ONRAMP SOLUTIONS

Inventory Management

Knowing what you have in stock and where the stock is located is a critical component of your business.

In all successful manufacturers managing stock is done with an inventory management system. Because inventory is so intricately tied to your operations, managing that inventory should be one of the foundation blocks of ensuring your company is running successfully and profitably.

Quite simply, you need to know where it is, what you have and if the material is usable, who acquired or worked the material, why it was actioned, and when it was processed to ensure you can fulfill your customer orders on time and with minimal add-on cost to you.

Most companies will have varied requirements for their inventory management but at their core all inventory management will have:

- **Material location tracking**
- **Material description, cost, and quantity**
- **Material user**
- **Material type** (Raw material, WIP, Scrap, etc.)
- **Material dates** (Expiry date, Date processed, Date shipped/ Received, etc.)

ONRAMP SOLUTIONS

WHERE

- Warehouse location
- Stock shelf number
- Bin number

WHAT

- Material description
- Material cost
- Material quantity

WHO

- Planner
- Purchaser
- Machine operator
- Driver
- Warehouse worker

WHY

- Raw material
- Assembled part
- Sales Order fulfillment
- Machine parts
- Office furniture

WHEN

- Expiry date
- Date processed
- Shipping date
- Due date

These systems can be especially useful for companies with more than one warehouse to ensure that you know the location of all your stock quickly and easily.

Poor Inventory Management

You firmly believe in the old adage is “A place for everything and everything in its place”. Knowing that your warehouse staff are behind you on this, you think that everything is humming along happily in your warehouse. But there is a problem. For the adage to work you, and everyone on your shop floor, need to know what that place is for all the other parts of your supply chain to fall into line with no effort.

With no way to manage your inventory during your daily operations, you can be on the road to catastrophic results, including:

- Lost or stolen parts and materials
- Overstock or lack of stock
- Incorrect materials usage
- Disorganized warehouse
- Single employee dependency (where only one warehouse worker knows where everything is)
- Missed shipments
- Decreased customer satisfaction, leading to lost sales
  And finally, a lost company

Early symptoms of an Inventory problem

The following have been found to be some of the earliest key indicators of a problem with how you are handling your inventory:

- **Undersold – poor pricing or forecasting lead to the need for a part you don't have.**
- **Increasing inventory levels – a lack of sales leading to dead stock.**
- **Damaged inventory – poor handling leads to discounted or unused stock.**
- **Manual tracking – keeping inventory on pen and paper leads to more errors.**

Having any of these issues arise in your company can be the start of a negative spiral.

The good news is that the issue of bad inventory has been found before and systems have been created to remove the waste created by poor inventory management.

As you remember, Inventory is one of the DOWNTIME wastes that is covered with Lean thinking. It is also the one that is most likely to create other wastes, like over-production, extra-processing, waiting, motion, and defects.

This means that a good inventory management system using proper techniques holds one of the highest returns on investment.

Which begs the question: What can a great IMS do for you?

Inventory Management Techniques

The best place to start with inventory management is to learn what techniques others have used to improve their supply chain operations. A good inventory management system will be able to implement a few, or all, of the following techniques.

Many of these techniques will come from Lean thinking, others from resource planning. Regardless of their origin, a good IMS should be able to meld them all together.

