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Treasure Hunt

The 7 habits of process improvement provide the map of how to pursue and unbury process excellence

Countless failures have shown that lean and Six Sigma do not deliver results unless their concepts and tools are applied every day by everyone in the organization, starting with senior leaders and extending to machine operators and office workers.

Ancient Greek philosopher Aristotle and modern-day American author Stephen Covey taught that excellence and effectiveness require habits—that is, acquired and frequently practiced routines that become a natural part of how we think and act.

In the more than 50 years since the introduction of Kaoru Ishikawa's seven basic tools of total quality management (TQM), lean and Six Sigma have arisen out of TQM and have been widely adopted and adapted around the globe in production and service, and in nearly all types of industries and sectors.¹

Many have articulated the concepts, practices and tools of lean and Six Sigma. While we have Mike Rother's problem-solving *Toyota Kata*,² we lack a simple set of basic process improvement habits that integrate all experience and insight gained in these past 50 years.

In this article, I propose seven habits of process improvement—that is, seven simple actions everyone can incorporate in their daily work to improve processes, which will lead to increased organizational performance and contribute to greater prosperity for all stakeholders.

Original seven tools of TQM

Ishikawa's seven basic tools can be used by anyone in an organization to detect problems and improve the quality of production processes. ASQ lists these as:

- + Cause and effect diagrams.
- + Check sheets.
- + Control charts.
- + Histograms.
- + Pareto charts.
- + Scatter diagrams.
- + Stratification.³

What's missing?

These seven tools have been and continue to be of great value. As guides for everyone's actions, however, they are inadequate because:

1. They are used primarily with production processes.
2. They don't incorporate learnings from lean and Six Sigma.
3. They only address data collection and analysis.

First, not only has the service sector grown dramatically, but process improvement has spread from factory floors to office settings, and from the manufacturing sector to nearly every other sector. We need something that applies to all processes.

Second, lean (developed by Toyota and focused on eliminating waste) and Six Sigma (developed by Motorola and focused on eliminating variation) have vastly expanded our understanding of quality and the scope of improvement. Lean has taught us to identify value and eliminate waste, manage visually, organize the workplace and create flow. Six Sigma has taught us to standardize work, reduce defects, analyze for root causes and measure performance. We need something that incorporates these learnings.

Third, the seven tools address only a small—though important—part of the improvement cycle. We need something that guides people in all aspects of process improvement.

Existing lean and Six Sigma definitions

Existing lean and Six Sigma definitions also do not provide the simple-and-clear guidance needed by everyone in an organization to actively engage in improving processes.

The Toyota Production System (TPS) house presents key elements of the TPS, but focuses on production. In their groundbreaking 1996 book *Lean Thinking*,⁴ James P. Womack and Daniel T. Jones proposed a five-step thought process to guide managers through a lean transformation:

1. Identify value.
2. Map the value stream.
3. Create flow.
4. Establish pull.
5. Seek perfection.

However, these steps speak to primarily managers and miss some key lean actions.

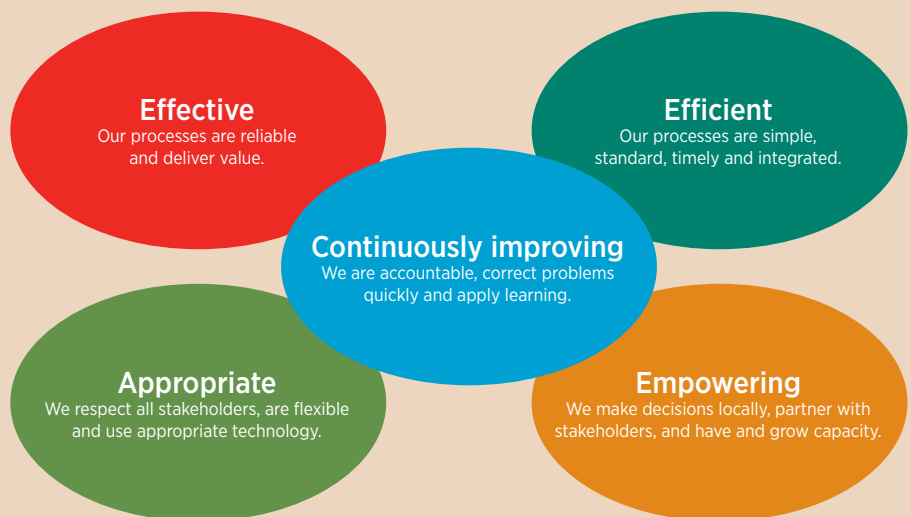
ASQ states, "Six Sigma is a method that provides organizations tools to improve the capability of their business processes" and goes on to explain that it also is a philosophy, a set of tools, a method and metrics—that is, Six Sigma quality performance means 3.4 defects per million opportunities.⁵ There does not appear to be a concise and definitive statement of the principles or practices of Six Sigma, let alone simple guidance on what Six Sigma practitioners should do, apart from follow define, measure, analyze, improve and control (DMAIC).

