ProShip

UNLOCKING AGILITY:

How an Integrated Enterprise Software Stack Optimizes a Robust Enterprise Shipping Strategy

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A Guide to a Well-Integrated Enterprise Software Stack (ESS)

The e-commerce landscape is a fast-paced battlefield. Customers demand lightning-fast deliveries, affordable shipping options, and constant visibility into their orders. Traditional, siloed shipping processes struggle to keep pace, leading to delays, frustrated customers, and lost revenue.

The solution lies in a strategic, calculated approach: a fully integrated Enterprise Software Stack (ESS). An ESS acts as a centralized hub consisting of your most important business systems (WMS, OMS, ERP, and MCSS, and automation solutions) used to transform your shipping operations. An ESS empowers you to conquer e-commerce shipping with each key business system:

- WMS: Real-time inventory & accurate fulfillment
- OMS: Automated workflows & faster order processing
- ERP: Data-driven decisions & cost optimization
- MCSS: Most cost-effective carrier selection and complete shipment execution
- Automation: Automated tasks & improved efficiency

Overall, a well-integrated ESS is the key to streamlined shipping, reduced costs, and satisfied customers.

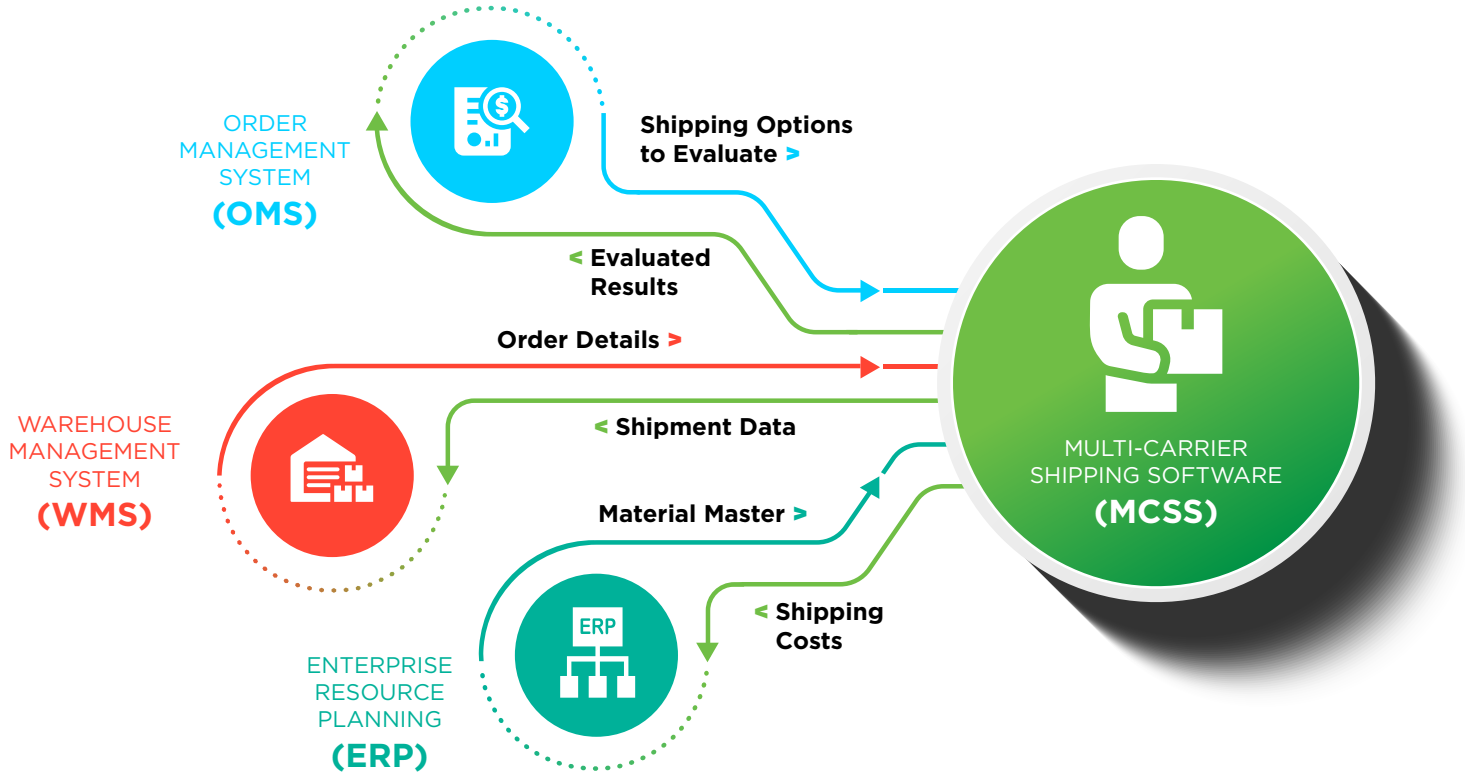
This white paper dives deeper into the power of a well-integrated ESS and how it can revolutionize your shipping strategy. We will explore the core components: WMS, OMS, ERP, MCSS, and automation solutions with a detailed breakdown of what they are, their benefits, key features and how they work together to optimize your shipping strategy. A cohesive ESS doesn't just streamline tasks; it empowers data-driven decision making. We'll explore how to leverage the wealth of data generated by the ESS to identify cost-saving opportunities and continuously refine your shipping strategy for peak performance.

EXPLORING THE ESS

A closer look at the **Enterprise Software Stack (ESS)**

In an ideal supply chain optimization framework, Warehouse Management Systems (WMS), Order Management Systems (OMS), Enterprise Resource Planning Systems (ERP), and Multi-Carrier Shipping Software (MCSS) collaborate seamlessly. The WMS efficiently handles inventory, while the OMS ensures smooth transactions from placement to fulfillment. ERP integrates business processes, and MCSS selects cost-effective routes, collectively enhancing efficiency and visibility throughout the supply chain.

Learn how each component of the ESS works together to deliver on customer expectations while reducing costs in within the supply chain.



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EXPLORING THE ESS
Warehouse Management System (WMS)

Efficient warehouse operations are crucial for e-commerce businesses. However, managing inventory and order picking manually can be challenging in a fast-paced environment. A Warehouse Management System (WMS) streamlines these processes, resulting in increased efficiency and improved fulfillment.

WHAT IS A WMS?

A Warehouse Management System (WMS) manages and optimizes fulfillment processes, inventory storage, and workforce coordination in a given warehouse or distribution center. Enterprise businesses and merchants of various sizes utilize WMS to streamline the distribution process of the supply chain—keeping track of all items going in and out of circulation from the warehouse to the product's final destination for purchase.

$8T

Global retail e-commerce sales are projected to reach more than **eight trillion dollars** by 2027.