Perpetual Inventory Management

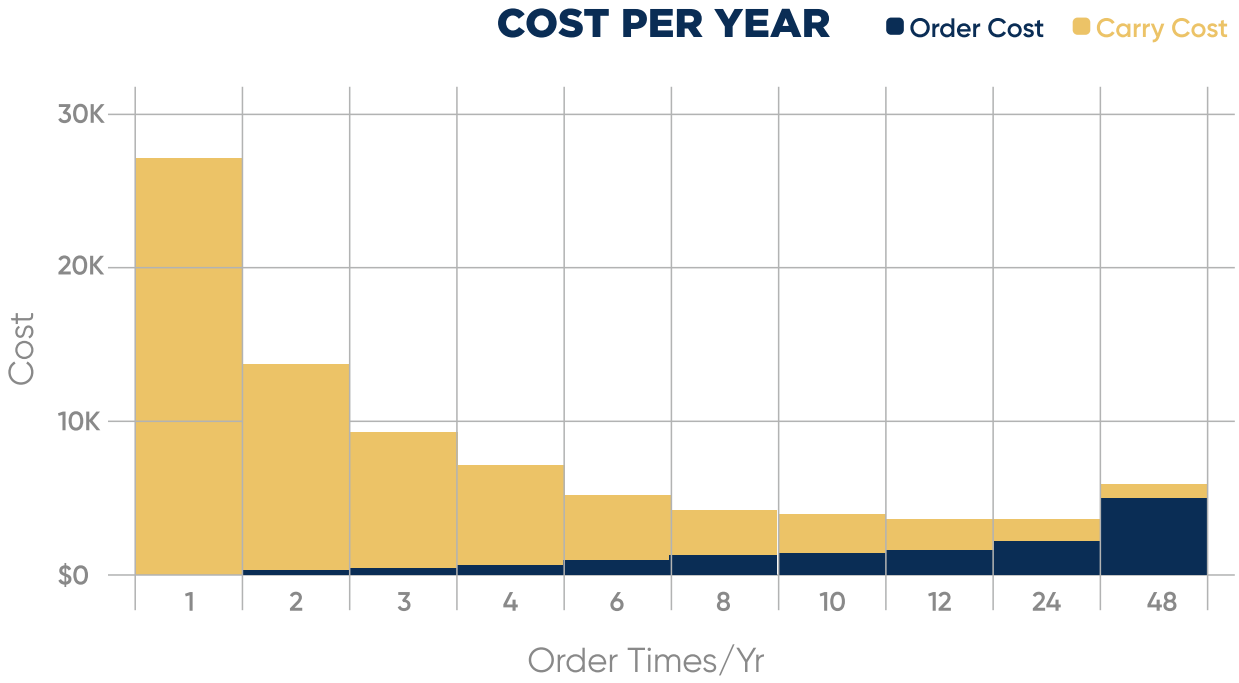
Perpetual inventory management is the act of counting inventory as it arrives. It is the simplest and widely used inventory management technique. While many still record the entries on paper, most firms will look to digitize their inventory counting, with some adding barcode scanners to further automate the process.

Minimum Order Quantity

Minimum order quantity, or MOQ, is a value set by your vendors stating the minimum amount of a material they will sell.
For example: A vendor sells boxes of 25 screws. This means the MOQ for that vendor for those screws would be 25 screws.

Economic Order Quantity

Economic order quantity, or EOQ, is a technique used to determine how much material to order in a way that maximizes productivity and minimizes expenses like purchasing capital and warehouse space.



Graph showing EOQ cost calculations

Bulk Shipping

Bulk shipping is the act of grouping or boxing finished products together so as to make loading and shipping more efficient.

Demand Forecasting

Demand forecasting takes a look at historical trends to estimate how much stock will be required by customers. The forecast will then calculate what needs to be purchased or made to satisfy that estimated demand.

Unlike Lean, this is a 'push' system, where estimates are made for customer requirements, which can leave you with excess inventory, or not enough.

Safety Stock

Safety stock is a value related to your stock where once that material reaches or falls below that value, you need to order more of that stock. This is used to ensure you don't run out of stock because of poor forecasting or unexpected demand.

A Kanban card system would be an example of how running low on stock for an inventory item calls the purchase or production of that item.

