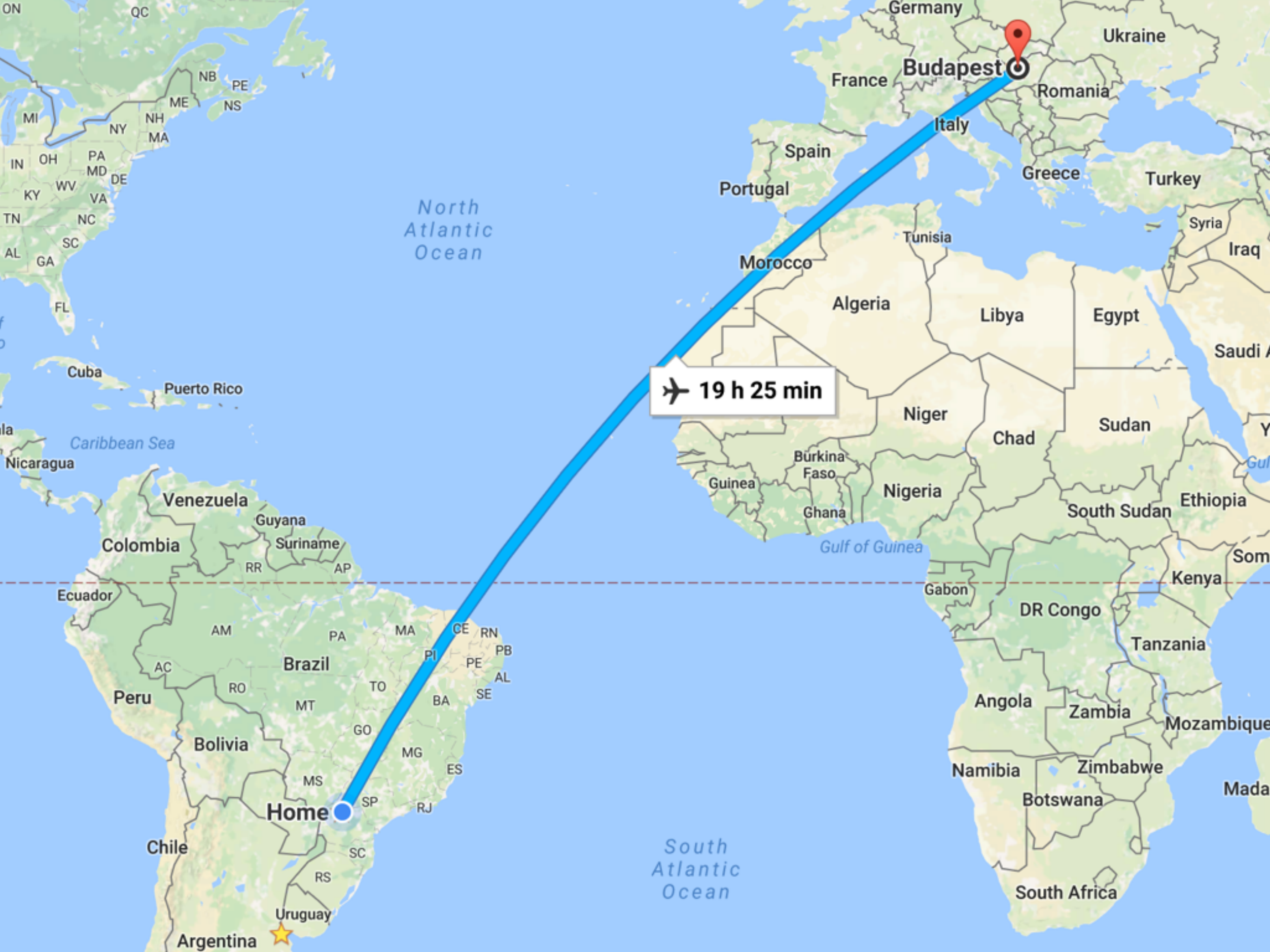
RODRIGO NONOSE

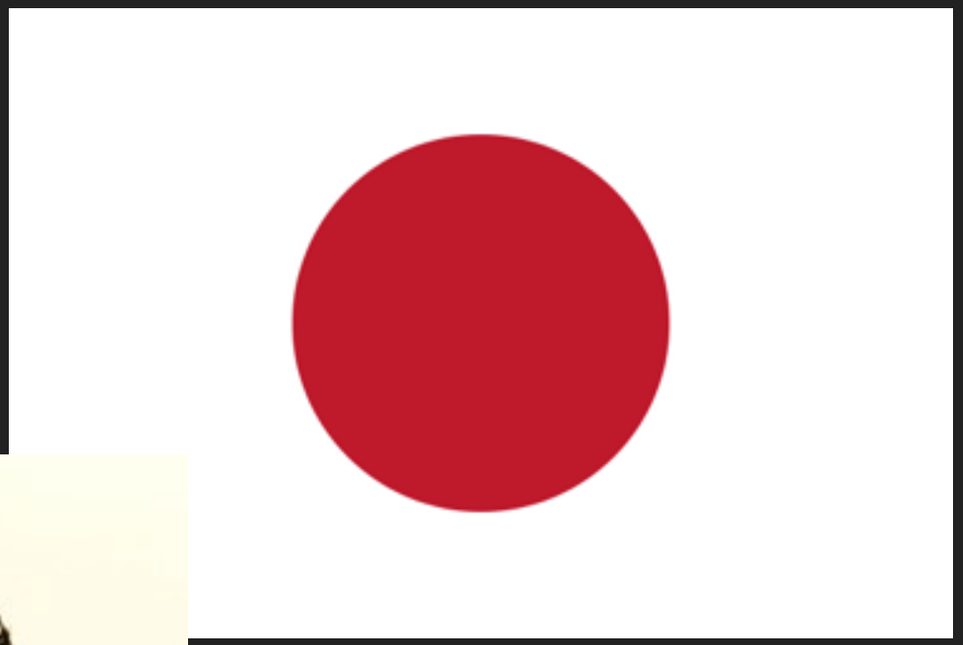
FROM SYNC TO ASYNC: HOW ELIXIR EDUCATED ME

RODRIGO NONOSE

FROM SYNC TO ASYNC: HOW ELIXIR EDUCATED ME

DIGITAL
NATIVES


Budapest
Home
19 h 25 min
Germany
Ukraine
France
Romania
Italy
Spain
Portugal
Greece
Turkey
Syria
Iraq
Tunisia
Morocco
Algeria
Libya
Egypt
Saudi A
Niger
Chad
Sudan
Burkina Faso
Guinea
Nigeria
Ghana
South Sudan
Ethiopia
Gulf of Guinea
Kenya
Gabon
DR Congo
Tanzania
Angola
Zambia
Mozambique
Namibia
Zimbabwe
Botswana
South Africa
Mada
North Atlantic Ocean
South Atlantic Ocean
Caribbean Sea
Nicaragua
Cuba
Puerto Rico
Venezuela
Guyana
Suriname
Colombia
Ecuador
Peru
Bolivia
Brazil
Chile
Argentina
Uruguay
ON
QC
NB
PE
NS
ME
MI
NY
NH
MA
IN
OH
PA
MD
DE
WV
KY
VA
TN
NC
SC
AL
GA
FL
RR
AP
AM
PA
MA
CE
RN
PB
PI
PE
AL
SE
AC
RO
TO
MT
BA
GO
MG
ES
MS
SP
RJ
SC
RS



