

SPECULATE

Plan implies too much...

SPECULATION RESOURCES

Agile Project Management: Creating Innovative Products (2nd Edition),
Jim Highsmith

User Stories Advantages

<http://www.mountaingoatsoftware.com/articles/advantages-of-user-stories-for-requirements>

Kent McDonald -

<http://www.slideshare.net/kentjmcDonald/estimating-in-software-development-no-silver-bullets-allowed>

Dan North –

<http://dannorth.net/2009/07/01/the-perils-of-estimation/>

Speculate - not Plan

Can you define "plan" as "a loose sequence of manifestly inadequate observations and conjectures, held together by panic, indecision, and ignorance"? If so, it was a very good plan.

Jonathan Stroud

In complex situations, we may rely too heavily on planning and forecasting and underestimate the importance of random factors in the environment. That reliance can also lead to delusions of control.

Hillel J. Einhorn

*In preparing for battle I have
always found that plans are
useless, but planning is
indispensable.*

Dwight D. Eisenhower

*A good plan violently
executed now is better than a
perfect plan executed next
week*

George S. Patton

SPECULATE

Plans are guides, not straightjackets

Plans must adapt

- Customers understanding of the requirements change
- Estimates of work effort vary
- People arrive/depart
- And many other reasons...

- Establish a target and a direction – we expect change over the life of the project

AGILE PROJECT SPECULATING

Determine how the product and its features will evolve in the current release

Balance anticipation with adaptation

Focus on the highest value features early

Think about business goals

Provide necessary cost and schedule information to management

Establish priorities and tradeoffs

Consider alternatives

SPECULATE PRACTICES

Build a product backlog

Release Planning

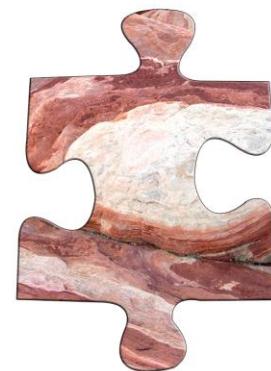
Candidate Architecture

Estimating

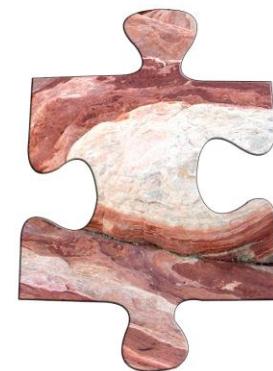
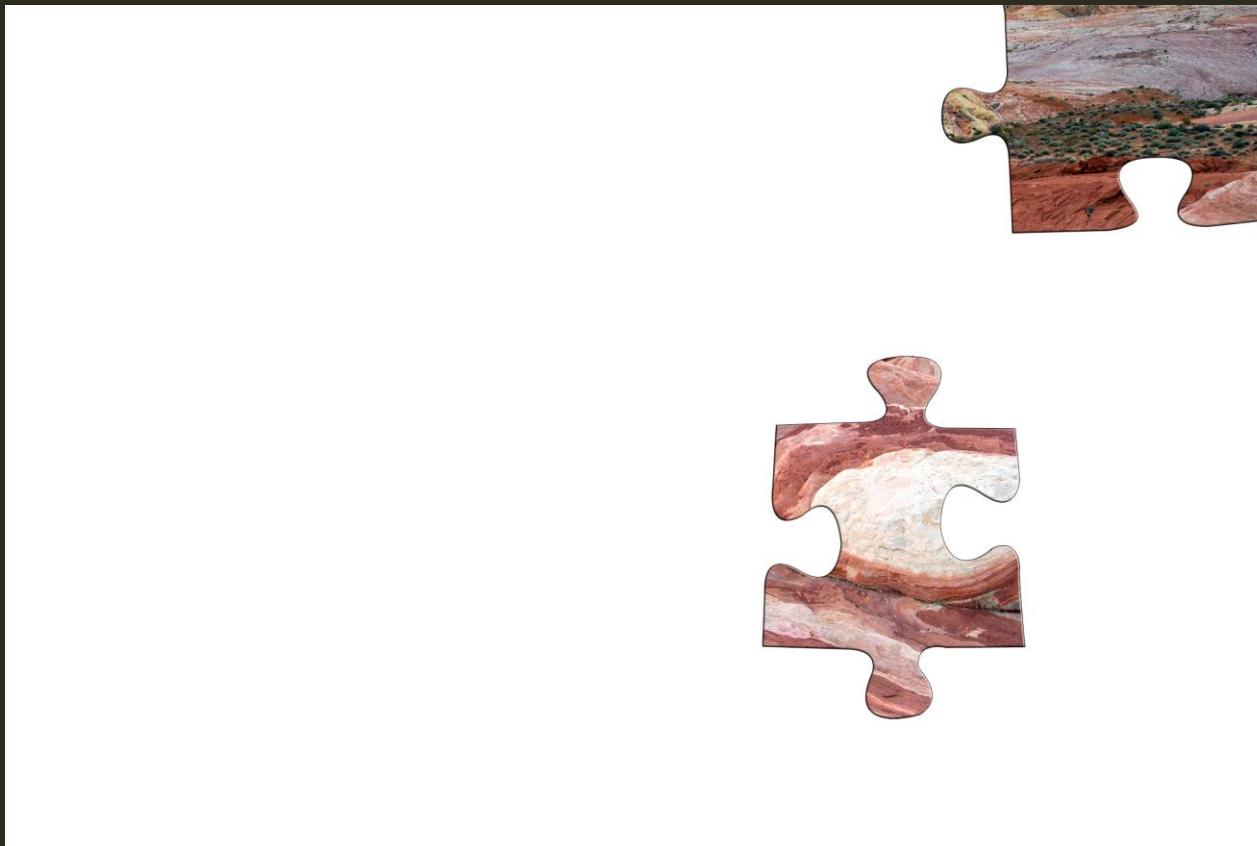
First Feasible Deployment

