

Turning Complexity Into Simplicity

An experience report

Jon Bach

jonb@quardev.com

Manager for Corporate Intellect

PNSQC 2010

Theme

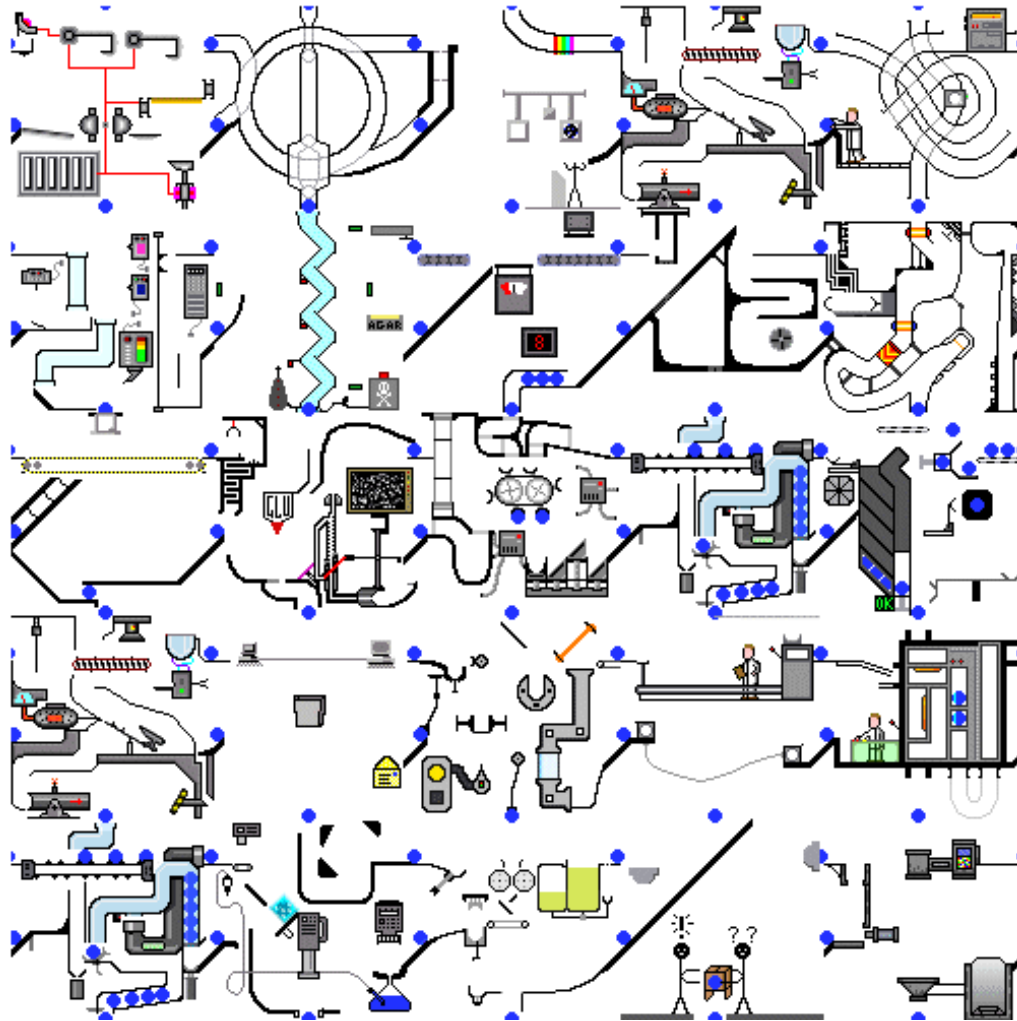
Complex: *“Hard to separate, analyze or solve.”*

Hard: *“Needing much effort or skill to accomplish, deal with, or understand.”*

Understand: *“to grasp the meaning or to have technical acquaintance with or expertness in the practice of”*



Many elements at once




Amount of features



Information overload



Mifos



Home | Mifos - Windows Internet Explorer
http://mifos.org/

Google mifos Search Share Bookmarks Sign In

P Pandora Radio - Listen to ... Quality Assurance Special ... Quardev -- Integrated Sof... QWeb QuardevWeb Quardev OWA Hotmail

P Pandora Radio - Lis... Home | Mifos

Our Vision

3 BILLION MARIES.
Open source technology to scale microfinance, transforming the lives of 3 billion Marias.

Community Spotlight

SunGard
The entire team at SunGard Technology Services in Bangalore, India have been working closely with the Mifos team for the past year helping to strengthen the core Mifos platform, dramatically increase the performance of Mifos for our customers, and provide

[READ MORE](#)

News Feed

Grameen Grows Its Microfinance Platform on Amazon's Cloud
2010-09-01 10:49
George Conard recounts the launch of Mifos Cloud and the continued growth in our customer base in this interview with ...