Reorder Point

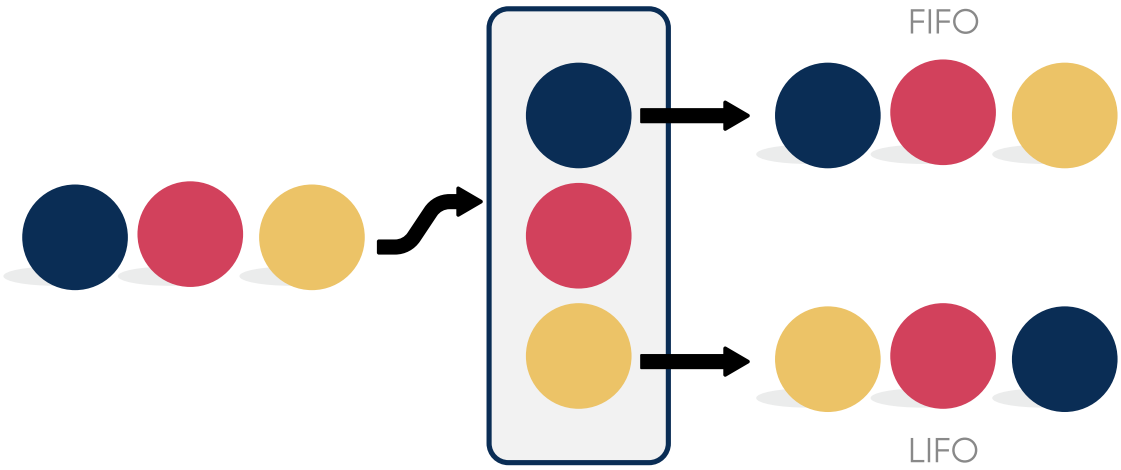
For some of your products, you may also have a reorder point. Because of lead times, or other issues, you want to ensure that the new order arrives before the safety stock limit is reached.

ABC Analysis

ABC analysis divides your inventory into three categories, A, B, and C, to determine the impact on overall inventory cost:

- **Category A** – These are your most valuable products that contribute the most to your company's profitability.
- **Category B** – These products are solidly in the middle-tier for profitability and company impact.
- **Category C** – These products are usually those small transactions that are vital for company profit but, individually, are unimportant.

FIFO and LIFO



FIFO (First In-First Out) and **LIFO (Last In-First Out)** are techniques to use inventory. For FIFO, the first material to enter the warehouse will be the first to leave, whereas with LIFO the last material to enter leaves first.

Most materials without an expiry date will probably be LIFO, where the last item is placed atop the previous items, so it would be the first to be used in production, or the first shipped, etc.

Consignment Inventory

Consignment inventory is purchasing stock from a vendor with an agreement that you only have to pay for the stock once you sell it.

Just-In-Time

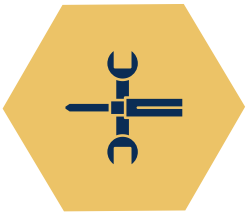
Just-in-time (JIT) aims to reduce inventory by having vendor supplied raw material ordered based on the production schedule requirements.

Lean Manufacturing / Six Sigma

Lean management techniques aim at improving efficiencies and cutting waste along with tasks that do not add value for the customer. The Lean methodology is based on the Toyota Production System, which looks at the 8 DOWNTIME wastes (Defects, Overproduction, Waiting, Non-skilled talent, Transportation, Inventory, Motion, Extra-processing) and implements a cycle that aims to improve all your daily processes.

Included into the Lean system is implementing a 'pull' production system with Kanban cards, where low inventory levels trigger the shop floor to start producing stock for those low inventory levels.

Six Sigma also borrows some of these techniques with the aim of improving business performance by decreasing excess waste, simplifying business processes, and increasing production reliability to the point where **99.99966%** of all processes are statistically expected to be free of defects.



Defects

Efforts caused by rework, scrap, and incorrect information.

Overproduction

Production that is more than needed or before it is needed.

Waiting

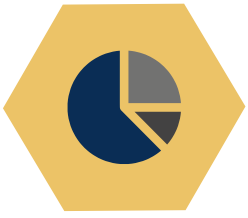
Wasted time waiting for the next step in a process.

Non-Utilized Talent

Underutilizing people's talents, skills. & knowledge.

Transportation

Unnecessary movements of products & materials.



Inventory

Excess products & materials being processed.

Motion

Unnecessary movements by people (e.g. walking).

Extra Processing

More work or higher quality than is required by the customer.

ONRAMP SOLUTIONS

Inventory Management Systems

Inventory management systems, or IMS, are a group of tasks or processes usually performed by software to fulfill the requirements of some or all of the inventory techniques mentioned above. These systems let you know, at any given time, what stock you have, how much of it you have, where it is, and other relevant data as mentioned in this paper. Knowing everything you need to know about your current inventory levels ensures you can manage them correctly in a way that minimizes excess inventory and maximizes your productivity and profit.

