



# Flexible or Direct?

Part 1 in a 3-Part Series  
Presented by Intralox

## Part 1: Choosing Your Package Handling System Design

Key questions to ask when choosing the right line layout for your expanding packaging operations to help you cut costs, improve efficiency, and future-ready your plant

# A Common and Costly Problem

Businesses undertaking packaging operations expansion are faced with choosing between radically different solutions when designing new packaging lines, leaving plants scrambling to determine what will allow them to fully utilize their current resources while maximizing the benefits of new technology. Overloaded with too much information, it becomes increasingly harder to choose the right line layout for your needs.

## The impacts of the wrong line layout:



**Decreased future flexibility**



**Underutilizing assets or resources**



**Overspending and increased TCO**

**“ We think about conveyance last and end up paying the price for it. ”**

— Corporate engineering manager  
for an international food manufacturing company

# Evaluating Your Needs

Navigating technical information to understand the different packaging line architecture can be a struggle. Plus, knowing how critical it is to invest capital funding wisely makes the choice between End-of-Line Palletizing and Integrated Palletizing a crucial one.

The experienced decision-maker will succeed by  
**adhering to the guiding principles of project execution:**



**Understand  
the drivers  
behind the  
expansion**



**Define the  
criteria for  
success**



**Identify and rank  
the factors by which  
design choices will  
be evaluated**

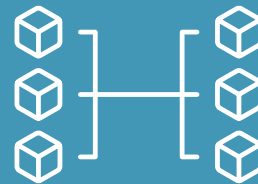
# Understanding Your Drivers is Key

to Determining Which Solution is Right for You



**End-of-Line  
Palletizing**

**OR**



**Integrated  
Palletizing**

Keeping your predefined criteria for success in mind, answer the questions on the following pages.

You'll be able to consider the economics of flexibility through these key components:

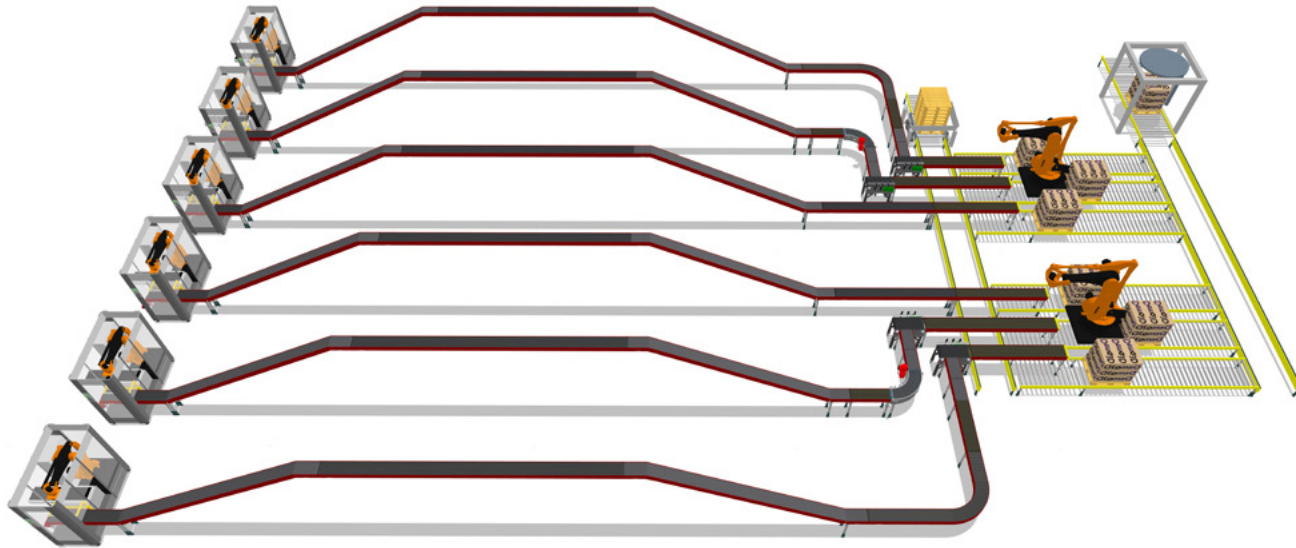
- Future-ready
- Total Cost of Ownership
- Production capacity
- Unplanned downtime
- Energy cost
- Controls complexity
- Equipment investment and installation cost
- Building cost
- Floor space utilization
- Operational cost
- Maintenance cost
- Production scheduling risk
- Safety risk
- Project timelines



# What is End-of-Line Palletizing?

End-of-Line Palletizing offers simple packaging line and distribution warehouse design, with the output of each packaging line transported to a single, dedicated palletizer or palletizer infeed.

The palletizer is designed to handle more volume than the packaging line can output, ensuring the packaging line will run uninhibited during steady state operation. The choice of this design hinges on easy-to-answer, yet critical, questions.



# What is End-of-Line Palletizing?

## Questions Regarding **Unplanned Downtime**

- How much accumulation will be needed to support continued production in the event of a short duration failure on the palletizer?
- Will an area for hand-stacking/manual palletizing be needed in the event of a long duration failure on the palletizer? If so, how will that impact safety?

