



# LIGHTNING UP the LEAN SUPPLY CHAIN:

Pick-to-Light in Manufacturing Applications

PREPARED IN CONJUNCTION WITH

**MODERN**  
MATERIALS HANDLING

 Reed Business Information.

## Introduction

In February, 2009, Modern Materials Handling magazine conducted a survey on behalf of Lightning Pick Technologies, a provider of parts and order picking, kitting and sequencing solutions, to examine how supply chain manufacturing operations are adopting and optimizing order fulfillment technologies to increase productivity and improve customer satisfaction.

## Background: About the Respondents and Their Facilities

Respondents to the study are top materials handling professionals and are predominantly warehouse, distribution, or logistics management, plant management, and plant engineers. They are employed across a range of industries and work in warehousing, distribution centers or manufacturing facilities.

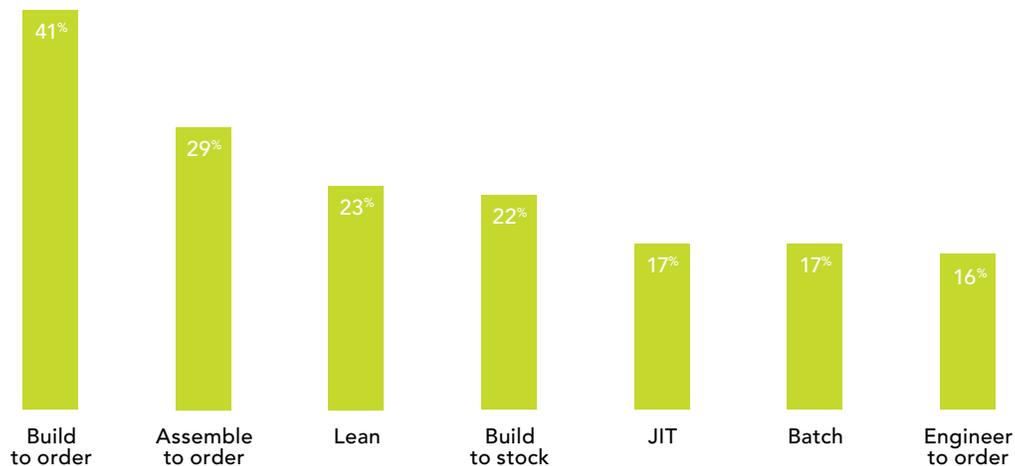
A mix of company sizes are represented in the study. Overall more than one-half reported that their 2008 revenues exceeded \$50 million; 28% are large organizations and report revenues in 2008 to be more than \$500 million. Over one-half of the companies studied (56%) employ at least 250 people.

## Assembly and Logistics Procedures

Businesses are adopting strategic initiatives to promote greater efficiencies in their manufacturing and warehousing/distribution facilities, and are embracing structured business disciplines such as continuous improvement (71%) and lean principles (55%) to improve production and inventory competencies. Methodologies such as Six Sigma (34%) and Total Quality Management (29%) are also management strategies that companies are supporting to achieve their goals.

The most common manufacturing and order fulfillment processes at these businesses are build-to-order and assemble-to-order production methods. Lean and built-to-stock are also fairly common practices.