(Source: Shopify)

KEY BENEFITS OF A WMS AS PART OF A UNIFIED SUPPLY CHAIN

The unification of supply chain solutions can only happen when well-designed applications communicate strategically with one another. By providing WMS, Multi-Carrier Shipping Software (MCSS), Yard Management (YMS), Labor Management, Slotting Optimization, Warehouse Execution System (WES), and more on a single platform, new strategies never before possible start to emerge. These benefits are plentiful, but a few of the top follow.

01 **Increased operational efficiency** can be unlocked by allowing planning and execution to not only coexist, but to play off each other. Data captured every second by Labor Management can feed into the WMS to enable more optimized task assignments and workforce balancing as well as significantly enhanced end-user communication along with enhanced monitoring of individuals, teams, or departments. Yard Management has a direct view into the DC operations allowing trailers to be more optimally placed at the right dock doors to reduce travel to final storage locations for inventory being unloaded.

02 **Continuous optimization** results from a unified WMS and MCSS and moves shippers away from sequential processing which leads to inaccuracies and increased spend. Rather, unification encourages movement to a continuous optimization paradigm where shipments are built and continuously improved and optimized based on exceptions that are sure to occur along the way.

03 **Holistic orchestration** of resources, whether human or automated, results from a unified WMS and Warehouse Execution System (WES). This is achieved by funneling real-time capacity information into the planning components of the WMS. With this real-time data, the WMS can optimize order selection and timely release of work to drive higher picking density, higher utilization, and better on-time shipping percentages and improved customer satisfaction.

KEY FEATURES OF A WMS

A powerful WMS offers functionalities to optimize warehouse operations and improve efficiency. Here are some key features:

- **Real-time Inventory Visibility & Control:** Gain complete transparency into inventory levels across locations, enabling informed decision-making.
- **Slotting Optimization & Task Management:** Strategically place inventory and automate tasks for efficient picking, packing, and order fulfillment.
- **Labor Management & Automation Integration:** Manage workforce effectively and seamlessly integrate with robots and automation solutions for increased productivity.
- **Enhanced Operational Visibility:** Monitor and analyze warehouse operations to identify bottlenecks and optimize workflows.

HOW A WMS IS CONNECTED TO THE ESS

While the WMS manages all activities inside the four walls of the distribution center, other solutions are commonplace to provide an optimal solution. Similar to the Order Management System (OMS), a WMS must communicate with the Enterprise Resource Planning (ERP) system and keep it apprised of actual inventory levels. As new inventory is received, shipped, counted, damaged, etc., the WMS will notify the ERP and the OMS simultaneously so that both systems have the most current information on what inventory is available to fulfill customer orders.

Warehouse automation is often used to increase speed and productivity, as well as to augment human labor. A cloud-native WMS with native WES capabilities offers supreme flexibility around connectivity to any style of automation from any desired vendor and can provide a significant improvement to warehouse resource utilization, leading to increased throughput.

Carriers, especially small parcel carriers, are more and more preferring API-based communication – a perfect fit for a cloud-native WMS. By publishing a standard set of APIs, the WMS can communicate directly with a carrier or with a 3rd party MCSS, which typically offers additional value such as streamlined carrier onboarding, ongoing compliance, and transportation spend analytics, which can help to better negotiate contracts.

87%

of those surveyed implemented WMS in 2022 (the most widely adopted technology that year).

(Source: Extensiv)

HOW A WMS SUPPORTS THE ESS TO OPTIMIZE SHIPPING

A cloud-native WMS, especially, is open in its communication possibilities. Standard API connectivity is key to enabling connectivity to multiple carriers, whether directly or via a 3rd party MCSS. Once a shipper has choices, they are able to leverage capabilities such as rate shopping to help ensure optimal costs for shipping every order and every package. A WMS can take this to the next level by consolidating orders destined for a similar geography and planning a line-haul movement to a carrier hub which will then distribute the packages to their final destination. Leveraging this concept of zone skipping, costs may be considerably reduced as the economics of a full trailer for long-haul shipping are much more attractive compared to the sum of individual package shipping rates for the same distance.

Together with a top-tier MCSS, a WMS can further help manage daily shipping volumes which may be restricted at peak times. And, speaking of peak, as shipping volumes fluctuate throughout the year, often due to holidays and other times of higher demand, a cloud-native WMS can scale up and down immediately keeping costs in check.

By using a WMS, e-commerce businesses can gain greater control over their warehouses, improve efficiency, and lay the foundation for efficient order fulfillment.

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EXPLORING THE ESS
Order Management System (OMS)

Managing orders across multiple channels (website, marketplaces, etc.) can be complex for e-commerce businesses. An Order Management System (OMS) streamlines the order management process, improving efficiency and customer satisfaction.

WHAT IS AN OMS?

An Order Management System (OMS) manages and tracks the lifecycle of an order from the moment the order is placed through end-customer fulfillment. The best OMS solutions available on the market provide an efficient tool for e-commerce businesses, manufacturers, wholesalers, and retailers to effectively process orders, provide customer visibility into the order management process, place and manage inventory in optimal locations, and harmonize fulfillment and shipping.

An OMS streamlines various stages of the sales process and preparation, including order entry, inventory levels, and returns management. In the modern unified commerce world where consumers can order from a multitude of channels, having the right OMS can be a critical differentiator for businesses looking to retain and keep consumers satisfied with their fulfillment experience.

34%

of shoppers shop online at least once a week.

(Source: IPC)

KEY BENEFITS OF AN OMS AS PART OF A UNIFIED PLATFORM

An OMS offers a range of advantages for e-commerce businesses, leading to a smoother and more efficient fulfillment process. These benefits ultimately translate to happier customers and a stronger bottom line.

01 Improves customer experience

With a solid OMS, end-customers no longer need to wonder where their order is within a supply chain network with order updates and transparency available throughout the order lifecycle. Order fulfillment is handled with unmatched precision and customer promises are kept. By enabling easy access to customer requests and order changes, customer loyalty and retention improve drastically.

02 Increased operational efficiency and productivity

Automated capabilities within OMS reduce the likelihood of human error, enabling accurate scalability.

03 Enhanced inventory command

Real-time inventory visibility enables organizations to adjust to changes in product demand and place inventory in the optimal location for fulfillment.

04 Reduced expenses

Operational costs are reduced with optimized fulfillment processes, including shipping costs, inventory storage, and more.

05 More sustainability

The right OMS reduces resource expenditure supply chain-wide, including reduced miles driven by finding the closest fulfillment center to the end-consumer and enabling box-less and printer-less returns.

KEY FEATURES OF AN OMS

An effective OMS offers a robust set of features to streamline order processing, improve inventory management, and enhance the customer experience. Here are some key functionalities to look for:

- **Centralized Order Management:** Capture & manage orders from all channels, track status through fulfillment.
- **Inventory Optimization:** Real-time visibility, allocation, multi-location control with Warehouse Management System (WMS) integration.
- **Enhanced Customer Experience:** Self-service portal for order tracking, changes & returns.
- **Data-Driven Insights:** Generate reports on fulfillment, inventory, & customer behavior.

