Lufthansa Systems

Our First Inverse Conveys Maneuver Was Not Enough

DevOps@Lido Flight 4D

Agenda

01 Lido Domain

02 Origin

03 Trip into Agility

04 Pain Points

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Facts & figures - Flight & Navigation Solutions

Each year, around

570 Mio.

passengers fly on planes based on navigation charts from **Lufthansa Systems**

Around

850 employees

dedicated to providing outstanding Flight & Navigation solutions

Between

250k-350k

NOTAM processed every month

Products and services designed for

commercial operators

120 airlines

are currently using our flight planning solution

Lido/Flight 4D saves an average of

1.6-2.0% per flight

in fuel cost, ATC charges and time cost

6,800

aircraft are operated with Lido/Flight 4D

Market leader

in Europe and the Middle East for commercial flight planning systems

More than

60 training sessions

with available space for over **500 trainees** per year

2,700

configuration parameters to customize Lido/Flight 4D to your needs, policies and regulatory requirements

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Customer References - Lido Flight Planning Solutions

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#takeoffwithlido

Flight Preparation

1 Flight Planning

2

3 Taxi-out

4 Take-off

5 In-flight

6 Landing

7 Taxi-in

8 At gate

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Agenda

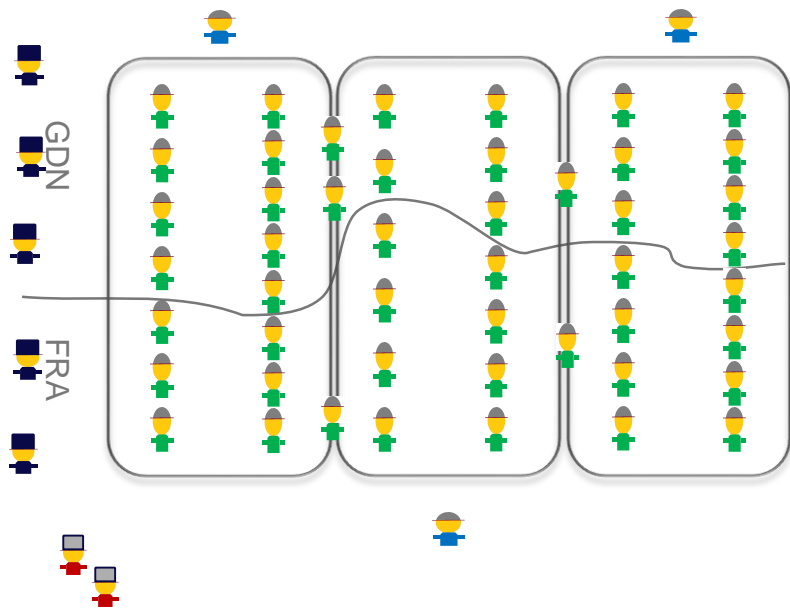01 Lido Domain

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Lido Flight Legacy Team Structure
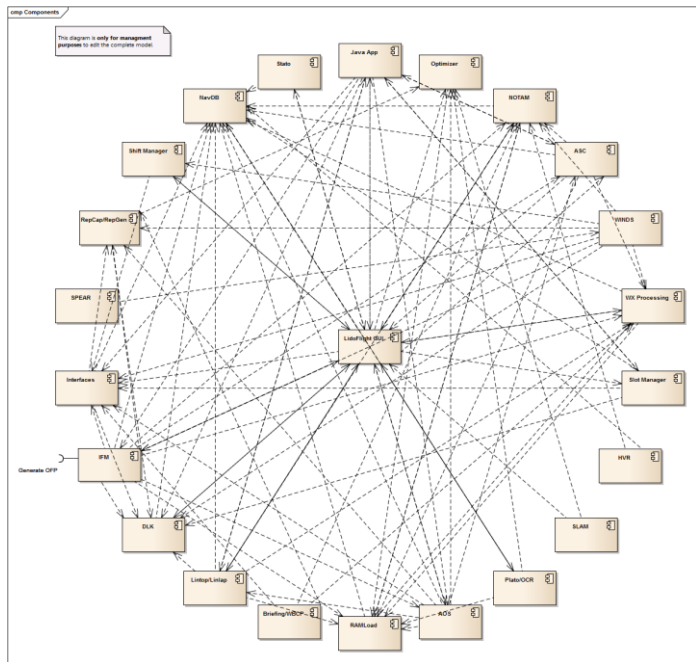
Virtual Teams with Traditional Capacity Planning across two locations having a Team Lead in GDN and FRA

