



Saleem Siddiqui

SPR

Principal Architect

Saleem is a software developer, practitioner, and coach. Lately, his focus has been organizational metamorphosis through microservice architecture -- using tiny software to cause large changes over time. Saleem enjoys that his work takes him the world over, and often writes about his experiences (occasionally in 3rd person).

A dark background featuring a laptop keyboard and a bright, glowing purple light trail that curves across the upper right portion of the frame. The text is overlaid on the left side of the image.

HOW TO FAIL SUCCESSFULLY & RELIABLY

And look good while doing it



Image: by source, fair use,
<https://en.wikipedia.org/w/index.php?curid=42425098>



open source

SUCCESS

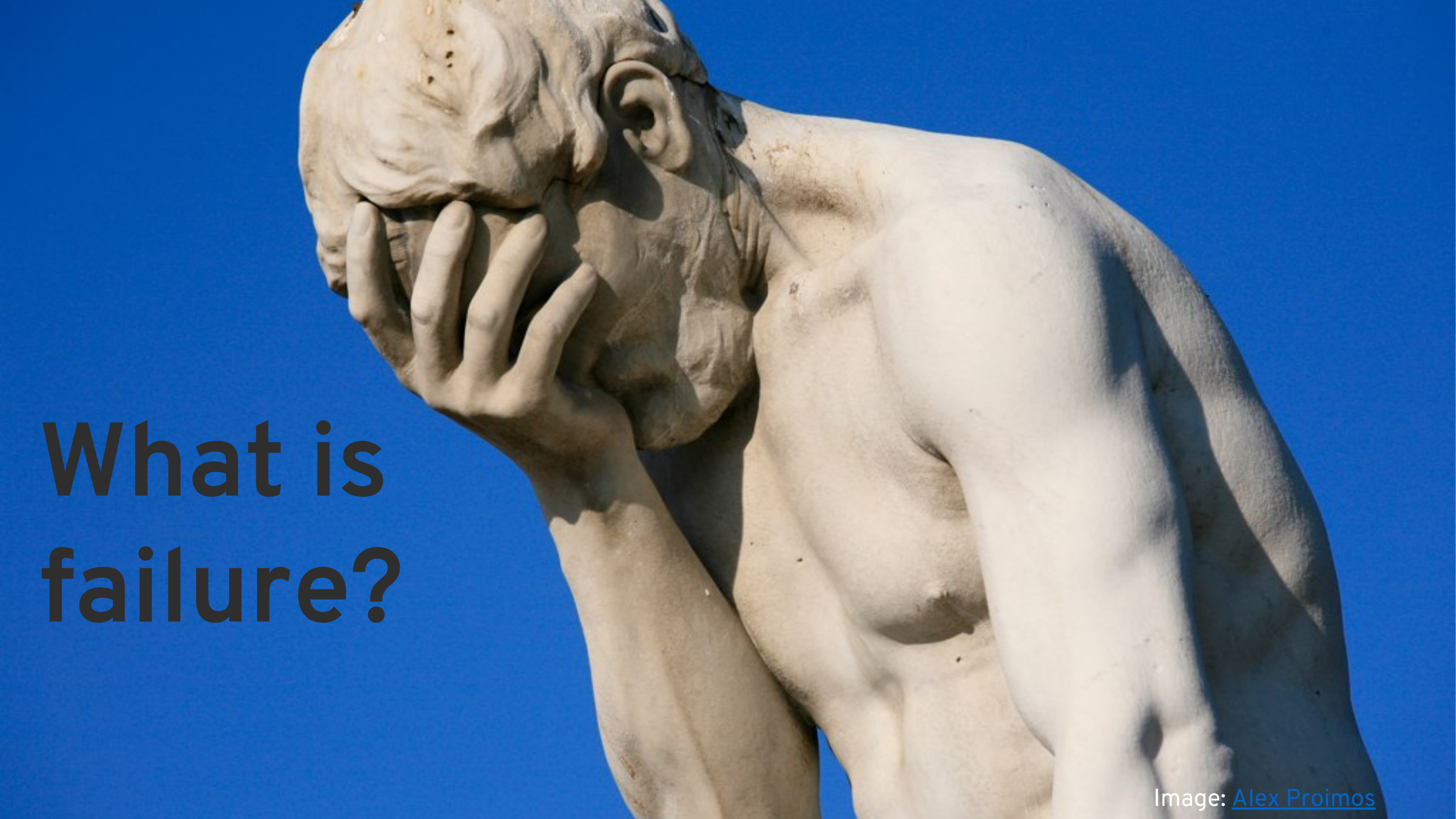
FAILURE

**Write a failure (or two) that you have
had in your professional life on an index
card**



Turn right

Take a minute



**What is
failure?**

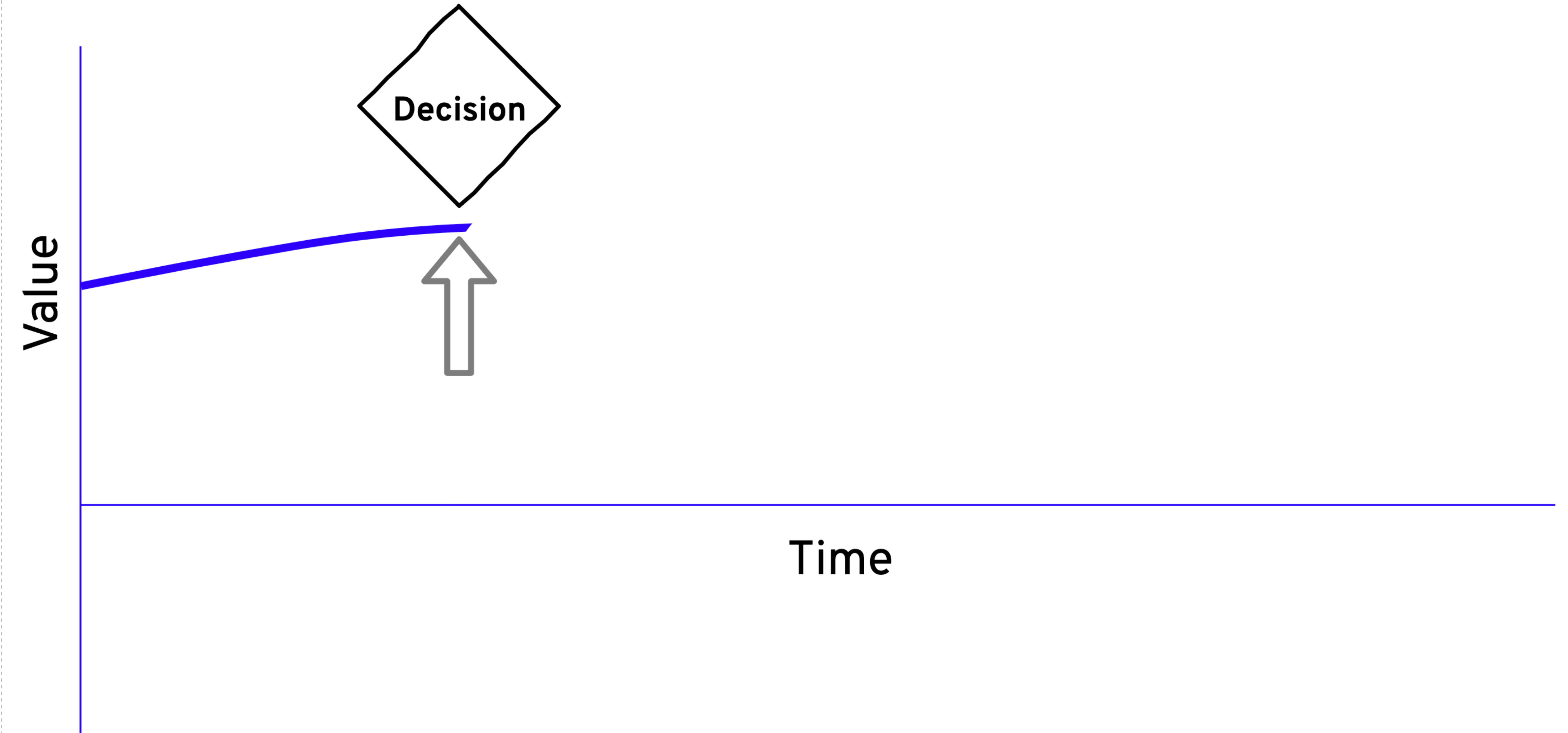
Image: [Alex Proimos](#)

