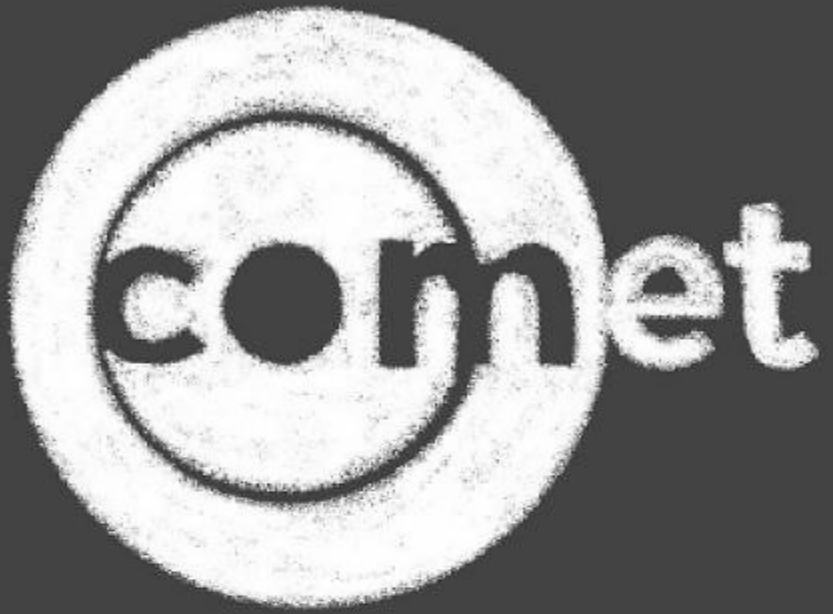
OVHcloud



OVHcloud K8s Team

DevOps & Agility in a Product Team

Horacio Gonzalez

2020-07-09

Who are we?

Introducing myself and introducing ~~OVH~~ OVHcloud

Horacio Gonzalez

@LostInBrittany

Spaniard lost in Brittany, developer, dreamer and all-around geek

OVHcloud

DevRel Leader

DevFest du Bout du Monde

Finist Devs

Google Developers Experts 2019

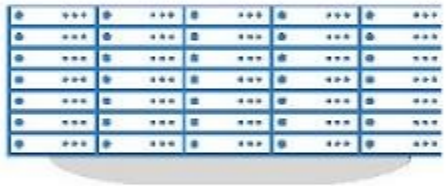
Web Technologies GDE

Flutter

OVHcloud: A Global Leader

200k Private cloud VMs running

1 **Dedicated IaaS Europe**



Hosting capacity : **1.3M** Physical Servers

360k Servers already deployed

30 Datacenters

> **1.3M** Customers in **138** Countries

OVHcloud: 4 Universes of Products

WebCloud

Domain / Email
- Domain names, DNS, SSL, Redirect
- Email, Open-Xchange, Exchange
- Collaborative Tools, NextCloud

PaaS for Web
- Mutu, CloudWeb
- Plesk, CPanel
- PaaS with Platform.sh

Virtual servers
- VPS, Dedicated Server

SaaS
- Wordpress, Magento, Prestashop
- CRM, Billing, Payment, Stats
- MarketPlace

Support, Managed
- Support Basic
- Support thought Partners
- Managed services

Baremetal Cloud

Standalone, Cluster
- General Purpose — T2 >20e
- SuperPlan — T3 >80e
- Game — T4 >300e
- Virtualization — T5 >600e
- Storage — 12KVA / 32KVA
- Database
- Bigdata
- HCI
- AI
- VDI Cloud Game
- Network

VPS aaS
- pCC DC
- Virtuozzo Cloud

Wholesales
- IT Integrators, Cloud Storage,
- CDN, Database, ISV, WebHosting
- High Intensive CPU/GPU,

Encrypt
- KMS, HSM
- Encrypt (SGX, Network, Storage)

Public Cloud

Compute
- VM
- Baremetal
- K8S, IA IaaS
- PaaS for DevOps

Storage
- File, Block, Object, Archive

Databases
- SQL, noSQL, Messaging,
- Dashboard

Network
- IP FO, NAT, LB, VPN, Router,
- DNS, DHCP, TCP/SSL Offload

Security
- IAM, MFA, Encrypt, KMS

IA, DL
- Standard Tools for AI, AI Studio,
- IA IaaS, Hosting API AI

Bigdata, ML, Analytics
- Datalake, ML, Dashboard

Hosted Private Cloud

Hosted Private Cloud

VMware
- SDDC, vSAN 1AZ / 2AZ
- vCD, Tanzu, Horizon, DBaaS,
- DRaaS

Nutanix
- HCI 1AZ / 2AZ, Databases,
- DRaaS, VDI

OpenStack
- IAM, Compute (VM, K8S)
- Storage, Network, Databases

Storage
- Ontap Select, Nutanix File
- OpenIO, MinIO, CEPH
- Zerto, Veeam, Atempo

AI
- ElementAI, HuggingFace,
- Deepopmatic, Systran,
- EarthCube

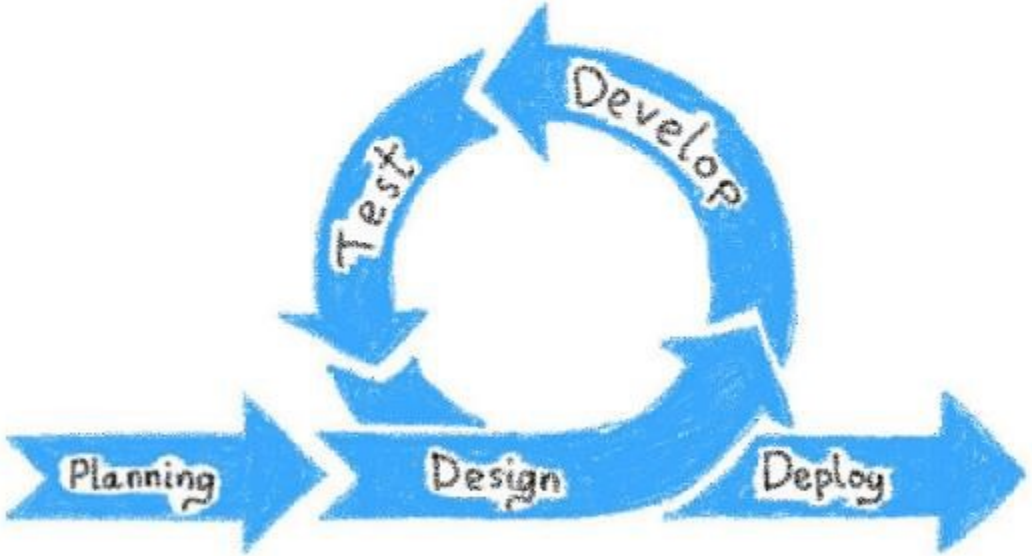
Bigdata / Analitics / ML
- Cloudera over S3, Dataiku,
- Saagie, Tableau,

Hybrid Cloud
- vRack Connect, Edge-DC, Private DC
- Dell, HP, Cisco, OCP, MultiCloud

