

Simplicity Appreciation 101

by Craig L. Jones

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30 Years Software Development

12 Years Agile
(mostly XP, Scrum, & Kanban)

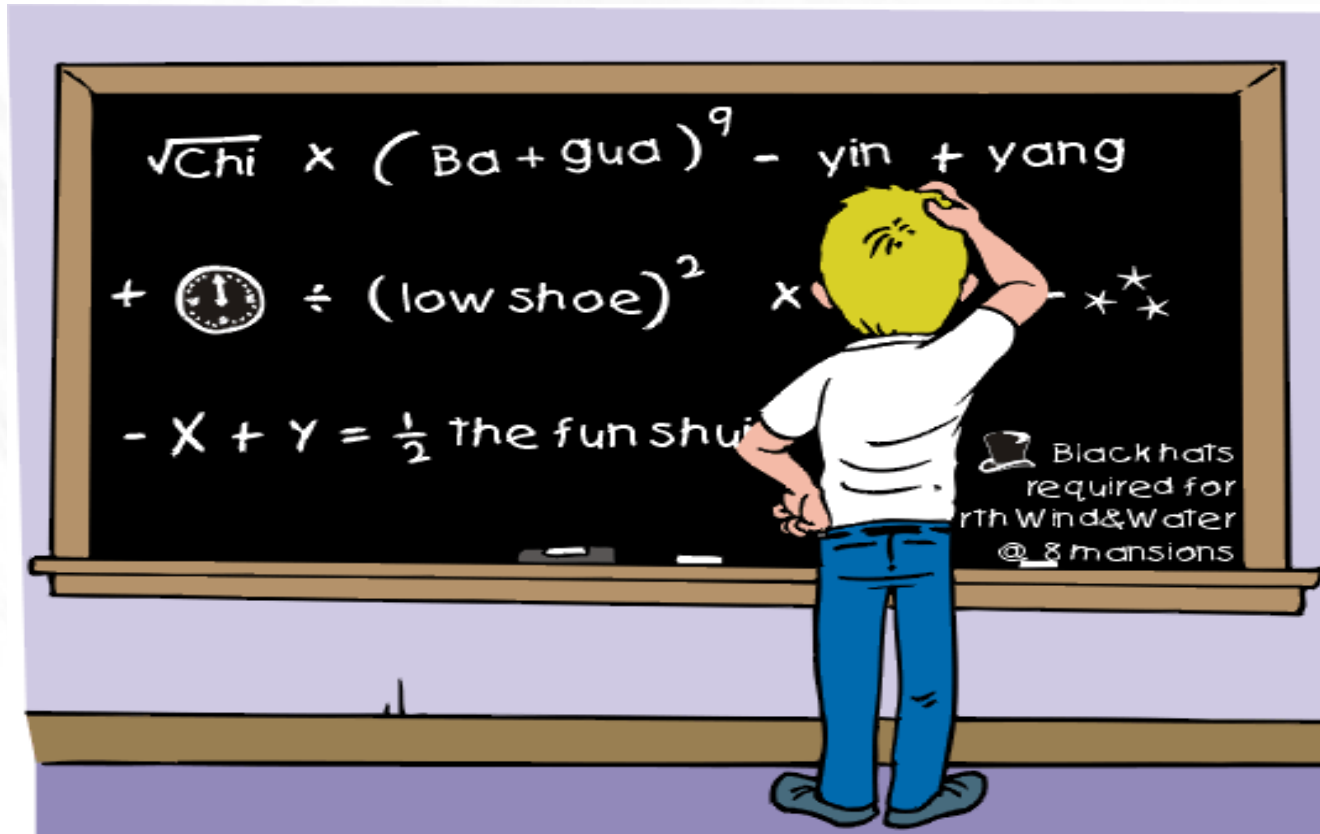
CSM & Scrum Coach

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Simplicity is Hard Work



Simple \neq Lazy

Problem #1: Although well-intentioned, we tend to overcomplicate things and make more work for ourselves

Problem #2: Even worse, we tend to overcomplicate things and make more work for others

Solution #1: Adopting an Agile Methodology
(collaboration, transparency, feedback,
INVEST, definition of done, retrospectives)

Solution #2: Addressing Complexity Head On

Exercise #1 - Brainstorm

Name some examples of good, wrong, or needed simplifications you have noticed lately...

