

Semat Panel Report

Co-located with the Rational Software Conference Innovate 2010

Wednesday June 9, 2010

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1 Prelude

The Semat panel was co-located with the Rational Software Conference (RSC) Innovate 2010, on Wednesday June 9, 2010 in Orlando. It was a 90-minute panel joined by five panelists: Ivar Jacobson, Walker Royce (IBM Chief Software Delivery Economist), Geoffrey Clemm (IBM Distinguished Engineer), Scott Ambler (IBM Chief Methodologist for Agile/Lean), and Greg Gorman (IBM Program Director, WW Systems Engineering Product Delivery). There were some 110 people attending the panel discussion.

2 Opening Presentation by Ivar Jacobson

The opening address by Ivar Jacobson briefly described Semat's goals, the troika, and the Semat timeline from its inception of the initial paper in mid 2009, Call for Action Statement in September 2009, to its first milestone in March 2011.

Ivar reiterated the case for action statement mentioning some of the problems software engineering faces today and how Semat intends to address them. To date, Semat has 34 signatories, 11 corporate signatories, and 1158 supporters worldwide.

Ivar also presented his personal "path to Semat" that described the critical stages evolved to the inception of Semat. Starting from the Unified Process (UP) to EssUP (2003) the focus changed from *process* to *practices* and all methods are composition of practices; then came to the Essentials (2006), the focus being on finding the *Kernel* underlying all methods/practices; then progressed to Semat (2009), the focus on being widely accepted. This is where we are today working towards getting the must: the kernel and the practices need to be widely accepted.

Following the quick review, Ivar outlined the key ideas of Semat, including:

- (1) All methods are just composition of practices
- (2) A kernel consists of Things we always have, do and produce when we develop software --- we need to find it. We call them the *Universals*. The kernel also includes a *kernel language* used to describe practices and universals --- we need to define it.
- (3) Practices to be shared over all platforms and all methods

The opening address was closed by a quote from Watts Humphrey "This meeting in Zurich is likely to be an historic occasion much like the 1968 NATO session in Garnish", a statement that resonances well with the audience.

3 Panel Discussions

The panel was participated vigorously by the audience. Many questions and comments, old and new, were raised from the audience and answered by the panelists. This section briefly summarizes some of the representative questions, comments, and the feedback during the discussion.

3.1 **How Semat addresses the two macro-trends in software**

Question: Does Semat address both technology and craftsmanship?

The software community has two macro-trends: one is “methods and tools” focusing on software development techniques; the other focuses on “professionalism and craftsmanship.” Semat’s current focus is on the first trend with the belief that raising the platform on top of which we understand, teach, develop, and execute projects will fundamentally improve our abilities to become professional. A year from now when Semat has delivered its promises it may very well move its focus to the second trend.

3.2 **How Semat deals with the two camps: documentation or not**

Question: Should software development activities include writing volume of documentation?

How much you want to document varies among different teams. Thus documentation standards should not be part of the kernel; it is not *universal*. What to write, what kind of document is needed, and in what depth --- these are not universals. Universal is something we always do and always have, regardless if we document it or not.

Another key point is “context counts.” Different situations have different processes to follow. Documentation or not depends on the context. We need to be flexible. From Semat’s perspective, the idea of the kernel is to separate the universals from the specific activities and keep the universals inside the kernel and the rest outside.

3.3 **Get terminology right is the first step to be successful**

This is one of the issues that generated some discussions.

If Semat could get a terminology agreed upon by most signatories, then it would be considered a success. Then the rest of the community would follow. However, to agree upon the semantics is difficult.

Ivar agreed with the comment. Even if the only thing we will agree upon is terminology, Semat will be successful. However, Ivar said Semat has higher goals than that. We will identify and define the universals, and we will give them some initial semantics. More semantics will be added to the universals as we add practices on top of the universals (the kernel). We will also define a kernel language to define universals and practices, which are composed to make up methods.

Another comment was that we haven’t even agreed if “software engineering” is a good term. Therefore, terminology is a difficulty topic that Semat should address.

3.4 To address “people engineering”

Question: How does Semat address “people engineering?” such as management and collaboration issues?