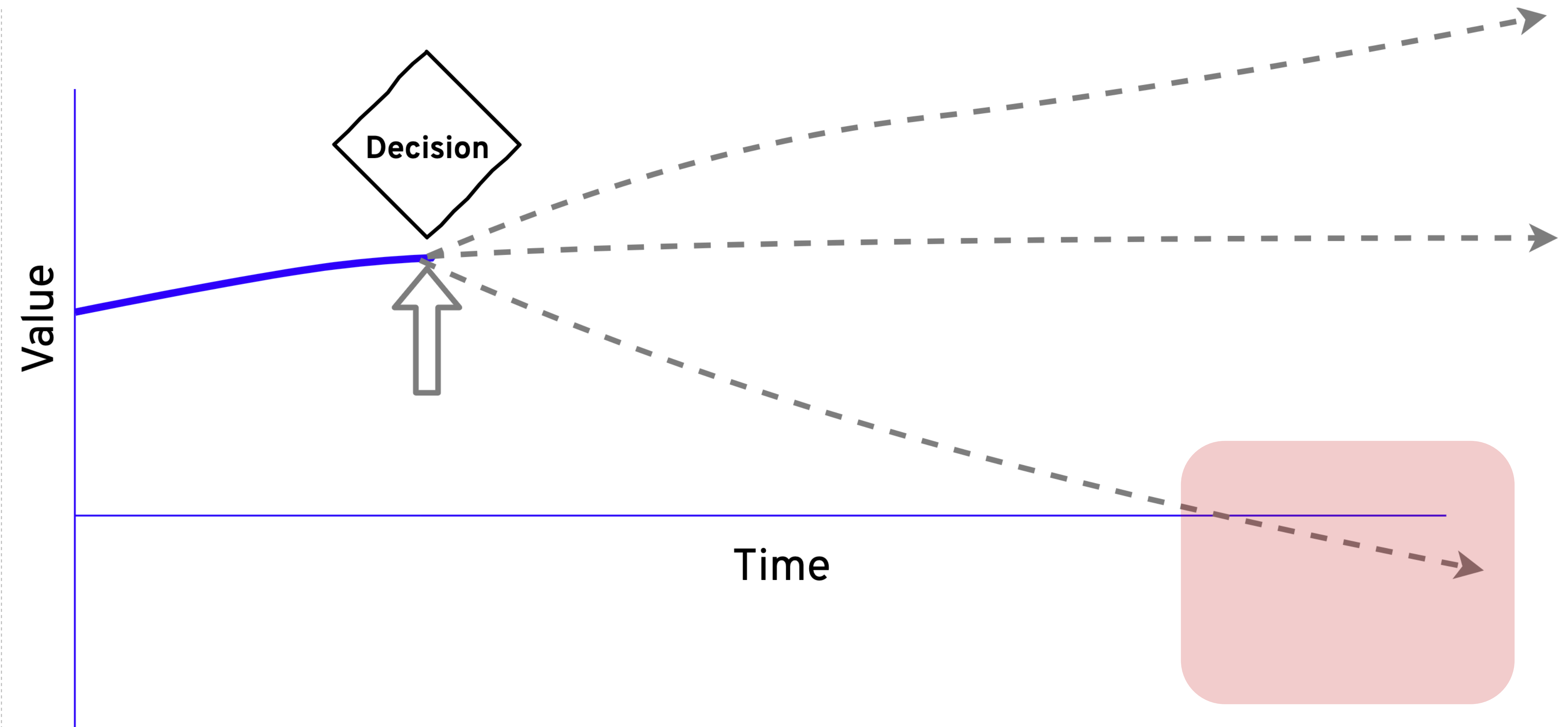
fail·ure | 'fālyər |

noun

- 1 **lack of success:** *an economic policy that is doomed to failure | the failures of his policies.*
 - **an unsuccessful person, enterprise, or thing:** *bad weather had resulted in crop failures.*
- 2 **the omission of expected or required action:** *their failure to comply with the basic rules.*
 - **a lack or deficiency of a desirable quality:** *a failure of imagination.*
- 3 **the action or state of not functioning:** *symptoms of heart failure | an engine failure.*
 - **a sudden cessation of power:** *a sudden power failure.*
 - **the collapse of a business:** *business failures rose by 53%.*

**“A lack or deficiency of a
desirable quality
caused by
a decisive action”**





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Summary of the Amazon S3 Service Disruption in the Northern Virginia (US-EAST-1) Region

We'd like to give you some additional information about the service disruption that occurred in the Northern Virginia (US-EAST-1) Region on the morning of February 28th, 2017. The Amazon Simple Storage Service (S3) team was debugging an issue causing the S3 billing system to progress more slowly than expected. At 9:37AM PST, an authorized S3 team member using an established playbook executed a command which was intended to remove a small number of servers for one of the S3 subsystems that is used by the S3 billing process. Unfortunately, one of the inputs to the command was entered incorrectly and a larger set of servers was removed than intended. The servers that were inadvertently removed supported two other S3 subsystems. One of these subsystems, the index subsystem, manages the metadata and location information of all S3 objects in the region. This subsystem is necessary to serve all GET, LIST, PUT, and DELETE requests. The second subsystem, the placement subsystem, manages allocation of new storage and requires the index subsystem to be functioning properly to correctly operate. The placement subsystem is used during PUT requests to allocate storage for new objects. Removing a significant portion of the capacity caused each of these systems to require a full restart. While these subsystems were being restarted, S3 was unable to service requests. Other AWS services in the US-EAST-1 Region that rely on S3 for storage, including the S3 console, Amazon Elastic Compute Cloud (EC2) new instance launches, Amazon Elastic Block Store (EBS) volumes (when data was needed from a S3 snapshot), and AWS Lambda were also impacted while the S3 APIs were unavailable.

MTBF and MTTR

Low MTTR and High MTBF
Fails rarely, quickly fixed –
ideal



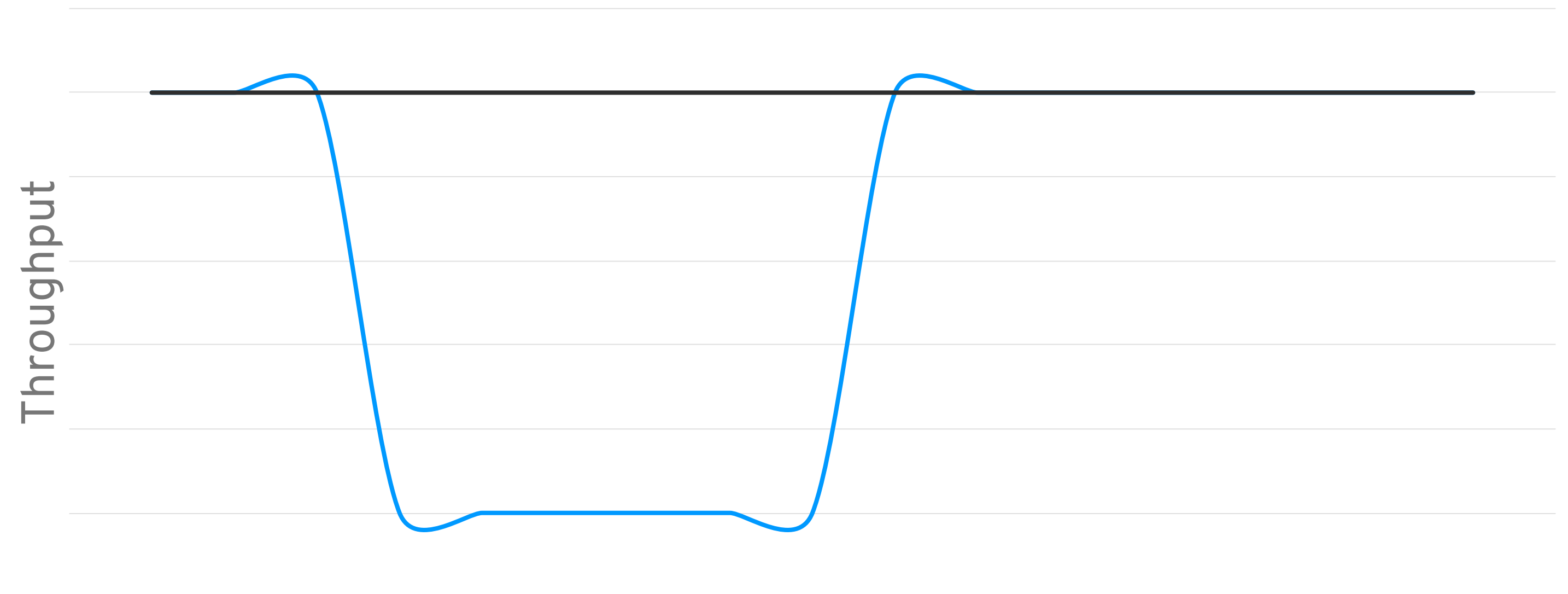
MTBF and MTTR

Low MTTR and High MTBF

Fails rarely, quickly fixed –
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High MTTR and High MTBF

Fails infrequently, hard to fix =
unreliable



MTBF and MTTR

Low MTTR and High MTBF

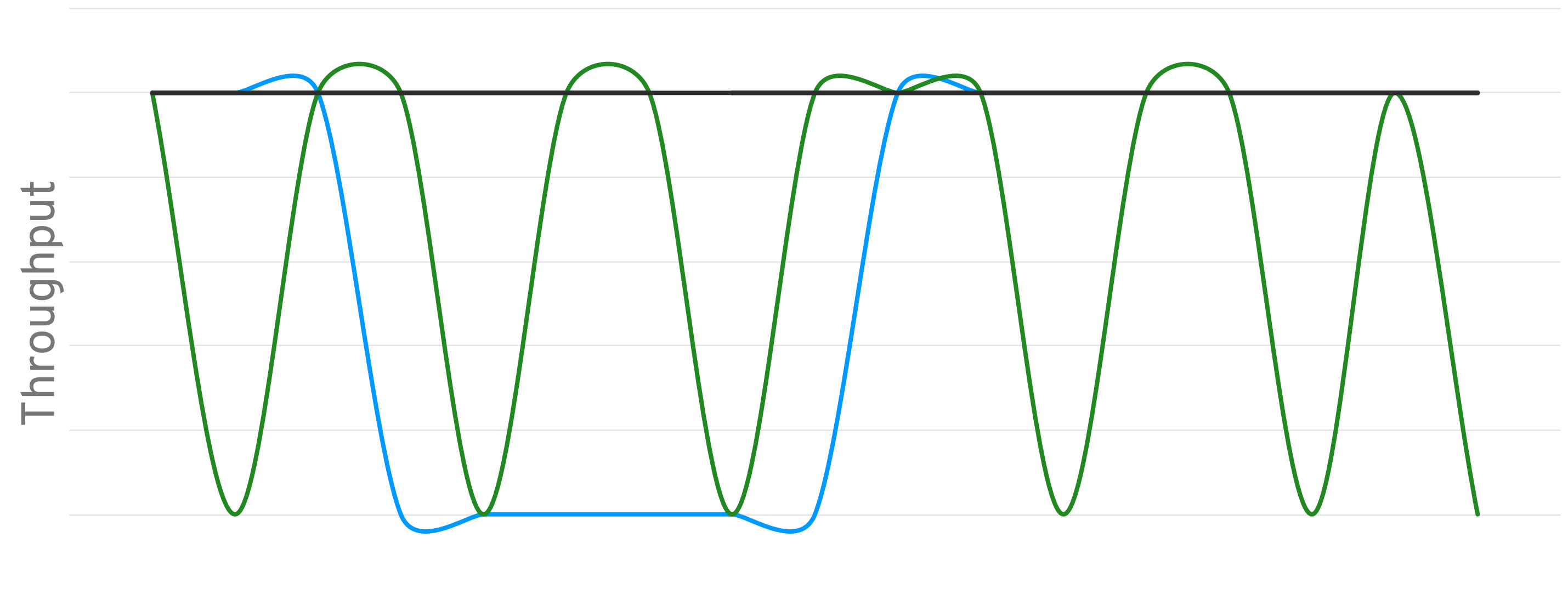
Fails rarely, quickly fixed –
ideal

High MTTR and High MTBF

Fails infrequently, hard to fix =
unreliable

Low MTTR and Low MTBF

Fails often, quickly fixed =
improvable



A system where failure is easy to recover from favors experimentation and improvement

A system where failure is difficult to recover from causes a culture of change-minimization



1st Ethic

Error recovery
> Error
prevention



Image: [Caitlin Regan](#)

sleep(3) - Linux man page

sleep(3) - Linux man page

Name

sleep - sleep for the specified number of seconds

Subject: A bike shed (any colour will do) on greener grass...
From: Poul-Henning Kamp <phk@freebsd.org>
Date: Sat, 02 Oct 1999 16:14:10 +0200
Message-ID: <18238.938873650@critter.freebsd.dk>
Sender: phk@critter.freebsd.dk
Bcc: Blind Distribution List: ;
MIME-Version: 1.0

[bcc'ed to committers, hackers]

My last pamphlet was sufficiently well received that I was not scared away from sending another one, and today I have the time and inclination to do so.

