From whiteboard to product launch

A retrospective

About this talk

- nuBridges Protect™ Token Manager
  http://www.youtube.com/watch?v=b-wMbCFuQF0

- Simplify and reduce cost of protecting sensitive data

- Therapy for me

- Process, Architecture, Tools, Organization, Release Management

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nuBridges, Inc. Solution Portfolio

Software Solutions

nuBridges Protect™

- DB & app encryption for heterogeneous enterprise
- Centralized, full-lifecycle key management
  - *Two deployment architectures in one solution – local encryption and Format Preserving Tokenization™*

nuBridges Exchange™

- Secure, enterprise managed file transfer & B2B gateway
- Multi-protocol
- Infrastructure-agnostic
- Community management
- Centralized visibility & logging

Service Solutions

nuBridges Exchange Network™

- EDI VAN, 100% secure connections, all doc types (EDI, XML, Files, etc.)
- Low cost
- High-touch customer service & partner on-boarding
- Advanced business intelligence visibility dashboard

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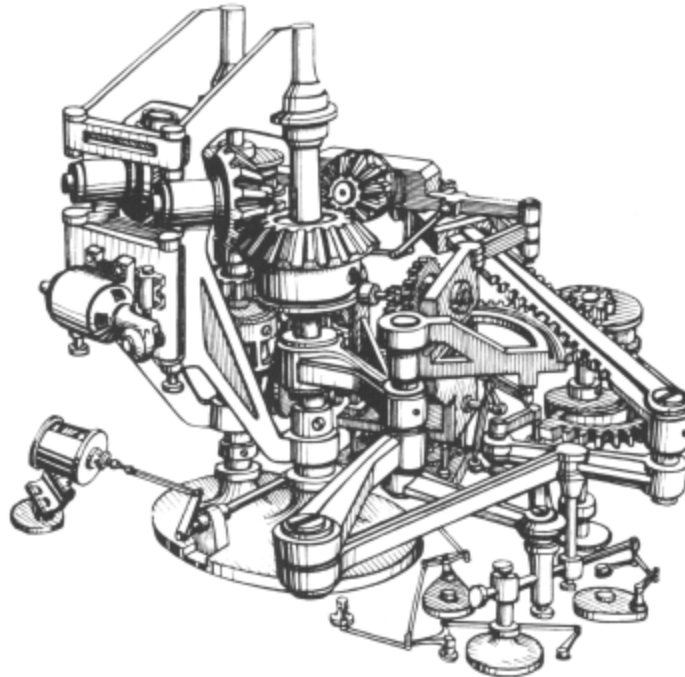
About me

- Director, Product Development
- Certified Scrum Master
- 20 years in the biz
- 10 years designing and building Java^{TM} based products and solutions
- Background - Developer, Architect

