SEMAT

SEMAT   Newsletter 2019

Over all the years we have been working on what we now call Essence and usage of Essence, we have never seen as much interest and adoption as in 2018. This means we are on a positive path – exponential growth. However, all successful adoption can be described as following a "hockey stick" curve and we are still at the beginning. Everyone adopting Essence has to make a careful analysis of the pros and cons. We are dreaming about reaching the inflexion point where the stick turns upwards and adoption is an easier decision.
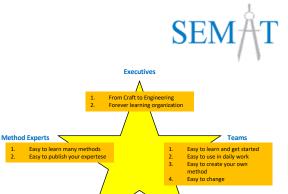
Well, the dream is not far from coming true. Many of us believe that we just have reached the inflection point, or at the least we will do it this year 2019 or early next year.
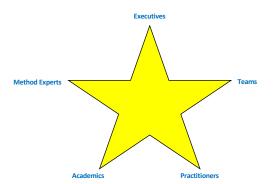
1. The latest and greatest

Those of us who have closely followed the development of Essence over the years, have almost every year discovered new features that surprised us. From the very beginning of our journey the ambition was to create practices which could be composed into methods. To do that we discovered alphas with states and checklists. Now we can make the practices and the methods come alive. This is a key differentiator for Essence. We can also measure progress of our projects in a method-agnostic way. We have basically every year been rewarded with new never earlier seen differentiators, smaller but still important ones. Here, in this newsletter, we will tell you about a few of them, but let us first revisit the value proposition for Essence:

Essence empowers many personas

Understanding Essence is not like understanding news in the software engineering space. Usually, we can get a reasonably good picture of a new practice such as user story, or even of a new method or method framework such as SAFe or DAD by browsing around on the web for a while. This is not so with Essence. Essence may seem small, but its use cases are many and some of them have not been available in the past, so it takes significant effort to get its full value. Fortunately, most people don't need to understand all its use cases, but if using it they will need to understand what Essence gives them and that there are other values to many other personas. The following picture illustrates the situation, but it is just the tip of the iceberg:

Executives

Method Experts

Teams

Academics

Practitioners

Executives
1. From Craft to Engineering
2. Forever learning organization

Method Experts
1. Easy to learn many methods
2. Easy to publish your expertese

Teams
1. Easy to learn and get started
2. Easy to use in daily work
3. Easy to create your own method
4. Easy to change

Academics
1. A systematic way of teaching
2. A platform for research

Practitioners
1. Learn for life
2. Easy to participate
3. Easy to contribute

It is the tip of the iceberg because many more personas than the five in the figure are dramatically influenced by use cases of Essence. For each of the five we have illustrated some of the values you gain by applying Essence. The values you gain are different than what you would gain by applying a new method framework; they are more fundamental. Combining a method framework such as Scrum at Scale with Essence therefore makes Scrum at Scale better. Thus, today Scrum at Scale Essentials are in the making – see further down.

Now to two specific lately discovered differentiators of Essence:

Addressing the human aspect of software engineering

The technical aspect of software engineering was where the work on Essence started, for instance being able to compose practices into methods. We soon discovered that Essence was more. We described it as a thinking framework helping us to reason about the different dimensions, actually the alphas, which need to be measured in a project. However, the human aspect was not treated as an equal to the technical aspect. Now it is.

- The thinking framework stimulates conversations about important subjects within a team and between teams.
- It has numerous placeholders for conversations with proposals for questions to be asked and space for asking more questions.
- Software development is enhanced by a large set of serious, interactive games.

Understanding the full impact of how Essence supports the human aspect was certainly an important discovery and a differentiator of Essence.

Essence is generalizable – it is not just for software engineering

Since its inception we have believed that Essence could be generalized to other disciplines than software engineering.