Star Contributor of the Month - Jim Stamper
2010-08-27 11:00
For the month of July, we're showcasing Jim Stamper who's lent his Drupal expertise to help improve the Mifos web presence.

Twitter Feed

RT @tmsrueg Finally coming full circle: RT @fsmcredit: Barclays Kenya ties up with Safaricom M-Pesa <http://is.gd/gOPQW> via @mobilemoneyafr about 7 hours ago

[VIDEO] @CBC: Mobile money transforms #Kenya. Highlights @Mifos team connecting m-pesa to #microfinance institutions <http://bit.ly/bhleAI> about 13 hours ago

RT @GrameenAppLab: In Cambridge UK? Check out 'Global Poverty & ICTS', w/ @GrameenFdn's David Edelstein on 10/26 <http://bit.ly/aYL2S8> #ict4d

MIFOS MICROFINANCE OPEN SOURCE

Technology-Enabled Microfinance: Mifos at Grameen Koota

Done Internet | Protected Mode: On 100%

12:18 AM 10/14/2010

Charter

“Create a list of features toward creating a test coverage outline and for planning charters to be posted on the site for volunteer testers can run. Find every feature or enhancement you can find and be ready to discuss your questions and issues with project stakeholders.”

So, I did...

```
CHARTER
-----
Analyze MapMaker's View menu functionality and report on areas of potential risk.

#AREAS
OS | Windows 2000
Menu | View
Strategy | Function Testing
Strategy | Functional Analysis

START
-----
5/30/00 03:20 pm

TESTER
-----
Jonathan Bach

TASK BREAKDOWN
-----
#FUNCTIONALCOMPLEXITY INTO SIMPLICITY.PDF
#DURATIONCOMPLEXITY INTO SIMPLICITY.PDF
short

#TEST DESIGN AND EXECUTION
65

#BUG INVESTIGATION AND REPORTING
25

#SESSION SETUP
20
```


Weekend Tester Club Charter

“Read the new user manual and the welcome doc to learn a bit about the purpose of Mifos and pick one of the following sections to discover new bugs, usability improvements, and user manual improvements.”

What happened?

```
CHARTER
-----
Analyze MapMaker's View menu functionality and report on areas of potential risk.

#AREAS
OS | Windows 2000
Menu | View
Strategy | Function Testing
Strategy | Functional Analysis

START
-----
5/30/00 03:20 pm

TESTER
-----
Jonathan Bach

TASK BREAKDOWN
-----
#FUNCTIONComplexity_into_simplicity.pdf
#DURATIONComplexity_into_simplicity.pdf
short

#TEST DESIGN AND EXECUTION
65

#BUG INVESTIGATION AND REPORTING
25

#SESSION SETUP
20
```

