



QCon 全球软件开发大会
INTERNATIONAL SOFTWARE
DEVELOPMENT CONFERENCE

BEIJING 2017

Testing Strategies in MicroService Architecture

Jason Xia

About me



- ▶ Agile
- ▶ Continuous Delivery
- ▶ Microservice
- ▶ Automation Test
- ▶ Automation Deployment



促进软件开发领域知识与创新的传播



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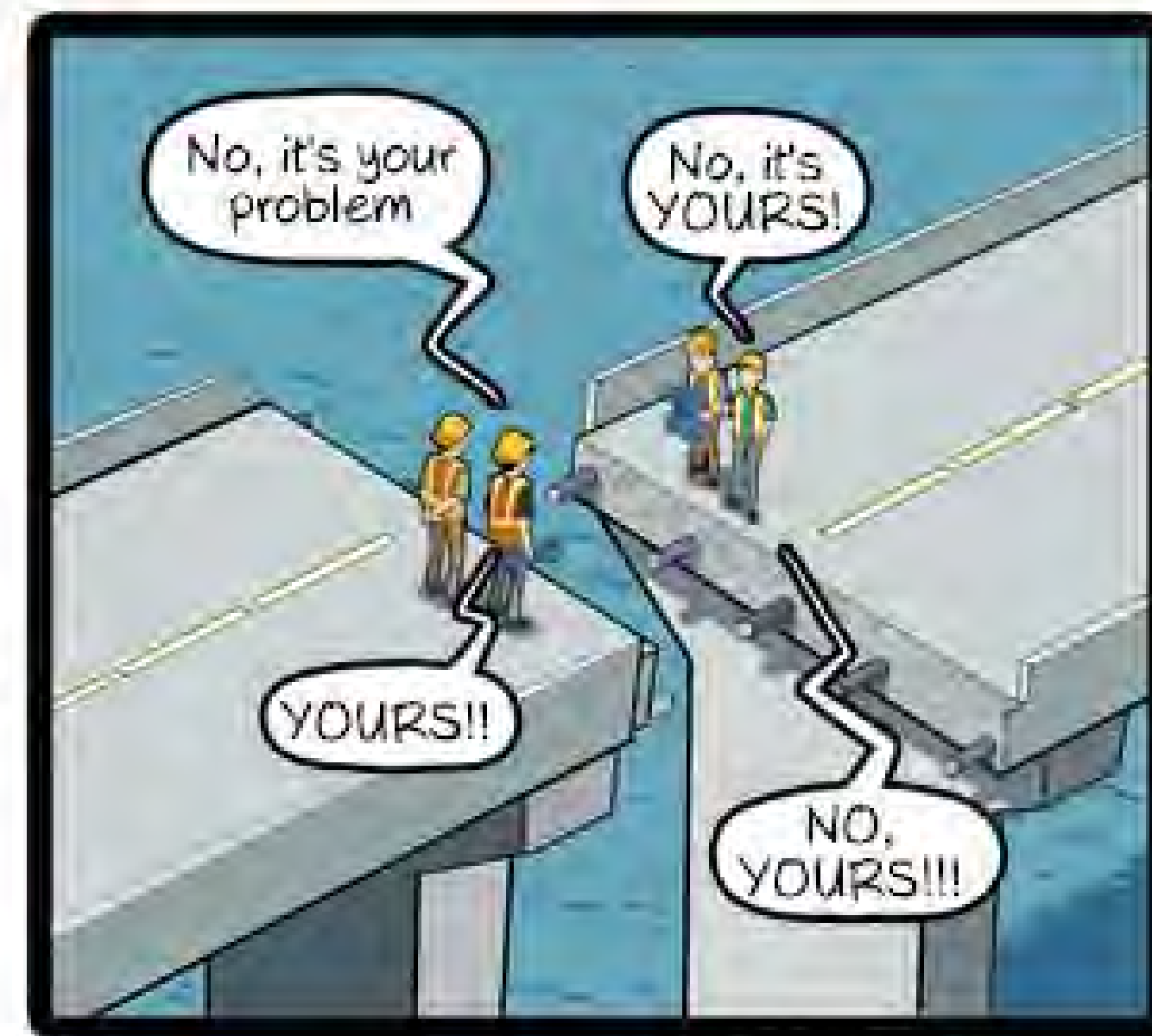
ArchSummit
全球架构师峰会 2017 [深圳站]

