

ADVANCED BACKLOG REFINEMENT & ESTIMATION TECHNIQUES

A Half-Day Workshop

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ABOUT US

Since 2012 AgileDad has been transforming companies to meet the needs of an increasingly rapidly changing Agile ecosystem.

- We provide high quality training and coaching to companies ranging in size from Startup to Fortune 100.
- We service both technical & non-tech organizations.
- We wrap the human side into everything we do.
- We design an Agile process that fits how you do business and gets you to a more frequent and regular delivery cadence.
- We don't just design a process and leave, we give you the tools to implement and sustain change.



Exercise 1: Introductions



- First & Last Name
- What Company Are you with?
- What is your current role on the team?
- Scrum or Agile Rating 1 10?
- A Rather Interesting Fact



Logistics:

- This is a CLOSED LAPTOP course. We will provide you with ample time at breaks to check email and perform necessary work.
- Please do set all cell phones and other electronic devices to vibrate or silent mode as not to disrupt the class.
- If you must leave the room during class, please be considerate to all those around you and be silent.







Workshop Agenda:

Topic

- 1 The Role of The Product Owner & Agile Analysts
- 2 The Extended Agile Framework
- 3 Vision & Strategy The Press Release & The Product Roadmap
- 4 Writing Great Backlog Items the Art of Estimation
- 5 Rapid Release Planning
- 6 Advanced Product Backlog Refinement
- 7 Identify & Manage Dependencies & Resolving Complex Impediments
- 8 Key Takeaways & Closing Thoughts



Advanced Backlog Refinement & Estimation Techniques

The Role of The Product Owner & Agile Analysts



Product Owner:



- Responsible for: Creation and maintenance of a stack ranked product backlog.
- Gathering of customer, business, and technical requirements and filtering them down to a single product backlog.
- Full understanding of the product and the process.
- Maintaining upward visibility.
- Representation of customer and or sponsor to the end team

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Product Owner Skills:

- Identify markets and customers
- Define products
- Establish the Product Vision and Roadmap
- Drive and quantify business value
- Prioritize and manage the product backlog
- Create user stories
- Be prepared with details at the appropriate time
- Set clear expectations for acceptance
- Convince Customers to buy and Executives to invest
- COMMUNICATE



Product Owner Qualities:

- Emotional Intelligence
- Collaborative Skills
- Ability to Say No
- Ability to Work With and Empathize With Customers
- Ability to Work Within an Organization to Remove Impediments
- Conflict Management
- Ability to Communicate Difficult Decisions at All Levels
- Motivating Teams
- Knowledge of the Complete Product Lifecycle
- Did I say COMMUNICATE



Product Owner Attributes:

- Presence The Product Owner makes it powerfully clear how important the planning week is by being present at every session. He sits in the room with the team, re-schedules conflicting meetings, avoids email or phone messages during meetings, and is fully attentive in all planning sessions.
- Deeply understands the voice of the customer Many Product Owners work intimately with analysts as well as both internal and external customers using both informal and structured interviews, focus groups, and conceptual layouts to discover potential backlog content. The product owner is articulate in conveying stories to both senior management and the team.
- Respectful of the team and of the process The Product Owner does not take things at face value. Instead, she engages the team in genuine conversation, treating them as professionals. The Product Owner is unafraid to speak bluntly about frustrations. When a decision regarding the stories needed to be made, she decides. When it comes to matters regarding process, the Product Owner deferred to the ScrumMaster or Agile Coach to show the team that it was still ok to learn and grow.
- "Just Ask Me"- The Product Owner was known in the business for the ability to marshal people and break traditional organizational rules when needed. EVERY time the team got hung up on a question or impediment he never hid. The Product Owner always had a 'Just ask me for help / Tell me what you need to succeed attitude. This created an environment where the team wants to engage often with the Product Owner.
- Not Just Another Project on the Plate The Product Owner makes it blatantly clear to the team that they are all in this together and were all equally committed to seeing the project through to completion. The Product Owner never plans to skip to another project or product after merely kicking this one off.



Agile Analyst:

- There are 3 types of analysts to assist the product owner in creation and maintenance of the product backlog:
- 1) Technical Analyst This analyst understands the way that the current product is built and can assist in determining technological feasibility of future enhancements.
- 2) Functional Analyst This analyst knows exactly how the current product works and understands the direction in which the business hopes to take the future of the product. This analyst is also typically very savvy about how end users typically use the product.
- 3) Business Analyst This analyst has a deep understanding of the customers wants, needs, and desires. They often negotiate with the business to get features into the product that the customer will actually use.