Lesson #1

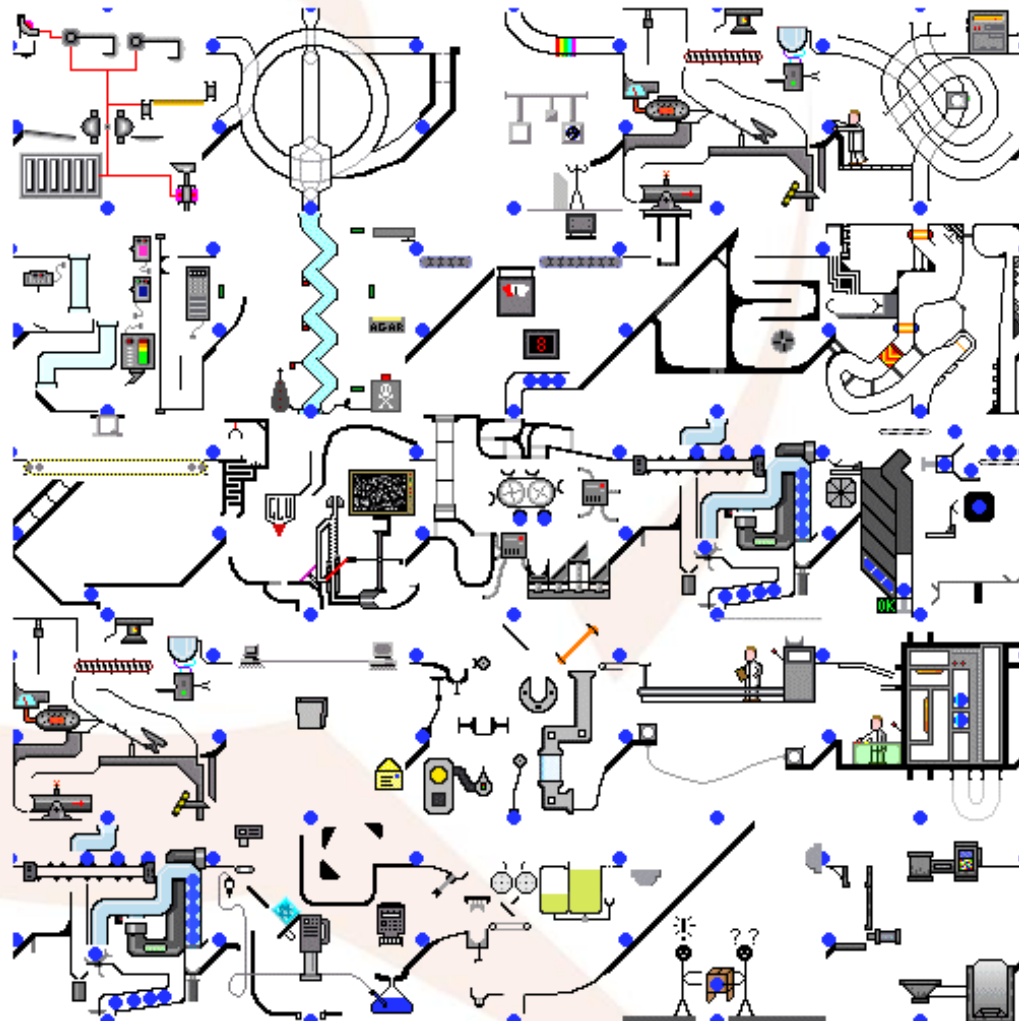
Complexity: many factors working at once

*“I stopped reading the manual because there was **too much** to read (too complex). I felt I had to try the product to get context then re-read the manual. It was only at that stage that I could read the manual in detail to find issues with the wording, etc. I found the manual was non-technical, and I needed some technical content to understand how to enter data in the fields - eg. the limits of the fields, or field types, or basic date rules.” -- Tester*



