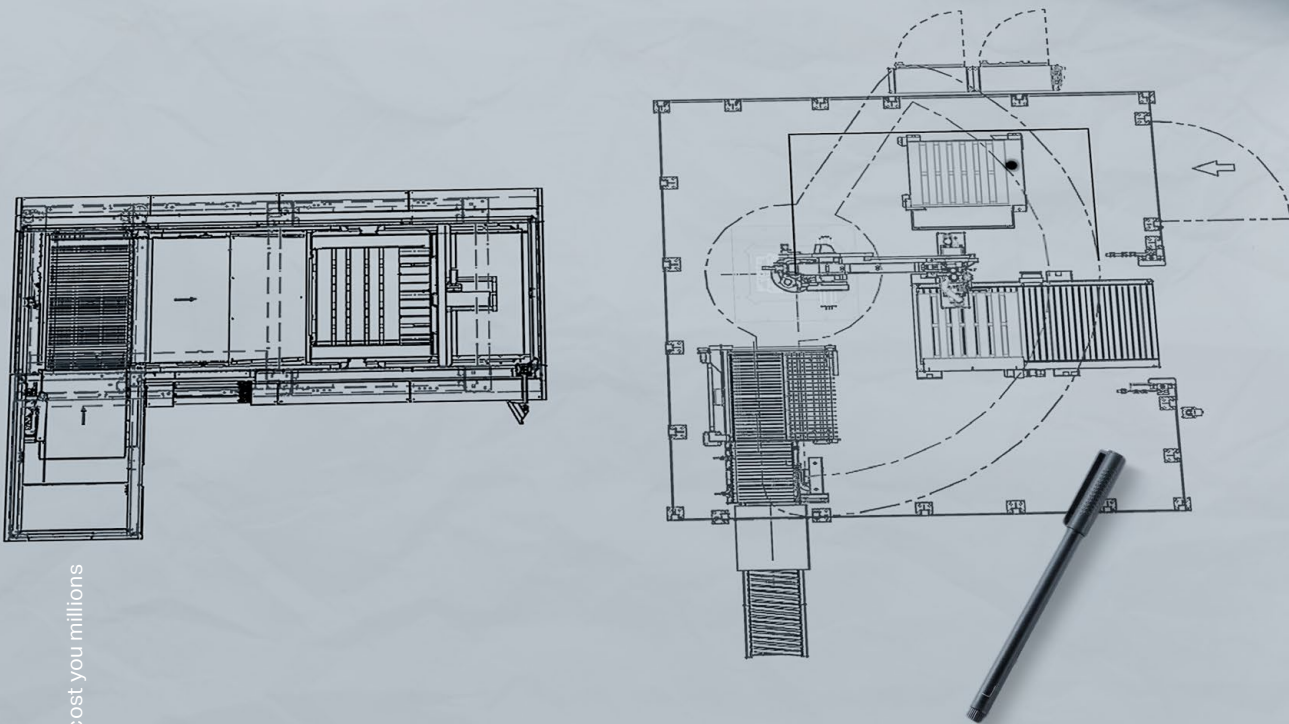


TOTAL COST OF OWNERSHIP COMPARISON

CONVENTIONAL PALLETIZER VS. ROBOTIC PALLETIZER



Why your palletizing decision could cost you millions

Uncovering the real price of automation over 15 years >>>

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The million-dollar question

What if the cheapest palletizer today becomes your most expensive mistake tomorrow? Picture this: Two production lines, identical products flowing at breakneck speed, pallets stacking like clockwork. Line A hums along with mechanical precision using belts, chains, and motors working in perfect harmony. Line B showcases a sleek robotic arm, dancing gracefully as it places each case with surgical accuracy.

Fast forward five years. Line A still runs like the day it was installed, requiring little more than routine belt changes and the occasional bearing swap. Line B has delivered exceptional flexibility and precision, yet now faces its scheduled major overhaul while your products wait in production queues.

Here's the truth that procurement teams discover after implementation: every palletizing technology brings distinct cost profiles that extend far beyond the purchase order. Each approach delivers specific advantages, yet these benefits come with unique financial implications that unfold over years, not months.





