Podcast Episode #10 – How to think like Elon Musk – Scrum for Hardware, with Joe Justice of WIKISPEED and Scrum Inc, USA

RAW TRANSCRIPT OF INTERVIEW

Balint: Today I have a special guest. If there was a black belt in his field, he would certainly be one of its holders. He's a master of a type of project management, an innovation method - Agile. Specifically, he's into Scrum, which is the most commonly used Agile method. My guest is Joe Justice from the US, president of Scrum Inc. Hardware at Scrum Inc., and founder of a company called Team WIKISPEED, which is still very much alive. Welcome, Joe, to this episode.

Joe: Balint, thanks so much for having me on your Hardware Entrepreneur Podcast. I'm excited to be a part of it and share the best of what I'm learning with your audience.

Balint: I'm very excited to talk to you now and share this knowledge because I think you have very valuable points to make which I would try to bring out. We've met a few times when you visited Zurich where you regularly give some courses and talks on Scrum through your involvement at Scrum Inc. I've been impressed by your enthusiasm and, of course, also by your results, every time I hear you give a talk or also a webinar, which I attended today, on Scrum in automotive. I'm equally impressed also whenever I read about Scrum method published by your colleague Jeff Sutherland who is the CEO of Scrum Inc. where you also work. Scrum promises to radically cut down the cost and time of innovation, as it's also indicated by Jeff Sutherland's book *Scrum: the Art of Doing Twice the Work in Half the Time.*

Joe, one story that stayed in my head, and this came up at one of your talks in Zurich, the story of Nokia which went bankrupt when they followed the traditional way of innovating, of project management by following the five year plan, even though obviously the market was changing due to Apple bringing out the iPhone in 2007, and in 2013 Nokia reached the end of the story when Microsoft announced that they would acquire the mobile phone business of Nokia. So to start off, you listener, are most familiar with waterfall or plan-driven method of managing projects and there are two extreme cases that I see for innovation. One is the plan-driven that I've just mentioned, and the other extreme is Agile. Because these are two extreme cases, there are intense reactions from people who want to follow some project management method so they either favour, they either love or they disagree with one method over the other. I was wondering if you could describe Scrum method, and how in your eyes this method is superior to the conventional way of managing a project according to the waterfall development.

Joe: Well, I'd love to share what I'm learning in that area. It looks like traditional project management, or how we call it plan-driven development, or waterfall project management or phase-gate project delivery, it's built on the idea that if your plan is

perfect, you can have perfect delivery. The problem is unless the plan is changing it won't be able to react to marketplace change, customer change, competitor demand change. And if it currently takes two years, two and a half years, four years or even seven years to execute a plan assuming that the marketplace won't have changed during that time could be dangerous. According to Forbes, the top 10 IPOs, so new stock market debuts, the top money generating firms, all of the top ten, use Scrum. Scrum is not based on the idea that a perfect plan will yield perfect results. Instead, it says on very short iterations a maximum of four weeks long the company will re-plan what the work will be.

Now, that's the first tenet. So it means we have a feedback loop that's a maximum of five weeks long. In very Agile companies using Scrum, such as Google, they execute this feedback loop, this Sprint hundreds of times a day. Now, each of these feedback loops you release to production, something tested that meets your quality bar. So to release that quickly, hardware and software companies have had to build tremendous amounts of investment in automated testing so they can make sure this thing they've just thought of meets their brand promise and the quality guide they care about. Hardware companies will like critical systems, like rockets and automotive projects, absolutely use Scrum. And it requires investment in an automated testing in order to be safe. Test and development has a whole lot to say about that and is the well-established, well-developed discipline of making that happen well.

But Scrum has another piece that hadn't yet had a chance to discuss with you, Balint, and that is, it's a team-level method to allow the team to change quickly without being disruptive. If we just took a traditionally run company and said, "Now we're going to change your priorities every four weeks," well, we have trouble getting anything done and anything out the door. A Scrum company also has a very precise structure that's modelled after a professional sports team. If you took a pro rugby team, for example, a top team, like let's say the New Zealand All Blacks, and you said, "Here the plays we're going to execute in order for all of the games this year " they wouldn't win. They wouldn't have a chance of winning because they wouldn't be able to inspect and adapt and react to the other players. But instead if you just say, "Oh, there's no plan. Just make it up as you go along," they would be very unlikely to win either, even though these are top players, the top players in the world depending on the year. Now the New Zealand All Blacks have won the Rugby World Cup more than any other team ever. So they're a top team but with no planning they'd also fail.

