

On the Map

What **good process mapping** can do for your organization

by Miriam Boudreaux

In 50 Words Or Less

- While an effective quality management system (QMS) is a boon to any organization, understanding its inner workings can sometimes be difficult.
- Creating a process map that outlines the organization's processes can make it easier for employees to comprehend how the QMS helps ensure a high-quality product.

DO YOU EVER think that even though you have a lot of procedures, your quality management system (QMS) may not be adding value to your company? Is the lack of adherence to your QMS due to a lack of understanding? If your answer to either of these questions is yes, perhaps the cause of your problems is the lack of good process mapping.

Process mapping is an essential technique for identifying all the processes that take place in an organization, as well as their interrelation. This visual tool makes it easy to understand the sequence in which these processes take place. An effective process map should be a high-level map of how your organization's processes flow, showing inputs and outputs, and how your product or service goes from being an input to a desired output.



Each process on the map should coincide with one that actually takes place in your organization and should be labeled precisely according to how it is referred to in your organization—not what your competitor calls it or what someone called it at a previous organization.

Your process map should encapsulate everything that makes your organization unique. Even if two organizations make the same product and perhaps have similar processes, their process maps will not look the same.

Good qualities

A good process map is simple yet effective at portraying the sequence or interactions of a process. A good process map encompasses a lot, yet is easy to understand and follow.

The following are some of the main components of an effective process map:

- Inputs.
- Core processes.
- Interactions shown by arrows.
- Outputs.
- Support processes.

The process map example in Figure 1 shows that the product realization processes at this fictitious or-

ganization start with a customer inquiry. After that is received, it triggers the quoting department to perform its functions. Notice that in this case, a decision box is not placed because quoting is not a step, but rather a process step containing multiple processes.

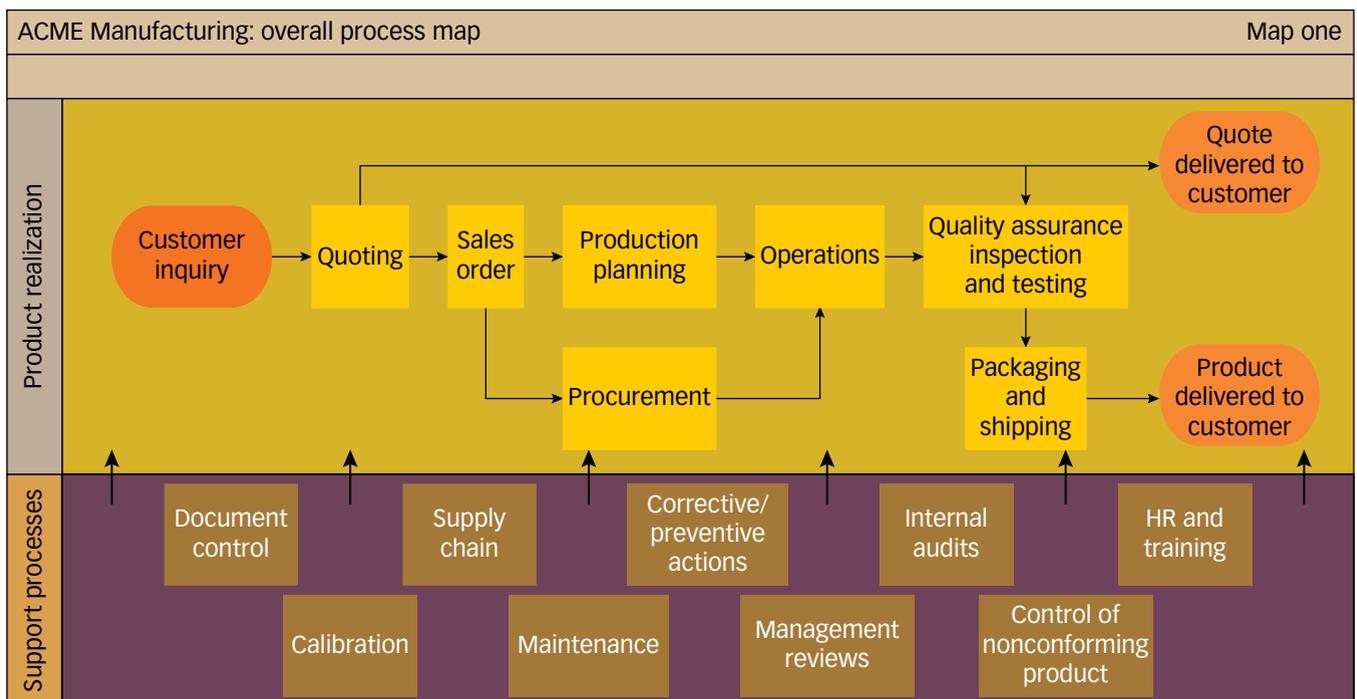
After the quoting process is over, there are two outputs: a quote to the customer and, if the quote is accepted, the actual quote to the sales department for sales-order processing. Outputs from the sales-order process are sales orders to the production planning and procurement departments.