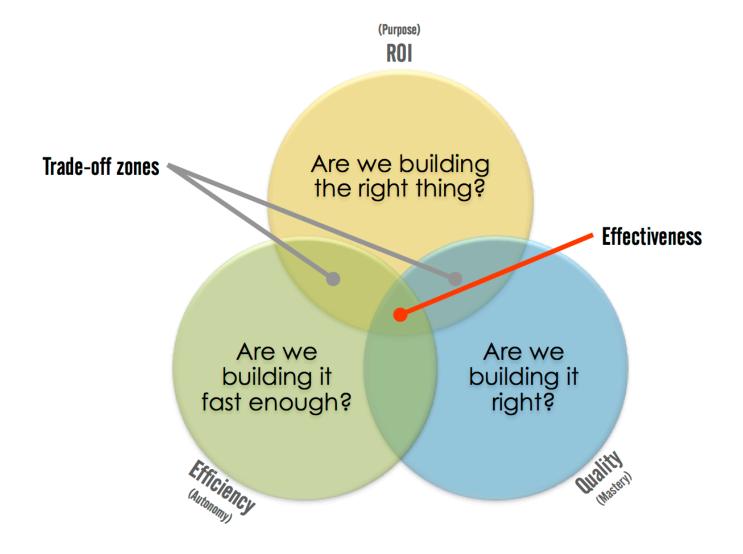


Advanced Backlog Refinement & Estimation Techniques

The Extended Agile Framework
Vision & Strategy – The Press Release
The Product Roadmap



What Should We Be Working On?





Complete Agile Planning - AgileDad

Meeting Name	Who Attends	How Often	Output
Vision & Strategy	Executives, VP's, Directors, Stakeholders, Sponsors, Product Owners, SM.	Typically once per calendar year per major initiative.	Agile Press Release
Roadmap Planning	Leadership, Sponsors, SM, Product Owner, Scrum Teams	Once per calendar quarter. (Every 90 days)	Agile Roadmap
POBAFATA BLI Creation Workshop	Product Owner, Business Analyst, Functional Analyst, Technical Analyst, SM	Once per quarter allowing 6 weeks of prep time for BLI Creation.	Epic's, BLI's, working items ready for Release Planning.
Release Planning	POBAFATA, Scrum Teams, SM	Once per quarter, (Unless you have a different release cycle)	Executive Release Diagram (Release Risk Diagram)
Backlog Grooming	POBAFATA, Scrum Team, SM	Once per week per team for one hour duration.	Refined Product Backlog
Sprint Planning	POBA, Scrum Team, SM	Once Every 1 or 2 Weeks	Sprint Backlog
Daily Standup	POBA, Scrum Team, SM	Daily - 30 Seconds per person not to exceed fifteen minutes daily.	Daily Accountability
Review & Demo	POBA, SM, Interested Parties	Once Per Sprint	WorkingDemo
Retrospective	Scrum Team, SM	Once per Sprint	Suggested Process Improvements

Vision & Strategy:

- Executives & high level managers are responsible for creating & adhering to a corporate or more global vision.
- Product Owners & other managers with the help of executives form the strategy to achieve the vision.
- The team is responsible for doing everything possible to execute on the vision by completing the work from a rank ordered product backlog.
- The Strategy is the most overlooked portion of the project preparation.
- Without both a vision & strategy the project will certainly fail.





The Art of The Agile Press Release

Doing More With Less

The Agile Press Release Contains Four Distinct Parts:

- 1) The Headline or Title
- 2) The Inline, Tagline, or Byline
- 3) The Elevator Statement
- 4) The Internal or External Quote

Vision & Strategy are Both Critical

 Having a clear vision & Strategy allows us to discover the Who, What, Where, When, Why, and How behind the products and services that we build.





The Art of The Agile Press Release

The Elevator Pitch



The Elevator Pitch:

- FOR our target customer
- WHO IS suffering from this major problem
- OUR PRODUCT is this type of product
- THAT PROVIDES this key benefit or potential reason to buy a specific product or service
- UNLIKE our primary competitor that suffers from this weakness
- OUR PRODUCT does this different or better