BUILDING A PRODUCT BACKLOG |

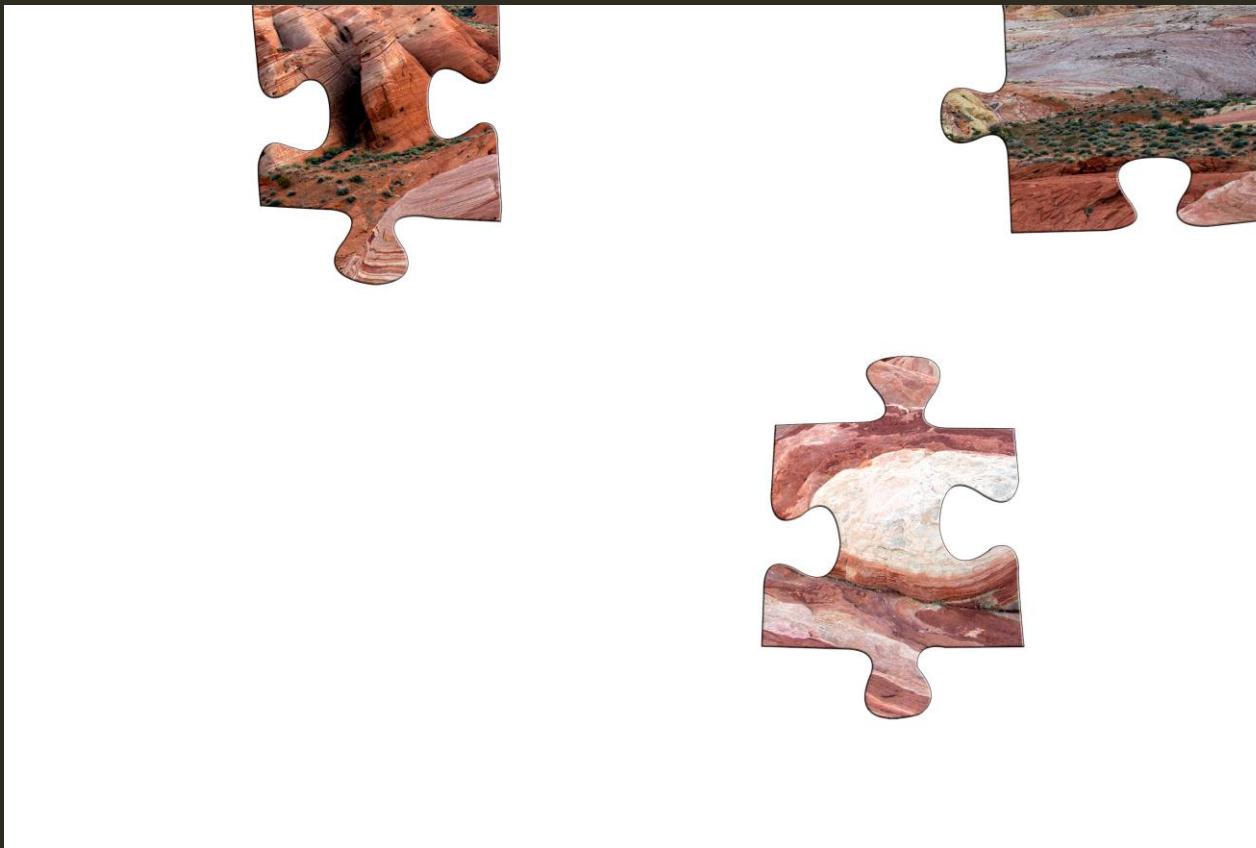
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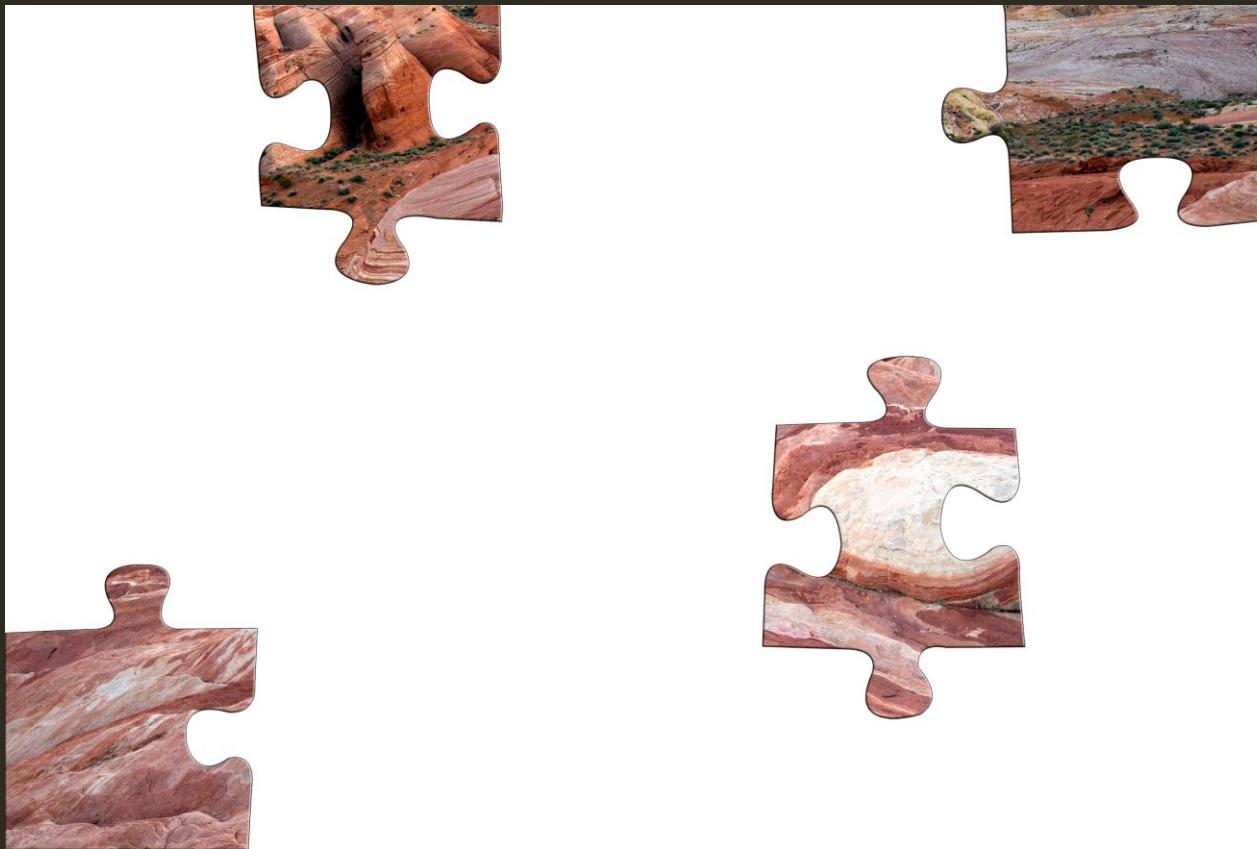
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