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咨询热线：010-89880682

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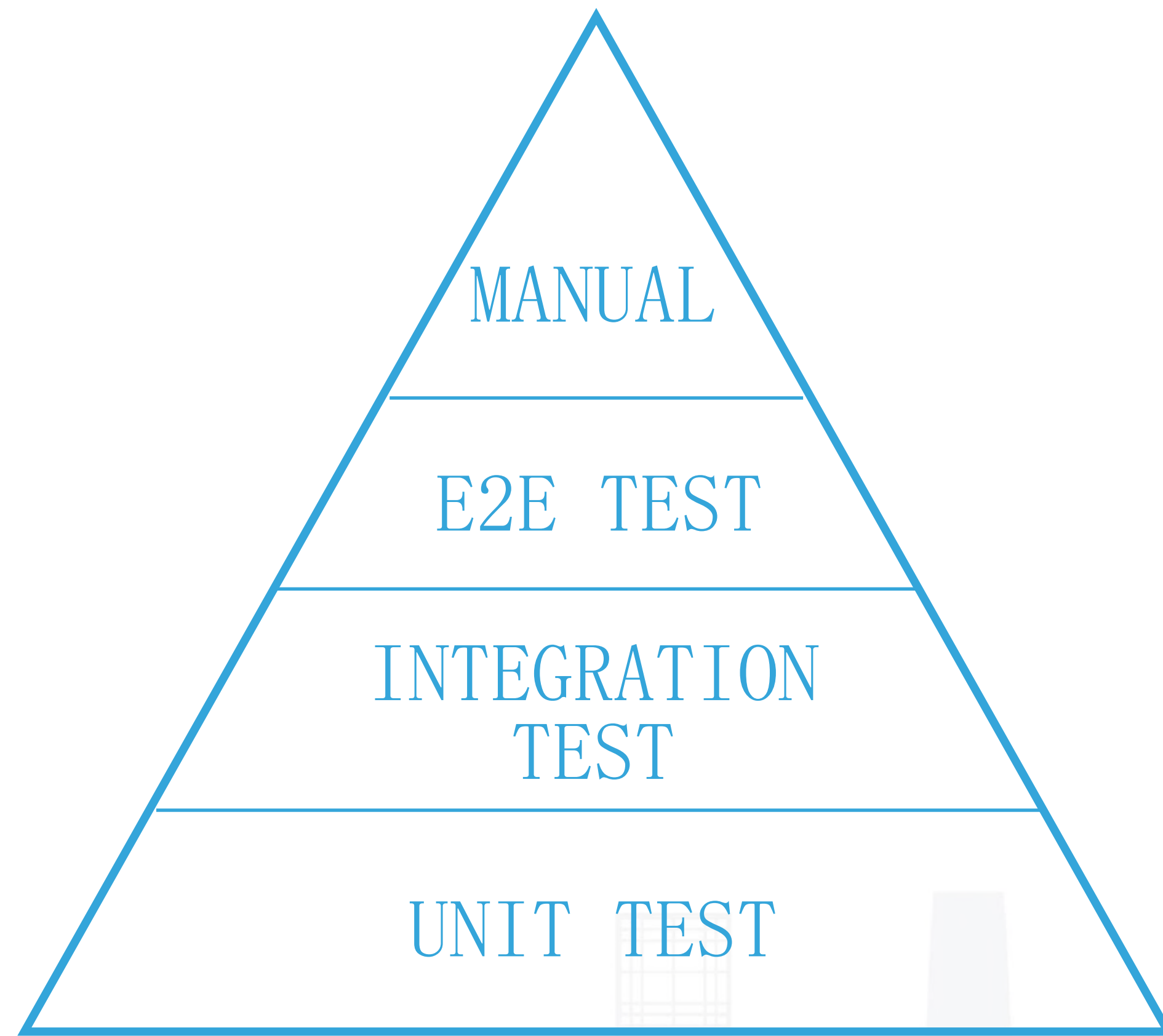
CommitStrip.com

