

Transform, industrialize,
rinse, repeat

Posteitaliane

My Contacts



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Cloud Adoption and Technology Architecture



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Poste Italiane: an introduction

The most effective and trusted distribution network

Posteitaliane

#numbers



MAIL & PARCEL

Unrivalled distribution network

- Successful restructuring of mail network to exploit e-commerce opportunities
- Consolidating mail market to address ongoing mail decline

B2C Market share (r. #1) 37%

Market share in mail (r. #1) 89%



FINANCIAL & INSURANCE

Comprehensive platform for all clients' financial needs

- A controlled open platform for savings, insurance and investment products to meet evolving customers' financial needs
- Optimised customer and sales coverage with 8k financial advisors and 30k tellers

Life insurance market share (r. #1) 14.7%

Total financial assets €569bn



PAYMENTS & MOBILE

Unique digital ecosystem

- Key player in the Italian payments market
- Distinctive platform integrating payments and telco

Cards issued (r. #1) 28.9M

Digital wallets (r. #1) 7.4M

Market share e-commerce transactions (r. #1) c.25%

The best client base in the country

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#numbers



LARGEST CLIENT
BASE IN ITALY



BRAND STRENGTH
RECOGNITION
CONFIRMED BY



HIGH CUSTOMER LOYALTY
FOSTERED BY COMMITMENT TO
QUALITY AND SOCIAL
RESPONSIBILITY



35m

clients



11m¹

daily interactions
with individuals,
o.w. 4.7m digital
visits



210m

parcels
delivered
in 2020
(2x 2016)



27m

postal savings
clients



>€15bn

retail net inflows
in 2020



2.5%

insurance
investment
products lapse
rate vs 5.5%
market



13%²

churn rate in
Telco vs 20%
market



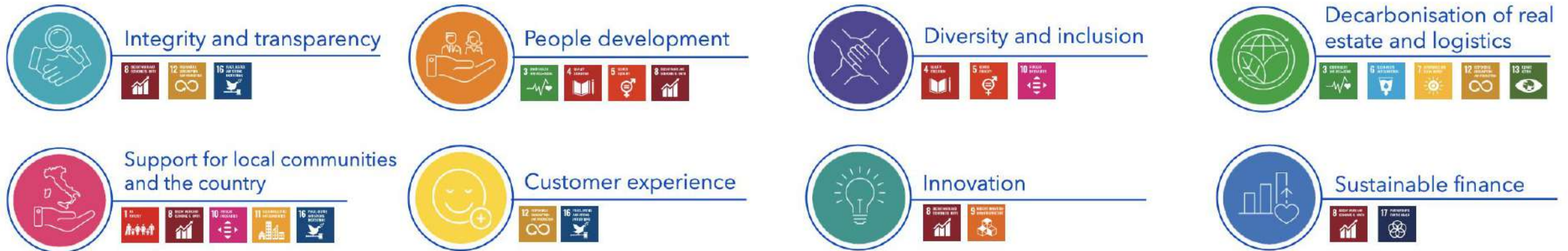
Rank #1

in the Top 100
most trusted
insurance brands
by Brand Finance

Sustainable Value Creation

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#sustainability



Delivering a greener future

Fighting against climate change, innovating throughout the business to minimise our environmental impact, managing risk and achieving long-term resilience

Investing in a thriving workforce

Rights, safety and wellbeing of our people come first in everything we do

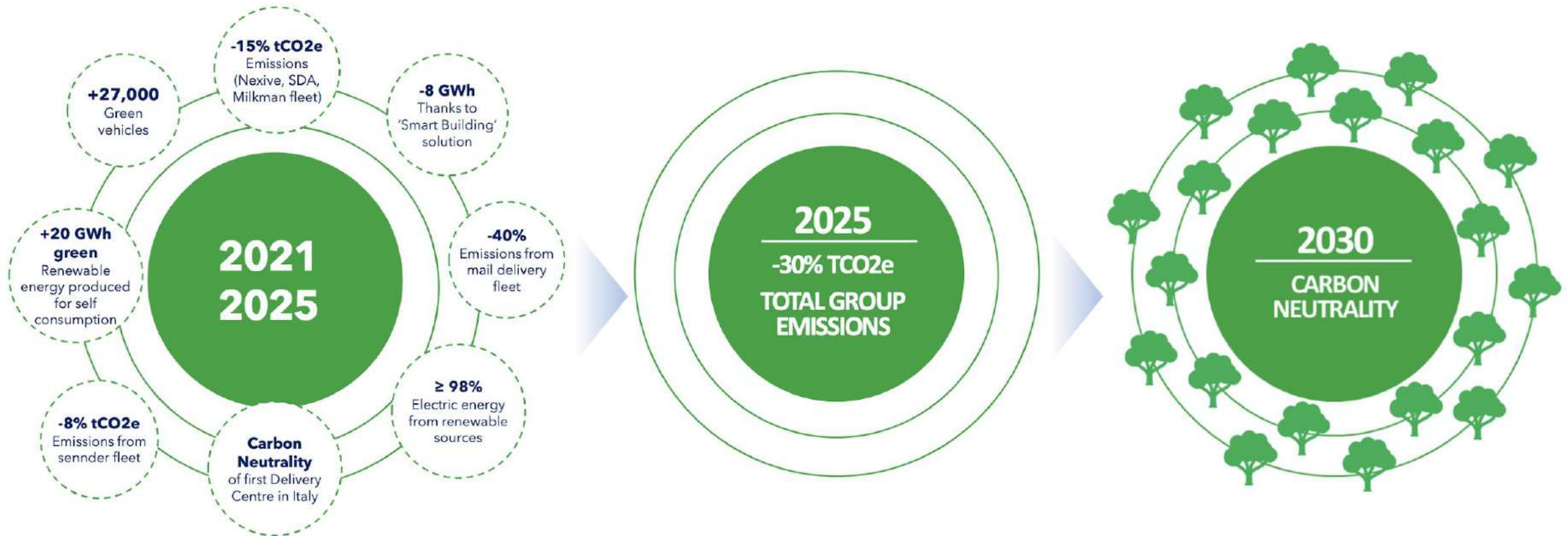
Protecting our customers, building an inclusive society

Providing vital support to the individuals and communities around us

Driven by good corporate governance

Leading with integrity and transparency, committed to a code of business ethics and remuneration. Striving to manage our business sustainably and invest responsibly

