

The SEMAT Initiative

Presented by:
Carson Holmes



A little about the Speaker

- Principal Consultant, Fourth Medium Consulting, Inc.
- President of the Global Rational User Group with over 25K members, also lead the Rational User Groups of So. Cal.
- IT Management Consultant and process engineer with over 20 years in IT
- Passionate about method integration, chiefly Agile, Lean, and Unified Process based practices.
- Involved in the SEMAT initiative, dedicated significant man hours.



Disclaimer



This is not an officially sanctioned presentation of SEMAT, nor does it necessarily reflect the views of the SEMAT organization.

This presentation will not disclose any work being done by or on behalf of SEMAT that has not been published on the Internet.

(Note SEMAT has not published anything since 11/8/2010)

This presentation is based on the speakers recollection and interpretation of events and work performed as part of the SEMAT initiative.

The Beginnings of SEMAT



- SEMAT was founded by the "Troika".



Ivar Jacobson



Bertrand Meyer



Richard Soley

- Some initial positioning was captured in three Dr. Dobbs articles:
 - :: Method Needs Theory
 - :: Why we Need a Theory for Software Engineering
 - :: The SEMAT Initiative: A Call for Action

Photos from SEAFOD 2010 Keynote Speakers

Call for Action



- Software engineering is gravely hampered today by immature practices. Specific problems include:
 - ⋮ The prevalence of fads more typical of fashion industry than of an engineering discipline.
 - ⋮ The lack of a sound, widely accepted theoretical basis.
 - ⋮ The huge number of methods and method variants, with differences little understood and artificially magnified.
 - ⋮ The lack of credible experimental evaluation and validation.
 - ⋮ The split between industry practice and academic research.
- We support a process to re-found software engineering based on a solid theory, proven principles and best practices that:
 - ⋮ Include a kernel of widely-agreed elements, extensible for specific uses
 - ⋮ Addresses both technology and people issues
 - ⋮ Are supported by industry, academia, researchers and users
 - ⋮ Support extension in the face of changing requirements and technology

SEMAT Kickoff



- A kickoff meeting for SEMAT was held in Zurich during the middle of March in 2010.
- Each attendee presented their position and each track leader gave an overview of their track. Track break out sessions followed.



SE Conference History

The 1968-9 NATO Software Engineering Conference made the terms "software engineering" and "software crisis" noteworthy



A Definition for Software Engineering

- There were a few attendees, especially Alistair Cockburn, who felt that SEMAT should develop a standard definition for the term: Software Engineering.
- Cockburn's position paper describes how the 1968 NATO definition is flawed and outlines ways to improve this definition.*
- By the close of the workshop, Tom Gilb's definition became the working definition:
 - :: "Software engineering is the discipline of making software systems deliver the required value to all stakeholders."
 - :: Though one week later, this was revised in the blog-o-sphere, thanks to Tom and others. These revisions can be found here: <http://se9book.wordpress.com/2010/03/23/semat-and-the-definition-of-software-engineering/>

SEMAT Tracks

- Work in SEMAT was originally broken down into five tracks:
 - ∴ Definition
 - ∴ Theory
 - ∴ Universal
 - ∴ Kernel Language
 - ∴ Assessment
- During the Zurich workshop a sixth track was added:
 - ∴ Requirements



Requirements

- The initial requirements storming in Zurich identified a large number of epics or use cases, relevant not just to methodologists, but practitioners, research, education, industry, etc..
- After Zurich, through polling these requirements were prioritized.



- In the Universal Track, so far they have identified the following eight universals:
 - ⌘ Opportunity
 - ⌘ Stakeholder Community
 - ⌘ Requirement
 - ⌘ Software System
 - ⌘ Work
 - ⌘ Team
 - ⌘ Method
 - ⌘ Practice
- ◆ A list of 250 practices have been identified and is being rationalized
- More Universals should be unveiled in the months to come.

- The Kernel consists of two things:
 - ⌘ The Universals and the Kernel Language
- The Kernel Language is used to precisely describe the universals as well as practices and entire methods.
 - ⌘ The Kernel Language is described with two related models; a *meta-model* and a *formal definition*.
 - ◆ The meta-model uses UML class diagrams to describe its abstract syntax.
- From the SEMAT blog, "The kernel is *not* a new unified methodology, it is **not a new software process meta-model**."
 - ⌘ The Kernel Language is a software process meta-model and more.

ALPHA

- There is a key concept that is evolving with the work being done at SEMAT, called ALPHA.
- ALPHA, originally from the Greek letter, was used by IJI as an abstract name for attributes of a software engineering endeavor.
- With a little “backronyming” by Meyer, ALPHA came to represent, Abstract-Level Project Health Attribute.
- All Universals are ALPHAs, but not all ALPHAs are Universals
- An ALPHA is a property that can be used to define the current state of a software engineering endeavor.
- An ALPHA can be described in terms of its underlying work products or sub-ALPHAs.

