

In-the-SPIN

Newsletter of the Boston  **SPIN**

Issue 31, November, 1999

Editor: Carol Pilch

Editorial

Three of our SPIN committee members contribute to this month's SPIN Perspectives column. Dan Allen, Rick Brenner, and Dolores McCarthy facilitated our October Roundtables and report on what the Roundtable participants had to say. The Roundtable topics set the stage for Michael Mah's dynamic presentation on how we as managers and developers can deal with imposed deadlines on software projects. Michael Mah stated that his objective was to give each of us in the audience one or two ideas to take with us. In my view, and that of other members of the audience that commented to me informally on the presentation, his objective was met or exceeded. If you missed the October meeting or would like a recap, there's a summary of the presentation in this issue. This issue also has a reprint of a message Michael Mah sent to Johanna Rothman as a follow-up to his presentation. We'd like to share the message with our readers so it's included in a special "Speaker's Message" column.

If you're a reader of this newsletter, the Boston SPIN would like your feedback. Consistent with the Boston SPIN charter, *In-the-SPIN* is provided by the Boston SPIN as a means of supporting the free and open exchange of software process improvement experiences and ideas. The Boston SPIN would like to know if the readers' expectations are being met. The steering committee encourages feedback on the newsletter as well as broader participation in the content and production of the newsletter. Send letters-to-the-editor, quips, quotes, anecdotes, articles, offers to participate in the newsletter committee, and general correspondence to Carol Pilch, carol.pilch@GD-CS.COM.

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SPIN Perspectives

This month's SPIN Perspectives column features summaries of the three Roundtable discussions conducted at our October meeting.

The following synopsis is contributed by Dan Allen. Dan is President of Vermont Offshore and Membership Chair of the Boston SPIN.

Benefits of An Imposed Deadline

Software people seem like masochists. We voluntarily expose ourselves to pain. Most of what we do outside of coffee breaks is painful.



About the only evidence that we are not masochists is that we genuinely hate imposed deadlines. Imposed deadlines force us to spit our products out the door with hardly a thought for the pride that drives many of us to our profession in the first place. Imposed deadlines burn us out, transforming us to shells,

who learn not to care about the alleged systems we feel we are forced to produce, often in the name of a quick buck or an executive's ego.

However, at my company, we deliberately impose deadlines on ourselves. We do it at the middle management level. Here are our reasons:

- Deadlines create focus.
- Pressure of deadlines train our teams and force them to gel.
- Aggressive deadlines accelerate our work, helping us get our products to market more quickly.

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- We think it is realistic to impose deadlines when real ones don't exist, since we usually are working on products with which we have no experience. Therefore, no basis for a "rational" target date.
- Deadlines support a "bias for action," which feeds Senior Management's need to have bullet items for their status reports. At the middle management level, marketing people seem to appreciate this too.

One of the reasons imposed deadlines work for us is that our systems architect is a wiz. We don't need to come to consensus on a lot of things, because our architect usually generates better answers than our consensus does. He knows what we need to build and how long it will take. We just need to do what he says. Good thing he is not stupid, or this would be a problem.

In our round table discussion, just about everyone had experience working with one imposed deadline after another, no matter what industry they were in. Perceived time-to-market pressures was the most common theme. That was why the super-fast radio controlled racecar we had at our table was a good symbol. The idea is this: if you want to race, you got to get your car to the track at race time. Put another way: if you want your software to be successful, you have to ship it.



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If we had had more time, we probably could have developed a more profound understanding of this topic. We wanted to make the race of the SPIN meeting, so we stopped here.

The following synopsis is contributed by Dolores McCarthy. Dolores is a Senior Process Engineer with Computer Sciences Corporation and is Secretary of the Boston SPIN.

Avoiding Burnout

Participants at this roundtable had a variety of ideas about the topic, "Avoiding Burnout." First they talked about what burnout is and is not, as they saw it or had read about it. Burnout is incapacitating and causes serious problems with work and life in general. Burnout is not the same as stress, however too much stress or poorly handled stress can lead to burnout. Not all stress is bad. Moreover, not everyone handles the same amount of stress (if that could be measured) equally well, so one person could end up burned out and another might be thriving with the challenge.



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The group talked about what people might feel like or appear like to others if they are too stressed and may be heading toward burnout. Some said people could be unlike their usual selves, often moody or irritable, withdrawn, and not feeling like working or mixing with others. On the other hand, they might be getting angry and insulting for no apparent reason.

Participants also talked about the factors that stress people, especially at work. Expectations, either from within or outside

of oneself, could be a big factor. It could be the unreasonable deadline that causes managers to drive people 50-60 hours per week for many weeks. Everyone on the team would be expected to go along with it, and it would be difficult to resist, even though detrimental to good health and morale. Another stress factor at work could be the manager who keeps changing the direction of the work without warning or rationale. Some said it could be they who cause their own stress, if they drive themselves too hard, and don't take breaks. Another said it could be uninteresting, boring, or repetitious work that is stressful, although that did not apply to anyone at the table.