HOW OMS IS CONNECTED TO THE ESS

An OMS is a useful software solution on its own but combining it with other enterprise software solutions in a unified platform can unlock significant capabilities and benefits for your supply chain network.

For retailers, Point of Sale, Inventory Management, Customer Relations Management, OMS, and Fulfillment Management can all be accessed within a single view and delivered symbiotically in one solution with a unified commerce platform. This provides retail associates with visibility supply chain-wide, with the ability to track order information from any selling channel. It enables visibility into cross-channel customer data, enterprise-wide inventory, and the ability to access all prior order history, while also allowing the customer flexibility to purchase or make changes to their order at any point along the buyer's journey.

For shippers, a unified commerce platform that integrates OMS, Warehouse Management (WMS), Multi-Carrier Shipping Software (MCSS) and other solutions such as Enterprise Resource Planning (ERP), provides unification of all stores, business operations, human resources, customer services, warehouses, and distribution processes to achieve desired business outcomes profitably. With this unification in place, it eliminates time and resources spent on multiple solution providers and reduces expense on upgrades to multiple systems with automatic upgrades occurring to all systems without disruption. As an example, interaction between a cloud-native OMS and cloud-native WMS enhances the buyer's journey significantly with the ability to impact orders very late in the lifecycle, potentially all the way up until shipping. This means a customer can change their mind, cancel or make adjustments to an order well after it has been placed leading to improved customer satisfaction, reduced returns, lower unnecessary transportation spend, and reduced impact on the environment.

208%

Companies who experience 10% or greater growth are **208% more likely** to have OMS in place than those that don't.

(Source: IHL Group)

HOW OMS SUPPORTS ESS TO OPTIMIZE SHIPPING

Within the e-commerce landscape, a well-integrated ESS is crucial for optimizing shipping. Here's how an OMS plays a vital role in collaborating with other systems within the ESS to achieve efficient and cost-effective shipping.

Order routing and optimization

Enables complex decision-making that considers factors like real-time carrier rates provided by the MCSS, delivery times, and inventory levels across multiple locations, ensuring efficient delivery and cost savings.

Customer controlled fulfillment

Customers can manage post-purchase experiences, including the ability to track, alter, cancel, convert, exchange, and oversee orders in real-time from their mobile device, reducing fulfillment experience friction and decreasing support costs. The MCSS also plays a role here by providing real-time shipping data to the OMS. This allows the OMS to determine if modifying the shipping option (e.g., changing delivery speed) is feasible based on the current shipment status within the MCSS. Post-purchase flexibility is key to providing a seamless customer pickup or shipping experience.

Optimized sourcing

An OMS provides continuous consideration of factors including location, customer, item, store or DC resource capacity, promotions, shipping, and value-added service attributes to select the most profitable fulfillment source. This data is then shared with the MCSS. The MCSS leverages the order details and real-time carrier rates to determine the most cost-effective carrier and service option based on the chosen fulfillment location (warehouse, store, etc.). This ensures efficient delivery and minimizes shipping costs. By adding stores as a method of fulfillment for any order, for example for BOPIS and ship-from-store orders, fulfillment strategies can significantly reduce delivery times and costs, leading to improved fulfillment capacity.

> ***An OMS paired with MCSS empowers e-commerce businesses to efficiently manage orders, improve customer satisfaction, and gain a competitive edge in the e-commerce landscape.***

Learn more about how Manhattan's OMS, WMS, and Unified Platform can optimize shipping for your business.

In partnership with enVista

EXPLORING THE ESS
Enterprise Resource Planning Systems (ERP)

Let's explore the world of Enterprise Resource Planning (ERP) systems, and how they work with the Enterprise Software Stack (ESS) including Warehouse Management Systems (WMS), Order Management Systems (OMS), and Multi-Carrier Shipping Software (MCSS). By understanding how these components work together, we can explore how they optimize shipping for mid-sized and enterprise companies.

WHAT IS AN ERP?

An Enterprise Resource Planning (ERP) system is a comprehensive business software platform that facilitates the efficient management of critical business processes across an organization. It acts as the central nervous system of an enterprise and provides automation, integration, and intelligence to communicate and share information efficiently, keeping day-to-day operations running smoothly. Key business processes managed in an ERP system include finance, sales, procurement, manufacturing, shipping, and inventory.

Here's what you need to know about modern ERP systems:

Integrated

An ERP serves as the system of record for organizational data by managing all critical business functions within a single-integrated system.

Cloud-based

Modern ERP systems operate in the cloud to simplify IT infrastructure maintenance and costs, and simplify long-term application support and maintenance, which ultimately work together to minimize long-term Total Cost of Ownership (TCO).

Modern Features

Unlike in decades past, today's modern ERP systems are far more than simple transaction, execution, and data capture engines. Modern ERPs are leveraging cutting-edge technologies such as Artificial Intelligence (AI) and Machine Learning (ML) to create actionable information that enables today's businesses to simultaneously enhance business processes and increase profitability.

KEY FEATURES OF ERP SYSTEMS

ERP systems offer a comprehensive suite of features to manage core business functions, including:

01 FINANCIAL MANAGEMENT

Tracks financial transactions, budgeting, and reporting.

02 SUPPLY CHAIN MANAGEMENT ■

Coordinates procurement, inventory, and logistics.

03 SALES & MARKETING

Handles customer orders, sales, and marketing campaigns.

04 PRODUCTION MANAGEMENT

Manage production orders, production plans, schedules and product quality control.

05 INVENTORY CONTROL ■

Tracks real-time information about inventory levels and valuation, item movements and optimizes inventory processes.

06 CRM

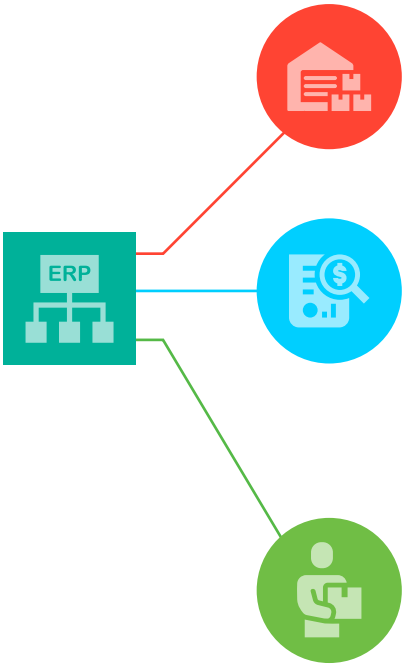
Manages customer interactions, sales leads, and service requests.

