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"WE MUST OVER-COMMIT – WE MUST WIN BUSINESS"

By Neil Potter and Mary Sakry

EDITOR'S CORNER

Using Six Sigma for Improvement and Comparison to CMMI

By Neil Potter

Six Sigma is a systematic approach and toolbox for improving the results of any organization. It consists of two parts: First, a life cycle for making improvements called DMAIC (1. Define the problem, 2. Measure current performance, 3. Analyze gaps between current performance and target performance, 4. Implement the improvements and 5. Control the process). Second, statistical analysis techniques to analyze data collected in the measure phase (e.g., run charts, stratification, root cause analysis and control limits).

The amount of value an organization can derive from Six Sigma is based on how mature its current process improvement program is and the quality of any performance data that will be analyzed.

Six Sigma can be overwhelming for an organization just starting process improvement, or one with little available stable performance data. Defining the problem in step 1 is fairly straightforward, but measuring process performance and analyzing the results can be meaningless unless you have mature measures and historical data that are stable. In this situation, consider using an improvement life cycle that is more appropriate for your capability. For example, PDCA (Plan improvement, Do it, Check the results, re-Act) is a subset of the DMAIC process and, although less advanced than DMAIC, encourages improvements to take place until stable and precise data are available.

If you are using the SEI CMMI, Six Sigma is an appropriate solution to help implement Levels 4 and 5. Levels 2 and 3 provide a stable process foundation and measurement system that can be analyzed at Level 4 and refined at Level 5.

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Introduction

Project planning and establishing achievable commitments continue to challenge software projects. Approximately 60% of software professionals that we meet complain about being over-committed, under-resourced and unable to negotiate deadlines, scope and resources. The remaining 40% have little difficulty establishing achievable commitments with their management team and customer. During our 16 years of observation we see two distinct camps. Camp One believes "It's not realistic to make realistic commitments." Camp Two believes "It's not realistic to make unrealistic commitments." This article describes each camp and how one can change camps if desired.

Intuitive and counter-intuitive thinking – an analogy

Before we describe the thought process behind making commitments, read the following short profiles of two wine sellers and determine which one you would buy from and why.

Jim: Jim is a wine salesman in the Le Grape Restaurant, a fancy establishment in a large city. Jim enjoys selling wine and uses the following sales process:

1. Mention to each customer that the finest wines in the restaurant are the two most expensive wines on the wine list.
2. Always tell each customer that the wines in the middle of the wine list had a bad year last year and should not be considered.

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3. Explain that the least expensive wines are really not worthy of the patron's time, but are included to make the list complete.

Jane: Jane is a wine sales person at the Panache Restaurant, a fancy establishment in a large city. Jane's sales process is:

1. Mention to each customer that the first two wines on the list (the most expensive) are excellent, but the third and fourth listed taste equally as good and are considerably less expensive than the first two.
2. Tell each customer that the wines in the middle of the list are very good, except for number 12, which actually had a bad year last year (the truth).
3. Explain that the least expensive wines at the bottom of the list are grocery-store quality, except for the one at the very bottom that tastes "cheap."
4. Offer the customer a sample of any of the wines before purchase.
5. Give each customer the one-page review by *Wine Critique* magazine.

With which wine salesperson would you want to do business? We have yet to meet someone that prefers Jim over Jane. Why? Because Jane is focused on the customer's agenda rather than hers, and when she puts herself in their shoes, she knows that customers want to be provided with credible information, educated about possibilities, and undersold rather than oversold. Initial intuition might tell us that sales are maximized by Jim's approach, i.e., sell more expensive wines. Counter-intuition would lead to Jane's approach, since that is the way individuals want to be treated. This treatment, in turn, creates repeat business.

Making commitments

Two camps can be observed regarding planning and commitments. Camp One believes that the only way to succeed as a development organization is to over-commit to the customer. Phrases such as, "We agree to crazy schedules because we are customer-focused;" "We must promise more than we can do so that we can win sales;" "It's not realistic to make realistic commitments;" "We tell management what they want to hear;" and "The business climate makes us over-commit" are used to explain their position. Customer satisfaction is cited as the primary motive for these actions.

Camp One: "We must over-commit to succeed"

Camp One's behavior is the result of having one or more of the following underlying beliefs (intuitive thoughts):

- Managers believe that their job is to commit the organization to "please the customer."
- Project managers and engineers think they must take scope and deadline requests from management almost verbatim and run as fast as they can to "please the manager."
- Project managers and engineers don't believe that they need to sell their proposal to management with Jane's elegance (e.g., provide recommendations on scope, risk and resource options from which to choose). It is sold as, "Take this option or give us more resources."
- The players in Camp One believe that they will eventually be able to recover the project and succeed. Recovery is accomplished by waiting for some other dependency to slip, thereby providing the whole project with more time, or by providing management and the customer no other alternative than to delay delivery.

The current economic climate is also used to support Camp One's premise. If the economy is booming, it is declared that there is no time for practices such as planning and risk management. Intuition says, "We are successful without those practices." If the economy is in a slump, it is declared that one must underbid and over-promise to "get in the door with the customer," or "tell the customers what they want to hear."

Camp One can continue for years before its behavior and results change, either because customers become used to the problems, or because people come through at the end of the project with heroic efforts. Usually, neither the organization or customers are happy.

