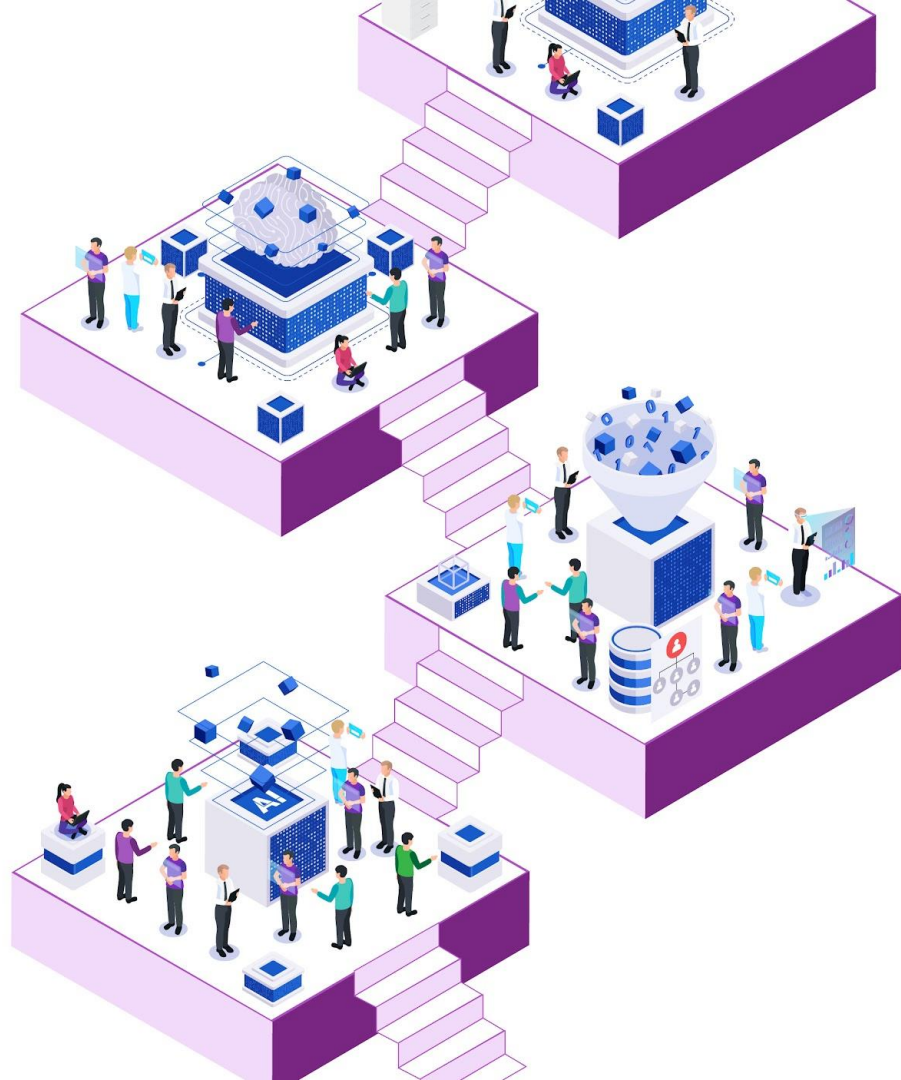




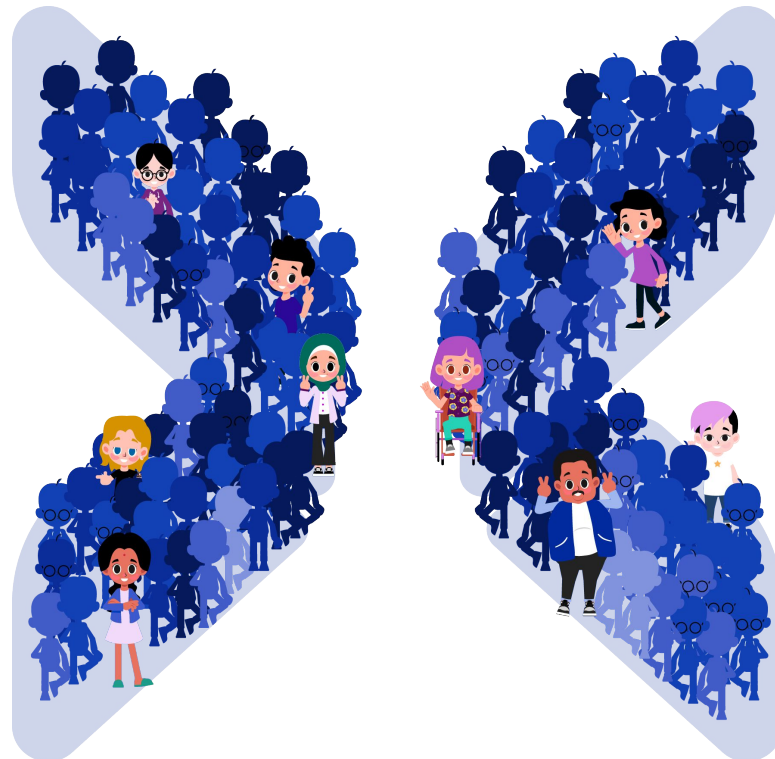
Debugging Talent: How We Engineered Our Career Ladder



Who is DKatalis?

DKatalis is a technology company that specializes in developing scalable digital solutions (like  **Jago** and ).

We strive to catalyze growth through our products and our journey to build them. Our culture is reflected in how we promote innovation, life, and a sense of community.



