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Consulting Strategies for Warehouse Distribution Operations

Strategy Guide





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CONTENTS

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EXECUTIVE SUMMARY

In today's rapidly evolving distribution landscape, businesses face unprecedented challenges driven by e-commerce growth, omni-channel fulfillment demands, and changing consumer expectations.

This whitepaper explores the critical role of distribution integration consultants in navigating these complexities and optimizing distribution operations. It examines the unique advantages of partnering with these specialists, contrasting their approach with that of OEMs and traditional supply chain consultants.

By analyzing industry-specific challenges and presenting comprehensive consulting capabilities, this paper offers valuable insights for logistics professionals seeking to enhance their distribution strategies.

Key Takeaways:

- Understand the strategic importance of distribution integration consultants in modern logistics
- Identify five crucial factors for selecting an effective distribution integration consultant
- Gain insights into specific challenges facing retail omni-channel fulfillment, e-commerce, wholesale distribution, and 3PLs
- Explore Bastian Solutions' comprehensive consulting services, including Operations Master Planning and System Simulation
- Learn how to develop a roadmap for distribution excellence in a dynamic market environment
- Recognize the value of process-focused solutions over purely technology-driven approaches
- Discover how analytics and conceptual design can optimize distribution center planning and operations

01
DISTRIBUTION CHALLENGES

Given the changing and increasingly complex dynamics of the distribution industry, the need for distribution integration consultants, with the precision supply chain analytics and broad scope of design solutions that they provide, has become more critical for supply chain executives than ever before.

Faced with the prospect of building a greenfield distribution site or upgrading their current distribution center, logistics executives are confronted with thousands of decision points to be worked out. Yet not all logistics executives possess the extensive knowledge and analytical capabilities in-house to fully concept, plan, manage, and bring to successful fruition a large-scale, highly automated warehouse or distribution center (DC). Their concept of what an ideal DC should look like, how it should function, and what material handling systems should be in place is limited by their distribution experience and by the time constraints they must operate within to design, decide and determine the parameters of the project.

Evaluating the tremendous volumes of information required and making the correct decisions throughout every step of the process can be a risky and daunting task for any logistics team, no matter how talented they may be. Key amongst these decisions is assessing which planning, equipment and management aspects of the project can be provided in-house and which should be outsourced. Equally important is whether these functions should be outsourced to a distribution integration consultant, OEM or supply chain consultant. These decisions can have a significant impact not only on the design of the distribution facility's material handling systems, but on the efficiency of the distribution operation.

NAVIGATING THE COMPLEX DECISIONS IN DISTRIBUTION LOGISTICS IS DAUNTING FOR ANY TEAM.

THE CRITICAL CHOICE: *DETERMINING WHICH ASPECTS TO HANDLE IN-HOUSE AND WHICH TO OUTSOURCE.*

DETERMINING THE BEST EXPERTISE FOR YOUR SOLUTION

The following questions should be asked before considering the use of an OEM or supply chain consultant or distribution integration consultant:

Will this approach deliver the best solution to meet the logistics challenges being faced?

Will it actually provide an optimized design and will it streamline project management?

Will it increase throughput and/or capacity in the new or upgraded distribution facility?

Will it leverage capital investment, minimize operating costs and provide a total lower cost solution?

For distribution executives, selecting an OEM or supply chain consultant or distribution integration consultant can have a significant impact relating to the set-up and running of an efficient and cost-effective distribution center:

ORIGINAL EQUIPMENT MANUFACTURER

- Makes the equipment for a specific distribution process.
- Their equipment is a component within a larger integrated system for which the OEM has limited control.

SUPPLY CHAIN CONSULTANTS

- Bring together a broad range of knowledge on many diverse types of systems used in distribution.
- Their experience with actual installation and integration of these systems can be limited.

DISTRIBUTION INTEGRATION CONSULTANTS

- Possess an in-depth understanding of the performance capabilities of most types of automation used in distribution.
- Have hands-on experience with system installation, integration, go-live, and operator training.

Five key points should be taken into consideration when selecting a distribution integration consultant versus an OEM or supply chain consultant:

1. Single-point responsibility
2. Analytics and conceptual design
3. Process before automation
4. Objectivity in automation selection
5. Change management

1. SINGLE-POINT RESPONSIBILITY

If services are to be outsourced, it is desirable to have a single point of contact and responsibility to design and manage the entire project. OEMs, in their effort to position themselves as single-source suppliers for their client's distribution needs, are increasingly making critical decisions on initial conceptual design and equipment selection for their clients' material handling systems. Conversely, distribution executives have traditionally relied upon supply chain consultants to help navigate through these challenging logistics decisions. They are typically well-suited to develop supply chain and network strategies and conventional distribution center layouts. However, their design capabilities for automated solutions within the four walls of a distribution center are a mixed bag.

