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# 5 Minutes to Process Improvement Success

Leading experts share valuable take-away strategies for achieving process improvement results

**Prepared by:**

Bill Fox

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# Notices

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## **Published by Bill Fox**

42986 Park Creek Drive

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(540) 454-6986

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# Introduction

What makes the difference between an organization that is truly successful with process improvement and an organization that tries one flavor du jour after another with little results to show? Almost always, it's visionary leadership and the alignment of strategy and tactics.

The good news is that no one organization or individual has cornered the market on process improvement. That's exactly why we created this series of "5-Minute Process Improvement Success" interviews. It's specifically designed to give you a collection of short, but brilliant process improvement strategies and tactics you can reference any time you need inspiration for fresh, new ways to improve your business.

In order to do this, we've enlisted a group of experts to share their most effective process improvement ideas with you. We asked each of these professionals just one question:

**"What is your best process improvement strategy or tactic that has worked really well for you or your clients?"**

Each expert was given 5 minutes to lay out their best idea along with practical steps for applying it. The intent is to give you dense, easily digestible nuggets of process improvement insight you can apply in your situation.

So get ready for some of the most unique ideas you've ever encountered on process improvement. You're about to discover a collection of powerful strategies and tactics that will become a mainstay of your process improvement library.

Bill Fox

Editor



**Bill Fox** - [bfox@5minutespisuccess.com](mailto:bfox@5minutespisuccess.com)

Bill helps organizations manage challenging projects while acting as a catalyst to introduce process improvements that improve quality and performance.

Progressive organizations that are striving to gain extraordinary value and results through process improvement value his ability to focus and manage their process improvement on the right priorities in a way that builds momentum and enthusiasm throughout the organization. Bill presented [Managing Process Improvement](#) at the Software Engineering Process Group (SEPG) in 2010.

Bill has over 25 years of experience in software delivery and process improvement as a project manager, analyst, process engineer and developer. Bill holds a BS degree from Penn State University and has ScrumMaster, PMP and Rational Unified Process certifications.

## Karen Base

### Establishing Trust and Credibility to Create the Foundation for Success

**Bill:** Today I'm talking with Karen Base. Karen is president of KLB Solutions, LLC, a company that helps organizations get leaner, faster and better through process improvement.

Karen has a very successful track record helping organizations achieve rapid change and improvement through her unique approach to process improvement. From 2008 to 2009, I had the opportunity to work with Karen on a major process improvement effort and witnessed firsthand her approach and results.

With that background, I'm pleased to have the opportunity to interview Karen today. So Karen, I have one question for you today. What is the single best strategy that's been responsible for your remarkable track record in process improvement?

**Karen:** I think that as a process improvement expert, yes, it is about process improvement, but a lot of it is change management and establishing trust with the organization. You need to be sensitive and respectful of the status quo. That sounds really strange, because process improvement is about changing the status quo, but until you establish that trust and prove to people that you understand the status quo, that you are listening, you really can't establish any platform to speak from. You can say, "Yeah, I have a perfect record of delivery," but nobody cares.

**Bill:** They're not going to hear what you say and believe you.

**Karen:** They're not going to get behind you. I used this tactic successfully with a variety of organizations, and I'm hearing that right now with my current client. People have told me directly, "We think the difference between you and other process experts is that you listen. You're listening to us and you're working with us to try to move to the next stage, instead of assuming you know everything and just bulldozing over us."

So I think just the initial establishment of trust with all the key players—and not just top-level management is critical. One thing that I think is effective is you need to find the right people to endorse the cause, and you need to get a sampling of the top and the bottom and somewhere in between within the organization.

**Bill:** How do you go about doing that? What is it you do that allows you to achieve the desired results?

**Karen:** I think that as you're infused in an environment and you're observing, a lot of it is just really observing the culture and constraints. You can pretty quickly—and this is where it's more of an art than a science—tell who is the "loud voice." What I mean by that is not the talkative

people that are just rambling for the sake of talking, but people that, when they speak, you can sense the whole room almost revolving around them.

Although it is important to have a strong top-down message saying, “You shall do this”, the message is often taken grudgingly and met with resistance. Usually the workers don’t know these types of people well enough to say, “I would do anything for that guy.” You need to find somebody at the top ranks, perhaps VP level or above, that people are saying that kind of stuff about. “I would do anything for him or her.”

And then you’ve got to find support in the line managers because usually the project and discipline managers are the people who are closest to the troops. These are your project managers, scrum masters, or whoever it is that’s doing the day-to-day caring and feeding of the troops. You’ve got to find people who are popular in that range, that level of staff, and get them on board with you as the change facilitator. If you get the line managers on board— or at least some of them on board, I think that that is another key piece.

Then you really have to reach out to the troops. It’s a grassroots movement at the end of the day because execs could get cycled in and out, but the troops have more staying power— so you have to get a sampling of the organization from top to middle to lowest level practitioner. And then if you get a good sampling of the loud voices of each of those layers, I think you have the beginning of some level of adoption.

The next thing is recruiting the proper people into the process improvement group. If I didn’t have staff whom were already widely respected by others on my team, it would’ve been a nonstarter. If you can get a reputable practitioner on your staff, someone who earns an “Exceeds” rating every year, the news spreads. Everyone starts wondering, “Why does he want to be in that group?” And they go to lunch with him to find out.

But within your group, you still have to—this is where the skill comes into play—know your process improvement techniques! You have to give people something to talk about so that they spread the news of innovative methods and how this is different than previous effort. If done right, the ideas are intriguing, and you start getting that gravitational pull. So you need to be organized, you need to know your goals, and you need to be able to articulate what the vision is and how everyone’s going to march towards it.

You need to have in your toolkit processes, tools and methodologies, and you need to know that stuff cold. This scientific stuff, to me, is the easier part. For example, you should be able to whip out process assets like, a process improvement PMP, and a measurement strategy and so on. When you have your act together in that sense, then you prove to the top performing people that are in your organization or anyone out there that you’re interacting with, that you know your stuff, and it’s not so bad, because this time it’s organized and it’s different than the way it was.

In the end, the process improvement mechanics are relatively easy. It's understanding the pulse of the organization and getting your storefront to look good, that requires a keen eye and some creativity to get right.

**Bill:** Do you put a plan together that calls out all these components and you customize it for each client? How do you size that all up and build a picture and do it?

**Karen:** I actually honestly do not have a technique that I've documented and said, "This is the approach," because each organization has its unique challenges. But there is an adoption pattern here. You should be able to apply this pattern, but you still need to use a lot of personal judgment too. Personalities come into play. You need to understand and assess the organization... is it a rough around the edges type of organization, or is it more of a genteel type of culture or if it's somewhere in between, and be able to fit in and apply this pattern appropriately.

This adoption pattern is to get a representation from the primary levels of the organization, and leverage the people to be part of the movement towards change. And don't be afraid to proactively establish a personal rapport. In fact, go out to lunch with people and do coffee and set aside time to do that. So that's the pattern, but whether or not you succeed in applying that pattern has to do with how well you understand the corporate culture. Does that make sense?

**Bill:** Yes, very much so Karen. This was a very interesting perspective and I'd venture to say often overlooked. Thank you for talking with me today.



**Karen Base** - [kbase@klbsolutions.com](mailto:kbase@klbsolutions.com)

Karen Base is an industry expert on leveraging trust and credibility to build a rock-solid foundation for optimizing systems delivery performance in IT organizations. She is the creator of the KLB Success Assurance™ infusion program that enforces her proven unique approach of client focus, problem solving, listening skills, and quality delivery practices. She's a recognized [thought leader](#) and was instrumental in bringing forward this innovative and collaborative 5 Minutes to Process Improvement Success white paper.

She has implemented large process improvement efforts for commercial and not-for-profit organizations, conducting CMMI based appraisals targeting various maturity and capability levels. She has developed and implemented strategies and frameworks for several enterprises, using unique organizational change management techniques and has been recognized for leading exemplary implementations that achieved broad support across the organization and results ahead of schedule.

Karen is the founder and owner of [KLB Solutions, L.L.C.](#), a management and technology consulting company offering process improvement and systems quality related services. She is a Certified Scrum Master, PMP, and ITIL certified professional, with 20 years of systems and software experience.

# Kevin Schaaff

## Keys to a Successful Quality Program – A Global Perspective

**Bill:** Today I'm talking with Kevin Schaaff. Kevin is currently a project manager with Booz Allen Hamilton and formerly a senior member of the technical staff at the SEI with deep experience working with organizations around the globe implementing process improvement.

From 2008 to 2009, I had the opportunity to work with Kevin on a major process improvement effort and his experienced and insightful guidance was pivotal in helping to bring the project to an exemplary finish.

I'm pleased to have the opportunity to interview Kevin today. So Kevin, I have one question for you today. What is your best process improvement strategy or tactic that has worked really well for you or your clients?

**Kevin:** You know it's interesting because of my global consulting experience, I've noticed that there are certain ideas and themes that translate regardless of culture that keep coming up over and over again. Independent of the technology, the business, the country, or the culture these are areas that if done well have consistently resulted in the success and long term sustainment of any quality program or initiative.

And probably the most important theme is that the Quality Program needs to identify a respected senior executive within the company as the Quality Champion. This must be someone who has earned the respect of the entire organization and is in a senior enough position such that they have the authority to direct resources and resolve issues as they arise. For companies where I have seen this done best this level of commitment usually starts at the CIO, COO level with strong visible support from the CEO. Programs that do not have this level of management support are generally short lived.

**Bill:** What if a process improvement effort finds itself without this support? Have you ever seen a project get this level of support after the fact or any recommendations on how to get it?

**Kevin:** I have seen process improvement efforts kick off without this initial level of support, although they still must have some level of senior management support to acquire the initial needed resources. However, long term success still requires the quality program to get this level of support. The business reality is that at the end of the day it's always about money. Specifically how much does this cost vs. impact to bottom line. If the program does not have this level of support initially to get it, they must explicitly make this linkage and show tangible results. Long term success is dependent on the program's ability to manage up.

**Bill:** That's a big factor Kevin. What's next on your list?

**Kevin:** The quality program must have a direct tangible impact to the bottom line business success of the organization. Whether that is maintaining skills and credentials needed to bid, responding to a customer mandate, or ensuring a consistent level of quality from the customers' perspective the quality program must be able to demonstrate business impact. The Quality program needs to be able to measure its effect on the product on the projects producing the products. There is an old business saying that says, "You can't manage what you can't measure." I have always found this to be true at some level.

**Bill:** I often hear organizations say, "We all know we're doing this to get better but we haven't focused on exactly what to measure." What's your response to that type of thinking?

**Kevin:** They should ask themselves the question: "Why am I doing this to begin with?" These efforts are always in response to some stimulus whether internal or external. Once you have the answer to that question then go one step further and ask, "How do we define success?" Based on those two questions the answer on what to measure usually appears. The other part of measurement I often see organizations overlook is get some initial measurements on how the organization is performing when the effort starts, regardless of how difficult this might be or suspect the data. The reason is usually about a year into the effort the organization is feeling like progress is being made, and by then has some kind of measurement in place but because they took no initial measurement, they can't really prove what they know is anecdotally true. The Software Engineering Institute has a very effective Goal Question Measurement approach which directly addresses this issue.

**Bill:** Ok, great. What else is needed to have a successful quality program?

**Kevin:** Pick the right people for the job and run it like a project. Unfortunately, all too often in companies I see people get picked to be quality or process improvement professionals because they are not skilled in the other functions that are perceived to be more relevant to the business needs. The program then is only loosely managed with no identified deliverables or timelines. Additionally, because the people chosen do not understand the business or quality, they put a lot of policies and processes in place that add no value to the end product. This is a formula for disaster. After a few years, the senior executives want to know what the Return on Investment is for the effort and these programs have nothing to show for it and generally fail to execute.