■ *Shipping Software involved*

HOW ERP IS CONNECTED TO THE ESS

With ERP focusing on broader business processes, other key solutions in the ESS drive additional efficiencies and cost savings.

These additional solutions include WMS, OMS and MCSS. Here's how they connect with ERP:



WAREHOUSE MANAGEMENT SYSTEM: An ERP system transmits order information to the WMS. The WMS then executes or automates put-away, picking, and packing processes. This integration ensures real-time visibility into inventory levels and location tracking.

ORDER MANAGEMENT SYSTEM: Tight ERP integration with the OMS enables unified order management for omnichannel commerce, focusing on order-related processes from shipping origin (warehouse, store, etc.) to delivery by automating order management and fulfillment and supporting order tracking. OMS communicates with the ERP for product info, inventory levels, customer data, and financial information.

MULTI-CARRIER SHIPPING SOFTWARE: Shipping solutions are designed to manage and streamline shipping operations where ERPs often have gaps in requirements for efficient shipping management. Speed and compliance are examples of key capabilities provided by best-of-breed shipping software that can be lacking in ERP systems. ERP will share order data with the MCSS, which typically communicates back shipment, carrier selection and rate information to update accounting and reporting systems.

PAIN POINTS ERP HELPS WITH

ERP systems are a powerful tool for tackling common challenges faced by enterprise companies. One major pain point they address is data silos, where information gets locked away in individual departments. By centralizing data in a single system, ERP fosters better communication and allows for more informed decision-making across the organization. Additionally, ERP streamlines processes by automating tasks and reducing manual work, leading to overall efficiency gains. Inventory management is another area where ERP shines. It provides real-time data on stock levels, helping businesses avoid costly stockouts and prevent excess inventory buildup. Finally, ERP integrates financial data with information from other departments, enabling companies to generate accurate financial reports and conduct insightful business planning and analysis.

ERP Benefits

- **Centralizes data, enhances communication**
- **Automates tasks, boosts efficiency**
- **Improves inventory management**

HOW ERP SUPPORTS THE ESS TO OPTIMIZE SHIPPING

ERP systems offer significant advantages for streamlining shipping operations. By integrating with specialized software, they create a unified data hub, unlocking several benefits:

Unified Data Hub

ERP integrates with WMS, OMS and MCSS to provide a single source of truth for inventory, orders, order fulfillment, and shipping data.

Accurate Order Fullfillment

ERP-WMS integration supports controlling the movement, storage, and process inventory within a warehouse to ensure accurate fulfillment, minimize errors, reduce labor costs and improve customer service.

Real-Time Order Visibility

ERP-OMS connectivity supports shipping optimization by enhancing order tracking, allocation, and fulfillment processes to maximize order visibility and avoid stockouts across sales channels. This ultimately leads to higher order fill rates and customer satisfaction while reducing operational costs.

Streamline Shipping Processes

ERP supports MCSS to reduce order fulfillment time, improve accuracy, and optimize carrier compliance and shipping costs by increasing shipping throughput, enabling carrier rationalization and enhancing omnichannel fulfillment.

IN SUMMARY

In summary, ERP systems act as the backbone of an organization, connecting business functions across the enterprise. When integrated with WMS, OMS, and MCSS, they create a powerful ecosystem that optimizes shipping processes for enterprise companies.

In partnership with Sparck

EXPLORING THE ESS
Automation

As an e-commerce business, the order fulfillment and packing process is one of the most crucial steps in delivering your products to customers. However, manual packing can become challenging when trying to keep up with the demands of the market while also maintaining speed, accuracy, and efficiency. In today's e-commerce environment, your organization must be flexible enough to respond to evolving consumer demands. By turning to automation, you can enhance your daily operations and scale for future growth.

WHAT IS SHIPPING AUTOMATION

In today's fast-paced e-commerce landscape, efficiency is key. Shipping automation utilizes technology to streamline and optimize the entire fulfillment process, from picking and packing to shipping and delivery.

Here's a breakdown of its core functions:

Automated Workflows

Repetitive tasks like order picking, boxing, labeling, and documentation are handled by automated systems, freeing up your workforce to focus on higher-value activities like customer service and quality control.

Intelligent Packaging

Automated systems can create custom-sized boxes that perfectly fit your products, reducing wasted space and void-fill materials. This translates to lower shipping costs and a more environmentally friendly operation.

Real-Time Data Integration

Shipping automation solutions seamlessly connect with your existing e-commerce software stack (WMS, OMS, ERP) to ensure data accuracy and eliminate manual data entry errors.

Improved Efficiency

By automating workflows and optimizing packaging, shipping automation significantly reduces fulfillment times and enables you to process more orders with greater accuracy and speed.

> ***In short, shipping automation empowers e-commerce businesses to revolutionize their fulfillment process, reduce costs, and deliver a superior customer experience.***

WHAT TYPES OF AUTOMATION ARE TRENDING?

1. Artificial Intelligence

Artificial Intelligence (AI) can be found in many aspects of e-commerce. It can help machines navigate and make decisions, help managers determine the best way to organize a warehouse, find the best shipping route for a parcel, calculate how many employees are necessary for each shift and more. The benefit of using AI in e-commerce is that it performs redundant tasks with greater speed and accuracy, allowing warehouse employees to focus on more important and fulfilling tasks. However, the most significant limitation of AI, similar to human intelligence, is that it is only as good as the data it receives.

Despite what skeptics may think, AI is here to stay, and it's going to continue to play an even bigger role in e-commerce. The continued integration of AI in e-commerce will be a net positive for many people, ranging from managers of organizations to end customers. AI's ability to execute monotonous tasks will free employees and business owners to focus on big-picture items. In addition, AI can find the most optimal shipping routes, allowing customers to receive their online orders faster. Lastly, AI's capacity to create right-sized packages will reduce our carbon footprint, benefiting all of humanity. Together, these factors will lead to increased profit margins for businesses.

Like most technology, AI is something that will continue to improve over time. As AI improves, it will find more use cases. Just as the internet went from being a luxury to a necessity, AI will become a necessary technology for any e-commerce company- to maintain a competitive advantage. If you don't take the steps to make your business more efficient, your competitors will. No matter how good your product is, your business will fall behind if you can't adapt to the times.

90%

of IT decision-makers plan to deploy more automation, including AI, in the next 12 months.

