A Framework for Tech. Debt

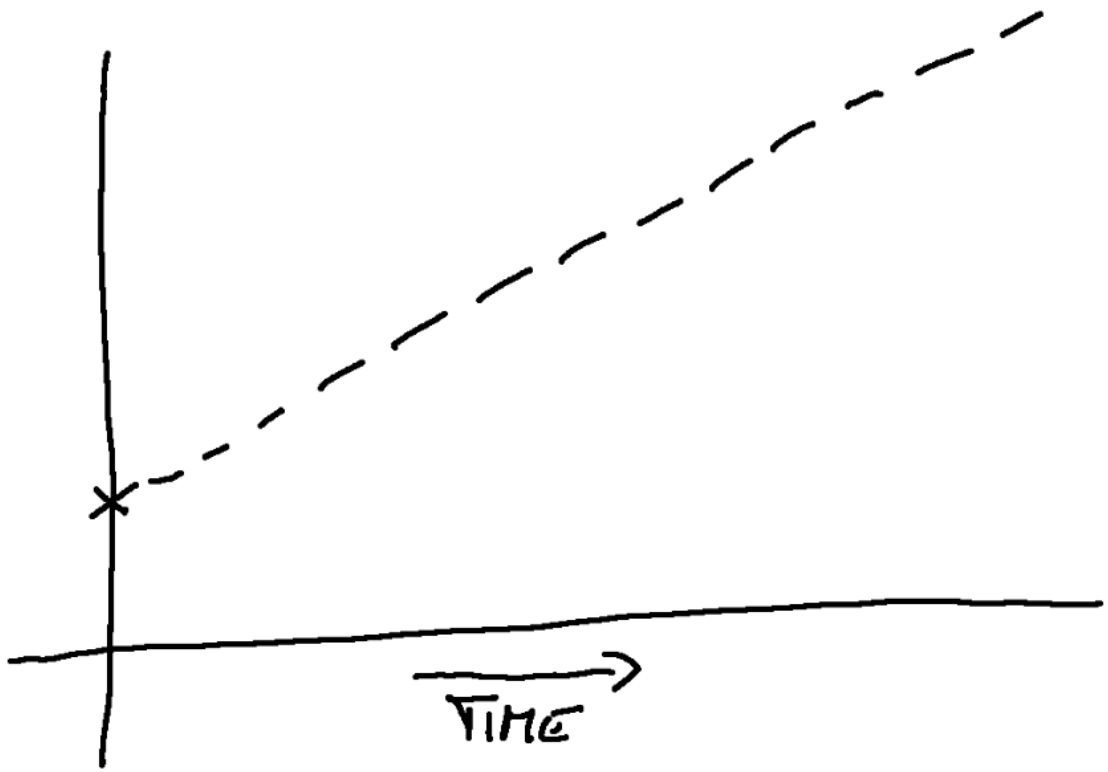
Technical Debt

Introduction

Introduction

Debt

Introduction

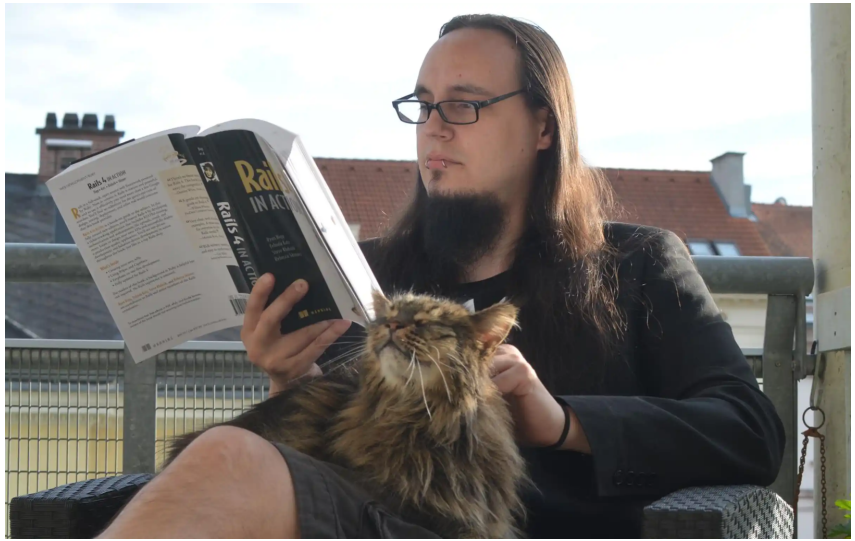


Software Rot

Business Risk

Me

- 👴 2+ Decades in Software Development
- 📚 Complete Stack
- 🛠️ Staff @ Meister



The Siblings of Meister

Practical Example

You join a project as seniored developer...