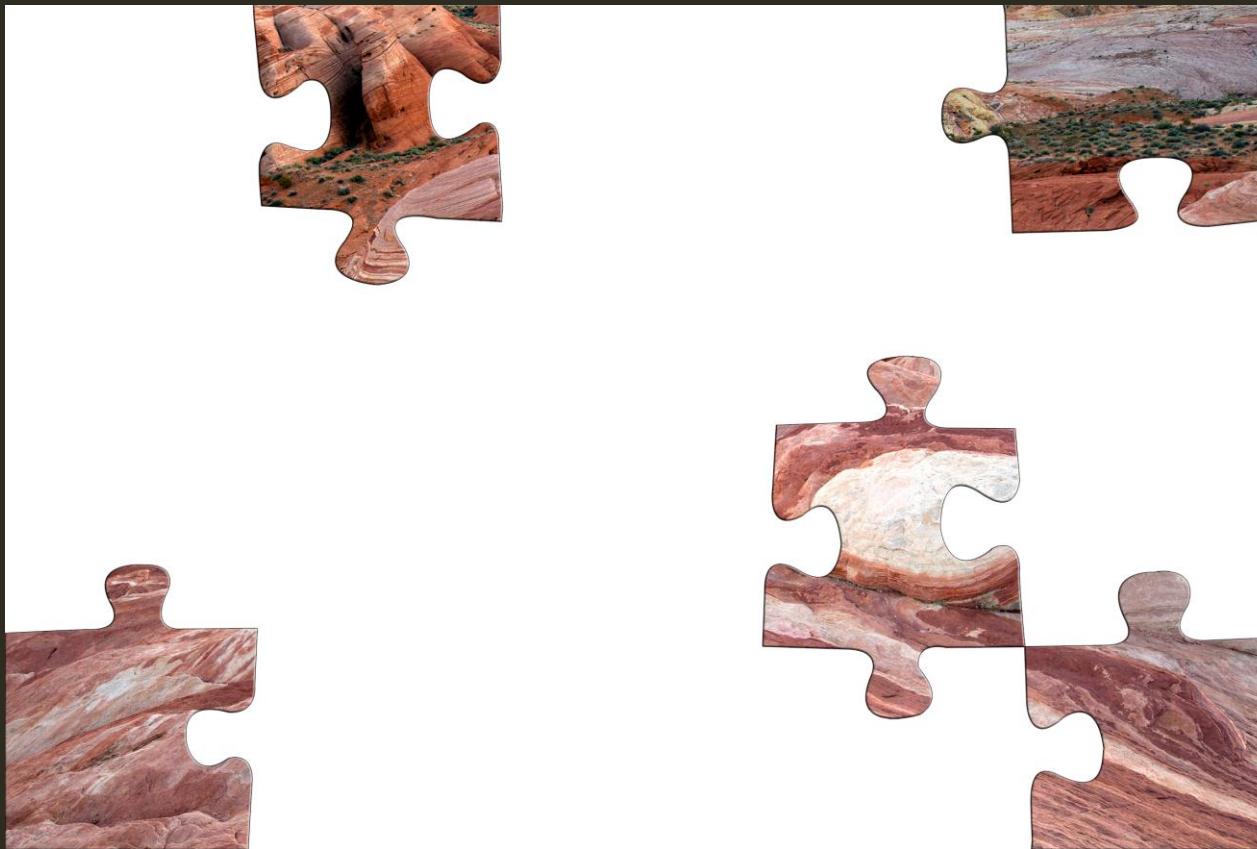
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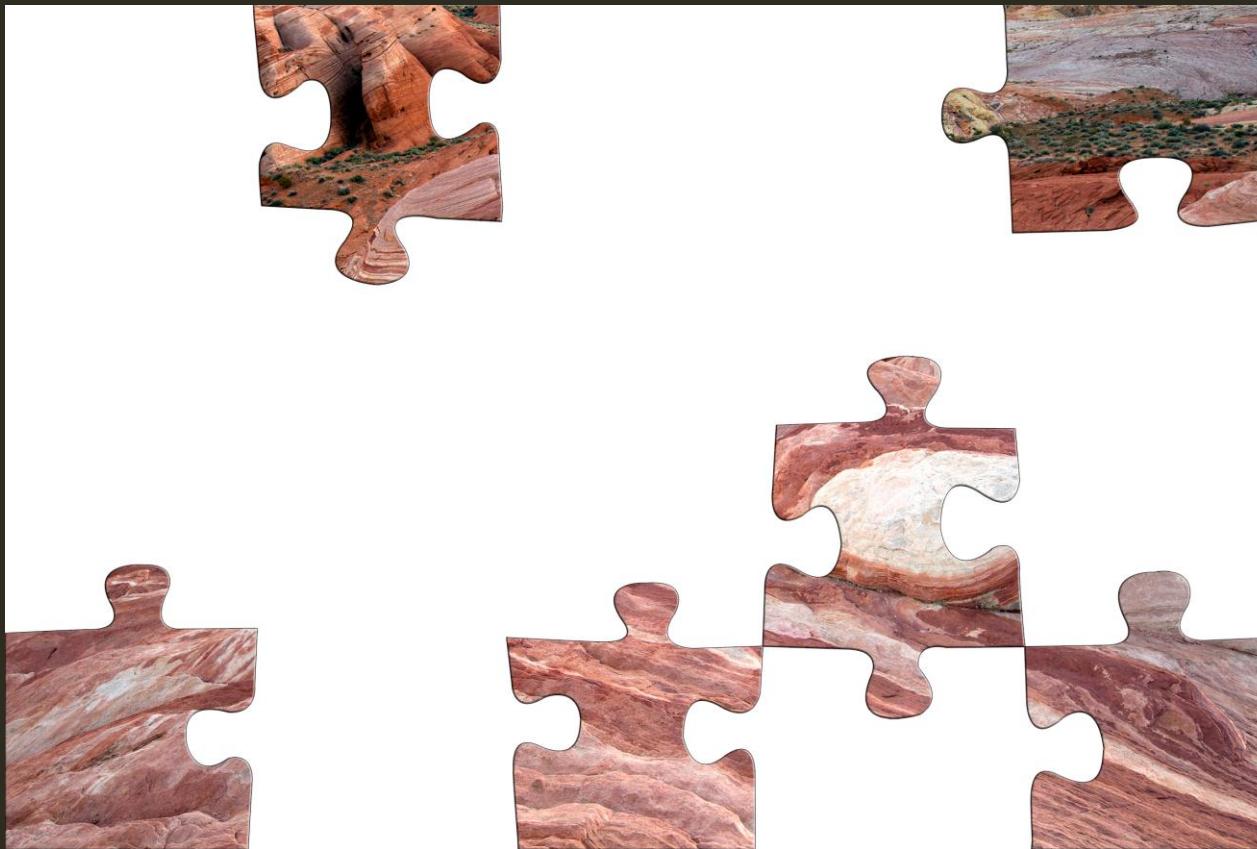
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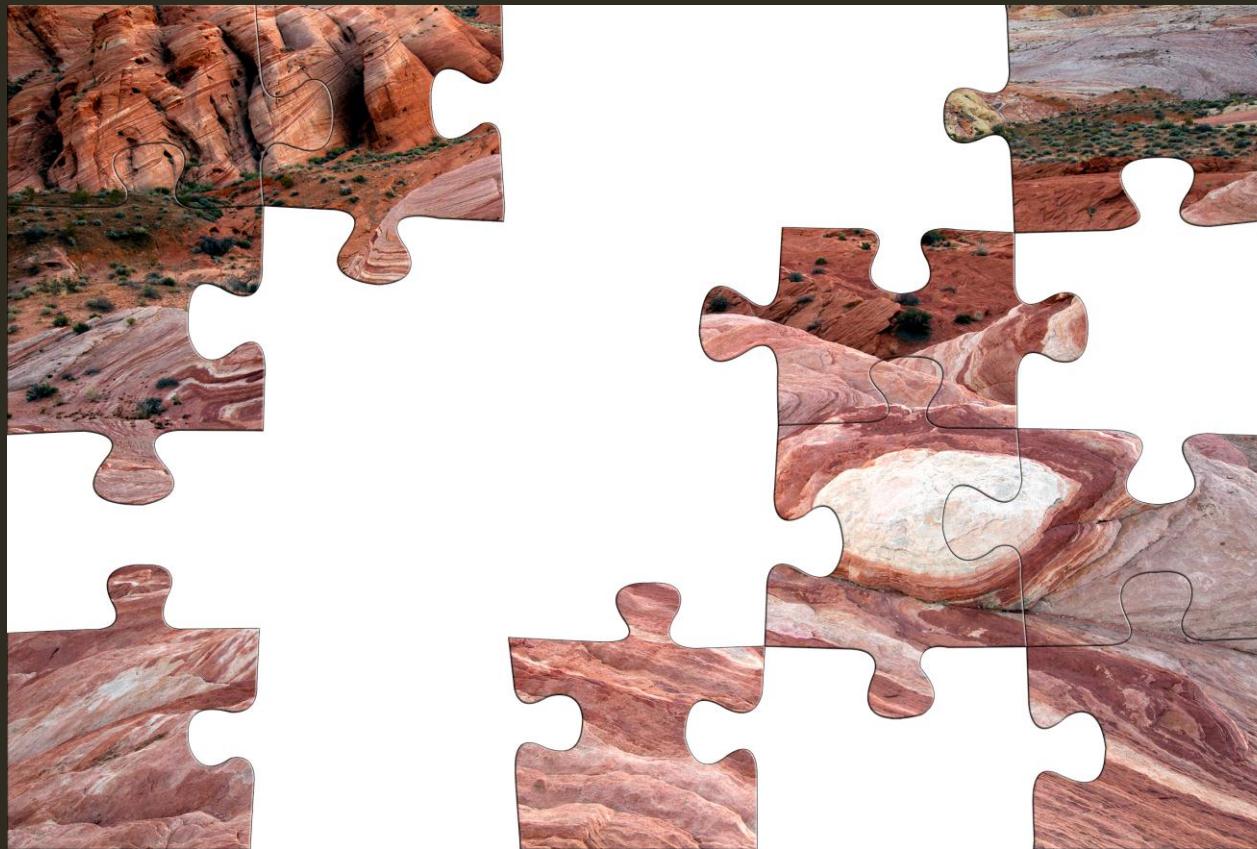
