Team Topologies

core agility for the self-steering organization

Matthew Skelton, co-author of Team Topologies

LPPDE Summit | 2024-05-02 online

Talk 52

Team Topologies

TeamTopologies.com
@TeamTopologies

Matthew Skelton

Co-author of the book Team Topologies

CEng

“Ecosystem Engineering”

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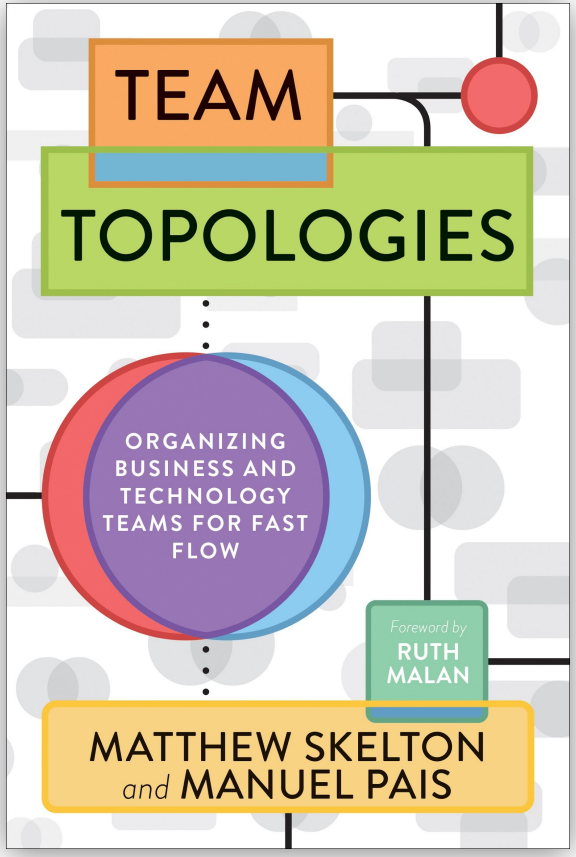
Team Topologies

Team Topologies

Organizing business and technology teams for fast flow

Matthew Skelton & Manuel Pais
IT Revolution Press, 2019

teamtopologies.com/book



Team Topologies

“We are on a mission to make work more humane and more effective for everyone via Team Topologies patterns and principles.” https://teamtopologies.com/mission

Team Topologies

What is Team Topologies?


haan
van gelder
9193
8877

Major activities need core agility

Team Topologies is core agility for the self-steering organization

Photo by kike vega on Unsplash

Business Agility: the ability to respond rapidly* to changing internal and external conditions (* in hours)

Team Topologies

Remote-first

Photo by Daniele Levis Pelusi on Unsplash

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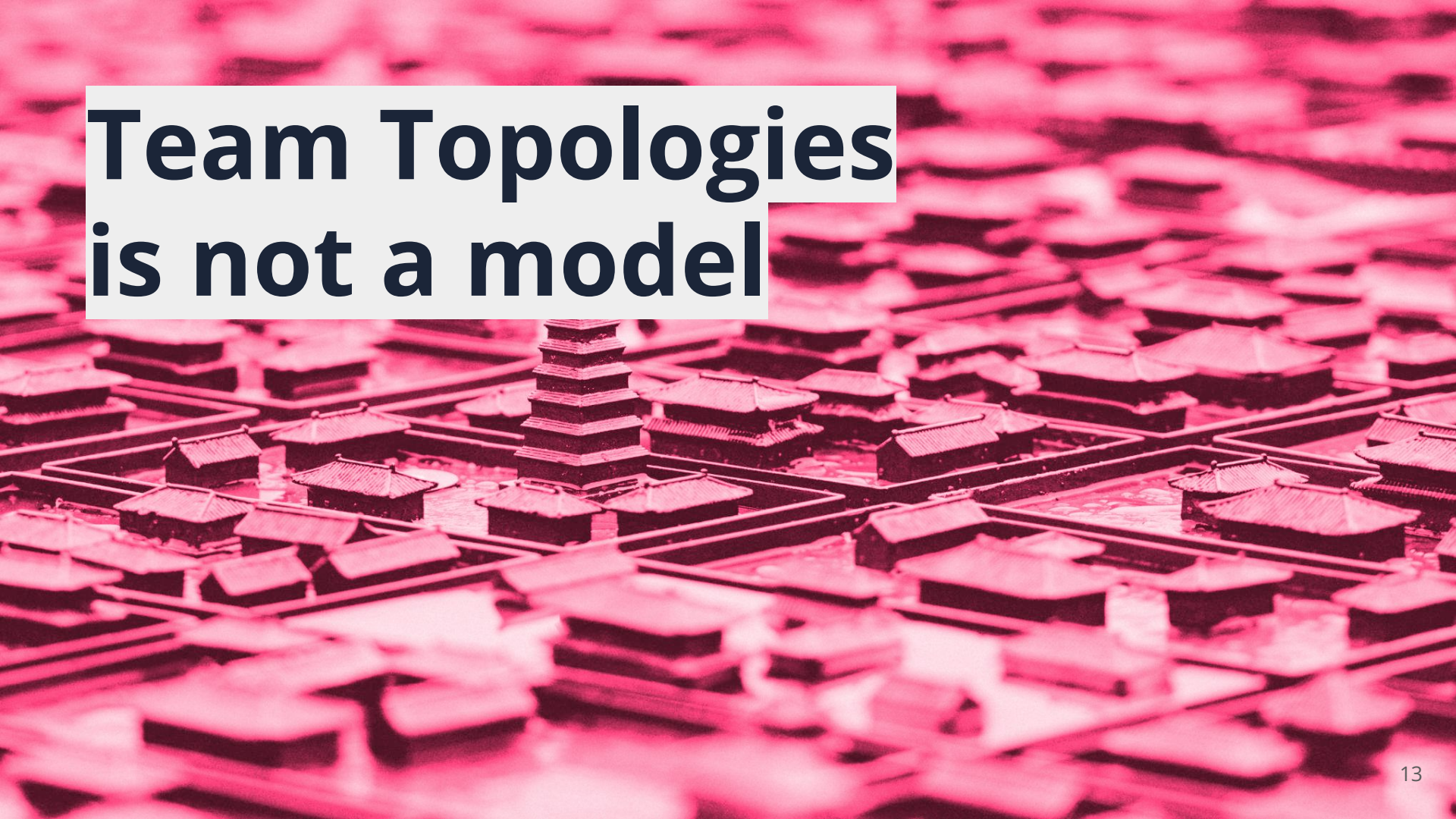
Increased global and local competition