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Context

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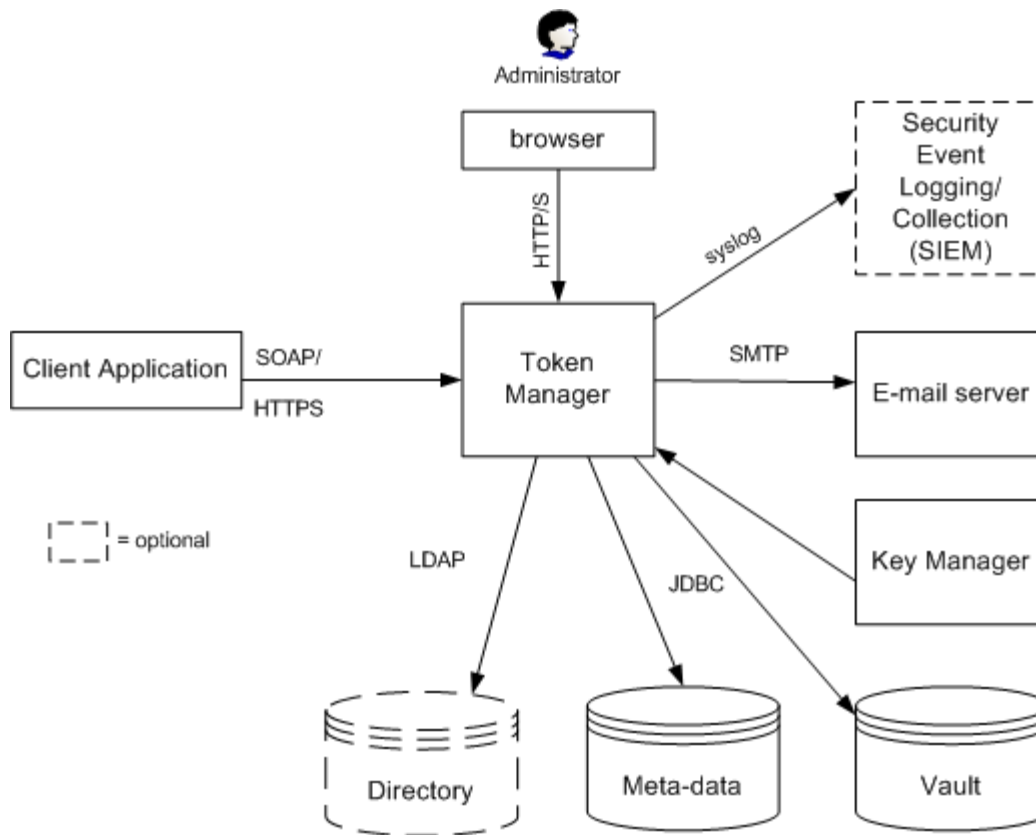
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Agile is kind of like yoga