So, what could be done to avoid the level of stress that leads to burnout? One person suggested that the work team might make helpful suggestions and negotiate with their manager for a less stressful way to reach the work goal. It seems that most people think they can't or shouldn't speak up, but it's worth a try if done in a constructive manner. Having more control over one's own life is in itself a stress reducer. Also, taking a walk or some exercise during the workday can help reduce accumulated stress.

The consensus of the group was that by taking appropriate action, individuals could avoid burnout.

[Note: Many articles about the subject can be found on the Internet, including a self-questionnaire to see if you're headed toward burnout. Just search under "burnout" or "stress."]

The following synopsis is contributed by Richard Brenner. Rick is Principal of Chaco Canyon Consulting and is an at-large member of the Boston SPIN Steering Committee.

Fixing Project Problems with More Bodies: Pros and Cons

Our roundtable discussion ranged over topics related to the practice of adding more people to projects. This report focuses on three small pieces of our conversation, but they are three very important pieces:

- Why do we add people to projects?
- What good does it do?
- What can we as managers do when it happens?

Why do we add people to projects?

Usually we add people to projects only when they're "in trouble." When a project or a project element is late, or in danger of not delivering something that is considered



important, management sometimes responds with additional staff. Whether or not additional staff would be helpful in that situation is not really a consideration.

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Meeting Summary

Notes from the October Meeting

Contributed by Carol Pilch, General Dynamics

Topic: Software Projects in Crisis Dealing with Dynamics of Imposed Deadlines

Speaker: Michael Mah

Michael Mah began his presentation by stating that as software managers and developers we are experiencing chaos in an “internet speed” economy. The good news is that productivity is increasing, cycle time is improving, development costs are down, and quality is going up. The problem he said is that this is not good enough. We are given statistically impossible targets and goals for schedules. As a solution, he is not advocating **NOT** setting a date.

A significant part of the schedule estimating problem is that when you initially estimate what it will take you typically have about 50% of the requirements. 16.2% of software projects are on-time/under budget. How do they make it? They cut functionality and deliver the “core” functionality. The whole scenario is set in motion because the end date is given and the requirements are not fully defined.

Rules of thumb

There are “rules of thumb” that we use to estimate software schedules. The assumption is that software scheduling acts in a linear way. But what do you do when you’re given a deadline and don’t know 50% of the requirements? At some point, you add more people. However, you lose efficiency by adding people late in the schedule. Industry data demonstrates that the best schedule compression that can be achieved is about two months (20%) in a ten month schedule.

Two problems

There are two underlying problems at work here:

- Management metrics frameworks are equivalent to antiques
- Technologists are not trained in negotiation.

Laws of Cause and Effect

Mah then presented the issue with metrics used to estimate schedule:

- The fundamental, or core metrics of time, cost, and quality, across small, medium, and large project (size) are **interdependent** variables.
- We, as managers and developers, have treated them as **independent** variables. (For example, we want to believe that we can keep a deadline fixed in spite of size growth.
- We think the effort is the effort, and reliability should not be impacted much (we hope).
- Not only are they **interdependent**, but data has revealed to us that changes in one dimension can result in *geometric impacts* in another dimension.

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Sometimes an organization needs to bill staff time to a client, or perhaps must find a place to use specific employees. These are examples of other circumstances that can lead to additions to the project staff. In both cases, the principal consideration is the needs of the organization—especially its financial needs—rather than the needs of the project or of the client. This emphasis rarely leads to a good outcome, and can result in demoralization, lower product quality and schedule disruption.

What good does adding people do?

The consensus of our discussion was that there is not much net benefit to adding people to a project when it is in trouble. There are reasons why it doesn’t help:

- It takes time to orient new people to the work to be done. The people who are already working on the project don’t have time for this additional burden.
- Since people who aren’t fully conversant with the work of the project are more prone to make errors, the rework rate can increase when you add new people.
- People who have been responsible for some areas of the project might find some of their responsibilities reallocated, so that the new people will have something to do. This can create resentment and new management problems.

When you can find some work that is self-contained and unallocated, it might be possible to introduce new people to a project with a minimum of disruption.

What can we as managers do when people are foisted on our projects?

Resisting the addition of new people when a project is in trouble is probably the best strategy. But if you can’t, and you can’t find some self-contained work for them to do, try letting them not work. Find a way to keep them from disrupting a project. Some of our roundtable participants reported that they had seen “new” staff sit in a cubicle for two weeks doing nothing. It sounds silly, but it was probably a wise move by that project’s manager.

