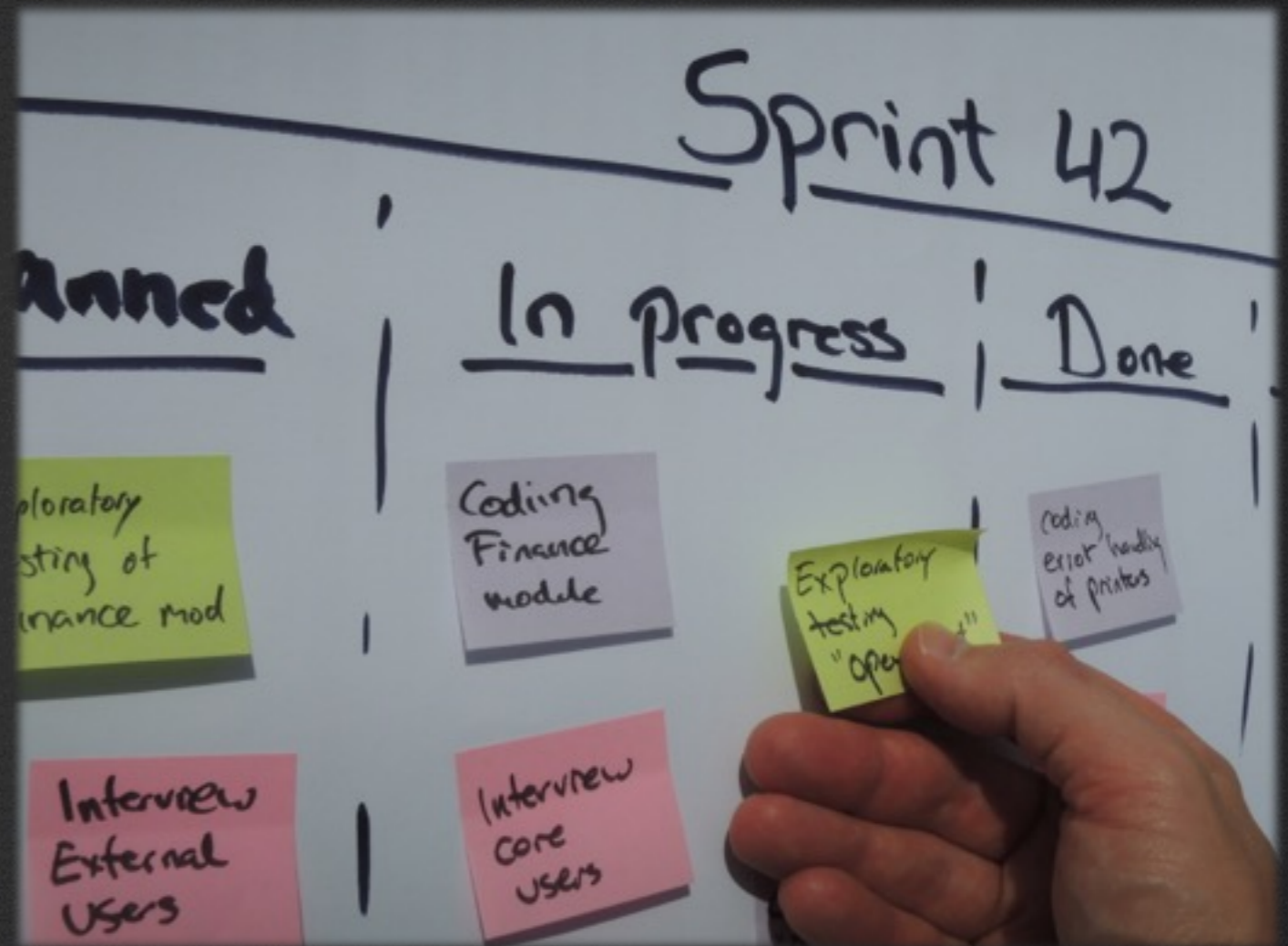


BUILDING PRODUCTS

with Agile Development



Sean Ammirati

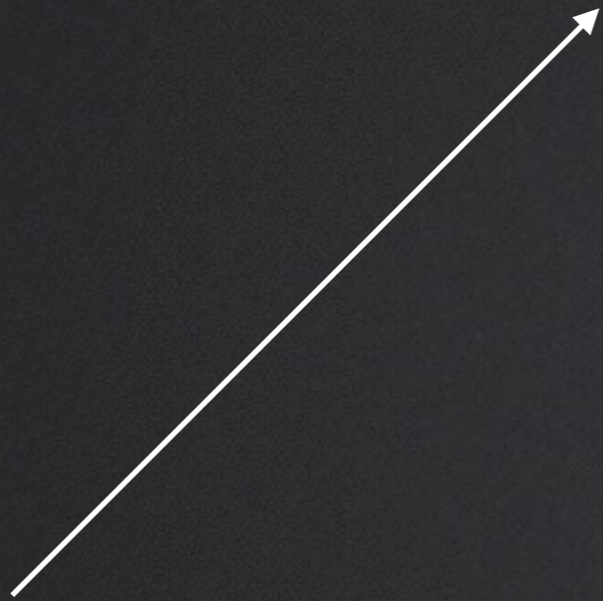
@SeanAmmirati

Partner, Birchmere Ventures

Adjunct Professor, Carnegie Mellon University

October 18, 2016

Build



Learn



Measure

What do you *build*?

“that version of a new product [or service] which allows a team to collect the maximum amount of validated learning about customers with the least effort”

– Eric Reis

A close-up photograph of a white egg that has just cracked open on a wooden surface. The egg is split into several pieces, and a large amount of water is splashing out from the opening. The water droplets are captured in mid-air, creating a dynamic and somewhat chaotic scene. The background is a warm-toned wooden surface.

Five

Misunderstandings

about MVPs

#1: Viable ≠ Crappy



#2: Not a destination!



What do you *measure* & *learn*?

MAPS #1 > Concept

MAPS #2 > P-M Eval

MAPS #3 > P-M Fit

	MAP #1 PPC Campaign Landing Page	MAP #2 Product Drawings Detailed Spec	MAP #3 Prototype Functional Output
Customer Interaction	Features / Benefits description 'More info' Call to Action	Face-to-face technology demo	Field Pilot
Learning Objective	Market insight Find early adopters	Locate Strategic partners Seed Funding Paid-beta customers	Revenue Customer Validation Capital Investment
Investment	\$	\$\$	\$\$\$



#3: Validates or invalidates
key hypothesis





#4: Doesn't have to be a product at all





#5: Not always a landing page



What do you *build*?

Storyboards

Landing Pages

Demo Videos

Wizard of Oz

(examples)

Storyboards

A panel or series of panels of rough sketches outlining the sequence of events a consumer will experience **before**, **during** and **after** using our product / service.

