



Chicago, October 19 - 22,
2010

Slimmed Down Software A Lean, Groovy Approach

Hamlet D'Arcy
Canoo Engineering AG
@HamletDRC

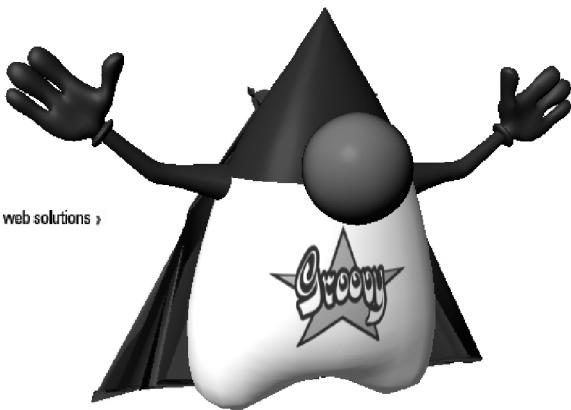


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canoo

» your provider for business web solutions »



GROOVY MAG
for groovy and grails developers

<http://groovymag.com>

canoo
» rich internet applications blog »

<http://canoo.com/blog>

NFJS
the Magazine

<http://nofluffjuststuff.com/>

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1988 - Japan

Taiichi Ohno

TOYOTA PRODUCTION SYSTEM
Beyond Large-Scale Production

2003 - Minnesota

Lean
Software Development
An Agile Toolkit

The Agile Software Development Series

Cockburn • Highsmith
Series Editors

- Adapting agile practices to your development organization
- Uncovering and eradicating waste throughout the software development lifecycle
- Practical techniques for every development manager, project manager, and technical leader

Forewords by
Jim Highsmith
and Ken Schwaber

Mary Poppendieck
Tom Poppendieck

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Lean Principles

- Eliminate Waste
- Build Quality In
- Create Knowledge
- Defer Commitment
- Deliver Fast
- Respect People
- Optimize the Whole

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XP Values

- Communication
- Simplicity
- Feedback
- Courage
- Respect

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Lean Principles XP Values

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- Communication
- Simplicity
- Feedback
- Courage
- Respect

XP Principles

- Feedback
- Assuming Simplicity
- Embracing Change

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Eliminate Waste?

```
Map m = [1: 'a', 2: 'b', 3 : 'c']
```

versus

```
Map m = new HashMap();
m.put(1, "a");
m.put(2, "b");
m.put(3, "c");
```

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Eliminate Waste?

Map m = [1: 'a', 2: 'b', 3 : 'c']

Map m = new HashMap<Integer, String>();

m.put(1, "a");

m.put(2, "b");

m.put(3, "c");

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Phase 1

stop doing
things that
aren't worth
the effort

Phase 2

do the same
things with
less effort

Phase 3

Profit!



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Membə Them?!



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Deja Vu?



How to Make a Decision

- Consensus
- Majority
- Plurality
- Dictatorship
- *Gradients of Agreement*

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From "Agile Coaching"

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Write Only Process Improvement

Working software over
comprehensive documentation
as long as that software is
comprehensively documented.

... from <http://www.halfarsedagilemanifesto.org>

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Recognizing Waste

- In-Process Inventory
- Over-Production
- Extra Processing
- Transportation
- Motion
- Waiting
- Defects

