Good API Product Lifecycle

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301,122 HEROES ARE WORKING ON 401,023 APIS BEING CONSUMED BY 3M+ DEVELOPERS

GOOD API

Independent API Consulting

Adam Kliment

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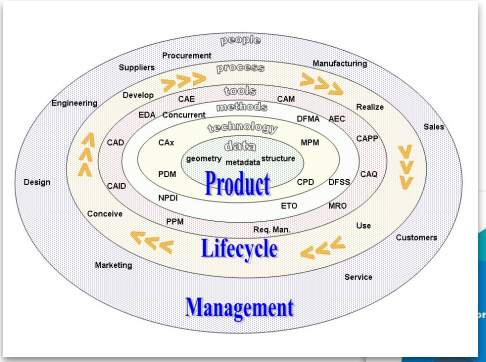
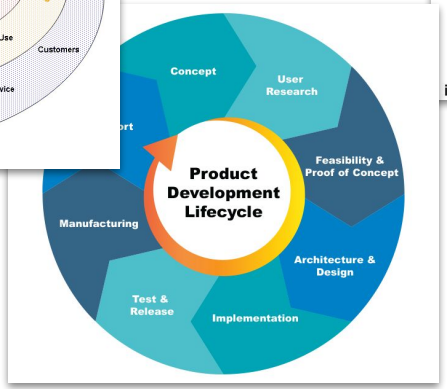
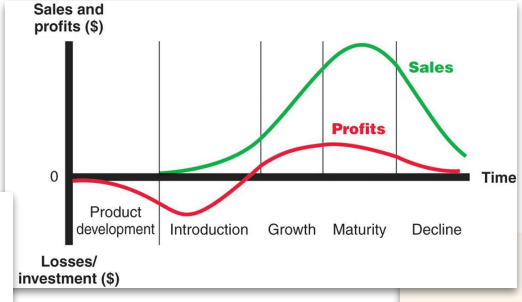
Treat API Development as Product Development

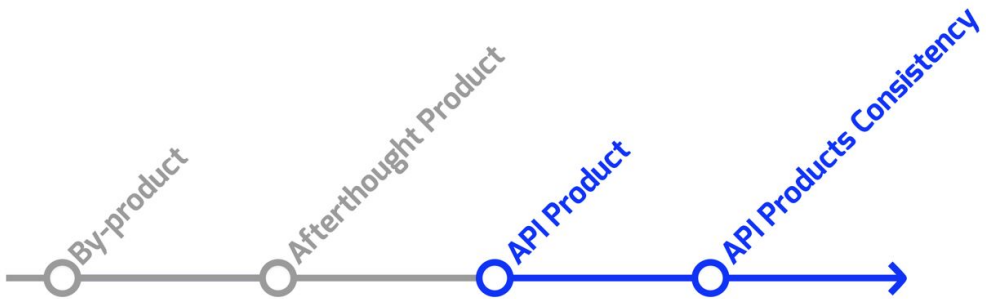






The API Product

History of API Products



The API Product

API-as-a-Product

Direct API monetization.

Where possible, the company product is offered directly through a paid API.

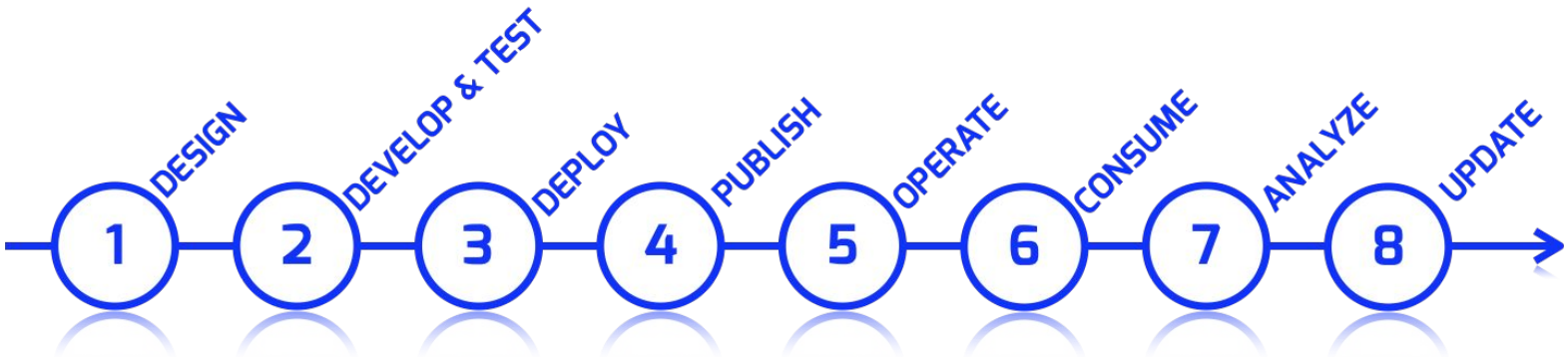
Product as API

Indirect “monetization”.