When both departments are finished with their part of the process, the outputs feed into the operations department, which feeds into quality assurance. Then, the product is packed and shipped, and the customer receives his or her order.

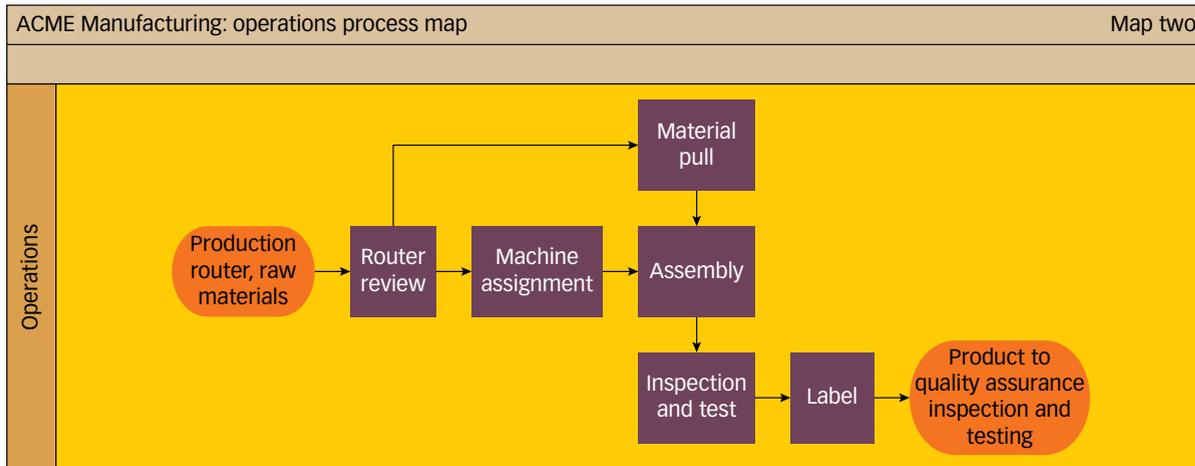
The boxes in the bottom half of the figure indicate the support processes that take place in the organization. These processes can interact at any stage with the product realization processes. To avoid confusion, they are separated from the core process, with arrows indicating their contributions.

Drilling down even further, it's possible to have a process map that is a subprocess of another map. An

Main process map / FIGURE 1



Operations subprocess map / FIGURE 2



effective subprocess map ensures inputs match the outputs of the parent map and that outputs match the inputs of the subsequent process map. Figure 2 is a detailed process map of the operations department process depicted in Figure 1.

As seen in Figure 1, the operations process has two inputs—the router from production planning and the raw materials from procurement. These two inputs have also been captured in Figure 2. When those inputs are received, they are inserted into the router review process and sent to the machine assignment process and material pull.

After the material is pulled, it goes to assembly, inspection and testing, and then to the labeling process. At the end of these processes, the output—the product approved by operations—goes to the next step: quality assurance inspection and testing.

In these examples, the organization has gone to great pains to paint a detailed picture of what goes on inside its walls. But the true value of constructing these maps is the ability to identify the processes that need to be formalized in your organization by way of procedures.

After you know what procedures you need, you can concentrate on developing them and making them robust. Of course, many more procedures or work instructions may be needed to sustain your processes, but at least now you'll be able to segregate each of the main core processes by affinity on the product realization process map.

Common mistakes

With software programs that supply multiple icons and fancy graphics, it's easy to go overboard incorporating all the bells and whistles available. While that may make the process map pretty, it won't make it functional.