Secured Cloud
- GOV, FinTech, Retail, HealtCare

DevOps and Agility at OVHcloud

You build it step by step, and you run it



A small fish in a big pond

Google

Microsoft

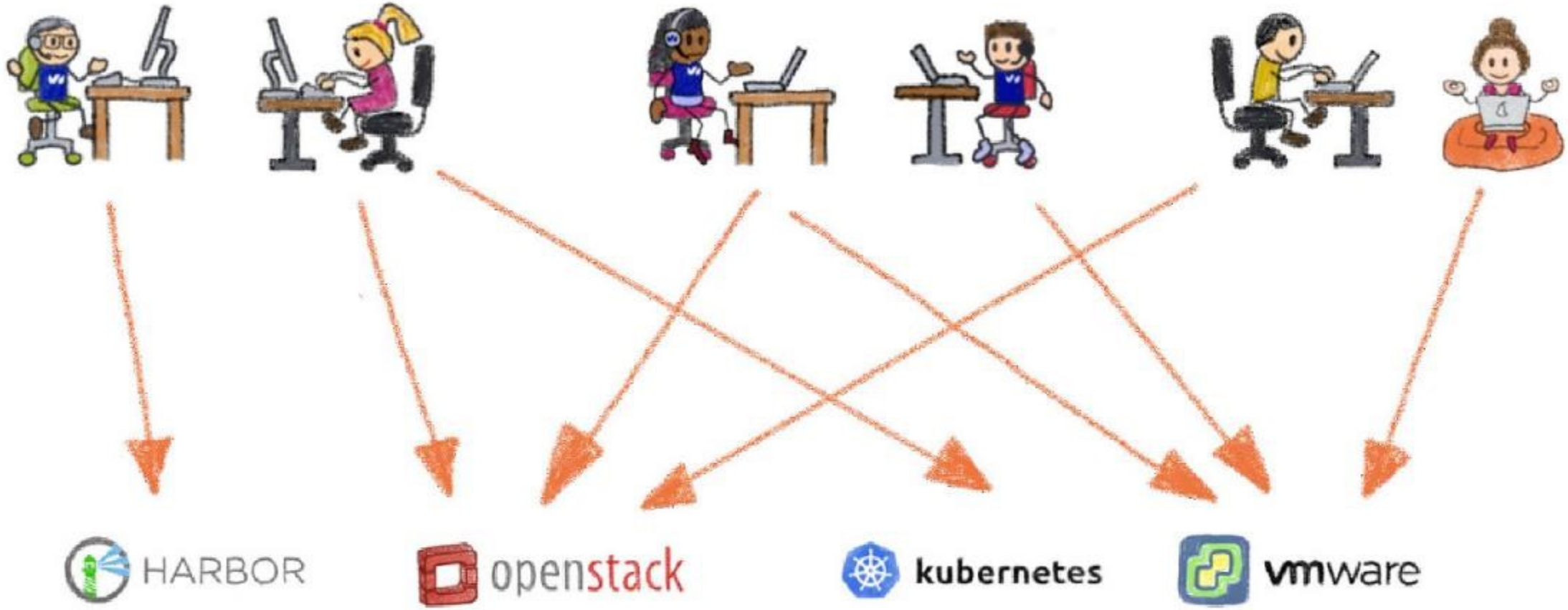
OVHcloud

aws

Alibaba Cloud

Needs to be adaptable, flexible, quick

Huge range of products



For a comparatively small technical staff

With a wide variety of technology stacks

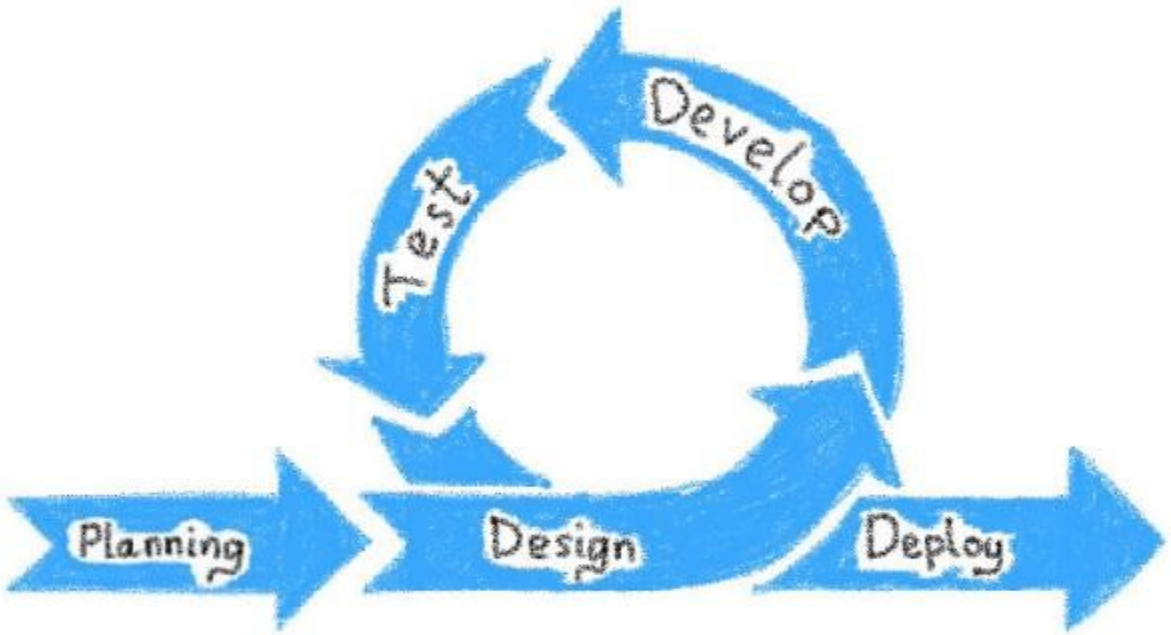
MySQL
MariaDB
hadoop
APACHE ZooKeeper
openstack
ceph
PostgreSQL
APACHE HBASE
APACHE Spark
ubuntu
LXD
redis
Warp 10
elasticsearch
kubernetes
docker
Microsoft SQL Server
influxdb
PULSAR
kafka
HAPROXY
DepC

Open source, non open source and self built

Only a way to keep up

You build it iteratively, you run it

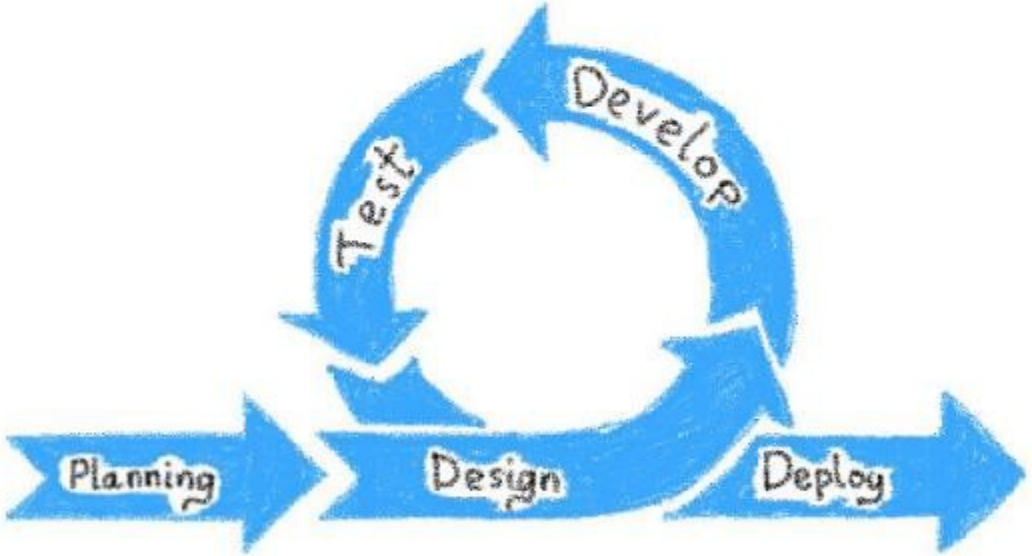
An Agile DevOps approach was natural



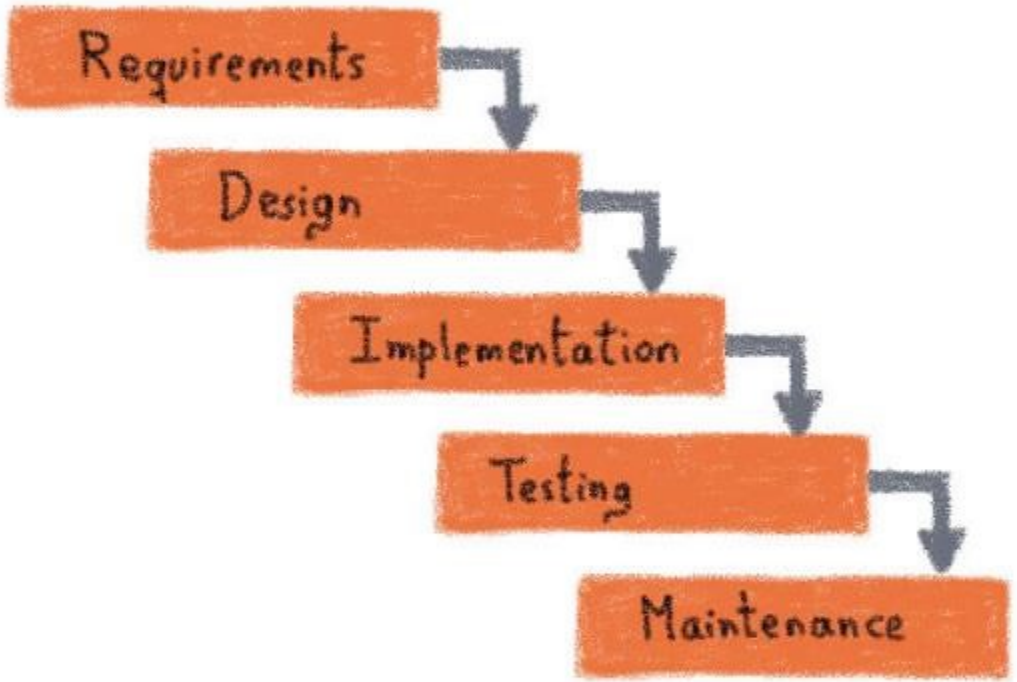
Even if not always fully structured

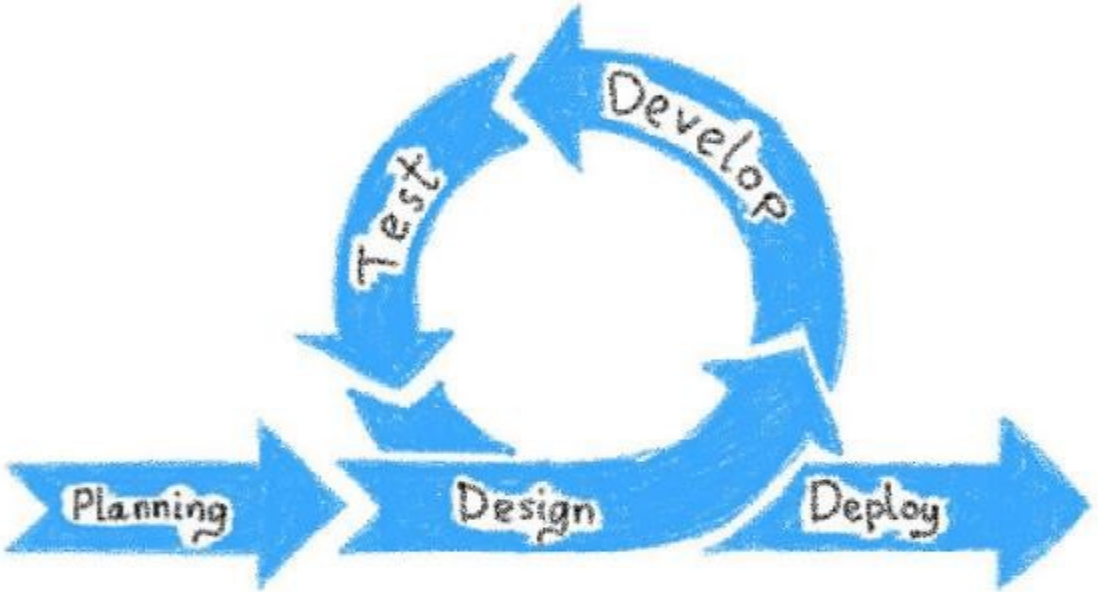
Why do you mix DevOps and Agility?

You can have one without the other, can't you?