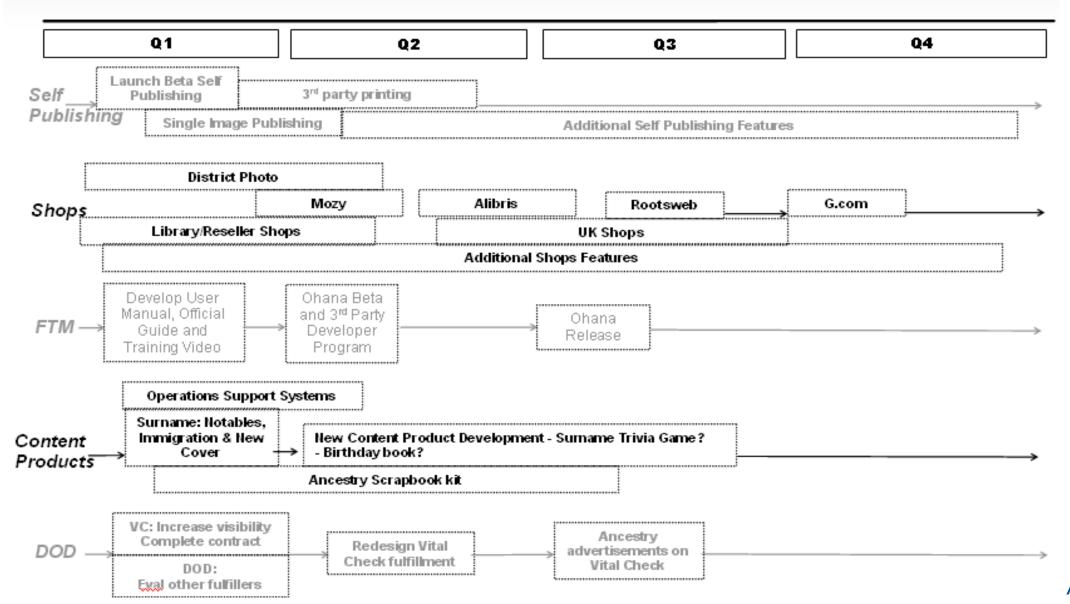
Exercise 2: Create a Vision & Strategy



- Elevator Statement:
 - FOR (who?)
 - WHO (why?)
 - THE (what?) is a (more defined what?)
 - THAT (how?)
 - UNLIKE (why when is important?)
 - OUR PRODUCT (value?)



High-level Commerce Road Map



The Product Roadmap:

- The Product Owner:
 - Helps determine when releases are best needed.
 - Determines what functionality will be sufficient.
 - Focuses on value derived from the release
- The Delivery Team:
 - Sees the entire vision in consumable chunks.
 - Learns about next plausible steps.
 - Learns the business priorities.
 - Provides technical input to the roadmap.

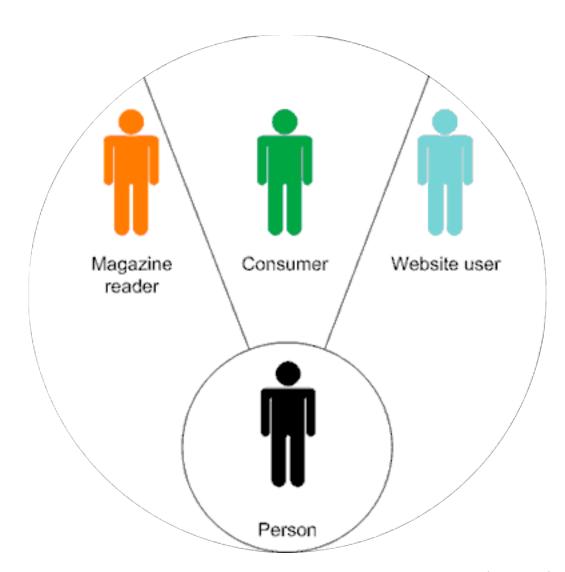


Advanced Backlog Refinement & Estimation Techniques

Writing Great Backlog Items - The Art of Estimation



Understanding Roles:



- Different types of end users may interact with the system differently.
- Each role may have many different personas that will exhibit different behaviors and use the same system in a very different way.
- Roles help us define broad stroke acceptance criteria that should be applied globally within a system.



Understanding Personas:

- Defining who more specifically will benefit from what you are building helps drive added value.
- This helps teams focus on the 20% of the features that are used most of the time.
- Using personas also helps the team consume backlog items with much lighter documentation
- Most organizations create a handful of most commonly used personas to assist the team in building the product.



Exercise 3: Using Roles & Personas

- Stay with your team and identify 3 roles that would interact with your product. For each role, identify at least one persona that would fill the role and how they would interact with the system.
 - Each role can be broad in nature.
 - Personas should be more specific and much better defined.
 - Use real world examples so that you can take these back to your teams.

Meet Our Users - Betty



Betty

Ambassador and Networker

Job Title: Sr. Human Resources Generalist

Location: Sunnyvale, California

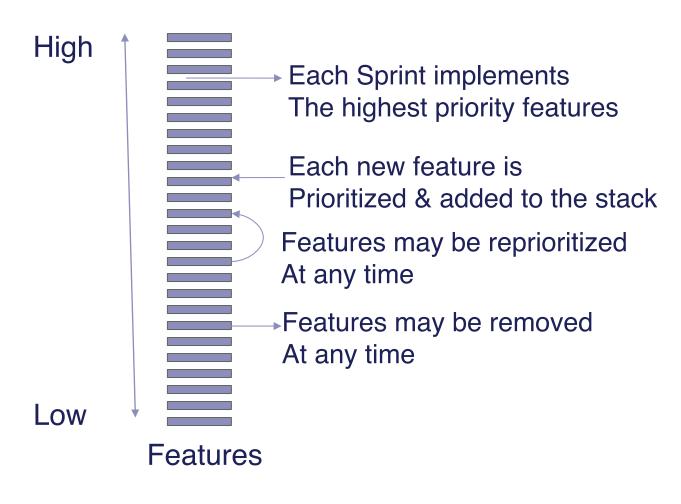
Responsibilities: Responsible for developing, implementing and managing a variety of Human Resources programs. Acts as a Business Partner for assigned departments. Partners with line managers to identify the Human Resources impact of specific business decisions.