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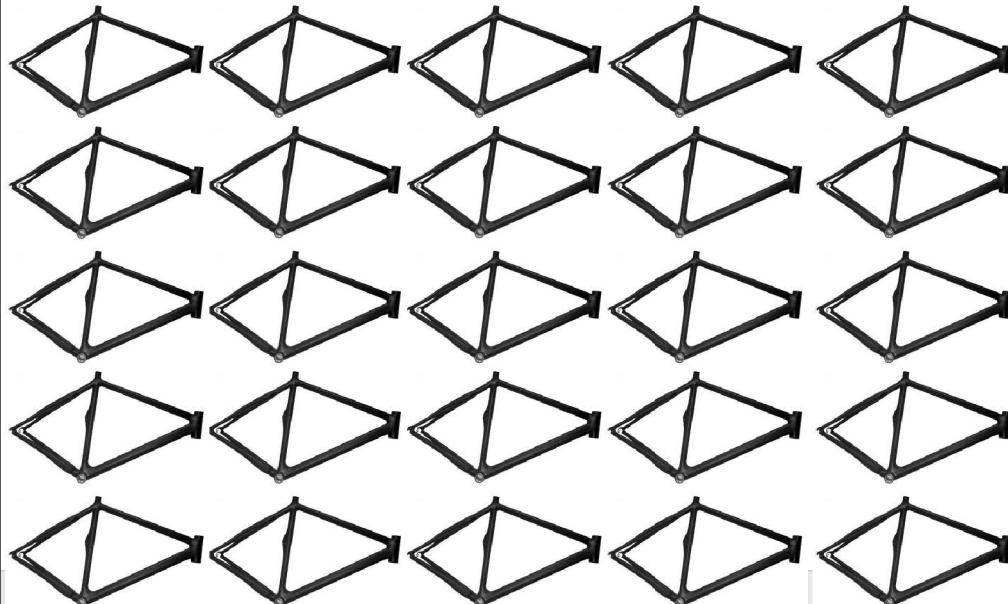
Recognizing Waste

- Partially Done Work (In-Process Inventory)
- Extra Features (Over-Production)
- Relearning (Extra Processing)
- Handoffs (Transportation)
- Task Switching (Motion)
- Delays (Waiting)
- Defects (Defects)

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Partially Done Work



Partially Done Work

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Code without Tests is Half Code

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Demo

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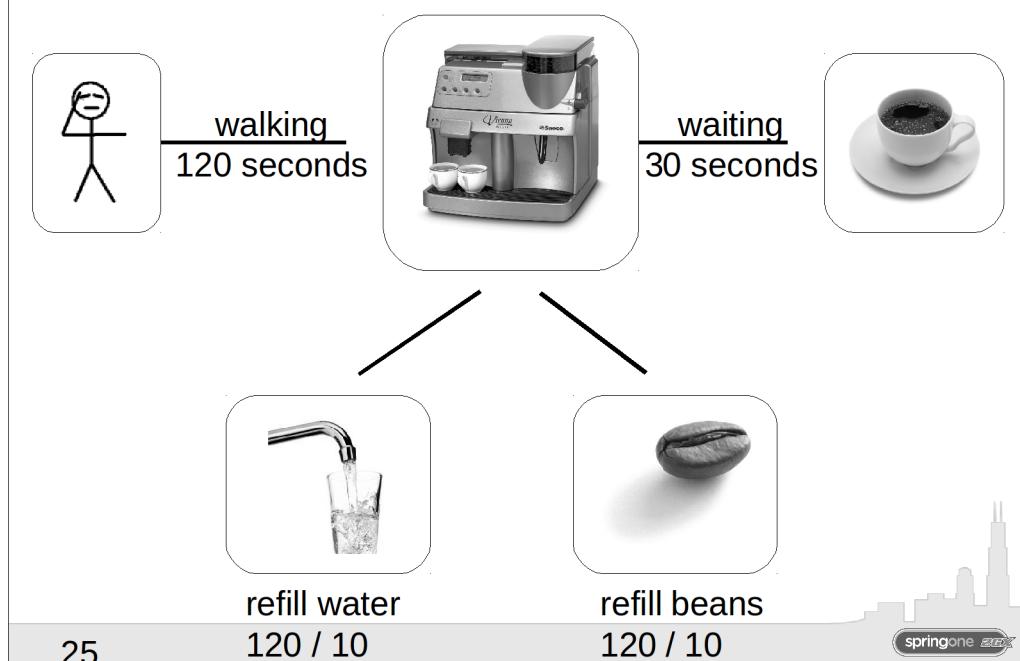
There is a big difference between
eliminating waste and not creating it in the
first place.

