

Harmon on BPM Paul Harmon

Types of Process Methodologies

The whole topic of process methodologies keeps coming up in one form or another. Some imagine that Lean or Six Sigma pretty well define a process methodology. Others know that both Lean and Six Sigma are specialized versions of a process methodology, and to make things more complex, Lean can be described in two rather different ways.

Top-Down Process Methodologies

Let's begin with the basic distinction. Some process methodologies are top-down. They begin with an overview of what the organization is trying to achieve, define a very comprehensive value chain that the organization relies on to generate the product or service it is focused on, and then work down from that high-level understanding to identify specific problems that impede optimal results. Top-Down methodologies tend to consider a wide variety of potential causes and rely on a large toolbox of techniques. They gather data before they decide exactly what is causing the organization's problem. Hammer used to say that one started with "a blank sheet of white paper" and considered every possibility.

The best known example of a top-down methodology was Business Process Reengineering (BPR) as defined by Michael Hammer in the early Nineties. Hammer suggested dividing the organization into value chains and then focus on redesigning value chains to radically improve their efficiency – primarily by using the latest IT techniques to change how the processes were designed. Today, BPR is less popular, but other top-down methodologies are still popular, and are usually termed either Process Redesign, or, more commonly, recently, Business Transformation.

Bottom-Up Process Methodologies

Other process methodologies are bottom-up. They begin with a specific problem – usually a specific processes that is rather limited in scope – and focus on trying to improve the performance of that process. The team using a bottom-up methodology tends to assume that the process is broken in some specific way and looks for specific types of problems. Lean, for example, tends to focus on process flow problems, while Six Sigma tends to look for quality and consistency problems. IT process people can be very narrowly focused, assuming that any business process problem is an opportunity for automation while ignoring people or other environmental problems. The methodologies that focus on bottom-up change are usually called incremental process improvement methodologies. Six Sigma is the

best known example of an incremental process methodology. Today, many also think of Lean as an incremental process methodology, in part because Lean has been widely incorporated into the Six Sigma work at many organizations. Like Lean, IT process analysis can be either top-down or bottom-up, but most IT process work also tends to be incremental, focusing on the automation of a specific, narrowly defined set of activities.

Top-down process methodologies tend to be voyages of discovery – explorations that consider how the business, as a whole, could be improved. Bottom-up process methodologies tend to begin with a well-defined solution and simply seek to document the need and scope of the specific changes to be made.

Alternating Between Approaches

Hammer famously used the chart reproduced in Figure 1, to illustrate the difference between a top-down and an incremental approach. The line represents the lifecycle of a process – say it represents an organization's Widget Marketing and Sales Process. At some point the organization decides that its Marketing and Sales Process needs to be radically changed to make it competitive. A team of process redesign people are called in and the entire Marketing And Sales Process is reviewed, and then redesigned. Perhaps the organization goes from marketing via magazines and using field sales reps, to marketing via the internet and accepting orders online. In other words, almost everything about the Marketing and Sales Process, including the activities and the people involved, will need to be changed.

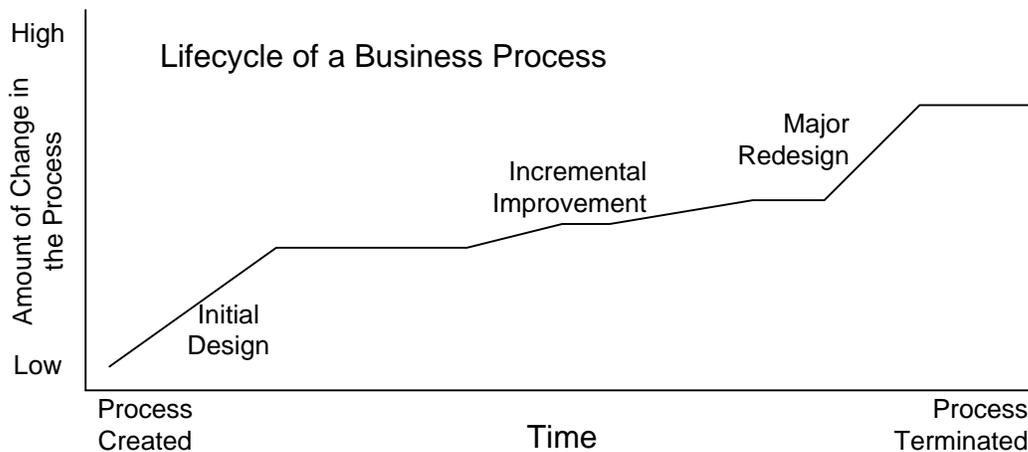


Figure 1. The lifecycle of a process with periods of basic redesign and long periods on incremental improvement. (Modified from a Figure originally used by Michael Hammer.)