### PRIMARY MANUFACTURING PROCESSES



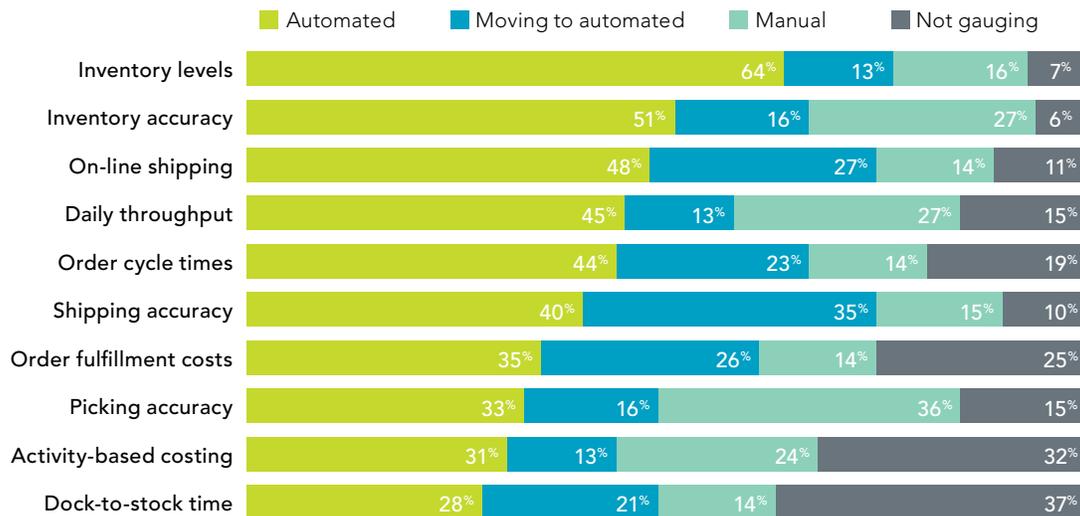
Inventory management, picking productivity, and shipping tasks are, in fact, being analyzed in many operations be it computerized or manual. Specifically, inventory levels and accuracies, and shipping precision are the areas most are gauging. For many, inventory tracking measures are now automated while facilities are presently adopting technologies that monitor the flow of goods.

Those moving to automated processes are additionally targeting processes regarding order fulfillment and related costs as well as shipping schedules. Systems evaluating inventory, throughput, and picking accuracy are all activities still measured manually by many. Interestingly, efforts involving the tracking of activity-based costs and order fulfillment production, along with dock-to-stock timing, are not being analyzed at all by more than one out of four companies surveyed.

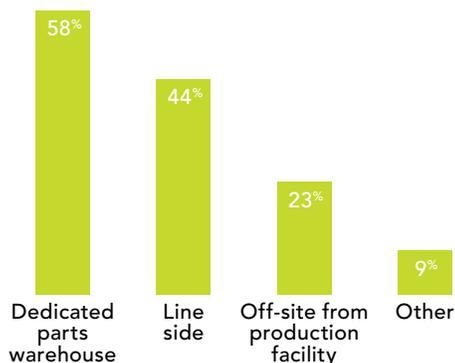
“We require traceability of high value items and items with associated documentation. Associating picked items with appropriate software, configuration information and historical documentation is critical for life cycle management of complex items.”

Executive Management

### HOW ACTIVITY IS MEASURED



### STOCKING OF PARTS

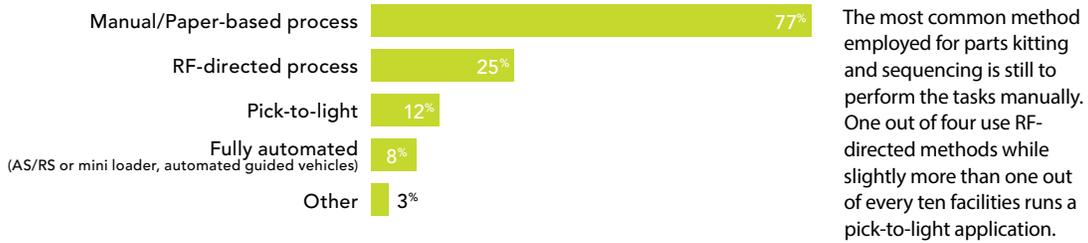


### Kitting, Picking and Sequencing

Kitting, sequencing or picking of parts is a common facet in many (68%) companies' manufacturing production lines.

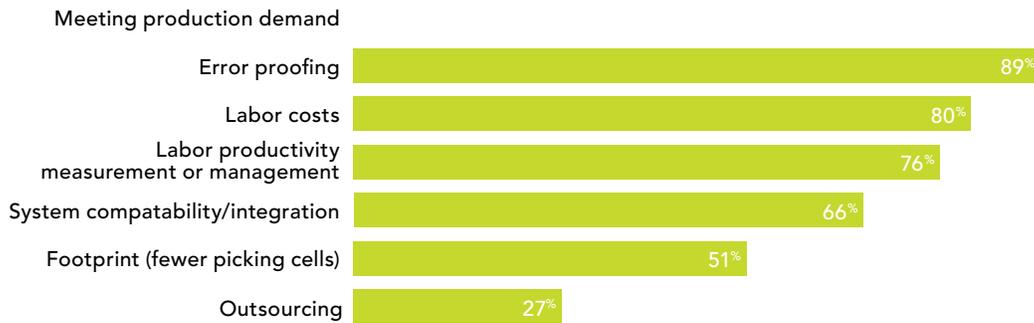
Parts and components are generally stocked in either a warehouse or 'markets' specifically devoted to storage (58%), or are held at satellite assembly units located alongside the assembly line (44%).

