

SCRUM MASTER

The Agile Training Seminar
For Business Performance

This book is the ultimate agile training seminar in book form. Business leaders, professionals who are ready to learn, and instructors will find here a complete training regimen with rich content, a training-tested structure, and high value insights that have already resulted in many thousands of agile projects delivered at all types of top tier organizations, from fortune 100 companies to lean startup companies, around the globe.

We have optimized this book to be an immersive experience you can adapt to the time you have available, so we encourage you to dive headlong into these pages, exercises, and practices so you can most directly apply your learning to your work immediately.

As a comprehensive course, this book offers the key practical knowledge for you to understand and be increasingly agile, and to effectively begin practicing or perfecting Scrum from the moment you begin through to realizing your definition of done.

Joe Justice is a highly rated instructor who has led hundreds of agile courses and supported agile transformations for teams and across leading businesses worldwide.

"You really rocked your roles as instructor, cheerleader, and host"
- Ken Merchant, 3 Star General, USAF Retired

"One of the best professional trainings in the world"
- Fabian Delava, Partner, Bain & Company

"Joe has broken new ground using Scrum in manufacturing"
- Dr. Jeff Sutherland, Co-creator of Scrum



SCRUM MASTER

The Agile Training Seminar For Business Performance

"Joe is a master in teaching Agile with meaningful real-world non-software examples"
- George Tome, Enterprise Agile Coach, John Deere

SCRUM MASTER

The Agile Training Seminar
For Business Performance



JOE JUSTICE

Edited by Phil Klein

SCRUM MASTER

The Agile Training Seminar for Business Performance

Complete Training for Instructors, Professionals, Business Leaders, and the Professionally Curious

Written by Joe Justice. Edited by Phil Klein.

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FORWARD TO THE FORWARD

This book is primarily written by Joe Justice, and that means some quirks of speech are going to be pervasive across the text. Joe loves the idea of Leading from an Emergent Future, popularized by Otto Scharmer, a professor at MIT's Sloan School of Business, where Joe has guest lectured. The summary of the concept is to attempt to visualize the possible and probable futures, and lead now within your scope of influence, no matter how broad or tiny it may feel at the moment, to make better future options more likely, and to better prepare for future risks. To go deeper on this concept, we recommend Otto's book "Theory U". Applied to this book, that means we use primarily gender-neutral pronouns, as the gender of the performer is not nearly as relevant to our business goals in this book, as what they are trying to achieve. For example, someone like Joe, who holds the position of Chair of the Board, would be just that, and we'll skip an older phrase of saying "Chairman". Similarly, a generic reference to a Product Owner would say "Product Owner" or maybe "they". Next, this book will often request the reader consider a topic or suggest an activity. We intentionally avoid command and control language or requests to act without consideration. This surrounds us with people who don't want to be told what to do but are interested in self-actualization, possibilities and inspiration, which is part of the emerging future which we would like to enjoy. Boosting this, we attempt to phrase all actions as opportunities, all choices as options towards those opportunities, all planning as intention, and all evidence as trends. This might help us create a more open-minded state awash in opportunity which might give us the best avenue out even when the business trend is tough, and the opportunities are risky. You see Joe Justice was born legally blind, learning to read by having Joe's nose touch the paper, and a life philosophy of viewing challenges as opportunities has let Joe achieve some difficult and maybe even important business successes, despite an inauspicious start. You can read about the successes on Joe's LinkedIn page if you like.

For the purposes of this book, it is good to know that Joe has founded and grown his own multinational company, set world records, been invited to consult by people who could afford

to talk to anyone, and achieved many of the traditional metrics of success as well as Joe's own. By the way, years of eye therapy, corrective lenses, and three eye surgeries later, Joe has a good amount of distance vision, too, and he did learn to read even before all that, with one of his first written sentences being "I want to be an inventor, learn the secret to all knowledge, and share it with everyone." Let's share the Scrum Master part of all knowledge, or at least as much as Joe and the team of authors contributing to this book have unearthed so far. Related, this book has frequent references to the work of others, and Joe wishes to stress the value of many of the concepts used in summary and application here. We write many recommendations in this book to other's works. We propose original concepts as well, namely Justice Estimation using contemporary research to apply and refine estimation research published in 1969 by the Rand Corporation, Justice's Law inheriting from Conway's Law from 1967, eXtreme Manufacturing which is an adaptation of eXtreme Programing with powerful contributions by Kent Beck, Martin Fowler, Cynthia Andres, Ron Jeffries, Ann Anderson, Chet Hendrickson, and many more, Group Scrum which was independently derived from practice at WIKISPEED Inc. from 2006 onward, and has served as an inspiration and reference to many similar or less simple multiple group or large group Agile practices. We are building knowledge in a field undergoing many innovations, and we look to others, and to you as our readers to share innovations you know, so we can give credit to those as well, because that is fair and just, and fair and just is important. And building up others' work is important, as the original creators are likely to make more of those good works, and we will be more likely to benefit from their valuable works.

DEDICATION

To Elon Musk. Elon is said to have never studied company performance, never hires consultants for company performance, never took a class on business performance. Elon is said to have hired a few people despite their MBA degrees but never because they had one. However, by enthusiastically and relentlessly pursuing the best dreams, Elon has learned what we Scrum professionals would have taught, and Elon achieves tremendous successes every week across five companies, serving currently as CEO. In fact, these companies execute at a speed so fast

that it is completely unknown by the incumbent competition and often misunderstood by media and investment professionals. We often think what we would teach if Elon Musk attended one of our classes. This book is dedicated to giving a Scrum Master seminar so masterful that even if Elon Musk did take it, the mindset and framework and technical practices would immediately be applied and double the speed, and double it again, across all five companies. How awesome would that be, if you like fast electric cars, rockets and multi-planetary life, your artificial intelligent brain link partner, or zero traffic 1,000 kph transit? We like all those things, so please enjoy this book on how to take or teach the best Scrum Master seminar on the planet, or maybe beyond.

FOREWARD

What is a Scrum Master?

Scrum is a framework for work. It is a way to organize a group of people to get work done, and now it is globally prevalent with thousands of companies hiring Scrum Masters. A significant percentage of total posted open jobs worldwide has the word “Scrum” in the job description, we suggest you give it a try.

A Scrum Master is a person highly knowledgeable in how Scrum works so they can help a team of people get work done using the Scrum framework as their structure. We can think of them a lot like a coach for a sport, first helping the players learn the rules of the game and then helping the players practice to play the game with excellence.

A Certified ScrumMaster® is a Scrum Master with a credential, a certification, clarifying they have met a level of training and immersion. The intention is that they likely are highly knowledgeable in how Scrum works so they can help a team of people get work done using the Scrum framework as their structure. The world’s most job-posting requested Agile or Scrum credential is the Certified ScrumMaster®, maintained by the Scrum Alliance®, a non-profit entity which provides these credentials to those that meet their selection criteria. Certified

ScrumMaster® is a certification mark of Scrum Alliance, Inc. Opinions expressed in this book are solely those of the authors and do not express the views or opinions of Scrum Alliance, Inc.

The most common method of earning a Certified ScrumMaster® credential is fully participating in a 16 hour seminar instructed by a Certified Scrum Trainer. The Trainer is measured to meet the requirements in terms of knowledge, work experience, teaching capability, and continuing education, to maintain that credential. These 16-hour seminars have been conducted virtually, all at once, in small chunks over days or weeks, and continuously during product delivery in real companies. The most common method is a 2-day seminar with a group of other professionals interested in improving their employability or professional capability.

This book is a master class on the Scrum Master seminar. This book is for those who would like to earn a Scrum Master credential and want the best in the world and most complete understanding before they come into their class to be certified. This book is also for those who have earned their Scrum Master credentials and want to go deep in areas of most interest and utility to them, as only a master class can provide. And this book is for Scrum Trainers, who want to improve their depth, breadth, and mastery of their craft so that every Scrum Master seminar they teach can truly be a master class.

CHAPTER 1: INTRO (Introduction)

This book is our launchpad to reach the rapidly growing new world of Modern Business Agility. Here we will present the Scrum Master program fully and completely, sharing how to achieve the business values included in it. The intention is to give you the principles that make it work broadly and to offer specific applications that solve recurring problems in specific domains. On completion of this book, you, as a dedicated reader, will be able to obtain the business values of the Scrum Master program in your studies, your personal goals, your personal work, and your business. In addition, a dedicated reader should be able to teach a top-tier Scrum Master seminar, provided they earn and maintain the appropriate credential, anywhere they choose in

the world. Combined, the authors of this book have trained more than 10,000 Scrum Masters in Europe, Asia, Africa, Australia, and North and South America. The authors of this book have achieved many of their own academic and personal goals, working goals, financial goals and more broadly, business goals.

Why should you consider trusting this book and its authors?

This book is created by the Agile Business Institute, with the primary contributor being Joe Justice, Chair of the Board at the Agile Business Institute. The Agile Business Institute has amassed more than 100 years combined experience in Executive Led Agile Transformations of Global Fortune 50 companies.

Joe Justice has been featured on CNN Money, Forbes, the Harvard Business Review, TED.com, the Discovery Channel, ABC's Good Morning America, NBC's Today show, Fox News, the Asahi Shimbun, and the Nikkei, among other global publications. Joe Justice's experience includes Agile Transformation work, training, consulting, and presenting in Lockheed Martin, Google, Amazon, Microsoft, Boeing, the US Air force, HP, Tesla, Toyota, Nissan, MIT, Siemens, Pictet Bank, and more than 100 others.

The Agile Business Institute has full time operations in all the most densely populated time zones, truly covering the world of work. The ultimate goal of the Agile Business Institute is to produce a globally powerful Master of Business Agility Degree, a modern MBA. Having guest lectured at MIT Sloan Business School, Harvard Business School, UC Berkley, Carnegie Melon, Oxford University in England, L'Ecole in Paris, University of Barcelona and Parsons School of Design in NYC, and others, we have observed contemporary business degrees offer courses on business agility but still teach outmoded models of dehumanizing and frankly ineffective management. It must be so tempting to believe that business students can learn a rote set of spreadsheet formulas, that arm them to sweep out the old management teams and create dramatically superior sustained shareholder performance. Rote formulas would do nothing to

repeatably create products that improve what is possible with a high morale employee base. For that we will need an entire new framework.

HOW TO READ THIS BOOK

Immersive learning is a superpower we can all access, and one way this is done is in a seminar. In this book, we want to give you a feel for the seminar experience as you go along, gaining a sense of inclusion during our time together. Findings about the physiology and neuroscience of learning suggest that active focus for set blocks of time, with breaks between them, enhances the learning experience. When reading this book, please treat it the same as you would attendance in one of our classes. Get up and get moving at least every 90 minutes if you can. Take a 15-minute break every 45 minutes to walk, stretch, get a coffee or water, and most importantly, get fresh air. Research by Lawrence Berkeley National Laboratory and SUNY Upstate Medical University show the air in a conference room, or single room, becomes so oxygen poor after just one short meeting, that our brain function is as impacted more than some drugs, with performance dropping from 44-94% when CO2 levels crossed 2,500 ppm. A Harvard and SUNY study later backed up those findings.

