Building Babbel

Guest lecture @ Hasso Plattner Institute
Fabian Lindenberg
February 2021

‘06 - ‘09

HPI
B.Sc. Software Engineering

‘09 - ‘12

HPI + dschool
M.Sc. Software Engineering

‘12 - ‘15

ecotastic
Co-founder

‘15 - ‘18

D-LABS
Team Lead Software Engineering

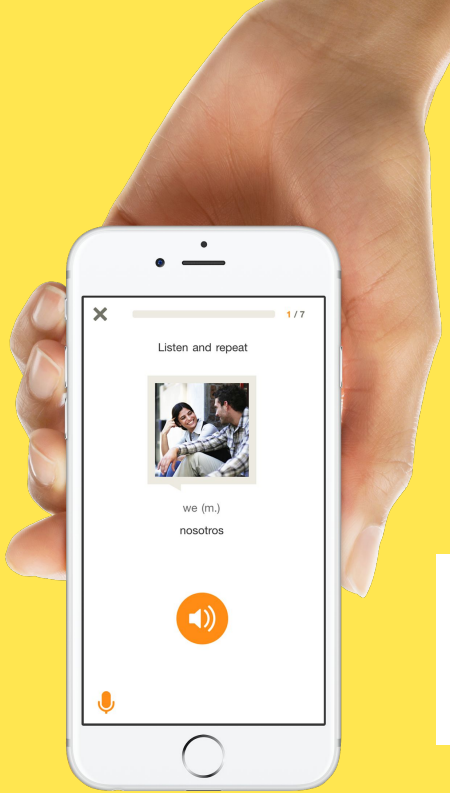
since 2018

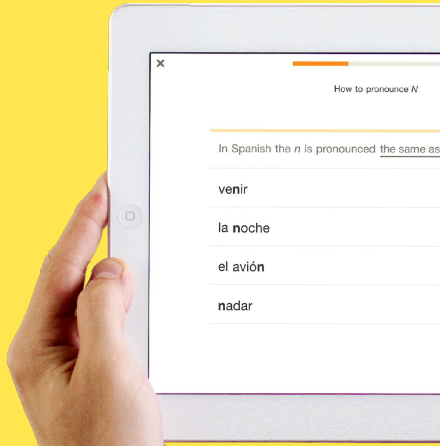
Babbel
Engineering Manager

Language learning

15 languages

Subscription model





