

# Why Microservices Fail Steve Ross-Talbot - CTO, Estafet









### **Enterprise Integration**

- Integration Experts for 15 years
- Specialists in Red Hat Middleware
- OpenShift 3

#### Agile Delivery

- Experts with Distributed Agile
- Estafet UK & Bulgaria (to scale delivery)





#### Mobile Development

### Big Data & IoT

- Extending Integration Projects
- Apple iOS experts

- loT Big Data Delivery
- BI Reporting
- Delivering Large IoT Applications











- Co-author of the SOA Manifesto
  - Serial entrepreneur
- Professor of Distributed Computing

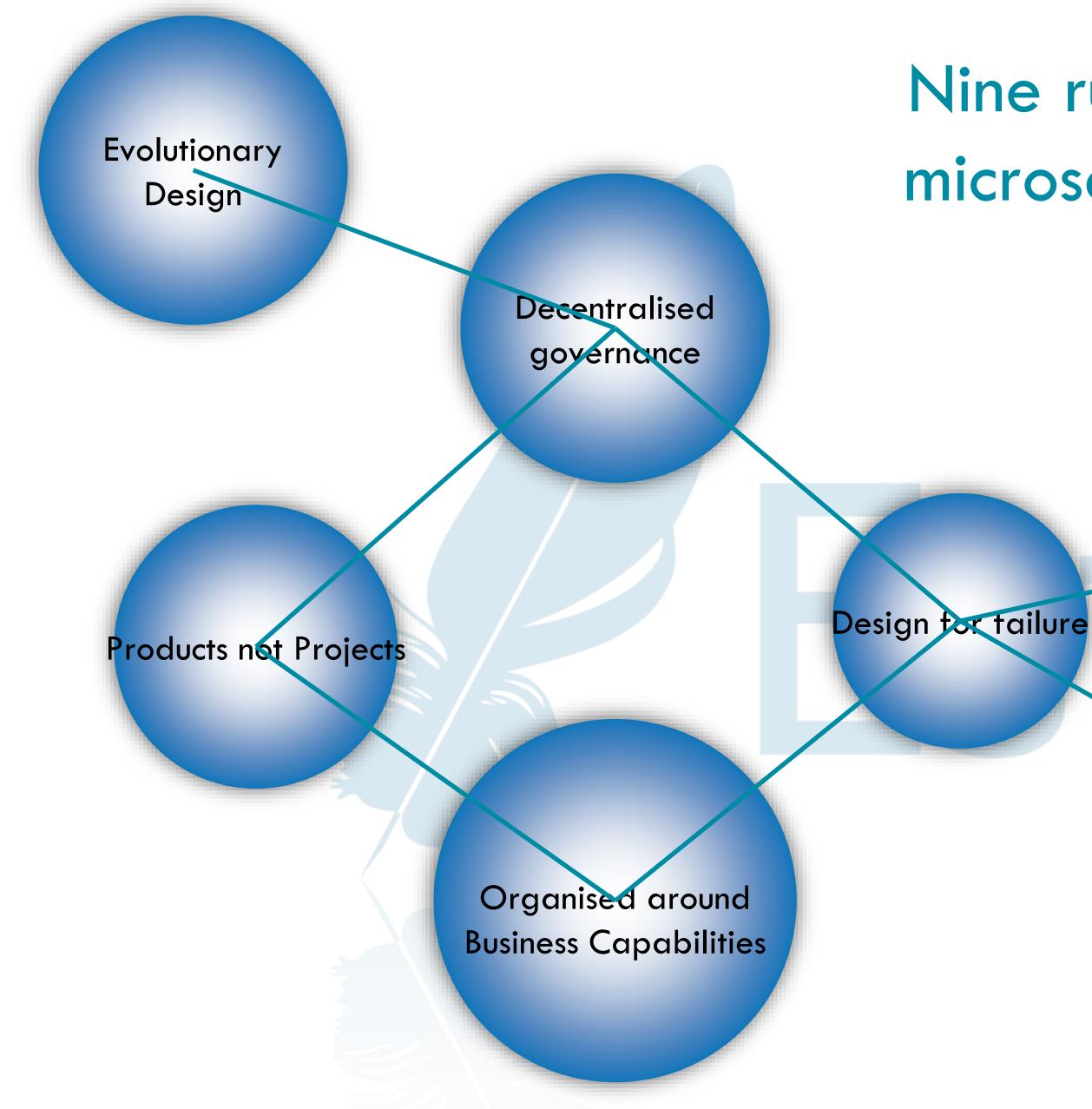


## About Me

- Chief Technology Officer at Estafet
- Former chair of Web Services at W3C
- Former chair of W3C's Web Services Choreography WG







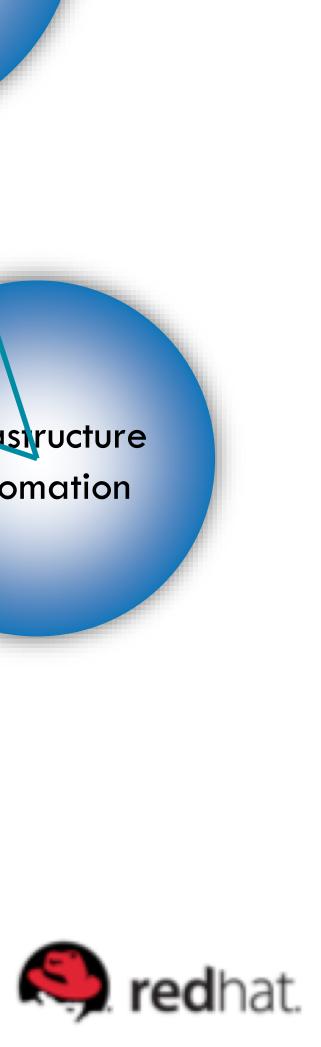
RED HAT FORUM Europe, Middle East & Africa

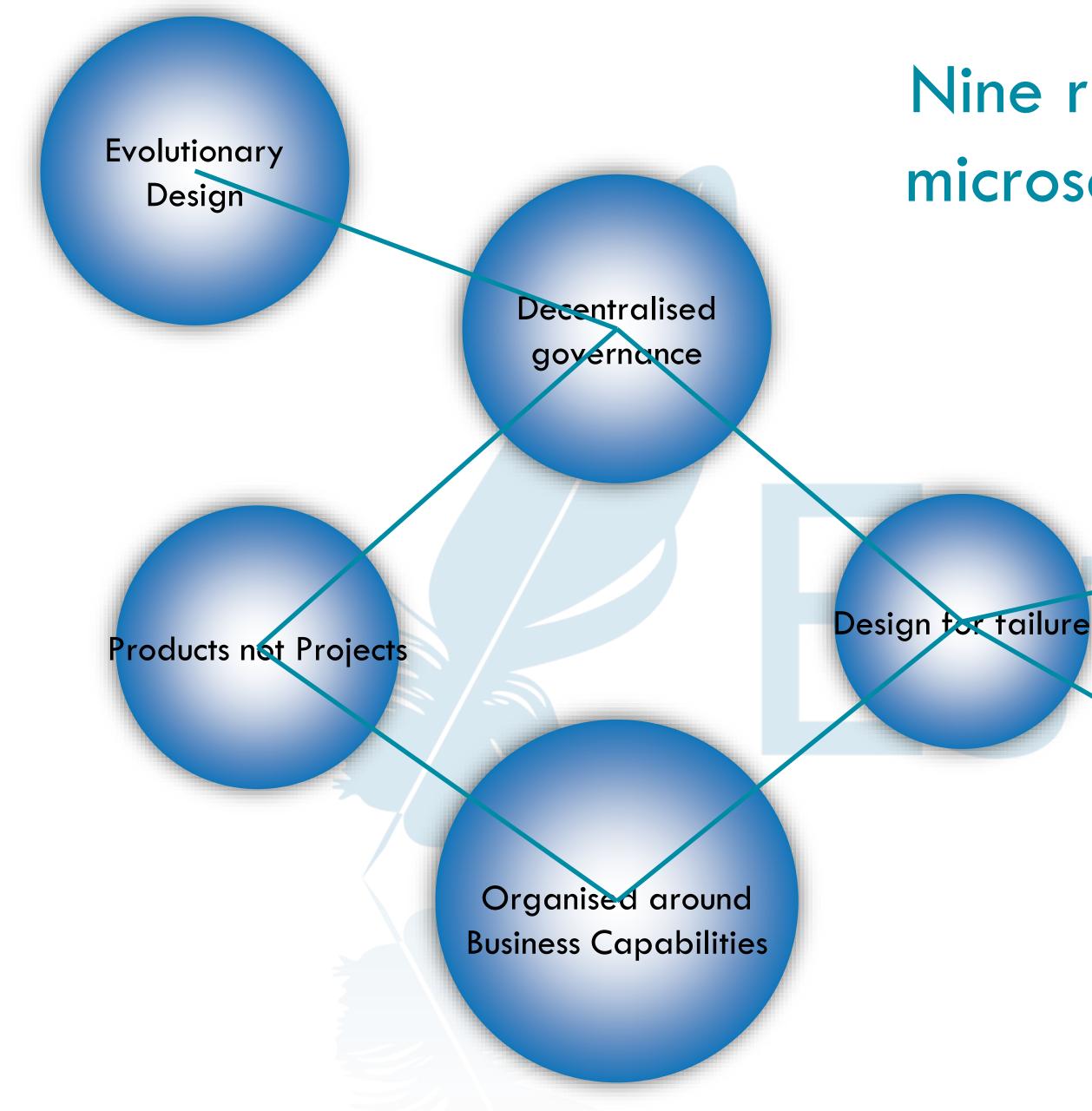
## Nine rules of microservices

#### Componentisation via services

#### Smart endpoints and dumb pipes

Infrastructure automation





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## Nine rules of microservices

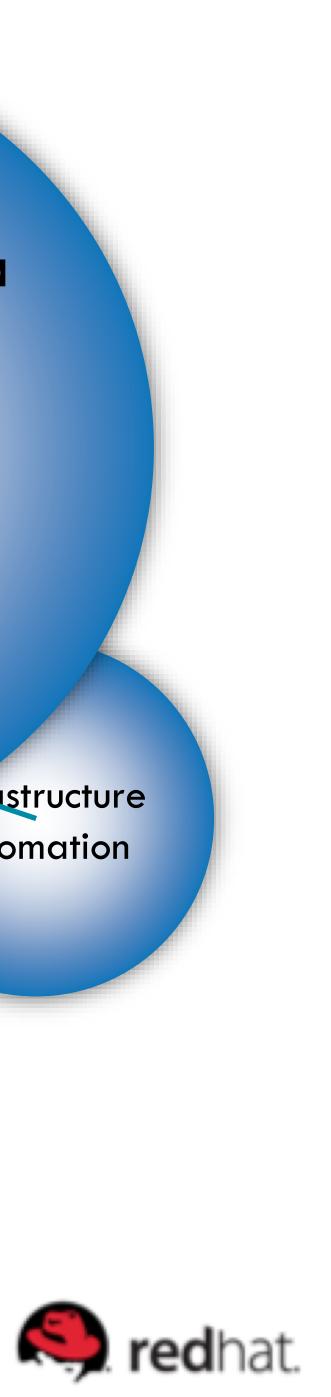
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## **Componentisation via** services