If practical, please attempt to read this book in two days. A recommended and aggressive goal would be Chapter 1 through 10, the first half of the book, across a full day. Treat this day as an immersive class, with 4 to 8 hours dedicated to this first approximately 100 pages. Then, perform the brief homework just before going to sleep on night one, at the end of chapter 10, the first half the book. The morning on day 2 your brain will have had the opportunity to generate new synapses and new synaptic connections, which allow us to develop new patterns of thinking and new habits. This is in fact required to accomplish a change in mindset, should you decide for that to be something you are interested in exploring. Day two please read the second half of the book, chapter 11 through 20, concluding with your certification. We are not able to grant a certification from the Scrum Alliance without working directly with you and your group in a specific classroom format, however you will have earned the equivalent knowledge

and we look forward to certifying you in person, should that be of interest to you, when you come to our seminars armed with your best questions.

Now you know all about us, and our dreams, and the structure of this book. We want to know more about you. 1) What company do you work in or are you seeking new opportunities? 2) How do you measure your own business success? 3) Does your organization measure business success as currency in dollars or another global exchange, or in impact the way a non-profit might? 4) What do you think might be the strongest business value of good Scrum in an organization? 5) What is your role in the organization? 6) What two or three skills, or more, do you do well professionally at work? It turns out we are all cross-functional, multi-skilled people, but some of us have not explained our breadth of skills to most of our colleagues or business partners. 7) How long have you been using Scrum, if at all? Please post this to any of the authors or the Agile Business Institute via LinkedIn, Facebook, Twitter, email, or your preferred method. The email for Joe Justice is Joe@Justice.fit. The email for the Agile Business Institute is Team@AgileBusinessInstitute.org. In a classroom setting, we would ask you to get up and introduce yourself to 3 to 4 other people across the room by asking each of them these questions in turn, and then sharing your own answers. When you are beginning self-organization of teams, we recommend you do the same. You are invited to attend an upcoming course yourself and become certified as a Scrum Master. Please see the available and recommended courses at www.agilebusinessinstitute.org.

Next, we would wish to take a class photo, for all of us to remember the start of our 2-day Scrum Master journey together. Please consider taking a selfie now, or using your work profile picture, and sending it to us. This might help us create some of the network, and comradery, and mutual support that comes from a classroom session together, even delivered through this book. If you don't mind, please give it a try! In the classroom, we ask participants to form a single file line in order of experience with Scrum. This might feel a bit intimidating, but there are some very useful teaching reasons for doing it. First, we are physically standing up for Scrum, which in some way shows an interest as a pledge of sorts to be interested in it earnestly,

at least for the two days of the training. Second, this physical act reduces the likelihood of a student slouching in their seat and acting as a know-it-all and making sniping comments that could slow or derail the course. That effect is partly due to the straight spine most of us adopt when standing up in a single file line to have our picture taken. Through this technique, the slouching posture of a snide commenter is disrupted early in the course.

In addition, seeing where we all are in a continuum of learning more experience with Scrum, creates a public value for Scrum experience that overrides a frustrated or tired students possible urge to devalue Scrum publicly. In any event, after the students have formed a single file line, in relative order of Scrum experience, our instructors will ask students to raise their hands if they have less than one year of experience with Scrum, and re-order the line. This repeats by increasing the increment of time and asking attendees re-order themselves, until we all know how long the most experienced person in the room has been attempting effective Scrum, and we all know about the range of experience in the room. This allows the class, from this point on, to be tailored to beginners, intermediate, or advanced Scrum application to best match the class. It lets the instructors learn a lot more, sometimes a student is far more experienced than some of the instructors, and making this visible early on allows the instructors to teach effectively what they do know while building in time for them to learn as much as they can, too.

SELF ORGANIZATION

The next step is to practice a team launch, as similar as practical to a real company during Agile restructuring. We ask attendees to self-organize into a group of 4 to 6 people, and we request they join a group of all people they do not know, with an equal distribution of experience with Scrum across all the teams that form. We also ask that each team have a gender split representative of the gender split of the attendees in the seminar. Being on a team with all people we don't know gives us the option to reinvent ourselves; no one on the team knows our strengths and weaknesses yet. This frees us from routine, pre-conception, and habit, allowing ourselves to play a new role, as an even more capable person and professional. Since we are

aiming to actually build new synapses tonight and myelinate them, like we do every time we learn something new, or better yet, create a better-serving habit, we are best served by surrounding ourselves with people who do not yet have any perceptions of us.

This step, like all parts of an Agile Transformation, and an Agile project, and this Scrum Master seminar, is conducted using Test Driven Development. The test is given to all attendees in as clear and brief a way as possible, and the next part of the work begins once the test is observed to have been passed. The test is, all students are sitting down at a new table, with their belongings, in a group of 4 to 6 people they don't know, with a gender split similar to the gender split of the attending students, and the relative Scrum experience in the room distributed approximately equally across all teams. One fast way to accomplish some of this is to have the students, while still standing in order of experience with Scrum from the class photo, count off by the number of class attendees divided by 4, placing them each in a team of 4 people. While this works fine, commanding this early on creates a mood where students are simply waiting for direction, which is not the alive and vivacious spirit of fast teams capable and interested in autonomously solving their own problems. As an instructor, we recommend trying to "read the room". The goal is to determine if letting the students fumble a bit, but ultimately self-organize into teams, will be seen by students, long term, as their own accomplishment, or just frustration. By the way, this also will reveal the culture in which the people in the room are used to working. For example, in some seminars, a manager type will simply start pointing at people and telling them which team to go in, and even worse some attendees will immediately follow these commands without even being surprised. This early reveal of an entrenched command and control culture will let you know your course will need to be adapted, to provide even more hands-on exercises, on the benefits of autonomous teams that make their own decisions, likely in financial success terms. This is because command and control organizations are often driven by commercial metrics above all else, likely as a result of a leadership culture selected over time from metrics-based MBA programs, which preach Sloan Silos and treating people as resources to be commanded. Interestingly, those same organizations, typically, have the lowest process efficiency when faced with quick change, and therefore stand to gain the

greatest business advantage if they can foster self-organization and empowered teams in their company. You really are doing the good work here and will help these companies a tremendous amount.

Now the test has passed, everyone is sitting in a group of 4 to 6 people. They are then asked to create a Scrum Board, or Kanban Board (Japanese for a sign board) as shown:

1 Inspiring Team Name

Release Goal: <Please leave blank for now>

NOT READY	PRODUCT BACKLOG	SPRINT BACKLOG	DOING	3	DONE
	Q's	Q's			
	Q's		BLOCKED		

PO
Name

2 DEVELOPMENT TEAM

Name Name Name Name

SM
Name

SELF ORGANIZE TEAMS

自己組織化 チーム

- Form a team of 4-6 people you do not know
- Create your team Scrum Board as shown

- ・ 4～6人でチームを組みます
- ・ 以下のようにチームのスクラムボードを作成します



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Note the steps 1 through 4, to guide the attendees through filling in this sheet, including choosing an aspirational team name, choosing someone to begin playing the Product Owner role, and someone else to begin playing the Scrum Master role, and the balance of the team to begin playing the Developer roles, and then writing 5 column headers, and finally filling in sticky notes of specific pain points or questions that attendees wish to accomplish during the seminar.

Possibly without knowing it, your class has just conducted team launches at scale. They have just self-organized into teams, created an information radiator of what they want to get done, in a standard format all attendees can understand (or will be comfortable with by the end of

our Scrum Master seminar), and made visible who is currently playing which role, so that teams can interact with each other as scaling patterns, to coordinate across multiple teams, are introduced to the class. You have done it. With this structure, the class can already self-organize up to hundreds of students. The largest class Joe Justice has taught, as of this writing, was 250 students, with only Joe as the instructor. Establishing this team launch first allows the course to self-regulate, as we will see in the sections on Group Scrum. It is Joe's belief this system can allow for a single simultaneous class of any size, provided all attendees can clearly see and hear the instructor, and their immediate team members, which is accomplishable with large screens and clear powered audio, or online tools such as zoom. The principle here is, if we get the structure right the scaling is painless, up or down, at any time. It may be useful to mention a contingency here. Joe likes to ask the class, "what happens if someone comes into class late?" Joe then fishes for the answer, that the Scrum Masters will welcome that person, help them find a team of people they don't know, and then the Scrum Master of that team will do their best, along with all the team members, to catch up that new person, and make them feel at home and welcomed. This is the same pattern used any time a new resource is made available in the organization. And with this ground rule established, the course begins to regulate itself, even in this not-unlikely scenario. As all three roles of Scrum are better and better understood, the class is soon able to self-regulate across many types of interruptions, aberrations, and even some catastrophes.

METASCRUM

Next, our first scaling pattern, MetaScrum. Here we will use the MetaScrum pattern as written by Jim Coplien et al, with additions by Joe Justice.

In the book "A Scrum Book", Jim Coplien et al write: "Create a [MetaScrum](#) as a forum where the entire enterprise can align behind the *Product Owners'* (PO's) Backlogs at every level of Scrum in the organization."

Here is how we will facilitate it, including the additions Joe Justice applies in the field: The instructor will place sticky notes on a wall where everyone can see. A virtual wall works fine for

a virtual class. If there are 11 teams in the seminar, there should be 11 or more sticky notes, so that each team may select their own sticky note. Each sticky note will have a business goal, that is achievable with effective Scrum, written across it in large font, readable from the back of the room. For example:

MetaScrum (Commercial Firms 商業企業)



PO's, decide together which ONE Group Product Backlog Item your team will try to answer (with a poster you will draw as a team) by the end of the seminar. Or write your own and convince me. Write it as your Release Goal. Teams, convince your PO's for a sprint goal you can be excited about.