A treasure and a map

To search for a treasure of gold, a pirate must know two things: There is a valuable treasure, and how to find it. To pursue the treasure of excellent processes, an employee also must know two things: Process excellence is a valuable treasure and how to pursue it.

In "Making Work and the World a Better Place,"⁶ I defined the five elements of process excellence:

Figure 1 5 ELEMENTS OF PROCESS EXCELLENCE



1. Effective impact.
2. Efficient performance.
3. Appropriate to context.

Drawing on and integrating the corporate world priorities of effectiveness and efficiency, the nongovernmental organization (NGO) priorities of appropriateness and empowerment, and the common desire to continuously improve, these five elements of process excellence provide a common vision and goal for all process improvement that applies to any organization in every sector. Figure 1 (p. 11) shows their high-level definitions.

Process excellence is a valuable treasure because excellent processes increase quality, reduce time, lower costs, provide greater customer value, and lead to greater employee engagement and well-being. Excellent processes increase organizational performance, which contributes to greater prosperity for employees, customers, owners and other stakeholders.

The seven habits of process improvement provide the treasure map of how to pursue process excellence. They succinctly describe seven actions that everyone in the organization can take every day to improve their processes in pursuit of process excellence.

Seven habits of process improvement

As shown in Figure 2, the first three habits—organize the area, make work visual and standardize work—stabilize processes. The second three habits—eliminate waste, prevent mistakes and make work flow—optimize processes. All six are ways to solve problems, which is the fundamental, scientific and creative approach of lean and Six Sigma that follows the plan-do-check-act (PDCA) cycle and all variations thereof.

1. **Organize the area:** Habit one is 5S/6S: sort, straighten, shine, standardize, sustain and safety (as a separate S or embedded in the others). Masaaki Imai notes that 5S is a foundational lean practice that involves everyone, connects people to their work and instills discipline.⁷

Figure 2 7 HABITS OF PROCESS IMPROVEMENT



2. **Make work visual:** Often done as part of 5S/6S, habit two, which helps reveal problems, also stands on its own. On one hand, it means labeling what things are, outlining where things belong, and making work flow and abnormalities visible. On the other hand, it also means visually managing the process: determining key performance indicators, creating a measurement plan, measuring current performance, setting targets, showing progress, performance and gaps, and acting on them.

3. **Standardize work:** Habit three encompasses a variety of tools and practices that guide employees, help detect problems and provide a springboard for improvement. Process mapping and analysis helps people discover and visualize the process flow from start to finish. The process map provides the outline for a procedure—the single best way known today for those who perform the process. Preparation (for example, through the development of item catalogues and bills of quantity/material) provides common, agreed-on standards that simplify and streamline work. Work instructions explain and visually show how key process steps are performed. Checklists and forms provide specific guidance on what must be done or written to succeed.

4. **Eliminate waste:** Habit four seeks to identify and eliminate *muda* (Taiichi Ohno's seven wastes, to which many add an eighth waste, which I call silence—dormant, stifled human potential), *mura* (unevenness) and *muri* (overburden). It means understanding value from the customer's perspective—knowing the results the customer wants to get from using the process output. It involves categorizing each step in a process as value adding, required nonvalue adding or waste, which is eliminated.

5. **Prevent mistakes:** Habit five, also known as mistake proofing (*poka yoke* in Japanese), seeks to prevent mistakes from occurring and detect them if they do. This habit involves creating simple, low-cost means to eliminate mixups, accidents, forgetting and other common causes of mistakes. Ways to prevent mistakes range from clever innovations to root cause interventions that come from a failure mode and effects analysis.

6. **Make work flow:** Habit six captures flow and pull as described by Womack and Jones.⁸ It means identifying and eliminating causes of delay (such as excessive hand-offs and

approvals), lengthy changeovers and consequent large batches. It also means leveling work, producing in response to customer pull, and visually managing flow of information and materials—for example, using *kanban* cards to connect physically separated parts of the process.