Our languages

L1
9 Display languages

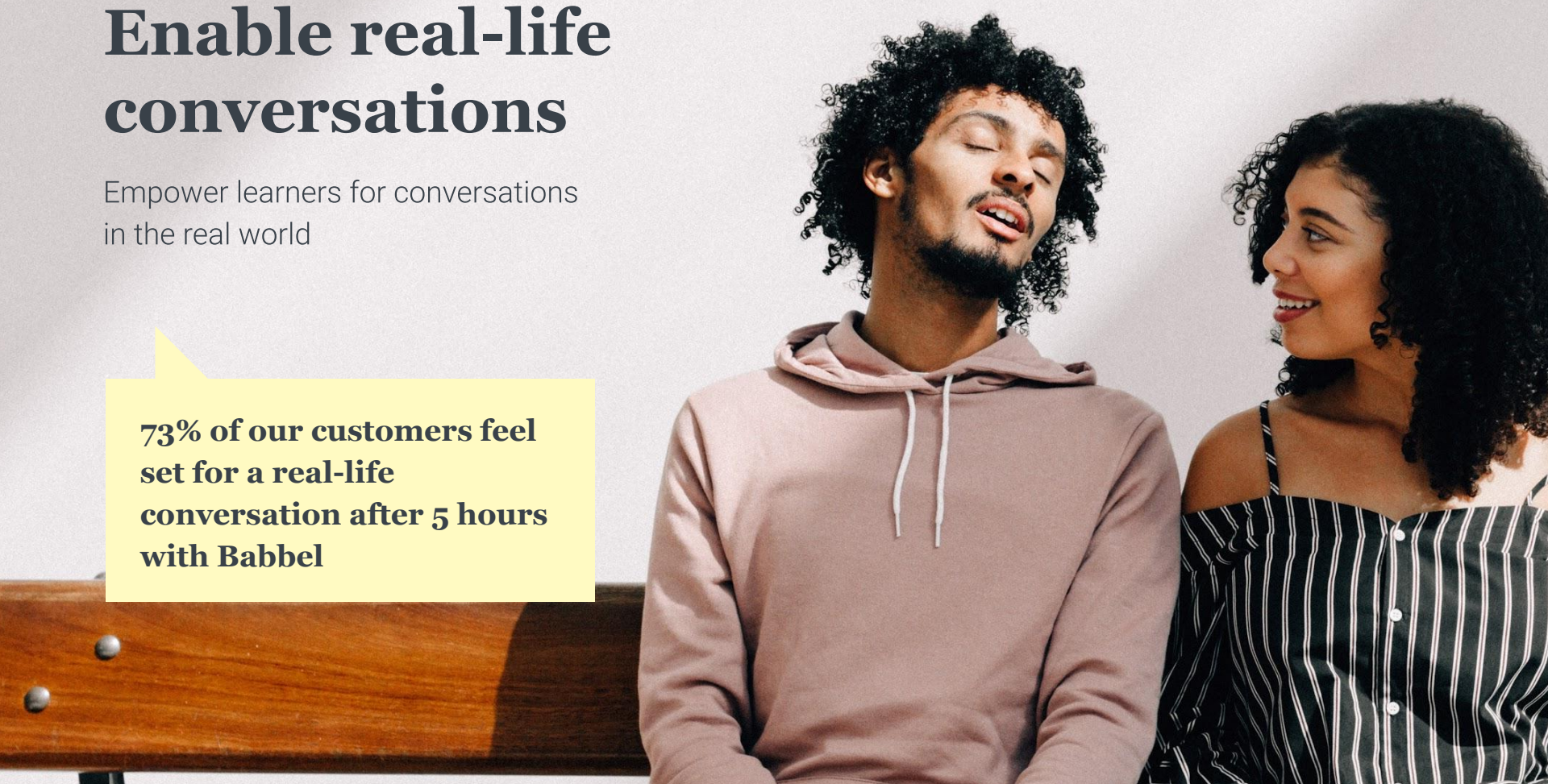
- American English
- British English
- French
- German
- Italian
- Polish
- Portuguese
- Spanish
- Swedish

L2
15 Learning languages

Enable real-life conversations

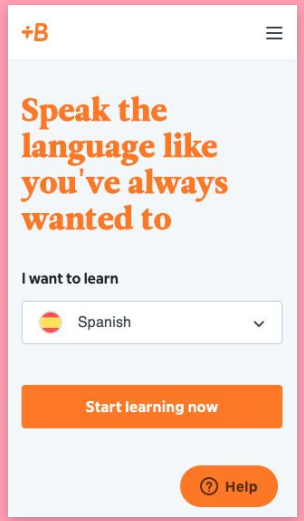
Empower learners for conversations in the real world

73% of our customers feel set for a real-life conversation after 5 hours with Babbel