Speaker Profile



Wira Siwananda

Principal Engineer at DKatalis



Nurdian Farikh

People Partner Lead at DKatalis



Brief

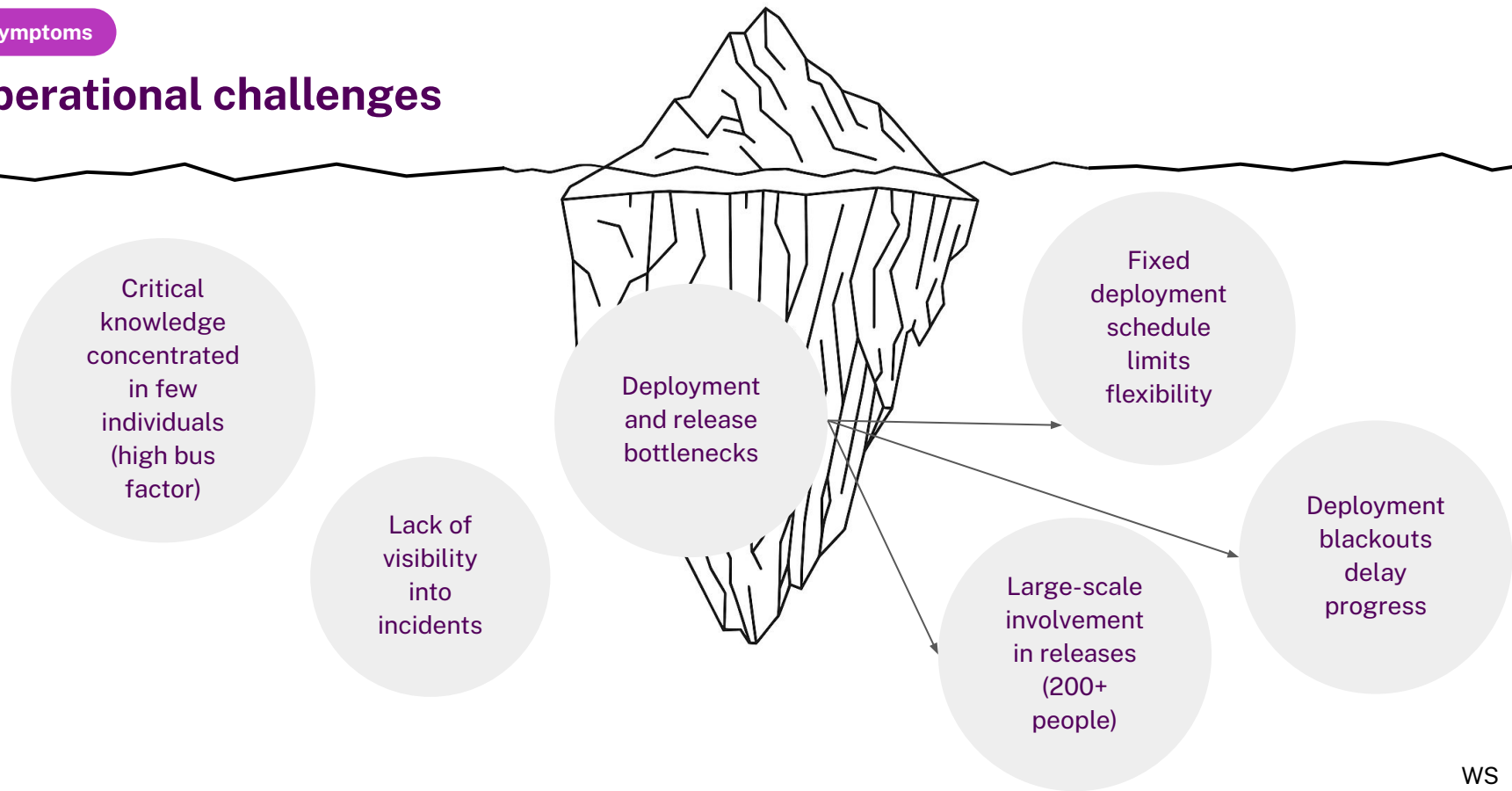
A retrospective on **how DKatalis (DK) embraced experimentation to assess engineering capability and expand to other areas.**

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Symptoms

Operational challenges

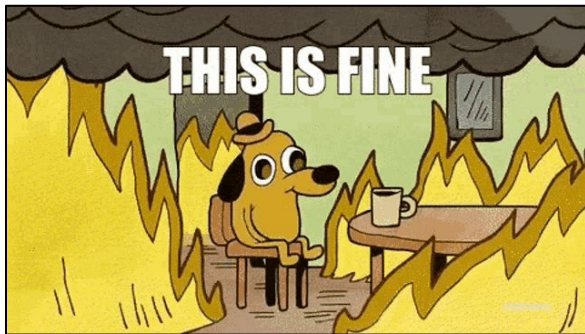


Symptoms

Engineering Practice Challenges

Broken git -
branching
strategy,
merging
practice, cherry
pick, etc.