Another problem organizations run into is mistaking a process map for a flowchart. The two share similarities, which is why many people make the mistake of using the terms interchangeably. But for the sake of your organization's improvement efforts, remember there are differences between the two (Table 1).

To illustrate the vast differences between a process map and a flowchart, take a look at Figure 3 (p. 35), which is the process map in Figure 1 shown as a flowchart. In this format, it will be hard to understand what really goes on at the company, let alone the core business processes, and where things start or end.

Process map vs. flowchart / TABLE 1

Process map	Flowchart
Starts with inputs (may be more than one).	Starts with a single start block.
Identifies individual process of a larger process.	Identifies each step of a process.
Has very few decision boxes because decisions may be happening within each process.	Has many decision boxes that appear throughout.
Ends with outputs.	Ends with an end block.
May be part of a procedure.	Is usually a procedure on its own.
Helps paint a high-level picture.	Helps paint a detailed picture.

A flowchart such as the one in Figure 3 does not add value to the company and does not lend itself to any kind of employee ownership of a process. The multitude of decision boxes and support processes make the chart too busy. That's why, in the process map, there's a section called support processes and arrows that show how these processes interact with the processes in the core business area at any given time.

For example, consider nonconformance reports (NCR), which can appear at any time during the manufacturing process, not just at the quality assurance step. An NCR can be issued during receipt of materials, procurement, operations, quality assurance or shipping. That's why the "control of nonconforming product" is a support process in Figure 1.

When I remap a company's processes, I tend to hear the same questions: Where are the stop gates? Where are the decisions boxes? While those tools sound good in theory and look nice on paper, each process is full of decisions. To identify them in a process map would be like trying to create a giant flowchart. You would need a whole wall to identify each process, decision and outcome that might happen throughout the process.

A process map should be easy to understand, so the addition of too many variables may not necessarily add value. Of course, when different outcomes are present, then the use of multiple inputs should indicate the different paths that may be occurring within the process.

The beginning and the end

Process mapping is and should be a primary tool in procedure development. But it's important to keep the following points in mind when creating a process map:

- **Do not confuse a process map with a flowchart.** A process map is usually part of a procedure and, therefore, doesn't need to include every single detail. Include those details in the description of the procedure. A flowchart usually explains all the details of a process. If you use it, you should do so in lieu of a procedure or work instruction.
- **During process map development, involve the employees who are part of the process being mapped.** Although you may think too many heads will prevent the group from reaching any consensus, in reality the opposite will happen. That's especially true if the process mapping is carried out by a competent expert with a broad vision, experience and excellent people skills.

- **Do not base your process map on what is desired, but rather on what is being done.** Basing your process map on steps nobody follows will create faulty procedures that nobody will follow. Wait until you have completed the process map—or at least until you have a good picture of what is being done—before you introduce new steps into the process. If your processes are not in control, your own employees will tell you where new steps are needed.
- **Don't worry about spending too much time on process mapping.** While one or two sessions should be enough, spending three or four sessions may be necessary if you are dealing with disjointed groups you hope to unite through new procedures. I would also suggest creating a parallel procedure because describing the process in words might bring more details to light and help to shape the process map.

As with any continual improvement exercise, a process map is not set in stone and may be revised many times as new steps are added or as the procedure is put into place. If your process mapping takes too long, focus on outlining your procedures. It's a good way to create the framework for a process map.

If you want to enhance your procedure, ensure it is built around and actually follows the process map. While the process map should show a picture of the processes in place, each of those processes should be further explained within the procedure.

