A Quality Management System?

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On the highest level, you can look at your company in terms of how it fits into a trade scheme. Your company is a part of a complex relationship with many other companies and individuals. This is a simple diagram. It does not address issues such as feedback loops. Here we’re interested in getting the high level flow. As you will see, we can take any high level system and break it down into its constituent parts.

With the rise in specialization throughout the centuries, the role any given company has, as with workers, increasingly specialized. If you map out your company and its interactions the implementation process will be very much easier.

If used correctly, these high level maps, like your process maps, can also be used as the backbones for problem solving. Use your maps to lay out the backbone for a cause-and-effects diagram any time trouble arises. While the discussion of cause-and-effects diagrams is beyond the scope of this guide, suffice it to say I personally see cause-and-effects diagrams to be a very important part of problem solving.
Organization As An Extended System

(Suppliers of materials and equipment)

(A)

(B)

(D)

(C)

(Receipt and test of materials)

(Production, assembly, inspection)

(Distribution)

(Design and redesign)

(Consumer Research)

(C

(Consumers)

(Test of processes, machines, methods)

(Deming, 1986)
This is another way of looking at the extended system with a focus on the details of your company and it’s internal systems and processes. You will soon see that this is approaching the ISO 9001:2000 ‘model’.

As is evident on the right side of the system, your end users are the product recipients. When defining what your products are, you should be looking here.
No matter what extended systems exist in your company, it is important that it is understood that feedback has to be evaluated. To do that, in 99% of the cases, some type of measurables have to be evolved. For example, in your quality policy you are required to state quality objectives. In addition, they qualify their requirement by requiring that objectives must be measurable. The logic is simple. If they are not measurable you cannot know if you are meeting your goals.
Here we add several ‘influences’ on the company systems, including feedback loops. The feedback loops become important in ISO 9001. To most companies this is already a given. Feedback is historically important to most companies. While we can always cite examples of companies we believe do not care about any feedback (telecos, public utilities and government agencies are always being accused of not caring about customers), the truth is most companies are looking for and evaluating feedback. Sales is looking for information about their customers and what people want. Internally, manufacturing is always feeding back information to the design folks.

The biggest problem in the feedback loop is effectiveness of communications. As an internal example, I have seen very high walls between departments. Design and manufacturing and quality all often have very high walls. Manufacturing feeds back to design problems the have or are encountering where they think a design change should be evaluated and design says “Tough. We have our own problems.” Sometimes this is the result of a lack of resources but typically it’s a combination of that and a failure to work as a team. I believe this is one reason Japanese manufacturing works so well. My experiences with Mexican companies has also been that there is more of a team work atmosphere.
The ISO 9001:2000 'Process' Model

Continual Improvement of the Quality Management System

Customers and Other Interested Parties

RESOURCE MANAGEMENT
Purchasing
Human Resources

MANAGEMENT RESPONSIBILITY
Quality Policy
Quality Objectives
Management Review

PRODUCT REALIZATION
Process Planning
Process Documentation

PRODUCT

MEASUREMENT, ANALYSIS AND IMPROVEMENT
Internal Audit
Preventive Action
Corrective Action
Customer Satisfaction

Satisfaction

Customers and Other Interested Parties

Notes & Commentary

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Process Mapping Basics

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Simple Top Level Operations Flowchart

Account Management

Sales / Marketing → Order Receipt → Order to MFG. → Procure Material → Build Product → Ship Product → Bill Customer → Collect Money

Support Processes

- Management Processes: Results / Forecasts, Business Plan Mgmt, Mfg
- Quality Systems: Internal Audits, Procedures & Standards
- Design Engineering
- Supplier Approval
- Document Control
- Control of Test Equipment
- Data Security
- Customer Complaints
- Training
- Personnel Processes
- Customer Services
- Facilities Processes
- Corrective Action
- Material Stocking
- Financial Processes
- Preventative Maintenance

Notes & Commentary
Feedback is a cornerstone, so to speak, of ISO 9001. The implication throughout the standard is that you will manage with data.

Only through the evaluation of feedback can one learn and thus improve. Rarely does improvement come through chance. Evaluation requires measurables. No measurables, no evaluation. So - we need to think DATA!
Business As A System (Process)

An example of a manufacturing company defining and mapping its processes.
Define Product and Base Processes

External Customers

Retail Clients
Process 1
High level Process Description
1. Product 1
2. Product 2

Wholesale
Process 2
High level Process Description
1. Product 1

This is not meant to represent YOUR process structure. It is only meant to serve to give you food for thought on looking at your processes.

Notes & Commentary

An example of a service company defining and mapping its processes.
An example of a service company defining and mapping its processes.
An example of sub-processes in a service company.
Every high level system can be broken down into sub-systems. Soon we will talk about distinguishing between what is a system and what is a process. I want to warn you now that the distinction is as much a part of what resolution you are looking at as anything else. This is to say that if you are looking at a system and its sub-systems, often times those sub-systems are referred to as processes. If you go to the next detail level, what was referred to as a process now looks is the ‘system’ and ITS sub-systems are now the ‘processes’.

My point here is to say do not get wrapped up in trying to label what is a system and what is a process. To some degree, they are the same thing.

We should also note that many peoples idea of a process is where something is being physically changed. For example, if I plate a part I am processing it. If I take a piece of metal plate and form it in a press I am processing it. This is a narrow interpretation of the word process. In English it is a verb: To process something.
This is a brief example of ‘exploding’ a sub-system for a more detailed look at the various interactions.
Specific requirements are detailed in Clause_Interp_and_Upgrading.doc