- ✓ Business
- ✓ Software
- ✓ Consumer Products
- ✓ Elsewhere

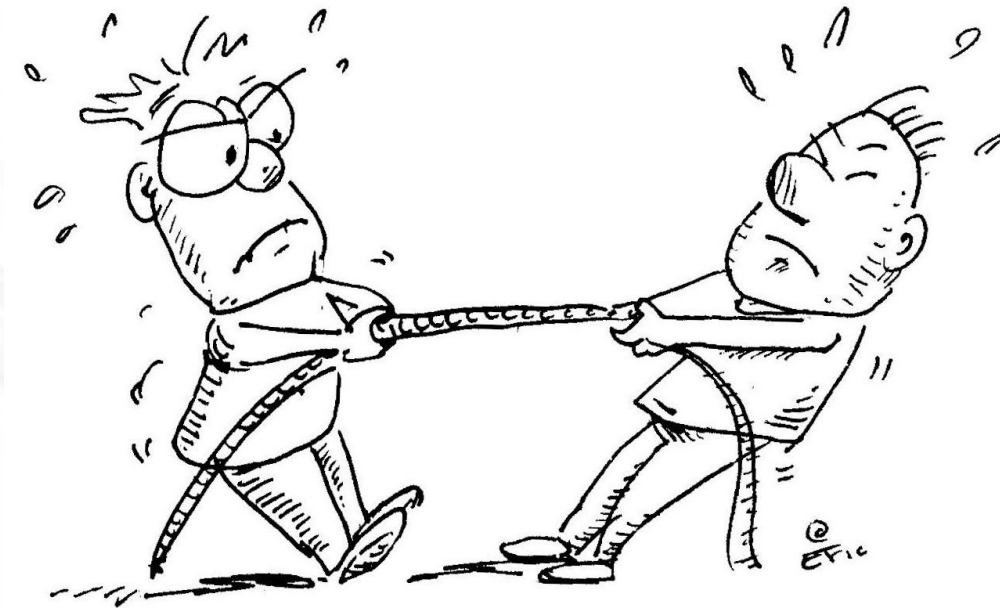
Exercise #2 - Analyze

Now, can you explain why they were, are, or would be simplifications?

[If you can't, maybe it's because you don't have a sufficient vocabulary for discussing simplicity.]

Exercise #3:

Why Do People Resist Simplification Efforts?



Humans are...

- **Natural builders and creators**, always looking to add, not so much to subtract (except out of spite). People often say, “there ought to be a law against that.” People rarely say, “we don't need that law anymore.”
- **Myopic.** We tend to fixate only what what's in front of us.
- **Not used to talking about simplicity.** Subtleties of simplicity are not in our vocabulary.

**We are hardwired to fear
what we cannot control.**

-- Linda Rising, *Fearless Change*

Natural Reactions to Lack of Control

- Over-specify
 - fearing only one bite at the apple
 - as a negotiation ploy
 - just to be thorough
- Over-engineer
 - to be foolproof
 - to be future-proof



Art Appreciation

“...I know it when I see it, ...”

~ Justice Potter Stewart

Simplicity



Complexity

(good)



