

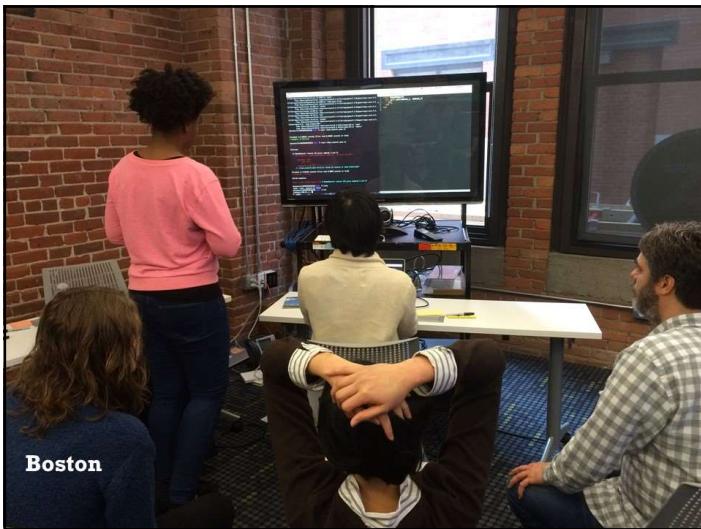
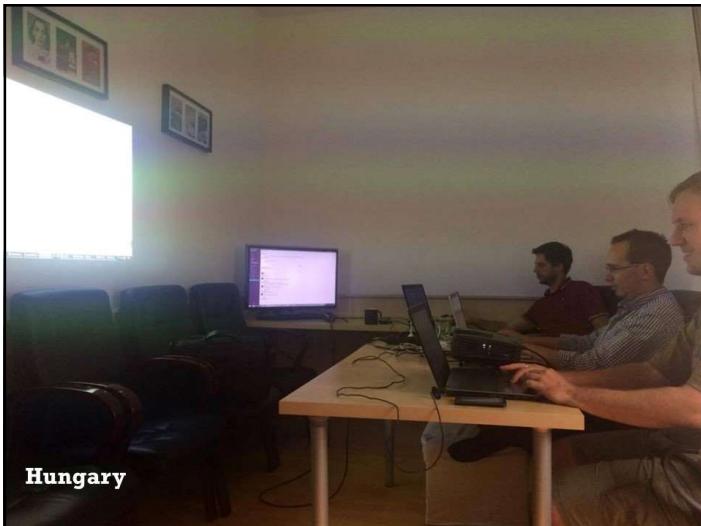
## Driver/Navigators



9

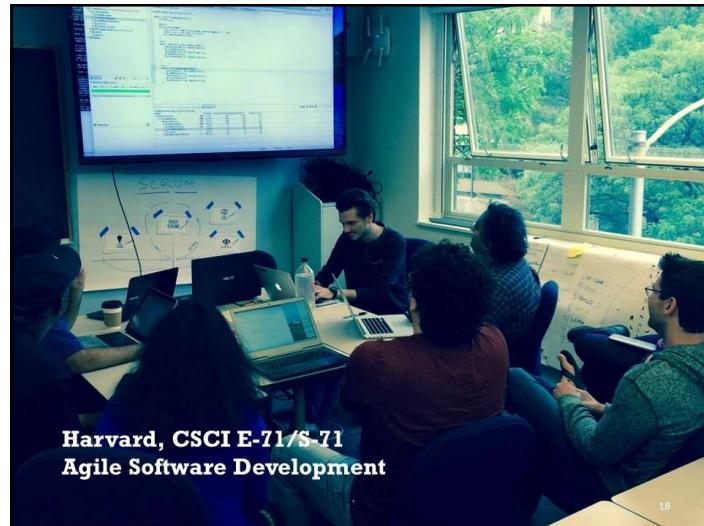
This is being done all over the world.