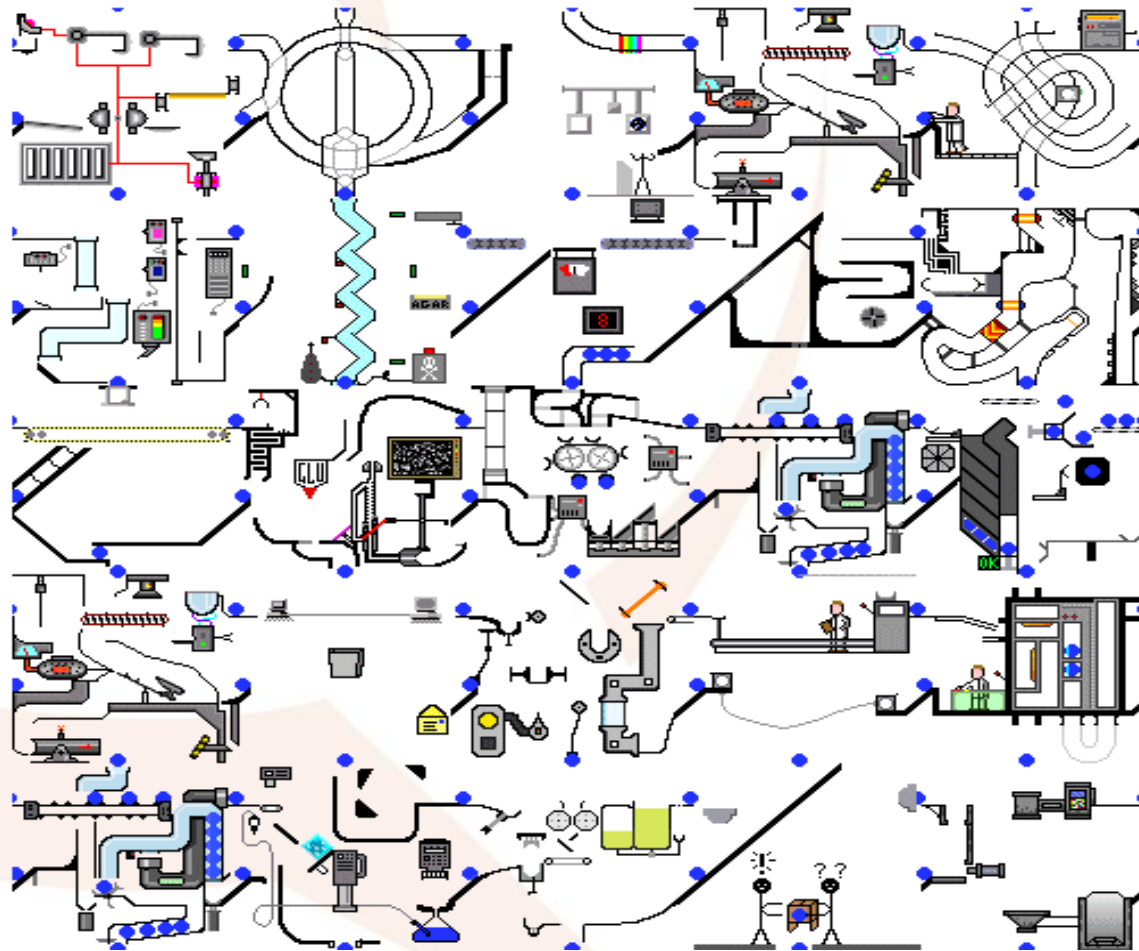
QUARDEV

Integrity, Service, Solutions



Remedy

Focus on one area



Lesson #2

Complexity: info overload

“The manual was too complex, but not the wording. It was written in a very basic way. It was just too much too soon. My brain was not prepared to read all that information. I had to try to learn it quickly in increments. That meant doing about 3 passes over the manual as I was learning the data entry form.”



Remedy

Slow down
Give yourself more time

Lesson #3

Complexity: an emotional relationship

“You have to acknowledge the level of detail you are at, and move between your 'safe zone' and the complex zone. There is always a level you are confident with. If you freak out, then go back to your 'safe place' and start again.”