Instead, they plan it play at a time and then they have a playbook that they practice and they have set rules in their teams so people know what their position is and how to support each other per play, and they practice all the plays. Now, they have a single point, a single point of decision making, in Scrum we call it the product owner, and they call out the next play. It's exactly like that for Scrum in hardware, or software, or service delivery. There's one person, the product owner, that calls out the next play. They call out these plays once every sprint, they have a list of plays, and the shorter the Sprint, the better. That's the shorter the feedback loop we have. The teams practice these plays. They practice them with a team coach, usually called a

Scrum master, and the Scrum master's job is to help the team be faster and happier executing these plays and being able to switch from one type of play to another. Just like a pro sports team. So it's definitely not, let the teams do whatever they want. It's highly structured but the structure is optimised to make it really cheap for companies to change their mind and deliver faster. And, according to Forbes, that's generating more revenue in the stock market than any other method ever.

Balint: Very impressive. You mentioned some companies that adopted, the top ten companies, that use Scrum. One example was Google. Can you mention some other companies, especially in the hardware field?

Joe: Certainly, certainly. There is Scrum being used very publicly at Bosch. Bosch' website, a primary supplier for automotive and they they're involved in many hardware, software and services deliveries. Their website lists the top priority objectives for this year is to increase their agility and increase the precision of their scrum. If you look at the keynotes from their CEO, Volkmar Denner, CEO of all of Bosch, 375 hundred thousand people globally. It's all about how are we going to execute better Scrum than what we already have. And I had the luxury of training two professional coaches and trainers inside Bosch myself. And they are listed on scruminc.com as certified Scrum and hardware professional trainers and coaches. Other businesses are Boeing. Boeing has released public photos of their Scrum and hardware professional trainers helping to reduce the time between one version of an airplane and the next, and other projects.

Ford Europe, and Mercedes Benz and BMW, met with me along with key suppliers such as Bosch and Vektor, at the Agile Automotive Conference in Stuttgart this year, all showing the results of their Agile in automotive and deliveries. We're seeing Scrum in Airbus. One of the trainers I coached, Helen, is currently at Airbus. We're seeing Scrum in automated surgery equipment, in medical fields. We're seeing Scrum in currency, Scrum in banking, FinTech, #Fintech is a fantastic place to see the current disruption for the customers competitive advantage of all of the finance world. And it's primarily driven by Scrum. Mike Beedle's work, a signatory of the Agile Manifesto. You'll see a tremendous amount about FinTech, Health Tech, and Insure Tech, and that disruption is using Scrum in all those domains.

We're seeing Scrum in construction. One of the major sports stadiums in the United States was built using Scrum, all of its construction and all of its architecture…Scrum in architecture. I had the opportunity to work with one of the architecture teams doing all kinds of really cool projects, including the labs that Apple uses to design, well, the future in many ways. If you look at that market share Apple has, they have a whole lot to do about what the human condition is, in terms of their market penetration and smart devices, and many, many more. And using Scrum to design the labs that are designing the future and then, of course, there is Scrum at Apple, that's public by representatives from Apple in many of their keynotes, including in the design division and in hardware itself, plenty of Scrum in military for better and for worse.

Safety is important. Let's make sure we're not bullies. That's up to the product owners, not the products. But what we're seeing some to get twice the military effectiveness and half the time globally in the military. Saab Defence is a primary leader in this. Going to Saab's website, this is Saab Aviation, Saab Defence. We can see the Grippen jet fighter is built in one-week sprints with six months releases, the entire jet fighters, software, hardware, avionics, hardware mount points, and they're very public about it. So attending Scrum and hardware conferences or Scrum and hardware classes, like those posted by Scrum Inc., very often someone from some Saab Defence will be there. And they're usually happy to share their story. So raising honest public about talking about Scrum in radar, Scrum in battleship systems and Scrum in missile systems. Those are the public examples that you can see on the investment portal at Raytheon, for example.

Balint: You still see it though, Joe, room for improvement, right? So it's already widely adopted, this method but it could be even more widely adopted. And I wanted to ask how does the situation look like, the adoption for smaller companies, startups that are just starting out in the hardware field, and small or medium sized enterprises?