**THE REAL QUESTION IS NOT WHAT YOU
WILL PAY UPFRONT BUT WHAT EACH
SYSTEM WILL COST OVER THE NEXT
15 YEARS.**

While procurement teams evaluate initial investments and engineers assess technical capabilities, maintenance managers quietly track the mounting realities: different maintenance schedules, varying part costs, distinct service requirements, and unique operational patterns.

This analysis is not about declaring one technology superior to another. Both conventional and robotic systems serve vital roles in modern manufacturing. The key lies in matching the right solution to your specific operational reality and long-term cost tolerance. Because in high-speed production environments where every minute counts and consistency drives profitability, the wrong choice does not just cost money but impacts customer relationships and competitive advantage.

Ready to discover which technology truly delivers long-term value for your specific situation? Let's dig into the data that matters most.

The sticker price illusion

Why focusing on purchase price is like judging a recipe by its ingredients list: you are missing the most important part.

Walk into any equipment demonstration, and you will witness the same scenario playing out. Sleek presentations highlight upfront costs, installation timelines, and impressive capabilities. But here's what rarely gets discussed during those polished presentations: the real cost clock does not start ticking until after the ribbon-cutting ceremony.

THINK OF PALLETIZING EQUIPMENT LIKE CHOOSING A PRODUCTION PARTNER FOR THE NEXT DECADE AND A HALF.

You would not hire someone based solely on their interview performance. You would want to know about their reliability, their support needs, and how they perform under sustained pressure.

The automation industry has mastered the art of highlighting immediate benefits while technical specifications and maintenance manuals contain the long-term cost details. Those impressive robotic demonstrations showcase flexibility and precision without dwelling on calibration schedules.

The conventional system quotes emphasize reliability without fully detailing their mechanical advantages.

BUT WHAT HAPPENS WHEN REAL-WORLD OPERATIONS BEGIN?

Your production demand spikes unexpectedly. A critical component requires attention during your busiest season. You need to switch between product configurations more frequently than anticipated. Suddenly, those initial cost calculations require serious reconsideration.

The Total Cost of Ownership (TCO) tells the complete story, one that unfolds over years of operation. It accounts for every service call, every hour of maintenance downtime, every parts shipment, and every productivity impact that stems from your palletizing choice.

SO HOW DO WE SEPARATE MARKETING PRESENTATIONS FROM MATHEMATICAL REALITY?

We examine what happens after the honeymoon period ends and your palletizer faces the daily grind of production life. Because that's where the real costs and the real savings reveal themselves through actual operational data.

The workhorse: when simple wins (conventional palletizing)

Sometimes the most sophisticated solution is the one that does not try to be sophisticated at all.

THE MECHANICAL MARVEL: CONVENTIONAL PALLETIZING

Conventional palletizers operate on a principle as old as manufacturing itself: if it works reliably, do not overcomplicate it. These systems build pallets the way nature builds anthills: methodically, predictably, and with unwavering consistency.

But here's what makes them remarkable in our complex world: they have mastered the art of doing one thing exceptionally well. No artificial intelligence, no adaptive algorithms, just precisely engineered mechanics that stack products with the reliability of gravity itself.

The numbers that tell the story

While other technologies pursue complexity, conventional systems quietly deliver where it matters most: your bottom line.

Annual maintenance reality check:

- ◆ Maintenance costs hover around 1.5% of your initial investment
- ◆ Most repairs happen during scheduled downtime
- ◆ Your maintenance team can handle 90% of issues in-house

The spare parts advantage

Picture your maintenance manager's relief when they can order replacement belts from three different suppliers, receive them within days, and install them without calling specialized technicians. No proprietary components, no OEM dependencies, no "sorry, that part is backordered for six weeks."

Uptime that matters

These systems face their biggest challenge not from mechanical complexity, but from something surprisingly controllable: pallet quality. Poor pallets cause more downtime than equipment failures. The solution? Implement automatic pallet inspection or upgrade to Grade A pallets. Problems that remain entirely within your control.

WHY YOUR PRODUCTION MANAGER WILL THANK YOU

Predictable performance

When your system runs the same way every day, production planning becomes mathematics instead of guesswork. No surprises, no variables, just consistent output that matches your forecasts.

Troubleshooting simplicity

When something requires attention (and eventually something always does), the problem reveals itself quickly. A worn belt sounds different. A misaligned chain shows visible wear patterns. Your team becomes diagnostic experts, not helpless bystanders waiting for specialists.