Practical Example

- ✅ check README.md
- ✅ check Gemfile
- ✅ explore some tests
- ✅ explore some code
- ✅ check testsuite passes (in CI 🙏)
- ❌ check RuboCop

Practical Example

Practical Example

 check RuboCop

Practical Example

```
$ cat .rubocop_todo.yml
# Offense count: 1
Lint/DuplicateBranch:
  Exclude:
    - app/model/team.rb
# Offense count: 8
Metrics/MethodLength:
  Exclude:
    - app/controllers/teams_controller.rb
    - app/model/team.rb
```

Practical Example

check RuboCop

Practical Example

```
$ wc -l .rubocop_todo.yml
1145 .rubocop_todo.yml # 1145 lines in file
```

Practical Example

How can we get rid of the TODOs? 🤔

Four Steps Framework

A Framework for Tech. Debt

1. Get the Numbers 📝

A Framework for Tech. Debt

```
# total number of lines
$ wc -l .rubocop_todo.yml
```

A Framework for Tech. Debt

```
$ cat .rubocop_todo.yml
# Offense count: 1
Lint/DuplicateBranch:
  Exclude:
    - app/model/team.rb
```

A Framework for Tech. Debt

```
$ grep 'Offense count:' .rubocop_todo.yml
Offense count: 1
Offense count: 4
Offense count: 2
Offense count: 28
# [...]

# extract number of rules violated
$ grep 'Offense count:' .rubocop_todo.yml | wc -l
```

A Framework for Tech. Debt

```
# extract number of violations
$ grep 'Offense count:' .rubocop_todo.yml | \
    ruby -e 'puts $stdin.readlines.sum { it.split.last.to_i }'
```

A Framework for Tech. Debt

1. Get the Numbers ✅

...and store them away

A Framework for Tech. Debt

Store in Database 🙄

Create a File per Day in a Bucket 

A Frameowk for Tech. Debt

```ruby
# lib/tasks/tech_debt.rake
namespace :tech_debt do
  desc 'Record development metrics'
  task metrics: :environment do
    total_lines = `wc -l .rubocop_todo.yml`.strip.split.first.to_i
    File.write("tmp/#{Date.today}.json", { total_lines: }.to_json)
  end
end
```

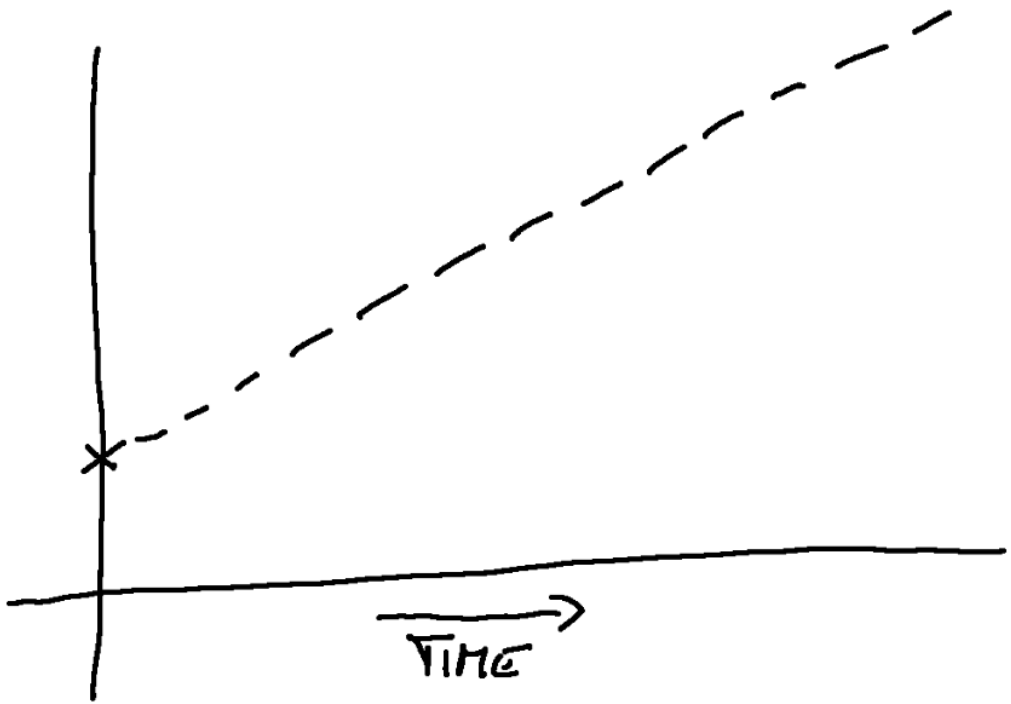
A Framework for Tech. Debt

```
$ cat data/2025-06-23.json
{
  "rubocop": {
    "total_lines_of_todo_file": 1145,
    "number_of_rules_violated": 74,
    "number_of_violations": 2128
  }
}
```

