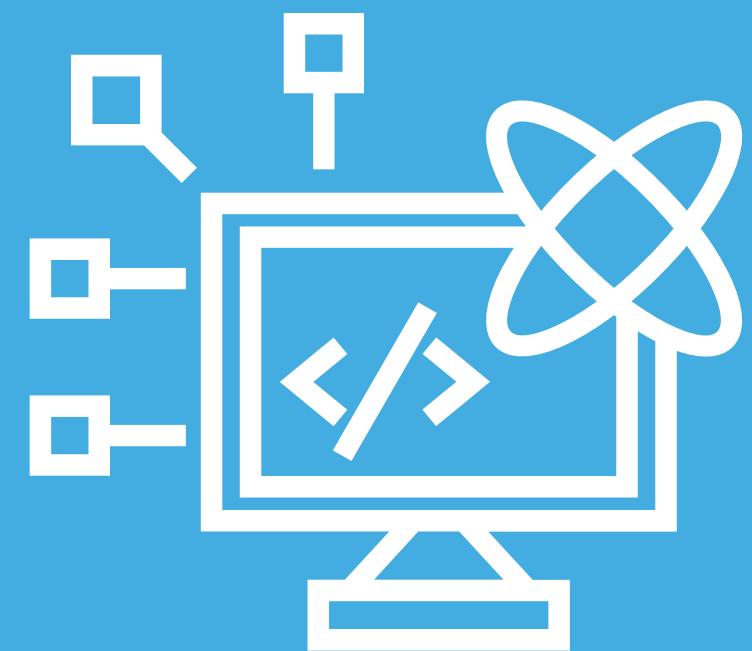


Technical Leadership

Masterclass



Welcome

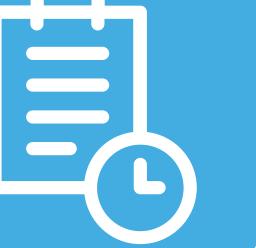


Introductions

Who



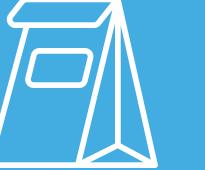
Agenda



Timing



Takeaways





TechLead ACADEMY

Training

e.g. TLs, EMs, Staff+

Time Management for Technical Leaders

Productivity methods that pay back

Systems Thinking Fundamentals

Manage systems, not people

Communicate Like a CTO

Grow your influence and be better understood

Tech Lead Masterclass

From Maker to Multiplier

Engineering Manager Essentials

A Strong Foundation for Effective EMs

Uncover the core expectations of EMs with this guided online course
<https://www.patkua.com/em-essentials>

Shortcut to Tech Leadership

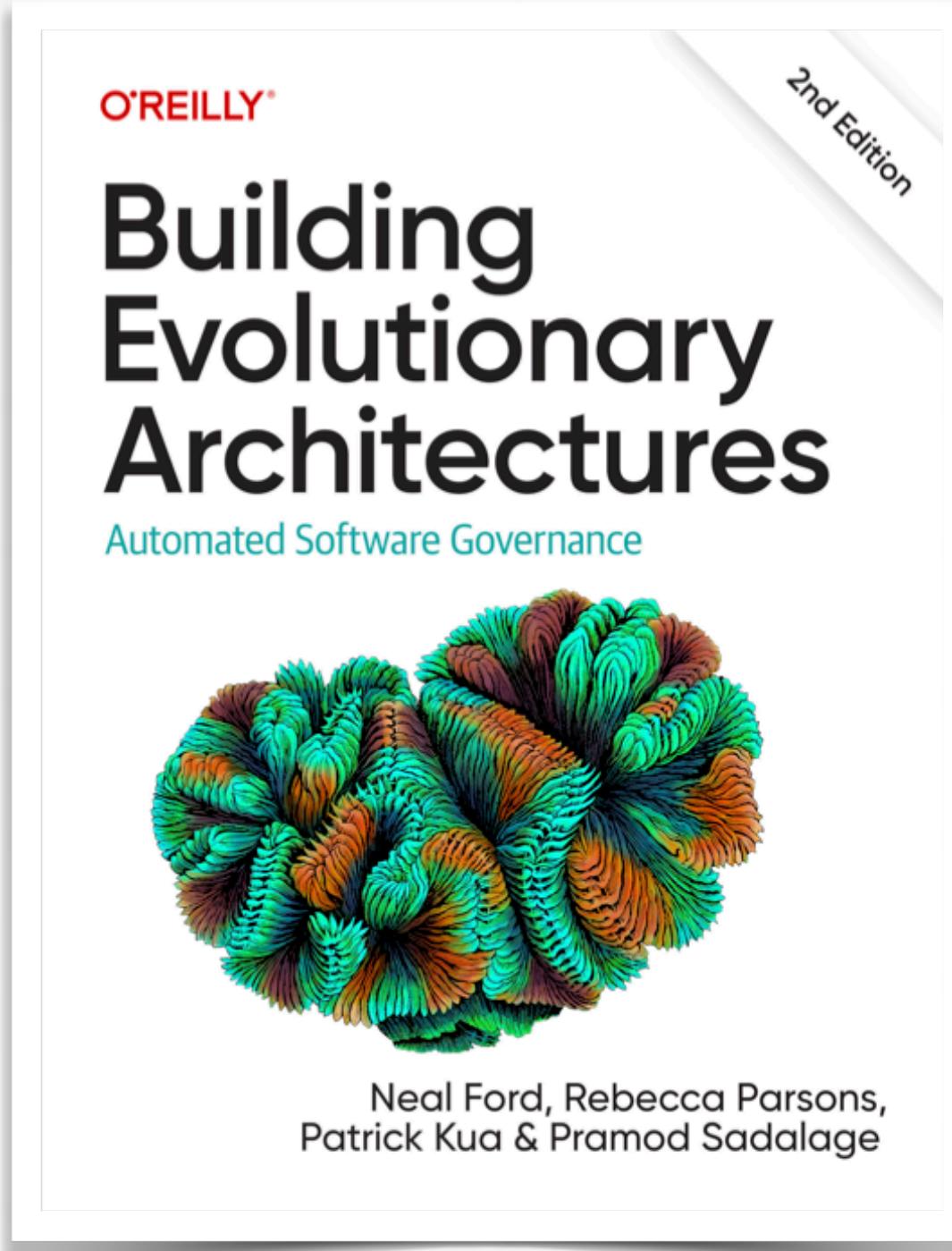
Accelerate Your Journey From Maker to Multiplier

Join a guided workshop designed for online learning
<https://www.patkua.com/shortcut-to-tech-leadership/>

@patkua



20+ years experience



O'REILLY®

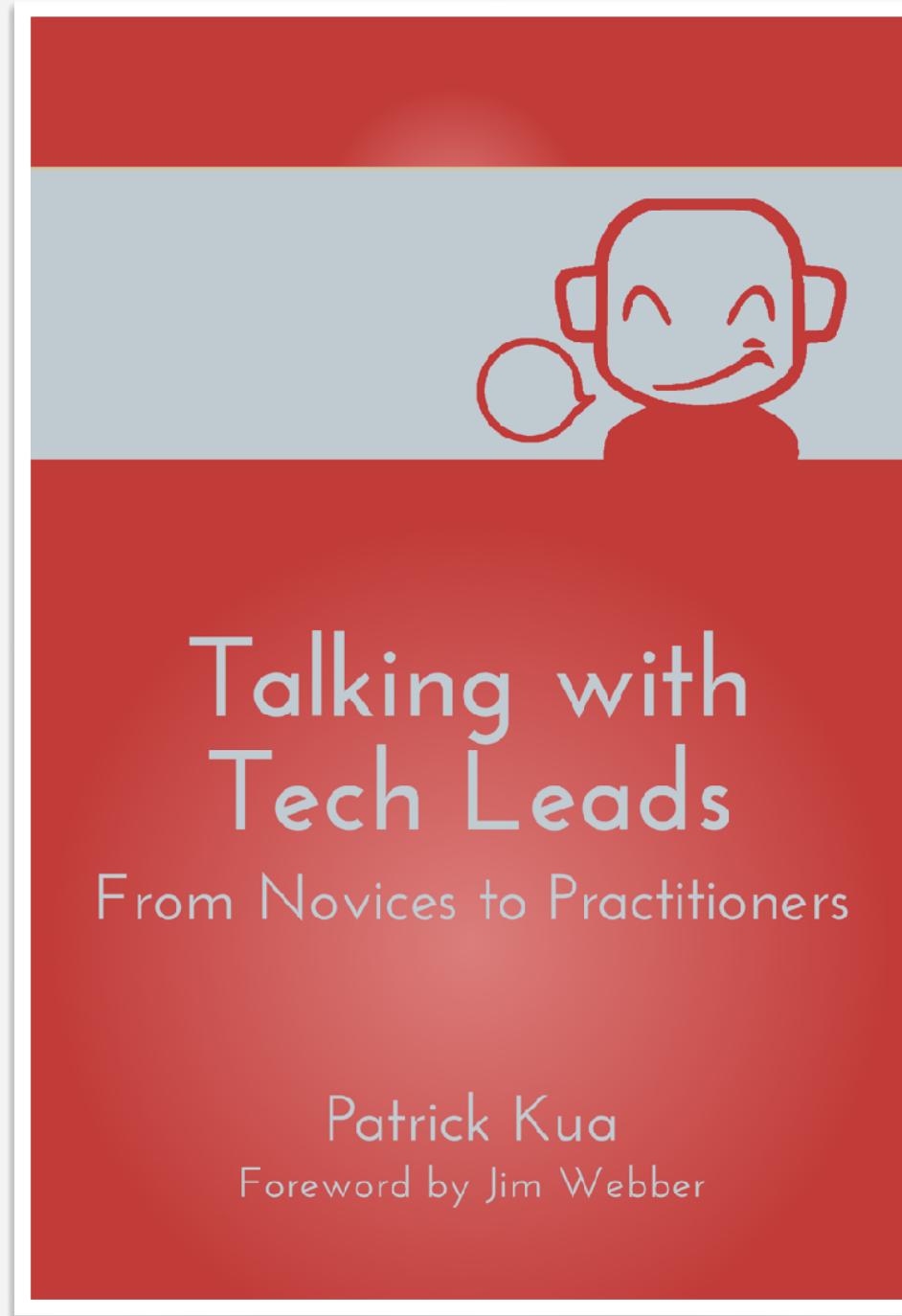
Building Evolutionary Architectures

Automated Software Governance



Neal Ford, Rebecca Parsons,
Patrick Kua & Pramod Sadalage

thekua.io/evolarch

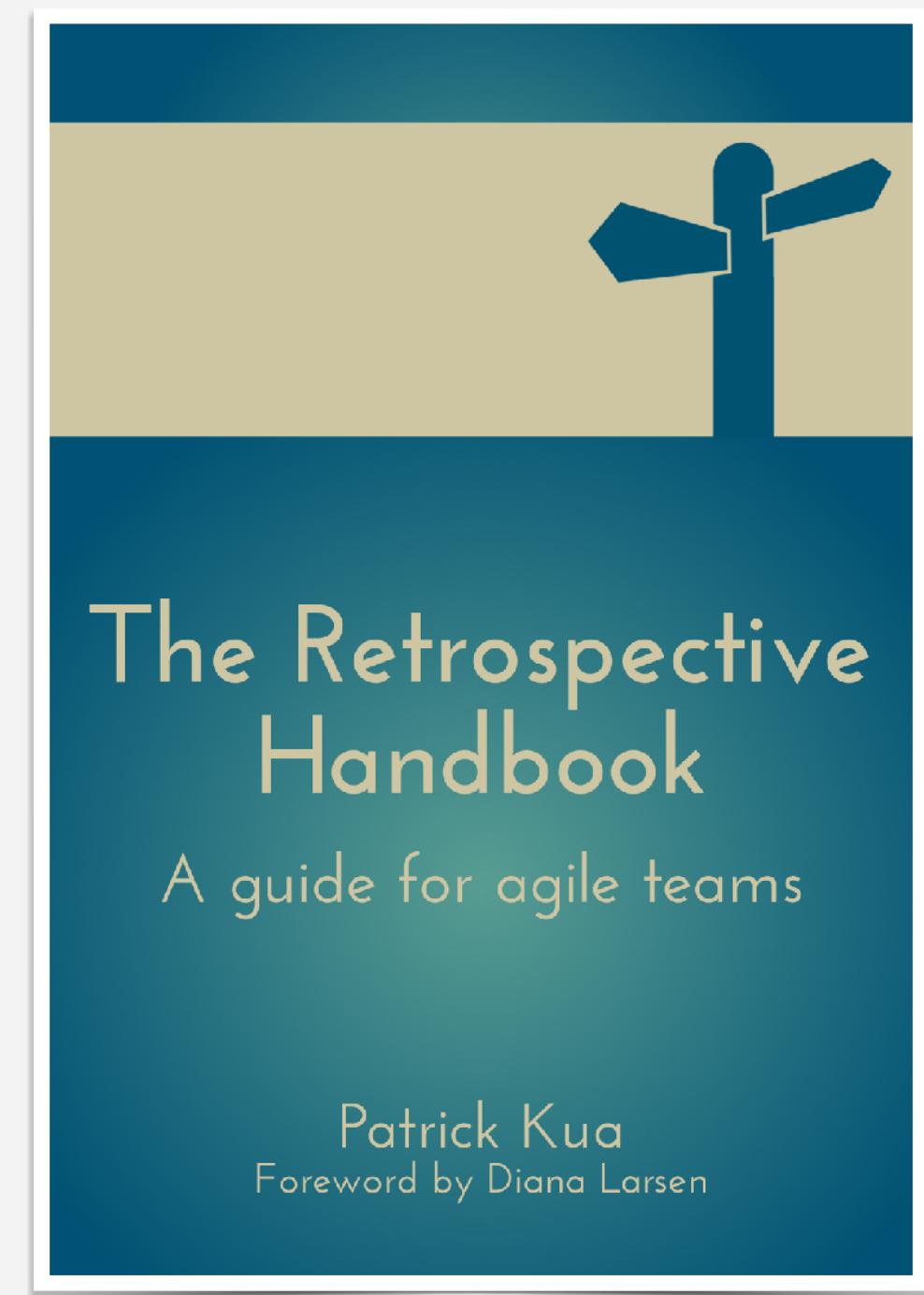


Talking with Tech Leads

From Novices to Practitioners

Patrick Kua
Foreword by Jim Webber

thekua.io/twtl



The Retrospective Handbook

A guide for agile teams

Patrick Kua
Foreword by Diana Larsen

thekua.io/retrobook

#Architect #Developer #Coach #Leader #CTO

#Life-long learner #Author #Speaker

@patkua



Podcast



Newsletter



<http://managingmanagers.tech>

@patkua

<http://levelup.patkua.com>

techlead.academy



Agenda



Agenda

Hopes & Concerns



Hopes & Concerns
(Recap)

Action
Plan

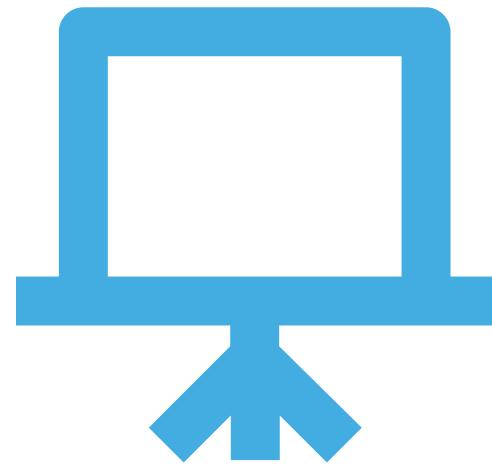




How we are going to work

Mixture of Styles

How we are going to work



Lecture



Discussion



Hands on Exercises



Learning from
each other

Take-Home Artefacts

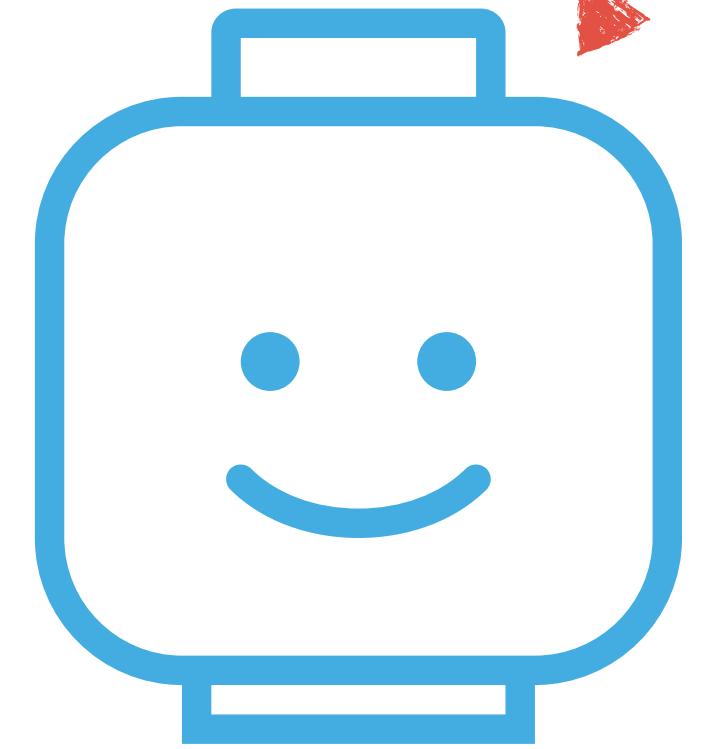


- ▶ Slides
- ▶ Handouts
- ▶ Free copy of e-book “Talking with Tech Leads”
- ▶ Recommended reading list
- ▶ Photos from workshop





EXERCISE



Draw a picture of your partner

Background:

Small batch XOXO tousled tacos stumptown. Pickled raclette YOLO put a bird on it. Beard vinyl deep v retro PBR&B green juice craft beer hammock everyday carry put a bird on it. Poutine butcher shoreditch food truck organic, gentrify unicorn plaid semiotics truffaut. La croix banjo, prism next level quinoa deep v pabst single-origin coffee.

Technical Leadership Superpower:

Seitan kombucha tofu making

Favourite Food/Beverage:

Intelligentsia small batch cold brew

Hopes & Concerns

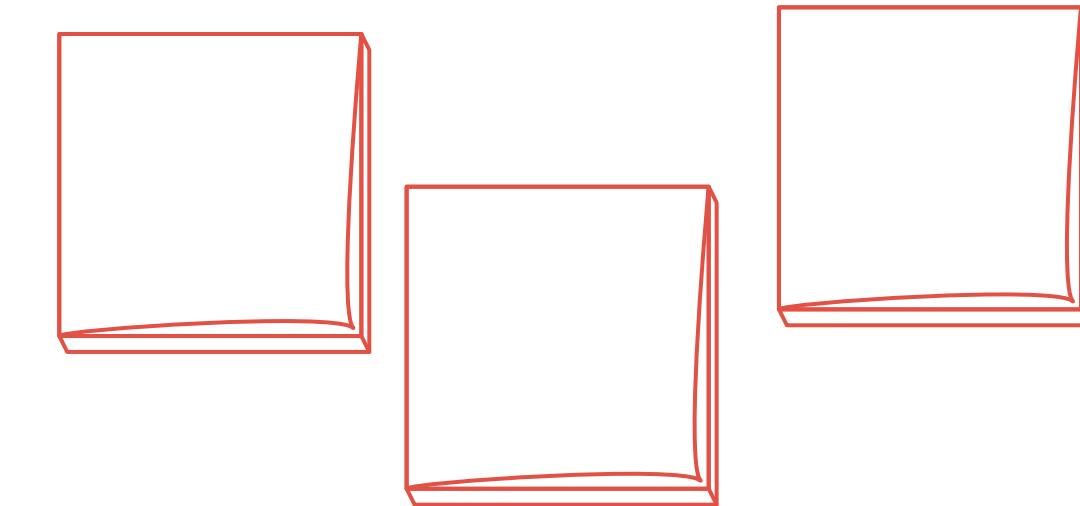
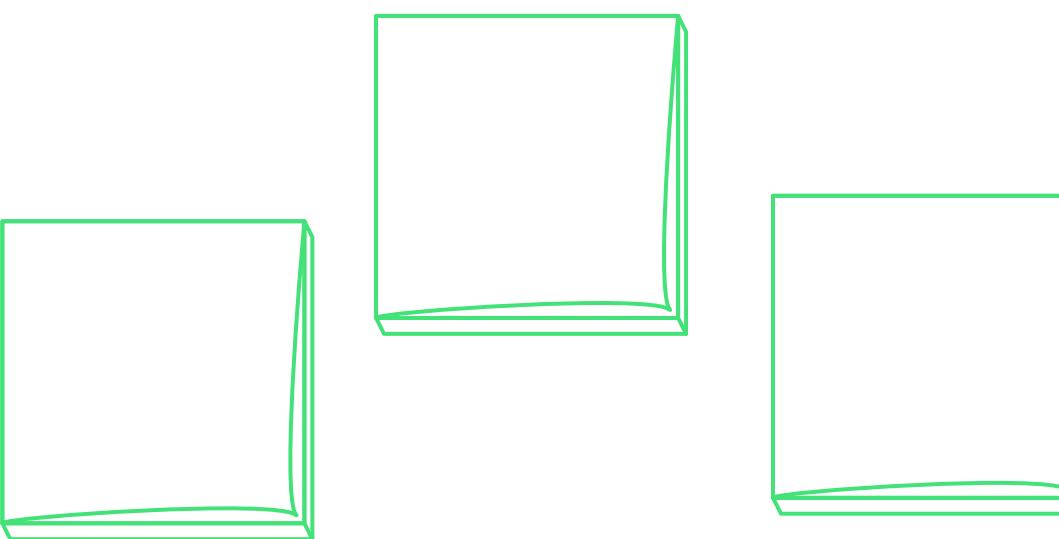


EXERCISE

What is **one hope**
you have about learning
to be an effective
technical leader?