**Bill:** Looking back across process improvement efforts I've seen or have been involved with, this one seems key. A good team can fix all the other keys to success, would you agree?

**Kevin:** I would agree that the right people chosen to do the job can overcome a lot of the technical challenges, but the right senior level champion is still needed for long-term success and sustainability. There are numerous examples across the industry of organizations with renowned quality organizations consisting of highly skilled people that know how to do the job, but if the senior management support wanes the overall effectiveness of the program can suffer. A very recent example of this in the news would be the quality issues that Toyota has been dealing with. Many industry analysts believe this was a case of losing the balance between quality and cost.

**Bill:** That's a great example Kevin that I'm sure we can all relate to. Have you identified any other key themes to a successful quality program?

**Kevin:** Finally, the quality program must fix something or solve a problem the business cares about. So often after years of improvement effort I hear senior executives or program managers state that despite all the quality initiatives nothing has gotten better or changed. Too often I see quality programs focused on compliance and not much else, and while compliance is a necessary part of any quality program it is not the only or even the most important part.

**Bill:** Any thoughts on why organizations get so hung up on compliance? Why doesn't compliance guarantee success?

**Kevin:** I believe it is a fundamental lack of understanding of what quality really means in an organization. The organization has an issue, someone hears about a model, methodology, or standard that addresses the issue without knowing what that really means, and then they blindly undertake a dogmatic implementation of it without really understanding the issue in the first place. Quality is a culture and a mindset, not answers on a checklist.

While I have focused these ideas on a successful quality program, if you think about it these are fundamental necessities to any successful initiative

**Bill:** Agreed Kevin. You make it seem so easy and basic but I've seen most of these fundamentals missed everywhere over and over again. Thanks for taking time to talk with me today to share your global perspective.



**Kevin Schaaff** - [schaaff1@comcast.net](mailto:schaaff1@comcast.net)

Kevin Schaaff is a Principal at Booz Allen Hamilton responsible for the system delivery of large scale IT systems. He is also a Visiting Scientist at the Software Engineering Institute. He is a certified High Maturity Lead Appraiser and Instructor, with over 30 years of experience in Systems Engineering and Project Management. His previous experience includes managing a variety of programs ranging from large Navy R&D efforts to implementing small to medium scale IT Systems. Before joining the SEI, Kevin led other organization's quality programs to SW-CMM and CMMI Maturity Level 3, CMMI Maturity Level 5 and was responsible for numerous sites being both ISO and AS9100 registered.

## Hillel Glazer

### **The Key to High Performance Operations: Applying a Visual Systems and Value Perspective**

**Bill:** I'm on the phone today with Hillel Glazer. Hillel is founder, Principal and CEO of Entinex, Inc. I attended one of Hillel's presentations at SEPG Europe 2010, and found his presentation on Values, Principles and Practices very revealing. In this presentation, Hillel demonstrated that he possesses that rare ability to examine our current assumptions, and reveal new levels of understanding. With that background, Hillel, I have one question to ask you today: what is your best process improvement strategy or tactic that has worked really well for you or your clients?

**Hillel:** The best strategy that has worked well for me is to start to look at what the organization needs to accomplish from a product, project and services perspective. And by that I mean whatever it is that you get paid to do. And secondly, look at what the organization does as a system.

From a systems perspective, an organization needs to satisfy a lot of often conflicting needs or expectations. For example, there are clients, customers, corporate governance, the need to make money, the need to keep clients and employees happy, the need to satisfy regulatory, statutory and other requirements. All of these are contributing pieces to a single system that must operate together and function as a whole.

**Bill:** Do you usually help your clients answer those questions to get a systems perspective or do they view it as a system already?

**Hillel:** Well, they don't see it that way yet. Very often the clients don't yet see the situation they're in as a system. They're too busy—and as a result, they often see each piece of the company, each piece of the operation or the business as though it's independent of all the other pieces. So they usually only see what they do to deliver out the door that gets them paid. All that other stuff somehow is seen as an interruption to their primary job, or as a necessary evil, or something that is outside of the overall workflow that gets them paid. When in fact they're not.

Each piece is not necessarily all part of the value add of what it is that they do, but in terms of and as a result, because they don't actually see the pieces as components of a larger system that either costs them money or helps them make money. They actually try to do the least that they have to do to get to the state of sending something out the door, which turns out to be a lot more disruptive and cost-prohibitive than had they stopped, stood back and looked at everything they need to get done as part of a single system.

**Bill:** After you answer those questions, how do you determine what's the best strategy for addressing them?

**Hillel:** What often happens is the client doesn't see all these things as components to a single system that must operate together. So the next best thing is to actually physically lay it out on a whiteboard or a flipchart. It's very important to visualize and see how these components fit together into a system.

I think that the notion of visualization doesn't get enough airtime. I think people aren't giving the idea of visualization the attention it deserves. Visualization is very powerful and it's a technique that deserves a lot more attention. I don't know why it's so frequently overlooked, I can't explain the psychology behind it, but I can say that I think for some reason people perceive visualization as not real work.

**Bill:** It almost seems too simple sometimes. But I can't count the number of times when a simple visual has brought immediate clarity and understanding to a discussion.

**Hillel:** Yes. And because it is so simple and powerful, I believe it's one of the contributing factors to why people ignore it. I think there's no shortage of organizations that are short-sighted when it comes to viewing their organization as a system. Given that there's no shortage of organizations that are short-sighted, I believe that in some cases the visualization is a threat.

Because once it's visualized, it's black and white, it's right there on the board. Where are our bottlenecks? Where are the things that are costing us money? Where are the things that take too much time or too much rework?

And so I basically apply two overlapping principles. The first principle is systems engineering, looking at everything that they do as a system that must be engineered to solve the needs of the organization. And those needs are the combination of the things we'd mentioned earlier such as making money, keeping clients and employees happy, and meeting regulatory, statutory and other industry requirements.

And if we look at either CMMI or general process improvement, what they're trying to do is to improve the overall performance of the organization. And until we see the entire organization and everything it does, then we're not going to know where and how to improve performance or how to most effectively apply the practices of improvement.

Without the systems perspective, we'll end up with point solutions that sub-optimize their ability to actually see true improvement. And I'm not going to get into the discussion about people that are just doing CMMI, for example, to get the certificate, so to speak, and check the box and move on. We're not going to go there because that's just a Pandora's Box of reality.

So we're strictly speaking about organizations that are interested in improving their performance. So I think I should probably make that caveat upfront that, assuming an organization wants to actually improve performance and not just check a box, what I said follows.

**Bill:** Ok, so that's very interesting how you apply systems engineering to process improvement. And the second principle is?

**Hillel:** The second principle is to look at each part of the system, and how it contributes to value. With value you are looking at three different aspects at a minimum: value to the customer, value to the project, and then value to the organization, both near-term and long-term.

To develop them, and then in that perspective, you develop a system so that you are producing things that add value, and that contribute to long-term success, so that when you work the two together, it's not just creating a system that is functionally capable, but that the system itself is also lean.

With every decision point, you're asking the question: what value does this add? Or in some cases you do have to realize the question is: what value does this cost? As long as you are aware, and thinking about each thing as a question of value, it raises awareness because you can't always make the decision on just what is the most value. Sometimes you have to make the decision that is not always the most valuable. But, going through the process of taking a value-focused perspective at least ensures that you are aware of the impact on value of how you are going about things, and will allow an organization to be cognizant of opportunities to improve value when they present themselves because people are quite aware and familiar with what it is that they are doing from a systems perspective, and the value that it's adding or not to what they are trying to get done.

So those are the two principles, systems engineering and value. And where the lean comes in is when you are making choices that are based on value. You can't help but become lean and pursue lean, and think of things in terms of lean, value, waste, productivity, efficiency, and effectiveness. It's almost like raising consciousness at an organizational level towards performance.

**Bill:** Okay, that's interesting. Now you raise it up, you can all see it; it's right in front of them, and they can make choices among various options.

**Hillel:** Yes, exactly. An organization gives itself alternatives when they pass everything through a value filter. Now you have a choice. A lot of times people feel that they are boxed in, and they're often feeling like their choices are either limited, or non-existent, do it this one way. But when you put everything through a value filter, not only does the organization itself stand to benefit, but chances are that organization's customers are open and receptive to having their minds changed. When an organization can go to their client and say, "I know what you asked for, but this is going to be more valuable." As opposed to when most organizations often run into trouble with convincing their clients of the right thing to do, chances are it's because they came to them with a technical best thing to do, and didn't present it as the most valuable thing to do. Whether it's process or technology, or service or something, they frequently present the cerebral case of, the geek case, where they often forget the emotion or the business case, which is what people get sold on.

**Bill:** Hillel, this has been a fascinating introduction to what we can expect in your upcoming book. I know I'm looking forward to its release to see exactly how you combine a system perspective and visualization and apply it to process improvement. Thank you for talking with me today.



**Hillel Glazer** - [hillel@entinex.com](mailto:hillel@entinex.com)

Hillel's the world's leading authority on introducing lean and agile concepts into the regulated world. In particular, he's the "AgileCMMI guy" ([agilecmmi.com](http://agilecmmi.com)) and is the SEI's go-to authority on Agile having co-authored their only paper on the topic and contributed the agile content in new CMMI v1.3. He's helped companies of all sizes and locations successfully blend agile with CMMI and achieve performance benefits, not just artifacts and ratings.

His upcoming book, "High Performance Operations: Turning Compliance into Competitive Advantage" lays out exactly how he does it, beginning with the key idea he discusses in this 5-minute interview.

His Baltimore-based company, [Entinex](http://Entinex) has a global reach that focuses on generating powerful results for high performance organizations among companies motivated to be lean, agile, and achieve world-class levels of operational excellence.

## Scott Ambler

### A Perspective from the Chief Methodologist for Agile/Lean at IBM Rational

**Bill:** Today I'm talking with Scott Ambler. Scott is Chief Methodologist for Agile/Lean at IBM Rational. I'm familiar with Scott's work and reputation through my previous work at Number Six Software. Recently I started following Scott on Twitter and a few things caught my attention. First, Scott's Twitter profile states: "*Doing my best to find effective strategies for software development and evolution.*" This statement is in strong alignment with my vision for this white paper. And secondly, Scott conducts surveys to gather data to inform his work and decisions. This is ultimately what I'm looking to do in this white paper - find people who are doing things that are moving the performance needle and getting real results based on data. So with that background, Scott, I'd like to start by asking you one question: What is your best process improvement strategy or tactic that has worked really well for you or your clients?

**Scott:** I think the best one that I use is help people and organizations become aware of what they are actually doing, and be aware of what is working and what's not. There are usually beliefs that a certain technique, for example, doing a detailed upfront estimate is working really well for them, and that's just the way they've got to work. That's actually an exceptionally poor strategy. So I'll ask people how well that actually works for them, "Walk me through that, when you've done that, what actually happened?" just to make them aware that things aren't working so well. Then I start talking about different options, and in particular, tradeoffs. I think that the tradeoff conversation is critical because usually they don't understand the tradeoffs that they are making. They don't know that they've got options, and they don't understand that they are making some pretty serious tradeoffs. What I usually find is that people start having intelligent conversations after that. If I had to pick one technique that would probably be it.

**Bill:** Okay, that's interesting Scott. How do you begin that conversation with them? Are there particular areas you focus on?