Environmental Strategy

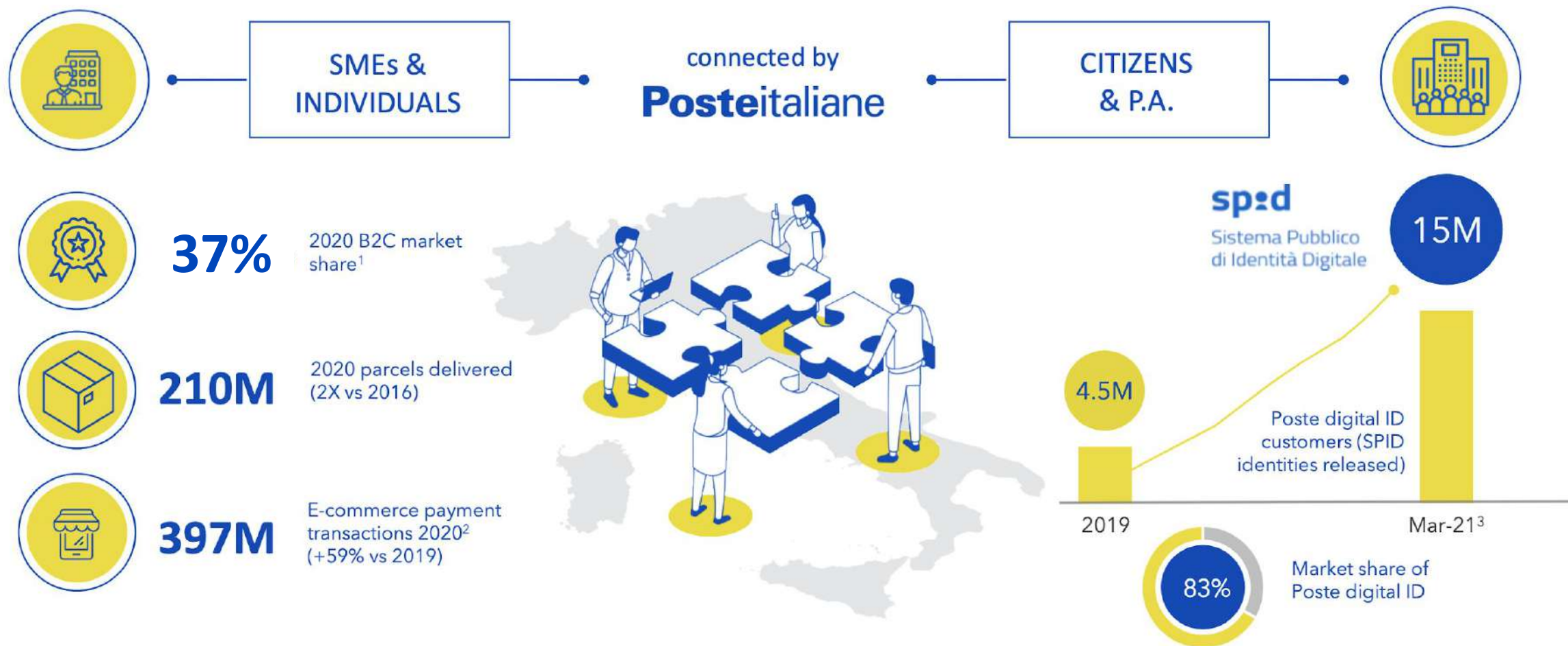


BUSINESS AMBITION FOR 1.5°C  

The Engine of innovation and digitalisation

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#digitaltransformation

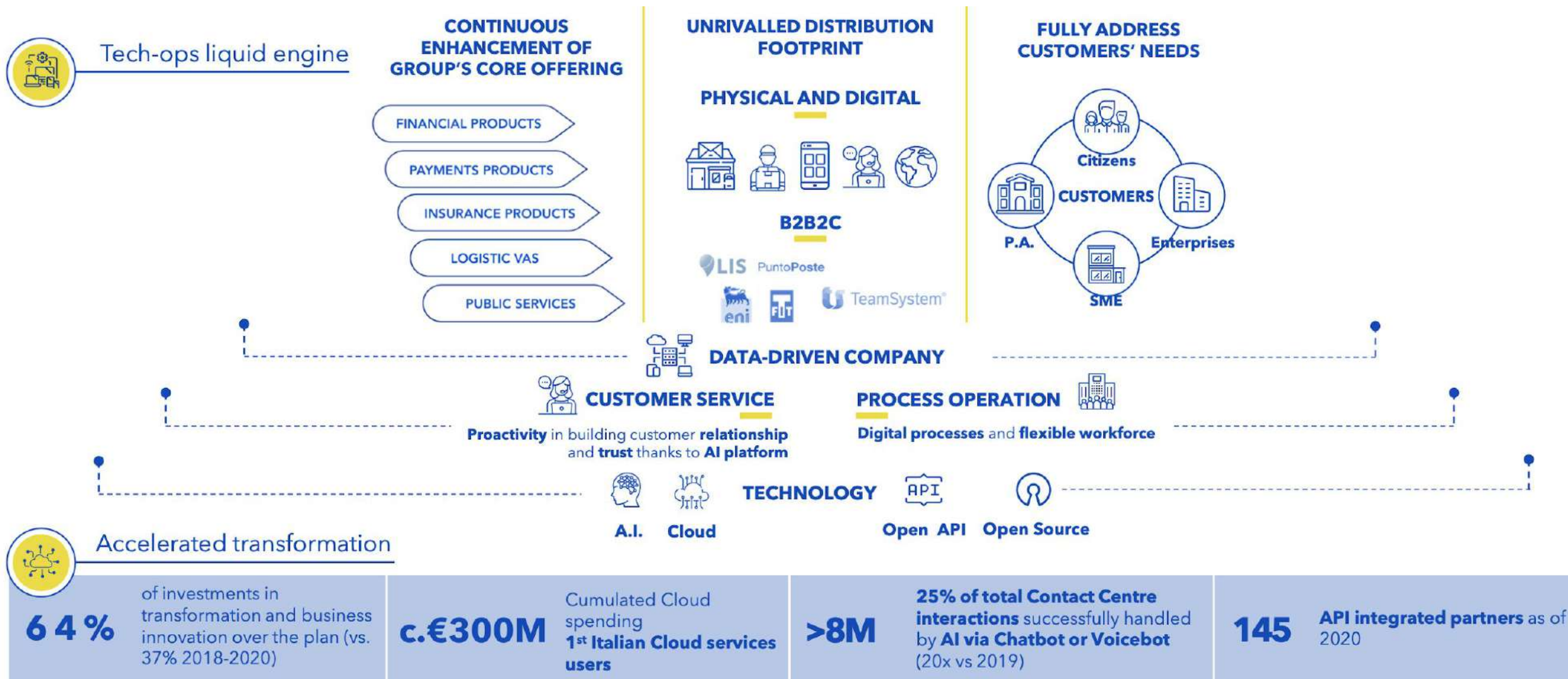


1. Mail & Parcel; 2. PostePay; 3. Update as of March 2021

A Tech enabled Company

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#techenabled



The «Tech» transformation

Our Transformation Pillars

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#culture

#api #cloud #streaming

API First

- Centralized or distributed gateways
- Economics
- Catalog
- Open Ecosystem
- Open API



Cloud First

- Containers
- 12-factor App
- Hybrid Cloud
- Microservices
- DevOps
- Exploit XaaS



Event First

- Streaming
- Realtime processing
- Decoupled Architectures

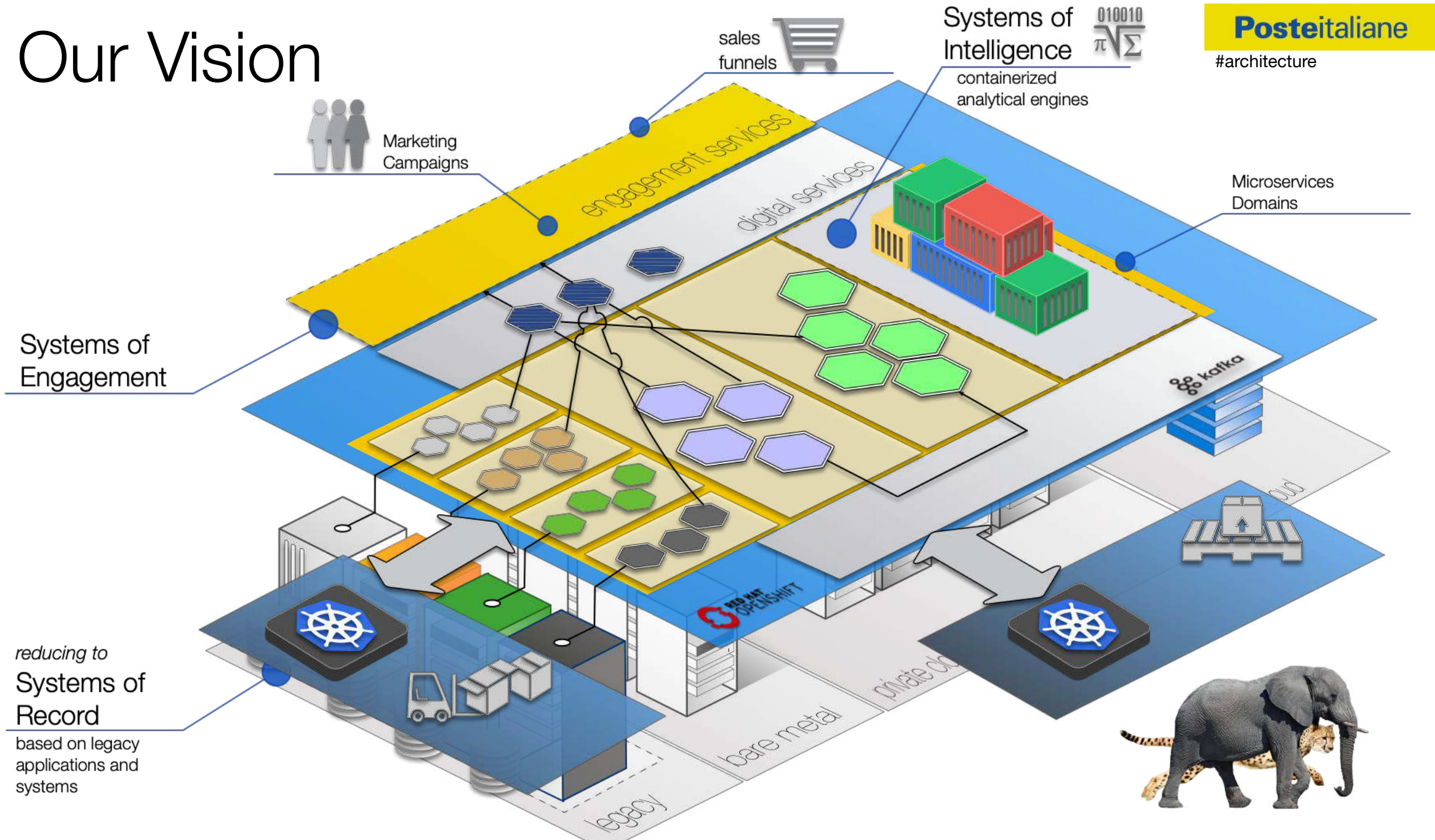


Mindset First

- Cultural Change
- Generative Society
- Collaboration
- Continuous Improvement
- Agile



Our Vision



After 1.5 Y



20 projects in dev stage
4 systems in production

1324 repos
~500 developer



13 clusters (OCP, Origin 3.9 and OKD 3.11)
1300 cores in production (WIP)

4 pipelines per project
1600 jobs



... and
Counting

Industrialization

Our Industrialization Pillars

Continuous Improvement

- Observability
- Quality gates
- Productization
- Feedback and Actionable Insights



Automation

- DevOps
- GitOps
- SecOps



Agile

- Iterative Process
- PSPI
- Lean
- Experiment
- Fail Fast
- PoC



Openness

- Community
- Standard
- Open APIs
- Open Source
- Active participation
- Dissemination



Transform, industrialize, rinse, repeat

```
package posteitaliane
```

```
import (  
    "transformation/pillars"  
    "industrialization/pillars"  
    "cloud/native"  
    "data/mesh"  
)  
  
type Platform struct {  
}  
  
func (p *Platform) Industrialize() {  
    for {  
        p.Transform()  
        // We build our own industrializazion foundations  
        p.BuildFoundations()  
        // Rebase also means cultural change  
        p.Rebase()  
        // Optimize is a continuous and iterative process  
        p.Optimize()  
    }  
}
```

```
func main() {  
  
    poste := &PosteItaliane{}  
  
    var wg sync.WaitGroup  
    // for the whole Company  
    for _, p := range poste.Platforms() {  
        wg.Add(1)  
        go func() {  
            defer wg.Done()  
            p.Industrialize()  
        }()  
    }  
    wg.Wait()  
}
```

IT DOESN'T COMPILE WITHOUT A CULTURAL
CHANGE

Let's talk about
Technology

Our Ideal Multi Hybrid Cloud Resiliency Model

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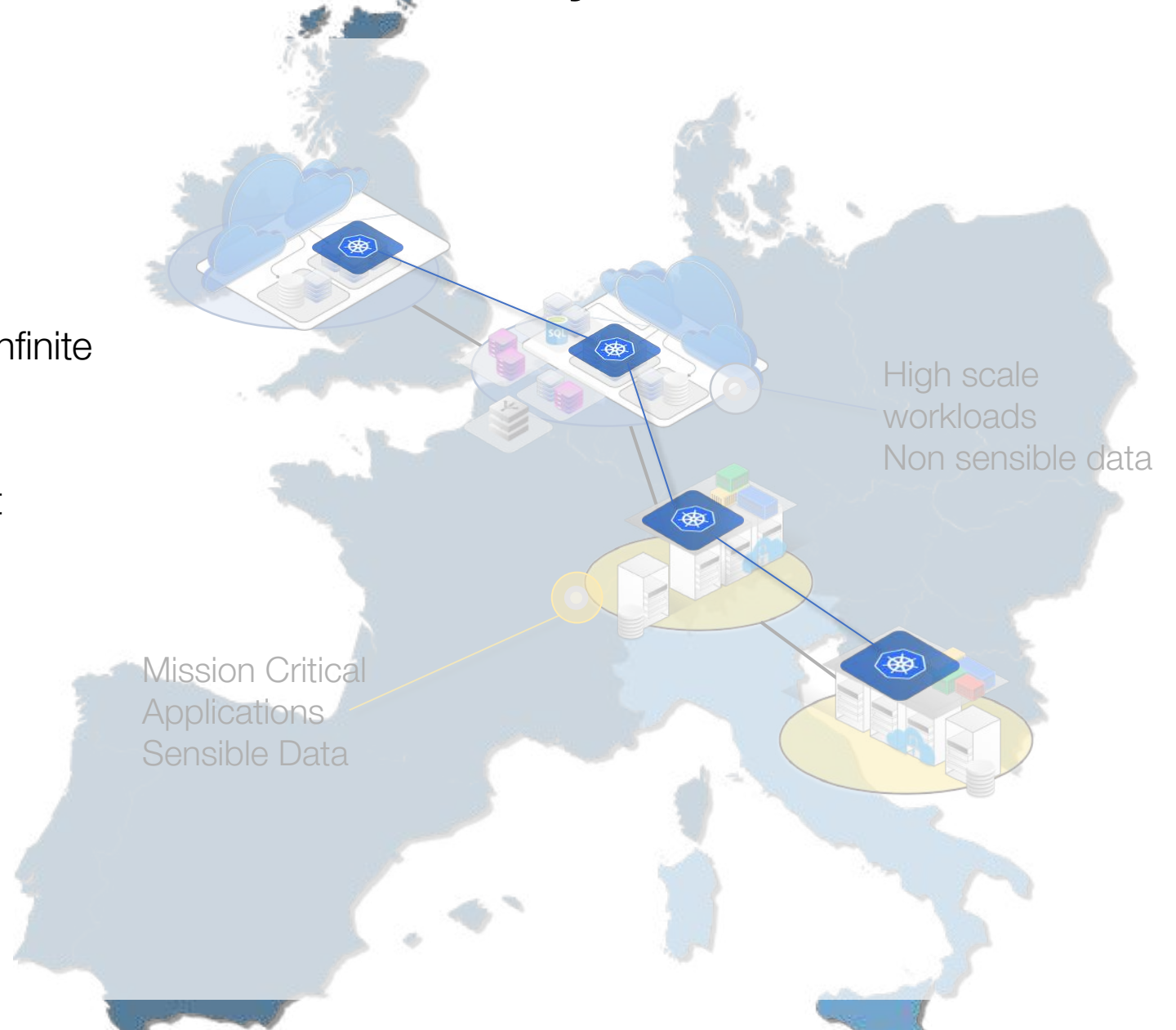
#hybridcloud