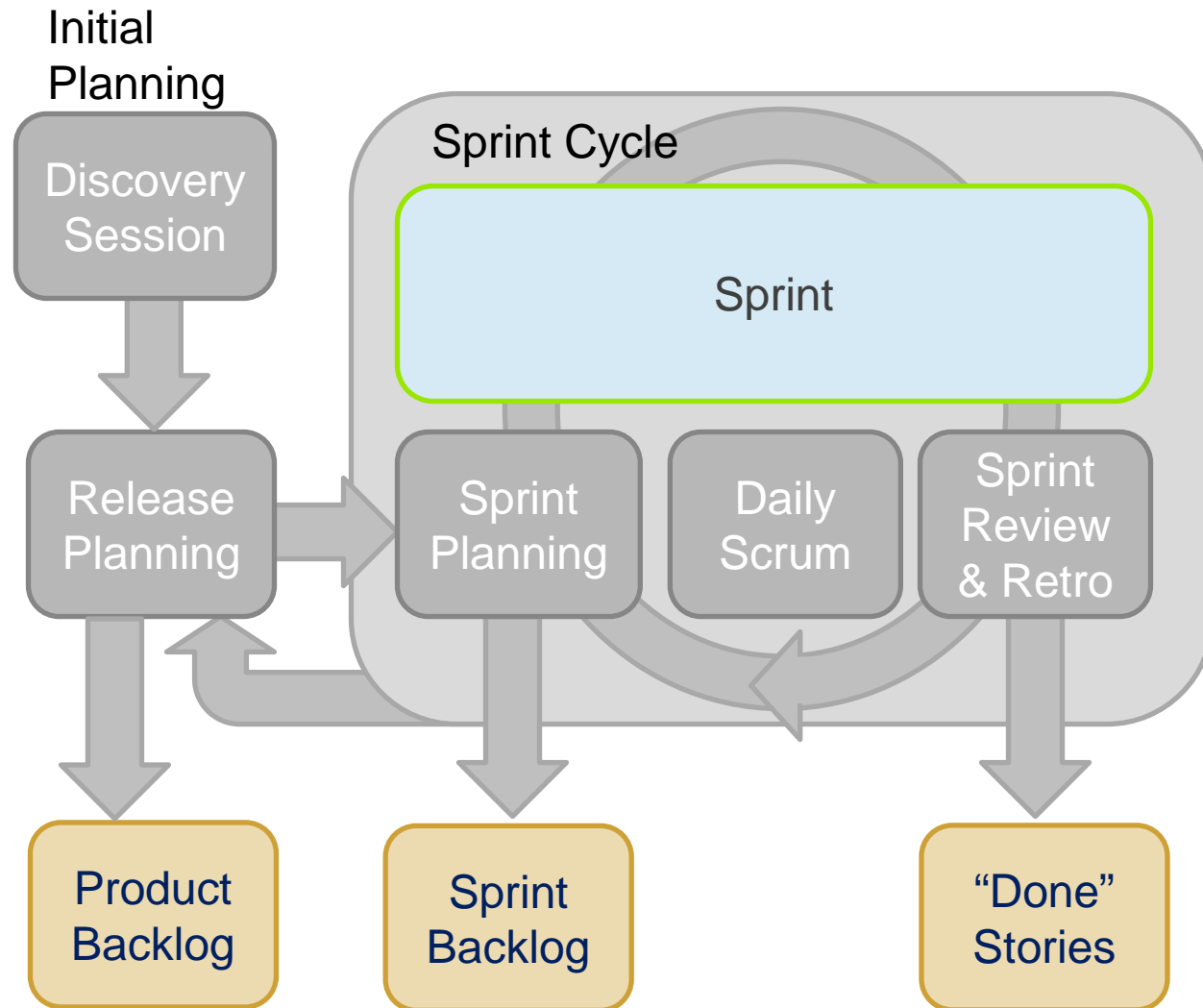Freedom

Stability

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What is Agile?

- **Individuals** and interactions over processes and tools
  Working software over comprehensive documentation
  Customer collaboration over contract negotiation
  Responding to change over following a plan

- http://agilemanifesto.org/

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Basic Scrum Process Model

Initial Planning

Discovery Session

Sprint Cycle

Sprint

Release Planning

Sprint Planning

Daily Scrum

Sprint Review & Retro

Product Backlog

Sprint Backlog

"Done" Stories

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Scrum roles

Product Owner

- Building the right product
- Sets priorities
- Responsible for market success (ROI)
- Defines release dates and content
- Defines features

Scrum Master

- Facilitates the process
- Shields the team from external interferences
- Removes barriers
- Ensure team is functional and productive