**Scott:** No, I'll usually let them start off with conversations around, "What are you doing now? What do you want to achieve? Why do you want to do process improvement at all?" Then that will sort to lead them to identify what they believe their pain points are. Particularly the goals will reflect what their current pain is, and what they are trying to achieve, and then I'll start going in on the, "What are you currently doing?" and helping them discern what is not working well. Some of the organizations do not understand the implications of the decisions that they are making at a high level. Down in the trenches, the developers, they pretty much know. They might not have the full process improvement picture, but they know what's not working. They have a few ideas around what could work better. They might not be willing to do the work to make it work it better, but at least the will is there. But what I find is at the higher levels, at the

senior management level, at the business level, particularly on the business side of things, they typically don't understand the implications of what they are asking for. They don't understand the behaviors that certain requests will motivate. It's always a big surprise that things don't work out well. I try to help them understand what the implications are of those decisions, the tradeoffs that they are making, helping them to understand, to recognize, whatever they are doing now has not been working for them, has almost no hope of working for them, and they need to get off that treadmill.

**Bill:** Once you bring that clarity, how do you get them to focus to make an improvement? Is there a way you approach that?

**Scott:** Yes, after we have the alternatives discussion, then we start trying to identify pilot projects. The proof is always in the pudding. We try to find a realistic pilot project or pilot projects, as the case may be, where it's medium-level complexity project where it's real, it's going to have an impact on the organization, but they are not betting the organization on this one project either. Then we start experimenting because a lot of my message is, "You need to see this work in your own environment." Every environment is different. At a high-level, the strategy will be the same or there will be some coherent similarity between the strategies, but the nuances will be different in every organization. Every organization is in a different situation. Every team is in a different situation. They need to tailor it to the context that they find themselves in. People learn at different rates and in different ways, so they need to experiment with these techniques that are new to them, and find out what works, what doesn't work. There will be some things they are going to struggle with, and they will need to focus on, other things will come very easy, and that will be okay too. They need to be prepared to be flexible, and to be in a learning mode, I guess you would say.

**Bill:** Okay. One thing that occurs to me now is that you are the agile and lean methodologist for IBM Rational. How does that play into it vs. looking at all the other options that are out there, how do you bring agile and lean into the conversation?

**Scott:** My focus for a long time has been on agile and lean. My title sort of labels me as an agile guy, and what I really try to aim for is, "What is the best strategy for your situation?" I've got a background in waterfall, I've done that. I've done a wide range of things, so I'm always trying to look for the best option, "What is the best strategy for the current environment?" Now that almost always happens to be agile and lean. At the end of the day, all the agile community has really done is identify what works really well in practice. They have identified what doesn't work so well in practice, and they focus on things that work well, and they try to avoid the things that don't work well. It's not rocket science. So what I'm finding is that as organizations start to wake up to the concept that traditional waterfall stuff really doesn't work so well in practice. It was wonderful theory, but we've shown the theory to be wrong now, to be wrong in most situations, I should say, or not the best strategy in most situations. Then they really need to start looking for what actually does work in practice, and that leads them to the agile and lean stuff. As a result, and frankly, most of the interesting stuff going on in the process community,

whatever that would be, is actually going on in the agile and lean space. All the leading thinkers in the process space are focusing on this right now.

**Bill:** Scott, I remember you mentioned before we started you'd like to talk about the agile scaling model. Do you want to talk about that or any other final closing comments?

**Scott:** So yeah, I've been focusing on something called the agile scaling [model](#) lately. The main message there is to just understand the context that you're in. It walks through three categories of process. The first one is core agile development - SCRUM is a perfect example of that. Part of my message is that these core agile methods, like SCRUM and XP, and Agile Modeling and Agile Data, and a bunch of other stuff, they are all really good, they are all part of the picture, but none of them are the whole picture.

The first thing you've got to do, period, is figure out, "How do I actually develop using agile techniques, or just any technique, from end to end, all the way into releasing the production, and obviously going onto the next release?" You need that full end-to-end picture, which none of the popular agile methods really give you. That is what we call an agile delivery. We bring enterprise awareness to that because you are working in an overall organizational eco-system. You should be reusing stuff and following conventions, all that good sort of stuff. We also talk about governance being built into it too. Somebody is keeping an eye on these projects. Somebody should be leading these projects to success, monitoring them and guiding them, making life easier for them. The agile community doesn't really like to talk about governance, it's almost a swear word, and yet all of their projects are being governed in some way, often ineffectively.

In a lot of organizations, I also look at the governance structure because someone is talking about the high-level business and high-level management stuff, that's mostly governance effort going on, and the governance efforts are almost always dysfunctional from an agile point of view. They are almost always focused on waterfall, and on documentation. They usually don't work very well, and then problems arise. I try to help with the governance stuff. We built this into this manageable delivery, but then the challenge becomes, that's mostly geared for small teams that are reasonably co-located, fairly straightforward stuff. But what if that's not your situation?

The third category in the agile scaling model is Agility at Scale, which is the really interesting stuff. What this category does is it makes explicit all the various scaling factors. Usually what happens is when you talk about scaling is everybody thinks of big teams and distributed teams, which is obviously important, but those are the easy issues to deal with. The not so easy issues to deal with are what happens when you are in regulatory compliance situation, what happens if you have a complex domain that you are trying to address, or a complex technology that you are working with, but you truly want to be enterprise aware and bring the enterprise architecture effort into play, and bring the strategic reuse effort into play, and portfolio management stuff, actually make it effective. This is what Agility at Scale brings in, so from a process improvement point of view, the challenge to organizations is to not focus on repeatable processes. I think this

has been one of the great disasters in the IT industry is just this naïve, this is just the most polite word I can say, this naïve expectation that we could have repeatable processes, and that's out of control bureaucracy in my mind. What we really need are repeatable results. We need to be delivering solutions in a timely manner, we need to be delivering quality, we need to be delivering systems that meet the actual needs of what people want, not what was specified. This working to a detailed requirement specification is just absolutely crazy, so this is just a completely different mindset. It's easy to say focus on repeatable results or repeatable practices, or repeatable processes, it's a very significant difference. The scaling factors bring this out because when you work through the eight scaling factors that we've identified, it's blatantly obvious that different teams are in different situations. As a result, you couldn't possibly have a repeatable process that met all of these combinations of scaling factors. It's an infinite combination, actually. So what you really need to do is tailor your process and tailor your tools to reflect the situation that you find yourself in. This requires discipline, it requires skill, it requires knowledge, it requires good governance, and it requires maturity. Unfortunately, maturity seems to be a bad word these days in the IT industry, but it requires a maturity that we don't see in a lot of organizations.

So this focus on repeatable results is quite a significant difference. From a process improvement point of view, and perhaps this is my most important message, is that context counts. If you don't tailor your process to meet the context that you face, the process is more than likely going to get in the way, and it's more than likely going to be ignored. I think we have a very large history in the IT industry of development teams completely and utterly ignoring the process, so that the process engineers need to be aware of this. The source of this problem is really on shoulders of the process engineers. If they're being ignored, there is probably a very good reason, and they need to start producing something that is attractive and motivational to the project team that can actually help them, as opposed to hinder them. That could be an interesting observation.

**Bill:** I really appreciate the coverage of the Agile Scaling, Scott. It really speaks to me in my experience introducing agile into a large organization that some of these other areas, factors were not considered, and as you know you're running into them all the time.

**Scott:** Exactly, and there's actually two aspects of scaling. If you look at it from the point of the individual project, are we a big team, are we distributed, are we in a regulatory environment, and so on. But then if you look at the organizational level, it's the scaling agile across the entire organization, and that brings in some interesting challenges. Usually what happens, and maybe one of the reasons why the agile community has seen such a good success, is that organizations kind of cherry pick the projects. Particularly if you look at the pilot project strategy, the strategy is always, "We'll, pick an environment where agile is going to work well. Pick your team of open-minded people who are reasonably highly skilled." So you set yourself up for success, which is obviously a smart thing to do, but when you try to roll it across the entire organization, you can't cherry pick projects anymore. You can't cherry pick your teams anymore because you've got to work with everybody. You've got to work with all the projects, or a very large

percentage of them, and that's a much harder change situation. And then, like you said, you bring these groups that you chose to ignore before, you can't ignore them anymore. You've actually got to find ways to work with the data management crowd, and their heads might still be in the 1970s, the operations crowd and so on. It's a much different environment for people.

**Bill:** Okay Scott, I think this is all great. You've given us to several great ideas to think about and I know we're keeping you from getting to all the snow that's piling up in your neighborhood!

**Scott:** Okay, fantastic! Thank you!

**Bill:** Thanks Scott, I really appreciate it!



**Scott Ambler** - [Scott\\_Ambler@ca.ibm.com](mailto:Scott_Ambler@ca.ibm.com)

Scott W. Ambler is Chief Methodologist for Agile and Lean with IBM Rational, working with IBM customers around the world to help them to improve their software processes. He is the founder of the [Agile Modeling](#) (AM), [Agile Data](#)(AD), Disciplined Agile Delivery (DAD), and [Enterprise Unified Process](#) (EUP) methodologies and creator of the Agile Scaling Model (ASM). Scott is the (co-)author of 19 books, including *Refactoring Databases*, *Agile Modeling*, *Agile Database Techniques*, *The Object Primer 3rd Edition*, and *The Enterprise Unified Process*. Scott is a senior contributing editor with *Dr. Dobb's Journal*.

Scott holds a BSC in Computer Science and a Master of Information Science from the University of Toronto.

## Neil Potter

### How to Get Faster Results with a Goal-Problem Approach

**Bill:** This evening I'm talking with Neil Potter. Neil is co-founder of The Process Group, a company that helps organizations with process improvement, software engineering and project management. To get started Neil, I'd like to let everyone know how I came across your name. I recently read several of your responses on one of the process improvement groups on the Internet, and your responses caught my attention as someone who's pretty pragmatic and experienced. I went to your website and saw more good information there, so that was what prompted me to contact you. So, may I just start by asking you the first question we are asking everyone, Neil, what is your best process improvement strategy or tactic that has worked really well for you and your clients?

**Neil:** I've boiled it down to one attribute that we have been using for a long time now, probably since the early 90s. Let me talk about it from two perspectives. One is from the perspective of when people don't do this, what happens, the classical approach they get themselves into. And then I'll discuss the strategy from a solution standpoint, that is, if they had tried this approach, they could have avoided many problems.

The classical approach that people use when they look at a model or standard (such as CMMI, ISO, FDA or a medical device standard), is that they often start designing their process improvement program around the standard they are trying to achieve. So if there are six sections to a standard, or seven process areas to the standard, they start with seven sections, seven teams, and seven documents, hoping to fulfill the standard.

So the strategy we recommend is to have people focus on the business of the organization and use that to drive the use of improvement frameworks. I'll give you an example to make it more specific. When a group starts out wanting to achieve CMMI level two, or level three, or an FDA standard, we have them list the next upcoming major deliverable. If they have a device they are going to ship to the field or an IT solution to deploy in the next six to twelve months, we have them start with that, rather than a model or standard because we know they are focused on that.

The second part of the strategy is to have them list all of the key challenges they are having right now with achieving a particular deliverable goal.

For example, a team may say that their current challenges include scheduling, estimation, supplier problems, changing requirements, or technical surprises. So the strategy is to design the improvement program around their goals and problems, and not around the sections of the model or the framework. This strategy always applies; the goals and problems always tell the team where to improve next.

For example, during a project a team may encounter any number of challenges. When they apply the strategy, they start to improve by tackling the major challenges they have right now. They then look at the framework or model they are using, and recognize that the framework has the very same things in it that they are struggling with, but they are described in different words.