Storyboards

3 Benefits

It's a mirror

Encourages customers to be more honest

YOU won't fall in Love

Storyboards

3 Benefits

It's a Mirror

Telling the customer's story from their context
- how they will use the product / service

Encourages
Customer
Honesty

Storyboards
3 Benefits

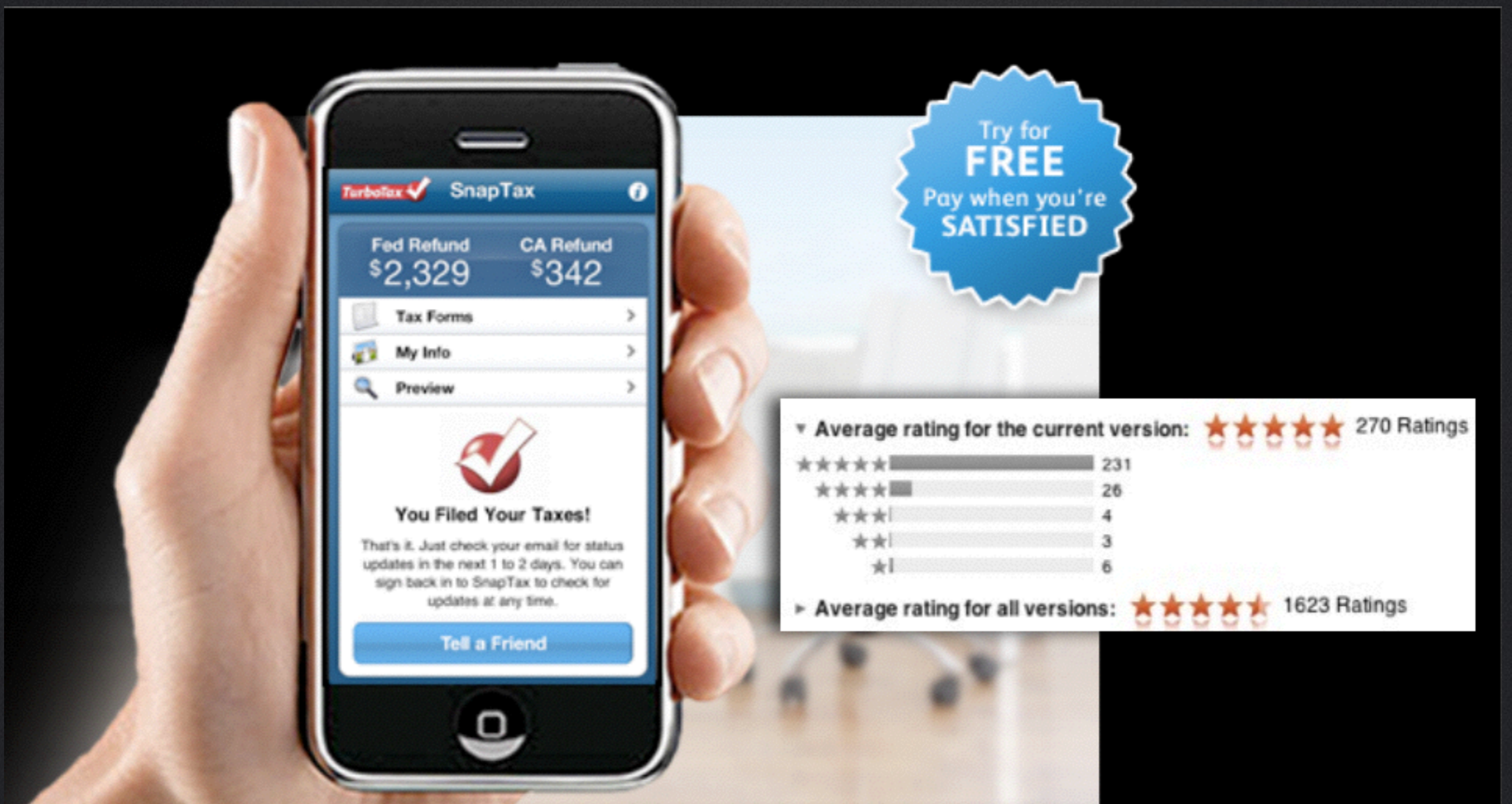
Easier to react honestly to
rough sketches
than final pixel perfect images

YOU
will NOT
Fall in Love

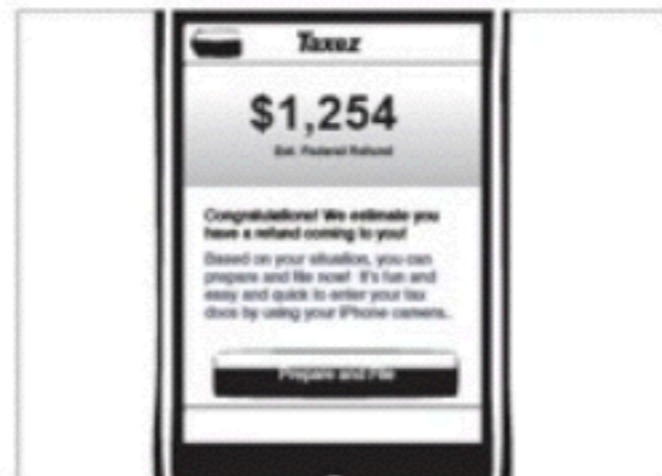
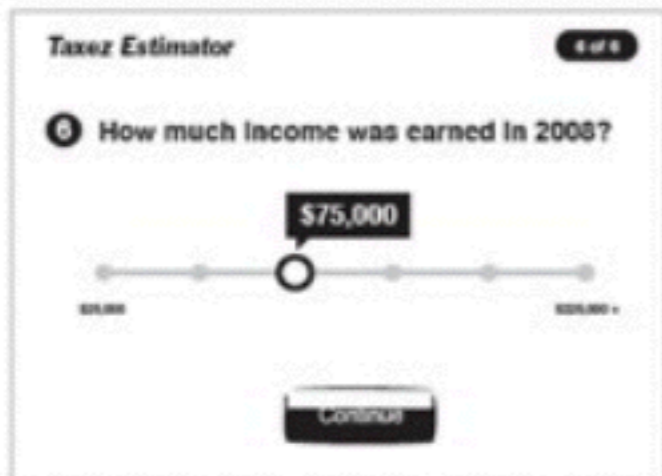
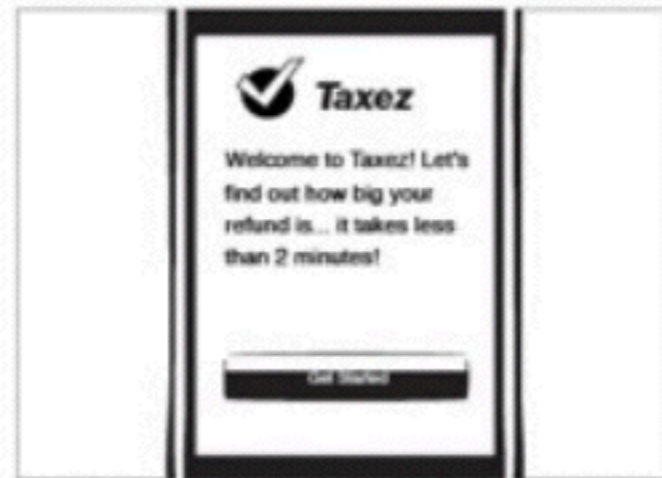
Storyboards
3 Benefits