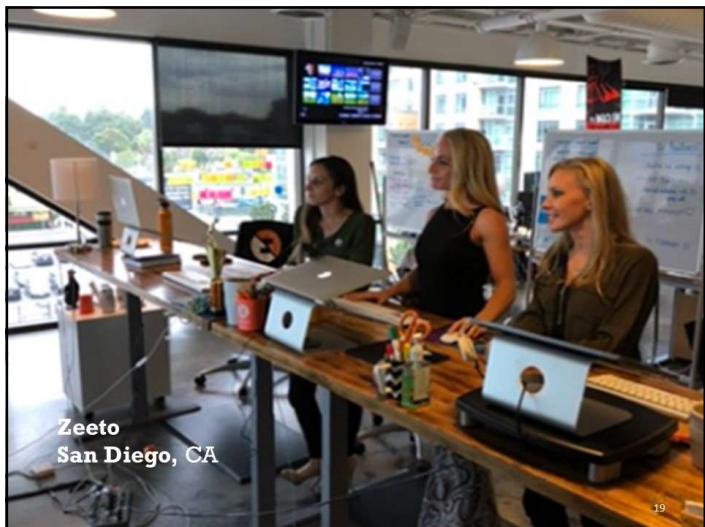


Unruly - London



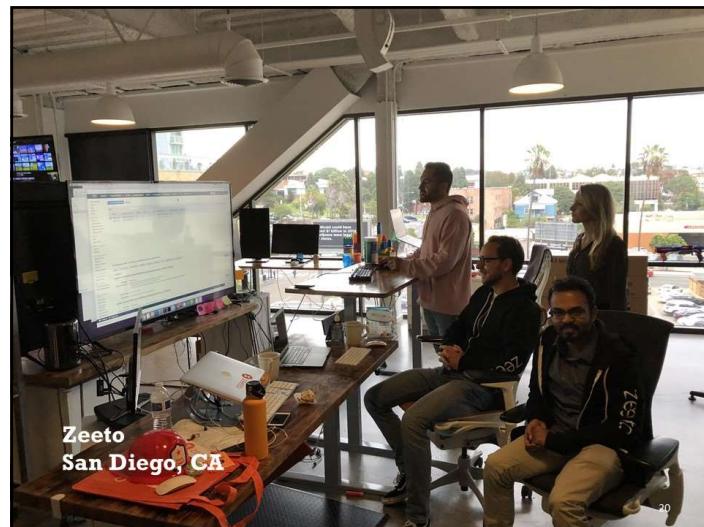
Harvard, CSCI E-71/S-71  
Agile Software Development

18



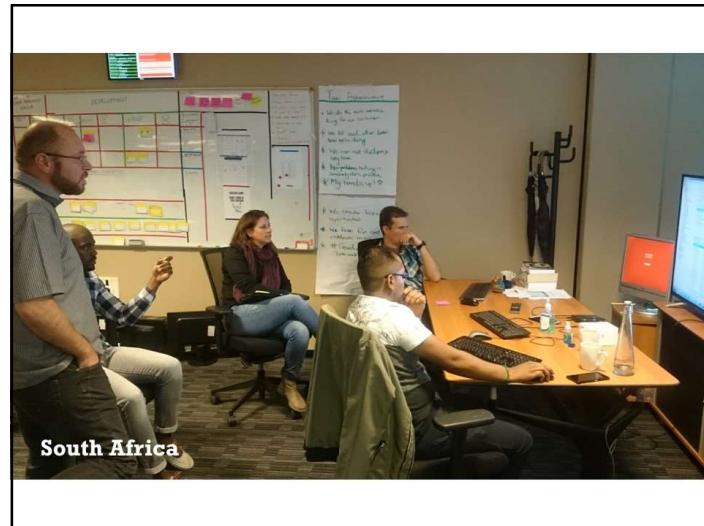
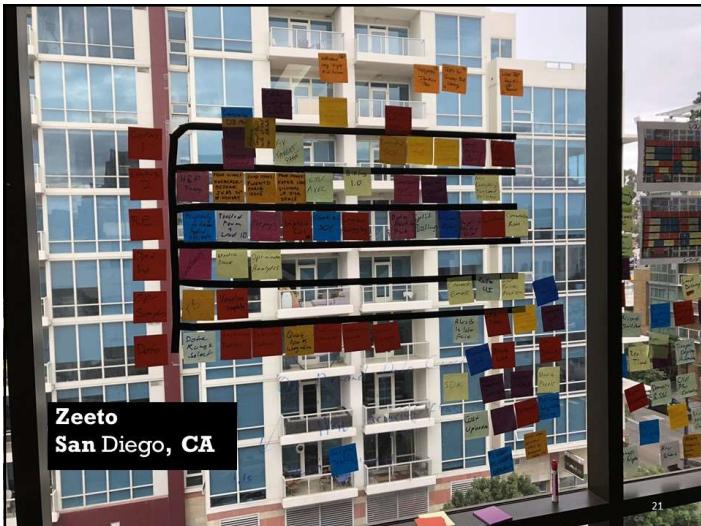
Zeeto  
San Diego, CA