A model that is resilient to the fault of a region forces to have a geographical distribution of the workloads in an **Active-Active** design

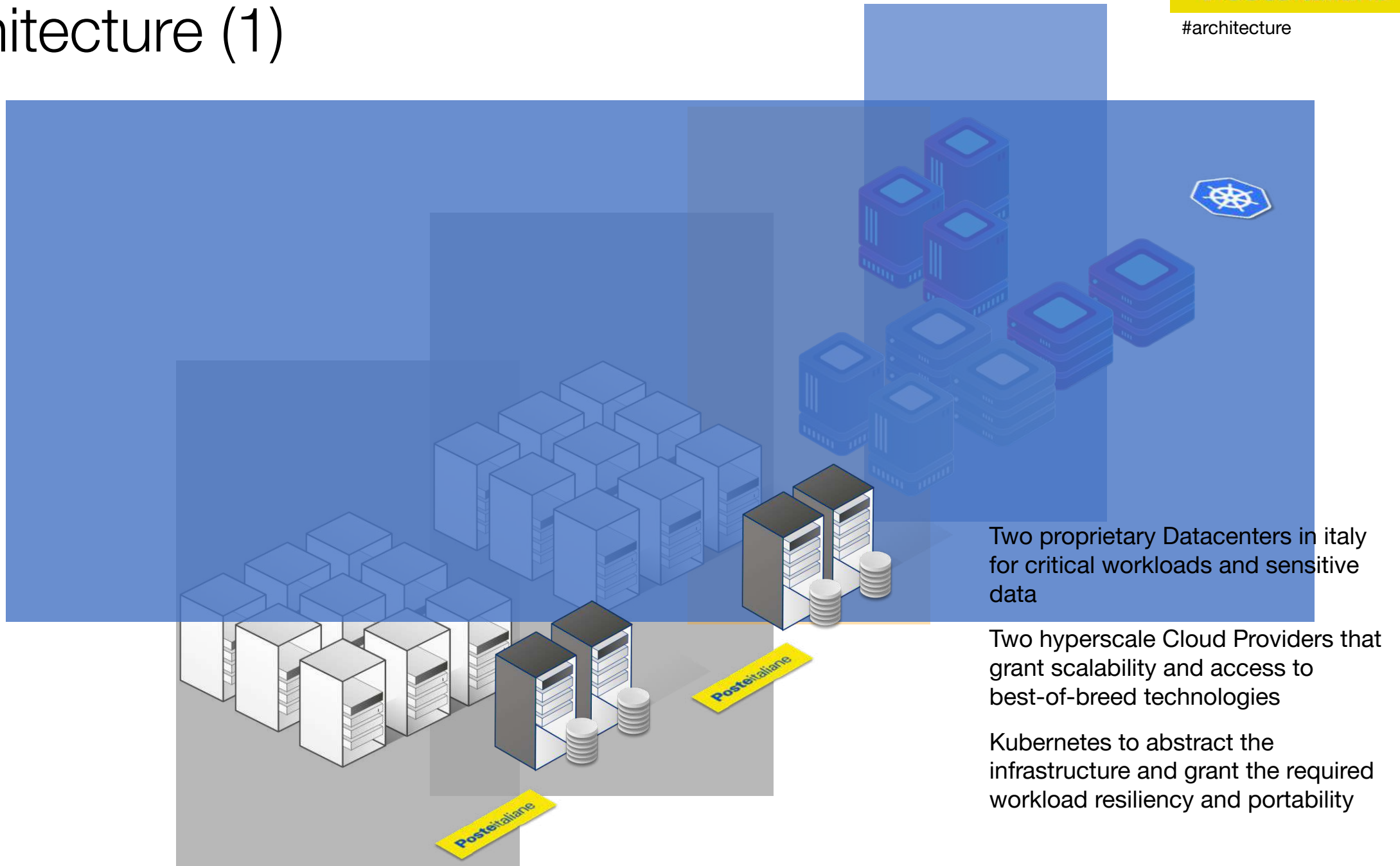
The Public Cloud allows us to access to **best-of-breed technologies** and to virtually infinite resources

Mission Critical applications or workload that deal with **sensitive data** can be deployed on proprietary data centers

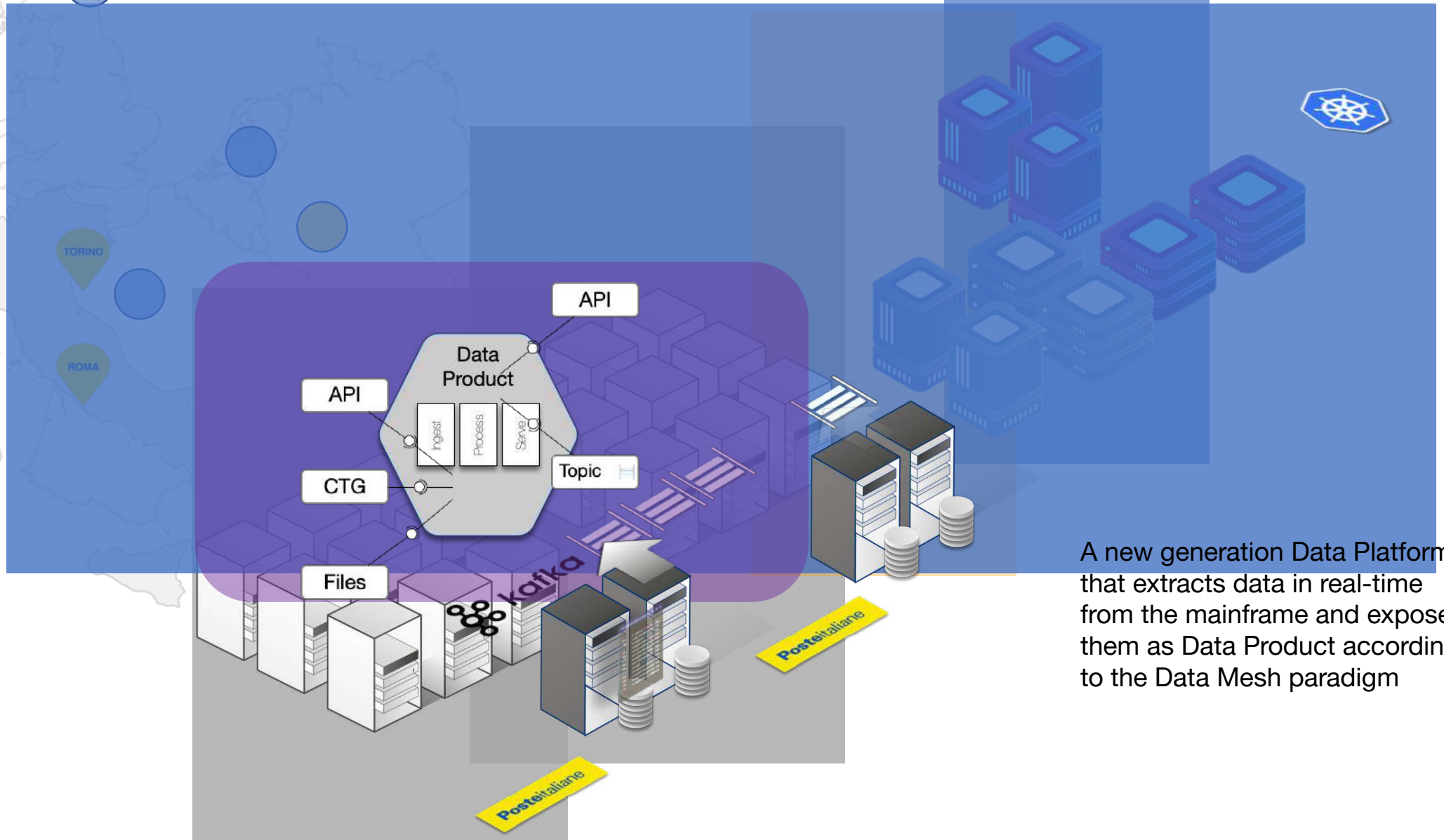
Containerization allows to move almost every workload everywhere



Architecture (1)



Architecture (2)

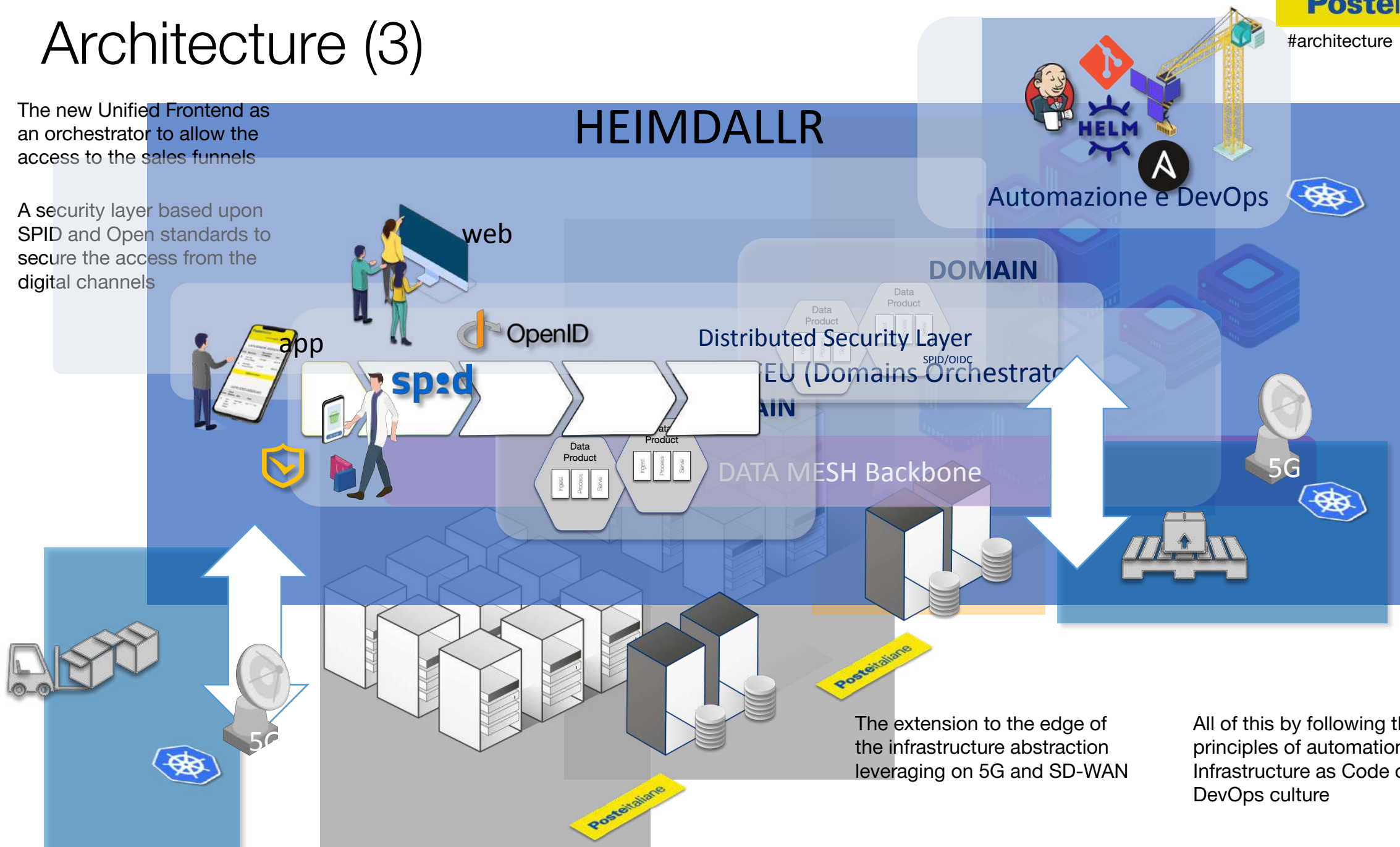


A new generation Data Platform that extracts data in real-time from the mainframe and exposes them as Data Product according to the Data Mesh paradigm

