

The Expert's

GUIDE TO

MANUFACTURING

IN THE CLOUD



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WHY CLOUD COMPUTING MATTERS FOR MANUFACTURING

How You Can Benefit From The Cloud

Over the years, the face of warehouse management has changed. New realities demand faster turnaround times, better communications, and deeper insights into business data.

Enter cloud computing (or “the cloud,” for short). The cloud has brought several new realities to manufacturers and distributors, including mobility options, rapid ERP and WMS deployment, and connectivity through the organization. Many manufacturers and distributors are considering moving their ERP and warehouse management software systems (WMS) to the cloud if they have not already done so.

A 2015 study conducted by DC Velocity indicates that only 8 percent of all warehouses are using cloud software. Manufacturers who adopt a cloud solution now will be ahead of the game and are likely to attain a competitive edge against those who do not utilize the cloud.

Why adopt cloud software? The cloud expands options for inventory management and warehouse automation, allowing manufacturers and distributors to perform crucial inventory management tasks via everyday mobile devices (such as iPhones, iPads, Androids, or Windows devices). Such adoption improves accuracy and speed of all processes and provides valuable insights into business data that can help companies become more productive and profitable.

This paper examines the many reasons why cloud computing matters for manufacturing—and how your firm can benefit by adopting cloud solutions. With these tips, you’ll become an expert yourself in cloud computing for manufacturers.

Seven Reasons You Should Make the Move to the Cloud

There are probably as many reasons to move to the cloud as there are manufacturers and these seven stand out as the best reasons your manufacturing or distribution operation should make the move this year:

1. Reduces the Need for IT Support

When you run your warehouse management software in the cloud, you don’t have to rely on your IT staff to implement, upgrade, or maintain your system; this is all the responsibility of the cloud provider. This allows your IT staff to focus on the more important issues to keep your warehouse up and running smoothly.

2. Improves Communication and Collaboration in the Warehouse

With the cloud, you can share important data and business information seamlessly across the organization. Instead of having to email reports to various departments, software users can log into the software wherever they are and view the information in real-time. This is extremely beneficial for the customer service department, as employees can view customer profiles and access order status instantly.

3. Increases Efficiency and Productivity in the Workplace

Due to the streamlined communication between different departments, efficiency and productivity in the workplace increase. With the cloud, your staff doesn’t have to waste time requesting documents or tracking down information. They can pull the information they need when they need it, allowing them to get more work done faster.

4. Creates Faster Warehouses

Cloud-based warehouse management solutions have a faster ROI, can be implemented quickly, and easily integrate with other software applications. Cloud-based solutions can be implemented in a matter of days, allowing you to start attaining your return on investment (ROI) much faster.

5. Supports Real-Time Inventory Tracking and Mobility Options

For manufacturers and distributors, tracking inventory in real time is essential. With cloud-based solutions, you can monitor inventory levels via your mobile device and instantly share that information with warehouse managers and executives in (and out of) the office.

6. Reduces Hardware Expenses

When your software is deployed in the cloud, you don't have to purchase or maintain expensive hardware. This allows you to allocate your resources to more business-critical tasks.

7. Supports Lean Efforts by Reducing Paper Waste in the Warehouse

While this is not the main reason to move your warehouse management software to the cloud, it is a bonus. By operating your warehouse in the cloud, you can reduce the use of paper in your warehouse and cut paper costs significantly. This is not only green, but it also supports lean efforts and can dramatically reduce your overhead costs.

The Benefits of Cloud-Based Inventory Management

The cloud isn't just for storing photos anymore. It has applications throughout the business world, even in your most critical operations. Inventory management in the cloud offers significant flexibility so that you can quickly adapt your operations for growth, or changes in product strategy.

Cloud Inventory Management Expands to Fit Your Needs

Think about rain clouds for a moment instead of data clouds. Rain clouds grow according to how much moisture is in the atmosphere. They shrink when the moisture is released, and the "demand" on them is lessened.

Cloud computing is similar. As your company's processing needs increase, the cloud expands to accommodate it. If you have one user on the system working late at night, it shrinks your usage so that you are using less.

More importantly, cloud computing can scale up as you need more bandwidth for your customers. Manufacturers with heavy seasonal demands may find that cloud computing easily adjusts and flexes to the demands at specific times of the year when order volume is high.