## Independent deployability over reuse

mastructure automation





Decentralised governance

**Products not Projects** 

## Organised around **Business Capabilities**

Business value-led



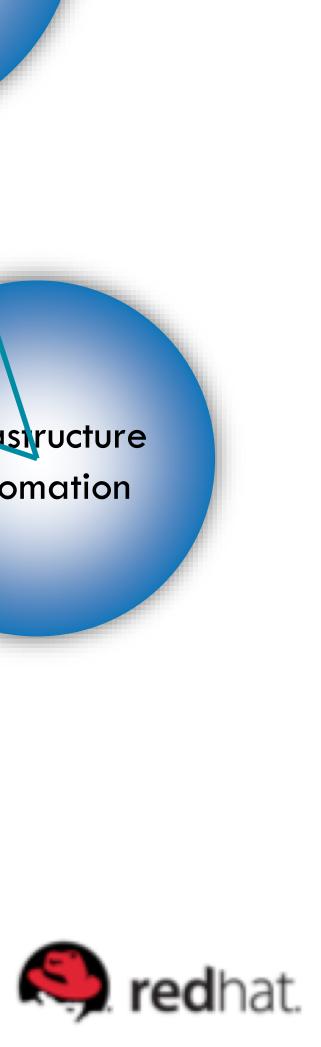
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## Products not Projects

workstreams

ed around ss Capabilities



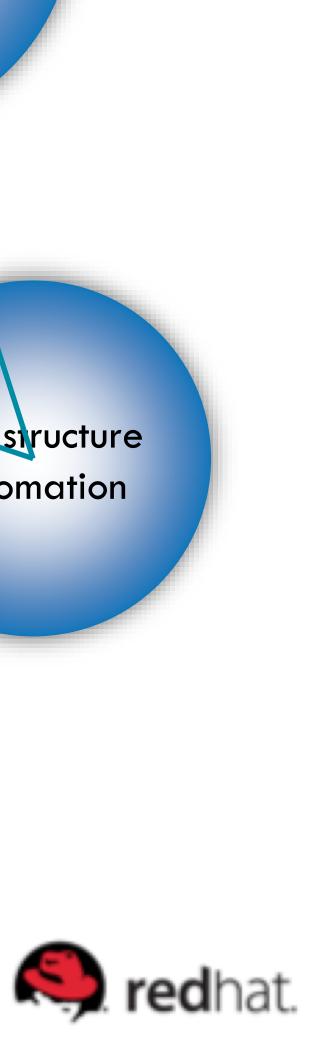
Design for tailure

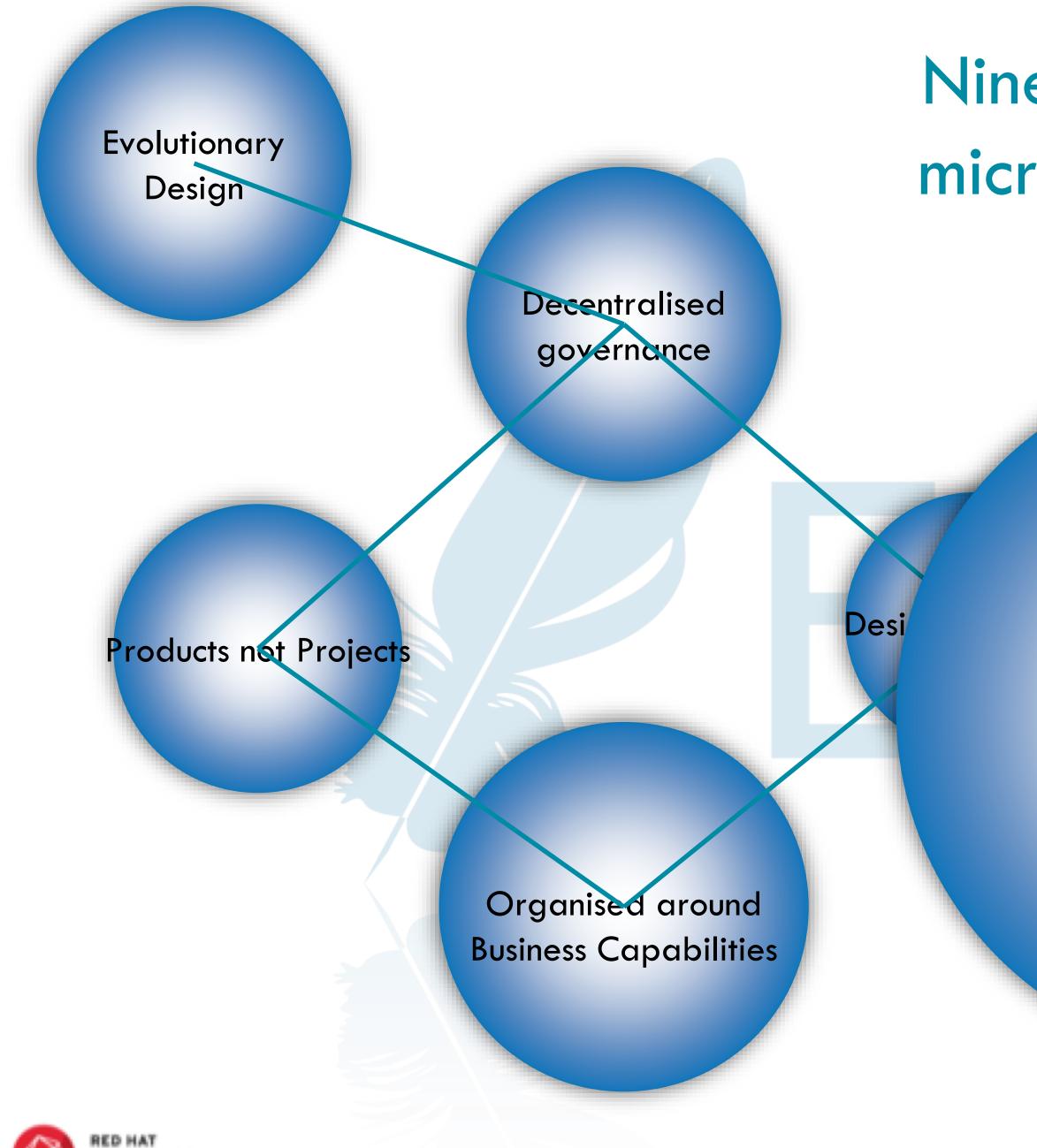
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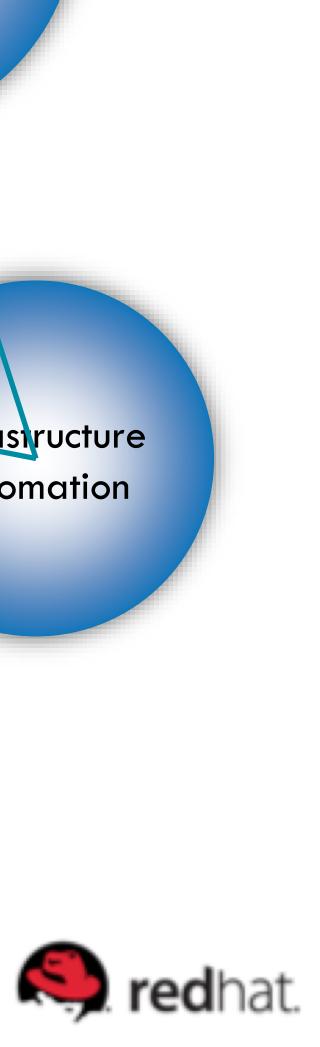
Componentisation via services

## Smart endpoints and dumb pipes

Choreograph at the end points

ed data gement

Infrastructure automation



Evolutionary Design

## Decentralised governance

## **Cross-functional teams** make decisions

Design for tailure

Products not Projects

Organised around **Business Capabilities** 

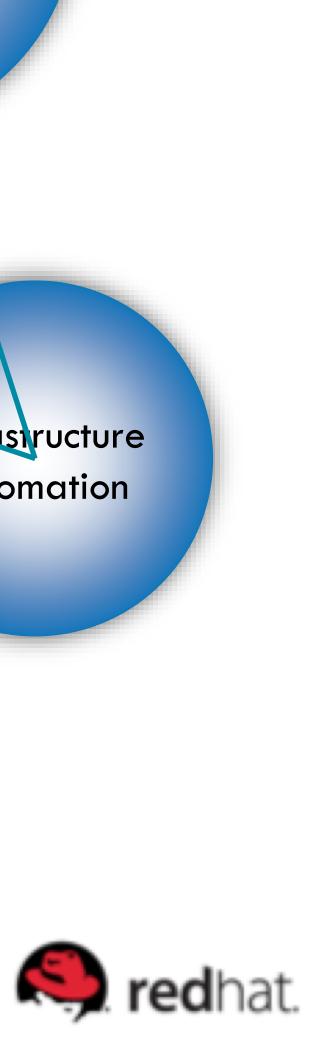


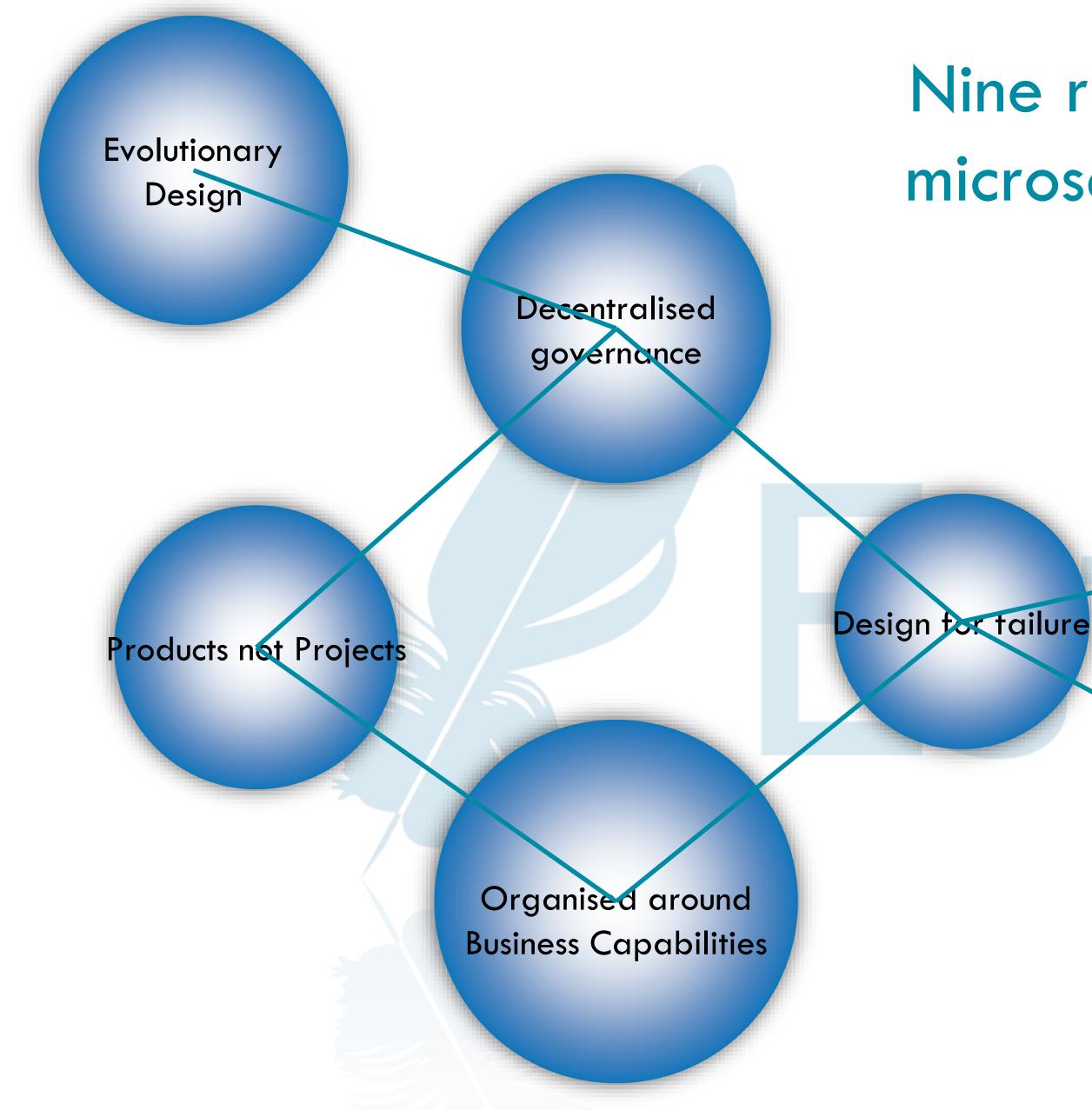
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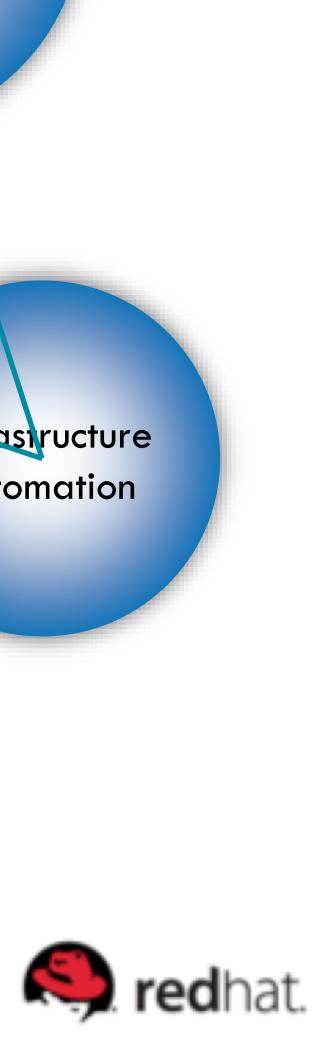
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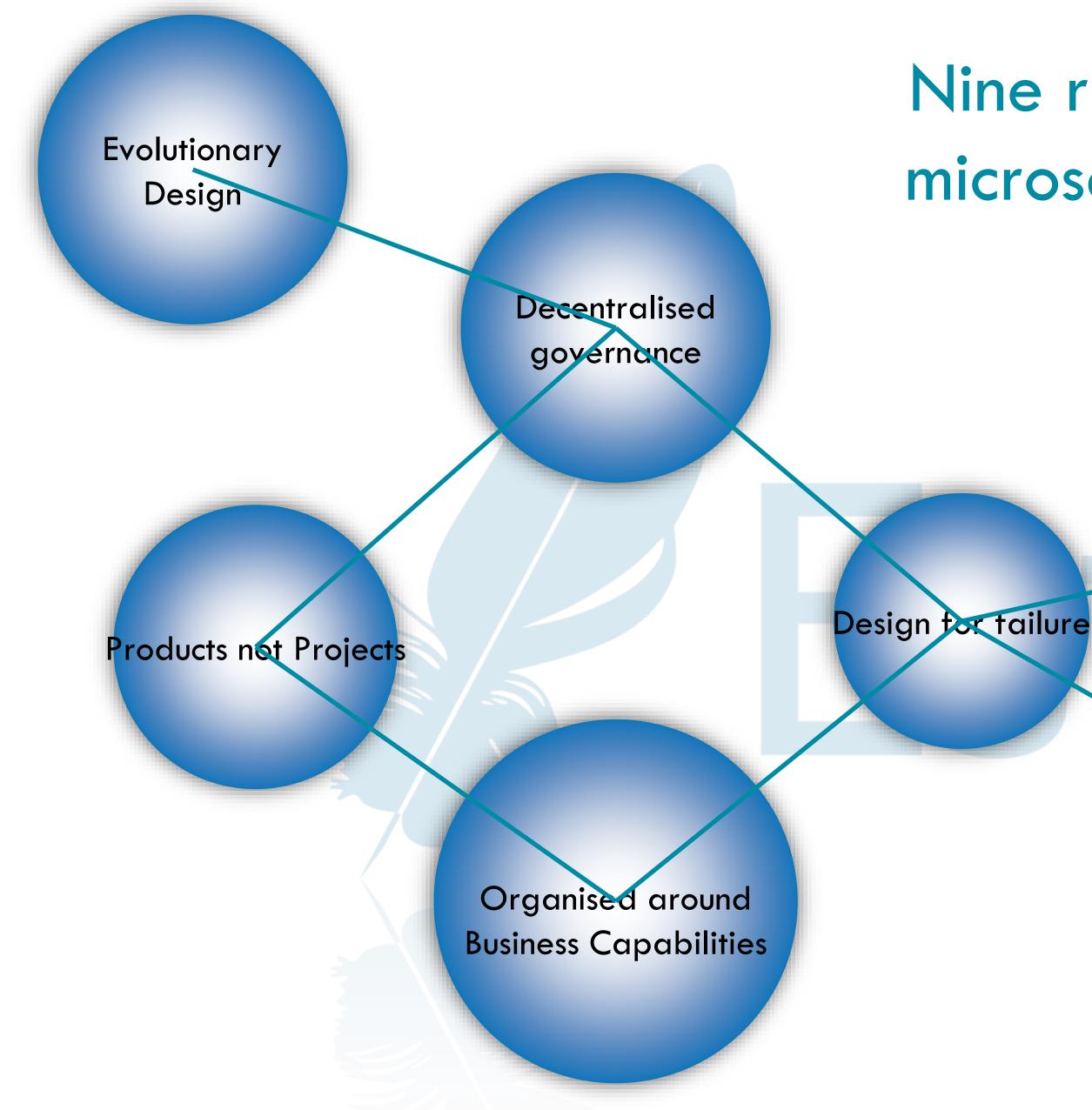
Smart endpoints and dumb pipes