Architecture (3)

The new Unified Frontend as an orchestrator to allow the access to the sales funnels

A security layer based upon SPID and Open standards to secure the access from the digital channels



The extension to the edge of the infrastructure abstraction leveraging on 5G and SD-WAN

All of this by following the principles of automation and Infrastructure as Code of a DevOps culture

After 1.5 Y



20 projects in dev stage
4 systems in production

1324 repos
~500 developer



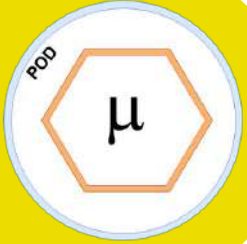
13 clusters (OCP, Origin 3.9 and OKD 3.11)
1300 cores in production (WIP)

4 pipelines per project
1600 jobs



... and
Counting

After 3.5 Y



290 projects (namespace) in dev stage
337 systems (namespace) in production



25 clusters/281 nodes (OCP 3.11 e 4.7 - AllEnv)
3413 cores in production (total capacity)



461 charts in production
3117 release
688 chart in dev
2488 release

~10000 repos
~ 924 mantainers
~ 1193 developers



1869 Build pipelines
2911 Deploy pipelines in production



... and
Counting

Some Use Cases

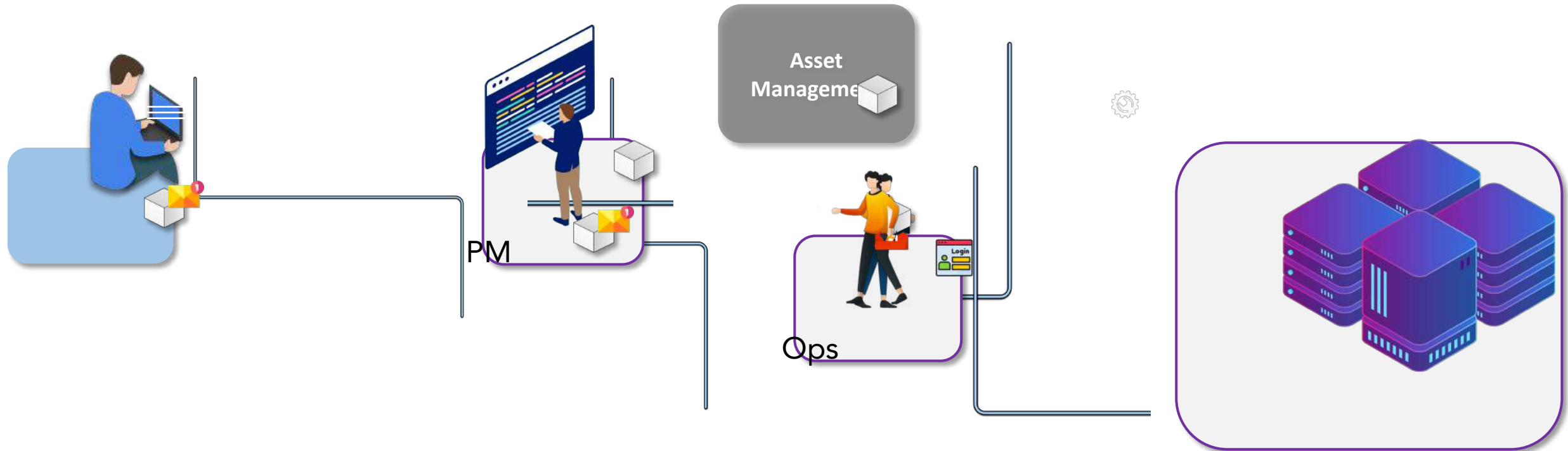
Use Case #1: Automation

code is the truth, automation is
power

The Pain

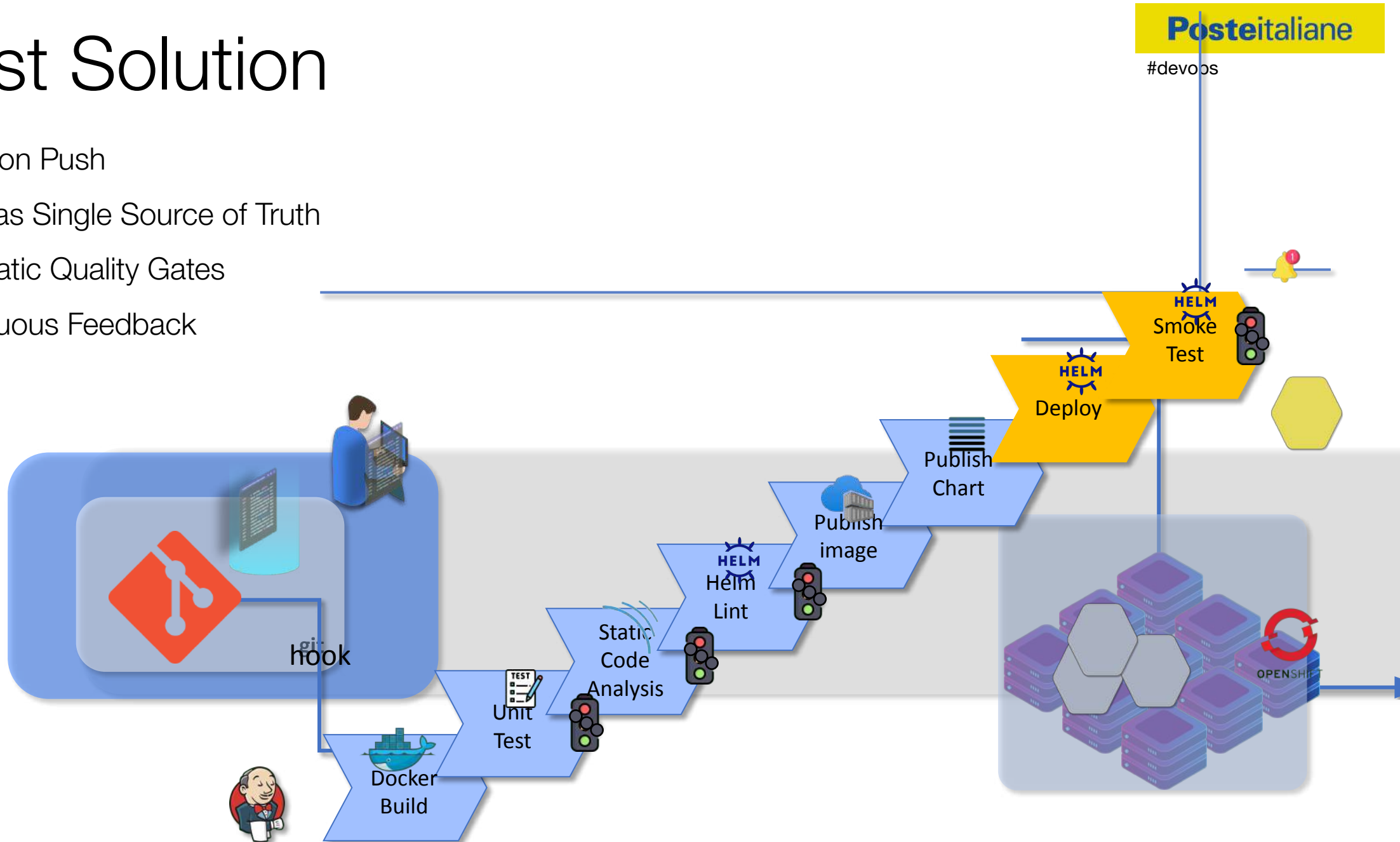
- Everything was manual
- TicketOps
- No repeatable actions
- Snowflakes

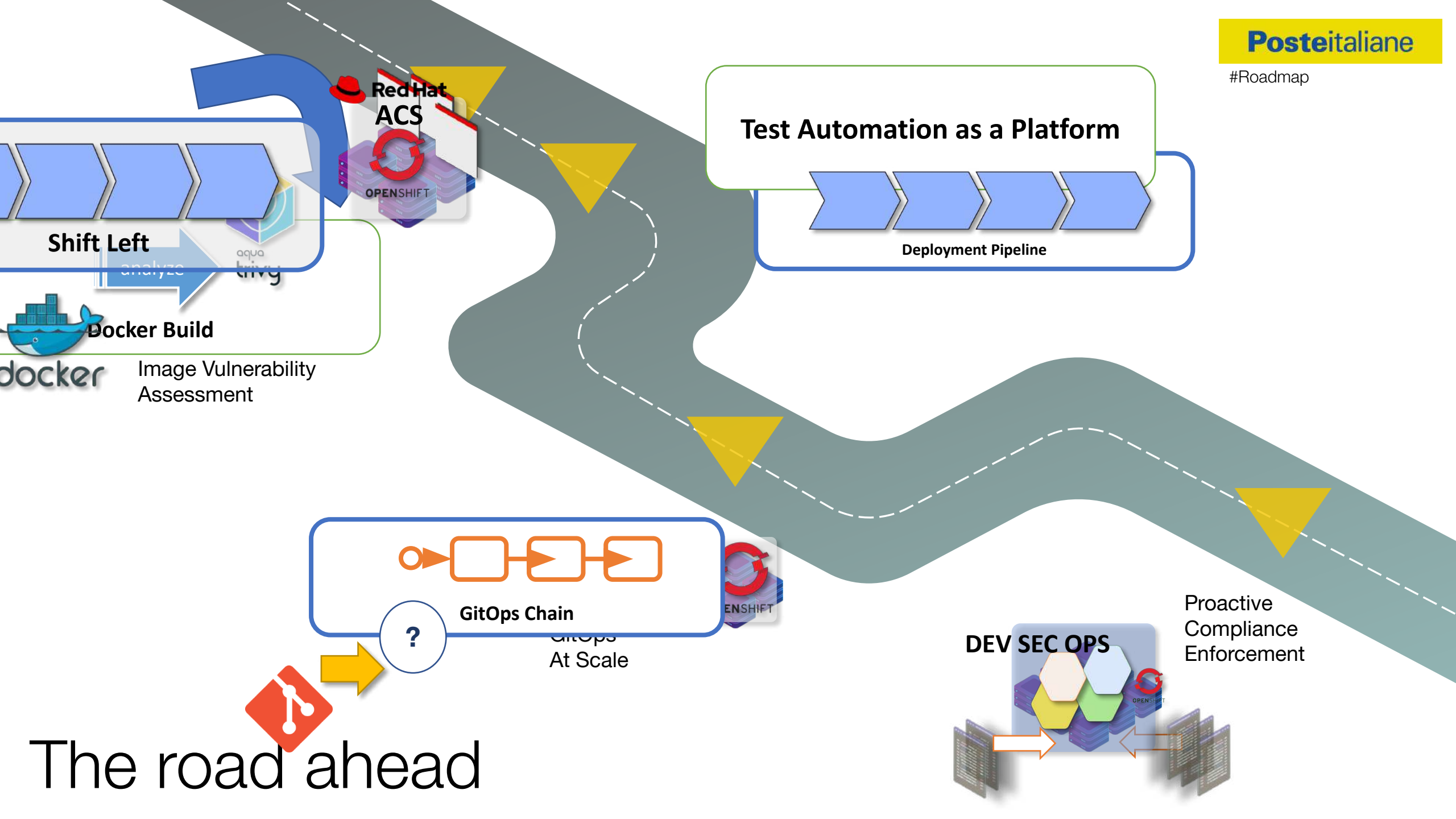
- Long Installation Procedures
- Error prone
- Human based