Alan Shalloway

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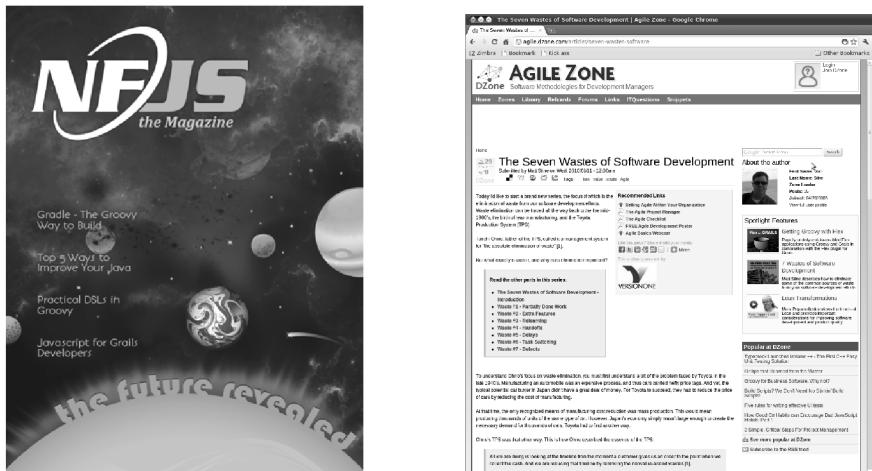
Next Steps: Value Stream Mapping



Next Steps: Value Stream Mapping

-
- A simplified value stream map showing the main flow from a stick figure to a coffee machine to a cup of coffee, with a "springone" logo at the bottom right. Below this, two parallel lines branch down to "refill water" and "refill beans" icons. To the left of the "refill water" icon is a bulleted list of metrics, and to the right of the "refill beans" icon is another bulleted list of metrics.
- 40 Canoosies
 - 5 days a week
 - 45 Weeks a Year
 - 2 Cups a Day
 - *174 Seconds Average*
 - \$50 an Hour
 - = \$43,500 a year
- 40 Canoosies
 - 5 days a week
 - 45 Weeks a Year
 - 2 Cups a Day
 - *150 Seconds Average*
 - \$50 an Hour
 - = \$37,500 a year
- 26
- springone

Need more waste?



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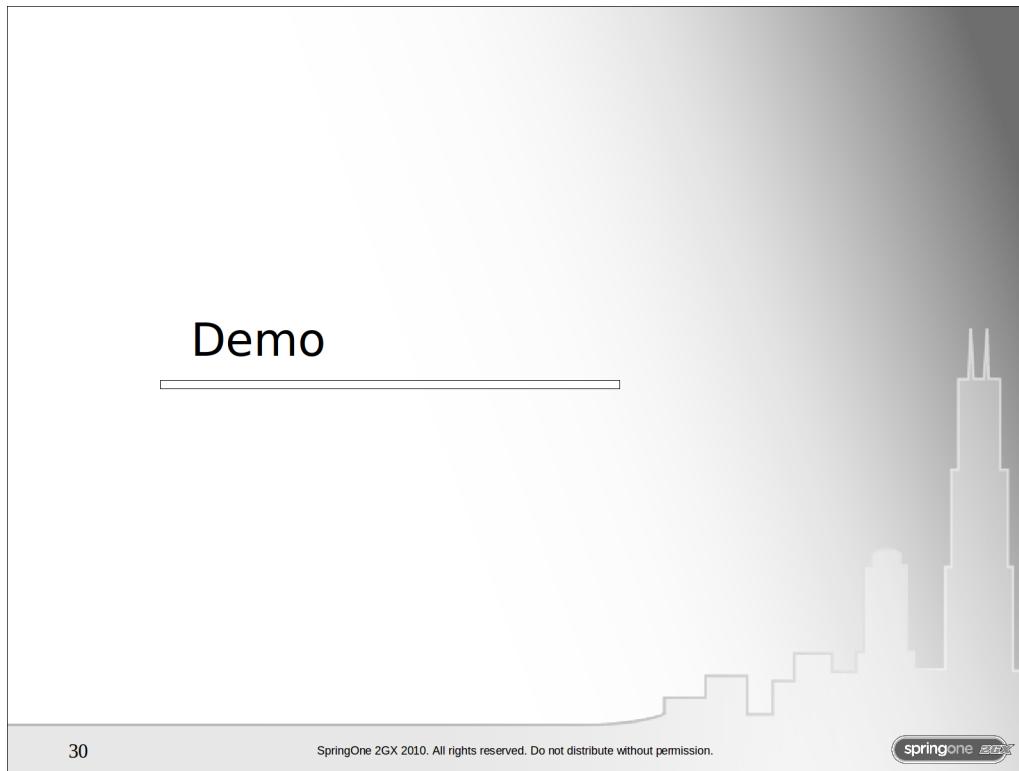
Lean Principles