一个真实地故事



Automation tests are company **assets**





Testing Strategy

那为什么测试没俘获呢？



Unit Test

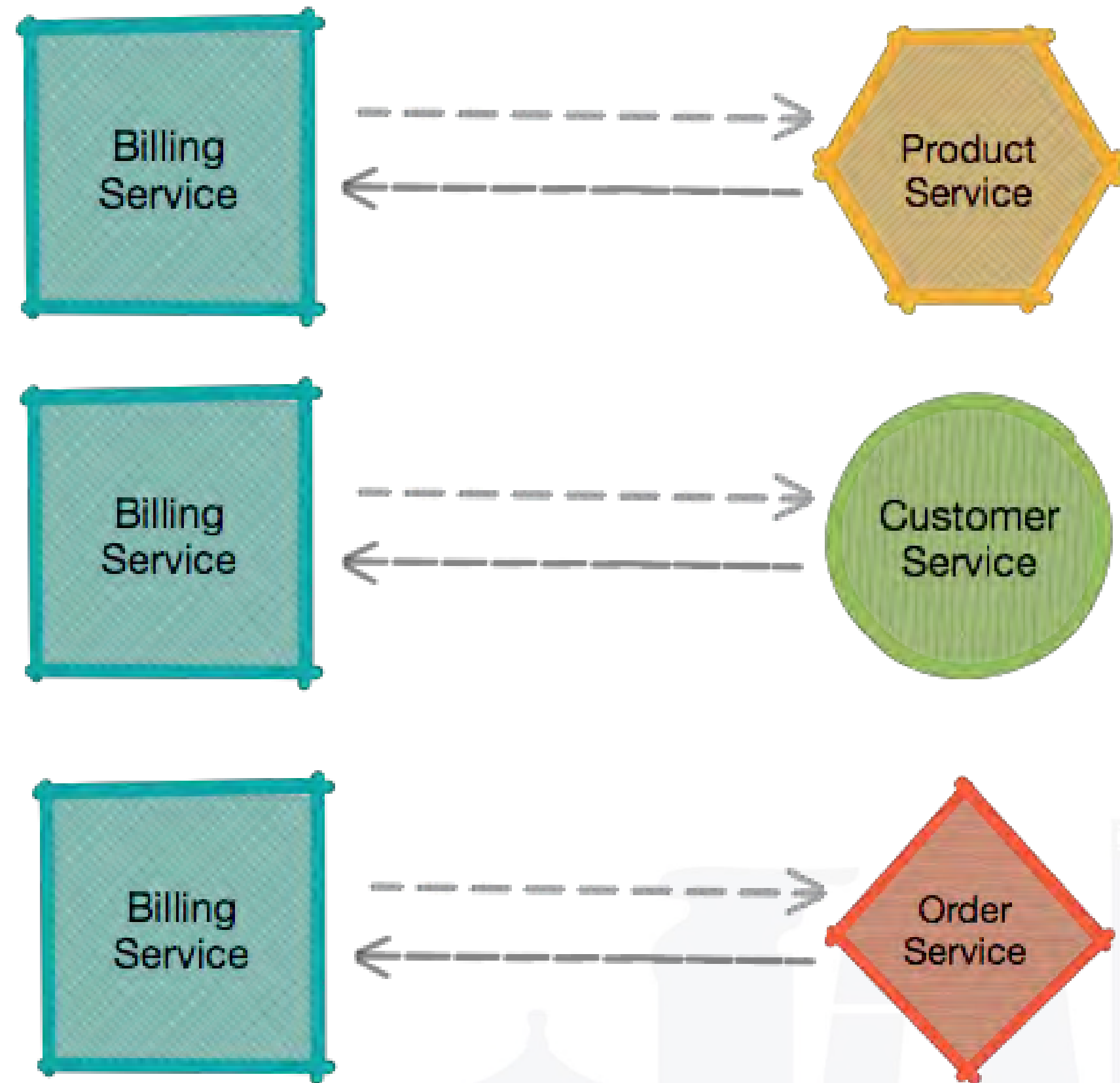


- ☆ Cheap
- ☆ Fast
- ☆ Reliable
- ✱ ~~Trustworthy~~

集成测试是个阴谋。

J. B. Rainsberger