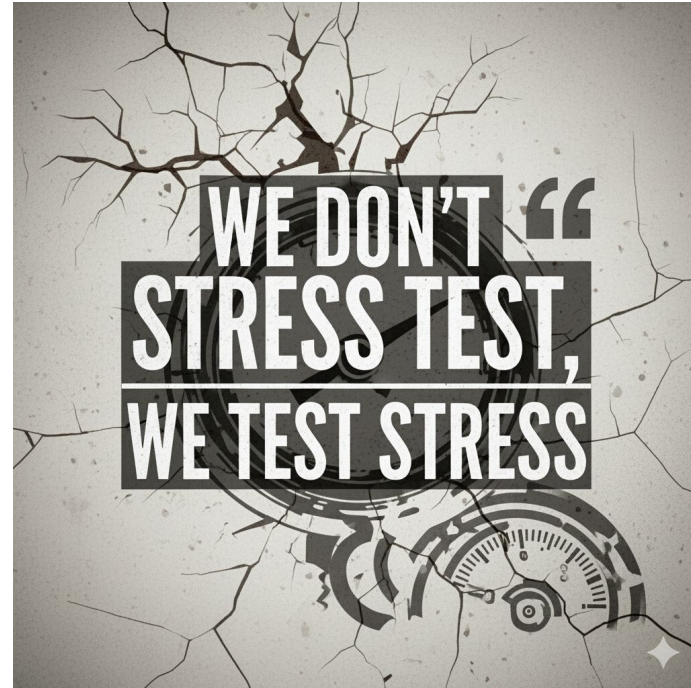
Lack of
backward
compatibility



Late
testing
cycle

Broken
feature
flagging
practice

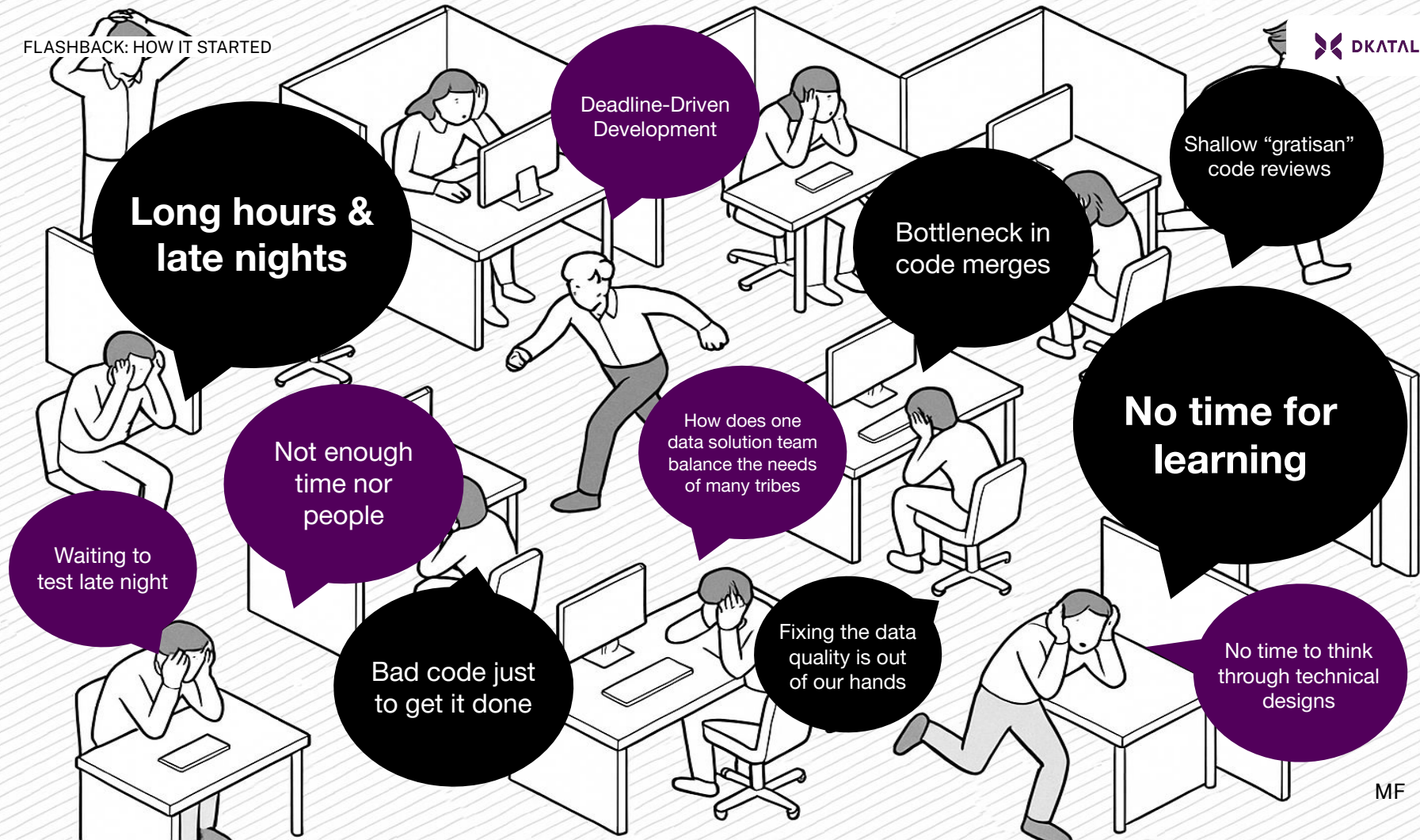
Tagline



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	2020	2021
Total employees	 176	 308
What we ought to deliver 	Teams are running at full speed to launch the app, on all front : • Building Value Proposition • Ramping up app development for Launch • Building and nurturing Digital Ecosystem • And many more	Teams are growing rapidly. Size and complexity are expanding. • App is launched and gain 3M Customer • App is integrated to digital ecosystem ; Gojek and Bibit • Pushing hard for Go To Market to scale fast
What did we do 	• Born during pandemic and born distributed • Teams are mainly composed of junior engineers led by a handful of senior engineers (4 seniors only) • Launched DK Academy and built Hub in India	• Start hiring digital talent in Singapore and Virtual, mainly for specialist role • Engage with more vendor • Acquired Software house
What does it cost us 		• Burn out for leaders and team. • High Attrition, low engagement, unhappy team. • Conflict between product x engineering x QA • Hidden ineffectiveness and inefficiency. MF



In Retrospect

The Consequence

For nearly two years, our engineering effort was consumed by a stabilization initiative, halting all new feature development.

The Challenges We Faced

Uncontrolled Complexity

Reactive Development

The Vicious Cycle of Debt

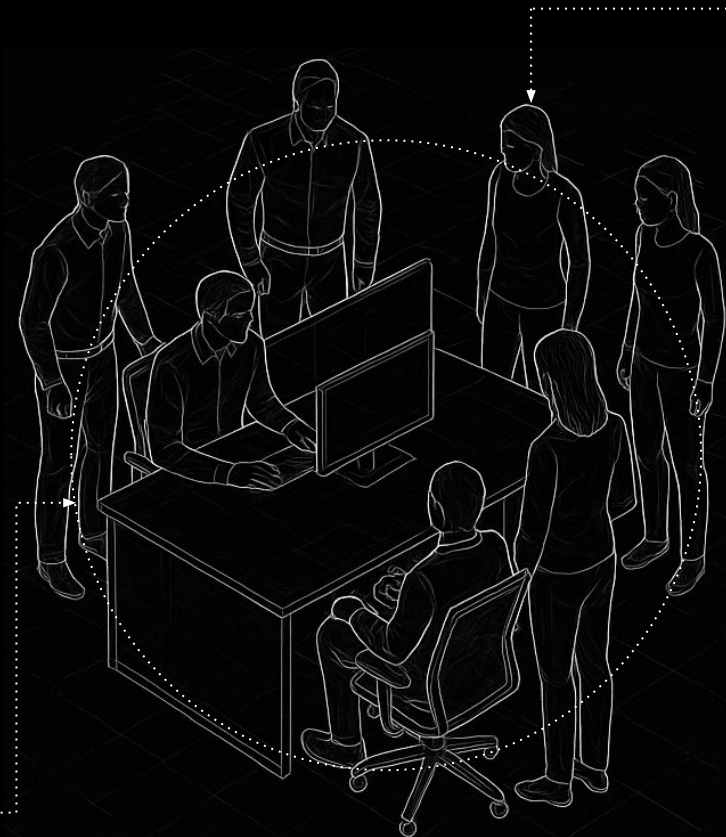
Organizational and Talent Gaps



The Hypothesis

Our Operating Model is a Bottleneck:

The way our teams are structured and how they coordinate is no longer fit for purpose.

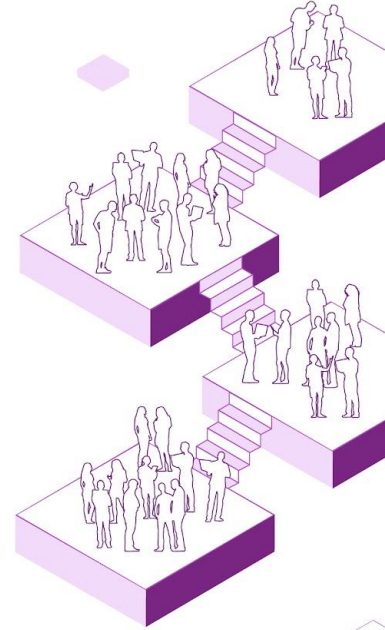


Our People are Left Behind:

We've failed to equip our teams with the skills and support needed to thrive in this new landscape.

Problem #1:

**What is the operating model that
would be suitable for the ever
increasing size and context ?**



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Here comes the rescue

On how we works:



- We found that Large Scale Scrum (LeSS) framework was most suitable for our situation.
- We started shifting our organization design and way of working according to LeSS framework and launched it in October 2021.