Photo by chuttersnap on Unsplash



Team Topologies is not a model

Team Topologies is not really about org design

Team Topologies is not about hierarchy

Team Topologies is for navigating knowledge-work


Team Topologies is for technology-assisted, empowered teams

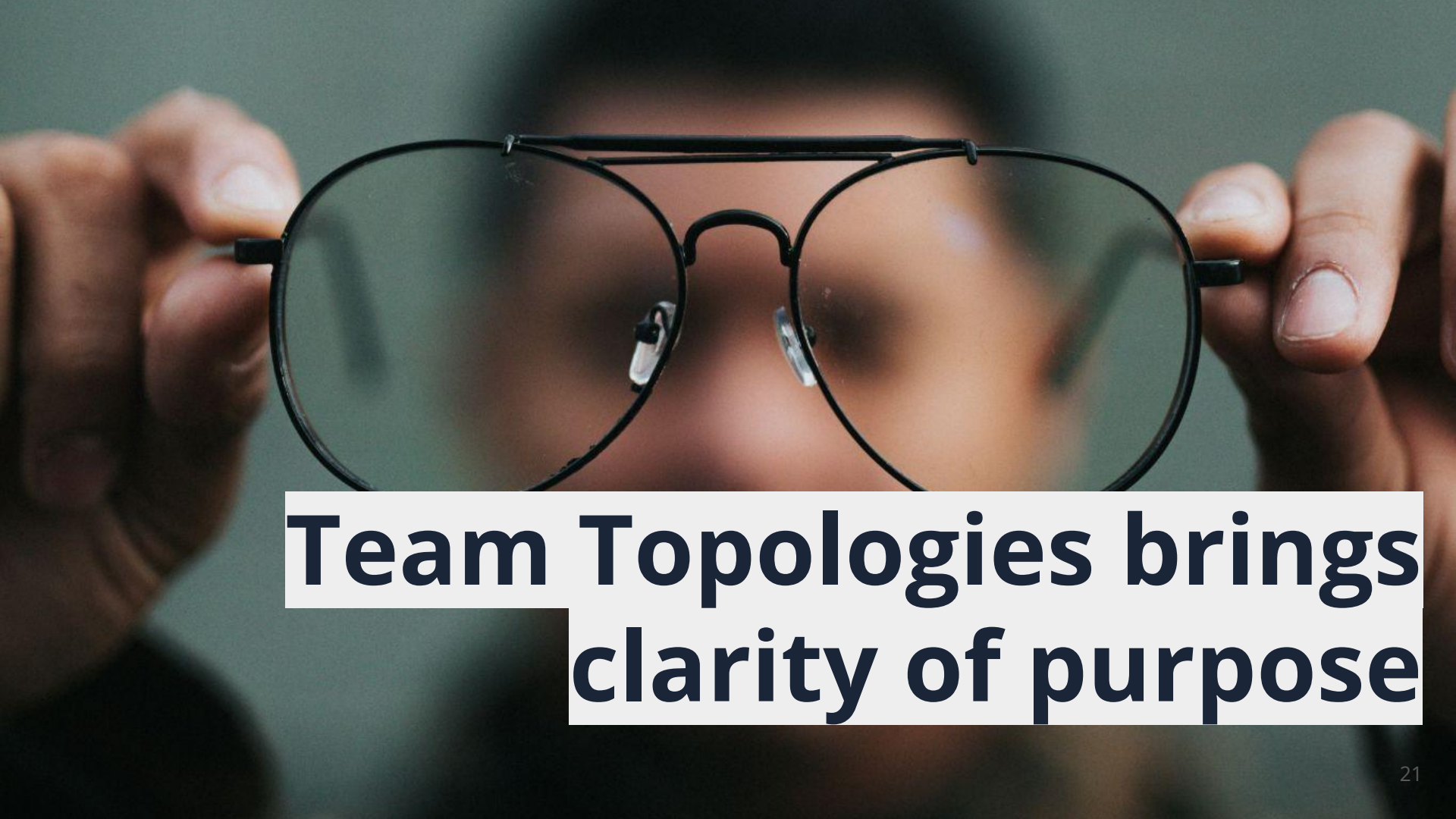
Team Topologies is for humane, effective organizations

“Team Topologies is a set of coherent patterns to encourage emergent behaviors for fast flow in humane organizations”

Matthew Skelton

Team Topologies

Team Topologies can help generate operating models



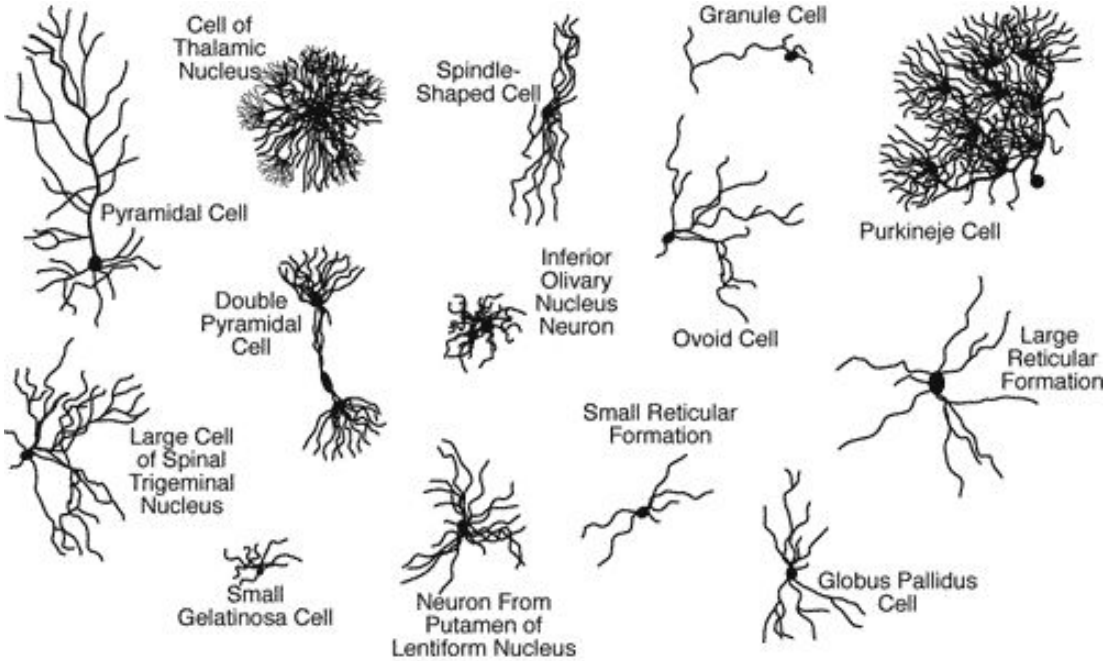
Team Topologies brings clarity of purpose

