Mistakes were made

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SCALE is awesome!
Thank you, volunteers.

We are obsessed with failure.

Just not our own.

Every 1000 lines of code contains 2 to 75 bugs.

T.J. Ostrand and E.J. Weyuker, The Distribution of Faults in a Large Industrial Software System, Proc. Int'l Symp. Software Testing and Analysis, ACM Press, 2002, pp. 55-64.

"We don't need a risk management plan," he emphatically stated, "because this project can't be allowed to fail."

- Jim Hightower, http://jimhighsmith.com/2012/01/09/can-do-thinking-makes-risk-management-impossible/
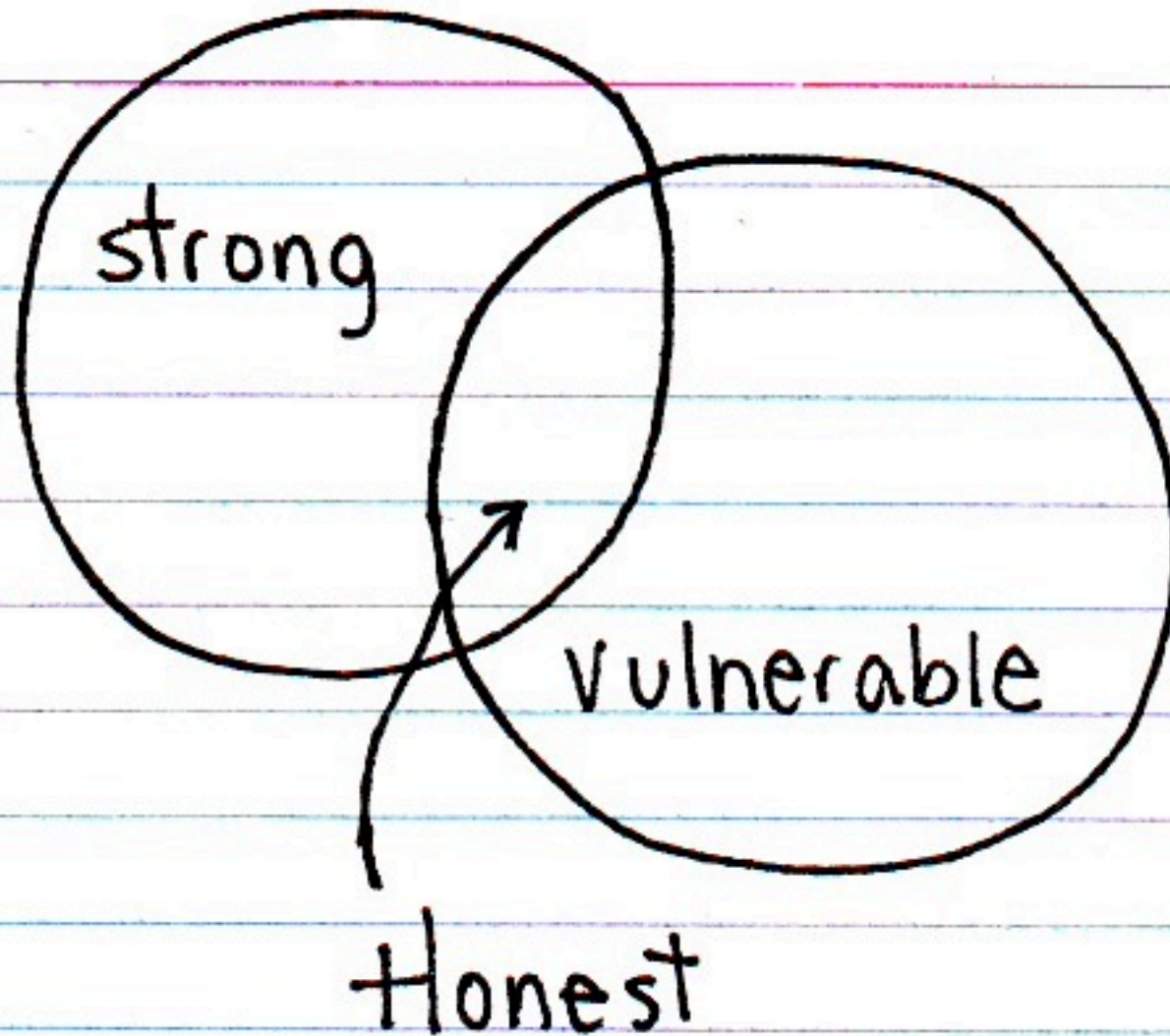
@AakashMehendale
Aakash Mehendale

@sam_strachan To quote someone (maybe @rands), "When I hear 'failure is not an option', I think, 'oh dear, they don't know how this works'"

15 hours ago via web   ☆ Favorite ⇄ Retweet ↰ Reply

Failure is an option.