What is **one concern**
about being a technical
leader you want
addressed?

Write each on a separate sticky note and
add your name/initials to the corner of the sticky note

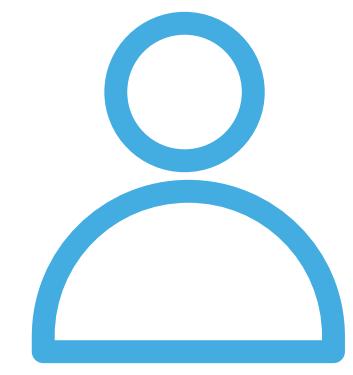


Exploring Technical Leadership





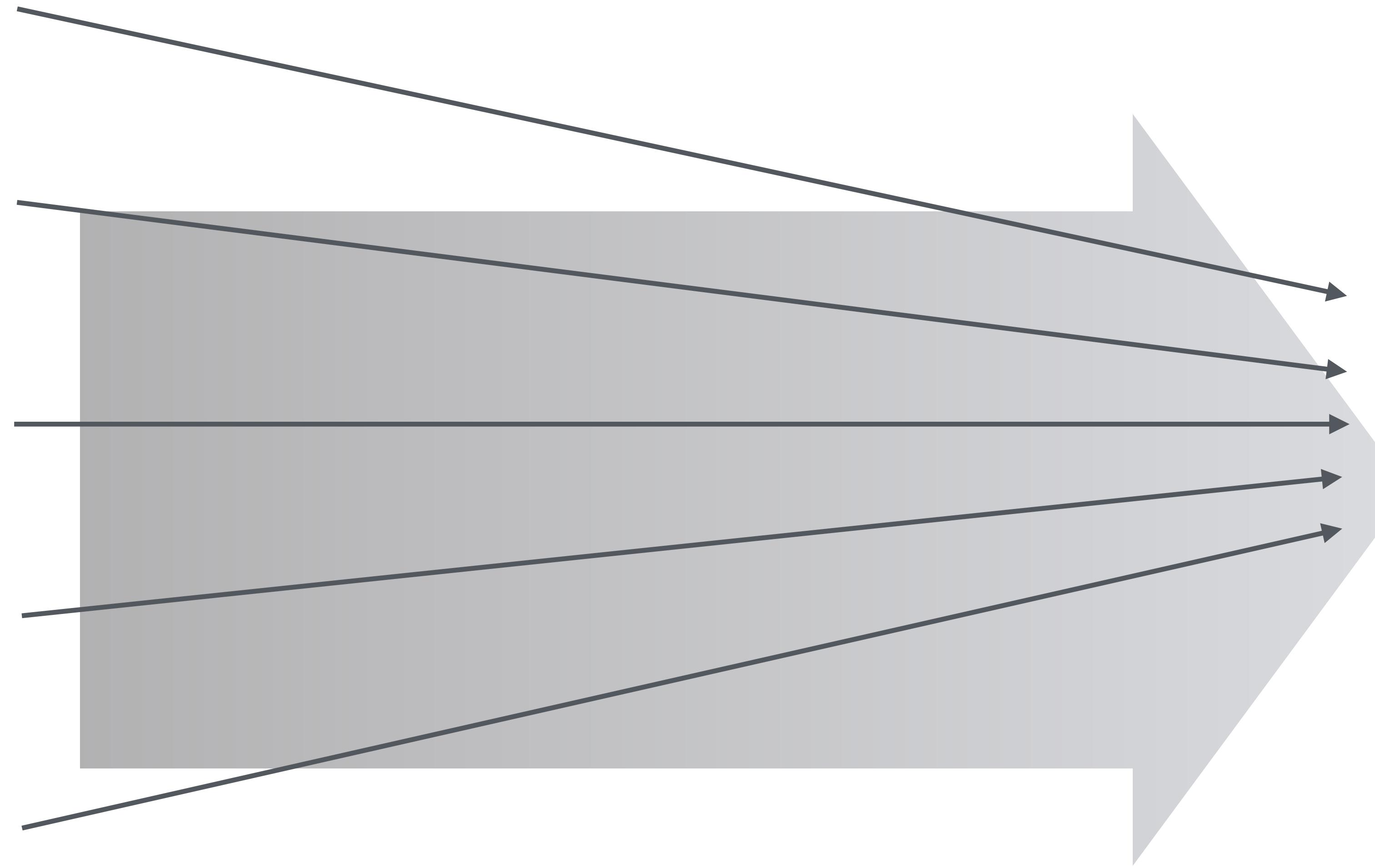
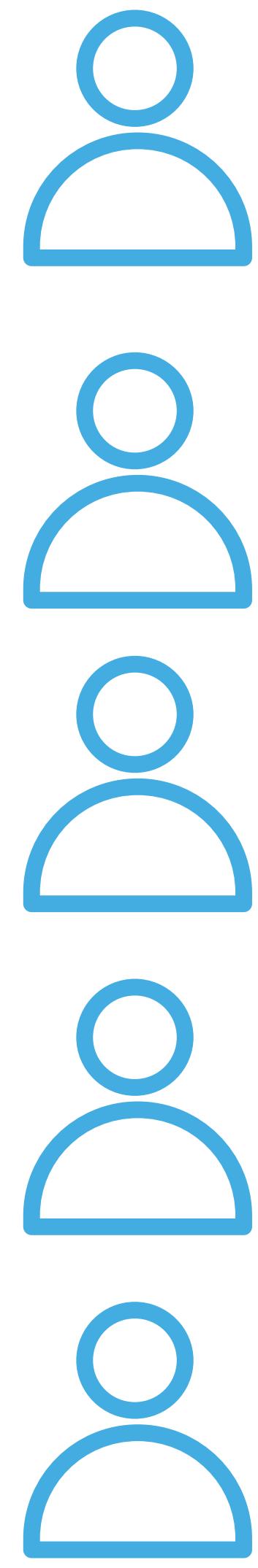
Why do we need
technical leadership?



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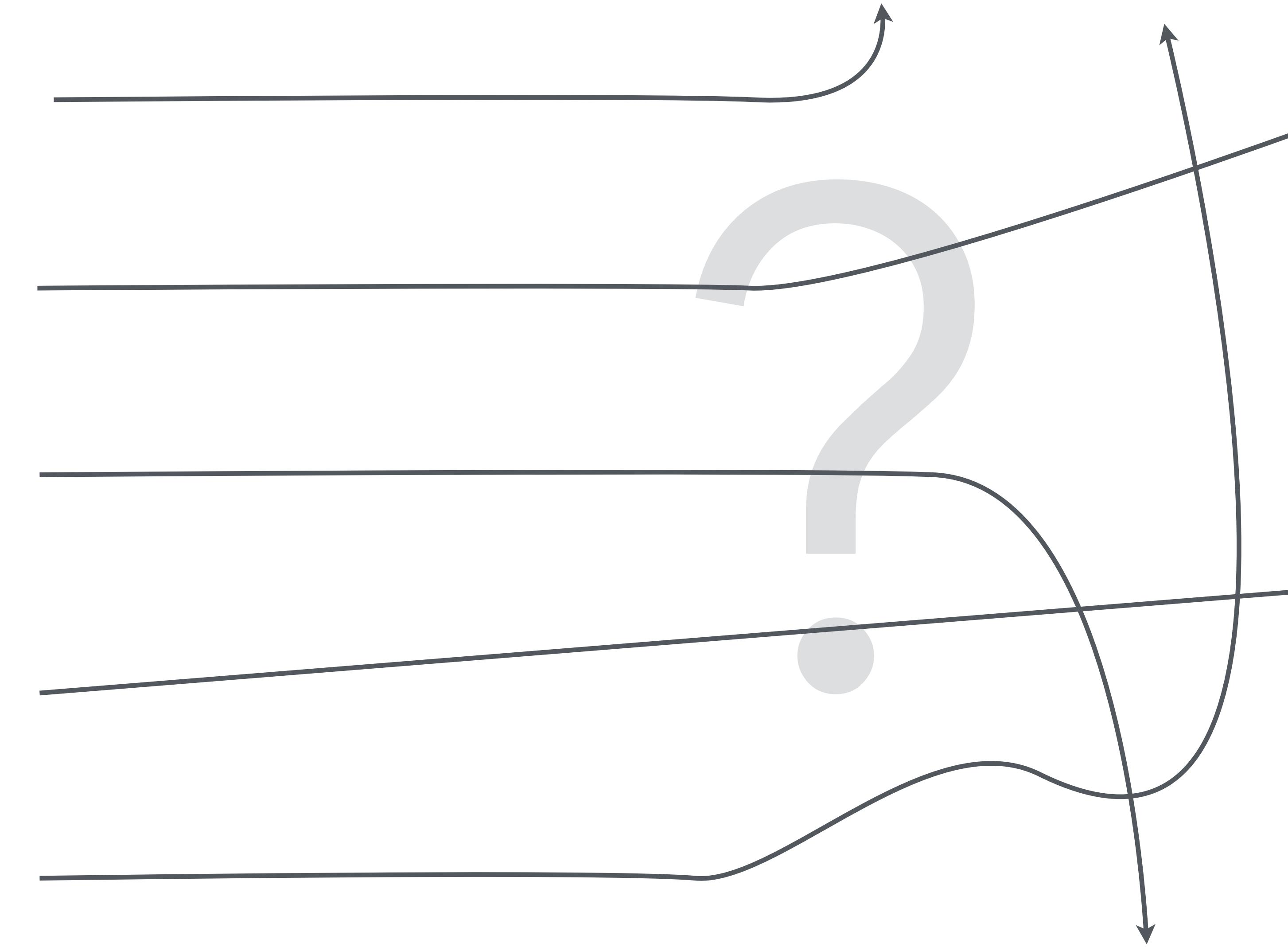




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techlead.academy

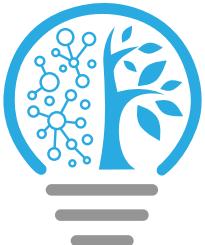




@julianboot

@thejayfields: I had ten guys on my last project, all of them had opinions and all of them were expressed in the code base #speakerconf

Source: <http://twitter.com/julianboot/status/232830267822309376>



Leadership

“The act of aligning a group of people.”



"Anyone can be a leader. All it takes is a single action."

Source: <https://www.thekua.com/atwork/2015/06/everyone-can-be-a-leader/>

- Pat Kua



Technical Leadership

“The act of aligning a group of people in a technical context.”



**What does good
look like?**

What not to do

A story of poor technical leadership



“The Overnight Refactor”

What does good look like?



EXERCISE

Good Behaviours

Bad Behaviours

In your groups, brainstorm behaviours of what makes a good / bad technical leader (1 item per sticky note, use as many as you like) and discuss these

Maker



**Maker to
Multiplier**

Technical Leadership

is a choice

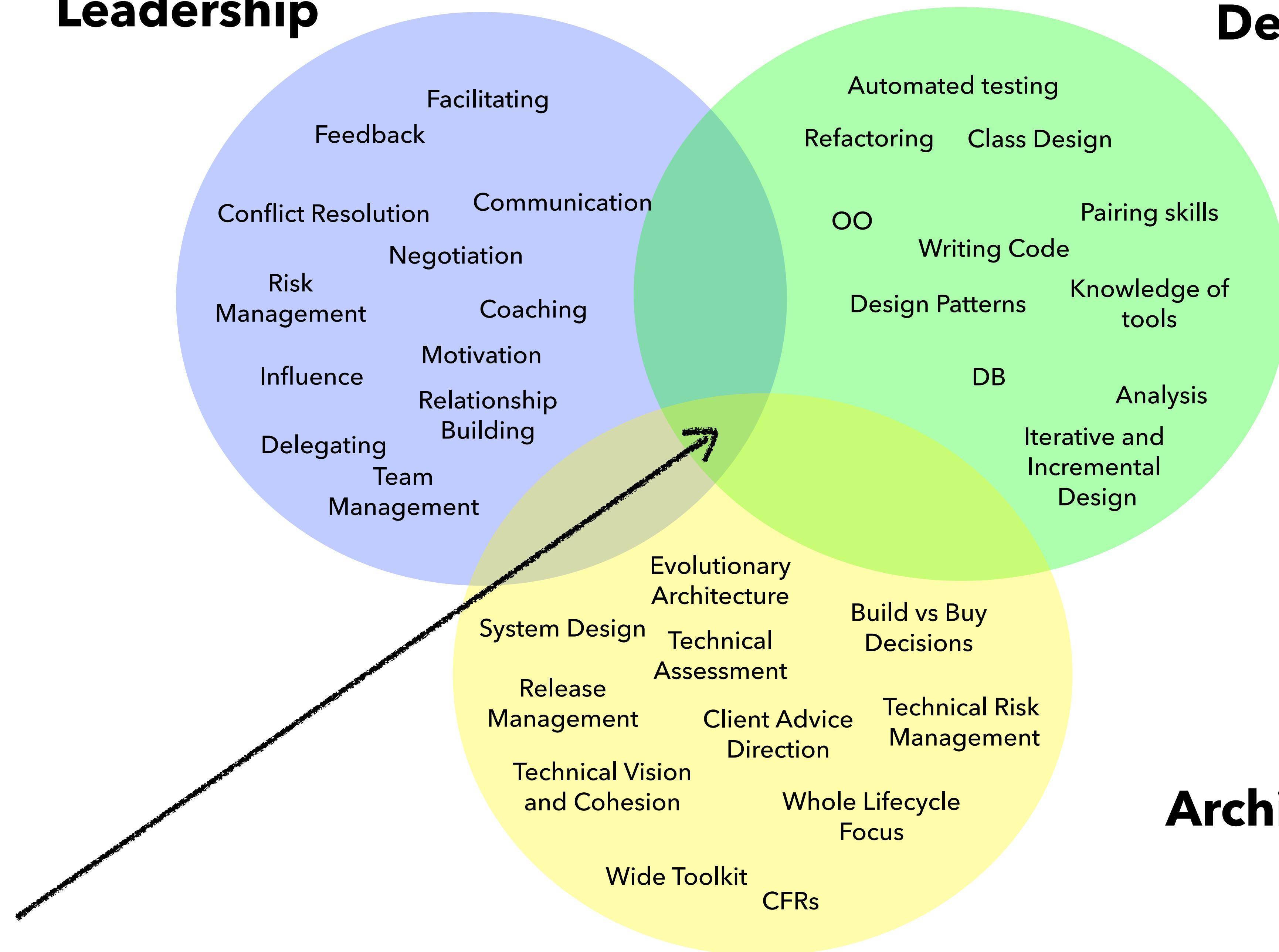
can be informal/formal

is non-exclusive



TECH LEAD

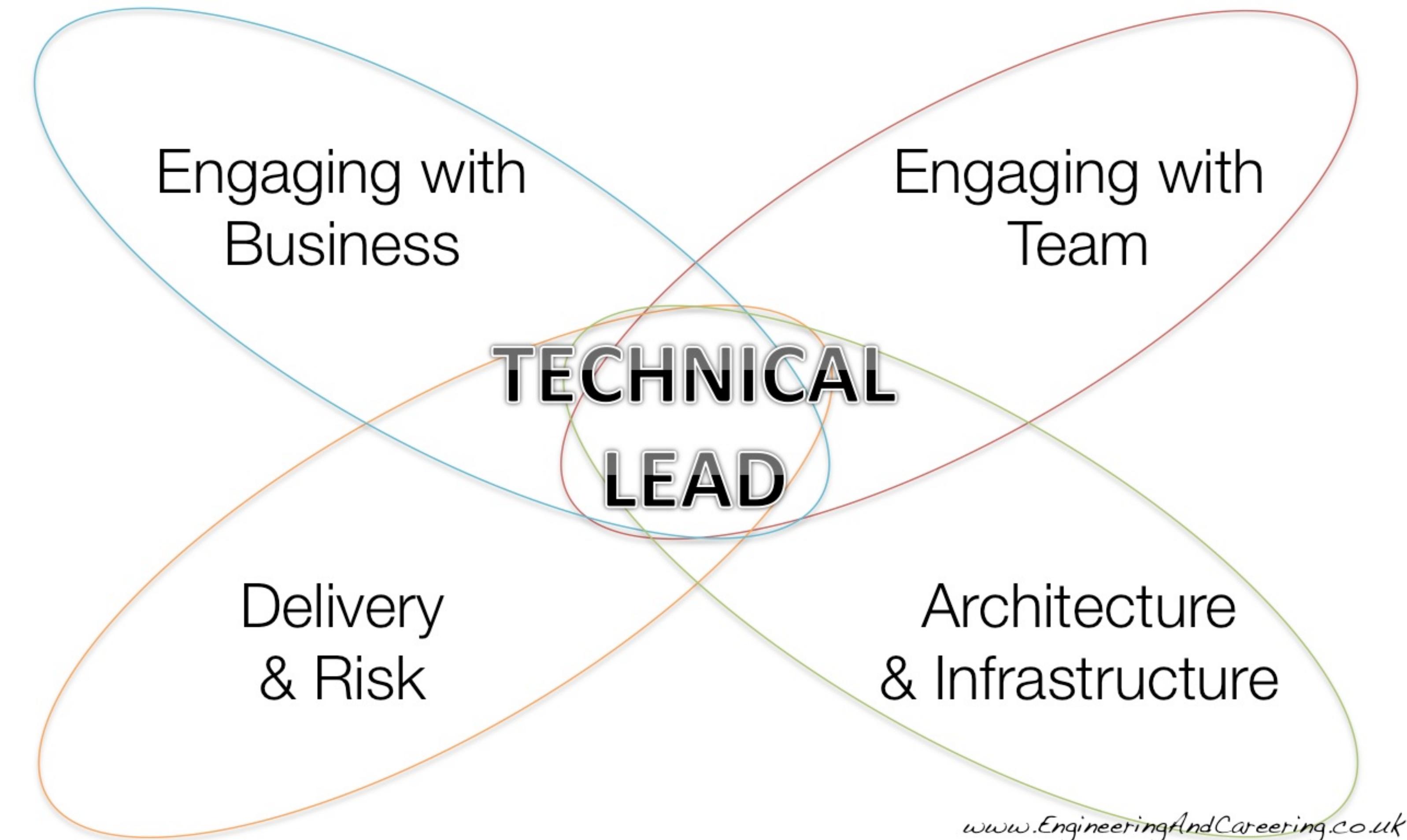
Leadership



Developer

Architect

Dan Abel's Well-Rounded Tech Lead model



Source: <http://www.engineeringandcareering.co.uk/2013/05/the-well-rounded-technical-lead-model.html>

