



ProMation Systems – Case Study

Summary

Hypro Corporation is a successful manufacturer and distributor of fluid pumps and related equipment. These are sold into agricultural, industrial, fire-fighting, and other industries. The company does design and testing of new products, performs manufacturing and assembly, purchases related products for resale, and has an international distribution network. Hypro has approximately 220 people in its St. Paul, Minnesota location.

In 1998, Hypro began a transition to an automated Lean Office System (LOS). Beginning with Receiving Inspection and Inspection Procedures, the company now also uses automated Nonconforming Material, Supplier First Article, Supplier & Internal Deviation, Supplier Corrective Action, and Print Change Request processes. Overall, Hypro has experienced a 14% increase in productivity among the people who use the LOS regularly.

- **Payback Period:** **4.7 months**
- **1-Year ROI:** **253% ****
- **Value / Business Day:** **\$777 / Business Day**

Calculation

Hypro WS data from CY 2001 – 2002 was reviewed. The system was queried to determine, by department, how much activity occurred in each of Hypro’s eight process modules during this time period. This calculation assumes that the WS can allow people to be twice as productive compared to using a system based on paper forms, and that the Quality Engineer spends 50% of her time dealing with the processes in the WS. This requires an additional 1/2 time Quality Engineer. Other departments’ Additional People calculations are based on these assumptions.

Department	Insp	QA Eng	Design Eng	Mfg Eng	Purchasing	Planning	Totals
People in Department	3	1	6	2	6	1	19
Total Recorded Activity	7895	4685	3191	3610	5250	569	
Activity / Person / Day	5.5	9.8	1.1	3.8	1.8	1.2	
Additional People	0.8	0.5	0.3	0.4	0.6	0.1	2.7

Additional People Calculation Example (i.e., Insp): $(0.5 \times (5.5/9.8)) \times 3 = 0.8$

Assumed Annual Salary: \$75,000 fully benefited (hourly and salaried)

Productivity Savings: $2.7 \times \$75,000 = \$202,500$

Productivity %: $2.7 / 19 = 14.4\%$

System Cost: \$80,000 (equivalent)

Payback Period: $(\$80,000 / \$202,500) \times 12 \text{ months} = 4.7 \text{ months}$

1-Year ROI: $\$202,500 / \$80,000 = 253\%$

Value / Business Day: $\$202,500 / (365 * (5 / 7)) = \$777 / \text{Business Day}$

Notes

- The activity count is conservative. People frequently use the system to simply read a record.
- Hypro did not need to purchase new or supporting software or hardware.
- How much faster an automated system will perform compared to an existing paper-based system will depend on the original system.
- ** Other financially substantial benefits, such as being able to make rapid decisions using real-time data and the benefit from improved product quality, were not included in these calculations. This means that the actual ROI is higher than stated above.