...

The thing which have triggered me this time is the "sleep(1) should do fractional seconds" thread, which have pestered our lives for many days now, it's probably already a couple of weeks, I can't even be bothered to check.

...

[C. Northcote] Parkinson explains that this is because an atomic plant is so vast, so expensive and so complicated that people cannot grasp it, and rather than try, they fall back on the assumption that somebody else checked all the details before it got this far. Richard P. Feynmann gives a couple of interesting, and very much to the point, examples relating to Los Alamos in his books.

A bike shed on the other hand. Anyone can build one of those over a weekend, and still have time to watch the game on TV. So no matter how well prepared, no matter how reasonable you are with your proposal, somebody will seize the chance to show that he is doing his job, that he is paying attention, that he is *here*.

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...

Poul-Henning

2nd Ethic

**If a decision is
only an opinion
trying to find
voice, curb it!**



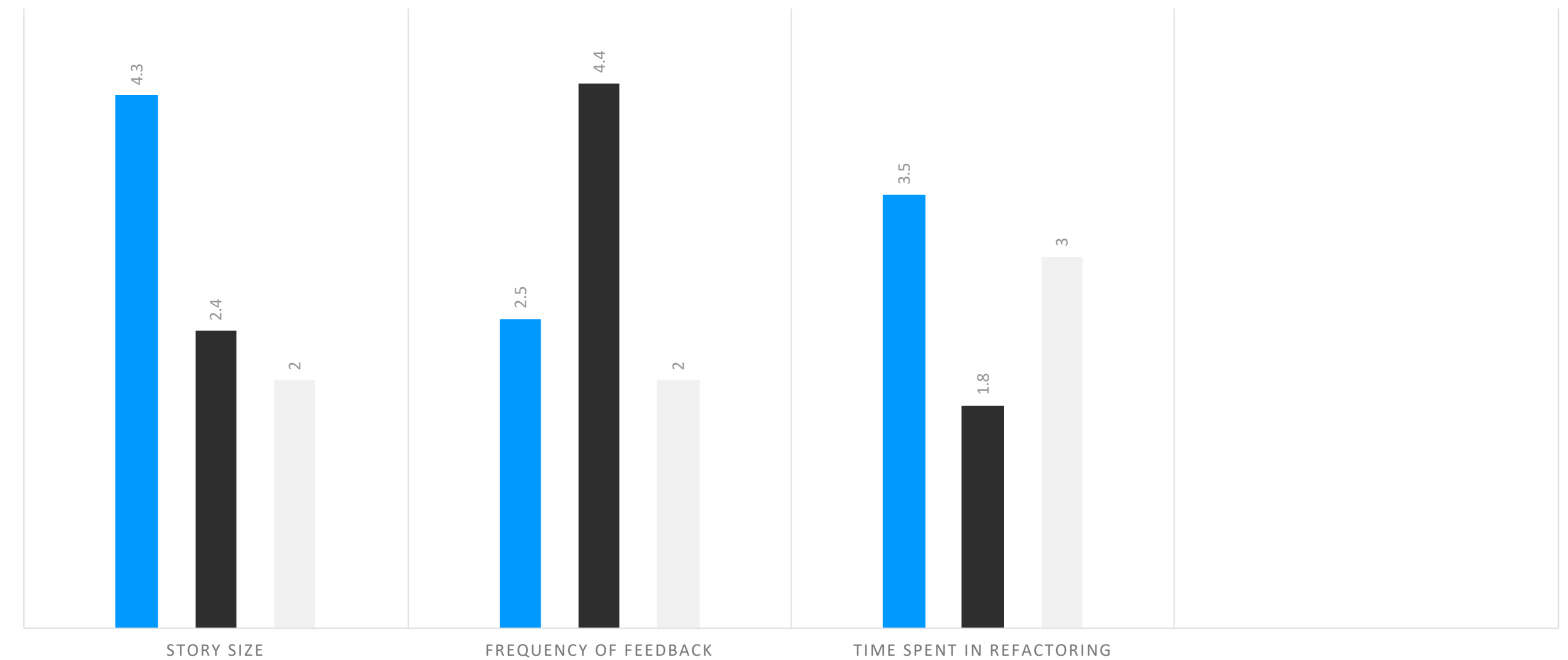
**“A lack or deficiency of a
desirable quality
caused by
a decisive action”**

We favor

- **Smaller commits**
- **More frequent feedback**
- **Fewer manual tests**
- **More time for refactoring**

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Branching strategy for our project



Created by Saleem Siddiqui
Last updated Jul 26, 2019

 Add your comments directly to the page. Include links to any relevant research, data, or feedback.

Status	DONE
Impact	HIGH
Driver	Need a consistent, agreed-upon branching strategy for our team in order to develop code
Owner	@ Saleem Siddiqui
Stakeholders	elided
Informed	elided
Due date	 24 Jul 2019
Outcome	

Branch: master ▼

[architecture_decision_record](#) / adr_template_by_michael_nygard.md

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kopper Fix typo

ca22b0b on Mar 6

2 contributors



25 lines (13 sloc) | 754 Bytes

Raw

Blame

History



ADR template by Michael Nygard

This is the template in [Documenting architecture decisions - Michael Nygard](#). You can use [adr-tools](#) for managing the ADR files.

In each ADR file, write these sections:

TITLE <short present tense imperative phrase, less than 50 characters, like a git commit message.>



HOW TO MEASURE ANYTHING

FINDING THE VALUE OF
"INTANGIBLES" IN BUSINESS



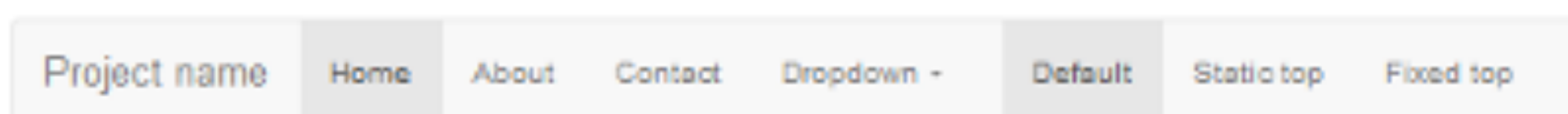
2nd
Edition
REVISED,
EXPANDED &
SIMPLIFIED

DOUGLAS W. HUBBARD

3rd Ethic

**For failure
recovery, measure
and document the
impact of your
decisions first**

**“A lack or deficiency of a
desirable quality
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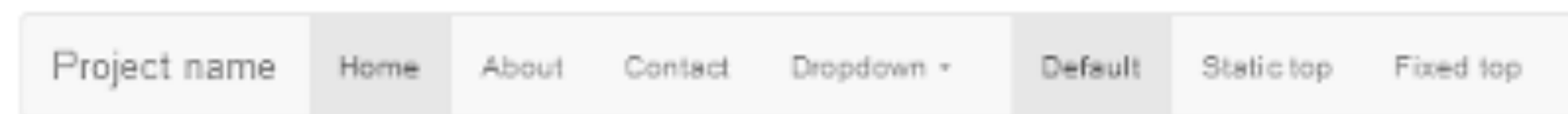


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Lorem ipsum dolor sit amet, consectetur adipiscing elit, sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.

Learn more

Click rate: 52 %



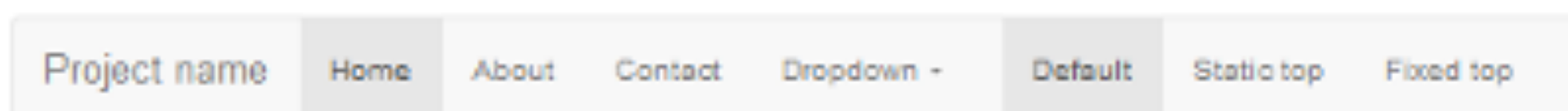
Welcome to our website

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Learn more

72 %

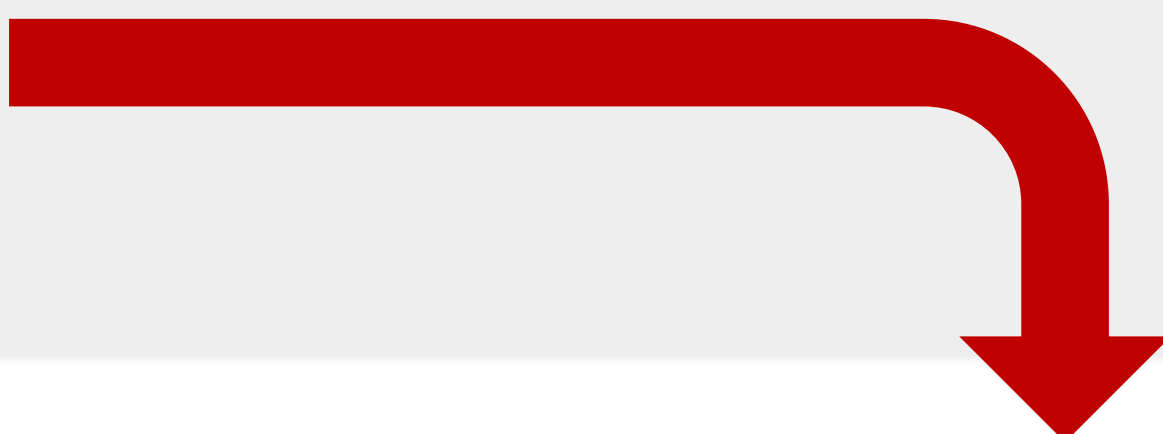
Image: [Maxime Lorant](#)



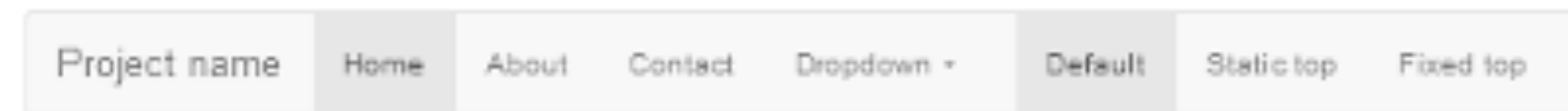
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Learn more