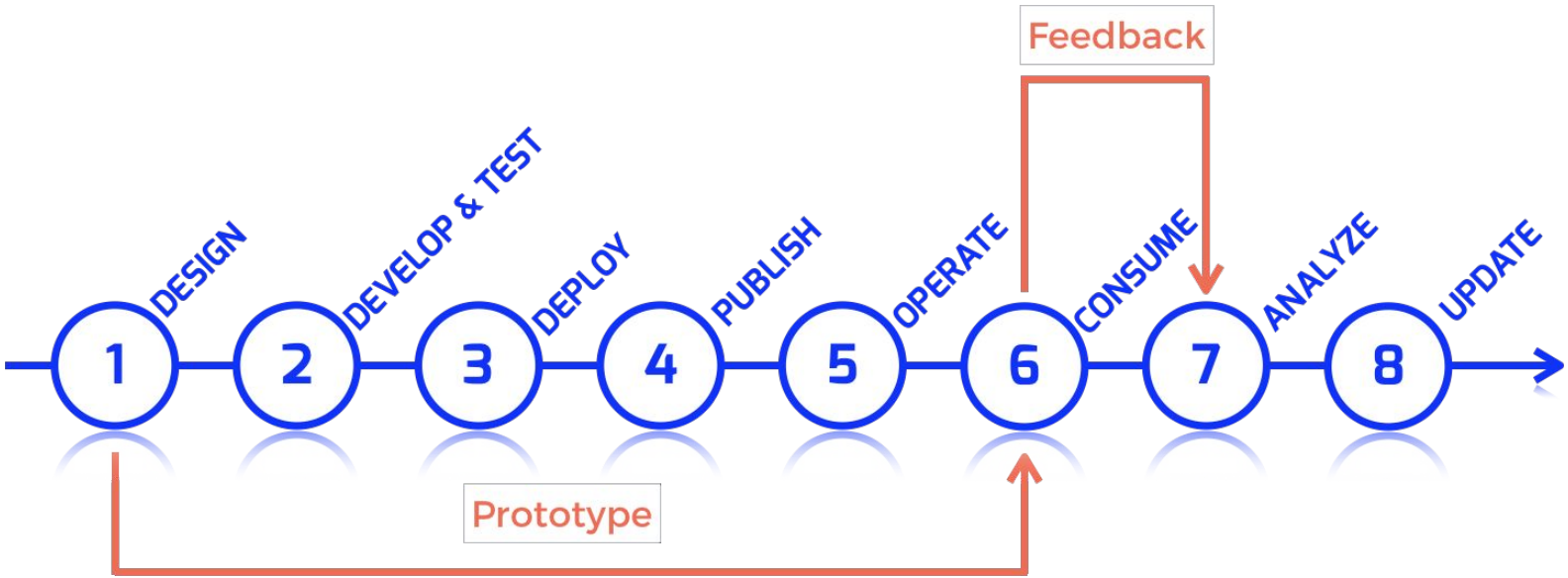
Each product is an API and used through its API. APIs are contributing indirectly to the bottomline through increasing stickiness, driving revenue-generating activities, leveraging partner channels, increasing efficiency or leading innovation.

