



Albert Einstein famously said, "Everything should be made as simple as possible, but not simpler."



Yet we find a world rife with complexity; as businesses struggle with the quickening pace of new technologies and global markets, many have lost sight of the basics that underlie excellent operations.

In this white paper we present a simplified approach to improvement initiatives for the overworked executive intent on improving internal organizational processes in their quest for operational excellence.

INTRODUCTION

Total Quality Management. Six Sigma. Eight Omega. ISO 9000. CMMI. BPMM. SCOR. The number of process improvement frameworks out there is staggering. Where does one begin? What should we believe? Is there a right way and a wrong way? To be sure, we should make a distinction between a framework and a methodology. While a framework provides a foundation typically designed to promote a standard operational architecture, a competitive advantage may only be derived by applying an improvement methodology that aims to distinguish one company's processes from another.

Why improve in the first place? There's typically a contingent of folks who believe the old saw, "if it ain't broke, don't fix it." But there are competitors out there, each a moving target, each determined to take customers away from you. Insurance companies face a particularly daunting problem: there is only so much room for price reduction. Unless you're already a major player, growth strategies built entirely on price competition, especially in the personal lines markets, are largely opportunistic and ultimately difficult to sustain. Soft markets demand greater attention to the other side of the profit equation – cost cutting brought about by operational efficiencies is how the game must be played to ensure sustainable growth.



Take a look at the graphic above. The lower left quadrant is where you'll find a myriad of insurance companies vying for the same business. Here we often see emphasis on new product development to meet the demands of their target markets. While product innovation is a critically important function to drive premium growth, a focus on new product development alone offers an invitation to competitors to imitate and, once again you're caught competing



on price. To sustain their competitive edge, savvy companies embrace the thought leadership that drives process improvement efforts (lower right quadrant). In so doing, they develop excellent operations which provide a distinct competitive advantage (upper right quadrant).

However, over time, the processes that drive excellent operations become written about and spoken about as examples of great ways to do business, and, as such, become codified as part of a larger body of "best practices" to which everyone has access (upper left quadrant). As a result, the competitive advantage they once provided begins to erode as these "best practices" become relegated to the heap of industry standards – thus providing no advantage at all. To thwart this vicious cycle, it's incumbent upon good competitors to continuously evaluate and improve their operations in order to preserve the competitive advantage that truly excellent operations provide.

WHERE DO WE BEGIN?

So I'll assume that you accept the notion that there's a place for continuous improvement, that by itself, it's not simply a buzzword or a faddish management mandate and that, sure, I've got your attention. But where to begin? Organizations can be terribly complex; a typical insurance company manages dozens of operational processes, all important, and all designed to influence the efficiency and effectiveness with which work gets done. There may be hundreds of staff members impacted by a single operational change, and technology – often millions of dollars worth of investment – to consider as well.

To be sure, I'm not advocating an all-at-once assault on the way things are done in an organization; those initiatives often fall flat, take too long and cost far more than anyone anticipates. At the end of the day, the benefit derived is simply not worth the effort (just ask those involved in business process reengineering initiatives in the mid-90s). What I am advocating, however, is the proliferation of a culture of continuous improvement – a workforce committed to monitoring and improving the way they perform their work.

So we've set up the thesis: (a) there are many approaches to process improvement; (b) there is a viable argument for undertaking a program of continuous improvement; and (c) given the complexity of most organizations, most folks don't know where to start. Fair enough? Given this, there are four important "big picture" items that must be in place in advance of an effective business process improvement effort. They are:

- PROVIDING THE VISION. Widely communicating what the world will look like in the event process improvement efforts are successful is critical. Good leadership skills are needed to promote and reinforce the notion that the hard work of changing the way things get done will yield phenomenal results.
- PROVIDING THE SKILLS. Absent the simple means to set about improving their own work, staff members will wallow in their own incompetence as they struggle to make things better. This should not be so much an exercise in futility and frustration as one of the disciplined

What I am advocating is the proliferation of a culture of continuous improvement – a workforce committed to monitoring and improving the way they perform their work.



application of proven methods. Provide new skills and employees will be better equipped and far more enthusiastic about the program. This paper attempts to provide an overview of such skills.