POの方は、あなたのチーム回答のプロダクトバックログ項目をセミナー終了までに1つ決めてください（チームでポスターを描いて）。または、自分で書いたものを講師に説明してください。それを目標として書いてください。
チームは、あなたがワクワクできるスプリント目標をPOに提案しましょう。

Increase Return on Capital 資本利益率の向上	Increase Compliance コンプライアンスの向上	Faster Development 開発の高速化	Reduce Defects 欠陥を減らす	Win More Investment より多くの投資を獲得する	Excite Customers お客様を喜ばせる	Win More Customers より多くの顧客を獲得する	Enter New Markets 新規市場への参入	Meet OKR's and KPI's. OKRとKPIとの出会い
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Inspiring Team Name
インスパイアされたチーム名

Release Goal:



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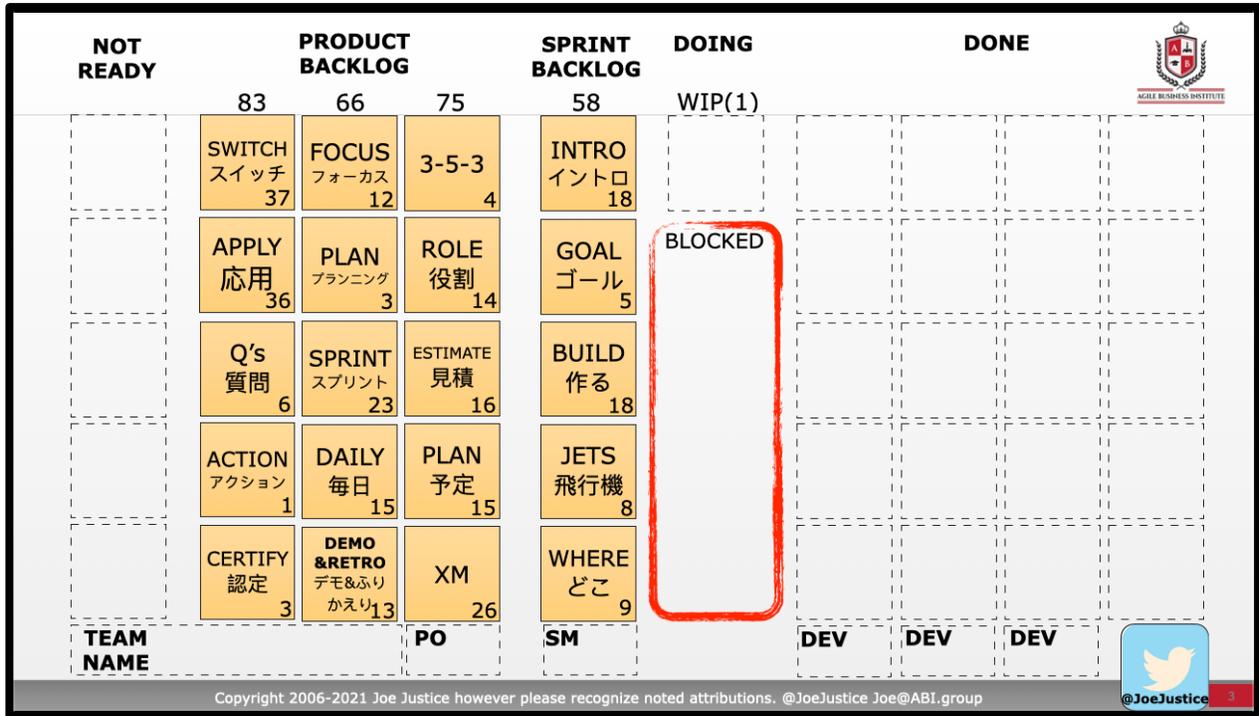
The teams are asked to send the person currently playing the Product Owner role up to the sticky notes, and the Product Owners are asked to discuss with each other, which ONE goal they will choose as their team's Release Goal, to be placed on their team's Scrum Board. Team members are asked to quietly lobby their Product Owner for the Release Goal they are most interested in or most excited about. Anyone, through their Product Owner, may propose new goals provided they can convince a majority of Product Owner's, that their newly proposed goal is even higher business value than the already posted goals. In the event that a team does not reach consensus quickly, the Product Owner is empowered to ultimately decide the goal for their team. Deciding a Release Goal for your team is a delicate act, as it can damage a team's belief that they can make their own decisions. Teams that believe they cannot make their own decision are slower, as seen at the beginning of day two, in Chapter 11: FOCUS. However, a

team that does not quickly have a shared goal fails the definition of a Complex Adaptive System, which will also prevent a team from quickly making decisions inside the team and cause the same slowness. The Product Owner's role here, is to allow the team to discuss as long as is fruitful, but not allow the team members to get frustrated or lose momentum.

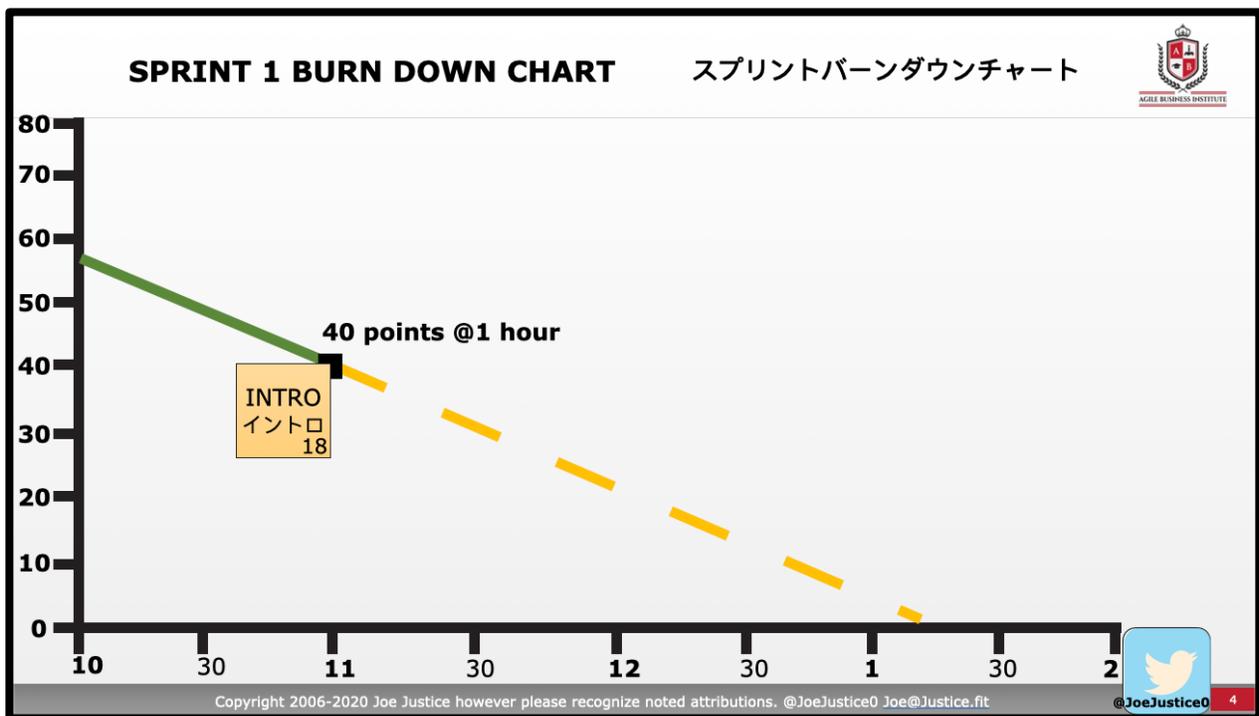
The Release Goal chosen during MetaScrum must be explained to the teams. In our seminar, each Release Goal is a business goal. Teams are instructed that they will teach others, through a poster each team will collaboratively create, how to achieve their chosen written business goal, by the end of the 2-day seminar. In this way, teams have now learned how to receive new business goals from management, and see how to coordinate with other teams to get the goals to the teams that are best equipped to solve the problem. As teams are allowed to trade players anytime, to best match skill and enthusiasm to the current goal, we now have a self-organizing system that iterates to self-maximize effectiveness of delivery and morale. We really could stop the class right here, in the first 60 minutes, but practicing the rest of Scrum will help us head-off many edge cases that can and do arise in the real world of work.

After MetaScrum, teams are shown the overall Backlog for the course. The Scrum Master of each team follows the instructor in creating a Sprint 1 burn down chart, which is absolutely necessary for creating future customer commitments, or working with investors, as seen after lunch time in Chapter 8: ESTIMATE.

The entire course Backlog:



The Sprint 1 burn down chart:



Finally, the Group Scrum Board is drawn for the class. This board is maintained by the instructor, just as it would be maintained by the business owner, ultimately responsible for viability and impact of the business. This is similar to an “obeya” room in the Toyota Production System, a one-stop view of the best information currently available, to make business decisions on the spot. For this practice to be effective, the best information must be present here, and the information must be current. Luckily, now that we have the Scrum Framework in place across our teams. Scrum Masters are trained and responsible to provide management metrics that are incredibly brief, simple, and straightforward, making our Group Scrum board fit on a standard white board or virtual white board:

GROUP SCRUM BOARD



TEAM NAME	SPRINT 1	SPRINT 2	SPRINT 3	SPRINT 4	SPRINT 5	SPRINT 6	SPRINT 7
	PASSED/TESTED/WIP	PASSED/TESTED/WIP	PASSED/TESTED/WIP				
TEAM 1 NAME	(Σ spend + Σ make) /velocity (Σ 使う + Σ 作る) /速度						
TEAM 2 NAME							
TEAM 3 NAME							
■■■							

Large projects employ more than one Scrum Team. Each team uses a row on the group scrum board.

大規模なプロジェクトでは、複数のスクラムチームを採用します。各チームはグループのスクラムボードに一行を使用しています。

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Specific column headers will be introduced in the chapters titled Build, Estimate, and finally Focus. In the live working environment in real business, the Group Scrum Board columns will be Sprint numbers, with each team having their own row, and the cells filled in by the teams themselves. Usually, the Scrum Master fills in most cells for their team’s row on the Group Scrum Board, but the team may choose any scribe. The Group Scrum Board is updated at least once per product release, as part of each Sprint Review, and demonstration of team progress.

What is actually filled in, is that team's Sprint Goal and a Y/N as to whether the team showed the Sprint Goal met the Definition of Done before the set time for Sprint Review, at the end of the Sprint. This will be explained with examples in the chapter titled Demo & Retro near the end of our book. As a brief and timely example, Sprint Goals may be a directionally correct improvement of a KPI or OKR, or a product release, or an agreement signed, or a money transfer completed, or a marketing campaign now live, or a customer mission accomplished, or a new customer signed, etc.

CHAPTER 2: GOAL

Scrum is touted in business journals, and in the business media, as a framework to increase the speed of delivery. Case studies across global companies support that companies can increase speed of response time and delivery by replacing wait states with a rapid decision-making structure such as Scrum. In addition, the inspect and adapt cycle provides a regular cadence of continuous improvement to amplify the effect. But when is speed not desirable? It is important to apply a tool where it will generate the most value.

Let's think of two scenarios, a convenience store in a high traffic area, and a Japanese *onsen*, or soaking tub, in a landscaped private sanctuary.

In the convenience store, speed of the overall experience is important to the customer and the business. As mentioned, this is a high traffic area, and the faster a customer moves through the store, the faster the next customer may move through the store. The faster the customer finds what they are hoping to find, is exposed to additional opportunities that may be valuable to them, and the faster the purchase is completed, is net positive for the customer and the business.

Let's think then about the soaking bath, the *onsen*. Losing track of time, turning inward and to the private garden surroundings, feeling the ripples on the water from the slightest wiggle of

your toes, these are some of the reasons that customers choose this experience. Here, prolonging a sense of time (a Kairos or expansive sense of time over a Chronos or linear sense of time), is highly valuable. But what about cleaning the *onsen* after a spill, how long does the customer and the business want that to take? What about repairs or corrections of a problem or disruption? What about response time to a rowdy, loud, or even dangerous customer? In these cases, speed is still the advantage to the customer and the business, but with the goal of speed to restore the almost timeless sense of tranquility. We will propose that speed is the positive asset for all companies to achieve what they wish, and is always an advantage, even if speed is used to more rapidly create slowness.