## Questions Regarding **Additional Hardware**

- Based on the number of lines and the distance from packaging lines to palletizers, how many motors, devices, drives, and additional power distribution and controls hardware will be required?
- What will be the cost of initial installation and continued maintenance?

## Questions Regarding **Location and Personnel**

- Will the palletizers be installed in a central location by the distribution warehouse and shipping docks?
- If the palletizers are installed in a central location by the distribution warehouse and shipping docks, can the line operations and maintenance personnel support them or will additional personnel need to be hired?
- If the palletizers are located directly at the end of the packaging lines, will additional fork trucks operators and aisle ways be necessary to support shipping? How will that impact safety?

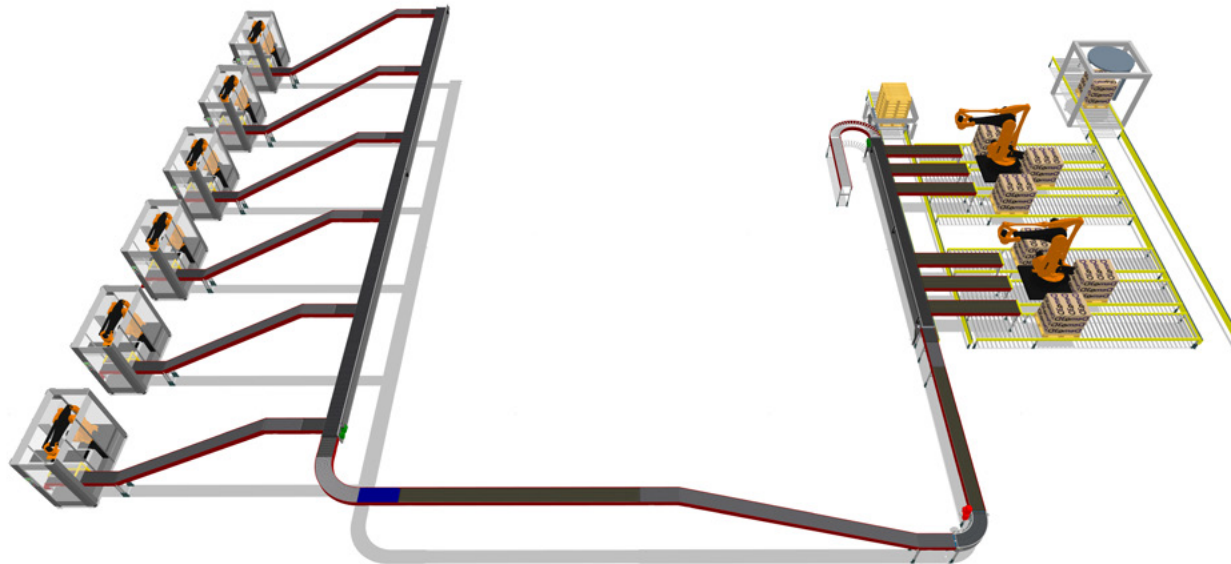
## Questions Regarding **Floor Space**

- Is there enough floor space to install a palletizer for each line and what is the cost (upfront or opportunity) of using that space?

# What is Integrated Palletizing?

Integrated Palletizing seeks to increase flexibility within your palletizing area and minimize the cost of equipment, installation, operations, maintenance, and floor space. This is done by reducing the number of palletizers and maximizing their utilization through a conveyance system designed to include merging, switching, and/or sortation. The packaging lines share some, or all, of the palletizers.

Integrated Palletizing gives additional control to production management. If a single palletizer is down, the operations staff can reduce rates on any of the packaging lines to avoid exceeding the capability of the other palletizers. With greater control and flexibility, comes more system complexity.



# What is Integrated Palletizing?

## Questions Regarding **Production**

- In terms of throughput, what is the worst-case production schedule to use as a basis for generating the number of palletizers needed?
- How will production be managed during planned and unplanned maintenance downtime on the palletizers?
- Based on the likelihood of failure on a small portion of the conveyor system, what is the risk of a major production shutdown?
- How does a shared palletizing and distribution system impact plant operations from a personnel and production scheduling standpoint?
- Do any unique products which run on the packaging lines require specific tooling or palletizer design to be handled? Do any require special conveyance?
- How does the need for training, spare parts, and external vendor support associated with merging, switching, or sortation equipment impact operations?

## **Production** (Continued)

- How much accumulation will be needed to support continued production in the event of a short duration failure of one or more palletizers? Is more accumulation required because fewer palletizers are installed in the system?

## Questions Regarding **Personnel and Safety**

- Is in-house expertise available to support a complex conveyor controls system?
- Is there any increased safety risk associated with merging, switching, or sorting equipment?



# Critical Evaluation – An Ongoing Part of Business Expansion

Every new packaging operations expansion opportunity is unique, with new products, rates, building, and logistics requirements involved. In addition to many other decisions you'll need to make, you also need to choose between End-of-Line Palletizing and Integrated Palletizing, with different reasons and different outcomes each time.

Armed with these questions and understanding your criteria for success, you'll successfully manage each new packaging operations expansion project.



**Intralox can help navigate these decisions utilizing regional and industry system solutions experts.**

**Contact Us**