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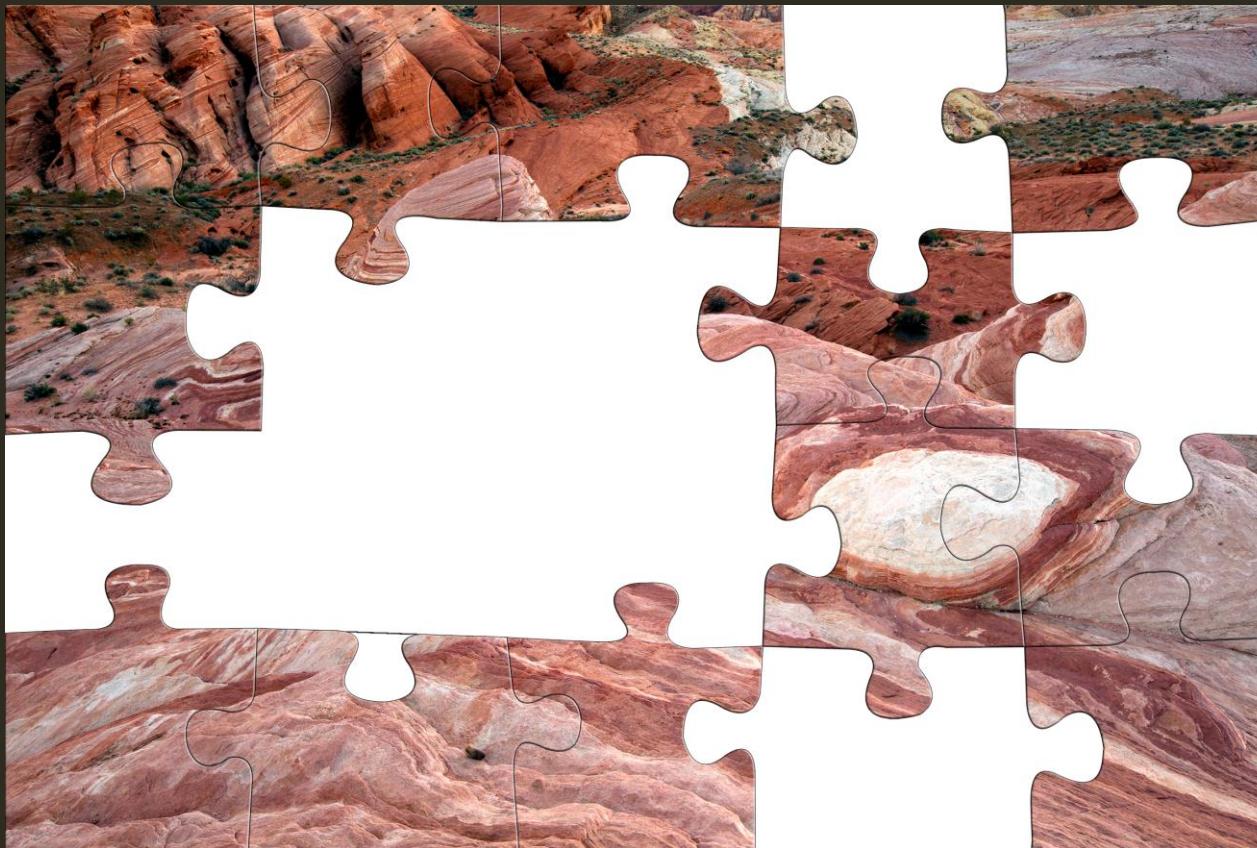
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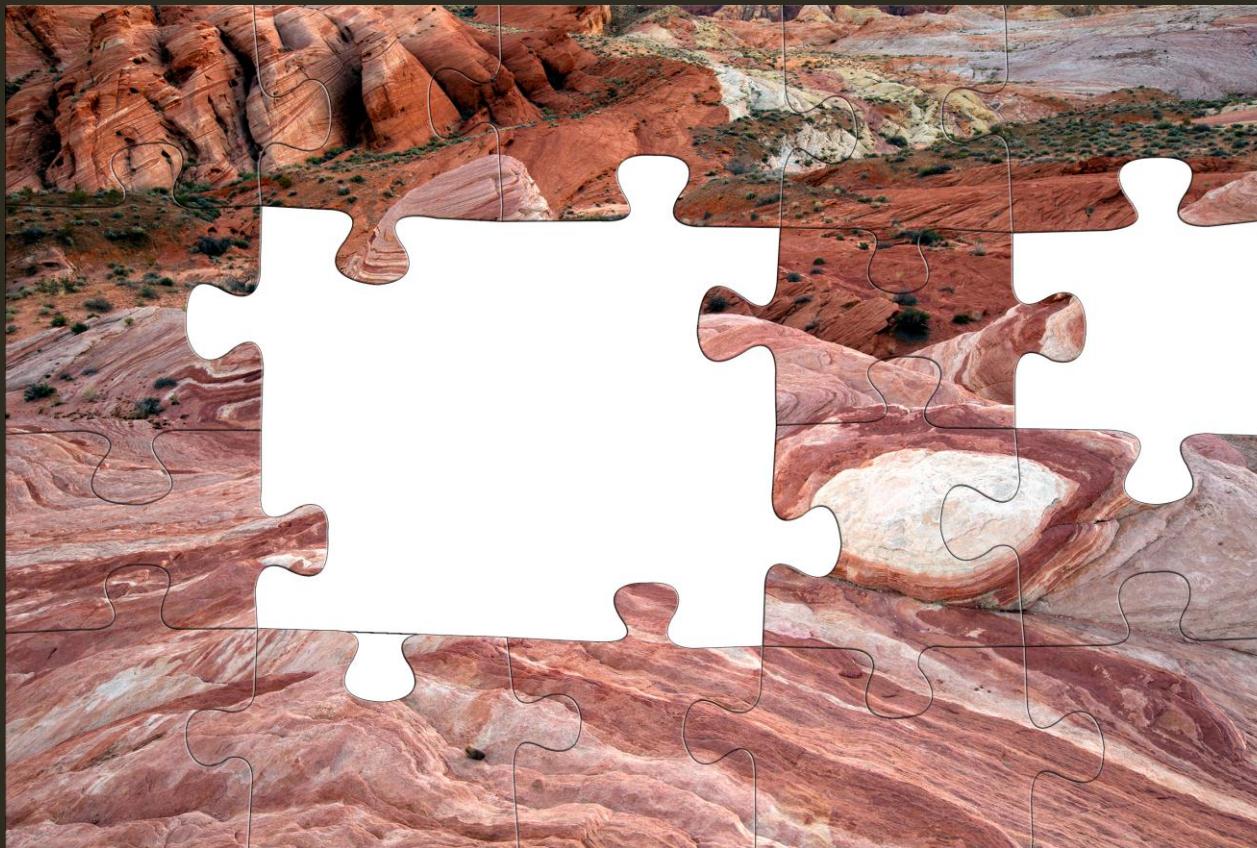