Cost transparency

Budget planning becomes straightforward when you know exactly what to expect. Replace belts annually, service motors every few years, upgrade components as they age. All predictable, all plannable, all manageable.

THE REALITY CHECK

Conventional systems are not perfect. They will not adapt to radically different products without mechanical changes. They need their dedicated floor space. And yes, they lack the programming flexibility that impresses visitors.

But ask yourself this: In your operation, do you need impressive, or do you need reliable?



The precision player: flexibility's price tag (robotic palletizing)

When every case needs to land in exactly the right spot, robotic precision becomes your secret weapon. Precision demands its investment.

THE FLEXIBILITY PROMISE

Robotic palletizers represent automation's evolution toward intelligence. These systems do not just move products; they analyze how to move them optimally. Different case sizes? Reprogram the pattern seamlessly. Fragile products requiring gentle handling? Adjust the gripper pressure precisely. Space constraints? Configure for compact operation.

The appeal is undeniable: one system that adapts to whatever your production demands.

THE SOPHISTICATED REALITY

This flexibility emerges from sophisticated coordination between multiple systems: robot controllers, vision systems, safety networks, and custom grippers. It's like comparing a Swiss watch to a sundial: both accomplish their purpose, but one requires significantly more expertise to maintain.

The annual investment:

- ◆ Maintenance costs climb to 3% of your initial investment (double that of conventional systems)
- ◆ Annual recalibration becomes essential; skip it and risk equipment damage
- ◆ Cable harnesses flex with every movement, creating wear patterns invisible until they fail

THE PRECISION ADVANTAGE

Here's something remarkable: robotic systems excel at precision, and that precision creates opportunities conventional systems cannot match. Accurate placement enables optimal load distribution. Gentle handling protects fragile products. Custom patterns create presentation advantages.

Think of it like this: A conventional system is like a freight train: powerful, predictable, and nearly unstoppable once it's running smoothly. A robotic system is like a Formula 1 car: incredibly capable and fast, but requiring pit stops that conventional systems never need.

THE SCHEDULED INVESTMENT CYCLE

Every five years, your robotic investment reaches a planned milestone: comprehensive overhaul time. While conventional systems coast through their middle years with minor part replacements, robotic arms require systematic mechanical refurbishment.

The 3-5 year reality: Those continuously flexing cable harnesses that seemed so elegant during installation? They are wearing with every cycle, requiring replacement as planned maintenance. This is not a design flaw but engineered physics at work.