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Really!?!: Behavior Driven Development

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Next Steps: Zero Defects Stop the Line

- BIS Agile 1.0
- Zero Defects - Stop The Line
- 2.1.22
2.1.23
2.1.24
- Daily Standup at 9:00 am
 - 2 week iterations
 - Demo Release Required EVERY FRIDAY
↳ email customer Release Notes + time remaining in budget of
 - Iteration Retrospective
 - = with customer
↳ rotating facilitator
↳ Separately from standup
↳ NEW FORMAT
 - Story Cards w/ green + yellow
 - .5 Day Cards. Work on same card. Card Design Sessions
Card Acceptance Criteria
 - Shelf is story board
 - Jira - track demo release progress
↳ USE TO ESTIMATE + REPORT DEFECT LOAD
 - 3rd Party - Get integration help/directions from 3rd Party Vendors
 - Backlog on Story Cards
 - ↳ Define Stories before putting them in iteration.
 - Effort + Burn Down in Excel
 - Experiment w/ Pomodoro Technique
CONTINUE
 - Broadcast Agile Successes
 - ↳ on Convo blog + reading group

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Lean Principles

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Software Engineer
or
Computer Programmer?

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Software Development as Knowledge Acquisition

- short, frequent learning cycles
- delayed commitment

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Large requirements and specification documents
provide a wonderful illusion of certainty

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Can tests be Documentation?

Evangelists have oversold
Developers have under-delivered

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Demo

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Unit Test Results: co...

Designed for use with JUnit and Ant.

Class com.canoo.grasp.StoreTest

Name	Tests	Errors	Failures	Time(s)	Time Stamp	Host
StoreTest	5	0	0	1.028	2010-04-23T21:33:09	hdarcy-laptop

Tests

Name	Status	Type	Time(s)
find must work after save performed	Success		0.462
listener is notified after a save	Success		0.018
listener is not notified twice after two saves	Success		0.029
listener is notified on delete	Success		0.008
listener is not updated after being removed	Success		0.025

Properties »



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Lean Principles

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- **Deliver Fast**
- **Respect People**
- **Optimize the Whole**

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3 Types of Decisions

- a right decision
- a wrong decision
- no decision

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3 Types of Decisions

- a premature decision *today*
- an informed decision *tomorrow*
- no decision and *missed opportunity*

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How will you get home tonight?

Last bus

Last train

Taxi

Stay at hotel



How will you get home tonight?

Last bus \$4.00

Last train \$8.00

Taxi \$25.00

Stay at hotel \$99.00

Options have value



How will you get home tonight?

Last bus	\$4.00	11 PM
Last train	\$8.00	12 PM
Taxi	\$25.00	All Night
Stay at hotel	\$99.00	All Night

Options have value

Options expire

How will you get home tonight?