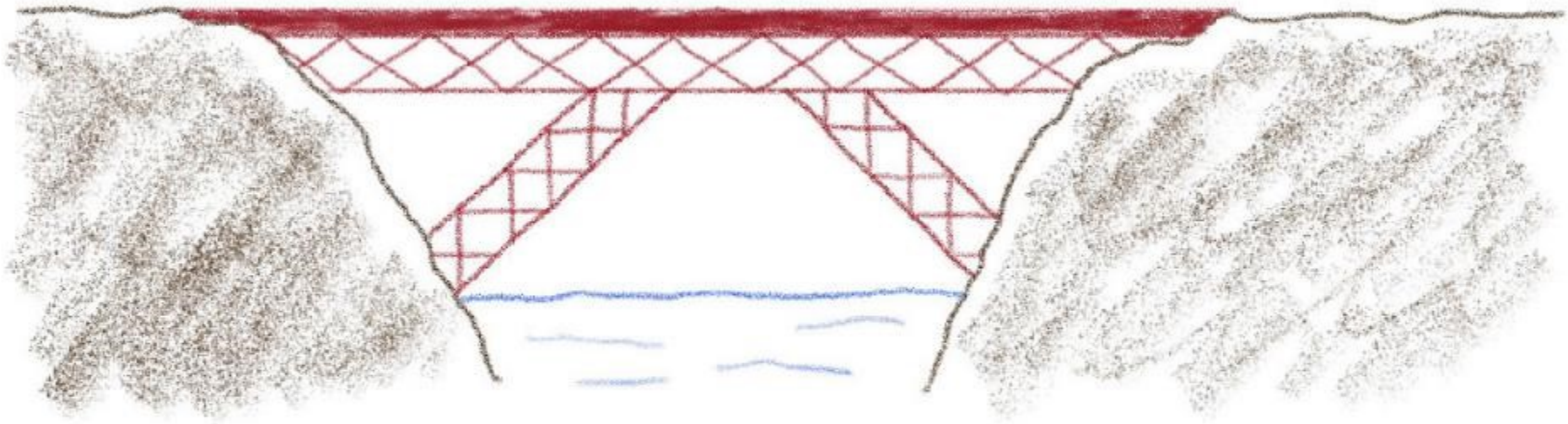
Agile is a response to Waterfall





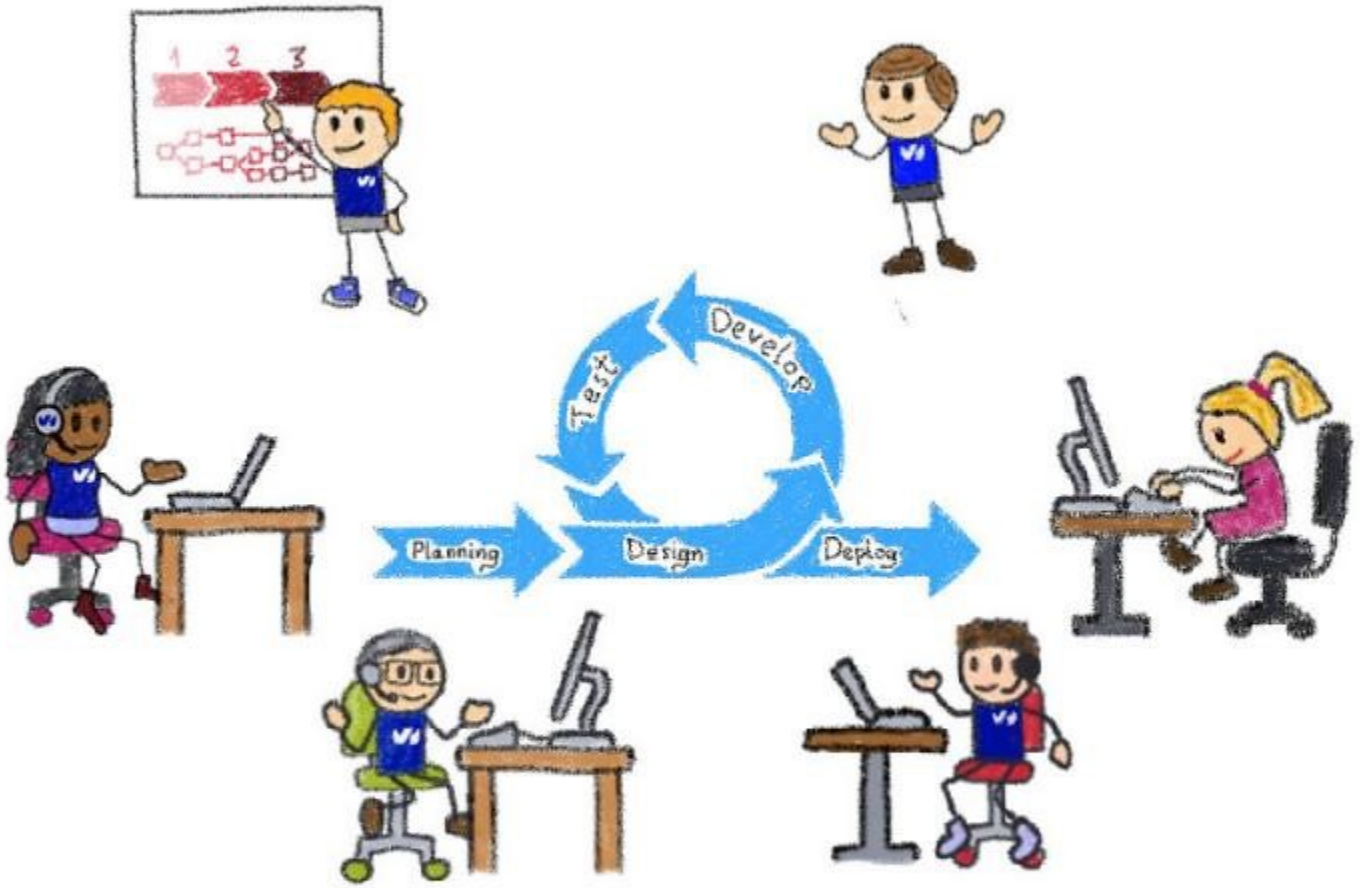
Methodological AND philosophical response

You don't build an app like a bridge



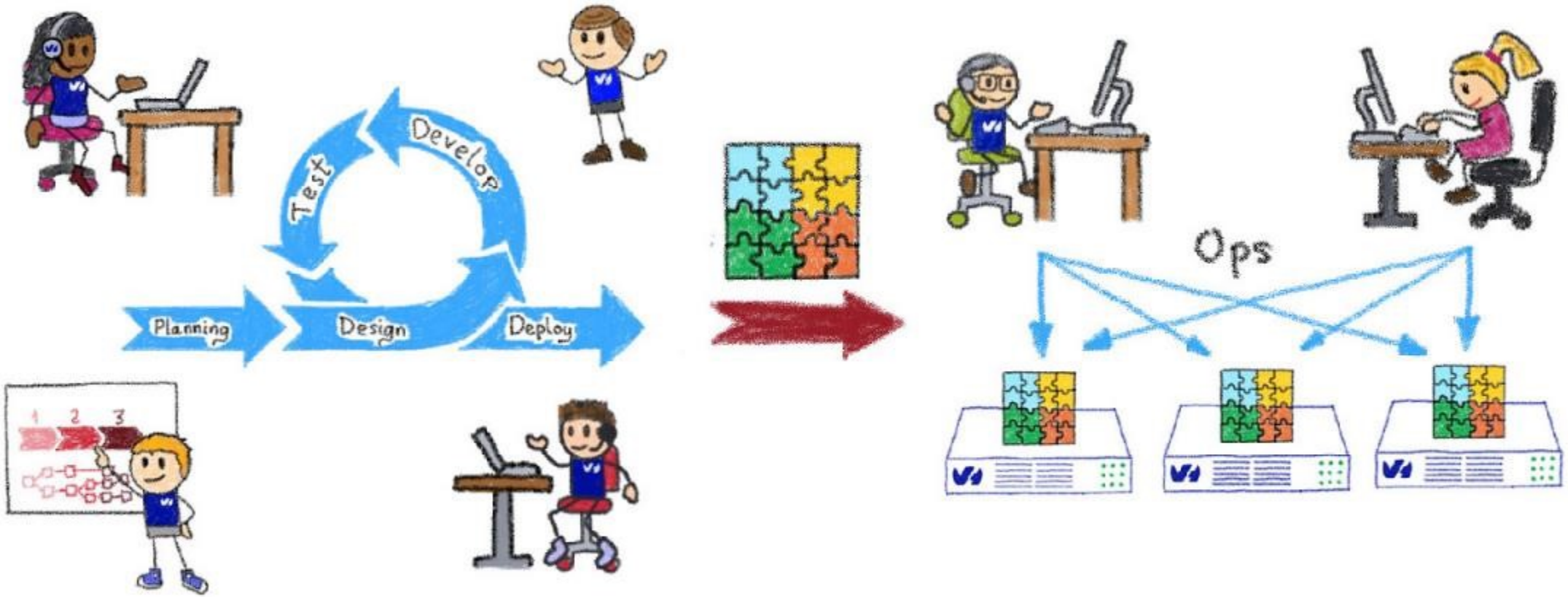
Static vs evolving paradigms

IT is an ever-evolving environment



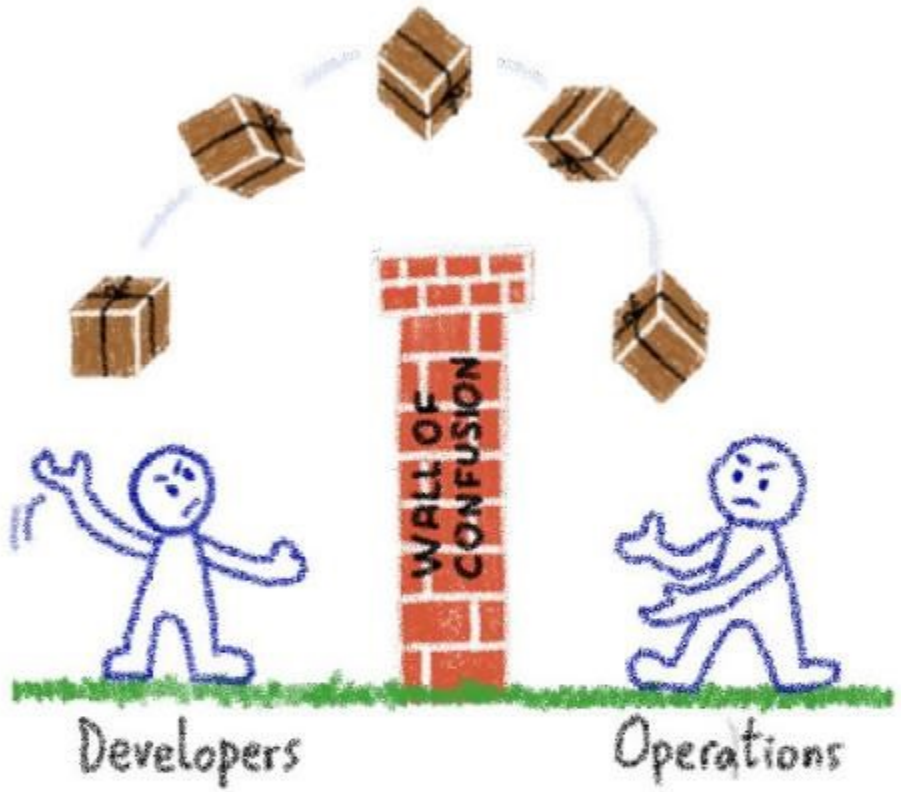
Agility is about speed of embracing change

