

HOW TO

CALCULATE ROI ON AUTONOMOUS MOBILE ROBOTS (AMRS)



Understanding the Benefits in Manufacturing

In today's competitive manufacturing landscape, operations leaders are under constant pressure to improve efficiency, reduce costs, and maximize productivity. Autonomous Mobile Robots (AMRs) are emerging as a key solution to these challenges. Yet before investing in AMRs, the critical question must be asked: What is the Return on Investment (ROI).

Common AMR Applications:

- Material delivery (raw materials, WIP, finished goods)
- Waste and recycling transport
- Line-side replenishment
- Tool or part transport across departments

Operational Benefits:

- Reduction in manual transport time and labor costs
- Fewer injuries related to material handling
- Improved consistency and uptime in production
- Scalability without increasing headcount
- Reallocation of labor to higher-value tasks



Labor Reality Check

40% of a worker's day in traditional manufacturing environments is spent walking or transporting materials.

—MIT Center for Transportation & Logistics

 AMRs can give this time back—enabling reallocation to high-value, skilled tasks.

Labor Cost Savings

Formula:

Annual Labor Cost Savings = (FTEs repurposed × Fully burdened hourly rate × Annual hours)

Example:

- 2 FTEs repurposed
- \$28/hour (fully burdened rate)
- 2,000 hours/year
- Annual Labor Savings: \$112,000

Productivity Gains

Formula:

Increased Uptime Value = (% Uptime improvement × Revenue per hour × Hours/year)

Example:

- 3% uptime improvement
- \$5,000/hour production value
- 2,000 hours/year
- Uptime Benefit: \$300,000/year

Injury & Safety Reduction

Formula:

Injury Cost Avoidance =

(Injuries avoided/year × Avg. cost per injury)

Example:

- 1 injury avoided/year
- \$42,000 average cost per injury
- Risk Mitigation: \$42,000/year

Space & Process Optimization

AMRs can enable:

- Elimination of fixed conveyors or forklifts
- Leaner layout design
- Improved space utilization - while harder to quantify upfront, real estate and process efficiency gains contribute to long-term ROI.

What does Scalability Look Like?

A single AMR can typically run 2-3 shifts per day, without fatigue, breaks or overtime costs.

💡 Adding an AMR fleet doesn't mean adding headcount.

Calculating Payback Period and ROI

Before investing in AMRs, the critical question must be asked: What is the Return on Investment (ROI).

These calculations are essential for evaluating feasibility and securing stakeholder buy-in. We provide examples based on conservative industry averages, but actual figures can vary depending on your plant's labor rates, layout, production volume, and use case.

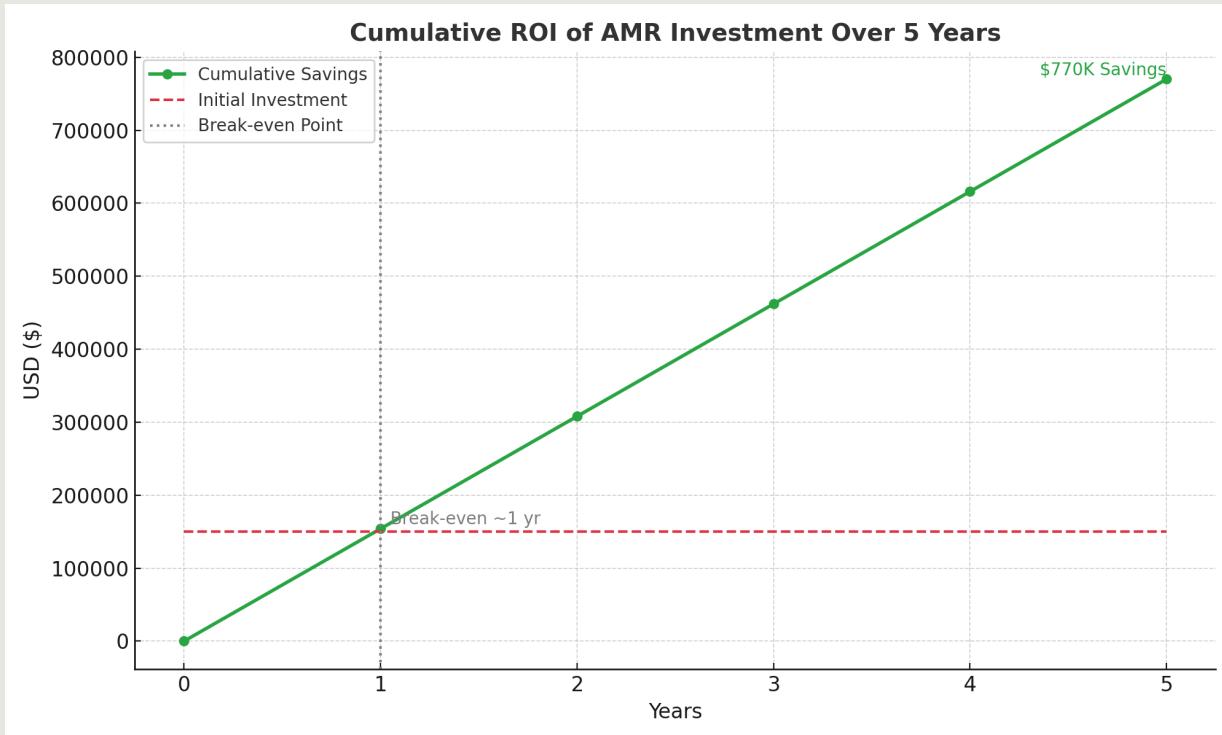
Payback Period

Formula:

$$\text{Payback Period} = \text{Total Investment} / \text{Annual Savings}$$

Example:

- Investment: \$150,000 (AMR, software, integration)
- Annual Savings: \$154,000
- Payback Period: ~1 year



5-Year ROI

Formula:

$$\text{ROI (\%)} = [(\text{Total Benefit} - \text{Total Investment}) / \text{Total Investment}] \times 100$$

Example:

Total Benefit (5 years): \$770,000

Investment: \$150,000

5-Year ROI: 413%

Variables to Consider and ROI Tools

Real-World Variables to Consider

Cost Variables:

- Number of AMRs required
- Software and integration fees
- Custom topper or tooling needs
- Training and ongoing support

Savings Variables:

- Current labor structure and shift schedules
- Plant layout and distance traveled
- Downtime impact on revenue
- Existing automation or lack thereof

Tools to Support ROI Evaluation

Sure Controls offers:

- Custom AMR ROI calculations
- Onsite workflow and feasibility assessments
- Expert guidance from concept to commissioning



Fast Track to ROI

81% of manufacturers report ROI on AMR investments within 18 months or less.
—Loup Ventures Research

AMRs are no longer a luxury or future-state technology. They are a practical, ROI-positive investment for manufacturers today. By applying proven formulas and clearly assessing both direct and indirect benefits, you can build the business case for automation that aligns with your operational goals.

Next Steps

Interested in modeling AMR ROI for your plant? Contact Sure Controls to:

- Schedule a no-cost onsite assessment
- Access our ROI calculations
- Learn more about available AMR solutions

Let's move your operations forward—autonomously.

Let's Connect



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