## **Decentralised data** management

Each team owns its data

Infrastructure automation





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# Nine rules of microservices

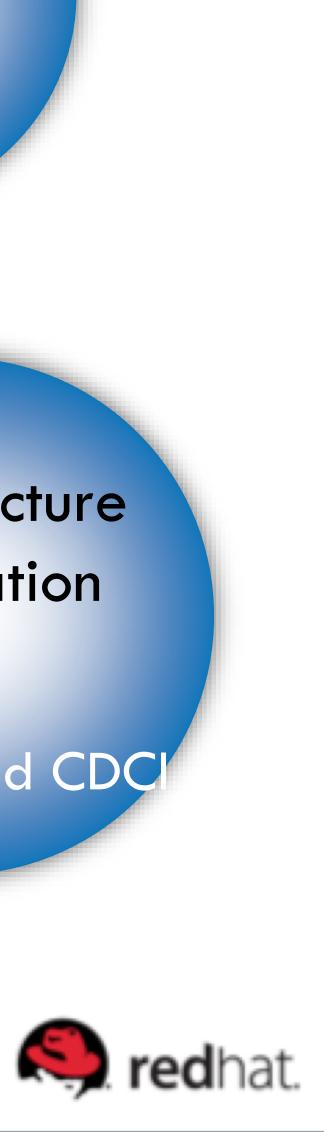
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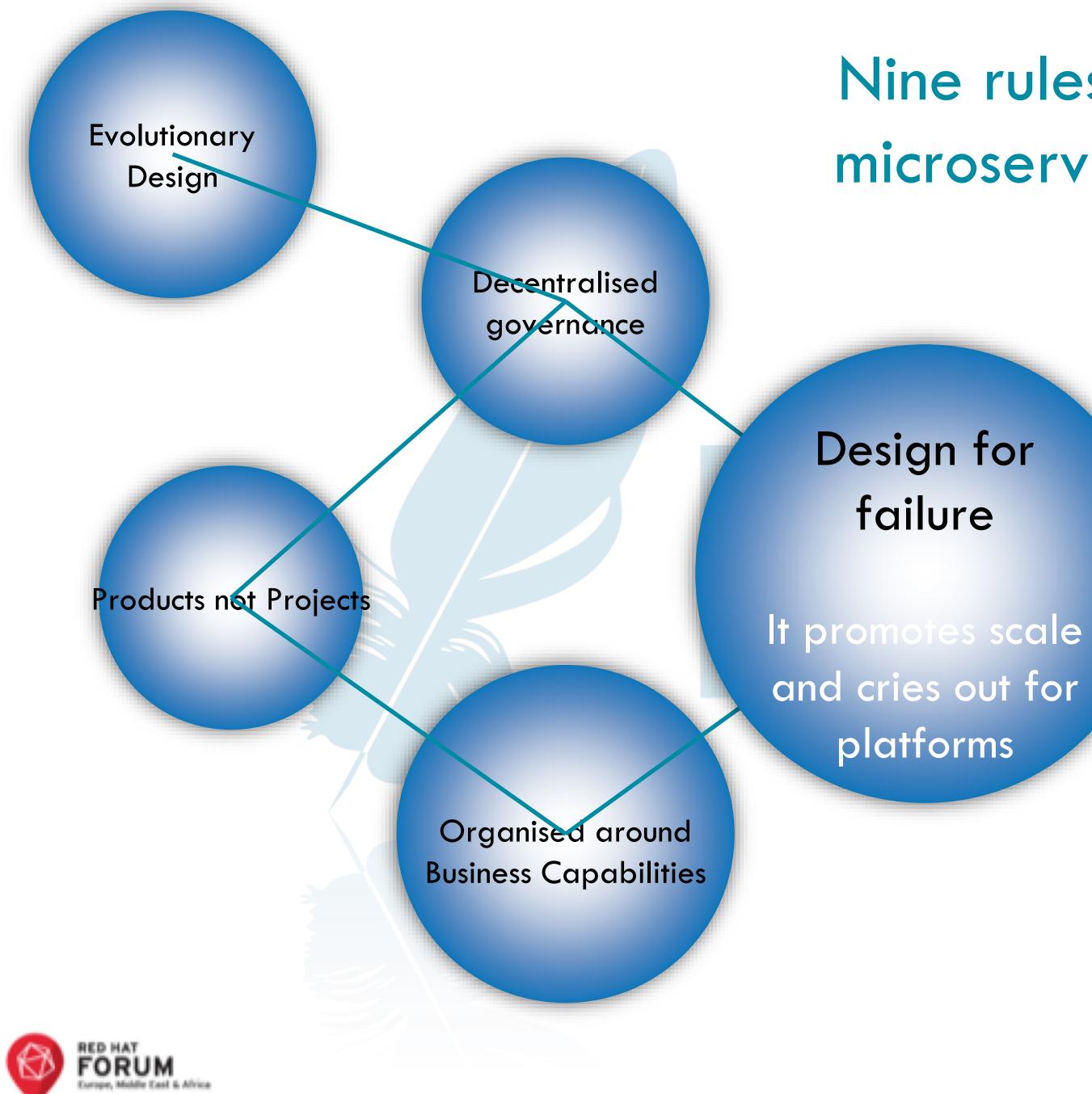
#### Smart endpoints and dumb pipes

# Infrastructure automation

#### Decentralised data management

## DevOps and CDC





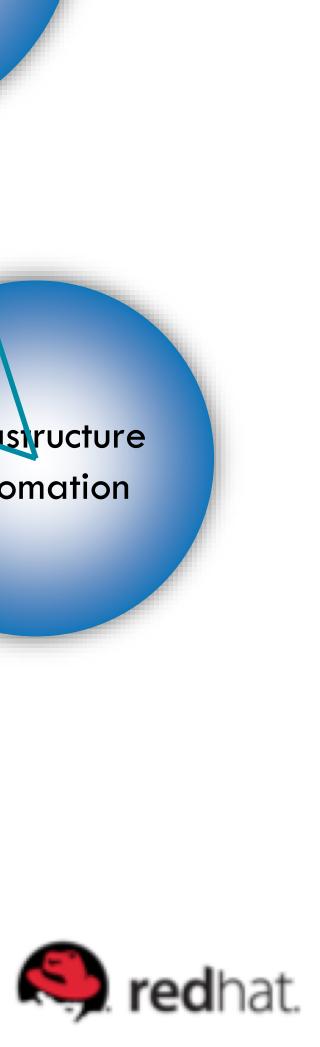
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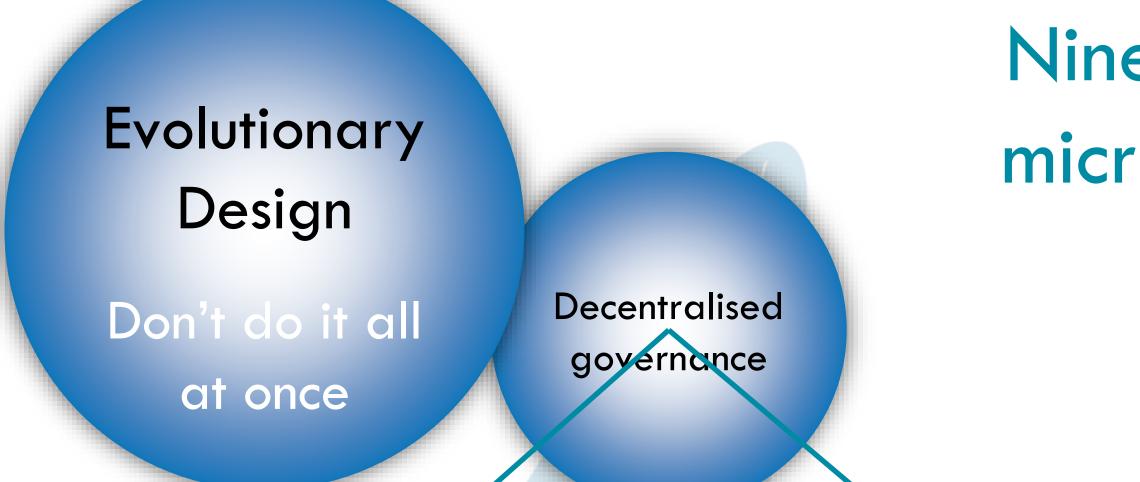
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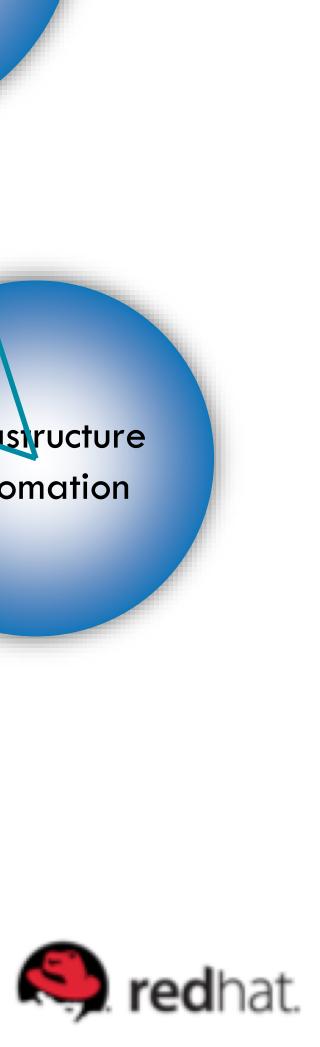