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Lido Flight Data centric Monolith Architecture Dependency Model & Solar System view

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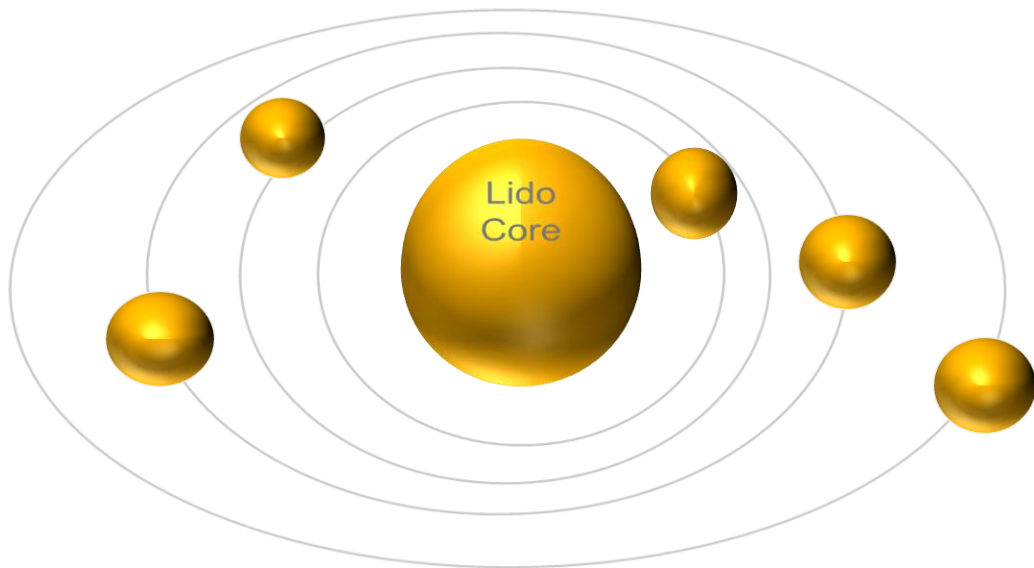
Agenda

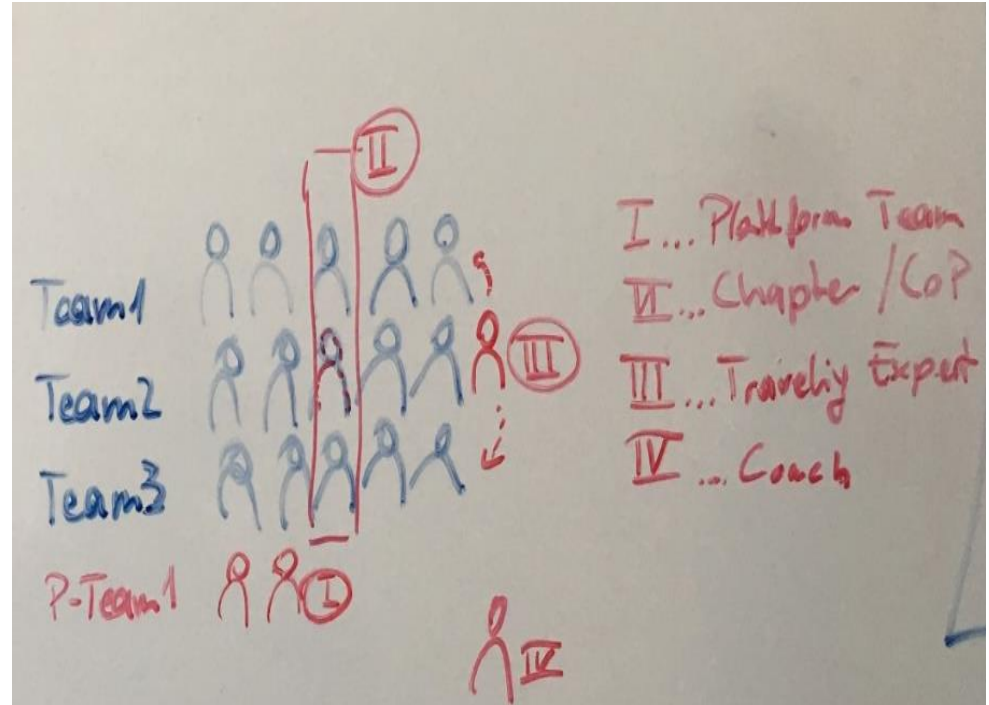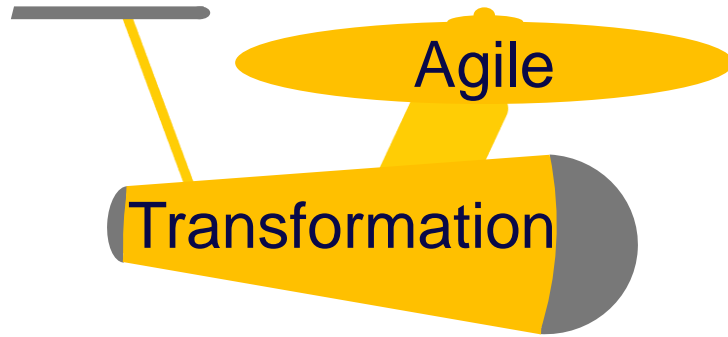|	
01 Lido Domain	**03 Trip into Agility**
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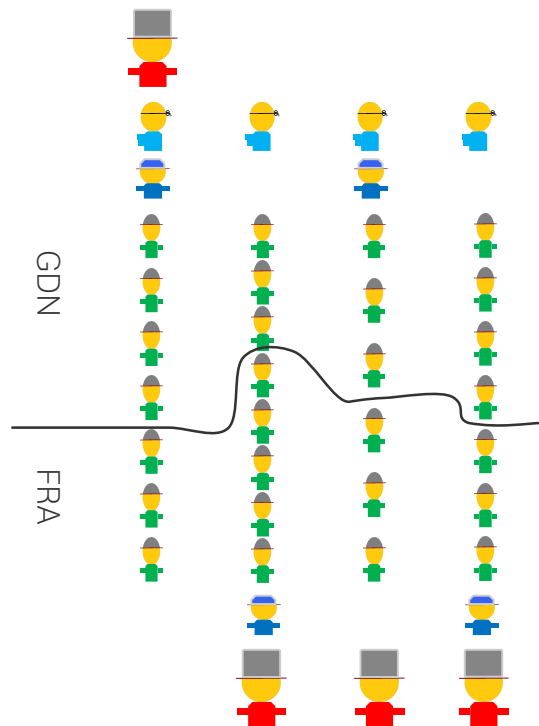# Lido Flight 4D new Domain Model and Architecture Principles