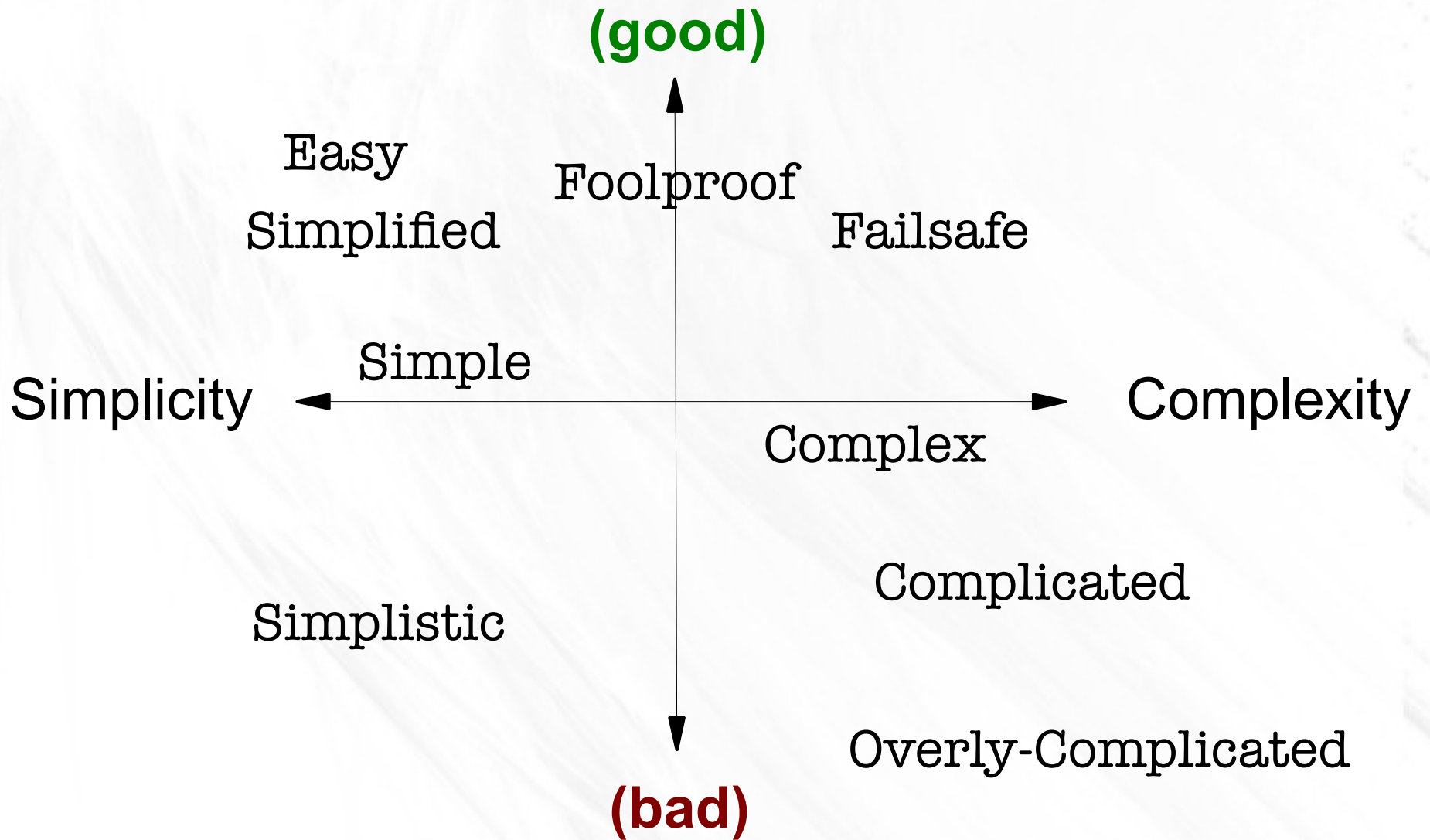
Simplicity



Complexity



(bad)



A candidate vocabulary...

The “Worse is Better” Model

From *The Rise of Worse is Better*, by Richard P. Gabriel, 1991.

In order of importance...

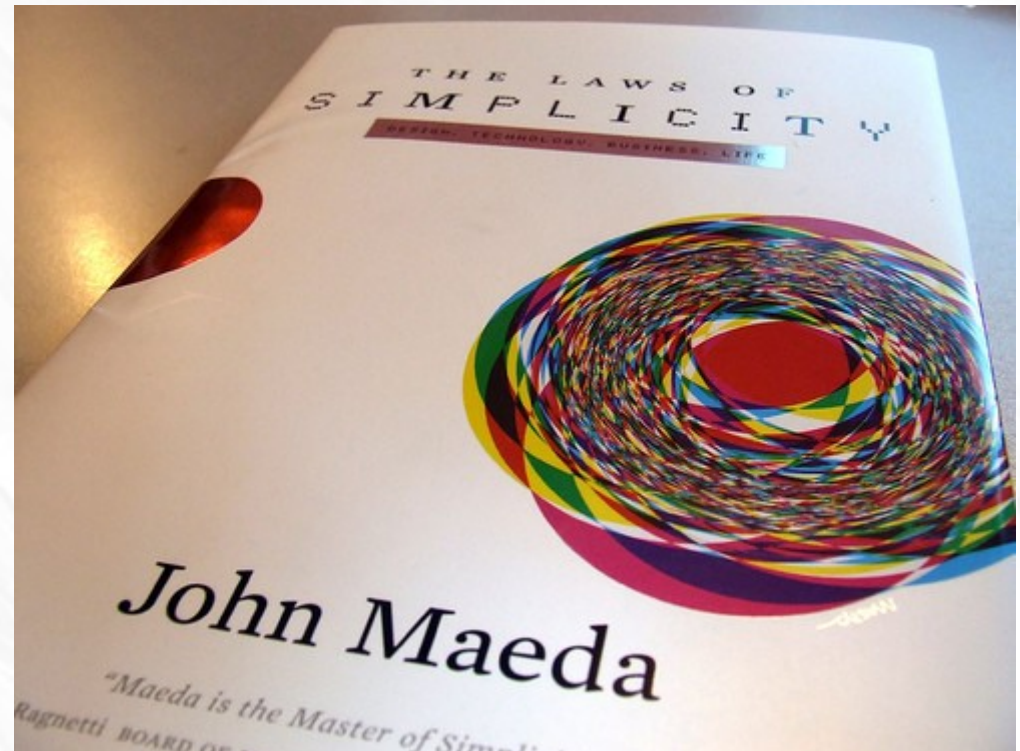
- **Simplicity** – Simplicity is the most important consideration in a design, both in implementation and interface. It is more important for the implementation to be simple than the interface.
- **Correctness** – A design must be correct in all observable aspects. It is slightly better to be simple than correct.
- **Consistency** – A design must not be overly inconsistent. Consistency can be sacrificed for simplicity in some cases, but it is better to drop those parts of the design that deal with less common circumstances than to introduce either complexity or inconsistency in the implementation.
- **Completeness** – A design must cover as many important situations as is practical. All reasonably expected cases should be covered. Completeness can be sacrificed in favor of any other quality, especially implementation simplicity.