Honesty is hard.

strong

vulnerable

Honest

"Ratio between success and failure is pretty stable."

Tina Seelig
Stanford Technology Ventures Program

Free and open source projects are learning communities.

I LIKE WHERE THIS THREAD IS GOING

(We fail a lot. Publicly.)

http://images.t-nation.com/forum_images/2/c/2cb85_ORIG-I_LIKE_WHERE_THIS_THREAD_IS_GOING.jpg

We are experts in studying failure, *collaboratively*.

Teach the world to fail

✓ Plan for the worst.

✓ Minimize risk.

✓ Fail.

✓ Recover, gracefully.

"I think getting two accidents of this type at the same time is a freak occurrence."

-David Cunliffe, NZ Communications Minister

Rats Cause Virgin Broadband Outage In Scotland

Some Virgin Media customers in Scotland were briefly left without broadband when rats chewed cables

On **October 13, 2011** by **Tom Jowitt** ⟷3

Virgin Media confirmed that some customers in Scotland experienced a **broadband** service outage earlier this week, after rats were found to have chewed through fibre optic cables.

Speaking to eWEEK Europe, a Virgin Media spokesperson confirmed that its services went offline for a couple of hours on Monday and then again on Tuesday. "Full service was resorted on Tuesday evening and customers are no longer affected," said the spokesperson.

Dietary Fibre?

"We're aware that a number of customers in the Kirkcaldy, Glenrothes and Leven areas may have experienced intermittent loss of their Virgin Media services from Monday morning until Tuesday evening," said Virgin Media in a statement.

"The loss of service was due to rodent damage to some underground cabling," it said. "On Monday morning our engineers were on site as soon as possible and worked at the highest priority to repair the damage, with service restored early evening on Monday."

However it seems that the pesky rodents were not finished with just one snack upon the 'tasty' fibre optic cables, but also opted for dessert the next day.

"Further damage was incurred on Tuesday afternoon and our engineers returned to repair the damage," said Virgin Media. "We've now put additional measures in place to prevent further damage to our cables to avoid further disruption for our customers. We're extremely sorry for any inconvenience caused."

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Plan for *when* things fail.

Stop, drop, *and* roll
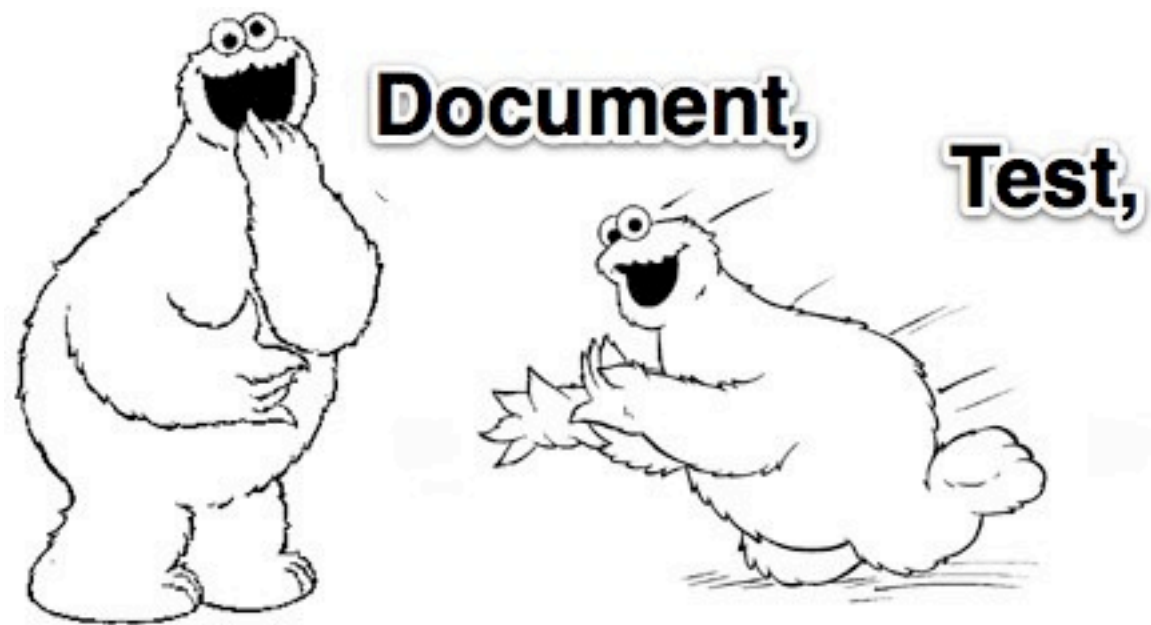
if your clothes catch on fire