- PROVIDING THE GOALS. Consistent with the vision, goals and milestones indicate that the program is working even before it has fully matured. Like the vision, goals, too, must be widely communicated and universally understood.
- PROVIDING THE REWARDS. When those goals and milestones are met, reward the team! Build compensation plans that reserve a portion of annual bonuses for meeting or exceeding the process goals established. Take a process improvement team out to dinner when a major milestone has been met. Reinforce the good work that's being done and you'll get the repeatable behavior that marks a culture of continuous improvement.

WHY WE DON'T DO IT

If there is such obvious value to be derived from disciplined improvement efforts, why aren't they more widespread? The challenge with many process improvement methodologies is that they portend to offer something uniquely valuable, something that, if embraced in their entirety, will provide a perfect response to the ills typical of poorly designed and executed processes: excessive handoffs, high rates of error, rework, delay, etc. However, we find management often stymied by choosing between methods, and getting staffs up to speed once one has been decided upon.

Is there a "correct" methodology? Which provides the best means to accomplish the goal of improving processes for sustainable competitive advantage? We all want to claim ownership over the best known way to approach something; we all want our names and companies associated with some proprietary method for achieving world-class status. But at the end of the day, there really is a simplified approach which is far easier to embrace; one that borrows from all but commits to none.

Understanding the principles of process improvement helps to remove the mystery and overwhelm that comes with attempting to approach many of the more comprehensive systems for improvement. A simple but often overlooked idea is based on Pareto's Law – that 80% of the problems we find in a process come from 20% of the potential problem causes. Why is this helpful to realize? Because finding and isolating that critical 20% – those "vital few" causes – and separating them from the other 80% – the "trivial many" – helps focus improvement efforts such that they're far more effective much earlier in the effort. Rather than attempting to fix everything at once, a committed, disciplined effort that first identifies the main causes of process problems and makes their remediation a priority means big gains and stellar results early on. And what does this accomplish? In addition to the obvious benefits brought about by better processes, the buy-in that's needed to continuously improve is instilled in both the workforce who inevitably must change they way they approach their

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work, and among senior management, without whose support few initiatives would get done.

GETTING TO WORK

To this point, we've (hopefully) convinced our readers that there's a solid argument for undertaking a process improvement initiative, and the foundations for doing so have been adequately conveyed. Next we define a simple but disciplined approach to such a program. Covering seven major steps, the following pages contain a simplified approach to process improvement that any company can embrace and implement immediately.

STEP 1: CREATE A PROCESS MASTER

The first step of any process improvement initiative is to take stock of as many organizational processes as possible. Why? Because everything is connected to everything else in the value chain – from concept to customer. Considering all organizational processes will force the team to think about the interdependencies between individuals, departments, vendors and customers, all of whom may influence the process. The tool we use to accomplish this is the process master (see following page) – a table that lists each process in a particular operational value chain. For our purposes, we'll focus on a subset of processes that comprise the regulatory compliance function of an insurer, which taken together represent the core of the compliance value chain:

Exemplary Insurance Company

Master Regulatory Compliance Process List

Business Process	Supplier	Input	Key Steps	Output	Customer	Measures
State Filings	Actuaries Product staff Bureaus	Rates Rules Forms	Prepare Filings Submit Gain Approval	Filing Pack- age	DOI's	Cycle time Errors Resubmissions
Regulatory Tracking	PCIAA Lexis/Nexis	Updated info	Access Source Review relevant Document Notify	Actionable info	Compliance	Cycle time Currency of info
Producer Li- censing	HR Legal	New producer Expiring license	 Gather info Schedule exam Verify results Note status 	New license Renewed license	HR Compliance	Cycle time
New Product De- velopment	Marketing	Marketing request	Review Draft rate plan Develop forms Update PAS	Approved product	Marketing Producers IT	Cycle time Time-to-market
Regulatory Reporting	Policy System	Policy data Claims data	Generate data Run edits Submit	Data file	ISO NCCI	Errors Cycle time Resubmissions

A process master for a regulatory compliance organization

- State filings
- Regulatory tracking
- Producer licensing
- New product development
- Regulatory reporting¹



Everything is connected to ev-

erything else in the value chain

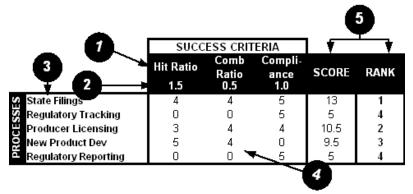
from concept to customer.