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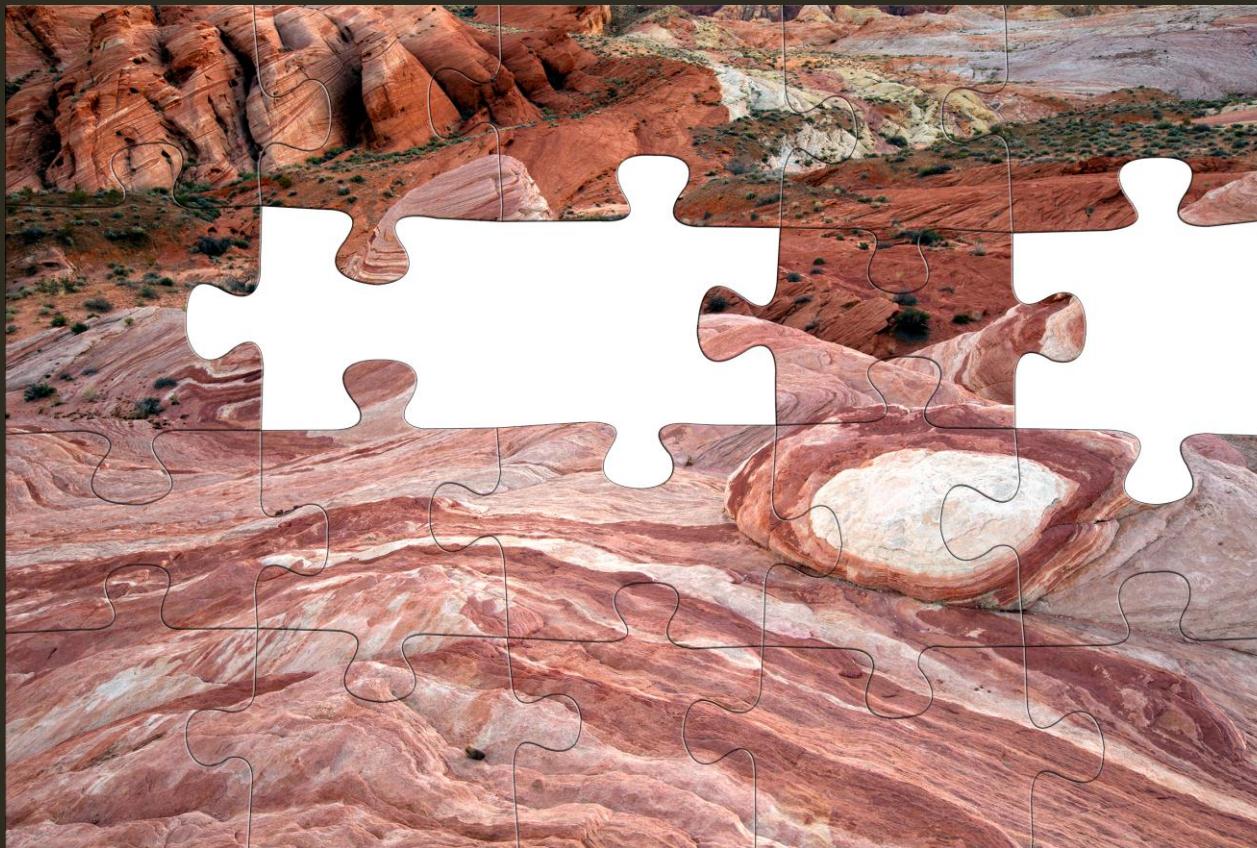
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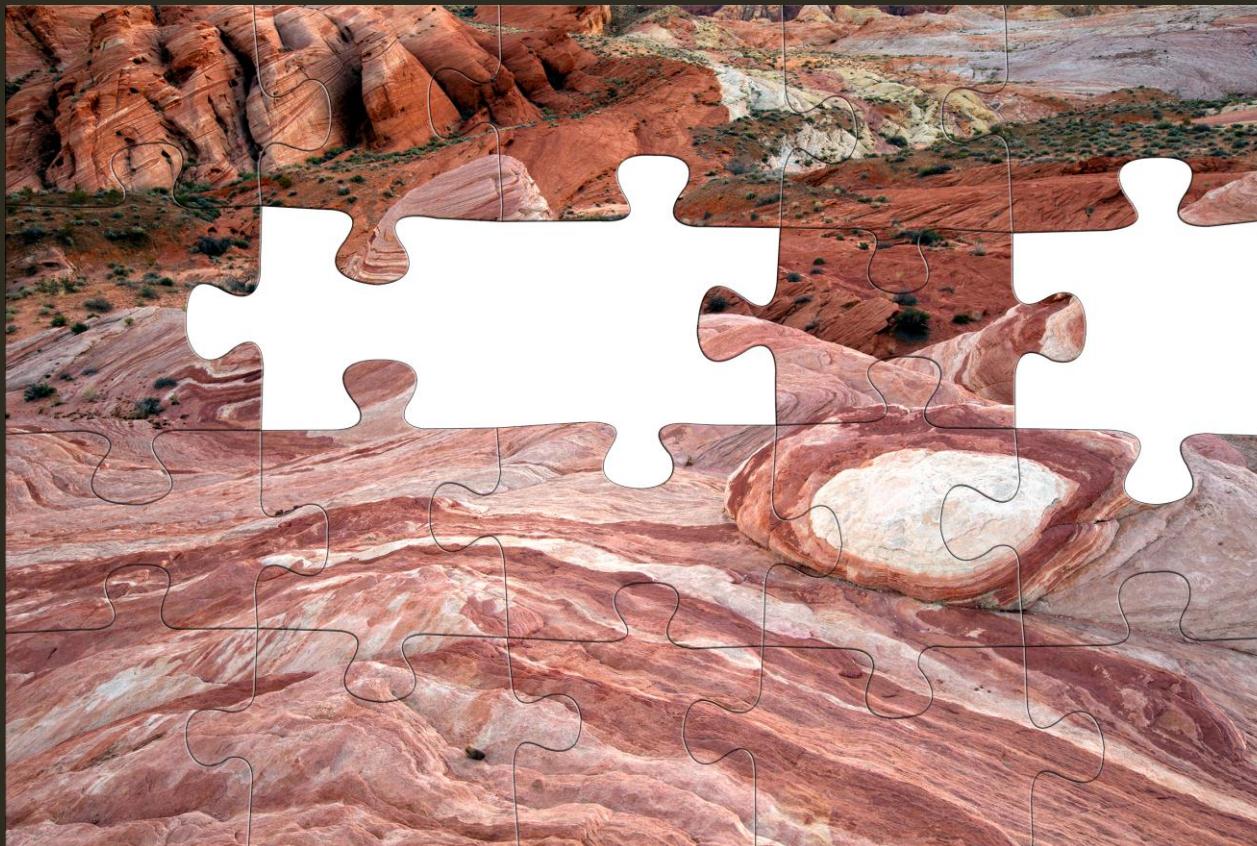
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