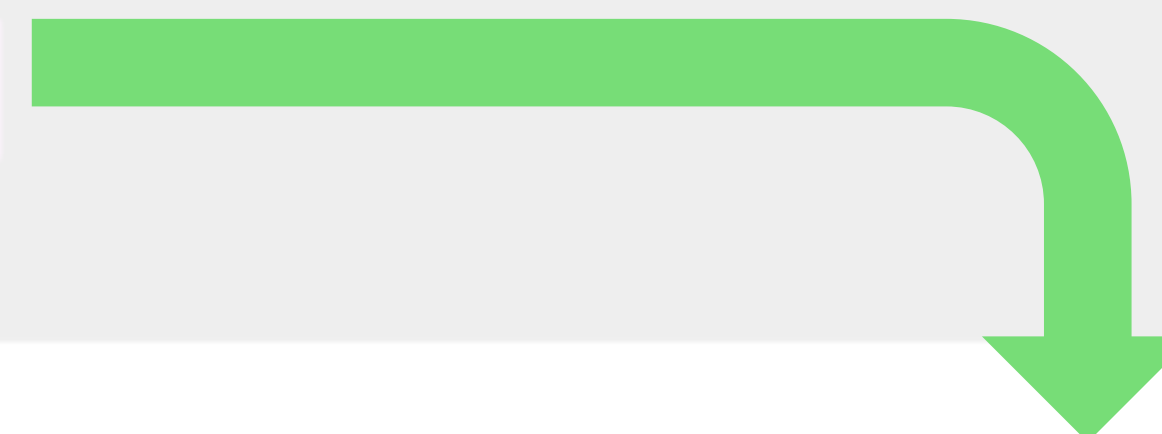
Click rate: 52 %



Welcome to our website

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Learn more

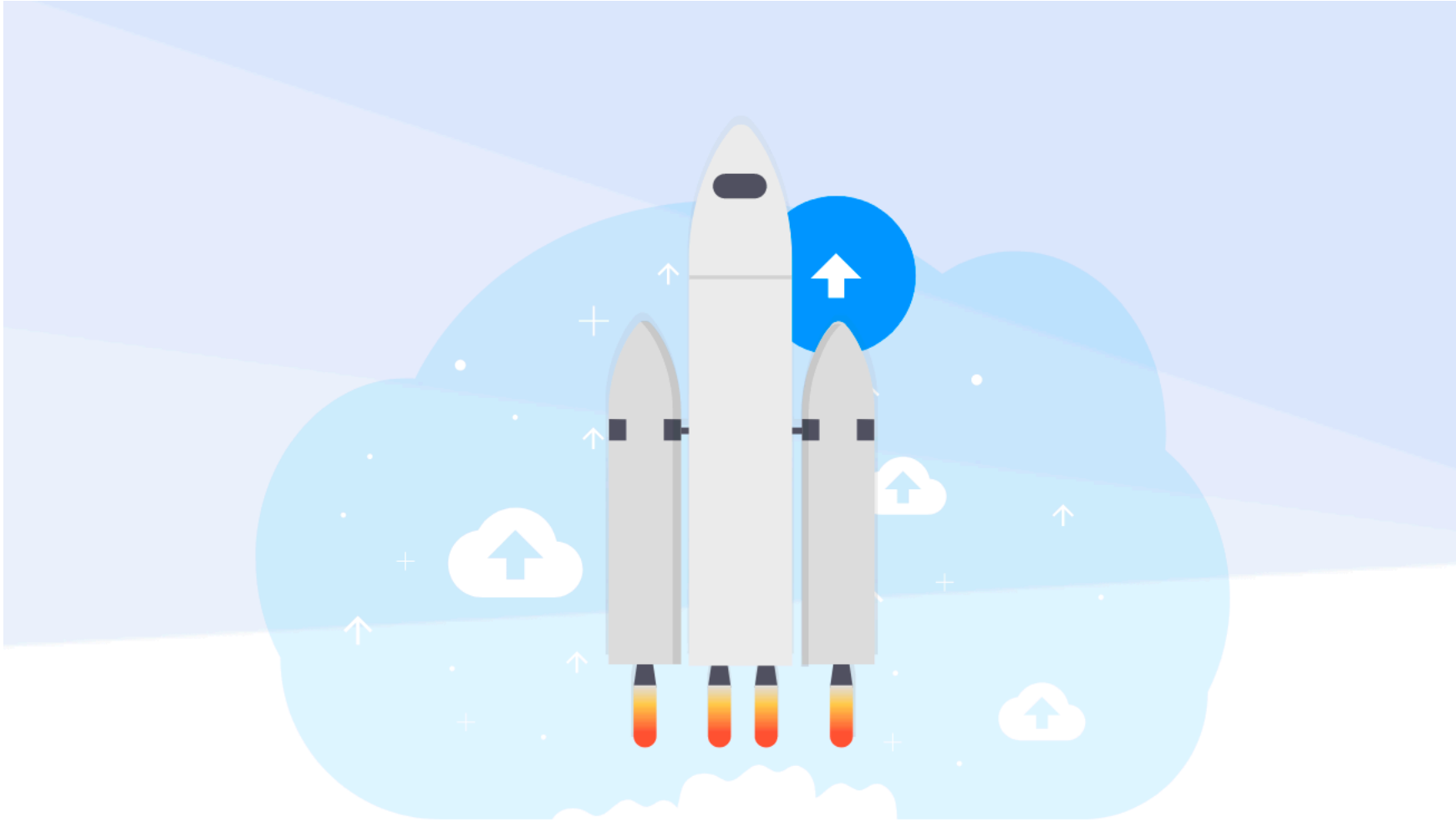


72 %

Image: [Maxime Lorant](#)


```
30 it('Left button redirects to Explore My Path page', () => {
31     const getLandingData = jest.fn();
32     const getUserInfo = jest.fn();
33     const routerSpy = spyOn<VueRouter>(router, 'push');
34     const wrapper = mount<Home>(Home, {
35         localVue,
36         router,
37         methods: {
38             getLandingData,
39             getUserInfo,
40         },
41     });
42     wrapper.find('.left-btn').trigger('click');
43     expect(routerSpy).toHaveBeenCalledWith({ path: '/explore-my-path' });
44 });
```

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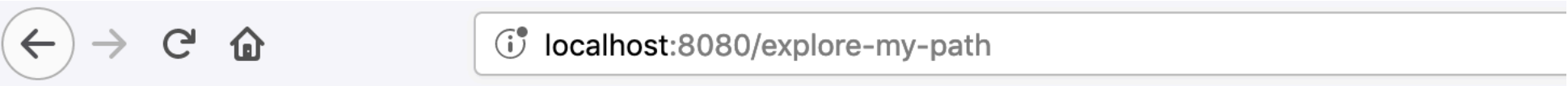
My Journey

We aim to inspire growth opportunities by setting goals and challenging you to achieve them. Aim toward the next step in your career.

Use this guide to walk through the possibilities – note, advancements can be made in both technical- or managerial-focused paths.

EXPLORE MY PATH

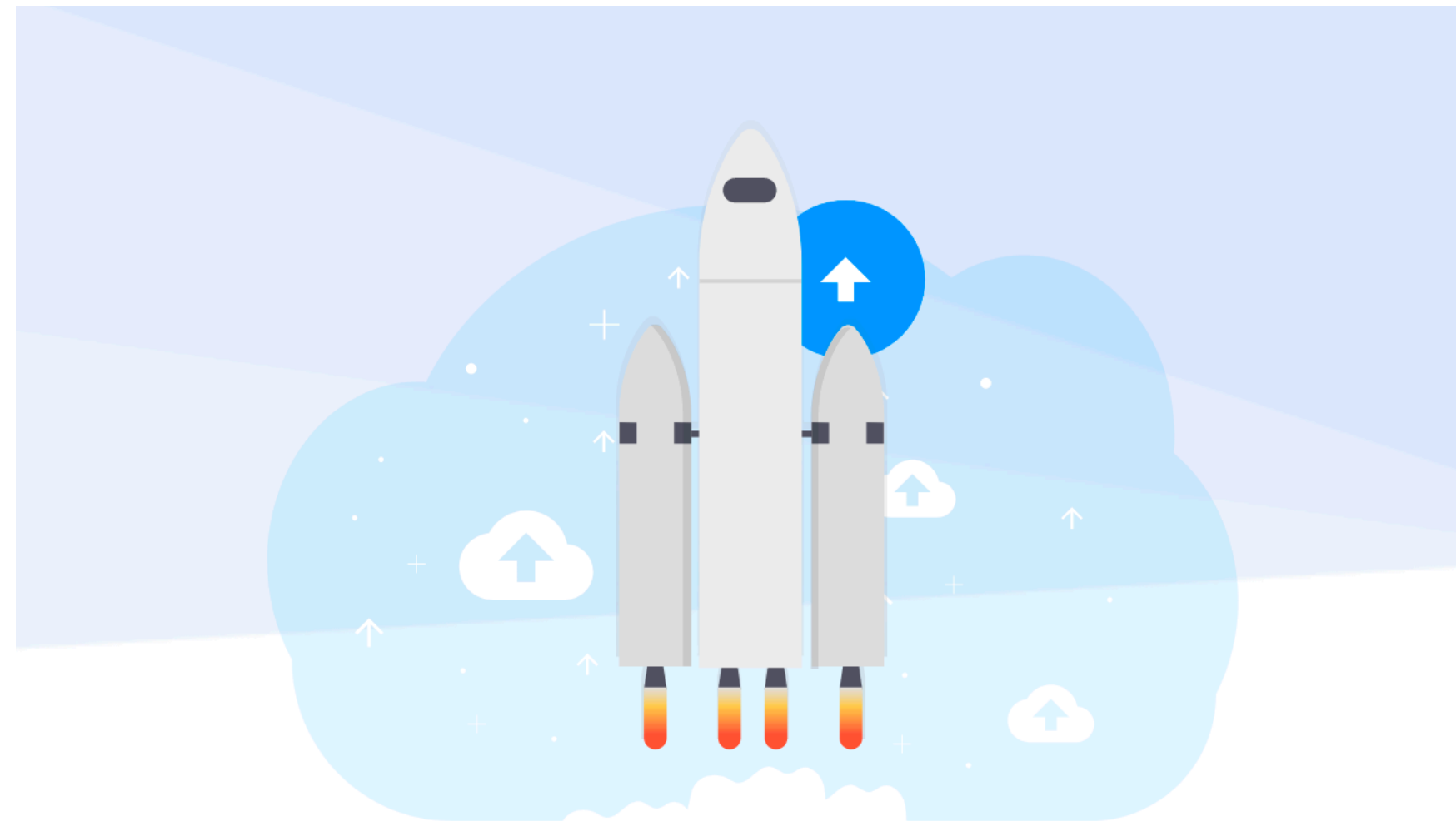
TELL ME MORE



MY CAREER PATH

Home

EXPLORE MY PATH



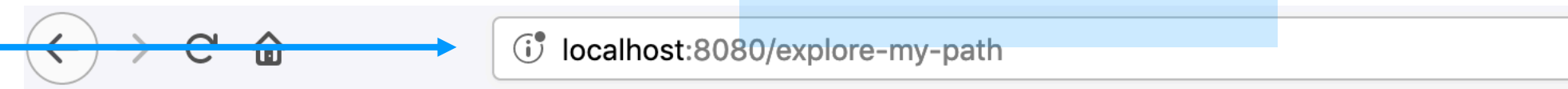
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EXPLORE MY PATH

TELL ME MORE



🏠 MY CAREER PATH

Home

EXPLORE MY PATH



10:09

Triggered: An abnormal number of users are signing in via html form

This may be because the javascript sign-in form is failing for a proportion of our users.