Integration Test



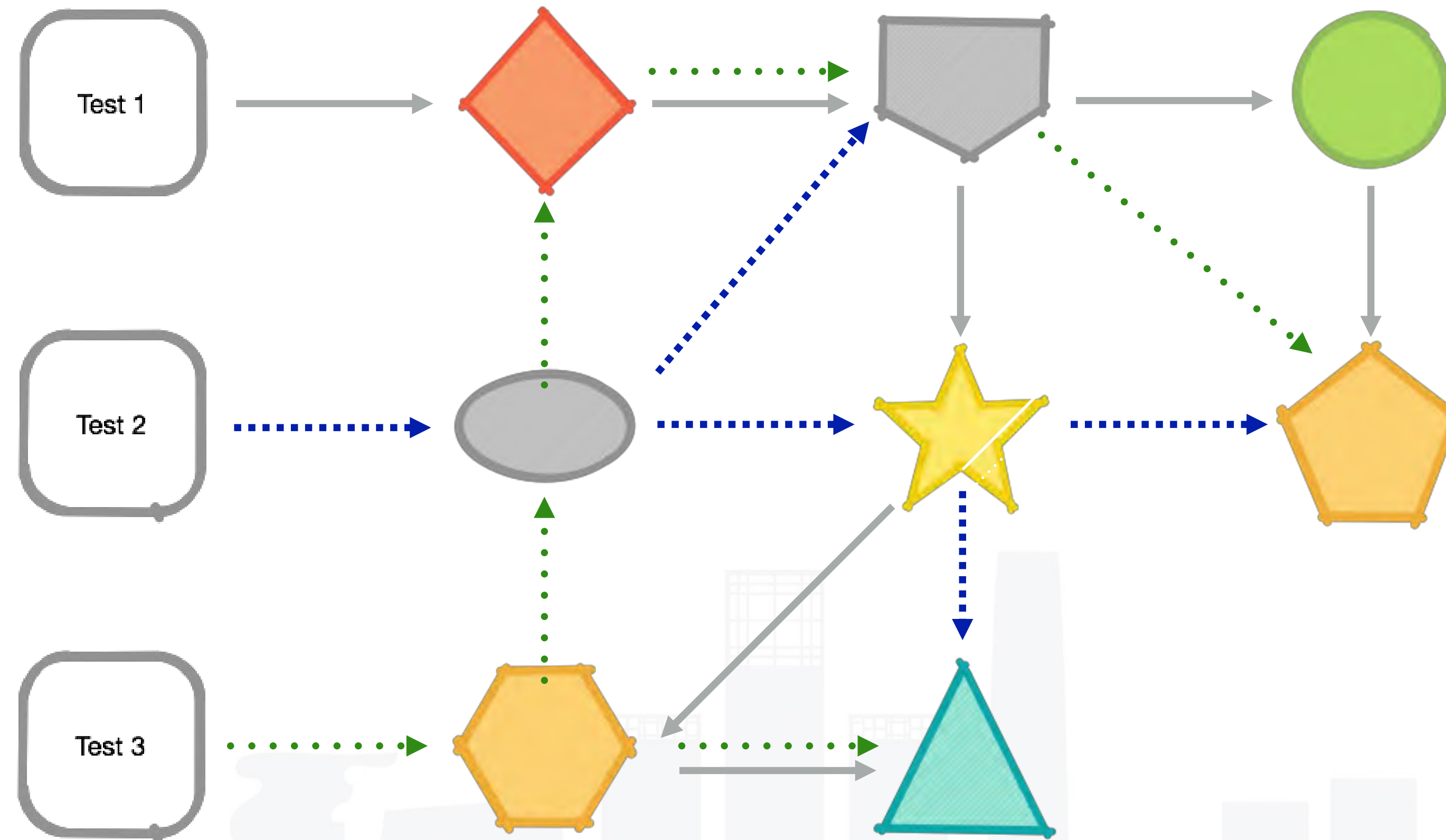
☆ Trustworthy

☆ ~~Cheap~~

☆ ~~Fast~~

☆ ~~Reliable~~

E2E Test



Manual Test



Contract Testing

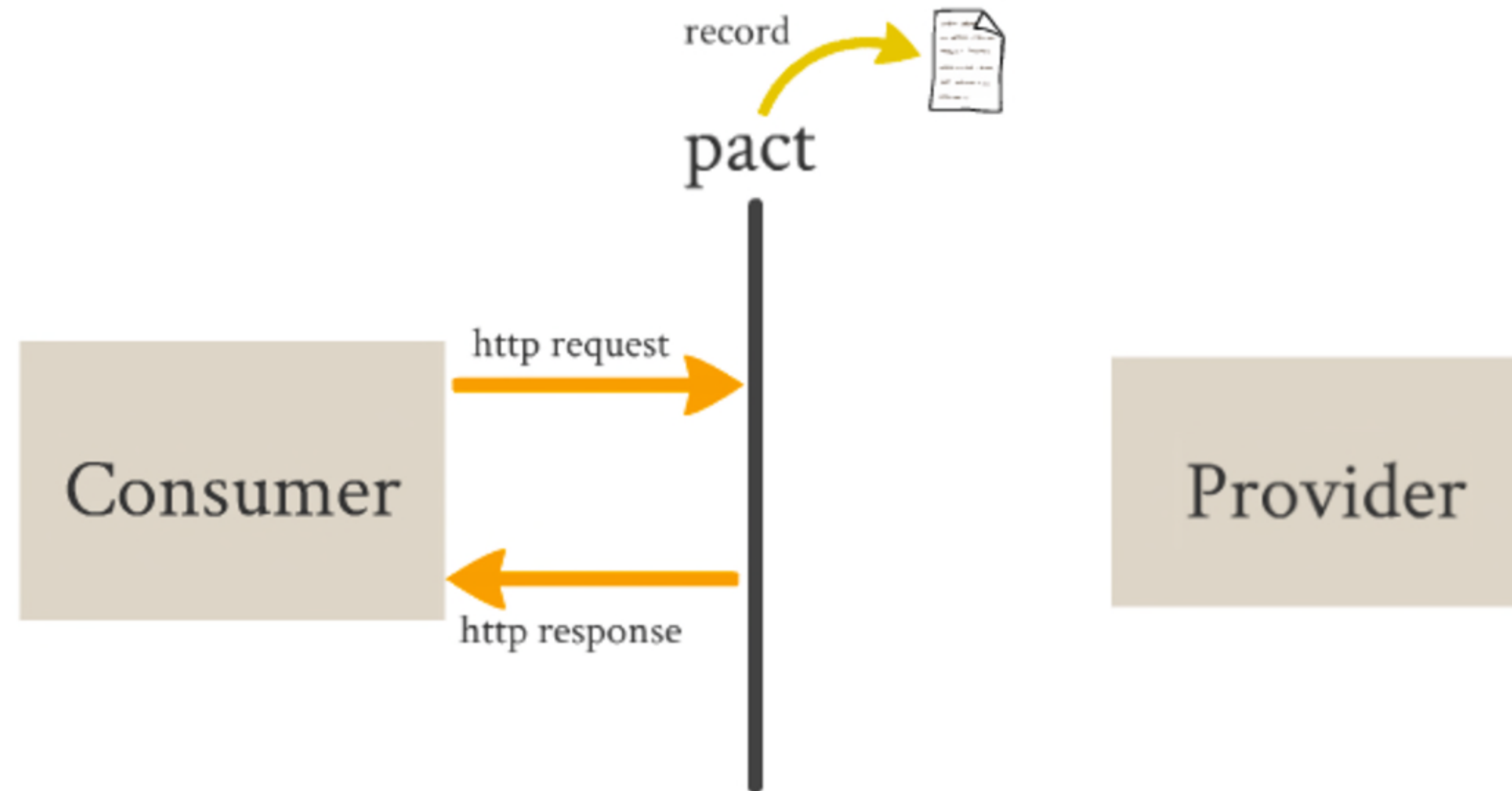


PACTS

[docs.pact.io]