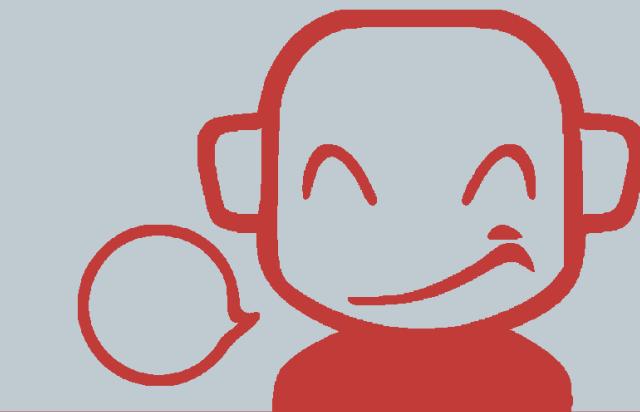
TECH LEAD

Bridging the Business with Tech

“Tech” of being a Tech
Lead

People

You



Talking with
Tech Leads

From Novices to Practitioners

Patrick Kua

Louderdad

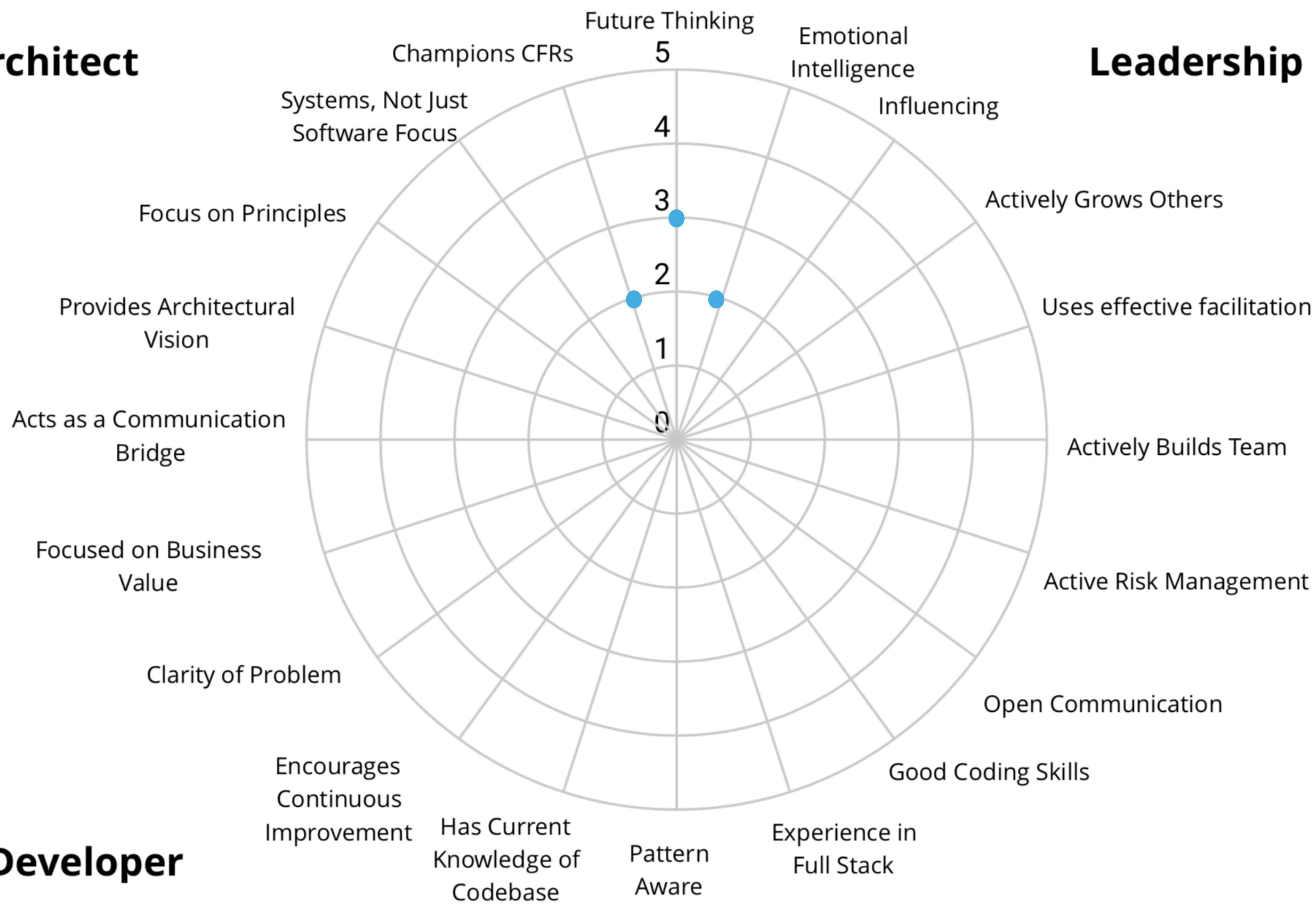
Technical Leadership

Self-Assessment



EXERCISE

Architect

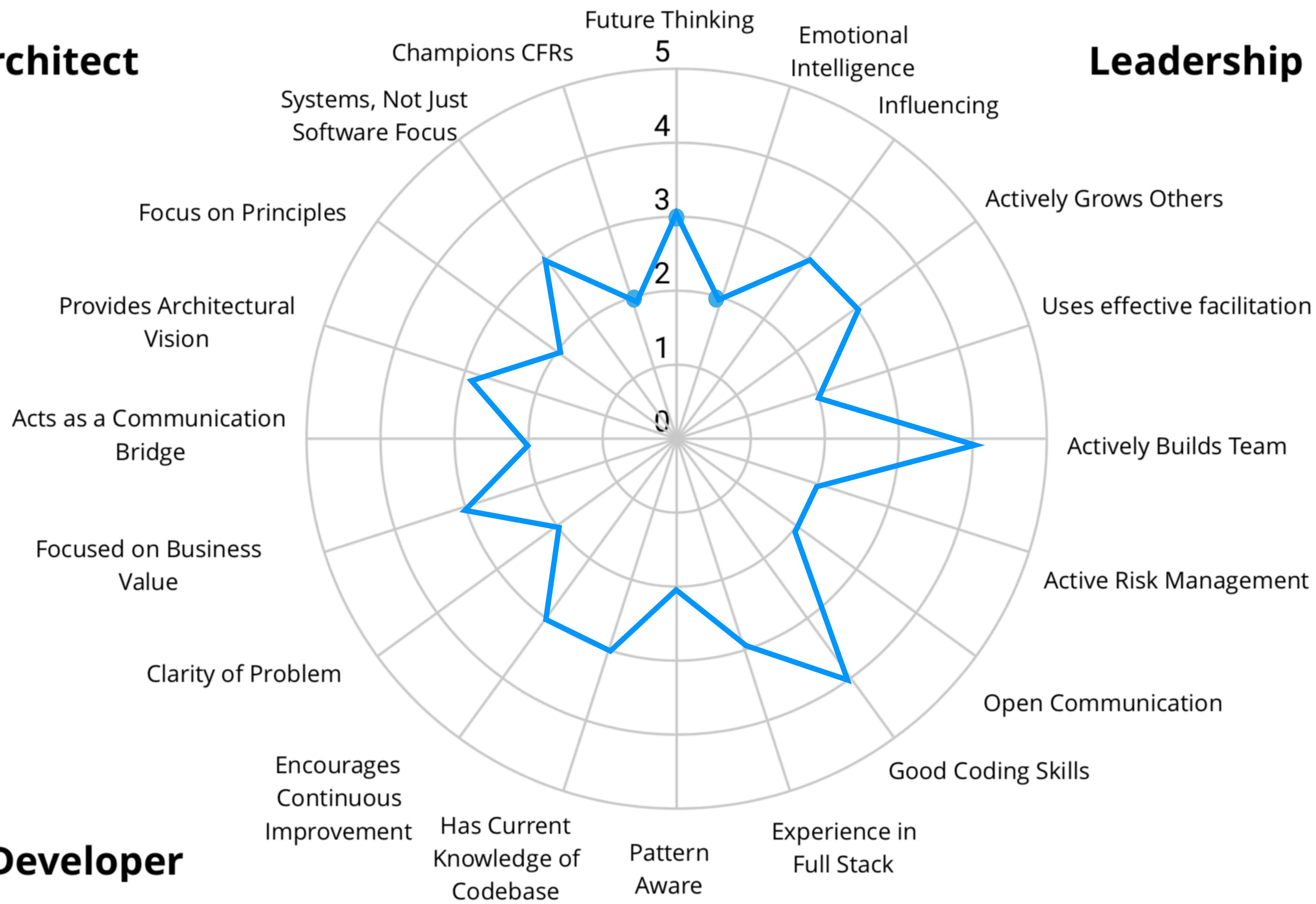


Leadership



EXERCISE

Architect



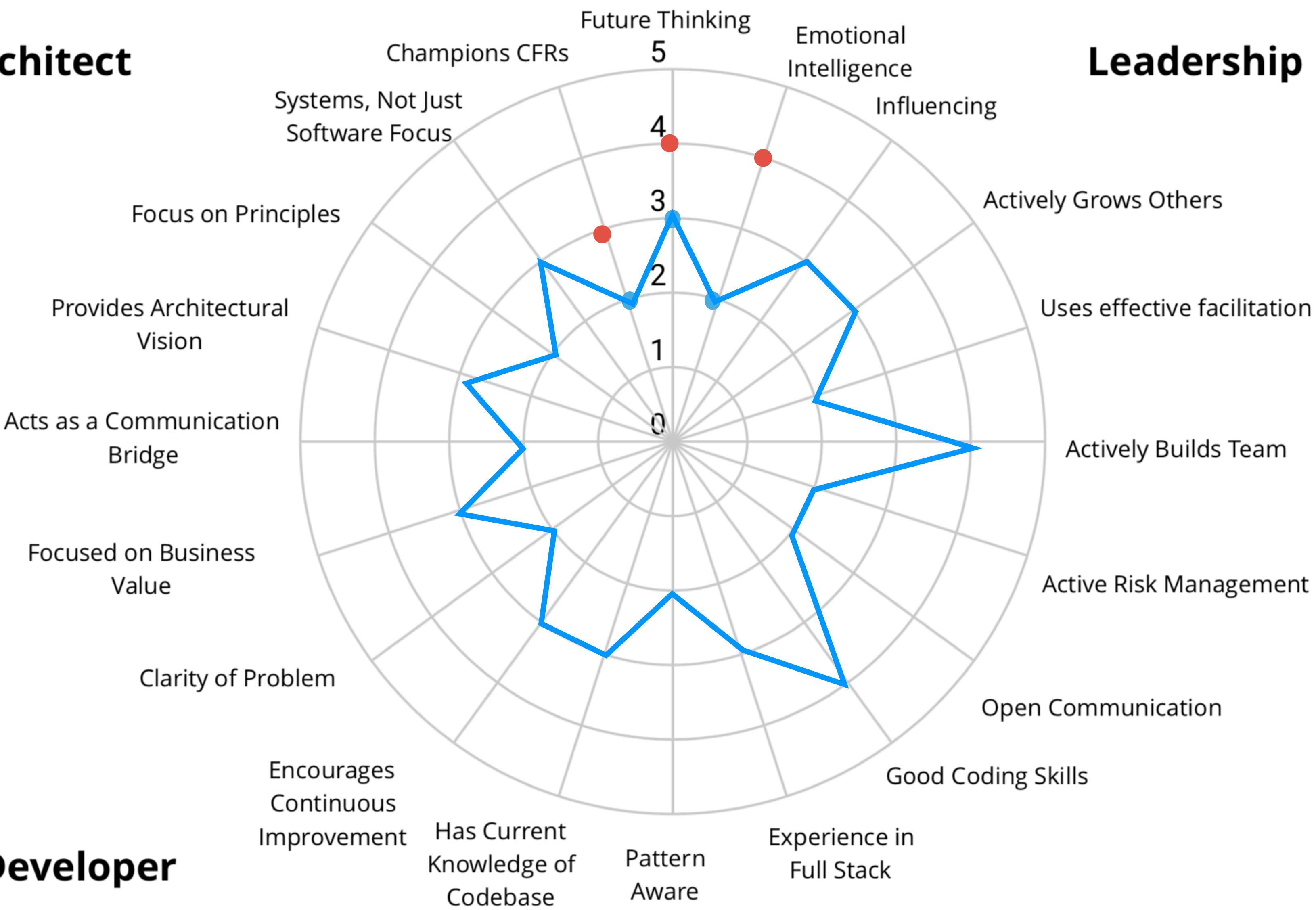
Leadership



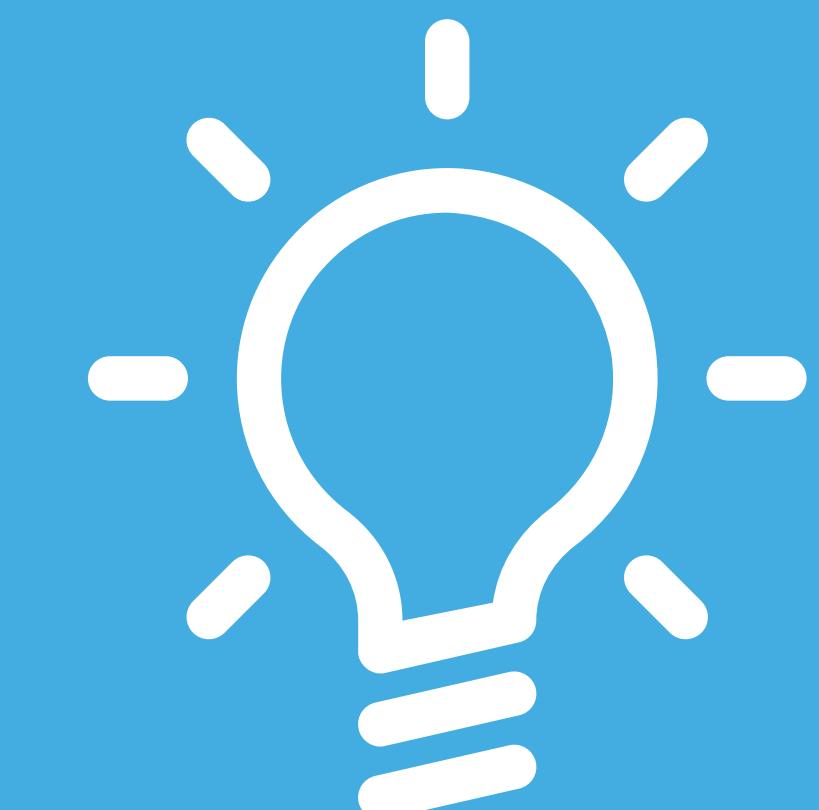
EXERCISE

Developer

Architect



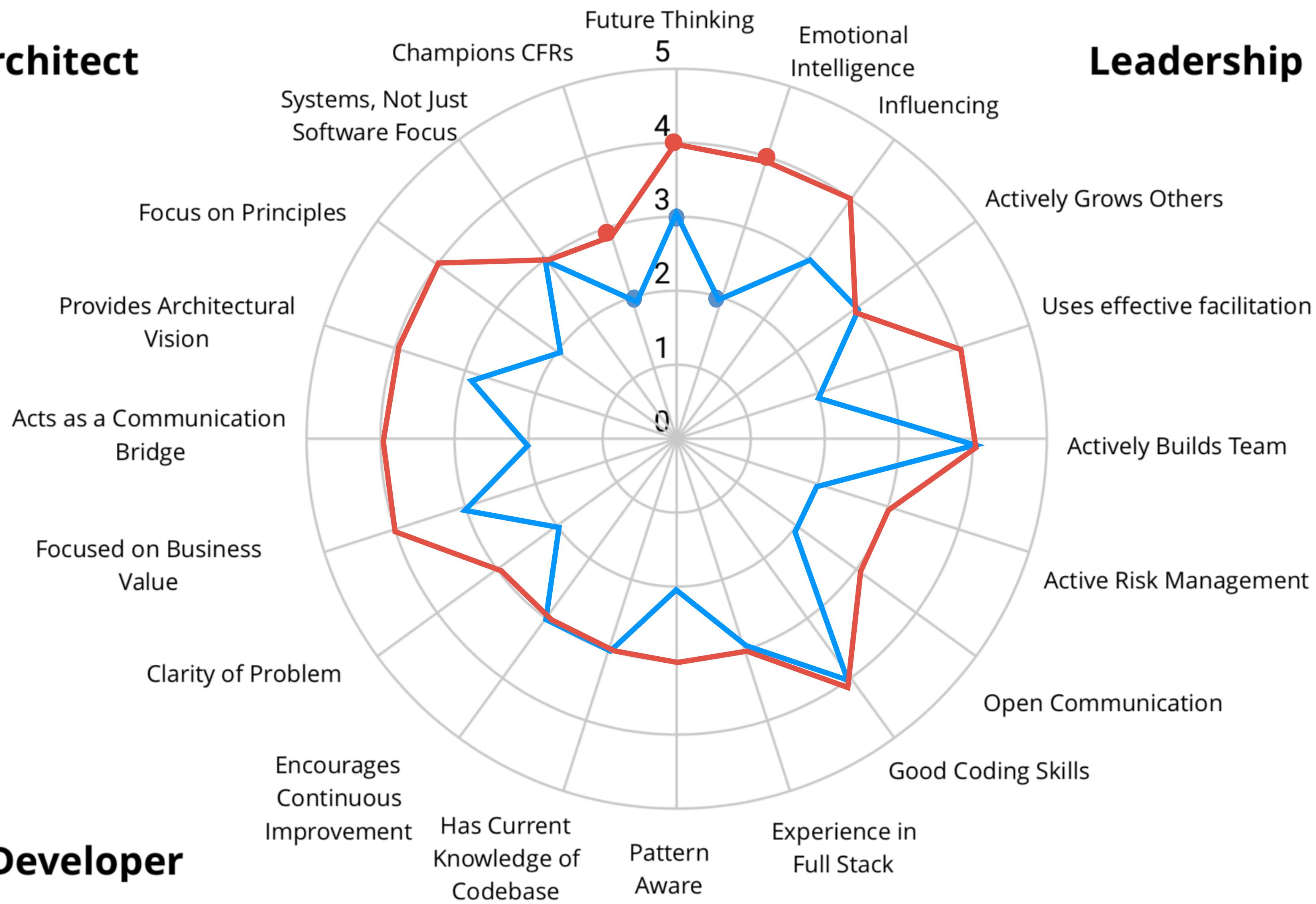
Leadership



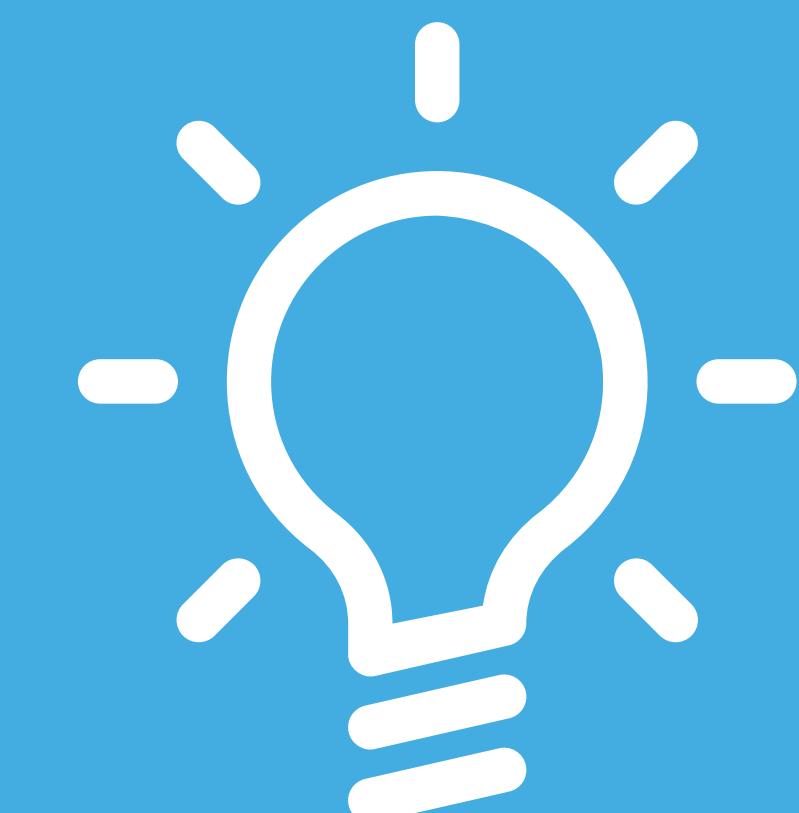
EXERCISE

Developer

Architect



Leadership



EXERCISE



SIMPLE TESTS...

The Conceptual Integrity Test

A close-up photograph of a person's hand holding a black pen, writing on a white piece of paper. The paper contains several mathematical equations written in blue ink. The equations include:
$$x = 13$$
$$y = -10$$
$$z = 7$$
$$w = 11$$
$$v = 13$$
$$u = 10$$
$$t = 11$$
$$s = 13$$
$$r = 11$$
$$q = 13$$
$$p = 11$$

Does the codebase look like it was written by a single person?

Yes

No



The Holiday Test



Can you go on holiday for 2 weeks?

(without responding to email/slack *and*
everything continuing to work well)

Yes

No

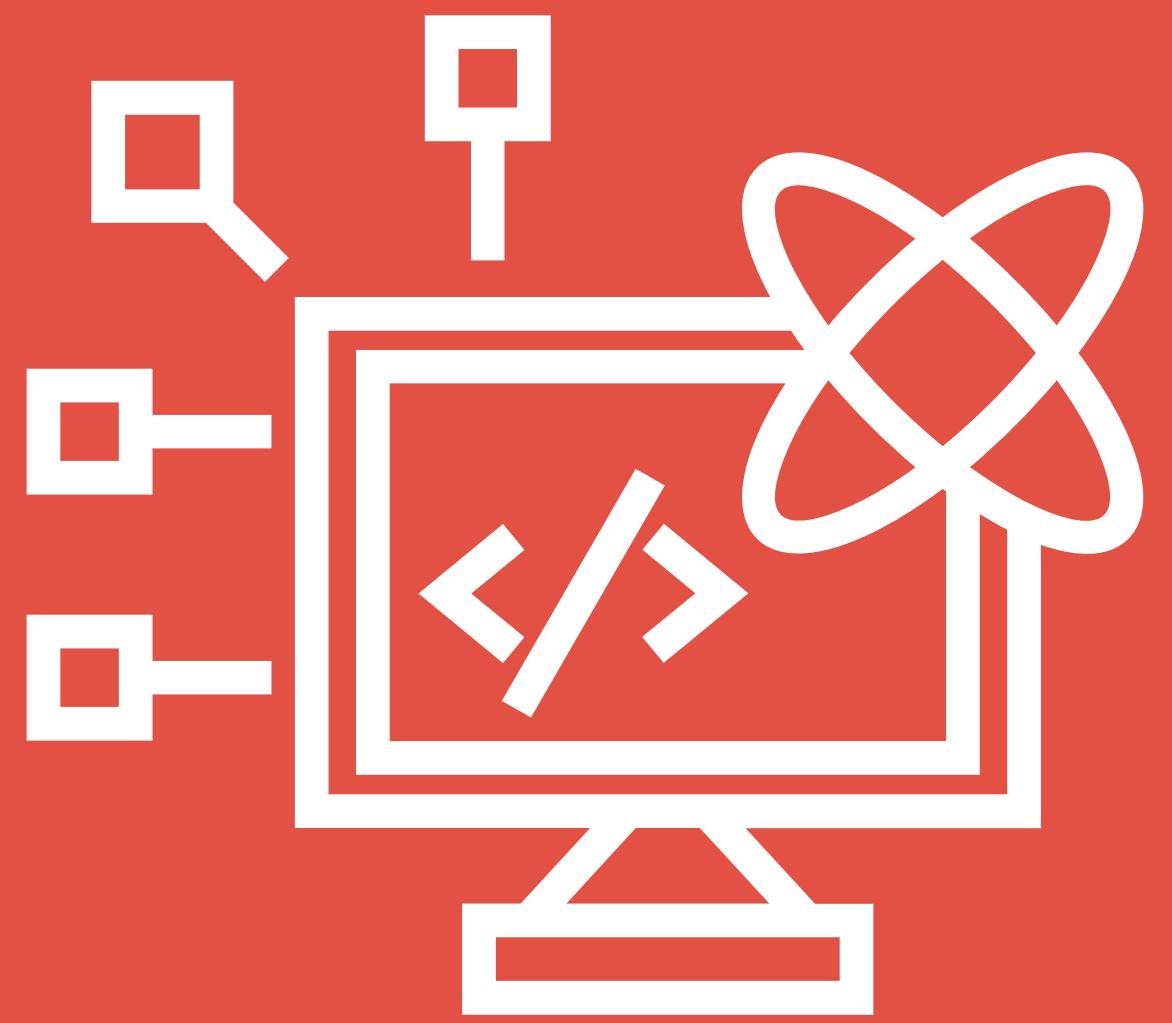




Questions?