The Team

- Building the product right
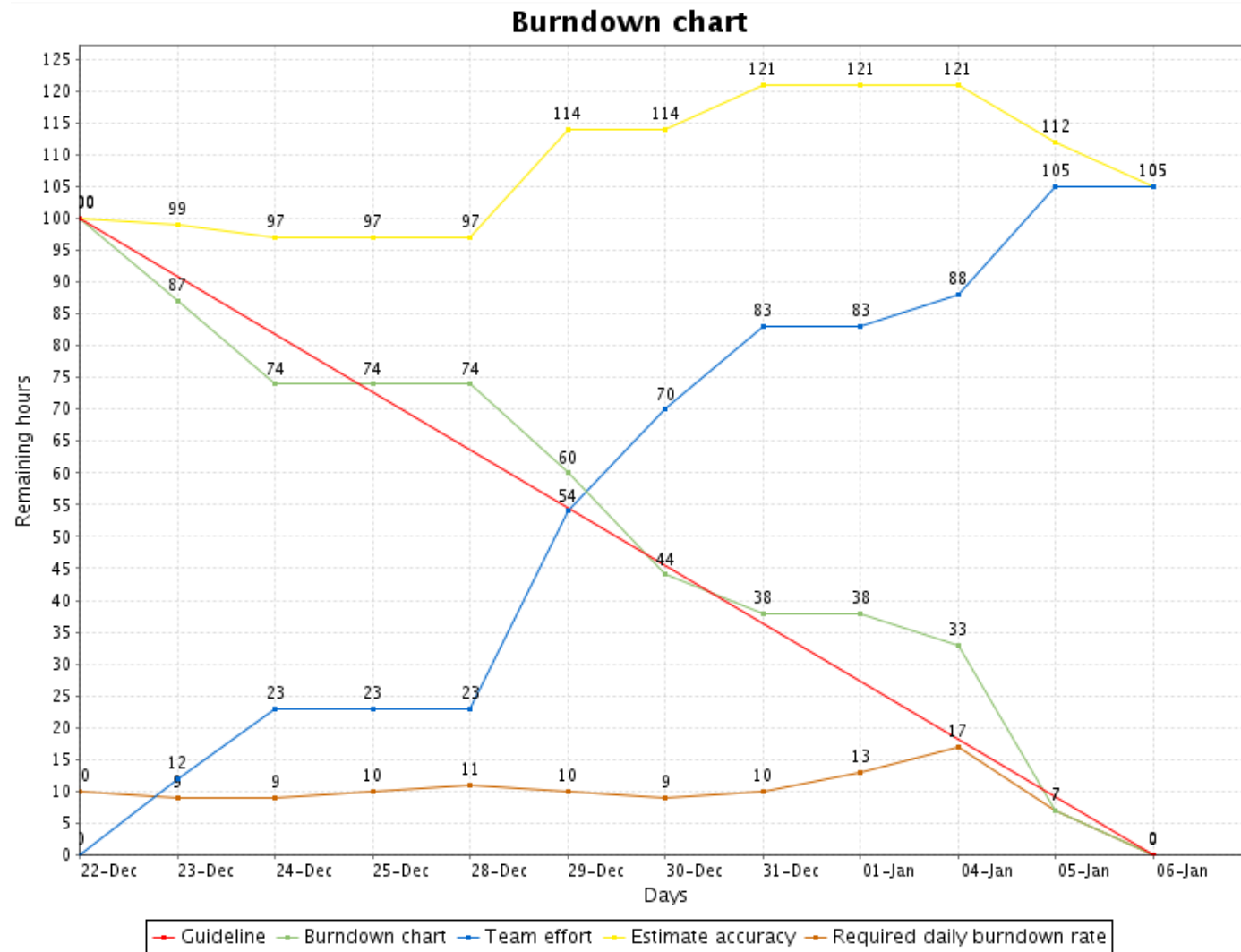- Responsible for product quality
- Commits to achieving sprint goals

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Metrics

- *"You Can't Manage What You Don't Measure"*

- *"Not everything that counts can be measured. Not everything that can be measured counts.".*. Albert Einstein