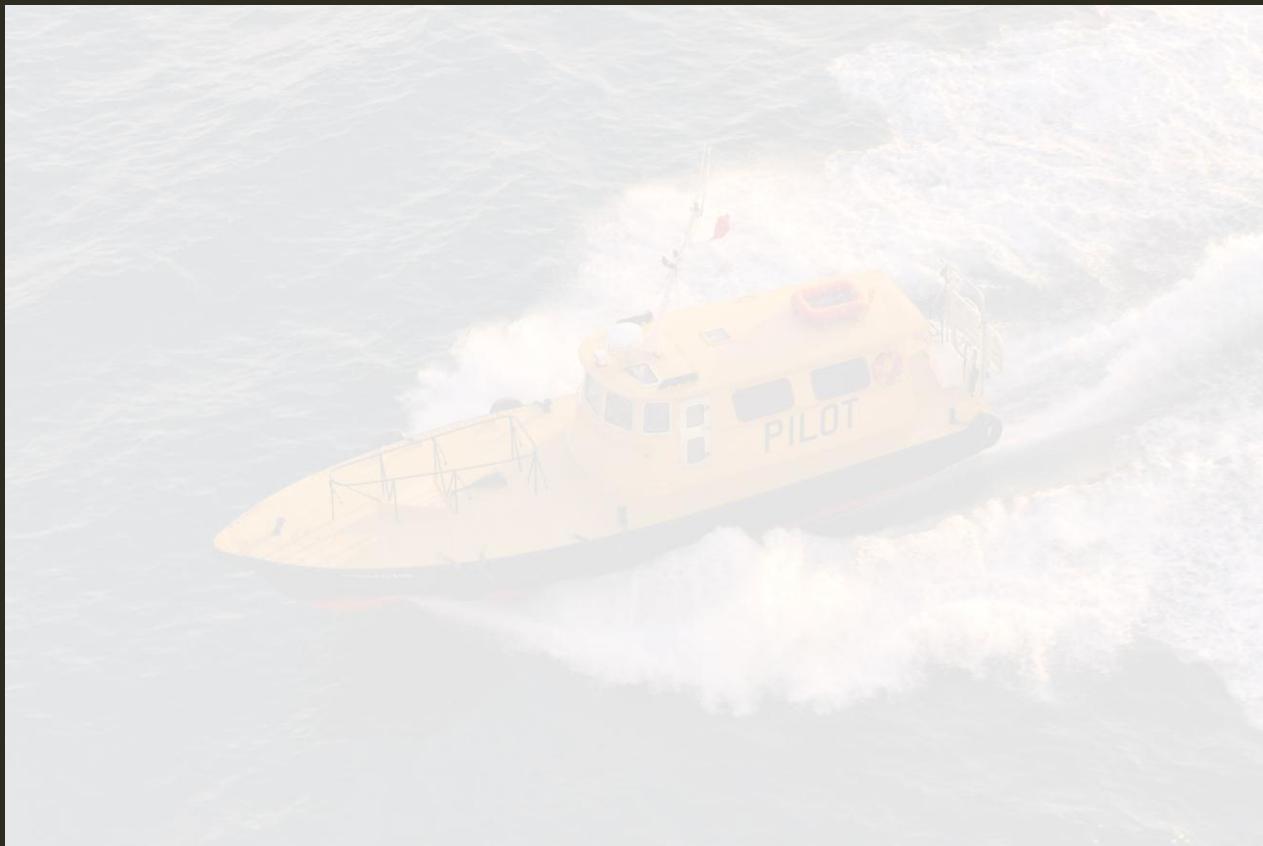
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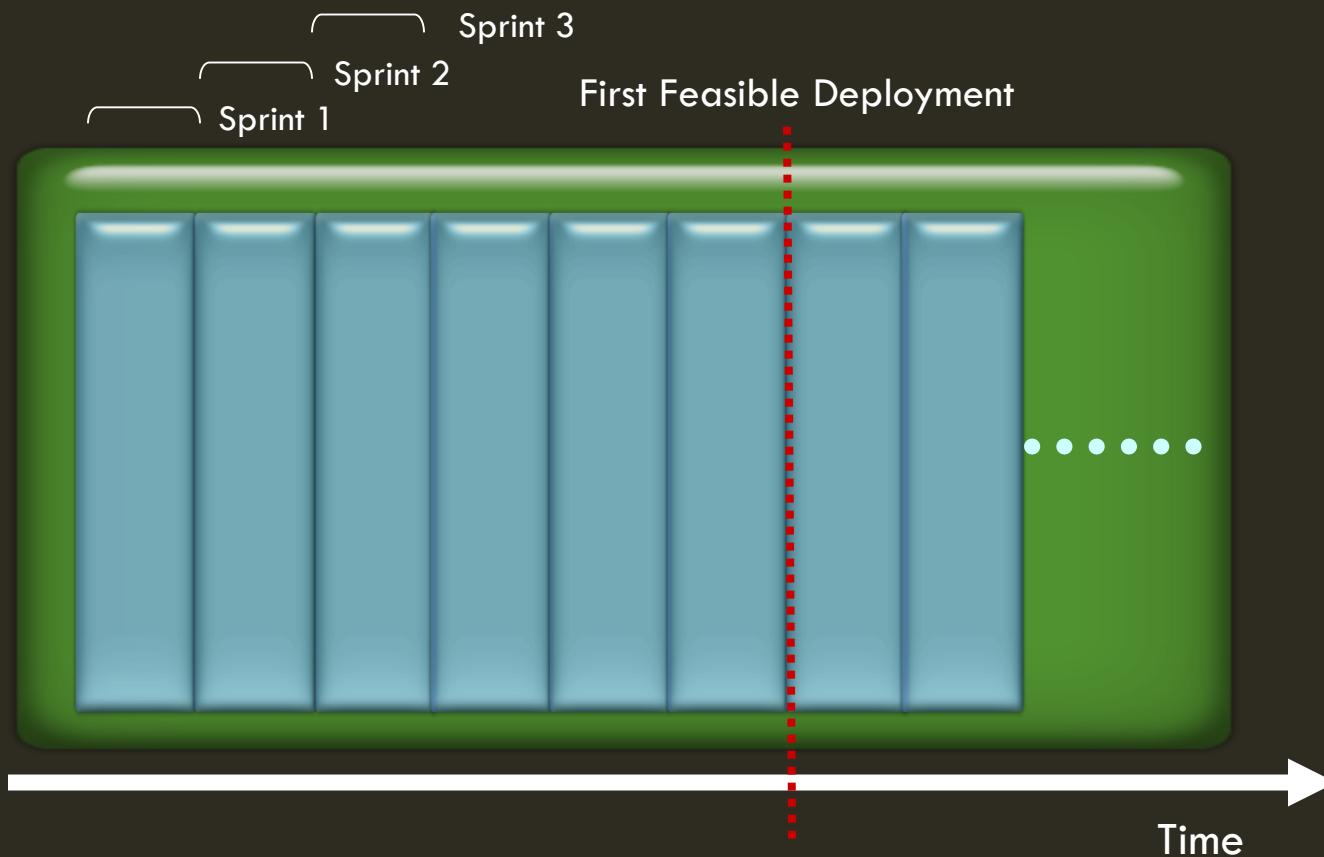
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INCREMENTAL – LIKE THIS