On People side :

Building and Hiring Core Team
Member to mentor and bridge the gap in people and team capabilities :



Principal
Engineers



Group
Product
Managers

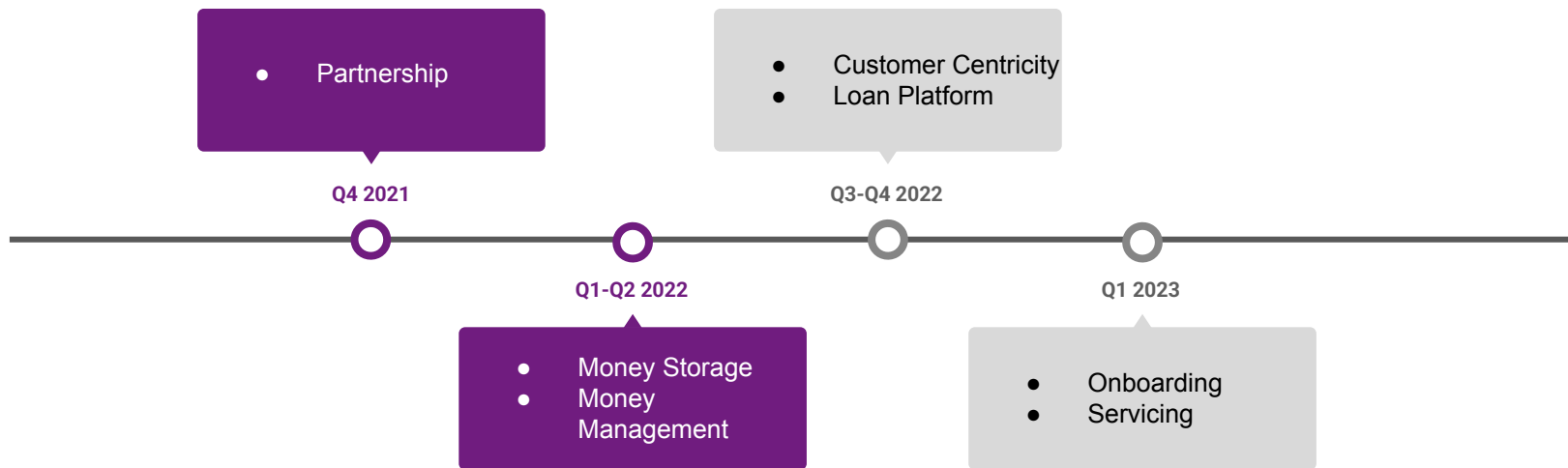


Agile
Coaches

fully supported by
Leaders + PAC

Then came the movement

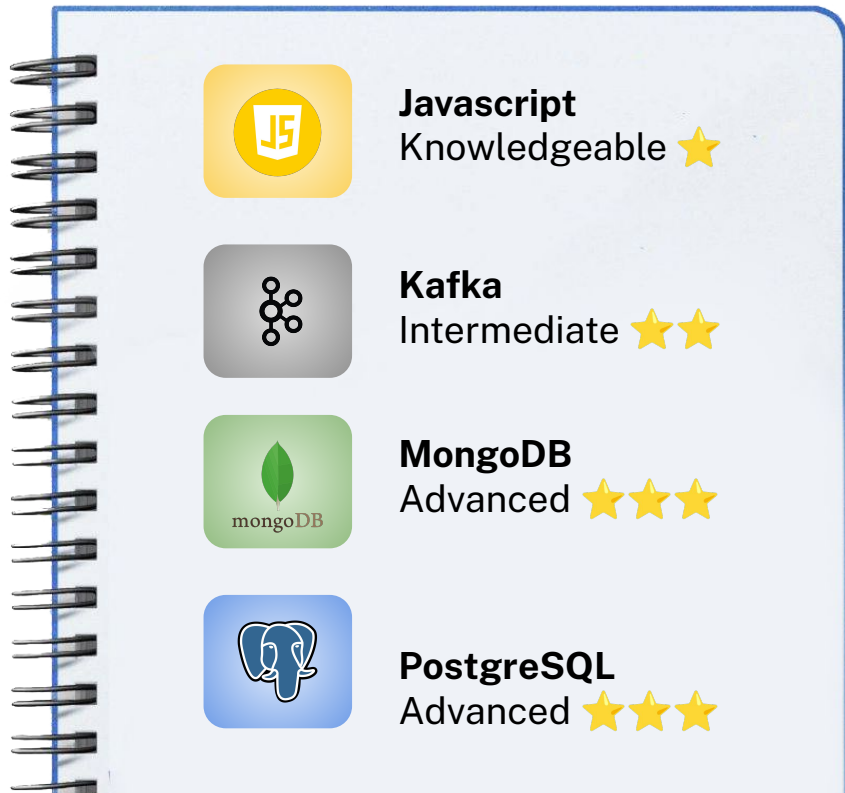
The core team drives the change and we are flipping the organization, one team at a time. Interestingly, thru self designing workshop without any intervention from management.



On the practices level

We try to invest in building some sort of Technical curriculum as a guard rail for team / individual development, identifying our tech stack as basis :

Example :



End of 2022

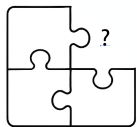
Things went smooth but...



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Underlying Issues (Re-)Surfaced



Technical Immaturity:

Lack of strategic thinking and inability to translate business needs into technical solutions.



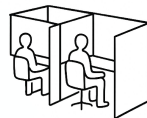
Operational Inefficiency:

Ad-hoc incident response and high-risk technical practices.



Inability to measure capability:

We can't measure how senior is senior and how junior is junior



Silos Appearing:

Since each area are enabled to work independently, silos start appearing





The Critical Link

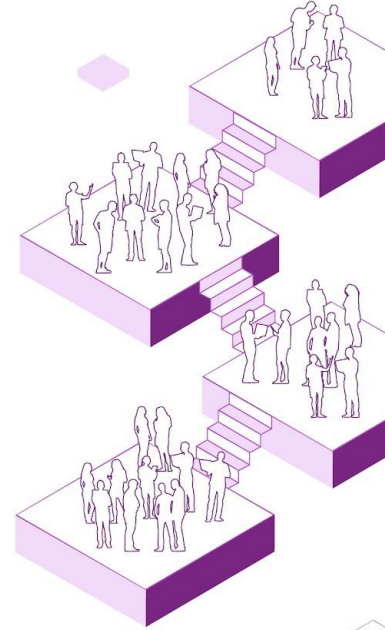
This is where the importance of people and their capabilities becomes clear. Technical agility is not a matter of process or tooling; it is a direct reflection of the competency of our people.

A good operating model is unsustainable without skilled talent and consistent investment in their growth.



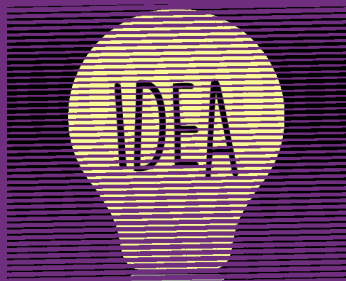
Problem #2

How to grow the team so that we can
scale sustainably?



Immediate Solution

Our People Strategy: Develop & Hire



To sustainably grow our talent, we must first address a series of fundamental questions:

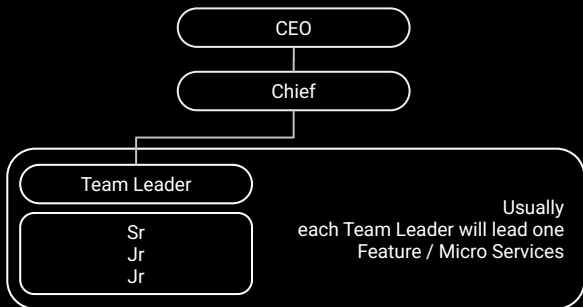
- 1 Define Seniority and Align Roles
- 2 Assess Our Current State
- 3 Plan for the Future

Let's get back into the past

2 Fundamental issues surfaced:

How we organized

Organization with less layer to instill agility and speed



Consequences to Hierarchy & Pay Grade

Shorter corporate band and implementation of broad banding,

Serves as locked up mechanism to avoid us breaching the ceiling



Using that assumption, we did reality check

- ✓ As our products grew in complexity, they outpaced both our team's capabilities and our initial assumptions on how to organize them. Example :

- ✓ Few people already at Band 2 hence when we hired more Senior People (PE & Lead Engineer) it create a bottleneck in Banding System.