The first concrete example where Essence is applied outside software engineering is for innovation. In Sweden a government supported project was looking for a framework for innovation, in particular practices for successful collaborations between startups and large companies. The practices identified were essentialized by Ivar Jacobson International (IJI) and composed into a method framework Innovation Essentials – not a software engineering framework. The result has become very popular in Sweden, several

new initiatives as well as adoptions are underway. As another example, Essence is being used to help with today's cybersecurity challenges. For more information, refer to the llinks below.

A striking observation expressed by many is the fact that much of what is in Essence is common to system engineering. Many people have advocated that the system engineering community represented by, among others, INCOSE, create a similar kernel.

Professor Dinesh Verma has accepted the lead to set up meetings with a group of people to explore the opportunity to create such a kernel for system engineering. Two meetings have occurred with 10+ very experienced participants from the system engineering world, many of them with leading positions in INCOSE. The outcome of the meetings was very positive in favor of generalizing Essence to also be applicable for system engineering. A couple of pilot projects are underway.

2. The Industrial World

Many companies around the world are now adopting Essence as a common ground for all their methods.

For instance here is a quote from Tata Consulting Services with 390,000 employees: "More than 80% of TCS is focused on a new framework called "TCS Business 4.0" which is based on the global "Industrial Revolution 4.0" paradigm that has adopted Essence as its de-facto Method creation standard".

IJI is working with many clients adopting Essence for their methods. IJI has also developed tools to support the development of practices and methods and to use them by teams in projects. Unfortunately, as expected most of these clients have not yet agreed to publish the results, but it will happen.

As an example of a published result, Fujitsu EMEIA asked IJI to give a workshop in Tokyo to their 100 highest level managers on modern agile leadership. IJI presented the workshop at https://www.ivarjacobson.com/publications/blog/fujitsu-and-iji-go-agile-essence, which in summary included six games most of them using Essence cards. Fujitsu wrote a blog titled Fujitsu and IJI go Agile with Essence, https://blog.global.fujitsu.com/fujitsu-and-iji-go-agile-with-essence/, declaring that the "outcome was a triumph".

PEM Systems is using Essence to help industry clients with real world challenges. Examples include:

1. Cybersecurity challenges. Refer to: https://paulemcmahon.wordpress.com/2019/05/16/using-essence-in-stealth-mode-to-help-solve-a-cybersecurity-challenge/ and https://paulemcmahon.wordpress.com/2019/06/09/scaling-essence-in-stealth-mode-and-why-you-should-care/ for more information.
2. Critical thinking challenges. Refer to: https://paulemcmahon.wordpress.com/2019/03/23/critical-thinking-and-essence-why-every-engineer-and-consultant-should-care/ for more information.

3. Thought-leaders

IJI has been working with thought leaders on essentializing their methods. For example, IJI has together with Jeff Sutherland, a father of Scrum, the most popular practice ever, has developed Scrum Essentials, which Jeff and several of his partners now uses in his normal training on Scrum. In his blog https://www.scruminc.com/better-scrum-through-essence/#comment-31323 he says: "I use the cards in

many of my Scrum training courses today and they prove to be very popular with both students and training partners. The cards add exercises and interactive games to enhance the learning experience."

You can find the cards and the games to be played here: https://pages.services/ss.ivarjacobson.com/essential-scrum.

Jeff's latest initiative Scrum at Scale is also essentialized and expected to be launched at a training event in London next September.

IJI has also worked with Scott Ambler on essentializing a key practice in DAD, namely Database Refactoring. Scott wrote a blog titled "Disciplined Agile and Essence: Succeeding Together" https://disciplinedagiledelivery.com/essence01/, in which he says: "We also intend to continue with this essentialization effort to share some of the key DA techniques within Essence. Stay tuned!" In an advisory board meeting of SEMAT, he also said: "We've had some very good success with Essence… Database Refactoring practice worked well with data professionals. Biggest challenge—they wanted more!".