(Source: Digitate IT Survey, 12/2023)

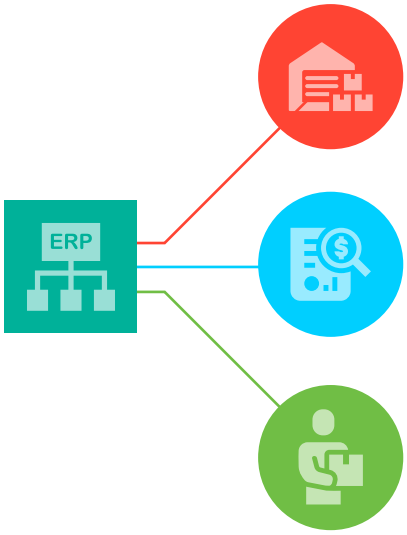
2. Auto-Boxing Technology

Auto-boxing technology utilizes automation to create custom-sized boxes that perfectly fit your products. This eliminates wasted space and the need for extra packaging to fill the box, translating into several key benefits:

- **Reduced Shipping Costs:** By eliminating dead space in packages, auto-boxing reduces the Dimensional Weight (DIM weight) used by shipping carriers to calculate costs. This can lead to significant cost savings, especially for larger or oddly shaped items.
- **Minimized Environmental Impact:** Auto-boxing reduces the amount of cardboard and other packaging materials needed, minimizing your company's environmental footprint.
- **Improved Efficiency:** Auto-boxing streamlines the packaging process, reducing labor costs and expediting order fulfillment.

HOW DOES AUTO-BOXING TECHNOLOGY INTEGRATE WITH OTHER PARTS OF THE ESS?

Automated fit-to-size packaging solutions seamlessly integrate with various components of your ESS, ensuring smooth operation and data accuracy. Here are some key integrations:



WAREHOUSE MANAGEMENT SYSTEM (WMS): The WMS provides real-time inventory data to the automated packaging system. This ensures the system selects the appropriate box size based on the ordered items. Additionally, the WMS receives updates on box dimensions and weight after packaging, maintaining accurate inventory records by confirming that the correct quantities and product(s) were shipped.

ORDER MANAGEMENT SYSTEM (OMS): The OMS transmits order details to the packaging system. This includes information like the number and ype of items ordered, which helps the system determine the optimal box size. Additionally, the OMS receives confirmation once the order is packed, allowing for efficient order fulfillment tracking.

MULTI-CARRIER SHIPPING SOFTWARE (MCSS): Integration with MCSS allows for automatic calculation of shipping costs based on the final package dimensions and weight. This ensures accurate shipping quotes and efficient selection of carriers based on cost and delivery speed. After the best carrier rate is selected based on DIM weight and a variety of other pre-determined business rules, the MCSS prints out a compliant label for the auto-boxing technology to automatically place on the box.

PAIN POINTS ELEVIATED BY INTELLIGENT PACKAGING AUTOMATION

Speed, Accuracy, and Efficiency are Compromised

Manual packing can slow down the overall order fulfillment process, as workers can only move so fast. In a fast-paced environment, mistakes can be made, such as using the wrong-sized box. Automated packaging allows for consistent throughput and ensures your customers receive their packages on time, right-sized, and undamaged. These machines can create a fit-to-size box every three or seven seconds. In addition to helping maintain consistency and speed, automating your packaging process will allow your operations to scale with consumer behavior.

Evolving Customer Expectations

The “fast food effect” has permeated e-commerce, with customers wanting their products as quickly as if they’d picked them up in-store. This shift in expectations is driving changes in fulfillment centers, propelling the need for disruptive automation technologies. This improved speed to customer is a big win in customer satisfaction, as meeting and exceeding customer expectations is the ultimate goal for e-commerce companies.

Take for example Sparck’s automated packaging solutions which allow for the production of up to 1,100 right-sized boxes per hour. With that level of automation, the coveted one to two-day turnaround time from order placement to doorstep delivery becomes a reality.

Experiencing Labor Shortages

Automation now allows businesses to effectively optimize their workforce. What once required ten people in a packing area can now be managed with just one or two people. This leap in labor efficiency is a testament to the transformative power of automation. With automation, e-commerce businesses can manage the constant ebb and flow of hiring seasonal labor. During peak seasons, the immense pressure on the entire workforce is mitigated, preventing overworked employees and staffing shortages.

Economic Uncertainty

In a period marked by uncertainty, automation plays a pivotal role in allowing companies to seamlessly manage varying demand. It streamlines operations, ensures consistency, and bolsters a company’s ability to meet customer expectations, regardless of external fluctuations - providing a sense of certainty in even the most uncertain times.

High Levels of Waste

Manual packing tends to lead to overuse of materials as the amount of void fill used is up to the packer. In this case, some might use more than others, leading to unpredictability. While your organization cannot control if or how much your customers recycle, you can control how much plastic and cardboard you send them. Automated packaging machines perform a 3D scan of each single- or multi-item order on demand and create a right-sized box requiring little to no void fill. In addition to saving your company money, this reduction in material use will make your business more environmentally friendly and appeal to eco-conscious customers. Smaller parcels will also allow you to fit more orders on trucks, reducing your carbon footprint even further and increasing efficiency.

287 lbs

The approximate amount of plastic waste contributed annually in the U.S., per person.

(Source: National Academies Press, 2022)

Operating Costs Need to be Cut

Through more efficient packaging, your organization stands to save on labor, material, and shipping costs by switching to fit-to-size automated packaging. Companies who switch to automated packaging have the potential to realize up to a 38 percent reduction in material costs, such as corrugate spend and void fill, a 32 percent decrease in transportation costs and a full return on investment within six to 18 months. Supply chain savings frees up resources that can be allocated elsewhere in your business and improve your bottom line.

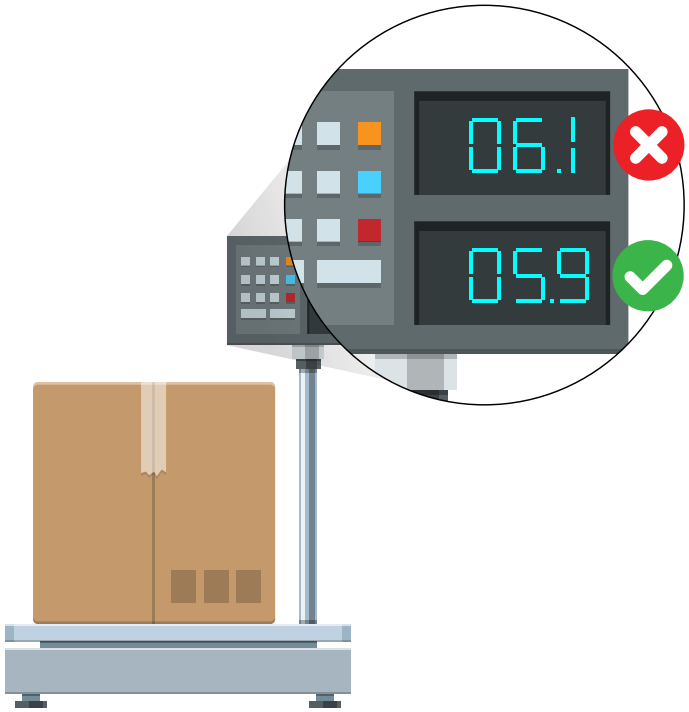
KEY FEATURES OF BOXING AUTOMATION

If a company is looking to achieve any of the following goals, then an automated packaging solution is worth exploring:

- **Solve for labor challenges**
- **Reduce freight and DIM weight charges**
- **Scale with order volumes, specifically during peak periods**
- **Improved carbon footprint**
- **Reduce stock box inventory**
- **Reduce or eliminate void fill usage**
- **Save on materials waste**

HOW PACKAGING AUTOMATION HELPS TO OPTIMIZE SHIPPING

With automated right-sizing packages, shippers can ensure their parcels aren't filled with extra air or volume. This directly impacts shipping costs because carriers often base pricing on DIM weight in addition to the actual weight of the package. DIM weight considers the size of the box (length x width x height) and applies a conversion factor to estimate its density. Even a slight reduction in box size can significantly lower DIM weight, especially when dealing with larger volumes.