Possessing the skilled personnel, extensive case history databases to draw upon, and in-depth experience with precision analytics, financial modeling tools and material handling (MH) systems, distribution integration consultants are better equipped to fully analyze and develop the conceptual designs needed for even the most complex supply chain and distribution center scenarios.

Once a solution has been decided upon, distribution integration consultants are well positioned to assume single-point responsibility for contracting, installing and integrating the various sub-systems in the warehouse or DC into one efficiently functioning material handling system spanning the entire distribution operation. This level of single-point responsibility gives the best guarantee that the distribution facility will operate as designed and meet the throughput levels and expected system efficiencies when the system goes live.

DISTRIBUTION INTEGRATION CONSULTANTS *ARE BETTER EQUIPPED TO FULLY ANALYZE AND DEVELOP THE CONCEPTUAL DESIGNS NEEDED* FOR EVEN THE MOST COMPLEX SUPPLY CHAIN AND DISTRIBUTION CENTER SCENARIOS.

2. ANALYTICS AND CONCEPTUAL DESIGN

Moving forward with certainty on a distribution center plan requires employing the most sophisticated analytical tools in the industry to provide straightforward, unbiased plans.

A thorough conceptual design analysis must be in place before distribution executives should even consider material handling equipment selection. This determines volume requirements that drive the distribution facility's size, capacity and velocity. A capital estimate is then prepared for the recommended solutions from a material handling standpoint and/or a facility build-out perspective.

These factors drive storage solutions, mechanical conveying and sortation solutions, pick systems, labor requirements, etc. Finally, a complete return on investment analysis is prepared, comparing current operating procedure to the new, proposed operating structure.

This level of analytics, however, is seldom performed by OEMs. Such analytics are best provided by distribution integration consultants who are equipped with the expertise and experience in material handling systems to achieve the most comprehensive and accurate results.

Too many supply chain executives make the fundamental mistake of thinking that technology should be the basis and starting point of their distribution solution.

3. PROCESS BEFORE AUTOMATION

Too many supply chain executives make the fundamental mistake of thinking that technology should be the basis and starting point of their distribution solution. Where, in fact, thorough conceptual design aimed at process improvement should be the central aspect of any distribution solution.

Given the massive influx of new technology flooding the material-handling market, it is undesirable that logistics executives jump first to technology as the solution to their throughput issues. They are influenced by what they see in other facilities, what they read and what they hear from others.

Manufacturers of material handling automation offer solutions that are focused on technologies that they manufacture. Consequently, their solution may not be the best fit or the most cost-efficient option for the needs of distribution operations.

Distribution integration consultants approach distribution challenges from a completely different perspective, embracing improvement as the key motivator rather than the equipment. The analysis they provide revolves around the precise process needs for the distribution operation.

Approaching system design from a process perspective does not necessitate the implementation of any specific automated technology, but leaves the door open to any options to achieve the objectives of the distribution facility's supply chain executives.

4. OBJECTIVITY IN AUTOMATION SELECTION

When designing a multi-million-dollar distribution facility, few factors could be more important than ensuring that the warehouse or DC's executive team has the opportunity to review and select any and all material handling system options available.

Many distribution projects put in place by OEMs install automated systems that are not the best fit or the most cost-efficient option for the facility. While supply chain consultants, lacking the full depth of technical knowledge on the many automation options available, will typically propose MH systems where they have familiarity with their operation and integration. The choices presented may not be the best material handling options or the most cost-efficient for the needs of the distribution facility being planned.

Distribution integration consultants bring a broader range of experience with more varied applications, thereby offering distribution executives a wider perspective on potential solutions. They draw on solutions from many industries, thus providing a broad perspective on potential solutions that might otherwise not be considered. This is critical to selecting the right equipment that will meet the requirements for the facility's throughput, efficiency and expected ROI.

The capability for objectivity can be further limited with the equipment bidding process. Because the breadth of options from OEMs and

supply chain consultants do not usually include other possible relevant systems, the bidding process is likely not representative of a realistic universe of material handling solutions.

Objectivity in system design without the constraint of limited-sourced options is the best guarantee that the optimum material handling systems will be put in place to achieve the operational and financial needs of the distribution center.

5. CHANGE MANAGEMENT

Change management is a critical link in the smooth transition of new and upgraded distribution operations into functionally efficient live operations.

The coordination of equipment testing, system conversion and equipment start-up is critical to ensure the interlinked material handling systems in the warehouse or DC go live without interruptions. Once the go-live or switchover takes place, it is vitally important for the distribution staff to be fully trained in the operation of the WES/WMS, robotic platforms, pick station modules, and the dozens of other functions involved with the operation of the new or upgraded facility. This requires considerable coordination between OEMs, installers, distribution executives and operational personnel.

Implementing such strategies is better suited for distribution integration consultants who are uniquely equipped to embrace and coordinate the full functionality of all activities within the scope of the distribution center. This includes providing on-site software and hardware training and access to learning management systems.