ORDEM E PROGRESSO

ELIXIR

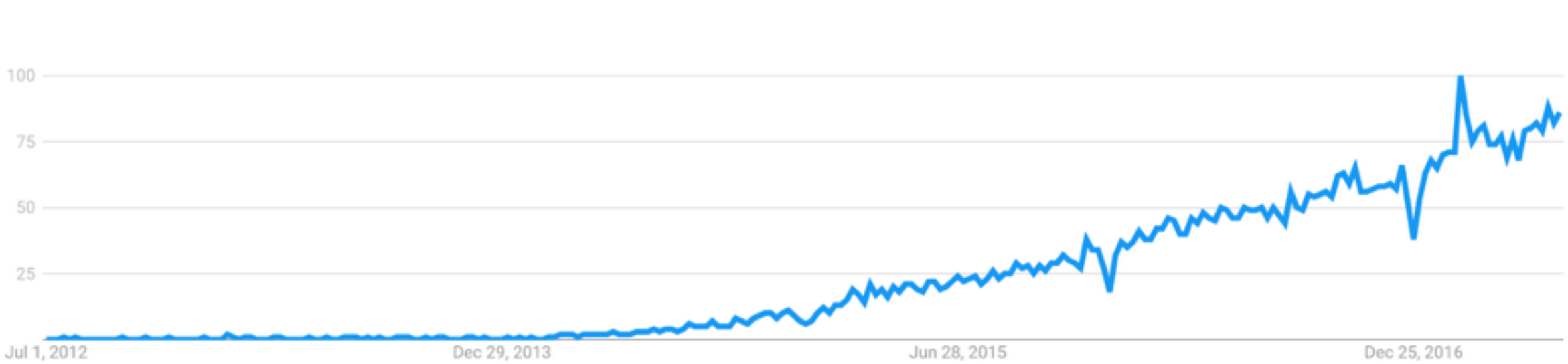
MICROSERVICES

microservices
Search term

+ Compare

Worldwide | Past 5 years | All categories | Web Search

Interest over time



Related topics		Top
1	Architecture - Professional field	100
2	Java - Programming language	75
3	Spring Framework - Topic	65
4	Docker - Software	45
5	Application programming interface - Software ...	35

1-5 of 25 topics

Related queries		Top
1	microservices java	100
2	spring	90
3	microservices spring	90
4	microservices docker	60
5	docker	60

1-5 of 25 queries

IN SHORT, THE MICROSERVICE ARCHITECTURAL STYLE IS AN APPROACH TO DEVELOPING A SINGLE APPLICATION AS A SUITE OF SMALL SERVICES, EACH RUNNING IN ITS OWN

James Lewis and Martin Fowler

PROBLEMS WITH MONOLITHS

AVAILABILITY

- One thing fails, brings down entire system
- Takes too long to bring up an instance
- Usually a single database

LOW PRODUCTIVITY

- Technical debt
- Environment differences
- Feature cycle time
- Painful Rollbacks

SCALABILITY

- Technical, performance
- Organisational, team-size

WITH WHICH ONE DO I START?

HOW ABOUT MIGRATION?

DO I REALLY HAVE TO CHOOSE?

WHAT'S THE ALTERNATIVE?

ERLANG

ERLANG (PROLOG)

ELIXIR

ELIXIR

- Pleasant syntax
- Rich REPL
- Pattern Matching
- Macros
- FP structural patterns

APPROACHES TO MONOLITH PROBLEMS

AVAILABILITY THROUGH FAULT-TOLERANCE

- Granular app restarts
- Process memory isolation

LOW PRODUCTIVITY THROUGH FP

- Immutability
- Testable
- Composable
- Reusable

SCALABILITY THROUGH DISTRIBUTION

- OTP apps
- Seamlessly connected nodes
- Preemptive scheduling

ASYNCHRONICITY

TEACHES MESSAGE

ORIENTATION

ALLOWS "TRUE OBJECT ORIENTATION"

OOP TO ME MEANS ONLY MESSAGING, LOCAL RETENTION AND PROTECTION AND HIDING OF STATE-PROCESS (...)

