

## Building Justification for Data Control and Distribution

In order to begin building tangible justification for the investments needed to implement Data Management in your company, management is going to ask you to identify specifics and quantify the costs and the advantages (return on Investment). We recommend that you look at your current workflows and processes first.

- How do we do it today?
- Where are the inherent problems or bottlenecks?
- What in our current process and technology prevents us from achieving our objectives?
- What critical processes is time consuming or error prone?
- What contributes to our quality issues?

You can start by prioritizing the most important issues. Begin to capture metrics such as – Where do you spend your time? Look at time specific to a tasks, cost, reduction in time or elimination of a task or process all together. Apply a frequency of the task (how many times a day, a week etc.) and how many people involved. With direct labor, apply the full burden rate for the employee performing the task and begin to generate return on your investment.

Don't forget to factor in business / competitive advantage savings or revenue realization that you may derive from process automation. Here are a few samples:

- The Vault may allow all people involved in the delivery and support of your products see the latest revision and released data immediately. How does this impact quality and time to deliver your product sooner to the customer?
- A single Vault ensures that manufacturing is building on the right revision reducing the chance for errors and rework late in the process. What impact does this have?
- Engineering changes may be routed sequentially from desk to desk. What if notifications were automatic and managers had full visibility to % of completion?

You get it. Experiment with your own assumptions and “what if” analysis. We have listed some key pieces of information you would typically need as you gather metric to support your project:

### Engineering

How many mechanical designers/engineers use CAD?

What is the average salary for a mechanical engineer? (including overhead)

What percentage of a mechanical engineer's time is spent using CAD per year?

How many new products are introduced annually?

How many people are using an expensive CAD seat to view and measure drawings?

On average, how many physical prototypes, used for testing fit and function are produced per design?

On average, how many physical prototypes, used for testing integrity are produced per design?

What is the average cost per physical prototype used for testing design integrity?

What is the average revenue per product?

What is the average gross profit margin for new products?

How long is the typical product development process?

How many times do product failures occur per year?

What is the total time to capture and process the issue?

Cost of related travel expenses to resolve the issue?  
 Cost of product repair/replacement to resolve the issue?

### Data Management

How many people outside of engineering need access to engineering data?  
 How many of those people only need to view, query and print?  
 Average annual salary for those outside of engineering? = Burden rate  
 How many Engineering Change Orders are done per year involving mechanical designs?  
 How long does it take to make the design and drawings changes for one ECO?  
 Assigning part numbers to a new CAD files (reserving numbers and filling all relevant data into the CAD system)  
 Typing in CAD part data into another system (ERP, MRP, Excel, etc...)  
 Keeping file properties in CAD up to date with another system (ERP, MRP, Excel, etc...)  
 Searching for items in the item master (ERP, MRP, Excel, etc...)  
 Typing the CAD structure and quantities into another system (ERP, MRP, Excel, etc...)  
 Amount of time spent keeping the CAD structure in synch with the master BOM in another system (ERP, MRP, Excel, etc...)  
 How much time do you spend looking for the latest release of a Bill of Materials  
 How much time do you spend looking for the latest release of a drawing  
 How much time do you spend looking for previous releases of drawings  
 How do Shop Floor and assembly people visualize design intent?  
 Time wasted manufacturing to the wrong revision of a drawing  
 Filling out engineering change orders  
 Amount of time wasted from engineering change order sitting on someone's desk

### Sales

How many Bids do you process per year?  
 How many products do you sale per year?  
 What is the average revenue per product?  
 How many dedicated sales engineers / drafters do you have?  
 How many hours does (non-sales) engineering contribute to pre-sales work?  
 How many Bids do your Distributors process per year?  
 How many man hours to produce an accurate quote?  
 How many man hours handling changes to a quote?  
 How many times do you send out inaccurate quotes per year?  
 Average amount of Lost Revenue related to the inaccurate quote?

### Tech Pubs/Marketing

How much do you spend on each Product Photo Shoot?  
 How many photo-shoots do you do per year?  
 How many products per year are returned based on aesthetic issues?  
 How many hours are typically required to fix the issues?  
 What is the typical burden rate to fix these issues?  
 What are typical replacement part costs to fix the problems?  
 What are typical travel expenses to review these problems with customer?