So if I said to a team, “What is the major goal you are working on and what are the major issues you are having right now?” And they may say surprises and a lack of good estimates. In any model framework, there is something about risk management and estimation. Now, what they are basically doing is verbalizing the model practices in their own language.

What happens when a model is created? It’s created by a committee and stated in a generic language. The more a project team can see that there is an overlap between elements of the framework that they want to use, and the very things that they have issues with, they see that the issues list tells them where to start. If they go through that cycle and they fix those three or four challenges, and they actually use those related practices of the model, they are making model progress and improving their performance at the same time. The next step is to repeat the strategy, because now they have those problems solved. On the next project or the next major deliverable, they do the same thing and select a few more issues to address.

Now let’s run through another scenario. Well, maybe their issue is now that they can’t find defects quickly enough, or they can’t find defects or mistakes early enough in the project. Or they have difficulty in dealing with code versions, changes to the product, and maybe suggestions from the outside about how the product should change. So the team has again verbally described (in their own language) new practices they need to use from the model. These might include CM, estimation, scheduling, requirements development, or improving requirements management. They apply those practices and they make progress on the model again. All they are really doing is using their own current situation to navigate into, and through, the standard and framework they want to use, but in an incremental fashion.

The benefit of using this strategy is that they never have to be confused about where to start next because the goals and problems that they have now will always tell them where to work next. You’ll always have goals and you’ll always have problems.

The other side effect is that when they use a practice from the model or framework to fix the problem, they can now obtain immediate benefit. They no longer have to wait six months for a committee to define the requirements management procedure, or twelve months for the team to define everything to meet the standard. They get immediate benefit from putting a few practices into place now on the current project.

The second benefit of using the above strategy is that the changes are correctly sized for the problems that they have. No longer are they creating very large documents, standards and templates that are all encompassing and meet no one’s needs. They are building process solutions, templates and guidelines that are sized specifically for the issues that they have. If they are careful, they can make the solutions a little bit more robust to deal with different situations that come up later on.

The goal-problem strategy has an organization integrate the improvement and work activities as one element. No longer are they seeing work and improvement as two separate things - you either choose to improve, or you choose to do work. When you do work now, you are improving, but incrementally.

**Bill:** That's really interesting, Neil. You're really chunking it down for them, helping them see what the real issues are, and then guiding them in a way that they are solving real issues, and not creating piles of documentation and standards that may or may not get used.

**Neil:** What I would just say on your point, the thing about documentation and standards is that documentation is now a natural byproduct of doing work. If they were ever to have a regulating body or an auditing group looks at them from outside, where they have to demonstrate planning or risk management, they are now producing documentation as a natural byproduct of doing a process correctly. The solution that they have built is at the right level and size for the issues that they have. If it's a small group, they've boiled it down to what they need.

**Bill:** Okay, very good. In terms of presenting that approach when you work with a client, do people usually see the immediate benefit of that approach, or do you have a pilot type of run to show how well it works?

**Neil:** That's a good question. When we present the approach, usually the light clicks on pretty quickly because they start to recognize that they don't have to take a standard or a model like CMMI and then do the whole thing at one time in parallel. They realize that they can get to the end point incrementally, but they can choose the elements in the order that are suited to where they are now.

The only side effect is that somebody in the group has to track which model practices have not been used yet and make sure that they don't get so focused on just work. They need to keep track of what they have used, and what they have not used, such that when they get to the point of either being appraised or audited, they have been through enough cycles and they have directly used all the practices.

That's not a big consequence to pay. They are going to track improvements anyway, but now it's just made a little harder because before they had seven documents to track, and that was easy. Now they have to revisit the framework, and see what is left. Also if they do have difficulty getting improvements to work, they can find that issue early, rather than wait six months for a committee to finish, and then find what the committee wrote is not applicable, too cumbersome, too complicated, or too free of content.

**Bill:** Yes Neil, I really like your approach. I've seen too much of that wait six months and see what comes out, and then try to make it work. It is very interesting approach. Thank you very much for talking with me today!

**Neil:** Thank you very much!



**Neil Potter** – [neil@processgroup.com](mailto:neil@processgroup.com)

Neil Potter is co-founder of The Process Group, a company formed in 1990 that consults on process improvement, software engineering and project management.

He has 25 years of experience in software and process engineering. Neil is an SEI certified lead appraiser for SCAMPI appraisals, certified high-maturity appraiser, Intro to CMMI instructor (development and services), Six Sigma Greenbelt and Certified Scrum Master. He has a B.Sc. in Computer Science from the University of Essex (UK) and is the co-author of [\*Making Process Improvement Work - A Concise Action Guide for Software Managers and Practitioners\*](#), Addison-Wesley. Click this link to find more information on [Goal-Problem Improvement](#).

## Bob Payne

### Applying an Intuitive Experienced Based Approach to Agile Adoption

**Bill:** Today I'm talking with Bob Payne. Bob is President of Electroglide, Inc., a consulting and training company specializing in Agile Software Development. I attended one of Bob's introductory agile training sessions last year and was impressed with his deep experience that was evident from his presentation and responses to questions. Bob, if you're ready to get started, here's the question I have for your today: what's your best process improvement strategy or tactic that's worked really well for you or your clients?

**Bob:** That's kind of an interesting question. The strategy is not necessarily a particular technique; it tends to be around trying to get a handle on the organization, the people in the organization and how to align their goals and desires. To be perfectly frank, there's no silver bullet; a lot of it is basic discovery work, and a gut feel that I get in conversations about what techniques might work best in that organization.

So when I tell you that it's a meta technique, a lot of times I will change my strategy based on the client or the particular personality that I'm dealing with in an organization. So if I were to look at the things that I do from a purely mechanical process aspect, I'm not sure you would find much in the way of one process improvement structure.

There's always a lot of assessment, structured training, and engagement with team members directly. But that doesn't really give you any sort of recipe. A lot of this has to do with experience. If you look at the [Dreyfus Model of Learning](#), something I happened to hear about from Dave Thomas, it talks about how you move from a mechanical process to a level of expertise. I don't want to make any bold statements about being an expert, but the Dreyfus Model essentially talks about moving from prescriptive, rule-based learning or operation to moving towards a more intuitive model.

Most of the techniques that I currently employ are based on intuition, having been in tens of organizations, doing an agile transition. And over the years, I see that I have evolved along that Dreyfus Model, moving from a very dogmatic approach to changing an organization—you know, "We're going to do XP."

I started out as an XP person, so I was very dogmatic about XP processes. Then as I learned more about organizational change and about how other models of Agile delivery, for example, LEAN, SCRUM, [FDD](#), how those essentially address the same problems with different techniques, it became clear to me that there wasn't one solution.

So a lot of my work has evolved around trying to find situation-specific techniques that will work in an organization. It's really about moving from mechanical process to a point where my

goal is to try to understand the organization and apply techniques that will work for both the organization, the people, and the structures that those people create—when you get those people in a PMO, what happens?

Recently I've tried to fight against the kind of very dogmatic approaches to agile adoption. The pendulum may have swung a little bit far on situation-specific, and some of my most recent work I've been moving back towards specific practice, engineering practice and requirements practice, for example.

But I think that really how I approach it is to move into the organizational change mode and apply the techniques and processes from agile that will allow that organization to get a bit better.

**Bill:** I think of you as an agile, SCRUM type of person, and I have this perception that you're probably going to be pretty dogmatic and have a silver bullet that you can bring into a company. So I'm fascinated with your response to this question.

**Bob:** That's because you met me at the client that we were just talking about, and they needed a very dogmatic solution—or the organization was asking for that.

**Bill:** Exactly.

**Bob:** These are the things you do. The other thing to understand, you know, I may be approaching it on this organizational change level; I also know the people I'm trying to change need rules. So Dreyfus Model says, "You can, at any time, be somewhere on that scale depending on what you're talking about."

So I may come into an organization and be further up towards the expert on the agile scale, but all of a sudden someone will ask me to enter my timesheet, and all of a sudden I'm a novice, I need a [recipe]. "Where do I go? What password do I need? How do I get there? Where's the security office?"

So understand that even though I might be thinking about what is your organizational context and what are the meta issues at hand, generally the folks I'm dealing with are like, "SCRUM, what's that? What do we talk about at the standup?" And for those people, the answer is, "Do this, and do it for a while, and then we'll talk about why you're doing it."

So I may take a more recipe-based approach to what are the practices that you try. In a retrospective I conducted today, I said, "Well, we tried this thing last week that we thought would help, but it didn't seem to help, so let's stop doing that." And people looked at me like I had two heads, because I want them to learn that improving, continuous improvement is not about picking a thing, doing it and sticking to it if it works or it doesn't; it is about asking the question, "We thought that would help, did it?"

And if the answer is no, then there's another question, "Did we not give it a good shot?" or, "Should we try something else?" And so I think it is that idea of moving along the scale of experimentation, and if not quantitative, some qualitative measurements of our experiments to

determine what's working. So first you start out with the recipe, and then you show them that it's okay, it's ok to experiment, and then at some point they're kind of on their own.

**Bill:** Thinking about this approach, I imagine clients sometimes may have preconceived notions about how you're going to come in and do what you do. Do you run into challenges in meeting those expectations sometimes? They're looking for a recipe, and you're thinking you need a little more background and experience here, to size things up and formulate a solution of how they're going to approach improvement.

**Bob:** Fortunately, SCRUM provided a mechanism that I could be dogmatic about. That is, we're going to adopt a continuous improvement plan which relies on retrospectives. Outcomes of retrospectives get prioritized by the team, and possibly depending on the scale of the change that the team wants to try or the organization wants to try out of the retrospectives, might involve management.

And we're going to implement and track that to look at the results. It's kind of interesting because it's kind of a trick. You say, "What we're going to do is we're going to start out with this recipe, and we're going to implement a process of continuous improvement, that we'll tailor the solution for your organization.

And most executives understand that organizational context is important. They also falsely believe that they're the only people in the world that have this problem many times. But those two play together nicely in that yes, you have the same problem, whatever that happens to be, we're missing dates or quality is low, but you have it in a way that is somewhat unique based on your organizational context.

So I don't really go in having to trick them into experimenting, because the recipe kind of lends itself to that.

**Bill:** In terms of what we covered today Bob, would anyone be able to look at something on your website or a podcast that would expand or reinforce anything we discussed today?

**Bob:** Yes, I'm sure there's stuff on the podcast. I think really, the key is to, as an organization... If I were to talk to potential clients, what I would say is, "Yes, there's a recipe." SCRUM is important; XP is important; LEAN is important—but only so far as they point towards a model of team delivery, and I don't even want to say software delivery because clearly, these things are used in many different contexts—that looks at the system as a whole.

I think one of the major issues organizations have, they look at it as a, "This team fixed this project," problem, and Agile, when it is really working, fundamentally transforms the way the organization delivers; it transforms the way employees or associates are engaged with their delivery, and it can fundamentally change the way organizations do business.

Now, you have to start small, and I think that piloting, growing that pilot and investing the time in a continuous improvement or Kaizen process from LEAN, will lead you to a place where you

are delivering better. But it is fundamentally a journey that requires work and not a mechanical process.

**Bill:** In the past I worked with a number of LEAN manufacturers as well as more traditional types manufacturing companies, and I had a mix of LEAN manufacturing companies that made the transition, and the difference was night and day. You walk in, the place is clean and organized, it's smaller, the people react differently; and to your point, it's a whole different environment.

