


IMPROVING YOUR SOFTWARE DEVELOPMENT PROCESSES

Overview

- About Me
- Why Projects Fail
- Discussion of Project Life Cycle with Emphasis on Improvement Points
- Tools and Automation

About Me

- Joe Walling
- 30 years industry experience
- Walling Info Systems LLC The logo for Walling Info Systems features a stylized human figure composed of puzzle pieces in yellow, red, and green, with a blue gear-like shape above its head. The text "Walling Info Systems" is positioned to the right of the graphic.
- Greenville Spartanburg Developers Guild

Define Project Failure

- Definition of failure is not as simple as one might think
- Doesn't meet business unit's **needs** at the specified price and in the specified time frame
- How many projects do you think meet this definition?
- Perception
- If money spent and no functionality is delivered before the plug is pulled, then the project is a failure regardless of the definition used.

Why Projects Fail According to IEEE

- ❑ Unrealistic or unarticulated project goals
- ❑ Inaccurate estimates of needed resources
- ❑ Badly defined system requirements
- ❑ Poor reporting of the project's status
- ❑ Unmanaged risks
- ❑ Poor communication among customers, developers, and users
- ❑ Use of immature technology
- ❑ Inability to handle the project's complexity
- ❑ Sloppy development practices
- ❑ Poor project management
- ❑ Stakeholder politics
- ❑ Commercial pressures

From an [IEEE Spectrum Online](#) article "[Why Software Fails](#)"

My Take on Why they Fail

- Communications
- Project Planning
- Technical

- The bigger the project...

Ways to Improve Success Odds

- Development methodology
 - Waterfall
 - Agile

Waterfall

- Spec everything in detail in advance
- Problems:
 - ▣ Time to get any deliverables is excessive
 - ▣ Business rules change
 - ▣ Flaws in spec and logic not determined until application is finished

Contrast Waterfall with Agile

- Highest ROI items delivered quickly
- Business rules may change but with Agile approach it is less likely to effect items already specified or done than Waterfall
- Flaws in spec or logic found earlier where they can be fixed more readily

SDLC Using Agile

- See [document](#)

Ways to Improve Success Odds

- Development methodology
- Increased Transparency
 - ▣ Helps communicate status
 - ▣ Builds trust because ...
 - ▣ Reduces manual processing/handling of status reports
 - ▣ Stakeholders can see their requests in context to entire organization

Ways to Improve Success Odds

- Development methodology
- Increased Transparency
- **Better Communications**
 - Sprint meetings to prioritize work items
 - Sprint reviews to figure out how to improve
 - Issue tracker
 - Developers get to speak with business experts and end users.

Ways to Improve Success Odds

- Development Methodology
- Increased Transparency
- Better Communications
- **Good Equipment**
 - ▣ Developer hardware and software
 - ▣ Test environments mimicking production

Ways to Improve Success Odds

- Development Methodology
- Increased Transparency
- Better Communications
- Good Equipment
- **Good Tools**

Tools

- Source control
- ALM
 - What it is
 - Why?
 - <http://architects.dzone.com/news/top-10-alm-solutions>
- Static code analysis
- Database comparison
- Memory profiler
- Design and Analyses tools

Static Code Analysis

- Visual Studio
- FxCop
- 3d Party
 - ▣ ReSharper
 - ▣ Telerik JustCode
 - ▣ DevExpress CodeRush

Memory and Performance Profiling

- RedGate ANTs Performance Profiler
- RedGate ANTs Memory Profiler

- JetBrains dotMemory
- JetBrains dotTrace

Analysis

- Use Cases
- Wireframes
- People typically can't understand a spec until they can see the UI
- Demo of Balsamiq and Use Cases

Ways to Improve Success Odds

- Development Methodology
- Increased Transparency
- Better Communications
- Good Equipment
- Good Tools
- **Good Processes**
 - **Development standards documented**
 - **Development processes documented**

Ways to Improve Success Odds

- Development Methodology
- Increased Transparency
- Better Communications
- Good Equipment
- Good Tools
- Good Processes
- **Automation**

Automation

- CI Builds
- Gated Check-ins
- Database updated to appropriate version
- Deployment to QA servers
- Deployment to production servers
- Unit tests
- Regression testing

Bugs

- Cost to fix bug increases as it goes through life cycle
- Not linear
- Think of all the people that must touch later in cycle
- Think of inconvenience and ill will generated if it gets to customer

Contact Info & Notes

- Email: jwalling@wallingis.com
- I will post the slides on wallingis.com when I get back this weekend
- I will also make an “Audit Form” available to you at <http://wallingis.com/ccc-audit-form>