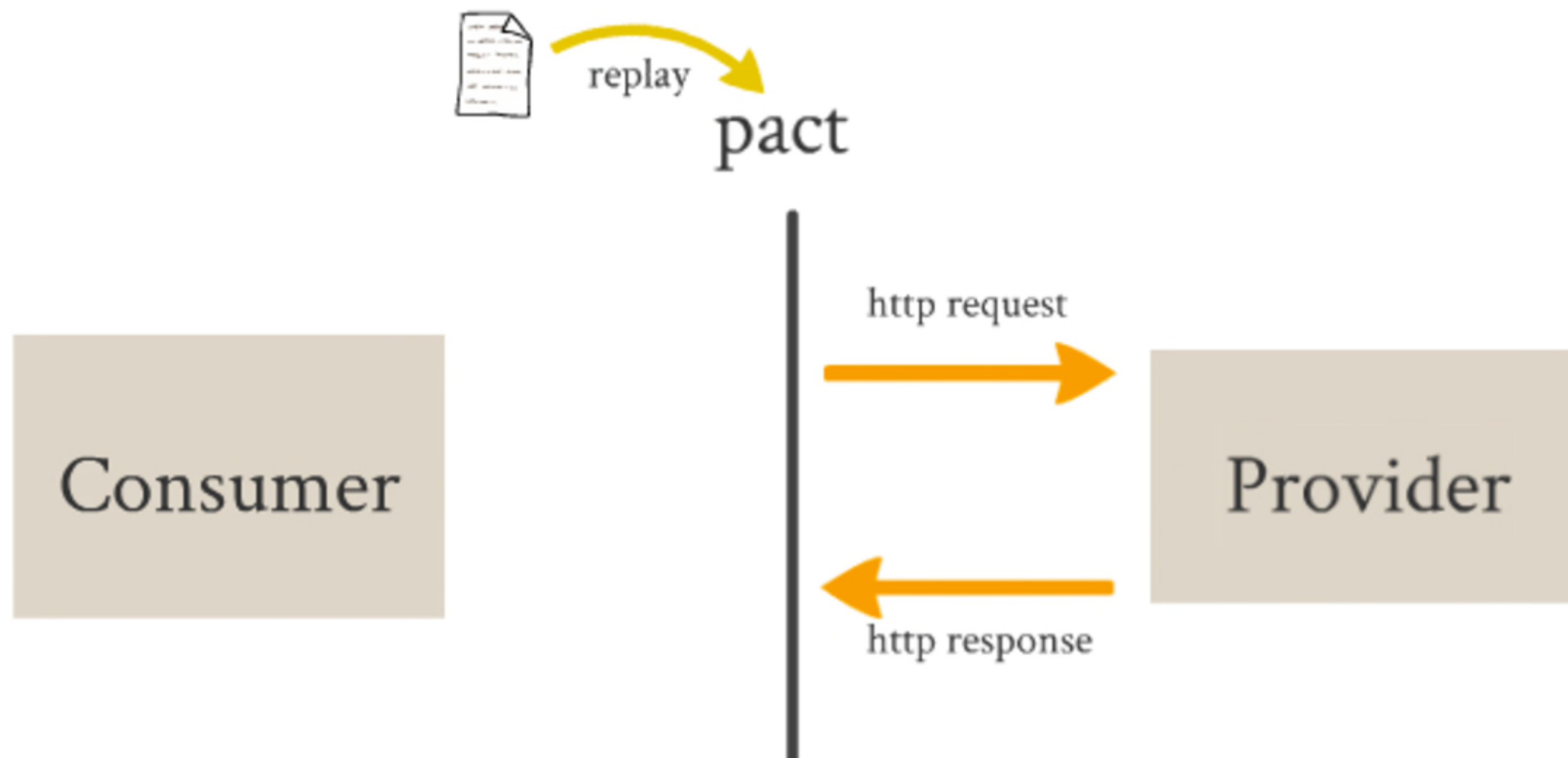


Step 1 - Define Consumer expectations