During other times of the year, when the volume is low, their computer demands decrease. Instead of investing in new hardware to handle the high-volume time periods, cloud computing adjusts with the needs easily and swiftly.

A Flexible Approach: Easily Add More Users

Another way in which the cloud can expand to fit your business is by easily adding new users onto the system at any given time. A busy warehouse may need to add temporary workers during certain seasons. The cloud can accommodate more logins without adding unnecessary terminals or additional software packages.

You can also add users from multiple locations. Some companies use freelance office workers, marketing, or salespeople to supplement their workforce. With cloud-based systems, you can add additional workers easily onto the system. They can access the database through their home computers, tablets, or smartphones. All you need is a web connection. It's an easy way to get everyone working from the same data and keeping your systems up-to-date no matter who accesses them.



52 % of all manufacturers surveyed indicated the lower total cost of ownership was the biggest determinant in their choice to switch from onsite solutions to SaaS.

SOURCE: Gartner study entitled "Survey Analysis: Adoption of Cloud ERP, 2013 Through 2023" (published on January 24, 2014, written by Nigel Rayner)

Excellent Security

One concern that many business owners have when they consider cloud computing is the security level. Cloud computing works off shared servers, and companies often worry their data may be compromised or somehow less secure when it is kept off-site than when it is housed on hard drives within their four walls. If you require your systems to be on-site, you can still gain many benefits from an on-premises cloud. If you choose to have a cloud hosting vendor, you can expect to see some of the strictest security protocols available in place to ward off viruses and hackers intent on damaging or stealing data. You can't "accidentally" access anyone else's data on the cloud, so your company's information is secure. Cloud computing is secure computing.

Cloud Technology is Here to Stay

Cloud computing has moved from a "nice to have" to a "must have" as more businesses embrace cloud technology. It's simple to use, highly secure, and less expensive than older technologies. Many systems can run off the cloud, including your operations. When paired with a cloud-based ERP, inventory management in the cloud offers remarkable benefits. If you are on an outdated inventory management system, now is the time to try the cloud.

Section Two

HOW MANUFACTURERS BENEFIT FROM CLOUD TECHNOLOGY

Cloud-based computing offers the flexibility companies require in today's fast-paced business environment. As cloud software technology matures, companies are moving toward putting their core systems online, including their warehouse management systems. In fact, more than half of U.S. companies now use some form of cloud technology and many more are making plans to move additional systems online.

Companies that have installed warehouse automation have already realized the benefits of standardizing processes, controlling costs, and improving accuracy. The warehouse automation market is going through a revolution driven by the accessibility and scalability of cloud solutions. Cloud warehouse management products provide even more benefits.

Here is what you can expect:

- **Lower Costs:** Cloud-based warehouse management provides access from any device on any platform without expensive software or customization. Using a cloud model, you can automate your warehouse using iOS or Android devices, lowering costs and providing a faster Return on Investment (ROI).
- **Increased flexibility, scalability, and accessibility:** The cloud model is especially valuable when you have multiple locations that need access to real-time updates and reports. Cloud-based warehouse management, integrated with your ERP, increases the ability to collaborate among a global workforce and enables more agile decisions.

Whatever your views of the technology, we can all probably agree that the cloud has changed the way we think about technology today. Often described as the most revolutionary technology invention since the PC, the cloud has caused quite a stir among businesses and technology consultants. As companies across the globe turn to the cloud for data storage and information accessibility, many are wondering whether the cloud is as beneficial as it seems. Does it really help you cut down on IT costs? Is it as safe as they say? How much can you save by moving to the cloud?

These questions are at the forefront of business leaders' minds and—in some cases—are preventing many from making the transition to the cloud. Hesitation to move to new technologies is understandable, especially in today's day and age. However, if uncertainty about the cloud's cost is holding you up, we'd like to put some of your doubts to rest. We've done our research, talked to cloud users, and formulated our own views based on years of experience. The following is what we've found regarding the cloud, its benefits, and its cost (or lack thereof).

Cloud Warehouse Management Soars in Popularity

CDW's 2013 State of the Cloud Report reveals some interesting information about the cloud and today's businesses. According to the report, companies are moving their ERP and warehouse management software solutions to the cloud at the highest rate in history. In fact, the Forrester Research "Sizing the Cloud" report predicts a six-fold increase for cloud computing solutions, moving from \$40.7 billion in 2011 to \$241 billion by 2020. With so many companies making the move, there must be substantial benefits—right?