02
INDUSTRY CHALLENGES

ADVANCEMENTS IN MATERIAL HANDLING AUTOMATION, DISTRIBUTION CONSTRAINTS, CHANGING BUSINESS GOALS AND MARKET FLUCTUATIONS *CAN OFTEN TRIGGER REEVALUATION OF OPERATIONS AND BUSINESS PLANS*.

Some obstacles commonly seen across industries include:

- *Strained manual operations, like picking, replenishment and product transport*
- *Errors or inconsistencies in manufacturing or order fulfillment*
- *Long or inconsistent order fulfillment or manufacturing timeframes*
- *Increasing overhead and operating costs*
- *Limited warehouse facility space*
- *Transitions to new automated solutions*
- *Changes in industry requirements*
- *Labor availability*

Distribution integration consultants permit facility executives to fully evaluate their processes, material handling systems, operator interfaces and plant structures.

Four key industry sectors that experience distribution challenges include retail Omni-Channel Fulfillment, ecommerce, wholesale distribution and third-party logistics. The common challenges faced by these industries can be identified and overcome through the use of Distribution Integration Consultants.

RETAIL OMNI-CHANNEL FULFILLMENT

Omni-channel Fulfillment (OCF) has emerged as the solution to support the ever-expanding demands of retail customers for both in-store and online purchasing, giving customers many more fulfillment options. Even though the OCF evolution began more than two decades ago, many retailers are still trying to establish a workable balance between ecommerce fulfillment and retail store replenishment.

Traditional replenishment for brick-and-mortar retailers encompassing movement and storage of unit loads and multi-SKU split pallets includes receiving, put-away/storage, picking, transport through the DC, sortation, value-added services (VAS), packing and shipping. This is great for store replenishment, but is a poor option for handling the needs of ecommerce fulfillment that requires each picks, small order fulfillment and system scalability.

Consumers want flexibility and they want options. They are requesting different service levels, speed of delivery, improved availability of inventory, and a better customer experience. These factors are driving innovation in OCF.

OMNI-CHANNEL FULFILLMENT HAS EMERGED AS *THE SOLUTION TO SUPPORT THE EVER-EXPANDING DEMANDS OF RETAIL CUSTOMERS* FOR BOTH IN-STORE AND ONLINE PURCHASING.

ECOMMERCE

According to a 2024 report from researcher Statista, the U.S. ecommerce market is projected to gross $930 billion (USD) in 2024, up 15.0 percent from 2023. Total worldwide online retail sales are expected to increase 15.6 percent year-over-year in 2024. This trend is expected to continue through 2028, when global ecommerce revenue is forecast to reach $5.3 billion.

As ecommerce continues its rapid growth into virtually every market sector, retailers are anxious to expand their presence online to capture this market share. To compete in this virtual arena, picking, packing and shipping of single items and small-volume orders to consumers is the name of the game.

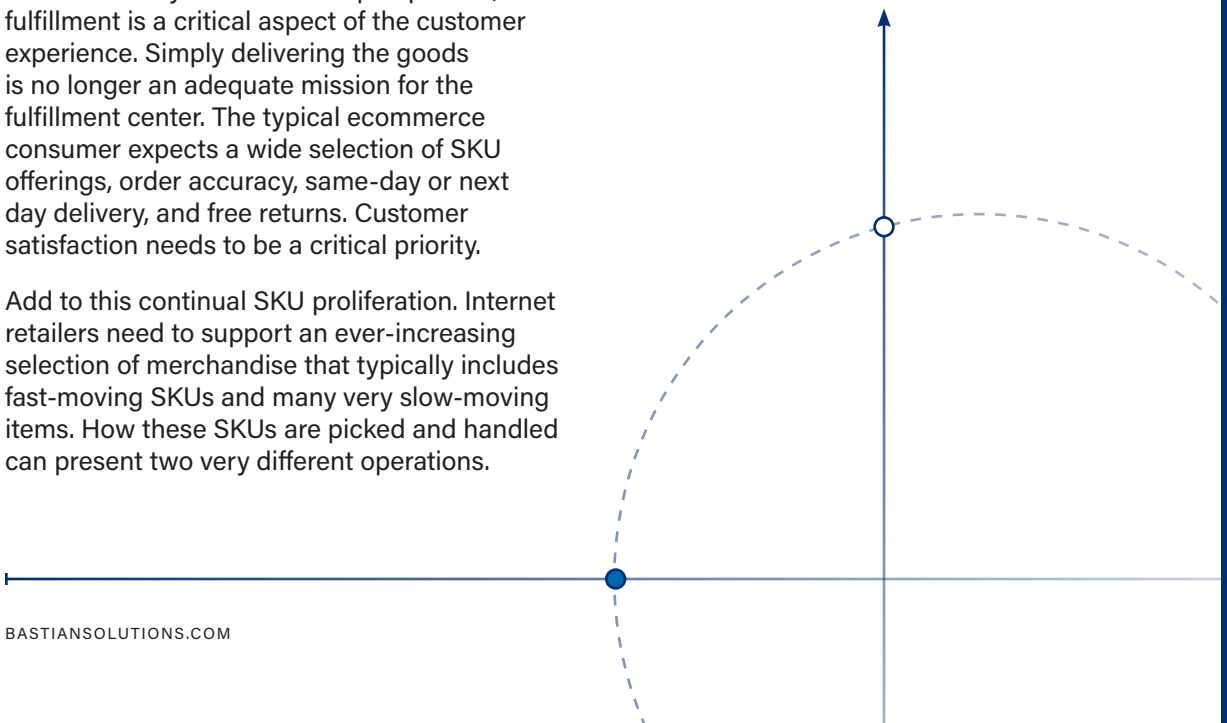
From the moment the online order is placed, to when it is picked, packed, shipped and delivered, every step in the process must be handled efficiently, consistently and cost-effectively. From an OCF perspective, fulfillment is a critical aspect of the customer experience. Simply delivering the goods is no longer an adequate mission for the fulfillment center. The typical ecommerce consumer expects a wide selection of SKU offerings, order accuracy, same-day or next day delivery, and free returns. Customer satisfaction needs to be a critical priority.