In fact, if we look at companies in the same industry, we can compare the financial performance of companies that focus on speed of innovation versus companies that focus on continuous improvement.

Here is a stock price climb of a company that focuses on speed of innovation. Their CEO has publicly communicated “Pace of Innovation is all that matters in the long run.” In the transcript excerpts from an investor earnings call, you can see the management team does not use any internal financial modelling or financial metrics. They manage by measuring team performance and challenging the teams themselves to increase the efficiency and remove bottlenecks, which in turn allow volume to increase. Their margin is entirely driven by automation.

Tesla Inc TSLA

\$841.37 ↑1,976.93% +800.86 5Y

Jan 19, 3:37:42 PM UTC-5 · USD · NASDAQ · Disclaimer

1D 5D 1M 6M YTD 1Y **5Y** MAX

Pricing strategy: **"Is there a target** for gross profit or operating profit on a per vehicle basis?" -Colin Rusch, Oppenheimer & Co. Inc.

A: "We are trying to make the cars as affordable as possible as fast as possible while still being at least a little bit profitable and growing the company like crazy and having good free cashflow and accumulating a cash balance... The thing that is going to have a profound effect on our financials is **high volume and high margin**. High margin comes from Autonomy... Tesla is all about hardcore engineering. " -Elon

source:m <https://www.youtube.com/watch?v=m1WQ0fBAi0>

"Give us some guidance on what CAPx is gonna be this year. As I look to **model out the business** long term is there a rule of thumb that we can use for Capital expenditures per unit of production capacity or some sort of rule of thumb like that?" -Market Analyst, Wolfe Research

"The challenge comes in finding efficient ways to actually flood capital, but that is the harder part than deciding on a CAPx number. " -Elon

"we always find ways to be more CAPx efficient per unit of capacity. Challenge the teams to always become more efficient. We see a reduction **per team in terms of capx.**"

Source <https://www.youtube.com/watch?v=m1WQ0fBAi0>

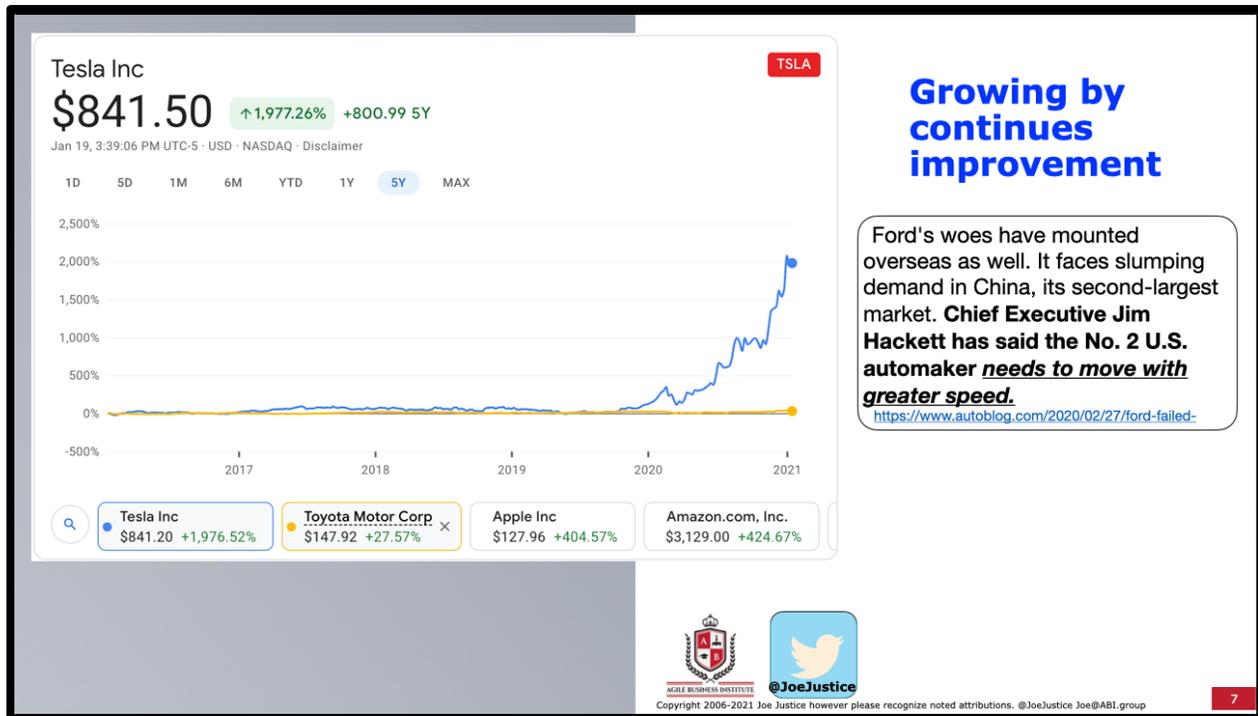
Growing by Innovation

The most rapid market capitalization increase in history

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We will now add a yellow line to compare this to a stock performance of a company focused on continuous improvement, in this case Toyota Motor Corporation, and a quotation from Ford Motor Company leadership:



We see that when growth is the target, there is some industry evidence that speed is important. Speed of understanding what the customer wants, speed of executing that, speed of building quality in, speed of driving cost out, and speed of improving the customer perceived value. The Scrum framework matches this very well. Our part, as Scrum Masters, is to remove the impediments that increase the flow of customer visible value through the organization. The Product Owners are responsible for identifying the highest customer perceived value that the organization can build, and the Developers are responsible for practicing engineering practices that let them increase quality while expanding the scope of what the team is capable of building quickly. As Scrum Masters we also own the framework, the communication structure throughout the organization. Without this, decisions cannot be responsibly made within the teams, which increases pressure on management to make snap decisions with poor data, which decreases managerial effectiveness, which ultimately creates slow companies. And, as we've just seen, slow may be a poor match if we want growth. Joe Justice has set up a Certified ScrumMaster® class inside Tesla, and Riccardo Mariti has earned Scrum credentials inside Tesla. Tesla does not use the word Scrum often, only sometimes, however the Tesla CEO Elon Musk is fond of saying "Agile" and even now is finally implementing some of the sustainable pace

practices of Scrum to reduce employee burnout. What about Toyota, which produces enormously successful products but at a much slower pace? A fast-tracked project in Toyota would take 2 years, with minor model changes occurring every 2.5 to 3.5 years, versus Tesla making 27 changes, to the Tesla Model S sedan alone, in a single week.

Is Toyota doomed in the long run by not having enough speed for the new world order? Joe has also worked with management teams at Toyota North America in applying agility to develop the stamp and dye operations of the 2019 Toyota Camry. The 2019 Camry is a first for Toyota, with an all-aluminum roof in a production vehicle, which required many inspect and adapt Sprints to create and increase quality and reliability. Joe also worked with the Scrum team, all team members and their management support earning Certified ScrumMaster® credentials, creating the financial approvals system for Toyota North America, which is used for all significant funding decisions in the entire company. Joe then was brought to Toyota headquarters in Japan, and then to train every employee of the Toyota Autonomous Driving teams at TRIAD, including the next CEO of Toyota, Diasuke Toyota, who is a trained Scrum Master. The stated reasons for Toyota to train Scrum Masters is to improve happiness and quality of life at work, and to increase speed by establishing a rhythm of visible work. While Toyota is only now re-orienting the company to high speed delivery, as of this writing, products are still internally managed at Toyota City global headquarters as multiple year initiatives. Time will tell.

A caveat, however. Both companies referenced above are enormously successful. Both have high customer satisfaction ratings, and both are at the top or near the top, now, of product quality indexes. Saying speed is the only way to create and maintain an excellent, financially successful company is a stance that has counter evidence. However, if growth is the goal, we can make a much clearer case. And if speed is important to drive growth, or for any other purpose, there is currently thousands of companies worth of evidence that Scrum is compatible with speed. It is much more difficult to prove causality. Is Amazon so huge and so fast because they have small team sizes and push decision making rights and process improvements into the

teams, or are they so huge and so fast because they entered their markets at the right time with genius executive vision? Likely there is some of both, and we can't prove the full-stack teams owning most of their own decisions and improvements is the majority reason, or even required for their success. We can observe that all 5 of the highest market capitalization companies on the planet have small team sizes as the primary working unit. These companies also stress and reinforce cross-functional or "full stack" skills in designing, producing, testing, and soliciting customer feedback directly by the same team. All these successful companies also have teams owning pieces with technical implementation and user facing, profit generating functions within the same team. As of this writing those companies are Apple, Microsoft, Alphabet (Google), Amazon, and Facebook. There is a case that Saudi Aramco is more valuable than Apple, without relying on small, cross functional, mission focused, customer facing technical teams, and if this is true then geography and politics can certainly create massive financial success as well. But while some of us cannot choose where resources are distributed in the world and what "ownership" and "extraction rights" are currently legal and which are not legal, we can choose our company structure, and with Scrum Masters we have good evidence we can transform an entire business for speed.

What about company size? Is speed less important for established, older companies that employ hundreds of thousands of people globally? Robert Bosch GmbH is a global company employing more than 398,150 people in 2019. Here is a quote from the chair of the board of Robert Bosch GmbH, Volkmar Denner, also performing as CEO of that company.

BOSCH

"For Bosch agility is crucial, it allows us to adjust to the increasing speed of change around us. Agility allows us to remain in a position as an innovation leader." Volkmar Denner, Chair of the Board and CEO, Robert Bosch GmbH.

Joe Justice worked directly with Volkmar Denner, at Bosch world headquarters in Stuttgart. It started with Volkmar calling Joe Justice directly on his personal mobile phone. "I was very

surprised, evidently Volkmar's administration team had researched me and presented Volkmar with my mobile number and work history. Volkmar was very friendly and very familiar with my work, and very clear. He said that an idea like Uber would never survive in the current Bosch. Their project approval process was too laborious and too risk averse. He needed an Agile company to create a faster pace of innovation. He said they were working with Tesla, and the parts of Bosch delivering to Tesla had seen agility, and very fast hardware design, develop, and test cycles. Volkmar said the rest of Bosch was not yet performing this way. The CEO's decision was to eliminate personal performance incentives for all 500 of the company's top executives. This would be replaced with a % of total company profit, meaning top executives were no longer incented to grow and reduce risk in just their little piece, but were incented to find whatever grew all of Bosch the most quickly, with an acceptable level of risk. He then asked me to present to these 500 top executives, including all the board of Bosch, and the board above the board of Bosch. Volkmar wanted me to share about WIKISPEED, my small, but global car company. The CEO requested I surprise them, that this Agile way of working may very quickly produce a competitor, from a sector that they had not been tracking, or not been even aware existed. He also asked me to work in small groups with every single executive, to explain in more detail how this actual Agile way of working is managed. Following this, sections of Bosch, up to 4,000 employees at a time, switched to Agile. Some sections of the company release newly designed and tested hardware and software every single week. Some of these groups of up to 4,000 people had no managers, only Product Owners to prioritize, and Scrum Masters to remove impediments to speed of flow." For details of what happens inside a Sprint at Bosch, see Chapter 13: SPRINT.