**Bob:** Right now I have the Toyota Way Fieldbook, which I haven't started reading, but it's on my shelf.

**Bill:** Yes, a lot of ideas are easily transferable from lean manufacturing into the software world, for sure.

**Bob:** Well, let's do a podcast when I'm in D.C., and you can talk about what you've learned from these interviews.

**Bill:** That'd be great Bob. I've learned a lot from these interviews, and I'm fortunate to have had the opportunity to do these interviews. I'm truly in awe of the quality and value of the ideas one simple question is prompting from everyone. Thank you very much for taking time to talk with me today!



**Bob Payne** – [bob@agiletoolkit.com](mailto:bob@agiletoolkit.com)

Bob Payne is the President of Electroglide, Inc, and a leading proponent of Agile Methodologies and Agile Engineering Practices with 25 years of project management, software development, engineering and business experience. As an early adopter of Extreme Programming (XP), he has worked exclusively as an Agile Coach and practitioner since 1999. He has mentored and managed many projects ranging in size from five to over one hundred people. As host of the [AgileToolkit podcast](#) he has produced over 60 podcasts, recording a variety of industry leaders and Agile practitioners. He has been on the organizing committee of the Agile Software Development Conference in 2007 and 2008. He is cofounder of the Washington, DC XP Users Group. Bob is passionate about training development teams in the use of Agile Engineering Practices that allow them to deliver high quality software in an Agile, iterative and incremental manner. With a MSEE in Computer Architectures for Artificial Intelligence and having grown up working in his family's restaurant, he brings a unique blend of technical excellence and customer service to bear on his projects and training courses.

## Mike Bonamassa

### A Rational Perspective on the History and Current State of Process Improvement

**Bill:** This morning I'm meeting with Mike Bonamassa. Mike is CEO of Green House Energy and formerly COO of Number Six Software. It's kind of funny Mike, but it just occurred to me that I was meeting you for breakfast almost exactly seven years ago to the day when you were recruiting me to join Number Six Software! Joining up with you and Number Six Software was one of the best career moves I ever made and I am fortunate to have had that experience to work alongside so many talented software engineering professionals. Mike, before I turned on the recorder, we had already started to address the main question we ask everyone: what is your best process improvement strategy or tactic that has worked really well for you or your clients. You began by talking about Karen Base's interview, your experience at Rational, and your reaction to what Karen said about having the people on your side.

**Mike:** It was interesting to me because when I was at Rational, Rational was (I believe) the very first software engineering company, where it was around doing things the right way. You have to consider what the world was like before Rational. You had every different government contractor creating their own language to implement the systems for the government, partially because they thought they needed to because they had great and smart people there, and partially because they realized, "If I create the language and I own the language, I'm going to be doing this for the government forever." There's a benefit to it.

So Rational was one of the first companies to actually say, "We're going to enable good software engineering." So we created this environment to go do it. Originally it was a purpose built computer, and then it went into different kinds of software. But we had this belief that if you give people technology that supports doing the right thing, people would just automatically change into the right thing.

And the reality is that the only reason Rational succeeded and grew was the technology enabled the change, but the change came from the services and the support that we provided. Rational got a reputation, if you had a program that was failing, you'd buy Rational. It cost you a lot of money, but you bought Rational. The reason was it would turn you around, and it turned you around because we had that technology enabled through the support of these tech reps, and they would come in, and they just knew how to do software engineering, and they knew how to do innately what Karen said, that consultants skill, explaining to people how you can change your behavior and use this tool to enable that change, so that there's less risk.

I think that's what it really comes down to. What the tools do is they enable you to minimize the risk associated with the change, because whenever you're doing something new, the biggest fear people have is, "I've not done it before; what if I screw up?" And what tools can do is you can

use a tool to say, “Well, the tool won’t let me screw up; the tool will guide you.” You just have to get them open to the change, and then teach them how to use the tool.

So from the Rational perspective, that was illuminating for me, to see how technology could enable change, but it certainly is not a change agent - that has to come from people.

**Bill:** Thinking back a bit in terms of Rational, what was it that people were doing that was enabling them to be very successful? Did you see any patterns, strategies, or tactics in that regard?

**Mike:** It was interesting because the funny thing is there’s this thing called the Rational Unified Process that got pretty popular in software development. Really, it was a precursor to Agile. RUP didn’t come from Grady Booch, Ivor Jacobson or Jim Rumbaugh. They just synthesized it as a process oriented extension to UML.

I always called Grady Booch the great synthesizer because he was able to look at what people were doing, and see patterns of best practices, patterns of behavior, and then he was able to quickly codify and explain those in terms of the process.

So that was really good and hugely valuable. But what he was looking at was what these tech reps were doing. What we were doing is we were working on these really tough programs, it was do or die. So when you’re in a do or die situation, people have to face change.

It’s like you either continue doing what you’re doing or you die, or you change and have a chance to live. So what these tech reps were doing is we were constantly talking to each other and moving between projects and identifying these best practices. So we learned very quickly—that’s why the Rational Unified Process was built around these best practices.

We learned very quickly that the concept of knowing what you need to do in a novel situation. There are different types of systems, novel systems, which you’ve never done before, you don’t have experience with, and then you have systems that are reengineered systems where you have experience with it, but you’re taking it to a new technology platform, and then you have pure legacy maintenance systems.

This can be modeled and associated with that if you have a new team that’s never used it, but the knowledge is already embedded in the code, so the knowledge is there. Where Rational was focusing most of its efforts on were the truly novel systems. And at that point what was in vogue was a thing called 2167a, waterfall development, and that sort of thing.

And it had this methodology associated with it that said you’d get all your requirements right up front. And it was very clear. You didn’t have to be a rocket scientist to see most of these programs were failing because of requirements. Because they would spend years sometimes getting these requirements, and then they would go to implement, and the requirement wasn’t complete or wasn’t implementable, or wasn’t relevant.

And so then it would change, and so you would have all these requirements you spent all this time getting; they were all built, it was almost like a semantic network, they were built on top of

each other and it wasn't use cases. There was a hierarchy—so they changed something down here, the ripple effect of the semantic impact was huge.

And then if you got the requirements stable, then you went and did this monolithic design, and you do everything, and then you're just going to go and code it, and then deliver it. So in each of those things there were problems. But the problems started with the requirements. The fact is that no matter how smart or how well-intentioned you are, they don't really know what they need.

A lot of times that's why the user interface stuff got in vogue, because it's like, "Show me." It's like, "Well, that doesn't really do it too because there's more than just this thing." (*pointing to an invisible field on a screen*) You had this recognition that you really needed to do small chunks of functionality. So you start doing small chunks of functionality, and you take them through and implement it, and that's great.

Very quickly we're able to get a slice of value for you. That created its own set of problems. And here's where I think the real key is, to me, to process change. It's not a step, it's a philosophy. Because a lot of times people will attack one symptomatic area, for instance, "Okay, we'll fix the way we do requirements," but that creates another whole set of issues, and it never changes.

When you look at SEI and CMMI, when you get to constantly improving processes, that kind of an optimized, constantly improving process is the pinnacle, right? That's what real process change is. You change something, and it enables you to break through. But you're going to find other areas - you can't ever rest back on it.

So when we changed the requirements and we created this functional [slice] capability in the system, we started to realize now we have ad-hoc architecture, because it's kind of like you're building a bunch of systems that didn't know about each other. So that brought in the idea of, "Maybe we should try to think about what are the things that are architecturally significant that are going to drive our architectural impact and decisions? Maybe we'll focus on that functionality first."

Once you started to get that architectural significance in doing that, that started creating an integration issue, because now it's like, "Well, we didn't really think about integrating this, so we built this functional capability, we thought about how it was going to have to be modified over time, and we implemented it, and when we built the next thing it broke all of that stuff and it didn't really work in the environment anymore."

And so then it got into kind of continuous integration. So each of these different innovations led to new problems, which led to new innovations. Once you got that engine going and you've got teams that were supportive of the idea, it was really fun to do that. Until people get that this is not a sport for people that want to go and work at a job and do the same thing every day, they should look for legacy maintenance, find a system that's been built, and you can do that.

**Bill:** I worked with several lean manufacturing organizations in the past and one of the examples they used was to think of the process as a river. When we lower the inventory levels, we're lowering the water in the river, but lowering the water to a certain point starts to expose some rocks — the rocks are the problems. Now you can see the problems that you couldn't see before and solve them. Then you repeat the cycle. Lower the water a little more, and more rocks show up. It's sort of a similar type of process.

**Mike:** It is.

**Bill:** And then you mentioned Karen and her experience—I worked with her during that transition, and it was fascinating how once it got going, people saw how this worked and that it was going to improve things, everybody jumped on the bandwagon, and everybody was all for it. There was a lot of enthusiasm, a lot of progress.

**Mike:** That reminded me of another thing. This was a fairly common failure mode we saw with the Rational unified process and iterative development. It definitely ignited, but it didn't stay where it was, and a lot of people failed. And here's, I think, the other problem that we had with process change. If you have that project that's successful, and that group of people that gets it and starts changing and innovating, it becomes exciting.

You're truly creating and you're empowered, and it's a very fulfilling thing to do. Other people in the organization see that shiny thing, and they want to become part of it. What happens, though, is that if they don't get the core of it, you have a project that's successful because you found certain rocks when you lowered the water, using your example.

Then the next project is, "We know where the rocks are now, so we're just going to adopt the exact same thing they did, and that's change." It's like, "Well, it's change; it's not thoughtful change; it's just copying." If you're the exact same river and the rocks are in the exact same spot, that'll work for you.

But in our world, novel development, it's never the same. So that's where things would fall down, because you needed to have process improvement. We did this project at a large financial organization. We were on Project Enterprise, and we got out there and they were failing miserably. They were doing everything the books said—doing use cases, using UML for design, really rapid development cycle, integrated configuration management, etc.

But they didn't have continuous integration. They had huge integration issues. But they also had this vertical architecture. They were doing a lot of the best practices; it's just they had done them by copying them out of a book. They never embodied them, never brought them into the way they thought and applied them in context of the problems they were addressing.

So we went in there with a relatively small team—the project was probably 60, 70 people, and we have six or seven people, and we had a huge impact on that project. We were able to turn it around and it was successful. Well, all of a sudden, instead of Project Enterprise being this project that's going to get canceled, it became the glory project.

When we went back a year or so later, everyone was like, “Oh, Project Enterprise,” everyone was trying to take the exact same approach and apply it. It just doesn’t work. So to me that was the most frustrating thing about process improvement is that when it works, people tend to say, “That’s great; let’s stop thinking now; let’s just take it and apply that in every situation.”

And then it ends up hurting the original process innovations, because they’re like, “It worked because of Bob, it worked because of Sally; it worked because of the people, not…” Well, yeah, but it was actually the way the people were working together, and they didn’t say, “No, because that worked once, we’re going to do it, we’re going to write it down in the book and never change.” That’s where the problems came in.

**Bill:** I know you used to work for Rational Mike, how long did you work there?

**Mike:** 13 years.

**Bill:** From the beginning?

**Mike:** I think the company started in ’85. I think ’85 was the first product, and I was there in ’89. It was all Ada development back then. Ada was the government’s answer to the plethora of languages that were out there. It was actually a really good language. But Rational had a purpose-built computer that was a development environment for Ada.

It did continuous integration, it did all these things. Basically it was a million dollars for a computer that supported typing in an ASCII interface. It’s like EMACS type stuff. From there it kind of grew. So I was there very early on. I think I was employee 89 or something like that.

And in 2001 when I left Rational, there had to be like 3,000 employees, so it grew phenomenally.