You could have Agility without DevOps



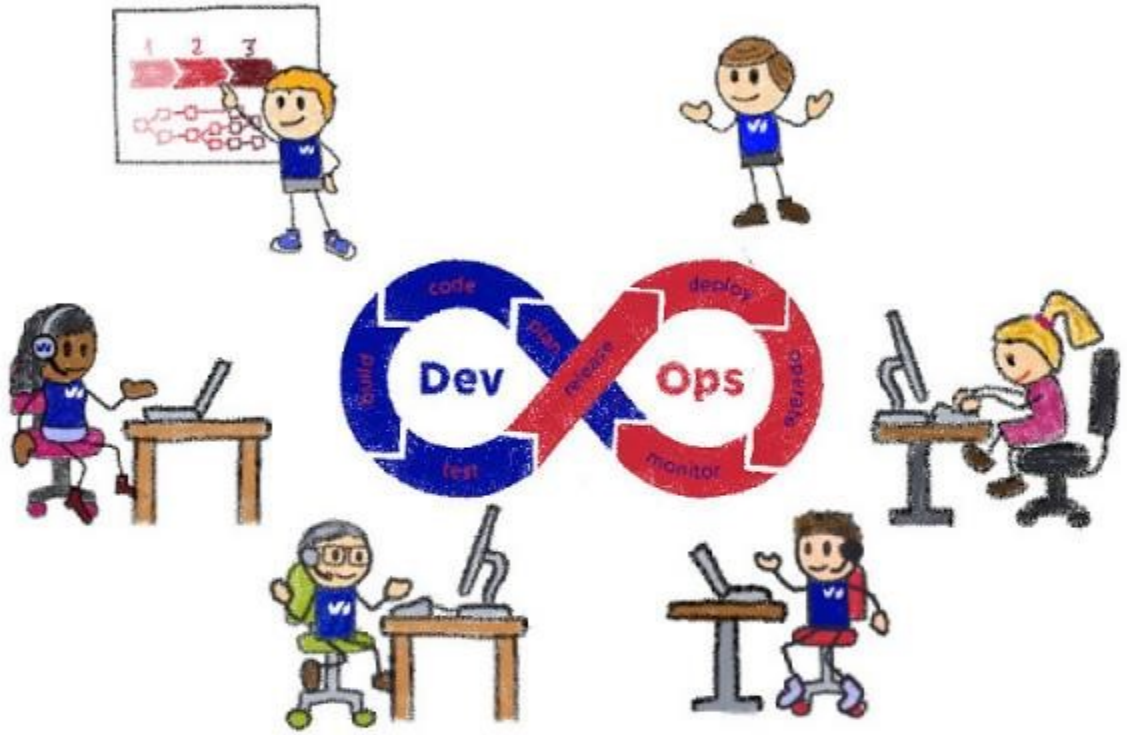
Even if I fail to see why you would want...

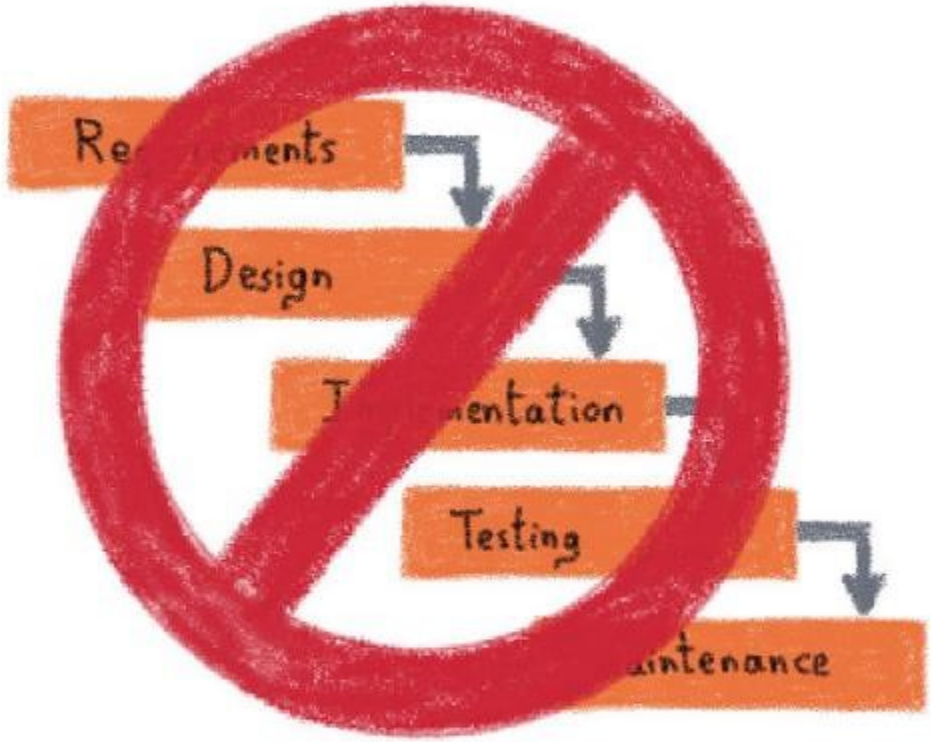
DevOps is a reaction to the wall of confusion



Making the different stakeholders
to work together in sync

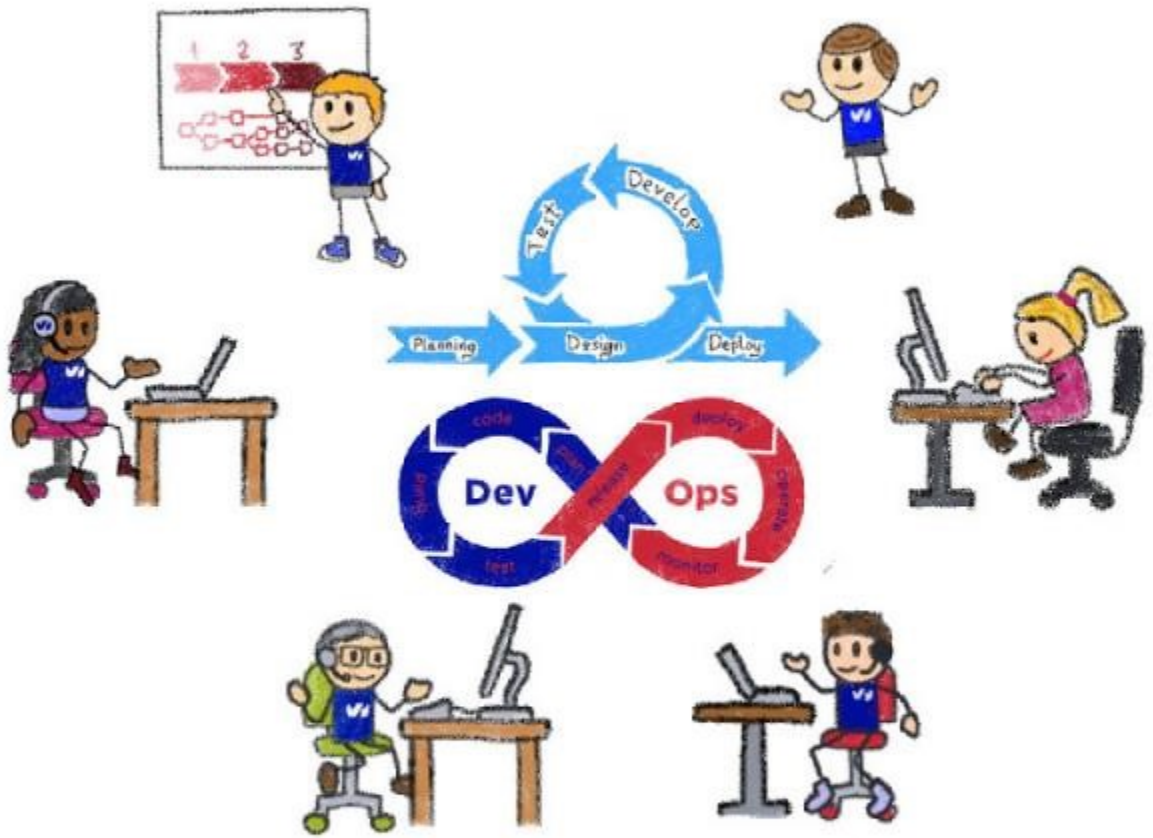
You cannot have DevOps without agility





DevOps is about shorter development sprints, increased focus on testing, increasing automation

