system, using green, yellow, or red alerts.

VisibilityIQ™ DNA

Zebra's VisibilityIQ™ DNA, available with every Zebra device, is a centralized management program with real-time visibility to see all the data you need as you need it. This program provides greater mobility through mobile computers while easily using thermal printers efficiently.



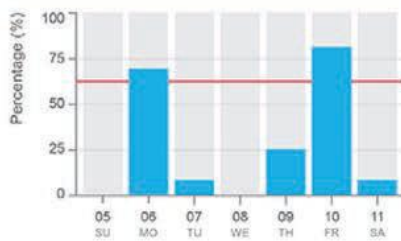
VisibilityIQ™ DNA features PowerPrecision Console, Device Diagnostics, StageNow, and WorryFree WiFi. The PowerPrecision Console provides battery health updates by color-coded categories so batteries can be replaced before impacting the employees using the devices. Device Diagnostics can reveal maintenance issues before it becomes a disruption.

These features improve the performance of barcode label printers so your company can run more efficiently and productively. VisibilityIQ™ DNA can improve uptime while streamlining asset management.

DASHBOARD SUMMARY



No trouble found to repair resolutions ratio



Repair status as of Mar 31, 2015



Serial number:
 Device model: **MC40**
 Site: **A001**
 Carrier: [UPS](#)
 Shipped: **Mar 27, 2015**
 Tracking: **305u13049u20394u**

Job:
 Status: **Shipped repaired**
 Opened: **Mar 25, 2015**
 Received: **Mar 26, 2015**
 Repaired: **Mar 27, 2015**
 Category: **Software**
 Resolution: **NTF**

Remote Device Management Service

DecisionPoint has managed services that can help maintain and manage your devices for you, assisting you during downtime and addressing any security gaps there may be.

DecisionPoint keeps track of your equipment needs and activity, so you don't have to.

Through the remote device management service, a dedicated remote person can investigate any problem and provide solutions. They can also collect data you need from your devices, review your dashboard and reports, and get you the information you need. It is a way to have oversight without spending your time.

Centralizing Management

Look for a solution that provides centralized management of all barcode labeling across your entire organization. Label management solutions empower you to populate label templates automatically with data from your ERP or database, stage label printing jobs to specific printers, maintain a print history, and manage your printers.



CONCLUSION

Barcode Labeling is a Complete Ecosystem

Creating a Thriving Ecosystem

When your company's barcode labeling process is simplified and optimized, the benefits include standardized labeling and completely functioning hardware and software across your entire organization. Every aspect of the barcode labeling process creates an ecosystem that can help your company thrive and grow.

Ensuring the long-term use of your entire barcode labeling system is what makes Zebra Technologies the best in the industry and is why DecisionPoint is a Premier Solution Partner with Zebra. From designing the barcode labels you need, using the proper templates, hardware, and supplies, through printing and management of your systems, every aspect feeds into the other.



Servicing helps maintain the integrity of the ecosystem.

Service contracts are available to make sure your equipment, and products are fresh and ready to go. Mobile and desktop printers are designed to be serviced at depots, while bigger tabletop printers are serviced in your facility.

[Contact us](#) today to discuss the barcode labeling solutions that are best for you.