Never seen anyone
fall in love with
their story board

Storyboards Sample



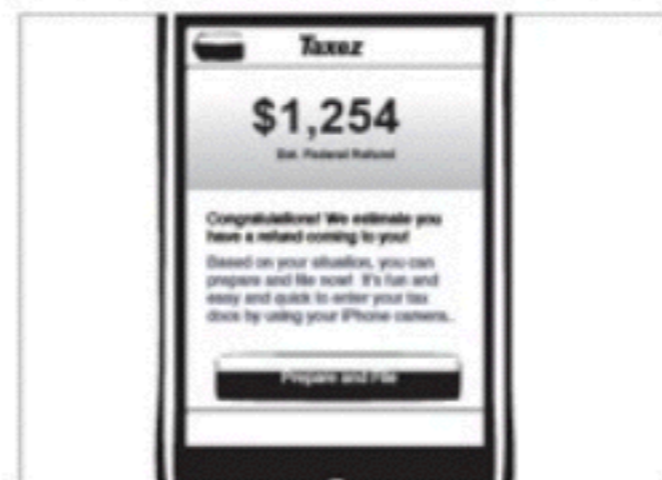
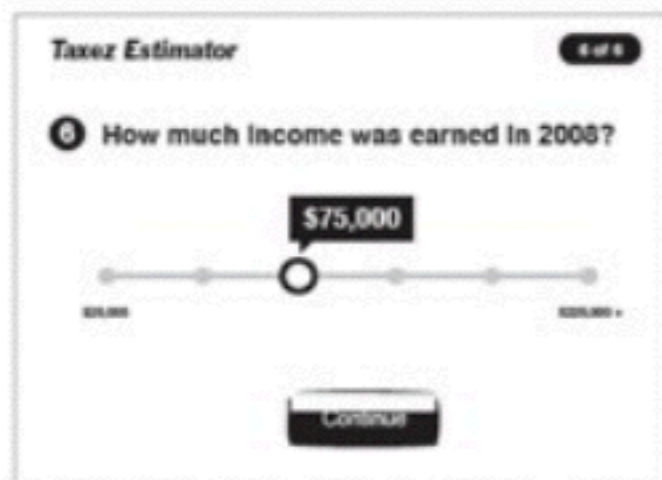
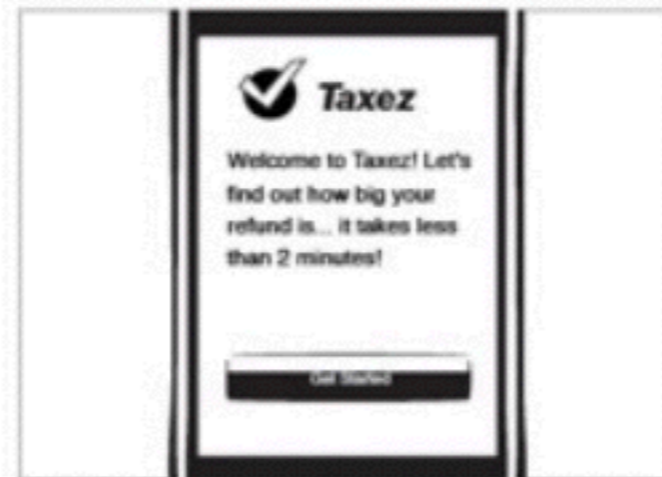
Storyboards Sample



Storyboards Sample



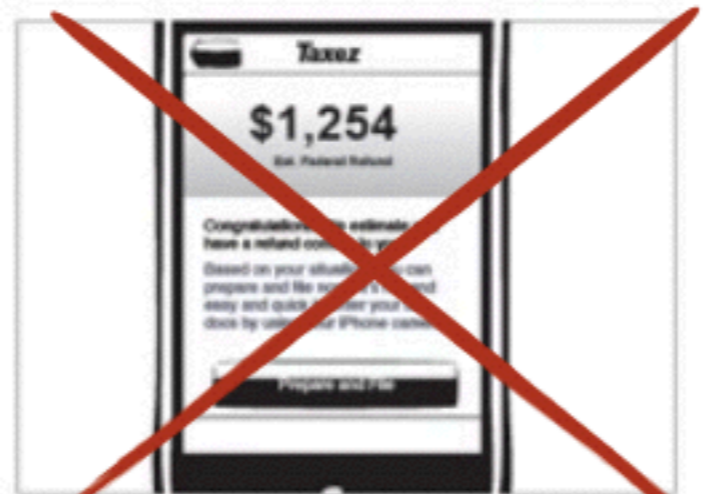
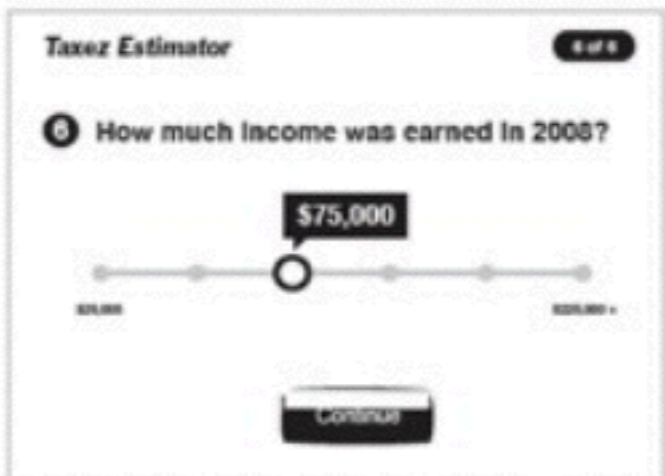
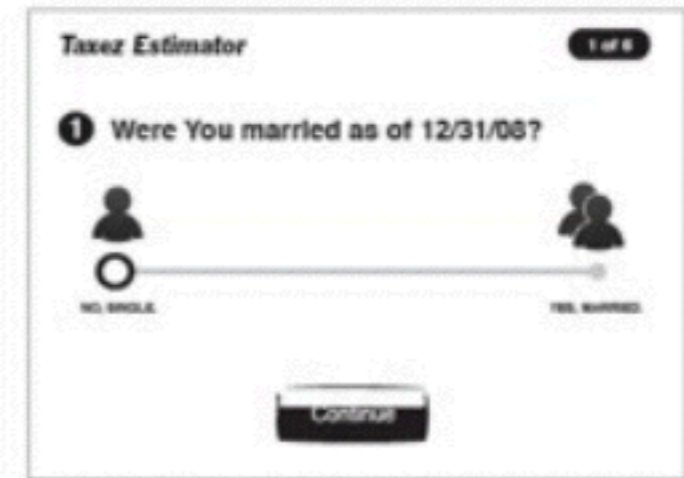
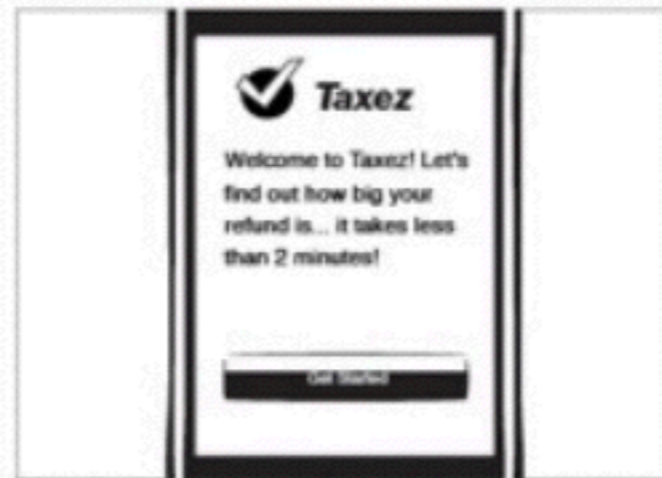
Wrong Problem



