Failing Gracefully As A Feature

Lorne Kligerman
Director of Product, Gremlin

@lklig
Hey team… bit of a spill but I’m fine.

Be down in 10!
We Expect Technology To Just Work™
Black Friday Failures

Technical Issues Likely Cost Retailers Billions
12.01.16

Macy’s, Lowe’s hit by Black Friday technical glitches
11.27.17

Retail outages online leave shoppers frustrated on Black Friday
11.23.18
Breaking Banks

- Wells Fargo accidentally foreclosed hundreds of homeowners
  8.7.18

- Customers report difficulty accessing Chase Bank mobile and online
  2.16.19

- Citibank Website down, not working
  2.28.19
Airline Incidents

Computer Problems Blamed For Flight Delays
4.1.19

Major US Airlines hit by delays after glitch at vendor
4.1.19

Pilots of doomed Boeing 737 MAX fought the plane’s software and lost
4.4.19
Technology is fragile. When it breaks, we shouldn’t notice.
Plan ahead to keep your users happy
Why Are Failures So Common?
Legacy Systems
Lack of Testing
With Scale Comes Complexity
What Can We Do About It?
Design For Failure
Designing For Failure

Key User Stories & Features

Edge Cases From Unexpected User Behaviour

Dependency Failures
Loading Screens Are Not Graceful
Inject Failure
By Breaking Things On Purpose
Inject failure one service at a time.

Maintain critical functionality.
Common Failures Modes

THAT DEGRADE THE USER EXPERIENCE

Errors
HTTP 400, 401, 402
500, 503

Blackhole

Latency
Degrade Gracefully
Graceful Degradation

- Provide the best possible experience
- All but the most critical functionality can fall off
- Don't give up on your users, hold state as long as possible
When one dependency fails, users are often affected
Implemented As Designed
Added Latency
Blocked Video Link
Blocked JQuery Request
The dashboard not changing color is related to S3 issue. See the banner at the top of the dashboard for updates.

2,284  12:17 PM - Feb 28, 2017

1,903 people are talking about this
Delight Your Users
Graceful Degradation Done Right
Positive Business Impact

Product Launch
Delight users with new features

Success Metrics
Quantitative goals of the launch

Product Landing
Were the goals achieved? Why or why not? What got in way?
Plan Experiments Early

Maintain release velocity

Engineers spend less time in war rooms

Deliver a positive user experience
Graceful Degradation As a Feature

RELIABILITY THROUGH CHAOS ENGINEERING

Design for Failure
Identify the most critical end user functionality.

Inject Failure
Impact your system to be sure your user experience isn’t impacted.

Degrade Gracefully
Plan for non-critical functionality not to get in the way.

Delight Your Users
Your product metrics will show behaviour, no matter the condition.
Break through.

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Q&A

Lorne Kligerman
Director of Product, Gremlin

@lklig