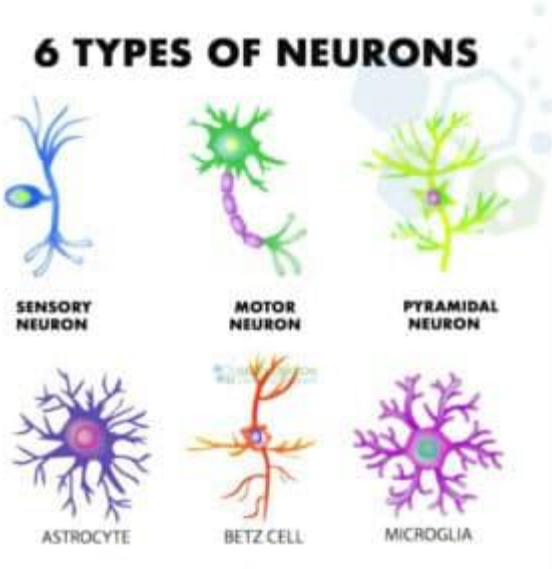
Team Topologies provides continuous adaptation

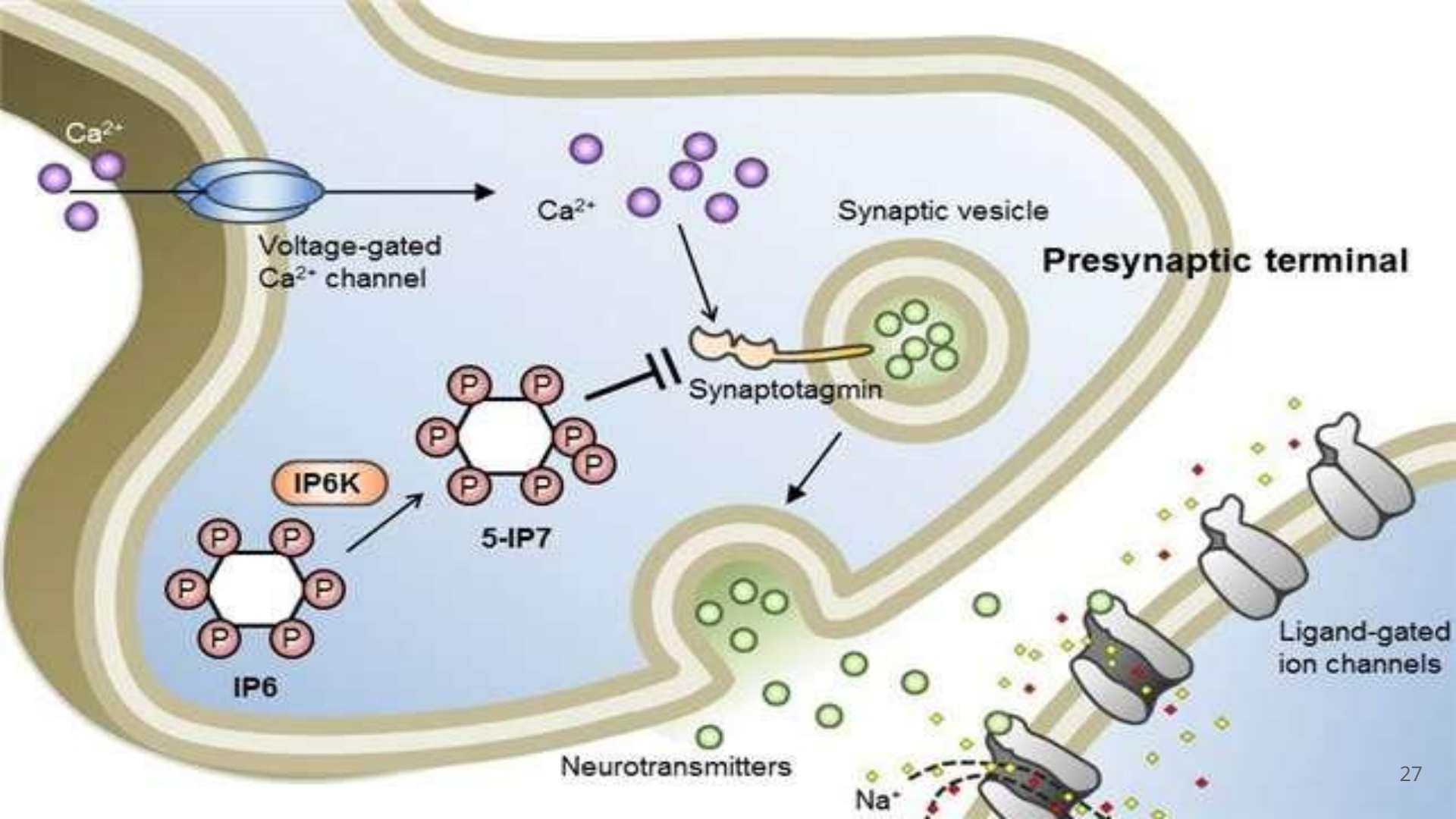
Team Topologies is core agility for the self-steering organization

Photo by kike vega on Unsplash

What are the key principles informing Team Topologies?