Once the processes have been identified, for each, further identify and note on the process master:

- The supplier of inputs to the process;
- Each input upon which the process depends;
- The major activities performed by the process participants that, when performed in sequence, lead to the output;
- The output(s) which result from performance of the activities;
- The customer who receives the output of the process; and
- The key *metrics* that indicate the effectiveness and efficiency of the process (cycle time, error rates, delay, etc.).

STEP 2: PRIORITIZE PROCESSES

We next determine which process(es), if improved, would have the greatest positive impact on the organization (i.e., would most likely contribute to the fulfillment of the organization's goals). To do this, we'll develop a process prioritization matrix that ranks processes accordingly. There are five steps involved in building the matrix, depicted on the following page:²



Process prioritization matrix

- List success criteria. Success criteria are those measures, ranging from most tangible (e.g., financial measures) to least tangible (e.g., strategic measures), that indicate the larger organization is on the right strategic path. In this case, the organization has determined that hit ratio, combined ratio and compliance are the three criteria that demonstrate it is performing according to its strategic plan.
- 2. Weight success criteria. Success criteria are then weighted relative to each other, using an index from 0.5 to 1.5, where 0.5 indicates the criterion has the least weight, and 1.5 indicates the criterion has the most weight. In our example, the organization has deemed new business to be a critical success factor. As such, hit ratio (1.5) is the most important strategic measure relative to compliance (1.0) and combined



Some processes have greater overall impact on an organization than others. Prioritizing processes assists greatly in

decision support.

ratio (0.5). They are all important, however; this is simply a relative weighting.

- 3. List processes. List the names of the processes from the process master on the left-hand side of the matrix.
- 4. Assign anchors. A number from 1 to 5 (each, an "anchor"), is inserted in each cell indicating the strength of correlation between each process and each success criterion.
- 5. Determine score and rank. The resulting scores, which are the products of the relative weights times the anchors summed across each process, provide a ranking, based on the success criteria, that indicate which processes should be given improvement priority. In our example, it has been determined that the state filings process (with a score of 13) most contributes to the fulfillment of the organization's strategic objectives.

It should be noted that prioritizing processes in this manner is purely for decision support. Obvious needs should be addressed first and must trump the outcome of this type of prioritization analysis.

Assembling process improvement teams is critical in gaining the input and support needed for any process improvement initiative.

STEP 3: ASSEMBLE A PROCESS IMPROVEMENT TEAM

Since the single greatest impediment to change is a lack of buy-in on the part of those who we hope will embrace it, it's important to involve representatives from every part of the organization that might influence or be influenced in any way by the modified (i.e., improved) process. As such, input from the following individuals should be solicited throughout any process improvement initiative:

- The *executive sponsor* is typically a member of senior management who endorses the process improvement initiative.
- The process supplier is the source of input to the process being evaluated.
- The process owner is the person responsible for the quantity, quality and timeliness of the ultimate output from the process.
- Process participants are those whose daily work impacts the process.
 At least one representative from each major process activity should participate on the process team.
- The *process consumer* is the recipient of the process output.

Without assembling a team comprised of each of these members – even if some only have peripheral involvement – you are almost certain to face resistance in the improvement effort.