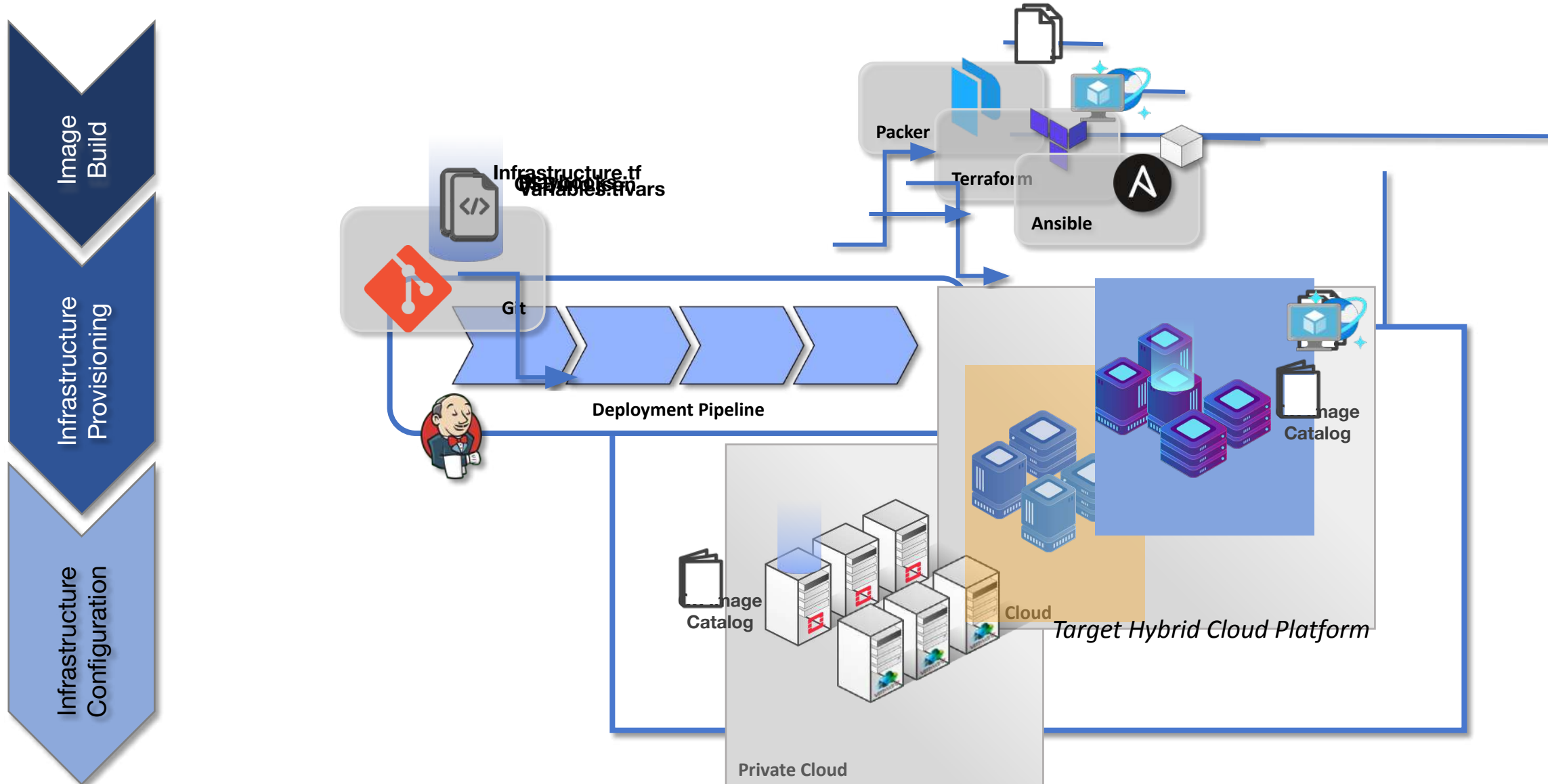
A first Solution

- CI/CD on Push
- Gitlab as Single Source of Truth
- Automatic Quality Gates
- Continuous Feedback
- HELM





Not just the applications... IaC



Sneak Preview: Gen 3

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Pierluigi Sforza



Posteitaliane

Giuseppe Brindisi



 **Red Hat**

Matteo Bernacchi

HYBRID CLOUD CONTAINER PLATFORM

LA TERZA GENERAZIONE DELLA PIATTAFORMA IBRIDA E FULL STACK
AUTOMATED DI POSTE ITALIANE

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Use Case #2: Data Mesh

the road to...