Leading Tech



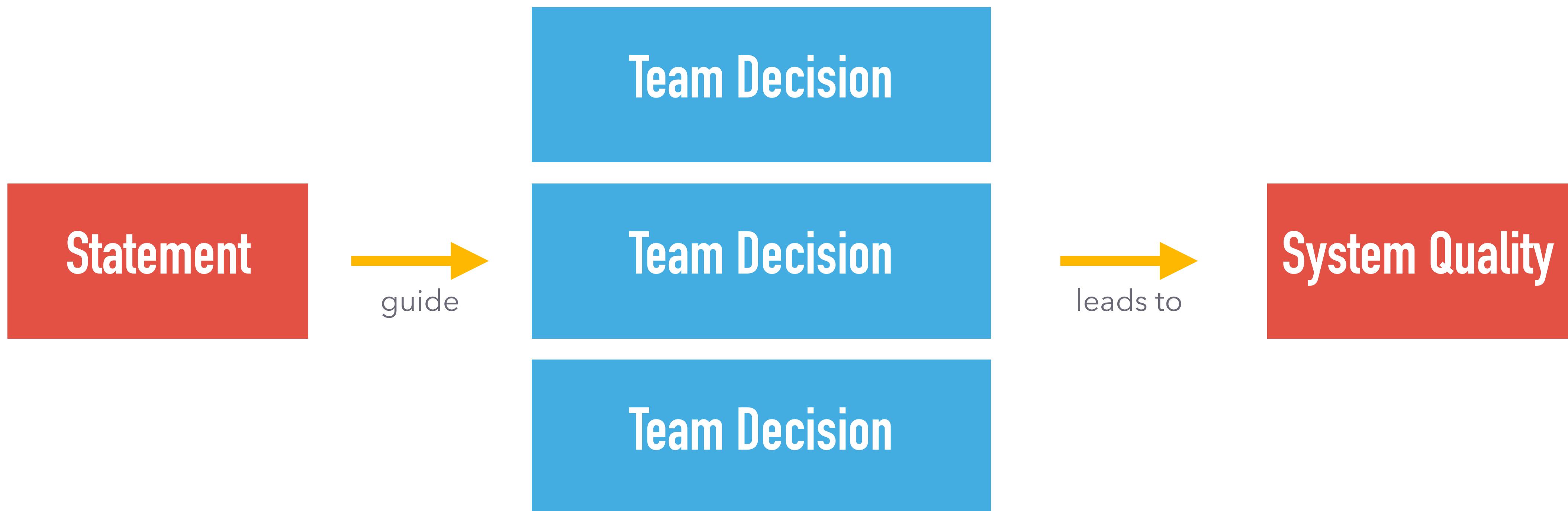
Creating Alignment

- ▶ Architectural principles
- ▶ Tech vision



Principles

Heuristics about decision-making



THE TWELVE FACTORS

I. Codebase

One codebase tracked in revision control, many deploys

II. Dependencies

Explicitly declare and isolate dependencies

III. Config

Store config in the environment

IV. Backing services

Treat backing services as attached resources

V. Build, release, run

Strictly separate build and run stages

VI. Processes

Execute the app as one or more stateless processes

VII. Port binding

Export services via port binding

VIII. Concurrency

Scale out via the process model

IX. Disposability

Maximize robustness with fast startup and graceful shutdown

X. Dev/prod parity

Keep development, staging, and production as similar as possible

XI. Logs

Treat logs as event streams

XII. Admin processes

Run admin/management tasks as one-off processes

Store config in the environment





Search ...

Design

Operational

Organisation

Practices



Smarts in the Nodes not the Network

Design

Build Differentiators

Design for Emergent Reuse

Evolutionary Systems

Scale Horizontally

Small and Simple

Smarts in the Nodes not the Network

Rationale

Implications

Related Reading

Sometimes referred to as “smart nodes and dumb pipes”, meaning that systems aim to be as decoupled and cohesive as possible, and not centrally choreographed in middleware.

Rationale

Systems owning their communication with other systems is an important aspect in allowing them to adapt to and keep pace with business change. It allows them to evolve over time without needing to negotiate and coordinate with separate teams and associated delay due to hand-offs, as well as meaning that the knowledge of how a system communicates is contained within the system itself.

Implications

- Prefer open protocols such as HTTP



Tech Vision

1. A meaningful **name**
2. “**Why** are we heading in this direction?” (Diagnosis)
3. “**What** does the end state look like?”
4. “**How** do I contribute to this?”



Example

Name

“Shared build and deployment infrastructure”

(From team to company)



Example

Why?

Each team is building, and maintaining their own build and deployment infrastructure. Each team spends ~25% of their time managing all of this, which is time not spent on product experiments



Example

What?

Moving to shared build and deployment infrastructure. This will be supported with:

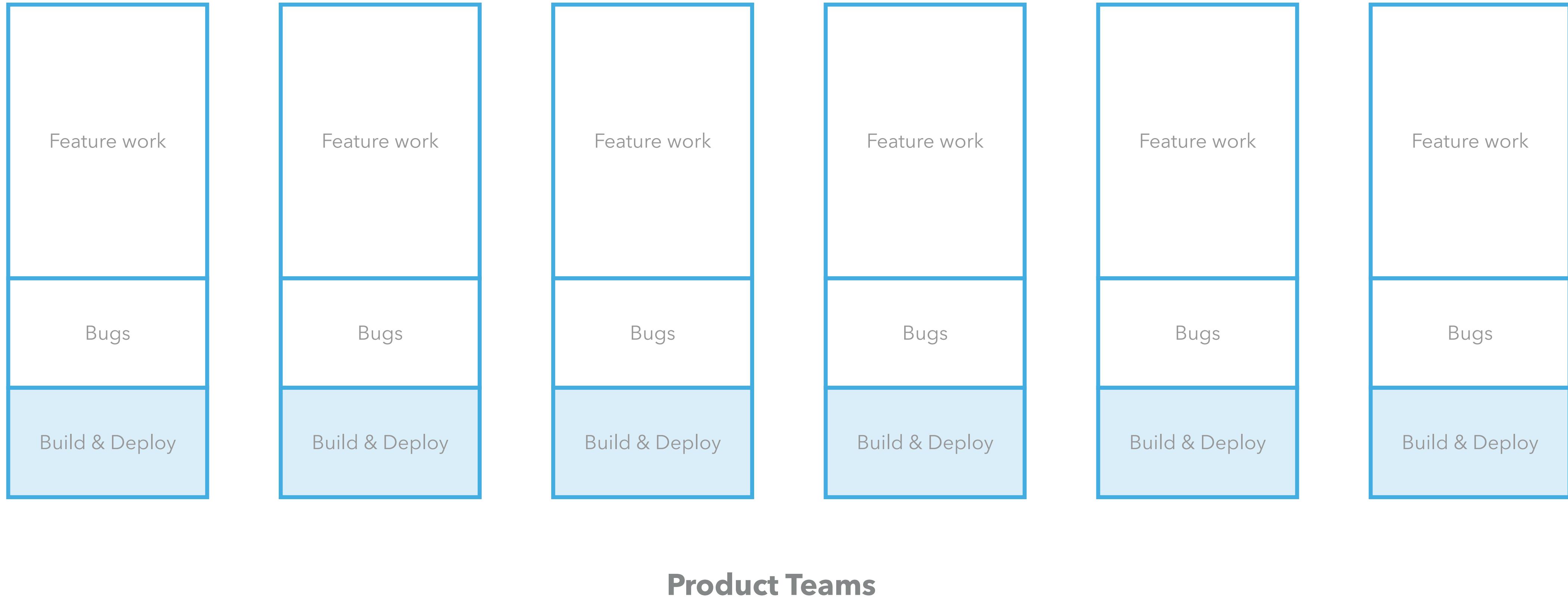
- ▶ A new platform team
- ▶ “Inner-source” shared platform infrastructure
- ▶ Internal consulting, training to ensure all needs are met



Example

What?

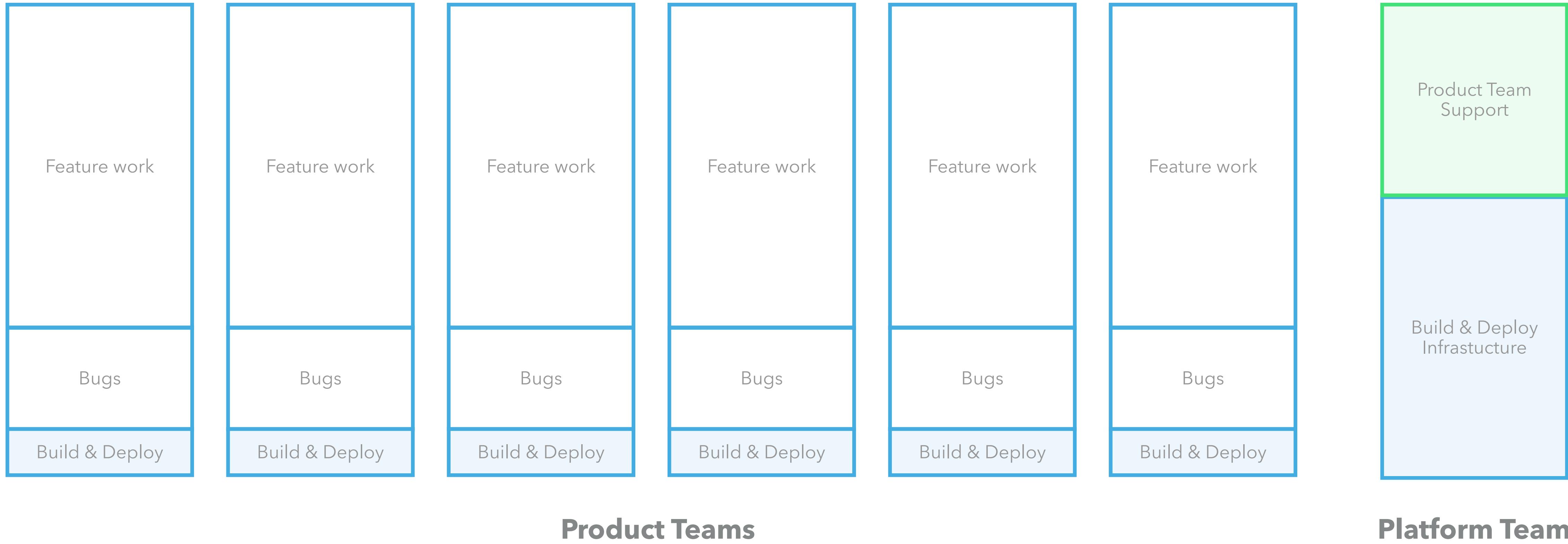
Before: Team responsibilities



Example

What?

After: Team responsibilities



Example

How?





EXERCISE

Opportunity for Improvement

Step 1: What is an issue you are currently notice that no one is taking care of?

(e.g. Multiple ways of doing things, repeating the same tasks, team doing unnecessary work)?



EXERCISE

Opportunity for Improvement

Step 2: Now fill out the booklet
with what you're going to do to
solve that.

Quality

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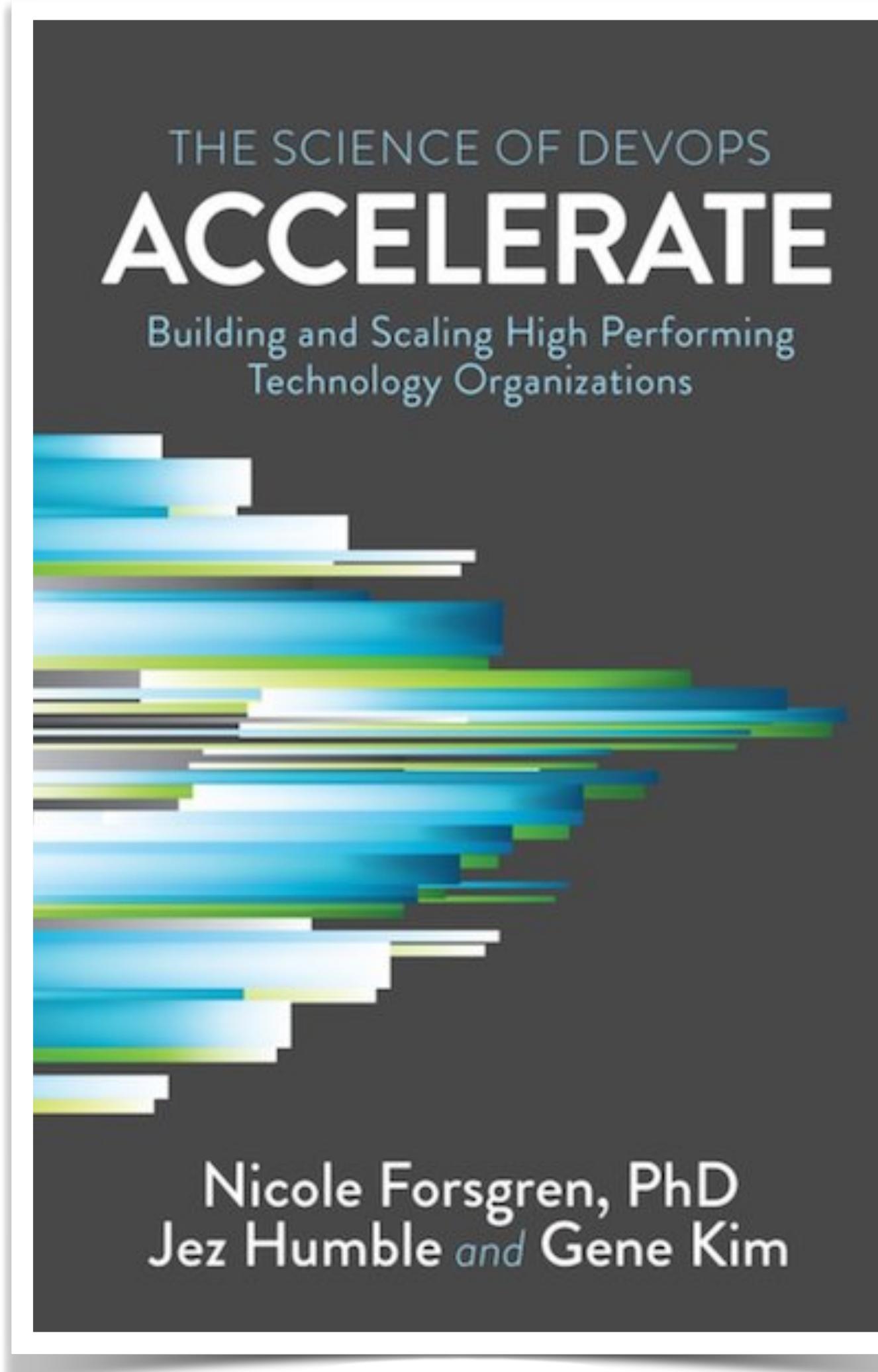
What shapes quality?

- ▶ Product/company domain
- ▶ Product lifecycle
- ▶ Use cases
- ▶ Quality should have a ROI



Research Shows Quality Matters

4 Key Metrics



Can we ship quickly?

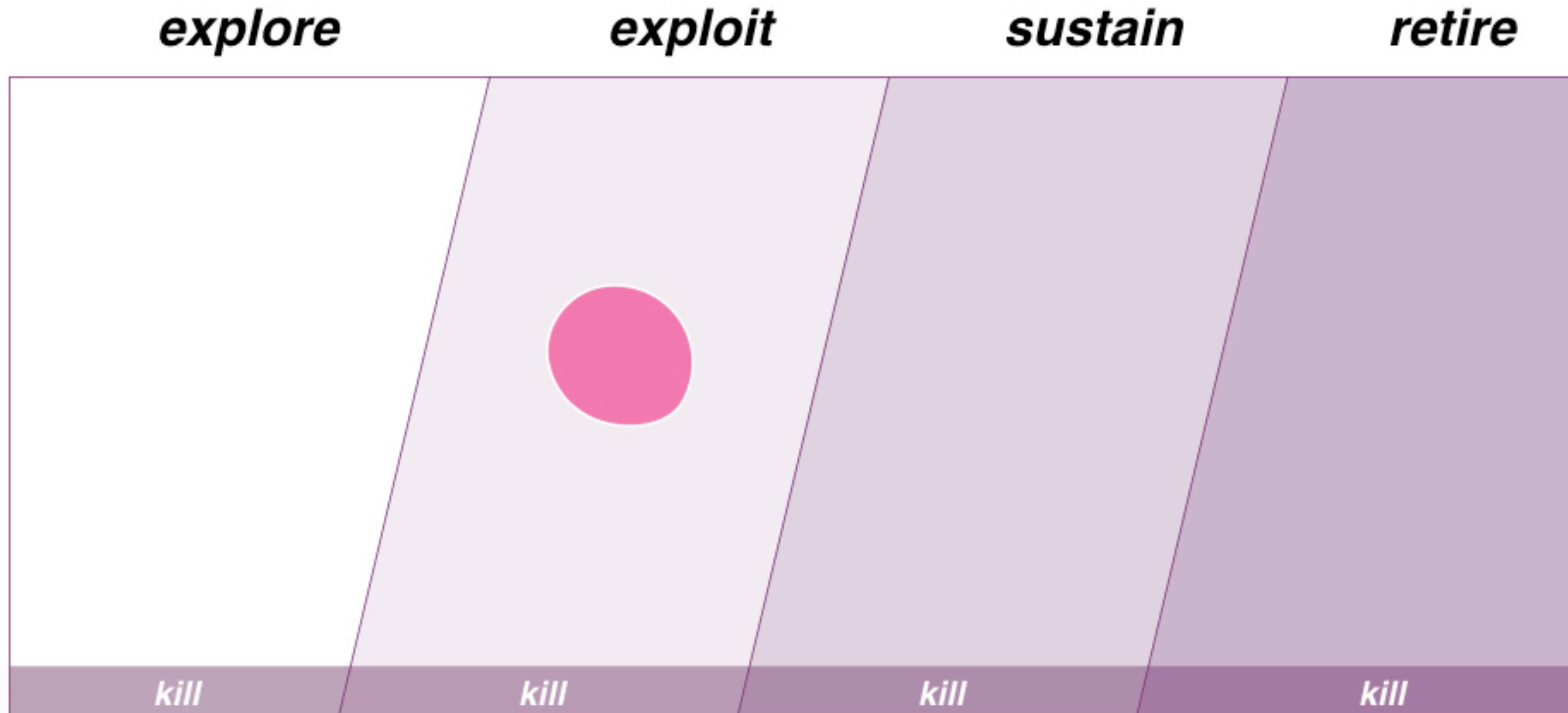
- Lead time
- Deploy frequency

Can we ship reliably?