A candidate vocabulary...

The Laws of Simplicity by John Maeda

Currently, President of Rhode Island School of Design. Previously, a Professor at MIT at the time of writing the book (2005/2006).

Just 100 pages. More at lawsofsimplicity.com



Maeda's Ten Laws

1. Reduce
2. Organize
3. Time
4. Learn
5. Differences
6. Context
7. Emotion
8. Trust

9. Failure
10. The One

Plus 3 essays on key technologies...

1. Away
2. Open
3. Power

1. Reduce

The simplest way to achieve simplicity is through thoughtful reduction.

SHE = Shrink, Hide, Embody

Even the Illusion of Reduction Can Help



Given a prioritized backlog of user stories and limited resources for developing it, what's the best way to simplify the list?

Passive Reduction

1. XXXXXXXXX
2. XXXXX
3. XX
4. XXXXXX
5. XXXX

6. XXXXXXXXXXX
7. X
8. XXXXX

Thoughtful Reduction

1. XXXXXXIXX
2. XXXXIX
3. XX
4. XXXXIXX
5. XXXX
6. XXIXXXXXXXXX
7. X
8. XXIXXX

2. Organize

Organization makes a system of many appear fewer.

SLIP = Sort, Label, Integrate, Prioritize

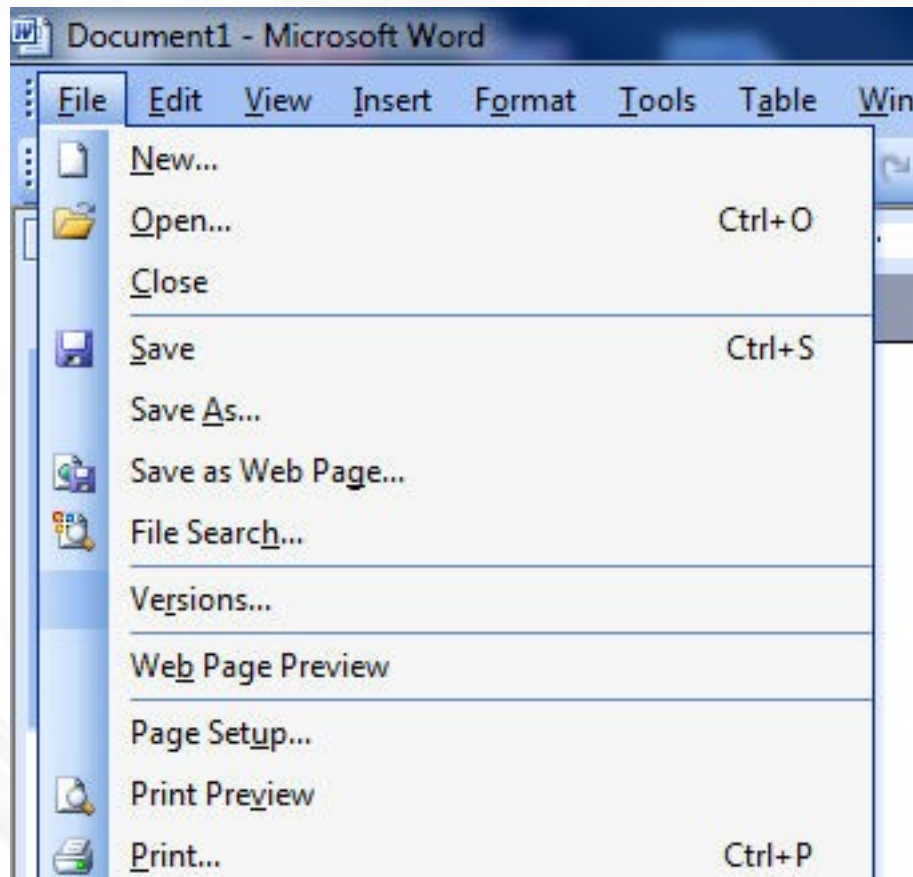
(cf. CVA = Commonality/Variability Analysis)

How many?

0000000000

How many?

000 000 0000



4 per
group
at most

“The best designers in the world squint when they look at something. They squint to see the forest from the trees—to find the right balance. Squint at the world. You will see more, by seeing less.”

3. Time

Savings in time feel like simplicity.

- Express lanes.
- Next available window.
- Making appointments.
- Multithreading / parallel processing (e.g. finish booting up in the background while user logs in).
- Start the download going, even though the user hasn't given a name or location.