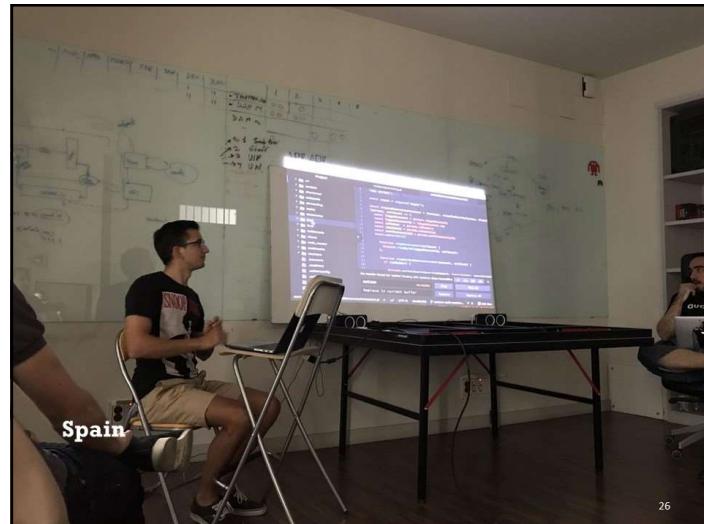
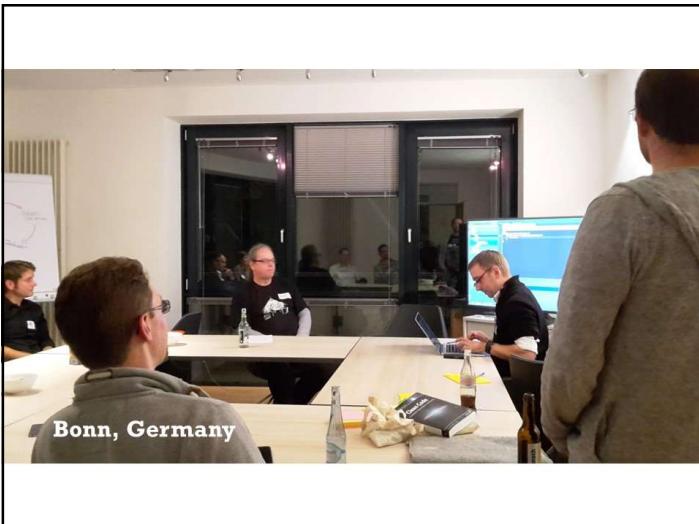
19

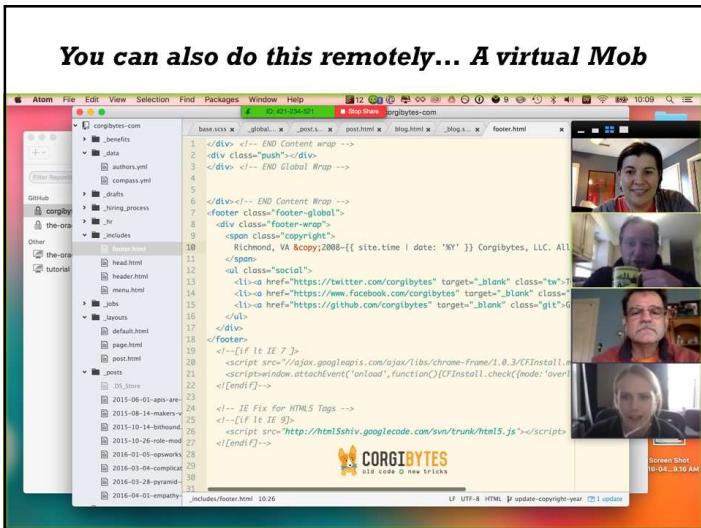


Zeeto  
San Diego, CA

20



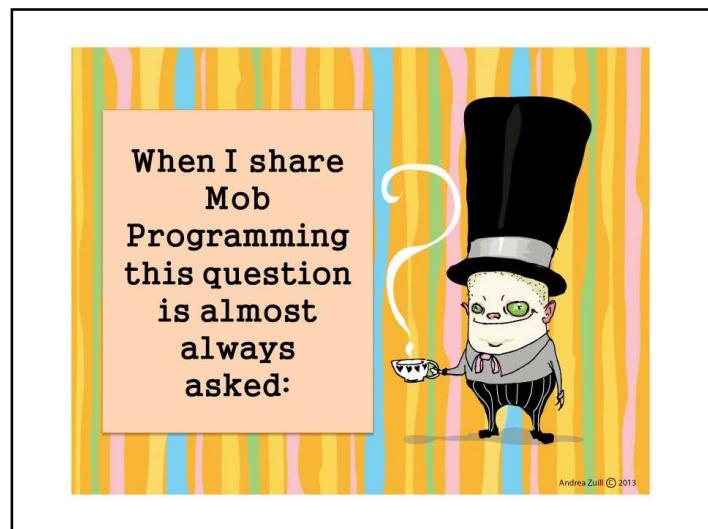




## Why would we work this way?

- Knowledge sharing
- Continuous code and design review
- Many perspectives on the work
- Work on the right things
- Rapid feedback
- Better solutions
- Flow of work items
- Higher quality
- More fun, less stressful, more engaging... etc.