4. The Academic World

A new book on Essence will be published in July 2019 titled "The Essentials of Modern Software Engineering" with forewords by Grady Booch and Ian Sommerville. It has been in preparations for 4 years with five drafts getting feedback from in total more than 50 university teachers. The book is intended for first year students in software engineering, but it is expected that experienced software developers will also be attracted because they will see everything they already know in a new and structured way. The publisher Morgan & Claypool in collaboration with ACM Press is tweeting: "We're taking pre-publication review requests from instructors for this new textbook that uses a systematic, universal kernel to teach the essential elements of ALL software engineering methods." It is really worth reading the publisher's motivations for reading the book: http://www.morganclaypoolpublishers.com/essence/. "Essence is supported by an ecosystem developed and maintained by a community of experienced people worldwide. From this ecosystem, professors and students can select what they need and create their own way of working, thus learning how to create ONE way of working that matches the particular situation and needs."

Four professors at universities around the world have already taught Essence as a full-semester classes. They are Pekka Abrahamsson, now in Finland, Anthony Ruocco at RWU in the USA, Denis Zmeev at Tomsk University in Russia and Jan-Philipp Steghöfer from Chalmers in Sweden.

Pekka says: "…we have finally a way to move beyond Scrum and Kanban. No more method wars on our campus! Essence is the future in Software Engineering method education and practice."

Jan-Philipp says: "… Essence is the first teaching tool I have seen that combines a clear terminology, a construction kit for processes, and a set of serious games that show different process aspects and are useful in both education and practice. … In my future teaching, I will not only continue to use Essence but extend its application in the course and support it with additional teaching material. "His report "Teaching Essence at Chalmers" is attached.

The other two reports use a similar language, all very positive. Some papers have been published after proper peer reviews.

New "Essence-In-Practice" online application coming soon

Within a few months a new online application, Essence in Practice, will be available from IJI which will provide the community with a mature and professional way of working with methods that has until now never been available. One of the key differentiators is that practices and methods are not just passive available for reading, but active helping the team members as they work. The existing popular method frameworks for scaling agile are like isolated islands, incompatible with one another, so you cannot without reworking, easily adopt practices from other frameworks than the one you are using – the practices are in method prisons. Essence changes a lot in the methodology space and that is now being implemented by Essence in Practice. You won't get it all at the launch, but you will be able to see where we are heading.

New "Essence-In-Use" certification training available now

A new "Essence-In-Use" certification training course is now available. Refer to https://essence-in-use.com/why-should-you-become-a-certified-essence-in-use-practitioner-cep/ for more information.

Find out what industry participants from Lockheed Martin, Rockwell-Collins, Alion Science and Technology and smaller business owners are saying about the power of the thinking concepts of Essence, as well as how to teach our young engineers to become effective critical thinkers. Refer to https://essence-in-use.com/testimonials/

5. What more?

We feel that a lot is happening around Essence right now:

The webinar series on Essence organized by Sigsoft

Late 2018 and early 2019 Sigsoft arranged a webinar series with Ivar Jacobson and his colleagues. They were recorded by SigSoft but they require that you register to be able to see them:

1. Aug 08, 2018: *Making the Heart of Agile Concrete: Essence*, https://urlzs.com/Gb7dZ
2. Dec 20, 2018: *'50 Years of Software Engineering, so what now'*. This is the overview and introduction seminar. Here it is: https://bit.ly/2T4W5C8. More than 1700 people registered.
3. Jan 10, 2019: *'Essence in Action',* "We will see how we go from the traditional world where practices are just static descriptions, to one where the practices come to life and are actively used." https://bit.ly/2W4y1kP
4. Jan 24, 2019: *'What is Essence?'*, "We will go into more detail and summarize why Essence represents a paradigm shift". https://bit.ly/2Vr90zZ

Other new blogs on Essence in 2018:

Cybersecure Software: New twists to well-known questions every developer should be asking**, https://urlzs.com/yrahY**

Making the Heart of Agile Concrete: Essence**, https://urlzs.com/pJ7F9**

Making software development as simple as possible, but not simpler**, https://urlzs.com/u94Sh**

How Essence makes software developers better software modelers for a lifetime, **https://urlzs.com/XeHMG**

Published papers

Several papers were written by many people. Ivar Jacobson and team wrote one paper published in InfoQ titled: "Escaping Method Prisons" : https://www.infoq.com/articles/escape-method-prson

The paper was honored in "Best Agile Papers 2018" https://amzn.to/2FnGnPD . Many other great papers for instance papers by Ron Jeffries, Mike Cohn and Mary Poppendieck.