Cell of Thalamic Nucleus
Spindle-Shaped Cell
Granule Cell
Pyramidal Cell
Purkineje Cell
Inferior Olivary Nucleus Neuron
Double Pyramidal Cell
Ovoid Cell
Large Reticular Formation
Small Reticular Formation
Large Cell of Spinal Trigeminal Nucleus
Small Gelatinosa Cell
Neuron From Putamen of Lentiform Nucleus
Globus Pallidus Cell


6 TYPES OF NEURONS
SENSORY NEURON
MOTOR NEURON
PYRAMIDAL NEURON
ASTROCYTE
BETZ CELL
MICROGLIA


Ca2+
Voltage-gated
Ca2+ channel
Ca2+
Synaptic vesicle
Presynaptic terminal
Synaptotagmin
IP6K
5-IP7
IP6
Neurotransmitters
Na+
Ligand-gated
ion channels

A variety of parts (actors) and interactions (behaviors) is needed for complex responses

Organization operating model constraints

1. Focus on flow
2. Ensure there is high trust inside teams
3. Design teams to be persistent (long-lived)
4. Limit team cognitive load
5. Enable rapid, safe changes to apps, data, infrastructure, etc.
6. Ensure that incentives are healthy for 24x7 operation and on-call
7. Encourage teams to be close to their customers - internal and external
8. Acknowledge that it is not possible to predict the behaviour of modern complex software ecosystems - design your processes to match
9. Encourage ongoing discovery and innovation at team and product levels
10. Avoid teams waiting on many other teams during delivery

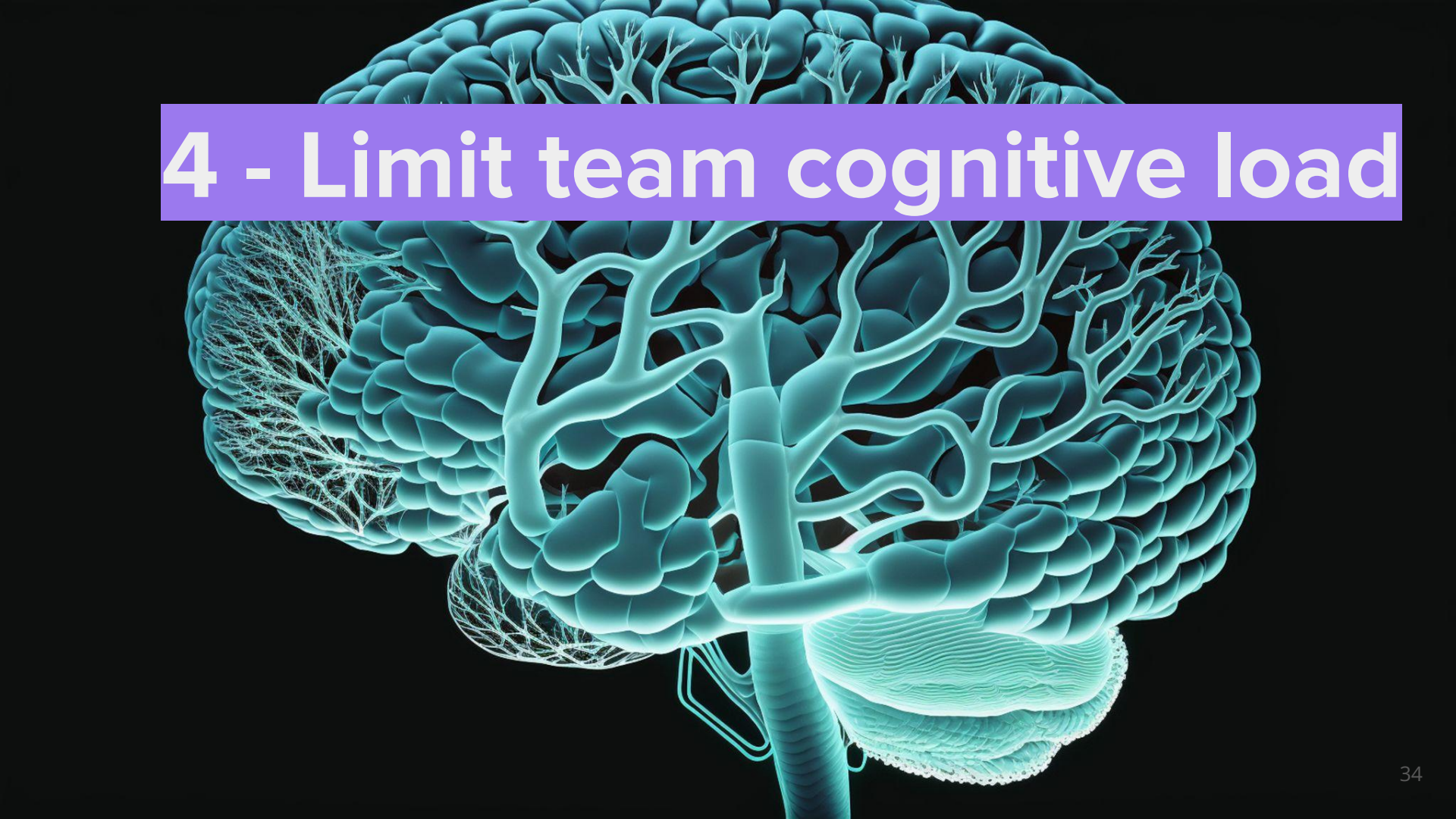
Learning from "DevOps" since 2008


1 - Focus on flow

2 - Ensure there is high trust inside teams

3 - Design teams to be persistent (long-lived)