31

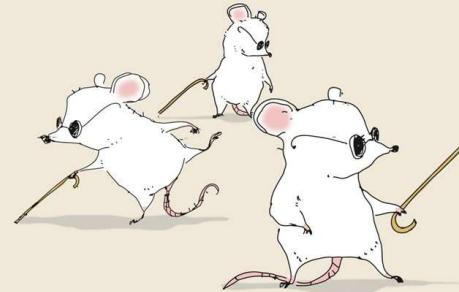


**How can we be productive  
with 5 people at one computer?**



33

**I don't know.  
Does that matter?**

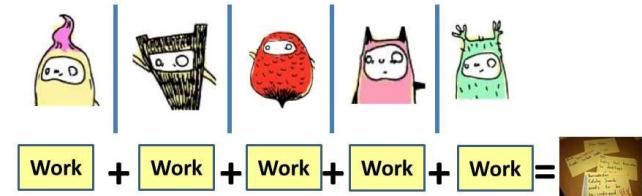


34

**We were paying attention  
Here is what we noticed**

35

**Working Separately**



36

## But working together



=



37

**VS**



**Not just more stuff  
The more useful stuff  
It was better done  
And of higher quality**

38



**VS**



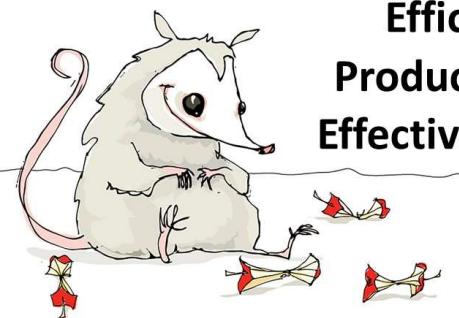
**"A system is not the sum of the behavior of its parts,  
it's the product of their interactions."**

**Russel Ackoff**

39

## About Productivity

**Efficiency  
Productivity  
Effectiveness**



Anne Zuti © 2001

## Efficiency

- How well we do things
- Minimum wasted effort or expense in doing the work
- Goal: More output for same input
- Problem: Busywork - lot's of work, no output.

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## Productivity

- Something is getting “done”
- Measure of outputs divided by inputs
- Problem: Could be the wrong things are getting done

42

## Effectiveness

- Doing the “right things”
- Complete the important things, the valuable things
- Get feedback to learn
- Adjust accordingly
- Getting the impact we “want”

43

## Condensed:

Efficiency = Doing things right  
Productivity = Output / Input  
Effectiveness = Doing right things

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## Why I'm after effectiveness:

Efficiency: Busywork  
Productivity: Wrong things  
Effectiveness: Right things

45

I wanted  
a better  
question



“Transformation comes more from pursuing profound questions than seeking practical answers.”

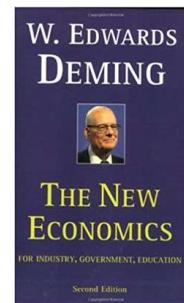
Peter Block  
Book:

The Answer to “how” is YES!



Illustration © 2012 - Andrea Zulli

## W. Edwards Deming



## **W. Edwards Deming**

“If you do not know how  
to ask the right question,  
you discover nothing”

49

## **Tim Ottinger**

“The answer is not  
in the answers”

50

**How can we be effective  
with 5 people at one computer?**



51

**Let's Flip  
This  
Over**



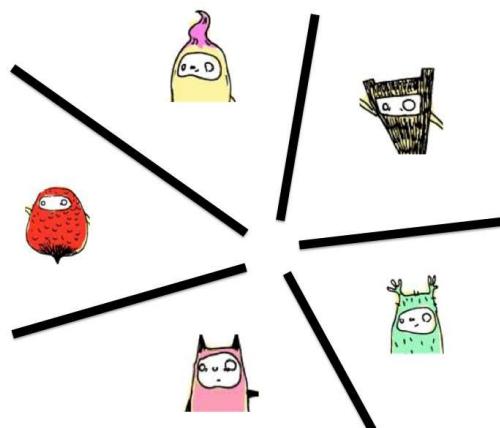
**What is a possible “reverse” question to  
“How can we be effective  
with 5 people at one computer?”**