> **In a cross-sectional study conducted of 165 firms ranging from small to large manufacturers and service enterprises, it was found that good inventory management directly lead to an increase in operational and marketing performance, especially when considering the marginal increase in resource requirements needed for a successful IMS implementation.**
>
> International Journal of Management and Commerce Innovations

Managing Inventory

Even with the best IMS implemented at your firm, ensuring that inventory is properly managed requires a concerted effort from all staff, with different teams checking and balancing the next:

- **Sales staff enter client orders**
- **Planners request the right amount of material to fulfill client demand, including forecasts**
- **Purchasers follow planning guidelines and monitor vendor relations and performance**
- **Warehouse staff receive and log inbound material and store it at the correct location**
- **Warehouse staff move material to operators to complete their work orders**
- **Warehouse staff ship the end-product**

With Lean thinking, and the goal of cutting DOWNTIME, inventory management takes an integral role in helping improve your company and increase your brand's market penetration.

Of course, you already know that a tidy house is a prosperous house, but what can you do to ensure you are getting the most management for your money?

While many Enterprise Resource Planner (ERP) systems do not include a useable IMS, the better ones tie an IMS in with all the other modules that you can find in an ERP, plus the ability to use scanners and barcodes to simplify the work of tracking inventory on the production floor and help you maximize your warehouse usage.

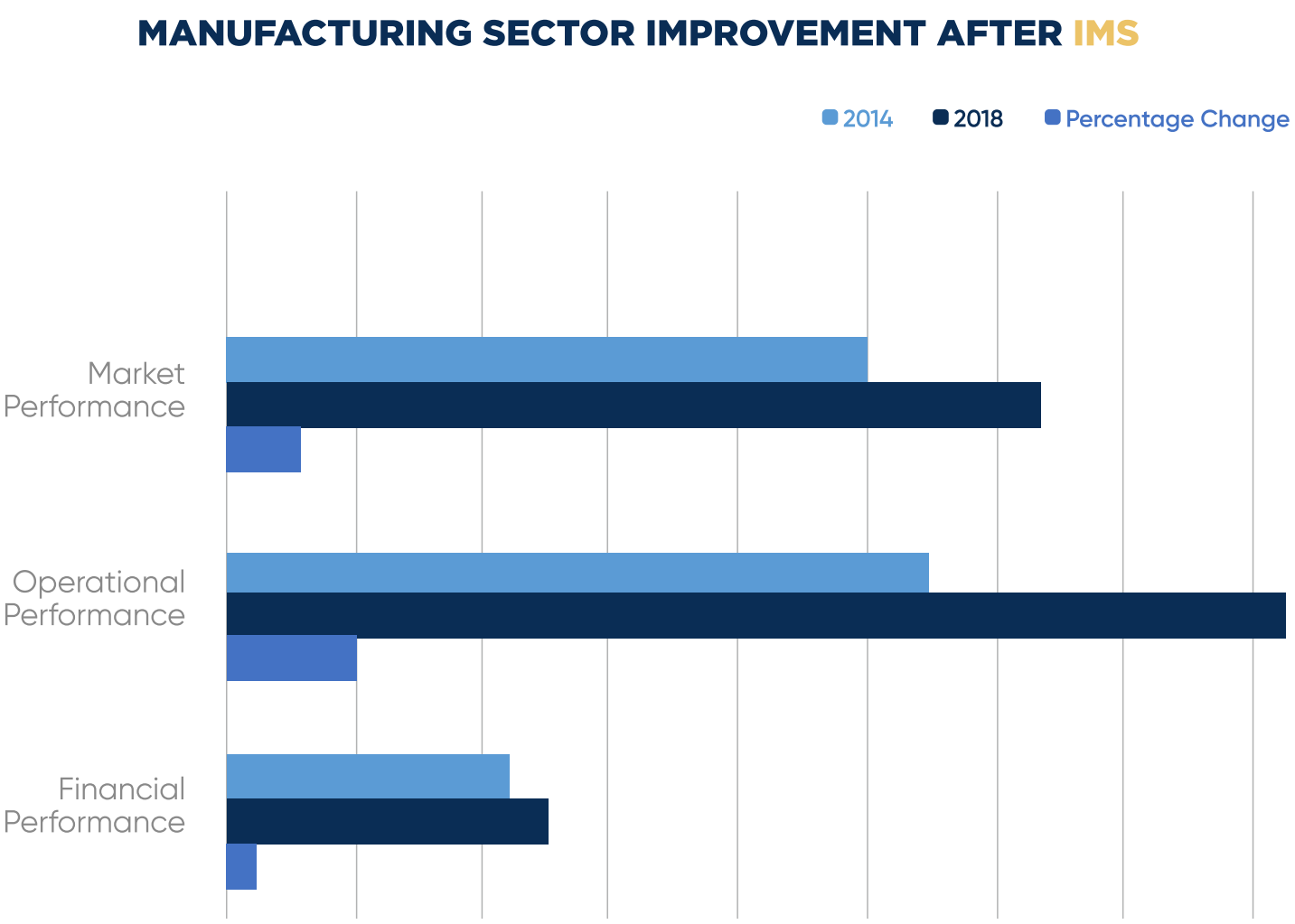
The best ERPs add to above list by including an integrated warehouse management system (WMS) and a team of consultants trained to help you maximize your warehouse usage and inventory storage in a way that quickly shaves waste and generates real value for you and your stakeholders.

