

Cost Justification (Avoidance) of an Electronics Program: A Case Study

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Part of our “*Manufacture Smarter*” series

Justifying/implementing a system will require us to speak 3 languages.

- Language of management
 - Language of employee's
 - Language of customer's
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- How then to prepare a package that the customer, employee and management all see as a benefit?

Management typically works in the language of finances.

- How do we justify the cost of sensors and the work required to set up and install?
 - 1) Scrap and rework/sorting data
 - 2) Premium freight due to rushed replacement shipments and returned shipments.
 - 3) Loss of reputation at the customer, may be difficult to quantify, but is typically reflected in the loss of new business opportunity.
 - 4) Management time spent trouble shooting and pacifying the customer

Employee typically works in the language of productivity.

- Downtime at \$100/hr for machine time
- Down 1 hr each time a missing nut is detected in audit X 52 runs/yr = \$5200/yr.
- Employee is appraised on Quality/productivity/safety.
- Employee has no opportunity to achieve the goals (bad morale)

Customer typically works in the language of defects/complaints and rejections

- Customers are measuring our capability in PPM, #of complaints, on time delivery, etc.
- Where is the pleasure as a professional to arrive at a customer's location to be met by a screaming Plant of Facilities Manager?
- Customer has specified QS-9000 compliance which requires Mistake Proofing section 4.14.1.2

Let's take an example of a simple plate with a clinch nut installed which is welded into a rail assembly holding a truck bed onto a pickup

1. Scrap/rework cost

Sort 20,000 pieces @ 1000 pieces/hr x 18/hr = \$360

Sort 3 times per year = \$1080

1 scrap truck bed = \$1200 x 3 = \$3,600

Let's take an example of a simple plate with a clinch nut installed which is welded into a rail assembly holding a truck bed onto a pickup cont...

2. Premium freight = \$1,000 per shipment x 3 = 3,000

Total = \$1,080 + 3,600 + 3,000 = \$7,680

Cost of sensor + cost to install = total cost

\$68.34 + \$5,000 + \$1,200 + \$600 = \$6,868.34

Time for payback = \$6,868.34/\$7,680 x 12 = 10.84 months

Therefore the payback on this investment is less than 1 year

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Loss of reputation at the customer can = \$500,000 in lost new business opportunity because if problems are ongoing, customers perceive we cannot solve problems. 3 pieces out of 120,000 shipped = 25ppm which is the GM threshold for new business award.

Questions? Contact us!

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