53

## **Effectiveness Question**

**How can we be effective if we  
separate the people who should  
be working together?**



55

**This led  
to a  
better  
question**



## What are the things that destroy effectiveness?

### Exercise

57

## A short list of things that can destroy effectiveness:

Fatigue	Not taking enough time the first time.	Not everyone is on the same page
Hunger	Communication barriers	Not knowing something
Personality conflicts	Lack of knowledge	External dependencies
Personality clashes	Lack of skills	Unclear requirements
Missing requirements	Needless meetings	Unclear expectations
Missing resources	Waiting on clarification	Unrealistic expectations
Insufficient resources	Lack of motivation	Time zone differences
Monolith architecture	Lack of plan	Waiting on other teams
Cumbersome processes	Fear	Lack of work backlog
Disagreements	Upsetting work environment	Interacting with others
Poor working conditions	Lack of context/understanding	Dependency on other teams
Too Much Noise	Indecision	Technical blockers
Too Quiet	Doubt	Scarce materials
Context Switching	Distractions	Waiting on dependency
Workflow interruptions	Analysis paralysis	Not knowing how to do something
Onboarding	Snow days	
Negativity		

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## What are the things that destroy effectiveness? Three minute exercise



8

## Some possible categories of things that destroy effectiveness

- Communication Problems**
- Decision Making Problems**
- Doing more than is barely sufficient**
- Technical Debt, and etc.**
- Thrashing**
- Politics**
- Meetings**
- Many, many others**



60

We noticed many problems simply faded away when we started Mob Programming!

**Communication Problems**

**Decision Making Problems**

**Doing more than is barely sufficient**

**Technical Debt, and etc.**

**Thrashing**

**Politics**

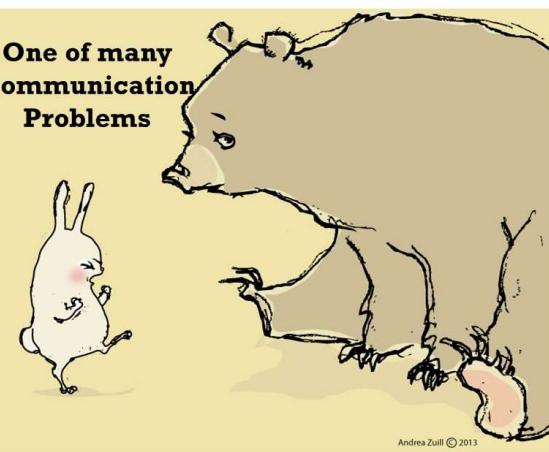
**Meetings**

**Many, many others**



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One of many  
Communication  
Problems



Andrea Zulli © 2013

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### Question Queue Time

The amount of time we must wait to get an answer to a question that is blocking us



Andrea Zulli © 2013

### Question Queue Time Value Stream Map



**As an example:  
One Hour, One Question**

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## Question Queue Time

Zero Queue Time – No Waste



Two Minute Queue Time – Wasting 16 minutes a day



Ten Minute Queue Time – Wasting 70 minutes a day



One Hour Queue Time – Wasting 4 hours a day



One Day Queue Time – Wasting the whole day!!!



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## How do we typically solve this?

One task we are working on



What do we do while we are blocked?

66

## How do we typically solve this?

One task we are working on



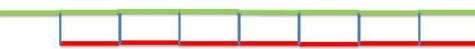
We increase inventory so we can stay busy