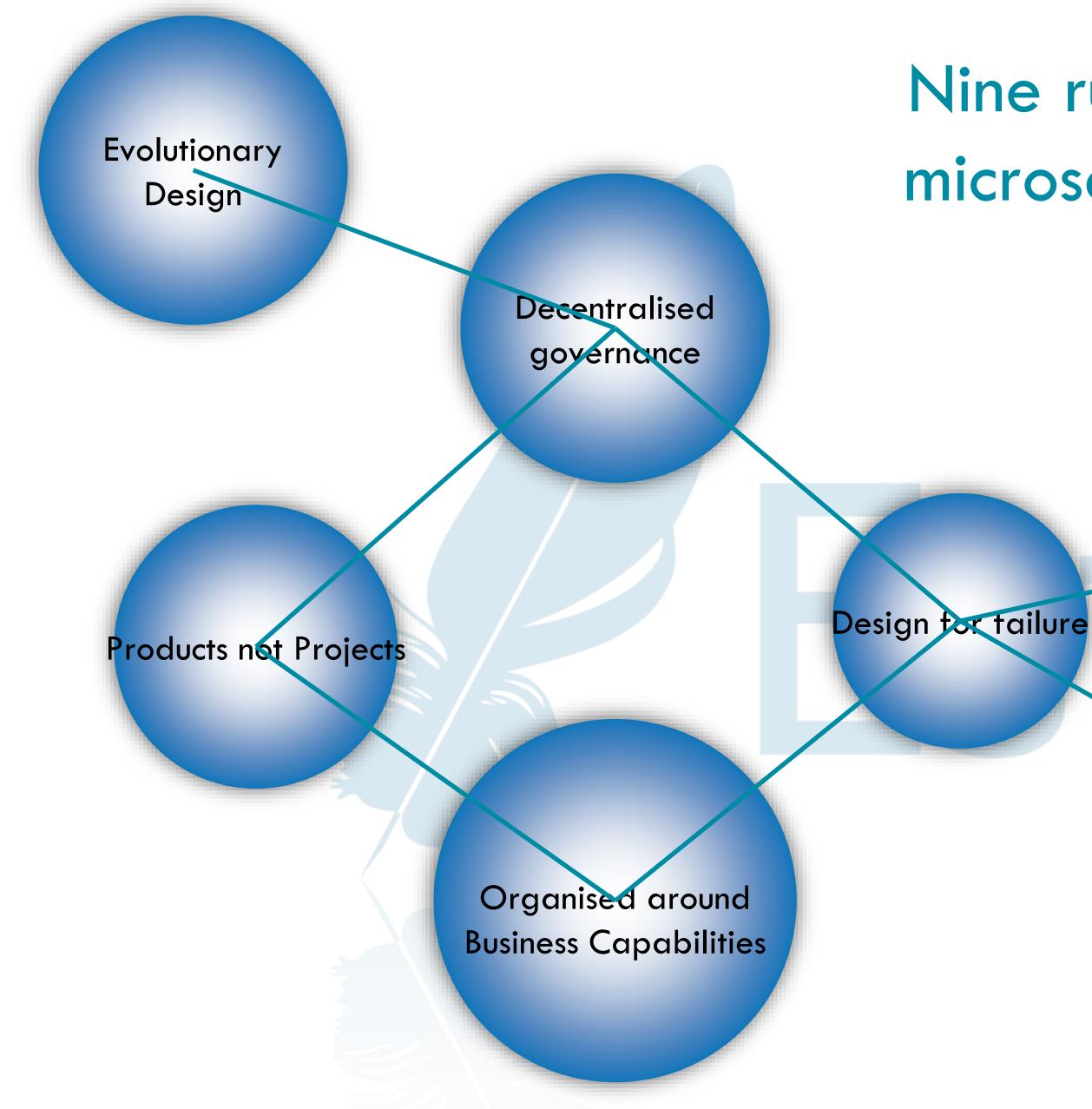
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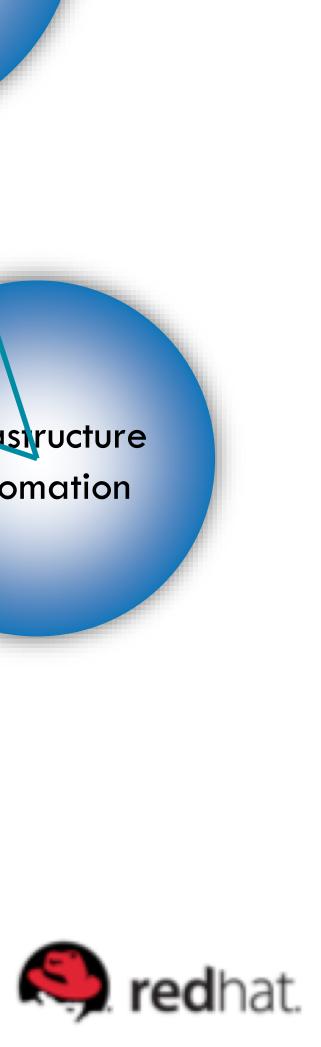
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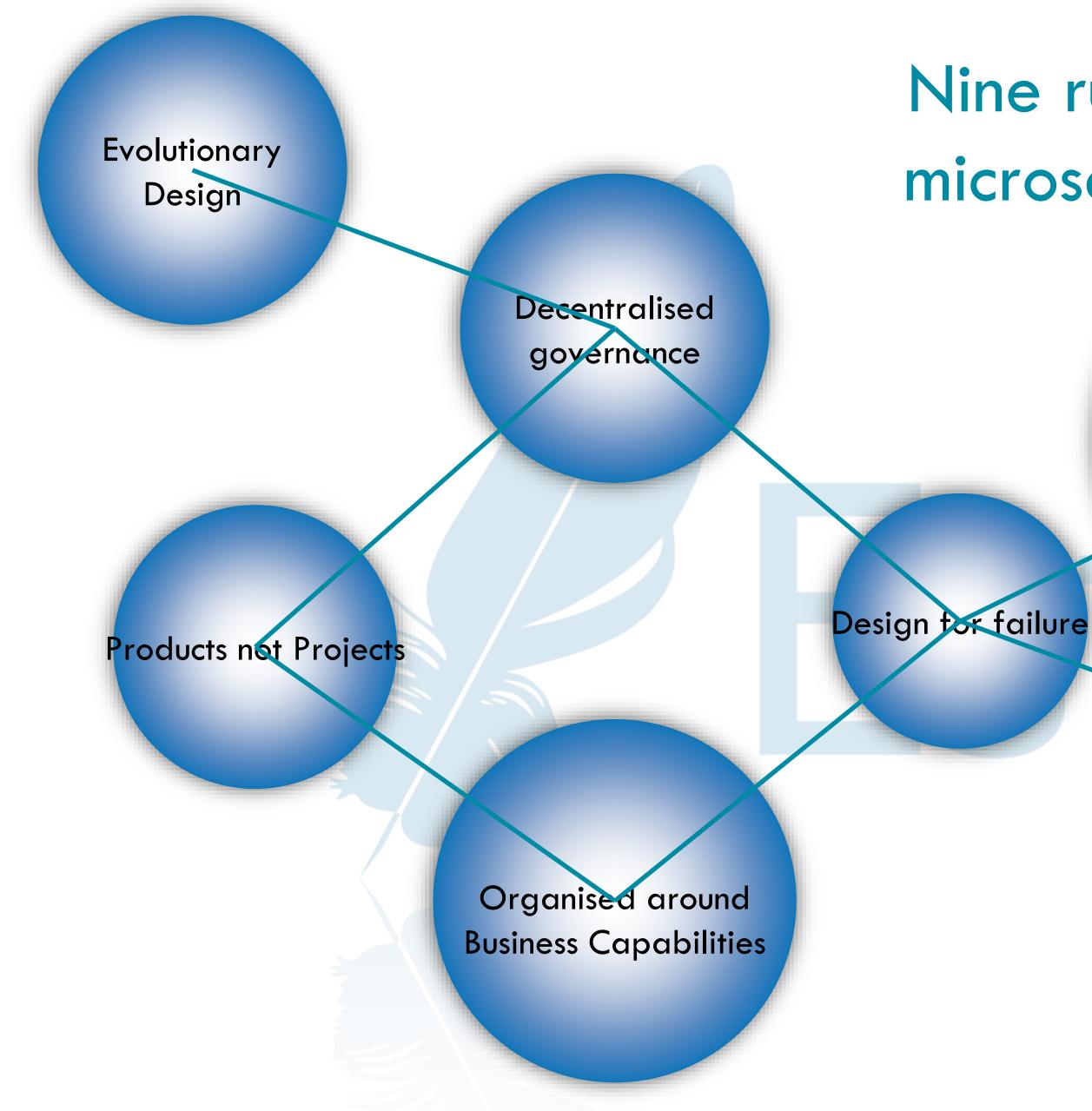
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**Componentisation via** services