stop,

drop,

and roll.

Practice stop, drop, and roll with Cookie Monster.

Tales of failure to...

Document

Test

Verify

Imagine

Implement

Failure to document.

Moving Day

Thanks, David Prior!

Prevent documentation failures.

✓ Write documentation.

✓ Update documentation.

✓ Make documenting a step in your written process.

✓ Assign a fixed amount of time to that step.

Documentation tools

- Our baby is ugly.
  We need graphic designers.

- Make and keep timelines for updates.

- Use bug tracking.

- Ordered todo lists.

Failure to test.

"My first day posing as a sysadmin (~1990, no previous training....) I deleted all zero length files on a Sun workstation."

Prevent testing failures.

✓ Verify success criteria.

✓ Write tests.

✓ Test with a buddy.

✓ Have a plan.

Testing tools

- All-pairs testing: `http://1.usa.gov/dfwu4h`

- Your favorite test framework

- Repeatable shell scripts

- Staging environments

Failure to verify.

"What does '-d' actually do?"

Prevent verification failures.

✓ Have a plan for things going wrong.

✓ Have a staging environment.

✓ Test your rollback plan, not just your implementation plan.

Verification tools

- Staging environments

- Your buddy

Failure to imagine.

For my group the bottom line was "don't trust anyone".

Thanks, Maggie!

Recover from failures to imagine.

✓ Share your stories of failure.

✓ Talk with people who are different from you.

✓ Act out implementation scenarios.

Failure to implement.

Re-implement

✓ Fail fast and frequently.

✓ Learn from mistakes.

✓ Try again.

Making the change

Who is affected?

✓ Customers

✓ People making the change

✓ Others

Before a change

✓ Plan to do a post-mortem.

✓ Document the plan with numbered steps and a timeline.

✓ Test the plan and the rollback plan.

✓ Identify a "point of no return".

During a change

✓ Share screens: UNIX screen, VNC

✓ Use a Chatroom: IRC, AIM, bots, logs

✓ Use Voice: Campfire, Skype, VOIP, POTS

✓ Have Headsets!

✓ Designate a time-keeper

✓ Update documentation

Making the change

When to you've failed

- Know *when* the "point of no return" is

- Decide how to decide ("3 strikes")

- Decide *who* will make the call

After a change

- Use "5 whys" to explore failures.

- Hold a post-mortem to identify areas of success and areas for improvement.

- Limit improvements to 1-2 things.

Succeed with a Post-Mortem

✓ Set expectation for 100% participation

✓ Designate a note keeper & time keeper

✓ Everyone shares a success, failure, something to do better

✓ Vote anonymously on what to do next

✓ Communicate meeting notes out

When you change the *institutional expectation* for failure, people take more and better risks.

Failure is an Option: Failure Barriers and New Firm Performance
-by Robert Eberhart, Charles Eesley, Kathleen Eisenhardt

January 10, 2012
http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1982819

Examples of how to lower failure barriers

- Prioritize documentation

- Fund staging environments

- Schedule maintenance during normal working hours

Lower the barriers to failure.

Things to read

- *Checklist Manifesto*, Atul Gawande

- *Liespotting: Proven Techniques to Detect Deception*, Pam Meyer

- *Everything is Obvious*, Duncan Watts

- Ops presentations by Etsy.com

- DailyWTF, Full Disclosure, Bruce Schneier

Thanks!

Document, Test, Verify!

Operational success with Cookie Monster.

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Photo credits

- Flickr: sheepguardingllama

- (thereifixedit link)