### KITTING AND SEQUENCING METHODS



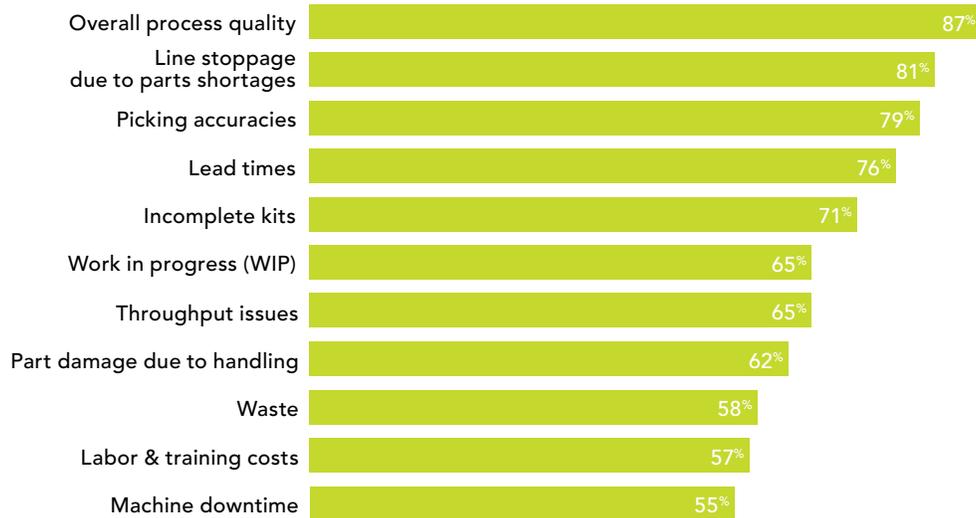
Meeting production demands, minimizing errors, controlling labor costs and managing productivity are the most critical criteria in managing kitting process operations.

### IMPORTANCE OF KITTING OPERATIONS FACTORS (Rated extremely/very important)

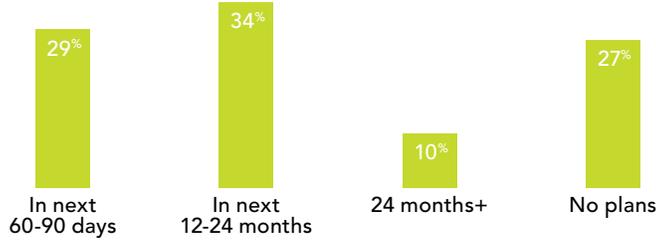


Issues pertaining to overall process, precision, costs, timetables, shortages, and waste are all applicable in company's assembly and packaging operations. Streamlining process flow, improving overall productivity, optimizing inventory and minimizing waste point to manufacturer's efforts to promote and run lean production cycles.

### RELEVANCE OF KITTING ISSUES (Rated extremely/very important)

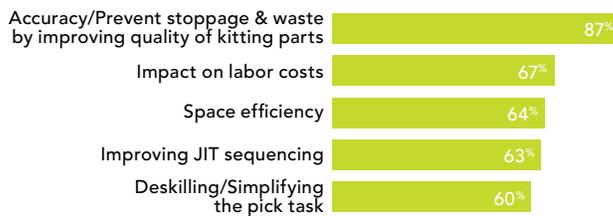


### TIMETABLE FOR ADOPTING A KITTING CONTINUOUS IMPROVEMENT PROGRAM



As previously stated, many have adopted a continuous improvement program. As it pertains specifically to parts kitting and sequencing, the timetable for launching a continuous improvement project, for some, is aggressive and will be executed within the next few months. For many others, these projects are on the horizon.

### OBJECTIVES IN USING PICK-TO-LIGHT (Rated extremely/very important)



Prospective results through the use of technology for kitting and picking applications are considered critical. Achieving accuracy and simplifying order fulfillment procedures, cutting process time, and eliminating waste are all goals operations are realizing or hoping to accomplish through the use of pick-to-light.