Storyboards Sample



Wrong Problem



Wrong Benefit

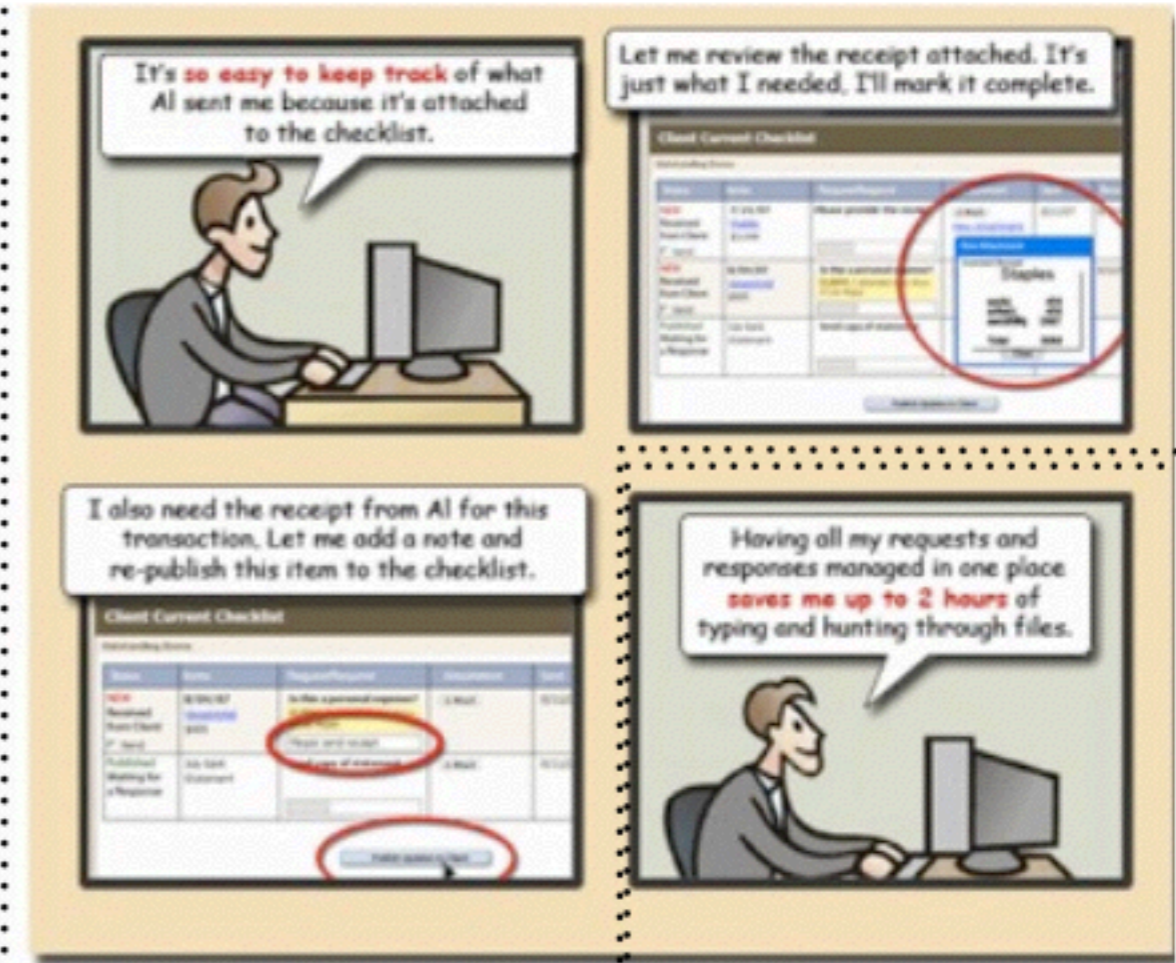
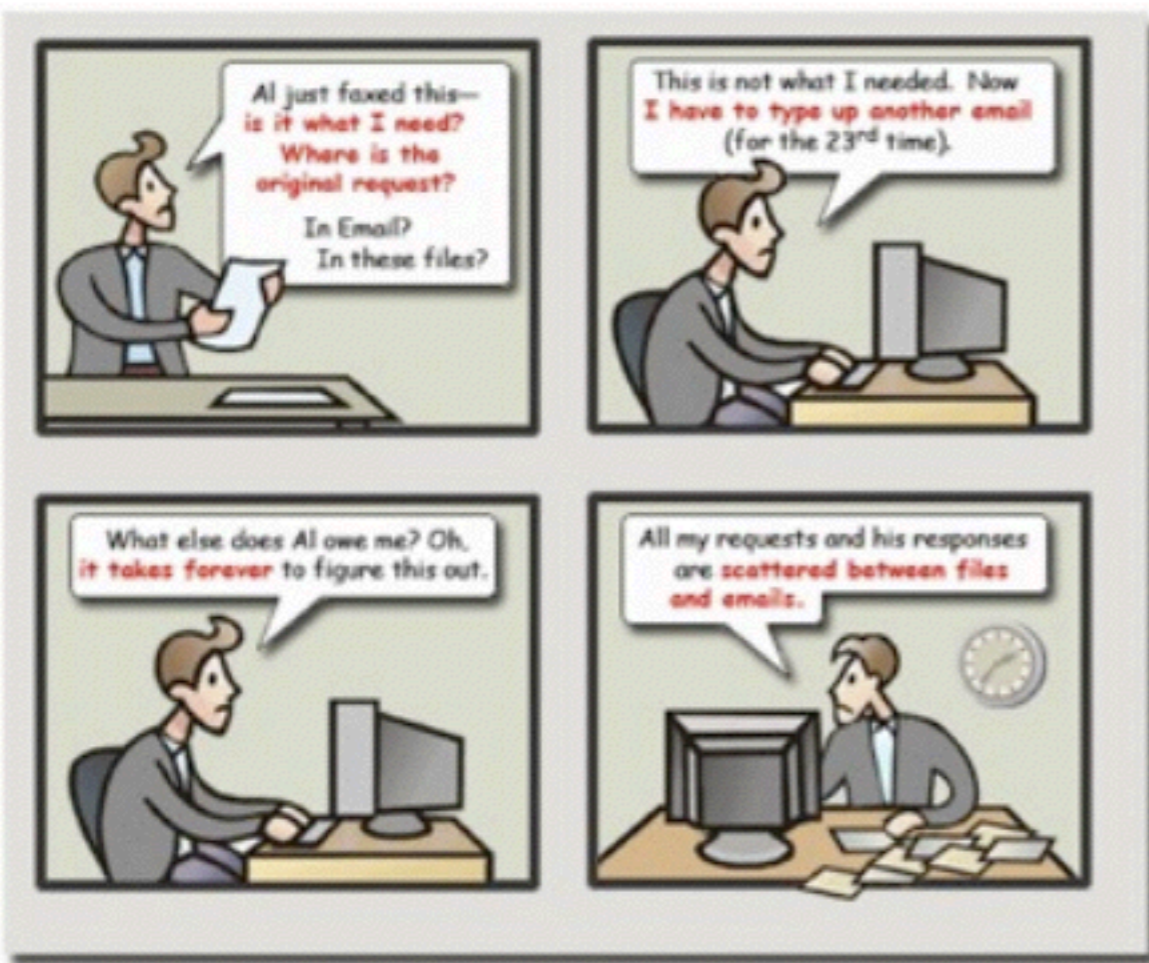


Storyboards

Sample

Problem

Solution



Benefit

Landing Pages

High Performing

User Centric

Clear & Concise

Conversion Focused

Shareable

Measurable

Consistent

Demo Video



<https://www.youtube.com/watch?v=7QmCUDHpNzE>

Wizard of Oz



How do you *build*?