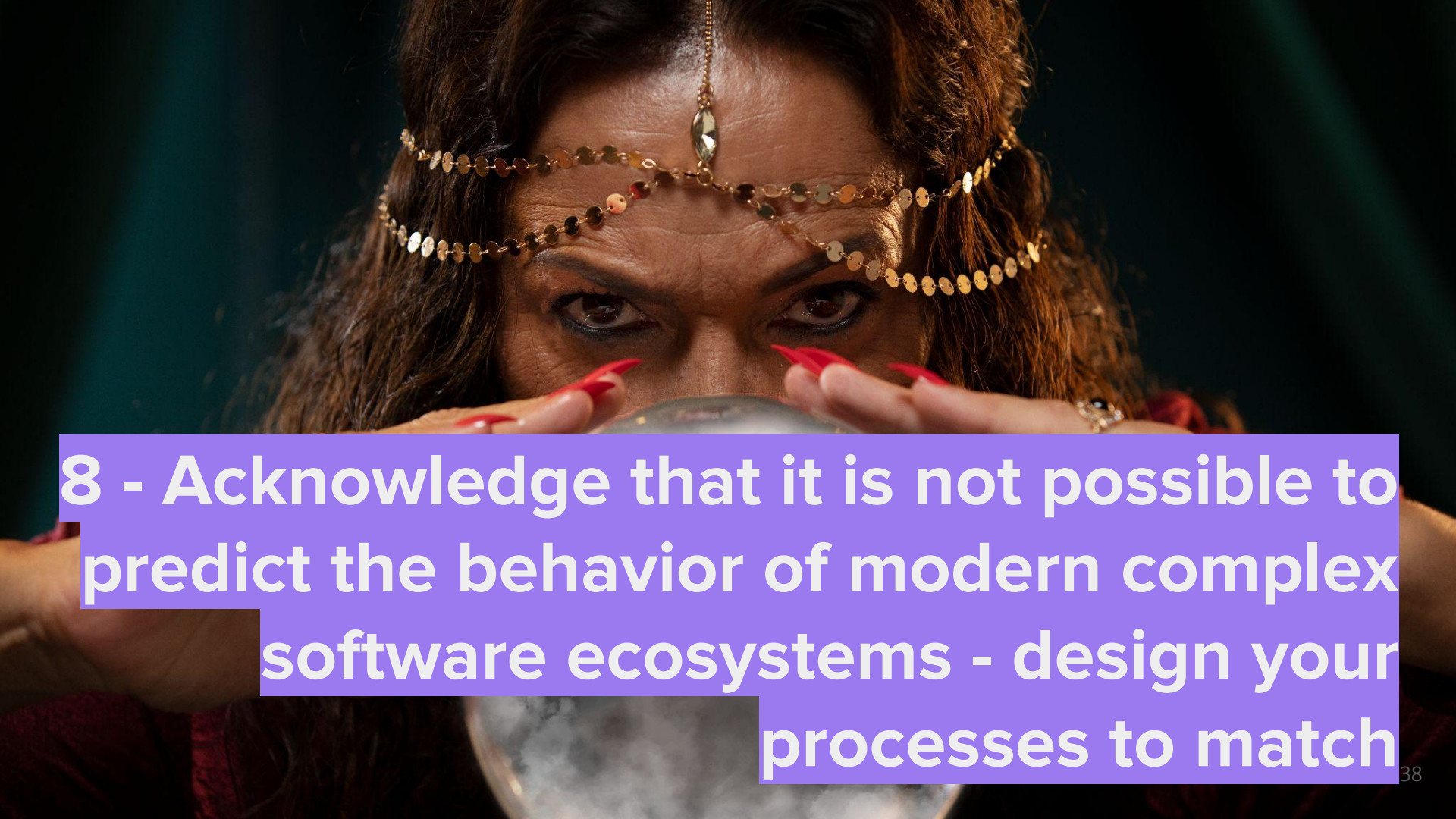
4 - Limit team cognitive load




5 - Enable rapid, safe changes to apps, data, infrastructure, etc.

6 - Ensure that incentives are healthy for 24x7 operation and on-call

7 - Encourage teams to be close to their customers - internal and external



8 - Acknowledge that it is not possible to predict the behavior of modern complex software ecosystems - design your processes to match

9 - Encourage ongoing discovery and innovation at team and product levels


10 - Avoid teams waiting
on many other teams
during delivery

Sense-check:
which of these things feel strange / not relevant / out of place / etc.?

If each person in the organization is blocked for 1 hour per working day, how much does this cost?

- Fully-loaded cost: €160k per year
- 260 paid days per year
- Total of 400 people

Person fully weighted cost per year	Person cost per day	Hours blocked per 8-hour day	Days blocked per 260-day year	Cost of blockers per person per year	Number of people	Total cost of blockers per year
€160,000.00	€615.38	1	32.5	€20,000.00	400	€8,000,000.00

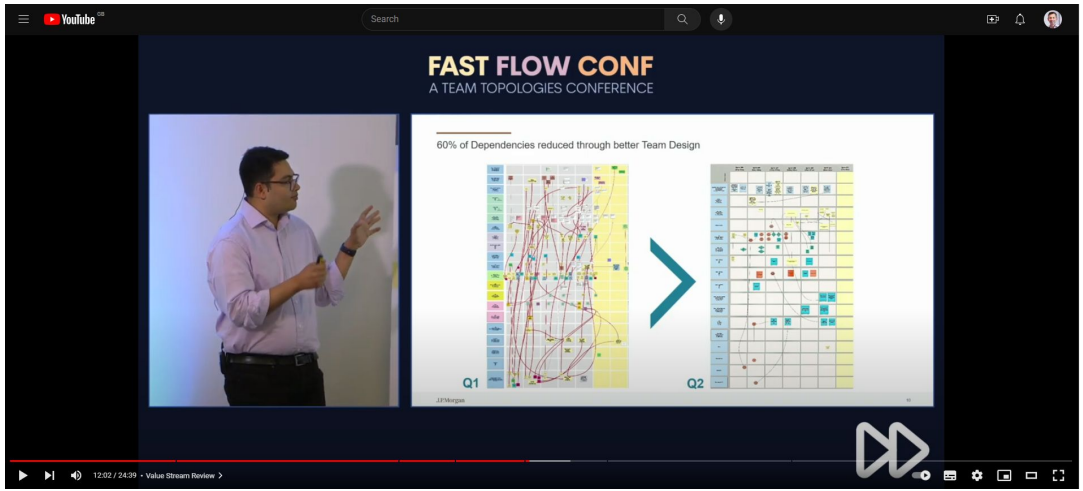
€8 million per year 💥

Case Study

JP Morgan

Case Study

“How JP Morgan Applied Team Topologies to Improve Flow in a Market Leading Enterprise Platform”