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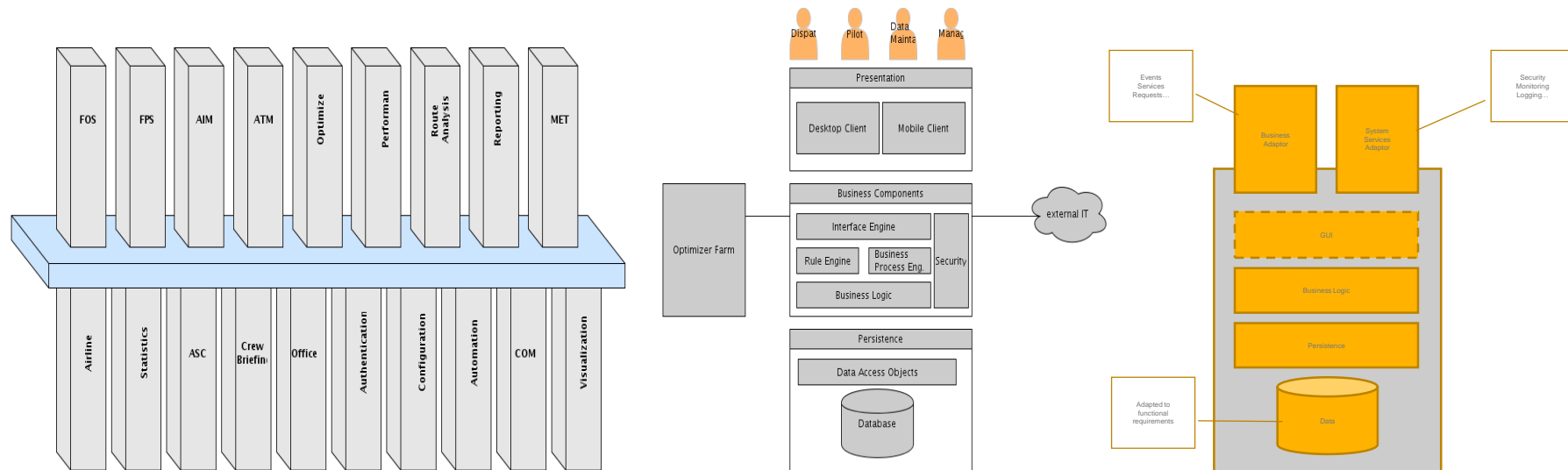
Design the new Organization

