insight

The guiding force

Without the right management process improvement isn't possible. John Morgan explains seven steps to ensure your processes are managed effectively

Companies from all sectors and industries consistently suffer from the same two problems. First, they often have too much data and it is usually not presented in the best way to aid interpretation and decision making. Second, processes are not owned and frequently not even documented, which results in misunderstandings, inconsistencies, work-arounds and disconnects, with no clear picture of an end-to-end process.

These problems are compounded when managers are unclear about their role. Managers may have had training in report-writing and budget-setting, for example, but if they have not been trained in managing a process then those first two problems can thrive. Subsequently, as difficulties arise in the process knee-jerk improvements and work-arounds will further sub-optimise the end-to-end process.

In today's economic climate, with its increasing pressures to reduce costs, the need for process management is probably more important than ever before. Anyone can reduce overheads by making people redundant, but at what cost to the organisation?

Such staffing decisions are now being made on a regular basis, but without an understanding of what others do, why they do it and how much waste and non-value-added activity could be reduced instead. Managing processes is key to this. Processes must be owned, understood, managed and improved. Managers need to work on the process with those working within the process in order to find ways to improve.

Processes need to work efficiently and effectively, keeping costs down and customer satisfaction up. Waste must be managed, reduced, removed and prevented, and the process steps should add value. Three questions can help determine whether what we do is adding value. They are:

- Would the customer care about this step?
- Does it physically change the output or is it a prerequisite for doing so?
- Is the step carried out right first time?

Typically, only 10-15% of the steps in a process add value, and they will usually represent as little as 1% of the total process time.

But what does a "managed process" mean? The following steps create a framework to ensure processes are managed effectively:

1. Clear customer-focused objectives

Processes should focus on meeting critical-to-quality customer requirements (CTQs). To determine CTQs, listen to the voice of the customer (VOC) – sources include market research, focus groups, surveys and complaints – and don't forget that CTQ's apply to both internal and external customers.

The next step is to translate what a customer has said into a measurable requirement. This can involve having a number of conversations with the customer and the process owner, as well as those people in the process. Then you can reflect back your interpretations to ensure they are correct. You require this input to understand customer needs, identify their key issues and translate those into terms that are meaningful and measurable.

Getting CTQs right also provides the foundation for your measurement data, and getting the right measures is vital in learning how well you are meeting customer requirements or where improvements are required.

A CTQ shouldn't prescribe a solution, it should be measurable and, where appropriate, have upper and lower specification limits and a target value. It should be a positive statement about what the customer wants. If, for example, staff members need to have the right information about service levels, the key issue to be dealt with is accuracy and that can be measured by a CTQ such as: "Ensure there are no errors in documentation."

Once you have defined your CTQs, you need to look at how processes have been designed.

2. Understanding how the work gets done

First, you need to agree what the processes are. Start at the top of the organisation, breaking down top-level processes into sub-processes that let you look at them in more detail.

Whether using a deployment flowchart or a value stream map, the aim is to see how the process works. A SIPOC diagram, like that shown in figure 1, is a good start, but first you need to consider some process basics.

A process is a series of steps and actions that produce a product or a service. All work is a process, and a process is a blend of people, equipment, method, materials and environment. This applies to everything we do, from getting up in the morning onwards. All activities can be broken down into steps and, in doing this, we see that these processes involve other people.

At work, other people can be described as internal customers and suppliers. For example: department A produces output for department B; that produces output for department C; that provides the answer to an external customer enquiry. It's important to recognise that all of these departments are involved in the process and need to understand its overall objectives. Too often, departments work in isolation.

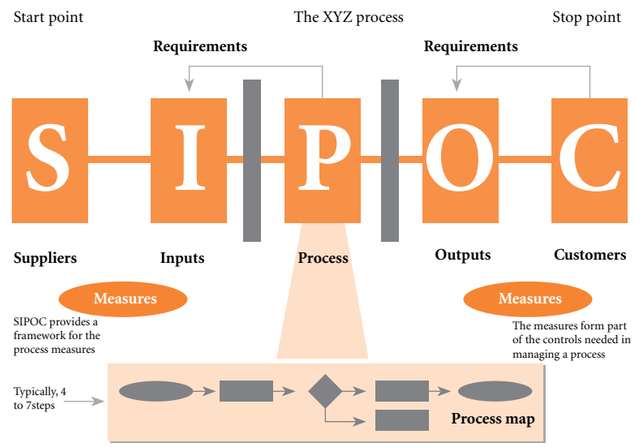
Processes should be seeking to meet customer requirements and to add value. For that to happen, the process itself has requirements to be met, such as:

- Ensure CTQs are understood and agreed. A lack of quality and rework are often the direct result of not defining these properly
- Once CTQs have been agreed, determine your own requirements from suppliers and then ensure that these are understood and agreed
- Ensure the right number of people are working in the process and that they have the necessary knowledge and skills. If not, training will be required
- Procedures must be developed, agreed, documented, updated and simple to understand. Clear language and pictures will help to achieve this
- Standards such as regulatory requirements or service level agreements will apply. These should also be easy to understand. If there's a budget or authority limits, management must ensure those in the process know the details
- Equipment and facilities will be needed to operate the process. Ensure the right equipment is in the right place, that it is regularly serviced and updated, and that the environment is appropriate for the activity.