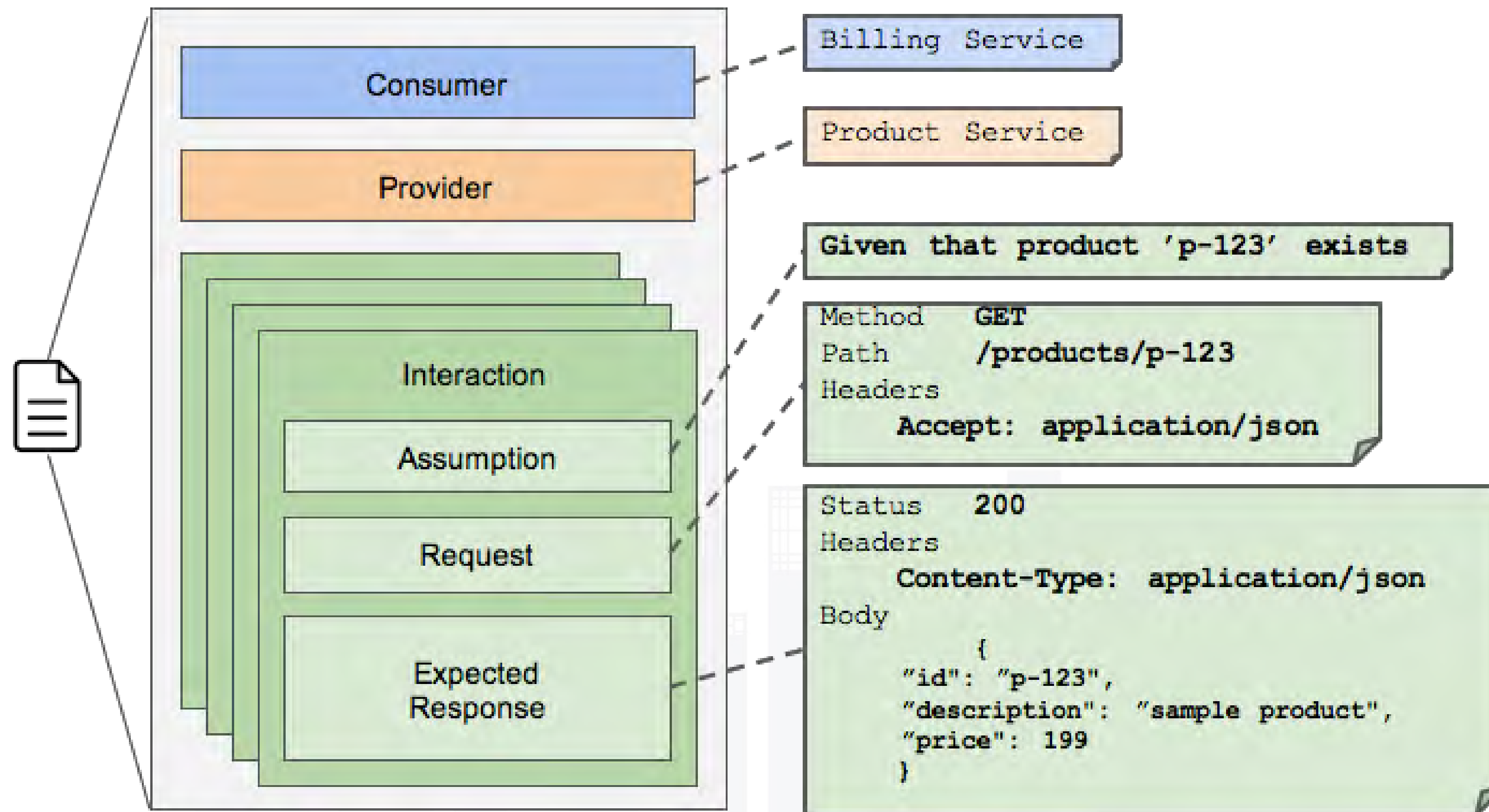
How PACT Works?

Step 2 - Verify expectations on Provider



How PACT Works?