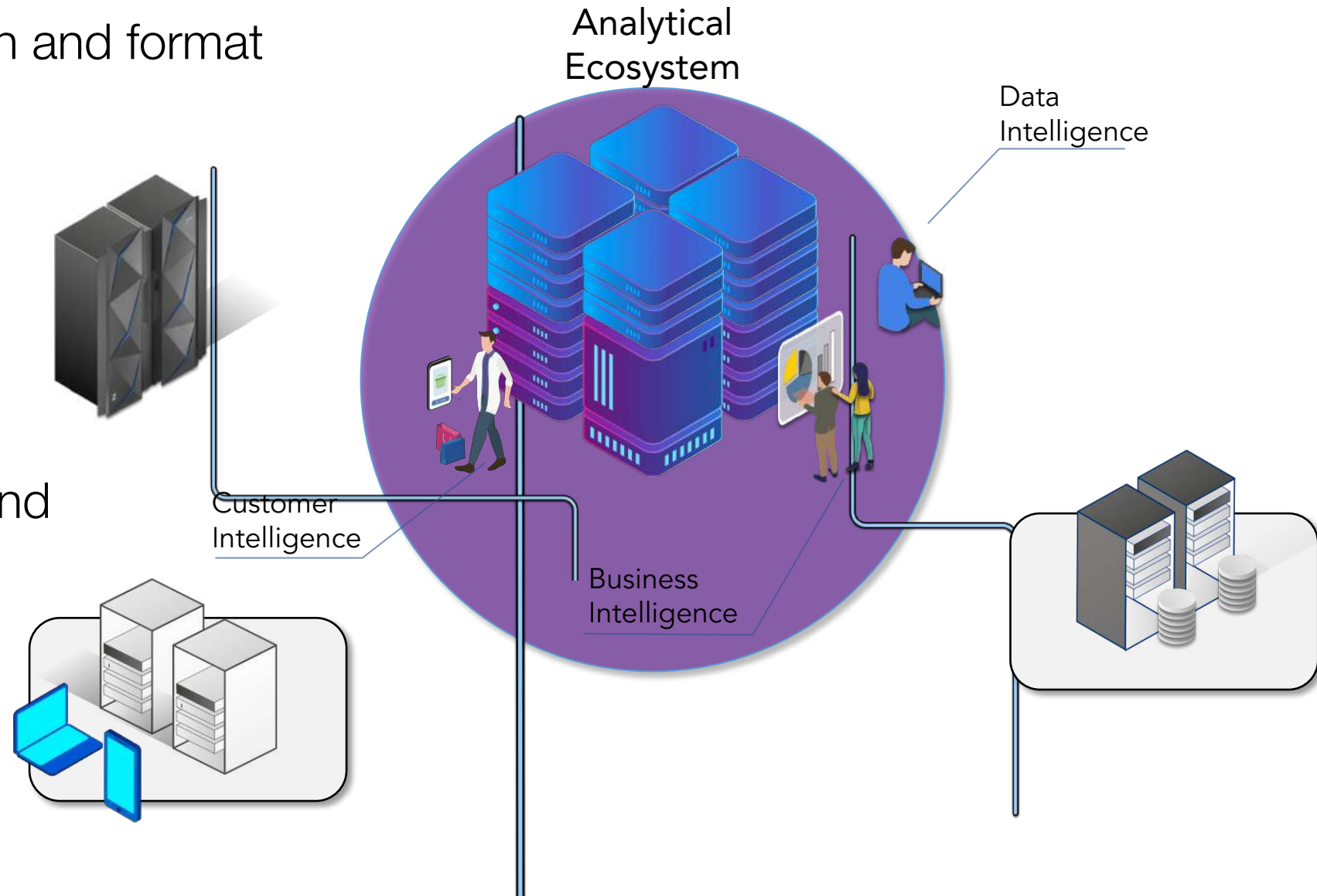
The problem: A Monolithic Data Platform

No Standards for ingestion and format

Batch oriented

Need for Infra Continuous
Augmentation/Renewal

Centralized Governance and
skills



The Solution: Data Mesh

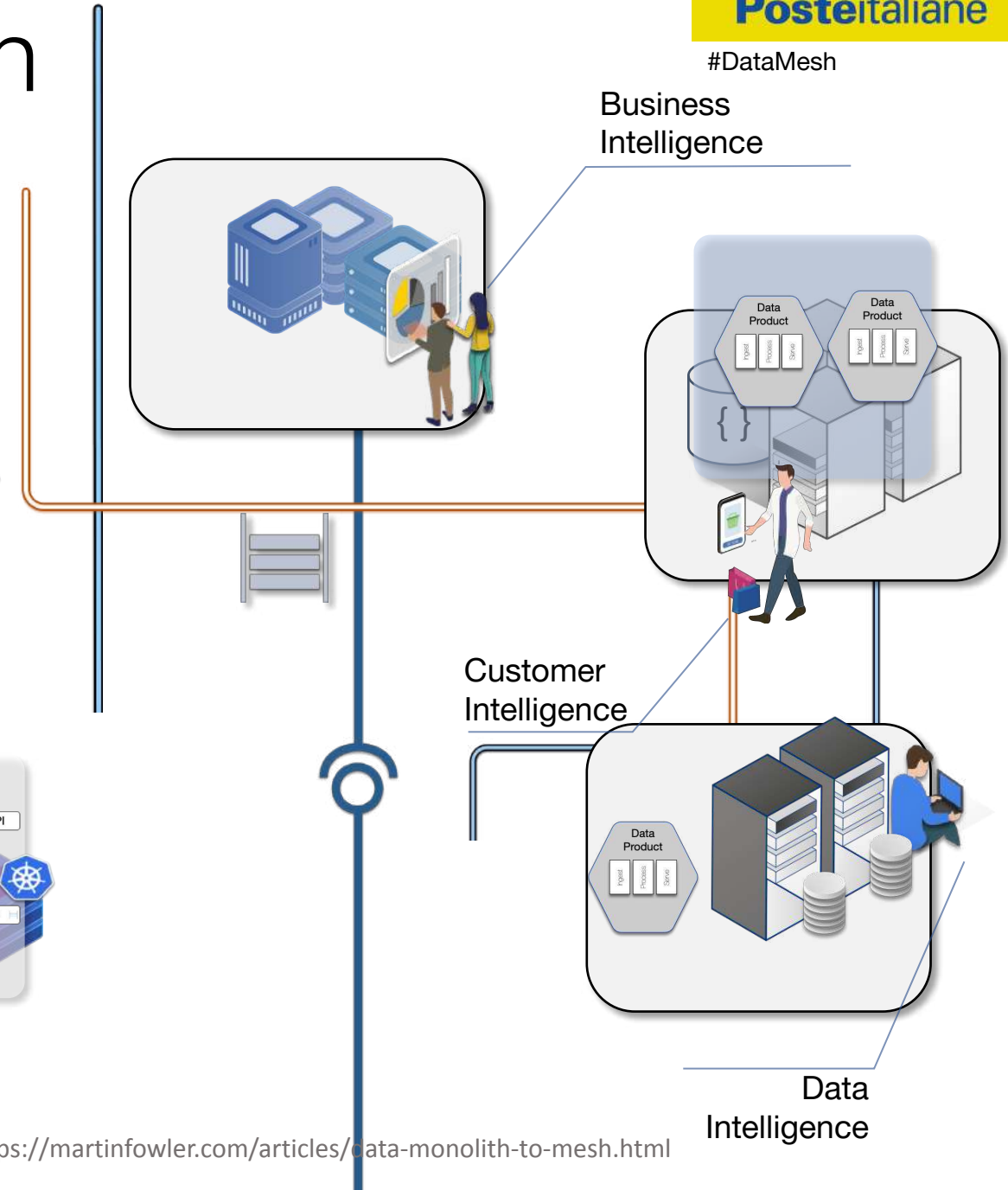
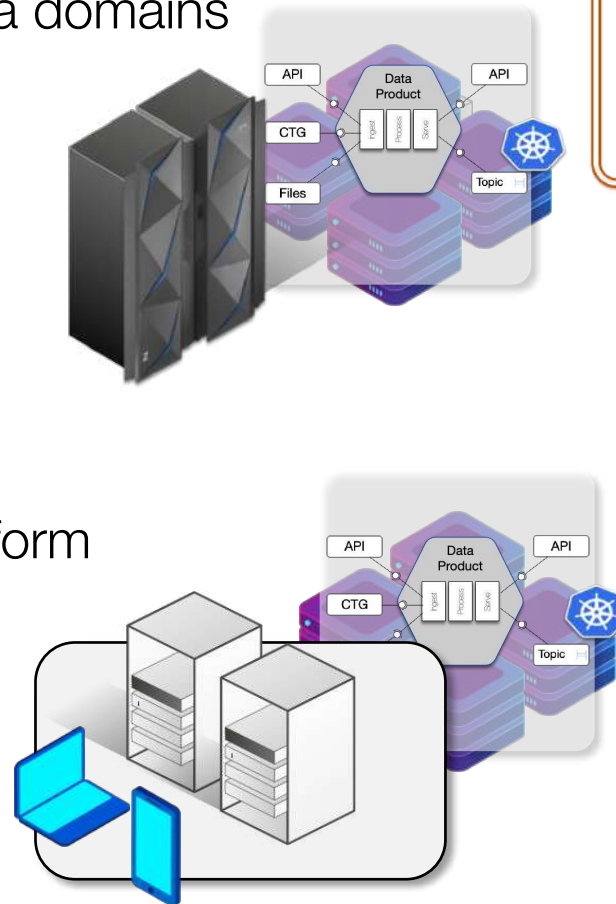
Standards for Data and communication (ports)

Self Certified Distributed Data domains

Real-time

Analytics at Scale

Common Technological Platform
(ideally in self provisioning)

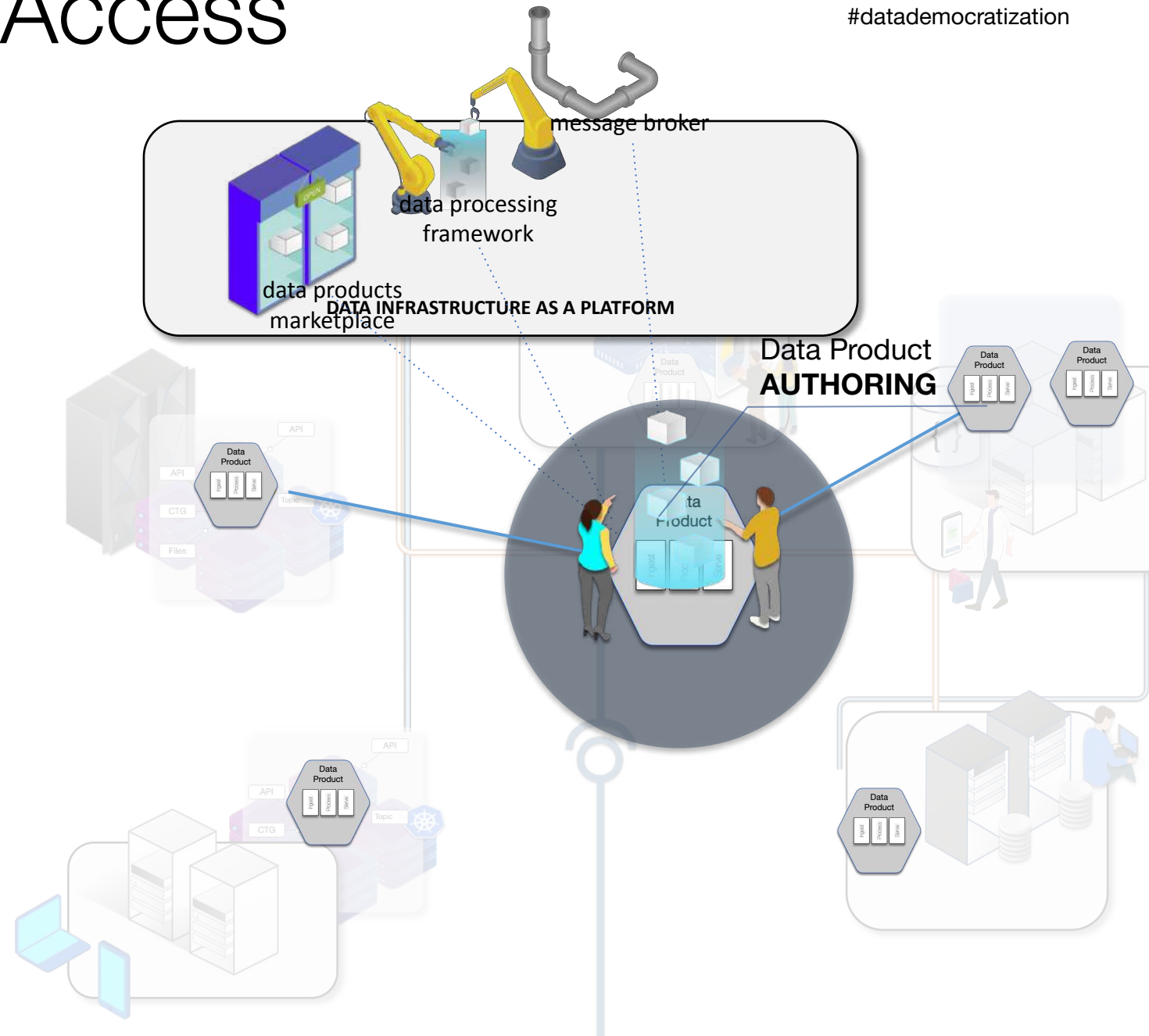


Democratize Data Access

And what about Data Scientists?

We need to democratize data access with standard tools that the «data guys» feel comfortable using

A central Data Product Marketplace with the published Data from which they can choose Data Products to analyze and publish their results as new Data Products for everyone to consume



An Application: Mainframe Offloading

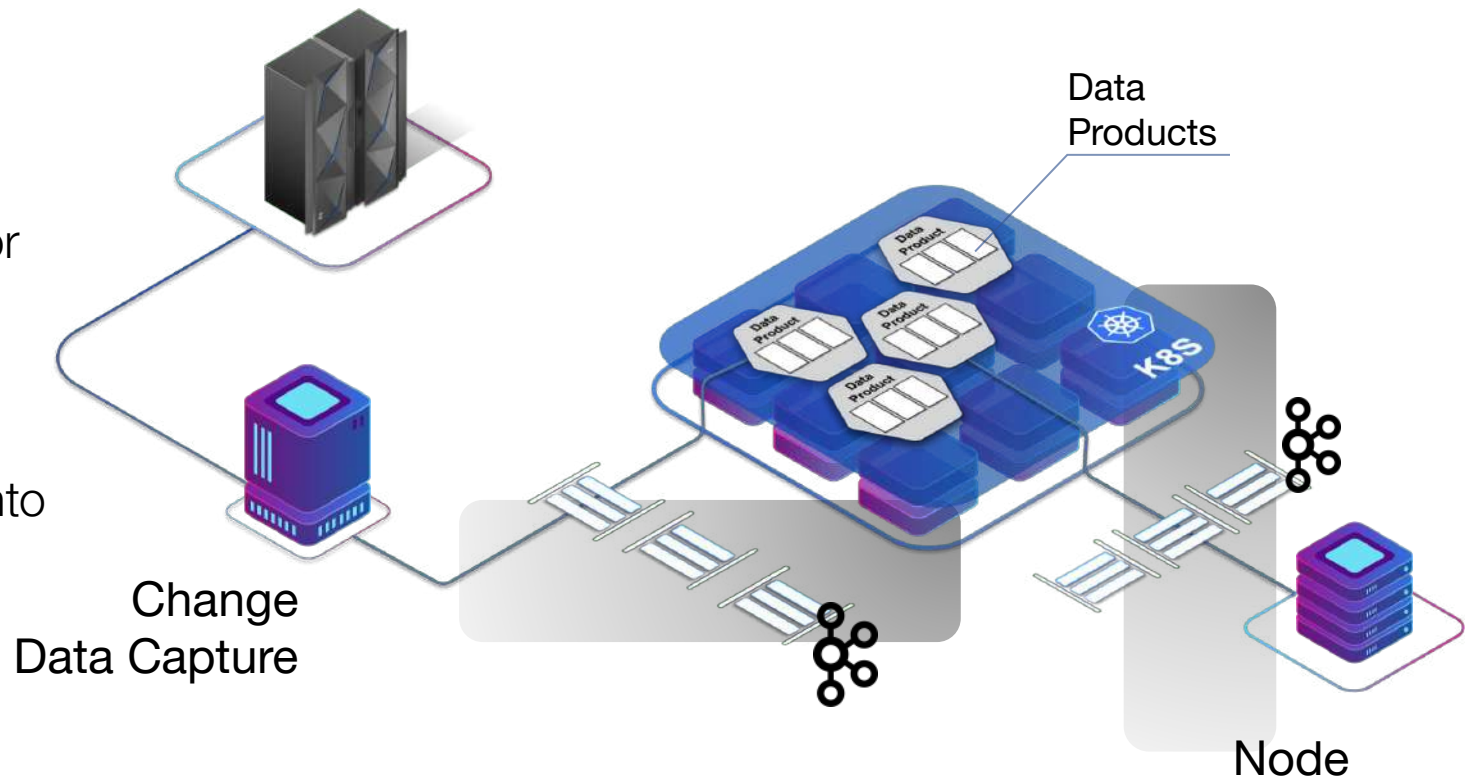
Transactions are captured via CDC from the Mainframe