Another but related paper was published in ACM Queue: "Tear down the Method Prisons! - Set free the Practices!" - https://www.ivarjacobson.com/publications/white-papers/tear-down-method-prisons-set-free-practices. This paper identifies a number of major issues with existing methods and frameworks. Then it explains how the SEMAT community got together to eliminate these issues and we how we got Essence, which goes much further than resolving the issues.

A report on using Essence to teach software engineering:

The following report is an abbreviated version of this paper:

Jan-Philipp Steghöfer: Using Essence in a Software Development Methodologies Course: An Experience Report. In Proceedings of ISEE 2019: 2nd Workshop on Innovative Software Engineering Education, pages 7-10, CEUR WS, 2019. Available online: http://ceur-ws.org/Vol-2308/isee2019paper02.pdf

Report

Finally, a way to speak and learn about processes that works

I have been teaching software processes for several years. One issue I always found daunting was the lack of common ground for speaking about the elements of processes, how they are combined to form a coherent, applicable process, and how they relate to important aspects of a process such as stakeholders, the produced software system, or the team. Situational method engineering and languages such as SPEM provided concepts for this, but they weren't well integrated, did not offer up-to-date process content and offered little support for combining different practices from these processes into new processes or tailoring the method content to form a coherent whole. Which practices are needed to create a workable process and which impact certain process design choices have remained a topic for experienced process engineers and proved very difficult to put across to students.

In autumn of 2018, I used Essence in my teaching for the first time to overcome these shortcomings. Essence provides a kernel — a set of process elements that are common to all endeavours — as well as a language similar to SPEM but significantly easier to learn and use to describe practices and patterns that can be combined into a process. It is available as an OMG specification and supported by a growing body of educational and other supporting material, in particular, a set of games, e.g., to identify the status of a project or to identify next steps. Essence has been designed from the beginning as an educational tool and to allow students and practitioners alike to explore software processes with the help of clearly defined, easy-to-understand concepts and the support of the kernel.

Using Essence in the classroom was very successful. First of all, Essence defines a small but clear terminology that is extremely helpful when discussing the concepts of software processes in the classroom. Furthermore, the Alphas - recurring concepts in an endeavour that change state as development progresses - allow students to grasp the necessary elements of a process and how they are transformed. The games using the Alpha State Cards are very helpful catalysts for discussions. The Alphas make the necessary building blocks explicit and the games cover important parts of engaging with the process, such as which milestones are relevant, which progress has been made, and how certain development practices influence them.

In particular, students used Essence to plan, monitor, and analyse a concrete endeavour. In a Lego Scrum simulation, students applied a version of Scrum they designed themselves using Essence, monitored it using the Alpha State Cards and games such as Progress Poker, and later analysed what happened using Health Monitoring. Based on this experience and the transitions between the Alpha States especially for

Team, Stakeholders, and Way of Working, I also explained the relevance of software process improvement. A process that is "Continuously tuned" is one of the hallmarks of the later stages of the "Way of Working". It is also possible to discuss method content selected to improve the process in the context of its impact on the Alpha States.

In summary, Essence is the first teaching tool I have seen that combines a clear terminology, a construction kit for processes, and a set of serious games that show different process aspects and are useful in both education and practice. When carefully scaffolded and combined with a practical element, Essence provides students insight into the complicated world of processes without overwhelming them. In my future teaching, I will not only continue to use Essence but extend its application in the course and support it with additional teaching material.