Has there recently been a release that might be breaking scripts on certain browsers, or might cause them to be loading more slowly than usual?

FAO the owners of app-authentication. @slack-sec-eng-alerts

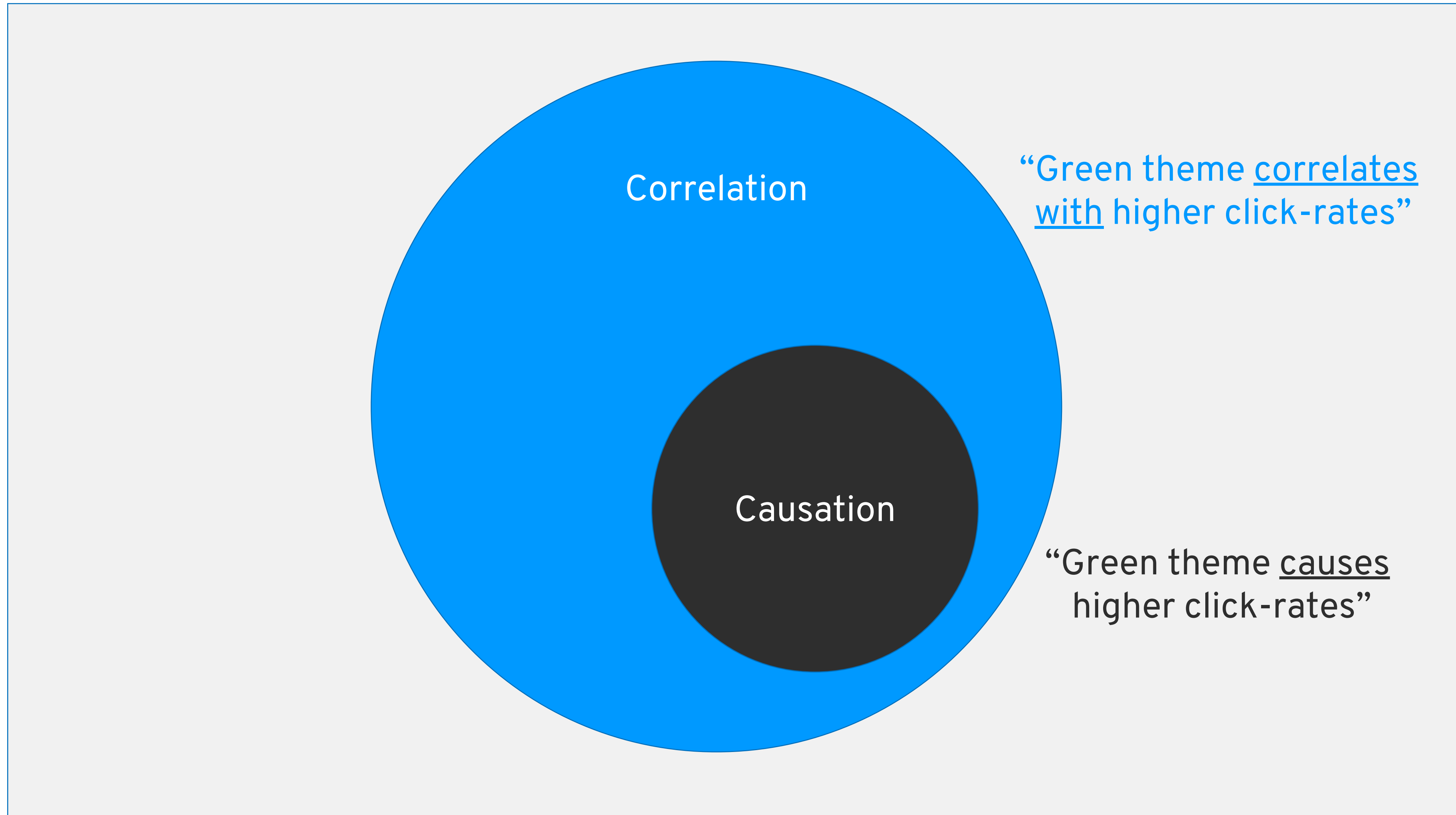
Note (23/05/19): This is a new alert that may need tuning.

```
sum(last_5m):sum:app_authentication.sign_in{environment:live,request:html}.as_count() > 50
```

Metric value: 52.0

Notified

@slack-sec-eng-alerts



POST
HOC
ERGO
PROPTER
HOC

4th Ethic

**At minimum,
establish
correlation to
understand the
impact of decisions**

POST
HOC
ERGO
PROPTER
HOC

Lemma

**Skip the
inconsequential
decisions**



The virtue
of sloth

There is no doubt that the grail of efficiency leads to abuse. Programmers waste enormous amounts of time thinking about, or worrying about, the speed of noncritical parts of their programs, and these attempts at efficiency actually have a strong negative impact when debugging and maintenance are considered. We should forget about small efficiencies, say about 97% of the time: premature optimization is the root of all evil.

Yet we should not pass up our opportunities in that critical 3%. A good programmer will not be lulled into complacency by such reasoning, he will be wise to look carefully at the critical code; but only after that code has been identified.

5th Ethic

**Defer decisions
until Last
Responsible
Moment**



Should you upgrade
your JDK from
version 8 to a more
recent version?

End of Public Updates of Java SE 8

Java SE 8 has gone through the [End of Public Updates process](#) for legacy releases. Oracle will continue to provide free public updates and auto updates of Java SE 8 from Oracle at java.com, until at least the end of December 2020 for Personal, Development and other Users. Developers can find [Oracle Java SE updates, including Oracle Java SE 8, 11 and current releases, free for development on OTN](#). As of the April 16, 2019 [quarterly critical patch update](#), Oracle Customers should access updates to Java SE 8 for commercial use from Oracle through My Oracle Support and via auto update where applicable (Visit [My.Oracle Support Note 1439822.1 - All Java SE Downloads on MOS](#) – Requires Support Login).

Oracle does not plan to migrate desktops from Java SE 8 to later versions via the auto update feature. This includes the Java Plugin and Java Web Start. Instead of relying on a browser-accessible system JRE, we encourage application developers to [use the packaging options introduced with Java SE 9](#) to repackage and deliver their Java applications as stand-alone applications that include their own custom runtimes.

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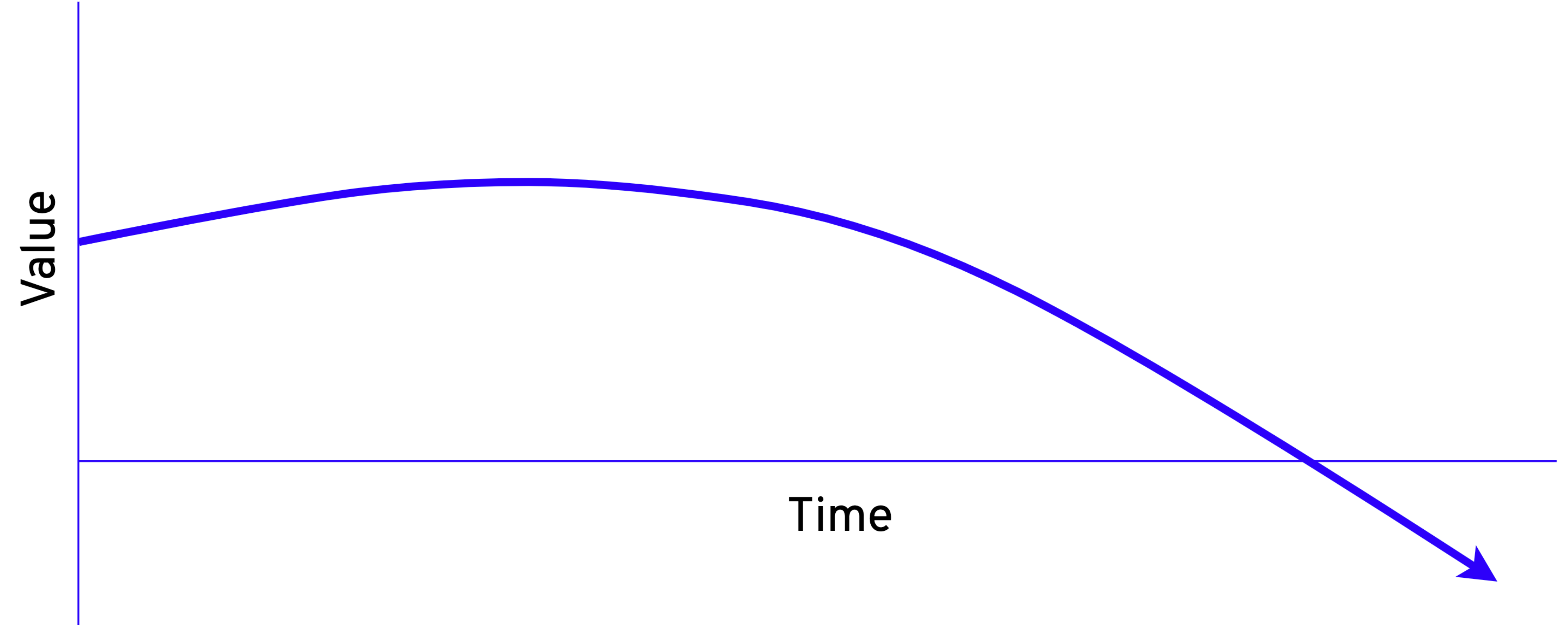
CVSS Scores Greater Than: 0 1 2 3 4 5 6 7 8 9