Second Choice:

- If you cannot make the wait shorter, then make it more tolerable.

"The average wait time is currently... six... minutes."



Third Choice:

- If you cannot make the wait shorter, at least keep the customer informed.

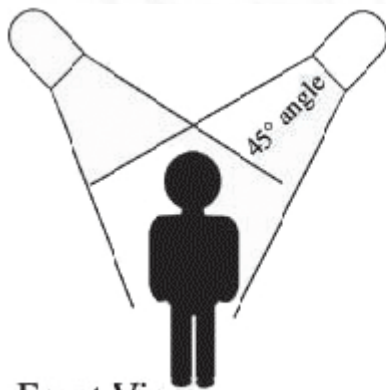
4. Learn

Knowledge makes everything simpler.

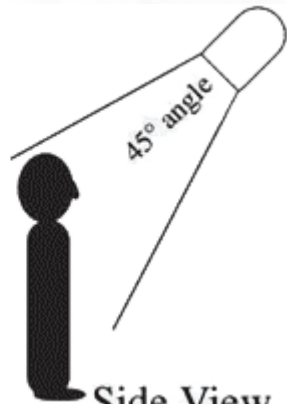
“Knowledge is comfort, and comfort lies at the heart of simplicity.”



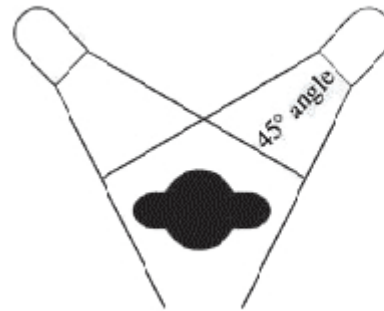
“Tweaking” a Leko



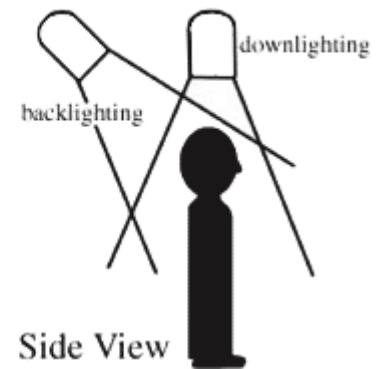
Front View



Side View



Top View



Side View

Always be learning. “In the martial art of Karate, for instance, the symbol of pride for a black belt is to wear it long enough such that the die fades to white as to symbolize returning to the beginner state.”

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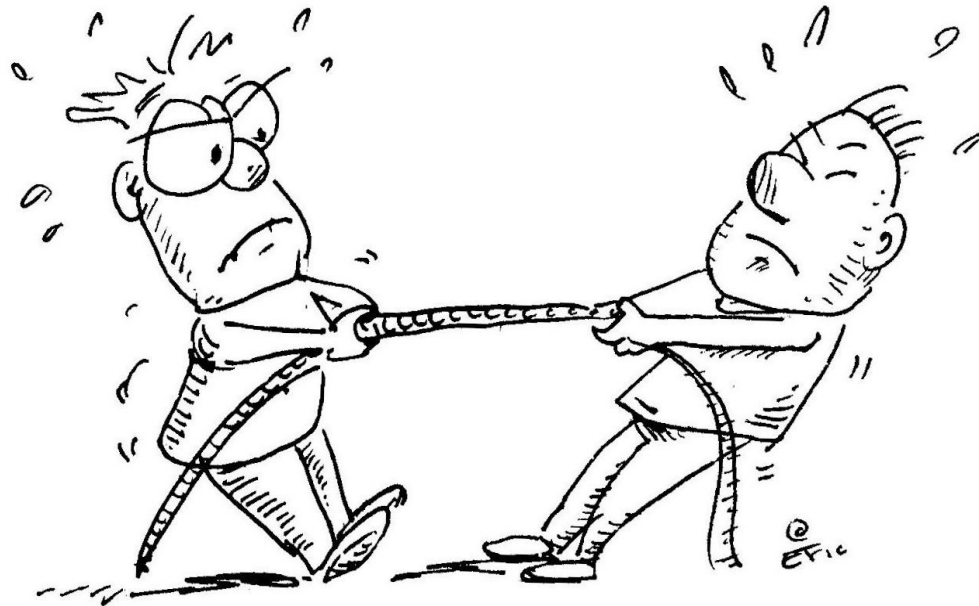
Kenneth Blanchard, Ph.D.
Spencer Johnson, M.D.



≤ 100 pages, ≤ 1 chapter

5. Differences

Simplicity and complexity need each other.



While-You-Wait Service



Who's the Customer?

The vendor should take the heaviest burden

- Automatic transmissions, power steering, and 100,000 mile spark plugs
 - Google's "Did you mean..?"
- (not) A la carte pricing of airfares – baggage fees, change fees, box lunches, ...