67

## How do we typically solve this?

We work on many tasks to keep us busy



**Symptom? – Not busy  
Problem? – Waiting for answers**

68

## How do we typically solve this?

Work on many tasks to keep us busy



Let's not "solve" queueing symptoms by introducing an inventory problem

Note: Inventory is work we've started on, but is not yet delivering value

70

## How did we Solve This?



Zero Queue Time



71

## How did we Solve This?



Zero Queue Time



Two Minute Queue Time



72

## How did we Solve This?



Zero Queue Time



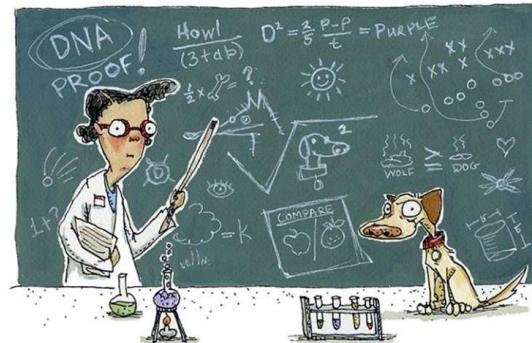
## "Automatic" One-Piece Flow

73

# Flow

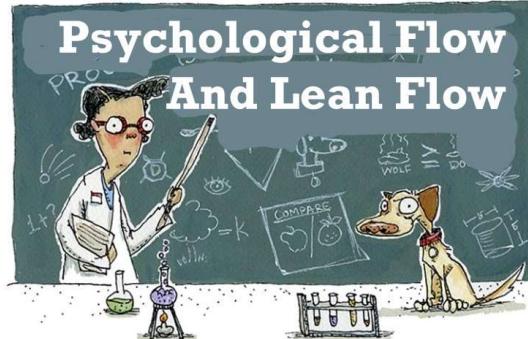
74

## Flow vs. Flow



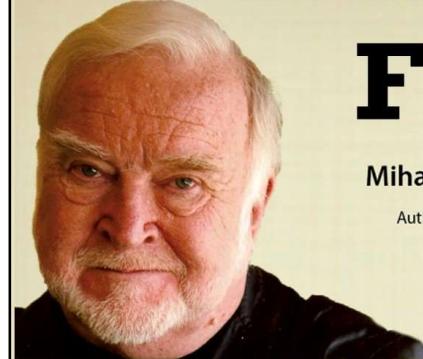
Andrea Zuill © 2016 75

## Flow vs. Flow



Andrea Zuill © 2016 76

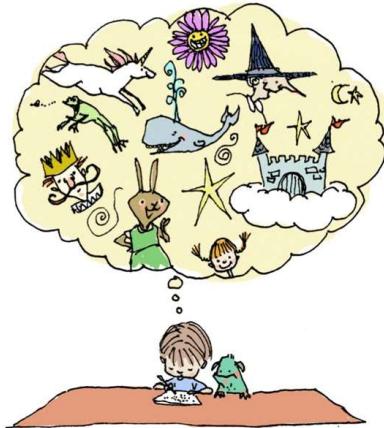
## Flow



Mihaly Csikszentmihalyi

Author and Psychology Professor

# Flow



"A state in which [a person] is so involved in an activity that nothing else seems to matter."

Csikszentmihalyi,  
1990

# Flow

"You are so involved in what you're doing,  
...you don't see  
yourself as  
separate from  
what you're  
doing."



A rock climber (Csikszentmihalyi 1975, p. 39).

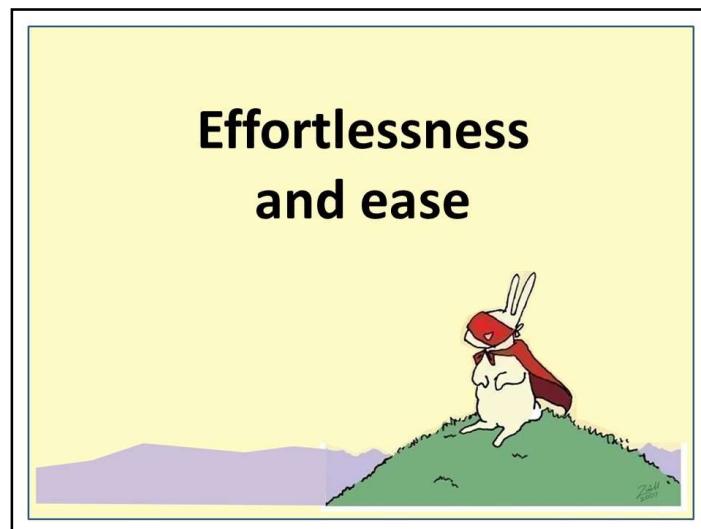
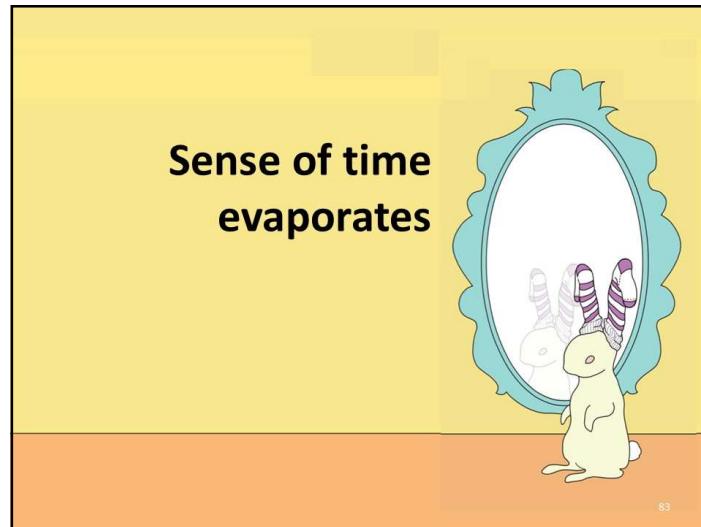
## The Nature of Flow