Finally, it is useful to see speed is a top driver of virtually all the competitors and partners of these companies.

TOYOTA

"We must destroy the Toyota Way" "What I strongly felt ... was the difficulty of innovating when times are normal." "We can identify things that we will further accelerate to promote

changes.” “When you look at a product, going to the actual sites, going to *genba*, what is important is to fuel the change point.” Akio Toyoda, CEO Toyota Motor Corporation.

Joe Justice was brought in to train all staff at Toyota Research Institute Advanced Development, or TRIAD, the Agile center for the new Toyota. Every single person at this site, and in many of the suppliers, was trained as a Scrum Master. Akio Toyoda visited to celebrate, and the ostensible next CEO, Daisuke Toyoda, was installed as an employee at TRIAD and trained by Joe Justice as a Scrum Master. A former Google employee was hired in to operate as TRIAD’s CEO. In this way, Toyota trains its next CEO in Agile working, to be able to lead all of Toyota with agility. The homepage for TRIAD currently reads “Silicon Valley Agility. Japanese Master Craftsmanship.”

VOLKSWAGEN

“The Volkswagen group is becoming more transparent, more Agile, more efficient, more innovative, and more profitable, that is what counts moving forward.” Then “The big questions are: Are we fast enough? If we continue at our current speed, it is going to be very tough. “ Volkswagen CEO Herbert Dies

Paul Takken spent years on assignment at a global company in Wolfsburg, Germany, and has many anecdotes about traditional German and global manufacturing operations. Paul talks about leadership hiring Scrum Masters into their companies, to establish a culture of fast action, self-decision making, gentle and respectful pushback when being asked to wait or submit documents for approval from outside the team producing the product or service, and to coach executives on the most effective leadership methods when now funding thousands of Agile teams.

Joe Justice was invited as the keynote speaker for the first Agile Automotive conference, and there collaborated with passionate agilists from Brose, the second largest automotive supplier in Europe, Ford Europe, Volkswagen group and their sub companies such as Porsche and

Bugatti, BMW, and Daimler. Joe later was invited back to meet with the CEO of MAN truck and bus, a Volkswagen company, and have breakfast with regional executives from the BMW group, where they discussed their company-wide Agile Transformation ambitions. The goals for all these Agile Transformations were increased speed, increased innovation, rapid change, and risk reduction through quality and transparency, while they deployed speed at scale. All these companies hired Scrum Masters.

TESLA

“Pace of innovation is all that matters in the long run.” -Elon Musk, CEO, Tesla Inc., and CEO, Space Exploration Technologies Corp, better known as SpaceX, and CEO, Neuralink Corporation, and CEO, The Boring Company.

As we mentioned previously, Joe Justice set up a Certified ScrumMaster® seminar inside Tesla. Joe later joined Tesla as a direct employee, after this book manuscript was completed. Joe operated Agile@Tesla, from the company global headquarters, in Fremont, CA, USA. During publishing of this book, there was just enough time to add this excerpt. Tesla, inside, like SpaceX, is incredibly fast and without much hierarchy. Anyone can talk directly to Elon Musk, the CEO. And if anyone tries to prevent talking to Elon, that is grounds for them to be fired immediately. That keeps the company very flat, very accessible, and very nimble. There is no Chief role, of anything, in Tesla, as that would not be flat enough for the speed they achieve. Elon often sleeps in a sleeping bag in the paint buildings, when the CEO was not sleeping in the new factories under construction. Elon also frequently joined the assembly line, wrenching and bolting, wearing production gloves, and helping configure robots. Elon claims 80% of the CEO's workday is spent on engineering, and Joe Justice believes this to be true.

Speed is the reason for Scrum. It is important to say a successful Scrum Master does not advocate rushing. Degrading quality damages many types of businesses, and the morale of workers who care about quality. A Scrum Master's job is to make it possible, even likely, for

Scrum teams to increase speed while maintaining or increasing quality. But is that possible? Let's build something together to explore the idea.

But first to summarize. The goal of being a Scrum Master is to increase the speed of your work, and the team of people you need to work with the get your work all the way to done. We do this by removing impediments to the flow of work towards done. The flow referred to here is all the steps, from concept and launch, through design and build, to done, of high-quality, tested work. That means we will need to be an expert in business flow, team psychology, organizational change for continuous improvement, continuous improvement, and we'll see that this will require a good grasp of complex adaptive systems, organizational structures, liberating structures, theory of constraints, human communication, motivation, and even traditional management. Welcome to Scrum Master class, we're going to cover a lot, and it's going to be awesome.

Agile Executives アジャイル エグゼクティブ



 <p>Volkmar Denner CEO Robert Bosch GmbH</p> <p>"For Bosch agility is crucial, it allows us to adjust to the increasing speed of change around us. Agility allows us to remain in a position as an innovation leader."</p> <p>「ボッシュの俊敏性は非常に重要であるため、変化のスピードの速さに適応することができます。俊敏生により、イノベーションリーダーとしての地位を維持できます。」</p>	 <p>Akio Toyoda CEO Toyota Motor Company</p> <p>"When you look at a product, going to the actual sites, going to genba, what is important is to fuel the change point."</p> <p>「製品を見て、実際に現場に行くとき、変化を加速することが重要です。」</p>	 <p>Herbert Dies CEO Volkswagen Group</p> <p>"The big questions is: Are we fast enough? If we continue at our current speed, it is going to be very tough."</p> <p>「大きな問題は次のとおりです。私たちは十分に速いですか？現在の速度で続けると、それは非常に厳しいものになるでしょう。」</p>	 <p>Elon Musk CEO Tesla</p> <p>"Pace of innovation is all that matters in the long run"</p> <p>「長期的にはイノベーションのペースが重要です」</p>
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CHAPTER 3: BUILD

We want Scrum Masters to be relaxed and confident in their ability to help increase speed while quality maintains or climbs. To do that, we have Scrum seminar attendees actually build things themselves using Scrum in Scrum teams. We have them apply the Scrum framework, as they learn it, for them to see speed increase and quality increase. We often ask seminar attendees how they felt, using rankings of happiness on a scale of 1 to 5, so that attendees can see which practices also were correlated with the most self-reported happiness. What we build depends on the class. The effect we want is a build exercise that increases the confidence of the soon-to-be Scrum Masters. During a seminar, the effect of the build exercise is dependent on how refreshed and supported the instructor is at that moment. Joe Justice has created a study of 71 Scrum seminars taught in North America, South America, Europe, Asia, and Australia. These seminars represent more than 3,500 attendees. All attendees self-organized their own Scrum teams with Scrum boards and the 3 Scrum Roles, exactly as you have done in chapter 1: INTRO (Introduction). The teams then built things in 3 or more Sprints. Some teams chose to build Lego cities, some teams wrote software, some teams folded paper airplanes, some teams designed and built entire cars with Joe Justice and raced those cars to celebrate. In every case, teams were forced to stop work at the end of each Sprint, and their Scrum Master was asked to facilitate a Retrospective. How to facilitate an excellent Retrospective will be covered in more detail in Chapter 15: DEMO & RETRO. Here, we will summarize. A Retrospective is done, or complete, when the team has chosen what they will do differently next Sprint to be faster and happier.

The purpose of a Retrospective is to choose a process improvement. A process improvement is also referred to by the Japanese word “kaizen”. The word Kaizen has become popular among process improvement professionals, many of whom study the Toyota Production System. After this process improvement, or kaizen, is chosen, the teams start the next Sprint. Every Sprint the Product owner writes, on the Group Scrum Board, a measure of how much work met the quality bar, and is therefore done, during that Sprint. Quality is also measured and labeled. What we have found is that in all 71 seminars velocity increased across the Sprints. And in 70 of 71 seminars quality also increased across the Sprints. It did not matter if the seminar was in

Tokyo, taught in Japanese with executives and engineering leads from NEC. It did not matter if the course was in Australia with a mix of military special forces and Regular Army, and civilian specialists. It did not matter if the seminar was held in Tesla, in Silicon Valley, in the USA. It did not matter if the seminar was in Germany with older, arguably stodgy engineers with decades of entrenched opinions. It did not matter if all attendees were C-level, or new hires, or even if the attendees were students and kids. And it did not matter if we were folding paper airplanes, writing software, drawing CAD, cutting aluminum, laying up carbon fiber, programming electronics, laying out circuit boards, or playing with Lego. Every team sped up, and 99% of them increased quality while they sped up.

This experience might be the most valuable for building confidence. The quotations from respected industry leaders help a Scrum Master know they are in good company. If anyone says this Agile stuff is silly, they would also be saying the CEOs of most global companies are also silly, along with the most exciting startups globally, and that helps insulate a Scrum Master from criticism. The business case studies showing successful company restructuring, using Scrum Teams, give a roadmap to replicate. We will have more on Justice's Law, to complete company restructuring, in Chapter 13: SPRINT. The repeated positive business outcomes assure us that that Scrum teams as a company structure can work across many types of work, maybe even all types of work. Actually doing it, actually building something ourselves in a Scrum team, using Scrum, creates a deeper confidence. Part of this is seeing the Group Scrum Board metrics, from our own team and all the other teams attending our seminar. During the build exercise, the metrics ramp up to an organizational performance level we likely have never been a part of before. That creates the confidence. Now, our trained Scrum Master can walk into a company full of Agile teams, and our Scrum Master can see if the teams are simply using Agile words, or, if they are using Scrum to get performance. Our trained Scrum Master now knows how to look at a Scrum Board and see speed and quality, or if the Scrum Board not-used, stale, or worse yet hiding a team that doesn't yet know how to do Scrum.

So how to do Scrum in class? Let's use two examples, the airplane game, and the WIKISPEED car build. The airplane game is great because it is so portable. The airplane game was first defined for grade school students by a team of brilliant educators in 2009

https://web.archive.org/web/20120609084634/http://www.teachengineering.org/view_activity.php?url=collection/wst_/activities/wst_kanban/wst_kanban_activity1.xml

(Teresa Abney, Adam Nathan, Don Knobbe, Lisa Picker, 2009, documented June 9 2012).

The game can be run anywhere we can get a full stack of paper from the nearest office printer. We can step into any venue anywhere and reasonably expect the physical requirement to be meetable. The car build is the entire opposite. This activity requires at a minimum all the raw materials and tools to create a car. In exchange, the exercise is entirely more memorable. Joe Justice still has past students stop him in the airport to take a picture together and sign a book, saying the car build they did together however many years ago is still the highlight of their professional life. That type of business performance imprint is priceless, but again the logistics are, literally, heavy.