Day in the Life of a Developer...

Workflow better be simple: Logging time, defining work, collaborating on requirements/designs, committing changes, deploying builds

The work at hand can be complicated: Solving gnarly problems, interfacing with hardware and 3rd party APIs, performance tuning.

6. Context

What lies in the periphery of simplicity is definitely not peripheral.

“The sixth Law emphasizes the importance of what might become lost during the design process. That which appears to be of immediate relevance may not be nearly as important compared to everything else around. Our goal is to achieve a kind of enlightened shallowness.”

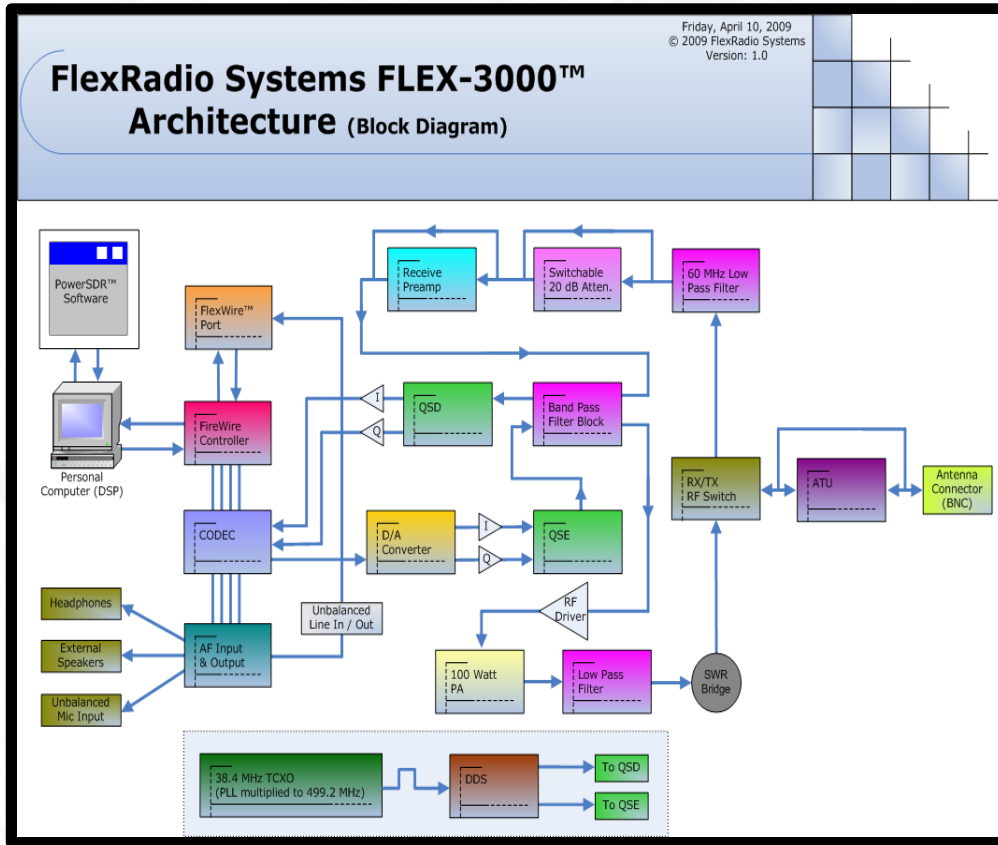


“Complexity implies the feeling of being lost; simplicity implies the feeling of being found.”

The screenshot shows the WordPress Dashboard 'At a Glance' widget. It features a home icon and the title 'Dashboard'. Below the title is a 'Right Now' section with a dropdown arrow. The main content area is titled 'At a Glance' and displays a grid of statistics: 49 Posts, 364 Comments, 7 Pages, 5 Approved, 14 Categories, 0 Pending, 143 Tags, and 359 Spam. At the bottom, it shows the current theme 'Typebased' with 7 Widgets and the WordPress version '2.9.2', along with buttons for 'Change Theme' and 'Update to 3.2.1'.

Right Now	
<i>At a Glance</i>	
49 Posts	364 Comments
7 Pages	5 Approved
14 Categories	0 Pending
143 Tags	359 Spam
0 Drafts	
0 Pending	
Theme Typebased with 7 Widgets	Change Theme
You are using WordPress 2.9.2 .	Update to 3.2.1

- Dashboard / at-a-glance view
- Tagging, filtering, sorting



- Block diagrams / A3 sheets
- Color coding

7. Emotion

More emotions are better than less.

“Aichaku (ahy-chaw-koo) is the Japanese term for the sense of attachment one can feel for an artifact. When written by its two kanji characters, you can see that the first character means **'love'** and the second one means **'fit.'** 'Love-fit' describes a deeper kind of emotional attachment that a person can feel for an object. It is a kind of semiotic love for an object that deserves affection not for what it does, but for what it is.”