**Bill:** So you had various roles throughout that time?

**Mike:** I came in as a tech rep. I came in as a tech rep simply because I was doing software development in C and C++ at the time, and I was trying to apply a lot of the things like encapsulation and stuff you can see, and I still love the language. I was trying to do all this, and when I saw Ada I was like, “Oh my goodness,” because I was also into those kinds of things.

I thought Ada was good. Then I saw this company, they understood software engineering, they got component based architecture. I said, “This is phenomenal.” So from the technology, I was all over it. Then when I got in there, I started to realize that it wasn’t the technology; it was the way we worked with people, the way we got them to apply the technology, the way we got them to think about problem-solving.

That allowed me to kind of move up to a lead tech rep. And then Rational’s culture was a sales culture, so then you had to move into sales in order to move up into management. So I moved into sales, moved into management. It was fun.

**Bill:** Anything to add in closing Mike?

**Mike:** There's this concept I've shared inside Number 6 and places where I've been leading at, that I call Compassionate Accountability. I think that too many times everyone says, "We want accountability," and I think accountability is absolutely core, because without accountability you can't have trust. If I say I'm going to do something and I don't do it, there's no trust.

If you come back and say, "Mike, you didn't do this," and I'm like, "Oh man, I totally forgot," or, "This came up and I wasn't able to," then you're able to restore that trust because you're able to communicate and get through that period. When I say compassionate accountability, it's that we know we're going to make mistakes.

None of us are perfect. Matter of fact, if you're not making mistakes, you're not making progress. The key is to have a process in place that says, "Let's identify a mistake; let's not obfuscate how we got there. Let's get to the root cause. The root cause is you just didn't know what the hell you're doing? That's okay. Let's understand that. Let's get you the training or the support you need, so that that failure pattern doesn't happen again."

Now, if you have a failure [mode] that occurs, and it occurs over and over, then it's not—it's a different situation. But in that compassionate accountability, it's like make sure people understand the accountability is there to help you not fail. And I think when you start to do that, it really becomes a core theme that you have to have in order to get process change to occur.

So for me, that's one of the huge things.

**Bill:** That's very important, absolutely. You don't see that often enough.

**Mike:** You don't. You hear people talk about it, "It's okay to make a mistake," but what happens when people make a mistake? You just slam them down, instead of supporting. It's frustrating to me because I really do believe in empowering teams, and I think this is another thing that's important for process improvement, is you can't have process improvement from the top-down, where you get the one big brain sitting in the office, everyone brings in their problems, "I've seen that rock; do this," and they'll do it.

That doesn't work. On small projects sometimes you can have that one hero who pushes through and, through sheer force of will, you get through. All you did was really enforce process control from a top-down, you didn't do process improvement. You just had a very smart person that's a little dictator.

**Bill:** Like you said, it's too complex; one person can't know it all anymore.

**Mike:** Yeah. So what I've always looked at is true empowerment. The way you get empowerment is through making people aware of what they're good at, and also making them aware of what they're not good at. And most importantly, and this is the thing that always gets me, is knowing what you know and knowing what you don't.

Situations we get in the most trouble are when we don't know what we don't know. We think we can solve it, and we just charge right in. All of a sudden we're like, "I'm not on the mountain anymore; I'm skiing and I'm not on the mountain. What the heck happened?" [laughter] So I'm

a big believer that if you look at most businesses, go to the 80/20 rule, 80% of the things a business does are not novel or complex; it's really applying past experience to solving problems. You empower people, you give them all the education, give them the training, you give them the support so that they can handle that 80% of the situation, but you let them know where the edge is.

Because that 20% where you actually need to get creative, you have to bring in innovation and thinking, you've got to see it when it's coming. Those people have to be empowered enough—again, with compassionate accountability—to be able to raise the flag and say, “I'm coming to what I know I don't know; how do we handle this and support it?”

When those organizations rally around individuals at that point, that's when I think real change and improvement and stuff can happen. But it's knowing that edge of what you know and what you don't know.

**Bill:** Mike thanks for meeting with me this morning. This has been a fascinating journey back through your career, and I'm sure it will give many valuable perspectives on the state of software process improvement.



**Mike Bonamassa** – [mbonamassa@mac.com](mailto:mbonamassa@mac.com)

I have had the honor of working for one of the best organizations in the world - Rational Software Corporation. The experience at Rational of contributing to and building teams has been a key influence in my own leadership style. Rational was one of the first companies to realize that knowledge of the operation and decision making should be pushed as far down into the organization as practical. Because of that Rational was able to move in many directions quickly yet still remain coherent around a central culture and vision. Rational also had a sales driven culture regardless of organizational focus. This empowered and sales driven culture has been imprinted on my DNA and is transferable across domains.

At Number Six Software we applied many of these lessons and grew the company from \$3 Million in 2001 to over \$35 Million in 2007. The Number Six growth was both acquisitive and organic - although the bulk of this was organic. At Number Six we built a unique culture of technical and business knowledge interwoven with client facing consulting and account management. Again we empowered employees but also made them engage in the sales process. We integrated our sales and account development with our technical excellence and created growth momentum that positioned us for an outstanding investor return upon sale to ATSC.

# Mario Hyland

## How to Achieve Results and Success with Multiple Models in a Small Company Environment

**Bill:** Talking with me today is Mario Hyland, Senior Vice President of AEGIS.net, Inc (AEGIS). Mario is the founder of AEGIS, and I had the opportunity to work with Mario's organization over the past year. While working with Mario, I noted two key distinguishing characteristics that caught my attention that I thought would be of interest to our readers.

First I noted that while AEGIS is a small company, they had achieved a rating of CMMI Maturity Level 3 for Development 1.2 Constellation (CMMI) as well as ISO 9001:2008 (ISO) certification. That's not an easy achievement for a smaller organization.

And secondly, in my day-to-day interactions with AEGIS employees over an eight month period, I noted a consistency, reliability and quality in the work they performed that was above the norm.

With that introduction, Mario, I have one question for you today. What is your best process improvement strategy or tactic that has worked really well for you and AEGIS?

**Mario:** I would point to three things. The first is that we approached process improvement organically. We knew that in order to be successful at the end of the effort, we needed processes that we could live with. So we didn't think the right approach was to bring in an outside organization with a turnkey solution for process improvement. Processes, procedures, templates, standards – we knew it had to be uniquely AEGIS' way of doing things in order for it to be accepted organizationally and therefore something we could live with. That said, we knew we couldn't get there overnight.

CMMI initially just was too large for us to take on. So we thought, "We'll start with ISO." We identified about nine process areas around which we needed to formalize and document our procedures and processes—we needed to develop a quality manual, quality processes, and through the implementation of that effort, we learned a lot. We began to formalize processes and make them consistent across the organization.

Meanwhile, a number of our employees had been with other organizations that had been successful, and some unsuccessful, at implementing ISO and/or CMMI. There was a certain level of anxiety within the organization as we continued down this path. I would say that one of our success factors was that the AEGIS leadership did not simply task it to be done; the leadership actually rolled up their sleeves and participated in getting it done. We helped review, write, edit, and revise, and we were an integral part of supporting it moving forward. That, I think, helped allay a lot of fears.

So once we had ISO in place, once we had lived with it for a year, we began to investigate CMMI and plan around how we would implement it. We spent a long time figuring out if it could be done, if AEGIS could operate under CMMI, before we even decided to “Go”. But once we did decide to go, we engaged a Class A SCAMPI appraiser as a consultant to provide us with some guidance. We tasked one of our IT professionals who had prior successful CMMI implementation experience to internally coordinate our efforts. We had a couple of dates in mind that we were trying to shoot for, but they were soft dates, they were targets, and not rigid. We were able to evaluate where we were in process and doing what we needed to do, and we ended up shifting the schedule by a couple of months to ensure that we were successful as opposed to ensuring we met a date. Again, leadership made it clear up front and regularly reminded the team that the goal was to implement the CMMI model to fit AEGIS – not to fit a particular deadline. We still drove toward the goal with purpose and resolve, but not with some artificial date hanging over everyone’s head. This helped the whole organization realize that we were committed to doing it right – not simply checking a box.

The second strategy has to do with maintaining these ratings and certifications. They require regular internal and external audits and appraisals to make sure the organization is doing all the things we say we do as part of ISO and CMMI. Some of the challenges we had just standing up CMMI was that we were already ISO, and if you start reading ISO, ISO says that you will only have processes and policies that are fully implemented across your entire organization. Well, CMMI doesn’t implement that way, not unless you do a staged implementation. We found, as we were evaluating CMMI, that the staged implementation is extremely rigid and difficult even in a small organization. Continuous improvement was the way to go, but the two, ISO and CMMI, collided; ISO was looking for everything to be done, and CMMI was looking for focus projects to appraise. We had to spend some time making sure that we ended up with processes and procedures that are uniquely AEGIS and which happen to conform to both the ISO standard and the CMMI model.

So the timing of our ISO audits around our CMMI implementation has been critical so as not to have a major finding during an ISO audit, which could jeopardize our ISO certification, at the same time be bringing in CMMI. So that was tricky, but we did work around it.

Finally, our third strategy has been maintaining our Improvement Opportunity (IO) system. This came out of our ISO implementation and is a key element of ISO, but it has also very effectively supported the continuous improvement philosophy at the heart of CMMI. Our IO system allows any employee or customer to submit, literally, an “opportunity for improvement.” It’s submitted on an electronic form that categorizes the issue and states the issue that needs to be improved. IOs range from corrections to internal forms and templates to suggestions for new employee benefits to corrective actions for preventing service delivery problems. The big benefit of the IO system is that it provides an easy but very meaningful way for everyone in the company to directly contribute to continuous improvement. When someone submits an IO, they are notified of the status as it moves through the steps of analyzing and addressing it, so they know they are having an impact. Of course, everyone understands that not every IO leads

to change – some great ideas just don't fit the organization for one reason or another. But our IO process has been specifically recognized more than once by outside auditors as clear and compelling evidence that AEGIS has embraced process improvement across the organization.

**Bill:** Another element of your strategy is the importance of people and how that forms the foundation for your process—what do you look for in the people that you bring onboard that assures you that they will sustain and improve your process?

**Mario:** Our recruiting process is—I'd like to say that we're only recruiting people, but we do find people for specific opportunities. But what I've found is through our recruiting effort, we're looking to find the right people, so the skills, they're soft skills. The ability to communicate, that's critical. Identifying people who are always looking to learn is another critical area. These areas as well as the sheer level of experience and expertise are what we look for in prospective AEGISians to differentiate us as an organization.

**Bill:** You talk about differentiation. You want to differentiate yourself from other organizations out there. How has going through this process allowed you to differentiate? What do your customers and your clients see that you do differently?

**Mario:** Right, as a small company engaged at a level more typical of much larger companies, we know we need objective ways to stand out. There are a lot of benefits of small companies – agility, attention from the executive level, dedication of the personnel. But size can also be viewed as a risk – lack of depth, cowboy-style approaches that are not repeatable, uncertainly about consistent quality. Implementing ISO and the CMMI model, particularly CMMI ML3, has helped us establish a level of credibility before we walk in the door that sets aside a lot of the perceived risk. Likewise, our focus on senior staff – people who have already been around the block a few times with various waves of technology, people who are excellent communicators, and people who have reputations for solving tough problems with ingenuity and hard work – helps us stay once we get through that door.

Our customers see and appreciate these differentiators. They see how we apply our processes and deliver consistent results. They really look at all of the AEGIS people and they say, "Wow, that person's from AEGIS and they're definitely performing above the bar," and that's what we try to do. While it's important that there are individuals and they have their skills, we want to tie that back to the organization. When the client sees four or five of our people doing things the same way – going back to our processes - that's where AEGIS stands out; that's where it's not about that one person anymore, although it's important; there's something behind them driving it, and that's AEGIS.