Add to this continual SKU proliferation. Internet retailers need to support an ever-increasing selection of merchandise that typically includes fast-moving SKUs and many very slow-moving items. How these SKUs are picked and handled can present two very different operations.

Another major issue that can hamper retailers is the lack of inventory visibility across their channels, which means that out-of-stock items are a real possibility. Online retailers do not want to find themselves unable to meet demand and face loss of sales and customer goodwill.

Retailers need to closely assess these customer expectations and ecommerce parameters to remain competitive and profitable.

To many distribution executives, ecommerce fulfillment poses a significant challenge to their existing knowledge, experience and resources. **A successful ecommerce fulfillment implementation requires carefully planned processes, scalable operations and highly efficient systems to address its inherent obstacles.**



ACCORDING TO A 2024 REPORT FROM RESEARCHER STATISTA, THE U.S. ECOMMERCE MARKET IS PROJECTED TO GROSS

$930

BILLION (USD)

UP 15% FROM 2023. TOTAL WORLDWIDE ONLINE RETAIL SALES ARE EXPECTED TO INCREASE

15.6%

YEAR-OVER-YEAR IN 2024.

WHOLESALE DISTRIBUTION

Wholesale distribution (WSD) is a fragmented market, with many subsectors ranging from grocery to energy, motor vehicle parts to computer equipment, apparel to building products, and a dozen more sectors. Every aspect of consumer and industrial products is in some way influenced by wholesale distribution.

The WSD market is experiencing challenging industry-wide issues. Amongst these is the increasing percentage of offshore-sourced goods brought into wholesale distribution facilities. Heightened overseas transportation costs and supply chain interruptions contribute to the need for WSDs to carry more inventory to service their customers, increasing warehousing costs.

Increasingly, WSDs are needing to provide same-day and next-day delivery for B2B ecommerce orders. They are also pressured from ecommerce retailers to provide fulfillment for many of their slow-turning SKUs, turning WSDs into shipping points for direct-to-consumer ecommerce orders.

Many WSDs rely on paper-based picking operations, with little or no automation for processing ecommerce orders. Investment in automated distribution infrastructure has largely been inadequate to keep up with the escalating growth in online ordering and evolving distribution models. Only a small percentage of WSDs have implemented long-term distribution strategic solutions that would give them the flexibility to adapt to these demanding and changing wholesale distribution challenges.

These factors are putting tremendous pressure on WSD supply chains that are largely unprepared to handle these inventory constraints and delivery turnaround times.

THIRD-PARTY LOGISTICS

Many retailers have turned over processing of their ecommerce orders to third-party logistics (3PLs) providers that are equipped and experienced in handling online needs. Retailers whose online orders are growing at an accelerated rate often prefer the flexibility of working with a 3PL that can help them continue to expand. 3PL usage is experiencing rapid growth, expanding at 12 – 15 percent annually, corresponding with the growth in online purchases.

Much of the recent investment in automation by 3PLs has been driven by a desire to improve order picking, packing and shipping processes, with a focus on picking. **Picking is one of the most labor-intensive functions which can provide significant cost-savings when automated.**

3PLs are also continuing to gain acceptance by retailers because of the sophisticated inventory management systems they employ for ecommerce, enabling them to process information for OCF with relevant details of each item and parcel shipped and tracked, with proof of delivery. This level of supply chain analytics allows 3PLs to maintain precise control of their customers' products and orders throughout every stage of the supply chain.

3PLs need to factor their automation investment for a shorter ROI compared to other distribution facilities, which makes heavily capitalized equipment a less attractive option. The focus on automation for 3PLs should be to easily increase fulfillment throughput and SKU density over time – essentially the system should be flexible and scalable. Such a system should enable 3PLs to pick, pack and ship orders and handle returns fast and accurately, while reducing labor costs and shipping errors, and realize equipment ROI over the life of their customer's contract.