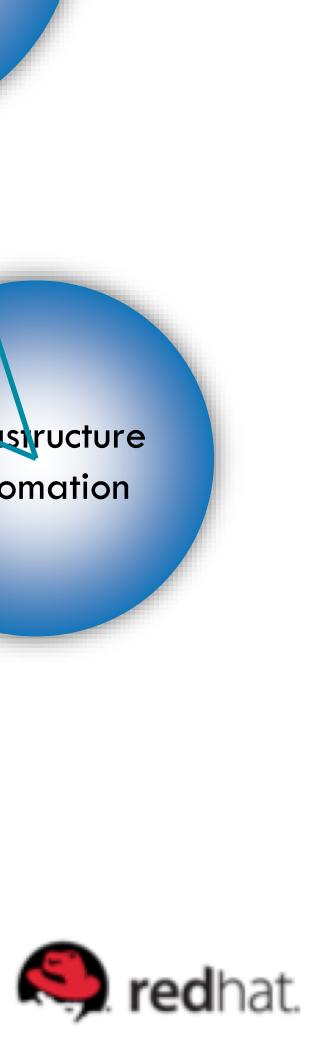
Smart endpoints and dumb pipes

DO NOT choreograph at endpoints

**Decentralised data** management

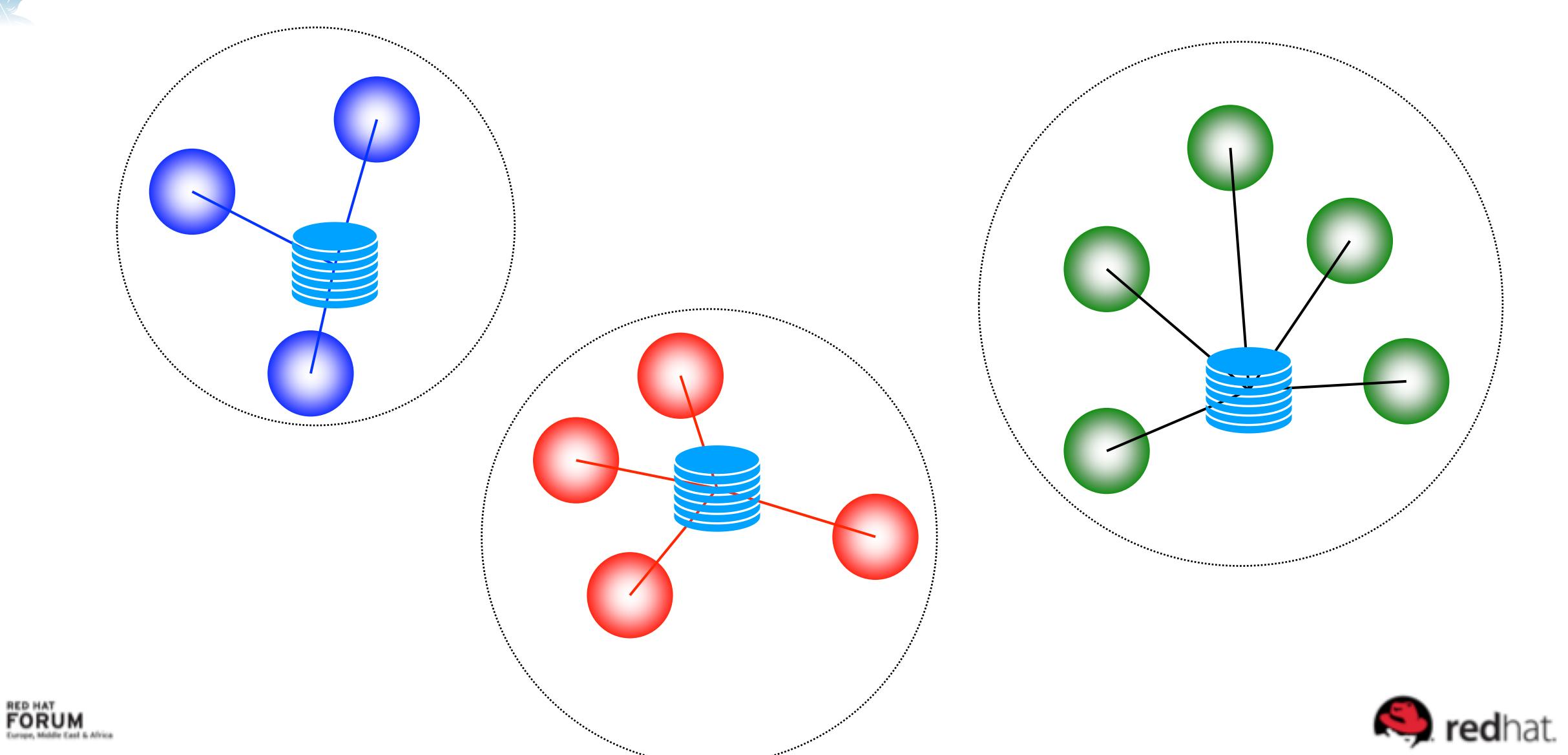
Each team owns its data: CONSISTENCY AS PROTOCOL

Infrastructure automation





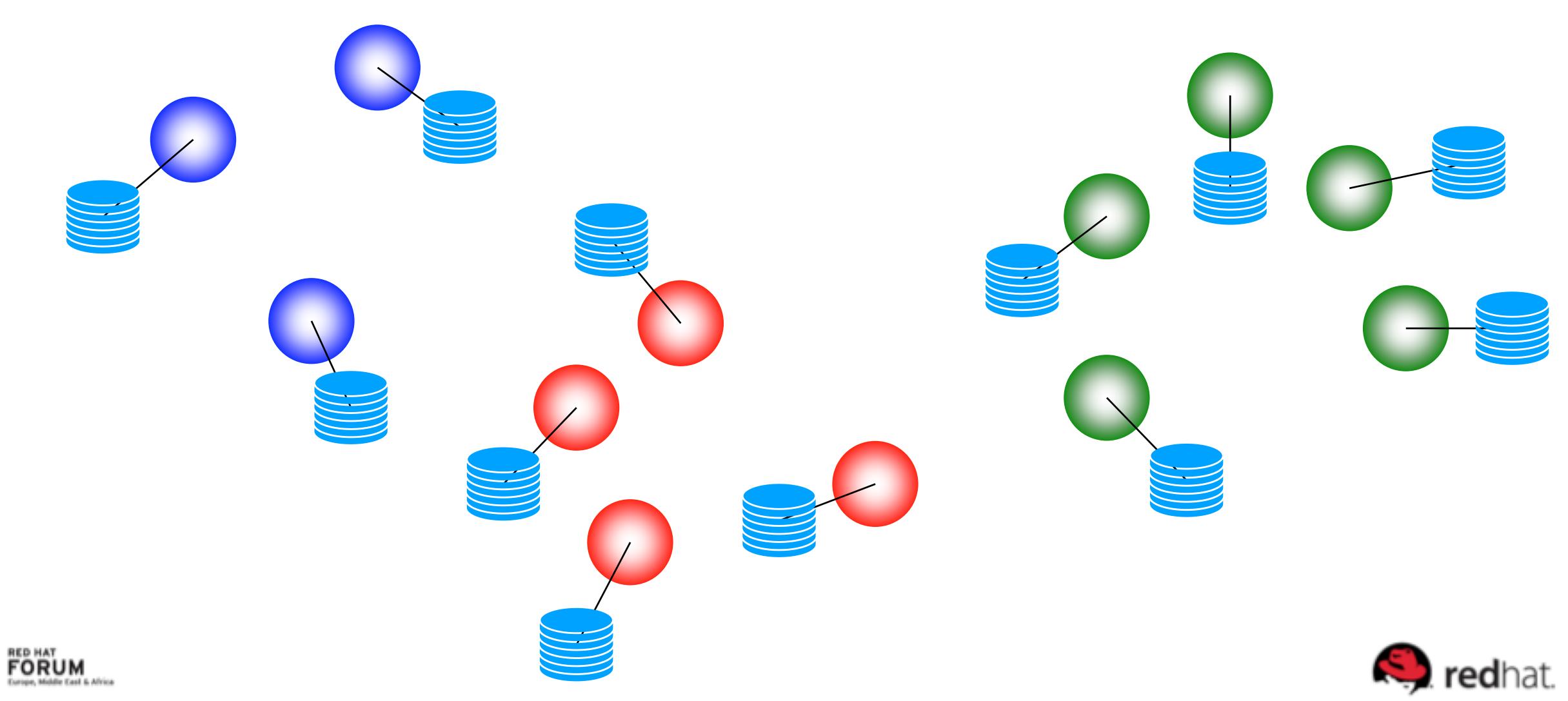




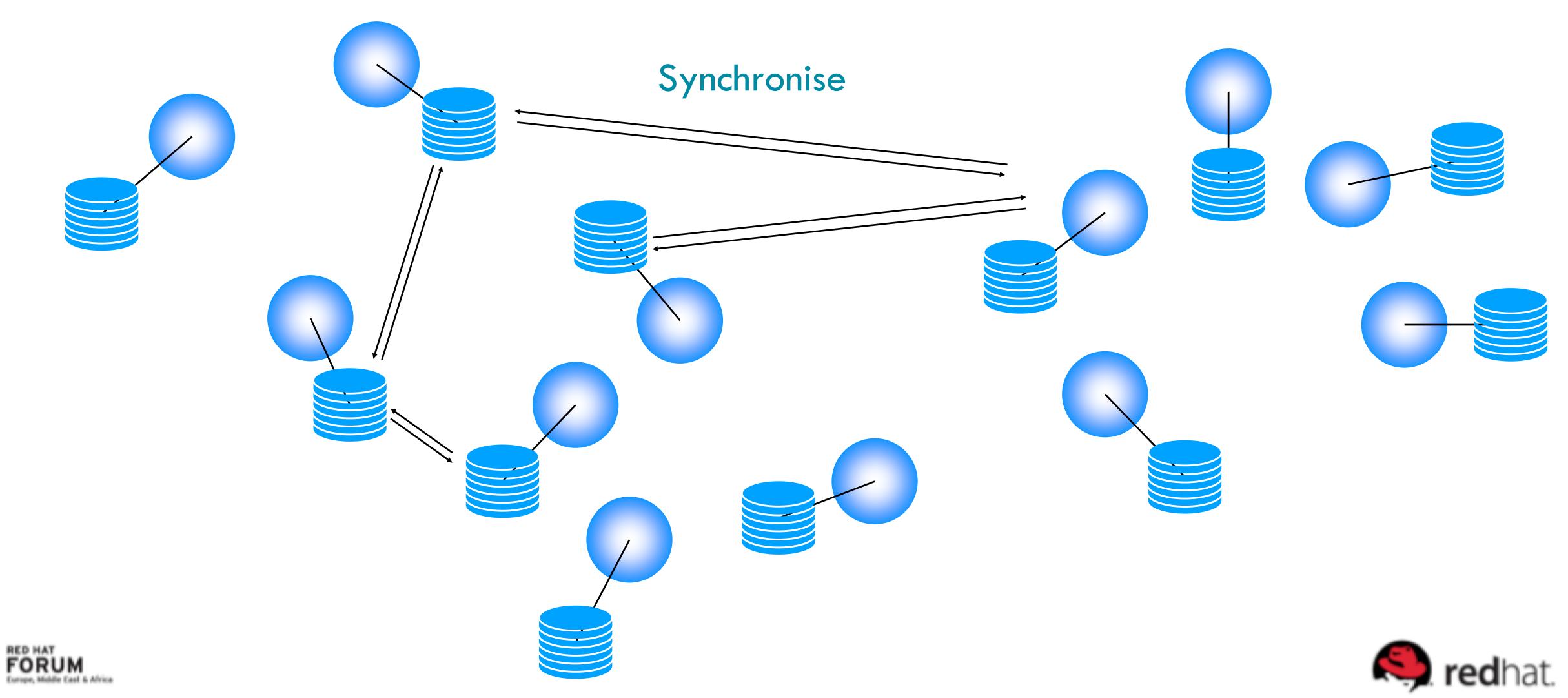
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## Data-centric