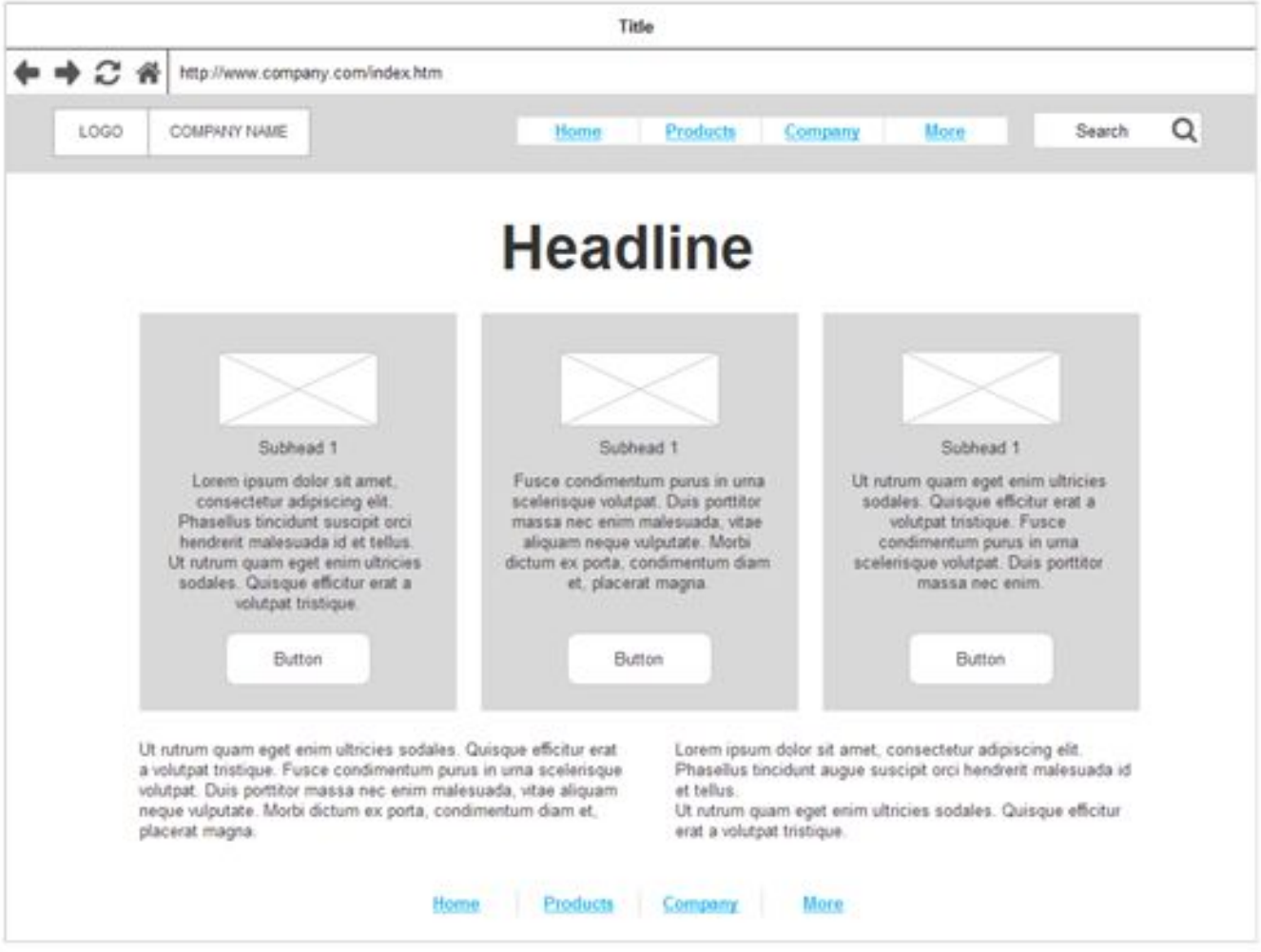
API Lifecycle

Waterfall Lifecycle



Agile API Lifecycle




Title
http://www.company.com/index.htm
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COMPANY NAME
Home
Products
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More
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Headline
Subhead 1
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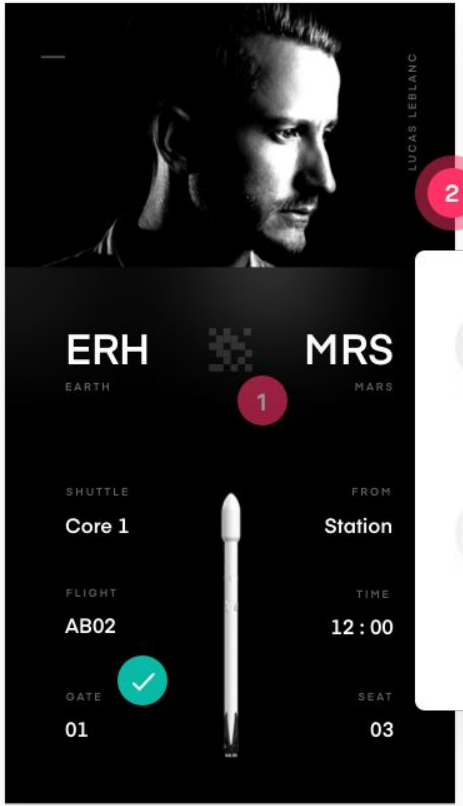
Home
Products
Company
More



Resolve

Isabelle Grant 20m ago

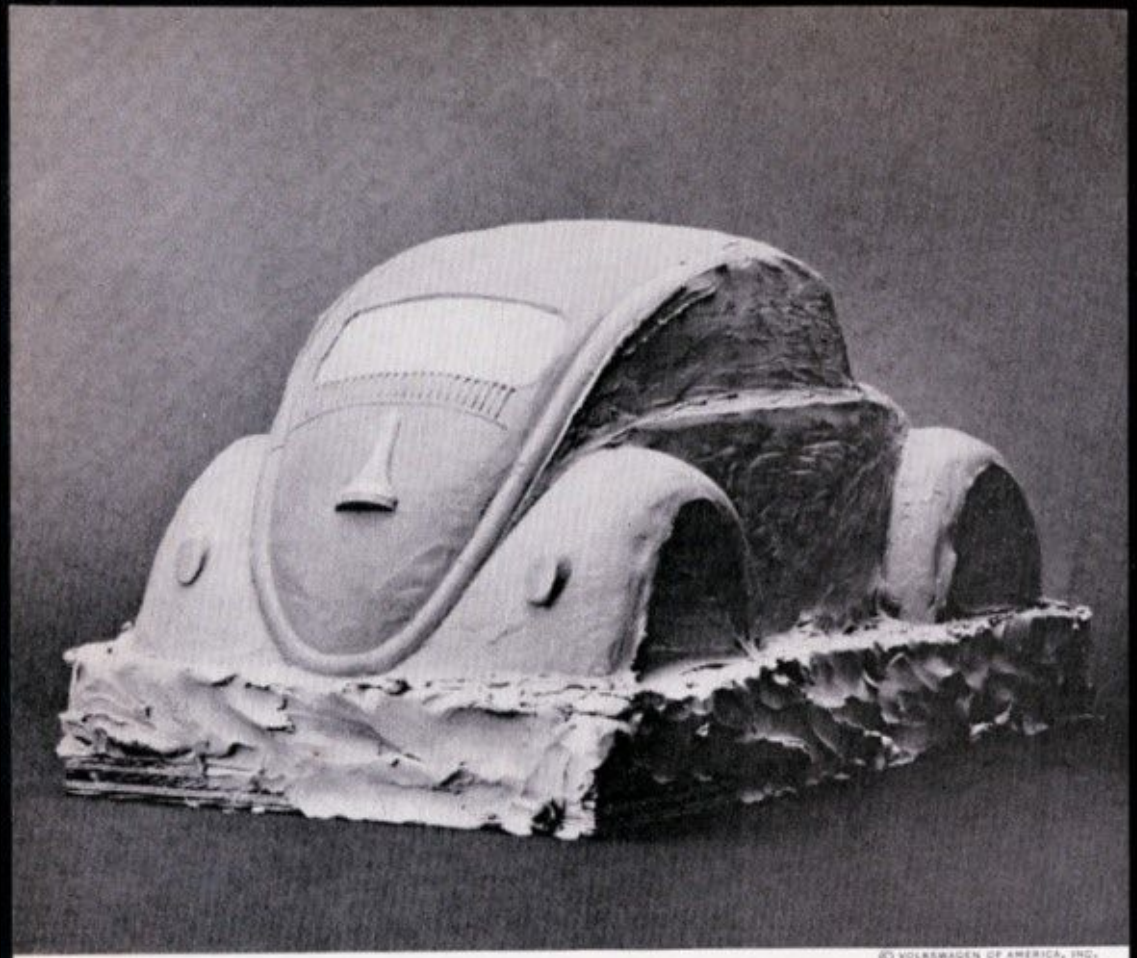
Is this meant to be a link?

