AGILE TRANSFORMATION

The Success Story of Scrum & Toyota
Ahead of the **Agile for Automotive Summit**, taking place this May 15th - 17th in Detroit, we sat down with two of our keynote speakers, Dave West and Nigel Thurlow, to discuss:

- The history of agility in the context of the automotive industry
- How Toyota Connected revolutionized the standard for enhancing and developing agility in lean product development
- What the new automotive 'agile' operating model looks like
- Top objectives/priorities for Scrum.org and Toyota Connected in 2019
- Why you cannot afford to miss their upcoming presentation

**Dave West**  
CEO and Product Owner  
Scrum.org

Dave West is the Product Owner and CEO at scrum.org. He is a frequent keynote speaker and is a widely published author of articles. He also is the co-author of two books, *The Nexus Framework For Scaling Scrum* and *Head First Object-Oriented Analysis and Design*. He led the development of the Rational Unified Process (RUP) and then worked with Ivar Jacobson running the North American business for IJI. Then managed the software delivery practice at Forrester research where he was VP and research director. Prior to joining Scrum.org he was Chief Product Officer at Tasktop where he was responsible for product management, engineering and architecture.

**Nigel Thurlow**  
Chief of Agile  
Toyota

Nigel Thurlow is an Organizational Theorist, International Keynote Speaker, Continuous Improvement Leader, Agile and Scrum Expert, and The Chief of Agile at Toyota Connected. He is an internationally recognized industry expert on Lean and Agile approaches and is leveraging the power of The Toyota Production System and The Toyota Way to enhance and develop Agility in Lean Product Development.

Nigel led the successful transformation at 3M Healthcare Information Systems, and was a principal trainer and coach at Scrum Inc together with the co-creator of Scrum. Nigel has taught and coached in notable companies such as GE, Bose, 3M, Microsoft, and MIT, and as of 2019 he has trained over 5000 people in Scrum and Agile techniques. He currently holds the Professional Scrum Trainer designation from Scrum.org, and is the first trainer to have ever been certified to teach Scrum by both the creators of Scrum.

He is the creator of Scrum The Toyota Way, an approach that blends the deep teachings of Toyota and the Toyota Production System with Complexity Theory and the Scrum Framework, as well as the founder of the Toyota Connected Agile Academy.
Agile and Scrum was born out of necessity. Software development has and always will be a discipline that deals with complex problems. Solutions, requirements, teams are always changing which creates both an opportunity and a cost. Traditional plan-do processes focus on understanding a problem and then planning in detail a solution. These approaches never really worked for software. For example, imagine a thermostat using a planned approach. Each day it would decide the temperature and then would execute on that plan ignoring the impact of actual outside temperature, how many times the door was opened, how many people were there, etc. The challenges of applying a plan-do approach to software were described in many papers and research documents with the most famous being the ‘mythical man month' by Fred Brooks. Agile was born out of the need to solve complex software problems and was documented in the Agile Manifesto.

Scrum an agile framework is a detailed, yet simple set of practices that support an agile approach. It is based on three simple ideas 1. Empiricism, 2. Self Organization and 3. Continual Improvement.Interestingly Self Organization and Continual Improvement came from research on Lean Manufacturing known as The Toyota Product System. And Lean in general has influenced the Agile movement because to be effective requires a people-centric, quality approach which Lean describes.

Ultimately there are two reasons why the auto industry cares so much about Agile.

- Agility is all about solving complex problems and as the innovation of cars speeds up there is the need to solve more and more complex problems.
- The amount of software in cars is increasing with many cars having over 100 million lines of code. This is compared with cars in the 1980s having about 50K lines of code.

This is manifesting in many high profile automotive companies doing Agile with perhaps the highest profile traditional company Volvo doing Scrum. Not to mention Tesla and their focus on using an agile approach. But ultimately it is not about Agile - that is just what they are doing - they are trying to become more agile to respond to an increasingly complex customer, the opportunity that software provides and a more complex global supply chain.

However, outside of IT for many traditional car companies Scrum and Agile are still new, and they are wrestling with its use in their core product development approaches. Ironic considering that many of the ideas and practices that are used come from Lean, which came from Toyota!
Can you tell us a little about the history of agility in the context of the automotive industry?

Nigel Thurlow
Chief of Agile
Toyota

We are transforming ourselves as a company into a mobility solutions provider, and not simply continuing as a manufacturer of cars. As our company president recently stated; “It’s my goal to transition Toyota from an automobile company to a mobility company, and the possibilities of what we can build, in my mind, are endless.” Akio Toyoda at CES, Jan 2018. And as Shigeki Tomoyama - Senior Managing Officer Toyota Motor Corporation and Chairman of Toyota Connected recently stated “We aren’t giving up on our main business, but we can’t vaguely just continue to make cars.”

The world is evolving and the demands of the consumer are changing ever more rapidly, and a traditional lifecycle for bringing new products and services to market is no longer acceptable. The automotive sector must respond more rapidly to consumer desires, and transform their ability to be able to deliver the products and services to their customers ever faster with greater value without losing quality and maintaining cost competitiveness.

The two pillars of Lean, Jidoka (built in quality through automation with the human touch) and JIT (Just In Time - the elimination of waste) have enabled Toyota to create an enviable reputation for quality and creating the best products in the world. This is driven by empowered team members. A human centered approach that enables small teams to improve the work as they do the work, a key inspiration for self organizing Scrum teams.

