



Atlanta SPIN

Software Process Improvement Network

The Atlanta SPINaker

January 2007

Volume 2, Issue 1



Watts Humphrey

The Wisdom of Watts Humphrey



Watts Humphrey Opening the Meeting

The 2006 Atlanta SPIN year closed with a flourish, as Watts Humphrey, nationally honored for his pioneering work on software process improvement, spoke to a group of nearly 100 attendees.

Watts' talk focused on the Personal Software process (PSP) and the Team Software Process (TSP.) The talk was interspersed with real world examples drawn from Watts' experiences, in particular war stories from his crucial early efforts (and successes) at IBM when his responsibilities were at the root of success or failure for literally billions of dollars of sales.

At the onset of the talk, Watts recounted the environment and attitudes he faced back then, where "Management" identified what schedule needed to be met; the Development team caved upon sufficient pressure; a "we'll do the best we can" approach was adopted; and the seeds

for failure had been not only been plowed but also watered.

Watts reminded folks that this was nearly 30 years ago, and yet the way that many programs are written today has changed very little. The key point here was that if things aren't done differently and better, the increasingly tougher and tougher problems that need to be addressed will overwhelm the best efforts we make to cope with them.

The challenges faced in software development begin with the difficulty in capturing a definitive statement of requirements. The developer's task is to convert potentially 1000's of pages of text to a precise solution that enables a machine to solve the problem. In most cases, the requirements are fundamentally "opinions" on how a system should work, opinions that all too often have not been meaningfully validated with the ultimate users of the system. He emphasized that given this, a requirements process is necessarily a learning process that must be managed across the duration of a project.

So what's the key to success here? Simply put, never make a commitment without a plan. It's important that the people doing the work make the plan. They should be challenged to ensure that the plan is aggressive but doable.

Continued on Page 2

Inside this issue:

More from **2**
Watts Humphrey

On the **3**
BOARDwalk: Scott
Burkett

Spotlight on our **3**
Sponsors:

About Atlanta SPIN **4**

What's Next? - January 17th

John DiMaria - BSI Management

**Importance of International Standards & Certification
in Your Compliance Program**

Watts Humphrey Highlights - continued

A challenge that often emerges in the early stages of working this way is that the team in fact doesn't have good data to base the plan on. Watts recounted a Swedish Army saying that if the map doesn't fit the terrain, believe the terrain. So if the plan doesn't fit the work, believe the work – And get the key measures in place to track the work for future use. The good news – there's really only three: 1) Task Effort; 2) Task Size; and 3) Defects Found.

In doing the above, Watts noted a crucial point. The measure of effort in time needs to include ONLY time actually spent on the task. Otherwise, if the measure includes all manner of disruptions, you won't be able to use it for planning purposes because it won't correlate with the task sizing, which is crucial to being able to extrapolate to future projects and properly plan them. Watts went on to talk about design. He commented that university assignments that most

developers get trained on typically have such limited scope that a competent software engineer can get quality results without doing design. The problem arises when these competent developers are now adding their 100-200 line code segments to parts of major systems that may have hundreds of thousands or more lines. Data from the PSP Training, encompassing 30,000 programs written using PSP, show that experienced developers who don't design inject 3-4 times more defects into their code segments than if they design. Watts said that you do design so that you can build big systems out of the little ones you produce.

The key issue here is that Quality really is the top priority. It's always fastest to do the job right the first time. However, quality without numbers is just talk, something that there is all too much of in the real world. Watts then took this background and used it to position the PSP and the TSP. The performance of a development organization rests with the performance of its teams. The performance of its teams is determined by the developer's personal practices, which are unique to each. These practices must be defined, measured, tracked and managed. Developers must be taught to make accurate plans – they lead to commitments consistently being met and quality products. The PSP addresses these skills and reinforces their adoption; the TSP then builds teams that can leverage these personal approaches, with the result that the team can produce essentially defect-free products on a consistent basis.

The key here, however, is that unless developers are convinced that they will see these benefits, they won't work this way. Watts recounted that early on, he would literally meet with each engineer one at a time to understand what each did. The fact of the matter was that each did something different, and no one knew what anyone else was doing. The success of Science and Engineering lies in the words of Isaac Newton, "to stand on the shoulders of others." Progress comes from building on previous successes with each person learning from others as they go.

The first core element of the PSP is teaching engineers how to measure the key indicators (effort, task size and defects) while ensuring there is an environment that supports the recording of such data. As noted above, you won't get good data from people unless they genuinely believe it will be useful to them. The second core element is teaching engineers how to make good estimates, recognizing as we already discussed, that this must be done using data for on-task effort. The third and last core element is ensuring that a quality design method is being pursued. Watts noted that quality and design are intricately connected.

Following the above, the TSP process applies these principles to a series of ten programs in a learning environment. A team can master the approach and quickly begin to control and predict their project trajectories with considerable accuracy. Watts indicated that teams pursuing this typically reduce the number of defects they are injecting into their software by 50%. Furthermore, the data identifies the mistakes that they have made. Given people's tendency to make the same kinds of mistakes repeatedly, the TSP approach enables a team to stop doing the very things that are creating problems in their developed codes. Analysis of this sort has them led, in relatively short periods of time, to an additional measurable five-fold+ reduction in defects inserted. Furthermore, the team begins to be able to better and better estimate the accuracy of its estimates.