Benefits of Cloud-Based Warehouse Management

Cloud applications provide many benefits, but the main benefits we'd like to focus on are:

- Elasticity and scalability
- Decrease in IT support
- Faster implementation times (which leads to a faster ROI)
- Cost-savings

The cloud is elastic and scalable, meaning you can use how little or how much you deem necessary at any given moment in time. Unlike traditional software servers that require you to invest in a certain amount of CPU, the cloud allows you to pay for only what you use. The outcome is a much more affordable solution with less risk for your company. In addition, the cloud requires very little (if any) hardware needs, freeing your IT staff to focus on more important issues. On-premises software solutions require rack space, electricity, cooling, bandwidth, hardware, and a trained IT staff to operate effectively; the cloud simply requires a connection to the Internet and devices you likely already own.

An added benefit of moving to the cloud is its speedy implementation. You can have your cloud-based warehouse management solution up and running in a fraction of the time it takes to implement a traditional, on-premises system. This allows you to reap the benefits of the cloud much faster and attain a full return on your investment in no time at all. You won't even have to worry about applying the latest security patches as the cloud has ongoing updates that are applied seamlessly and automatically.

The True Cost of the Matter

The above benefits contribute to the overall cost-savings of cloud warehouse management software. Less hardware, lower upfront costs, and quick implementation times all factor into the cloud's low-cost model. However, the most compelling reason for switching to the cloud can be seen when you compare the long-term costs of on-premises solutions with cloud-based solutions.

On average, businesses replace their on-premises software systems every five to eight years. Some companies may try to stretch this timeframe but, on average, this is the lifespan of an on-premises warehouse management solution. This is something many executives and managers don't consider because they see the cost as being too "far off" to make a difference. The reality is, however, that the cost does make a difference in the long-term cost of your solution. If you are replacing or upgrading your system every 5-8 years, your total cost of ownership (TCO) is extremely high.

With the cloud, your TCO is much lower as updates occur automatically. You don't have to worry about investing in a new solution every five years, and you can rest assured that your software is up-to-date and relevant with your warehouse management technology. So, while you may balk at the monthly fees, the long-term cost is actually cheaper when you consider having to replace your on-premises solution every 5-8 years.

S U C C E S S S T O R Y : C L I F T O N M O U L D I N G M A X I M I Z E S I N V E N T O R Y A N D P R O D U C T I O N W I T H S C A N C O

Interior Trim Manufacturer Grows Inventory and Production Capability With New Scanco Barcoding Solution

Overview

Clifton Moulding Corporation was founded in 1957 and has been under current ownership since 1991. They manufacture primed, finger-joint, and solid mouldings in Clifton, TX. With a staff of 130 dedicated mill workers, utilizing a 200,000 square foot facility and a combination of well-maintained legacy equipment as well as state of the art CNC equipment, they produce a high-quality product.

When faced with an opportunity to grow profitability via improved usage of their planer with rough lumber, the team knew there was no way they could take on the challenge without some improvement to back office and inventory processes.

Challenges

- Robust Barcoding System Needed
- Needed System to Integrate With Current ERP System

Results

- Clean, Intuitive Interface
- Perfect Data Integration
- Improved Profit Margin

Robust Barcoding System Needed to Optimize Use of Materials

For many years, Clifton had operated their planer at a low volume using hand tags: Planed lumber was run through the machine once more and produced SKUs that were manually keyed into the database.

When an opportunity arose to work with a mill that would send Clifton an alternative raw material, Jack Buhr, who oversees Clifton's IT processes, knew they had a great opportunity to effectively utilize technology to provide necessary transparency. "The more we can do inside of our plant, the more we optimize our use of material," said Buhr.

This raw material ultimately allows larger profit margins for Clifton, and a considerably more complex SKU volume. "It becomes a four-step process in the warehouse for us with multiple SKUs for each material," said Buhr. "Without a robust barcoding system, it would be impossible to take advantage of this opportunity."

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Another challenge was finding a solution that would integrate with the mill's current ERP solution. "We use Sage 100 and did not want to change," said Buhr. "I reached out to our Sage consultant, Beth Bowers, and she said Scanco was the best solution, hands down, so I figured I wouldn't look any further."