2 likes

Cool, I'll work on it @isabellegrant

Post · Cancel

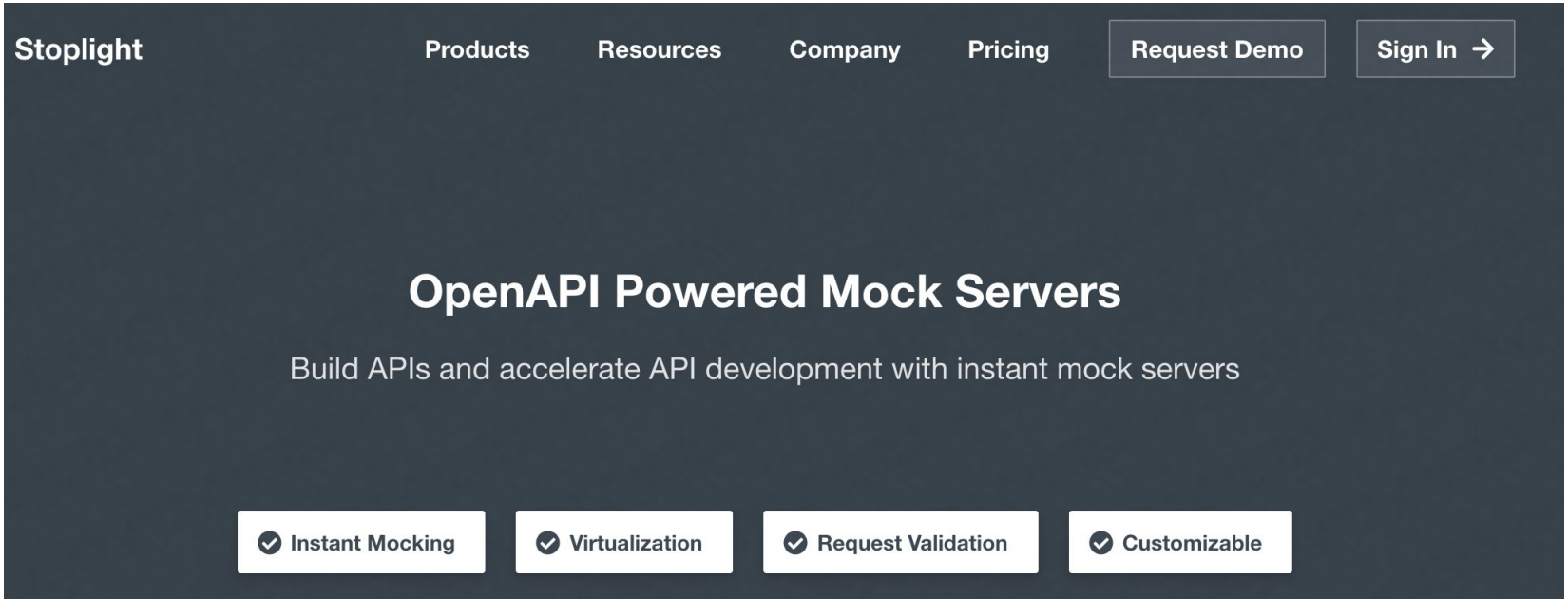
1 person will be notified. Add more



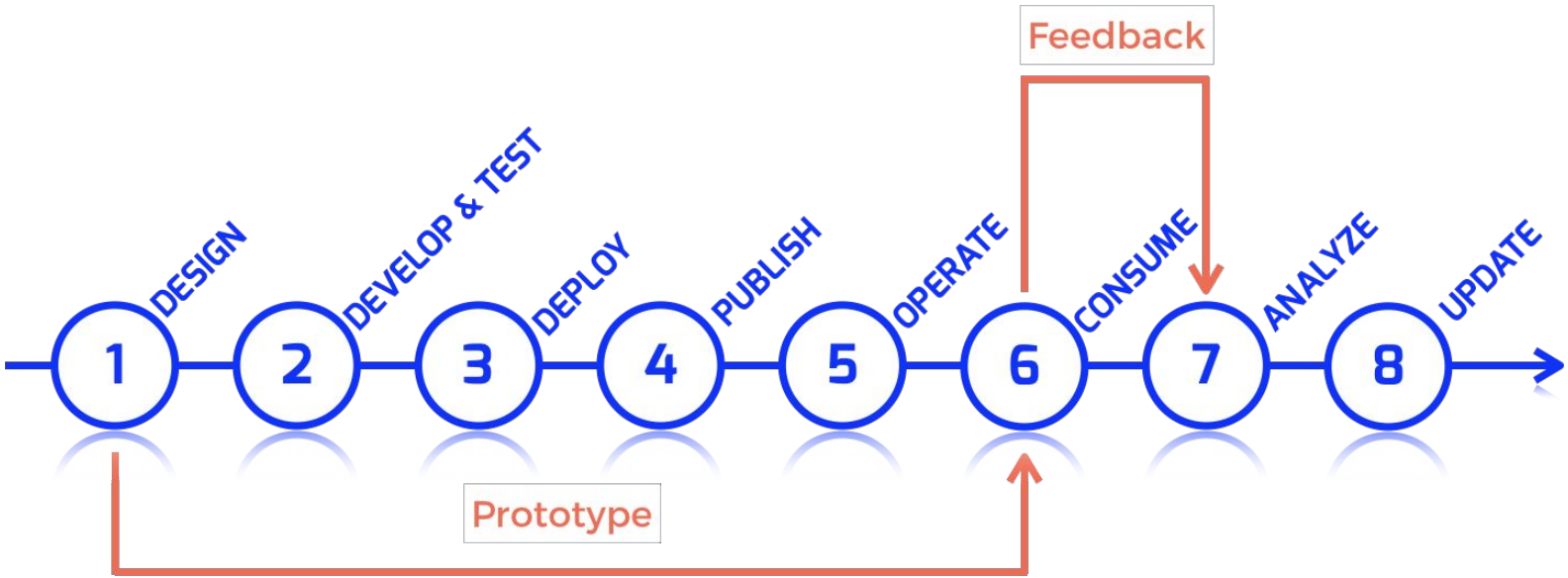
We don't have to start from scratch each year.