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Camp Two: "We cannot over-commit and succeed"

The members of Camp Two believe that if they over-commit, they risk building a reputation of being late on deliveries and a provider of poor quality solutions, resulting in lost sales. Customer satisfaction is cited as the motive for the focus on planning and making achievable (but not necessarily easy) commitments.

There are beliefs that distinguish Camp One from Camp Two. These are typically not the first choice of Camp One because they appear to be exactly the opposite of what should be done to "win business." (And this is the distinction between the two camps; Camp Two does not think like Camp One).

Camp Two techniques for managing commitments have been used since the beginning of time, but unless they are tried, it is easy for them to be labeled as luxurious and theoretical. When experienced, and their implementation refined, they can be believed. (Note, if you are already in Camp Two, these practices will appear obvious and intuitive!)

Camp Two believes that it must routinely:

- Clarify when a commitment is required, rather than assume that a commitment is required immediately.
- Request time to plan so that proposals and commitments can be sound, or explain that quick commitments are just that, "quick commitments."
- Commit to the pieces of the project that are known and that can be estimated. It establishes subsequent deadlines when the remaining pieces can be defined and committed to.
- Make the first prediction a range of effort and deadline estimates and establish a date for the final commitment.
- Assess risk and team resource availability prior to making commitments.
- Explain the risks of the current project scope and deadline and recommend mitigation actions.
- Provide options for various schedule, scope, quality and cost trade-offs. (Each option is achievable with associated risks.)
- Make plans and estimates comprehensive so that they can be believed and sold. Plans and estimates show customers and managers how their needs are being addressed, rather than presenting one option that is believed to be what the recipient wants to hear.
- Examine the critical path of the schedule (longest calendar path) and resource assignments on that path.
- Determine sections of the project that should be contracted out to save time or money.

Changing

It is almost impossible to convince Camp One that its own intuitive thinking is problematic (at least, that is our experience). Suggestions that the customer's needs should be better understood, or that estimates should be created and risks assessed before commitments are made, are seen as luxurious or theoretical approaches. Camp One is sure that "This is the way we must work," and perceives that Camp Two has an easy life in an easy industry.

Camp One does change when it sinks under the weight of over-commitment and there are no longer any alternatives other than to plan and make sound commitments that customers can trust. Another situation that appears to cause the tide to change is the introduction of a new senior manager that insists on raising the bar – someone typically from Camp Two.

Your next step

If you are reading the list concluding that the practices of Camp Two are luxurious and theoretical, think carefully about the needs of your customer and manager. Do they really want to hear *any* story from you, or a credible one they can trust? If you still believe that the practices are luxurious and theoretical, show your manager the list and ask if he or she could support at least one practice. Whatever the answer, pick one and try it on a small scale and see what happens. Fix your implementation until it works and then try another.

Conclusion

At face value, intuition can appear to be the most appropriate reaction when dealing with managers, customers and commitments. Intuition can lead to over-commitment, project chaos and unhappy customers. Counter-intuition (doing the exact opposite) can initially appear to be the incorrect set of actions to "please the customer." However, in hindsight, counter-intuitive actions often provide the only way to satisfy the customer.

Practical Solutions for your Software Development Challenges

- ❑ **Understand customer needs. Clarify product requirements early.**
  In this workshop, IN SEARCH OF EXCELLENT REQUIREMENTS, software engineers, managers, requirements analysts and user representatives learn how to gather, document, analyze and manage customer requirements for software applications.
- ❑ **Decrease product development time-to-market. Reduce costs.**
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- ❑ **Manage projects effectively. Meet project deadlines and reduce risks.**
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  This one-day SOFTWARE ESTIMATION workshop (a subset of Software Project Planning and Management) helps teams develop more accurate estimates.
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  This two-day INSPECTION (PEER REVIEWS) workshop teaches teams to efficiently find defects in code and documentation. (Includes moderator skills.)
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  The following workshops are available:
  - ❑ SEI CMM: LEVEL 2 (one day), SEI LEVEL 3 (two days), SEI LEVEL 4 (one day)
  - ❑ SEI CMMI: Overview (half day), LEVEL 2 (one day), LEVEL 3 (two days)
  - ❑ SEI INTRODUCTION TO CMMI (three days)
- ❑ **Identify critical changes to improve organizational results. Benchmark against the CMM/CMMI.**
  A SOFTWARE PROCESS APPRAISAL examines your organization's software practices and generates a focused list of the critical areas for improvement. Our SEI-authorized Lead Appraisers conduct customized CMM/CMMI-based appraisals.
- ❑ **Goal/problem-based improvement.**
  This two-day MAKING PROCESS IMPROVEMENT WORK workshop provides a systematic approach for organizations to improve their development capability. It includes: getting management support, focusing the organization on the critical issues, planning the improvement and effecting change.
- ❑ **Manage your subcontractors.**
  In this one and one-half-day workshop, SOFTWARE SUBCONTRACT MANAGEMENT, software engineers, managers and subcontract managers learn how to define a software product to be outsourced, write a subcontract management plan, select appropriate vendors and manage the project to completion.
- ❑ **Tailored assistance. Dedicated phone-based assistance.**
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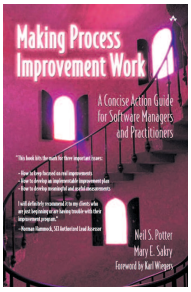

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