PACT Contract



你接受什么是自由的，而你
发送什么是保守的

Postel法则 – Robustness
Principle

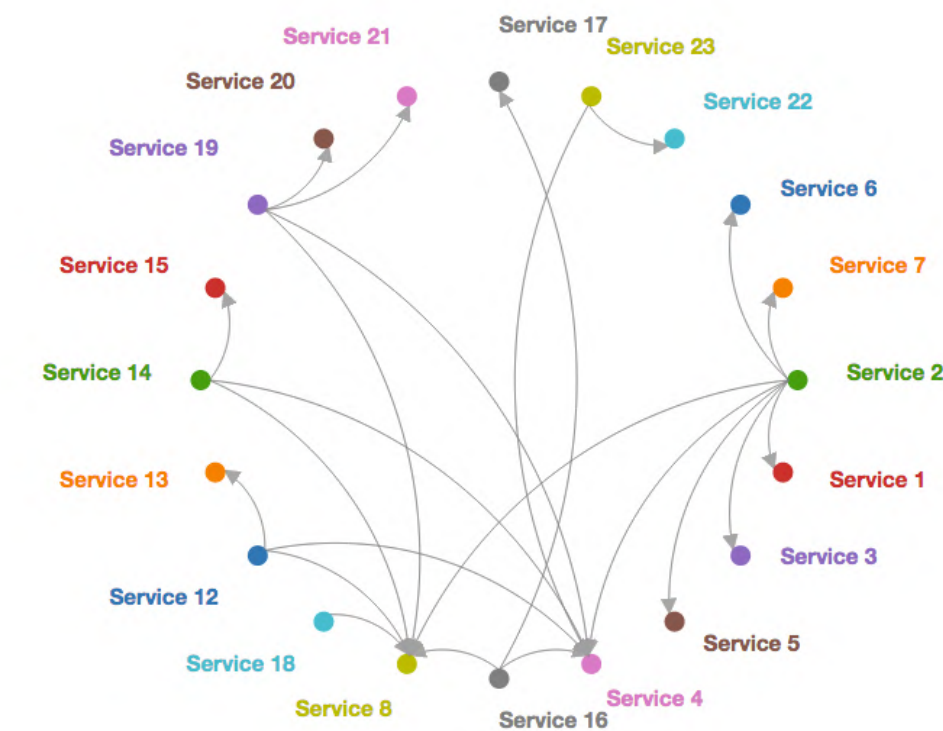
Sharing Pact Contracts



Local



Cloud



Pact Broker

PACT Broker

- ☆ 所有Pact框架原生态支持
- ☆ 企业内部共享PACT Contracts
- ☆ 支持Versioning & Tagging
- ☆ Restful API
- ☆ 具体的服务交互的例子
- ☆ 图形化服务依赖关系
- ☆ 支持Webhooks

A pact between Zoo App and Animal Service

Zoo App version: 1.0.0

Date published: 11/11/2014 8:56PM +11:00

Requests from Zoo App to Animal Service

[View in HAL Browser](#)

- A request for an alligator given there is an alligator named Mary
- A request for an alligator given there is not an alligator named Mary
- A request for an alligator given an error occurs retrieving an alligator

Interactions

Given there is an alligator named Mary, upon receiving a request for an alligator from Zoo App, with

```
{
  "method": "get",
  "path": "/alligators/Mary",
  "headers": {
    "Accept": "application/json"
  }
}
```

Animal Service will respond with:

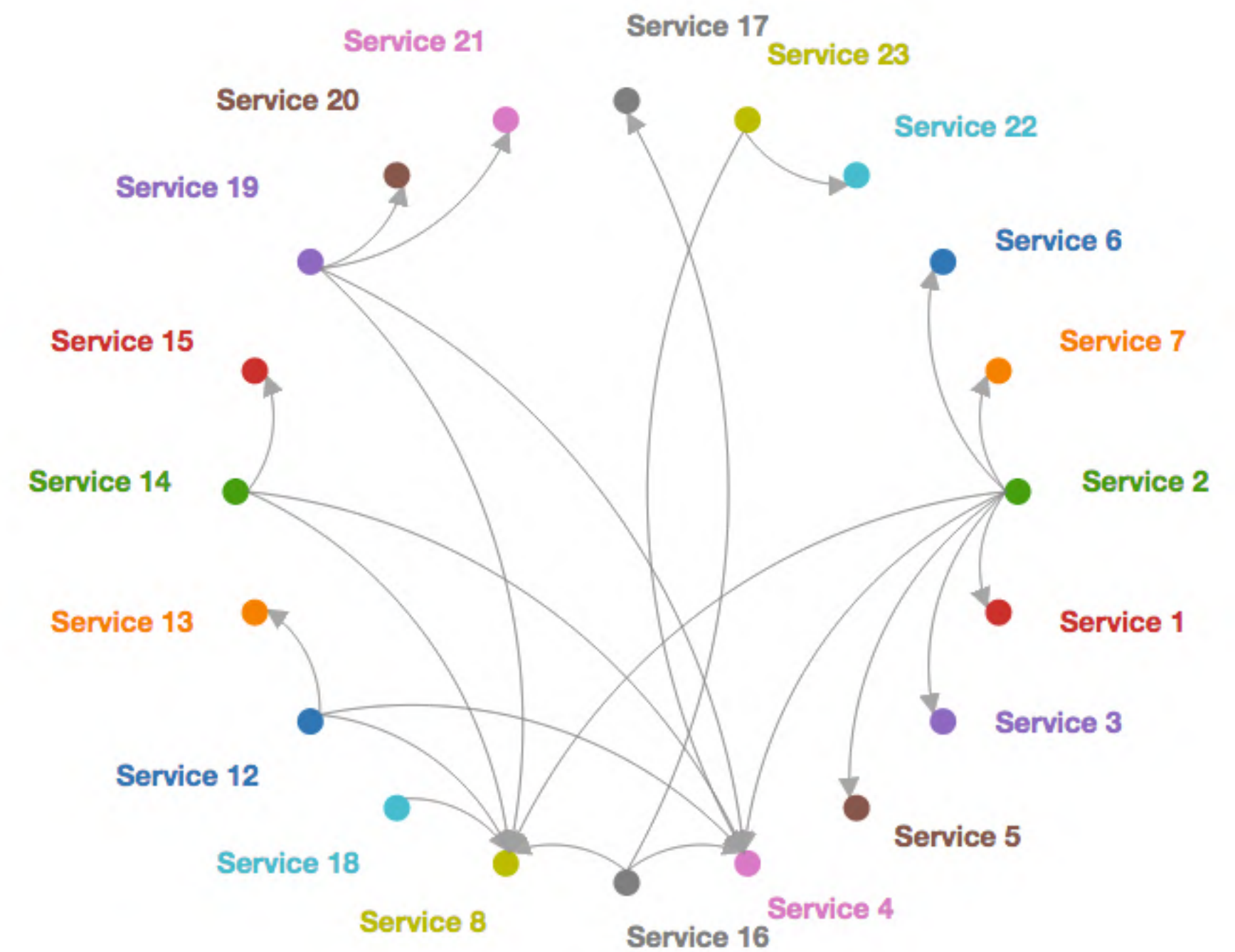
```
{
  "status": 200,
  "headers": {
    "Content-Type": "application/json;charset=utf-8"
  }
}
```