Alan Kay

EXECUTION NOT BLOCKED FOR TOO LONG

EASES EVENT-ORIENTED ARCHITECTURE

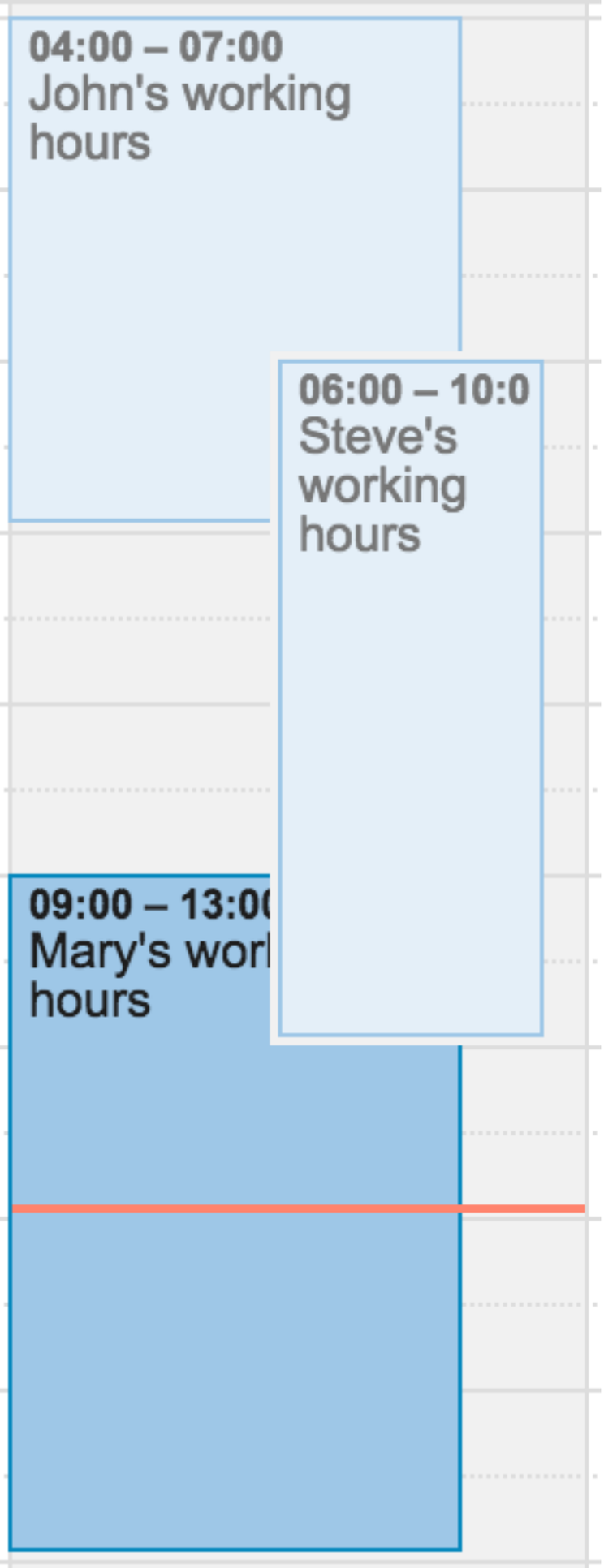
CACHING BECOMES EASIER

ASYNCHRONICITY: ORGANISATIONAL PERSPECTIVE

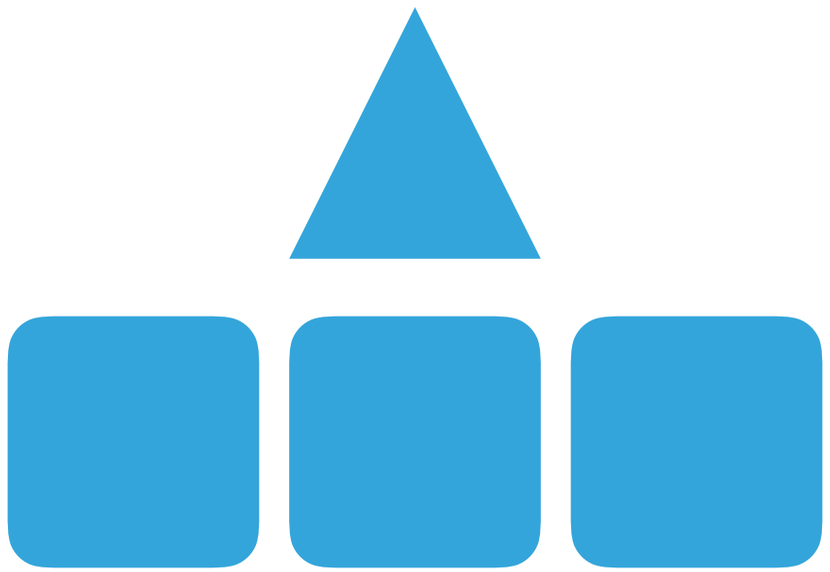
ORGANISATIONS WHICH DESIGN SYSTEMS ARE CONSTRAINED TO PRODUCE DESIGNS WHICH ARE COPIES OF THE COMMUNICATION STRUCTURES OF THESE ORGANIZATIONS