Joe: Oh, fantastic, Balint. The really cool advantage for small companies is, statistically if we have a group of five people or less, the way in which they deliver is almost exactly what a very healthy Scrum would produce. There is, if you ask any two people in that group if they work closely together, what is the top priority right now, the percentage in similarity, the answer is very similar, we call that communication saturation. If you ask those people what's the top priority plan to get the top priority done with quality, the percentage of similarity in those answers is very similar. If you ask those people in what architecture we can strain to get it done, the percentage in similarity is very similar. Teams of five people or smaller tend to have many of the best practices very naturally. The challenge comes when the startup or the small company hires their sixth person or brings in their sixth shareholder/developer/builder/architect, whether they're paid in equity or paid salary.

The company starts to then specialise, is statistically what we observed. At that point we need to train everybody in Scrum. That takes two days, it's a certified Scrum master class. They can choose one that fits their domain best, whether it's Scrum in hardware, Scrum in sales, Scrum in finance, Scrum in merging and acquisitions, Scrum in people operations or HR, etcetera. Then, the team can scale without losing that nimbleness that made them such an effective small company and they avoid what Toyota calls big company disease. So a team of five or smaller, you guys and gals are rock stars, by definition. You typically have the very best practices that we've ever seen. As you scale to six or more that's when you do need to introduce what is often called the minimum viable bureaucracy, the absolute minimum amount of overhead, that allows everybody to still work in such a nimble way, that is aggressive Scrum, where it is split into teams of three to five people. They're co-located in the same place whenever possible. And that's not always possible but we get as close to

it as we can. The fastest teams are in one room in touching distance of each other all day. The teams are 80% stable.

So for a team of five only one person would change every year and a quarter. So the same people work together, they work from one product backlog or one product, and they swarm on one task to get it done together. That's very natural on a team of five or less. So keeping the company from specializing, apart from specialties, in teams of six or eight. So small companies have an edge. If they use Scrum, they can keep that as they scale and continue to grow revenue.

Balint: Do you know some examples where Scrum has been scaled up? So starting out when they were small and growing somewhat bigger for hardware?

Joe: Oh, sure, sure. This might be an opportunity for me to bring in my own hobby company WIKISPEED Inc which I own and I have the luxury of being the CEO. WIKISPEED Incorporated started in my garage, at that time in Denver Colorado, building prototype cars. WIKISPEED Inc. is now in 23 countries delivering in parallel. It's modelled after Wikipedia where any person can edit a Wikipedia entry to attempt to increase the accuracy. And then you have teams to audit the edits. Well, WIKISPEED Inc. works very similarly but in cars anyone can edit our CAD, three dimensional drawings, and it's the job of our build servers to manufacturer whatever the CAD is every Thursday. So anyone anywhere in the world could collaborate to edit our CAD. That's scaled up from one person, it started with just me. There are now more than 2000 people who are collaborating to edit our CAD and it's invited to anyone anywhere in the world, and their operations in 23 countries where they build whenever the CAD is and test them for road legal sale. That's an example.

Almost every single product on Kickstarter started as something very like Scrum and the ones that have continued to make great money avoided big company disease as they scaled. So if we look at any company that's entered the Fortune 50, we see companies that are using Scrum. Tesla is a fantastic example. Every single job posting at Tesla says Agile. Every single one. Whether it's hardware, software, management, custodial services, finance, VPs, Presidents, they all say Agile. Half of them explicitly label Scrum. Must attend Scrum ceremonies, most create Scrum burned down charts, etc. Now that is a company that started as a startup, about the same size as my hobby company WIKISPEED Inc. We competed together in the Progressive Insurance Automotive X Prize in 2010 and Team WIKISPEED outlasted Tesla. Since then, Tesla's grown by leaps and bounds, and far exceeded Team WIKISPEED's dreams currently.

So we're in catch-up mode now. We've done some cool stuff in manufacturing that we're excited to share with Tesla. In terms of our final product, hats off to Tesla. They've won this one. They've won this round. So they've grown to large company size and they have more growth in the luxury sedan market than Mercedes or BMW, or Porsche, or Bentley. They're the number one growth so they've clearly entered the mainstream. And they're a company that started very, very small using Agile princi-

ples and using formal Scrum they've grown to, according to their job postings, they've grown to legitimate full-scale size. And, in fact, Tesla is heralded as the example of entering a difficult to enter industry, an industry with a high barrier of entry, excelling in the shortest amount of time anyone thought was practical, and all across Silicon Valley and entrepreneurs worldwide say, “How can I think like Elon Musk?” Well, that is a company that is using Scrum. And so that might be useful to many of the visitors and listeners to The Hardware Entrepreneur.

