Improving Global Supply Chain Management

IPRO 306, spring 2010 semester

IPRO It takes a team! INTERPROFESSIONAL PROJECTS PROGRAM

ILLINOIS INSTITUTE OF TECHNOLOGY

Sub project 1
Preventative / Predictive Maintenance

Background

To a manufacturing company, machine failure is very expensive.

To put it another way: reducing machine failures saves a lot of money.

It has been acknowledged that Preventative / Predictive Maintenance (PPM) program can significantly reduce the risk of machine failure, and Sloan Valve urgently needs it; the IPRO 306 team helped with the launch of this program.

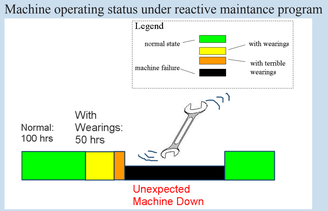
Original problems

- Maintenance was performed on machines only when they were out of order.
- No formal PREVENTATIVE / PREDICTIVE MAINTENANCE (PM) program was being used.
- Maintenance team was too busy "firefighting," and had no time for PM
- Daily PM check sheets with procedure and pictures did not exist for operators
- Only reactive repairs were listed in maintenance logs

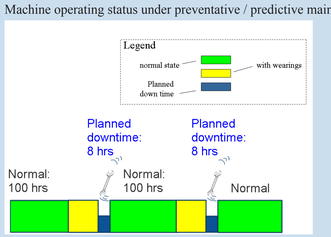
Objectives

- assist Sloan in switching from reactive maintenance program to a preventative maintenance program
- design PM check sheets to be used by the maintenance teams and the machine operators

Machine operating status under reactive maintance program



Machine operating status under preventative / predictive maintenance program



Process

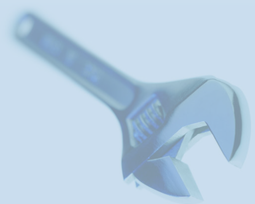
1. tour of the plant
2. project orientation
3. introduction to maintenance department
4. machine research
5. compiling research into PM check sheets
6. taking and cataloging pictures of machines
7. compiling daily PM procedures

Results

- PM sheets were created for over 50 machines, for both the operator and maintenance crews.
- PM procedure with pictures for daily check sheets were posted at each machine.
- Weekly check lists for daily PM were created.
- Instructions for logging PM sheets were documented.

Future work

- incorporate PM check sheets into a computerized system, which will send out notifications to maintenance crew members when preventative work needs to be performed



Sub project 2
Warehouse Management System

Background

Sloan Valve's warehouse management system needed to be improved to keep up with the company's business expansion in recent years.

In fall 2009, the previous IPRO 306 team collected some initial data for launching a new system. This semester, the current IPRO 306 team continued their work and targeted to have the new system go live in May 2010.

Original problems

- No formal procedures existed on how items were stored in the warehouse.
- Products were not easily identifiable in storage locations (e.g. not bar coded).
- Bin cards used for identifying items were usually not filled out properly or consistently, making reconciliation on bin cards difficult.
- Bin locations were moved frequently with little control over the process.
- There were too many shipping errors on outbound and internal orders.
- Inventory was not stored by volume of transactions.

Objectives

- clean SAP* system data and populate warehouse management screens in SAP
- develop reports to have items stored in optimized locations
- prepare Sloan's Central Distribution Center for bar code automation processing
- formalize a process to roll out SAP warehouse management to other Sloan warehouse facilities
- document the new procedures and process flow
- establish metrics to track optimized performance

Process

1. tour the warehouse & review its layout
2. learn about the pick and put away process in the warehouse
3. receive training on the SAP system
4. collect data for system setup
5. work with Business Analyst on unit testing and integration testing for the SAP system
6. assisting Business Analyst in preparing documents needed for system rollout

Results

- New processes went live for picking, putting away, and cycle counting.
- Stability of SAP system was verified.
- Training documents for the new processes were created.

Anticipated benefits

- increase in inventory accuracy in Sloan Valve's Central Distribution Center: between 85% and 99%
- reduction in the number of returns resulted from picking errors: between 11% and 25%
- reduction in material handling labor: between 10% and 25%
- reduction in inventory write offs
- more efficient usage of warehouse space

SAP®

* About SAP:
The SAP application is an integrated ENTERPRISE RESOURCE PLANNING (ERP) software, which allows open communication within all company functions. Sloan Valve uses it in the warehouse for managing end to end procurement and logistics business processes.