DevOps comes with Agility

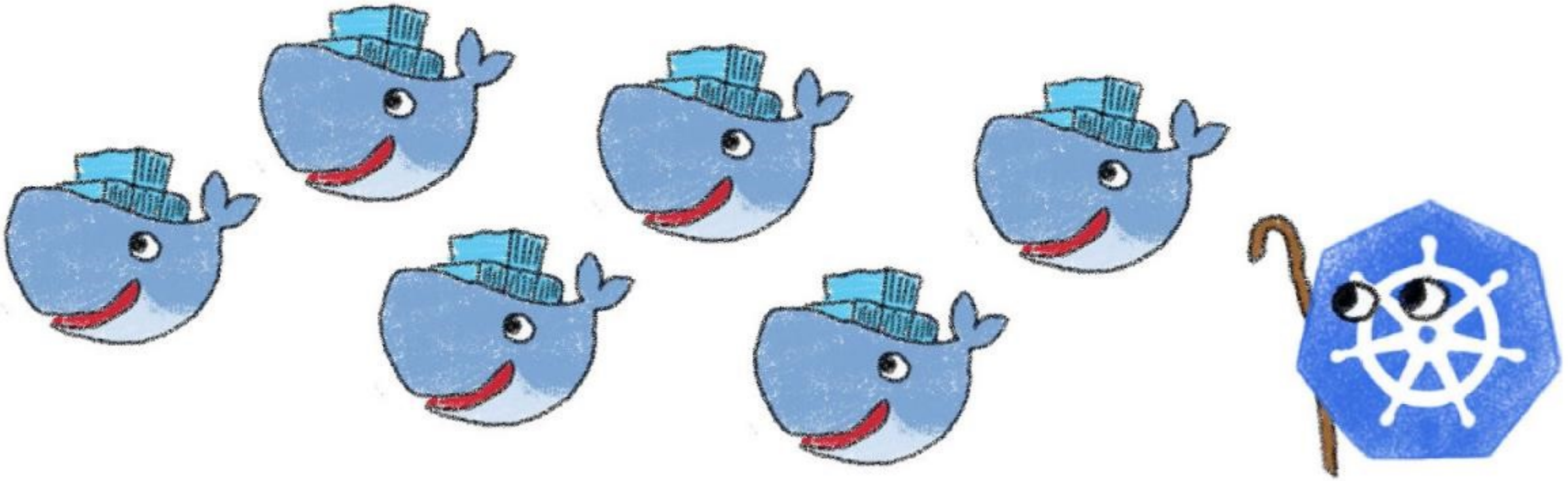


DevOps is an extension of Agile
that includes systems and operations

Let's create a new product

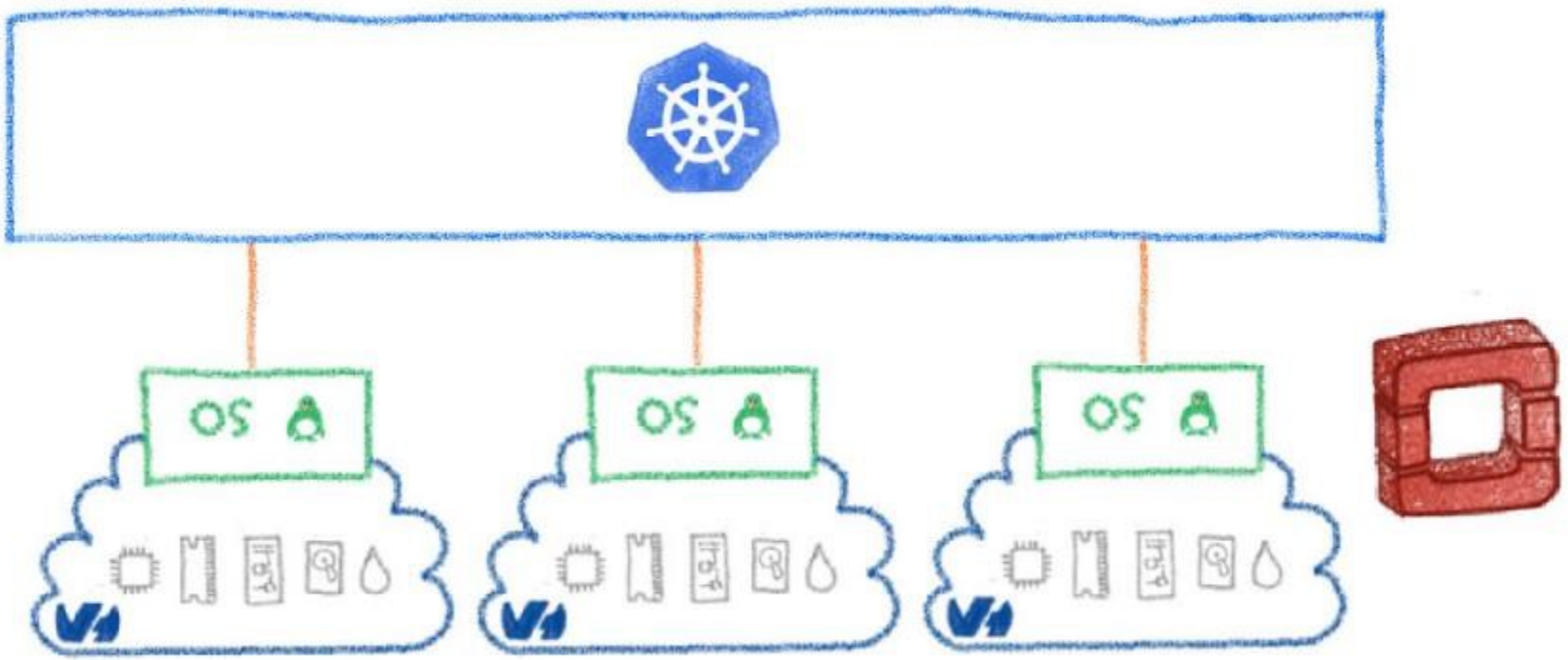
OVHcloud Managed Kubernetes

In 2018 we decided to build a product



OVHcloud Managed Kubernetes

Build over our Public Cloud

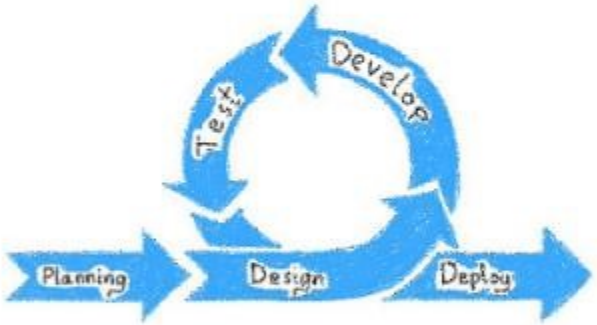


We leverage on our OpenStack expertise

Building a team for the project

A small DevOps team to:

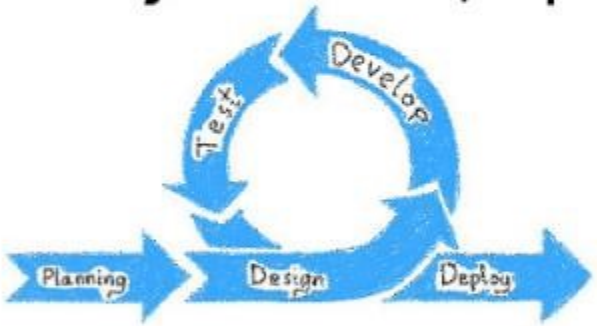
- Bootstrap the project
- Build the product
- Operate it



A balanced mix of skill needed

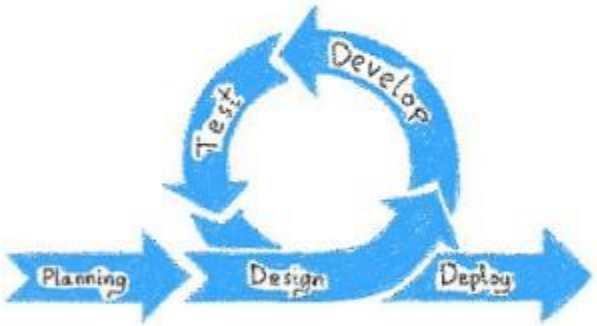
At the beginning of the project:

- Architects
- Developers
- Sysadmins/Ops



But a clear objective

By the end of the projects,
having DevOps



Everybody on call

The most direct road from Dev to DevOps

Developers need to be on call

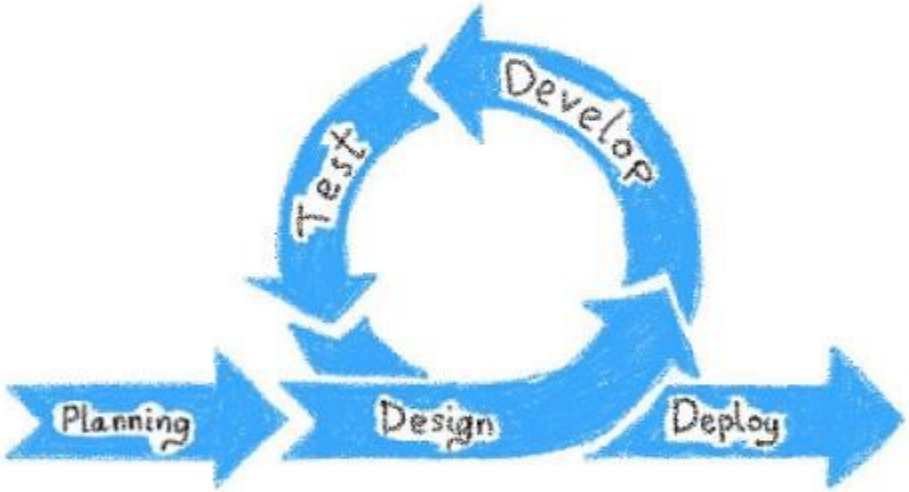
- Engineering is about building **and maintaining** services
- On call should not be life-impacting
- Services are **better** when feedback loops are short