Balint: You mentioned that Tesla is looking for people who have experience in Agile. There are other methods as well. For example, Lean development, Kanban, and of course in the startup world there is the Lean startup concept which is, you know, popularised by Eric Ries, Steve Blank, or also Ash Maurya with his book *The Running Lean*, where he uses the Lean Canvas. Do you use some elements of the Lean Canvas and the lean startup principle in Scrum? Or how do you see this? And also, how do you differentiate Scrum from other principles, other methods, lean development, Kanban, which I mentioned?

Joe: Oh, glad you asked, Balint. I, myself, absolutely use the Lean Canvas. It helps me make sure I’m being clear about what is it I’m building, unfair advantage, helps me measure success, etc. etc. etc. In Scrum Inc. we teach many of our classes using the Lean Canvas. That's just one of the tools. Let me bring it up a little higher level first. Scrum is a team-based method to get stuff done and allow for very rapid changing in priorities without disrupting the flow of work to enable lean single-piece flow. One third of all of Scrum is Toyota production system, the Toyota Production System, half of it is what is called Lean, outside of Japan most of the time. The other half hasn't been transported outside of Japan very much, the respect for people and building up individual capacity. The reduce waste fortunately is very popular outside Japan.

Both those together make the Toyota Production System, empowering people, helping people become much more smarter and more capable, and reduce waste. That's one third of Scrum. So all the lean disciplines are natural complements for any of these methods. Scrum isn't a method, it's a framework. So it's a team that does things like lean. It's a team that delivers things using tools like a Kanban board. It's a team that creates stuff like Lean Canvas, which are practices and methods, and it's a team that produces lean startups, validates them with customer feedback and pivots quickly to attempt to find the highest valued item that truly solves the issue in the market. So this team can do, say anything is too broad, but many things. So it is wise that scrum is a framework and not a collection of practices. But I’ll say, according to the creator of Scrum, Dr. Jeff Sutherland, he says he's never seen an excellent Scrum that didn't run all of the XP practices, Extreme Production practices or called Extreme Programming, if you're only talking about software.

And he and the creators of XP, Extreme Production or Extreme Program, they have have said they've never seen a fantastic XP team that wasn't using Scrum, the Scrum framework to run their XP practices. Same is true, best I can tell, with lean

and with Kanban. These pieces are necessary if you want a fantastic company. Good luck running your company if you are not very clear on what you're building, who you're building it, your unfair advantage, who it's going to help and how you're going to measure success. Whether that's traditional project management with a Gantt chart or whether using a nimble team based method like Scrum, you have to know that, or good luck. It'll be dumb luck if you are successful as entrepreneur without that information. A Scrum team will execute those. I absolutely recommend the Lean Canvas. I absolutely recommend Lean startup. I had a chance to be with David Anderson in Lean Coffee in Seattle, Washington while he was writing the book, Kanban, and I've been a fan of Lean Startup since it absolutely started. But I'll say if we don't have an aggressive trained team to execute those pieces, they have trouble speeding up. And that's Scrum's power, is the team that allows the group to get faster and faster each iteration of time, we call it the sprint, will be even happier about it in creating the aim as a very pleasant place to work. Because we've seen teams that also multiplies team speed.

Balint: Scrum, this framework, it sounds very good. And what kind of obstacles do you see for its implementation for this to become even more widespread, especially in the hardware field?

Joe: There is a perception that tooling in the hardware is a barrier. It's a phase to resist redoing. The cost of tooling has come down. Dynamic tooling is now an option where you can make significant changes to what your final product will be even after you've made tooling because the tooling itself has flexibility built in in some areas. In some cases the tooling is entirely digital driven, it's computer numerically controlled but that depends on the final product material. Then there is also even 3D printing the final part, worth 3D printing the tooling. But I run into the perception continually that we can't have sprints more than every three years because the tooling cost is so high but the tooling cost is not that high anymore. We might look at a $1 million tool or a $750000 tool, to use US dollars as an example, as a benchmark, as a reference point.

And if we look at the cost to employ the team over those three years to create the designs, to validate the designs, create the manufacturing plants, create the tooling, validate the tooling, work with the partners to get the tooling, install the tooling in the production facilities, scale up and certify the production facility team, test the final parts, all the test disciplines and test hardware on the line. If we look at those people's time, it's a far higher cost almost always than the tooling. So we could get the new product development cycle down to less than three years, maybe two and a half years, or one and a half years, or eventually all the way down to one week, which is what a very fast hardware companies with tooling are doing now. Well, then yes, you are investing in tooling every one week. But if it's one week, you can use Prototype tooling which might cost you only $500000 or even less. And the cost of labor is so low because the time you're employing all those smart people developing and validating, and deploying manufacturing the product is shorter. Because your entire life cycle just took a lot less time. It's much less expensive.