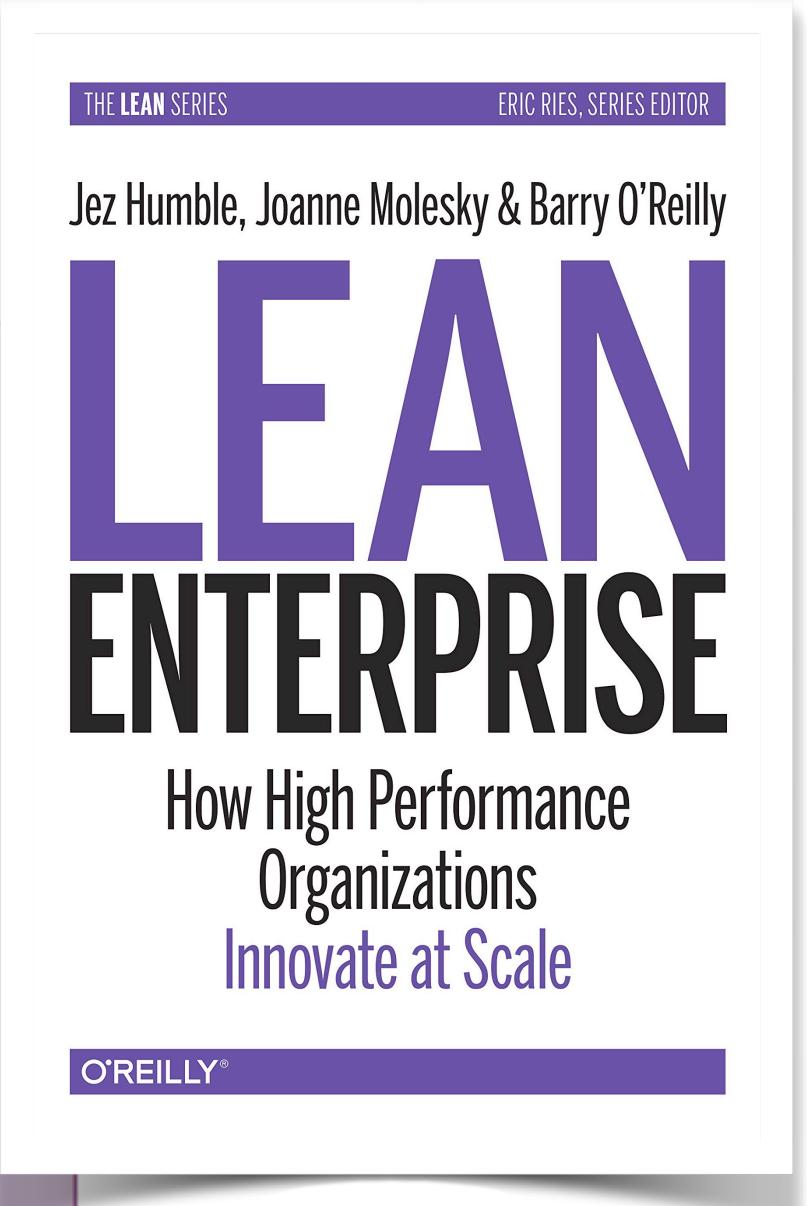
- Mean Time to Restore (MTTR)
- Change fail percentage

Quality is contextual

on the product lifecycle



Humble, Molesky, O'Reilly, *Lean Enterprise: How High Performance Organizations Innovate At Scale*

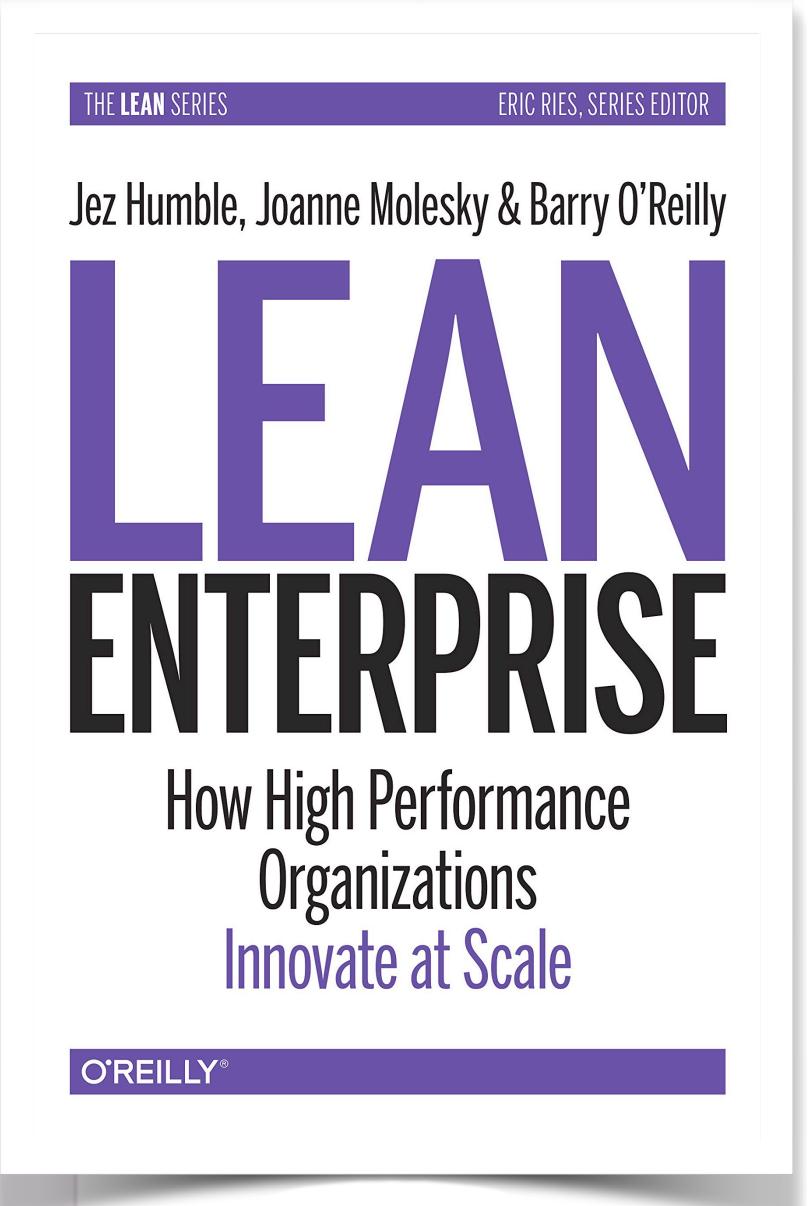


Quality is contextual

on the product lifecycle

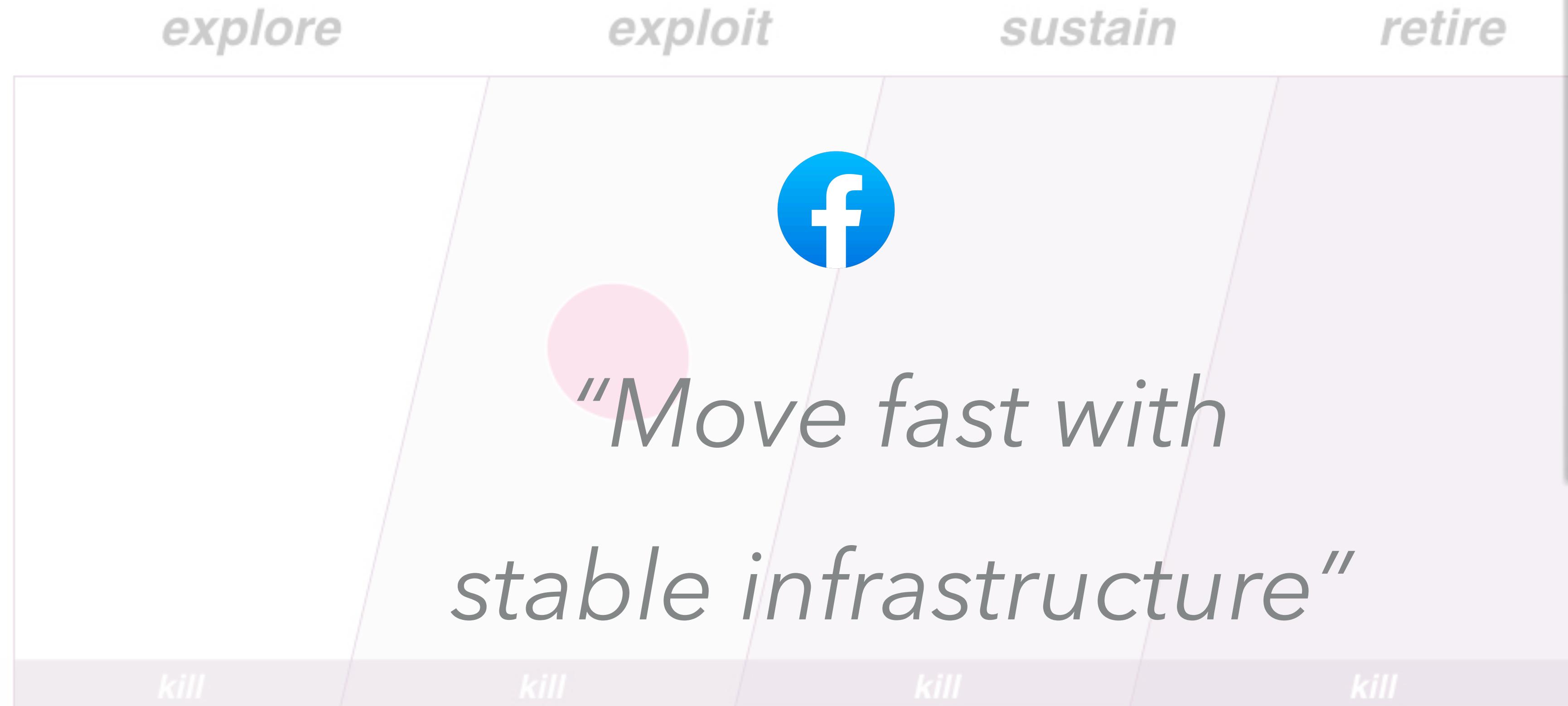


Humble, Molesky, O'Reilly, *Lean Enterprise: How High Performance Organizations Innovate At Scale*

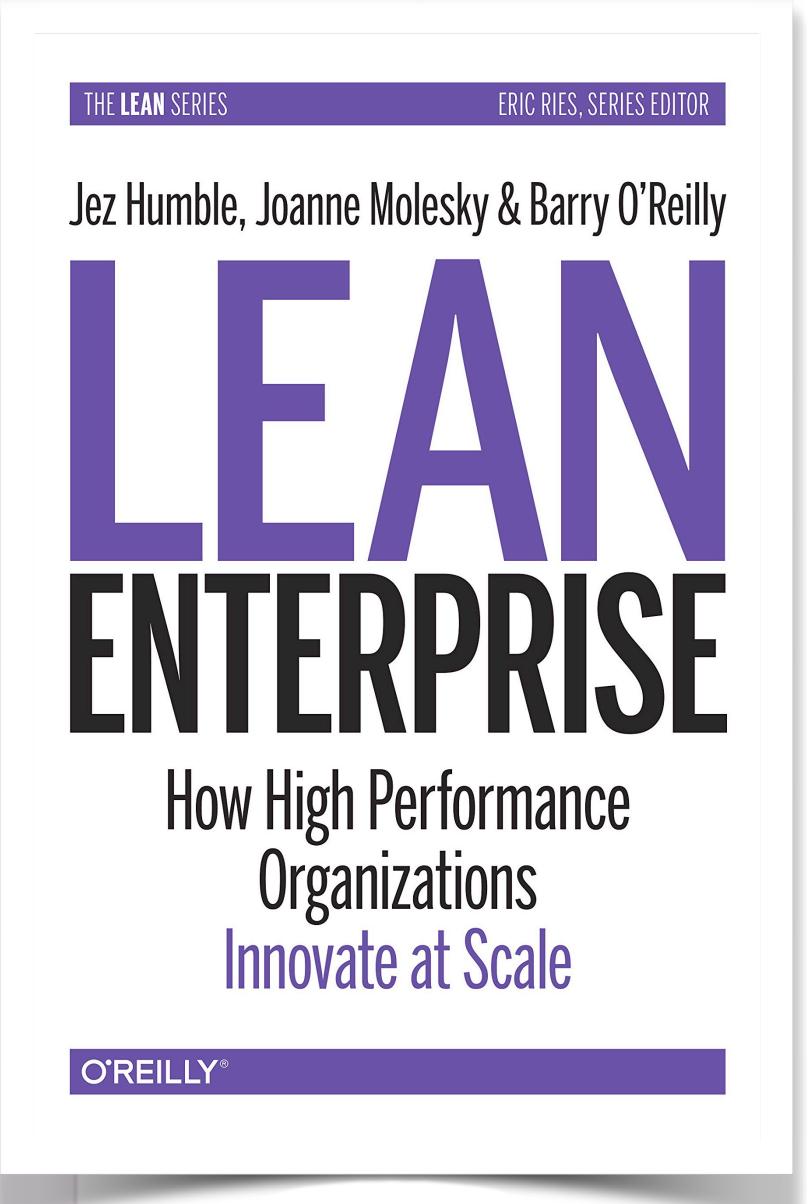


Quality is contextual

on the product lifecycle



Humble, Molesky, O'Reilly, *Lean Enterprise: How High Performance Organizations Innovate At Scale*



Cross Functional Requirements



What are Cross Functional Requirements (CFRs)

Sometimes called:

- Quality attributes
- “-ilities”
- “Non-Functional Requirements”

The qualities no one generally asks about.



What are Cross Functional Requirements (CFRs)

These “cut across” all functional requirements

- “Make or break” a system (e.g. scalability)
- Significantly shape architecture (e.g. availability)
- Impacts tooling/process (e.g. security)
- Can have significant cost (e.g. ESBs, licences)

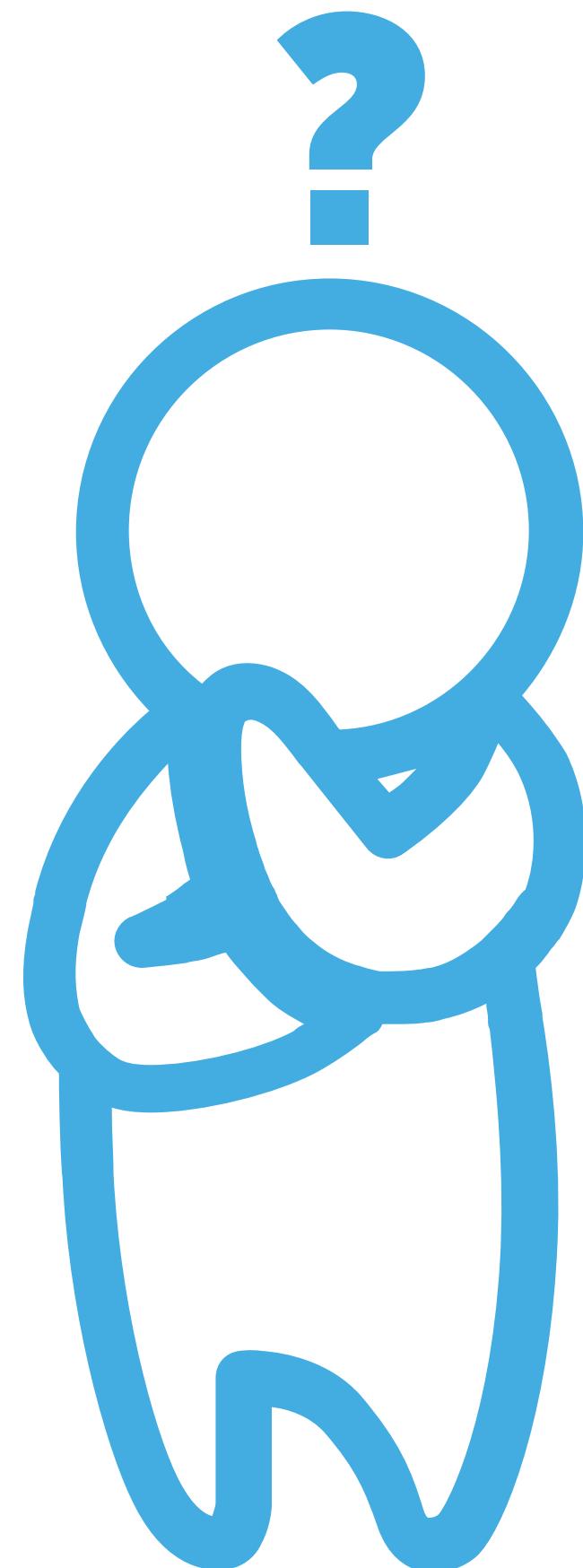


Why avoid “Non-Functional Requirements (NFRs)”?

People (other than techies) hear:

- “Nothing to do”
- “It comes for free, right?”
- “It’s not my concern - you’re the professional”

YET we need input as to the degree of quality
that we need, or the risk-reward investment



Talking with stakeholders (ROI)

Scenario 1

95% availability or
8.4hours/week

Scenario 2

99% availability or
1.68 hours/week

Scenario 3

99.99% (4 nines)
or 6.05/seconds

Return

Investment

1 person doing scheduled maintenance on weekend
Planned downtime

Services/data duplicated in 2 regions. On call system (2 people). Monitoring, backup, resiliency testing
~US\$500K/year + 1 team/2months

Services/data duplicated in 8 regions. 24/7 operations team (~20 people). Monitoring, backup, resiliency testing ~US\$5M/year + 1 team/12months

CFR Impact

- ▶ Requirement (e.g. authentication=user login)
- ▶ Architecture decision (e.g. availability = duplication)
- ▶ Process (e.g. usability = user testing)
- ▶ Tooling (e.g. compatibility = using OpenAPI)



EXERCISE

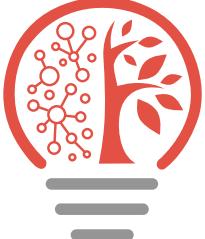
Am.i.Sick

Define the CFRs

- Choose 3 key CFRs
- How will you satisfy them?
- State any assumptions/targets/goals



Questions?



Leading People



Learning about your group strengths

Pick **three words** from this list that best describe your personal strengths

Write one sticky note for each word (three in total)

Achiever

Activator

Adaptability

Analytical

Arranger

Belief

Command

Communication

Competition

Connectedness

Consistency

Context

Deliberative

Developer

Discipline

Empathy

Focus

Futuristic

Harmony

Ideation

Includer

Individualization

Input

Intellection

Learner

Maximizer

Positivity

Relator

Responsibility

Restorative

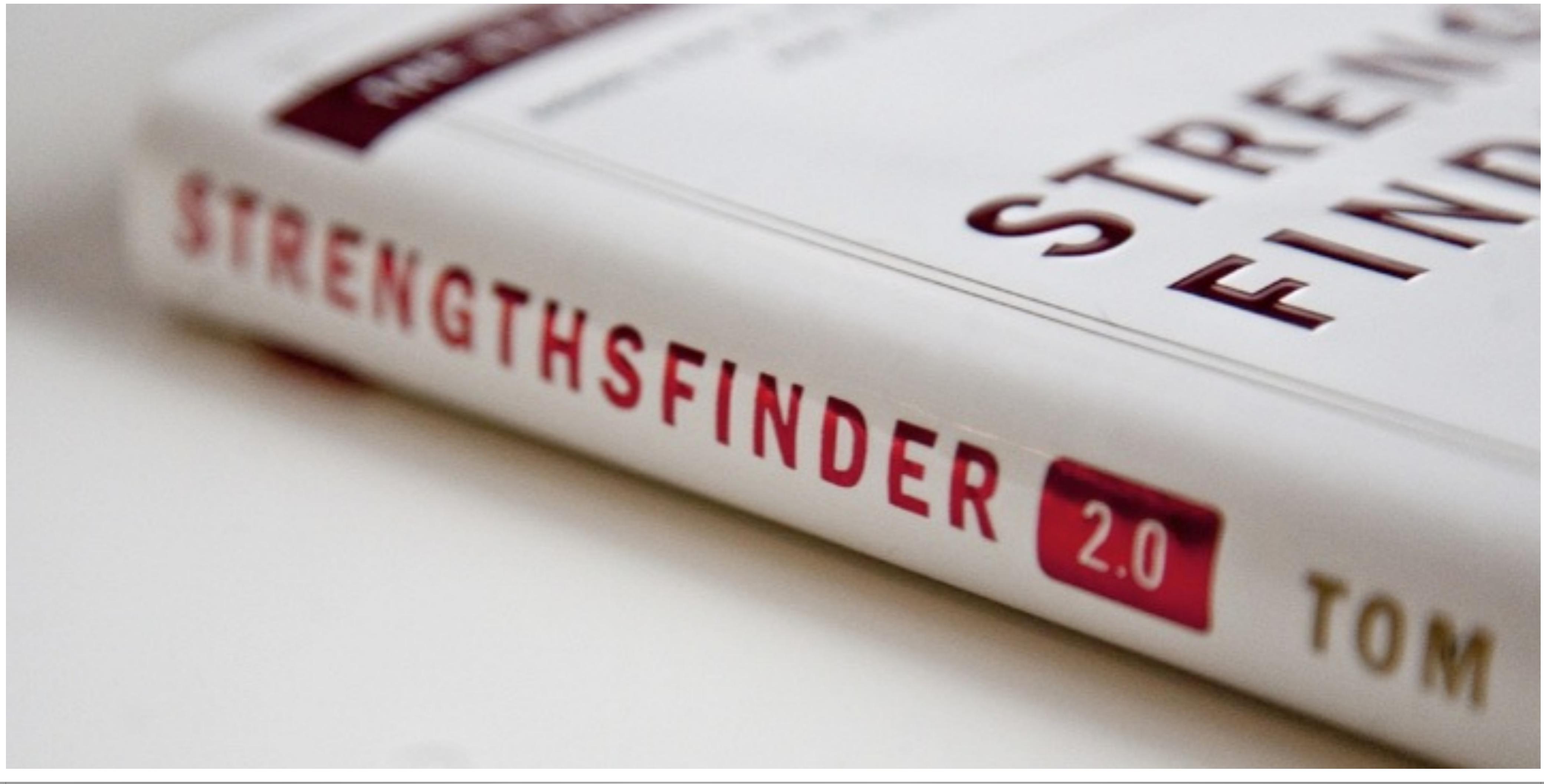
Self-Assurance

Significance

Strategic

Woo





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Executing

Achiever
Arranger
Belief
Consistency
Discipline

Deliberative
Focus
Responsibility
Restorative



Influencing

Activator
Command
Communication
Competition

Maximizer
Self-Assurance
Significance
Woo



Relationship Building

Adaptability
Connectedness
Developer
Empathy
Harmony

Includer
Individualization
Positivity
Relator



Strategic Thinking

Analytical
Context
Futuristic
Ideation

Input
Intellection
Learner
Strategic



Adaptive Leadership



EXERCISE

Discuss the distribution of strengths across your group.