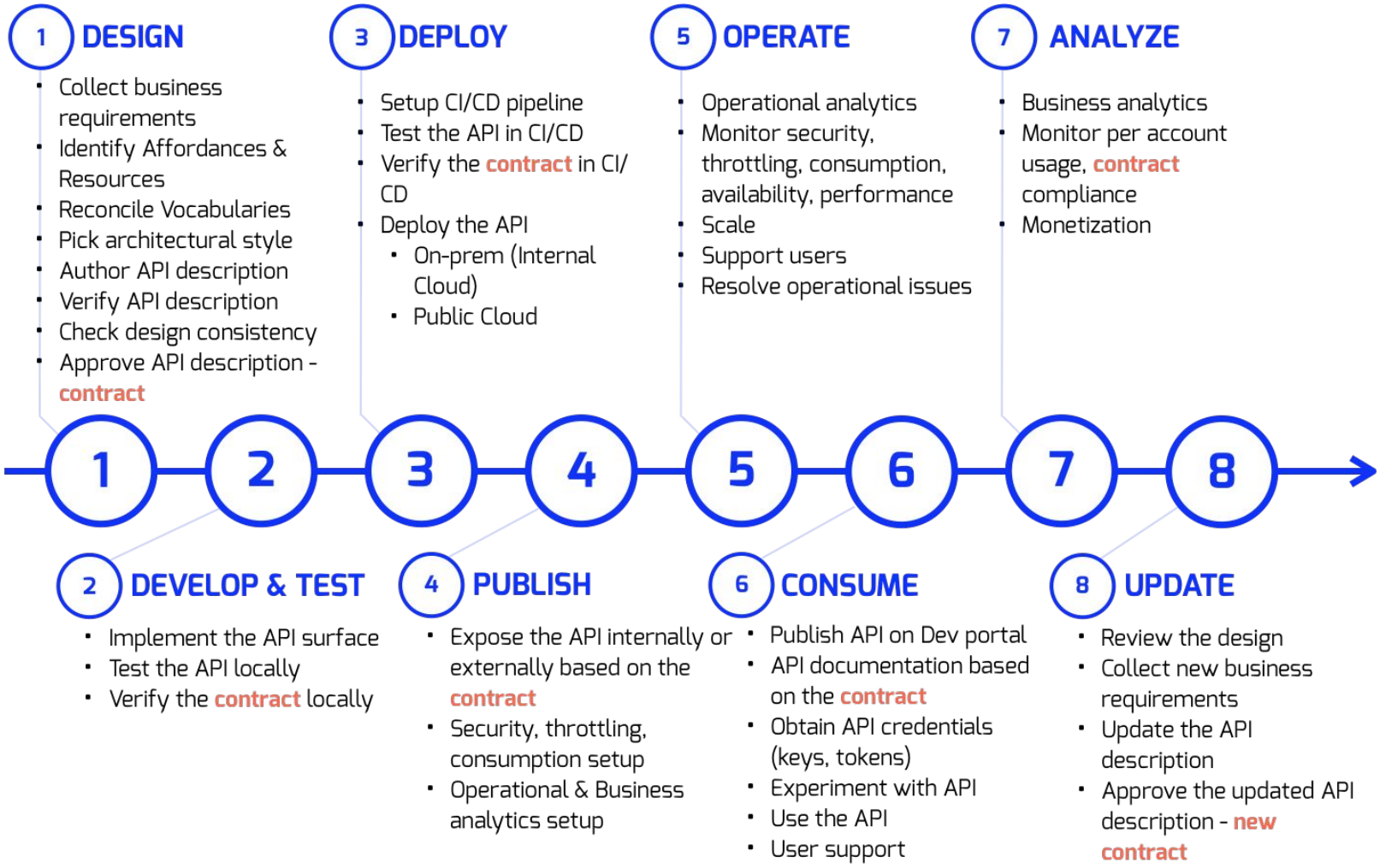

KAROQ

API Design Contract based prototyping



Agile API Lifecycle




1 DESIGN
Collect business requirements
Identify Affordances & Resources
Reconcile Vocabularies
Pick architectural style
Author API description
Verify API description
Check design consistency
Approve API description - contract
3 DEPLOY
Setup CI/CD pipeline
Test the API in CI/CD
Verify the contract in CI/CD
Deploy the API
On-prem (Internal Cloud)
Public Cloud
5 OPERATE
Operational analytics
Monitor security, throttling, consumption, availability, performance
Scale
Support users
Resolve operational issues
7 ANALYZE
Business analytics
Monitor per account usage, contract compliance
Monetization
1
2
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4
5
6
7
8
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Verify the contract locally
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Expose the API internally or externally based on the contract
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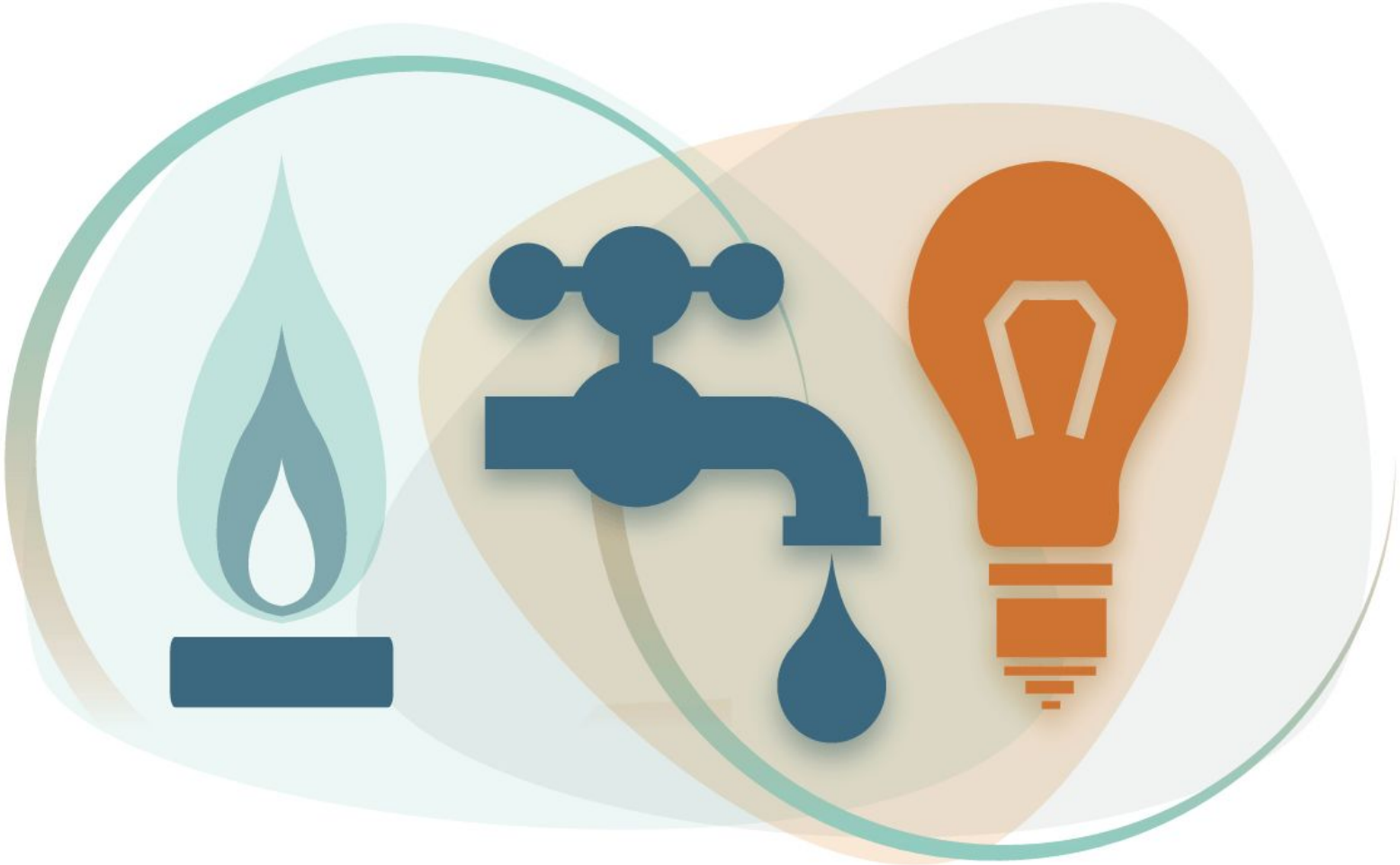
Operational & Business analytics setup
6 CONSUME
Publish API on Dev portal
API documentation based on the contract
Obtain API credentials (keys, tokens)
Experiment with API
Use the API
User support
8 UPDATE
Review the design
Collect new business requirements
Update the API description
Approve the updated API description - new contract