Before



Partner



Internal Services

Current



Partner

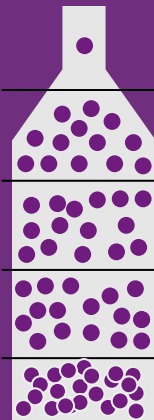


Standardized API



Microservices with
proper domain
segregation

Before



Band 1 : Chief

Band 2 : Team Leader

Band 3 : Sr Engineers

Band 4 : Engineers

Band 5 : Jr Engineers

Current

Band 1 : Chief

Band ? : PEs

Band ? : Lead Engineers

Band 2 : Team Leader

Band 3 : Sr Engineers

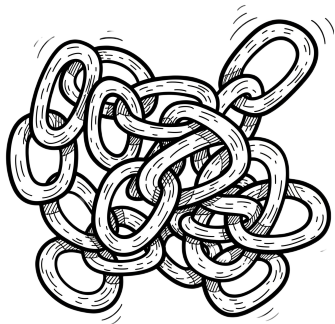
Band 4 : Engineers

Band 5 : Jr Engineers

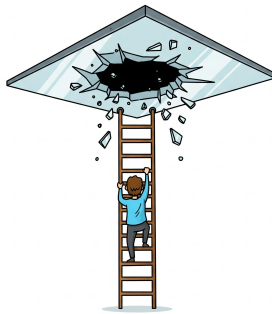
MF

The source of misery

Our legacy banding system is a clear source of technical debt, and its convoluted structure creates the perception of a limited growth trajectory for our talent.



A System with Technical Debt



**The Perception of Limited Growth
(The inverted structure)**



The Data Validates the Concern

And similar like code, hence it is natural to refactor this system

Now...

comes part of experimentation and iteration



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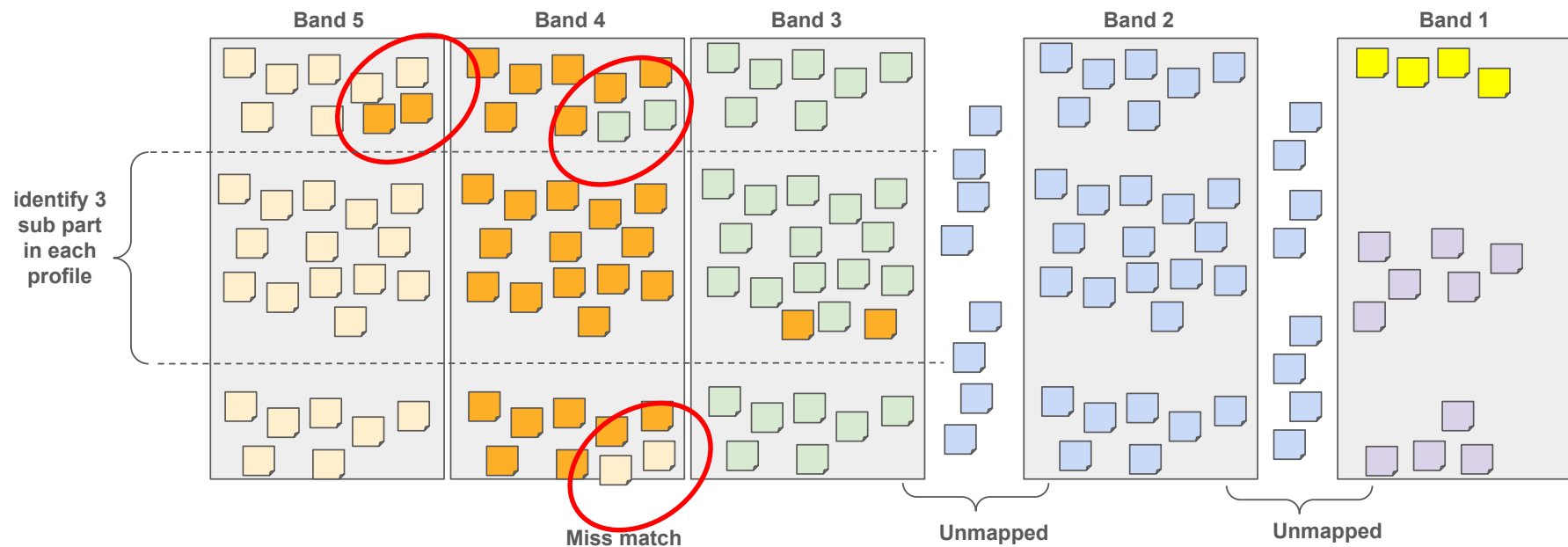
1st iteration : Redefine Band System

Rather than immediately abandoning our current banding system, we've focused on working within its framework. We've tried to redefine each band by articulating the specific technical and soft skills required.

	Soft Skill	Technical
Band 1	a. Able to grasp organization construct and complexity	a. Technical know-how: has a mastery on defining technical strategy and strategy execution to change/improve infrastructure, processes, or products.
Band 2		
Band 3	b. improving organization construct and drive the changes	b. Able to strategize by understanding best practices and starting advocating them. Able to do experimentation to drive innovation.
Band 4		
Band 5	c. Stakeholder management both internally and externally	c. Able to drive innovation (understands cost, impact and benefit)

Retrofitting people

A Mismatch in Reality: Our calibration efforts revealed a large number of employees whose skills don't align with the defined band narratives.



2nd iteration : Capability Profile A-E

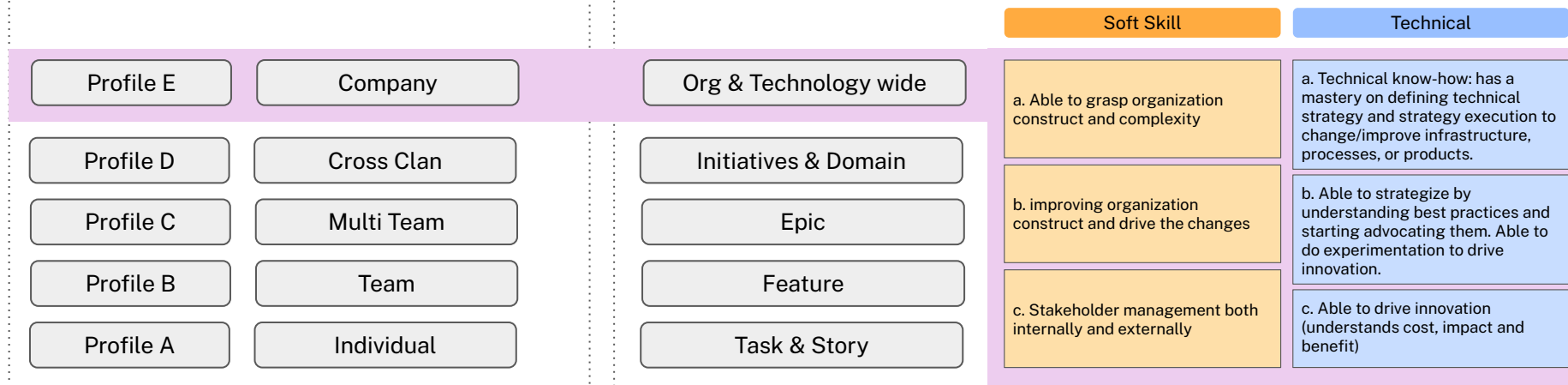
We've made a strategic decision to decouple our new mastery framework from the old banding system. We have deliberately opted out C-suite roles, as they represent an executive track, not an mastery path.

