Fostering excellence in IT services through quality and innovation

Carl Erickson
Atomic Object
Vernon Cycle

1. new product development
2. maturation
3. standardization
Overblown Fear

1. The numbers
2. Nature of our work
3. Types of innovation
Service jobs offshored
Engineering Graduates

- US
- India
- China

10%
Software as Widget?
Software != Widget
Up vs Downstream

“Venturesome Consumption, Innovation and Globalization”
Amar Bhide of Columbia University
The Economist, July 29, 2006

Too much attention paid to upstream innovation: invention, engineering and science

Too little attention to downstream innovation: marketing, customization, productizing
Experience

“The biggest driver of software costs is poor quality.” quoting a paper from the Center for eBusiness@MIT

“’Follow the sun’ model is essentially a quick-and-dirty strategy that converts a schedule problem into a quality disaster.”

GSD favors waterfall methodology

“GSD: Not a business necessity, but a march of folly”
Experience

“Lessons from Offshore Outsourcing”

• shared goal
• shared culture
• shared process
• shared responsibility
• trust
Global Alternatives

high hourly rate, status quo, unresponsive, poor quality

"If a company is going to create a rut and pay humans to fall into it, it makes sense to pay as little as possible. The average software developer is a lemming, marching with his or her eyes to the ground toward an unknown goal."

-- Chad Fowler
Global Alternatives

- high hourly rate, status quo, unresponsive, poor quality

+ low hourly rate, status quo, unresponsive, poor quality

- high hourly rate, innovative, responsive, high quality

Uncompetitive local

Uncompetitive offshore
Quality

1. Process
2. Testing
3. Design
Process

- Frequent, regular delivery of working, complete, tested software
- Story-driven development
- Engaged customer
Testing

- Think of testing as a development activity
- Practice TDD
- Automate your tests
Design

• Study design principles and patterns
• Strengthen your design skills
The Secret to Becoming a Better Designer
public void addOdxFile(String fileName) {

    String path = getPath(fileName);
    Vector logicalBlocks = sigView.getLogicalBlocks();

    LogicalBlockWithSignature lBlock;
    long dBlockStart;
    long dBlockSize;
    long lBlockStart;
    long lBlockSize;

    Vector v;
    Vector dataBlocks;
    SessionDescription sd;
    DataBlock dBlock;

    v = ODX.loadFile(fileName);

    for (int i = 0; i < 1; i++) { // Use only the first session
        sd = (SessionDescription) v.elementAt(i);
        dataBlocks = sd.session.dataBlocks;
        for (int b = 0; b < dataBlocks.size(); b++) {
            dBlock = (DataBlock) dataBlocks.elementAt(b);
            dBlockStart = Long.parseLong(dBlock.startAddress.toString(), 16);
            dBlockSize = Long.parseLong(dBlock.endAddress.toString(), 16) - dBlockStart;

            for (int lb = 0; lb < logicalBlocks.size(); lb++) {
                lBlock = (LogicalBlockWithSignature) logicalBlocks.elementAt(lb);
                lBlockStart = Long.parseLong(lBlock.addr, 16);
                lBlockSize = Long.parseLong(lBlock.size, 16);
                if (lBlockStart + lBlockSize <
                    dBlockStart || lBlockStart > dBlockStart + dBlockSize)
                    continue;
                lBlock.setSignature(dBlock.signature.toString().trim().toUpperCase());
                break;
            }

            addFile(path + getName(dBlock.flashData.fileName.toString()));
        }
    }

    setChanged();
    notifyObservers(sd.partnumber.toString());
}
How will I write code to test this?
Global Competition

- high hourly rate
+ innovative
+ responsive
+ high quality

Competitive local
Innovation

If a company sets its main focus on innovation and marketing, it will significantly outperform every other competitor in its industry.

-- Peter Drucker
(from Curtis Gray in Business Review West Michigan, June 15, 2006)

The more a company’s revenue comes from new products, the more profitable it is.

Amazon: 165,635 book hits

Google: 212,000,000 page hits
**V** Kills Mice!

Electronic Mouse Trap

- Quick, Humane Kill
- Meets International Humane Kill Standards
- Effective
- Patient Pounding Design Ensures Superior Efficacy
- Easy to Use
- No Spring to Set or Mussy Glue
- Built-in Safety Features Prevents Accidental Activation by Children and Pets

www.victorpest.com
IT Service Innovation

1. "supporting the business's innovation agenda" vs "supporting the business"
   *Michael Schrage, CIO magazine, August 15, 2006*

2. Getting better at crafting software
Necessity & Sufficiency

• Passing Operating Systems is necessary for graduation, but not sufficient
  (since Data Structures, Networks, etc, are also required)

• Satisfying all course requirements is sufficient for graduation, though individually any given elective is not necessary
Smart, creative people
Smart, creative people who care

People who don't care...

• are satisfied with the status quo
• don't feel pressure to do better
• withhold their creative energy
• keep their commitment low
Innovation is a natural consequence of a combination of attitude and circumstance.