Implementing Scanco Easy Due to Clean, Intuitive Interface

It was important to have a barcode solution that worked intuitively with Sage 100 and was easy for the employees on the shop floor to adopt. "Our company has grown because of a great team of people that have worked here forever. We love our people and knew that changing their processes had the potential to disrupt things."

Fortunately, the Scanco solution was flexible and easy to use right out of the box. "We put a lot of thought and heart into decisions and changes," Buhr said. "Implementing Scanco was easy, largely due to the clean and intuitive interface. Our team took ownership of the new process because Scanco wasn't frustrating or hard, which is exactly what you hope for with a new system implementation."

With the new Scanco barcode inventory solution, Clifton could build their system on WIP versus finished SKUs. Now every time a SKU is created out of the planer, it is tagged and results in an inventory transaction and receipt. An inventory issue is then created as a WIP SKU goes back through the planer and creates another inventory receipt, and on and on.

The new barcoding process is easy and intuitive for the employees on the shop floor. Tasks are straightforward, including scanning inbound inventory, creating a tag, and tagging the outbound inventory, all with reliable and durable handheld scanners. "I didn't want the technology to get in our employees' way. They are exceptionally skilled at running planers and grading material. I wasn't trying to make them into

technicians. And Scanco doesn't get in their way."

Scanco's Barcode Data Keeps Accounting Accurate

Everyone at Clifton is benefiting from the new barcoding solution. "We love the fact that you never have to touch a keyboard with Scanco," Buhr said. "All data is collected in real time. We provide inventory reports to our manufacturing team every morning. They have a clear picture of the workflow which makes their job much more efficient and easier to manage. Scanco has set our team up for success."

Scanco's barcode data keeps Clifton's accounting accurate. "We pay a fixed price for raw material, and we want to allocate that cost based on the value of what we got out of that log," Buhr noted. "If we put \$1 worth of material into the planer, we only want to account for only \$1 coming back out. With the quality of the data I'm getting, my allocations are dead right every time. And our profit margins have improved because of the new process paired with Scanco's barcoding system."

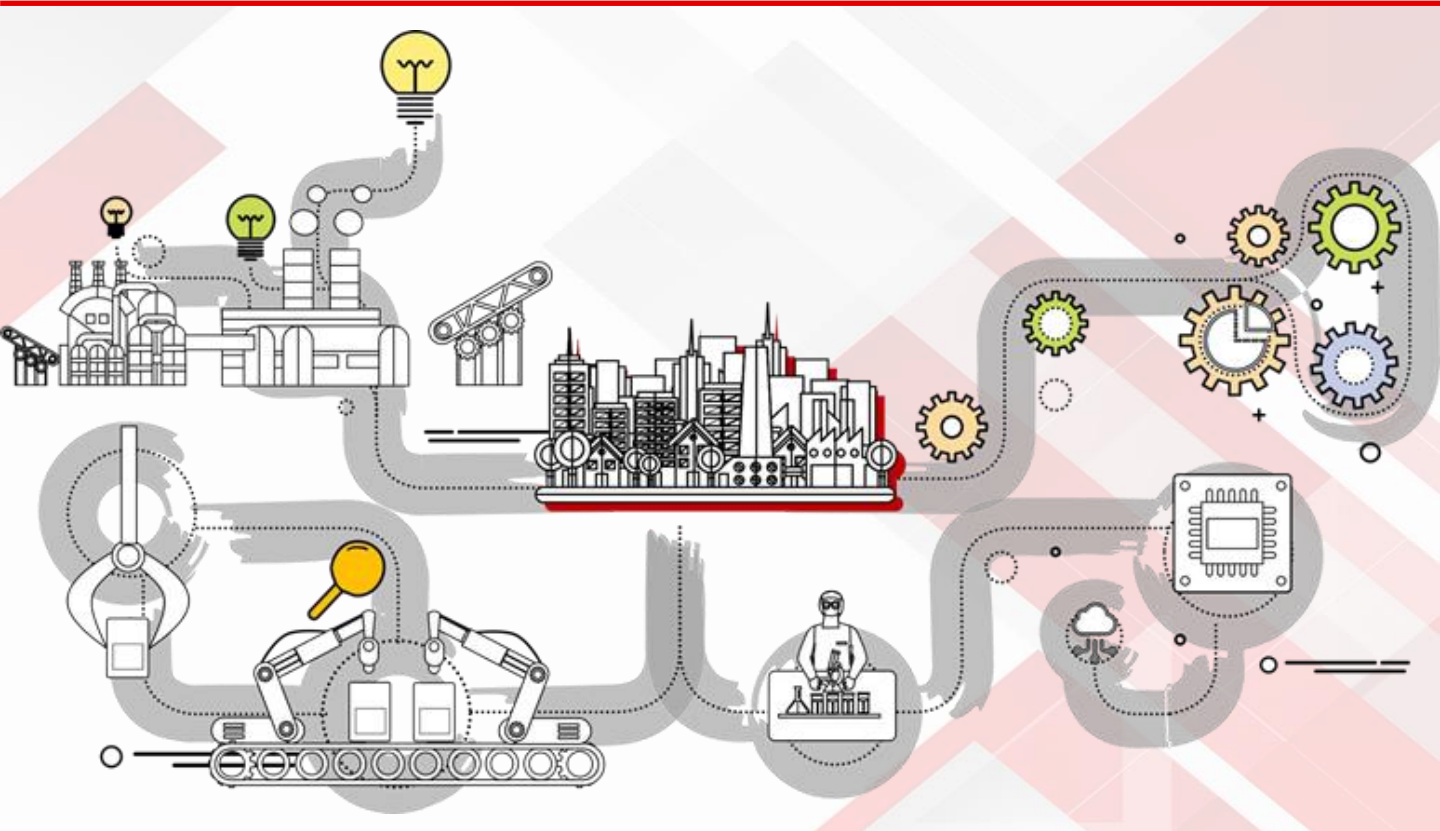
Overall, Clifton Moulding made a great business decision when they implemented the new barcoding solution. "Why Scanco? Because the data integration is perfect," Buhr concluded. "This software lets me maintain my business process. The data flow is very reliable. The interface on the shop floor is manageable, and the hardware holds up."