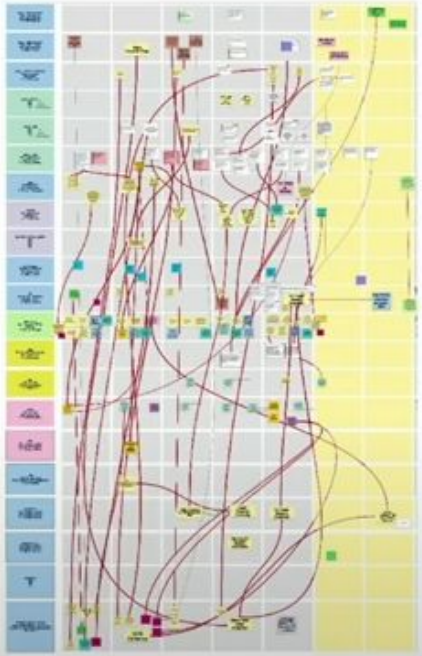


https://www.youtube.com/watch?v=y3OL7dv2I48

Fast Flow Conf 💖
https://www.fastflowconf.com/

Case Study

60% of Dependencies reduced through better Team Design



Q1

Q2

J.P.Morgan

10

Case Study

“60% of dependencies reduced through better team design” 🎉

Engineer fully weighted cost per year	Engineer cost per day	Hours blocked per 8-hour day	Days blocked per 260-day year	Cost of blockers per [illegible]	Number of engineers	Total cost of blockers per year
€160,000.00	€615.38				400	€8,000,000.00

Remember this?

€8[illegible]illion per year 💥

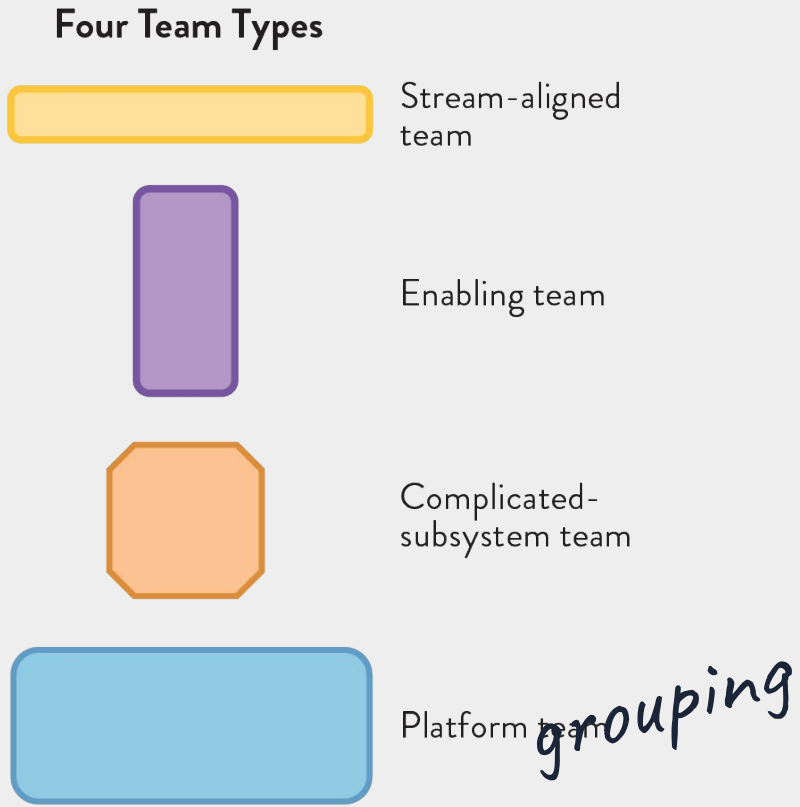
[Note: these are not figures from JP Morgan]

Multiple, independent flows, fractally

Team Topologies

TT principle #1

4 team types
(well, 3 + 1)



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Each team type (or grouping) has specific expected behaviors

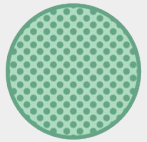
Each team type (or grouping) has a specific relation to flow and team cognitive load

TT principle #2

3 team interaction modes

Collaboration

X-as-a-Service



Facilitating

Team Topologies

The constraints on interactions provide signals to tell us when boundaries are not good for fast flow

The constraints on interactions provide signals to tell us about intent/mission, capabilities, skills, strategy, and lots more…

TT principle #3

fast flow

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Organizing for fast flow means we are happy with: duplication, (a few) different versions, async + eventual consistency, ‘internal marketplace’, etc.

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TT principle #4

team cognitive load

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Using team cognitive load as a key architectural and design principle means we have a humane, compassionate, and realistic workplace

TT principle #5

thinnest viable platform (TVP)

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TVP avoids ‘platform bloat’ by focusing on enhancing flow and reducing team cognitive load - rather than technology

TT principle #6

empower teams to adjust boundaries to enhance flow

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Empowering teams to adjust boundaries for flow uses local knowledge for regular incremental gains, avoiding a dreaded ‘Re-org’ every 5 years

Key success factors for Team Topologies

Months and years, not weeks

Provide time + space + funding for real capability enhancement and behavior change

*"The work is delivered in **many small changes that are uncoordinated to enable flow.** … Management's job is to provide **context**, **prioritization** and to coordinate across teams. Lending resources if needed across teams to **unblock things**. … It works well within a **high trust culture**."*

Adrian Cockcroft https://mastodon.social/@adrianco/111174832280576410

Technology strategy advisor, Partner at OrionX.net (ex Amazon Sustainability, AWS, Battery Ventures, Netflix, eBay, Sun Microsystems, CCL)

Almost all decisions need to use the twin ‘lenses’ of fast flow and team cognitive load 👓

Almost ALL roles and teams should be focused on either:

🔀 A flow of change -or-

👐 Supporting flow(s) of change

🔀 A flow of change:

- Software changes to a service/app
- Config changes to COTS software
- Onboarding a new employee
- Reviewing legal contracts
- Installing A/V equipment

👐 Supporting flow(s) of change:

- An infrastructure platform for cloud services/apps
- A data platform for analytics
- A wiki or How-To guide
- Real-time data for decision-making

Underlying techniques + social and technical practices


Re-aligned architecture
for information,
products, etc.