Semat itself is the ultimate test of collaboration, with 30+ signatories coming to an agreement is a testimony. Universals can help us to simplify the way we do work. The results from Semat can help channel the many existing methods to simplify the community.

3.5 Close the chasm between academia and industry

Question: Currently, university students are distracted by different industry practices, such as the ones from IBM, MSFT, etc. Fundamental science teaching, such as math, doesn’t seem to be relevant anymore in software development. How should software engineering be taught in university? How can Semat help to close the gap?

While academia is the easy target of being primarily responsible for education, the practitioners’ community should share some of the responsibilities (aka blames). They should write good textbooks for universities to teach. We should stop complaining, instead start doing.

One of the major tasks of Semat is to define the kernel. Academia can then without adding any practices use the kernel to teach basic software engineering/ Later practices of all kinds can be taught using the kernel as a prerequisite. In addition, Semat has a special track to recognize theories, useful to describe practices, hence to define methodologies.

3.6 Get involved in Semat

Question: How to get the Semat message out and get involved in Semat?

The Semat community has many different people involved, but we also have what we call “customers”. Our customers are all corporate signatories, higher-level executives from big companies. One of Semat tracks, the requirements track, is lead by the ABB corporate signatory and this track had developed a use-case model for Semat itself. This track will ensure that we work on things that matter in the software community.

Moreover, we have identified what need to do to get the Semat work widely accepted. We have written papers, blogs, meeting and track reports etc, all of which are parts of the channels to get the messages out. However, we need to do much more.

To popularize the results, we need to motivate people to use the results.

Of course the signatories are important participants in getting Semat successful, but we also have many people who have joined us and actively participate in the day-to-day work. We welcome many more people to join us to bring out the best of our community.

Everyone who is now involved in Semat is contributing without any monetary rewards. They participate because they believe Semat is for a great good, something that is larger than themselves. We need people to contribute. Wikipedia is a good example of a great contribution from the community.

3.7 Meta-language of Kernel Language

Question: Does Semat have a meta-language for the kernel language?

Currently we work with a similar meta-language used to develop UML, but we will most likely switch to a more modern meta-language later on. A proposed candidate for the meta-language is KM 3 that is a specialization of extended MOF.

3.8 Does Semat try to accelerate the maturity of Software Engineering?

One comment from the audience was software engineering is immature, like to raise children, we need to let time pass to let it mature. If software engineering needs science behind it, then patterns and practices need to turn into science. We don't need to have science beforehand. The comment was that it seemed like Semat try to force science into software engineering, short circuit and accelerate the process.

Some of the comments from panelists were that so far, we haven't had any good way to raise software engineering "children" yet.

Software engineering is not only an "engineering" discipline; it needs to have a science component. We need to have a mix of kernel elements allowing people to collaborate.

4 Closing Statements

At the end of the panel, each panelist gave their closing statements. Some highlights are:

- One of the results of Semat is hopefully that all signatories will use the same terminology. That would be a huge success.
- Semat is not looking for the union of knowledge, but for the intersection of knowledge, which needs to be simple and powerful, with focus on the universals.
- We need common terminology and metrics.
- We work to raise the level of software engineering by finding the kernel and defining a kernel language allowing people to describe practices and patterns and thus any methodology. Once this has been done we can turn the focus on teaching and training to address craftsmanship and professionalism. We can if we want.
- Get involved. Blogs, tweets for example. Something valuable will emerge from the Semat effort. It can only emerge if lots of people get involved. Please raise your opinions about it, even though you don't believe in it.

The panelists and most of the audience were very supportive of the initiative. They clearly expressed that it is an important initiative, and that it will likely have a significant impact on the software community going forward. The atmosphere was very positive after the meeting.

5 Next Semat Venues

The next general Semat meeting will take place on July 13-14, 2010 in Washington D.C. In addition, working sessions gathering some of the participants will co-located with various conferences:

- SEAFOOD (Software Engineering Advances For Outsourced and Offshore Development), Saint Petersburg, Russia, 17-18 June, with keynotes by Ivar Jacobson, Richard Soley and Bertrand Meyer (<http://seafood.ethz.ch>).
- TOOLS EUROPE, Málaga, June 29-July 3 (<http://malaga2010.lcc.uma.es/>), with keynotes to be confirmed.

Please contact the event organizers if you would like to participate in these events.