Come up with two scenarios:

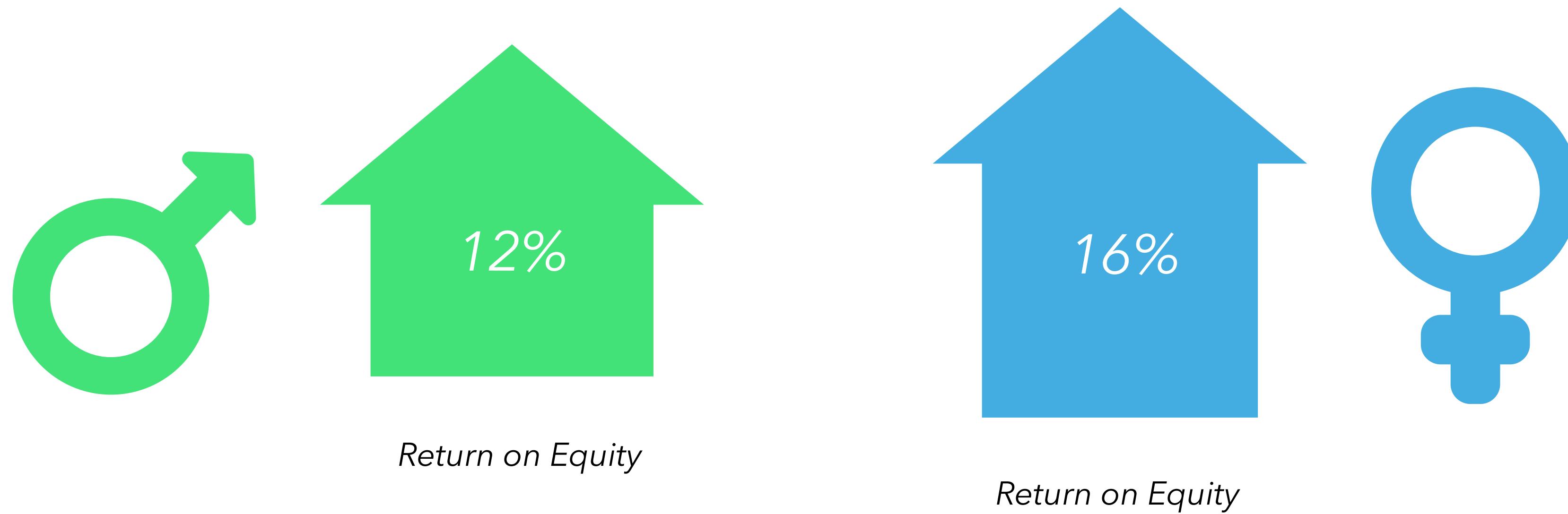
- 1) A scenario where your group strengths would be **particularly useful**
- 2) A scenario where your lack of group strengths would be **challenging**

PEOPLE

Strength in Diversity

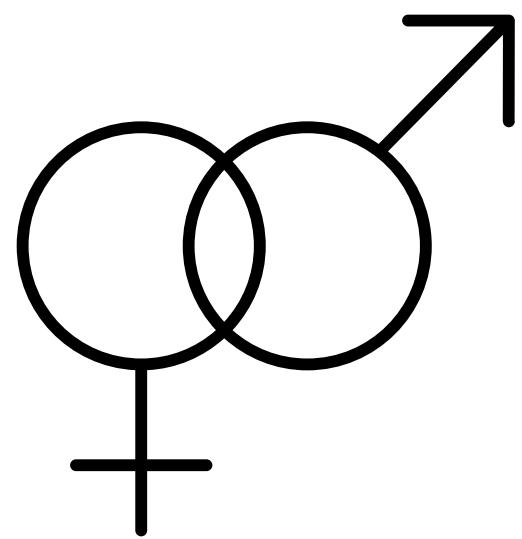
Source: Credit Suisse Research Institute (August 2012) <http://bit.ly/Oozuvl>

*“...over the past six years, companies with at least **some female board** representation **outperformed** those with no women on the board in terms of share price performance.”*

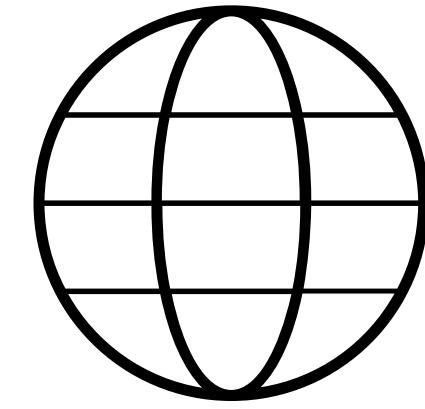


Mix that Matters

Source: The Mix That Matters: Innovation Through Diversity (2017)



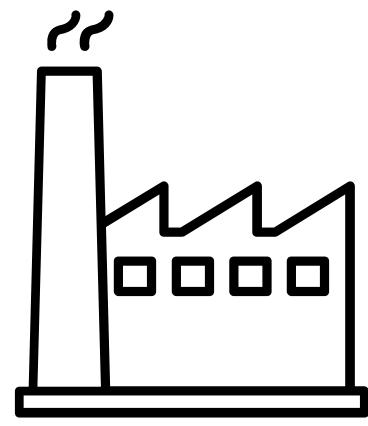
Gender



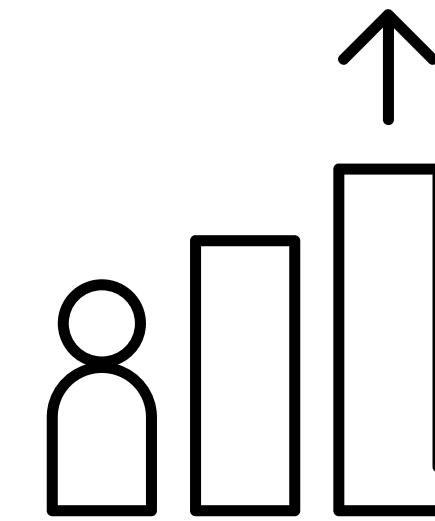
Country of
Origin



Academic
Background



Industry



Career
Path

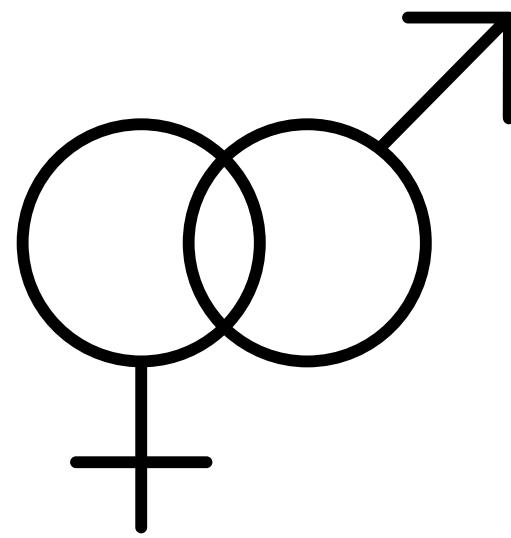


Age

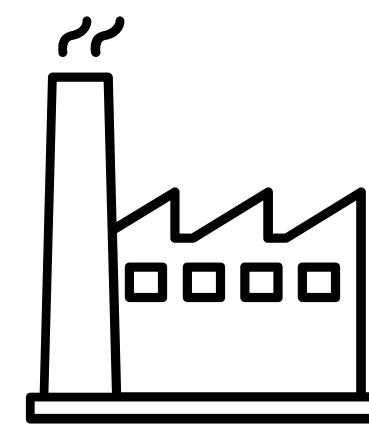
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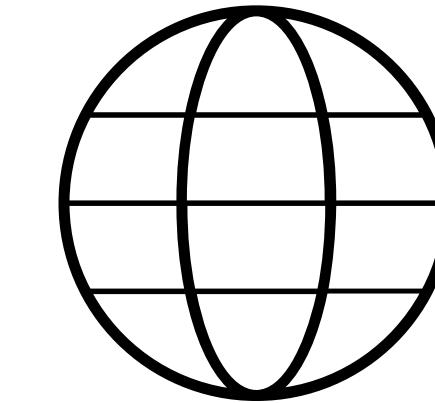
**Positive
Correlation**



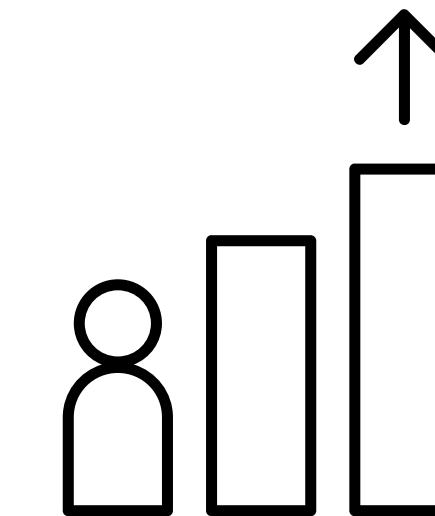
Gender



Industry



Country of
Origin



Career
Path



Academic
Background

**Negative
Correlation**



Age



Science of Diversity

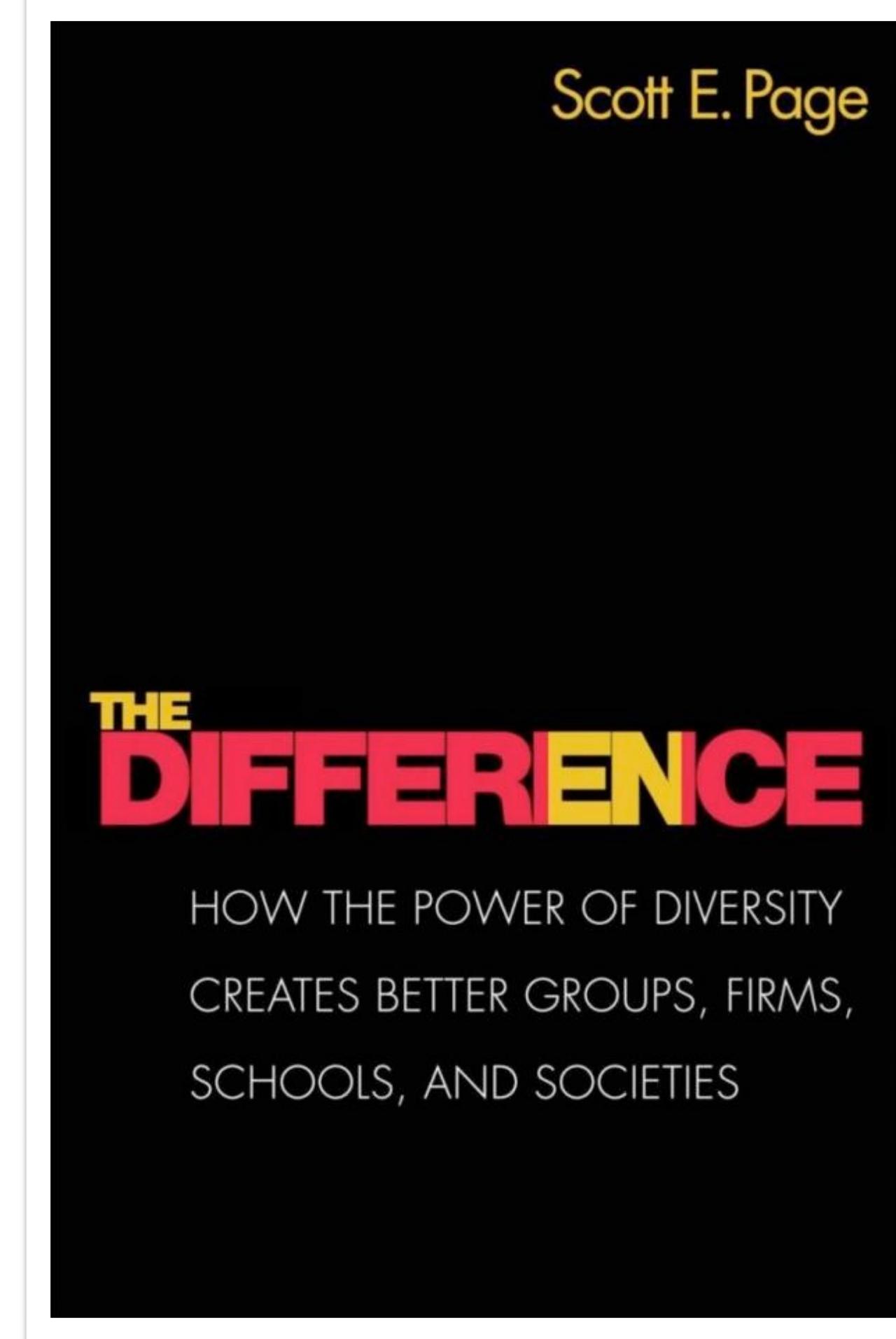
Collective Accuracy

=

Average Accuracy

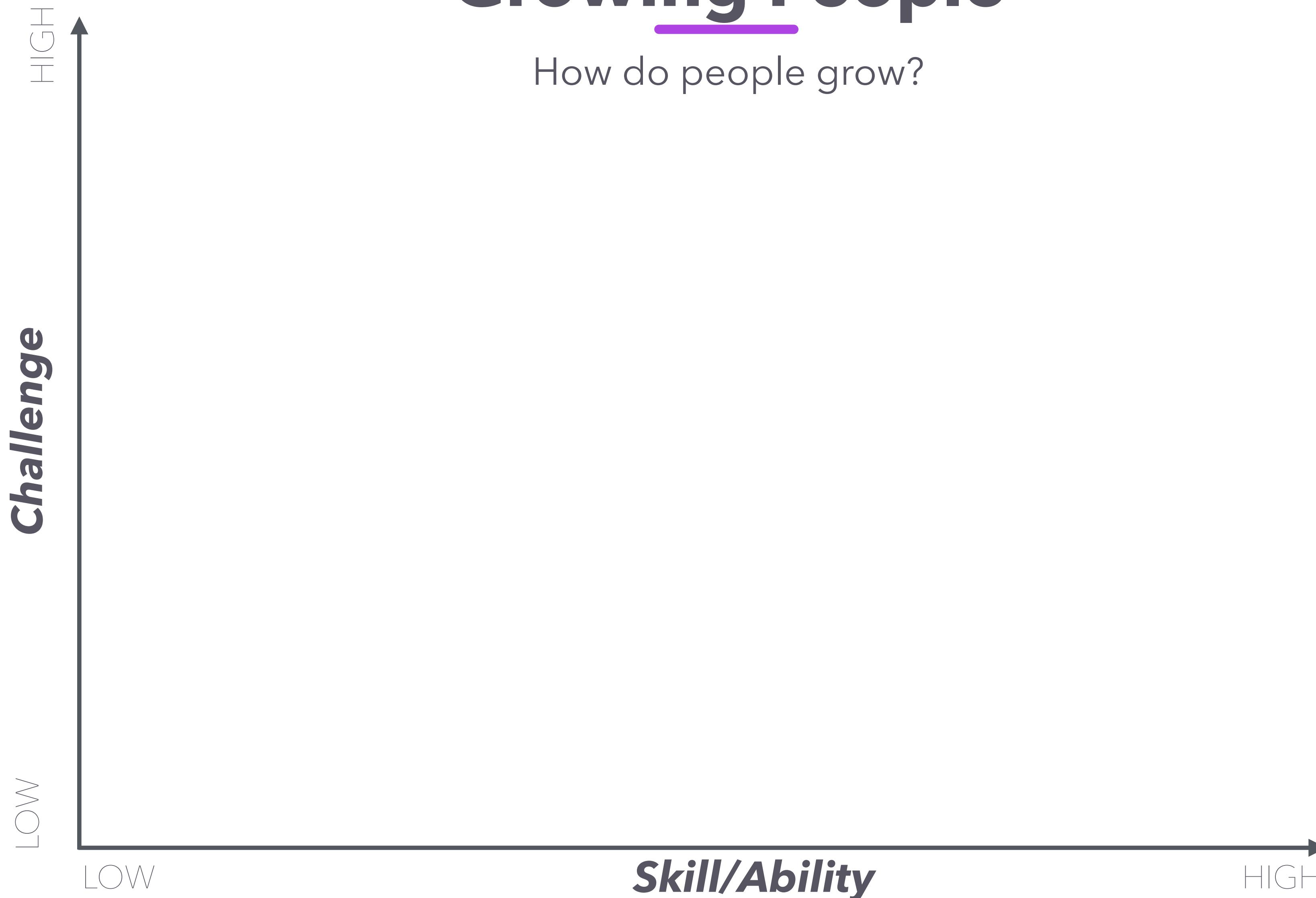
*+ Diversity**

* Requires ability to integrate



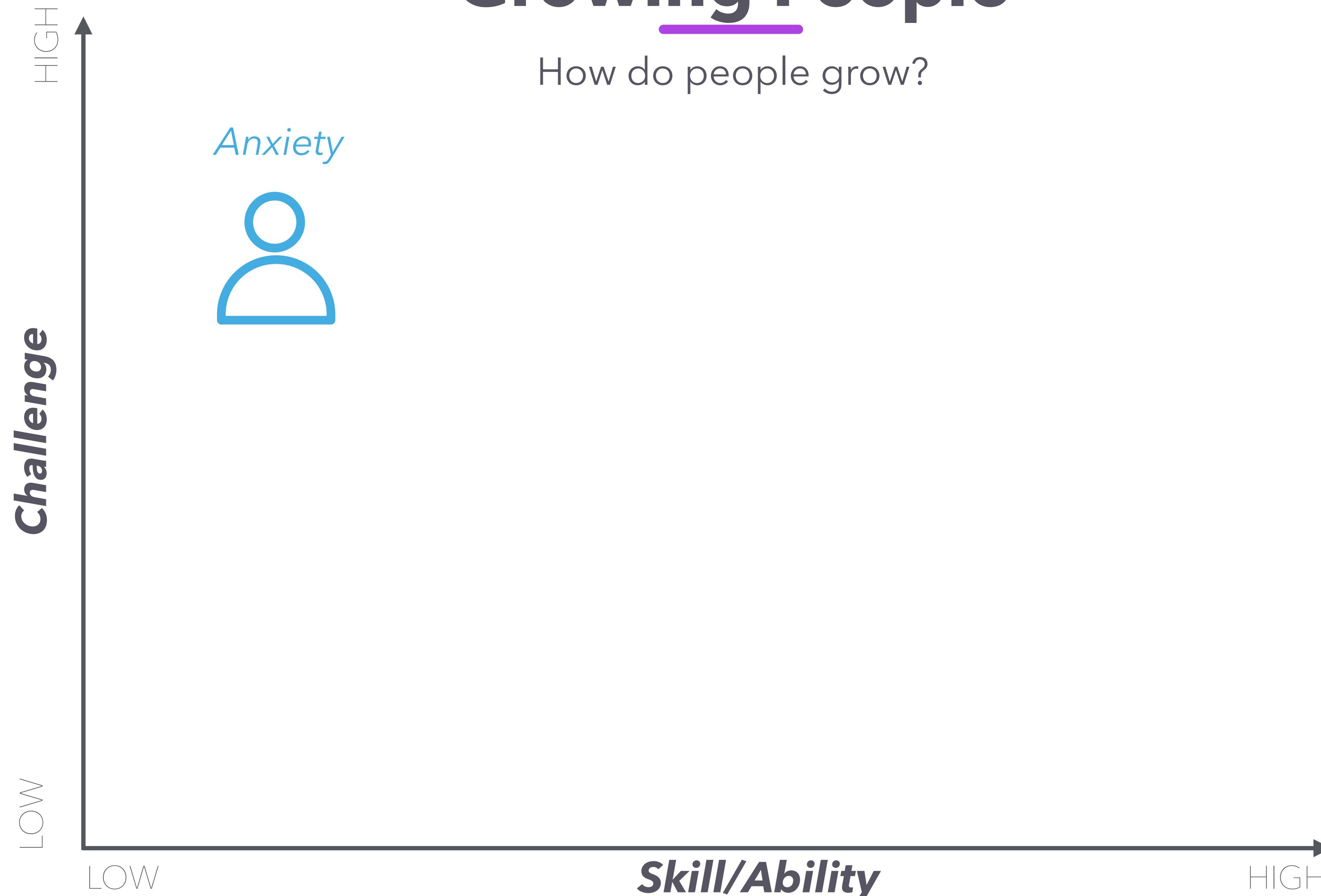
Growing People

How do people grow?