AGILE Development

What do we mean by *agile*?

We value ...

Individuals & Interactions over process and tools

Working products over documentation

Customer collaboration over negotiation

Responding to change over following a plan

Why *agile* development?

You're wrong more than you are right

Key Metric: How fast can you iterate?

Need to Predict Delivery Times

How to do *agile* development?

Scrum

Engineering
Practices

This will be unique for each of you based on your team, type of solution being developed and personal preferences.

Could be: XP, Feature Driven Development, Crystal, Kanban or any other process your engineering team is comfortable with.

(often pull aspects from each)

Why do we focus on *SCRUM?*

Firsthand observed it transform & improve my last software company - mSpoke

Being used at some of the largest technology companies in the world today (Google, Yahoo!, Adobe, etc ...)

Provides a great framework for entire team to understand what is going on.

Disclaimer: Still hard to build innovative products & services and not a silver bullet

Why do we focus on *SCRUM?*

Scrum Master in Under 10 Minutes (HD) by @hamids

[hshojaee](#) 6 videos



SCRUM
in under 10 Minutes

0:21 / 8:00

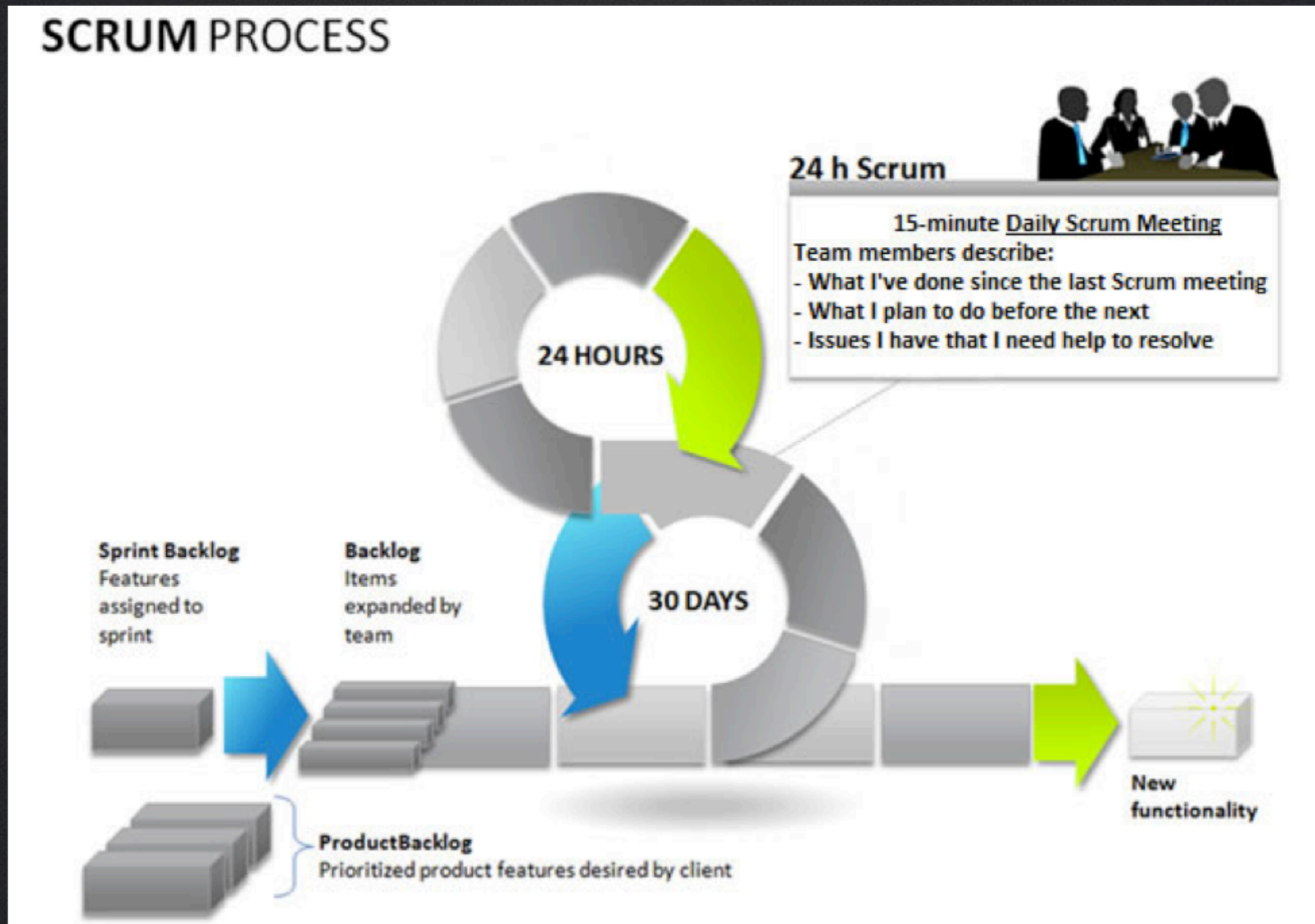
CC 360p

446,334

https://www.youtube.com/watch?v=XU0lIRltyFM&src_vid=Q5k7a9YEoUI

Key Themes from Scrum

The process of Scrum?



Tips / Tricks for Scrum?

Important for everyone to buy in and get familiar with vocabulary

Tools for implementing scrum (not necessary):

Scrumworks - <http://www.open.collab.net/products/scrumworks/>

Version One - <http://www.versionone.com/>

Rally Software - <http://www.rallydev.com/index.php>

Google Doc Template - <https://docs.google.com/previewtemplate?id=0AoBzAQ22ynH5dEpRRkNBVGRCVUIHMmk2enBMYUZZSGc&mode=public>

10 More Free Scrum Tools -

<http://knowscrum.com/10-best-free-scrum-tools/>

Product Backlog

Prioritized list or queue of requirements

Rough Estimates of level of effort to complete (not all estimates need to be equally thorough / higher priority can be more thorough)

Ultimately Product Owner sets the priority

Any one (customer, employee, board member, advisor) can add to product backlog

Should be shared with the full-team

Product Backlog

Product Wish List v1 - C iRSS - 5-2-07.xls

New Open Save Print Import Copy Paste Format Undo Redo AutoSum Sort A-Z Sort Z-A Gallery Toolbox Zoom 100% Help