On-call duty needs to be humane

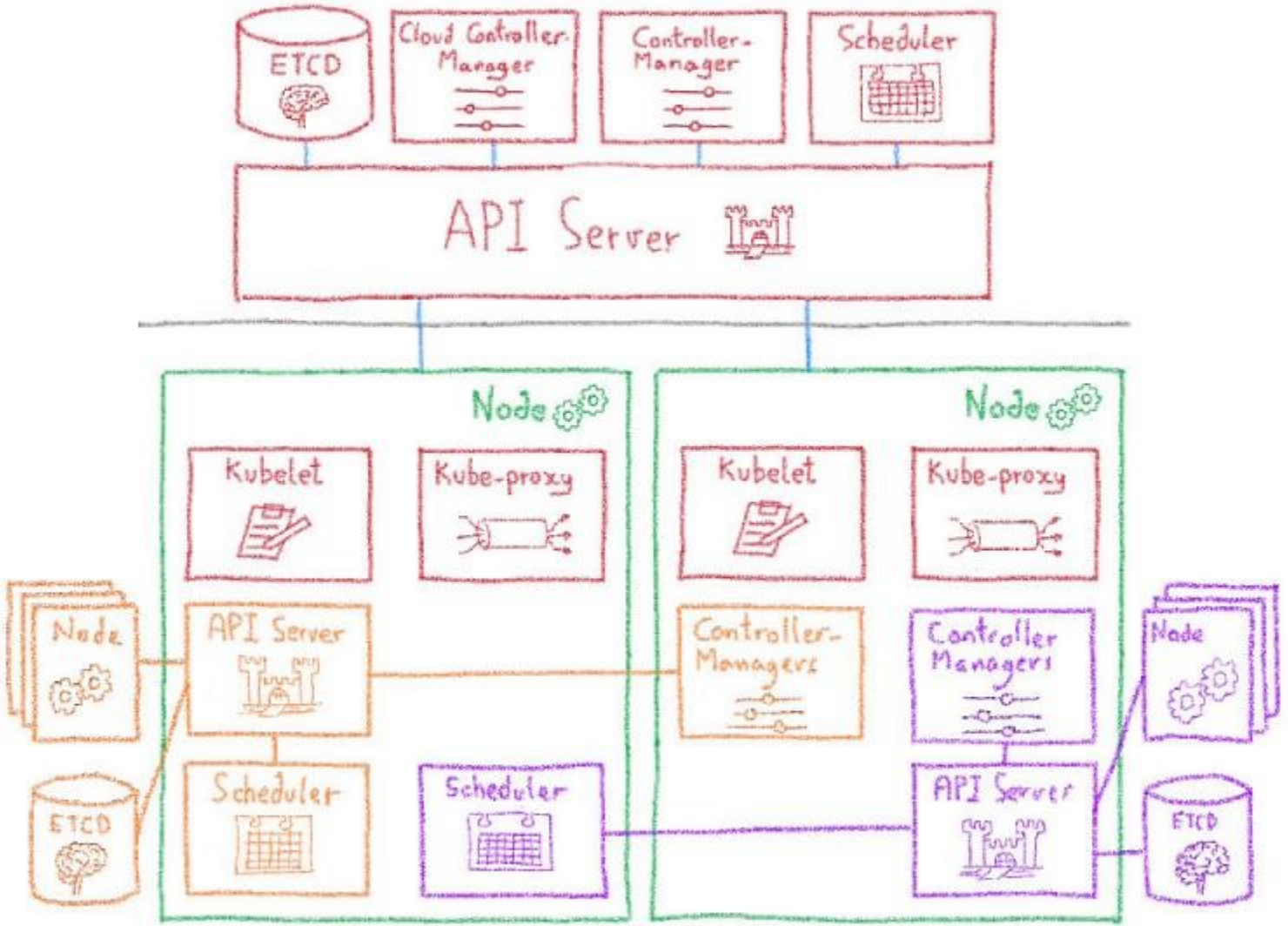
- Paid on-call duty
  - Flat rate per rotation period
  - Call out fee for responding to an alert.
- Enough people in rotation
  - Between 5-10 people
- Flexibility
  - Allowing people to swap on call time
- Curated alerts
  - Not all systems or errors deserve an on-call alert
- A clear escalation policy
  - And level 2/3 on-call duties

Building it for efficiency

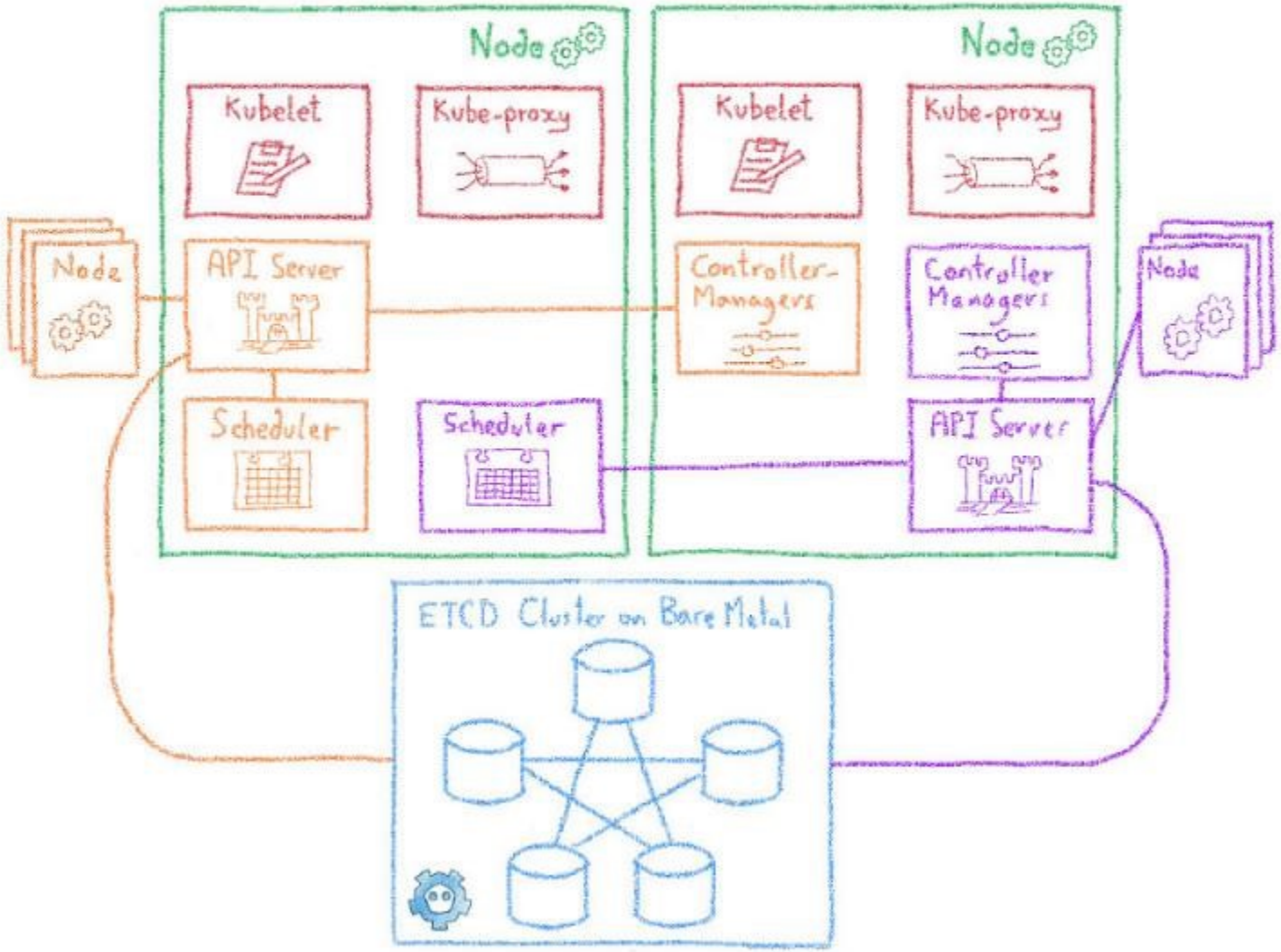
Because we need to facilitate operations



