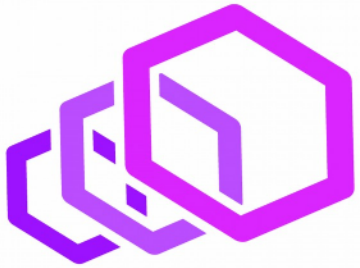

envoycon

Cynthia Coan
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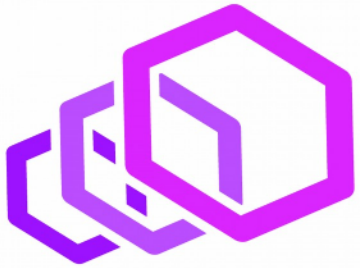

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Making Envoy Sustainable

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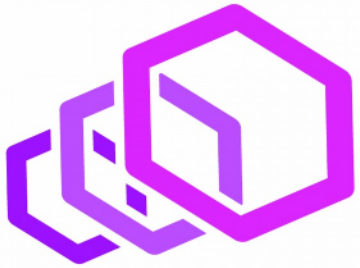

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~~Making Envoy Sustainable~~

How to be an responsible platform engineering team and have your service last.

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Setting the Scene

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"Alright we'll give you time to build your API Gateway/Service Mesh/<buzzword of the week>."

... And since you've been so talkative about it, we'll let you help shape the project, and be on the team.

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... And since you've been so talkative about it, we'll let you help shape the project, and be on the team.

You're imaginary self has never done this before...

Sustainability...

So You Get To Thinking, and After Thinking About It...

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You want to ***keep technical debt low*** since techincal debt impacts multiple teams.

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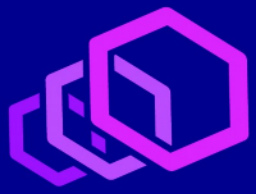

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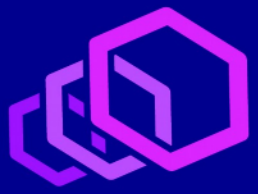

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So You Get To Thinking, and After Thinking About It...

You want to ***keep technical debt low*** since techincal debt impacts multiple teams.
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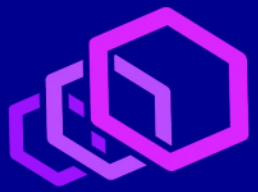

envoycon

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You want to ensure ***envoy is updated frequently*** to keep delivering value.
You want to be able to make it ***easy to do the right thing***, and hard to do the wrong thing.

You want to keep up with Envoy.

So You Start Writing Software...

So you start writing software, get a team to work with you, and start rolling out software...

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So why don't people roll out software?

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- ***Time***

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- ***Time***
- ***Poorly Defined Breaking Change Policies***

So Why Is Time A Problem?

So you do some time digging with teams, and you realize something...

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Teams have a lot going on. Like a Lot.

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They have ***App Updates***.

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They have ***App Updates***.
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Teams have a lot going on. Like a Lot.

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They have ***Infrastructure to Maintain***.
They have ***Support Issues***.
They have ***Feature Work***.

Remember it's not cause they're unwilling. They just have little time.

Breaking Changes...

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```cpp
#include <vector>

class A {};
class B {};

class C {
 public:
  explicit C() {}

  void filter(std::vector<A> vec) {}
};

class D : public A, public B {
 public:
  explicit D() {}
};

int main() {
  (new C())->filter({D(), D(), D()});
  return 0;
}
```

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class C {
 public:
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  void filter(std::vector<A> vec) {}
  // This has caused a build break:
  // `error: call to member function 'filter'
  // is ambiguous`
  void filter(std::vector<B> vec) {}
};

class D : public A, public B {
 public:
  explicit D() {}
};

int main() {
  (new C())->filter({D(), D(), D()});
  return 0;
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```
#include <string_view>
#include <gtest/gtest.h>

TEST(AStaticFunction, LogOutput) {
  World world = new World(new Civilization());
  LOGGER_RECORD_OUTPUT();
  world->do_large_thing();
  const auto log_output =
        LOGGER_RECORDING_STOP_AND_GET_LOGS();
  EXPECT_EQ(
        log_output[0],
    std::string_view("[File.cpp:42] success")
  );
}
```

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```
1  class A {
2   public:
3    explicit A();
4
5    [[deprecated("use b() for better perf")]]
6          void a();
7
8     void b();
9  };
10
11 int main() {
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Context Matters.

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A Solution

So how do we fix this as a team? What can you do as a platform team?

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You make your upgrades easy.

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You make your upgrades easy.

Like Really Easy.

For Your Codebases...

So what's the secret, for codebases you own?

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Communicate wither other teams.