Sheets Charts SmartArt Graphics WordArt

Product Wish List									
ID	Category	Total - Sprint 5	Effort Estimates	Planner	Difficult or Uncertain Issues	Abstract Requirement	Summary of Spec	Notes / Test	
73	Tech	1.25	0.5d - Identify common patterns (Brian and Evan) 0.75d - Factor out patterns	Evan		Improve front-end server architecture		Factor out common resource patterns	
74	Tech	2	1d research JSUnit automated testing features 1d automated test infrastructure development	Brian		Improve Javascript unit testing			
96	Tech	3	0.5d set up persistent Quartz environment 1.0d configure Quartz 0.5d other odds and ends 1.0d test and rework	Dean		Organize the software for automatic operation on multiple nodes: e.g. automatic input feed processing, personalized feed processing. Integration testing and debugging of the software running as a whole.			
85	Tech	2	1d - Rails Learning .5d - Testing .5d - First Migration	Brian		Database Migration Infrastructure			
107	Tech	1	1d - investigation			Explore Tomcat redeployment issues			
81	IC	5	0.5d - Atom generation library research 0.5d - Programmatic URL creation research 1d - Implementation of Atom generation 3d - manual testing	Evan	- Choice of XML-generation architecture. - Architecture for generating embedded URLs (or decision to hard-code for now).	The personalized feed URL should deliver feed content when pulled.	Generate an atom feed on each request containing all PersonalizedFeedItem's that were created in the last 72 hours. (This line item includes basic styling.)	Sample of manual test	
12	II	5.5	.5d test image maps in FRs and browsers 2d badge generator API and algorithm design. 2.5d development .5d manual test	Brian	- logic and code to lay out and render the badge - Test to make sure image map alt text works as planned in multiple feed-readers.	When an item is delivered in a personalized feed, it includes a visual representation of how relevant the system believes it is and possibly why.	Generate a badge (per Thi's spec) that the feed item references as an image (e.g. IMG tag) with image-map rollover (alt) text for each meme.	Does it make sense for this just to be a controller in our current spring MVC servlet? Or should we think about making this more easily distributable across multiple machines separate from the other spring MVC controllers?	
75	II	4	2d design & HTML layout 1.5d development 0.5d manual test	Brian	- Test to make sure image map alt text works as planned in multiple browsers.	The user is able to provide "thorough" feedback on the preferences that drove the selection of a particular content item.	When the user clicks on the badge or "why was I shown this?" link in the feed item, they are taken to a web page with a badge and a representation of the item. On this web page, they can hover over the memes in the badge to see descriptions or click to get the "property edit" dialog.	Sample of manual test	
36	R	8	1d remaining tweaks from last round with Jamie 2d first pass at improving scalability 1d first pass at testing scalability 1d finish scalability	Dean		Memes can leverage topics		a subject such as "hurricane Katrina" or "the surge in Iraq" that lasts from a few days to a few months, and that is too ephemeral to reliably get an appealing human-readable name	

Product Wish List Upcoming Months Burn Down Graph Burn Down +

Normal View Ready Sum=0 SCRL CAPS NUM

Product Backlog

Product Wish List v1 - C iRSS - 5-2-07.xls

New Open Save Print Import Copy Paste Format Undo Redo AutoSum Sort A-Z Sort Z-A Gallery Toolbox Zoom 50% Help

Sheets Charts SmartArt Graphics WordArt

Tuesday, May 01, 2007

Product Wish List												Effort Estimates	Planner	Difficult or Uncertain Issues	Abstract Requirements	Severity of Spec	Notes / Test
ID	Category	Total - Sprint 1	Est - Sprint 1	Total - Sprint 2	Est - Sprint 2	Total - Sprint 3	Est - Sprint 3	Total - Sprint 4	Est - Sprint 4	Total - Sprint 5	Est - Sprint 5						
34	Tech	-	-	7	0.5	4.5	0	0	0	0	0		na	Build a framework for persistence	Recreate through JPA	Run automated tests	
35	Tech	-	-	14	7	4	4.5	0	0	0	0		na	Basic Feed Processing			
36	Tech	5	0	0	3	2	4	0	0	0	0		na	Setup front end user interface architecture	na	Show source tree	
71						5	0	5	0	0	0		na	5d - One calendar day (Sat?) Invasive apis up	Find front end Ninja / Pina		
37	Spec												na	Recreation: readability in present writing with special use cases (e.g. "I'm not a doctor, but I know what I'm talking about")			
38	Tech	6	3	3	0	0	0	0	0	0	0		na	Front to back end communication protocol	na	Run automated tests	
39	Tech	15	8	8	0	0	0	0	0	0	0		na	The system should effectively use preferences to choose relevant content for the user. (General infrastructure for memos)	A user's memos put content	Run automated tests	
40	R	14	12	12	12	12	12	12	12	12	12		na	Recreation: readability in present writing with special use cases (e.g. "I'm not a doctor, but I know what I'm talking about")			
30	Tech	-	-	4	1	1	0	0	0	0	0		na	fd - training	na	show the environment's interface to run the continuous builds in our development environment.	
41	R	20	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5	20.5		na	Recreation: readability in present writing with special use cases (e.g. "I'm not a doctor, but I know what I'm talking about")			
38	R	-	-	3	2	2	0	0	0	0	0		na	fd - development fd - manual test	na	Chooses a single item from each "story" in each time interval (e.g. day), based on which item is ranked highest by other memos.	
42	R	3	3	3	3	3	3	3	3	3	3		na	Recreation: readability in present writing with special use cases (e.g. "I'm not a doctor, but I know what I'm talking about")			
19	C	1.5	1.5	1.5	0	0	0	0	0	0	0			For the first release, it is ok if the user can only create one "second tier" feed per account.	A user can only create one "highlights" feed originally, but knows that "coming soon" he'll be able to have feeds based on topics that are interesting to him.	Sample of manual test	
43	R	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		na	Recreation: readability in present writing with special use cases (e.g. "I'm not a doctor, but I know what I'm talking about")			
44	R	-	-	2	2	2	0	0	0	0	0		Brian	No work for prop editing?		Recognizes a particular "topic" (defined below).	
11	R	15	18	18	13	13	13	13	13	13	13		Dean	The content adapts based on a user's interactions with items in the feed. (Learning Infrastructure)	A user clicks on stories & thumbs up / down stories to change the content they are getting.	Sample of manual test	
72	Tech										1.25		Evan	0.5d - Identify common patterns (Brian and Evan) 0.75d - Factor out patterns 1d research JSUnit	Improve front-end server architecture	Factor out common resource patterns	
74														Improve Javascript unit testing			

New Open Save Print Import Copy Paste Format Undo Redo AutoSum Sort A-Z Sort Z-A Gallery Toolbox Zoom Help