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Lido Flight Legacy Team Structure

Confidential

Lufthansa Systems
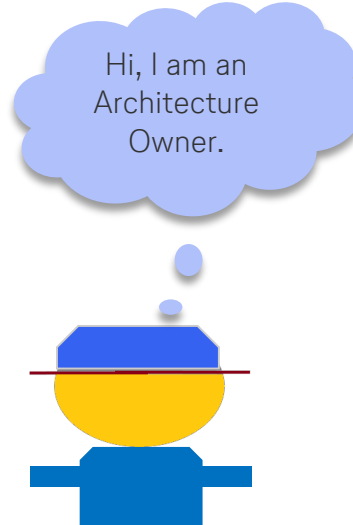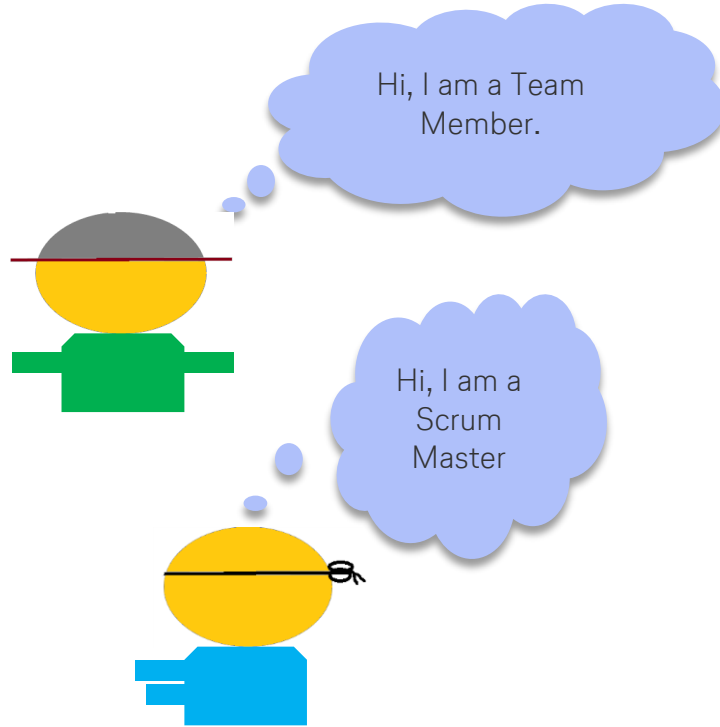
Agile Teams with new Roles

Quality Gate I: Ready for Decentralization

- ☑ dedicated resources of delivery team are available
- ☑ Tools set up, e.g. tasklist etc. (dS/tS done)
- ☑ New
- ☑ Bac
  reco
  ASC
- ☑ upd
- ☑ Incr

Quality Gate II: Ready for Agile

- ☑ Overall Agile Training for team (team is trained in SCRUM, PO-training)
- ☑ PO & AO assigned
- ☑ Functional and technical trainings performed (no NCB involved, handover to Kris and Kurt
- ☑ Sub-
  sessi
- ☑ Func
- ☑ Agilit
- ☑ Deliv
  main
- ☐ Desir
- ☐ Desir
- ☑ Team 'values' & ways of working agreed

Quality Gate III: Done with Lido/Flight 4D

- ☑ Quality gates and criteria of 4D fulfilled (see here)
- ☐ Specific training according to role needs performed
- ☐ Technology skill gaps in team closed (Ansible expert etc.) (scheduled)
- ☑ RE training for team (4D standard) performed
- ☐ Testplan for the delivery team has been worked out and agreement with independent testing found (open)

We have defined Principles and Values to foster the new behavior

ENABLE PRODUCT TEAMS TO TAKE FULL RESPONSIBILITY - decentralization as much as possible

ELIMINATE ACCIDENTAL COMPLEXITY - Strive to keep it simple. Focus on essential complexity. You build one, you delete one.

COLLABORATION CULTURE - Engineers from all backgrounds work together in collaborative teams and share responsibilities. No silos.

MACRO AND MICRO ARCHITECTURE - Clear separation. Autonomous products within the rules and constraints of the macro architecture of the suite.

COST EFFICIENCY - Collect metrics to allow decisions cost vs. value.

YOU BUILT IT, YOU RUN IT - The team is responsible for shaping, building, running and maintaining its products. Fast feedback from live and customers helps us to continuously improve.