Watts finished up the presentation by recounting the tangible benefits that arose in several projects that were pursued using a newly adopted TSP approach. In one complex communications-related example, the actual and planned completion time was double the original "management dictated" 9 month interval. After the consternation settled and the Marketing Executive Team recognized that the team's homework had been carefully done, the plan was acquiesced to. Now long in production and 1000 copies of the software later, there has still yet to be a customer defect filed against the software that was delivered under the plan.

So this does work. However, and it is a major caveat, it does require top management support – if you don't have that, a company shouldn't start down this path. The TSP approach is not a training program for some engineers that the rest of management can be blind to. Rather it is a fundamental change to the culture of how an organization specifies, builds and delivers software. The culture invariably needs to change from one of fighting fires to delivering quality initially. Self-directed teams can accomplish tremendously quality and efficiency improvements.

The presentation slides provide additional material not covered in detail here. Access this at www.atlantaspin.org/meetinginfo.htm



On the BOARD walk Scott Burkett - Sponsorship Committee - Atlanta SPIN

Scott Burkett joined the SPIN Board over a year ago, and while juggling the ever expanding needs of an 11 month old daughter, tries to help out with various Board initiatives as needed. He also serves on the board of directors for TAG's Business & Technology Alliance.



Scott has nearly 20 years of broad technology industry experience, and is a successful technology entrepreneur. Scott began his career at TSYs here in Georgia, and spent a number of years in the management consulting arena working for CAP Gemini and Cambridge Technology Partners. Scott received his BS in Business Administration (double major in CIS) from Thomas A. Edison State College.

How did you get involved with Atlanta SPIN?

I was originally approached by Jerry Recht, a colleague of mine (and a former SPIN board member). Jerry knew that I had a fair amount of experience in software process improvement, and he felt that it would be a mutually beneficial experience.

What process improvement-related activities have you personally participated in?

Besides holding a Six Sigma certification, I also have significant experience working within a TQM environment. I assisted a key client in their successful effort to win the Malcolm Baldrige National Quality Award, as well as helping a 2,000+ person consulting firm in achieving Ford Motor Company's Q1 Quality Certification. Additionally, I have successfully led technology projects under a variety of different methodologies, including RUP, Agile, and of course, good old waterfall.

What benefits have you personally derived from participation in SPIN?

For starters, it is hard to beat the content. The SPIN board works very hard to ensure that our speakers are of the highest caliber. I have enjoyed broadening my own horizons through their wisdom. I have also met some fantastic software professionals, which is another great reason to get out to the monthly meetings!

What motivated you to join the Atlanta SPIN Board?

I simply wanted to play a small role in helping fellow professionals expand their thinking when it comes to software process improvement. Plain and simple!

What do you hope to achieve this year within Atlanta SPIN?

I want to see a continued focus on bringing real-world case studies and "lessons learned" to our members. These are often the most valuable learning opportunities we have as professionals. I, of course, want to continue to support the Board's efforts, as we collectively take SPIN to the next level.

Spotlight on our Sponsors:



Atlanta SPIN
Software Process Improvement Network

Once again in 2007, we will highlight the activities and interests of our sponsors. They play a key role in enabling Atlanta SPIN to provide the kind of quality offerings that have drawn greater and greater interest in and attendance from the Atlanta software process improvement community.

If you think your company would be interested in supporting our efforts, please contact Stewart Forscher (sponsorship@atlantaspin.org) so that we can follow up on this.

Thanks!!! The Atlanta SPIN Board



Ronald J. Wojcik, editor
 The Atlanta SPINnaker
 Post Office Box 888004
 Dunwoody, Georgia 30356
 Email: newsletter@atlantaspin.org

Atlanta SPIN Sponsors—They Make Our Efforts Possible!



And our 23 Individual Contributors!

Atlanta SPIN Board of Directors

| Director | Role |
|--------------------|----------------|
| Abi Salimi | President |
| Larry Hyde | Vice President |
| Mike Sweeney | Treasurer |
| Mike Murphy | Secretary |
| Garrison Atkisson | TBD |
| Scott Banks | Education |
| Scott Burkett | Sponsorship |
| Stewart Forscher | Sponsorship |
| Dean Morrow | Membership |
| Bill Reister | Education |
| Michael Richardson | Webmaster |
| Ron Wojcik | Newsletter |

About Atlanta SPIN

The Atlanta SPIN organization was chartered in 1991. This group has been a force for software process improvement in the Atlanta area since then. The organization has a growing membership list that currently numbers 650+ members.

The group typically meets every third Wednesday of the month. Our meetings typically attract audiences of 40 – 50 people. These meetings provide a forum for like-minded people, interested in learning from others and sharing their own experiences. There is time allowed before and after the meeting for networking among the participants, including a review from the audience of any job openings that are available. The Board, through its work with Sponsors, ensures that food and drinks are also available at no cost to the membership.

The Board has a process for identifying excellent speakers, and provides guidelines and necessary support to help ensure the presentations are top quality. The Board sees these as the cornerstone of its value proposition to the overall group. To this end, the Board conducted surveys last year to gain a better understanding of its members' interests. This analysis has directly influenced the choice of specific presentations during the past six months. The Board continues to seek excellent relevant talks of interest to the membership; please advise us of potential talks and speakers that you think may be of interest; contact us at education_committee@atlantaspin.org.

In future Newsletters, we plan to provide more information about the goals and activities that Atlanta SPIN is pursuing. We welcome your feedback on how to improve this newsletter; contact us at newsletter@atlantaspin.org.

Ron Wojcik, editor