Sheets Charts SmartArt Graphics WordArt

ID	Category	Total - Sprint 1	100% - Sprint 1	Total - Sprint 2	100% - Sprint 2	Total - Sprint 3	100% - Sprint 3	Total - Sprint 4	100% - Sprint 4	Total - Sprint 5	Effort Estimates	Planner	Difficult or Uncertain Issues	Accepted Requirement	Activity of Spec	Notes / Test
66	Tech	-	-	1	0.5	4.5	0	0	0	0	5d - One calendar day (Sat?) intensive spin up	NA		Build a framework for persistence	iterative through JIRA	
67	Tech	-	-	14	7	4	4.5	0	0	0	NA	NA	Basic Feed Processing			
71	Tech	5	0	0	5	0	2	4	0	0	NA	NA	Setup front-end user interface architecture	NA		Show source tree
72	Tech	5	0	0	5	0	0	0	0	0	NA	NA	Find front-end Ninja / PHP			
73	Dev										NA	NA	1.0d - Research for capabilities: 2d - researching various APIs			
74	Tech	6	3	3	0	0	0	0	0	0	NA	NA	1.0d - back-end communication protocol	NA		Run automated tests
75	Tech	15	8	8	0	0	0	0	0	0	NA	NA	The system should effectively use preferences to choose relevant content for the user (General infrastructure for memos)	A user's memos put content	Run automated tests	
76	U	14	12	12	12	12	12	12	10	0	2d - design 2d - user testing 1d - development 2d - manual test	NA	The user should be able to "bookmark" a section in the content feed (previous selection of feed content). User may be able to "reset".	A user can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it.	Sample of manual test	
77	Tech	-	-	4	1	1	0	0	0	0	1d - training	NA	The development environment should encourage continuous integration & testing - with efficient & effective build management.	1.0d - install & deploy	Show the environments interface to run this continuous build in our development environment.	
78	U	18	18.5	18.5	18.5	18.5	18.5	18.5	18.5	0	1d - design user interface 1d - design user interface 2d - user interface development 2d - development 2d - manual test	NA	The user should be able to "bookmark" a section in the content feed (previous selection of feed content). User may be able to "reset".	A user can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it.	Sample of manual test	
79	R	-	-	3	2	2	0	0	0	0	1d - development 1d - manual test	NA	Memo: feed item for story		Choose a single item from each "story" in each time interval (e.g. day), based on which item is ranked highest by other memos.	
80	U	3	3	3	3	3	3	3	3	0	Break Down	NA	The user should be able to "bookmark" a section in the content feed (previous selection of feed content). User may be able to "reset".	A user can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it.	Sample of manual test	
81	C	1.5	1.5	1.5	0	0	0	0	0	0		NA	For the first release, it is ok if the user can only break one "second tier" feed per account.	A user can only create one "highlights" feed originally, but knows that "coming soon" he'll be able to have feeds based on topics that are interesting to him.	Sample of manual test	
82	U	12	12	12	12	12	12	12	12	0	2d - design 2d - development 2d - development 2d - development	NA	The user should be able to "bookmark" a section in the content feed (previous selection of feed content). User may be able to "reset".	A user can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it. User can click on a link in the feed to bookmark it.	Sample of manual test	
83	R	-	-	2	2	2	0	0	0	0	No work for prop editing?	Brian	Memo: topic		1.0d - highlights a particular "topic" (defined below).	
84	U	15	18	18	13	13	13	13	3	0		Dean	The content adapts based on a user's interactions with items in the feed. (Learning Infrastructure)	A user clicks on stories & thumbs up / down stories to change the content they are getting.	Sample of manual test	
85	U	11	11	11	11	11	11	11	11	0		Dean	1.0d - research for capabilities: 2d - researching various APIs			
86	Tech										1.25	Evan	1.5d - Identify common patterns (Brian and Evan) 0.75d - Factor out patterns	Improve front-end server architecture		Factor out common resource patterns
87	Tech										2	Brian	1d research JSUnit 1d automated testing features 1d automated test infrastructure development	Improve Javascript unit testing		
88	Tech										3	Dean	0.5d set up persistent Quartz environment 1.5d configure Quartz 0.5d other odds and ends 1.5d test and rework	Organize the software for automatic operation on multiple nodes: e.g. automatic input feed processing, personalized feed processing. Integration testing and debugging of the software running as a whole.		
89	Tech										2	Brian	1d - Rails Learning 1d - Testing 1d - First Migration	Database Migration Infrastructure		
90	Tech										1		1d - investigation	Explore format redisplay issues		
91	Tech												0.5d - Atom generation library research 0.5d - Programmatic URL	The personalized feed URL should deliver feed content when pulled.	Generate an atom feed on each request containing all PersonalizedFeedItems that	Sample of manual test

Product Backlog

Tips

Everyone on team should easily be able to see the backlog

I've found one "administrator" helpful logistically

If not using a full scrum tool, you can do this easily in a shared spreadsheet (eg Google Docs)

Time Box / Sprint

Each sprint:

Lasts a defined number of days
(time box)

Has a specific set of requirements from backlog
allocated to it (defined during “sprint planning
meeting”)

Has specific goals for the team to achieve (set
up front) - “sprint goal”

Estimates

All estimates are forward looking

How much will it take to complete this feature / requirement?

Increasing an estimate based on learned complexity is accepted by the team

Sprint backlog estimates should be updated regularly

Velocity / Burn Down

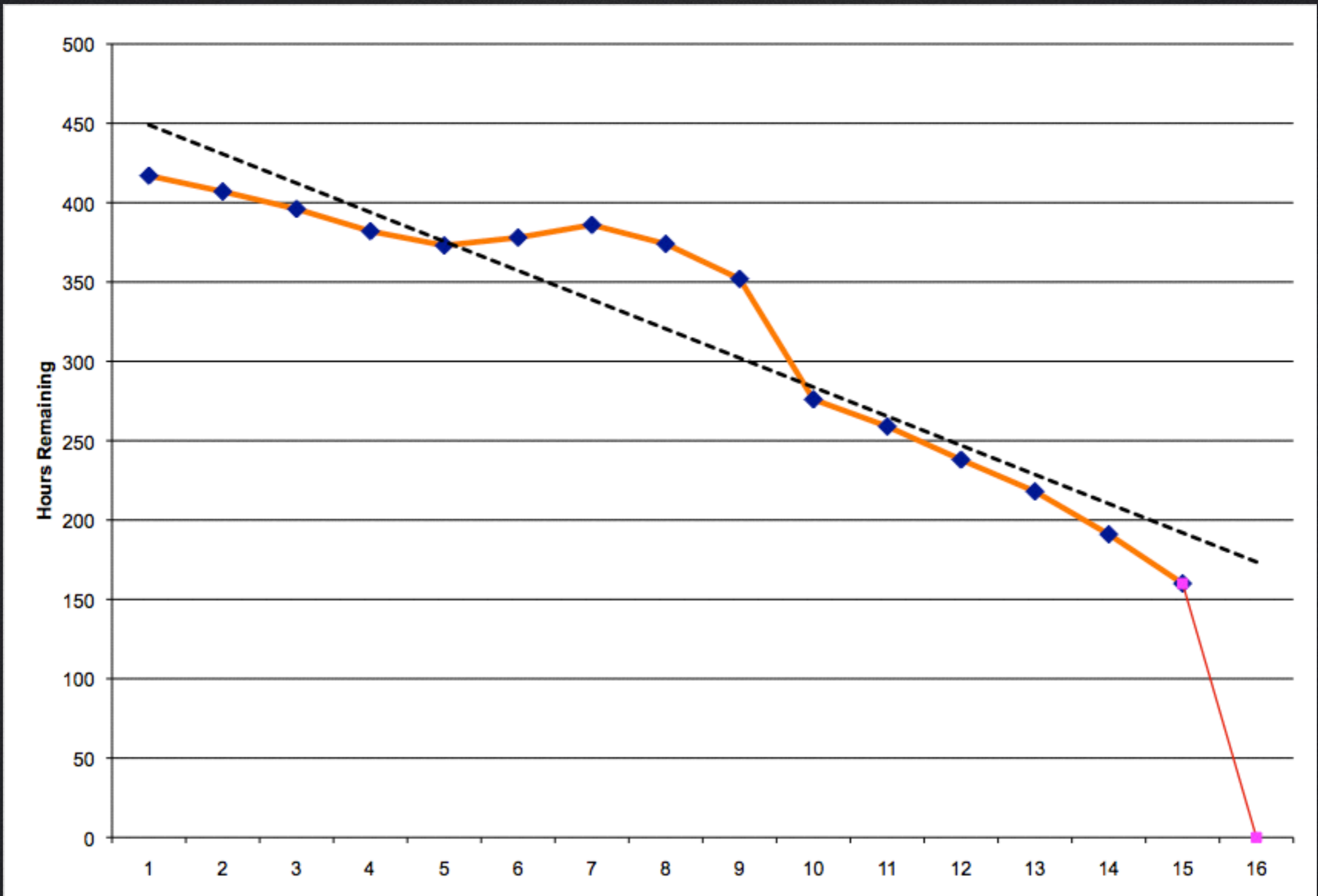
The average decrease in estimates for the total effort / time remaining is a sprint's velocity