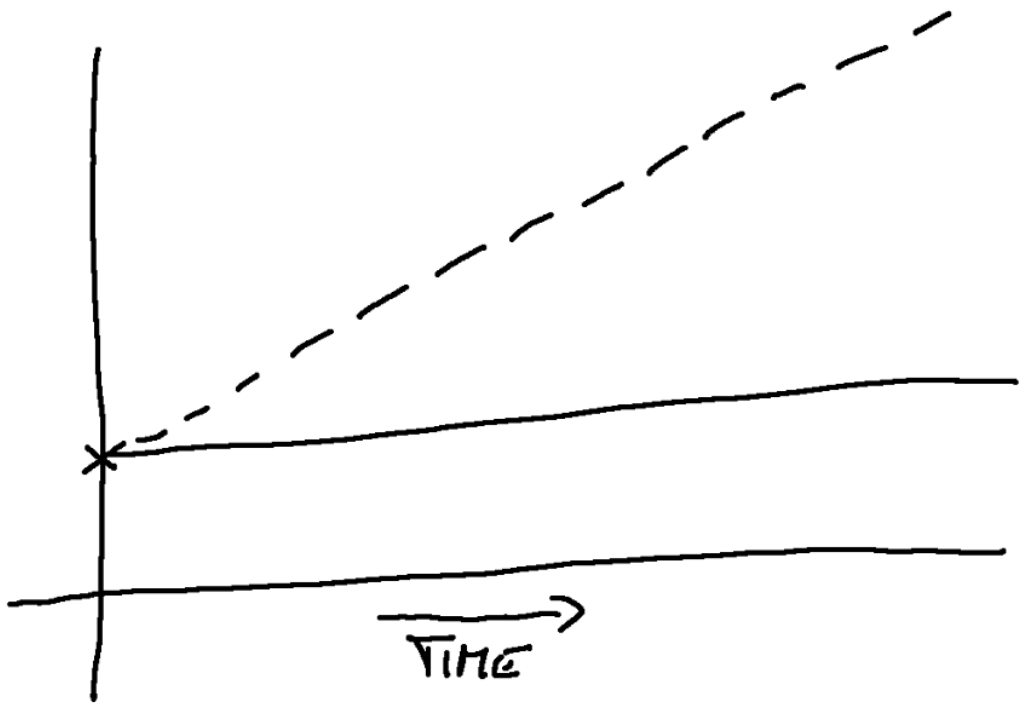
A Framework for Tech. Debt

1. Get the Numbers ✅
2. Visualize Numbers 📝

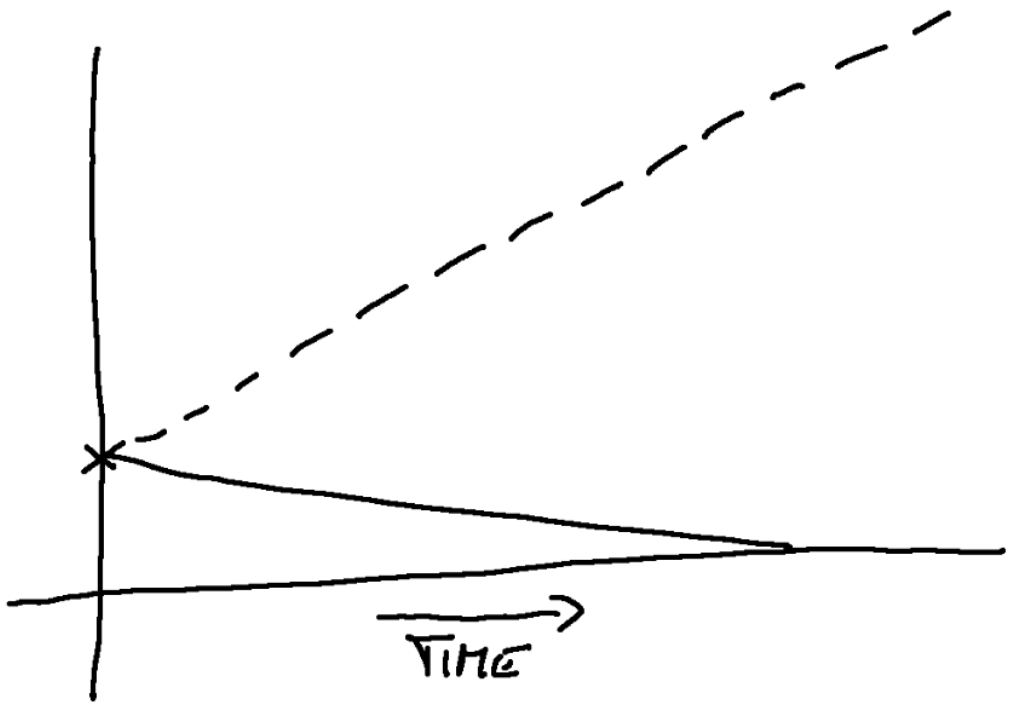
A Framework for Tech. Debt



A Framework for Tech. Debt



A Framework for Tech. Debt



A Framework for Tech. Debt

1. Get the Numbers ✅
2. Visualize Numbers ✅
3. Create a Vision 📝

Vision for RuboCop

✅ Good Practice

A Framework for Tech. Debt

Benefits 💪

* Ruby Practice & Learning
* Readability
* Consistency
* Collaboration
* Maintainablility
* Code Complexity
* Performance
* Security