A New Structure:

We opted for a 5-level framework (A-E) derived from our average historical layers, ensuring a clear and scalable career path.

Scope of Work:

The levels correspond to the scope of influence, from individual contributions to company-wide initiatives, a model proven across the tech industry.



There are still gaps

A New Philosophy:

delivery-centric model to
capability-based organization
centered on engineering
excellence.



Talent Constraint:

Our previous approach was too
rigid, lacking the flexibility to
map our diverse talent



Anticipating Growth:

New framework should be
designed to anticipate future
organizational expansion

3rd iteration

Taking into account all of our experimentation, then we try to :

- We choose to use sphere of influence as basis of profiles

Individual

Other Engineer within team

Team

Multi Team

Clan & Cross Clan

Tribe & Technology

- We choose to use sphere of influence as basis of profiles

Consistent

- And as people get more expertise and experience, they become better at sharing it with others through collaboration, coaching, mentoring, and teaching

Competent

- Agility, the ability to adapt and react to new situations, to “shift on the fly” based on new information,

Showing

- Fluency refers to the smoothness with which they perform their task. The lack of hesitancy and the ease at which they perform tasks all improve as people move up the mastery ladder.

- **We distill further the skill / competency required both in Technical and Soft Skill / personality**

Technical

1. Technical Know-How
2. Code Delivery (code + test)
3. Innovation and Experimentation

As an engineer, technical qualities is mark of competence, the importance of mastering good skill and its application into product solutions are paramount and can't be replaced

Personality

1. Taking initiative
2. Feedback
3. Communication
4. Leadership and Influencing
5. Mentoring & Developing

Mastering your capability as an individual without the ability to share and apply it, will limits the potential

- **And design its progression across the profiles to ensure the individual and team can perform on each sphere of influence**

Quality/Band	Profile B	Profile C	Profile D	Profile E
Technical know-how	Has some knowledge in his/her technical area * basics of OOP * basics of FP * basics of abstract programming concepts * basics of established design patterns * competency of at least 1 programming languages	Has most knowledge in his/her technical area * competency in more than one programming language * competency in applying concepts of OOP or FP * competency in abstract programming concepts * competency in established design patterns * competency in libraries or frameworks required * understanding of database schema design * understanding of database indexing	Has mastery over some technology in his/her technical area * mastery in applying concepts of OOP or FP * mastery in some abstract programming concepts and/or design patterns * mastery in some libraries or frameworks * understanding of advantages and disadvantages of patterns and/or libraries * understand multiple database types and able to adjust design accordingly	See D
Code delivery (Code + Test)	Able to produce and maintain basic application code * basics of clean code * able to follow clean code * able to write Unit Tests * able to practise TDD * monitors releases and/or services * understands cloud environments	Able to produce and maintain code with good quality * full understanding of clean code * formed a habit of clean code, more than following clean code * able to produce full test-pyramid * understanding of best-practices * able to start advocating best-practices * understands engineering trade-offs * applies best practices in reliability management * understanding resiliency, autoscaling * understanding monitoring and alerting	Able to produce and maintain robust and reliable code * contributes to robustness and reliability * contributes to code polishing and promotes for nuanced fixes * thinks not in codes or components, but in systems * able to make pragmatic decisions about technical trade-offs * good understanding of cloud platform * good understanding of CI/CD, testing and validation * applies design patterns in reliability management * applies best practices in reliability management	Able to produce and maintain exemplary code and set examples * understanding of best-practices and why so * advocates best-practices to influence people * takes ownership of delivery
Innovation & Experimentation	n/a (not applicable at this level)	Able to contribute on experimentation * able to experiment on libraries/frameworks * able to present the result of experimentations	Able to drive innovation through experimentation * able to offer experimentation * understand the purpose of the experimentation * understand when to fail the experiment * able to drive innovation from experimentation result	Able to drive innovation (understands cost, impact and benefit) * understand purpose of innovation * understand importance of innovation for organisation * understand successful experiment could mean failed innovation

In profile E, technical Know How qualities is cumulative qualities and proficiencies technical know-how from profile D

In order to functionally participate and embark on innovation & experimentation, talent needs to understand and achieve proficiencies in Technical Know How and Code delivery for Profile B

- To accelerate the growth of our junior engineers and promote a culture of technical excellence, we've decided to merge the IC and EM tracks at the outset.
- We've also deliberately avoided traditional "Lead" and "Manager" titles to ensure our talent remains focused on technical proficiency and not on management trajectories.
- This shown in our decision when we vote naming convention for each profile

principal-engineers-channel

Below are some sets of titles that we worked with, please suggest all good.

Friday, July 14th

feels unnatural / uncomfortable. Also, do vote on the preferred option if

Title option 1:

1. Junior Engineer
2. Engineer
3. Senior Engineer
4. Lead Engineer
5. Staff Engineer
6. Principal Engineer
7. Distinguished Engineer

Having a lead engineer is misleading with managerial responsibilities

but, staff engineer title is not popular title in indonesia, close to associate

Title option 2:

1. Junior Engineer
2. Engineer
3. Senior Engineer
4. Staff Engineer
5. Senior Staff Engineer
6. Principal Engineer
7. Distinguished Engineer

Option 3 is the more conservative approach

we can cluster into 3 big categories

1-3 as Engineer

4-5 as Staff E

6-7 as PE

It can serve as transition period towards more mature state of organization

Flexible and fluid approach and not to hierarchical centric

For recruitment Perspective, it will avoid confusion, for having Sr Engineer but we hire in Staff level, we can bluntly said, we are hiring staff engineer

@Alex Titlyanov @Nurdian Farikh please add up if I missed out some

Putting all together.....