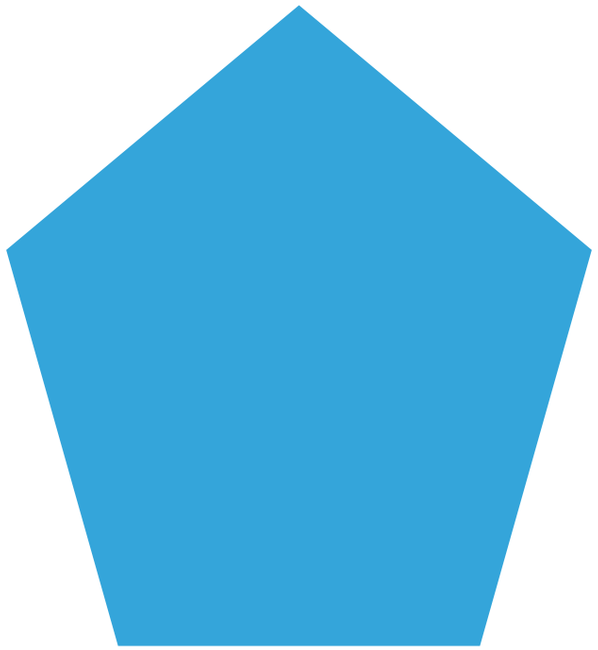
Melvin Conway

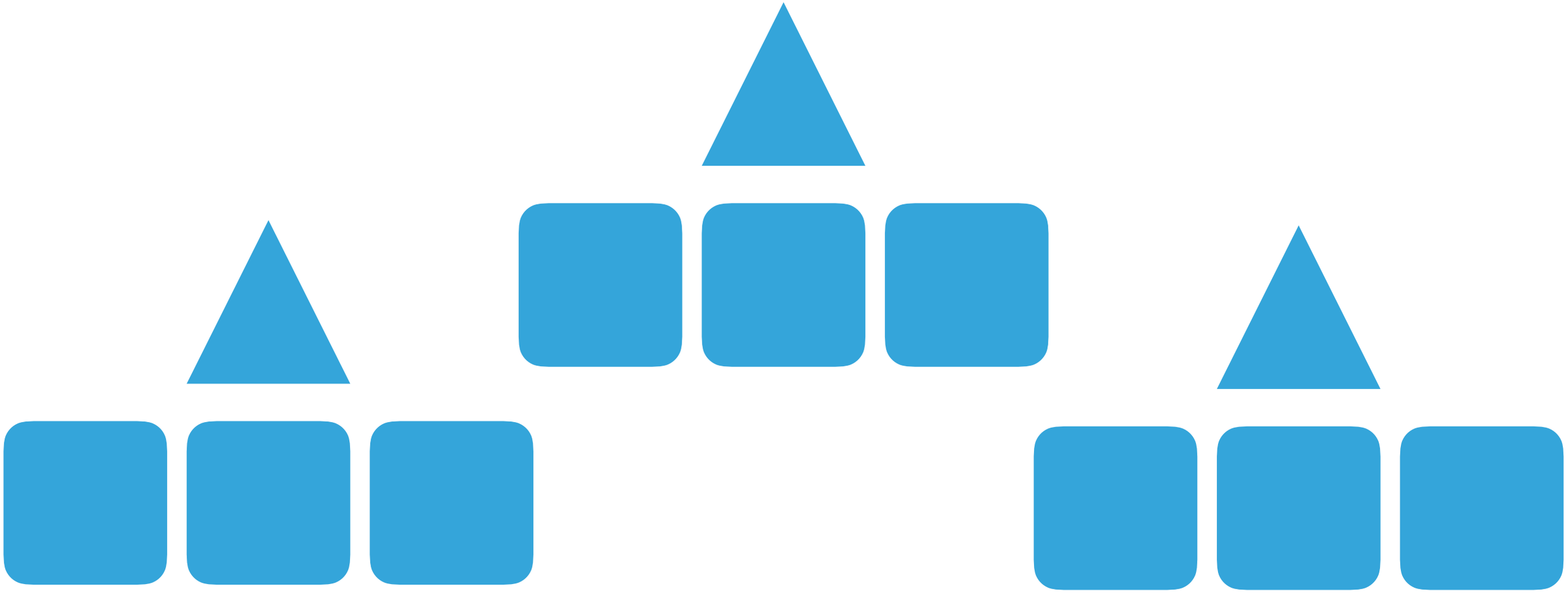
INCREASE IN HOME OFFICE AND REMOTE MEMBERS