Kubinception: running K8s on K8s

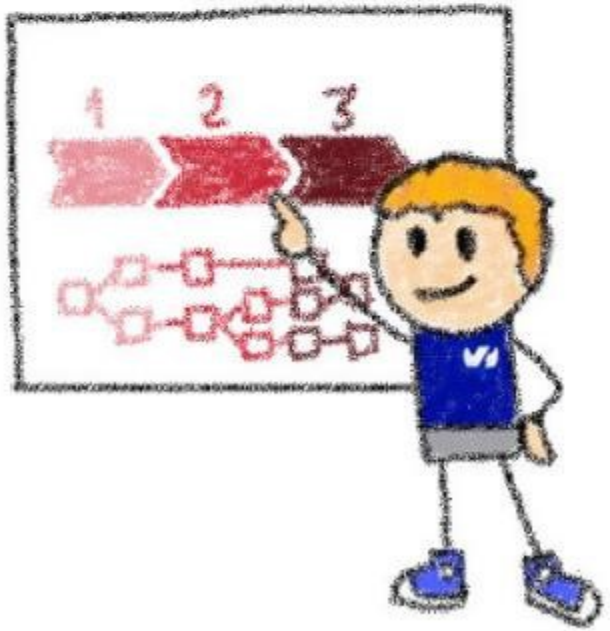


And the ETCD

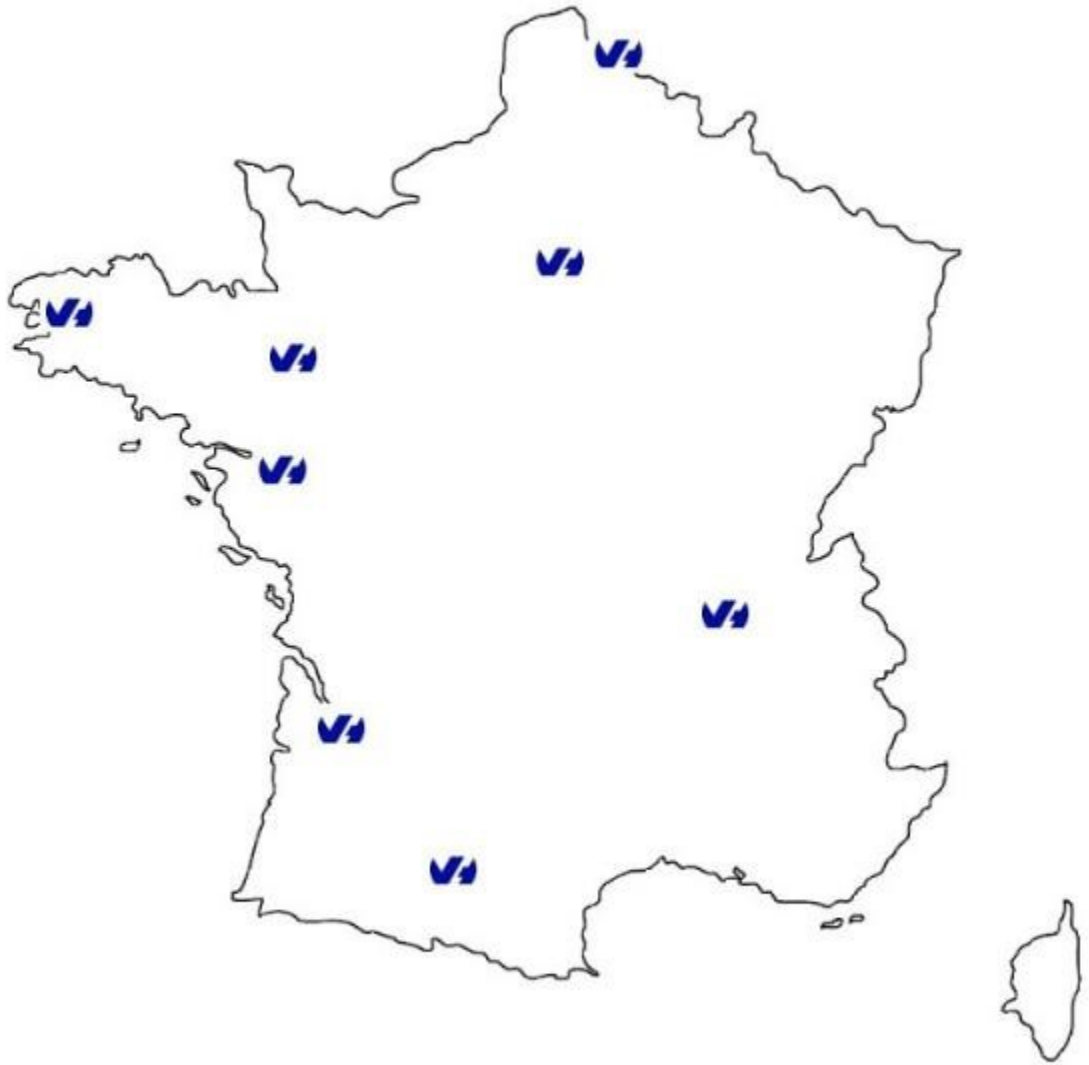

Node
Kubelet
Kube-proxy
Node
API Server
Scheduler
Node
Kubelet
Kube-proxy
Controller-Managers
Controller Managers
API Server
Scheduler
Node
ETCD Cluster on Bare Metal

And the agility in all that?

The keystone of the whole project and DevOps approach



DevOps teams all around the country



- Roubaix
- Paris
- Rennes
- Bordeaux
- Toulouse
- Lyon
- Nantes
- Brest

Tools & Methodology

« *SCRUM* »

« *Farmer's Wisdom* »

« *KINTSUGI** »

What do we mean by agility?

A team with prejudices about Agility

"Being Agile? This is a trick to justify a failure in project management. "

"The Scrum does not work for development teams, it is for managers"

"Scrum is only useful to watch and control us"

"Scrum? We tested 3 years ago, we quickly understood that it was not for us..."

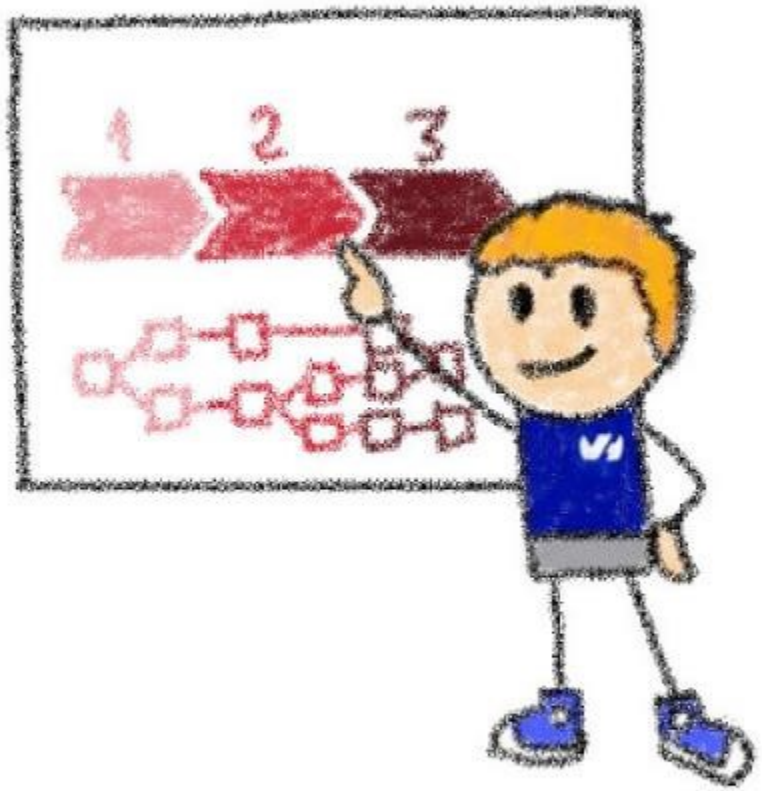
1st step: building trust

"I'm here to give you visibility"

"We will create value together"

"Your rhythm will be respected"

"We will keep our commitments"



2nd step: team engagements

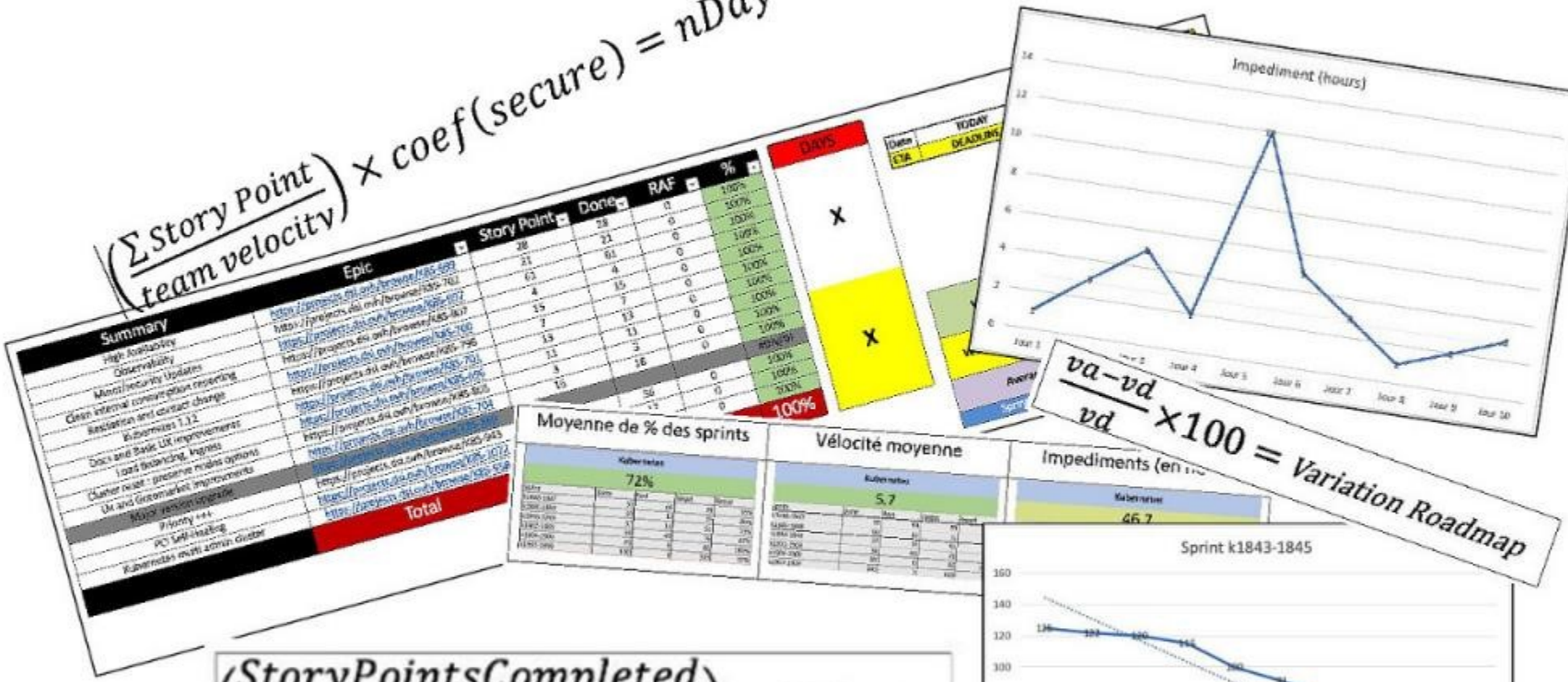
"We respect the rules of Scrum"

"We track our Impediments"

"We respect our tickets' lifecycle"

3rd step: convince with numbers and metrics!

$$\left(\frac{\sum Story\ Point}{team\ velocity}\right) \times coef(secure) = nDay$$



$$\frac{va - vd}{vd} \times 100 = Variation\ Roadmap$$

$$\left(\frac{StoryPointsCompleted}{DurationSprint}\right) = Velocity$$

Agility and real life of a DevOps team

"I have a customer who came to ask me to solve a problem"