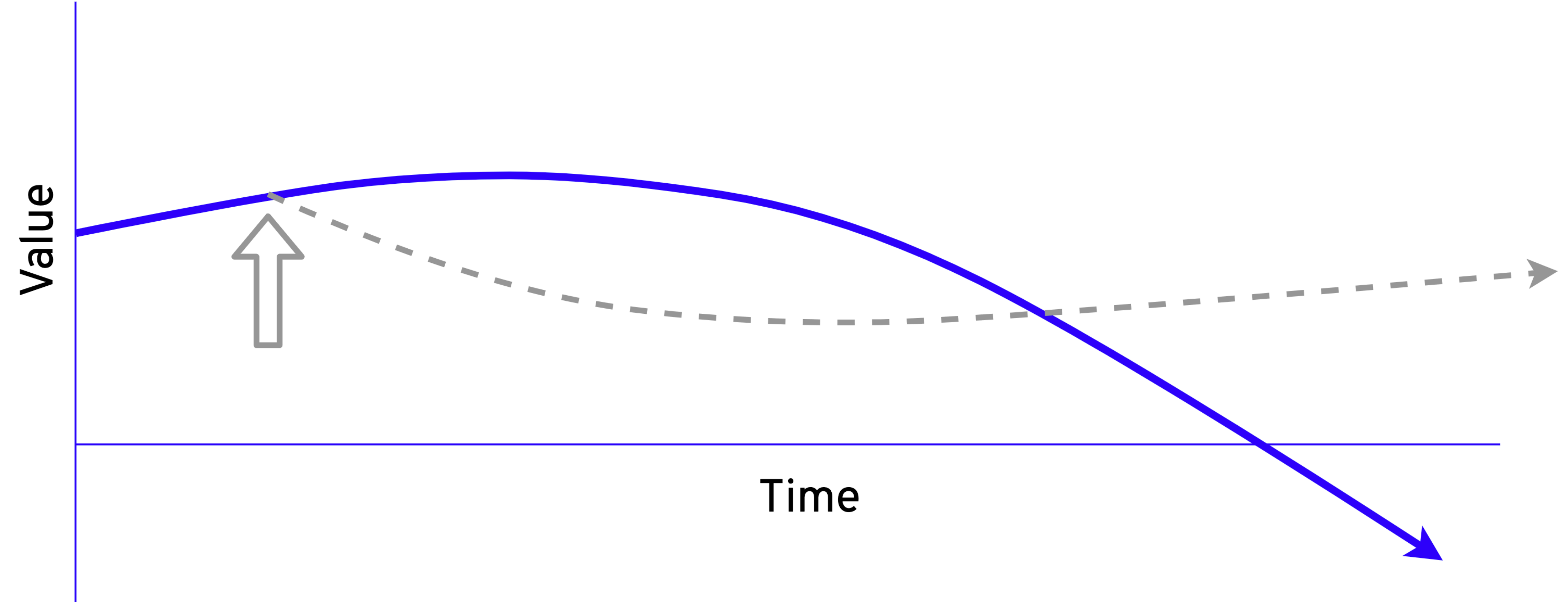
Sort Results By : CVE Number Descending CVE Number Ascending CVSS Score Descending Number Of Exploits Descending

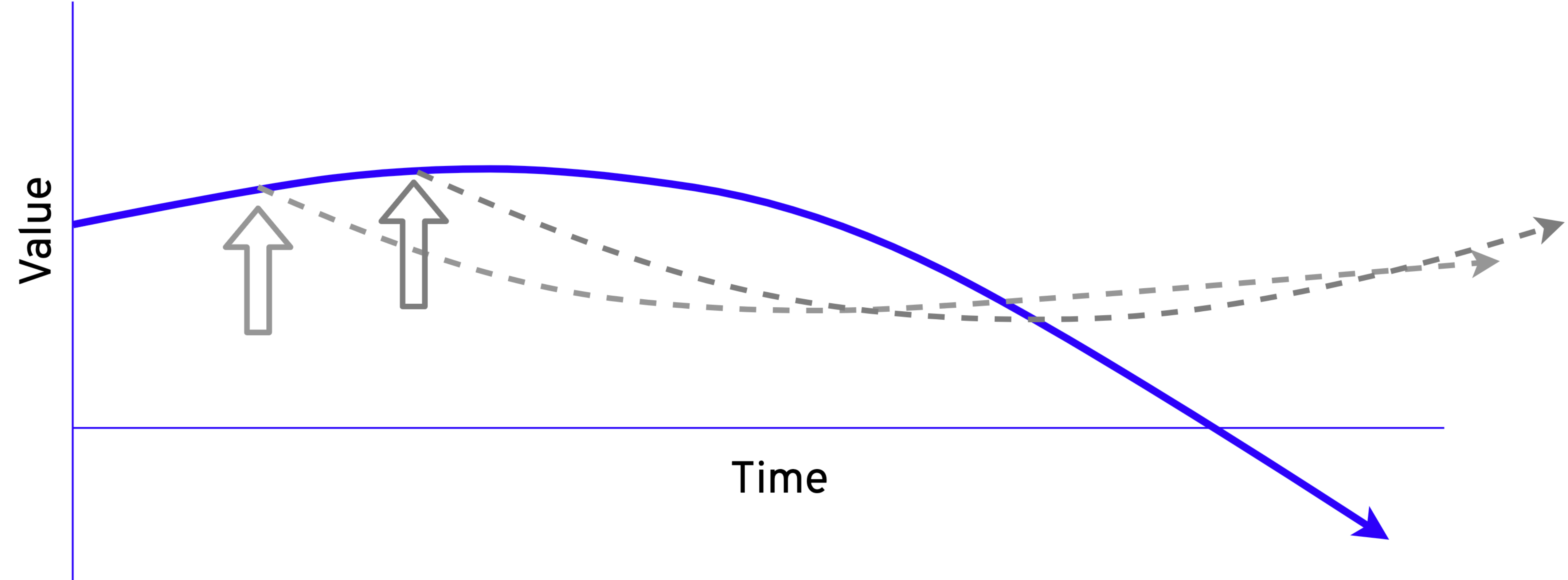
Total number of vulnerabilities : 607 Page : 1 (This Page)2 3 4 5 6 7 8 9 10 11 12 13

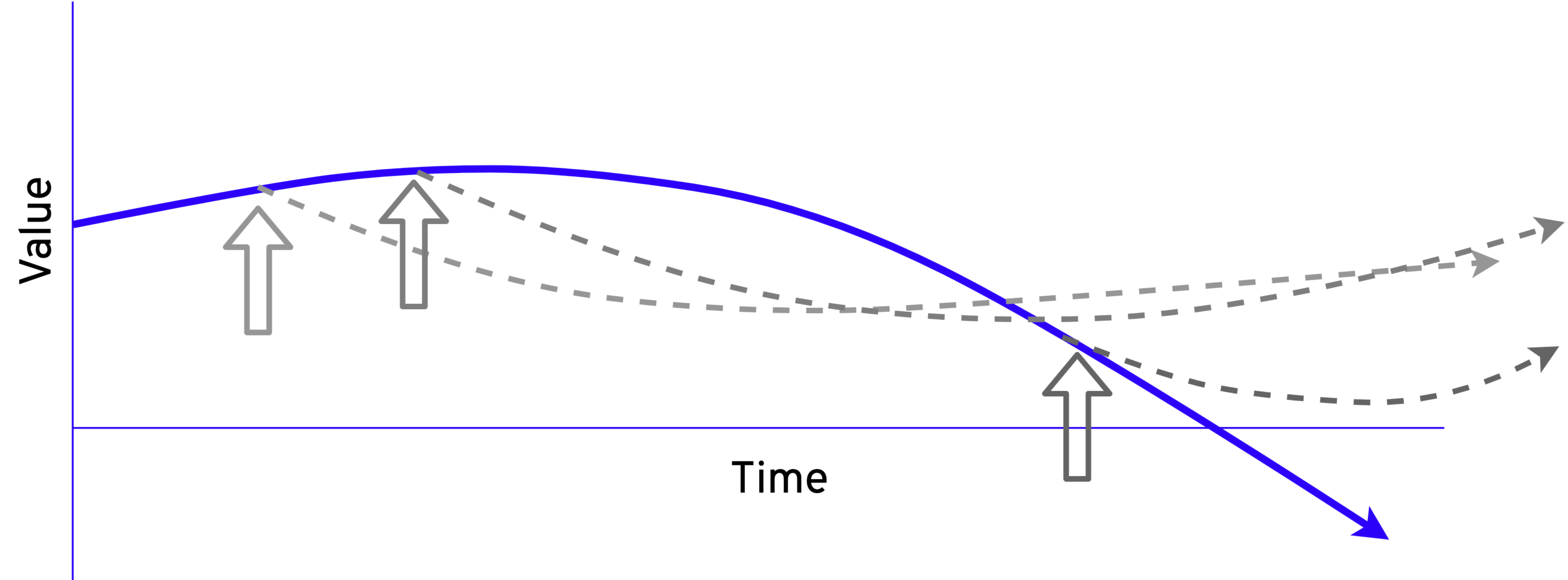
Copy Results Download Results

#	CVE ID	CWE ID	# of Exploits	Vulnerability Type(s)	Publish Date	Update Date	Score	Gained Access Level	Access	Complexity	Authentication	Conf.	Integ.	Avail.
1	CVE-2019-2842	284		DoS	2019-07-23	2019-07-30	4.3	None	Remote	Medium	Not required	None	None	Partial
Vulnerability in the Java SE component of Oracle Java SE (subcomponent: JCE). The supported version that is affected is Java SE: 8u212. Difficult to exploit vulnerability allows unauthenticated attacker with network access via multiple protocols to compromise Java SE. Successful attacks of this vulnerability can result in unauthorized ability to cause a partial denial of service (partial DOS) of Java SE. Note: This vulnerability applies to Java deployments, typically in clients running sandboxed Java Web Start applications or sandboxed Java applets (in Java SE 8), that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability can also be exploited by using APIs in the specified Component, e.g., through a web service which supplies data to the APIs. CVSS 3.0 Base Score 3.7 (Availability impacts). CVSS Vector: (CVSS:3.0/AV:N/AC:H/PR:N/UI:N/S:U/C:N/I:N/A:L).														
2	CVE-2019-2821	284			2019-07-23	2019-07-31	2.6	None	Remote	High	Not required	Partial	None	None
Vulnerability in the Java SE component of Oracle Java SE (subcomponent: JSSE). Supported versions that are affected are Java SE: 11.0.3 and 12.0.1. Difficult to exploit vulnerability allows unauthenticated attacker with network access via TLS to compromise Java SE. Successful attacks require human interaction from a person other than the attacker. Successful attacks of this vulnerability can result in unauthorized access to critical data or complete access to all Java SE accessible data. Note: This vulnerability applies to Java deployments, typically in clients running sandboxed Java Web Start applications or sandboxed Java applets (in Java SE 8), that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability does not apply to Java deployments, typically in servers, that load and run only trusted code (e.g., code installed by an administrator). CVSS 3.0 Base Score 5.3 (Confidentiality impacts). CVSS Vector: (CVSS:3.0/AV:N/AC:H/PR:N/UI:R/S:U/C:H/I:N/A:N).														
3	CVE-2019-2818	284			2019-07-23	2019-07-31	2.6	None	Remote	High	Not required	Partial	None	None
Vulnerability in the Java SE component of Oracle Java SE (subcomponent: Security). Supported versions that are affected are Java SE: 11.0.3 and 12.0.1. Difficult to exploit vulnerability allows unauthenticated attacker with network access via multiple protocols to compromise Java SE. Successful attacks require human interaction from a person other than the attacker. Successful attacks of this vulnerability can result in unauthorized read access to a subset of Java SE accessible data. Note: This vulnerability applies to Java deployments, typically in clients running sandboxed Java Web Start applications or sandboxed Java applets (in Java SE 8), that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability does not apply to Java deployments, typically in servers, that load and run only trusted code (e.g., code installed by an administrator). CVSS 3.0 Base Score 3.1 (Confidentiality impacts). CVSS Vector: (CVSS:3.0/AV:N/AC:H/PR:N/UI:R/S:U/C:L/I:N/A:N).														
4	CVE-2019-2816	284			2019-07-23	2019-07-30	5.8	None	Remote	Medium	Not required	Partial	Partial	None
Vulnerability in the Java SE, Java SE Embedded component of Oracle Java SE (subcomponent: Networking). Supported versions that are affected are Java SE: 7u221, 8u212, 11.0.3 and 12.0.1; Java SE Embedded: 8u211. Difficult to exploit vulnerability allows unauthenticated attacker with network access via multiple protocols to compromise Java SE, Java SE Embedded. Successful attacks of this vulnerability can result in unauthorized update, insert or delete access to some of Java SE, Java SE Embedded accessible data as well as unauthorized read access to a subset of Java SE, Java SE Embedded accessible data. Note: This vulnerability applies to Java deployments, typically in clients running sandboxed Java Web Start applications or sandboxed Java applets (in Java SE 8), that load and run untrusted code (e.g., code that comes from the internet) and rely on the Java sandbox for security. This vulnerability can also be exploited by using APIs in the specified Component, e.g., through a web service which supplies data to the APIs. CVSS 3.0 Base Score 4.8 (Confidentiality and Integrity impacts). CVSS Vector: (CVSS:3.0/AV:N/AC:H/PR:N/UI:N/S:U/C:L/I:L/A:N).														