Objectives

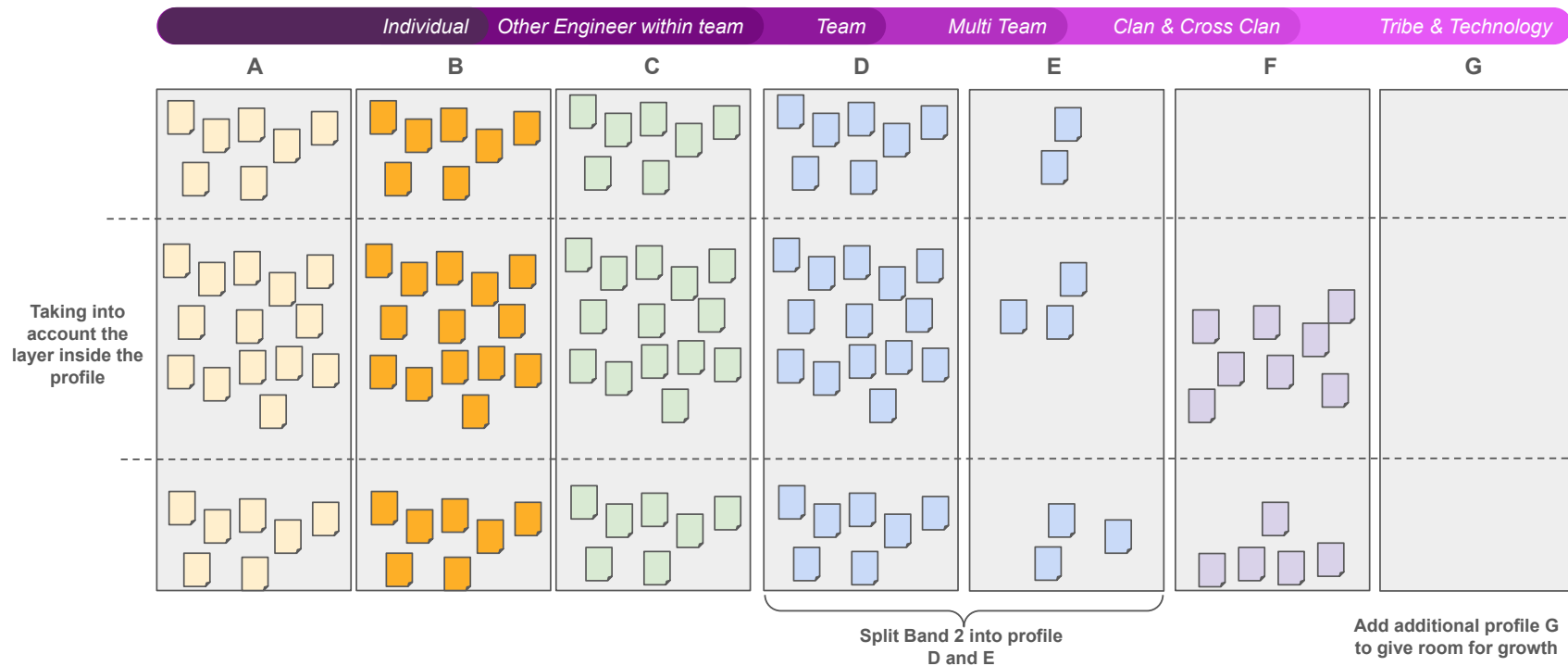
- Valuing more in technical proficiencies, hands-on contribution, continuous learning and mentorship culture
- Adopting more Modern approach in position title

Chief Engineering Officer

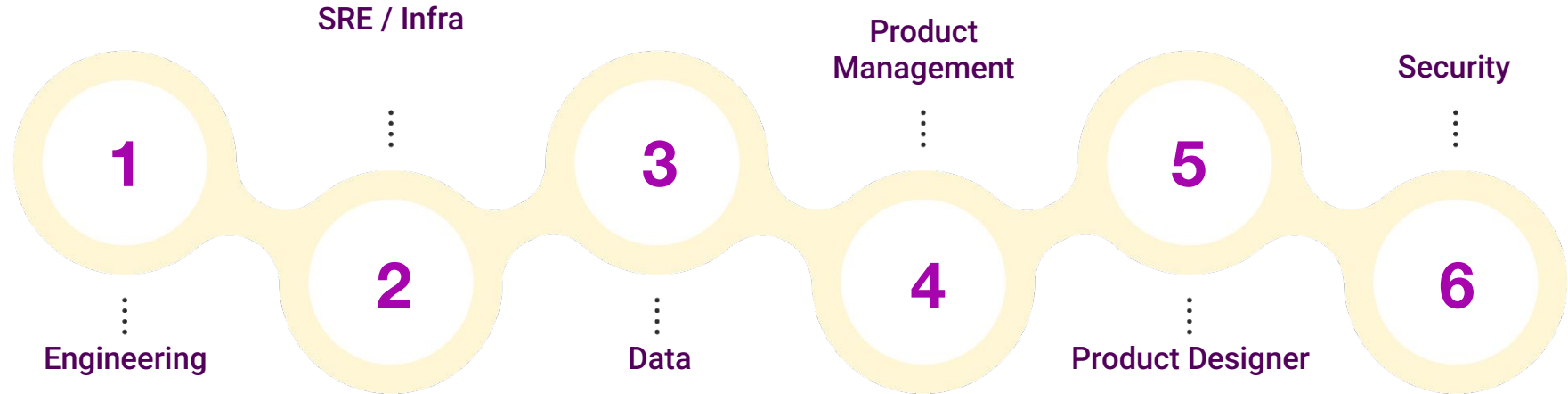
G	Sr Principal Engineer	Clan, Tribe and Technology - Lead of leads - Mentors and develop team member - Bridge diverse perspectives, and tackle large-scale initiatives - Organizational improvements, innovations and strategic directions
F	Principal Engineer	
E	Sr Staff Engineer	Team and Multiple Teams - Mentor and develop team member - Collaborate, solve complex problems together, and push the boundaries of teamwork
D	Staff Engineer	Being an expert, go-to and has a mastery in technical and domain knowledge
C	Senior Engineer	Other engineers within team - Guide and mentor junior engineers - Advanced technical skill and domain knowledge
B	Engineer	Individual - Independently contributes within team - Hone the core skills, mastering the fundamentals and navigating solo challenges
A	Jr Engineer	

When we did reality test, it shows promising result, not only once....
on the multiple calibration the result were stable and works