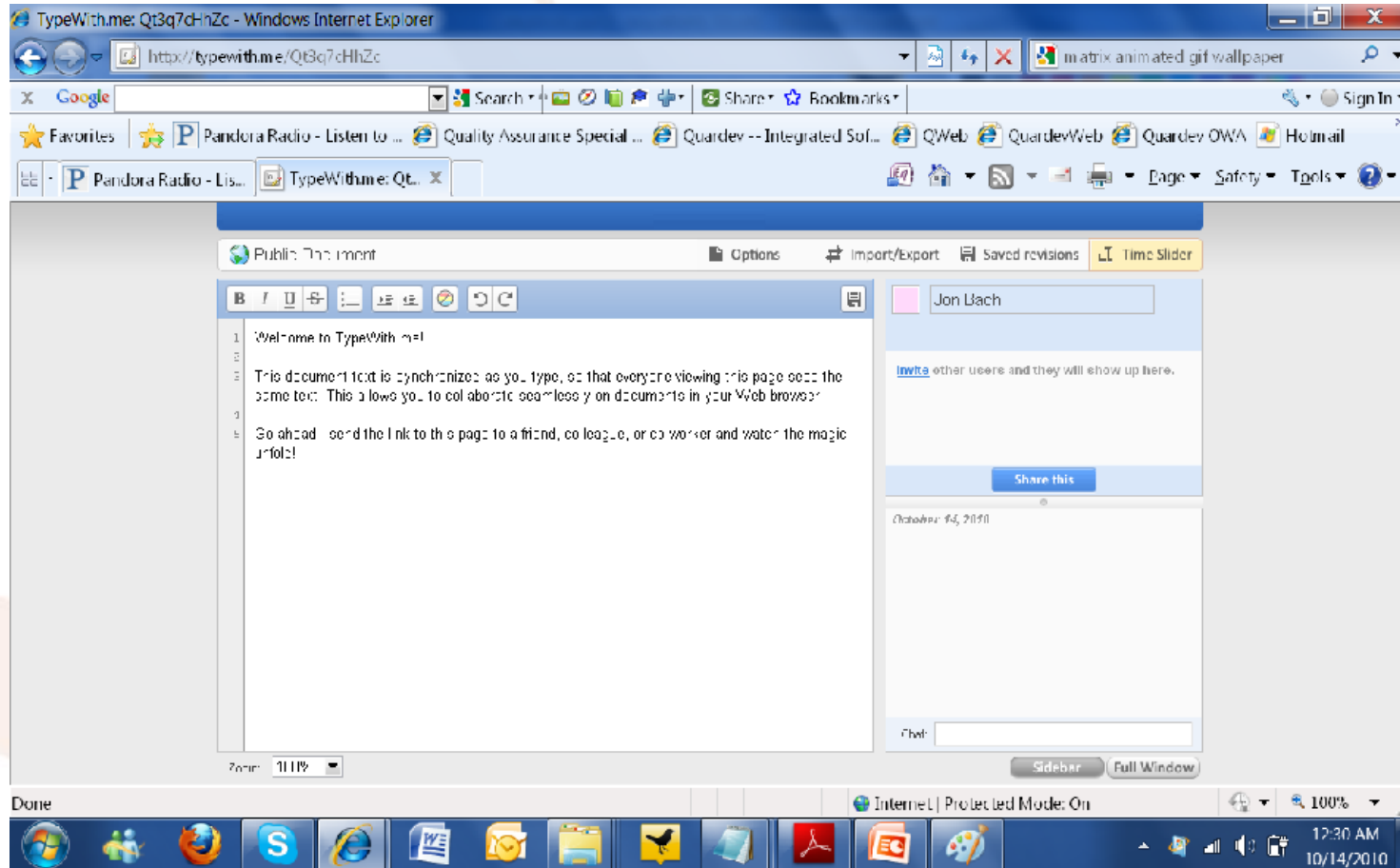
```
Z g $r XG @M b < 0
+6 M+ Zs CX 0 jT
N L2 se C{ 0 T
z L? s2 = { 0 o
^ 4< f $ P % 8 t Q X d
( &e i L O 5 i 6 Y ` X] z A & 0 5 ` ; * * & " v T 2 & D 8 9 c 4 ? , 7 [ g { T E h > z s # # Z J T K J ` d X & | Y f # # x c o @ , ; q : ? u # h d z o l J w v ( o - e g " o / ; Y | # 1 { K 4 , 9 { \ 2 s T U s [ j [ F ; ! W v ; Y | # 1 { M J C h 6 n ^ e a x M ( r > ` 8 X / g r ) - 4 7 - ` s - o 1 p S t 0 ) ( r > ` 8 X / g r ) ^ A L N v s ` L P e m 8 P | u O 7 ( u O 7 - ` s - o 1 p S t 0 ) g ( E D . X C I O o
```

Remedy

Safety

What do you understand?

Simplicity



Simplicity

Safe

Confident

Familiar / Experienced

Freedom

Extension of Power

Focused

One or 2 layers

Matches Mental Model

“Makes it look easy”

Paradigm / Pattern

Bandwidth handled

Simplicity into complexity...

Taking a shower
except when you have a leg in a cast

Open a file and saving it
except when the OS is Japanese

Flying an airplane
except when the weather is rough
...and you're flying formation
...and it's night
...and you're about to land on an aircraft carrier

Complexity into simplicity...

How do you reduce complexity?

- Create equivalence classes
- Find patterns
- Give yourself more time
- Improve the interface
- Make it easier to identify what complexity is
- Reduce the number of things to deal with
- Education – identifying parts and their interaction
- Different views of system
- Encapsulation
- Dashboard or Visibility
- New eyes, different people looking at the same system
- Remove components

Birds of a Feather :Yesterday

Why reduce complexity?

- App will run faster
- Easier to Fix & Maintain
- Easier to Test
- Increase resilience
- Eliminate redundancy
- Reduce risk
- Lower Cost
- Satisfy customer needs



QUARDEV

Integrity, Service, Solutions