Vision for RuboCop

✅ Good Practice

🌞 Less Problems

Vision for RuboCop

✅ Good Practice

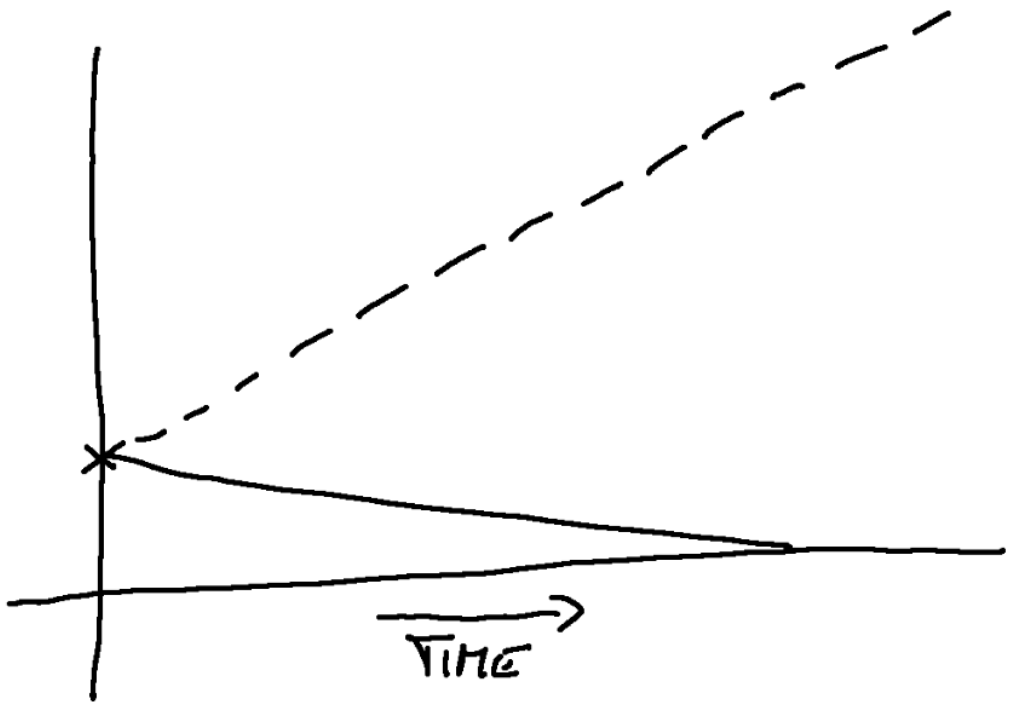
☀️ Less Problems

🌴 Easy Changes

A Framework for Tech. Debt

1. Get the Numbers ✅
2. Visualize Numbers ✅
3. Create a Vision ✅
4. Make Steps Towards the Vision 📝

A Framework for Tech. Debt

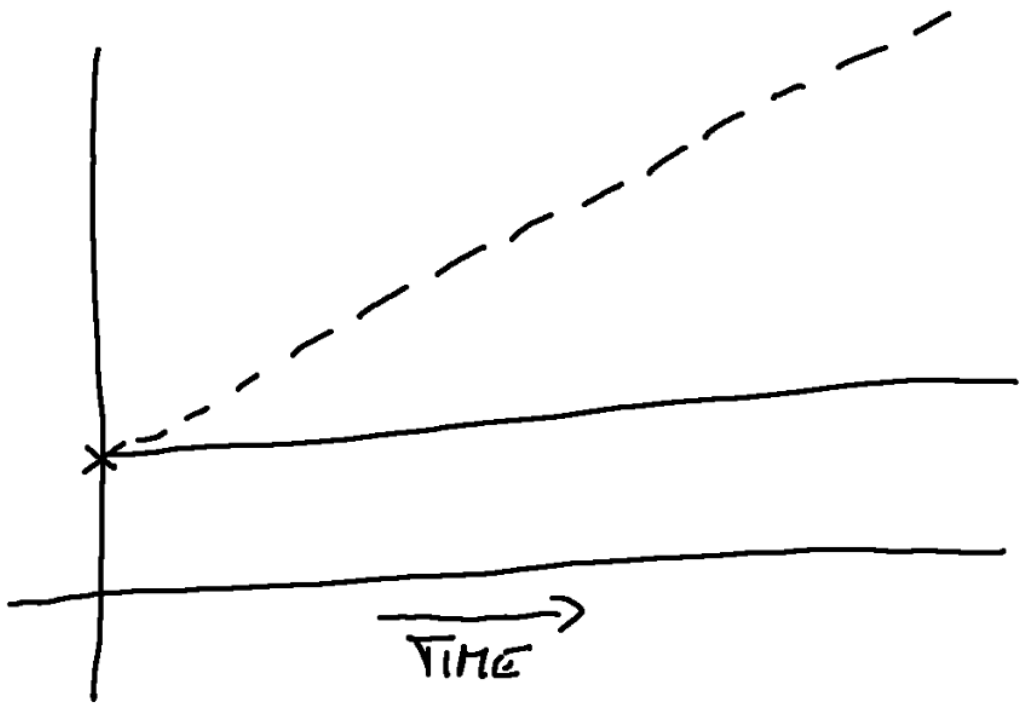


A Framework for Tech. Debt

Extend our Playbook:

📝 On Additions: Accept No Violations.
📝 On Changes: Refactor When Possible.

A Framework for Tech. Debt



A Framework for Tech. Debt

“We don’t need to **fix** everything.”