Trigger for Action: Has established 1:1 meetings with Vijay, a Principal Software Engineer who manages a team in <u>Pune</u>, and would like to see what he looks like.

N



Product Backlog Design:



- All possible system features are captured in a stack rank ordered list called the product backlog.
- New features can be added to the backlog at any time.
- Features in the backlog have a gross estimate of effort and or value.



What About Business Priority?



Two websites to assist with priority: http://dotmocracy.org

http://www.innovationgames.com

- We all know the business has a 3 point ranking scale for priority of backlog items: High, Really High, or Really Really High.
- The business needs to use tools to help them understand that not everything can be of the highest priority.
- With the understanding that we would not be doing the work if it were not important, which items have the greatest urgency? Can we arrange them into High, Medium, and Low categories?



The Index Card – Strategic Priority

Business Priority

H-M-L	Title - The title should be 10 words or less.	
Description- As a I would like to so that		



Time vs. Relative Complexity:

- Let's paint the room!
- How many hours will it take?
- Why all of the different answers?
- Have any of you painted before?
- Compared to something else you have painted, would it be easier to determine how difficult it would be to paint the room?
- Is it easier to reach consensus?





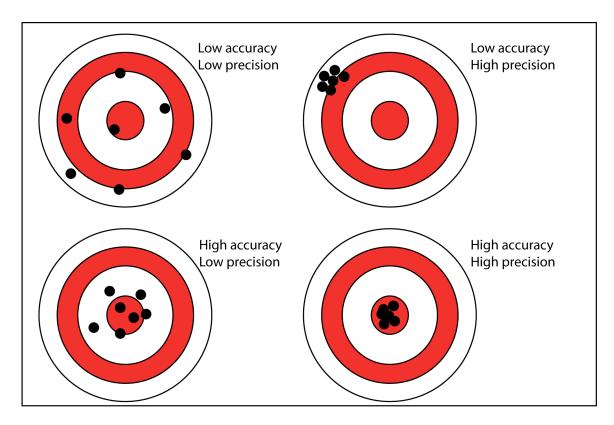
Planning Poker – Does It Work?





Agile Estimation – Accuracy Over Precision

It is better to be consistently accurate than rarely precise.



Jeff Patton - Agile Product Design - Story Mapping

Time Based Estimates Are Wrong

Time based estimates are consistently wrong.

Team B Is Better

The Agile team should not always be trying to increase the amount of work they can consume in a sprint.

What Is Your Shoe Size?

What exactly does your shoe size mean?

Story Point? What's A Point?

Story Points are so easily misunderstood. What can we do to correct this? What went wrong? Are We doing enough?



Let's Use A T-Shirt Size

Sizing needs to be based on a non-numeric value.



T-Shirt Size	Points	Definition
Extra Small	1	This Story is extra small in relative complexity when compared with all of the other items and the benchmark.
Small	2	This Story is extra small in relative complexity when compared with all of the other items and the benchmark.
Medium	3	This Story is extra small in relative complexity when compared with all of the other items and the benchmark.
Large	5	This Story is extra small in relative complexity when compared with all of the other items and the benchmark.
Extra Large	8	This Story is extra small in relative complexity when compared with all of the other items and the benchmark.



The Index Card – Initial Estimate

Business Priority

H-M-L

Title - The title should be 10 words or less.

Description- As a _____

I would like to _____

so that ______.

XS - S- M - L - XL

PO T-Shirt Size

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Identify A Small Benchmark

Extra Small	Small	Medium	Large	Extra Large
	S			



Place All Other Cards On The Wall

Extra Small	Small	Medium	Large	Extra Large
	S			



Mark Cards With Time It Took To Complete Each One

Extra Small	Small	Medium	Large	Extra Large
.5	2	3	7	21
2	8	8	3	4.5
	14	5	11	
	1	7		