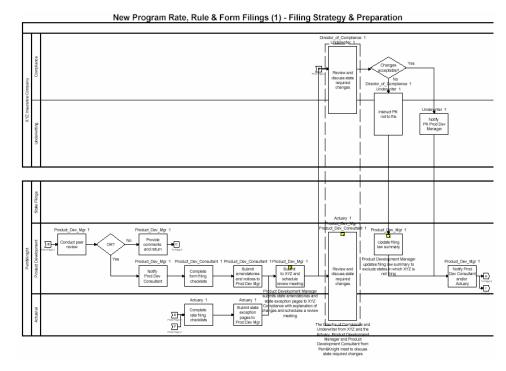
STEP 4: CREATE PROCESS MODELS

There are many business reasons for which an insurance company should



model its processes. A well-developed process model renders the departments, resources, activities, third parties, handoffs and decision points graphically; a process deconstructed in this manner expedites analysis and problem identification. They are also increasingly important for compliance purposes, including Sarbanes-Oxley, ISO 9001 and the forthcoming adoption of the NA-IC's Model Audit Rule by many states.

A best practice for modeling a process involves a "swimlane" diagram (see figure on page 36), where each lane represents a department within an organization. Lanes that "float" outside of the main body of the map (i.e., the three lanes at the bottom of the diagram) represent third parties who provide services in the conduct of the process. Rendering the process in this manner also gives a sense of timing with respect to the flow of the process, as activities flow downstream to the right as time passes and the process is completed.



A detailed process model (segment)

I like to keep these diagrams simple, and use only a few mapping symbols: a rectangle to represent an activity, a diamond to represent a decision point and a rounded rectangle to represent an endpoint. Note that activities in the figure can span multiple departments or organizations, indicating that responsibility for completing the activity is shared.

In addition, the functional title of the resource(s) charged with performing each activity is included above each activity rectangle, and, where needed for clarification, brief narratives are provided below both activities and decision points to describe the step in greater detail.

In reviewing the process model, our intention is to identify as many non-val-

Rendering the process in this manner gives a sense of timing with respect to the flow of the process, as activities flow downstream to the right as time passes and the process is

completed.

Similar non-value-adding activities will be discovered during most business process improvement initiatives.

ue-adding (NVA) activities – those activities that add nothing of value to the ultimate consumer of the process output – as possible. The list of "usual suspects" includes:

- Excessive handoffs. Workflow that navigates between multiple staff members in multiple departments requiring multiple approvals is a major impediment to efficiency. Review the process model to see whether some of those handoffs can be eliminated. A concept known as rolled throughput yield (RTY) exemplifies this best: if there are two activities in a certain process, and each activity is performed with 98% effectiveness, the output, or RTY is 98% X 98% = 96%. However, if the same process involves five activities each performed with same level of effectiveness (98%), the RTY is much lower (98% X 98% X 98% X 98% X 98% = 90.4%).
- Bottlenecks. This where someone or something in the process can't keep up with the rate of input. Bottlenecks represent the best opportunity for improvement, as they're easy to identify; the slowest activity and resources with highest utilization rates often indicate bottlenecks.
- Rework. When something has to be sent back into the process because of defect or error, it contributes to bottlenecking and decreases RTY. Look for "hidden" incidences of rework at activity steps (does the activity get the job done or is it redone somewhere down the line?) and decision nodes (once the decision is made, is it made again?). Bear in mind that the further downstream in a process rework occurs, the more costly it is, as each preceding activity step has a cost associated with it, and the more activities that have to be repeated, the more the overall cost of the process increases.
- Waiting/idle time. Often a by-product of bottlenecks and rework, waiting and idle time are akin to throwing money out the window. Waiting saps the process of productive capacity and even contributes to higher rates of error, as process participants who start and stop multiple times during the day lose their focus and the consequent ability to get into flow.
- *Transport.* If process participants are physically moving documents for signature or shipping off files to another office for completion or approval, the process is undoubtedly suffering from an inefficiency due to transport. In addition to the direct cost of transport, it, too contributes to idle time and bottlenecks. Pay attention to where the process requires the physical movement of work product for completion, and eliminate as much as possible.
- Untapped creativity. The people charged with working daily within the process being examined are a terrific source of ideas. What are you doing to solicit their input? Not only do the front-line staff often have the best ideas, but the implementation of their ideas gives them ownership of the process and improves morale. Be sure to actively solicit the ideas and opinions of staff.



Root cause analysis is the first major diagnostic part of any improvement effort. The next stage of the improvement initiative, root cause analysis, seeks to identify the underlying causes of these and other process problems.