AGILE IN PRACTICE



USER STORY EXAMPLES – RECRUITING WEBSITE

As an applicant I can post my resume on the web site so that it will be visible to a company looking for people.

As an applicant I can search through posted jobs so that I can see if they are interesting to me.

As a recruiter I can post job openings on the web site so that the job opening will be visible to applicants looking for jobs.

As an applicant I can limit the list of recruiters who can see my resume – why?

As an applicant I can limit the other applicants who can see my resume – why?

WHAT MAKES UP A USER STORY

Written description of the story, primarily a reminder of a conversation.

- A Story: As a <role> takes an <action> and gets <value>
 - Example: As an administrator I want to look up this month's patient report to see who is over the user defined threshold
- Have business value
- Are easily identifiable by the Product Owner, customers and the team

Conversations about the story that serve to flesh out the details of the story

Tests that convey and document details that can be used to determine when a story is complete

CARD, CONVERSATION, CONFIRMATION

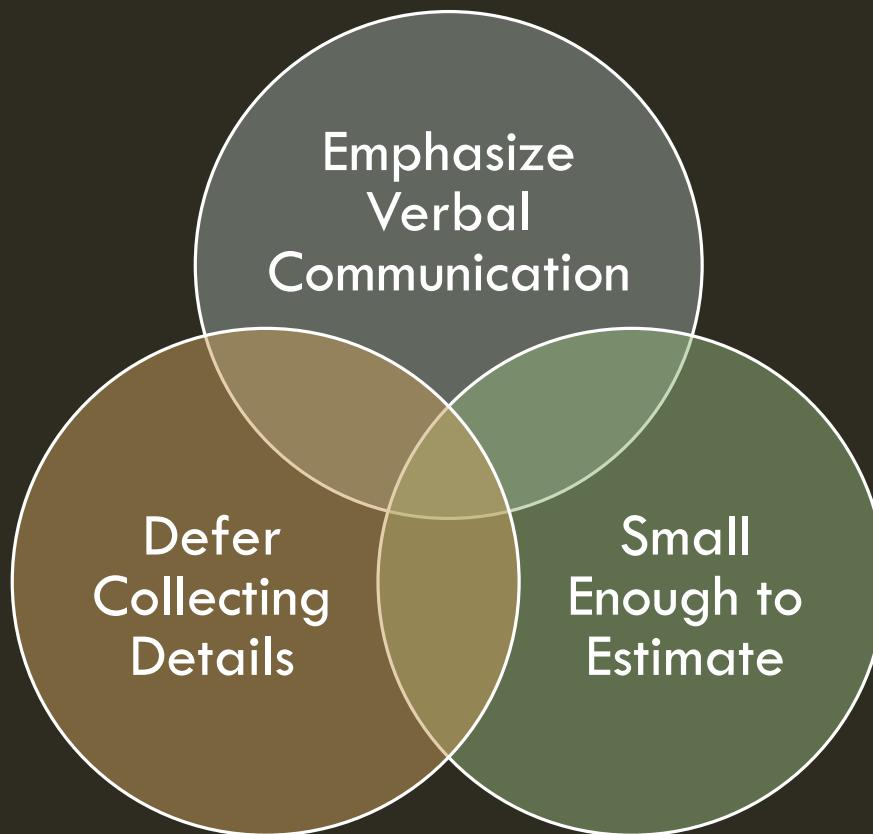
The card is a physical manifestation of the user story

The conversations that make up the user story are the shared understanding of the user stories.

The confirmation aspects of the card are the way that we would figure out whether or not we completed the card.

Ron Jeffries, “Essential XP: Card, Conversation, and Confirmation,” *XP Magazine*, August 30, 2001.

WHY USER STORIES?



WRITTEN LANGUAGE ISSUES

Often very imprecise

Open to interpretation

For example:

- Entrée comes with choice of soup or salad and bread
- That should not have been a difficult sentence to understand, but it was. Which of these did it mean I could choose?
 - Soup or (salad and bread)
 - (Soup or salad) and bread
- We act as though written words are precise, yet they often aren't.
- “The user can enter a name. It can be 127 characters.”

EXERCISE: COMMUNICATION

Goal: Have the development team build a picture per the specification

Setup: Teams of 4 – Choose 2 developers

Rules

- The originals cannot leave the room
- Specifications can be delivered as often as desired.
- There is no limit on the number of specifications that can be delivered
- Specification Writers can ONLY hand over the specifications
- No verbal or Non-Verbal Communication
- Specification writers can look at what the developers are doing

Duration: 30 Minutes

INVEST IN YOUR PRODUCT BACKLOG

William Wake, 2003

Invest Independent

Negotiable

Verifiable

Estimable

Small

Testable

INVEST IN YOUR PRODUCT BACKLOG

William Wake, 2003

Independent

- Dependencies lead to problems estimating and prioritizing
- Can ideally select one item to work on without pulling in 18 others

Negotiable

- Product backlog items are not contracts
- Leave or imply some flexibility

Valuable

- To users or customers, usually not to developers
- Re-write developer-oriented backlog items in terms of value to customers

Estimable

- Because plans are based on user stories, we need to be able to estimate them

Small

- Complex backlog items are intrinsically large
- Compound backlog items are multiple items in one

Testable

- Make backlog items testable by having acceptance tests

PRODUCT BACKLOG CONTENTS

User Stories (aka features)

- A Story: <user> takes an <action> and gets a <result>
 - Example: An administrator looks up this month's patient report and is able to see who is over the user defined threshold
- Have business value
- Are easily identifiable by the Product Owner, customers and the team

Bugs

- Bugs are prioritized along with user stories, treat them as first class citizens

Work Items

- Build environment, categorized as a precondition

PRODUCT BACKLOG AND CUSTOMERS

“Collectively, the developers have a sequence in which they would like to implement the features, as will the customer.

When there is a disagreement to the sequence, the customer wins.
Every time.

However, customers cannot prioritize without some information from the development team.

It is up to the development team to provide information (assumptions, constraints, alternatives) to the customer in order to help her prioritize the features”

- Mike Cohn, User Stories Applied

Q/A

EXERCISE: WRITE USER STORIES

Goal: Have the development team write user stories and define roles for a planning poker website

Setup: Teams of 4-5

The Web Site

- We are going to provide a web experience to do planning poker on a web site.
- Users will be able to enter story information and then play planning poker.
- We are a for profit company and want to build a great product.
- Duration: 45 min

PLANNING POKER INSTRUCTIONS

The Product Owner or customer reads the item to be discussed

The item is discussed

Each Estimator privately selects a card representing their estimate

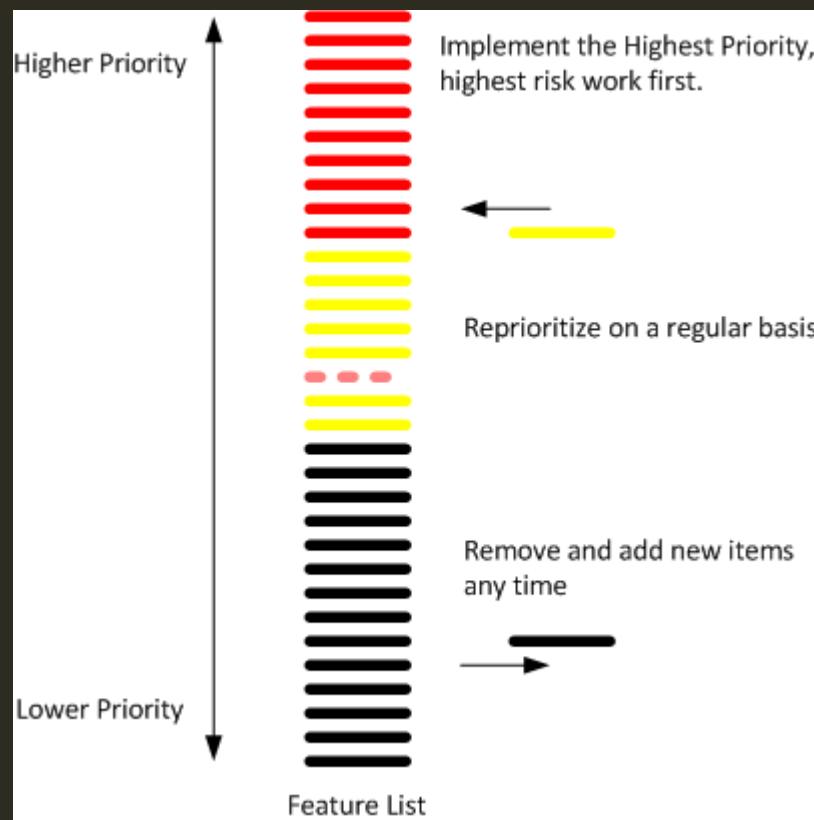
All Cards are turned over at the same time