Erase The Time – Use Story Points

Extra Small	Small	Medium	Large	Extra Large
1	2	3	5	8
1	2	3	5	8
	2	3	5	
	2	3		

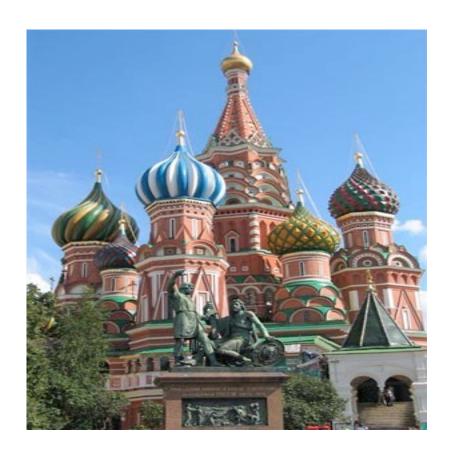


Sprint Velocity Remains Consistent

Sprint 4	Sprint 5	Sprint6
21	20	21



Understanding MoSCoW:



- MoSCoW = more than a Russian Capital
 - Must Have
 - Should Have
 - Could Have
 - Would Like
- Every iteration should have a mix of the above types of items.
- Stake holders LOVE the Would Likes.
- The Product Owner drives the product backlog and creates the rank order based heavily on the MoSCoW ratings.

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MoSCoW – Consumer Demand

Business Priority

MoSCoW

H-M-L

Title - The title should be 10 words or less.

M-S-C-W

Description- As a _____

I would like to _____

so that ______.

XS - S- M - L - XL

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PO T-Shirt Size

The Index Card (The Back) - Part 5

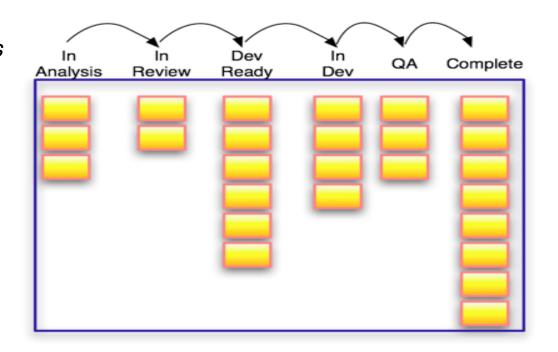
Acceptance Criteria:

Thou Shalt Allow This to happen.
Thou Shalt NEVER Allow This to happen.
Etc.



Exercise 3: Create Five Stories

- Think about what you have learned about user stories Take a few moments to create five Story Cards that look like the ones we have created so far:
- * 1) Make 5 cards each with a title & description. (Bonus points for using roles & personas in the description.)
- * 2) Take the 5 cards and give them each a priority. (Remember, this is from the business perspective.)
- * 3) Take the 5 cards and give them each a MoSCoW rating. (Remember, this is from the customer perspective.)
- * 4) Next, take the 5 cards and give them a T-Shirt size based on relative complexity & scope.
- * 5) Finally, take the 5 cards and place them in stack rank order. Be certain to take all 3 corners into consideration when placing them in order.





Exercise 3: The Formula

- Here is the formula for correct placement of stack rank order of your backlog items. Address risk by performing the items with the highest complexity earlier working towards the lower complexity items later in the process:
- 1) All Must Have High Priority items should be considered first and foremost.
- 2) Be certain to get at least one Would Like in every sprint. Next should be one Would Like High Priority item.
- 3) Next should be the Must Have Mediums and Must Have Lows.
- 4) The Should's go next from High to Low Priority.
- 5) Finally, place the Could's from Highest to Lowest Priority.
- Note: Dependencies trump priority & moscow rating.

Must Have	High Priority
Would Like	H-M-L
Must Have	Medium Priority
Must Have	Low Priority
Should Have	H-M-L
Could Have	H-M-L

All states are stack ranked from highest to lowest risk unless the velocity of the Sprint does not afford this as an option. Team velocity always prevails.

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Advanced Backlog Refinement & Estimation Techniques

Rapid Release Planning



Determining Velocity:

- What has the team been able to do in the past?
- Have they ever worked together?
- Do we have historical estimates from a previous similar project?
- How much total team time do we have?
- How much team time do we predict the first story will take us?



What Is a Release?

- In order to have a release, you need the following three elements:
 - 1) A start and end date.
 - 2) A set of work for the team to complete.
 - 3) A customer to pass off on final acceptance of the work.



Release vs. Sprint Planning

	Release Planning	Iteration Planning
Attendees	Team, SMEs and product owner required. Managers/customers optional.	Team, SMEs and product owner required. Managers/customers optional.
Lowest level of work breakdown	User stories	Tasks
Estimates Provided in	Points, t-shirt sizes, or duration (weeks)	Hours
Output of meeting	Release plan (= high level plan for multiple iterations)	Iteration plan (= detailed plan of tasks for one iteration)



The Product Backlog in Release:



 Imagine for a moment that the water cooler pictured contained all of the features we could ever want in the product. Each listed in stack ranked order and ready to be placed into a tentative release.