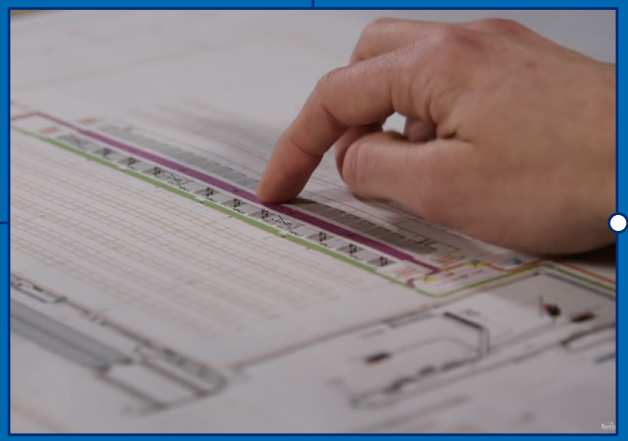
03

BASTIAN SOLUTIONS' DISTRIBUTION INTEGRATION CONSULTING CAPABILITIES

Consulting is a vital component for all material handling systems specified and implemented by Bastian Solutions. From initial data gathering through system acceptance, Bastian Solutions' team of distribution integration consultants will travel to your facility to study your operations and processes to identify areas of waste. From there, they use detailed data analysis and advanced modeling to optimize the future state of your distribution facility. Whether you're improving the utilization of existing equipment, investing in an expansion or selecting all new automation, Bastian's consultants will help define a comprehensive solution which provides a strong business case.

Bastian Solutions' distribution integration consultants provide their expertise through every stage of a project's lifecycle, encompassing:

1. *Operations Master Plan*
2. *Facility Layout and Warehouse Design*
3. *Operations Engineering*
4. *System Simulation and Optimization*



OPERATIONS MASTER PLAN

Taking a holistic approach, Bastian Solutions' distribution integration consultants strive to determine the best long-term configuration for your greenfield or brownfield facility, assessing its economic and operational viability to meet your company's vision for the future. Bastian Solutions' consultants develop an end-state facility design and phased implementation plan to achieve your vision, developing budgets, business cases and staffing plans as appropriate.

To create such an Operations Master Plan, Bastian Solutions' consultants employ a proven methodology consisting of four distinct phases. This procedure focuses specifically on facility automation and flow.

PHASE 1:

Current State Review and Assessment

a. Understanding current operations
b. Analyzing data and defining future design requirements

PHASE 2:

Alternatives Analysis and Qualification

a. Identifying potential concepts
b. Evaluating conceptual alternatives
c. Prioritizing alternatives
d. Aligning on recommendations

PHASE 3:

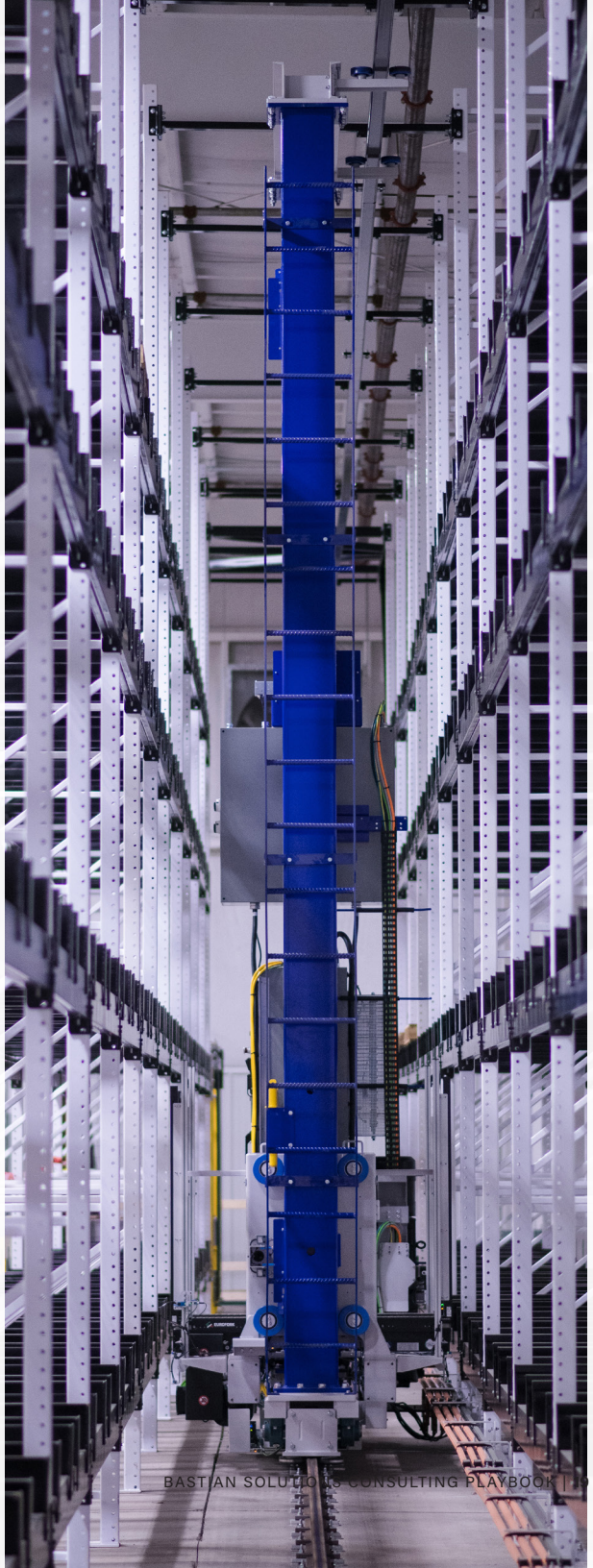
Solution Development

a. Conceptual design development incorporating lean operations and material flow principles
b. Equipment engineering
c. Designing, simulating and finalization

PHASE 4:

Business Case and Timeline

a. Conceptual design development incorporating lean operations and material flow principles
b. Equipment engineering
c. Designing, simulating and finalization



OPERATIONS ENGINEERING

The role of Bastian Solutions' distribution integration consultants does not end with a finished Operations Master Plan. Instead, their consultants follow the project through all stages of development with detailed design reviews, functional specification development, reporting specifications, testing plan development, and training plan development, as well as on-site support during critical implementation phases.

SYSTEM SIMULATION AND OPTIMIZATION

Computer simulation analysis helps Bastian's consultants visualize changes in your layout and processes, as well as answer what-if questions before implementing automation technology, information management systems or procedural changes. Simulation models can be used to help evaluate potential new automation investments or changes to your current operations. Results of an automated system simulation can help determine throughput rates, staffing levels, design enhancements and system capacities.

FACILITY LAYOUT AND DESIGN

Bastian Solutions' consultants not only design efficient systems, but also understand the technical components that comprise them. They can show you just how your facility will operate with automation changes, demonstrate process flows, discuss material handling techniques and highlight operator interfaces.

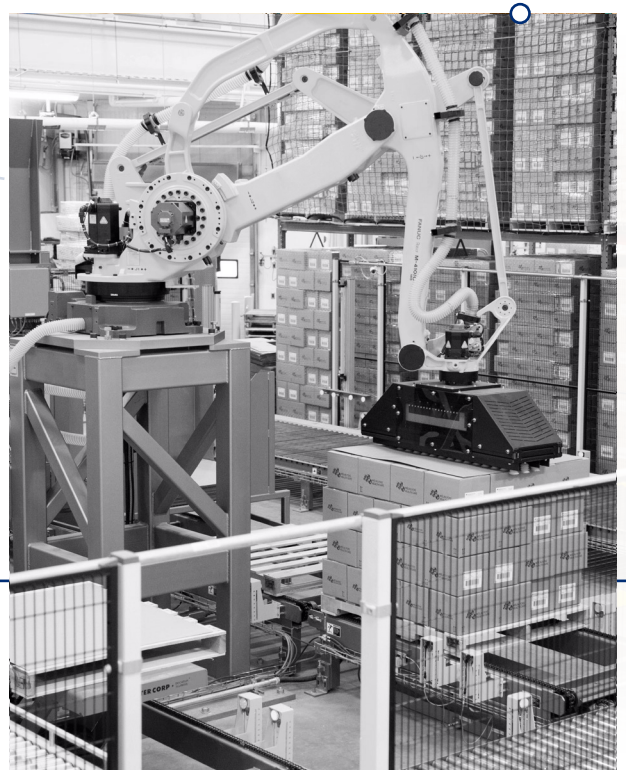
Bastian's consultants ensure layouts are built with scalability and flexibility in mind, allowing operations to adapt to expansions or adjustments caused by seasonality or fluctuating customer needs. Our experts provide guidance throughout the entirety of the project to improve workflows, increase throughput, reduce operator movements, optimize floor space, and optimize system reliability to maximize uptime.