Improving Inventory Management

By applying the correct inventory techniques paired with smart automation and an ERP with an integrated IMS, you will be able to achieve the goal of knowing the answers to the 5Ws of inventory. This, in turn, helps your business grow by providing your firm and your customers with confidence in your capabilities. This is the end goal of inventory management: Making your firm better.

Implementing a smart IMS gets your firm running Lean and, more importantly, it lets you quickly spot the areas in your business units where there is Inventory waste to cut. And removing that Inventory waste quickly helps you find the other hidden waste mentioned like defects, over-production, waiting, motion, and extra-processing.

In study after study of manufacturing firms both big and small there is a marked improvement in operating performance and sales/ marketing with an IMS implementation.



Graph showing mean performance change 4 years after implementing an IMS

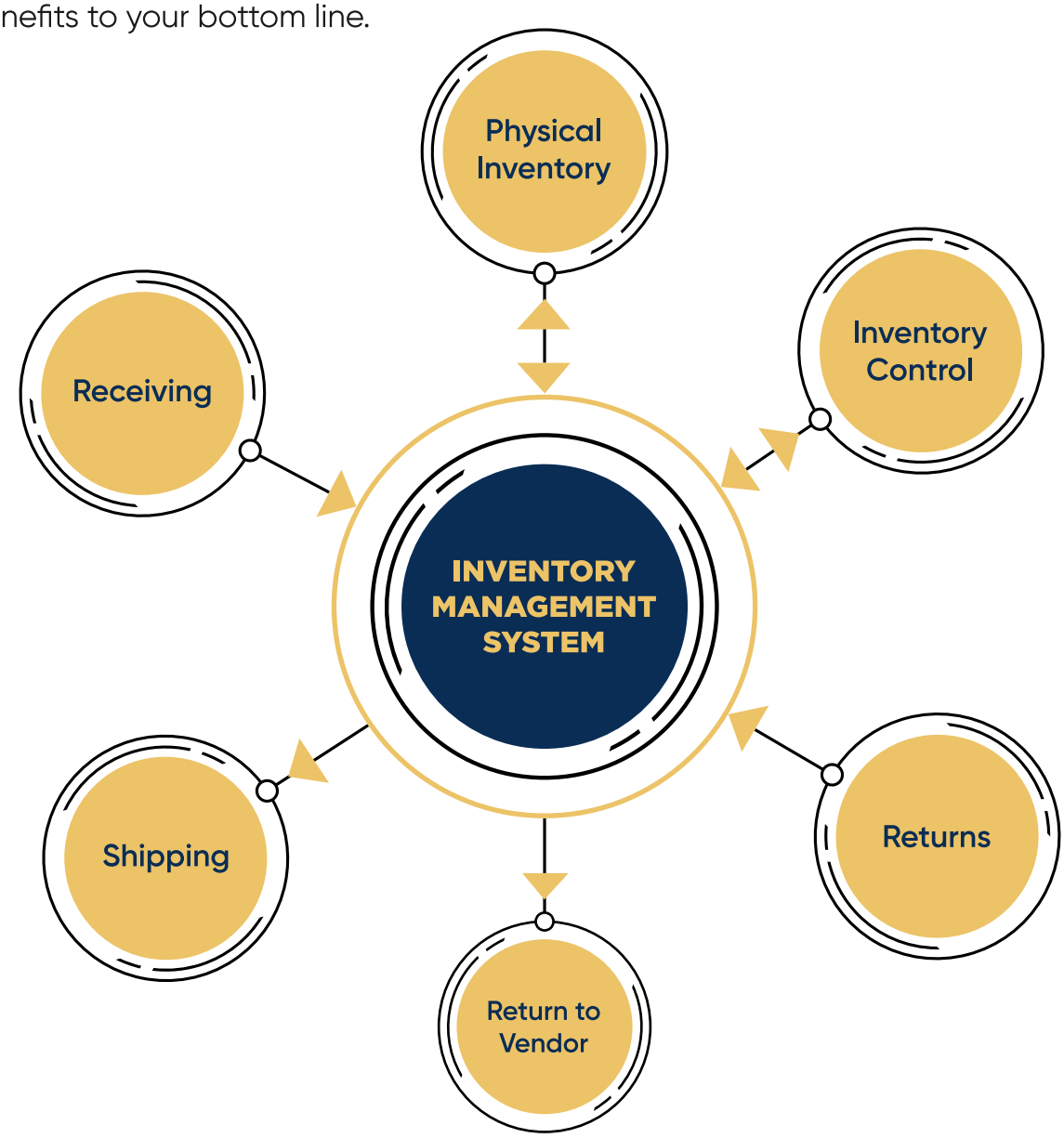
Conclusion

Poor inventory management, often caused by implementing the wrong IMS, leads to productivity, competitiveness, sales, and financial losses for your company.

IMS implementations are consistent with a decrease in shipping errors, dead or lost stock, improper storage, defects, over production, wait times, transportation costs, material movement, and customer complaints. All this together means happier clients, less expenses, a healthy bottom line and a growing company.

With your inventory being your biggest asset, it is imperative in this global economy to adopt a best-in-class IMS module to help you thrive.

Moving forward, you must look to an IMS system that works well with all your other resource systems, like ERP, WMS, CRM, MRP, DCP, HR, and Accounting. Pairing your IMS module with those other systems, and with a warehouse management system implemented by an experienced team in your industry and market, will grant you long term benefits to your bottom line.



IMS tracked inputs and outputs

Where OnRamp Helps You