The Agile Release:



The water line determines our Release Backlog



Given our product backlog and release date, How many cups (iterations) can we fill?



Release Planning Woes:



- Teams with different length iterations make release planning a real challenge. The size (length) of the iterations should remain as consistent as possible.
- It is truly up to the team to determine what their true velocity really is.



Value of Agile Release Planning:

- Allows for planning for a series of iterations at a high level, reducing waste in planning detailed tasks for requirements we are uncertain about.
- Allows for communication of the entire scope of the release to project teams and stakeholders around a high level plan.
- Protects the ability to remain flexible and 'agile' by embracing changes in requirements.
- Serves as a guide, a baseline, and is expected to be updated based on collaboration and the emerging product.



Value of Release Planning Realized:



- Understand the need for human and other resources as the macro release level; understand possible decision points for make vs. buy, integration, etc.
- Provides the customer and leadership with an idea of how a large project is progressing.
- Involves the team in its creation, which means more buy-in, accuracy, and empowerment.
- "I know things in a project are going to change, but in my agile projects, I know this information much sooner which allows for good decision making."
- ~ Joe CEO



What a Release Plan is Not:



- A release plan is not entirely predictive or prescriptive.
- A release plan is not planned at the task level.
- A release plan is not 'frozen', (aka Scope Control)
- There is really still no crystal ball to insure 100% accuracy.

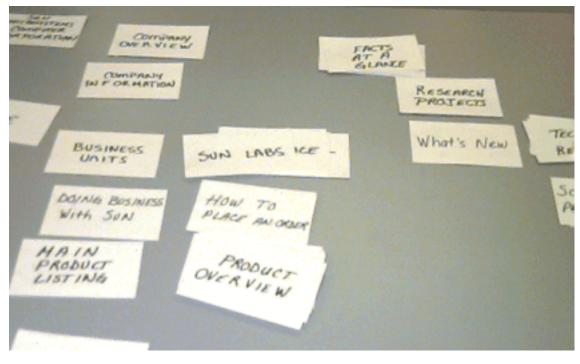


Release Plan Reporting:

- People expect to know about changes to requirements in the product backlog.
- Contract phases and dates.
- Team Velocity
- Cost
- The ability to re-project the number of iterations needed to complete the work slated in the release.



Exercise 4: Rapid Release Planning



- This exercise is a lot like the inverse of the 25 thousand dollar pyramid. I will give you a topic, and you will have a very short time frame to blurt out as many answers as possible prior to time expiring:
- 1) Stay in your teams and nominate a team Scribe for this exercise.
- * 2) The team scribe will be responsible for recording twenty unique replies from the team. One per sticky note.
- 3) Once you have twenty sticky notes, you will be given a second very short window to identify one of the items that is small in scope.
- 4) The final seconds will be used to sort the remaining cards into three columns: S - M - L.
- 5) We will review the answers and make a great discovery.



Rapid Release Planning Instructions:

- 1) Print out all of the story cards you hope to be included in the release leaving off the product owner t-shirt size. (After all, we would not want to influence the team.)
- 2) Place all of the cards in a large box, bucket, or basket.
- 3) Invite all of the teams participating in the release to be part of the rapid release planning session to gather around a large table.
- 4) Explain that in a moment you will be dumping out all of the cards. The team will have a preset amount of time to find a card they all agree is small in scope.
- 5) Once the team has identified a small benchmark item, explain they will have a preset amount of time to place all of the remaining cards in columns on the wall listed as small, medium, and large relative to the first item and to each other.
- 6) If a team member picks up a card they are uncertain about, have them return the card to the table for other team members to review.

Rapid Release Planning Instructions:

- 7) If an item is smaller than small, make a column for extra small. If the item is larger than large make a column for extra large.
- 8) If an item is placed in the wrong column on the wall, feel free to move it. Any card can move except for the initial small benchmark item.
- 9) For the final few seconds, I command silence and have the team carefully study as many items on the wall as they can in an effort to allow for any final adjustments to be made.
- 10) Once the time expires, I excuse the team for an extended lunch and ask the product owners to stick around for a while so we can do a quick comparison.
- 11) Any items with no disparity or with only one column of difference in either direction between the product owner and the team is a good enough estimate. The team will get better at estimating as they go and product owner will have a lot fewer items for additional review. The teams estimate in this case is the final one.

Rapid Release Planning Instructions:

- 12) If there is more than one degree of separation in the t-shirt size between the product owner and the team, this warrants additional discussion regarding that item. In most cases this limits the number of items requiring additional conversation to a much smaller number.
- 13) Outliers are marked with both the team size and the PO size and placed in a separate column for additional discussion.
- 14) When the team returns, we talk about the outliers for a time-boxed period of five minutes each in an attempt to clarify scope.
- 15) The teams estimate stands and we move quickly through the items.
- 16) Before we exit the room, the team takes a sheet of round stickies and identifies any backlog items in the release that have an internal or external dependency.
- 17) Based on the teams projected velocity, the product owner places items into future sprints to identify any items that could be considered at risk of not making the release.