After the new process is rolled out, things seem to be better. Every so often, however, the people working on the new Marketing and Sales Process see an opportunity to improve some aspect of the new Marketing and Sales Process. In essence, the managers and employees that work on the Marketing and Sales Process initiate an incremental process improvement effort. Maybe they reorganize the way customers are selected for email contacts, or they redesign the way the Sales Process website works. Over the course of time, the Marketing and Sales Process people may launch many different incremental process improvement efforts. With

luck, that will keep the Marketing and Sales Process in good shape. If it doesn't for some reason, then the company can always bring in a team and launch a new major redesign effort.

The Problem with Lean

Lean provides a special situation that is worth discussing in more detail. Lean is the popular name for techniques derived from the Toyota Production System (TPS), a process methodology that was developed in the Toyota factories in Japan. Before we can consider the problem of Lean in more detail, we need to be sure we understand the idea of process maturity. This concept was introduced as a result of studies done for the US Defense Department in the early Nineties. Seeking to find why some contractors consistently delivered on time and within budget, while others didn't, the DoD commissioned Carnegie-Mellon University (CMU) to study the problem. The University came up with the idea of "Capability Maturity." The idea is that organizations that focus on improving their performance get better at managing their business processes. CMU developed a continuum. At one end were the organizations that had no process management skills, didn't have a good idea of how their processes worked, and didn't measure and manage their processes. As organizations acquired process management capabilities, their maturity was said to improve, and CMU developed a five step scale to describe how the improvement takes place. We picture this Capability Maturity Model (CMM) in Figure 2.

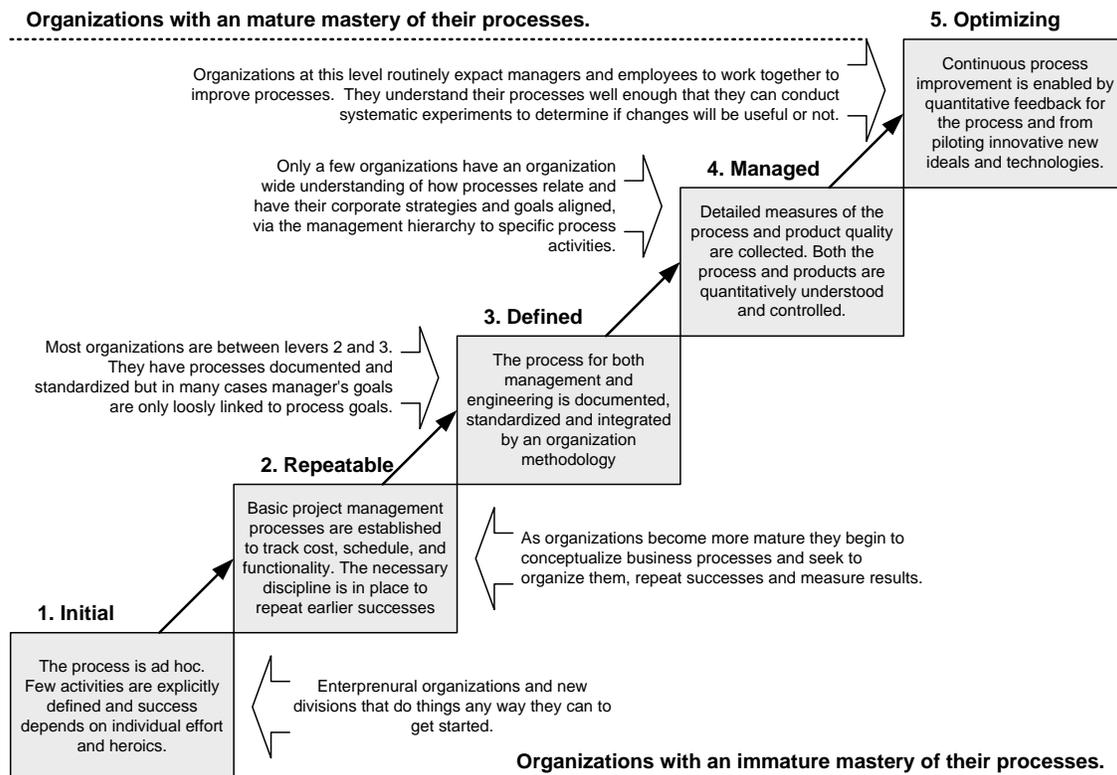


Figure 2. The CMU Process Maturity Continuum.