Last bus	\$4.00	11 PM
Last train	\$8.00	12 PM
Taxi	\$25.00	All Night
Stay at hotel	\$99.00	All Night

Options have value

Options expire

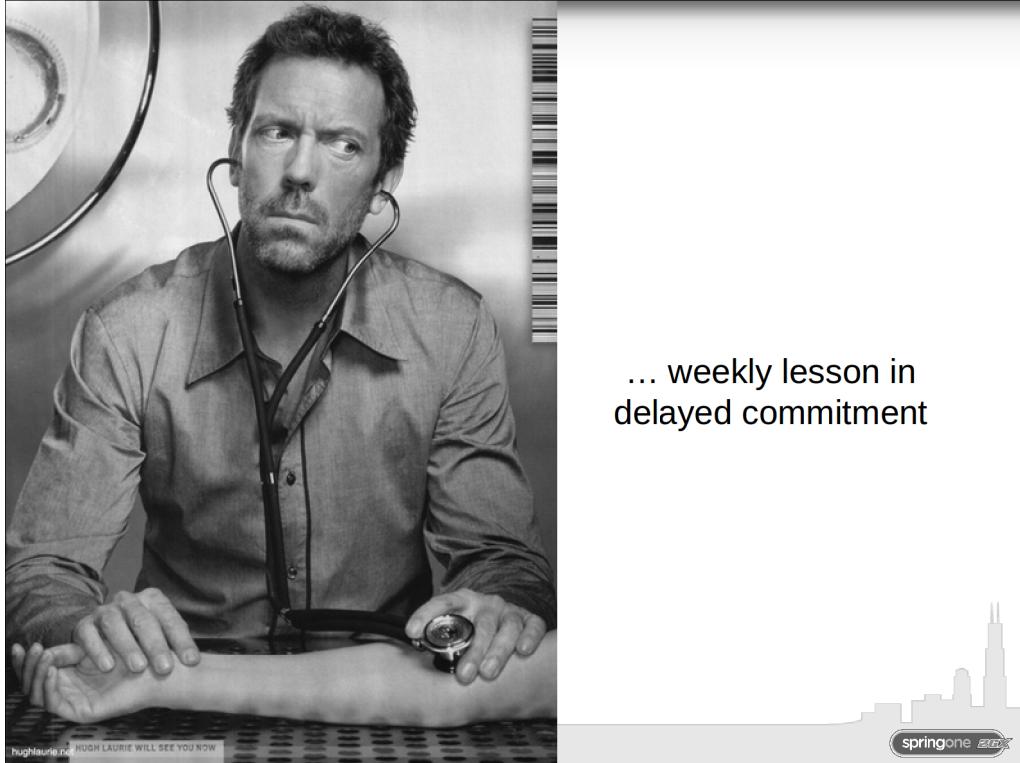
Never commit early unless you know why



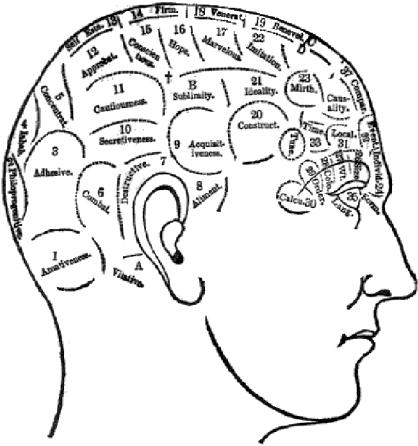
"The last responsible moment is after which execution of an option is too late. The option no longer exists or you're not able to execute it any more."

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Humans hate uncertainty.

So give them specifics.

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“Very dynamic languages like Lisp, TCL and Smalltalk are often used for prototyping... [One] reason given for these languages being good for prototyping is that they don't require you to pin down decisions early on. JAVA has exactly the opposite property: it forces you to make choices explicitly.”

James Gosling 1996

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Late Bound and Low Coupled

```
public void testUserView() {  
    def mockService = [  
        getUsers : { ... }  
    ]  
  
    def view = new UserView()  
    view.selectUser(1)  
    view.removeCurrent()  
    ...  
}
```

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Is the value of an IT system in
the inputs or the outputs?