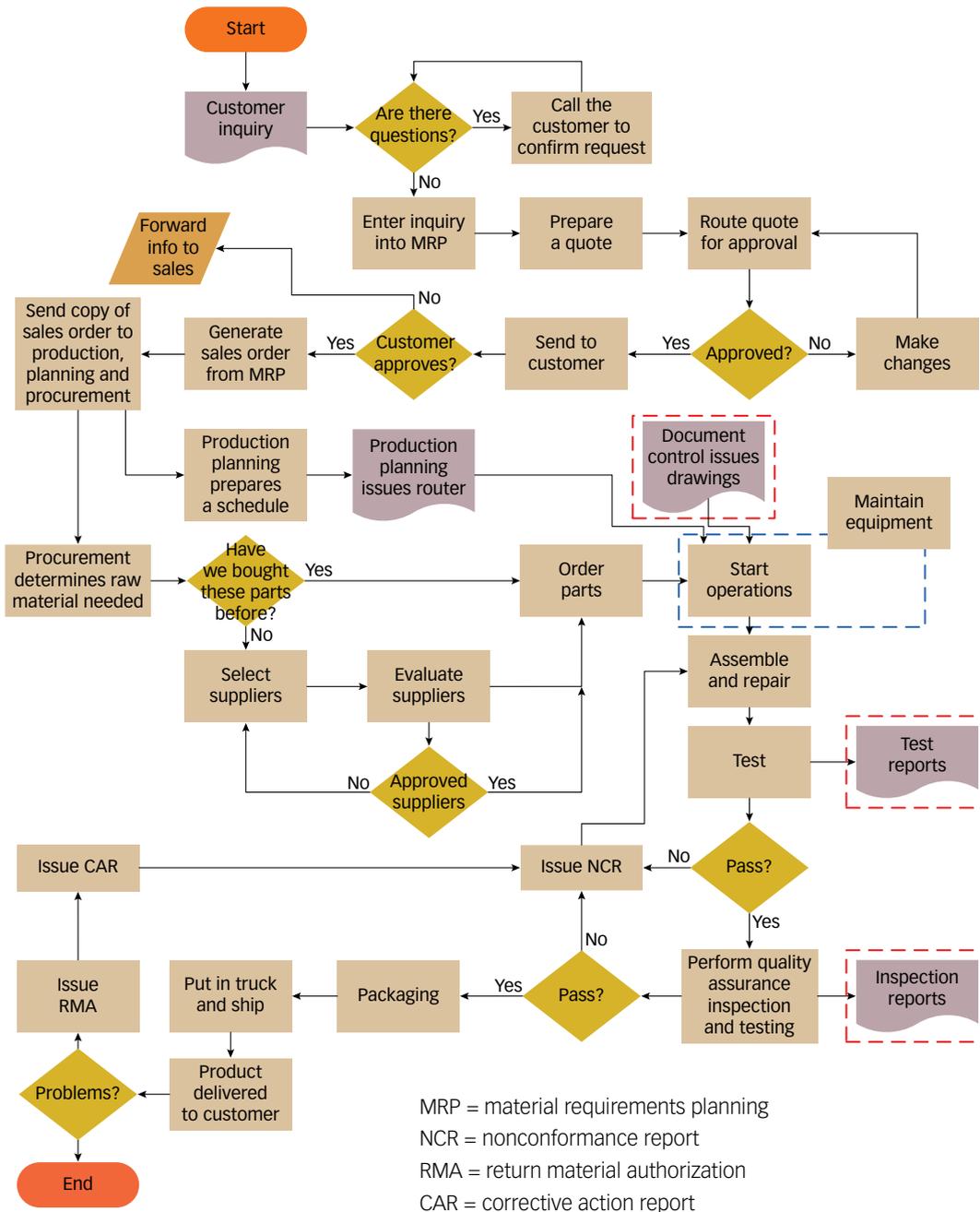
Less is more

If there is a phrase that best represents a process map, it's, "A picture is worth a thousand words." A good process map is lean and can tell a whole story in a matter of a few blocks. Don't make the process map so cumbersome that employees can't understand it or follow it.

Your process map and your procedures should complement each other. The process map is the big picture, and the details are in the procedures. But if you can't resist the urge to put details into the process map, make it a flowchart and do away with the procedures so they don't contradict each other or create redundancies.

I've seen many process maps, and some of them have a lot to say—sometimes too much to understand. Depending on what hat I'm wearing, I may comment on it or keep quiet and take the process map for what it is. Just because you haven't received any comments about your process maps doesn't mean they're perfect. Take a look at your process maps and ask yourself if you can

Operations subprocess map as flowchart / FIGURE 3



understand them. If the answer is no, do you think your employees can?

Sometimes, taking a step back will help you take a step forward. Remap your processes and see how going back to the drawing board can help your organization take a quantum leap toward world-class quality. **QP**



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