OnRamp is a single point database ERP system that was designed from the ground up to touch all your business units and improve their processes and communication with each other.

Added to our best-in-class ERP is our dedicated IMS module with a barcode scanner system. This means no added IT systems, no other vendors, no messy 3rd party plug-ins, and no added costs. All your data instantly shared with all your business units. And to help you get started quickly and with your best foot forward, OnRamp's consulting team has decades of combined experience in manufacturing and implementing proven management methodologies that will improve your bottom line. Whatever you make, we can help you make it better.

We know manufacturing.
And we want to work with you to make it better.

- Improve Customer Service
- Increase Productivity
- Reduce Costs
- Increase Profits

ONRAMP SOLUTIONS

Here are some of the things that OnRamp can help you improve:

PRODUCTION FLOOR:

Warehouse management system	Storage system management	Production planning
Order policy suggestions	EOQ calculations	Inventory management
Shipment management	Work order management	5S audits
MRP	Finite scheduling	Maintenance management, including preventative maintenance management
Worker skill management	Plant issue/ suggestion tools	Detailed capacity planning
Gateway queues	Work center scheduling	Online inspection software
Task automation	Quality management system	Scrap management
Quality alerts	Shop monitors with production entry capacity	Engineering document and drawing management

FRONT OFFICE:

A single database for all records	Paperless approval and sign-off	Customer request management
Easy to access files and data	Team communication tools	Paperless accounting
Lead time and inventory management	Vendor relations portal and management	Customer relation management
Project management and approval	Training and skills gap analysis	Notification systems
Server run software with a locally installed shell	Customizable reports and documents	

ONRAMP
SOLUTIONS

Built for manufacturing,
by manufacturing

CALL US NOW!

+1 (905) 901-5020

MAIL

info@onramp-solutions.com

HEAD OFFICE

1081 South Service Road W,
Oakville, L6L 5T7, Ontario, Canada