Bento box art –
inside and out





“While great art makes you wonder, great design makes things clear.”



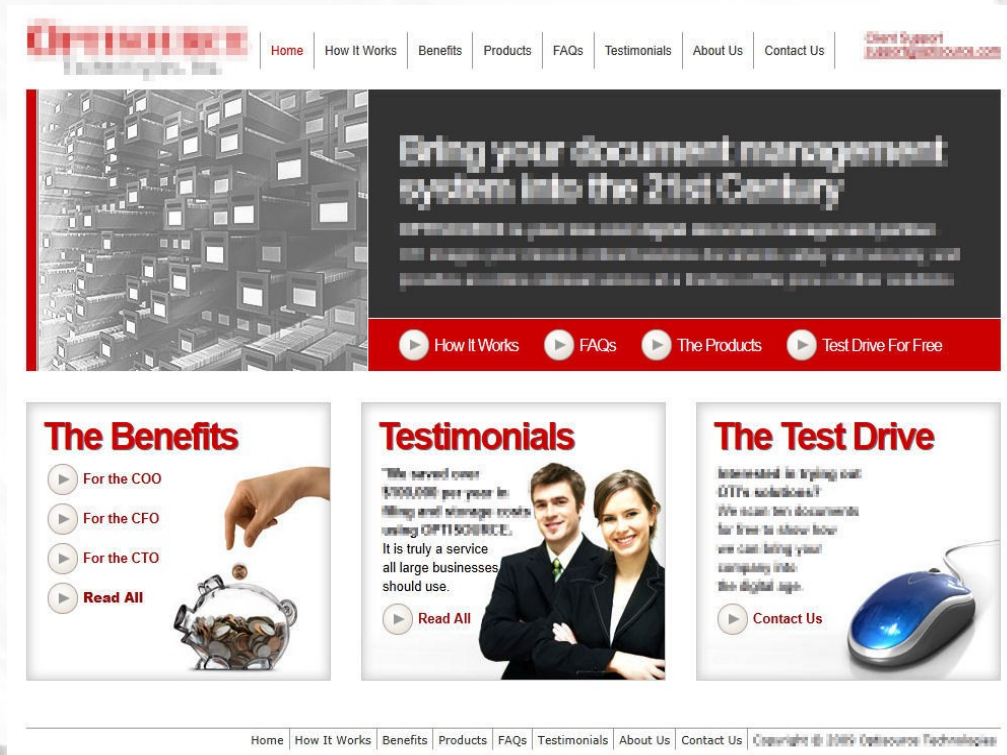
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Same site circa 2009

8. Trust

In simplicity we trust.

How much do you
need to know
about a system?

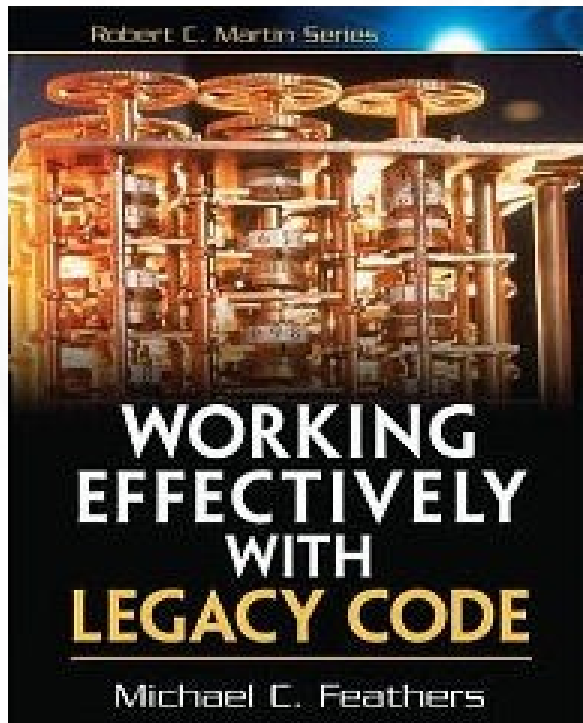


How much does
the system
know about you?

- One-click shopping
- Brand name consistency
- Being able to Undo changes
(Gift receipts are a form of undo)
- Google's “I'm feeling lucky” button.

9. Failure

Some things can never be made simple.



(Or, more likely, it's possible, but not worth the effort)

- Blow it up and start over
- Cordon it off (e.g. the “Wrapper” pattern)

“Thar be monsters here!”

10. The One

*Simplicity is about subtracting the obvious,
and adding the meaningful.*



July, 2011 – LA dismantles 32 red-light traffic cams that were determined to be ineffective at reducing accidents.