The good news is a build exercise can be run with any type of work, provided it meets the following criteria. The work must be able to be completed and judged for quality within the Sprint length. For a car, at least in Sprint one, the entire product is unlikely to be completed within a single Sprint. In that case the product must be modular, where each module is able to be completed and tested within the Sprint length. By the way, you have just grasped why modularity is necessary for Scrum companies. Modularity is used to fit the entire design/analyze/build/test/deploy cycle into a single Sprint. For a massive project, it must be modularized, and the modules must be able to be built in parallel. In that way, if we have a big project, like a WIKISPEED car, which is composed of 8 modules, and if we have 8 teams, we can complete the car and test it within one Sprint. Now that you know the secret, we will return to the build exercise.

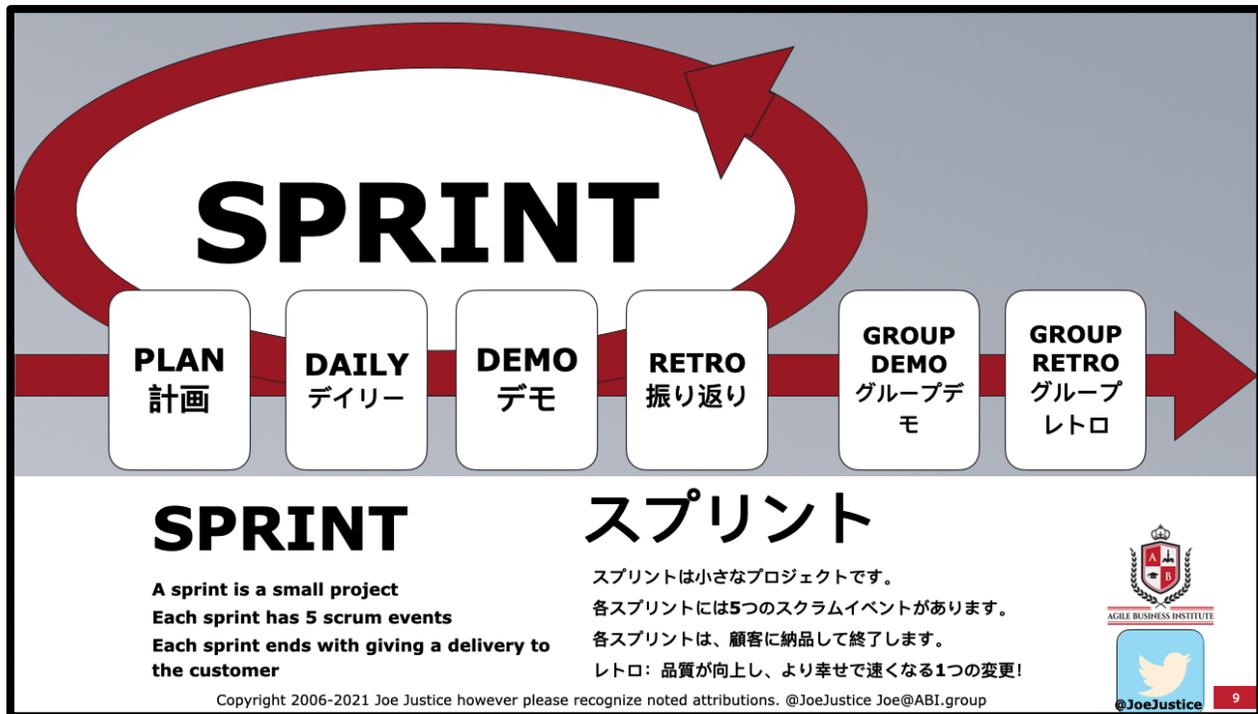
First, let us conduct a masterclass on the airplane game.

Each Scrum team is instructed in the goal. The goal is that we are now acting as one company with many Scrum teams. One of the teams is a management team responsible for choosing the project that will bring the most value to the company, given what the company can build, and what resources the company can access currently. That project would have been chosen in a MetaScrum, where any employee at any level can propose a more valuable goal. MetaScrum, used this way, is explicitly to solve for Volkmar Denner's problem at Bosch, where an idea like Uber would not have survived the many approvals, and presentations, and reports, of the previous Bosch project selection process. At the start of the airplane game, that goal has already been chosen for brevity. The goal is to build as many paper airplanes across all teams as we possibly can with quality. The "All Teams" part is stressed several times, and teams are asked to help each other to maximize total output. We will come back to this point at the end of Sprint 2 of this exercise. The airplanes must be tested within the Sprint. Anyone can test but only the Product Owner's test counts. The team can rotate who is playing the Product Owner or any of the Scrum Roles or even trade with other teams at any time. The test is to throw the airplane 3 meters, or about 10 feet, or farther. Any plane that fails to fly 3 meters must be put in the recycling bin; it has crashed. Any plane that flies 3 meters, has met our quality bar. The Product Owner updates the Group Scrum Board, showing how many paper planes successfully pass the test by meeting our shared quality bar. Product Owners track how many planes they threw each Sprint, of those did any meet the quality bar of flying 3 or more meters, and how many partially folded airplanes were left at the end of the Sprint, which is our WIP or Work In Process. Work In Process is a type of waste, where products are not completed yet, but the partial products are taking up space and already took up time and other resources. That is to say we have made investment but do not yet have any return on that investment. At the end of each Sprint all WIP is put in the recycling bin. This ensures every Sprint starts from 0 planes. Starting from 0 planes ensures that if a team has more planes pass the test next Sprint, it is because they increased speed, not because they had a bunch of partially folded airplanes left over from the previous Sprint. And, finally, all planes must fly with aerodynamic lift. We've seen a lot, from crumpling up a balled wad of paper and throwing it, which we call the "space pod", to nesting 4 or even more sheets of paper on top of each other and folding them all at once and

calling it 4 or even more planes. In all these cases however, the craft are not flying with aerodynamic lift. The space pod isn't using aerodynamic lift at all. And in the nested airplane case, only one plane is flying with aerodynamic lift, the rest are cargo and do not count.

It is important to not hand out the paper to the teams, but instead to set the stack of paper somewhere where all teams can see it and can get to it. This way the teams build the expectation of going to get their own supplies. When building cars or other products with Scrum, it does not scale to have a facilitator running supplies and tools to teams. Instead, teams need to know where their supplies and tools are likely to be found and be patterned to get supplies and tools themselves as needed.

Teams are further constrained, that all planes must be folded from $\frac{1}{4}$ of a full sheet of paper. This results in smaller planes, less waste, and less material consumed. Previously, all planes were required to have a blunted tip for safety, however many Scrum seminars have skipped this step and we have yet not recorded an injury. Please judge the risk yourself and make the best decision for you and your seminar when you are teaching or participating in this or a similar exercise.



Teams are free to fold any type of airplane they want, use any design they want, organize the work anyway they want, have anyone perform any step they want. We will simulate complex work, that any one engineer can not yet complete alone. To enforce that constraint, we add the rule “one person, one fold.” This means that any person may fold any part of the plane, but then must pass the plane to someone else to conduct the next fold. There are so many useful reasons for this in our game. One reason is now the team is much better off if they can agree on one plane design at a time, which means they are figuring out how to make design decisions as a team. This also means now the team can swarm, where each team member understands the high-level design, to the point that they can work simultaneously, without losing the overall design goal. This allows many team dynamics to be tested that are not present in individual work. And it means no one person can finish the product by themselves, again allowing for a team dynamic to emerge, which is the key enabler for speed inside a given Scrum team.

And we are off. Sprint one starts. There is energetic and rhythmic music. There are teams that choose to sit and teams that choose to stand. There are teams that have moved their work area to be more near a 3 meter straight path where they can throw their planes, and teams who

have their Product Owner get up and walk to the other side of the room, before they throw each plane. There are teams where the Product Owner throws planes and then sits back down to help fold, or wait for folded planes, and there are teams where the Product Owner shouts back as each plane is thrown, giving their team feedback on which design is flying and which design is crashing, and what they want from the next plane. And then Sprint one ends, abruptly and with immediate finality. The immediate finality is important, or some teams will throw just a few more planes, but that would ruin the accuracy of the scores that are about to be recorded. The Product Owners update the Group Scrum Board, writing how many planes flew 3 or more meters that Sprint, how many planes were tested, in this case tested means thrown, and how much WIP is left partially folded or untested on the table. Some Sprints, a team forgets to throw any planes during the Sprint and has 100% WIP. Some Sprints none of the planes fly 3 meters or more. Some of the Sprints, a tremendous improvement is found and the number of planes that flies the distance doubles or even more.

**After each sprint we will have DEMO: Teams count planes that passed the test!
Product Owners: Record Your Results on the White Board!**



TEAM NAME	SPRINT 1	SPRINT 2	SPRINT 3
	PASSED/THROWN/WIP	PASSED/THROWN/WIP	PASSED/THROWN/WIP
Dean Bean	0/3/2		
TEAM 2 NAME			
TEAM 3 NAME			
...			



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Now that every team can see how they and all the teams together are performing, the magic happens. The person currently playing the Scrum Master Role on each team is asked to

facilitate a Retrospective. Typically, they have not yet been trained in any of the dozens of formal methods to facilitate an excellent Retrospective. Typically, the Scrum Master, and the people folding airplanes with them, have just met an hour or two prior, at the start of the Scrum seminar. The teams are asked to support their Scrum Master in discussion, and choose one thing they will do differently next Sprint, to build more airplanes that fly 3 meters or more, and to have more fun doing it. The teams discuss, and they choose. This is called the Inspect and Adapt loop in Scrum, and it always happens right after Sprint Review, or the moment when we know how much work met our Definition of Done, and is accepted as done with quality. The Sprint Review, in miniature, is the Product Owners writing the scores on the Group Scrum Board. The Inspect and Adapt loop is simply scientific method, an empirical process. As we are using an empirical process here, to control the way we work, through a regular rhythm of Sprints, we call this in process engineering terms an Empirical Process Control. Scrum is a 2 level Empirical Process Control, but we'll get to that in Chapter 6: 3-5-3.

And now Sprint 2 starts. The teams typically have even more vigor, they have ideas of how to perform, and already have some experience relying on each other. Planes start to fly thick through the air, continuously, during the 3-minute Sprint. And, TIME! All teams stop simultaneously, and the Sprint is already becoming a rhythm. Teams do not act interrupted, or a little annoyed, at the end of Sprint two as many of them did at the end of Sprint 1. Instead, there is more body language revealing relaxation and accomplishment, and many people are smiling. Product Owners write their scores on the Group Scrum Board but hardly anyone is looking, except for the occasional side-ways glance to see if their team is the best. Something unhealthy begins to emerge here. It happens in every case except when we run the exercise with pre-school kids. Pre-school kids have not yet entered traditional academia, or sports. For nearly all post-preschool teams, conversation moves to how their team can win.