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Document ***more than a public API***, and test everything.

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When was the last time you...

wrote a script to do an atomic code change, and let tests validate it?

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Communicate wither other teams.

Document ***more than a public API***, and test everything.

Invest seriously to ***make sure your API is followed***.

When was the last time you...

wrote a script to do an atomic code change, and let tests validate it?

wrote a custom lint rule to check for usage of unstable apis?

wrote a custom lint rule to check for anti-patterns?

For Code You Don't Control...

So if you don't control code, and can't make it easy for your intern. What can you do to make it so an intern can do it?

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How can you test earlier than an RC Though?

Pro's & Cons

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- When upgrades are consistently easy, ***people don’t mind doing your upgrades*** soon.
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- When upgrades are easy, even if the team is under a crunch period, ***they still have time for your upgrades***.
- By more accurately defining what the purpose of your project is, and helping others understand how your code should/should not be used. You get less: "***why are you doing it this way***?"

- Requires more work from the people providing the service for multiple teams.
- Needs to be constantly reviewed.
- Requires Talking with Coworkers, which may be harder for teams on different timezones.

Another Bump In The Road

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What about your teams image? ***Will people want to keep using your product***?

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What about your teams image? ***Will people want to keep using your product***?

At the same time, you can't be scared to make changes. ***Tech Debt will always happen***.

When Planning...

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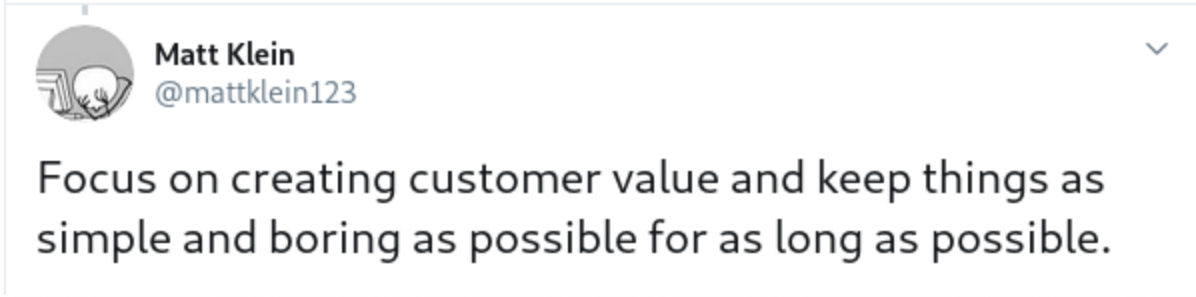
- ***"Keep it Boring"***



When Planning...

- ***"Keep it Boring"***
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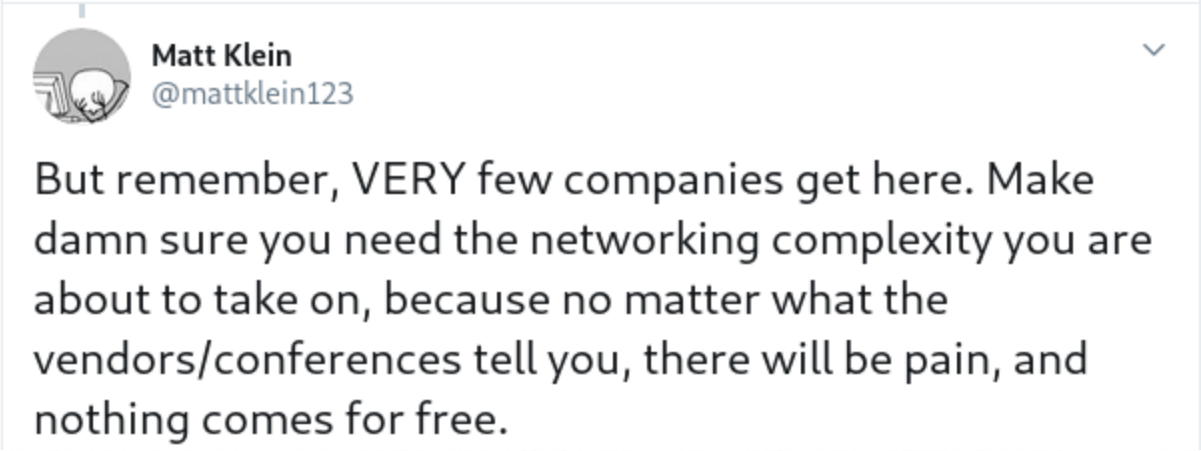