**Bill:** I happen to know that metrics are an important part of the AEGIS process. What advice do you recommend based on your experience with metrics?

**Mario:** Metrics are important to us since they help us see where we're going and how we're doing. We need to track metrics as part of our continuous improvement. While we don't have firm plans to go for CMMI appraisal at levels 4 or 5 yet, we know we can't get there without

metrics since organizational metrics are key to level 4 maturity. But there are plenty of obvious practical reasons for tracking metrics. We have found that, as with many endeavors, it's best to start out simple. Choose metrics that are meaningful and ideally ones for which you already collect the data or can make the data collection part of your normal routine. If you are

Regular	Decaf
11:25 11/10/10	
14:00 12/13	
6:49am 12/14	
8:30am 1/11	
10:00am 2/15	

Figure 1 - Fresh Coffee Made Times

developing software, metrics like lines of code are not relevant anymore, but defects per development cycle or sprint are important, and probably right in front of your face no matter what format or mechanism you use for defect tracking. So it's easy to pull out that metric and track it over time, see the effect on it when you make changes to your development process and so forth. Like the other aspects of process improvement, it just doesn't have to be complicated. You start with what you can do easily and improve from there. That's probably our most important overall observation and

recommendation – process improvement can begin with the most basic level of effort. One of our folks mentioned this recently when he was visiting a break room in a large local system integrator's offices. They had a coffee maker in the room, and evidently the coffee drinkers there had decided to take a simple step to improve the coffee making and consumption process. Someone tacked a sheet of paper on the bulletin board behind the coffee maker and wrote, "Fresh Coffee Made Times." They added columns for "regular" and "decaf". Various people (based on variations in the handwriting) had updated the chart with dates and times when they started brewing fresh coffee. That's a very practical example of metrics used for process improvement and it shows that process improvement doesn't have to be complicated.



**Mario Hyland** – [mario.hyland@AEGIS.net](mailto:mario.hyland@AEGIS.net)

**Mario Hyland, Principal Consultant**, a Senior Vice President and founder of AEGIS.net, Inc. (AEGIS) in 1996. Mr. Hyland's extensive career spans more than 25 years, with 15 years focused on Health Information Technology. Mr. Hyland currently supports the Department of Health and Human Services Office of the National Coordinator (ONC) – for the Standards & Interoperability Framework Federal Health Architecture CONNECT as a Federal Health Architect, and the Virtual Lifetime Electronic Record (VLER) Program. Because of his commitment to his customer's vision and mission, Mr. Hyland has been asked to serve on the VA Architecture Review Board, and as a member of the program's Risk Management Team. Mr. Hyland has authored numerous publications and has been the plenary speaker and most recently supported ONC at HIMSS11 Interoperability Showcase. Mr. Hyland graduated from Control Data Institute in Toronto, Canada.

## Jeff Dalton

### An Iterative and Incremental Approach to Process Improvement

**Bill:** Today I'm talking with Jeff Dalton. Jeff is the President of Broadsword Solutions and his company provides a broad range of process improvement and Capability Maturity Model Integration (CMMI) products and services. Several months ago I started following Jeff on Twitter and periodically checked in on his posts on his "Ask the CMMI Appraiser blog". It was becoming evident to me that Jeff was highly experienced and offered a lot of sound advice. Recently Jeff announced that he would be speaking at DC Spin on May 2<sup>nd</sup>, and I thought that would be great opportunity to ask Jeff if he'd be willing to be interviewed for this report. After an exchange of emails, Jeff graciously agreed to an interview and that led to our phone call today. With that background Jeff, I'd like to start by asking you our opening question: "What's the best process improvement, strategy or tactic that has worked really well for you or your clients?"

**Jeff:** I've been thinking about that question and I have an answer for it. The hardest part of process improvement is not telling clients what they should do—that's not even part of what we do—and it's not writing a process for a customer, and it's not even getting them to write a process and propose one and deploy it, although that is useful. The hardest part, and the thing that's most impactful and what works most for us, is actually how you deploy it to the community. In other words, how you get people to embrace it and use it.

And the approach we use that has been very successful is an iterative and incremental approach that we call Agile CMMI, and that's our branded approach for this. In some ways you can think of this as using Agile methods—like you've talked to Scott and Hillel, they've probably talked about Agile methods.

Using agile methods like incremental delivery, continuous build, collaboration, to not only write software, but to use those same similar techniques to deploy and get people to embrace process as well. So we do a lot of different things to help organizations embrace processes successfully. Because the best process in the world is useless if you can't get people to actually embrace it and adopt it.

And until they embrace it and adopt it, you don't even know if the process you developed is even useful. So we use incremental methods where we deploy small components of the process in releases over time. So we might release two or three sub-processes and test it out, and then once the company has embraced those small, easy to digest, useful things, we'll give them another set of small, digestible, useful things.

Now, we plan it all out in advance so they're getting appropriate pieces at the appropriate times. But the real kicker on this one is that that's how we learn. We learn as human beings by

digesting things in very small pieces. So when you look at so many process implementations that have failed, the key thing that was identical is that the company tried to throw a big binder or a big website at all their employees and said, “This is going to be your new process,” and we sort of turned that upside down on its head by saying, “We’re not going to do that; we’re going to give people very small components to start working with and we’re going to keep feeding them those things over time until they have their complete process suite and their process improvement architecture and their methodology and everything they need will be implemented over a period of time,” sometimes a period of months, where they get these things in small enough bites so that they can understand them, they can put them in context, and they can start to embrace them and use them successfully.

**Bill:** What was the genesis of getting to that strategy? Did you evolve it over time?

**Jeff:** Good question. My background is in consulting. I was with Ernst and Young for ten years, and in software development. In my days at Ernst and Young, when I was doing a lot of, let’s call it business consulting or process consulting, I noted that almost every process implementation was a failure. It’s a little bit like large-scale software implementations often fail, or software development implementations often fail.

I really struggled with, “What’s the reason behind all this?” and I discovered two things. One is that human beings don’t learn in a waterfall way; they learn in an incremental way. And adopting and using new processes is, above all else, a learning experience. People learning how to do things; people learning that this is good for them; people learning how to change the way that they think, because that’s really what process improvement is all about — changing the culture and changing the way they think.

So going back almost ten years, I really started thinking about, “How do we turn this on its head so that we can make process implementation a learning experience?” and I came to the conclusion that iterative and incremental was the way to do that. The second part of that is as a software person, I realized that there are so many process experts out there in the industry, talking about Six Sigma, CMMI and process improvement and ISO and using all these sort of process-centric languages, and I realized that until we started talking to software developers and project managers in language they can understand—things like object orientation, encapsulation, polymorphism and all the things associated with software development, that they really wouldn’t get what we were talking about.

This Agile CMMI method not only takes the first concept of incremental and iterative design and deployment, but it also embraces the second concept, by presenting everything to developers in a language they understand and using UML diagrams and data flow diagram, things they’re used to using, as opposed to trying to shove them into the process world, which is a world they don’t want to be in.

All of these things together sort of brought me to the conclusion that process isn’t overhead—process isn’t like this foreign thing that we make people do; process is another word for engineering. And we just, as an industry, as a process-proven industry, we’ve done an awful job

over the decades really explaining that well enough, and part of it is our toolset and our methodology.

And our Agile CMMI methodology solves both of those problems. So we've had really good success with it. We have probably a dozen clients that embrace it wholeheartedly, and some have even gone and started using it in other parts of their business, and it has really been a very successful adventure for us.

**Bill:** In terms of clients, do you need to find organizations that embrace this, or do you have to sell it?

**Jeff:** It's an interesting question because, and if you talked to Hillel, he probably talked to you about clients who seek certification versus clients who really want to achieve greatness, that's kind of a thing for him. We have similar ideas. We call it the "Path to Greatness", that's our slogan. And obviously you want all your clients to have that kind of mentality, but the honest truth is 95% of clients in my space, which is similar to Hillel's space, they come to us saying, "I need a certification, I need this piece of paper, I need to be level three or I need to be level two."

The difference between some other folks and me and our company is that I consider it part of my job to turn them; in other words, to change their mind. So one of the things I believe it's our responsibility to do—and you can read our website; I don't want to give you a marketing pitch—you can read anything you'd like because it's all on there, but I believe that as a process improvement expert or consultant, it's our job to help our clients understand why this is good for them, because they don't come to that conclusion, and they don't come to us with that understanding, usually.

They usually come to us with the need for certification and questions of, "How much does it cost? My job is to say, "Look, okay, we can help you with this, we can help you get the certification." I then start working with them and really start to change their attitude about how this whole thing works and how it can benefit them."

And I would say that I need about three to six months with a client to change their cultural understanding of what it is they're trying to do with CMMI anyway. And once you make them believe it, they're evangelicals and they go off and spread the word very quickly among their people. I think what's missing a lot is there's a lot of guys out there pitching CMMI work or process improvement work, and it's not that hard to put the acronym on your business card, but I think what's missing in our industry—and there's very few guys and girls that get this, I think—and that is the real consulting help we can give our clients, helping them understand why this is valuable to them and how they can use this as a strategic weapon for their business. I consider that part of my duty to educate them on that fact.

**Bill:** I think that's right dead on, Jeff. When I have been involved with a successful implementation, I can see that idea take hold in people as they observe things happening and results happening and things changing, and all of a sudden a light switches on.

**Jeff:** I think the term consultant is—I don't want to go off on a rant here, but the term consultant is kind of used loosely with a lot of people. I believe that to be a total consultant means helping them understand culture, helping them communicate things, helping them learn. These things are all above and beyond the certification discussion, right?

So our methodology has all that built into it. It sort of came about over the years as just a reaction to all these problems. So it's really been good for our clients.

**Bill:** I think that's right Jeff. I think you are addressing all the other typically unseen issues that are below the waterline of the iceberg that so often many organizations seem to learn the hard way. How would you describe the mission of your company?

**Jeff:** The kind of mission I guess I'm on is to help people really understand that this discussion is about culture; it's not about certification. The big message that I often deliver to clients—as a matter of fact, I'm on my way to teach a class in Dayton on this subject—which is process isn't overhead; process is the definition of how we do work every day.

One of the little tricks I use when I give this talk at conferences is I talk about how I have a new way to spell “process,” and then on the screen I bring up a phonetic spelling of the word “engineering” and I let people look at it for a minute and figure out what it says, because it's phonetic and it's not obvious right away.

I think it really makes the point that process isn't this thing we do that adds overhead, time and energy, because if you do it that way, then you did it wrong. Process is about how we perform engineering tasks every day, and every engineer in the world, if he thinks about it and it's presented to him the right way—and we think our Agile CMMI method is that right way—any good engineer you present that argument to will be in agreement and will embrace it. So that's kind of a mission that we're on in our company. So I guess that kind of sums it up.

**Bill:** Jeff, this has been another very informative and revealing interview. Thank you very much for taking time to share your expertise and experience with us today.



**Jeff Dalton** - [appraiser@broadwordsolutions.com](mailto:appraiser@broadwordsolutions.com)

Jeff is President, Certified Lead Appraiser, CMMI Instructor, ScrumMaster and author of “[agileCMMI](#),” Broadword's leading methodology for incremental process improvement. In 2008 he coined the term [Process Debt](#) to describe the crushing, over-bearing processes too many companies employ to achieve a CMMI rating. In 2009 Jeff was awarded the prestigious Software Engineering Institute's *SEI Member Award for Outstanding Representative* for his work uniting the Agile and CMMI communities together through his popular blog “[Ask the CMMI Appraiser](#).” He holds degrees in Music and Computer Science and builds experimental airplanes in his spare time.