Teams start to say how their team is the best, or how their team needs to overtake others, or how their team needs to fight to become the best at the expense of other teams. This is when the instructor calls for everyone's attention. Maybe they use chimes, maybe they raise their

hand, in any case, they request full silence from the room. The instructor then reminds everyone, that the stated goal of this paper airplane manufacturing company, is to maximize the output across all teams, and assist each other. The instructor asks the person playing the Product Owner of the highest performing team, what they did last Sprint to help the lowest performing team. The answer so far has always been “nothing”. The teams are reassured that this answer is completely normal across all companies, all countries, and all cultures.

It is important to keep everyone feeling valued and accepted and not “injured”, so immediate forgiveness here will pay dividends in the rest of the class in terms of engagement and knowledge retention. The instructor then asks the Scrum Master of the lowest performing team, what they did to solicit help from the highest performing team, or any other team, and the answer so far has always been “we did not ask”. Again, immediate forgiveness by the instructor here is important. Then, the instructor makes the business point clear. In business, even when the executives say, the goal of the company is collaboration to achieve maximum performance, even when teams are specifically asked to help each other, it is not enough. As leaders of Agile organizations, we have to do something more to actually get the collaboration for which Agile teams are famous, and which amplifies performance. We need to command and control something. **In Scrum we command and control the interfaces**, and everything else is left up to the teams. This creates the stable framework of Scrum across the organization, while maximizing the innovation and self-management aspects, through the Scrum Roles, on each team. We will try it now. We will command and control the interface between teams. We will have Group Scrum. For more information on coordinating large initiatives with many teams, and entire enterprises, including supply chains, regulatory organizations, and suppliers, please see our book “Group Scrum”, (www.agilebusinessinstitute.org/books).

Scrum Masters
Scrum of Scrums

How can we improve our process?
Flow?
Reduce cycle time?
Eliminate waste?

プロセスをどのように改善できますか?
フロー?
サイクルタイムを短縮しますか?
無駄を削減しますか?

Product Owners
Meta Scrum

How can we improve our product?
Value?
Performance?

どうすれば製品を改善できますか?
バリュー?
パフォーマンス?

03:00
MR. TIMER

GROUP SCRUM

Development Team
Daily Scrum

How can we improve our quality?
Teamwork?
Pairing?
Swarming?
Technical excellence.

どうすれば品質を改善できますか?
チームワーク?
ペアリング?
増員する?
優れた技術?

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The product Owners from all teams are called, to meet in front of the Group Scrum Board, and asked to discuss how to improve the product, the paper airplane, for three minutes. Their one goal is to bring an improvement back to their team. They are instructed that the fastest team should share, but all teams should then share, as it has been observed that the best performing product is often someone else's reaction to the previous best performing product, and therefore the even better performing product is equally likely to be shared by the lowest performing team, after they have seen the previous best performer. This is called MetaScrum, where the goal and product are discussed. Anyone is welcome, but only the Product Owners talk. Restricting the number of people talking is only to reduce the number of communication pathways (see Chapter 14: DAILY). Other team members talk to their Product Owner, quietly, and ask their Product Owner to bring the good ideas from their team to the MetaScrum conversation. For more information on MetaScrum, see A Scrum Book: The Spirit of the Game, by James O. Coplien et al.

The Scrum Masters are asked to stand in a circle in another area of the room, where they are still in eyesight and hearing range of the Product Owners and all the Developers. They host an

almost identical meeting but focused on speed improvements, by removing impediments to flow. This is often called Scrum of Scrums. Again, for more information on Scrum of Scrums, as a repeatable pattern, see the book *A Scrum Book: The Spirit of the Game*.

Simultaneously, the Developers at their own tables are asked to host a Daily Scrum meeting, where they discuss what technical practices and work methods they might try, to increase quality. In the airplane game, quality is the % of planes that fly 3 meters out of the total number of planes flown. So how can they more reliably produce planes that will fly 3 meters or more? Note the Developers are not asked to discuss speed improvements, that comes from the Scrum Master's flow improvements. And the Developers are not asked to improve the product, the Product Owners are attempting to do that. The Developers are asked to relax, destress, and think about how to fold paper airplanes with low defects. How to fold creases well? How to pass the paper smoothly, and orient it clearly and understandably to the next team member? We absolutely want everyone in the room to give improvements to flow which drives speed, product and goal which drives value, and engineering practices which drive quality. Everyone is invited to quietly lobby ideas through their Developers, Scrum Masters, or Product Owners, to get their innovative idea considered by that group.

This continues for 3 minutes, and then the Developers are asked to re-unite with the Product Owners and Scrum Masters, and invest another 1 minute together, and re-plan Sprint 3.

And then Sprint 3 starts. The air is a steady stream of paper airplanes. Planes stick into ceiling tiles, wall molding, and white board frames. People laugh. Most teams are standing now in a what looks like a relaxed, high energy posture, as they lean forward and slide paper plane bits around. Many teams have a Product Owner folding the last fold, and then throwing the plane from where they stand, and calmly but loudly and clearly giving feedback to the team, saying what they need differently on the next plane, or confirming that the design is still performing with quality. When "TIME!" is called, and all teams stop folding, there is laughter, cheers, sometimes high-fives or hugs, but that really depends on the culture of the attendees, and

where in the world the class is being held. The Sprint three scores are posted on the Group Scrum Board.

We will now host a closing Retrospective. The Scrum Masters are asked to ask their teams “What could be changed in your real companies, based on what worked in this game?” Depending on class timing, a Developer from each team may be asked to share the possible real company change, that they believe would have the largest business impact in a real company.

Frequently shared ideas are:

“Continually re-planning during the work, not just up-front, lets us build a better product with higher quality and build it faster.”

“Having the Product Owners and Scrum Masters meet in Group Scrum, sped all of us up. We could do that in our real company tomorrow.”

“Finishing the product in our team, not just planning it, or just testing it, or just building it, let us improve the entire flow.”

And so on. Some instructors write these possible process improvements down, and email the seminar attendees as a reminder, of what to try, when they are back in their real companies.

For the Airplane Game, we usually end here, and move to the teachable moment, the enduring lesson we wish the soon-to-be-Scrum Masters take back to their companies, and their passion projects, and their own studies, and their families, and their own lives.

1. Work can speed up. Many professionals actually believe that there is only one speed for work, only on or off. This has been reinforced by a number of non-evidence-based MBA, or Masters of Business Administration, programs where hot-shot graduate students are taught, that the method to increase the speed of work is to add people. This has been known untrue since the publishing of the Mythical Man Month by Frederick P. Brooks Jr. in the 1980's. Brooks published “Brooks Law: Adding people to a late project makes it later”. This has been proven in every industry measured under audit. We will explain

this phenomenon, and the communication pathways that currently explain our understanding of the cause of it, in Chapter 14: DAILY. Graduate Students have been misinformed for years by the “Iron Triangle” of management: resources, scope and time. The idea, that the same scope of work could be completed more quickly, with the same people, but in less time, breaks the idea of the iron triangle, and all the spreadsheet company modelling made from it, including most of the “expert organizational consulting” brought by established and well paid mega-consultancies around the world. Many of those same consulting companies have since been trained by us, and are working to re-vamp their offerings, to match what has been learned by becoming Scrum Masters. All of the major consulting companies now offer Agile services.

2. Work can speed up and quality can go up the same time. Many professionals actually believe that if work could speed up, the only way to speed up would be to sacrifice quality. The reality, that applying a forced stop of work and Retrospective after making performance visible, through the Sprint Review, could actually increase speed and quality, is completely outside the prior belief system for many professionals.

Because a principle redefining moment has just occurred for some percentage of the attendees of the class, it is important as an instructor to immediately follow through into examples of the principles of this game performing in real work. Here are some projects Joe Justice has worked on:

This works for non-paper planes too
紙じゃない飛行機でも使えます

Use XP to get quality software in a shorter sprint.
Use XM to get quality hardware in a shorter sprint.
XPを使用して、短時間で高品質のソフトウェアを入手してください。
XMを使用して、短いスプリントで高品質のハードウェアを取得します。
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This is such a mental stretch for many attendees, compared to business as usual, that it must be justified, or it just an outlandish claim, and the entire class thereafter is suspect of fraud. We immediately share how the examples are actually achieved, which is our next chapter, Chapter 4: JETS. Note that the airplane game often takes 45 minutes. It is important to have a break just before the airplane game, and then present JETS quickly and clearly, then make room for the next break.

What about building a car in Sprints?

Joe Justice became well known globally, after presenting a 9-minute presentation at TEDxRainier, in Seattle, Washington, USA. In this Ted.com talk Joe explained how he worked, as a member of a volunteer team, creating ultra-efficient cars in 1-week Sprints. This shocked hardware organizations globally, where 3 or 7 or even 14-year long development cycles are accepted.

To host a build event, we will need a modular product, a ready Backlog of kits to design and build and test each module of that product, printed signs of the 7 eXtreme Manufacturing Practices, as listed in Chapter 10: XM (eXtreme Manufacturing), Self-organizing module teams, and as much fun stuff as we can, to boost morale, because building cars is difficult and strenuous. More detail, edge cases, principles, and options are presented in our book WIKISPEED, Ultra-Fast, Ultra-Efficient, Ultra-Fun: (www.agilebusinessinstitute.org/book).

All participants do need to sign a safety and liability waiver, here is the one Joe Justice uses:

“By signing here, I agree that I release Joe Justice, WIKISPEED Inc., and everyone else, for any injury I may sustain. I also agree to release any photos or video taken here into the public domain.”

Then, Joe recommends the following:

- **Liability and photo/video release**
- **Tools / materials budget per product owner (yes, I hand cash or a credit card)**
- **Coordinate PO's with Meta Scrum**
- **Coordinate SM's with Scrum of Scrums**
- **Run all 5 events each sprint, even if just 5 minutes each**
- **45 minute sprints with 15 minute breaks seem best if energy is high**