Adding staff to a project that is in trouble is not about helping the project. It’s about helping Management. Management needs to be able to say they are doing everything they can, and they need to be able to point to something. Adding staff provides them something to point at.

In truth, the best thing for Management to do—usually—is Nothing. Let the team do its work.



Selling and Negotiating

What we as software managers and developers really need to do is selling to management and negotiate reducing functionality. Use the argument that imposed schedule is going to have an impact on defects and look for ways to reduce scope. Work backwards. How much functionality can be built into the schedule?

Provide industry statistics as backup. Translate defects into dollars. "If the system is down, you lose X dollars." Chart the demonstrated decrease in quality levels when the schedule remains fixed despite "feature creep."

Productivity Metrics vs. Productivity Index

Productivity metrics are dangerous. The ratio (size/staff months) used in estimation methods does not include time as a variable. In estimating software schedules this way we make bad promises. Unfortunately, this is the nature of engineers. We're chronic people pleasers and often our self-esteem is in terms of how much we can do. We don't say no.

We need a corporate memory (project histories) so that we know how to estimate the next project. Then we can calculate our productivity index that incorporates a time variable:

Productivity index:

$$PI = \text{size} / (\text{time} * \text{effort})$$

Use the PI to do a best case/worst case analysis. Provide a window or range for negotiation with management.

Boston SPIN Calendar

Information about Upcoming Meetings

by Johanna Rothman, Program Chair

November Meeting Announcement

Topic: Good Enough Quality

Speaker: James Bach

When: Tuesday, Nov. 16, 1999. 6:30pm-8:30pm
6:30-7:00 Networking and Round Tables
7:00-7:10 Announcements
7:10-8:10 James Bach: Good Enough Quality
8:10-8:30 Questions and Answers

Who: Everyone (Academia, Government, Industry), no charge

Abstract:

In intellectual enterprises, "Good Enough" is an abstract concept and a challenging goal-- at least for those of us who want to be *absolutely certain* we are doing a good enough job. One thing we do to evaluate the goodness of software is to test it. But how do we know that our testing is itself good enough? We need methods of evaluating the goodness of testing. In this talk I will present two heuristic models that I use to evaluate test processes. They are part my slow, but relentless progress toward a comprehensive cognitive test methodology.

About the Speaker:

James Bach (<http://www.satisfice.com>) is founder and principal consultant of Satisfice, Inc. James cut his teeth as a programmer, tester, and SQA manager in Silicon Valley and the world of market-driven software development. He has worked at Apple, Borland, a couple of startups, and a couple of consulting companies. He currently edits and writes the Software Realities column in Computer magazine. Through his models of Good Enough quality, exploratory testing, and heuristic test design, he focuses on helping individual software testers cope with the pressures of life in the trenches and answer the questions "What am I doing here? What should I do now?"

Location: General Dynamics, 77 "A" St., Needham MA.

Directions: From Route 128 in Needham, take exit 19A onto Highland Avenue East. Take your first right by the Ground Round and take your second left onto "A" Street. General Dynamics is the last building on the right. Enter the parking lot by the General Dynamics sign and come into the building by the cafeteria entrance, which is located to the left of the main entrance. There will be a security guard at the entrance.

Info: See our web page, <http://www.cs.uml.edu/Boston-SPIN>
For SPIN info, contact Johanna Rothman, 781-641-4046, or jr@jrothman.com

Cancellations (including weather cancellations): We will notify the membership via email to the SPIN distribution list by 3pm, post the notice on the SPIN web page, and announce the cancellation on Channel 7 TV and radio, WRKO AM 680.

SPIN '99-'00 Program and Speaker Schedule as of 10/11/99

Date	Speaker/Topic
Nov. 16, 1999 @ General Dynamics	James Bach "Good Enough Quality"
Dec. 21, 1999 @ General Dynamics	Audience Participation Roundtables
Jan. 18, 2000 @ General Dynamics	John Abbot "Requirements Sizing"
Feb. 15, 2000 @ General Dynamics	Johanna Rothman "Using Quality to Drive Project Lifecycles"
Mar. 16, 2000 Joint meeting with ASQ	Jim Driscoll "Ensuring Clients Achieve Superior Value in the Digital Economy"
Apr. 18, 2000 @ General Dynamics	Dolores McCarthy, Carol Pilch, Panel: "Getting to Level 2" Moderator: Donna Johnson
May 16, 2000 @ General Dynamics	Paul Lanzoni "Technology Planning and Decision Making"
June 20, 2000 @ General Dynamics	TBD

Looking for Interesting Speakers



We are always looking for interesting speakers. If you'd like to speak at Boston SPIN, please review these criteria before sending us an abstract.