WHEN ROBOTS DELIVER MAXIMUM VALUE

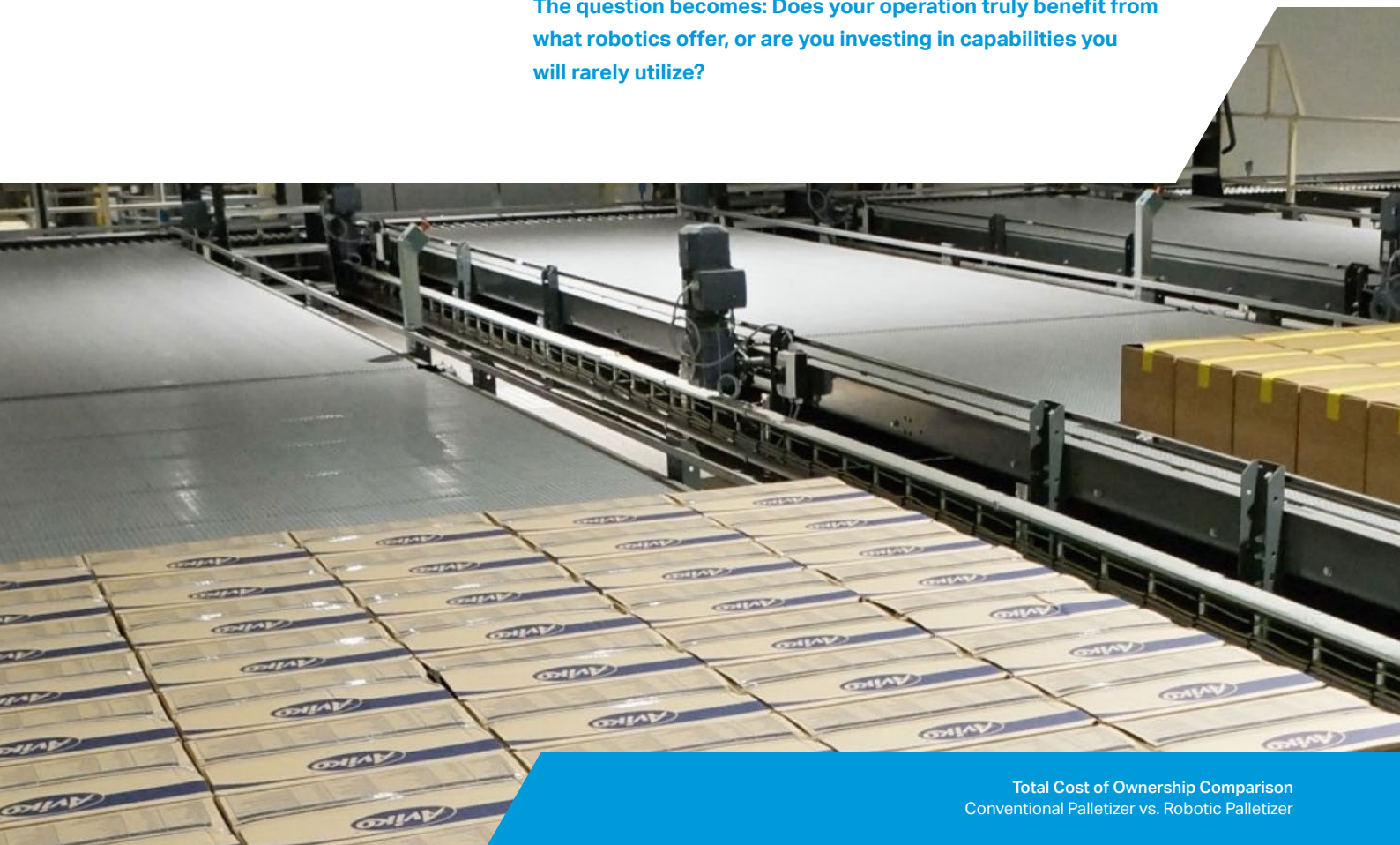
Robotic systems earn their investment in specific scenarios:

- ◆ **Product diversity:** When you handle multiple case sizes, unusual shapes, or varying product characteristics within the same operation.
- ◆ **Space premium:** When every square foot costs money, and compact solutions justify higher operational expenses.
- ◆ **Precision requirements:** When product presentation, fragile handling, or custom patterns create value that exceeds additional costs.
- ◆ **Volume optimization:** When your throughput requirements align perfectly with robotic capabilities rather than demanding absolute maximum speed.

THE BALANCED ASSESSMENT

Robotic palletizers are not expensive mistakes but sophisticated tools designed for specific applications. The challenge happens when their complexity and costs get minimized during the selection process.

The question becomes: Does your operation truly benefit from what robotics offer, or are you investing in capabilities you will rarely utilize?



The truth behind the numbers

Time for the moment of truth when marketing claims meet maintenance reality.

The 15-year financial journey.
Let's trace two identical production lines through their operational lifetime and see where the money actually flows:

The real cost comparison	Conventional system	Robotic system
Years 1-2 <i>Initial Phase</i>	Minimal maintenance, learning curve complete	Higher learning curve, calibration requirements begin
Years 3-5 <i>Operational Maturity</i>	Routine maintenance, predictable costs	First cable harness replacement, growing maintenance needs
Years 5-7 <i>Mid-Life Reality</i>	Occasional component upgrades	Major overhaul required, significant investment and downtime
Years 8-10 <i>Continued Service</i>	Continued reliable operation	Second cable replacement cycle, mounting complexity
Years 10+ <i>Extended Operation</i>	Standard part replacement as needed	Major bearing changes, potential second overhaul

THE MAINTENANCE MATHEMATICS

Conventional systems: 1.5% annual maintenance investment

- ◆ Based on proven mechanical systems
- ◆ Most work handled by existing maintenance teams
- ◆ Parts available from multiple suppliers
- ◆ Downtime scheduled around production needs

Robotic systems: 3% annual maintenance investment

- ◆ Requires specialized technical support
- ◆ OEM dependency for diagnostics and major repairs
- ◆ Proprietary components with limited sourcing options
- ◆ Calibration schedules that cannot be postponed

THE DOWNTIME REALITY CHECK

What actually stops production?