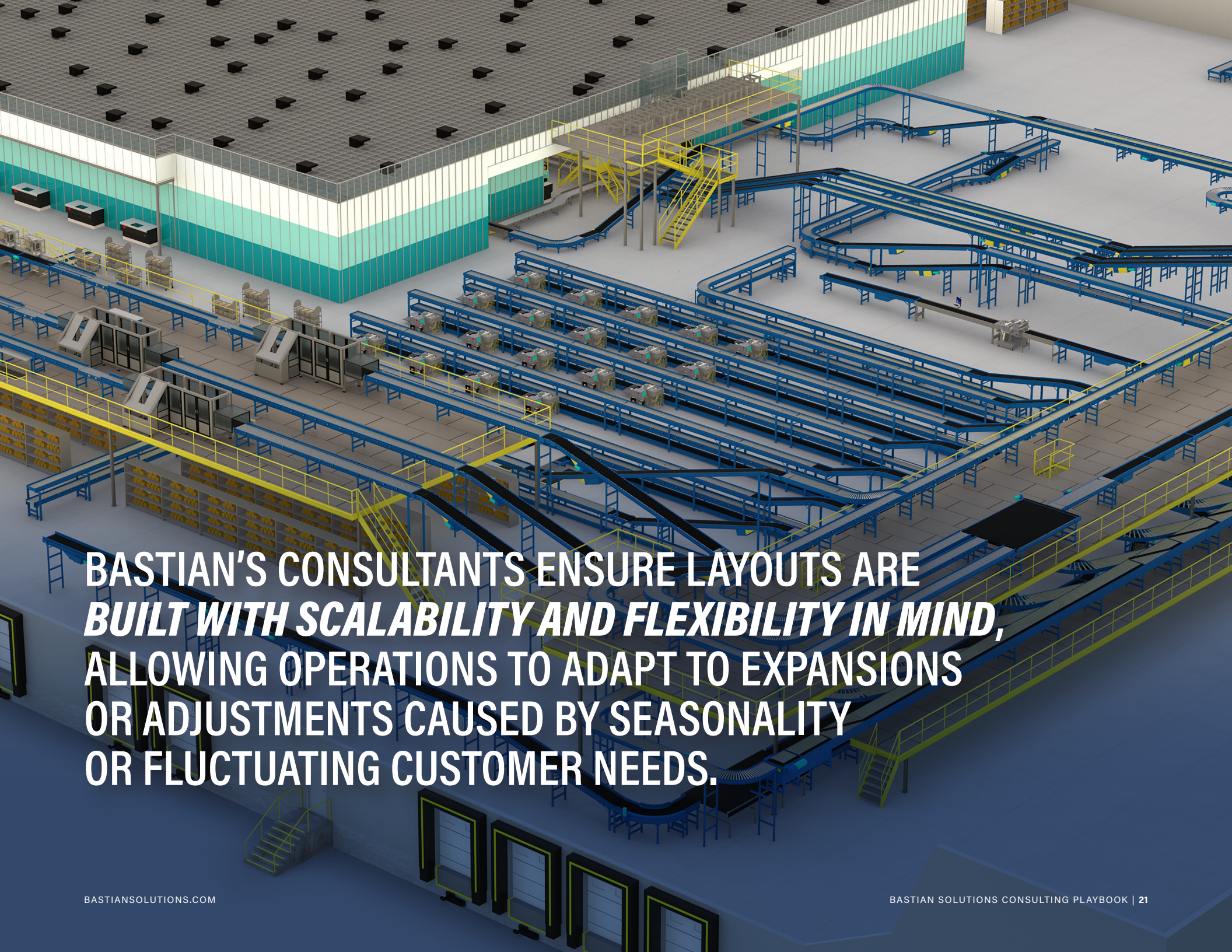
CHANGE MANAGEMENT

Change management is a critical link in the smooth transition of new and upgraded distribution operations into functionally efficient live operations. However, successful change management strategy is seldom fully embraced by OEMs in projects that they are executing. This is evident in the excessive number of time and cost overruns caused by system transitions that were not properly planned and executed.

The coordination of equipment testing, system conversion and equipment start-up is critical to ensure the interlinked material handling systems in the warehouse or DC go live without interruptions. Once the go-live or switchover takes place, it is vitally important for the distribution staff to be fully trained in the operation of the WES/WMS, robotic platforms, pick station modules, and the dozens of other functions involved with the operation of the new or upgraded facility. This requires considerable coordination between OEMs, installers, distribution executives and operational personnel.

A more holistic perspective is required for putting in place successful change management practices than what is provided by OEMs. Implementing such strategies is better suited for distribution integration consultants who are uniquely equipped to embrace and coordinate the full functionality of all activities within the scope of the distribution center. This includes providing on-site software and hardware training and access to LMS.





BASTIAN'S CONSULTANTS ENSURE LAYOUTS ARE ***BUILT WITH SCALABILITY AND FLEXIBILITY IN MIND***, ALLOWING OPERATIONS TO ADAPT TO EXPANSIONS OR ADJUSTMENTS CAUSED BY SEASONALITY OR FLUCTUATING CUSTOMER NEEDS.


Bastian
SOLUTIONS

ROADMAP TO DISTRIBUTION EXCELLENCE

Facing increased customer service expectations and labor scarcity, companies are turning to advanced warehouse automation and creative operational plans to help them maintain an edge in an ever-expanding competitive landscape. With many unknowns to solve – fluctuating customer demands, OCF, future growth models – it can be difficult to know where to start.

Let Bastian Solutions' distribution integration consultants help build a customized automation roadmap for your distribution needs.

Utilizing business requirements, growth models and an all-encompassing four-wall approach, Bastian Solutions' consultants design concepts that optimize your operation in the short- and long-term. Our studies improve your material handling system's productivity by reducing wasteful processes, optimizing space utilization, improving labor effectiveness and more.