If everyone agrees on the number then that is the estimate

If the estimates differ than the group discusses

Repeat until estimates converge

PRODUCT BACKLOG PRIORITIZATION

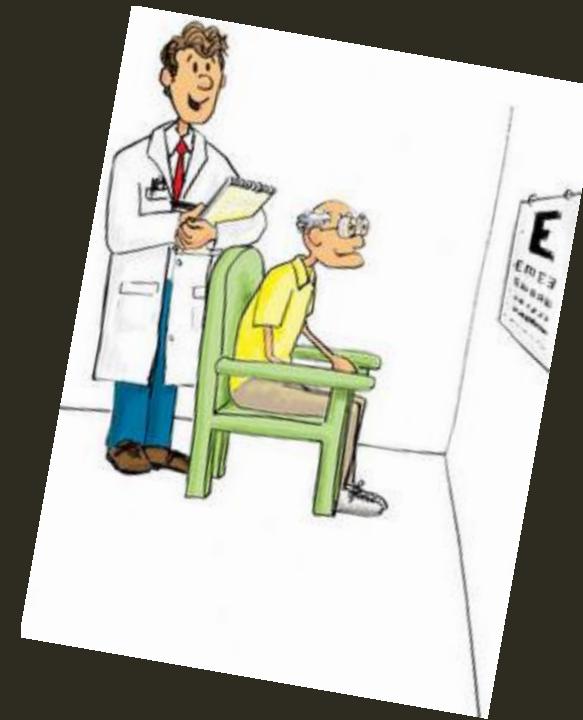


STACK RANK THE BACKLOG

The product backlog is a stack ranked list of stories

Use 20/20 Vision to determine stack rank

(see: <http://innovationgames.com/2020-vision/>)



EXERCISE: 20/20 VISION

Goal: Have the development team order the users stories that they wrote for the planning poker website

Setup: Continue with your existing teams

Rules – Use 20/20 Vision to Stack Rank the Backlog and number the stories from 1-N

Duration: 15 Minutes

CANDIDATE ARCHITECTURE

CANDIDATE ARCHITECTURE

Single Architecturally Significant Story

Vertical Slice – implemented end-to-end

Production Quality Code

Provides a Reference for Estimation

- Code Base
- Team

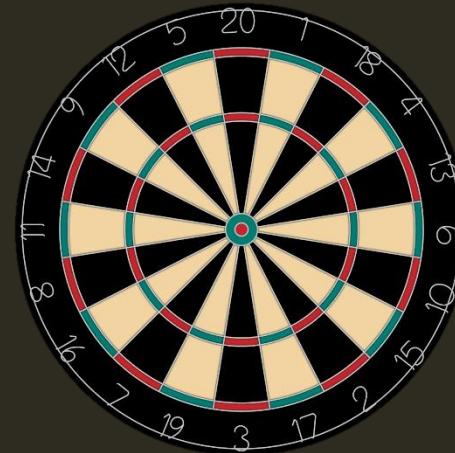
ESTIMATION

WHY WE ESTIMATE

To pretend we are in control

To forecast

- What will be true by when
- When something will be true



FINDINGS OF A 1998 HBS STUDY OF LARGE SOFTWARE PROJECTS

The first flawed assumption is that it is possible to plan such a large project.

The second flawed assumption is that it is possible to protect against late changes.

The third flawed assumption is that it even makes sense to lock in big projects early.

SINGLE POINT ESTIMATE - THE EXPERT

Ask the Manager

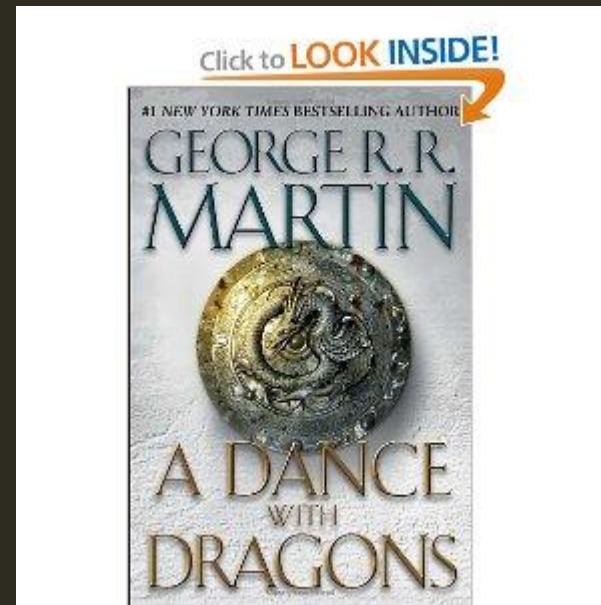
- Wants the team to look good
- May discounts technical risks
- May amplify management and interdependency risks
- Tend to under promise

Ask the Architect

- Wants the system to look good
- May discount management and dependency risks
- May amplify system capabilities
- Tend to over promise

HOW LONG WILL IT TAKE TO...

Drive to Los Angeles?



Read A Dance with
Dragons?

ESTIMATE SIZE – DERIVE DURATION (MIKE COHN)

Estimate Size

- How far is it to Los Angeles?
- How many pages is A Dance With Dragons?

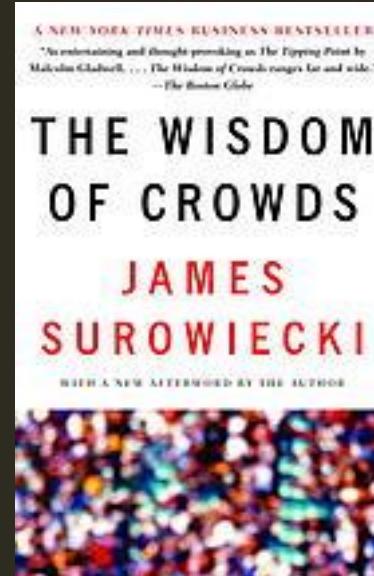
Derive Duration

- Based on experience
- For example:
 - I drove to San Francisco once and it took me n hours
 - I read a previous book from George RR Martin and it took me this long

THE WISDOM OF CROWDS

Why the Many Are Smarter Than the Few and How Collective Wisdom Shapes Business...

The opening anecdote shows that the crowd at a county fair accurately guessed the weight of an ox when their individual guesses were averaged (the average was closer to the ox's true butchered weight than the estimates of most crowd members, and also closer than any of the separate estimates made by cattle experts)



KEYS TO WISDOM OF CROWDS

Diversity of Opinion

Independence – people are not influenced by the people around them

Decentralization – people are able to specialize and draw on local knowledge

Aggregation – Some mechanism exists for turning private judgements into collective decision

LET'S TRY AGAIN...



CONCLUSION

Group estimates are more accurate than single point estimates

YESTERDAYS WEATHER

Future
performance is
best informed by
historical
performance



RELATIVE ESTIMATION

FIBONACCI SEQUENCE



ESTIMATION IS FRACTAL

<http://dannorth.net/2009/07/01/the-perils-of-estimation/>

To compound this, it turns out that estimation is fractal. The more fine-grained you break down the requirements, the more “edges” you will discover. This means that the more detailed you estimate, the more the total will tend towards infinity, simply due to rounding errors and the fear factors that we multiply into fine grained estimates.

ACCEPTANCE CRITERIA FOR AN ESTIMATION TECHNIQUE

Utilizes

- Yesterdays Weather
- Relative Estimation

Detailed – but not too detailed

Harnesses the Wisdom of Crowds

Builds on Shared Context

EXERCISE: FLOW AND COMPLEX SYSTEMS

Goal: Understand and Improve System Throughput

Setup: Clear the room

Rules

- You are one big team – everyone must touch each ball once for a point to count
- Balls must have airtime
- No ball to your direct neighbor
- Start point = End Point
- Sprints = 2 minutes
- Retrospective = 1 minute
- We do 5-10 sprints
- Duration: 30-45 minutes