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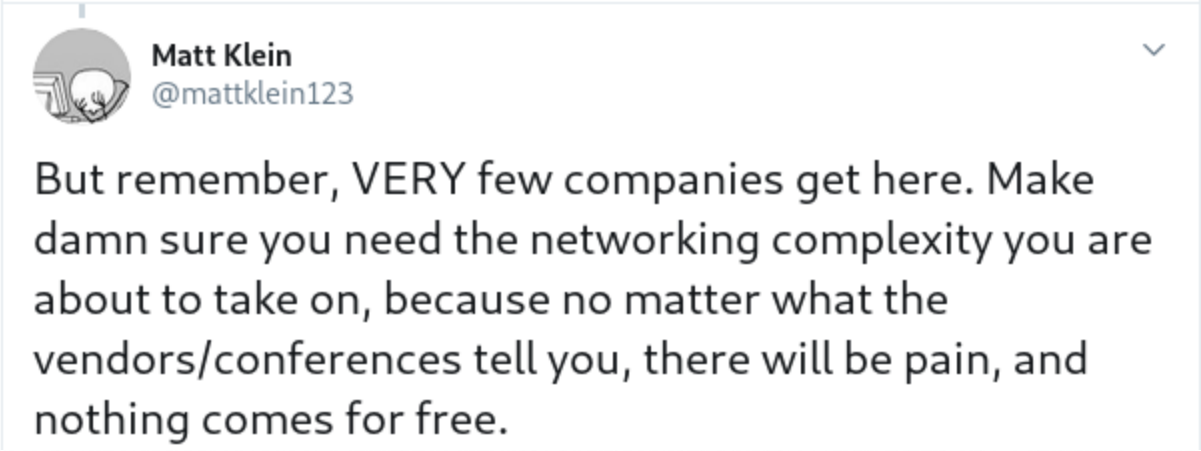

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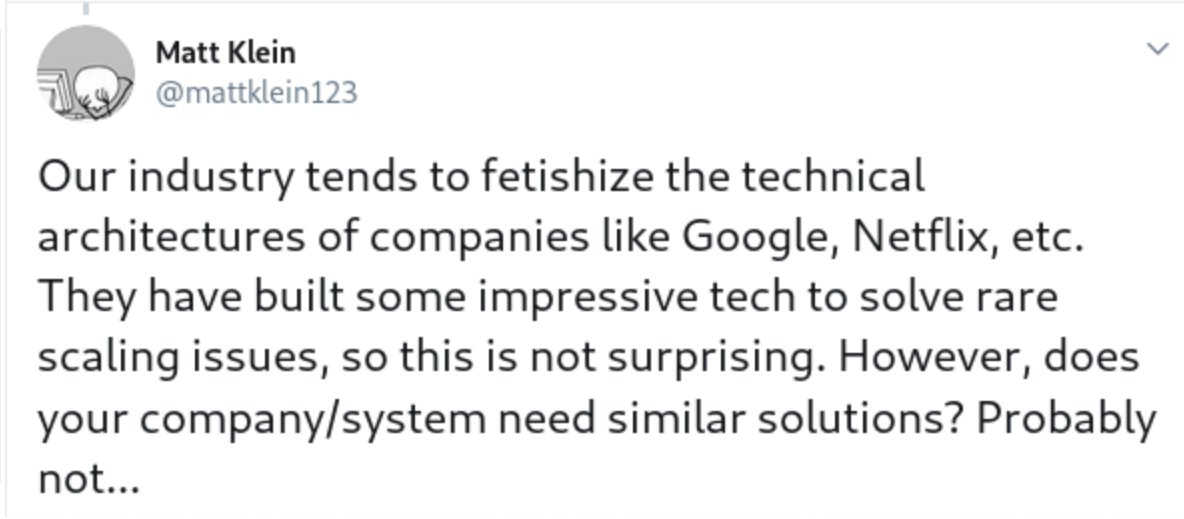
- Do you really need all the features of that open-source filter?
  - Or can you lock some of it down with a linter, ***so it's not adopted accidentally until you're ready to handle it***?



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- Less Tech Debt gives you more time to work on feature work, and solving new problems which is always interesting.
- People will actually want to contribute to your codebase because they don't have to understand the tech debt that exist in the codebase.

- Planning Features can sometimes take too long to be a source of severe blockage, and is easy to screw up.
- We all hate being in meetings all day, which is possible if you don't limit the service review/syncs you need.
- Prioritizing is hard work, since some things really are small but really important to someone.

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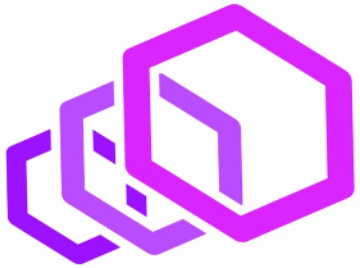
Invented a special versioning scheme to better communicate guarantees, and what is expected from maintainers, and consumers.



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