So there's a myth that tooling is a bottleneck that has gone away more than 10 years ago. It's no longer cost wise the bottleneck. Also, there are other options that depending on your final product might allow you to skip tooling entirely. For more information on that, please check out the Webinar *Extreme Manufacturing* and then *Extreme manufacturing at scale*, or *Scrum in Mass Production*. They're both hosted events from the scruminc.com. The next barrier to Scrum, in even more prevalent, appears to be policy. If you're in a brand new company, an entrepreneurship company policies are just now emerging. So I would say make sure that whenever you write a policy, it accelerates and doesn't impede the Agile Manifesto, and the 11 laws of Scrum. If you do that, you shouldn't ever have a barrier with policy. But many companies that were founded a long time ago have many policies that were not meant to optimize for the Agile Manifesto or the 11 laws of Scrum, the 3-5-3 of Scrum to find in the Scrum guide or agilemanifesto.org. Those policies might say things like the same group that writes the test plan is not allowed to build the test fixture.

Well, that is in opposition to a collaborative, co-located, cross-functional team that Scrum will give you. And that is in opposition to the Agile Manifesto. So in order to drive excellent Scrum, when you have those policies, you do need to change policy. So someone who has the authority to change policy does need to be aware of what this change is and able to drive it. Now, often that policy is merely just a shared document written in a shared folder. So you take the Scrum Guide and the Agile Manifesto, and you publish them to that same shared folder and you put a sentence in the by-laws that are passed during one of the board meetings that says, “and this method is also allowed, as compliant with company policy.”

Once that happens you're pretty much set and then eventually no one wants to run the 800-step phase-gate delivery model in hardware anymore because it's delivering less money, the customers are frustrated because the length between releases is longer than they would like etc. etc. And so then the board has a meeting where someone says and it's noted that, yes, the board approved, that we will now only use methods compliant with the Agile Manifesto and the Scrum Guide. And that is our company policy. And then it just goes away. So I'd say there's a myth about tooling costs being a bottleneck or stamped steel dies, etc. And there's a challenge, legitimate challenge with policy, both in individual companies policies but also in cities, larger geographies and country policies.

Now many countries specifically endorse Scrum. Scandinavian countries have constitutions and business laws that are very collaborative with Scrum. United States does as well. Not every country does. So in some countries you have to have a reporting version of even your entrepreneurship that's run based on waterfall, and it's their job to phrase what the Scrum teams are doing well compliant with the Scrum Guide as to their policy and the Agile Manifesto as their policy such that they can report back to waterfall metrics that their city or their government might require. And till such time, as the law is made more agile in their country. Again, it's already perfectly legal in the United States and all the Scandinavian countries, to my knowledge, and

several others. But not everywhere yet. So that is a bottleneck that entrepreneurs have to have to face. They do likely need each member of each team that is responsible for reporting, translating the team's work into something that looks more like Waterfall Project Management for reporting and taxation purposes.

Balint: So the two ways of thinking still have to meet somewhere. The old, which requires this gate-phase to reporting, and the other one, the Scrum?

Joe: There is a truism in racing in automobile, boat and airplane racing, in space racing, called the last of the old will still be the first of the new. And we're right there right now in some areas with Scrum. Scrum has already beaten all of the old in software. There is almost no waterfall software left. If there is any type of incentive to competition or being cheaper, it's been crushed. Now what's happening in mobile phones, there's almost no waterfall left in the project management of mobile phones and that's happening with all the electronic wearables. That's now starting to happen in cars. We've seen the shift already in the total market share and the market growth in luxury cars. Well, guess what? We now have Tesla's coming into mainstream and Tesla is not the only one doing it. So that's happening in automotive now too. We're at the tipping point. But some industries aren't at the tipping point yet. So the waterfall massive Goliaths are still requiring that Scrum entrepreneurship startups have to fill in Gantt charts and long gate-phase plans. That's dying off, that's happening now. What's accelerating that dying off is the open market.

Balint: My next question relates to how the leader, so the Scrum master or the Product Owner can influence the people who are working on the team? How do you make people stretch themselves so that they do not give a too comfortable project timeline, a too conservative estimate of what could be achieved during the development? So how do you motivate those people? How do you get the right timeline which is more aggressive?