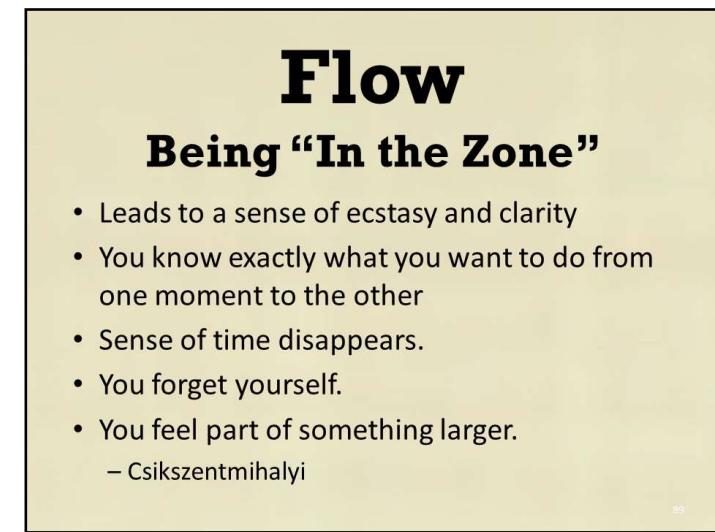
- Balance between challenge and skills
- Experience is intrinsically rewarding
- Complete concentration on the task
- Clarity of goals and reward in mind
- Actions and awareness are merged
- Losing self-conscious rumination
- Feeling of control over the task
- Lose awareness of time
- Effortlessness and ease
- Immediate feedback



## Complete concentration on the task







**Do we destroy this when  
we work as a team?**



90

**Can we get this  
“Flow” in a team?**



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92

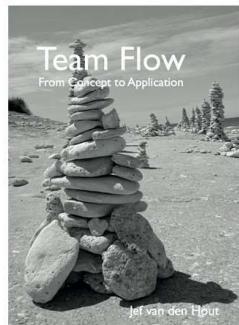


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## Team Flow

Collective ambition  
Common goal  
Aligned personal goals  
High skill integration  
Open communication  
Safety  
Mutual commitment  
Sense of unity  
Sense of joint progress  
Mutual trust  
Holistic focus



Jef van den Hout 96

This is  
**ALL GOOD!**



[http://www.huffingtonpost.com/entry/wang-lucy-in-narrative-objective\\_n\\_516d10e4b065df89edec9](http://www.huffingtonpost.com/entry/wang-lucy-in-narrative-objective_n_516d10e4b065df89edec9)

But...  
There is another  
kind of flow.  
Flow, as in Lean



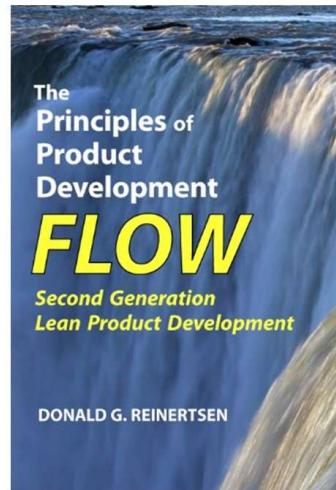
98

### Flow In Manufacturing [simplified]

- Complete production of one piece
- From start to finish
- With as little work in process (inventory) and as little waiting (queueing) between operations as possible



Well  
Worth  
the  
Read



### The Principle of Queueing Waste:

Queues are the root cause of the majority of economic waste in product development

Donald Reinertsen



**Queues create:**

- Longer cycle time**
- Increased risk**
- More Variability**
- More overhead**
- Lower quality**
- Less motivation**

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## Value Stream Map



**Green: The Right Work Getting Done**  
(includes exploring, experimenting, discovery)

**Red (Waste): The Wrong Things**

Examples: Waiting, Merging, Arguing, Discussing rather than trying things, Work that doesn't need to be done, Doing the "Wrong Thing", Failure Demand, meetings, coordination, prioritizing... ad nauseam

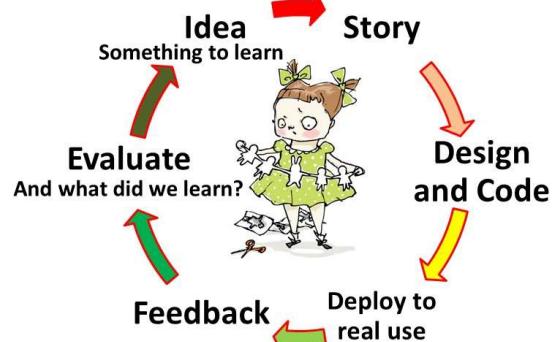
10  
3

**Flow with Software Development:**  
**Each Story flows from “idea”**  
**to delivered, working software**  
**directly**  
**without queueing, waiting, distraction,**  
**interruption, or multitasking**