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The Sliding Scale

# Of Items	# Of Teams
0-99 (5)	1 Team (+0)
100-199 (10)	2 Teams (+5)
200-299 (15)	3 Teams (+10)
300-399 (20)	4 Teams (+15)
400-499 (25)	5 Teams (+20)
500 (30)	6 Teams (+25)

Times in Parentheses should be added together to calculate the TOTAL team time needed for the RRP

- The amount of time allowed for each step in the Rapid Release Planning Process varies based on the number of items you are trying to plan for, the number of people, and whether teams are remote or collocated. The scale at right should be used as a guide and can be adjusted according to what works best for you. Please remember:
- 1) The times are intentionally FAST! This is to perfect reaching a true grit gut decision instead of pondering.
- 2) Every team member may not get to see every card. This is PERFECTLY fine. They need to trust in the ability of the team member that did see the card.
- 3) Movement of cards throughout the exercise is both normal and expected.
- 4) Limit the number of people participating to no more than 50 People.
- * 5) Video Record your teams executing this and send it directly to me or upload via YouTube for a chance to win cool prizes!
- Note: Remote teams should add 50% to the times listed.

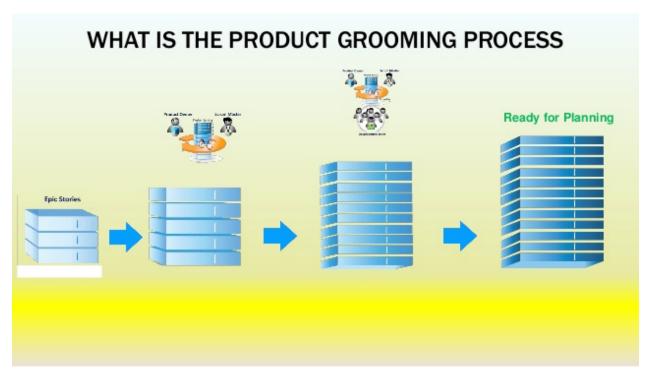


Advanced Backlog Refinement & Estimation Techniques

Advanced Product Backlog Refinement



Product Backlog Refinement



- Each team meets for one hour per week with the Product Owner and ScrumMaster for backlog grooming.
- The Product Owner asks the team to assist with various tasks including:
 - Breaking down epics
 - Refining acceptance criteria
 - Reviewing current or new estimates
 - Other tasks as requested



Advanced Backlog Refinement



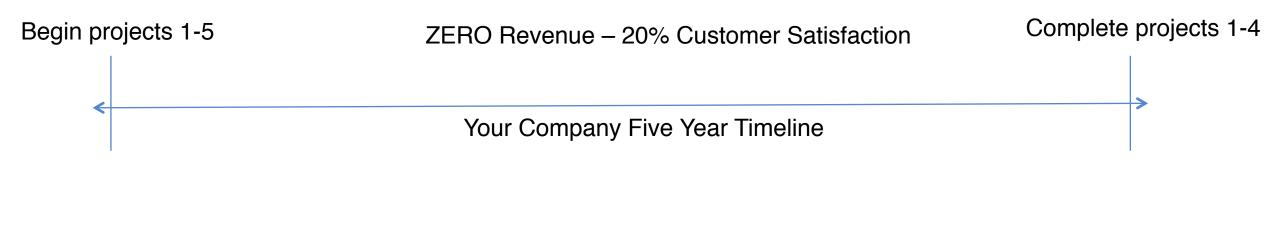
- Create a shared Definition of Ready
- Integrate feedback from Stakeholder Groups, Regulatory Requirements, Validation, Defects, Technical Concerns, etc.
- Be certain to communicate the purpose, intent, and context of each backlog item.
- Answer and Clarify all questions.