Joe: Balint, as you would have been able to tell your listeners in traditional project management we would have a role called a project manager and they'd be defined by the PMI, the Project Management Institute, all over what they would call the PMBOK, the project management body of knowledge, and this person, the project manager, also sometimes called the project leader, will be responsible for motivating their team to meet an aggressive deadline. Well, those projects are late nine times out of 10 and don't ship anything, hardware, software, nothing shipped, all resources spent, all money spent half the time. So that model itself is flawed. It turns out what works, what actually delivers fast stuff that works well with high quality, isn't about "motivating the team" or anything about a stretch goal. In fact, the Harvard Business Review and Forbes have both recently published pieces showing the harmful effect of stretch goals and how they reduce speed. So what Scrum does and what most Agile method, Lean Startup teams will very often use this, Kanban teams will very often use this, whether or not they formal Scrum or something like a product owner and a Scrum Master, which Scrum would define, is they make success very visible to the team. So the teams themselves have a huge billboard sized screen or board that

shows how quickly they're getting value into the market that meets the market's expectations.

So in Scrum that's a burn-down chart and a Scrum board which is very similar to a Kanban board, add work in process limits and you have an excellent Kanba board in many respects. And the team themselves sees the rate in which they're getting cool stuff done that the market likes and they're seeing the rate at which they're getting cool stuff done in that market doesn't like so they can tune their work. It turns out that is more motivating than almost anything a product owner or a Scrum master could do. And it's just like playing a pro sports game. That's the model. So if we go back to the New Zealand All Blacks playing Scrum, it's not that their coach gave a really rousing speech, although that does happen sometimes and it doesn't hurt, is that they can see their score. Imagine if the team couldn't see their score and they couldn't see the opposing team's score. They were playing the game. How motivating would that be? Especially trying to hold that motivation across the entire season. It doesn't work. Making work visible which is the third required output of Scrum, and that's the Scrum master's job by the way, to make sure that work has been made visible, the team can see their score. And their score has to do with quality, too. They are not just being productive but it's what the market wants, it's meeting the company quality standard.

When they can see the score it turns out that is the most motivating thing to drive up the team's speed again, and again, and again, and again. And the Scrum Master's job then is mostly just getting obstacles out of the way of the team so they're not frustrated because the motivation was up inside the team just from seeing their own score and feeling that they're in control of their score. And by a change, that they have made this week will make them score more points next week is motivating all on its own. And that's directly in line with what Daniel Pink has published, and the same as TED talk, in his book *Drive* on what truly motivates people and that is a key reason we believe why Scrum has more success statistically than any other method we're currently aware of, as evidenced by Forbes in the top 10 IPOs of all time.

Balint: I have actually a Project Management Professional certificate. And I've been working in waterfall development so I know the problems it has. Even working on long-term projects that you can run into these problems and this command and control style that it's not the best way to bring out the best from the people. So I support this.

Joe: Very kind of you to say that I don't want to be a zealot. When something better than Scrum comes along, I'll use it and I'll change the name of the company from ScrumInc.com to that better thing.com Right now the best statistics we have for project delivery comes from Scrum. So I'm all in. And I want to say the goal isn't do great Scrum, of course right. The goal is, have fantastic valuable releases that make the world a better place and knock out problems. Right now the past is where we know to use that as Scrum and I'm happy to walk us through it but that the goal isn't Scrum. Right now is the best we know. But the goal is to deliver great stuff and that

is the method. And as you pointed out, Balint, Scrum as a framework is then holding all these fantastic practices so we better be familiar with Eric Ries' Lean Startup, better be familiar with Lean Canvas. We'd better be familiar with David Anderson's *Kanban*, and we'd better be familiar with Jim Benson's *Personal Kanban*, we better be familiar with Mary and Tom Poppendieck's *Lean Product Development*, and the Toyota production system, etc., etc. Those are necessary pieces.

Balint: Joe, I would have tons of other questions but unfortunately because of lack of enough time to discuss all these topics I'd like to now move on to the last round of questions which is the ultrafast round of questions. This means I will ask four questions and it'd be great if you could answer these relatively short.

Joe: Let's do it.

Balint: Okay. The first question, if you could go back in time, like in the Back to the Future movie, maybe it's also one of your favorite, at least it's one of my favorite, when you were younger in your let's say early 20s, what notes what would you take back to that time to give it to yourself?