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Visibility

Process reflections from the trenches

- Scrum has gaps
- Visibility
- 2 weeks – nice sprint duration
- Trust
- Collaboration
- Intensity
- Pre-planning
- Timely reviews & demos
- Traceability
- Finish what you started
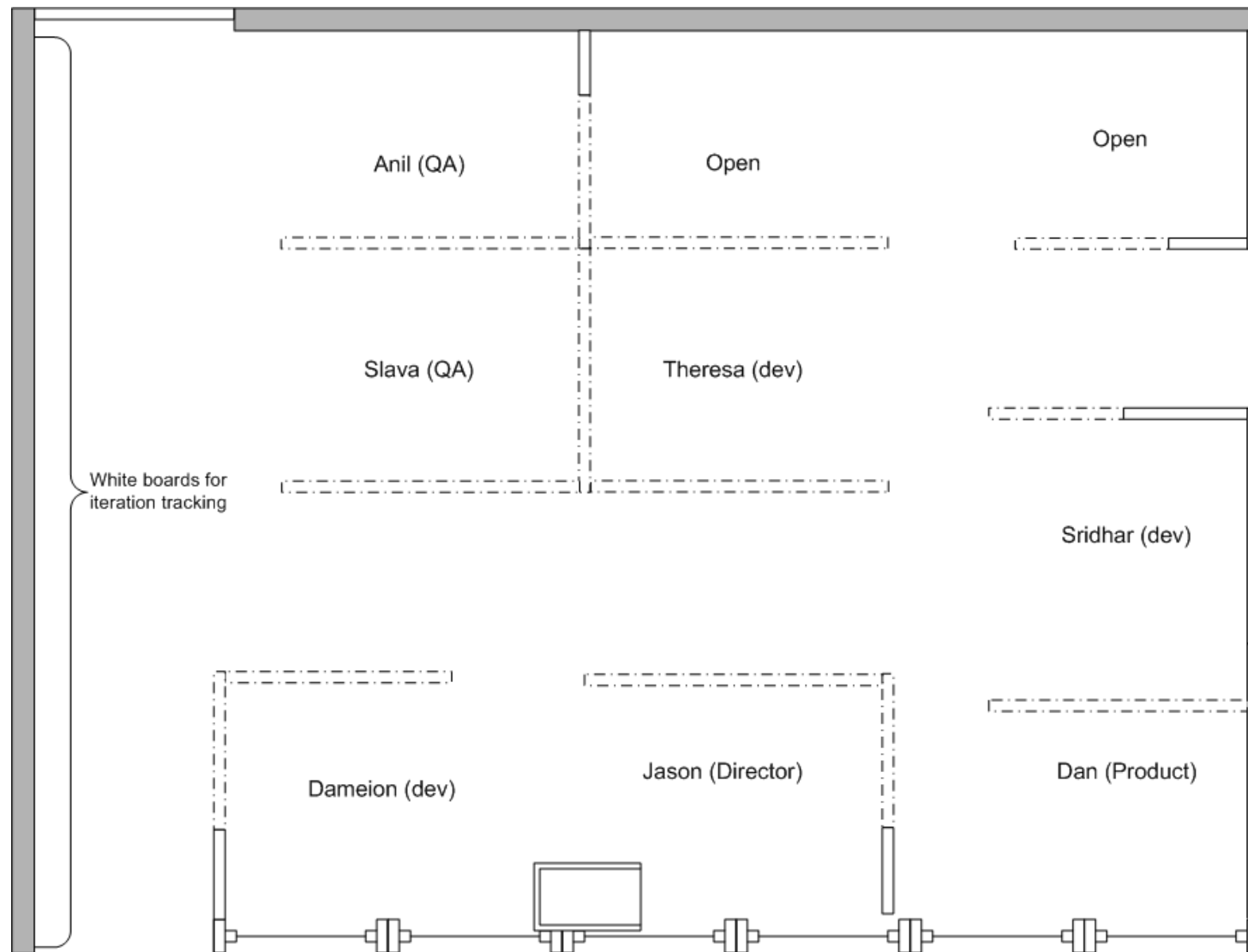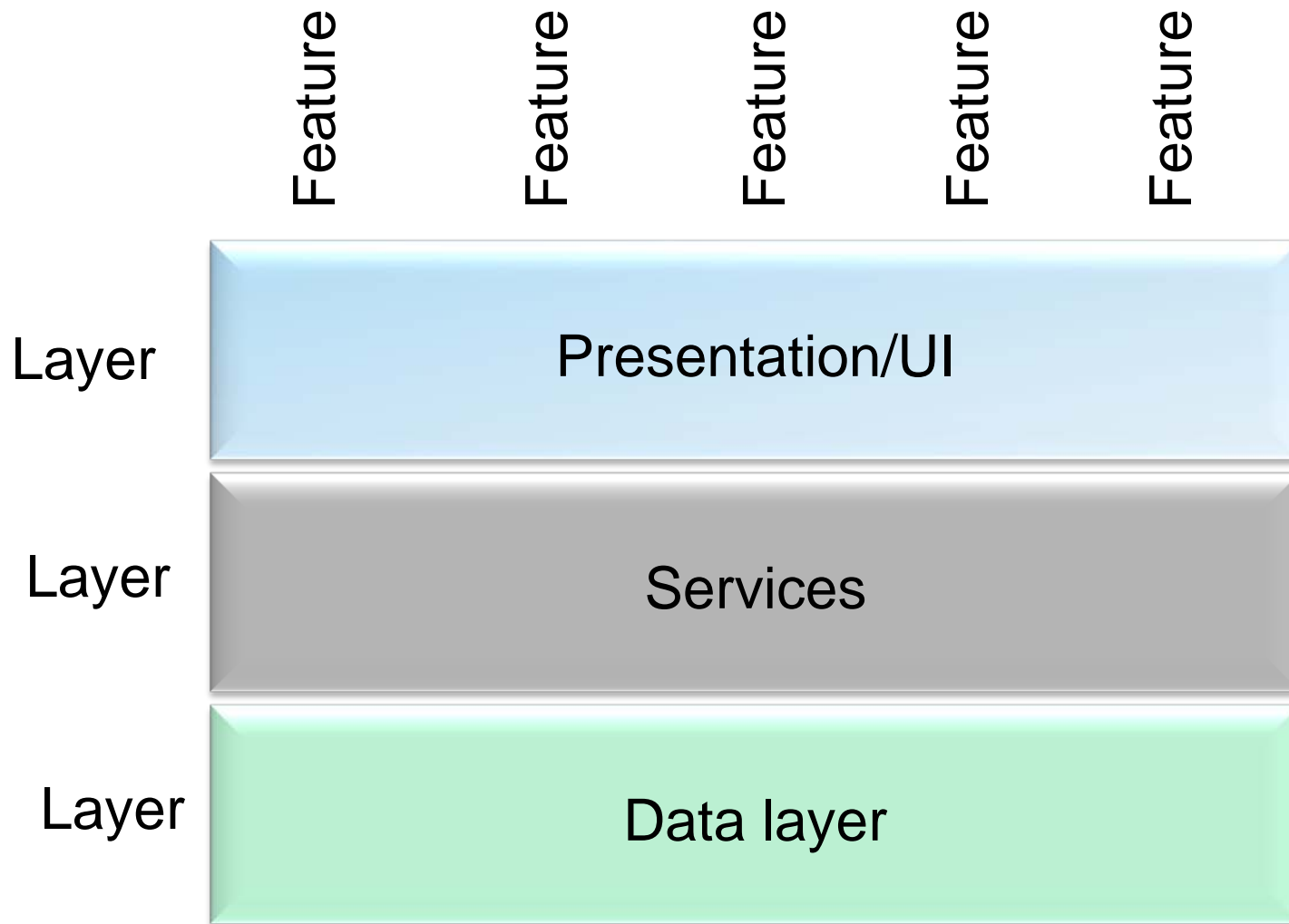- Progress <u>motivates</u> a team