These process requirements are picked up in figure 1. This SIPOC diagram identifies customers and the outputs they need, presents a high-level process map and confirms input requirements from suppliers and customers. The model provides a framework to determine measurement data required.

With the SIPOC in place you will understand your processes more, but you will need to go into more detail to increase that understanding. This is where "process stapling" comes into play. This involves taking a customer order, for example, and walking it through the entire process to see what happens. Wherever it goes you go too, asking: "Who does what and why? How do they do it, where and when?"

Figure 1: A SIPOC diagram



Understanding how much travel and movement there is enables you to create a process map and a spaghetti diagram, illustrating, for example, the distance travelled by people and materials. Siting people and equipment together is often a simple way of reducing waste and cycle time.

Process stapling helps to spot inconsistencies and needless activities, as well as the steps that add value and those that don't. You could find real value in extending the process stapling concept to customers and suppliers. How does your process and its output link to your customer's process, for example? What does their process look like?

3. Understanding how well the work gets done

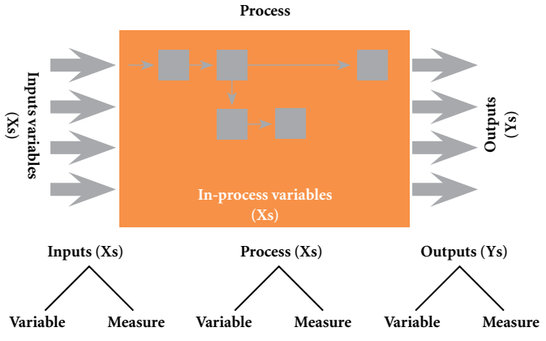
Measurement and data collection will be essential in your improvement activity, since you need to quantify and verify the possible causes of the process problems you are investigating and, in developing solutions, need data to determine the best approach.

One way would be to anchor your measures to a SIPOC diagram. You will need to consider the performance of both internal and external suppliers: Are their inputs accurate, complete and on time? You will also need in-process measures covering time data, rework levels and work in progress. And, of course, measure your process outputs to see how well you are meeting both your internal and external customers' requirements.

You will need a balance of measures to effectively manage and improve the process, as shown in figure 2. Using the terminology of lean six sigma, the Xs and Ys denote cause and effect. So the independent input and in-process variables influence the dependent outputs from the process.

Whatever measures are selected, your measurement and data will only be as good as the process that collects it and, like any process, data collection requires managing and improving. There is likely to be enough variation in the operational process itself without the situation being compounded by variation in the measurement. The data collection process starts with output measures to enable you to see how the voice of the process matches the VOC.

Figure 2: Balancing measures and understanding how they interrelate



4. The process has been error proofed

Prevention is a good way to tackle waste and delays, reducing the need for rework and avoiding other non-value-adding activities. Several tools and techniques can be used, including failure mode effects analysis and preventative maintenance. Error proofing can prevent mistakes or make them easier to spot.

5. Visual management is in place with links to team meetings

In the workplace, visual management could mean displays, charts, signs, labels or colour-coded markings that help everyone understand the process and see it is being done correctly.

Displays and controls could include data or information for the people in the area, keeping them informed on overall performance or focused on specific quality issues.

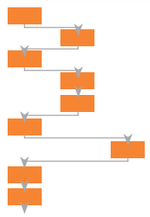
Visual controls could cover safety, production throughput, material flow or quality metrics. Visible management isn't enough by itself, it needs to lead to appropriate and timely actions. In part, this highlights the important role of process team review meetings. Regular meetings are key to review and maintain performance, but keep them short and focused.

Apart from reviewing performance and the day ahead, these meetings can also offer the chance to discuss any improvement opportunities and ideas.

6. There is a control plan in place

The control plan ensures the process is followed consistently and improvement gains are held. It highlights the importance of monitoring performance at different stages, identifying actions required. Ideally, it incorporates process, performance and the action to be taken, as shown in figure 3.

Figure 3: Example control plan

Process	Performance	Action
Deployment flowchart	Checks and measures	Corrective actions
	Plot time on each step (should be two hours or less). Check for special causes	If time exceeds two hours alert leader and organise investigation
	Count errors	If more than one per order, stop process, contact team leader and investigate

- The first column captures the process map
- The middle column identifies checks and measures that help monitor performance
- The third column identifies the actions that needed depending on the data collected by the measures.

7. Process improvement is undertaken in a systematic way

In lean six sigma, the improvement of existing processes uses the principles of define, measure, analyse, improve and control (DMAIC). DMAIC projects start with a problem that needs to be defined and agreed. In the measure phase, the aim is to understand the current situation to determine how the work is done and how well. If you are managing your processes already, you should have a process map and the right data in place. Through analysis, you determine the root cause of the problem. This is then addressed in the improvement phase, where ideas are considered and the solution selected. In the control phase the solution is implemented, the gain achieved and the steps put in place in the control plan to maintain it.

Introducing process ownership and management takes time, but it provides effective and efficient products and services. Having established ownership of the process, you can assess it and identify and prioritise opportunities for improvement. DMAIC then gives a framework to tackle that improvement, and a control plan helps ensure gains are maintained and new opportunities are prompted

John Morgan is a director at Catalyst Consulting. He is the author of *The Lean Six Sigma Improvement Journey* and *Go Lean*, and a co-author of *Lean Six Sigma for Dummies*