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Connecting the world of software delivery



The Experience Of Designing API

About Me

- Software Engineer
- Joined Tasktop in 2010 as VP of Engineering
- I'm now VP of Architecture



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The Experience of Designing API

Software is eating the world
But 30-70% of software projects fail

Business
Analysts

Silo focus is breaking
the value stream

Ops

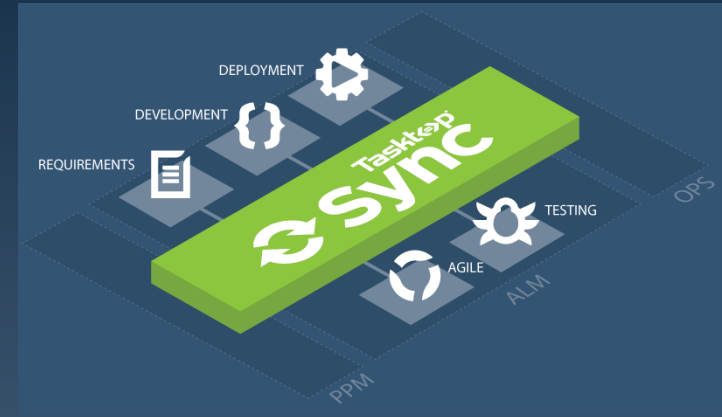
Testers

Project
Managers

Developers



A new kind of infrastructure

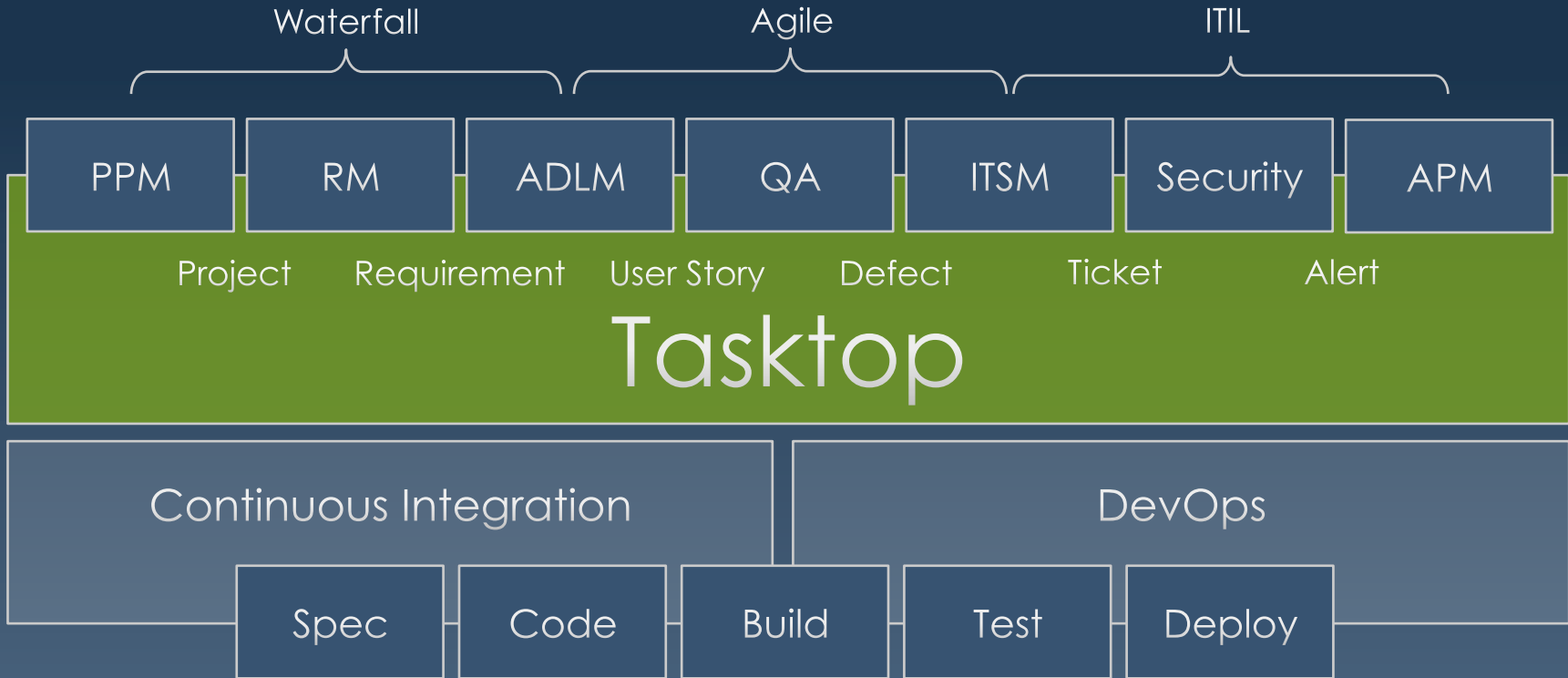


- Manual, error prone
- Email & spreadsheets
- Does not scale

- Brittle point-to-point
- Requires developers
- Upgrade issues

- Real-time lifecycle bus
- Configurable, extensible
- Connects people

Platform for Lean Software



Tasktop and API

- 3rd party web APIs
 - REST
 - SOAP
- 3rd party Java APIs, binary APIs
- Mylyn API
- Tasktop-proprietary API

Tasktop SDK

- **Goals**

- More economically
- Higher quality
- Enable 3rd parties to create

- **Timeline**



Creating API is Hard

- API cannot be changed
- People
- Requirements
- A lot at stake
- A lot of choices and tradeoffs

Getting Started

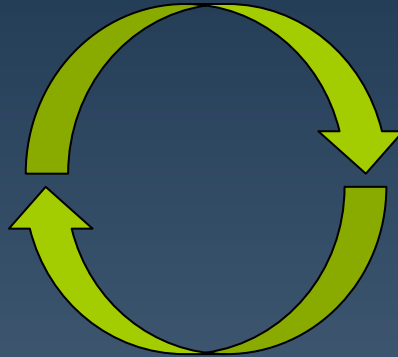
- What are we trying to achieve?
- What are we not trying to achieve?
- What are the constraints?

Process

Optimize process for failing often, and fast

- Compiler
- Unit tests
- Code coverage
- Checkstyle
- Sonar
- Code coverage
- Continuous integration

Build something



How are we doing?

- Code review
- Team feedback
- User feedback
- Velocity