Evolving the API Product (design)

The first rule of Fight Club

Never break clients

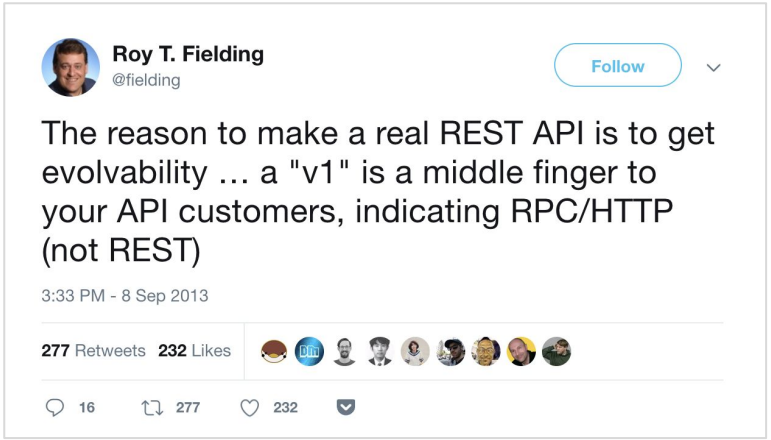
Any modification to an existing API MUST avoid breaking changes and MUST maintain backward compatibility.

Rules for extending

1. You MUST NOT take anything **away**
2. You MUST NOT change **processing rules**
3. You MUST NOT make optional things **required**
4. Anything you add MUST be **optional**

Identifier Stability

URI is an identifier



Backward incompatible changes

New Resource Variant

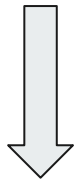
T0

Parameters `first` and `last` optional

T+1

Parameter `first` required

/greeting?first=John&last=Appleseed



New Resource Variant

/named-greeting?first=John&last=Appleseed

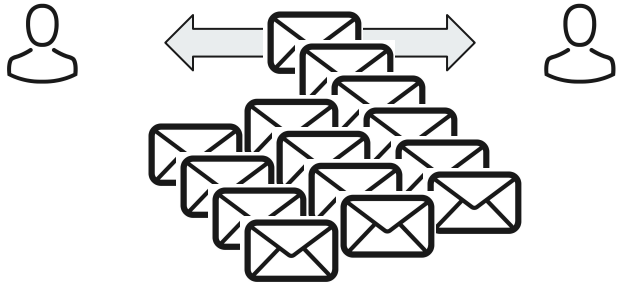
Introduction to API Design

API Design

The Email Story

RE: RE: RE: RE: RE: RE: The API We Want

Have you ever tried to discuss what an API should look like over a plain email?



API Design

Good API Design

API design is API architectural style decision together with a set of additional design constraints applied on a specific domain, business, domain, organizational and technical requirements.

API Design

Good API Design is Verified

- Prototype
- Share
- Verify
  - Stakeholders
  - Users
  - API Developers

API Description

API Description

API Design is formalized using one of the API Description formats

- API Blueprint
- RAML
- Swagger
- OpenAPI Specification 2.0 (fka Swagger)
- OpenAPI Specification 3.0
- AsyncAPI Specification
- GraphQL Schema
- Avro Schema
- Protobuf