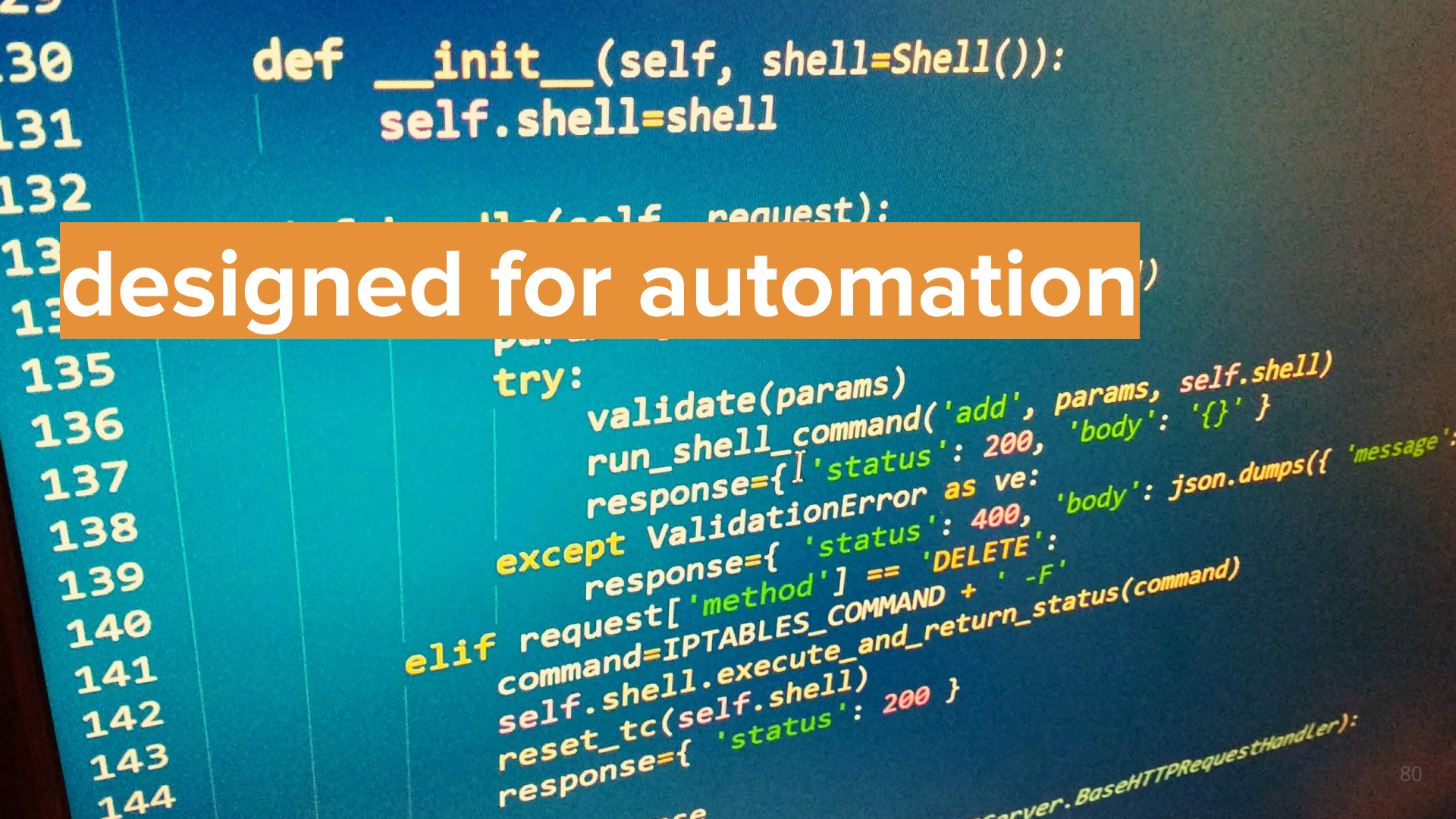

Fast feedback via
digital telemetry

Good technical practices

Team stewardship of products & services

Configuration stored in version control

Operational transparency


def __init__(self, shell=Shell()):
self.shell=shell
try:
validate(params)
run_shell_command('add', params, self.shell)
response={'status': 200, 'body': '{}' }
except ValidationError as ve:
response={ 'status': 400, 'body': json.dumps({ 'message':
elif request['method'] == 'DELETE':
command=IPTABLES_COMMAND + ' -F'
self.shell.execute_and_return_status(command)
reset_tc(self.shell)
response={ 'status': 200 }
designed for automation

Continuous

integration

testing

scanning

performance

right-sizing

monitoring

deployment

Psychological safety

Active diffusion of learning across team boundaries

Use external expertise to uplift capabilities

It’s more fun (and effective) together - teams, partners, ...

Look for external help that works as a combination of “Platform” and “Enabling team” (moves towards self-sufficiency)

Our network of world-class expert practitioner coaches and partners provides global enablement for adopting Team Topologies

Team Topologies

Current TTVPs

Erica Engelen – TTVP

Erica is a Business Agility Coach, driven by a deep passion for both people and technology. She is an early adopter of Team Topologies and experienced how easy it was to establish a common language with organizations based on the

Kenny Baas-Schwegler – TTVP

As a sociotechnical systems

João Rosa – TTVP

João is an early adopter of Team Topologies in his consultancy

Eduardo da Silva – TTVP

Eduardo has a long track record

Susanne Kaiser – TT

Susanne is a Team Topologi
Valued Practitioner (TTVP) c
work on combining War
ps, Domain-driven Desig
Team Topologies, first w
series of talks and more
iently as the author of the

Victoria Shakspeare – TTA

Victoria Shakspeare is a passionate advocate of Team Topologies because it places

Radek Orszewski – TTA

Radek Orszewski – is a seasoned agility practitioner with almost 20 years of international experience in software products

Ben Dodd – TTA

Ben is a keen advocate of Team Topologies and speaks regularly at all levels within organizations and as part of the public

Current TTSPs

Lean Agile Ninja – TTSP

Accelerate your journey to true business agility with th
Kanban University' Accredited Kanban Consultant and

Read More →

TTSP

Conflux – TTSP

Conflux is on a mission to make workplaces more huma
Topologies. We help organizations to optimize for fast
change agents and leaders.