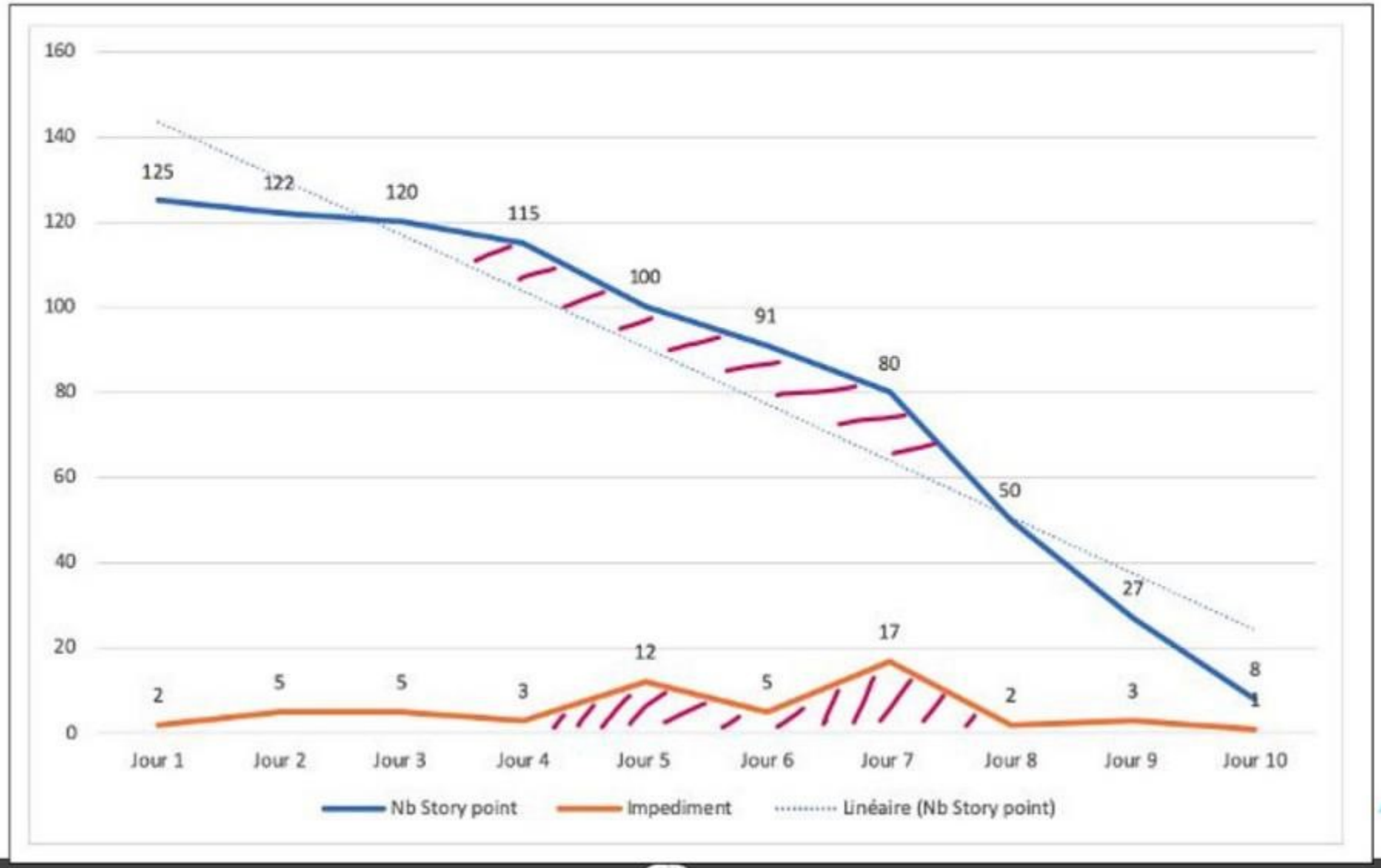
"I am too often disturbed to fix bugs!"

"I didn't have time to finish the ticket, I had to deal with an emergency"

Impediments

Unexpected tasks asking for immediate attention
and diverting time from scheduled tasks

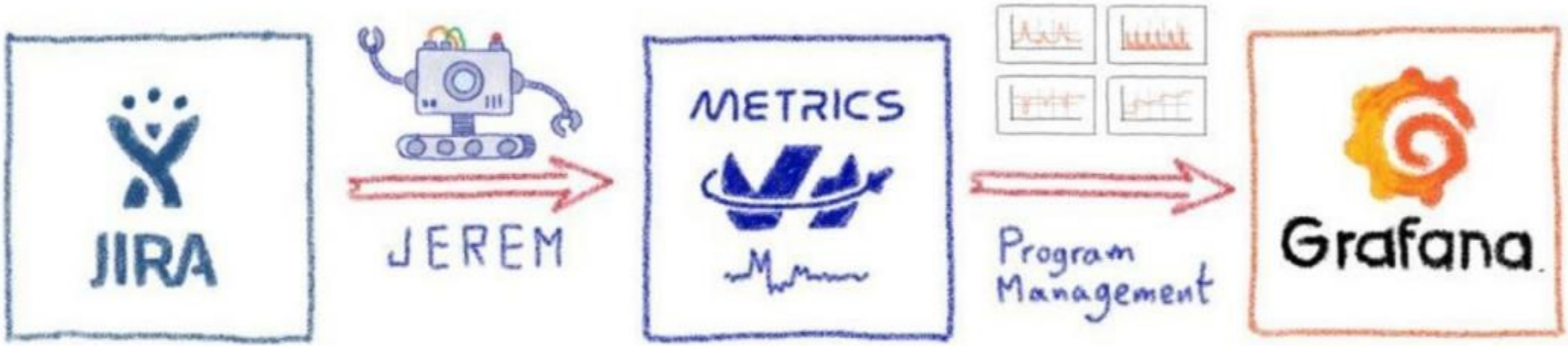
Tracking burndown and impediments



- ✔ *Decision making*
- ✔ *Vision*
- ✔ *Creation of value*
- ✔ *Respect for the rhythm of the team*

4th step: agile telemetry

Agile telemetry workflow



Extracting metrics from Jira

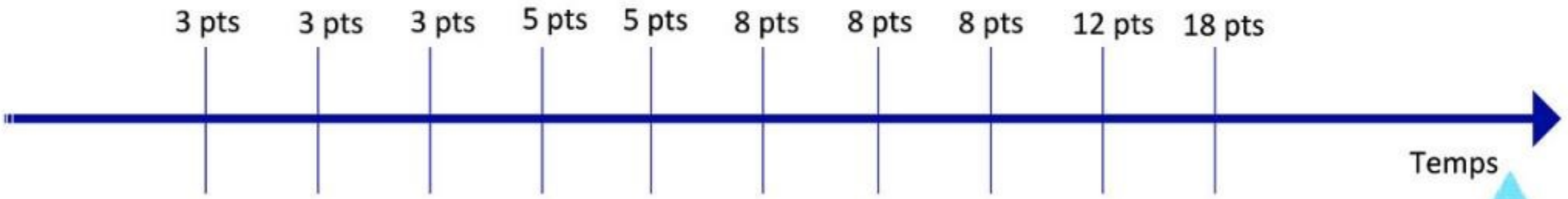
bot.jerem

Language	Golang
JIRA	API Scrapping
Metrics	HTTP POST
DataBase	Warp10

From metrics to visualisation

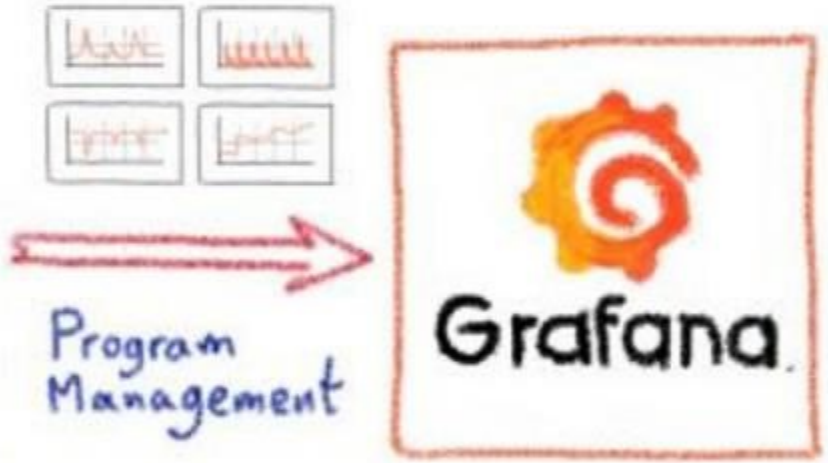
1 Objet

Example :
Projet : OB
Epic : Alpha
Information : taches DONE

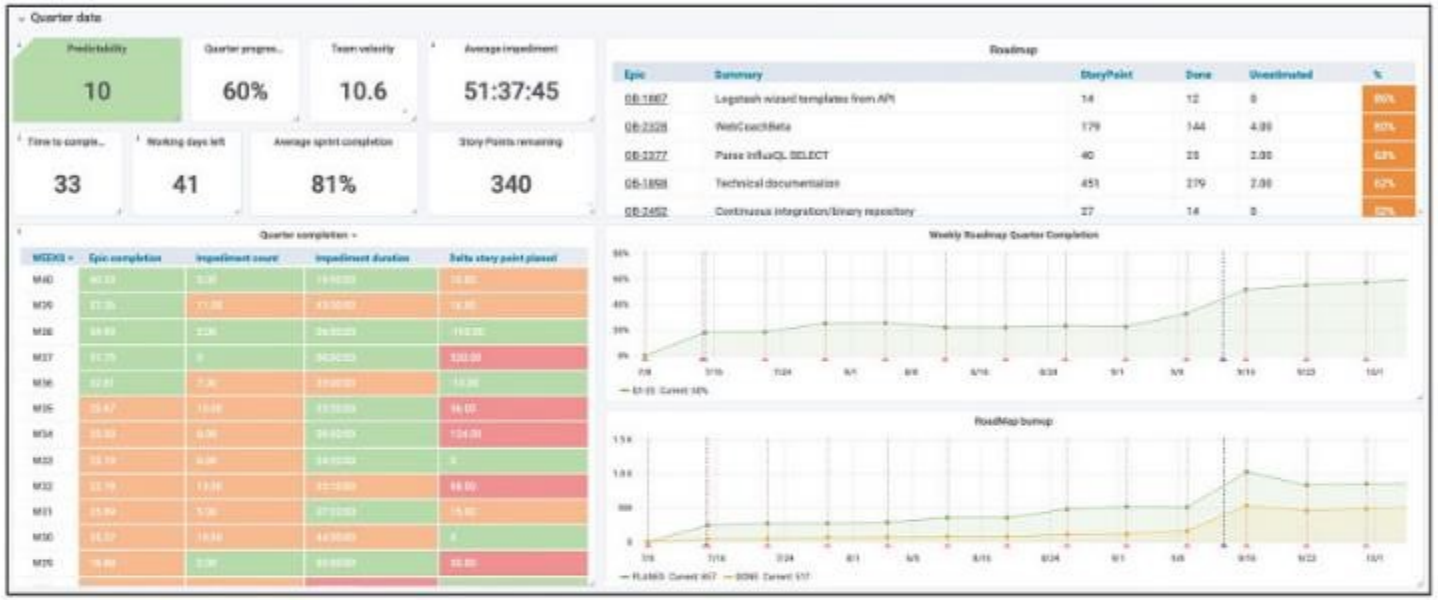


Interval régulier envir : 20min

And then to the dashboard



OVHcloud agile telemetry



MACRO

- Top management
- Product Marketing
- Program Manager

MICRO

- Equipe de dev
- Scrum Master
- Technical leader

Last but not least...

"We have kept our promises, with a fairly good level of quality" - Developer

"We don't apply the method mindlessly, we adapt it" Developer

"Product release with good visibility and accuracy" - Manager

A convinced product team

That's all, folks!

Thank you all!