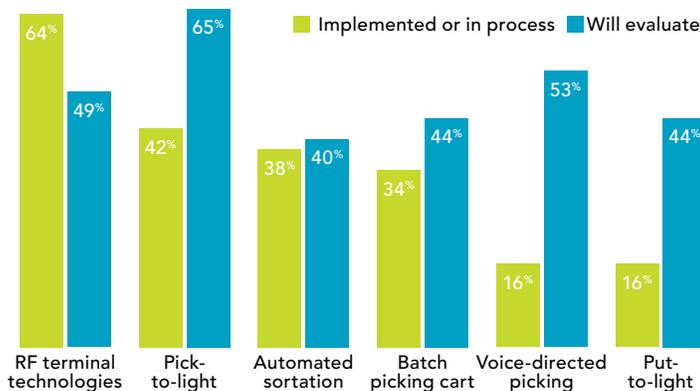
### CHALLENGES WITH KITTING PROCESSES

| Challenge  | % of total |
|--|------------|
| Cost   | 51%        |
| • Ability to integrate into process or major IT systems            | 46%        |
| • Scalability of kitting solution                                  | 29%        |
| • Tried to build own with mixed results                            | 19%        |
| • We have no suitable application for automated kitting procedures | 15%        |

Costs and systems integration are reportedly the greatest challenges when automating kitting and sequencing processes.

## Picking, Kitting and Sequencing Solutions

### PICKING AND KITTING SOLUTIONS IN USE/PLANNED FOR CONSIDERATION



Over the next few years, the market appears poised to widely adopt technologies that facilitate picking and assembly. Roughly one-half expect to evaluate voice-directed picking, digital picking, pick-to-light, and RF terminal solutions over the next 2 years.



## BENEFITS OF PICK-TO-LIGHT TECHNOLOGY

|  | % of total |   |
|--|------------|---|
| • Reduced manpower   | 39%        | In particular, pick-to-light technology is seen as a solution that improves productivity and throughput, promotes accuracy, reduces costs, minimizes errors and eliminates waste – all paybacks that are relevant in order picking, assembly, and packaging operations. |
| • Substantially reduced errors through decreasing the readying and walking time associated with manual processes | 36%        |   |
| • Real-time order tracking   | 34%        | The benefits realized from a pick-to-light solution support those goals companies look to solve with their assembly initiatives – reduced manpower, decrease in errors, order accuracy and increased productivity.  |
| • Sorting and picking accuracy is greatly increased due to directed picks/puts                                   | 33%        |   |
| • Sorting and picking productivity is more than doubled over manual picks  | 29%        |   |
| • Reduced space requirement  | 24%        |   |
| • Reduced inventory  | 22%        |   |
| • Low cost automated solution  | 22%        |   |
| • Reduced administration costs   | 20%        |   |
| • Seamless integration with existing Warehouse Management Systems and Conveyor Control Systems                   | 17%        |   |
| • Modular design for growth  | 17%        |   |
| • Seamless integration with the overall processes  | 16%        |   |
| • Open database connectivity for easy creation of reports  | 16%        |   |
| • Integrates with numerous proprietary or in-house-developed host systems including ERP, MRP, MES, WMS, etc.     | 16%        |   |
| • Scalable options to meet the current needs economically with a growth path using most of the same equipment    | 15%        |   |

“We have been using Pick-to-light for 20+ years. We try to keep it simple. I am surprised it has taken so long for other companies to get on board with pick-to-light.”

Plant Management

However, the research further shows that end users need more education on these advanced order picking technologies. While, in general, respondents are moderately familiar (60%) with pick-to-light, four out of ten contend they are not familiar with this solution. And, these materials handling professionals are less familiar with other leading-edge kitting applications; approximately one-half are familiar with put-to-light (53%) and digital picking (49%).

The education on pick-to-light, for many users, begins with understanding the basic details of this solution, associated costs and necessary resources, integration and implementation issues such as scalability and portability, how it works, benefits to running the system, and what it actually can accomplish.

“I’m interested in case studies that talk about the different applications and examples of successful operations that use it as a strategy.”

Manufacturing Operations

“We need a better general understanding and whether it would apply to my operation.”

