



What's the ROI on Automation, and How Will You Know?

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Cost vs Benefit of Implementing Automation



Costs

- Automation requires upfront investment
- Costs are typically finite, visible, and measurable



1. Capital Investment

- Includes equipment, software, integration, and validation
- Maintenance, service agreements add ongoing fixed costs
- Capital is deployed upfront while returns accrue over time

2. Physical Footprint & Infrastructure

- Automation requires committed physical space that displaces other revenue generating uses of that space
- Often requires some upgrade in electrical, HVAC, plumbing, and/or IT work

3. Time

- Lead times, procurement and delivery, including installation, validation, and testing periods
- Training staff and updating SOPs
- Downtime is typically irreplaceable

Benefits

- Benefits compound as volume increases
- Automation removes constraints that limit growth
- Operational consistency becomes the norm



1. Increased Throughput

- Higher units processed per hour
- Reduced bottlenecks

2. Risk Reduction

- Standardizes high-precision repeatable processes
- Reduces human error and variability
- Improves audit trails and compliance confidence

3. Increased Capacity

- More tasks completed in the same space and time
- Enables the ability to take on new business lines and opportunities as well as effectively handle demand surges

4. Reduced Labor Costs

- Redeploy staff to higher value work
- Reduce overtime and burnout risk

ROI Example Calculation



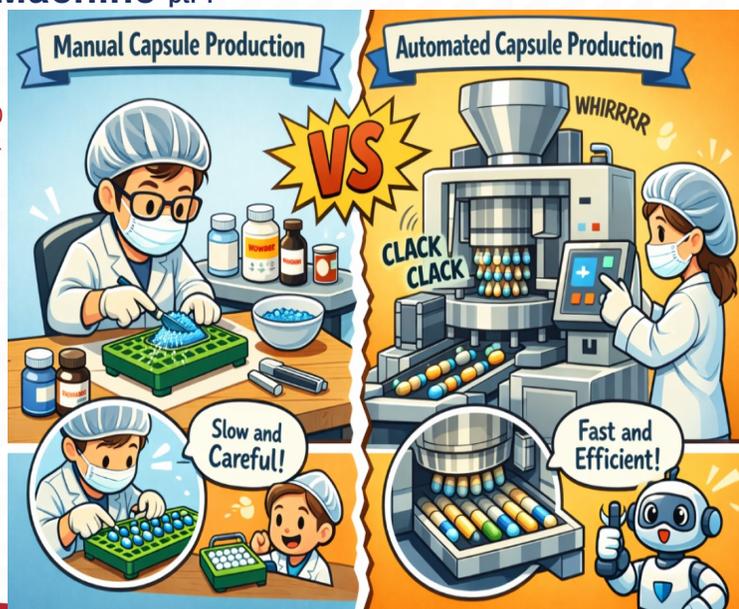
ROI Example – Capsule Machine pt. 1

Current Manual Process

- Capsules per technician per hour: 300
- Technician fully loaded cost: \$28/hour
- Operating hours: 2,000 hours/year
- Error / rework rate: 3–5%

Automated Capsule Machine

- Capsules per hour: 2,000
- Technicians required: 0.5–1 FTE
- Error / rework rate: <1%
- Machine cost: \$180,000
- Annual service & calibration: \$18,000



ROI Example – Capsule Machine pt. 2

Labor Savings

- Manual Labor Cost
- 2 technicians × \$28/hr × 2,000 hrs
= \$112,000/year
- Automated Labor Cost
- 0.75 technician × \$28/hr × 2,000 hrs
= \$42,000/year
- **Labor Savings**
- **\$70,000/year**



ROI Example – Capsule Machine pt. 3

Error & Waste Reduction Savings

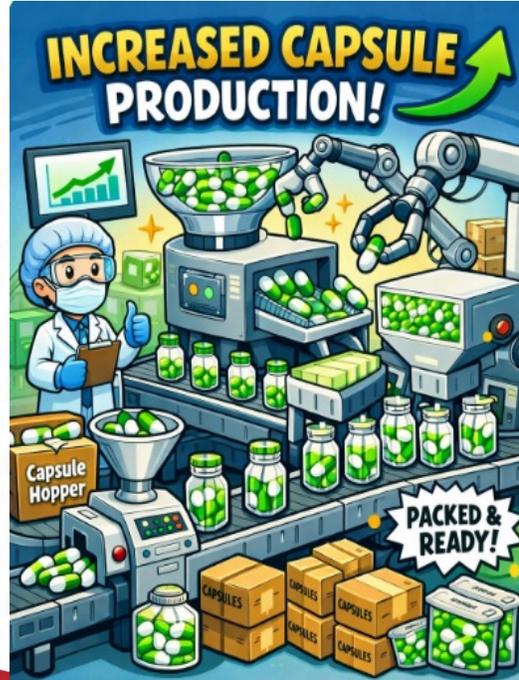
- Typical capsule compounding losses includes
 - Ingredient waste
 - Capsule rejects
 - QA rework time
- **Conservative Estimate**
 - Manual waste & rework: \$45,000/year
 - Automated waste & rework: \$15,000/year
- **Savings**
 - **\$30,000/year**



ROI Example – Capsule Machine pt. 4

Throughput and Revenue Opportunity Gains

- Manual Capacity
 - 300 caps/hr × 2,000 hrs = 600,000 capsules/year
- Automated Capacity
 - 2,000 caps/hr × 2,000 hrs = 4,000,000 capsules/year
 - Conservative Estimate: 25% new capacity
 - Additional usable volume: 850,000 capsules/year
- Contribution margin: \$0.12/capsule
- Total: 850,000 × \$0.12 = **\$102,000/year**



ROI Example – Capsule Machine pt. 5

Total Annual Benefit

- Labor Savings: \$70,000
- Error & Waste Reduction: \$30,000
- Capacity Gain: \$102,000 (subjective)
- Total Benefit: \$202,000/year
- Maintenance & Service: \$18,000/year
- Net Gain: \$184,000/year
- ROI = $(\$184,000 - \$180,000) / \$180,000$
- Year 1: ~2% Year 2+: ~102%
- Assumed machine is paid in full with no loans in year 1
- Payback Period: $\$180,000 / \$184,000$
- **~11.7 months**



Contact Information

Speaker Name and Credentials

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