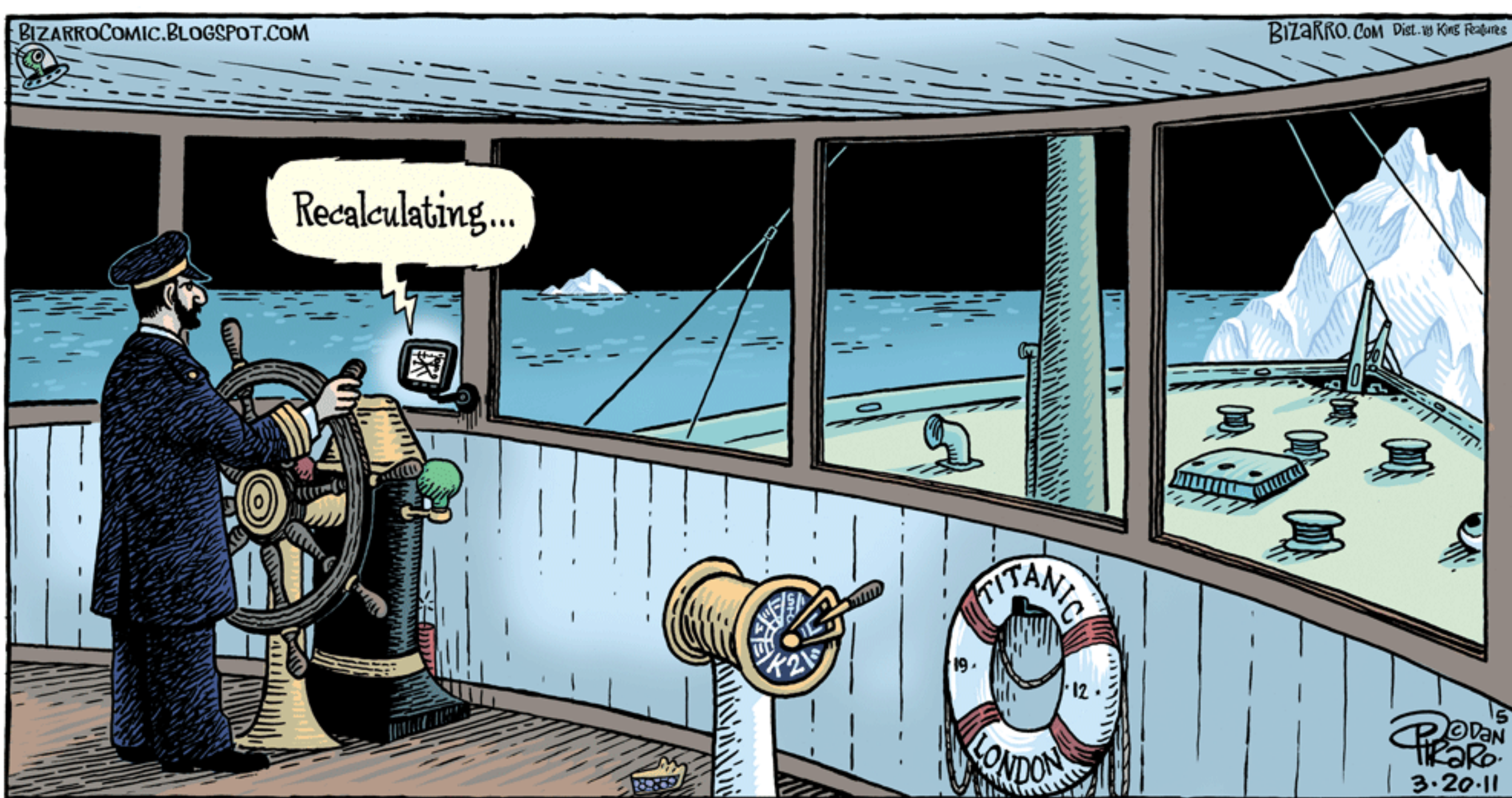


5th Ethic

**Defer decisions
until Last
Responsible
Moment**

Lemmas

... But no later!



Satisfice

RATIONAL DECISION-MAKING IN BUSINESS ORGANIZATIONS

Nobel Memorial Lecture, 8 December, 1978

by

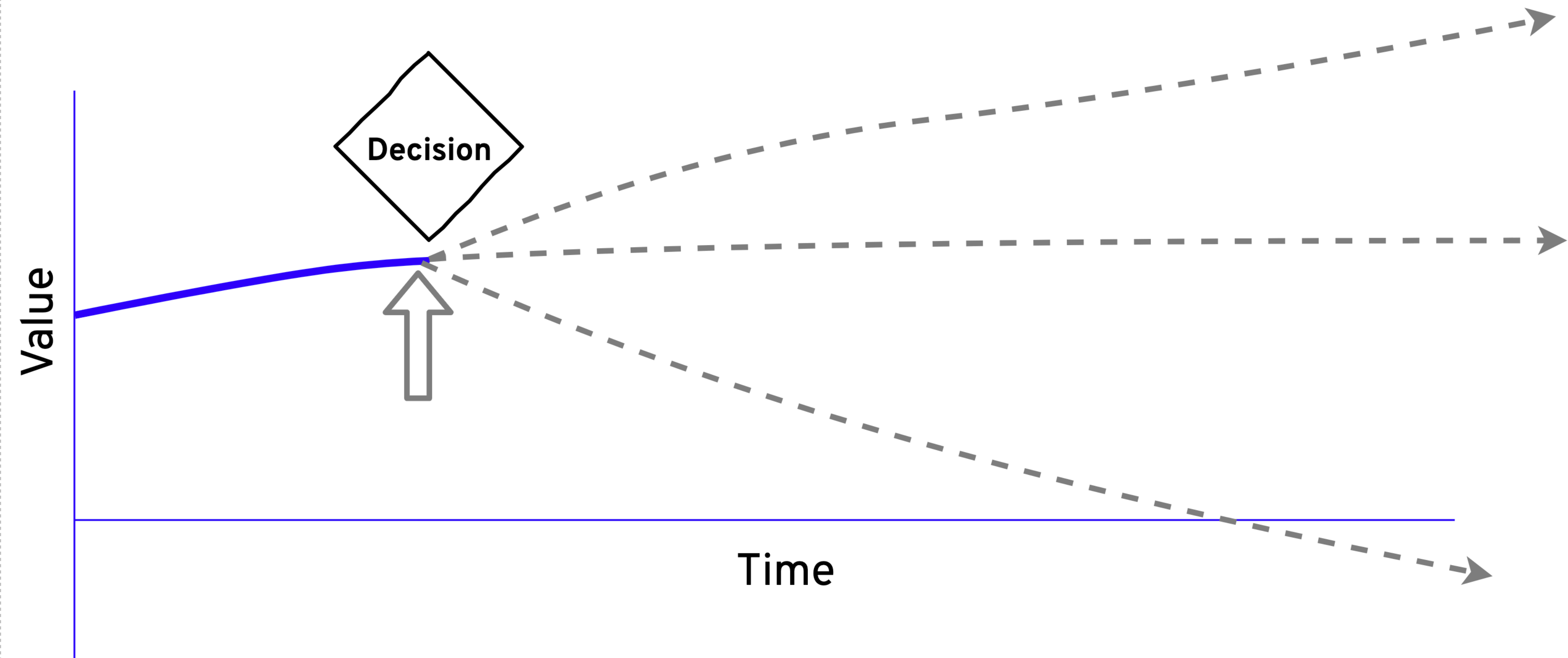
HERBERT A. SIMON

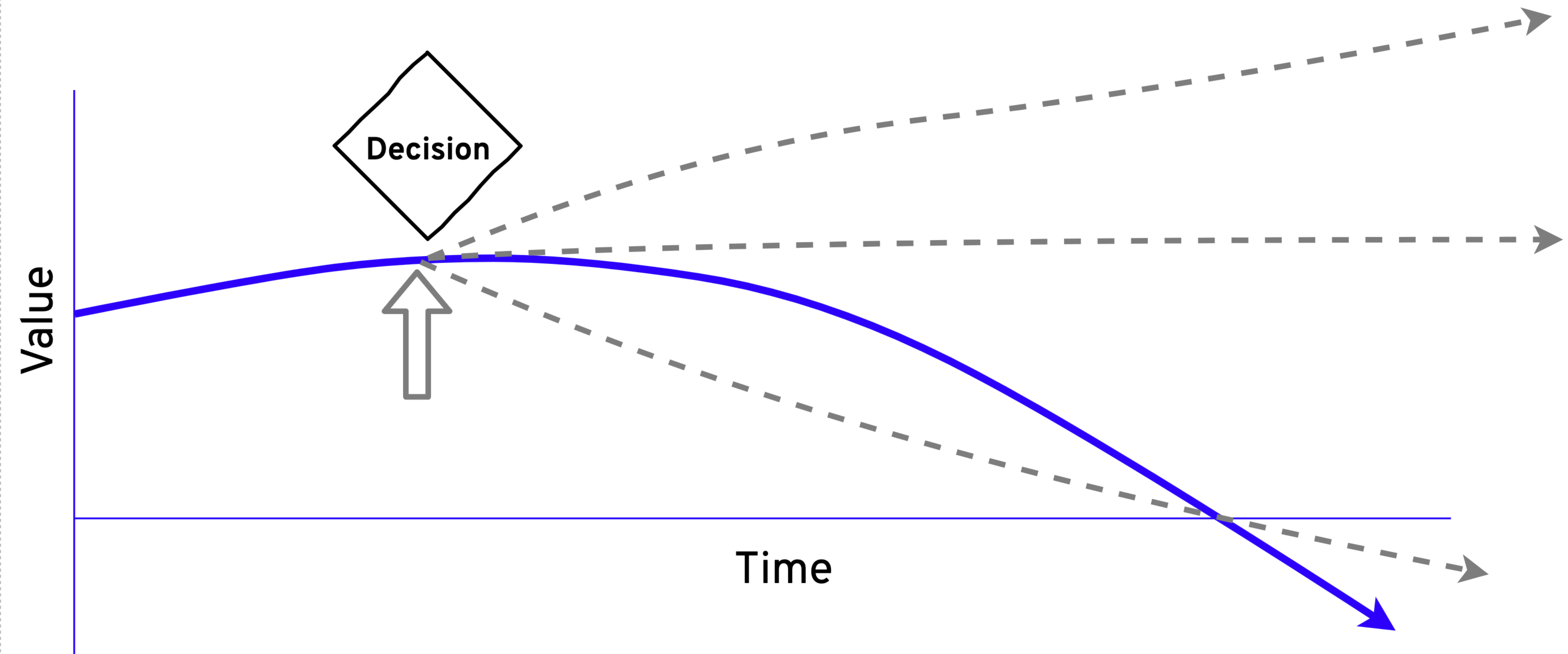
Carnegie-Mellon University*, Pittsburgh, Pennsylvania, USA