Joe: That's awesome. First, when I was 20 I would enroll in Formula S.A.E., which I didn't do. So I'd have a note saying enroll in Formula S.A.E., that's a student run project where they compete in race cars that are sort of like Formula One on a smaller scale. And the advantage to that for me, why I wish so much I would have done that, is they're cross-functional teams. You work on this compact team very intense way using something not too different from Scrum and everybody has to help with everything to get it done. So you learn a little bit about metallurgy, you learn a little bit about composites, you learn a little bit about finite element analysis. All the stuff that I have to do now in my automotive company I would have learned a little bit about every aspect of that much earlier. Other notes I would have brought back is I would have told myself to earlier read the book *Journey of awakening* by Ram Dass, and not that it's the world's best book but it was so impactful to me in terms of shaping your perception to yourself and the world around you. Steve Jobs was often accused of having a reality distortion field and thinking in from books like Ram Dass *Journey of Awakening* show how that can be done positively or how that even works. And I'm a massive fan. And if I could bring back just one short set of notes what honestly it would be the Scrum Guide. Because if I could have found Scrum Guide in my life earlier, man, I'd be a decade or more ahead by now of where I am or my life goals. So that would be the cliff notes version.

Balint: This also kind of answers the second question that I wanted to ask. So the name of a book which had the biggest impact of your career, because it looks like then two books actually had a big impact. The one that you mentioned, *the Journey of Awakening*, and the other one was the Scrum Guide.

Joe: Yeah, yeah. And I'd also add personal fitness has done tremendous amounts for how much energy I've had in the day, which affects my ability to focus to a tremen-

dous degree, for that meditative martial arts have been incredibly useful. And I've finally learned more about the science of what makes that possible in a book by Michael Mathews called *Bigger, Leaner, Stronger,* and the angle of that book is ultimately about bodybuilding, which isn't my goal. My goal is health and energy. However, the research cited in that book is exactly in line with Michael and being stronger. It works with that perfectly even if that the way you look isn't my ultimate end result. And that book is the only book that I've found on nutrition and fitness, in this case bodybuilding, but all of fitness is there. It's all evidence based. There is zero author opinion and the footnotes for that book, he cites more than 700 research lab papers on what will actually grow you this way, what actually will feed you this way. And I'll say it's completely modified the way I eat and the way I move, and has had useful impacts on many, many areas of my life. So I'd say that, if it's in terms of books, what's allowed me to get a lot more done than I used to is the Scrum Guide. If it's what has allowed me to work the reality distortion field, is one way to say it, but personality wise, people to people, better than I could have before, Ram Dass' Journey of Awakening was giving me a lot more energy is Shaolin kungfu, and the science of that has been distilled very well by Michael Matthews in *Bigger, Leaner, Stronger*. And there is another dimension that I think is just as important and that's the awareness, the resources I have to build stuff from. Where does the aluminum I have come from? What animals is that affecting human and otherwise? And in my own yard, in my home, what's the biodiversity and biodensity, and how to have that be healthy and how to coexist with a whole lot of other animals, human and otherwise? That comes from Tom Brown and his book *The tracker, The Scout* and his *Field guides* series. And then ultimately taking a week-long class called *Standard* with Tom Brown and he does that worldwide. Those books together have shaped a whole lot of what I am and if someone were going to come into a Team WIKISPEED or join WIKISPEED Inc. to work with me in any of my Scrum companies, I'd say reading those books and attempting to create a backlog of how to make what they read in those books come more true every week than it was the week before, it's going to be their fastest step to being a high value add in any of the companies I'm involved in.

Balint: Excellent. It's amazing. This book recommendation I have to look up this. The third question, I'm amazed by habits and how these kind of have a positive effect on us. Just like in a Scrum you have a certain beat, like Scrum meetings, daily stand up meetings, that you organise. This is also a kind of habit. And what kind of morning routine or evening or daily routine do you have that make your day better?

Joe: My very best days start when I've had my evening routine the night before. And I don't always get it in but when I do I have not had a best day where I didn't have evening routine the night before, and here's the evening routine as I have it right now In the evening routine I attempt to think through what I got done during the day. I do a retrospective, for you Scrum masters that are trained that are listening to this, I do a retrospective. Well, what didn't go well and what would I do differently tomorrow to maximise the value of the day. Or I use one of the other retrospective techniques. That's the simplest called plus delta. Then, I make my backlog for the next day. I do product backlog refinement and then I go to bed. So we could call it a different way.

We can say I meditate and then I plan but I'll use the Scrum terms. I run a retrospective and then I do product backlog refinement and a little bit of Sprint planning. Then I set out what I need for the morning so that then affects if I'm able to get the morning routine I want, so often I prep breakfast the night before according to the book *Bigger, Leaner, Stronger,* and I'll set out my workout gear so I can get my physical conditioning in first thing before my kids wake up and my wife wakes up, which usually sets me up for a really good day.