When DIM weight is calculated, it's rounded up. Even the slightest fraction of a pound can influence the total cost, especially as shipping volumes rise. If a shipper has a box weighing 6.1 pounds and they are able to reduce it to 5.9 pounds, it saves them a full pound. While that difference may seem minor, it can have a huge impact on overall shipping costs.

In contrast, manual packing often leads to oversized boxes filled with void fill materials. This not only increases DIM weight and shipping costs but also contributes to unnecessary waste.

Manual fulfillment processes can be a bottleneck for e-commerce businesses struggling to keep up with demand. Shipping automation streamlines the entire process, from picking and packing to shipping, resulting in greater efficiency, reduced costs, and a superior customer experience. By embracing automation, e-commerce businesses can future-proof their operations and scale for growth in a competitive landscape.

$98.2B

The global market for e-commerce packaging is estimated to reach $98.2B by 2025 and is growing at a CAGR of 15%.

(Source: Smithers, "The Future of E-Commerce Packaging to 2025" report)

with ProShip

EXPLORING THE ESS
Multi-Carrier Shipping Software (MCSS)

In today's competitive e-commerce landscape, efficient and cost-effective shipping is no longer a luxury, it's a necessity. Shippers are facing tight margins, demanding customers, and a constant struggle to balance three critical factors:

Speed

Customers expect lightning-fast deliveries, often with multiple shipping options with Estimated Delivery Dates (EDD) to choose from. Meeting these expectations can be technically difficult.

Cost

Every shipment represents a cost to your business. Finding the right balance between speed and affordability is crucial for maintaining profitability.

Control

Keeping track of thousands of packages across multiple carriers and ensuring on-time delivery from the right shipping origin can be a complex and time-consuming task.

68%

of shoppers look for shorter delivery windows at checkout.

(Source: Roadie)

WHAT ABOUT TRADITIONAL METHODS?

Traditional methods of carrier selection and shipping management often fall short. Manually comparing rates from different carriers in different systems is inefficient and prone to errors. Siloed systems can lead to data inconsistencies and delays. Enter Multi-Carrier Shipping Software (MCSS), a powerful tool designed to streamline your entire fulfillment process.

WHAT IS MULTI-CARRIER SHIPPING SOFTWARE?

Multi-carrier shipping software (MCSS) acts as a central hub within your ESS. It seamlessly connects with existing systems like the Warehouse Management System (WMS), Order Management System (OMS), and Enterprise Resource Planning (ERP) system, and it simplifies managing multiple carriers by offering these key functionalities:

Easy Carrier Onboarding

MCSS integrates with a wide range of carriers, including national, international, regional and final mile carriers, eliminating the need for individual accounts and separate platforms.

Automated Workflows & Complete Shipment Execution

MCSS automates repetitive tasks like comparing carrier service rates, rate selection based on cost and other pre-defined business rules, generating compliant labels, and creating shipment documentation.

Centralized Shipping Data

MCSS acts as a single source of truth for your shipping data, pulling information from your WMS, OMS, and ERP. This provides a unified view of inventory, orders, and other shipping requirements.

Increased Efficiency

By handling these core functions, MCSS lays the groundwork for a more efficient and cost-effective B2B and B2C e-commerce fulfillment process, eliminating data silos and manual tasks associated with shipping while streamlining your entire fulfillment process.

BENEFITS OF MCSS: CONQUERING COMMON SHIPPING CHALLENGES

MCSS empowers businesses of all sizes to overcome several key challenges in today's e-commerce landscape:

Reduced Shipping Costs

MCSS allows you to automatically compare rates and select the most cost-effective option for each shipment. Advanced algorithms analyze factors like weight, size, destination, service level, and more to ensure you get the best cost and quickest delivery timeline on every package, no matter the shipping origin.

Improved Workflow Efficiency

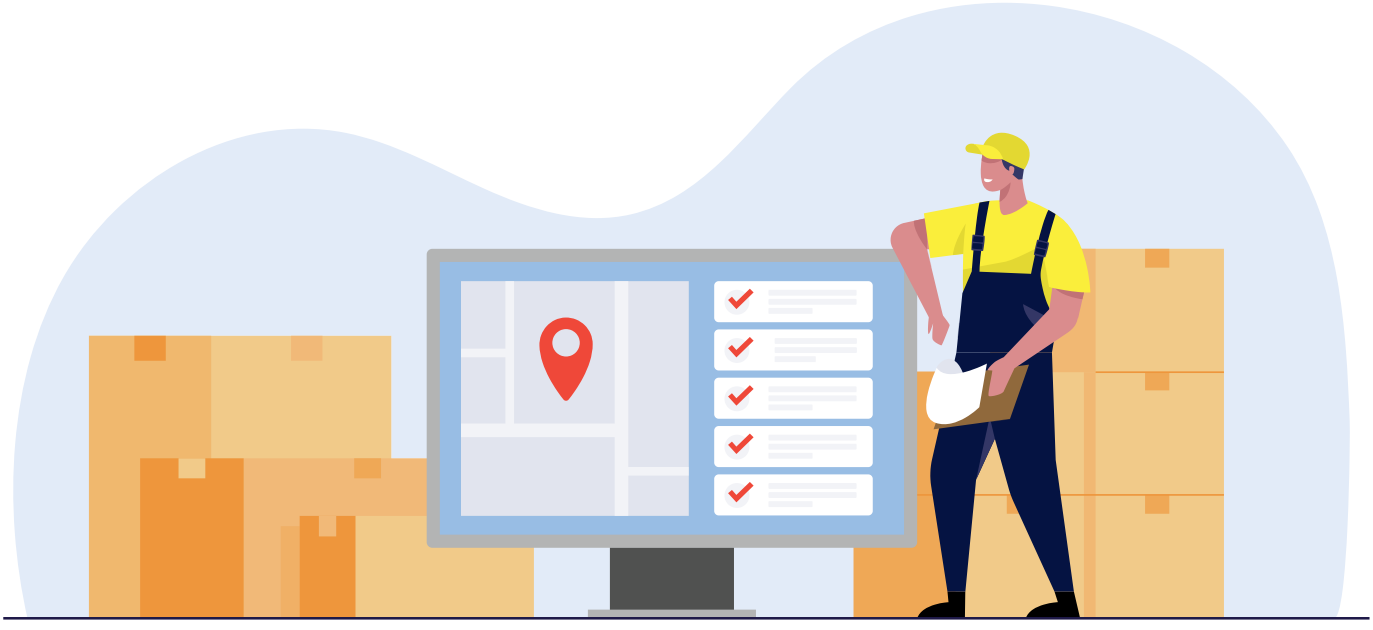
Manual tasks like carrier selection, label printing, and documentation are automated by MCSS. This frees up your team to focus on core business activities like order fulfillment and customer service. Additionally, automation reduces the risk of human error in the shipping process.