Washington D.C., 2nd Workshop

- The second SEMAT workshop was held in Alexandria, VA.
 - ⇒ Tracks presented their work and received feedback.
 - ⇒ This led to many lively debates.



Domain Model

- From the second SEMAT workshop, there was consensus that a Domain Model was needed.
- The Domain Model would be the definitive place where all terminology was defined and related.
- A team consisting of Stephen Mellor, Meilir Page-Jones, and Carson Holmes was organized to drive the domain model.
- The Domain Model was not as abstract as the Kernel Language.
 - ⌘ For example, a work product, My Use Case, is of type Use Case, which is of type Requirement Work Product.
 - ♥ In the Kernel Language, the class Work Product represents all three meta-levels
 - ♥ In the Domain Model, there were separate classes for each level, Work Product, Work Product Kind, and Work Product Group Kind.

Milan, Italy, 3rd SEMAT Workshop

- The third SEMAT workshop was held in Milan, Italy.
 - ⌘ Again the tracks presented their work and received feedback.



- The following areas comprise the largest risk and challenges for SEMAT:
 - ⌘ Resources
 - ⌘ Intellectual Property
 - ⌘ Consensus Driven
 - ⌘ Governance
 - ⌘ Adoption

- **Qualified Help is Hard to Find**
 - ⌘ The nature of the work being performed by SEMAT is complex.
 - ⌘ Individuals qualified to contribute to SEMAT are hard to find and are in high demand in industry and academia.
- **All Work is Done on a Volunteer Basis**
 - ⌘ Most all have a "day" job which tends to come first
 - ⌘ Resources contribute for a while and then become constrained
 - ✦ Turn over and transition is an issue
- **Incentives**
 - ⌘ There are few incentives to entice qualified resources to participate
 - ✦ Altruism
 - ✦ Recognition for effort

Risk & Challenges: Intellectual Property



- Various standards have tricky property rights to overcome
 - ∴ For example, content from ISO standards could not be reused/republished by SEMAT
- Consideration of more position papers
 - ∴ There were a lot of good ideas asserted in the first SEMAT workshop in Zurich.
- Recognition for contributions
 - ∴ There should be incentives for those who contribute intellectual property to the effort.

Risk & Challenges: Consensus Driven



- Most of the work being done by SEMAT is discussed in great detail in Skype conferences
- There is an underlying challenge of arriving at stable results
 - ∴ For example, the universal, Requirement, went through several revisions in which it was renamed to Intent and then back to Requirements.
- This churn may help SEMAT arrive at a high quality end product
 - ∴ However, it may take a long while to get there.
- Smaller companies such as IJI or Fourth Medium Consulting are years ahead of the work being done by SEMAT

Risk & Challenges: Governance



- In 2010, decision rights of SEMAT were owned by the Troika
 - ⇒ As work progressed, Ivar was more hands on than Richard and Bertrand
 - ⇒ Ivar passion, brilliance, and leadership helped drive results in SEMAT
- On Nov 8, 2010 the Trioka announced their “retirement” as SEMAT leaders
 - ⇒ The implementation of the first year vision (the kernel) would move to the OMG
 - ⇒ SEMAT will be forming an Executive Committee that will have decision rights going forward and an Advisory Board.
 - ⇒ OMG will initiate an RFP as part of their standards process

Risk & Challenges: Adoption



- As Ambler pointed out in Zurich:
 - ⇒ The work of SEMAT needs to pass the “Who Cares” test
 - ⇒ Not sure the software industry at large is very aware of SEMAT
- SEMAT is attempting to bring together a large number of method communities
 - ⇒ Not sure if the Agile, Lean, Scrum, and Kanban communities will embrace an OMG standard
 - Agile culture is very different than your traditional standard adopting culture
 - YAGNI
 - ⇒ Perhaps if SEMAT gets behind the future OMG standard it may help with its adoption across other method communities

How will SEMAT Impact EPF/SPEM?



- It is still a little early to tell how the work of SEMAT will impact EPF.
- SEMAT had planned to publish on the first year vision by April, 2011.
 - ∴ The OMG standards process that will now be orchestrating these results may take longer than April to publish
- The Universals once published as an OMG standard should probably be reflected in the EPF content
- The Kernel Language represents a more sophisticated meta-model than SPEM and if the OMG publishes this as a standard, there may be rationale for evolving EPF and the EPF composer to accommodate the architectural changes.

Thanks for coming to...



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