INFRASTRUCTURE AS CODE - Automate everything: Reproducible, traceable, tested and monitored.

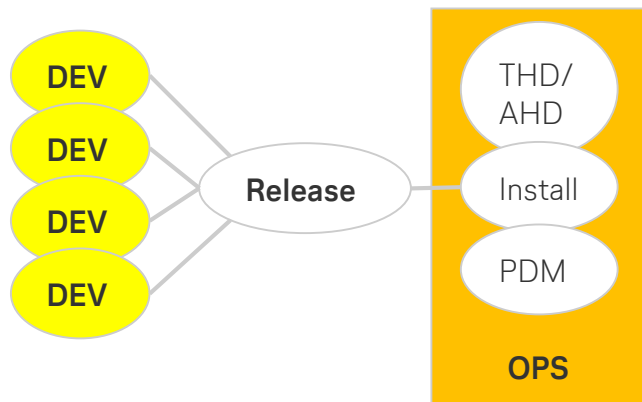**KNOWLEDGE-BUDDIES** - Always more than one person that knows how things work

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Shift left and value stream done wrong!

Phase	Coding	Build	INT	SYS	D	ACC	
			Version Release				
Duration		12 d	29 d	14 d	7 d	18 d	
SR duration		16 weeks (80 days)					

Phase	Coding	Build	INT	SYS	D2A	ACC	D2C
			Service Release (TT Delivery)				
Duration	9 d	5 d	10 d		1 d	9 d	1 d
SR duration		5 weeks + 1 day (26 days)					

Our delivery teams do not deliver individually
Instead they fight with dependencies and coupling

Lido Flight 4D Application

Feedback loop

Delivery Team 1
stream aligned

API

API

Delivery Team 2
stream aligned

API

Delivery Team n
stream aligned

Delivery Team Help Desk
stream aligned

open mind
Learning for the future

Dunbar? Ah! It has a number?