A Framework for Tech. Debt

1. Get the Numbers ✅
2. Visualize Numbers ✅
3. Create a Vision ✅
4. Make Steps Towards the Vision ✅

Impact on Communication

Technical Debt for **Developers**

Applications of the Framework

Software Rot
for **Technical** and
Non-Technical People

Business Risk
for
Non-Technical People

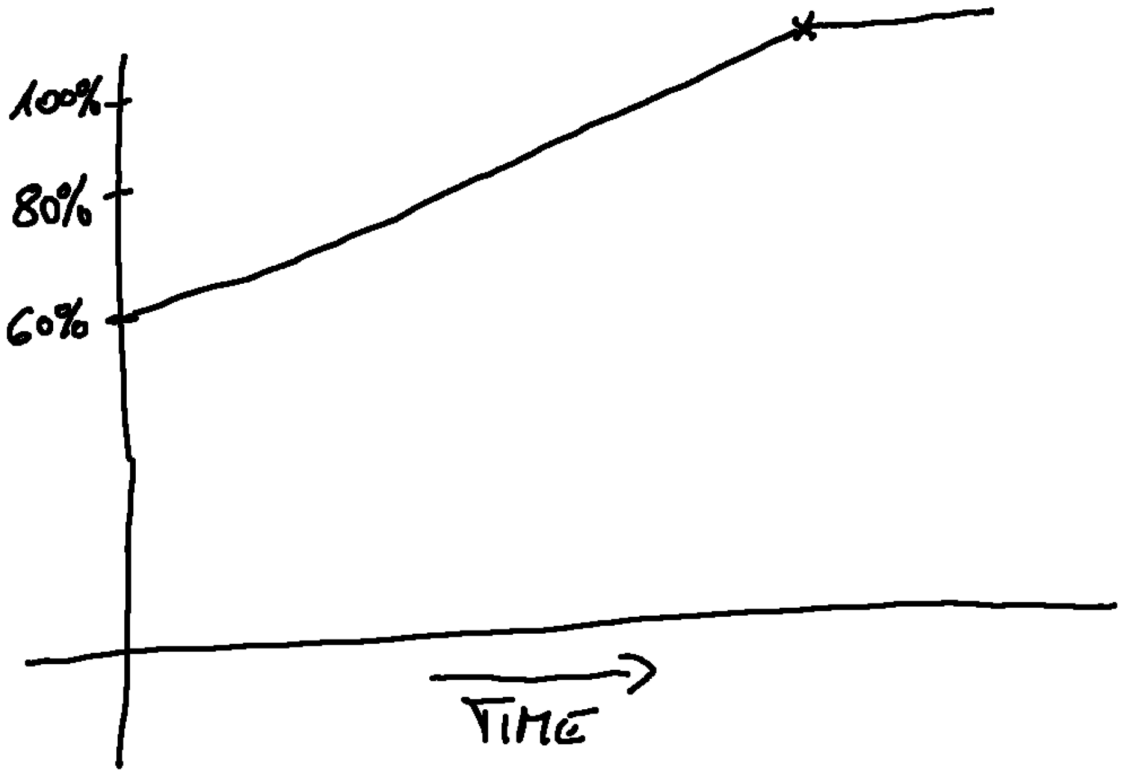
Applications of the Framework

… but there’s so many kinds of Tech. Debt

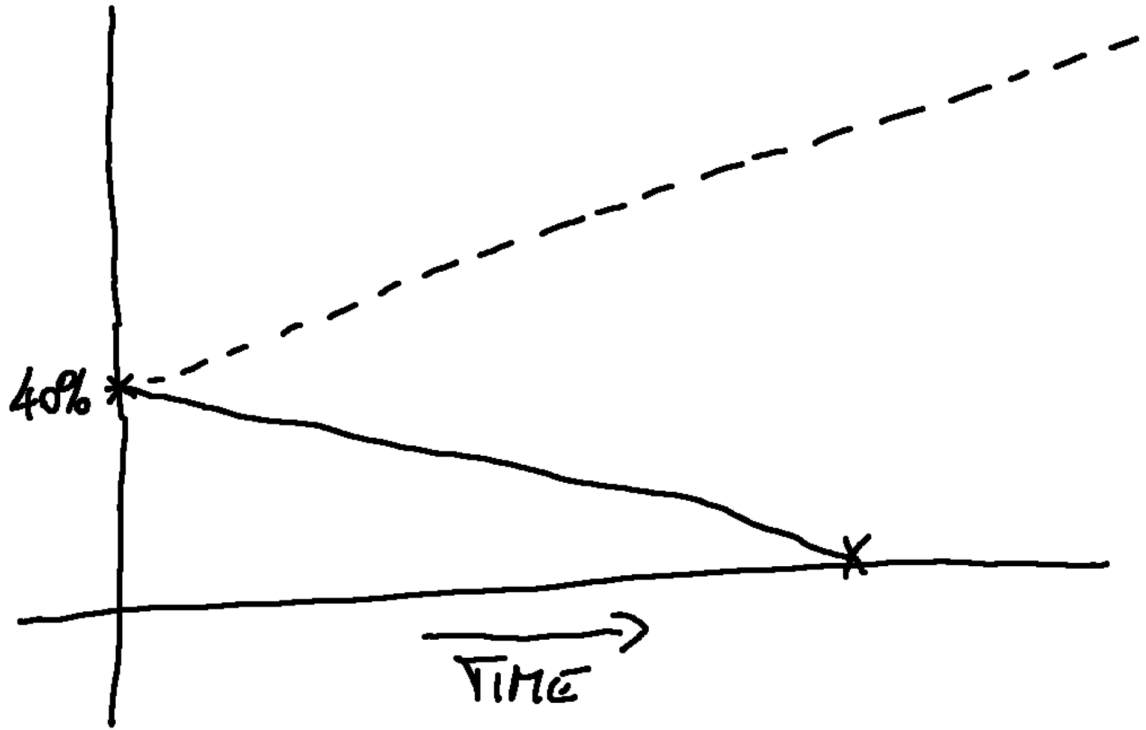