Speaker Criteria:

1. The topic must be timely, an issue of concern to our membership.
2. We want to hear about real-world topics. If you have an academic topic, we're interested in how it applies to the real world.
3. If you are interested in creating a panel, please write an abstract, and suggest at least one panelist. We can work with you to find other panelists.
4. The topic should either explain how to *do* something, or bend our brains in another direction.
5. The presenter should be intimately involved with the "hows" of the thing that got done.
6. We are not interested in sales pitches.

If you have information you'd like us to hear, please send an abstract to Johanna Rothman, jr@jrothman.com. Or, contact Johanna at 781-641-4046.

We developed a speaker checklist so that none of us would have to rely on our short term memories. Please use the checklist to prepare for your SPIN talk.

Speaker Checklist:

1. 2-paragraph abstract and speaker bio at least 60 days in advance to Johanna.
2. Speaker provides one copy of overheads for our library.
3. If speaker desires, a copy of overheads, paper, etc. for our web page as of the day of the meeting. If possible, provide 50-60 copies of overheads at the SPIN meeting. The attending members really appreciate this.

Speaker's Message

From: Michael C. Mah, Guest Speaker

Thank you for the enthusiastic response to my talk. The feedback was very positive; Nearly everyone commented that they received PRACTICAL techniques that they wanted to "try at home"

"What Did He Talk About Again? O Yeah, 'Just Say No' to Software Estimation!"

Let's recap the theme.

Deadlines. They're what we're given first, before our project is even defined. "You folks start coding, I'll go and see what it is they want us to build. We have a date to meet."

Given that, we need to ditch traditional estimation. Consider a "Reverse Estimate". That is, given the deadline, given the size of our team, and given the type of system we have to build (Inventory Management, Financial, Telecom, etc etc.), how much can we realistically promise in this time frame?

I focused on "Keeping Our Promises", because, from industry overrun stats, we as an industry severely OVERPROMISE. One big dysfunctional family.

So Here's the Stuff I Promised!

Two Powerpoint Items:

- 1) Reverse Estimation with Example and
- 2) Historical Benchmarking with Example.

This uses the notion of a Productivity "Index". But it's not a cure all. I advocate supplementing these with your own performance charts (think about the Pediatric Growth Chart examples). (Note: These are now on the SPIN website)

The latter is described in the reprint I handed out last night from the May issue of Software Development magazine.

Online, it's at

<http://www.sdmagazine.com/supplement/ppm/features/s995ppm2.shtml>, if you didn't get a copy.

Another useful item is a reprint of an article from Yourdon's American Programmer entitled "An Aerial View of the Software Metrics Landscape." Available in the QSMA Web Site Resource Center (Articles) at www.qsma.com

I welcome comments/questions on the QSMA Discussion Forum!

Our electronic "virtual community" is a great place to add your voice to a dialog on this. Go to www.qsma.com, Resource Center, Discussion List. If you have ideas or thoughts and want to pulse the community for answers or questions, come on in! It's free. You can subscribe and unsubscribe whenever you want, as often as you want. Connect with folks and get some great ideas while you're at it!

Good luck with the attached. And thanks again for attending. For questions, contact me through our web site, via e-mail at michaelm@qsma.com, or at (413) 499-0988.

Michael Mah
Managing Partner, QSM Associates, Inc.
www.qsma.com

P.S. For fun with BlueQ Magnets (the ones that poke fun at those inspirational posters), go to www.dafridge.com or www.fridgedoor.com. Enjoy! (I only get the fun, no commissions unfortunately.)

Boston SPIN

The Boston SPIN is a forum for the free and open exchange of software process improvement experiences and ideas. Meetings are usually held on third Tuesdays, September - June. Boston SPIN welcomes volunteers and sponsors. There is no charge to attend the meetings.

For more information about our programs and events contact:

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For information about SPINs in general including ***HOW TO START A SPIN*** contact:

Dawna Baird of SEI (412) 268-5539, dbaird@sei.cmu.edu,
<http://www.sei.cmu.edu/collaborating/spins/spins.start.html>.

IN THE SPIN is available on our Web page:
<http://www.cs.uml.edu/Boston-SPIN>.

TO RECEIVE NOTIFICATION OF NEW IN-THE-SPIN ISSUES and Boston SPIN specific notices send email addressed to danallen@danallen.com

We have 2 separate email lists: one for this newsletter and one containing announcements that we receive from other process organizations and forward out.

IF YOU WANT TO ADD YOURSELF TO THE ANNOUNCEMENTS LIST send email to ryan@sei.cmu.edu.

Send letters-to-the-editor and general correspondence to Carol Pilch, carol.pilch@GD-CS.COM.

Send job postings to heimann@world.std.com.

Back issues and other information about Boston SPIN can be found at our WEB HOME PAGE:
<http://www.cs.uml.edu/Boston-SPIN/>