Kaizen, the spirit of continuous improvement, is practiced at all levels throughout Toyota and the PDCA practice (Plan Do Check Act) originated by Edwards Deming and adopted by Toyota ensures we embrace empiricism in everything we do. The influences in Scrum are hard to disguise as Scrum is also an empirical process. In fact what Scrum has given the Lean world is a way to codify PDCA.

I was in conversation this week with one of my mentors in Toyota, and we had a great discussion about Innovation and Reality. It is clear the industry is undergoing a digital transformation, and our customers expect immediate access to these new capabilities and benefits, and to see them be updated as fast as apps on their mobile devices. But then there is the reality. The reality that we simply cannot retool the entire TPS overnight. Therefore we must incrementally improve our ability, flexibility, adaptability, and become more agile responding ever faster to the customer needs and desires.
How has Toyota Connected revolutionized the standard for enhancing and developing agility in lean product development?

We took the best of breed agile learning and combined that with decades of lean thinking from the creators at Toyota and established an approach we currently call Scrum The Toyota Way. This approach also includes complexity theory, team science, and multi team systems as we work to solve the challenges associated with transforming an 80-year old global corporation.

Every team member has had formal training, followed by continuous coaching in the workplace through a dedicated team of Scrum Masters and Coaches who are independent from the product delivery teams.

Toyota Connected is building a pattern library of tools and techniques they have created or identified that work in various contexts. Just as The Toyota Production System never stops improving, Scrum The Toyota Way evolves endlessly.

I have also taken the stance that there is not really an agile transformation, rather there is a need to transform the way we work. Agility is an outcome, not a goal. An organization must transform the way it works to better deliver value to their customers, and as a result, it will become agile. Just adopting some tools and words isn't going to help much.

What does the new automotive ‘agile’ operating model look like?

To be honest it is still emerging, but ultimately it is a team-centric, empirical approach that aligns to the product. Innovation is the norm with a strong focus on experience rather than design.

Consider the following example. A hurricane hits the south of the USA. People need to get out of that area. Traditionally car manufactures would not have been involved. But actually, they can update the engine management software to increase the range. They work in an environment where customer needs are rapidly met. They are aligned with the customer and continually deliver. Yes, hardware and bodywork change cycles are much longer, but innovation continually happens.
What does the new automotive ‘agile’ operating model look like?

Evidence based decision making is key to success. We must plan empirically and base our decisions on rapid feedback loops. We must learn early what decisions we should be making, and then adapt our product delivery to match that emergent learning. Those feedback loops must be as rapid as possible. Codifying this using Scrum is a key part of the approach.

The needs of our customers are changing much more rapidly than ever before, and with the move towards MaaS (Mobility as a Service), a four-year development lifecycle is not quick enough. We build our products the right way, but we need to ask ourselves, are we building the right product?

Toyota Production System (TPS) Lean thinking also continues to play a huge part in becoming more Agile. I do extensive work to teach people how to identify waste. There is so much hidden waste in everything we do, and by applying a Kaizen mindset we see huge gains in product delivery times, which then speeds up the feedback loops. To quote the father of Lean, Taiichi Ohno, “anything that does not add value to the customer is waste”. We must relentlessly remove all non value added work.

Tentatively, what are your top objectives/priorities for Scrum.org and Toyota Connected in 2019?

From a Scrum.org point of view we have a simple set of objectives around breadth and depth. We continue to want to drive the ideas of Scrum in a broader set of contexts that are dealing with complex problems (think more than just software teams) and add more materials to help those professionals be more successful in the application of Scrum in their work.

Toyota Connected is continuing its research and partnership with Scrum Org and other industry leaders to identify further patterns to enable greater agility in the automotive sector. I also want to help the industry improve the competency of coaches and practitioners so we deliver the value our customers continue to expect. I hope to see Toyota Connected lead the way in evolving The Toyota Production System to be a reference in Lean Product Development in an Agile world.
As keynote speakers at the upcoming Agile for Automotive Summit, what is one message you hope attendees will take away from your presentation?

Nigel Thurlow
Chief of Agile
Toyota

It's time to transform the way we deliver value. Agile isn't saving lean and lean isn't saving agile. We are using frameworks like Scrum and tools coming out of the Toyota Production System to enable business agility and developing the ability to respond more quickly to market trends. Agility is not the goal. It's a result or an outcome there is great synergy between agile and lean. The irony is that one is based on the other, but once you start becoming more agile, you will become more lean more easily.

Dave West
CEO and Product Owner
Scrum.org

Why now, why the problems of legacy, dependencies, compliance, and tradition are not show stoppers but just bumps on the road that can be dealt with if they take responsibility for the change. I want the audience to feel inspired by the opportunity and feel able to make a difference because they can!
INTERESTED IN ATTENDING?

This May 15-17, 2019, Automotive IQ will host Agile for Automotive, our inaugural event dedicated to OEM and mobility Agile leaders. As pioneers in bringing Agile methodologies to vehicle production, we are excited to have you joining other experts, leaders, and innovators within the automotive and mobility sectors to discuss best practices and innovative new ways to use Agile and Scrum Methodologies.

Agile for Automotive 2019 focuses on technical challenges and new thinking on the most urgent issues facing Agile integration, including culture change, targeted piloting, case studies and knowledge management and SAFe for hardware and software. Expect attendance from OEMs, mobility, parallel industries, and Tier 1 and as well other suppliers.

Hear first hand how other automotive and IoT leaders integrate Agile into their automotive product development during the premier US based conference bespoke to Agile Methodology in the automotive industry. Hands on learning and networking opportunities are included to spark innovation with other leaders in automotive Agile integration in high level settings.

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