7. Solve problems: Habit seven describes the scientific and creative approach of solving problems through W. Edwards Deming's PDCA cycle and variations thereof. It means preventing problems rather than fighting fires. It means not blaming people, but solving root causes of problems. It means not passing on problems, but stopping to solve them right away,⁹ the action embodied in the andon cord. Solving problems may mean using an Ishikawa (fishbone) diagram, asking "Why?" five times, following Ryuji Fukuda's cause and effect diagram with the addition of cards process,¹⁰ or statistically analyzing data. It can mean making simple two-second improvements,¹¹ applying Toyota *kata*, using an A3 template or following DMAIC for more significant improvement projects. Ishikawa's seven tools fit in this habit as practical tools for detecting and solving problems. Properly understood, habits one to six also are ways to detect and solve problems.

Why these seven habits?

I have presented these seven habits of process improvement to hundreds of people in NGOs and developing countries. They understand them readily and find them to be useful guidance for what they must do to pursue process excellence.

Each habit is only two or three words, which makes them easy to remember and do. Regardless of educational level, with clear teaching and good coaching, everyone in an organization can apply these seven habits. These seven habits are the most appropriate because they also:

- ✦ Reflect the essential actions and directions of lean and Six Sigma.
- ✦ Are relevant for every organization—whether private, public or nonprofit, manufacturing or service.
- ✦ Are especially fruitful at low levels of process maturity.

"We are what we repeatedly do. Excellence, therefore, is not an act, but a habit."¹² This quote, generally attributed to Aristotle, states the need for habits in the pursuit of excellence. Like Stephen Covey's *The Seven Habits of Highly Effective People*,¹³ those who practice these seven habits of process improvement

will be highly effective in their pursuit of process excellence and provide their organizations with a significant strategic, competitive operational advantage.

Lean leadership

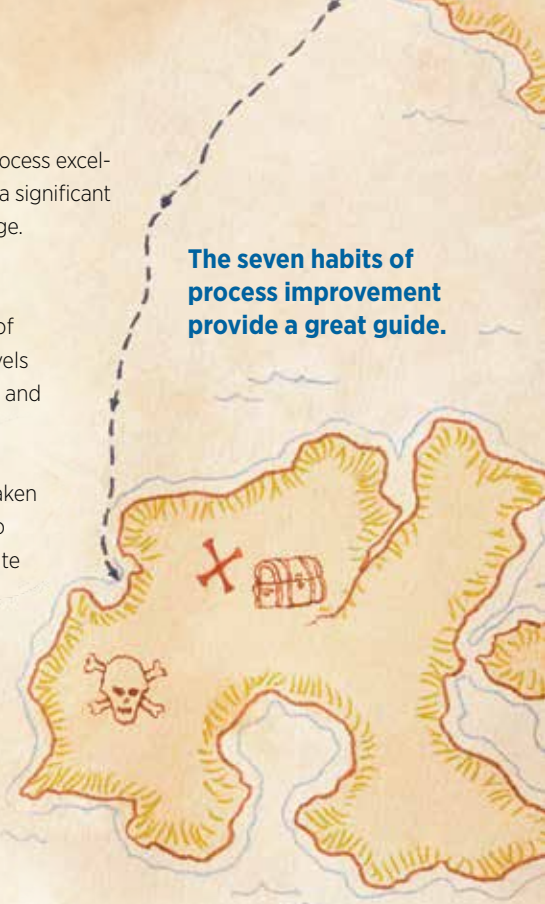
As an organization matures in its journey of pursuing process excellence, it will add levels of sophistication appropriate to capability and context. While these seven habits can and should be practiced by everyone, their full benefit only can be realized when undertaken in an organization with senior leaders who actively practice, teach, coach, and promote lean, and establish the systems and structures required to plant and grow these habits so that they flourish and bear fruit. Without sustained lean leadership, these habits will diminish and die.

Adopt and adapt

The seven habits of process improvement—organize the area, make work visual, standardize work, eliminate waste, prevent mistakes, make work flow and solve problems—provide a great guide for all employees, in production or service, in every department, organization and sector, as they pursue process excellence.

As we build the capacity of our employees and empower them to adopt and adapt these seven habits to their context, they will solve problems to improve processes, which will increase organizational performance and contribute to greater prosperity for all stakeholders. &

The seven habits of process improvement provide a great guide.



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ANDREW PARRIS is process excellence manager at Medair in

Ecublens, Switzerland. He holds a doctorate in mechanical engineering from the Massachusetts Institute of Technology in Cambridge. Parris is an ASQ member and a certified lean Six Sigma Master Black Belt.