For conventional systems, the biggest challenge is not equipment failure but pallet quality. Poor pallets create more downtime than mechanical issues, making this a controllable variable through better pallet management or automatic inspection systems.

For robotic systems, downtime increases with age as components require more frequent attention, calibration becomes more critical, and the complexity of troubleshooting grows systematically.

THE SPARE PARTS ECONOMICS

Conventional advantage: Walk into any industrial supplier and find the belts, chains, and motors your system needs. Multiple suppliers compete for your business, keeping costs reasonable and availability high.

Robotic reality: Specialized components often come from single sources with premium pricing. When something needs replacement, you are not shopping around but calling the OEM and accepting their terms and timeline.

MAKING THE DECISION

Choose conventional when:

- ◆ High-volume, consistent product flow defines your operation
- ◆ Uptime reliability outweighs operational flexibility
- ◆ Your maintenance team prefers mechanical simplicity
- ◆ Long-term cost control is a priority
- ◆ Your operation runs standard palletizing patterns

Choose robotic when:

- ◆ Product variety demands programming flexibility
- ◆ Space constraints justify higher operational costs
- ◆ Precision handling adds measurable value
- ◆ Your operation can absorb higher maintenance investments
- ◆ Custom palletizing patterns create competitive advantage

THE DATA-DRIVEN TRUTH

Most operations could achieve their goals with conventional systems at significantly lower long-term costs. The appeal of robotic flexibility often exceeds actual operational requirements.

But here's the key insight: Neither technology is inherently superior. The winner is the one that matches your operational reality rather than your technological preferences.

Your next move

Now comes the moment of truth:
translating analysis into action.



BEYOND THE DEMONSTRATION

Forget the polished presentations and impressive demonstrations. Your decision should answer one fundamental question: Which system will still be delivering value 15 years from now?

The evidence points toward a clear conclusion: For high-throughput operations prioritizing reliability and cost control, conventional layer palletizers deliver superior long-term value through lower total cost of ownership, predictable maintenance requirements, and operational simplicity.

THE 40-60% ADVANTAGE

The data speaks clearly. Conventional systems typically deliver 40-60% lower total cost of ownership compared to robotic alternatives. That difference compounds over time, creating substantial savings that flow directly to your bottom line.

This is not about opposing technology but supporting profitability.

WHEN ROBOTS EARN THEIR INVESTMENT

Robotic palletizers find their optimal application in operations where flexibility, precision, or space constraints create value that justifies higher costs. Multi-product operations, custom palletizing requirements, or facilities with severe space limitations can benefit significantly from robotic capabilities despite their premium.

THE STRATEGIC REALITY

For most production environments, especially those demanding consistent high-volume output, conventional layer palletizers remain the optimal choice. They have earned this position through decades of reliable service, predictable costs, and proven performance in demanding applications.

Before making any decision, ask yourself:

YOUR ACTION PLAN

1. DO I NEED FLEXIBILITY OR RELIABILITY MORE?
2. CAN MY OPERATION JUSTIFY 3% ANNUAL MAINTENANCE VERSUS 1.5%?
3. WILL PROGRAMMING CAPABILITIES ADD MEASURABLE VALUE TO MY OPERATION?
4. CAN I ABSORB SCHEDULED OVERHAULS EVERY FIVE YEARS WITHOUT IMPACTING PRODUCTION COMMITMENTS?
5. DO MY LONG-TERM COST PROJECTIONS ACCOUNT FOR THE COMPLETE OWNERSHIP EXPERIENCE?

THE BOTTOM LINE

Both technologies serve modern manufacturing effectively, but conventional systems continue dominating where uptime is non-negotiable and cost control is paramount. Their mechanical simplicity, lower maintenance requirements, and component availability create a value proposition that remains difficult to match.

THE CHOICE IS NOT ABOUT WHICH TECHNOLOGY IMPRESSES VISITORS BUT ABOUT WHICH ONE DELIVERS CONSISTENT VALUE TO YOUR OPERATION YEAR AFTER YEAR.

Ready to discover your true palletizing costs?

Contact Scott Automation for comprehensive TCO analysis tailored to your specific operation. Because the right decision today prevents costly surprises tomorrow.

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LET'S CALCULATE WHAT YOUR PALLETIZING
DECISION WILL REALLY COST AND SAVE
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