Hopes and Concerns
Our Roadmap

- Agile Methods
- Agile Values & Principles
- Software Engineering
- Agile Practices
The Start
We started with **Software Engineering**
NASA’s Defect Density

Pretty good, right?
NASA’s Defect Density (another data point)

- **Defect Density (bugs/KLOC)**
  - **Industry**: 5
  - **NASA**: 0.004

- **Cost ($/LOC)**
  - **Industry**: 850.0
  - **NASA**: 5.0

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Sometimes, heavy weight methodologies work, but there are extensive costs, and the risk in using them in dynamic environments is high.
Agile

- Lean Software Development
- XP
- DSDM
- Iterative and Incremental Development (1930)
- RUP
- Crystal Family
- ASD
- CMMI
- FDD
- Scrum
- Mercury Space Program (Iterative) (1957)
- 2 Pass Development (1970)
Our Roadmap

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Agile Manifesto

We are uncovering better ways of developing software by doing it and helping others do it. Through this work we have come to value:

- Individuals and Interactions OVER Processes and Tools
- Working Software OVER Comprehensive Documentation
- Customer Collaboration OVER Contract Negotiation
- Responding to Change OVER Following a Plan

That is, while there is value on the right, we value the items on the left more.
Our highest priority is to satisfy the customer through early and continuous delivery of valuable software.

Welcome changing requirements, even late in development. Agile processes harness change for the customer's competitive advantage.

Deliver working software frequently, from a couple of weeks to a couple of months, with a preference to the shorter timescale.

Working software is the primary measure of progress.

Agile processes promote sustainable development. The sponsors, developers, and users should be able to maintain a constant pace indefinitely.

Continuous attention to technical excellence and good design enhances agility.

Business people and developers must work together daily throughout the project.

Build projects around motivated individuals. Give them the environment and support they need, and trust them to get the job done.

Simplicity--the art of maximizing the amount of work not done--is essential.

The best architectures, requirements, and designs emerge from self-organizing teams.

The most efficient and effective method of conveying information to and within a development team is face-to-face conversation.

At regular intervals, the team reflects on how to become more effective, then tunes and adjusts its behavior accordingly.
Our Roadmap

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- Agile Values & Principles
- Software Engineering
- Agile Practices
Waterfall Methodology

Effort

Time

Analysis
Design
Coding
Testing
Deployment

3 months

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Agile Methodology

Time

Analysis  Design  Coding  Testing  Deployment

3 months

Iteration 1

Effort

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What an iteration might look like

- Iteration Planning
- Co located teams
- Story writing (future)
- Development (current iteration)
- Testing (current iteration)

Daily stand up

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A specific practice...

- Story writing (future)
- Development (current iteration)
- Testing (current iteration)

Iteration Planning

Daily stand up

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The daily stand up...

Yesterday, I tried working on that invoice report but couldn’t because our test environment wasn’t up.

Let’s go see Dylan’s team after this to try and resolve it.

I worked on the billing agent yesterday and refactored out a common utility for the printout of the bill.

Hey, that’s great. I’ll need that when I get to the overdue bill story later this week. Can you show me that after stand up?

I spoke to the infrastructure team yesterday and we won’t get a build environment until next week. Can we make do with what we have for now?

Today, we’ve got the customer showcase for the last iteration. I’m sure we can get some useful feedback and would be good if everyone heard it firsthand.

No worries.

Sure.

I guess so.

I’ll be there.

Me too.
A specific practice…

Iteration Planning

Co located teams

Story writing (future)
Development (current iteration)
Testing (current iteration)

Code reviews

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Co-located team + Code reviews

This is turning out harder than I thought. Maybe I should get help.

Hey Ava, Can I get you to look at this?

Sure

I’m currently in the middle of ... and keep seeing ... What do you reckon I should do?

I’m not sure if I really understand the problem. Let’s white board this

So it’s a bit like ... and a bit like ...

Maybe we can try ... or ...

Right! That’s great.

Hey Connor. I heard you talk about adding in ... When we talked about that story, you remember that the user would be happy with just ... instead of that?

Really? That makes it really simple then!

Ok, so first ... and then ... right?

Yup!

Hang on! We can do this and it’d be much simpler
Questions?