Warehouse, Distribution, Logistics Management

“I’d like to see a comparison analysis vs. Voice Picking and vs. Wearable Terminal with scanner.”

Consultant

## Examples of Successfully Implemented Pick to Light Applications

Users have effectively implemented pick to light solutions to produce greater efficiency, accuracy and savings in their picking, kitting and sequencing operations.

| WE IMPLEMENTED OR ARE EVALUATING PICK-TO-LIGHT BECAUSE WE...   | THE APPLICATION OR AREA IN WHICH PICK-TO LIGHT IS DEPLOYED ADDRESSES...   |
|--|---|
| ...are looking to replace paper based picking with pick- to-light technology, one can expect their picking productivity to double. | 1. Flow / Shelf racking picking.<br>2. Mobile cart picking<br>3. Assembly/ knitting work station<br><br><i>Warehouse, Distribution, Logistics</i> |
| ...need to error-proof parts kits before they get line-side.   | 500 parts locations in dedicated parts kitting warehouse.<br><br><i>Lean/Continuous Improvement JIT</i>   |
| ...have over 1,000 SKUs. Zone picking using pick-to-light is the fastest way to pick 1300 orders per shift.                        | Broken case, zone picking on a conveyor line, 9 to 16 zones/pickers per shift.<br><br><i>Warehouse, Distribution, Logistics</i>                   |
| ...want to enable a quicker, accurate means for getting the right parts to assembly and to be de-trashed before it goes there.     | Circuit card assembly<br><br><i>Engineering</i>   |
| ...have to address added complexity at some of our hardware stations.  | Hardware assembly on windows.<br>Selecting proper style and color for 26 different options<br><br><i>Engineering</i>                              |

## Conclusions

Meeting production demands, cutting labor costs, and reducing errors are the most important issues that companies' picking, kitting and sequencing operations look to address.

While many continue to gauge critical inventory, assembly and distribution processes manually, companies are gradually changing the ways in which they gauge productivity and efficiency, and are migrating from manual processes to automated systems. Means for tracking shipping accuracy and scheduling, and analyzing costs associated with processing orders are among those tasks that companies are changing.

Cutting-edge order picking solutions are seen as applications that will optimize a lean production methodology. Subsequently, adoption of solutions such as voice-directed picking, pick-to-light, and digital picking show strong growth potential over the next two years. However, while many users recognize the benefits of these solutions, further information on system basics, implementation, applications, and accomplishments end users can expect to attain through the use of these technologies will likely facilitate adoption.



## Methodology

This research was conducted on behalf of Modern Materials Handling magazine for Lightning Pick Technologies, by RBInteractive Research Group. This study was executed in February, 2009, and was administered over the Internet among subscribers to MMH. Respondents were qualified for being involved in decisions regarding their company's picking, kitting, and sequencing process solutions and for being employed in an industry characterized by discrete process manufacturing. In total, 879 materials handling professionals were interviewed.

## About Lightning Pick Technologies

For over 25 years and across 500 installations worldwide, Lightning Pick has delivered advanced parts and order picking technologies on time, on budget, every time. Our best-in-class applications for Pick to Light, Put to Light, Voice and RF systems optimize lean supply chain processes from manufacturing through order fulfillment. As a result, our user community has increased productivity, attained higher quality and improved customer service to achieve superior process efficiency. Best-in-Class Applications Include:

- Error-Proofing
- Parts Picking, Kitting & Sequencing
- Pack Kitting
- 'Mini-Market' or 'Supermarket' Environments
- Assembly
- Order Picking & Fulfillment
- Put to Store Replenishment Order Fulfillment
- High-Speed Sortation

Lightning Pick has the fastest growing user community and leads the industry in new installations and retrofitting legacy Pick to Light systems by providing the only proactive Pick to Light solution in the industry. Our unique software gives users an unmatched level of visibility and control over their order fulfillment execution processes.

Lightning Pick also led the cable-free light module hardware revolution to provide convenient and cost effective system installation, maintenance and expansion. Our deep catalog of light module models, colors, and configurations all share these advantages to meet your unique application requirements. Furthermore our hardware has been tested and proven throughout hundreds of installations to reliably deliver the perfect parts, kit, build or order hour after hour.

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