Mitigating Risks

MCSS eliminates single-carrier dependency and can help you negotiate rates with your carrier partners. MCSS empowers you to access a broad library of carriers, focusing on those that truly fit your shipping profile. With additional carrier options, shippers reduce the impact of disruptions or service delays with a single provider. Additionally, seamless integration with WMS and OMS ensures accurate labeling, minimizing delays caused by incorrect shipping information.

Enhanced Customer Experience

MCSS empowers you to offer a wider range of shipping options at checkout and allows customers to choose the best option for them, whether that's a faster delivery time by a certain EDD or even free shipping. MCSS also helps ensure accurate tracking, on-time delivery, and an easy returns process.



Key features to look for in an

MCSS SOLUTION

MCSS offers a comprehensive suite of features to manage core business functions, including:

01 SEAMLESS INTEGRATION

Look for a MCSS that integrates seamlessly with your existing WMS, OMS, and ERP systems for smooth data flow and elimination of manual data entry. For instance, a MCSS should be able to utilize an OMS and WMS to determine the best shipping origin (distribution center, store, drop-ship vendor) to ship each package from for the lowest cost and quickest delivery time.

02 EXTENSIVE CARRIER NETWORK

Choose a solution that provides access to a wide range of carriers, including national, regional, final mile, LTL, and alternative delivery providers. It's also important to find a solution that is carrier-agnostic and maintains solid carrier relationships. Some carriers establish recognition programs or industry awards for MCSS providers who consistently deliver high-volume shipments or demonstrate efficient operations. These preferred partner and top-tier compatibility programs ensure you are choosing a solution with the reliability and reputation needed to stay compliant and deliver exceptional service to your customers.

03 SPEEDY RATE SHOPPING

Ensure rate shopping functionality is designed for speed and efficiency for high parcel volumes. Advanced parcel and LTL rating solutions should have the capability to compare rates across hundreds of carriers and service options, and factor-in pre-defined business rules in milliseconds.

04 CONFIGURABLE BUSINESS RULES:

Build and manage complex business rules directly within the MCSS. This empowers you to define clear guidelines for carrier selection, order routing, handling of hazardous materials (hazmat), and other critical shipping processes.

05 AUTOMATION CAPABILITIES:

Prioritize solutions that automate tasks like carrier selection, label printing, and shipment documentation. Also ensure the solution provides self-configuration tools with ability to add, remove and manage shipping locations and capabilities to turn on and off carrier services as needed.

06 ZERO DOWNTIME UPDATES:

Enjoy automatic updates and eliminate downtime with features like Continuous Improvement/ Continuous Deployment (CI/CD) versionless architecture. This ensures you're always operating on the latest, most secure version of the software without disrupting your workflow with sporadic updates and forced upgrades.

HOW MCSS OPTIMIZES YOUR SHIPPING STRATEGY

MCSS goes beyond simply automating tasks. It empowers you to optimize your entire shipping strategy through several key functionalities:

Data-Driven Carrier Selection:

Leverage advanced cost calculation engines that factor in weight, size, destination, service level, and current market rates to identify the most cost-effective carrier for each shipment. This ensures you're not just automating a process, but making intelligent choices that save you money.

Superior Rate Shopping:

Explore various rate options with features like basic, time-in-transit, and even Advanced Date Shopping. This flexibility allows you to tailor shipping options to customer needs and budget constraints, potentially leading to increased sales and improved customer satisfaction.

[VIDEO] How ProShip Advanced Date Shopping Carrier Rate Shopping Works

WATCH NOW >

High-Speed Shipment Execution:

Experience millisecond shipment execution speeds for tasks like carrier rating, applying business rules, and compliant labeling. This eliminates delays in your shipping process and keeps your fulfillment moving at peak efficiency.

Scalability for Growth:

As your business expands, your MCSS can grow with you. Manage shipping across your entire omnichannel fulfillment network, including distribution centers, stores, third-party logistics providers (3PLs), and drop-ship manufacturers. This ensures your shipping strategy remains optimized regardless of your business size or complexity.

IN SUMMARY

MCSS is a strategic investment that provides significant benefits for your e-commerce business. It automates tasks, reduces shipping costs, improves efficiency, and empowers you to navigate the e-commerce rush with confidence. The ability to consistently deliver faster, more affordable shipments, while complying with regulations and handling complex situations like hazmat and international shipping, leads to a significant improvement in customer satisfaction and overall business success.

In partnership with briez

EXPLORING THE ESS **Integration**

The supply chain Enterprise Software Stack (ESS) has become increasingly complicated as customer expectations have evolved over the past 10 years. As e-commerce demand increases and the requirement for omnichannel fulfillment is mandated, enterprise companies need to have the key best-of-breed supply chain systems integrated well to optimize the shipping process for efficiencies within the warehouse, store operations, and customer satisfaction. More than ever, shoppers are expecting the same experience from retailers and brands, regardless of what channel they purchase through, and a well-designed and well-integrated supply chain ESS is key to making sure that experience is consistent.

PARTS OF A SUCCESSFUL INTEGRATION STRATEGY

The foundational element to a unified supply chain ESS is a well-designed integration strategy that incorporates every part of your supply chain for both B2B and B2C flows.

This includes components such as:

- **How you present shipping options on the website to end customers**
- **How your Order Management System (OMS) routes orders based on capacity, inventory, and shipping times**
- **How your Warehouse Management System (WMS) allocates orders and at what process flow points does it communicate with enterprise shipping software**
- **How your Multi-Carrier Shipping Software (MCSS) communicates communicates with various carriers to identify the best shipping option for that package without comprising delivery speed and margin**
- **How each of these systems feeds information back to the website or post-purchase platform for accurate package tracking and improved customer experience**

75%

of shoppers say that regardless of channel, they expect the same experience from a brand or retailer.