## Paul E. McMahon

### How to Discover Your Own Best Practices for Process Improvement Success

**Bill:** I'm pleased to be talking with Paul McMahon today. Paul is Principal at PEM Systems and helps large and small organizations improve their technical and management processes and move toward increased agility and process maturity. I recently encountered Paul while I was reviewing presentation briefs at the upcoming Better Software Conference in Las Vegas, Nevada in June. Paul's presentation brief on improving your organization through Lean and Agile techniques caught my attention, and I decided to pick up his recently published book, "[Integrating CMMI and Agile Development: Case Studies and Proven Techniques for Faster Performance Improvement.](#)" I was so impressed with it that I decided to contact Paul and was excited when he agreed to interview for this report. So Paul, why don't we go ahead and get started by asking you our lead in question: "What's the best process improvement, strategy or tactic that has worked really well for you or your clients?"

**Paul:** It may sound strange at first, but even though I'm a consultant I have learned not to try to give my clients answers or tell them what to do. Rather, what I'm finding I'm doing more and more of is helping clients discover what's already working in their organization, which sounds strange because if it's already working, how is this going to help them?

To explain this a little more, I've learned through the years there are two ways to look at process improvement: The traditional way is—when we see behavior that isn't quite right—to immediately try to correct it and get the behavior going the right way. But that's where we often run into resistance because that's where you start telling them what to do. They're not so sure they should listen to you because you're an outside consultant.

They think: "Do you know my job?" or "Why should some outside consultant be able to tell me what to do?" So the other way I like to look at it, to avoid that scenario, is to go in, listen to what's going on, and to talk to people, letting them tell me what's happening. I take notes and just try to discover the behaviors that are already happening—good and bad.

The interesting thing that I've discovered is even in an organization that needs help, there are always people that have figured out some really neat ways to address common problematic issues. Often their techniques aren't even considered a standard practice. So what I like to do is observe that, extract it, and then help spread it across the organization.

I hadn't really thought about it until you asked me this question. When I considered it, just this past weekend, I realized this is definitely the best strategy that I've come across. I think the reason it's the best strategy is that it really does avoid all those issues of, "Why should I change?" or "Why should I believe a consultant who doesn't really know my organization or my job?" It removes those common obstacles.

**Bill:** Paul, can you share any examples with us?

**Paul:** What I talk about in the book are some of the best practices that I discover this way. People sometimes don't even think of these as practices. I call them local practices. They're usually not documented, but they're things that are happening and helping people succeed in each organization.

For example, in the Bond case study in the book I talk about doorway risk management. This is something I actually observed. I'm watching the way they do risk management. This organization really was successful because they lived and breathed risk management. When somebody was worried about something, they're in the doorway of their manager, and they're already working out the mitigation strategies.

That wasn't written down. It was just something that was happening. But I actually wrote this down, described it, and helped them train others in the organization. We trained people and spread the word this was an expected practice. People loved it because when we trained it, it wasn't the consultant saying, "Here, this is what you should do." I brought the people in that were already doing it in their own organization, and I was just the facilitator.

I said, "Joe, could you describe what you do?" And then they shared with each other their own best practices. The more I do this, the more I'm finding as a consultant I have less work to do, because what I'm really doing is motivating the people in the organization to talk to each other. Just a few other quick examples—again, a lot of them are in the book:

What I call the super resource spreadsheet. Every company does something like this, but they don't write it down. They don't train others in how they do it or why they do it. There's usually somebody managing the resources across projects, and somebody usually has this big Excel spreadsheet with a lot of valuable information, such as all the engineering people in the company listed—and what projects they're working on.

They're often tracking how much work each person is doing on each project. They're making decisions related to, "Well, if I'm having trouble on one program, I might have to pull Joe off of this one and put him over here, but what's the impact?" Some keep a column in that spreadsheet of important things to consider with respect to people working certain projects, such as potential impacts to that project if this person was moved to another project. They use this informal spreadsheet with all this valuable information to help make better decisions.

I've brought this to the attention of a number of companies. Few companies ever write this down and describe it as a best practice, but something like this is used in many organizations. This is an example of a technique that is used to help with critical decision-making that frequently has to be made in organizations.

Let me give you another example with peer reviews. The interesting thing is there are a lot of people who think a peer review has to be formal, "I go at a set time and I go into a room." But one of the things I've observed in a lot of companies is the best peer reviews are the ones that happen when a situation occurs and they know that they've got to get their best people together

to talk about this situation. The review just happens at that point when they knew they needed it. Some people may view this in a negative light because it is ad hoc, but I see it in practice as smart because it works.

When I observe this happening, I ask someone in the organization, “What are the criteria you are using when you call such a meeting?” When they think about it they realize they do know, but they haven’t really described it and told others about it. So again, I pull that information up, extract it out, we write it down, and then we say, “This is expected. We expect you to pull people into a room, talk about issues and solve problems when you have these types of situations because they have proven to work in this organization in the past.” By making more of the people in the organization aware of such practices the organization as a whole can begin to perform at a higher level and do it more consistently.

Another piece of this strategy I really like is what I call tailored workshops where I’m just facilitating. I make sure to have people in the workshop that are doing these local practices. Then I just turn it into a sharing and have the different people in the organization share with others some of these best practices they never even viewed as best practices.

**Bill:** I think that’s a fascinating approach about helping them to discover and find the answers themselves Paul. You point out the practices that are so well known to them they aren’t even recognized. I’ve seen instances of how successful this approach can be, but it seems like there are so many distractions, there are so many ways to get off-course, and I’m wondering if you found any ways to keep a focus on this approach.

**Paul:** I agree. You do need to stay focused on the right things because I have also found you can get overwhelmed and go too far with this approach. The way to keep it focused and to really keep value there is not to try to discover anything. If you talk to people and you ask them how they do their job, they will start sharing with you. You will start hearing where their pain points are in getting their job done. I listen for what’s getting in their way.

When I do this I start to see patterns in organizations of where the trouble spots are. Then I listen for the people who best know how to solve those common trouble spots. So the things I raise up in these workshops and get people to talk about aren’t just any particular neat thing they’re doing, but it’s something that someone is doing that others need help with, and that’s why it’s of value and why people get excited about it. Typically in the workshops if I ask people how they might handle some specific common issue that I have heard about, I also make sure I have somebody there who has faced a similar issue and has found a good solution and is willing to explain that solution to the group.

That keeps a focus on this approach. We’re not talking about a lot of things. There are often just a few of these key trouble spots, or patterns, that keep reoccurring and really have value if you can show people how to handle them effectively.

When a project starts to get into trouble, it’s not uncommon that there are two or three things that are causing it, and it’s not the same two or three things in every organization. Each

organization seems to have their own specific patterns that tend to repeat. So if we can find the best way to keep away from these common patterns, or solve them rapidly when we sense them, and share those techniques it leads to real improvement in the organization.

It's not just, we're putting processes in place for process's sake; we're putting them in place where we can really see value added that can help the people in the organization with the common obstacles and trouble that they face.

**Bill:** Paul, we've been talking about ten minutes now and before we end our talk today, I'd really like to ask you why you wrote your most recent book. I'm so impressed with how well it's written. And there are so many great insights and examples throughout the book. It's clear to me that you put a tremendous amount of work into this book.

**Paul:** The thing that really motivated me to write that book was the misunderstandings that people have about CMMI. To me the best way to use the CMMI is to turn the model around and not look at it as a set of dictated practices, but turn the practices in the model into questions. Asking questions, and then listening—that's the way to use the model. Using the model this way got me into this mode of just listening, and then finding where we can really help this organization, rather than just creating a lot of processes.

I think when you do that, people really quickly begin to see how the model can help them, and how it can work well with Agile approaches.

**Bill:** I think the CMMI model is a very powerful tool and it's not exactly obvious at first glance. My motivation to write this interview series with people like you came about in a similar manner. I was involved in a successful CMMI implementation and then a new CIO came in at the very end who didn't understand it and killed it.

**Paul:** The mistake that gets made is, when people decide, "I'm going to use the CMMI and I'm going to use it right now because I want to be level three in six months." If you take that attitude and you put that schedule in place and you start driving for a formal appraisal as your primary goal, you totally lose the value of using it less formally in this question mode, which really is needed before getting focused on a formal appraisal.

You need to give the organization time to find out where they need their improvements and to implement appropriate changes or just share what is working across more of your organization. So it's a less formal way of using the model. If you jump right to the formal way of using it for an appraisal, you won't get the value.

**Bill:** Paul, thank you very much for talking with me today. I really enjoyed talking with you today. And I'll leave our readers with this teaser. "If you're looking for a guaranteed way to improve your golf game or just about anything, pick up Paul's book and read chapter 9!"

**Paul McMahon** - [pemcmahon@acm.org](mailto:pemcmahon@acm.org)

Paul is Principal, PEM Systems (Binghamton, NY), helps large and small organizations as they improve their technical and management processes and move toward increased agility and process maturity. He has taught Software Engineering at Binghamton University, State University of New York; conducted workshops on Engineering Process and Management, and published more than 35 articles on software and systems development and management, including several in CrossTalk, The Journal of Defense Software Engineering. Paul is the author of two books, Integrating CMMI and Agile Development: Case Studies and Proven Techniques for Faster Performance Improvement (August, 2010) and a book on collaborative development, Virtual Project Management: Software Solutions for Today and the Future (CRC Press, 2000).

A frequent speaker at industry conferences, including the Systems and Software Technology Conference, Paul has been consulting independently since 1997. His experience, insights, and recommendations he shares with his clients reflect 24 years of engineering and management experience working for such companies as Link Simulation and Lockheed Martin. Paul holds a BA degree, Magna Cum Laude, in mathematics from the University of Scranton, and an MA degree in mathematics from Binghamton University.

His current interests and work with clients focus on the use of Agile Methods, Lean techniques, the CMMI framework, and distributed teams. Paul provides tailored workshop training for his clients. He is also currently on the leadership team of an international initiative to refound software engineering founded by Ivar Jacobson, Bertrand Meyer and Richard Soley ([www.semat.org](http://www.semat.org)).

Paul is a Certified ScrumMaster and has been a member of the CROSSTALK Editorial Review Board since 2004 and continues to serve on the board in 2011. Past and current clients include Raytheon, L3 Communications, BAE, Alion Science and Technology, Northrup-Grumman, and the Department of the U.S. Navy.

## Next Steps and Acknowledgements

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As the reader of this paper, you are our most important critic and reviewer. The publisher and contributors to this paper want to know what you think about the information presented, what we could do better, what additional topics you'd like to see published, and any other comments you're willing to share.

### **Our Contributors are Available to Answer Your Questions**

We hope this paper has provided you with helpful information to get your process improvement efforts headed in the right direction and on track for 2011. However, if you'd like additional information on any of the topics presented, our contributors are available to answer your questions. Please feel free to visit our contributors' web sites or reach out to them via the email address provided in their bio.

### **This Paper Will Continue to Evolve**

This paper will continue to evolve and will be continuously expanded and updated. Please make sure you have submitted your contact information at the 5 Minutes to Process Improvement Success website at [www.5minutespisuccess.com](http://www.5minutespisuccess.com) to be notified when updates are released.

### **Recommend Someone to Interview**

We are interested in interviewing anyone who is achieving uncommon success and leveraging process improvement to achieve real performance gains. Please email your recommendations to Bill Fox at [bfox@5minutespisuccess.com](mailto:bfox@5minutespisuccess.com) or by phone at 540-454-6986.

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