“... decision makers can satisfice either by finding optimum solutions for a simplified world, or by finding satisfactory solutions for a more realistic world. Neither approach, in general, dominates the other, and both have continued to co-exist...”









6th Ethic



**Beware of
comparing real
costs with
imaginary
benefits**

**Take your neighbor's index card and
see what, if anything, you'd do
differently**



Turn right

Is it a failure ...

- | that OSS licenses didn't cover the **services** that are built using OSS?
- | (and an irony) that my personal info can be locked up in **propriety datastores** using OSS?
- | that so many (90%+) of OSS projects on github **don't have active committers** after one year?
- | of **mine** to show you a PowerPoint slide-deck on a MacOS?
 - | That's an easy one: use LibreOffice on Linux!

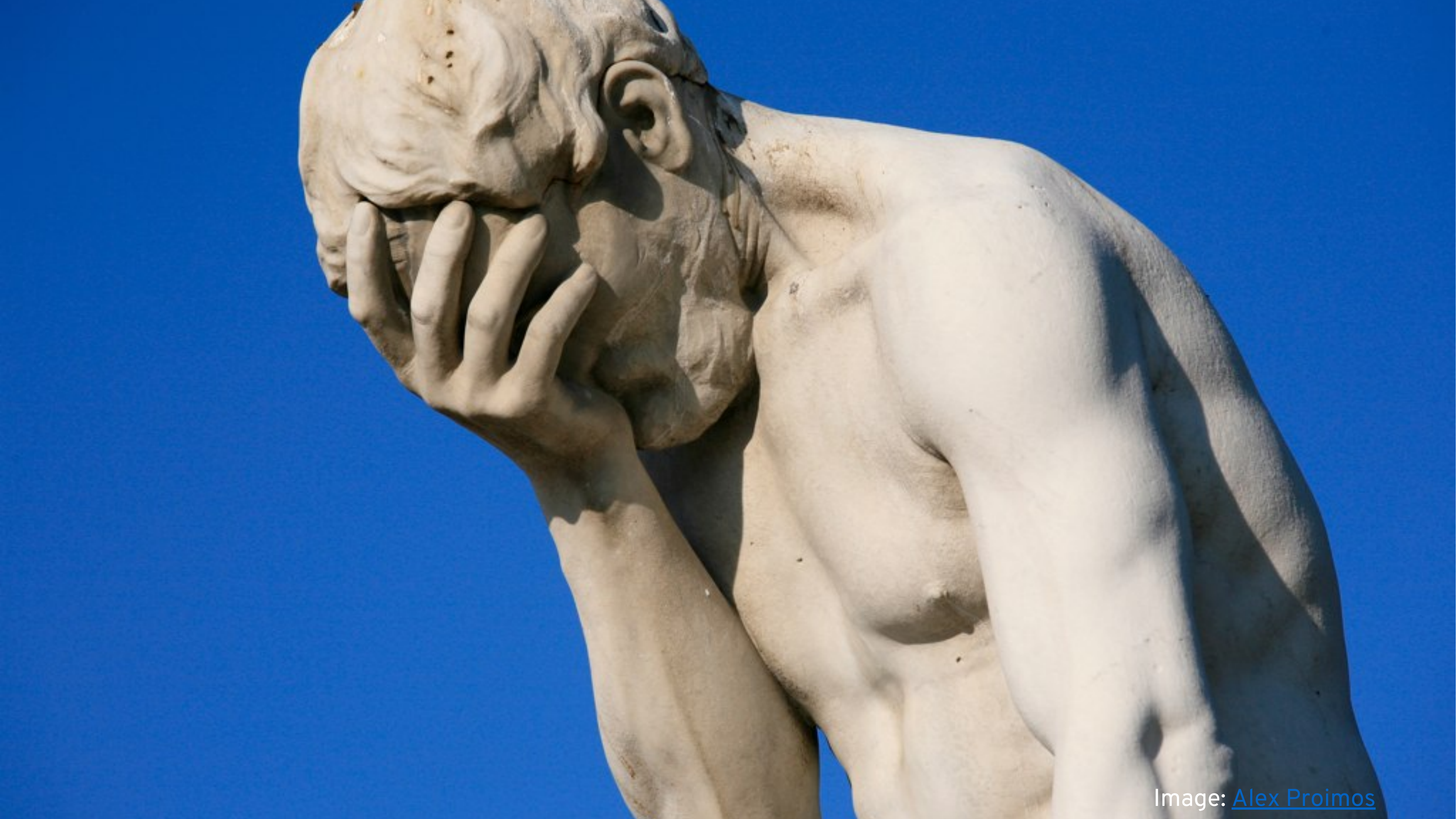
Take a minute



open source

SUCCESS

FAILURE





7th Ethic

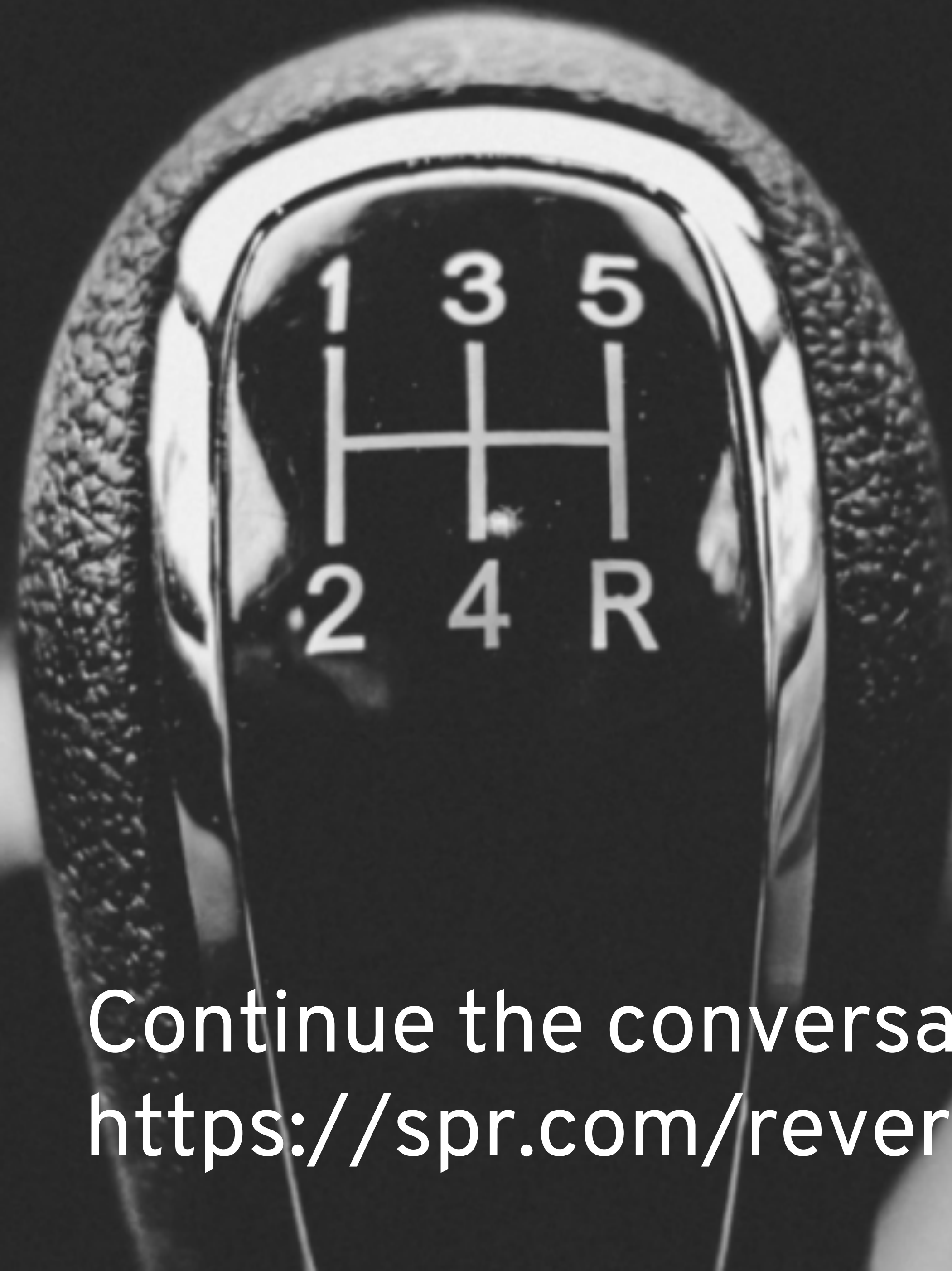
**Fail often!
Avoid regrets**

The Seven Ethics

1. Error recovery > Error prevention
2. If a decision is only an opinion trying to find a voice, curb it
3. For failure recovery, measure and document the impact of your decisions first
4. At minimum, establish correlation to understand the impact of decisions
 - a. Skip the inconsequential decisions
5. Defer decisions until Last Responsible Moment
 - a. ... But no later
6. Beware of comparing real costs with imaginary benefits
7. Fail often, avoid regrets

How to fail
successfully
and reliably

And look good
while doing it



Continue the conversation at
<https://spr.com/reversible-mistakes>



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