"With the quality of the data I'm getting, my allocations are dead right every time. And our profit margins have improved because of the new process paired with Scanco's barcoding system."

Jack Buhr
ACCOUNTANT, CLIFTON MOULDING

IMPLEMENTATION ROADMAP

Implementing a barcode inventory management system can be tricky. Not only does it require you to implement the barcoding system correctly, but it also requires you to successfully integrate your new barcoding system with your existing software systems (think ERP or warehouse management solution). While your barcoding software provider can certainly implement your barcoding solution for you, many companies would rather attempt it themselves. We've witnessed and performed numerous barcode inventory management system implementations over the years and have developed the following seven tips to help you successfully implement your solution.



Choose the right barcode label printing solution for your company's needs.

Ensuring barcode quality is key to any barcode label printing solution. Make sure you select a barcode printer that is fully capable of meeting your company's requirements for durability, legibility, and speed of barcode generation. If your fast barcode label printer does not produce legible or durable barcodes, it is not the right solution for you. It will ultimately be less cost-effective in the long run than a slow printer that produces better quality barcode labels. Make sure you choose the right barcode label printing solution for your needs and not just the "cheapest" solution.

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Consider how the labels will be used.

While the physical barcode label materials you use may be the least expensive component of the entire barcoding system, they are the most susceptible to environment changes. Your products, forms, and barcode labels can experience harsh conditions in and outside of the warehouse and may sit on stockroom shelves for long periods of time. If your barcode labels degrade over that time, your company may be forced to re-label the entire inventory (a process that is not only time-consuming but also costly). Make sure you choose the proper barcode labeling materials prior to barcode implementation. Most label manufacturers can provide you with the material specifications of their labels and the environmental limitations of their labels. Choosing the right barcode label can make a huge difference in your cost-savings.

Test before deploying.

This may seem like an obvious step, but many companies jump straight into labeling their products before testing their barcode labels. In addition to testing your barcode labels to ensure they contain the right information, you will need to thoroughly test your printed barcode labels in the actual workplace over a specific period. It should be long enough to mirror the life cycle that a real barcode label will encounter in your warehouse. While this will lengthen the time you spend in the testing phase, it will prove to be beneficial in the long run. By spending time in the testing phase, you have the opportunity to work out all obstacles prior to deploying the entire barcoding system.