and raw Data is streamed out

The CDC is a certified Kafka Connector

Complex Topologies aggregate Data into different Data Products

The Data Products are consumed by other nodes and by the digital channels

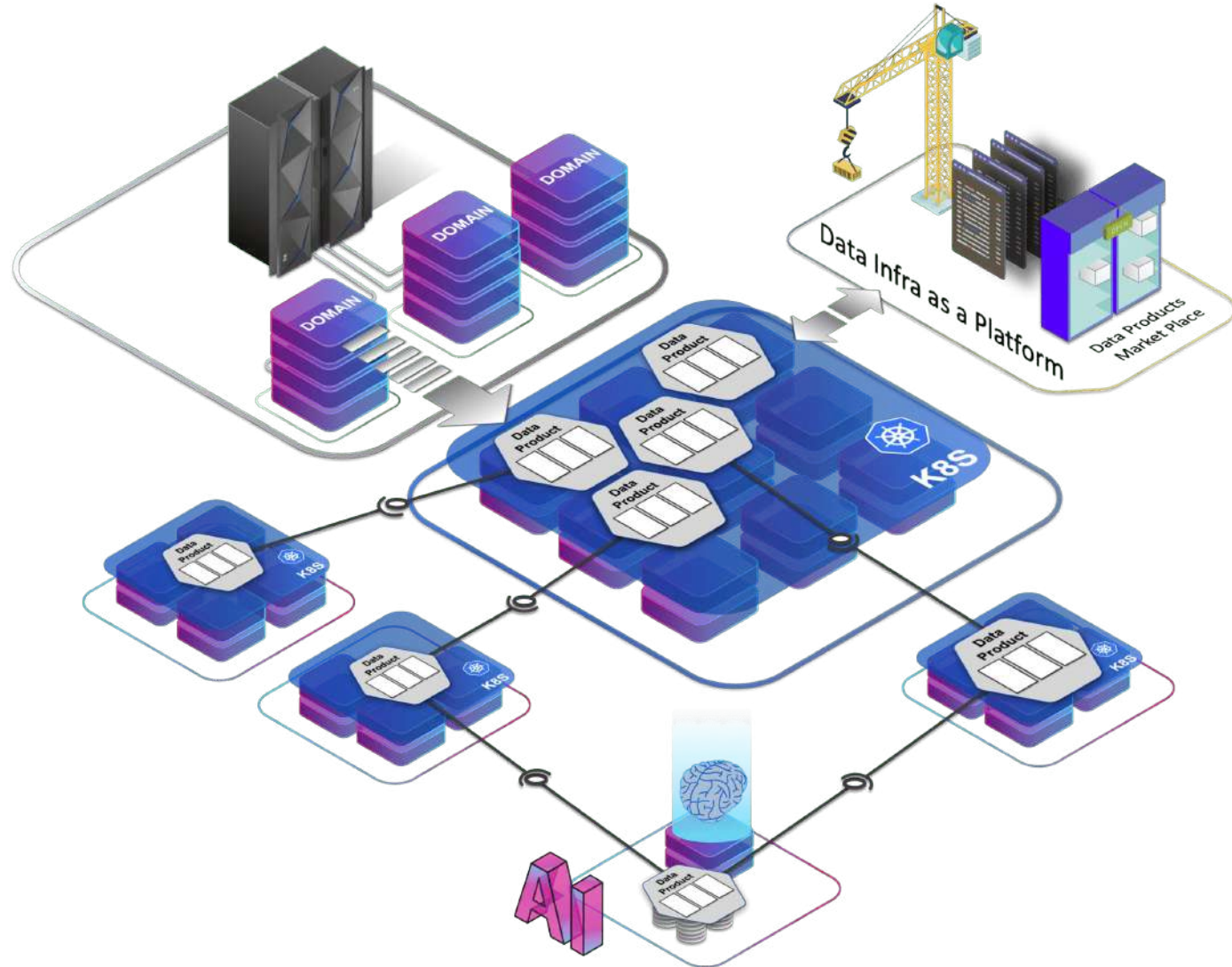


Mainframe Offloading... why?

Driving the cost down

Protecting the Mainframe from the unpredictable load surges of the digital channels

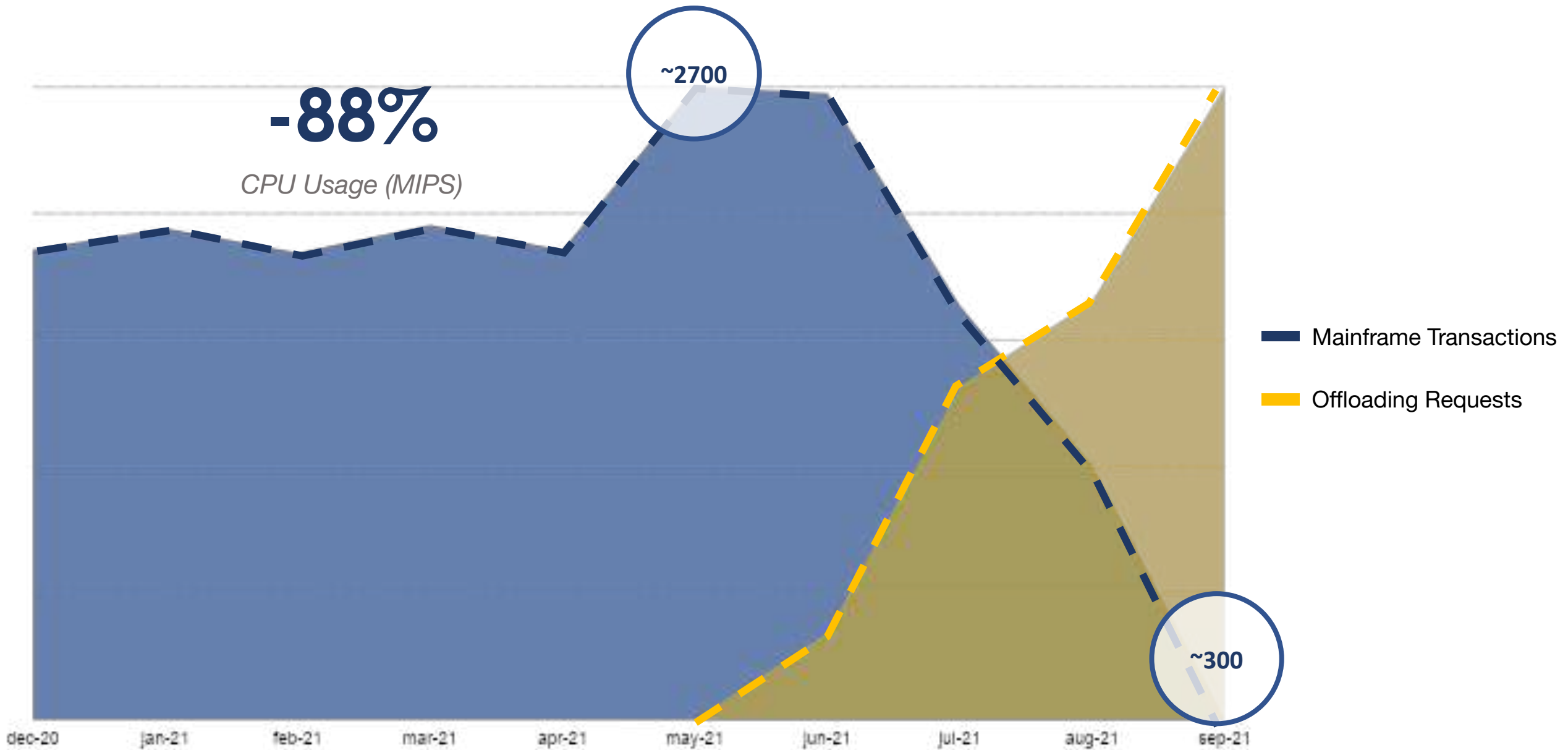
Once you have different Data Mesh Nodes, each one with its own Data Products you can consume them on different channels, build a hierarchy of nodes, both descriptive and predictive