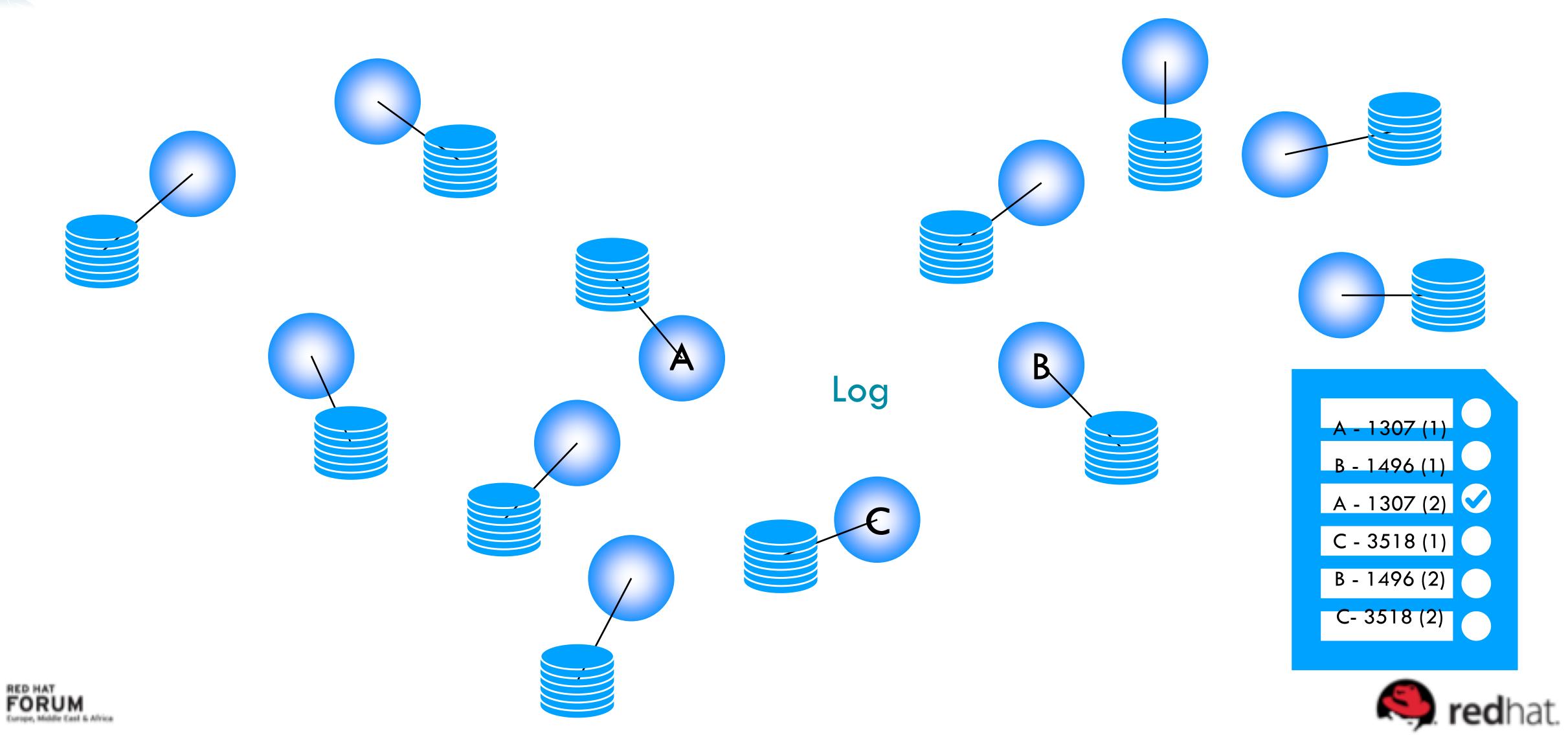




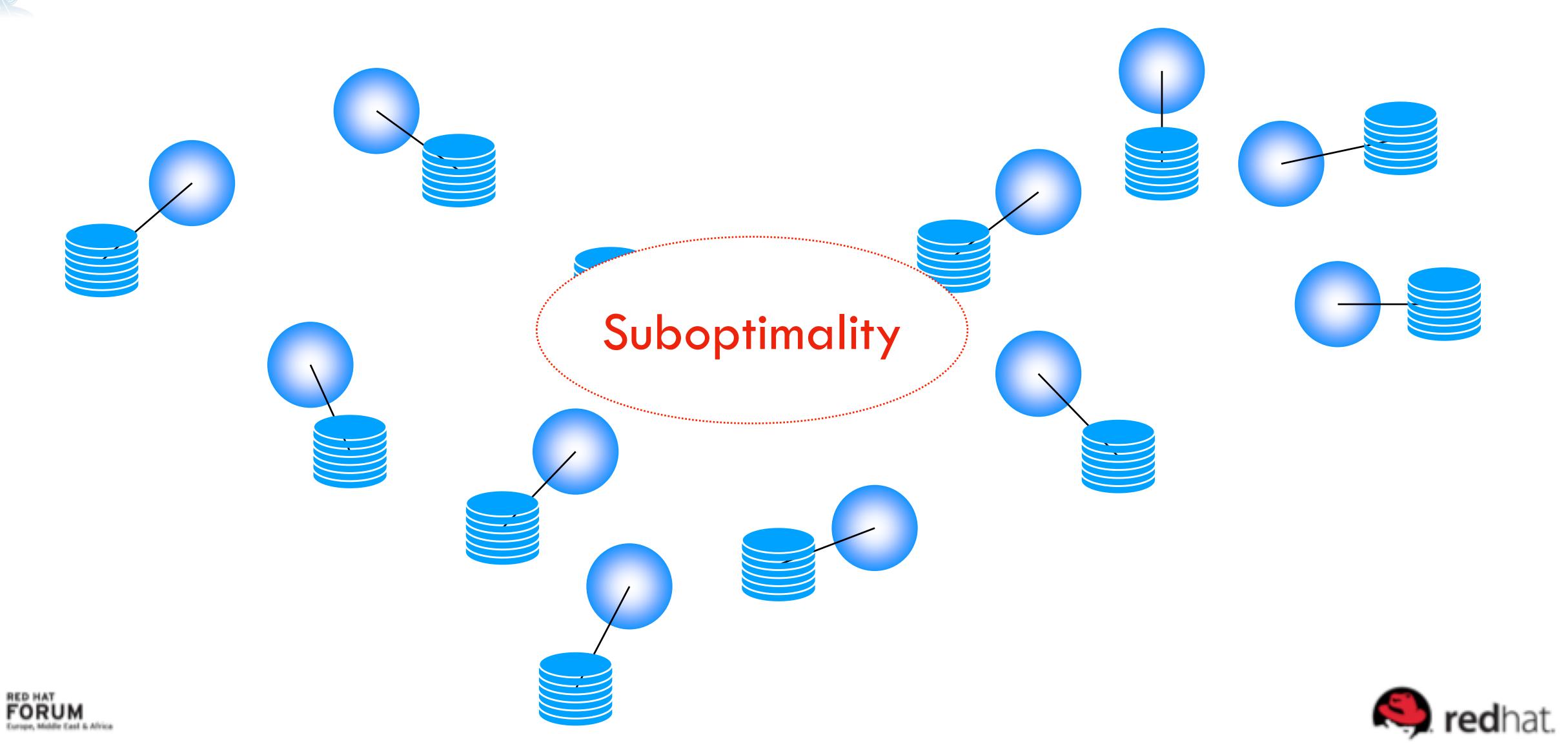












## Quality

## Rework

## Suboptimality

## Velocity

C121 R4 75 C122 C125 C135 C135 C141 C129 C135 C141 C135 C141 C129 C135 C141 C145 C14 C145 C1

C137

R178

0.0

**a** 

RP72°

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3

R87

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225

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RP34

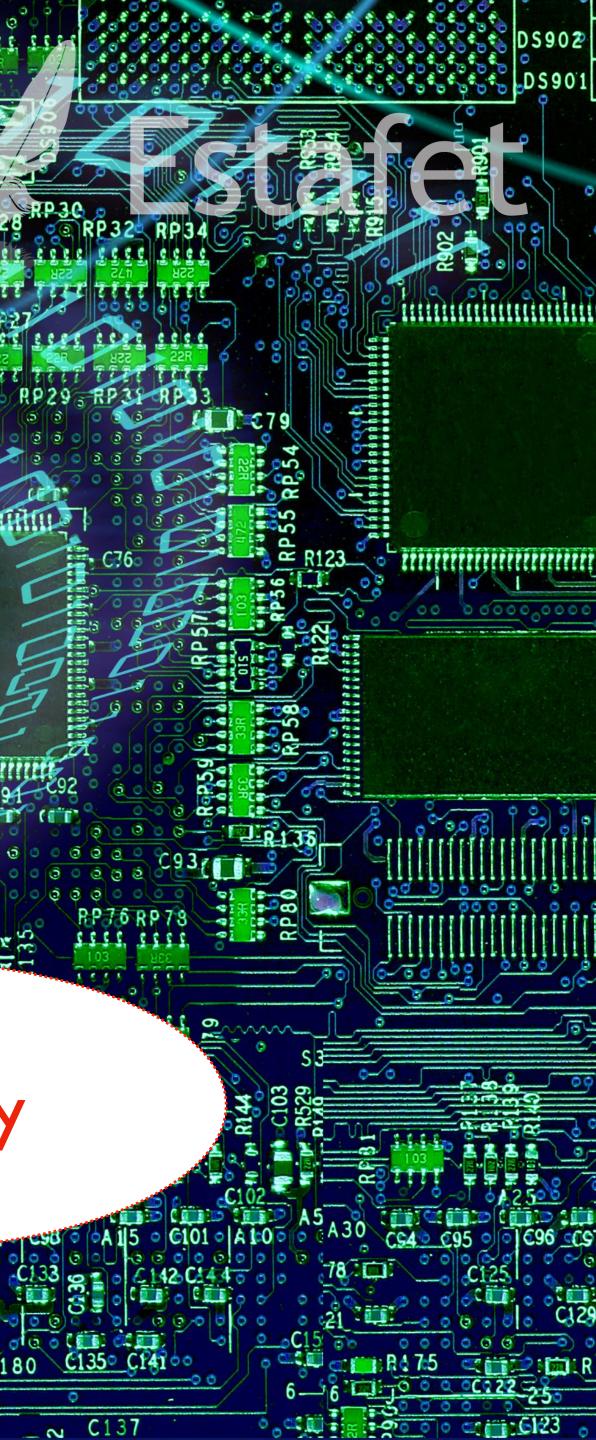
......

RP29

RP35

6PJ6 RP78

RP 2-6



€ R123

C15 00

**Spotify**<sup>®</sup>

Code first - ask questions later?

# "Failures"



DIT M

# NETELIX

### What can we learn?

"Enough" up-front design

Design everything up-front

8 . . . . . .

C121 : C123 C135 C141 C122 25 C123 C137 C123 C137

A30 CS4

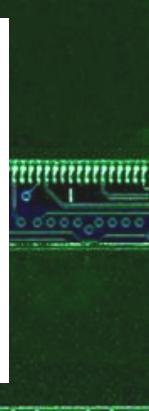
R178

5

C+48

RP50





A5 A30 CS4 C95 C96 CS 78 CS4 C95 C125

CI5 CI III: PA 75 C

C123 .