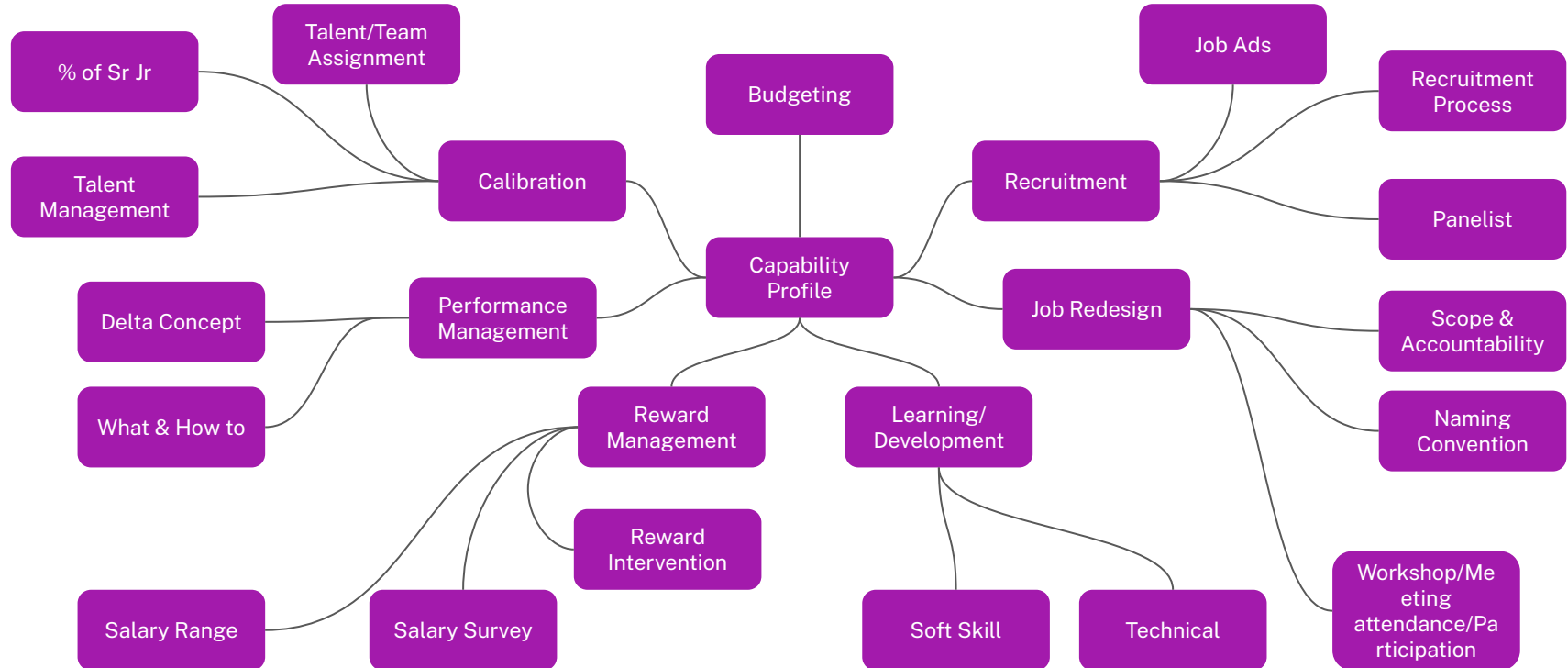
Taking out CxO from profile 



From that moment we scale this model out from engineering to



And its usage has been scale to many people practice
across organizations



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To uncharted territory

Change is constant

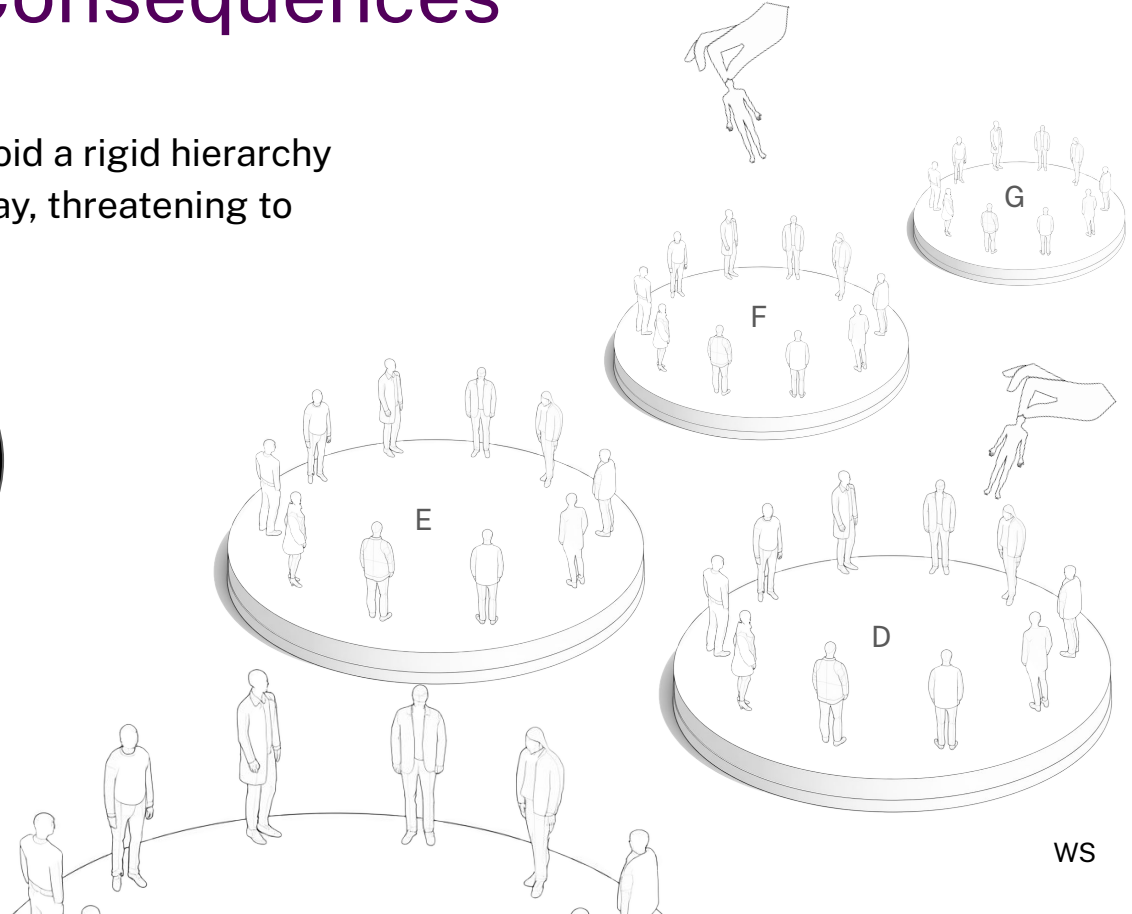


The Unintended Consequences

The very systems we put in place to avoid a rigid hierarchy are now being used in a mechanistic way, threatening to make us stiff and inflexible.

Misguided
Implement
ation

The Cost of
Inconsistency



Moment of truth, those findings will be another story to be recount later on

For us, the lesson learnt are:



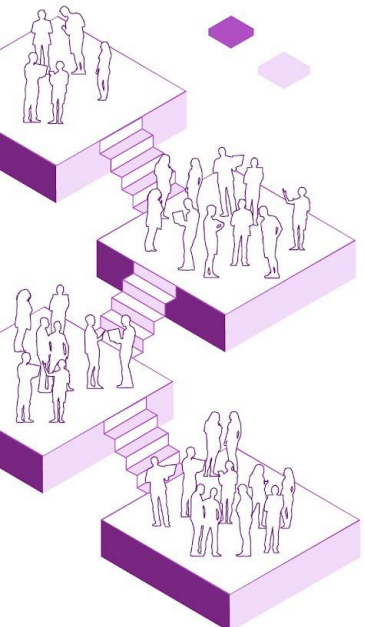
Aim for progress not to
perfection



Invite others, optimize
collective intelligent



Check the underlying
assumptions, not only
the surface



Regardless of what we discover, we understand and truly believe that everyone did the best job they could, given what was known at the time, their skills and abilities, the resources available, and the situation at hand.

And it's OK