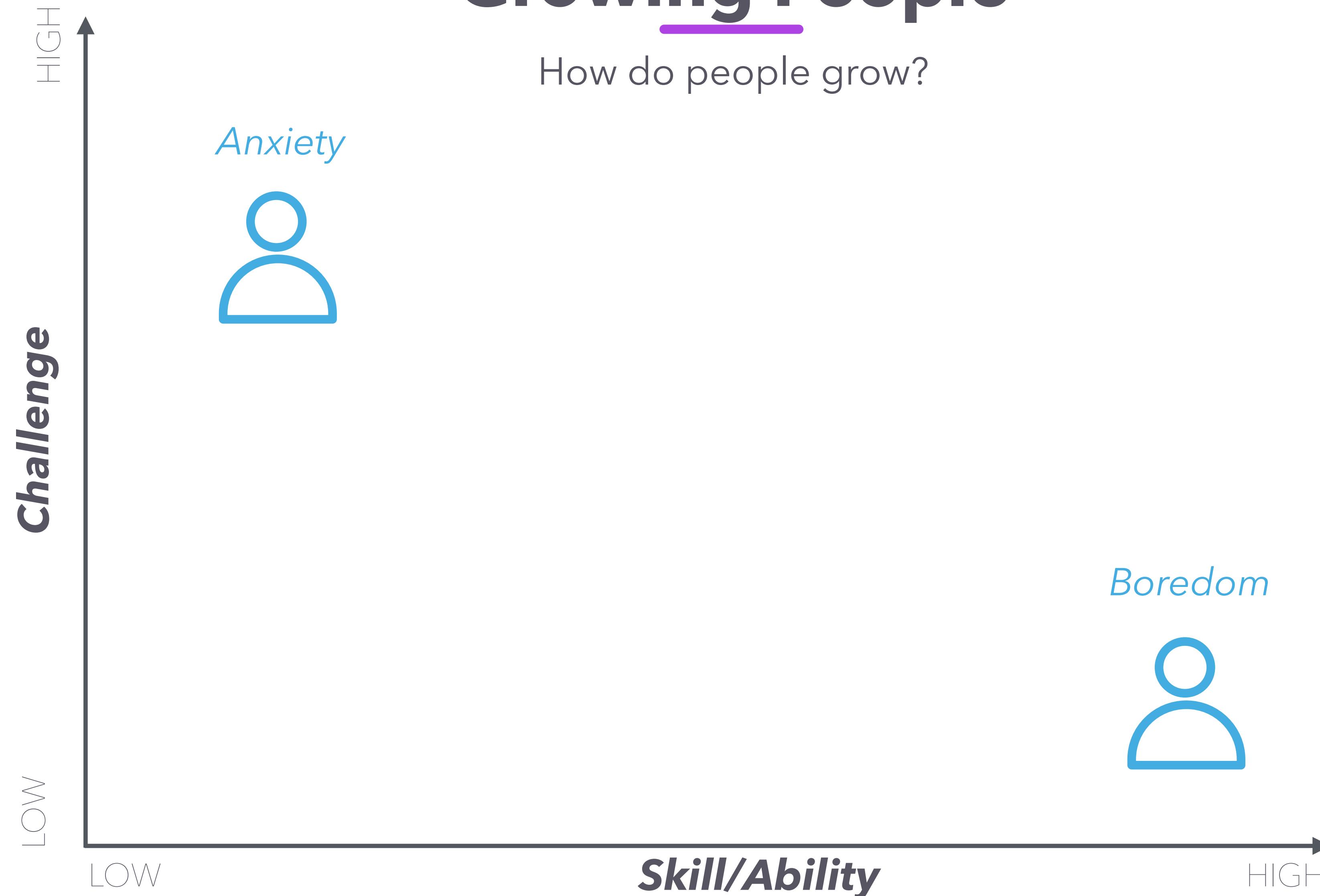
Growing People

How do people grow?



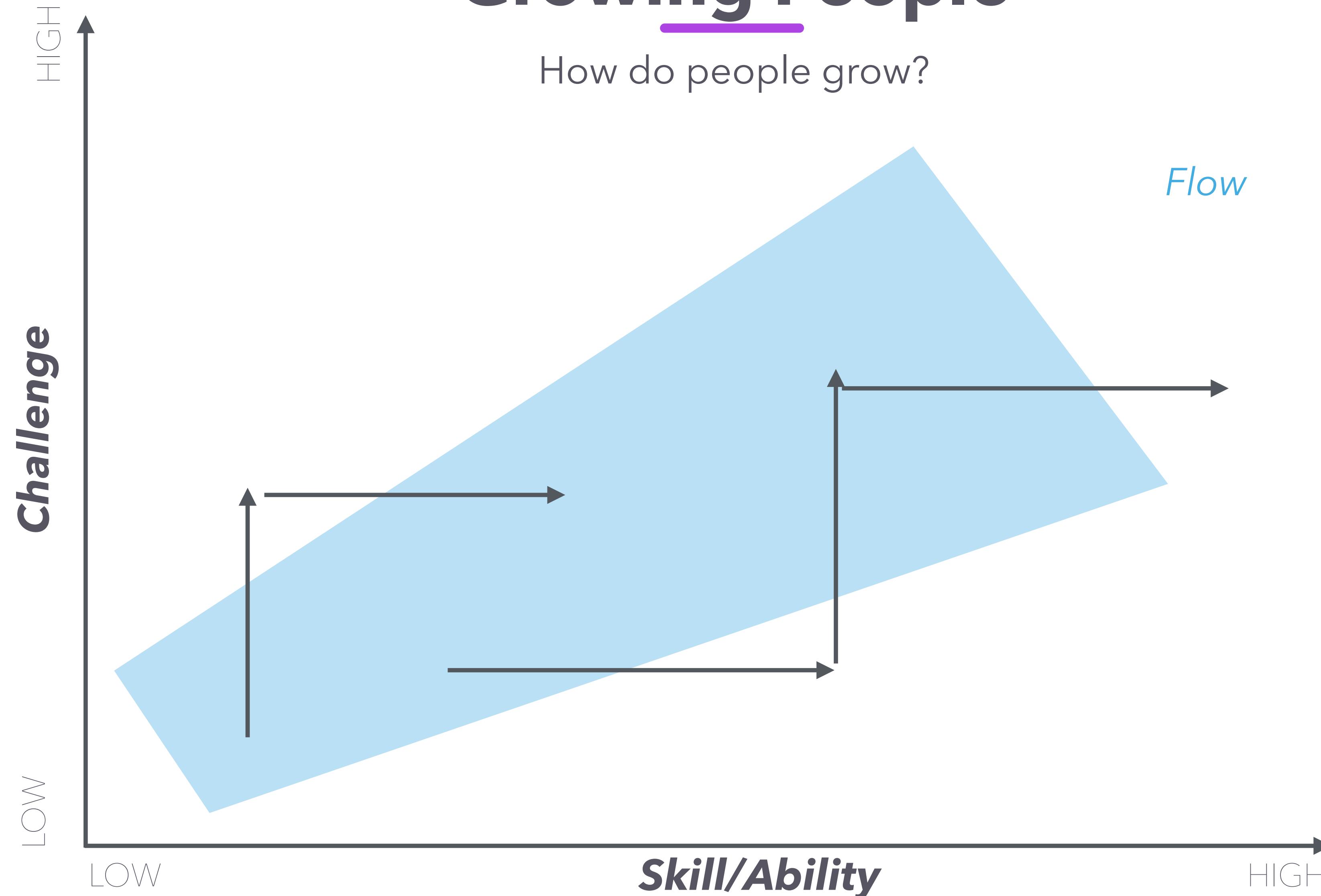
Growing People

How do people grow?



Growing People

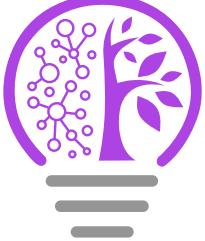
How do people grow?