STEP 5: PERFORM ROOT CAUSE ANALYSIS

While the first four steps represent discovery and team identification, this step represents the first major diagnostic part of the improvement effort. The root cause analysis technique that is most easily taught involves using several tools from the Six Sigma toolkit, including brainstorming, cause-and-effect diagramming, affinity diagramming, discrete data collection and Pareto analysis. As such, this stage of our process improvement initiative involves five sub-stages, described in turn below.

- Brainstorm possible causes of the problem being investigated. Brainstorming sessions should involve the entire process team and others who may have an interest in the outcome of the effort. For example, if the team includes a member who represents a particular activity performed by, say, five staff, all five staff should be invited as well. Brainstorming should be somewhat of a free-for-all, with few rules other than these:
 - Name a facilitator who calls on participants and jots down ideas on a whiteboard that all can see:
 - Anything goes no judgments should be made and all ideas, no matter how far-fetched, are valid; and
 - Limit the session to no more than 45 minutes.

At the start of the session, the facilitator provides the ground rules and addresses the group with a problem statement:

"We have a problem. It takes far too long to complete a new rate or form filing and submit it to a DOI. As a result, new product introductions have been delayed. We need to determine why it's taking so long to get these filings out the door. Any ideas?"

Meeting participants then raise their hands to offer ideas, which the facilitator writes down in rapid succession. The goal is to gather as many ideas as possible in the 45 minute session. The facilitator uses the list of generic issues identified during the process modeling step to prompt the group. All possible issues should be considered in their "organizational context" – how they are impacted by workflow, systems, key performance metrics, governance (policies and regulations), personnel (reporting structure, hiring, training and compensation practices) and the physical environment in which the work is performed. The group should continue to drill down until it can go no further, having reached a possible root cause.

 Assign ideas to affinity groups. A good brainstorming session will yield 50, 100 or more ideas in 45 minutes, which becomes somewhat unwieldy. To make the process more manageable, the group next endeav-



ors to place the ideas into broader categories, called affinity groups. While there is no "correct" set of affinity groups, the major areas impacting most processes are those described above as comprising the "organizational context" in which the process is conducted. As such, our affinity groups are labeled workflow, systems, metrics, governance, personnel and environment.

An affinity chart of some of the possible root causes typically discovered during brainstorming sessions, as well as a chart showing the possible root causes from our example, are depicted on the following page.

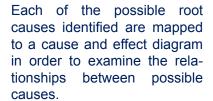
Workflow	Systems	Metrics	Governance	Personnel	Environment
Suppliers delayed	Training insufficient	Not specific	Onerous policies	Inadequate org structure	Rural HQ location
Inputs faulty	Documentation lacking	Not measurable	Onerous regulations	Poor hiring practices	Wide team distribution
Process steps poorly defined	Poor integration	Not actionable		Inadequate training	Excessive transport
Outputs inadequate	Poor usability	Not timely		Misaligned compensation	
Customer	Difficult to access	Not relevant			

Generic root causes by affinity group

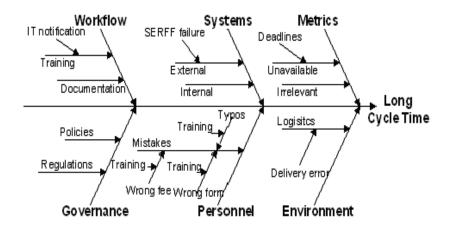
Workflow	Systems	Metrics	Governance	Personnel	Environment
Inadequate training	Internal	Metrics unavailable	Policies	Mistakes	Logistics
Inadequate documentation	External	Metrics irrelevant	Regulations	Wrong form used	Delivery error
Failure to notify IT	SERFF failure	Missed deadline		Wrong fee paid	Excessive transport
				Incomplete filing	

Root causes from our example categorized by affinity group

Map affinity groups to a cause and effect diagram. Each of the possible root causes identified are next mapped to a cause and effect diagram (also called an Ishikawa diagram, after its creator, or a fishbone diagram, for obvious reasons) in order to examine the relationships between possible causes. At the far right we indicate the process problem we wish to address, and on each of the major "fishbones" we indicate the major affinity categories. We then place possible causes on branches of the major fishbones, and drill down as necessary until we get to the possible root cause. In our example, you can see that personnel (staff) involved in the process run the risk of using the wrong form, paying the wrong fee or making typographical errors, which the group attributes to poor training. We've illustrated just a few of the possible root causes for each of these process errors.