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Groovy for Unit Testing

Deferring Commitment
An Undo-able Decision

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Next Steps: Delayed Commitment Applied

- 1) Identify the options
- 2) Identify when the option expires
- 3) Identify steps to seek new options until the expiry date
- 4) Wait... and wait... and wait... until the conditions are correct for a decision
- 5) Decide quickly and act with confidence



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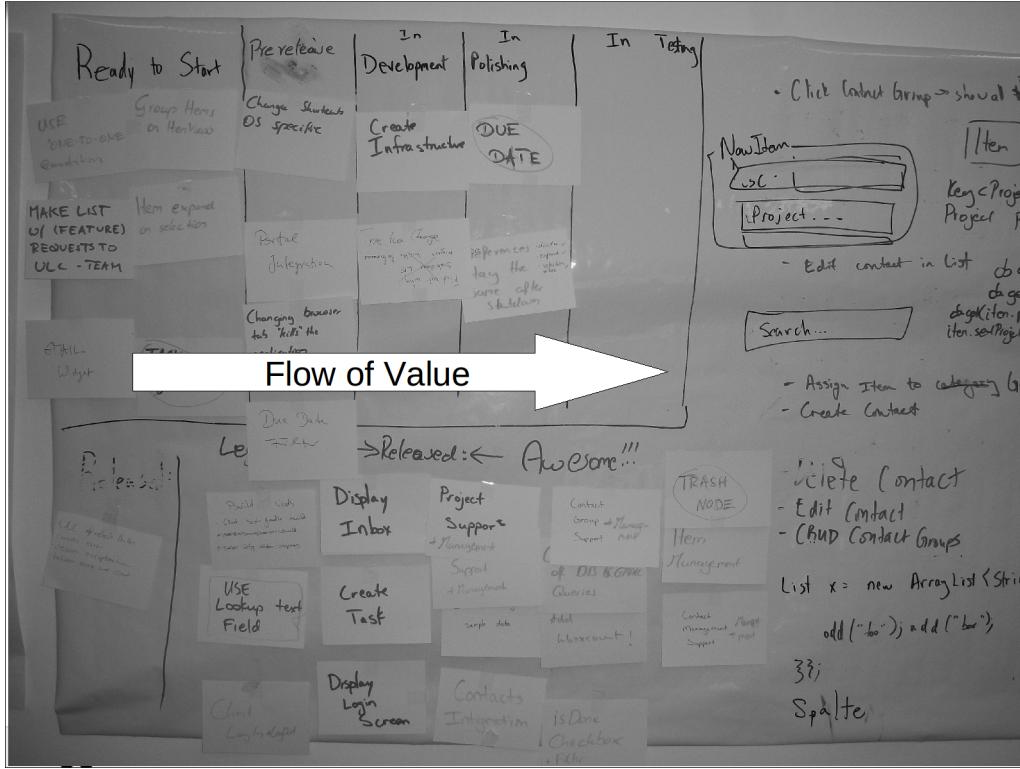
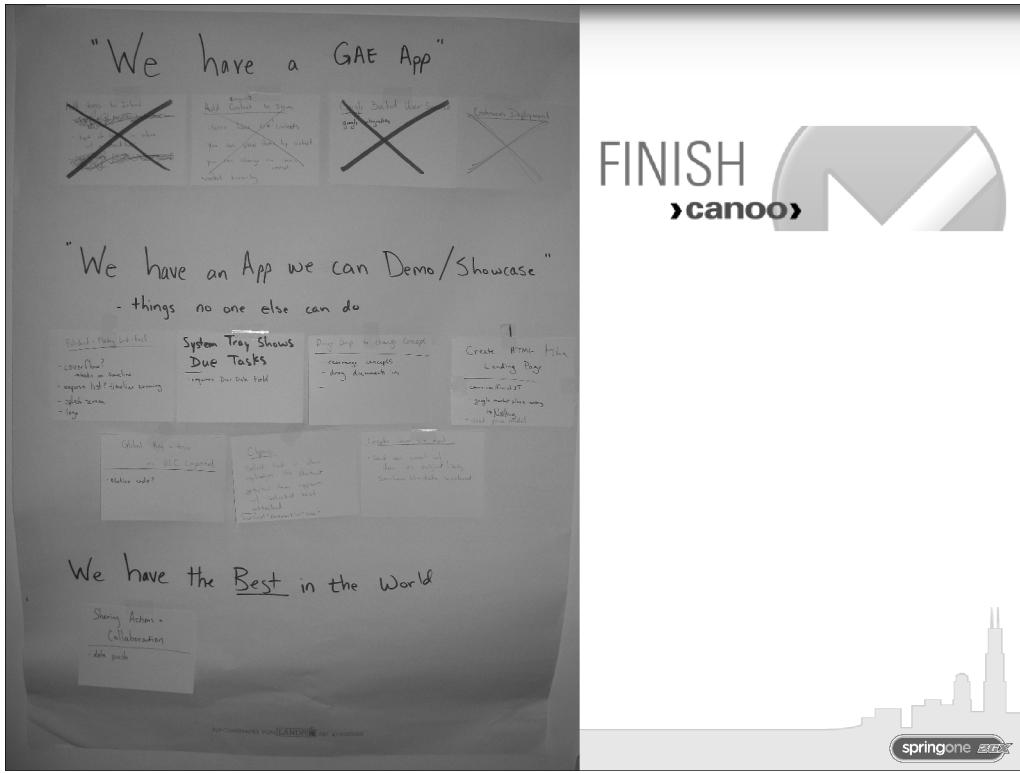
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**Spoiled Sashimi
and Deployment Charades**