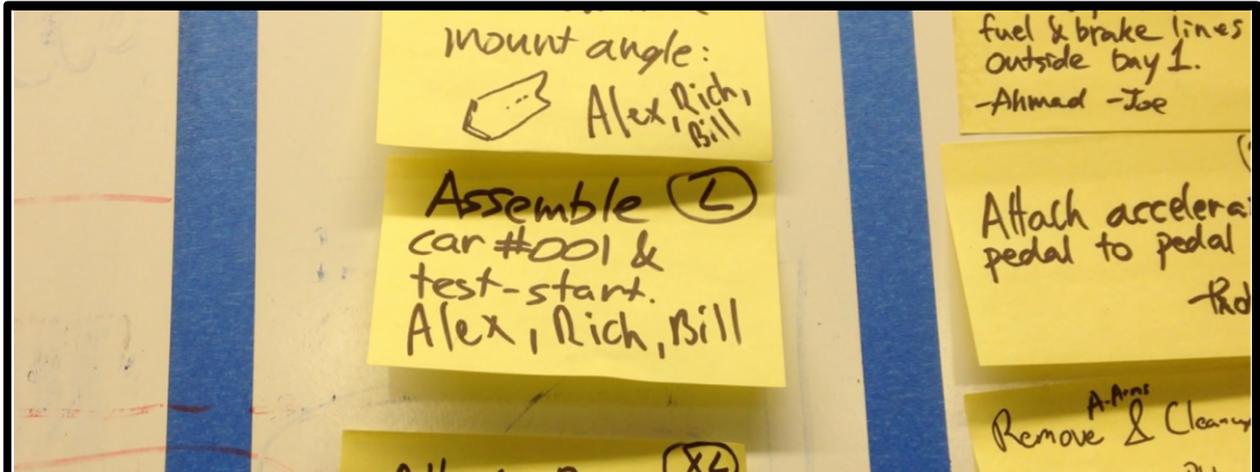
Now we are ready! We have all the materials and tools piled up, and a ready Backlog on the wall. A Group Scrum Board has been posted, for teams to write down how much of the Backlog they complete each Sprint. The Sprint cadence is called by the instructor, or timed with music and a large screen, or both. Each Sprint starts with MetaScrum, where the Product Owners meet in front of the Backlog, and teams lobby them for what to do next. The facilitator moves

available Backlog, on cards, from a “Not Ready” column to “Ready” column. Work is held back in the “Not Ready” column, if it is dependent on something else not yet done, or otherwise not immediately actionable. This helps prevent teams from becoming frustrated, by selecting work, that is not yet able to be completed to the definition of done. For example, the only Backlog in the Ready column in Sprint 1, are to post the 7 XM practices signs, visibly around the work area, fan out and group all materials and tools, so the materials and tools are all visible, from standing in one space, and materials and tools are grouped with similar materials and tools, and the work area is swept clean. As soon as the XM practices are posted, the facilitator moves Backlog to the ready column, to complete setting up the work area. For example, once the XM Practice sign saying, “Safety Gear”, is posted, the instructor will move into the ready column the Backlog saying, “All safety gear under the Safety Gear sign”. Following these steps, typically in less than 5 minutes, a pile of materials and tools has been transformed into a functional factory space.

Next the teams pull Backlog. Teams do this by hosting their own MetaScrums whenever they need them now. The teams are given specific instructions that their Scrum Masters will help remove impediments, like organizing tool sharing across teams, however anyone can help the Scrum Masters accomplish this. A recurring risk is the teams working through the Sprint boundaries and skipping Sprint Review and Retrospective. If teams work through the Scrum Events, the teams’ velocity do not increase Sprint to Sprint. We recommend the instructor politely, but firmly, enforce the Sprint boundary. We also recommend showing the velocity growth, as a result, after the fact.

The reader is invited to watch a time lapse of several car build events all over the world, hosted on WIKISPEED’s YouTube channel, www.YouTube.com/WIKISPEED. Most of these time lapse videos are tagged with “Build Party” and “Time Lapse”.

The morale boost when the car comes together, and the people who built it can sit in it, and again when the attendees can take pictures of it, and the vehicle starts to really look like a car, and again when they can drive it, is almost unreal.



Real Paper Backlog

For in-person work

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Fail

- Sometimes the sprint ends and we aren't finished
- Failing about 80% of the sprints is recommended to keep innovation high



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Group Scrum Board

- Each team has a row
- Each Column flows work
- No Agile training required if trained, expert coach is full time embedded with the teams



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José Díaz @jdiaz_berlin · Apr 29

Replying to @JoeJustice0 @AgileTD and @TG2G

It was one of the best moments of the conference history. We rocked with you. It was awesome!



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**Building
in Teams
of Teams
all over
the
world**



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**Executives
and New Hires**

Sprints are truly a
flat-organization



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Sprint Review

As much fun as responsible

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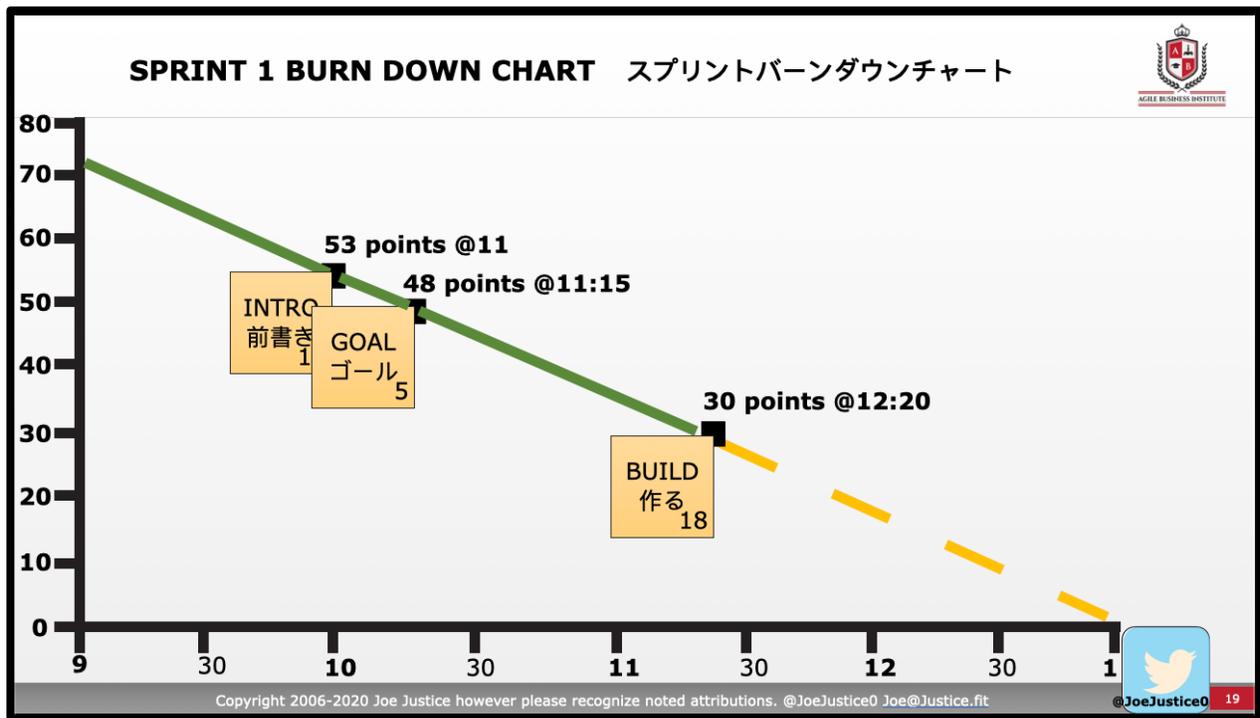


Some additional words of encouragement and experience. Hosting a build party takes at least a full day before, to prepare the materials and tools, sometimes 3 days. It also takes about a day after, to store the vehicle that was built, or sell it, or deliver it, or break it back down into modules or materials for a future build event. Logistically, it is massive. The memories are worth it, the morale and confidence imparted are impossible to replace, the professional network earned from these activities has a depth and loyalty as if you have truly accomplished something transformative together, because you have. But be ready for the time commitment and physicality, eat well and sleep well, as best you can, the week before and after. And doing a build event every week, or one every day, is a real test of your healthy lifestyle. You have been encouraged, and warned, and we are wishing you luck and success.

We also invite you to consider joining Team WIKISPEED, at www.WIKISPEED.org. WIKISPEED is a global non-profit organization, pulling work that contributors are excited about from the Backlog of projects, hosted on the website. Interested people, all over the world, are encouraged to work alone, or better yet in Scrum teams, and even better yet in teams of teams as a Group Scrum, to accomplish one of the projects and post their Sprint Review on

WIKISPEED's YouTube channel, www.youtube.com/WIKISPEED. This is an entirely self-managing, honor-system, open and transparent method, and yet has produced 4 world records in life-critical, highly regulated industries. This encompasses much more than only Scrum; however, Scrum Masters are the necessary ingredient, on each team, to provide the mechanism to coordinate across large groups, with Group Scrum. For more reading on the crowdsourcing, morale building practices, momentum building practices, frugal practices, social-good practices, and growth mindset in a post-growth market, we recommend you enjoy our book, WIKISPEED, Ultra-Fast, Ultra-Efficient, Ultra-Fun.

At this point in the Scrum Master seminar, our Sprint 1 Burn Down Chart may look a lot like this one. This burn down chart is from a seminar in Japan, where the seminar starts at 10am and ends at 6pm with a Happy Hour:



That means it is time to take a 15-minute break. Please get up, stretch, walk outside, let fresh air into your room, use the bathroom if you need to, and ideally exercise a little bit.

CHAPTER 4: JETS

The F-35 is advertised as the most complex, most competent, most advanced multi-role joint strike fighter ever produced. At a purchase price of \$180 million dollars per airplane, plus maintenance, the total program cost is calculated to be \$1.5 trillion dollars, making it more expensive than constructing all the Egyptian pyramids in adjusted currency. In fact, that makes it the single most expensive project ever undertaken by humans on earth. The world health organization says \$1.5 trillion United States dollars is enough money to feed every person on the planet for 50 years continuously and end world hunger.

What happens when businesses and organizations and governments develop an attack or a defense that prevents the F-35 from completing its missions? All that \$1.5 trillion dollars sits idle until the F-35 program can deploy a countermeasure. In the world of global defense these moves are attempted all the time, every week, continuously. How fast do the world's militaries want to design, develop, test, and deploy new countermeasures? Really, really fast. \$1.5 trillion dollars' worth of fast.

We don't get to talk about most of our work with the F-22 and F-35 programs, but we can show pictures with signed releases taken in Joe Justice's house.



Boeing, Lockheed Martin, US Air Force, US Government Procurement, Scrum training at Joe Justice's home, Feb 2019

A full-stack team
All project decisions are able to be made by this group in one room in real time

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Here we see the head engineers from Boeing and Lockheed Martin for the F-22, the retired 3 star Air Force general who headed the F-22 project at the time and now heads the F-35, a leadership team member for the F-35, the US Government procurement officials responsible for purchasing the F-22, and the government organization responsible for auditing the purchase process to verify it is in the tax payers best interests. When we talk about “Full Stack Teams” that can responsibly make decisions inside the team without waiting on external approvals, this is what we mean. This, by the way, is why an Agile Transformation is a leadership activity, it involves the policy makers of the company to sign a new policy and fund it.

When these professionals run the “build” exercise, they don’t need to fold paper airplanes. They are so good they can use metal and carbon fiber. In the pictures below, you can see these teams with a car they built, in a similar amount of time to what most companies use conducting the paper airplane game.

THANK YOU FOR READING OUR FIRST 50 PAGES AS A PREVIEW! FOR THE COMPLETE BOOK, PLEASE VISIT www.AgileBusinessInstitute.org/books

This book is available on Amazon:

<https://www.amazon.com/Scrum-Master-Training-Performance-Institute/dp/B08VYR25BZ>

This book is available on LeanPub:

<https://leanpub.com/bookstore?type=all&search=joe%20justice>

Thank you Paolo Sammicheli. Paul Takken. Riccardo Mariti.

Your lives are masterworks of self-development and execution.

You gave to me from your highly developed skills and charged me nothing.

I cannot wait to do the same for you.

-Joe Justice January 29 2021

Made on Earth by Humans