Review all support options.

Make sure you examine the support options of all the devices you will be implementing, including software, barcode scanners, barcode labels, and any other equipment. These support plans will most likely not be coming from the same vendor, so make sure you have a thorough

understanding of where your company stands in terms of the support of the products you are about to implement.

Integrate your barcoding system with existing information systems.

This is the biggest challenge we've seen and experienced in implementing barcode inventory management systems. Because most companies already have an information system in place (such as an ERP or warehouse management system), the new barcoding solution will need to be integrated with the existing system. This requires more than simplifying the physical infrastructure; it requires an understanding of how the data will arrive at the system's database from the barcode label.

Get to know your vendor.

It's important to choose a vendor you can rely on in the future. Make sure your barcode inventory management system vendor is committed to assisting you not only in your implementation but also throughout your system's lifecycle. The worst thing that can happen is to find out—months or years later—that your solution provider has disappeared or no longer supports your specific solution. You will need a vendor who has the reputation and expertise to deliver a quality barcoding solution.

Stay current on your technology.

While barcoding technology has been around for years, manufacturers and distributors are just now beginning to implement it into their warehouses. The technology is advancing at a rapid rate, so it's important to keep up with new barcoding trends. Don't fall behind the technology curve—make sure you are taking advantage of all the new barcoding technology has to offer.

Important Questions to Ask When Choosing a Cloud Manufacturing Solution

If you are considering implementing a manufacturing barcoding system next year, review these three critical questions. Some of these needs are “non-negotiable” and essential to get the most out of your manufacturing automation implementation. Failing to ask key questions can lead to poor results.

- **Have you received feedback from the entire team?** Invite key managers and support staff to discovery meetings and take copious notes to help you form a “wish list” for a project scope.
- **Is this system configurable?** The ease with which systems can be configured is an important part of your decision-making process. Balance the need for configuration with the need for a solution to meet your requirements as much as possible “off the shelf,” without any tweaks or changes. When the balance shifts in favor of an off-the-shelf system, with minimal customization needed, you’ve probably found a worthwhile solution.
- **Is this system made for manufacturers?** Many barcoding systems are made just for warehouse purposes. Manufacturing barcoding needs can be very different. It is better to begin with the right solution than to try to fit a square peg into a round hole.
- **Find an executive sponsor or champion:** An executive sponsor or champion can help you secure buy-in for your warehouse barcode system project throughout your company’s executive team. An executive sponsor not only ensures you have the budget you need for your project but removes potential roadblocks to project success. Their enthusiasm and open support for the project sends a powerful signal throughout your company that this is an important project not just for your warehouse operations, but to the entire organization.
- **Assign a project lead:** A project lead is someone within the organization who takes responsibility for developing the potential scope of work, vendor selection, and project coordination. Choose someone for the role who is organized, thorough, and a good communicator.
- **Form a representative project group:** It’s important to have members from every department on the project team that will be affected. A warehouse barcode system can impact more than just the warehouse floor; consider the effect on accounting, manufacturing, sales, and others.
- **Create a project plan with ROI:** A project plan with detailed ROI metrics, milestones, and measurements will help management understand the benefits of the warehouse automation project and how to measure its success.
- **Work with an experienced vendor:** A vendor with experience in warehouse automation has the benefit of past projects to learn from and can guide your implementation.

Expert Tips for Barcode System Implementation

Are you new to warehouse barcoding or do you have a warehouse barcode system that you would like to replace? Here are some great tips to make your selection and implementation a success.

Cloud-based systems are ideal for a manufacturing environment. With the right system, you can manage operations, inventory, and the business day effectively. Start today to find the best system for your needs and join the cloud evolution.

A B O U T S C A N C O S O F T W A R E

Since 1989, Scanco has been a leading provider of supply chain automation software and services. Since our inception, we have focused on innovative warehouse management solutions with a unique technology-driven approach. Our solutions deliver unequaled efficiency and visibility for distribution and manufacturing companies around the globe.

From basic barcoding to the most complex distribution and manufacturing operations, Scanco software is positioned to grow with our customers ever changing business needs. We are focused on providing top-tier, fully integrated automation solutions built specifically for your ERP solution. Today, thousands of world-class distribution and manufacturing companies have automated their facilities with cutting-edge Scanco technology.



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