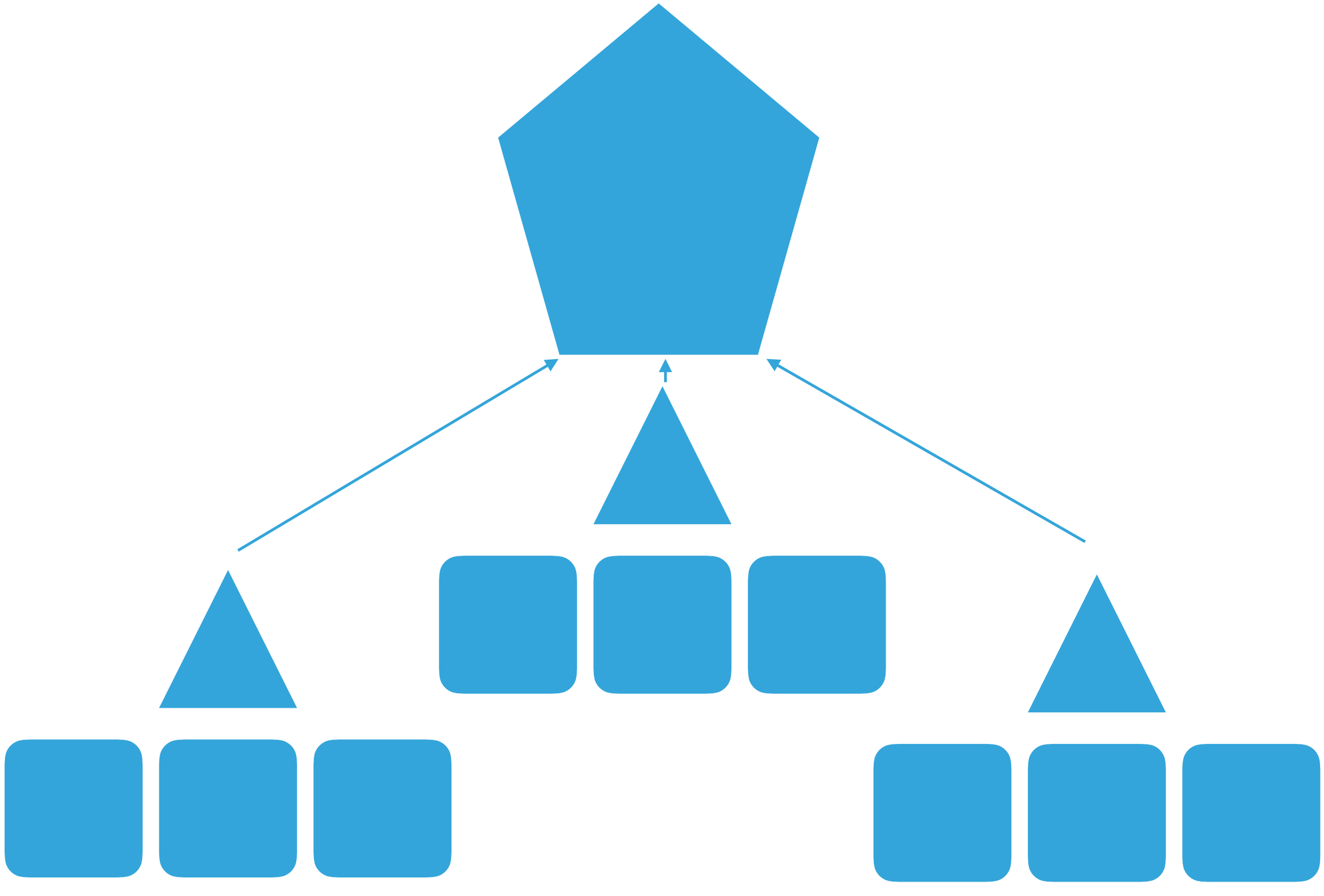

04:00 – 07:00
John's working hours
06:00 – 10:0
Steve's working hours
09:00 – 13:0
Mary's wor
hours