Core Values and Practices

- **Developing core values helps to establish a common understanding**
 - Fewer disagreements
 - Makes future decisions simpler
- **Developing a set of practices based on the core values establishes daily routine**
 - Ensures that the core values are realized
 - Creates a common set of expectations with the team
- **A foundation for trust**

Ideas

- Lots of ideas is better
 - Compare, discuss, agree and proceed
- Sometimes consensus just doesn't happen
- Not all ideas are good
 - Leave ego aside
- Some ideas take time to “gel”
 - Give the team time to warm up to your idea

Team

- Different cultures/languages
- Different timezones
- Different skillsets
- Diversity is a strength

Other Teams

- Everyone has ideas, and people will want to contribute
- Their input will not always reflect your team values
- Can't consult with everyone all the time
- People may feel left out
- Get creative!

Tradeoffs

- Quality v.s. Speed
- Automation v.s. Manual
- Flexibility v.s. Constrained
- Documentation v.s. Intuitive API

Success and Failure

● Things that worked out well

- SPI vs. API
- Immutability/builders
- Service oriented
- Operations
- Dependency Injection
- Separation of value from schema
- Creation of a toolkit
- OSGi for modularity, API, dependencies, versioning

● Things that didn't work out

- Early API that doesn't fit well
 - Hot spots in the code (e.g. field constraints)
 - Timing of session state
- ## ● Working but costly (jury is out)
- Automated provisioning (some repositories)
 - Maven/Tycho build, target platforms

Thank You



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