API Description

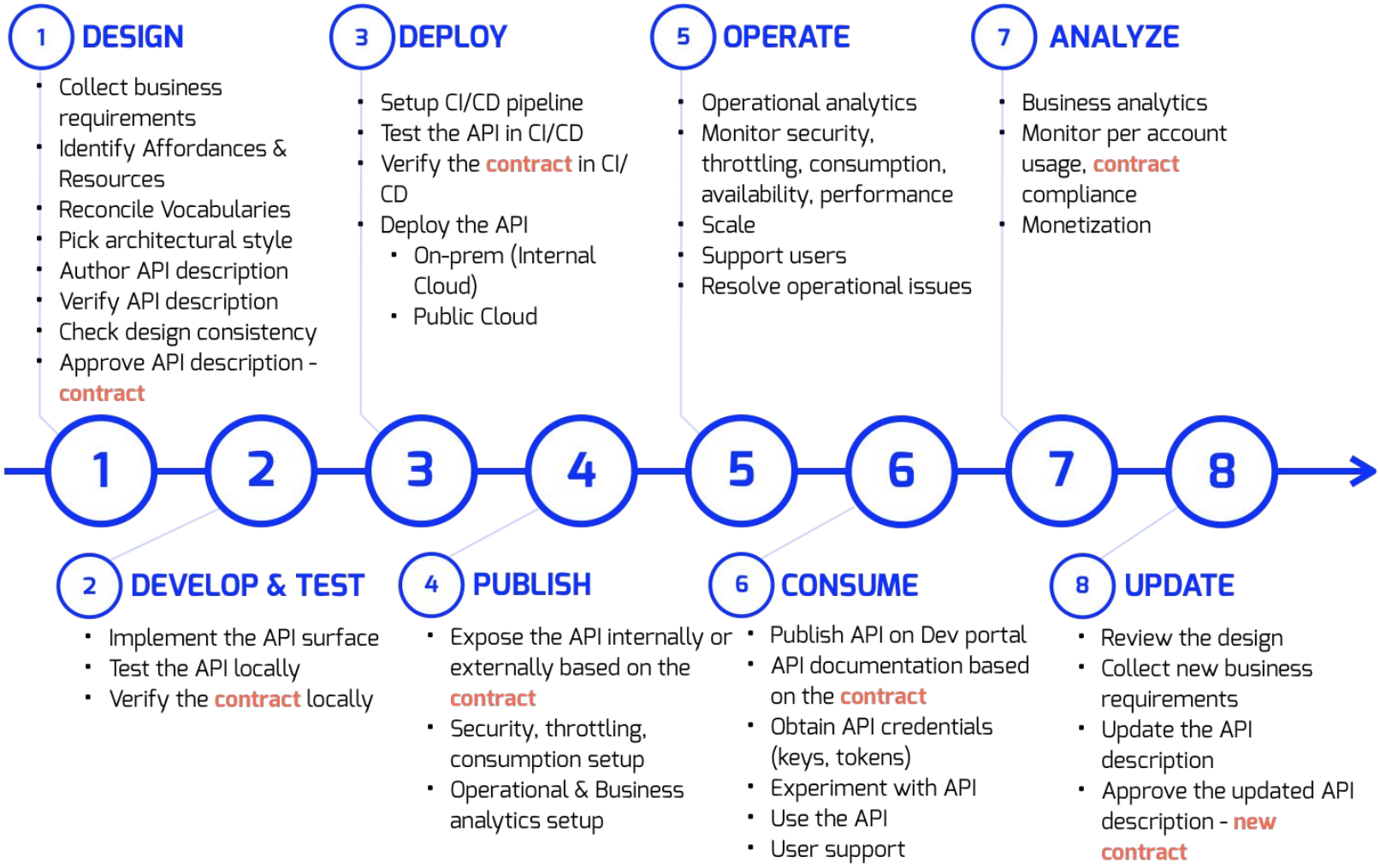
OpenAPI Specification 2.0 (formerly Swagger)

```yaml
swagger: '2.0'
info:
  description: This is a simple API
  version: 1.0.0
  title: Simple Inventory API
  # put the contact info for your development or API team
  contact:
    email: you@your-company.com

  license:
    name: Apache 2.0
    url: http://www.apache.org/licenses/LICENSE-2.0.html

# tags are used for organizing operations
tags:
- name: admins
  description: Secured Admin-only calls
- name: developers
  description: Operations available to regular developers

paths:
  /inventory:
    get:
      tags:
      - developers
      summary: searches inventory
      operationId: searchInventory
      description: |
        By passing in the appropriate options, you can search for
        available inventory in the system
      produces:
      - application/json
```

API Description

API Description must be:

- Human & machine readable
- Accessible
- Understood by Stakeholders, Developers, API Consumers, Tech writers, DevOPS, Support team
- Versioned in VCS
- Treated as Product Requirements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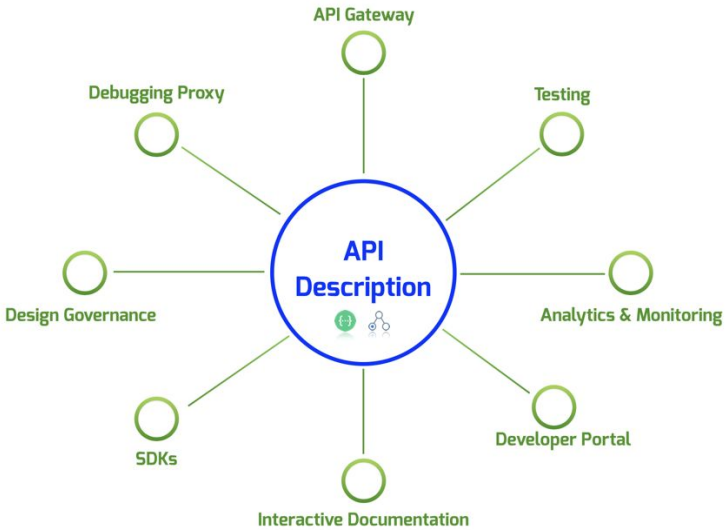
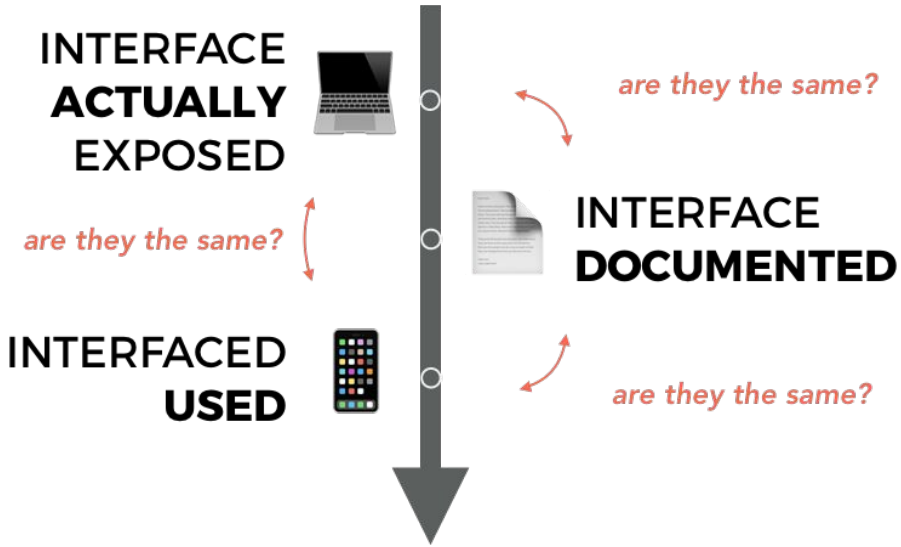
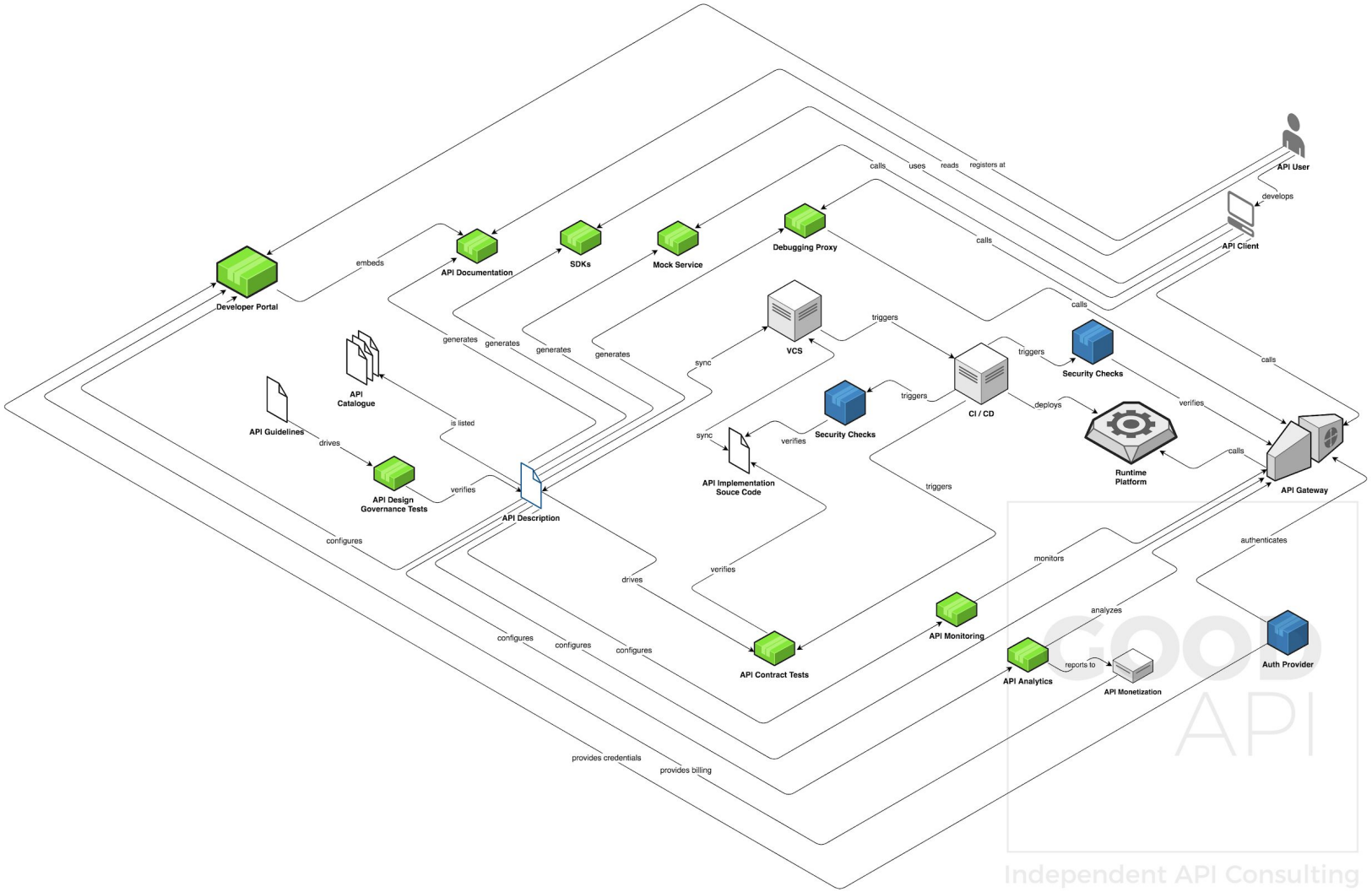
Contract-driven API Lifecycle

API Lifecycle Must be Contract-driven



Keeping Things in Sync is Hard




API User
develops
API Client
calls
uses
reads
registers at
Developer Portal
embeds
API Documentation
SDKs
Mock Service
Debugging Proxy
calls
calls
generates
generates
generates
generates
API Catalogue
API Guidelines
is listed
drives
API Design Governance Tests
verifies
API Description
configures
sync
VCS
triggers
triggers
Security Checks
calls
triggers
CI / CD
deploys
verifies
Runtime Platform
calls
API Gateway
sync
API Implementation Souce Code
verifies
Security Checks
triggers
drives
verifies
configures
configures
configures
API Contract Tests
monitors
API Monitoring
analyzes
API Analytics
reports to
API Monetization
authenticates
Auth Provider
provides credentials
provides billing
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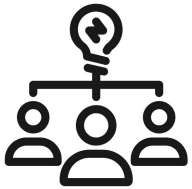
Approved API design becomes the contract

API-first

The Three Pillars

Three Pillars of Digital Transformation API-first

Business



Organization

Technology

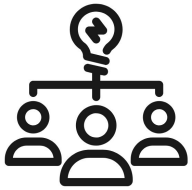
Business

APIs are the products that you create, manage, sell, measure, recombine, and retire.

API First means that if a product in your organization does not have an API, it essentially does not exist.

APIs are the connective fabric.

Organization



No matter how good your service or product is, if it is delivered through a bad API, this substantially diminishes the quality of the product.

Teams embrace the fact that APIs is their main deliverables.

Technology

Everything that gets created or consumed in the organization is based on APIs.

The quality of APIs greatly matter for how easy it is to create and consume company products.

APIs change must not create expensive and time-consuming ripple effects through a chain of API dependencies.

APIs are no longer just about the technology

APIs are an exercise of cross-organizational collaboration

Independent API Consulting