Start With Two 5-Year Timelines

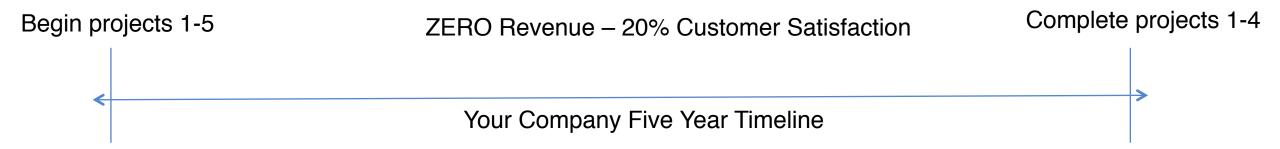


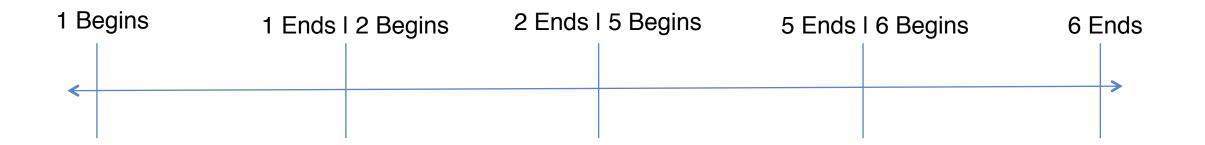
Your Company Is In Trouble





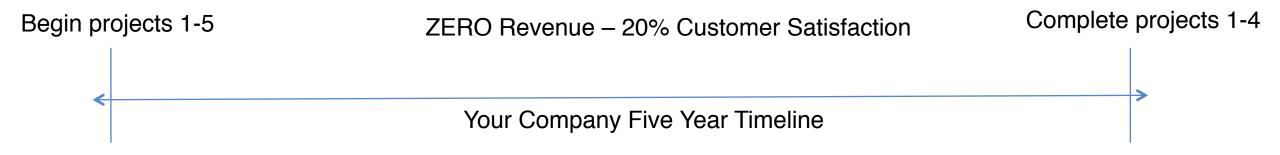
Limit Work In Progress

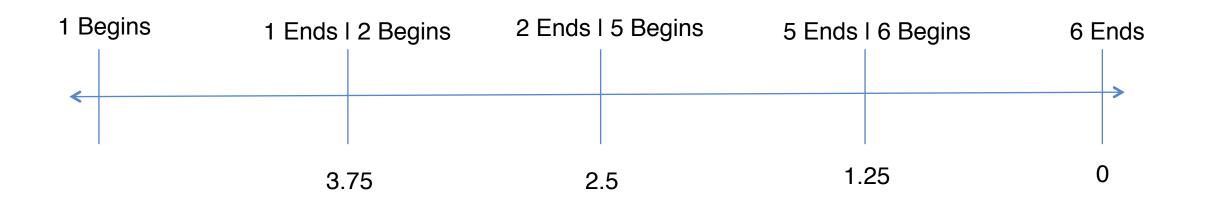






7.5 Years Of Revenue







Let's Do The Math...

Company A	Company B	Advantage
4 Products Released	4 Products Released	All Equal
ZERO Revenue	7.5 Product Years Revenue	Company B
20% Consumer Satisfaction	100% Customer Satisfaction	Company B



Advanced Backlog Refinement & Estimation Techniques

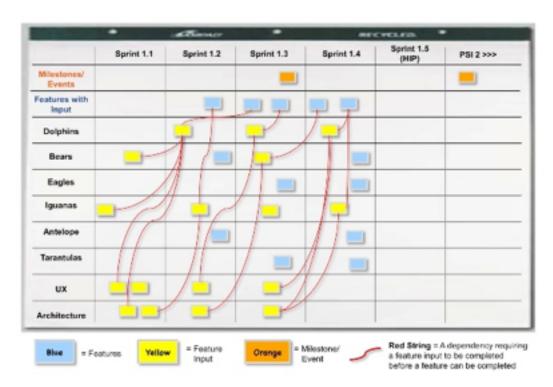
Identify & Manage Dependencies & Resolving Complex Impediments



Identify & Manage Dependencies

THE PROGRAM BOARD





The best way to resolve dependencies is not to have them!

Peer-to-peer collaboration between teams

A visual representation of the product feature backlog

Dependencies may be difficult to manage, they're also inherent to larger, agile organizations with cross-functional teams

Discuss at your tables how these techniques can be used to better manage dependencies.



Resolving Impediments

- What types of impediments might a Scrum Team incur?
 - Late attendance to meetings
 - Blocked work
 - Issues with outside vendors or inside supply teams
- Teams use techniques to identify the issue not the symptom:
 - Root Cause Analysis
 - Fishbone
 - 5 Why's
- What are techniques that your organization has used to resolve a specific impediment?
- In groups define a current impediment that your team may be facing. Use root cause analysis to discover the cause of a common impediment? Report how you solved the issue.



Advanced Backlog Refinement & Estimation Techniques

Key Takeaways & Closing Thoughts



Session Conclusions:

A CLEAR understanding of roles is 100% necessary for Agile to be successful!

Take time to identify & manage technical debt and focus on limited work in progress.

Organizations should create great backlog items and focus on Outcome over Output.

Find the balance between the development needs, strategic benefit, and consumer awareness. Build the right thing quickly and correctly.

- Accurate relative complexity estimates better give us the ability to forecast. Precise time based estimates are precisely wrong.
- Visit AgileDad.Com to learn more about this topic or to downloadr a copy of this presentation and accompanying document.





Thank You!

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