http://hbr.org/2010/01/the-hbr-list-breakthrough-ideas-for-2010/ar/1

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Part II – Team Organization

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Workspace

Build by feature or by layer? - discuss

Feature Feature Feature Feature Feature

Layer	Presentation/UI
Layer	Services
Layer	Data layer

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Building the team

- Look for generalizing specialists

- Building a hairdressing team – would you want a fringe specialist? A side specialist? A back-of-head specialist?

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To Release is to Know..

- Know what you are releasing
- Know it's breaking point
- Know it's limitations
- Know how it performs
- Know more than your customer
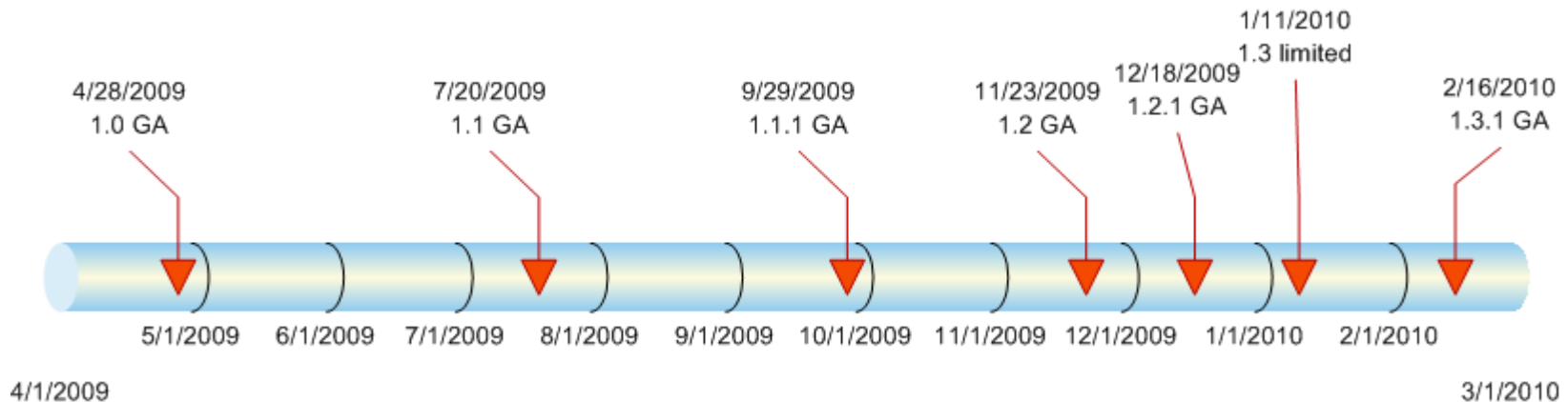- = no surprises
- Enjoy your first release!

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But wait…

- Is it possible to release after every sprint?
- Maybe - it depends
- Consider the cost of the release – include cost of supporting the release
- Knowing when to release is hard

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When to release

- Release too early – discuss?
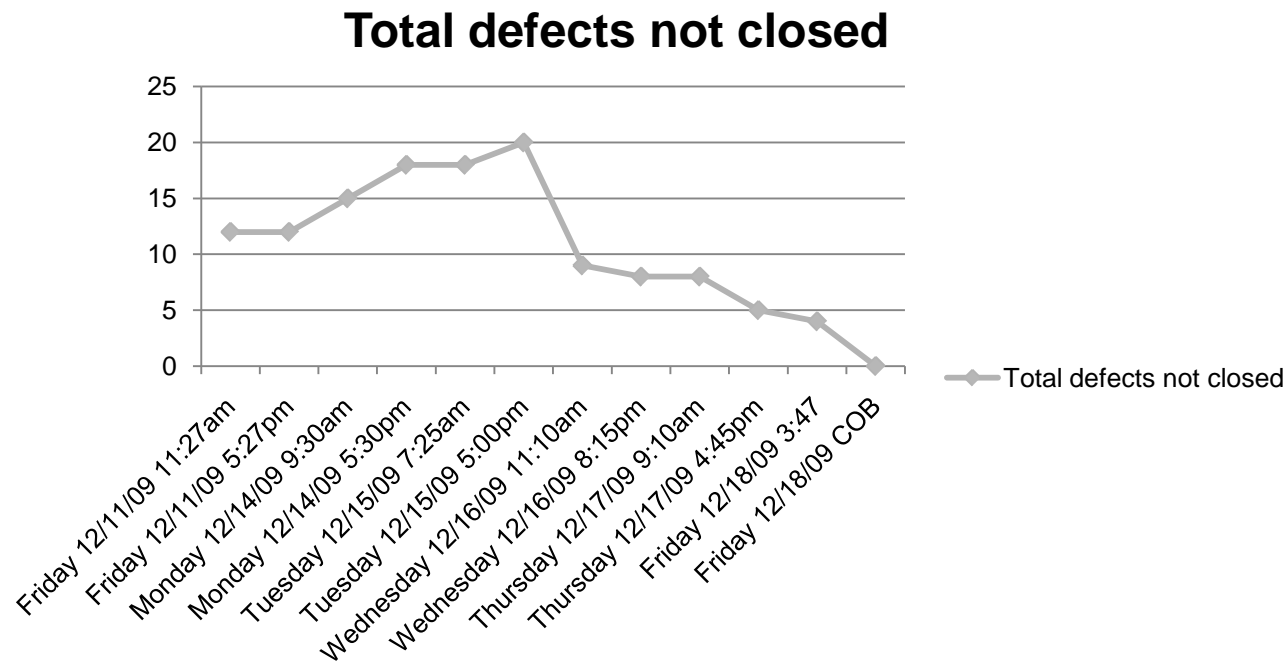- Release too infrequent – discuss?