(Source: BazaarVoice)

COMMON INTEGRATION PITFALLS

The inability to have the right data available in the right system for decision-making at any of the previous points will lead to a negative customer experience (CX).

Common pitfalls that we see enterprise companies encounter as they implement and integrate shipping software with other enterprise software are:

Putting all shipping decisions in a single system:

There are options for intelligent shipping decisions at multiple spots in the supply chain, and depending on data flow, that may be on the website (user chooses expedited shipping), in the OMS (routing to ship from distribution center (DC) vs. Ship-from-Store (SFS)), or in the WMS (route during the wave vs during packing).

Understanding Label Requirements:

Failure to understand and detail internal requirements and carrier requirements for labels can cause delays, fines, and returns. Ensure labels comply with carrier specifications and include accurate internal data.

Reliance on a single, nation-wide carrier for the entirety of your shipping network:

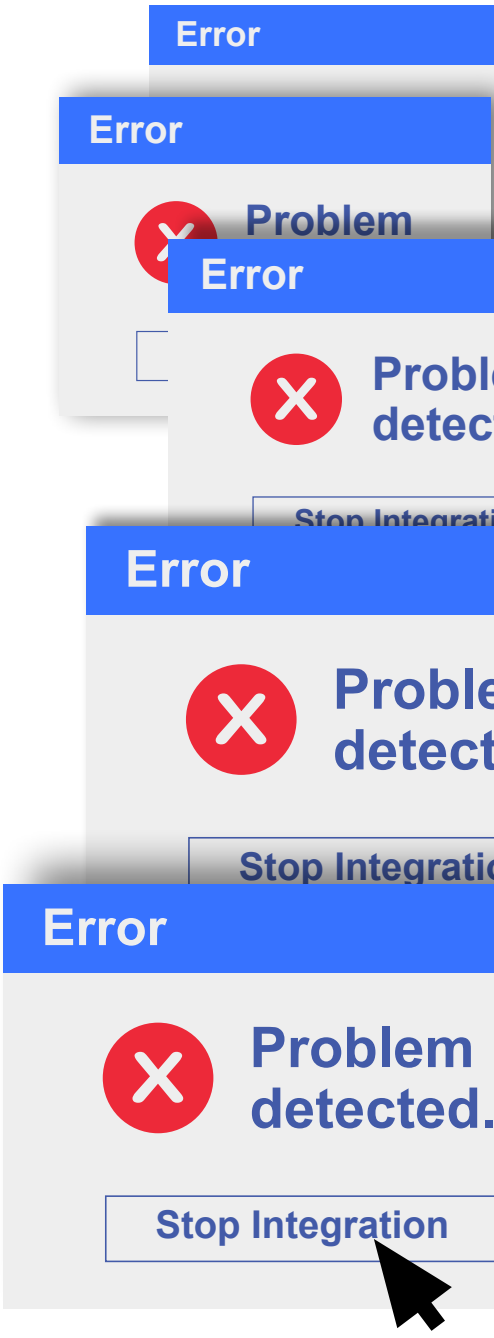
There's great value in diversification of carriers and finding value-driven regional or local last mile carriers with which to partner. The importance lies in having the right mix of carriers, not necessarily increasing the quantity.

Lack of detailed testing:

Testing should be robust and include the validation of every shipping zone, Ship Via, cost, and label. Additionally, having end users execute exception testing at each step that a Ship Via decision or label print may be possible, will ensure a smooth deployment and reduce the risk of uncovered scenarios. Also, ensure there's enough time for testing well before any spikes in shipping volume should occur, i.e., peak season.

Lack of volume testing:

In high volume, e-commerce environments, volume stress tests need to be run at 120% of Peak Volume to ensure the ability to appropriately route packages and print labels to keep up with production speed.



KEYS TO AUTOMATION SUCCESS

The good news is that multiple resources are available to build the foundational element of a well-designed integration and data management strategy.

01 Find a trusted supply chain delivery partner

The first resource available is finding a trusted supply chain solutions delivery partner. Having a trusted partner that is focused on the implementation and integration of your supply chain ESS and fulfillment operations allows you to continue to focus on day-to-day operations while ensuring your new integration project is running smoothly. A partner focused on the overall solution delivery allows unbiased, smooth communication and integration with all of the technology vendors who are providing high quality software.

02 Repeat what works

The second set of accessible resources are various best practice templates and checklists that have been built out by teams who have executed similar projects. These offer the keen ability to fast-track configuration templates, testing templates, and volume testing data packages that will shrink implementation timelines, reduce risk of new implementation projects, and lead to a quicker return on investment (ROI).

IN SUMMARY

The key to a smooth implementation is having multiple parties collaborate and execute the appropriate roles for maximum efficiency. You, as the shipper, understand the intricacies of your operation better than anyone. By providing insights and feedback on what makes you unique compared to your competitors, you'll be well-positioned to leverage the full potential of your ESS. The supply chain software vendor provides best-of-breed technology and is focused on delivering high quality solutions that are free of major issues, while continuously improving with new features. The integration and implementation partner lives and breathes the project, ensuring risk is reduced by keeping the plan moving forward and on scope. They lead the technical and operational activities on a day-to-day basis to ensure high quality project delivery. Having all 3 (or more) parties working in harmony will ensure implementation goes well.

PARTNERS
Contact Information

BRICZ | INTEGRATION

Bricz is a global supply chain solutions delivery partner to leading retailers, brands, distributors, and 3PLs. Our focus on designing, implementing, and optimizing best-of-breed supply chain solutions is coupled with a unique blend of operational & technical expertise around WMS, OMS, TMS, Parcel Technology, and Warehouse Robotics. Our approach is customer first and that is reflected in our long-term customer partnerships and award-winning services team.

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MANHATTAN ASSOCIATES | OMS & WMS

Manhattan Associates is a global technology leader in supply chain and omnichannel commerce. We unite information across the enterprise, converging front-end sales with back-end supply chain execution. Our software, platform technology and unmatched experience help drive both top-line growth and bottom-line profitability for our customers. Manhattan Associates designs, builds and delivers leading edge cloud and on-premises solutions so that across the store, through your network or from your fulfilment centre, you are ready to reap the rewards of the omnichannel marketplace.

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ENVISTA | ERP

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PROSHIP | MULTI-CARRIER SHIPPING SOFTWARE

ProShip's suite of leading multi-carrier shipping software solutions empower businesses of all sizes to simplify parcel and LTL workflows, automate shipping tasks, and take complete control of their shipping strategy. As a premier logistics technology provider exclusively dedicated to shipping software solutions, ProShip is committed to delivering powerful shipping software today and into the future. Trusted by leading brands, ProShip is the last shipping software you'll ever need. Visit www.proshipinc.com to learn more.

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