Read More →

TTSP

Armakuni – TTSP

Armakuni have a proven approach (and the success sto
outcomes.

Read More →

AXIOLOGIK

Axiologik – Candidate TTSP

Axiologik is an advanced digital delivery consultancy with a world

NearForm – Candidate TTSP

We are NearForm. We combine engineering, design and strategy

JCURV – Candidate TTSP

JCURV support organisations to increase their agility so they can

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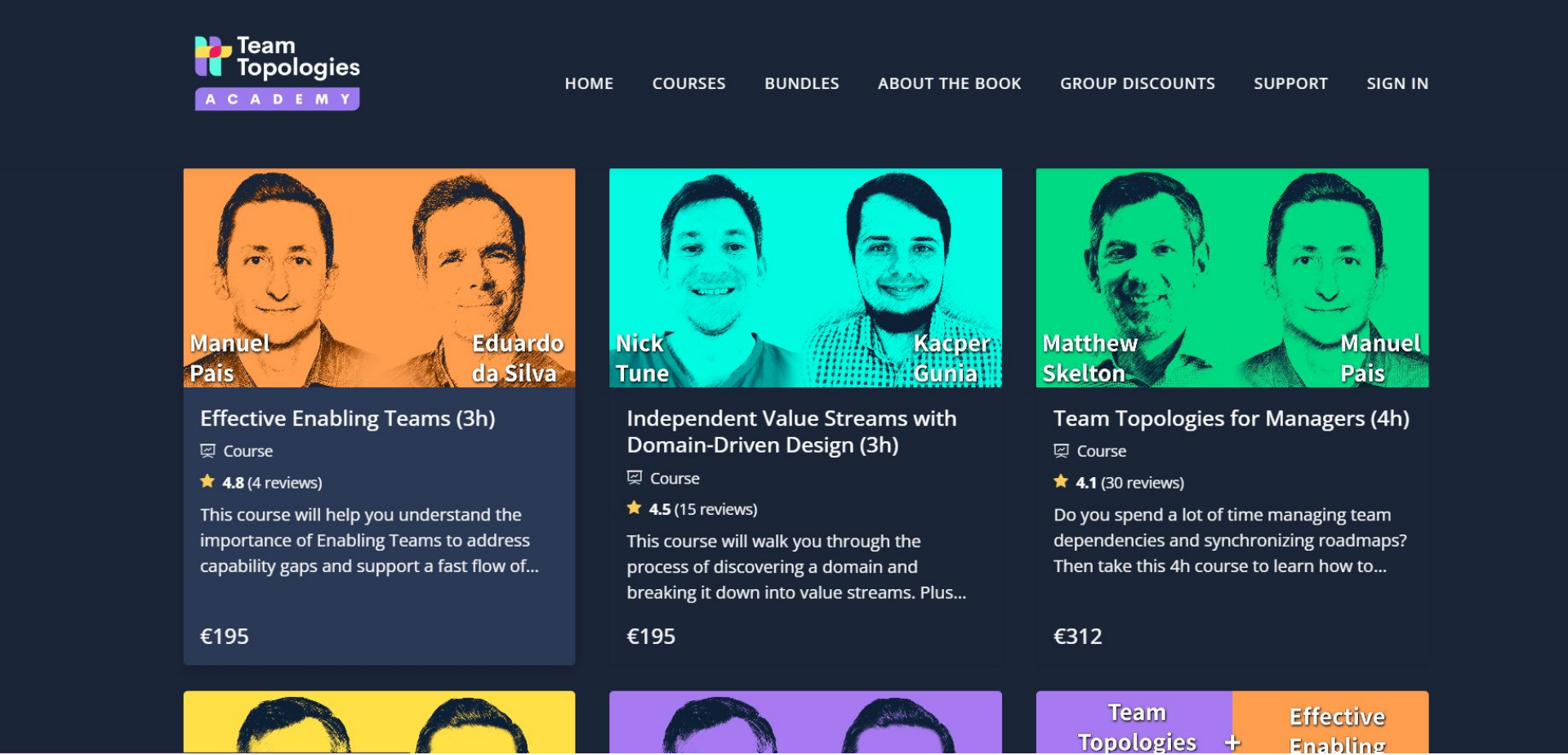
Team Topologies
ACADEMY
HOME
COURSES
BUNDLES
ABOUT THE BOOK
GROUP DISCOUNTS
SUPPORT
SIGN IN
Manuel Pais
Eduardo da Silva
Effective Enabling Teams (3h)
Course
4.8 (4 reviews)
This course will help you understand the importance of Enabling Teams to address capability gaps and support a fast flow of...
€195
Nick Tune
Kacper Gunia
Independent Value Streams with Domain-Driven Design (3h)
Course
4.5 (15 reviews)
This course will walk you through the process of discovering a domain and breaking it down into value streams. Plus...
€195
Matthew Skelton
Manuel Pais
Team Topologies for Managers (4h)
Course
4.1 (30 reviews)
Do you spend a lot of time managing team dependencies and synchronizing roadmaps? Then take this 4h course to learn how to...
€312
Team Topologies
+
Effective

Teamperature
Managing cognitive load for healthier teams

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Introducing Teamperature: Managing Cognitive Load for Healthier Teams

BETA version soon available for exclusive early access!

- Is your team struggling to deliver complex work and meet stakeholder commitments?
- Does your team feel stressed and lacking the time and autonomy to make better informed decisions?
- Are people overwhelmed by the amount of tools, processes and dependencies they need to navigate on a daily basis?

Teamperature delivers data-driven insights into your team's cognitive load drivers, enabling you to spot risky areas that need attention now.

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by Team Topologies

Team Topologies

Teamperature - https://www.teamperature.com/

📦 Package of materials, licenses, ‘train-the-trainer’, guides and other enablement to help with rapid adoption at scale. (2025+)

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