Overtime velocity becomes very helpful for planning purposes

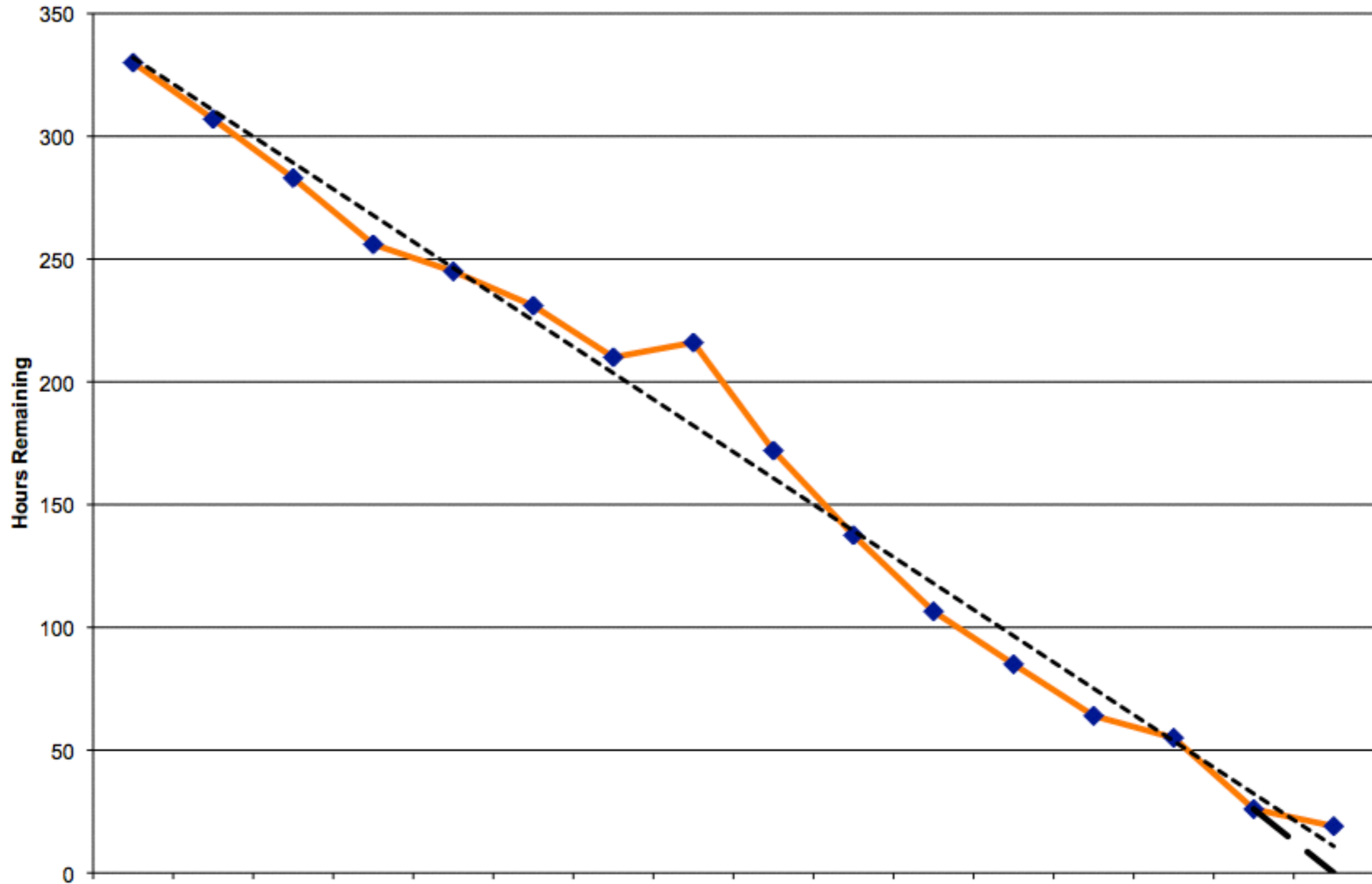
The chart showing daily total of time remaining is called a burn down chart or sprint's signature

	Sheets		Charts		SmartArt Graphics		WordArt		
	A	B	C	D	E	F	G	H	I
1	Sprint Back Log								
2									
3	Who	Description	Original	6/20/07	6/21/07	6/22/07	6/25/07	6/26/07	6/27/07
4	<i>Create a QA environment in data center</i>								
5	Jim	Create	8	8	8	8	4	4	4
6	<i>Port webui JSP templates to Velocity</i>								
7		Port						4	1
8		Test						1	1
9	<i>Improvements to thumbs-up and thumbs-down landing pages</i>								
10		Place 'powered by mSpoke' image on Left side nav bard		1	1	0	0	0	0
11		Show rating widget in thumbs-up page		1	1	0	0	0	0
12		Move page header above cred space on items memes page		1	1	0	0	0	0
13		Change "thanks for letting us know" on thumbs-up		1	1	0	0	0	0
14		Make "Powered by Technorati" image smaller		1	1	0	0	0	0
15		Move "Powered by Technorati" icon underneath results on thumbs-up page		1	1	0	0	0	0
16		Add box around Technorati results on thumbs-up page		1	1	0	0	0	0
17	<i>Improve Thumbs Up / Down Interaction</i>								
18	John	Investigate	8	8	8	8	8	8	8
19	John	Fix / Improve	22	22	22	22	22	22	22
20	<i>#1896 should prioritize initial processing of new input feeds over re-processing of old ones</i>								
21	Dean	Fix	8	0	0	0	0	0	0
22	<i>#1908 - need user administration page for deleting a user and/or personalized feed</i>								
23	John	Fix	4	4	4	3	3	3	3
24	<i>#1977 Meme's Icon and Label below mouse pointer should resize accordingly on drag</i>								
25	Evan	Fix	2	2	2	2	2	2	2
26	<i>#2003 Meme display doesn't animate in NetNewsWire</i>								
27	Evan	Fix	5	5	3	3	3	3	3
28	<i>Better error handling implementation in the client across the board</i>								
29	Brian	Centralized UI for error handling	8	8	7	7	2	2	2
30	Brian	Develop useful messages for current errors thrown	8	8	8	8	8	8	8
31	<i>Better architecture for error handling between client and server in general</i>								
32	Brian	Better passing of error context from server to client	8	4	3	3	3	3	3
33	Brian	Integrate Spring's Message Resources	4	0	0	0	0	0	0
34	<i>Strip out malicious HTML / JavaScript @ Our WWW Display (HTML)</i>								
35	All	Identify Cases	4	4	4	4	4	4	4
36	<i>Controller Unit Test Infrastructure</i>								
37	Zach	Learn Spring	8	8	8	8	8	8	8
38	Zach	Research existing implementations	4	4	4	4	4	4	4
39	Zach	Build framework	8	8	8	8	8	8	8
40	<i>500 user load test</i>								
41	Ian / John	Test	4	4	4	4	4	4	4
42	<i>#2032 Need to implement Status Edit link as spec'd</i>								

Velocity / Burn Down



Velocity / Burn Down



Sprint Review

At the end of the sprint, the team demonstrates what they have built

Compares against the sprint's goals

Retrospective to look for improvements at the end of the sprint

Thank you

Twitter: [@SeanAmmirati](#)

My 2x monthly newsletter
seanammirati.com/email/