Sept, 2011 – Why not just leave the yellow light on longer?

Key Technology #1. Away

More appears like less by simply moving it far, far away.

Away

- Away could mean delayed in time
- Specifically means away in distance
- Any kind of 3-dimensional representation
 - Stacked charts
 - iPod Cover-flow
 - Second Life Animated motion -- zoom/pan/float

Key Technology #2. Open

Openness simplifies complexity.

Key Technology #3. Power

Use less, gain more.

Exercise #4:

Discuss the following simplification techniques and examples in light of the ten laws (refer to handout) ...

Scrum/Agile/Lean Examples

- A3 Sheet
- Timeboxing

Scrum/Agile/Lean Examples

- Taiichi Ohno's 7 Wastes (Muda):
 1. Overproduction
 2. Waiting
 3. Transporting
 4. Inappropriate Processing
 5. Unnecessary Inventory
 6. Unnecessary / Excess Motion
 7. Defects

Scrum/Agile/Lean Examples

- Poppendieck's 7 Wastes in Software Dev:
 1. Partially Done Work
 2. Extra Features
 3. Relearning
 4. Handoffs
 5. Delays
 6. Task Switching
 7. Defects

Software Development Examples

- DRY (Don't Repeat Yourself)
- YAGNI (You Ain't Gonna Need It)
- Extract Method (Refactoring) and its opposite, Inline Method (Refactoring)

Business Process Examples

- Amazon order speed
- Bill Bratten's NY City subway cleanup
(the “broken windows” phenomenon)
[read about it in Malcolm Gladwell's *Tipping Point*]
- Southwest Airlines seating

UI/UX Examples

- Wizards vs. Expert Mode
- Proximity of error messages
- Uniformity of experience

Exercise #5:

Discuss the following quotes in light
of the ten laws ...

“'Think simple' as my old master used to say – meaning reduce the whole of its parts into the simplest terms, getting back to first principles.”

~ Frank Lloyd Wright (1867-1959)

“Any fool can write code that a computer can understand. Good programmers write code that humans can understand.”

~ Martin Fowler

“Any intelligent fool can make things bigger and more complex... It takes a touch of genius - and a lot of courage to move in the opposite direction.”

~ Albert Einstein

“Optimism is an occupational hazard of programming: feedback is the treatment.”

~ Kent Beck

“Simple, clear purpose and principles give rise to complex and intelligent behavior. Complex rules and regulations give rise to simple and stupid behavior.”

~ Dee Hock, founder and former CEO,
VISA

**“The unavoidable price of reliability is
simplicity.”**

~ C. A. R. Hoare

“Simplicity is the most difficult thing to secure in this world; it is the last limit of experience and the last effort of genius.”

~ George Sand

“The problem with quick and dirty, as some people have said, is that the dirty remains long after the quick has been forgotten.”

~ Steve C. McConnell

“Simplicity is the ultimate sophistication.”

~ Leonardo da Vinci

**“I’m erecting a barrier of simplicity
between myself and the world.”**

**~ André Gide, winner Nobel Prize in
Literature, 1947**

[Often misattributed to Mark Twain...]

“I have made this letter longer than usual, only because I have not had time to make it shorter.”

~ Blaise Pascal, 17th-century French philosopher and mathematician

Homework Assignment:

Write a 50-Word Fictional Story

- 50 words or less (use the stats tool in your word processor to count for you)
- Must be a complete story, with proper grammar (prose, not poetry)
- Should have a good ending (a plot twist, a moral to the story, an Aha! moment).

Motivation

A Joni afternoon despite the sunshine outside. Songs of lost love and grey skies, melancholy piano and guitar, a voice reaching out to find some joy. Autumn blues are here again. I don't know what to do or want to do it. Time's adrift, leaves fall, and reasons are forgotten.

© Rupert Loydell 2002 -- <http://tangents.co.uk/50words>

Double Bill Matinée

Drinks. Popcorn. Comfy seat in the dark.
Crazed groundskeeper chases a wacky
gopher around the golf course; hijinks ensue.
End credits. Piss break. More comfy drinks
and popcorn. Comical camp counselor
teaches wacky kids about life; hijinks ensue.
End credits. **BLINDING SUNLIGHT.**

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1. Write out the story without regard to length (100 – 200 words).
2. Edit like crazy. The point of the exercise is to keep asking yourself, “Is this word or phrase really necessary? Can I still get my point across without it?” You'll be amazed.
3. Tip: Use the title to convey some of the story without using up precious word count.
4. Tip: A thesaurus is indispensable for conveying exactly what you mean in as few words as possible.

Flash Fiction / Microfiction

Some resources:

- <http://microfiction.rumble.sy2.com/>
- <http://tangents.co.uk/50words/>
- http://en.wikipedia.org/wiki/Flash_fiction

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