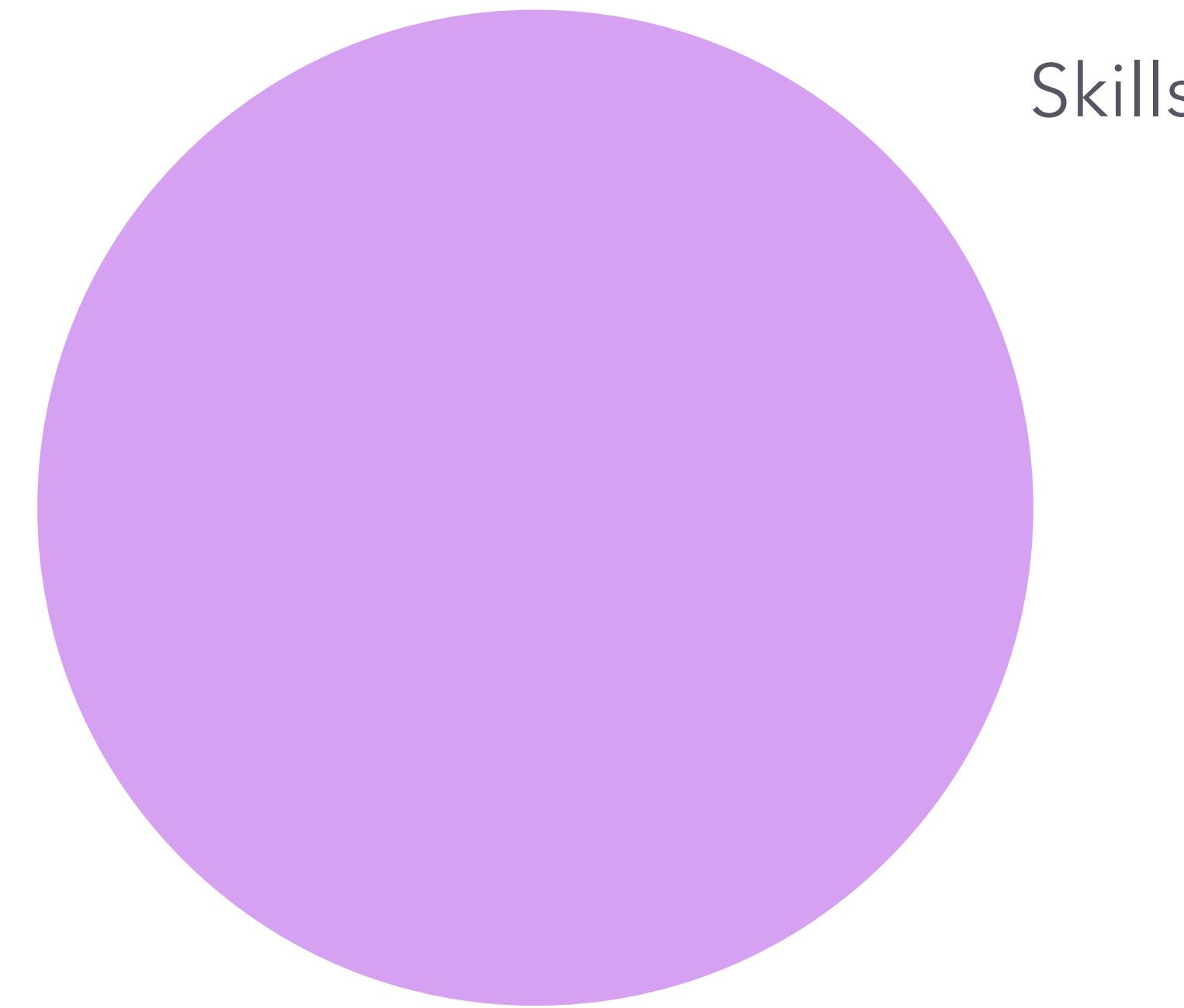
Maximising Potential

@patkua

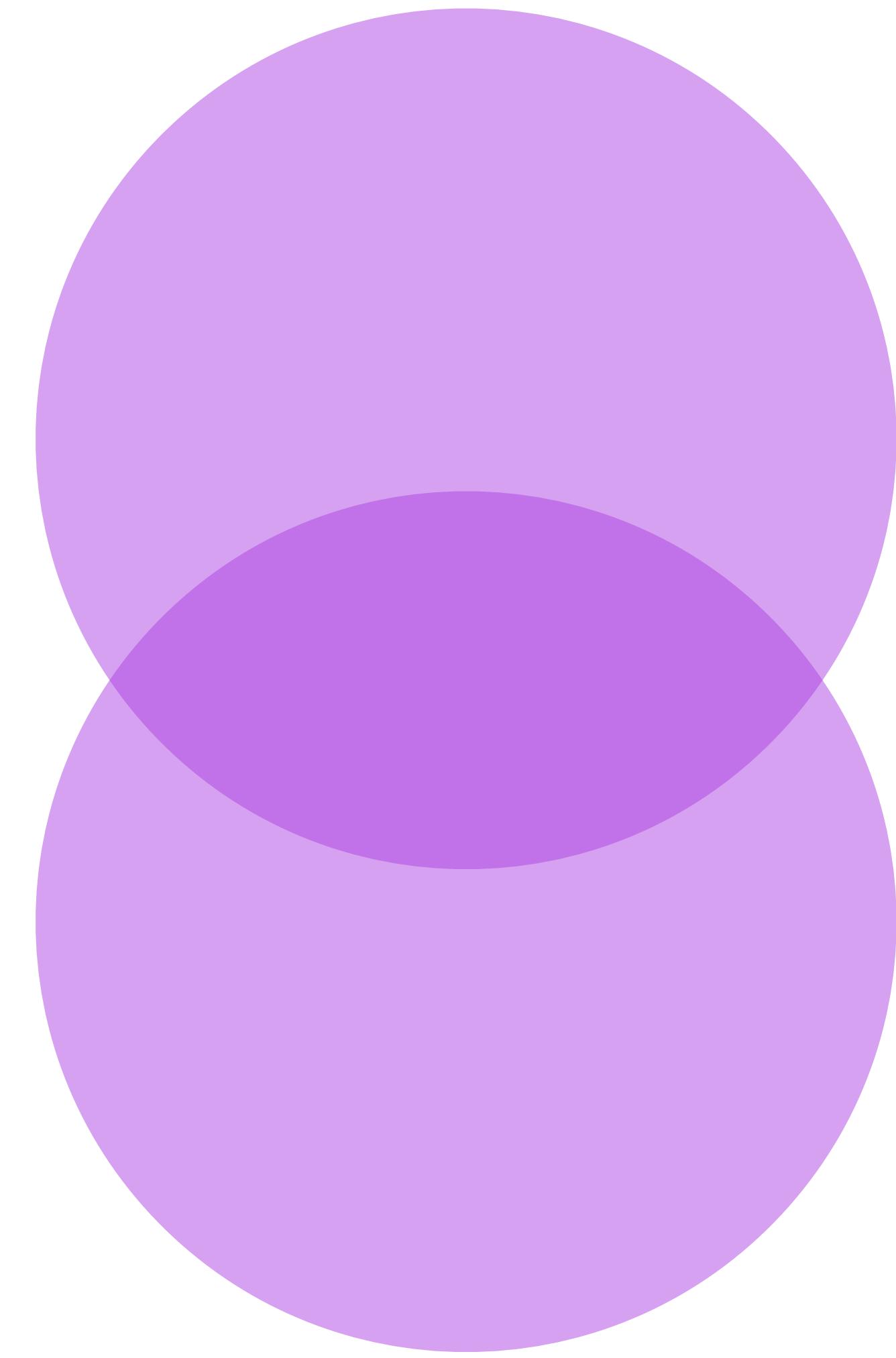
techlead.academy



Maximising Potential



Maximising Potential

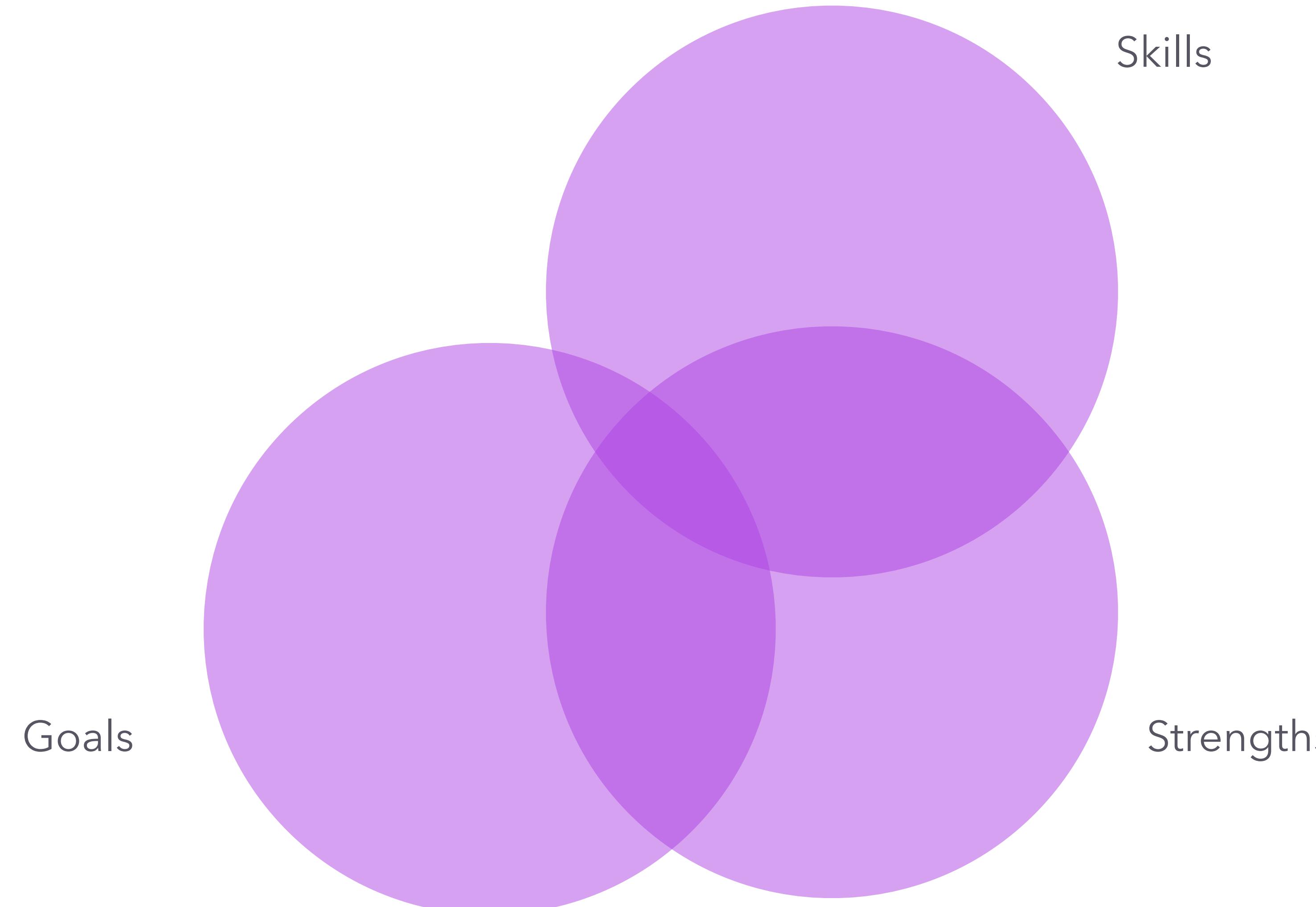


Skills

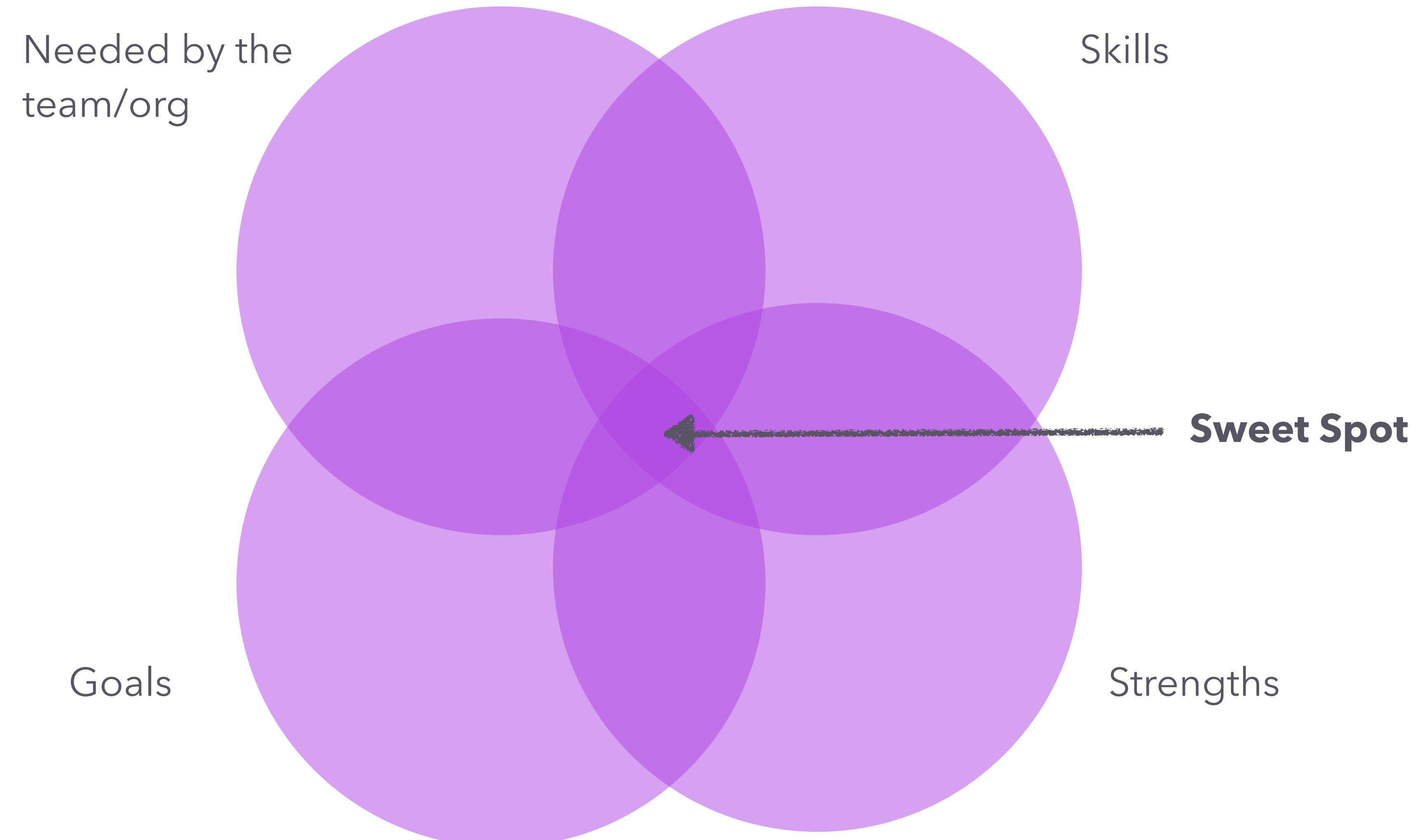
Strengths



Maximising Potential



Maximising Potential



Encouraging Learning

Learning Activities



Encouraging Learning

Team code
reviews

Video or
Book Club

Technical
Retrospectives

Pair

Programming

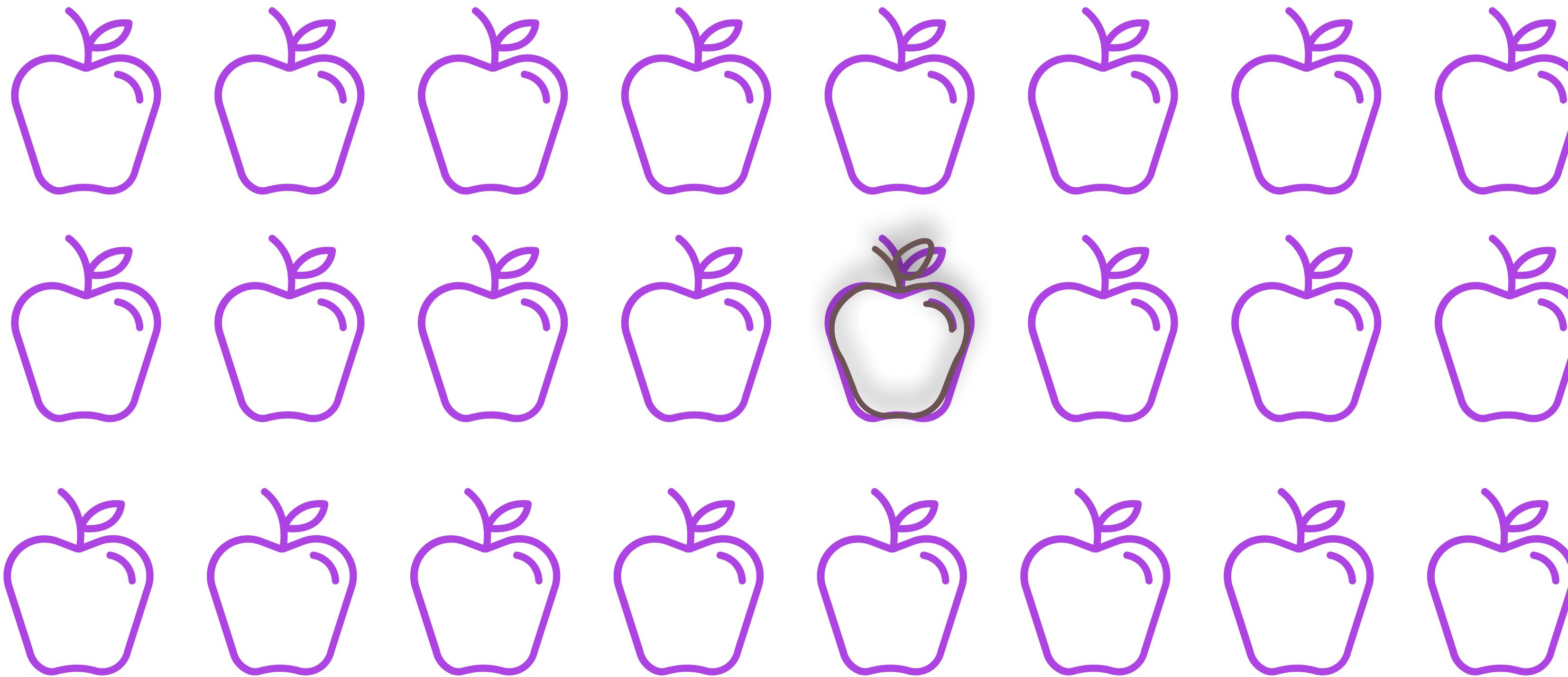
Mob
Programming

Brown Bag
sessions

Spike
Showcases



Beware the bad apple



Radically candid feedback

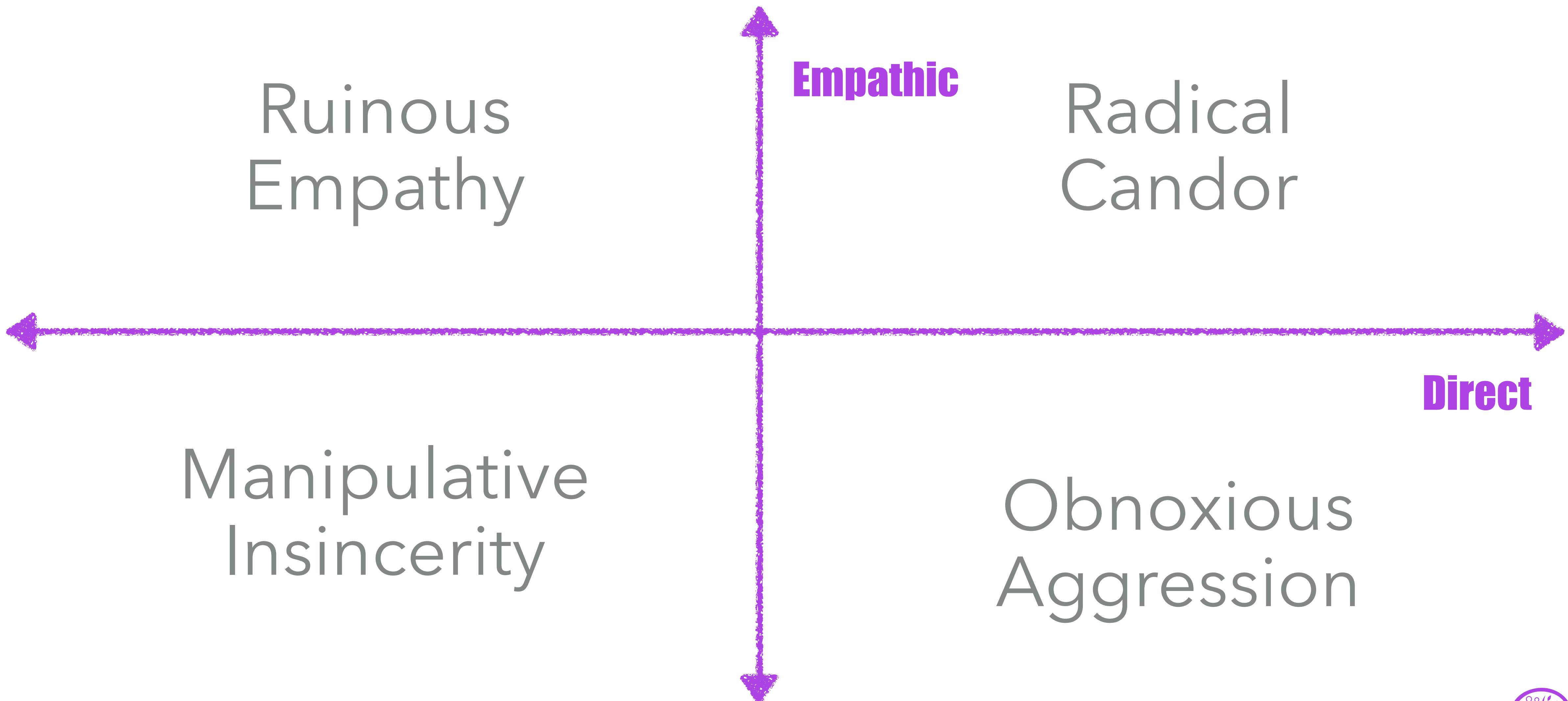
Situation

Behaviour

Impact



Radically candid feedback

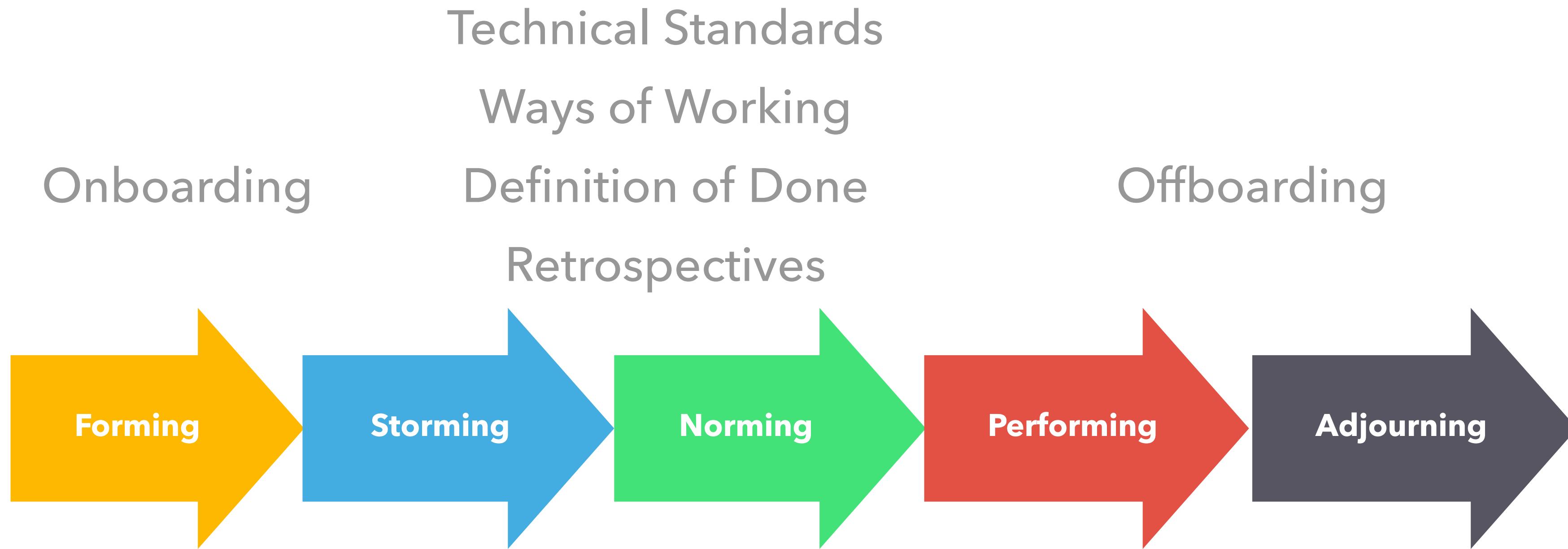


Teams > People

Tuckman's Model



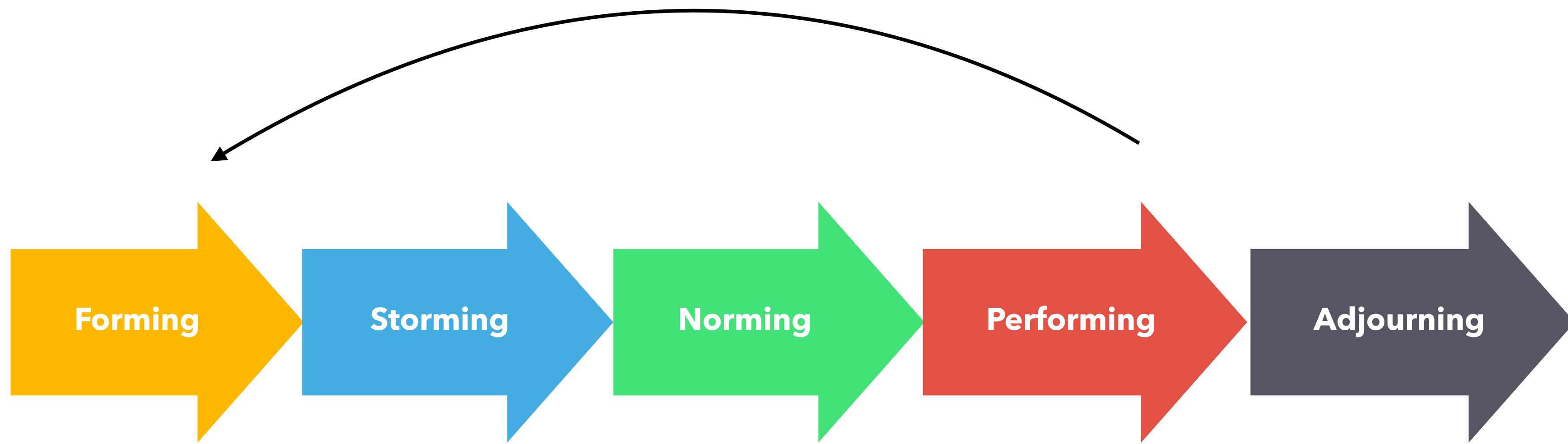
Teams > People



Tuckman's Model



Teams > People



Tuckman's Model





Questions?





Agenda

Hopes & Concerns



Hopes & Concerns
(Recap)

Action
Plan



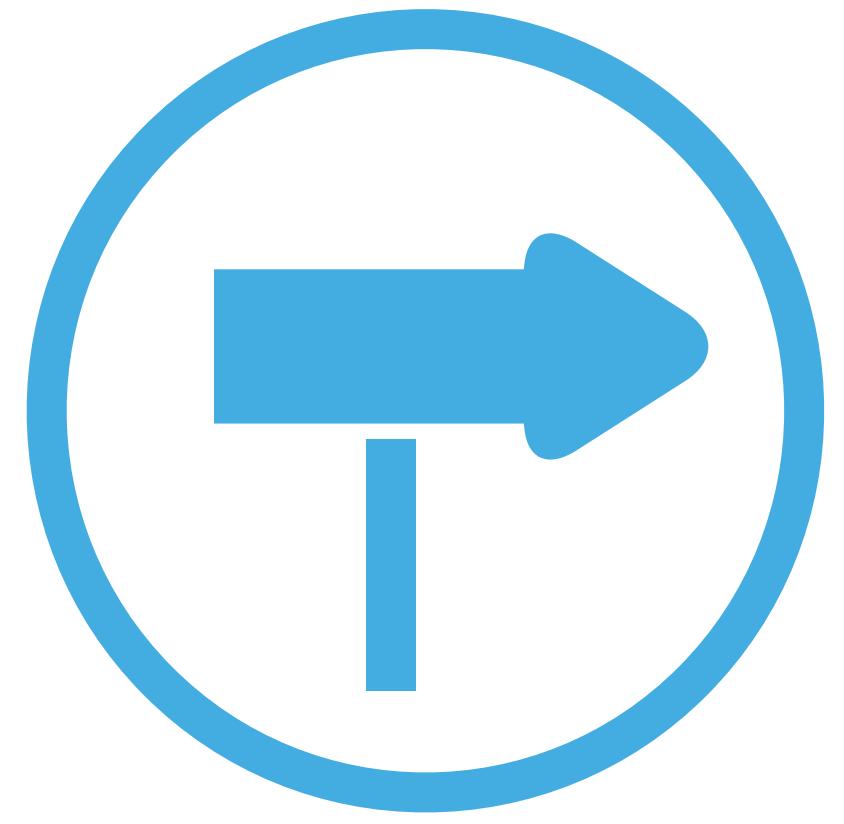
Hopes & Concerns

Recap

If your hope has been fulfilled, or your concern addressed, please remove it from the wall

EXERCISE





Action Plan

“Never stop learning because life
never stops teaching”



Example Actions

Taking learning further

“Watch a conference talk
about active listening in
the next 3 weeks”

Example Actions

Taking learning further

“Pick one architecture book
to read in the next 3 days”

Example Actions

Taking learning further

“Read (selected) book in
the next three months”

Example Actions

Taking learning further

“Write a book summary
and share with three
colleagues/friends”

Example Actions

Taking learning further

“Meet 4 people for a coffee/tea I don’t normally talk to in the next 3 weeks”

Example Actions

Taking learning further

“Complete a first draft
tech vision in the next 3
weeks”

Example Actions

Taking learning further

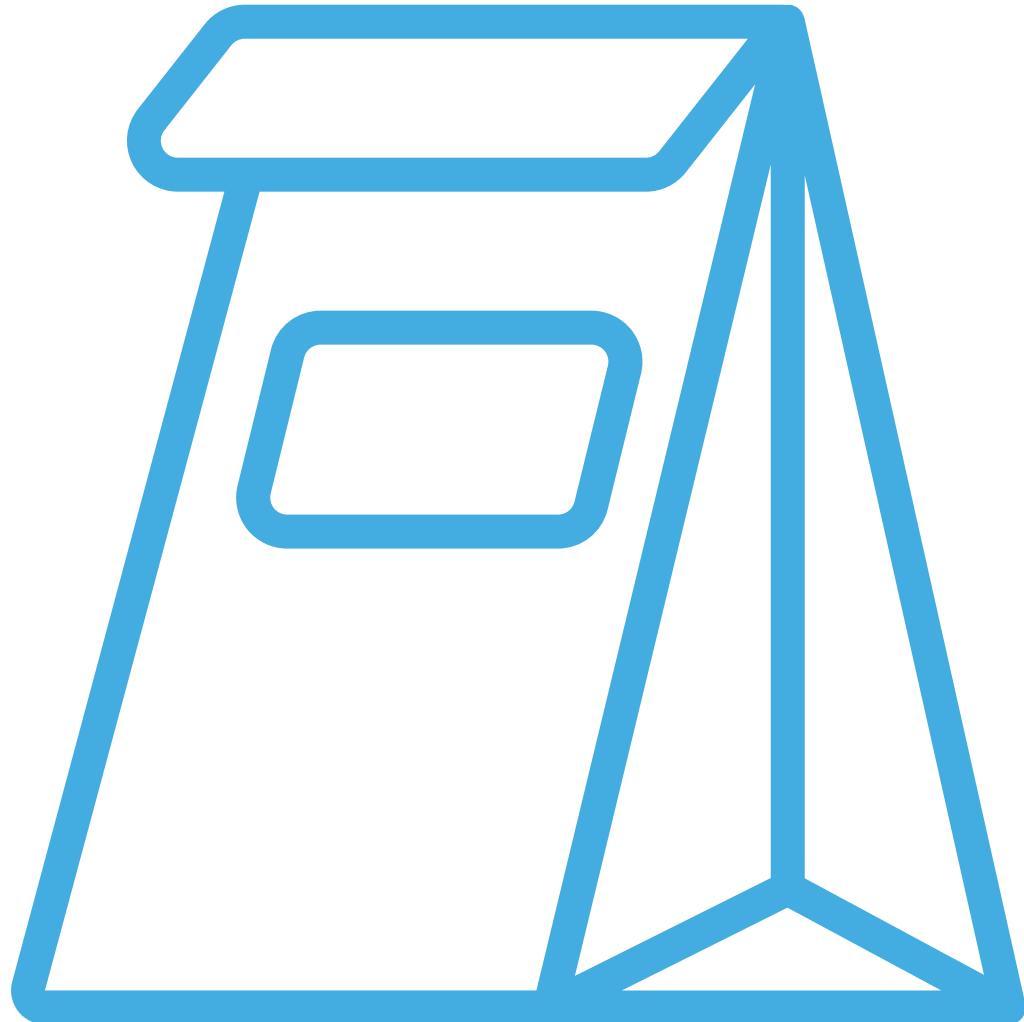
“Review my calendar and group fragmented activities in the next 3 days”

SMART Actions

Taking learning further

- **Specific** - Be concrete ("use a verb - e.g. do/read/write/talk")
- **Measurable** - When do you know you're done.
- **Attainable** - What results can realistically be achieved, given available resources and time?
- **Relevant** - Does this help you with your own goal?
- **Time-related** - When? Already given

Take-Home Artefacts



- ▶ Slides
- ▶ Handouts
- ▶ Free copy of e-book “Talking with Tech Leads”
- ▶ Recommended reading list
- ▶ Photos from workshop



Great technical leadership
requires more than just great
coding skills.

```
1 > TechLead  
2 .Journal()  
3 -  
4  
5
```

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Listen Score

LS **31**

Global Rank

TOP **5%**



X LISTEN
NOTES



> TechLead
.Journal()
-

FEEDBACK IS A GIFT!



<https://forms.gle/jdyCrmS8oEwhFtjSA>

Thank you!

pat@patkua.com

The end of the workshop but your journey continues...