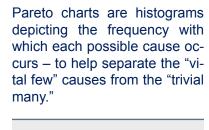
A cause and effect (Ishikawa)diagram

Collect data. At this point, we've already begun to discover many possible causes of process delays that result in increased cycle time. However, it's important to make fact-based decisions about improvement efforts and further refine our analysis by recording each incidence of each possible root cause to measure the frequency with which each occurs. Such measurement is per-formed using another simple tool, the checksheet (pictured below). The checksheet simply provides a list of possible causes (of increased cycle time, in our example) in a grid in which process participants record the number of times a particular type of defect is discovered.

Exemplary Insuance	e Co					
State Filings Unit	Period	1/07/0	8 - 1/11/08	Staff	Rob Berg	
Defect	Mon	Tue	Wed	Thu	Fri	Total
Typographical Error	///	//	////	////	/////	19
Wrong Form	/	/		/	////	7
Failure to Notify Client	//	/		/		4
SERFF Failure		/	/			2
Wrong Form	/	//				3
Delivery Problem				/		1
Wrong Fee Paid	///	//	////	///	/////	17
Filing Deadline Missed				//		2
Incomplete Filing			/			1
Other					//	2
Total	10	9	10	12	17	58

A checksheet used for the process study

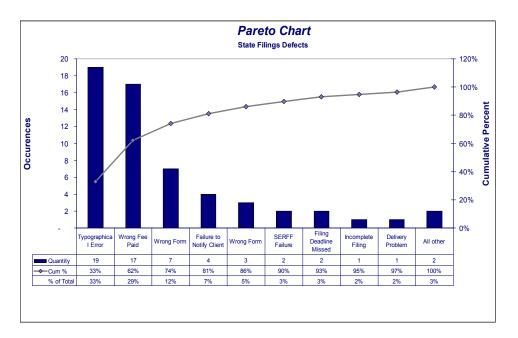
Perform a Pareto analysis. After a reasonable study period (which, depending upon the process, will typically last anywhere from one to twelve weeks), the results are translated to a Pareto chart (see following page) – a histogram depicting the frequency with which each possible cause occurs – to help separate the "vital few" causes from the "trivial many." Our objective here is to eliminate the sense of overwhelm that accompanies process improvement approaches that fail to





zone in on the most pressing problem causes, and instead attempt to fix everything at once.

In our example, of the nine causes of increased cycle time identified by the team, three stand out as most problematic – typographical errors, wrong fee paid and wrong form used account for 74% of the causes of the undesirably long cycle time required to submit a complete filing to a department of insurance. The job of the team is to determine how best to address these issues.



A Pareto Chart

STEP 6: ADDRESS TOP 2 - 3 CAUSES

While there are far more comprehensive approaches to process improvement using advanced techniques like statistical process control or experimental design, our simple analysis, supported by real data and not just guesswork, has revealed some important information and we're in a strong position to develop our first hypothesis. In conducting root cause analysis, the process team determined that each of the three potential causes we've chosen to address are most likely caused by poor training. As such, we hypothesize that by improving our training program we would realize a profoundly positive impact on our process – to the tune of a 74% decrease in errors and a corresponding decrease in cycle time based on our data. At this point, the team should charter a project aimed at creating or revising training materials and delivering the improved training program.

STEP 7: RE-MEASURE

Once the selected improvement project has been completed and the revised practices have been implemented, it's time once again to take a tally of the possible root causes identified in the earlier stages of the improvement initia-

Simple analysis, supported by real data and not just guess-work, has revealed some important information and we're in a strong position to develop our first hypothesis.



Only through successive iterations of the improvement program can you sustain operational excellence.

tive. Each subsequent measurement serves to validate the effectiveness of the improvement program, which reinforces team and management buy-in and sets up the organization for the next set of initiatives.