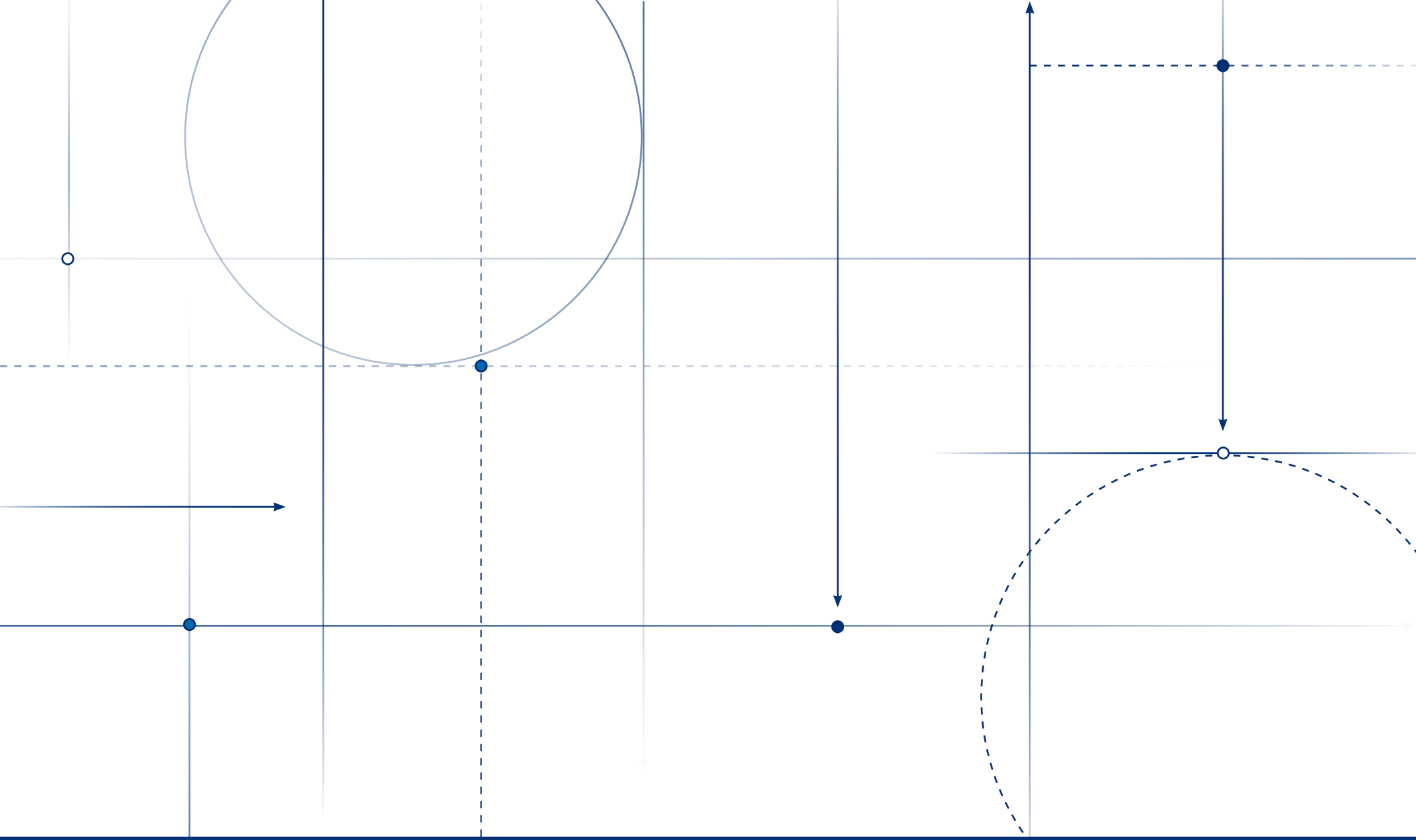
For customers building a new facility or exploring system improvements at existing locations, **Bastian's operational consulting brings together project planning, system design, supplier sourcing and project implementation for a unified execution that exceeds expectations and maximizes your investment.**

Leveraging years of experience with a variety of clients, industries and system sizes, Bastian Solutions' team of dedicated distribution consultants in the U.S., Mexico, Canada, South America and India provide strategic insight into your operational needs to ensure a successful, on-time system delivery that meets your business objectives now and into the future.

ABOUT BASTIAN SOLUTIONS

Bastian Solutions, a Toyota Automated Logistics company, is a trusted supply chain integration partner committed to providing clients a competitive advantage by designing and delivering world-class distribution and production solutions.

At the end of the day, it comes down to a positive customer experience. Bastian Solutions experts work to understand, design, test, install, and support to ensure that customers meet their business objectives. Using advanced technologies and the expertise of Bastian Solutions engineers, we combine data-driven designs, scalable material handling systems, and innovative software. Bastian Solutions helps clients across a broad spectrum of markets become leaders in their industries.



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