A black and white photograph showing a single can of Oskars Surströmming (a very pungent Swedish herring) resting on a large, textured rock. The can's label is partially visible, showing the brand name and product type. The background consists of a gravel surface.





Queuing Theory

Delivery becomes slower as...

- variability increases
- batch size increases
- utilization increases

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Little's Law and Throughput

$$\text{Inventory} = \text{Arrival Rate} \times \text{Flow Time}$$

5 People in Ramp Jam (Inventory)

1 Minutes Per Person (Flow Time)

Wait is 5 minutes (Arrival Rate)

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Little's Law and Throughput

You will move user stories to done faster by
reducing the amount of stories in-process

(a simplification)

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Little's Law and Throughput

work in small batches
create slack time
reduce variability

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The Small Batch Language

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Are your automated tests
helping you go faster?

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Platform Services

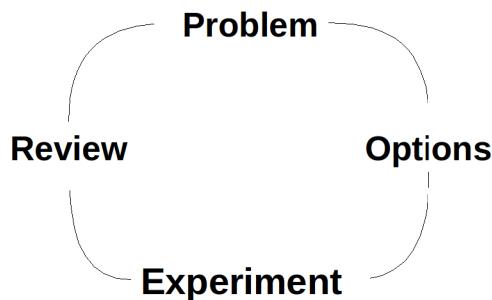
Gold Card

Was sind Gold Cards?
 → Zeitfenster
 → Gold Cards
 → Der SW ist fertig

Wie werden Gold Cards benutzt?
 → Jeder SW hat eine Gold Card
 → Eine Gold Card für jeden Tag
 → Eine Gold Card für jeden Tag
 → Die Resultatliste