## "Enough" up-front design

0123 4567 8901 2345



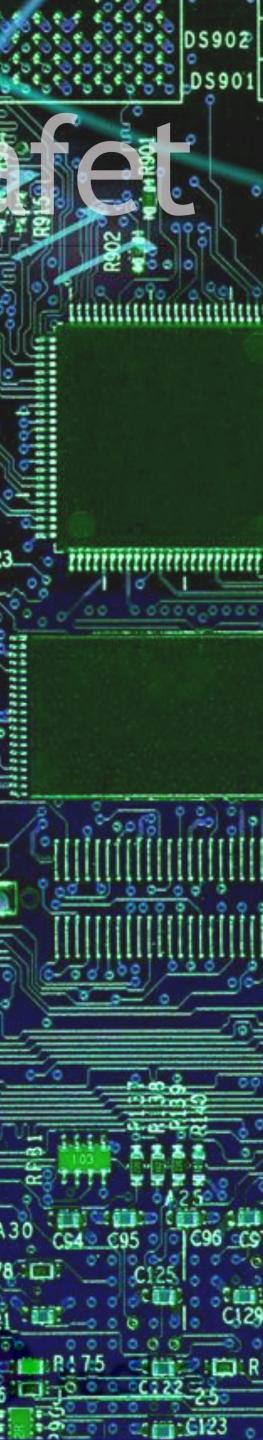


1. Write story cards to capture ...

2. Prioritise by ...

3. Plan release schedule

4. Scribble ...



(1) A5,

I.R180

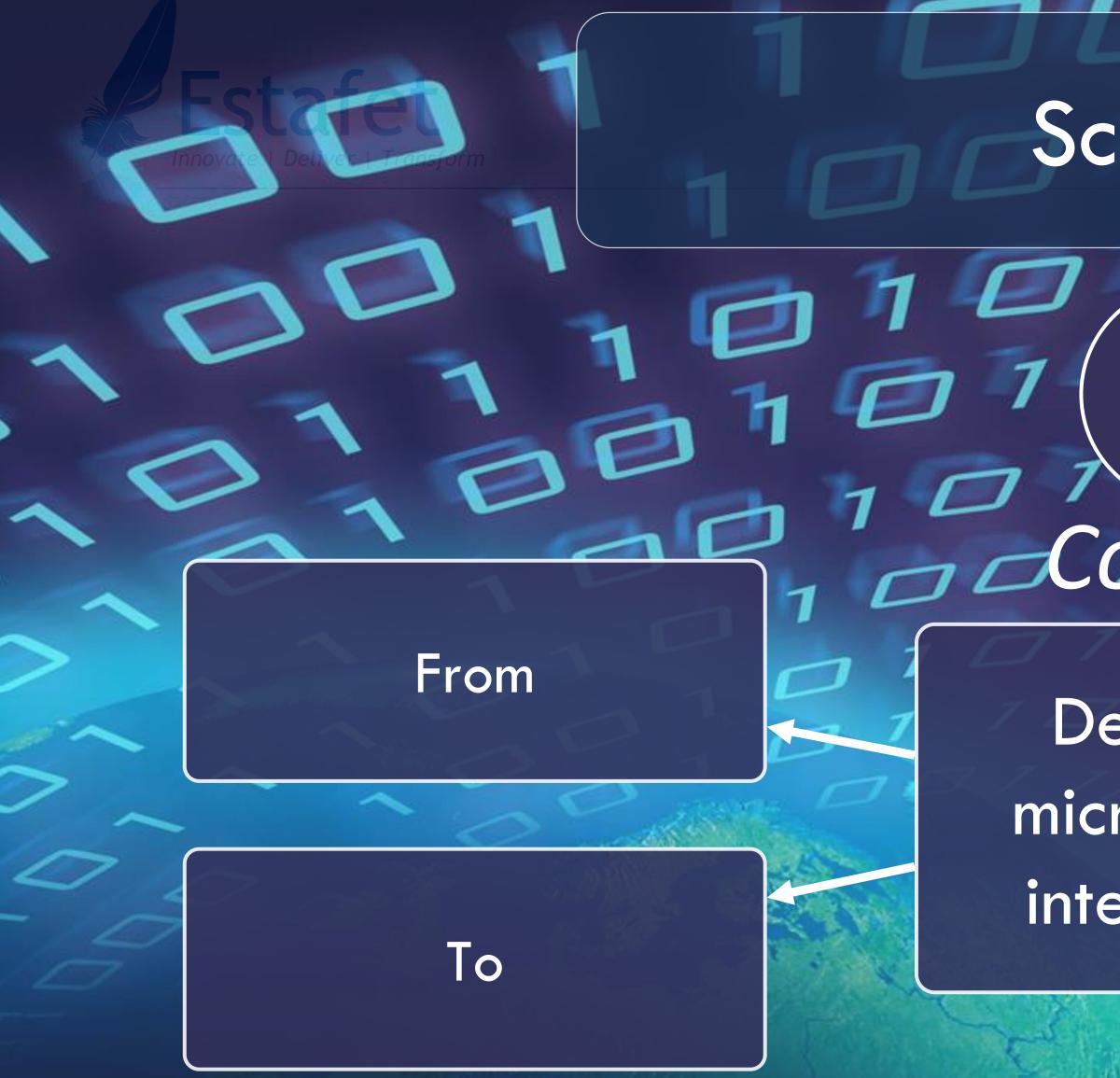
CG123 0

1 76 1 70 Cizz 25

C135° C141°

C137

- 2





## Scribble

RP72

# Control

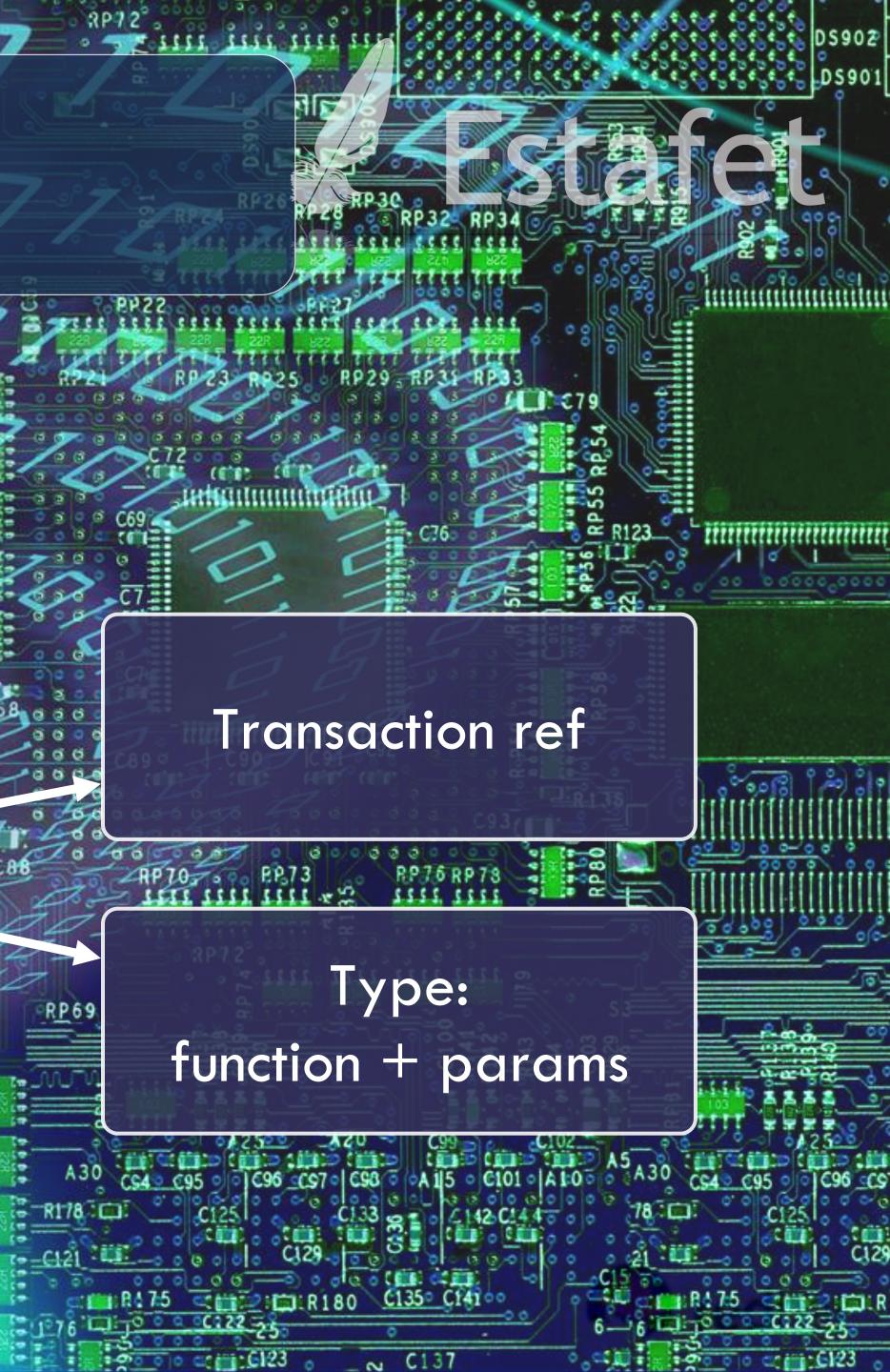
Describes microservice interactions

RP50

### **Transaction ref**

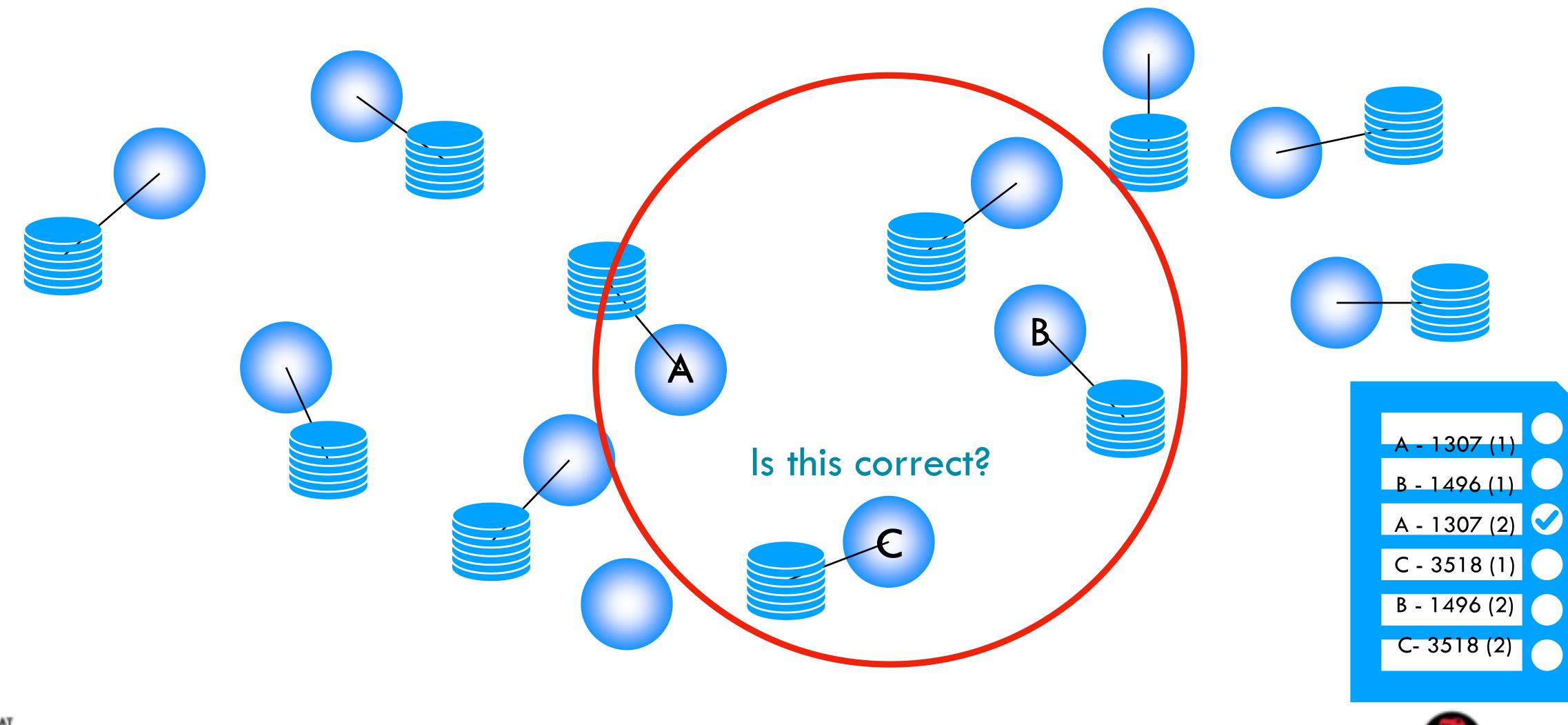
PP-73

## Type: function + params

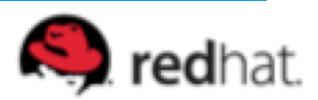




## You cannot control what you do not understand





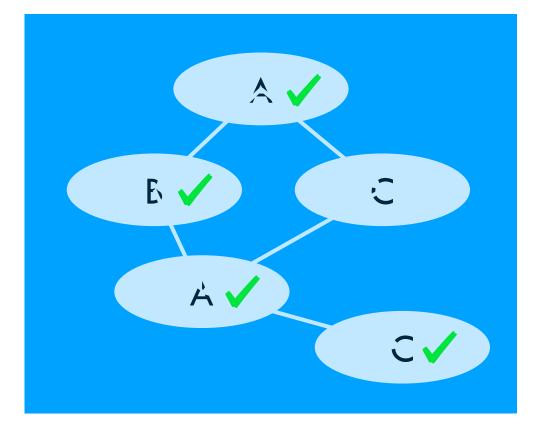








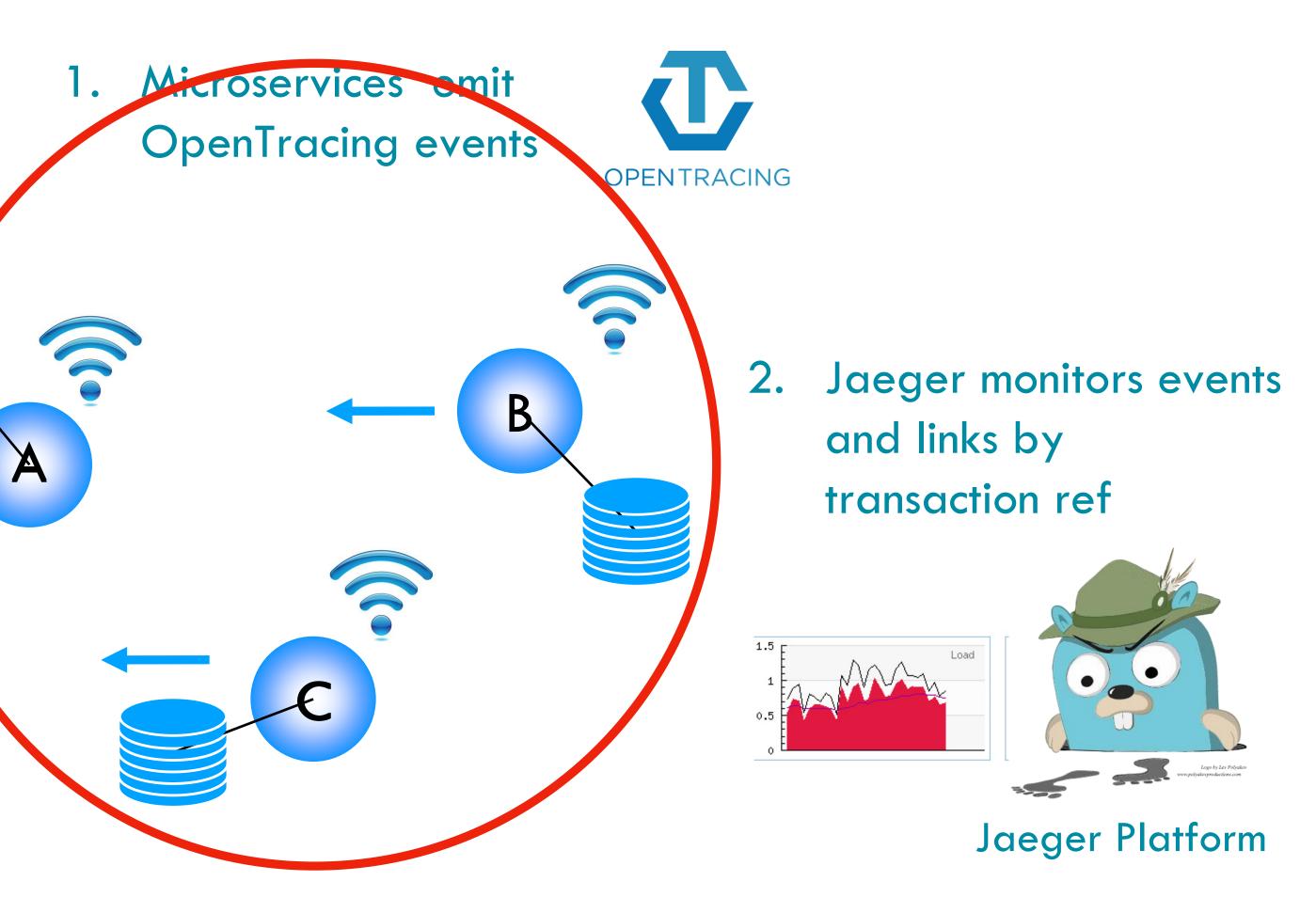
Scribble Model

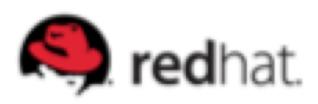


# Complete 3. Check choreography is correct

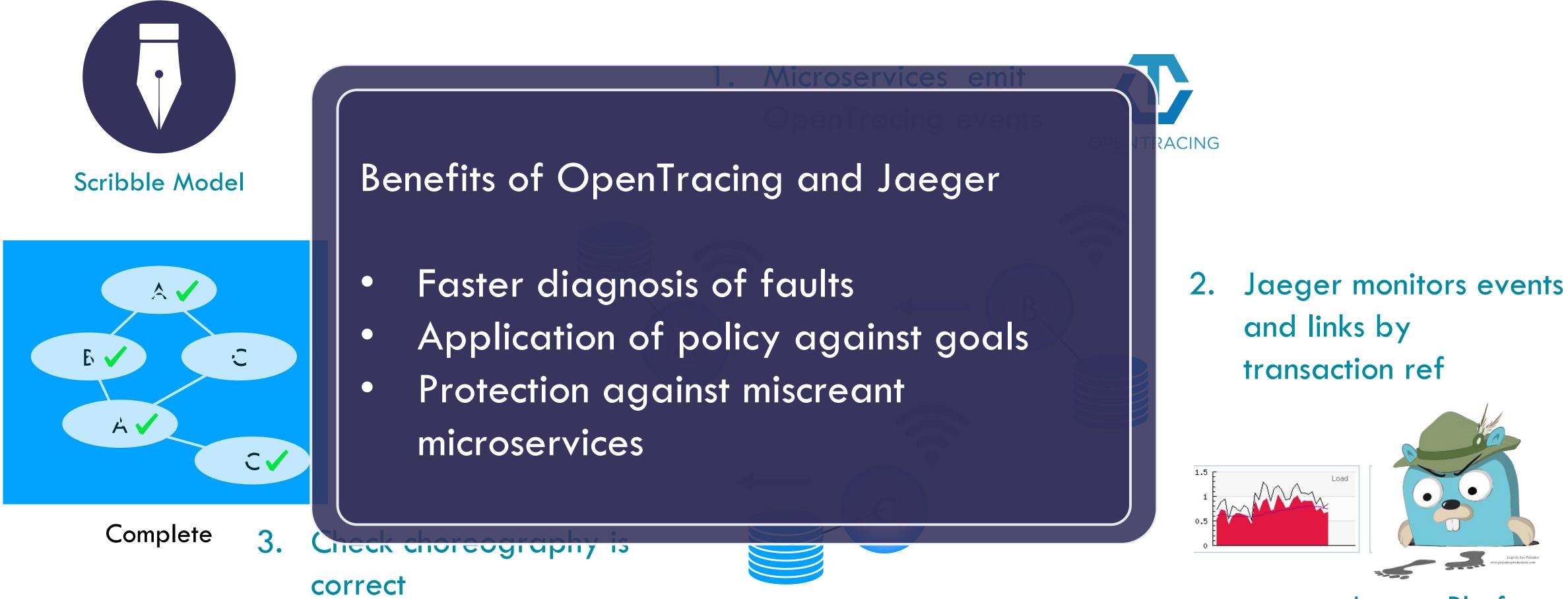