I'll set all that out, I'll set my clothes out, I'll pack my bag or whatever it is I need to do the next day. I'll even prep my laptop so that I have a Notes text file open with the backlog of what I need to get done in the morning. So when I get to it, it's right there available and I synch that with my phone, and then I rock it. And my very best days, I actually have a playlist that auto kicks off as my alarm clock and it calls out cadences of key stuff that I want to get done in the morning and about what time to walk me through it, so specific exercise routines, some business pieces to do, some evaluations or business purchasing things that are important to me that day, etc. Finally, if the night before I'm able to make a new desktop image for my phone and my laptop on that desktop background, I'll have a picture of sticky notes of my top priority missions and goals this week, and who I need to network with to get each one done. And that has increased my velocity in business tremendously, it's making a backlog the background on my iPhone and my laptop when I can. I hope that helps some people. I got a lot of that from Jim Benson's *Personal Kanban*, which is a fantastic book in my opinion.

Balint: Fourth question: in your work, because you said that you're present with WIKISPEED Inc., you said something like 23, 24 countries, you have some… Maybe you probably encountered cultural differences, and what kind of cultural difference is memorable for you and how did you resolve such issues, if they were issues?

Joe: In some countries, in some cultures, people won't criticize their superiors unless they're invited to do so. In some countries and cultures people want stop/start to work unless they're explicitly told to do so. And even writing it down and posting it on a wall "Do this work," which is called a Scrum, isn't enough. You then have to say it out loud. And that's been surprising to me. So I'll say when I'm in a product owner role I have to remember to communicate in multiple ways. Okay, start these missions or goals, here's the backlog, begin. So I can't just send an e-mail. I'll often have to have a video chat and say it, and verify the team has started, or if I'm there in person, which is always faster if I can be, to say, "Start this work, here's the work, here's how I'm going to be measuring us, here's our product backlog. These are the missions and the goals. Any work that's not on this backlog is not value add and won't be counting." That kind of thing to focus the group in terms of getting the feedback I have to explicitly say in some cultures, I have to ask a junior, someone who sees themselves as junior, to provide criticism during the retrospective or during product backlog refinement to elaborate a story or propose a different plan. Once that happens, usually the room opens up, or the team opens up, or the business organization opens up and they realize it's ok.

When I was in Vietnam the power distance, they would call it, was very strong, I thought, where people who viewed themselves as subordinate would not criticize the plan made by a superior. Even if they knew something fundamental and important that everyone would want to know. I thought that might be unsolvable. Interestingly though, as soon as the subordinate, the person who saw themselves as junior, was asked by the superior to provide input story, elaboration or criticism, example criticism and the retrospective, they did. And then everybody did. So it wasn't unbreakable, it just needed to be invited. At least that's what appeared to be in Vietnam. I saw the same thing happened in Japan, which has a complete intense culture of “Do not talk over your superior” but if you're superior specifically invites you, especially in a particular format like a Scrum retrospective where people who've been trained retrospective and that's what it's for, the feedback does come. So those have been two useful learnings for me and I look forward to learning many, many more cultural tools to get maximum effect.

Balint: Interesting. Very good. To close off, Joe, what would be the best way for listeners to reach you, social media or email?

Joe: Oh, yeah. Well, say comments on, Balint, on your Hardware Entrepreneurship Podcast. I'll try to follow those as closely as I can. Also, reaching me at Joe.Justice@scruminc.com. Scruminc.com is likely the very best and I can forward those onto my product owner, which is what prioritizes me doing a class, or training, or coaching, or consulting, or a keynote with me. Casually, for a short contact, I tweet every day and I read the tweets sent to me every day. In fact, maybe every 90 minutes some days. Joe Justice zero, the number zero is my personal Twitter hash tag and without that I can be completely, open transparent and honest, and say anything that's important to me. So that’s #JoeJustice0 on Twitter. Team WIKISPEED also has a Twitter and that's answered by anyone on Team WIKISPEED including me, so sometimes you'll reach me but sometimes you'll meet other members all over the world. That’s #@WIKISPEED. And you can reach all of Scrum Inc., which I also participate in some of its Twitter usage but also all the Scrum Inc. team, including Dr. Jeff Sutherland respond on that. That's @ScrumInc.com. Those are the primary methods and, Gosh, reach out to me all the time.

Balint: I had a really good time talking to you about all these aspects of Scrum. Thank you.

Joe: Thanks so much, Balint I’ve enjoyed myself.

Balint: Bye, bye.