Some Numbers

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#MainframeOffloading



Use Case #3: VA
 X

The Pain

Well.... You know

Our Solution

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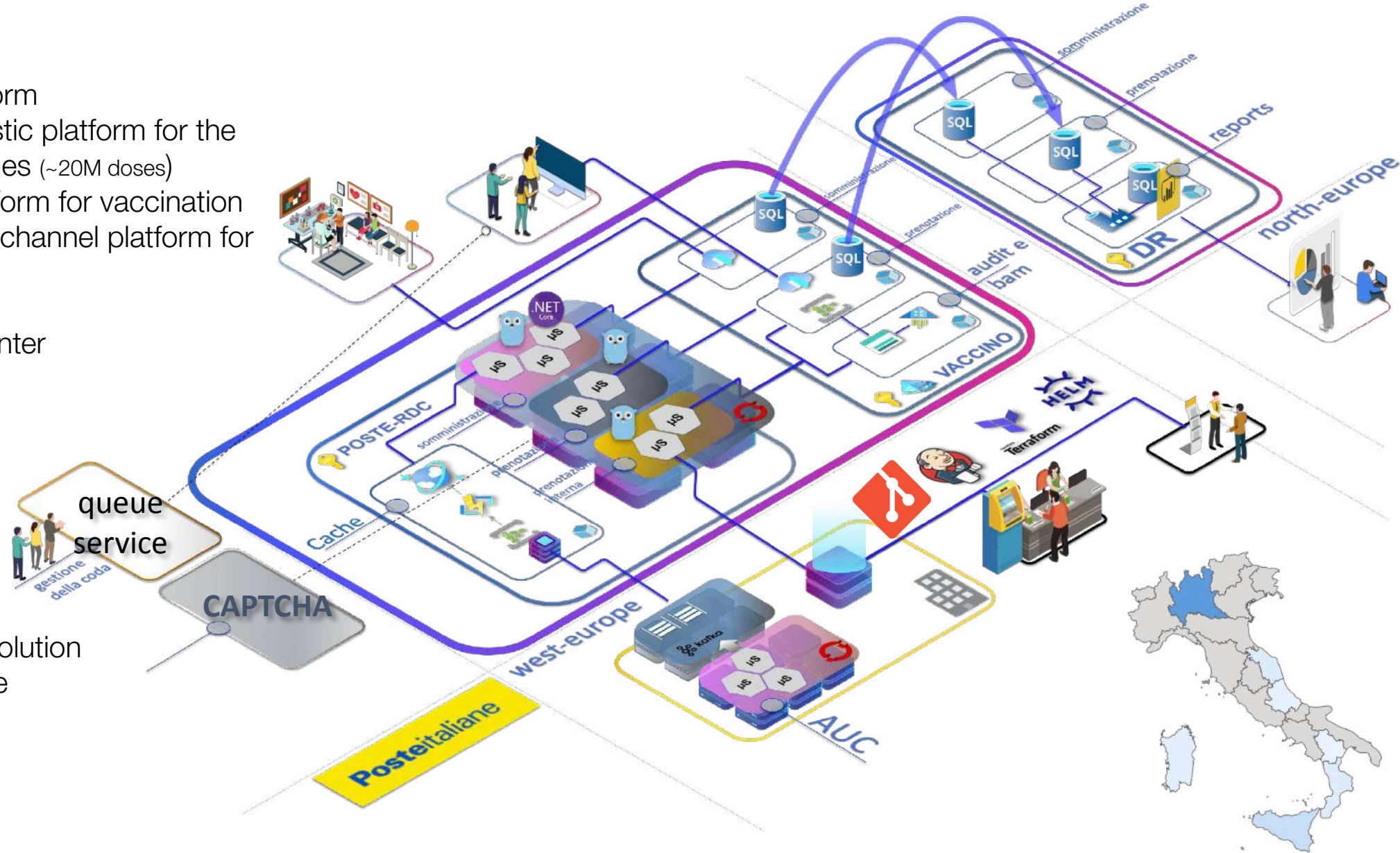
#covid19 #vax

WHAT

- An «end to end» Platform
 - A dedicated logistic platform for the delivery of vaccines (~20M doses)
 - A dedicated platform for vaccination
 - A dedicate multi-channel platform for booking:
 - Web
 - Contact Center
 - Postmen
 - ATM

HOW

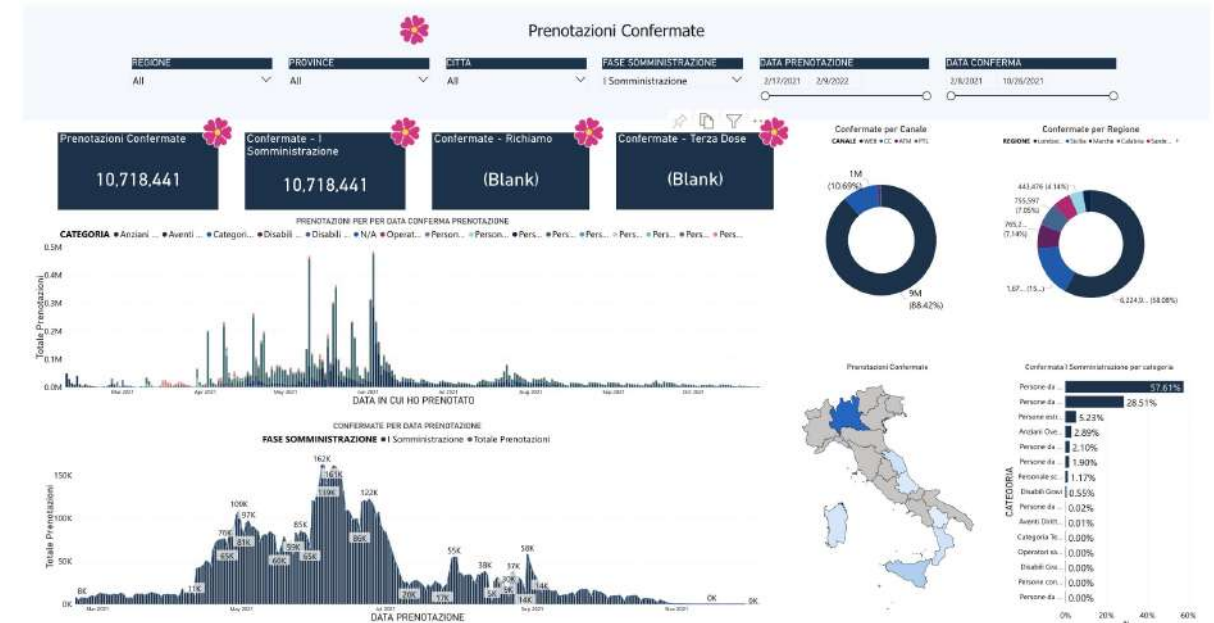
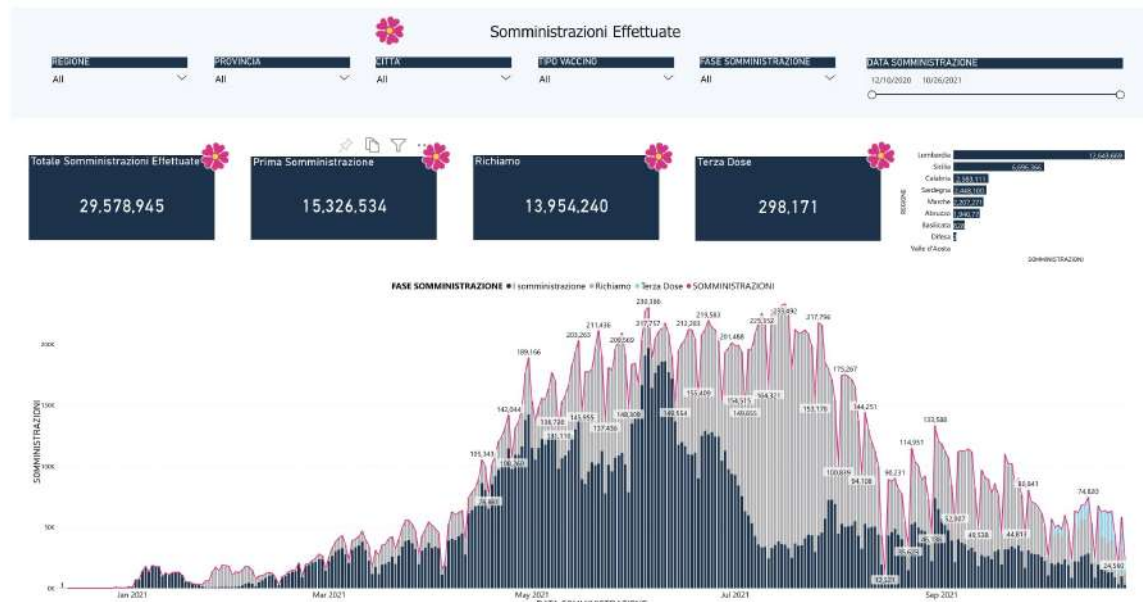
- A Multi Hybrid cloud solution
- Kubernetes at the core
- Resilient by design
- Monitored in real-time



Some Numbers

- 30M total administered doses
- 14M full vaccination cycles

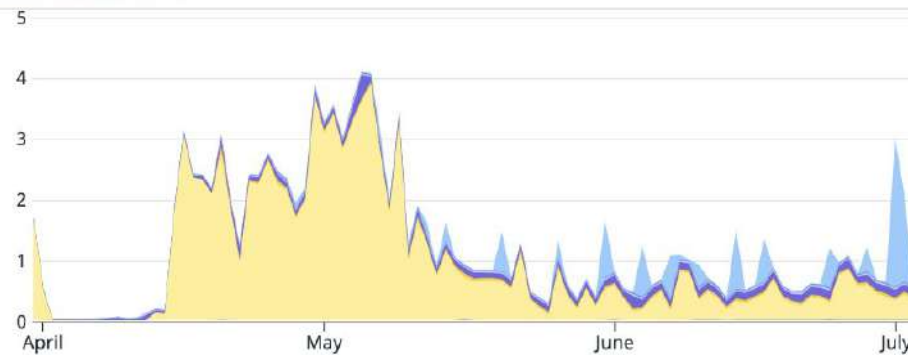
- 11M booked slots
- ~500k slots booked in a single day



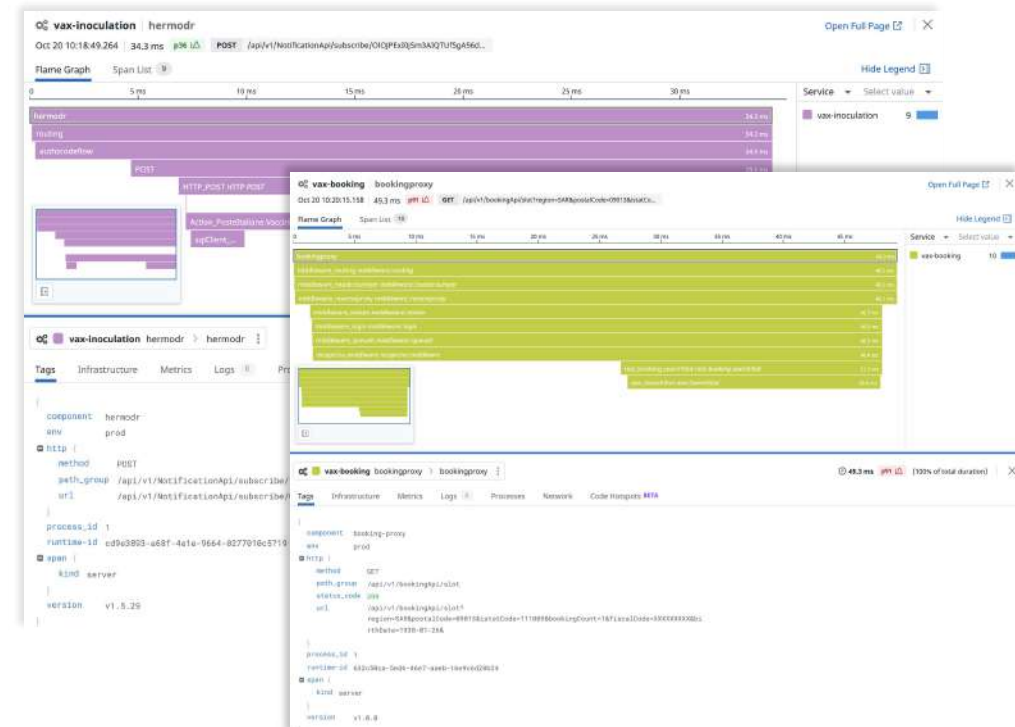
Some IT Numbers

- 47 Helm Charts
- 2250 deployments in 10 Months (peak 600 in January)
- 222 total pod replicas
- 89 total GB memory used (limits...)
- 61 total CPUs used (limits...)

Kubernetes CPU



LOMBARDIA - SMS Sent by Provider



Thank you

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