## Monitor events to check behaviour











## Monitor events to check behaviour

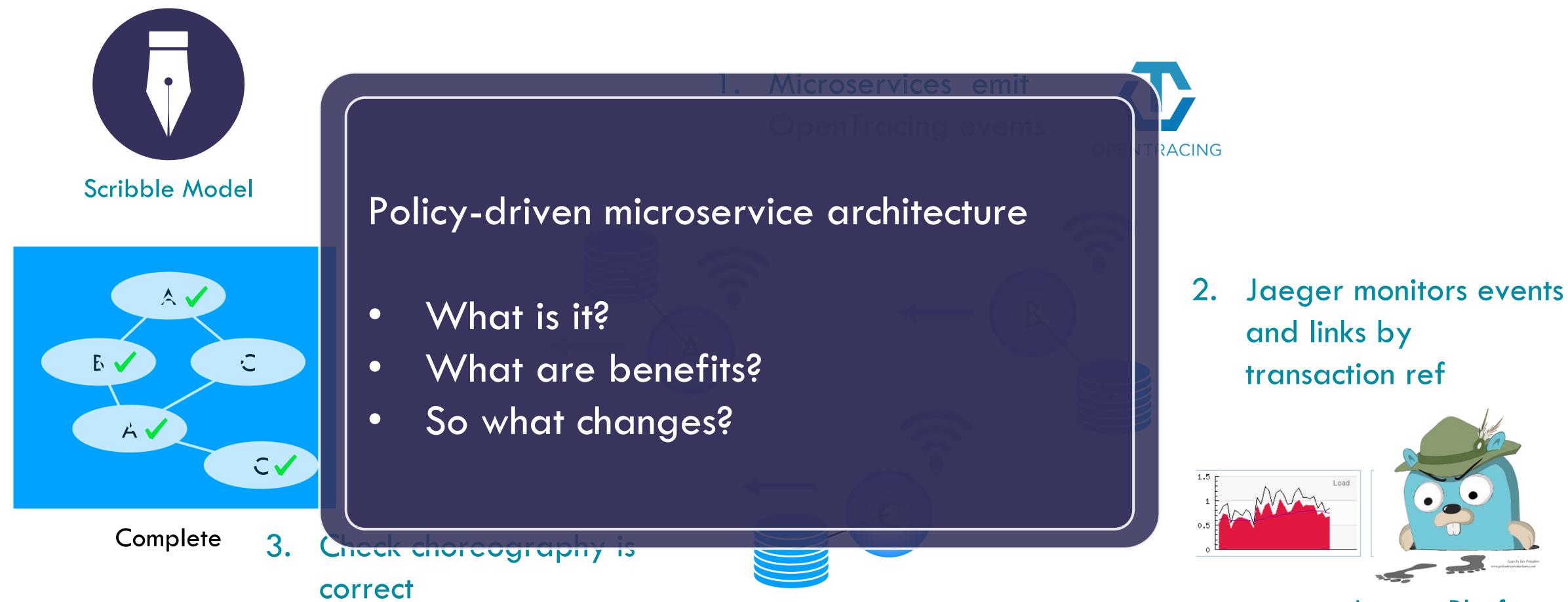
Jaeger Platform













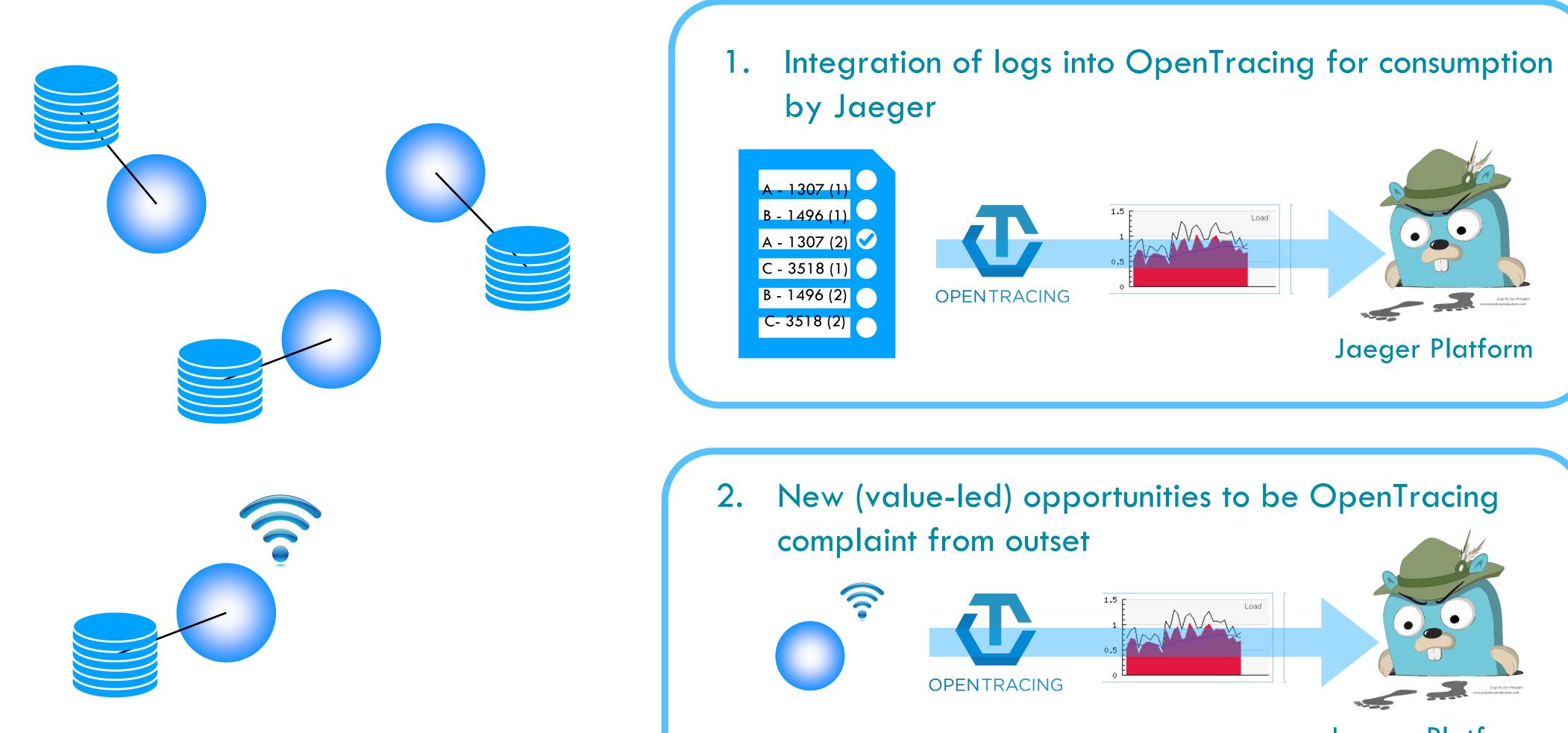
## Monitor events to check behaviour

Jaeger Platform











## What can I do now?

Jaeger Platform





redhat.



## First Steps

- Two-week discovery to understand business flow and compare it with live logs;
- Share initial findings and then cost work required to create automated monitoring with SLA breach alerts;
- Build fast "root cause analysis" capability, leading to higher quality for lower cost.



## What can I do now?

(COO)

## Contacts

- <u>adrian.wright@estafet.com</u> (CEO)
- steve.ross-talbot@estafet.com (CTO)
- alistair.park@estafet.com

## See our videos on

"<u>Why microservices fail</u>"

- goo.gl/GXgkkB
- "Managing distributed systems with Scribble"
- Estafet YouTube channel

<u>goo.gl/pzNeyG</u> <u>goo.gl/Vuiaxf</u>



