The Birth of Craftsmanship

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Our Craft:

After years, we have a definition!
Electron Gun and Slit
Moving the slit, moves the spot.
What would two slits show?
Two Spots?

Electron Gun
Yikes Stripes!
Yikes! Stripes!

Electron Gun
What if electrons are waves?
Then the waves would interfere.
So let’s shoot them one at a time.
OK, let’s watch the slits.
Detectors off. Pattern returns.
This is a picture of a single electron.

But only if we don’t watch it pass through the slits.
This is 60,000 individual electrons.
What have we learned from this?

The world is not as it appears to our common sense notions.

or

If you think you understand QM, then you are missing something.
But we’re supposed to be talking about our Craft...
Prehistory: The dark times.

70’s-90’s
We believed in big plans.
Object Mentor’s Third Law of Agile Development

“In preparing for battle I have always found that plans are useless, but planning is indispensable.”

Dwight David Eisenhower
Booch’s Common Sense Example

The Doghouse vs. the Skyscraper.
And then there’s this…
Object Mentor’s First Law of Agile Development

“A complex system that works is invariably found to have evolved from a simple system that worked. A complex system designed from scratch never works and cannot be patched up to make it work. You have to start over, beginning with a working simple system.”

The Waterfall Model

Managing the Development of Large Software Systems
Dr. Winston W. Royce — 1970

1 May
1 Jul
1 Sep
1 Nov

Analysis
Design
Implementation

DFD
ERD
DL
ST
Royce’s actual diagram.
Figure 4. Unfortunately, for the process illustrated, the design iterations are never confined to the successive steps.
Royce’s Conclusion
But the data says something different

$37B worth of DoD projects using 2167A

46% Never used. Egregiously failed to meet needs.

20% Required extensive rework to meet true needs.
Over specification.

Actual use of Waterfall Requested Features

- Never: 45%
- Always: 7%
- Often: 13%
- Sometimes: 16%
- Rarely: 19%
Long Projects Fail.

![Project Success Graph]

- **Title:** Project Success. 23,000 projects
- **Y-axis:** Percent success
- **X-axis:** Months
  - 0% success at 36 months
  - Initial success rate drops sharply, indicating a high failure rate for long-term projects.
Object Mentor’s Second Law of Agile Development

“...the document-driven, specify-then-build approach... lies at the heart of so many... software problems.”

Fred Brooks
1992: Jack Reeves
C++ Journal

“What is Software Design?”
Blueprints and Source code.

Jack Reeve’s article:

```java
public int score() {
    int score = 0;
    int frameIndex = 0;
    for (int frame = 0; frame < frames.length; frame++) {
        int ballOut = frames[frame];
        if (isStrike(frameIndex)) {
            score += 10 + strikeBonus;
            frameIndex++;
        } else if (isSpare(frameIndex)) {
            score += 10 + spareBonus;
            frameIndex += 2;
        } else {
            score += sumOfBallOuts;
            frameIndex += 2;
        }
    }
    return score;
}
```
What if houses were like software?

- Construction costs *nothing*.
- Design is everything.
- Every design change costs $100.
1995: Principles & Patterns
SCRUM
1995 PLoP

~muddle~
Short Iterations
TDD
Refactoring
Simple Design
Continuous Integration

Pairing
Excitement: 

The Techie Practices
Revulsion:

No Architecture!
No Design!
1999: XP Immersion
XP Leadership

Hillside Burnout.

The Two Martins.
Lightweight Process Summit
Snowbird
Agile Manifesto

“Agile” Coined

Most important
Most damaging
Agile Stimulated SCRUM

Scrum subset of XP
SCRUM doesn’t smell like GEEKS
SCRUM makes Agile palatable to Business.
2002: CSM #1

meh.
SCRUM certification gold rush

Attracted Business attention.
But…

Agile, Scrum, XP were for:

Small teams.
RIP: SOS
Aunt Mary.

LEAN

Agile in the Large.
Engorged SCRUM
SCRUM Certification & Lean

Scrum crossed the Chasm and penetrated business.
But something was left behind...
Tech Practices!

Test Driven Development
Pairing
Simple Design
Refactoring
Flaccid P

Scrum
It’s the worst case scenario:

No Design.
No Architecture.

Just Rapid Churn.
How many of you have been significantly impeded by Bad Code.
To make matters worse

The mess doesn’t show up right away.
The Flaccidity Curve

Productivity vs Ti

Time
Seeming fast is not BEING fast.
Scrum-ED:

Agile->Stimulated,
Lean->Engorged,
No tech->Flaccidated.
But Agile exposes this problem so that the Business can see it!
Because velocity is measured and reported
To improve velocity Scrum Teams must adopt TDD, CI, Pairing, simple design, refactoring. (XP)
Agile is the gateway
To Craftsmanship
To a Profession
Craftsmanship: Professionalism:
The Next Big Thing™
TDD / Refactoring
Clean Code
Boyscout Rule.
The only way to go fast...

...is to go well,

and to write...
Code This Good.
The Green Band

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Craftsmanship
Manifesto

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