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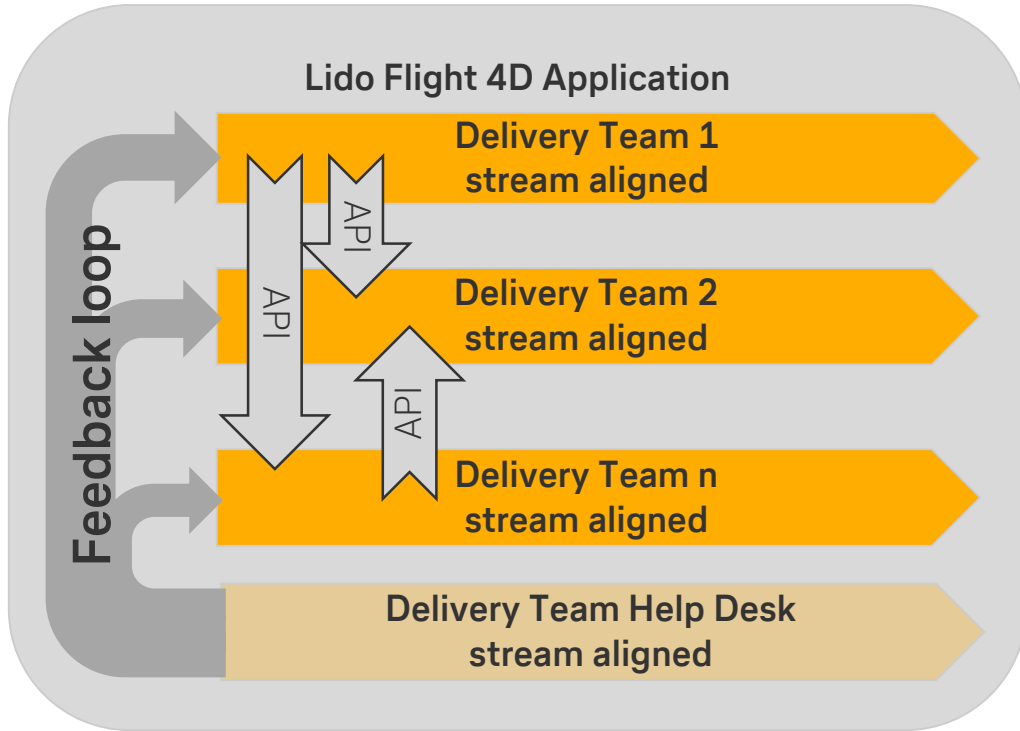
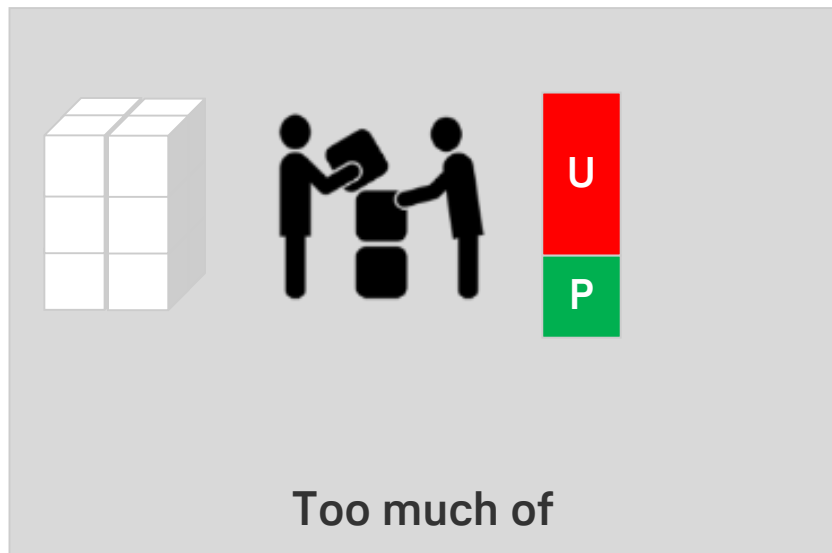# Dunbar's Number and how we ignore it
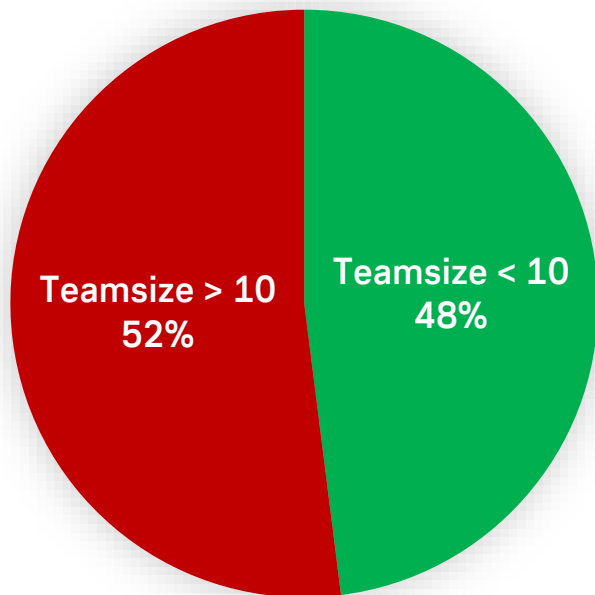
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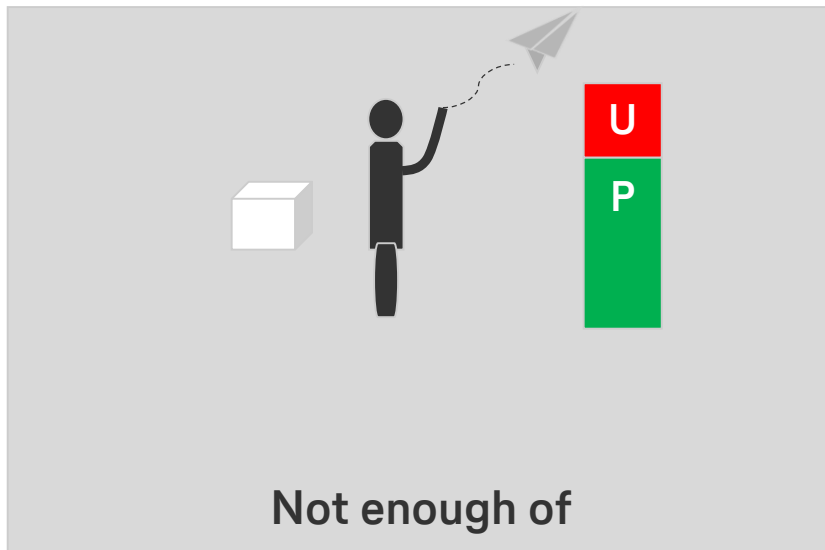
KNOWLEDGE-BUDDIES - Always more than one person that knows how things work

Pie chart:
- Teamsize > 10: 52%
- Teamsize < 10: 48%

Bucket Size, Flow and visibility of Work

Too much of

Not enough of

U = Unplaned work

P = Planed work

→ **Contact**

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