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The Small, Inexpensive, Attempt at Value  
**ONE AT A TIME**



**With Mob Programming  
what do we want to  
optimize for???**



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**We optimize for the  
flow of the work**

**rather  
than for the  
output of the  
individual**



7

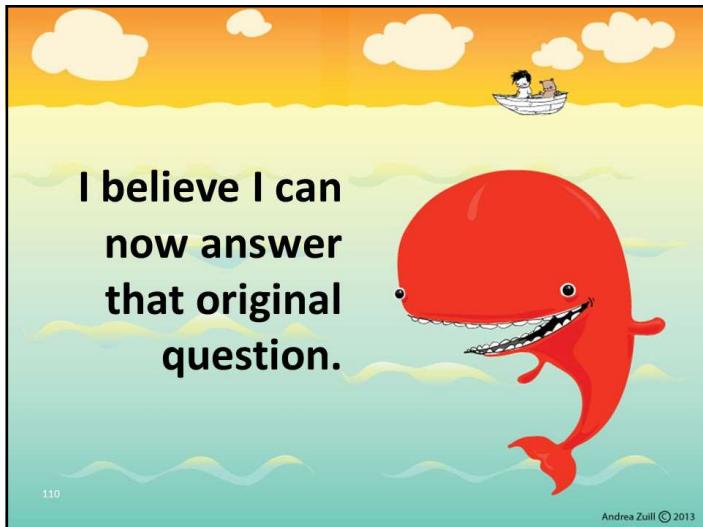
**We are not NOT trying to  
Get the most work out of each person**



10  
8

**We are seeking to  
get the best of each  
of us into everything  
we do.**





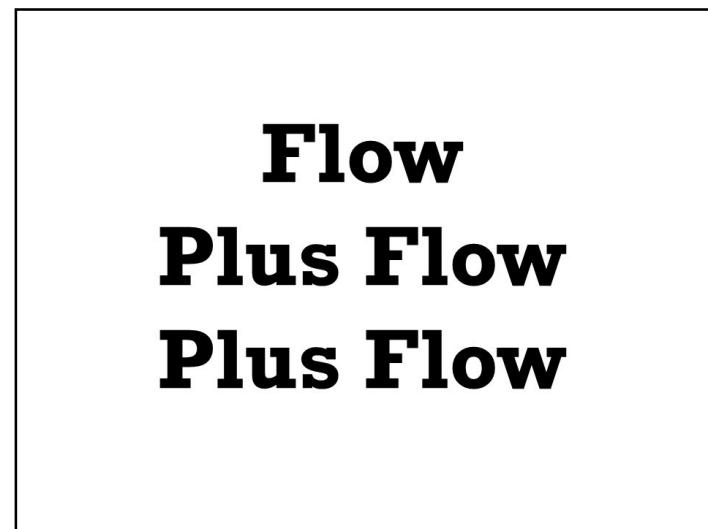
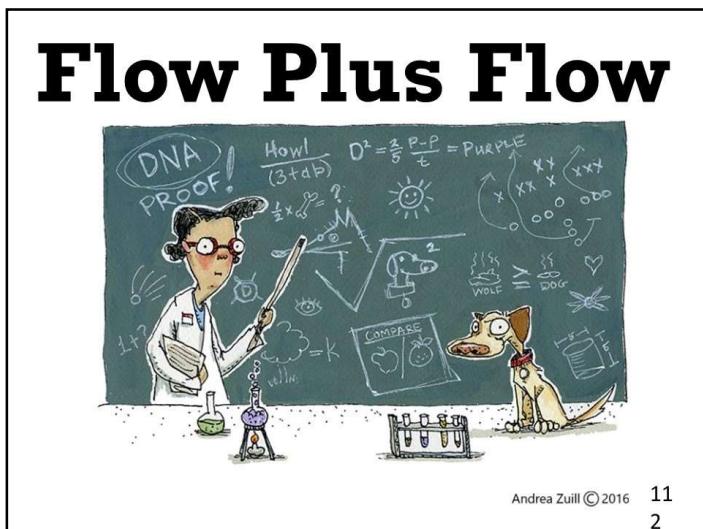
## Effectiveness

How can we be **EFFECTIVE** with 5 people at one computer?

=

=

11  
1



# Flow++

We Enable **Individual FLOW**  
by giving each person the safety and  
space to think in their own way.



115

We Enable **Team FLOW**  
by Working Well Together



116

We Enable **Lean FLOW**  
by Eliminating Queues



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