SUMMARY

If you've made it this far, well, you've got yourself a bona fide process improvement framework – certainly enough to give you a feel for a simple – and perhaps best – way to approach troublesome process problems. The process doesn't end here, however; only through successive iterations of the improvement program can you sustain operational excellence, and so it becomes important to ingrain the tools and methods presented here among the staff, who are daily charged with performing the good work of the organization. The seven major steps are summarized on the following page.

SEVEN STEPS TO OPERATIONAL EXCELLENCE



CREATE A PROCESS MASTER. List each organizational process, and the suppliers, inputs, major process activities, outputs, customers and key metrics for each.



PRIORITIZE PROCESSES. Using the organization's strategic success criteria as weighting factors, determine how each process impacts their fulfillment and rank accordingly.



ASSEMBLE THE TEAM. Include an executive sponsor, the process supplier, the process owner, process participants and the process customer.



CREATE PROCESS MODELS. Detail the flow of activities in the process and identify departments, resources, decision points and narratives where indicated for clarification.



PERFORM ROOT CAUSE ANALYSIS. Using brainstorming, affinity diagramming, cause-and-effect diagrams, checksheets and Pareto analysis, identify the possible root causes of the problem.



ADDRESS TOP CAUSES. Have the team charter projects, as appropriate, to address the causes identified as most problematic during Pareto analysis.



RE-MEASURE. To validate the effectiveness of the solutions implemented as a result of the successful completion of the chartered projects, re-measure using checksheets.

CONCLUSION

The adoption of a disciplined approach to solving process problems will provide substantial rewards to organizations and separate those that do so from their competitors. A workforce genuinely focused on continuous improvement – on making things better – is enviable. The dividends from improved morale



Business process improvement: Seven steps to operational excellence "Perpetual optimism is a force multiplier." - Colin Powell

alone rival the direct financial benefits, by demonstrating to customers and the world at large a dedication to excellence and a commitment to quality. A framework that facilitates the continuous establishment and achievement of goals that are appropriately rewarded breeds enthusiasm – and the optimism infused in the visions that motivate great competitors.

NOTES

- ¹ For a fairly comprehensive list of generic organizational processes, refer to the *Process* Classification Framework, available as a free download from the American Productivity and Quality Council (www.apqc.org).
- ² Note that any process being improved must be considered with respect to all other processes in the same value chain. A common mistake is to focus on one area at a time without regard for other areas, and the organization as a whole suffers. Said another way, a set of local optima do not yield a global optimum.



ABOUT THE AUTHOR

Rob Berg is a Principal and Director of Perr&Knight's Insurance Technology Group (ITG). In addition to managing Perr&Knight's internal development initiatives, Rob and the ITG team work with insurers to provide solution design, requirements gathering, vendor selection, business case development, project planning, risk assessment, business process design, IT governance, data management and staff augmentation services for their technology initiatives.

Over a career spanning more than twenty years, Rob has led or advised executive teams in the financial services, consumer retail, software and telecommunications industries. His expertise includes strategic planning, organizational design, project management and process improvement methodologies, including workflow design, analysis and simulation. Prior to joining Perr&Knight, Rob was Chief Operating Officer of SmartReply, a leading retail marketing firm that enjoyed three consecutive years of triple-digit growth during his tenure. Prior to SmartReply, Rob was Chief Executive Officer of Ecor Solutions, a New Yorkbased IT consulting firm that counted Deutsche Bank, W Hotels and American Legend among its clientele.

In addition to holding a Bachelor of Arts in Economics from Stony Brook University and completing graduate work in technology management, decision theory and organizational behavior, Rob holds credentials from the American Society for Quality (Six Sigma Black Belt) and Stanford University (Advanced Project Management). He is a member of ISACA and a Senior Member of the American Society for Quality, a frequent speaker at industry trade events, and has been quoted or published in multiple industry trades including Best's Review, IASA Interpreter, InsuranceNewsNet and the Journal of Insurance Operations, of which he is Editor-in-Chief.

ABOUT PERR&KNIGHT

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