GROWING MEANS HARDER SYNCHRONOUS COMMUNICATION



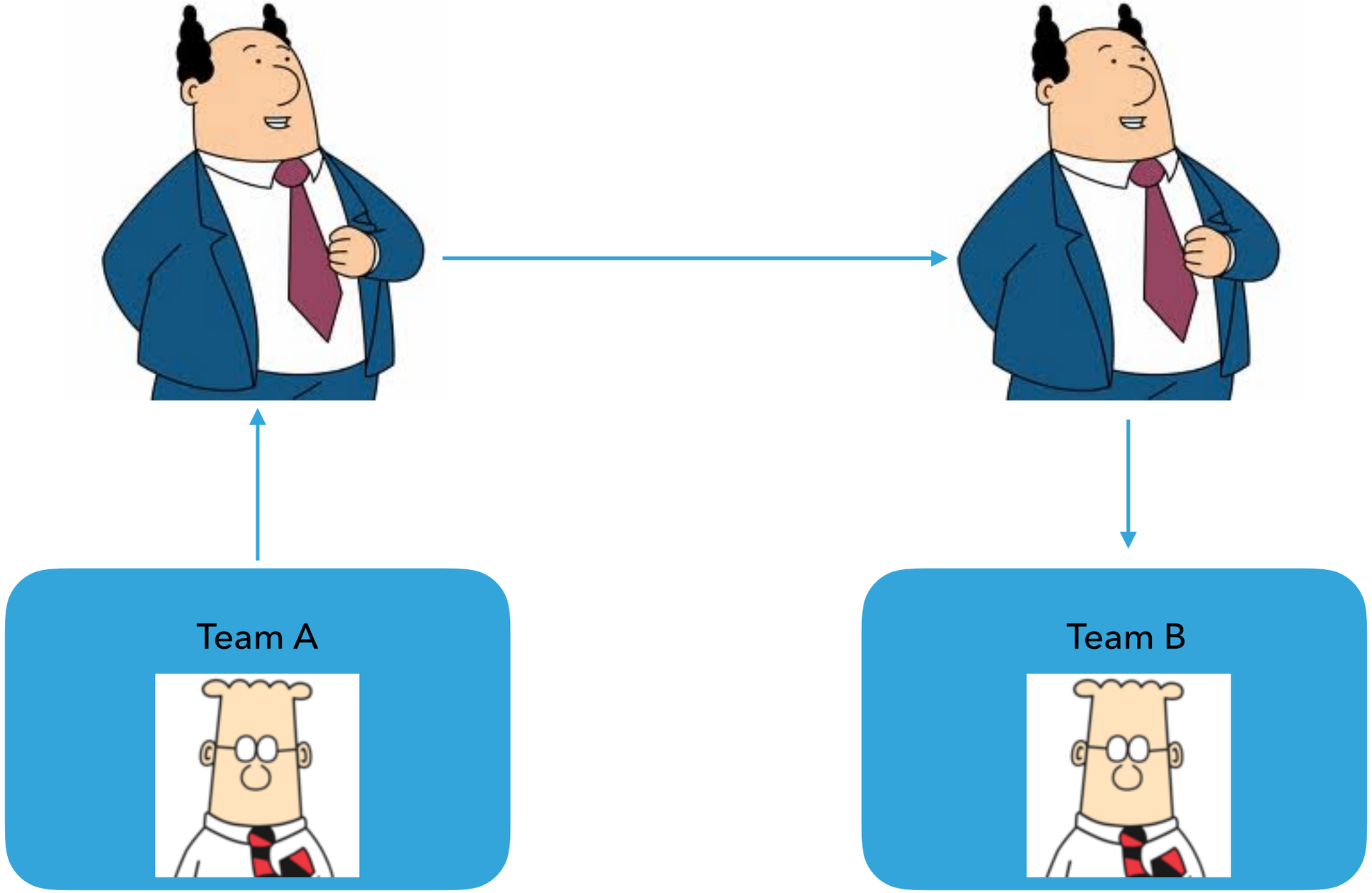


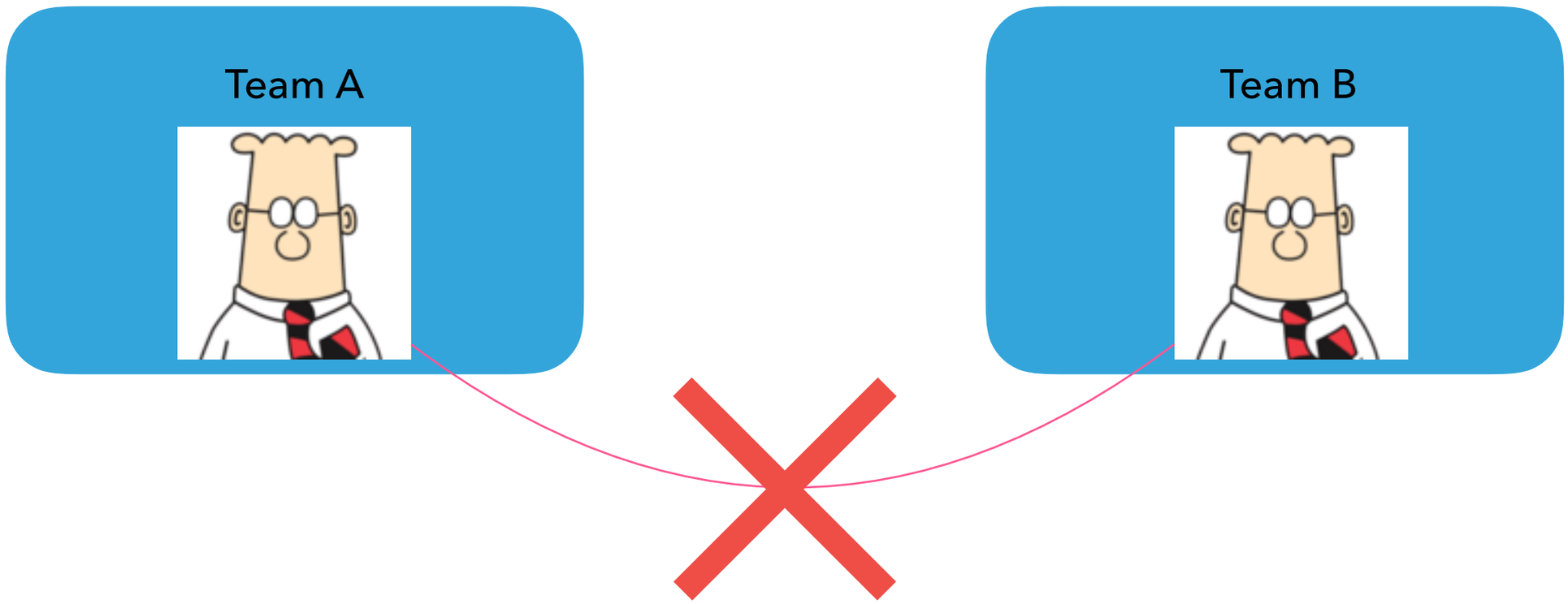




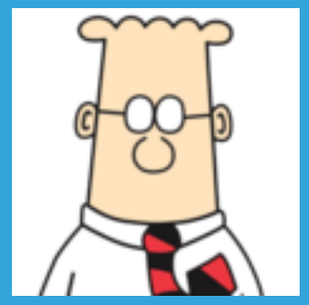
FROM TRADITIONAL HIERARCHY TO FLAT-HIERARCHY

縦社会

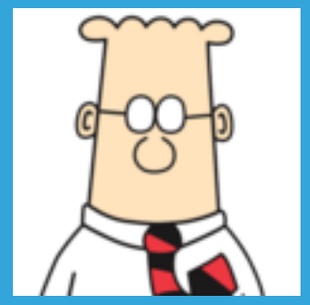

Team A
Team B


Team A
Team B

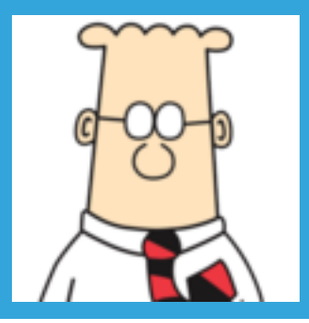
Team A



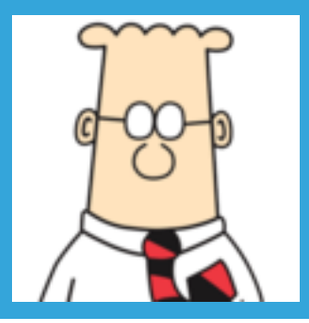
Team B



Team C



Team D



UNDERSTAND ASYNCHRONOUS COMMUNICATION

DRAWBACKS

FUNCTIONAL PROGRAMMING

ASYNCHRONOUS OPERATIONS WITH RELATIONAL DATA IS HARD

ASYNC BRANCHES WORKFLOW

EVENTUALLY NEEDS TO SYNCHRONISE

CONCLUSION

FP IS LIKE BUILDING APPLICATIONS WITH LEGO WHERE YOU BUILD YOUR OWN PIECES

ASYNCHRONICITY IS LIKE SENDING POST-ITS INSTEAD OF TALKING TO YOUR COLLEAGUE

THANK YOU