FRANK		Thomas		Alex		Sven	
Profile							
1. Sprint	2. Sprint	3. Sprint	4. Sprint	5. Sprint	6. Sprint	7. Sprint	8. Sprint
02.06.10 - 15.06.10	15.06.10 - 28.06.10	30.06.10 - 13.07.10	28.07.10 - 10.08.10	14.07.10 - 27.07.10	28.07.10 - 10.08.10	11.08.10 - 24.08.10	24.08.10 - 06.09.10
9. Sprint	10. Sprint	11. Sprint	12. Sprint	13. Sprint	14. Sprint	15. Sprint	16. Sprint
11.08.10 - 24.08.10	25.08.10 - 07.09.10	03.09.10 - 16.09.10	17.09.10 - 30.09.10	01.10.10 - 14.10.10	06.10.10 - 19.10.10	20.10.10 - 02.11.10	03.11.10 - 16.11.10
17. Sprint	18. Sprint	19. Sprint	20. Sprint	21. Sprint	22. Sprint	23. Sprint	24. Sprint
18.10.10 - 31.10.10	28.10.10 - 10.11.10	12.01.11 - 25.01.11	26.01.11 - 08.02.11	09.02.11 - 22.02.11	15.02.11 - 28.02.11	29.02.11 - 11.03.11	12.03.11 - 25.03.11
25. Sprint	26. Sprint	27. Sprint	28. Sprint	29. Sprint	30. Sprint	31. Sprint	32. Sprint
26.10.10 - 08.11.10	27.10.10 - 09.11.10	09.11.10 - 21.11.10	22.11.10 - 03.12.10	04.12.10 - 16.12.10	05.12.10 - 17.12.10	06.12.10 - 18.12.10	07.12.10 - 19.12.10

Recipes for Going Faster



From “Agile Coaching”
 (a very good book)

Recipe for Disaster:

increase productivity in a non-bottleneck area

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Next Steps: Profit and Loss Sheet

What has the greatest cost?

- delivery four week later
- refactoring for 40 hours
- paying a \$100,00 license fee
- skipping user interface design
- ignoring risk of team member leaving

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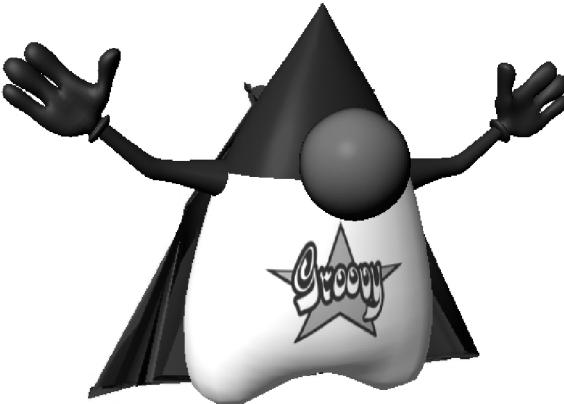
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... some anti patterns



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we're all in this
together people

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“Changing culture is hard, but for many organizations,
it’s the critical first step towards better software”

Nathaniel Schutta

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Agile Adoption Stage 0

behave territorially
are inflexible
grow uncomfortable with uncertainty
treat developers as a commodity
believe development is a linear process

(you're not ready)

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Backdoor Groovy

SOAP UI and Web Services
@Grab and Groovy with Operations

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Demo

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A black and white photograph of a woman with short, wavy hair, looking upwards and to the left with a surprised or questioning expression. She is wearing a light-colored blazer over a dark top.

“You're free to
use Groovy for
personal scripting”



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Documentation Breeds in Captivity

Which is the canonical source?

Requirements
User Stories
Functional Tests
Test Plans

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Demo

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automate, automate, automate

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'automate ' * 3

better?

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Gradle

a better way to build

A platform for automation
(and covered better elsewhere)

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Lean Principles

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“Be a catalyst for change”
Pragmatic Programmer Tip 5

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Q&A

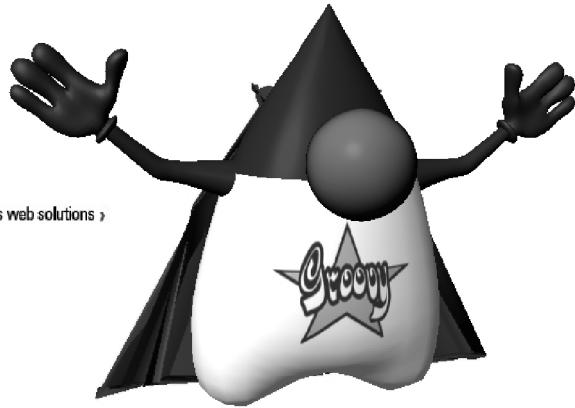
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