PACT Broker — 服务依赖图

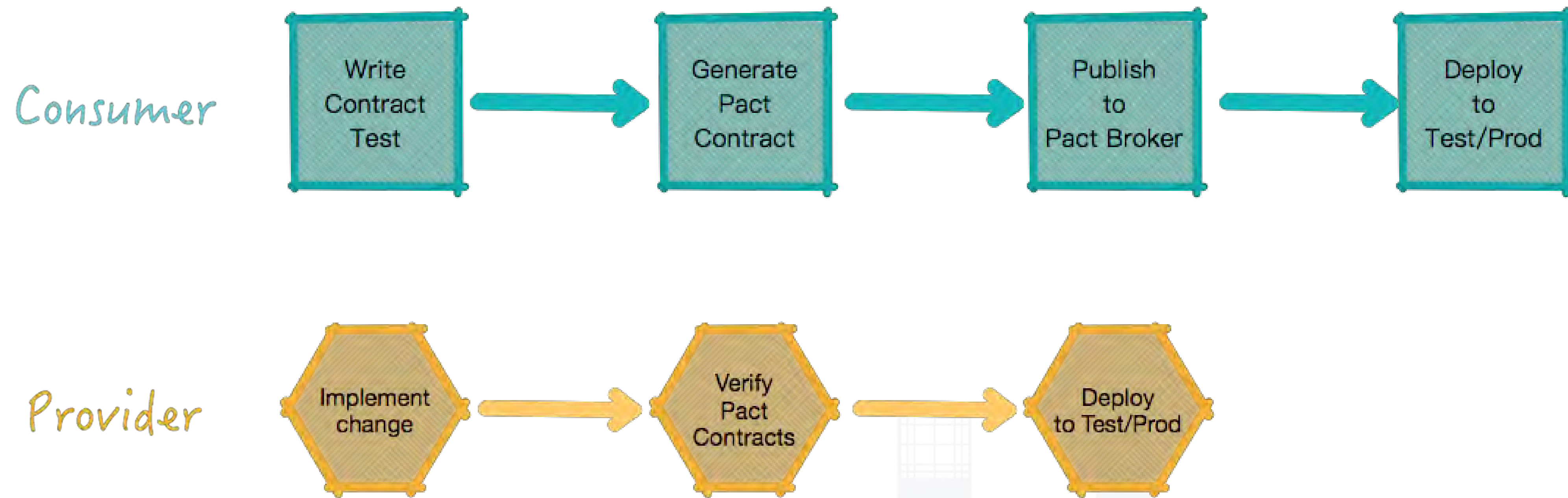
HAL Browser

Relationships

Consumer ↓↑		Provider ↓↑
Service 10	→	Service 11
Service 10	→	Service 24
Service 10	→	Service 9
Service 12	→	Service 13
Service 12	→	Service 4
Service 12	→	Service 8
Service 14	→	Service 15
Service 14	→	Service 4
Service 14	→	Service 8



开发流程



Communication is the key!



Tips & Tricks

- ▶ Collaborative API Design
- ▶ Increased confidence, Fail faster, less E2E tests
- ▶ Consumer Driven
- ▶ Don't abuse Provider States
- ▶ Don't limit to Happy Path
- ▶ Think/Design your Build & Deployment pipeline

PACTs



[<https://bitbucket.org/atlassian/swagger-mock-validator>]



Convinced ?

Unit Test

- ☆ Cheap
- ☆ Fast
- ☆ Reliable
- ☆ ~~Trustworthy~~

Integration/E2E Test

- ☆ Trustworthy
- ☆ ~~Cheap~~
- ☆ ~~Fast~~
- ☆ ~~Reliable~~

Contract Test

- ☆ Cheap
- ☆ Fast
- ☆ Reliable
- ☆ Trustworthy

PACT Family



谁在用PACT？



Demo





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Thanks!



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