Step 1 - Kill the airspeed

- No more features!
- Solidify and perfect
- User documentation drafted
- Pay down defect debt
- May take more than 1 sprint

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Step 2 - The final approach

- March towards a release candidate (RC) build
- Specify criteria for RC build
- "Test-fest"

Total defects not closed

Step 3 – Pull into gate

- Regression test
- All hands on deck
- Focus
- X-platform testing
- Soak testing
- Performance testing
- Negative testing – throw rocks at it
- What if defects are found?
- Compatibility testing
- Upgrade-ability testing

Part IV – Architecture

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The stack

- Pure Java^{TM}
- Classic stack (Tomcat+Spring+Hibernate)
- GWT front-end
- ExtJS for UI components
- Axis for SOAP
- Quartz for scheduled/background tasks
- JFreeChart for charting
- Velocity for e-mail generation

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Thoughts

- Big up front design – discuss?
- Build prototypes – prove out components/ideas
- Stay as lightweight as possible
- You need to have some technical direction
- Know your quality attributes/NF reqs
- Focus on making decisions up front.. that are harder to change later
- Ensure the architect is a pig – not just a chicken

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Tools

Design

- Grails
- Visio
- Balsamiq

Coding

- Eclipse
- Subclipse

Management

- Jira
- Greenhopper
- Fisheye
- QuickBuild
- Cobertura
- Ant
- Subversion

Testing

- SoapUI
- Groovy
- eXcel

Deployment

- InstallAnywhere
- NSIS
- Shell scripts
- Ant

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Deep dive - Continuous integration

- Why? Early feedback
- QuickBuild
- Find at 1pm fix by 2pm close by 3pm
- 3 build configurations
  - Continuous – auto-trigger, trunk, no unit tests (too long)
  - Nightly – 7am EST, trunk, with unit tests + Cobertura
  - Release – on demand, release branch

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JUnit report

Cobertura

Deep dive – Using Groovy & Virtualization

- Provide QA with script capability
- Testing the API component of the product
- Without having an IDE get in their face
- Groovy based test kit was developed
- Combined with virtualization – provides load testing capability

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Deep dive – Using Groovy & Virtualization

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Sample Groovy test client

```groovy
import java.math.BigInteger;
import java.rmi.RemoteException;
import com.nubridges.datasecure.tokenmanager.webservice.ResponseData;
import com.nubridges.datasecure.tokenmanager.webservice.TokenManagerWebService;
import com.nubridges.datasecure.tokenmanager.webservice.TokenManagerWebServiceProxy;

println new java.util.Date()
def tokens = new FileWriter("tokens.txt")
BigInteger ccnum = new BigInteger("1000000000000000")
BigInteger one = new BigInteger("1")
TokenManagerWebServiceProxy tokenManager = new TokenManagerWebServiceProxy()

// Update endpoint to point to the Token Manager endpoint you want to test
tokenManager.setEndpoint("http://10.0.25.86/TokenManagerEngine/services/TokenService")

println tokenManager.getEndpoint()
println "data,token,status,message,time"
println "----------------------------"
for (long i = 0; i < 10; i++) {
    ResponseData response =
        tokenManager.protect("MTI0ODkwNDA2MjQxM015QVBJSzE1NjE0MjMyNTg=",
                            "CREDITCARD",
                            ccnum.toString());
    print ccnum + ","; print response.getToken() + ",";  print response.getStatusCode() + ","
    print response.getStatusMessage() + ","; println response.getTimeTaken()
    if (response.getStatusCode() == 0)
        tokens.println(response.getToken())
    ccnum = ccnum.add(one);
}
tokens.close()
println new java.util.Date()
```

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Part VI – Looking ahead

- A better wiki
- JUnitPerf
- Sonar
- Structure101
- QA Automation
- Crucible
- More metrics
- GUI

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