Organizations that are more mature can be more effective in their use of a Process Methodology. A CMM level 2 organization, for example, can improve process flows,

but usually isn't well positioned to improve the way processes are managed, because its managers haven't been trained, or even accepted the idea that they should be managing processes.

Toyota is a Level 5 CMM organization. The entire organization accepts that process improvement is key to the organization's success. The CEO appears in a Harvard Business Magazine interview to say process is central to Toyota's future, and so forth. The Toyota Production System reflects a Level 5 CMM organization and assumes that processes are measured. Specific employees at Toyota know exactly how long it should take to perform a specific task, and stop the production line if mistakes are detected. Employee teams gather if an individual does a task in 2 minutes that should have taken 3 minutes. They check to see if the output is up to spec. If it is, then the individual has identified an improvement and the team wants to learn about it. If the output isn't up to spec, then the team wants to determine why the individual wasn't performing as prescribed. Was he or she trained properly? Was he simply being sloppy? This kind of scrutiny is supported by the supervisor, whose job requires that he work with employee teams to assure processes are constantly improved.

There is redesign work done at Toyota, of course. Machinery has been installed to automate most aspects of the production line over the past 2-3 decades, radically improving the auto assembly process. But there is also constant incremental improvement. The key thing, however, is that it's very hard for a CMM Level 2 or 3 organization to borrow the techniques used at a CMM Level 5 organization. The less mature organization lacks the process measurement systems and trained managers and the management processes required to implement many of the key Lean systems. Too many US Lean practitioners are forced to implement a modest sub-set of the practices that make Toyota such a success.

Toyota has Top-Down techniques and it has Bottom-Up techniques. Too many US organizations only use the Bottom-Up Lean techniques and never get around to implementing Toyota's more sophisticated techniques. Most early books on Lean seemed to suggest that Lean was primarily focused on eliminating waste. Books on Toyota tend to provide a more comprehensive description of all of the different aspects of a TPS/Lean approach, but even they lack one basic insight: It took Toyota a couple of decades to develop the system that they have today. The Lean methodology, as usually described, has nothing about organizational maturity, nor does it offer any advice as to how to improve the maturity of your organization, which requires, at a minimum, years of work and a major commitment on the part of your organization's senior and middle managers.

So, two versions of Lean: (1) The popular version of Lean is a relatively simple set of techniques that every organization could benefit from. (2) The more complex TPS/Lean is a description of the practices of a CMM Level 5 organization that understands its value chains (which they tend to call value streams), has its processes very well defined and measured and has a sophisticated process management system in place to assure that processes are constantly being improved. (1) is usually applied bottom-up. (2) is definitely a top-down approach.

Top-Down and Bottom-Up Compared

Properly speaking, you don't want to compare Top-Down and Bottom-Up process methodologies – they are NOT competing methodologies, they are complementary.

(In fact the BPTrends Methodology treats both Redesign and Incremental Improvement as two phases within a single methodology. There are times in the lifecycle of a business process, when a process is radically out-of-date – perhaps a major new technology has been introduced that will require major changes in the process – and the whole process needs to be redesigned. Or, more dramatic, perhaps the whole business unit needs to be reconceptualized in response to some major change in the business environment. Most of the time, however, the process should be monitored and incrementally improved. There may be times when nothing is done and the process is simply performed, over and over, in exactly the same way. But the longer that goes on, the more likely someone will be able to identify a way to improve the process in one way or another.

In other words we always want to be thinking about how to make our processes better. If no major changes are required, then we look for incremental improvements, constantly monitoring for quality and consistency, constantly looking for specific activities that can be eliminated or modified to make thing run a little faster, or a little more consistently.

When radical changes become possible, when a new technology like the Internet or 3D printing is introduced, then a team should be assigned to step-back from the day-to-day operations and reconsider fundamental changes. This is when you should work top-down, assuring as you make major changes in one area that you don't generate side-effects that through other major processes out of sync.

The problem with top-down changes is that they take significant amounts of time and money, and can be disruptive. They require that a team consider lots of activities, conduct studies, maybe try alternatives, and then make changes that often require changes in hardware, software, employee jobs or even managerial practices.

Bottom-up changes can usually be done quickly and for less cost and disruption. The problem with bottom-up changes is that they often sub-optimize larger processes. By improving a specific activity, you may introduce a change that makes some other activity less effective. In other words, incremental improvements can often introduce unwanted side-effects.

Good process work requires the use of both bottom-up and top-down approaches, each used when appropriate. An over commitment to either top-down or bottom-up can cause problems. The best Business Process Management methodologies try to combine both approaches and to manage the entire lifecycle of an organization's processes, using different approaches at different times.

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