Applications of the Framework

Low Test Coverage

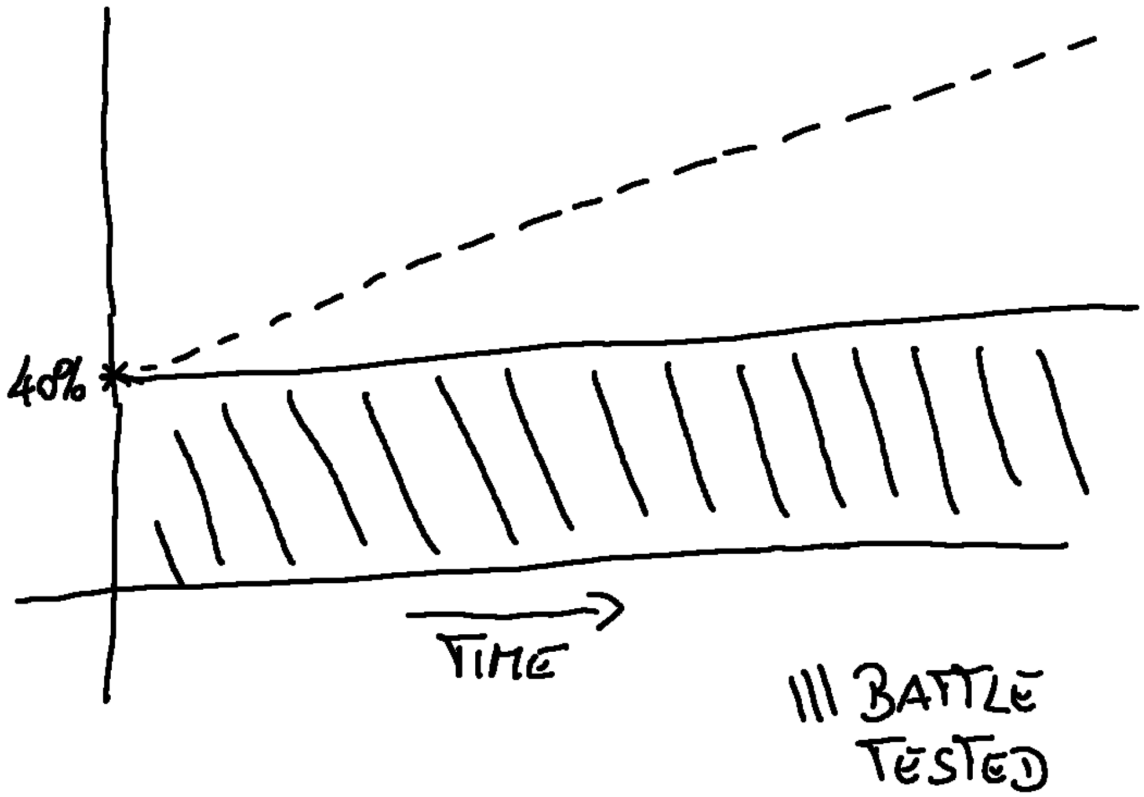
Applications of the Framework



Applications of the Framework



Applications of the Framework



Applications of the Framework

RubyGem Dependencies?

Applications of the Framework

```
# List installed gems with newer versions available
$ bundle outdated --help
$ bundle outdated --filter-major --only-explicit | wc -l
```

Applications of the Framework

Replace a Service?

Applications of the Framework

```
$ grep LegacyService::Client | wc -l
```

Applications of the Framework

Strong Coupling
& Low Cohesion?

Applications of the Framework

```
$ packwerk # check for violations
$ packwerk update-todo
```

A Framework for Tech. Debt

1. Get the Numbers ✅
2. Visualize Numbers ✅
3. Create a Vision ✅
4. Make Steps Towards the Vision ✅

`https://github.com/unused/a-framework-for-tech-debt/`