

Jamison Friauf
Eric Belozovsky
Brendan Busch
4/21/19

Data Collection Methods

The data collection system that we would use to find the highest quality solution:

1. Observation and Manufacturing System Overview:
 - a. Identify the problem - The problems have been identified by PCC Wyman-Gordon regarding it's tracking of the ring forging process
 - b. Understand how the forging process works.
 - i. Some products fit into special order categories, but we can observe what information needs to be collected to fulfill customer expectation in delivering correct specifications
 - ii. Interview the people involved in the manufacturing process to find out what information is needed for the purpose of inputting, storing, and outputting data
 - c. Cost-tracking of individual orders
 - i. Determine the cost of raw materials in quantity and quality
 - ii. Job-costing system (Labor charge, Machinery uses)
 - iii. External factors (changes in specification, regulation, etc.)
2. Detailed Information about the Development of System
 - a. Determine how many users will use the system
 - i. 10,000 users
 - ii. 5,000 create report
 - iii. 38 plants + data center
 - b. Language setting
 - i. English
 - ii. Spanish (Find out how much of works uses Spanish as home language)
 - iii. Other Languages
 - c. Timing Synchronization of the System
 - i. Under which time zone was a report created? How do we output time to users?
 - ii. Reports to be synced immediately when updated and be accessible to all users. Keep track of which reports are viewed by which users.
 - iii. How to promote timely decision to be made by decision makers using system overview
 - d. Type of System we plan to use
 - i. Just-in-time order system

3. Interaction within internal users and with external users (ex. customers)
 - a. Identify how many departments and categorize user's primary tasks within the system
 - i. Manufacturing worker, Manager, Accountants, Customer Reps, etc.
 - b. Create integrity and access control to comply with Sarbane-Oxley
 - i. Determine who can access to what?

Interview Questions with Users

In order to determine the requirement of the system that promote efficiency and ease of use, we would interview users. Each user is different as far as their function in the job, so we would tailor questions specially for each type of users.

Reference 1.b.ii.

People involved with manufacturing process wear special equipment to protect themselves, thus it's difficult for them to stop and update the current step of the process in the report

1. Which technology do you anticipate you can easily log information on as necessary to keep track of process?
2. What kind of information do you need to store as you proceed with the process?
3. Can you specify the information that you need to know before proceeding with the order?

Reference 1.c.

This involves information sharing with accountant, people on the manufacturing floor, and suppliers

1. How does the job-costing system work at PCC Wyman-Gordon? Please list all details at the best of your knowledge
2. Is there any obvious way to reduce cost and save time?
3. In general, how would you use the system to make your job easier, yet improve your performance?

Reference 2.d.

We're trying to determine which process system PCC Wyman-Gordon uses and to determine if they'd perform better under a different system

1. What system do you currently use to deliver work completed to customers? (ex. Just in time, LIFO)
2. Do you think the system could be better? Please provide details and why.

Benchmarking Systems

Determining the type of systems required will be determined at Final Deliverable. Factors including processing order, ERP, DBMS, etc. will be included and system requirements will expand as we discover more.

We will benchmark in the following categories:

1. Product
2. Process
3. Functional
4. Financial
5. Performance
6. Strategic

After gathering data, we can compile a list of the minimum requirements that the system *absolutely must* have. Based on those criteria, we will research and select systems that meet those requirements. Then we can walk through each system in each category listed above and rank each system accordingly. The system with the lowest average rank will match our needs the best, and will be the one we use.

The criteria below will allow PCC to evaluate whether or not the system is successful. Some metrics for choosing the initial system however, after compiling a list of alternatives, are ease of use, integration with oracle, and graphic value. There are some systems that are easy to learn, but do not provide very basic information. We would much rather choose a system with powerful data analytics and ability to automatically create charts and graphs that give an easy visual representation of the data. This is easy to identify from pictures and tutorial videos that reporting tools have on their websites.

Evaluation Criteria

- Deadlines (predicted, estimated, in-process, and soft/hard deadlines on each steps)
- Timeline (display the whole process as a timeline to show quality, speed, and efficiency of work)
- priorities (to display what workers should prioritize and complete ranging from today to an week)
- Work in process (show raw, in-process, and completed steps so that people can track products in every milestones and steps)
- Orders (projects to be finished, inventory orders, and parts orders)

- Inventory (track overall inventories and see if any is needed to reordered/restocked to meet project requirements)
- Shipping (track in-company and out-company shipping process)
- transactions (records of financial transactions with confirmation process, confirmation if projects were paid, warn the company executives when projects payment are late)
- Financial check (if inventory needs to be restocked or something, need to check financially and company's affordability.
- Cycles (track production cycles)
- Date updated (automatic system that tracks whether in-process/important information or data are not updated, it will warn the company/managers/supervisors/workers to record and report.)
- Inspection (criterias on each steps, cycles, milestones, and completed works with manager/supervisor verification)
- Certificate (confirmation and verification for completed inspections)
- Technical / mechanical evaluation (to make sure all machines are still functioning)
- Success / Error rate measurement
- Law / policy / rules (display relevant and required in-company, state, and federal policies/laws/rules for each procedures, products, departments, and workers so that all employees will know what is needed to meet all expectations and requirements)
- Performance Quality (assess each employees' performances and signal the managers/executives when an employee, team, department, or project is either over-performing or underperforming)