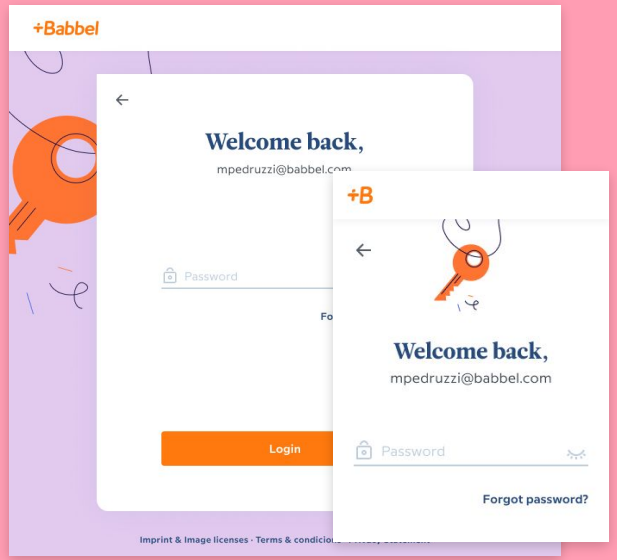


Product impressions

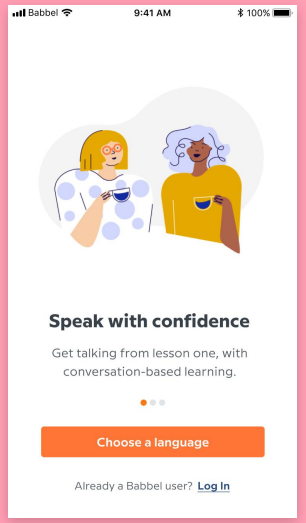
Landing Pages



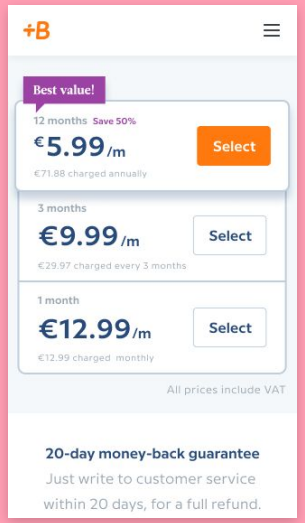
Signup/Login Flow



Product Tour

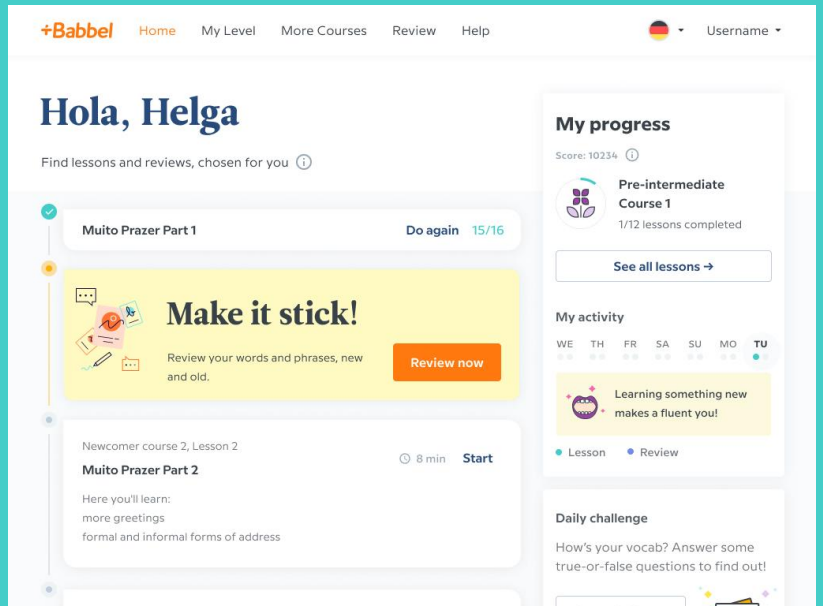


Price Page

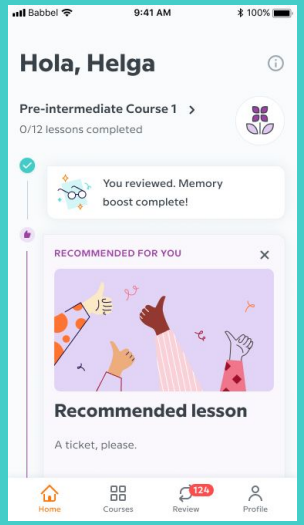


Product impressions

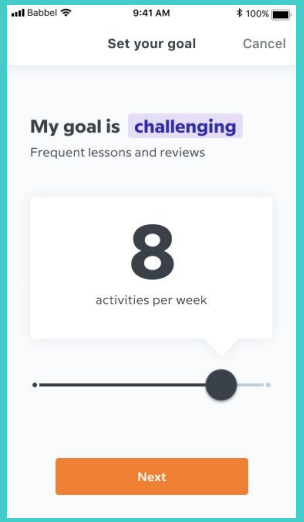
Learning Path & Learning Activity



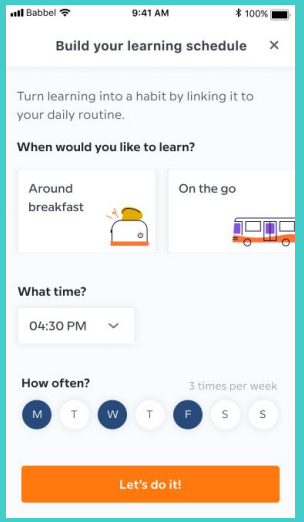
Recommendations



Goal Setting

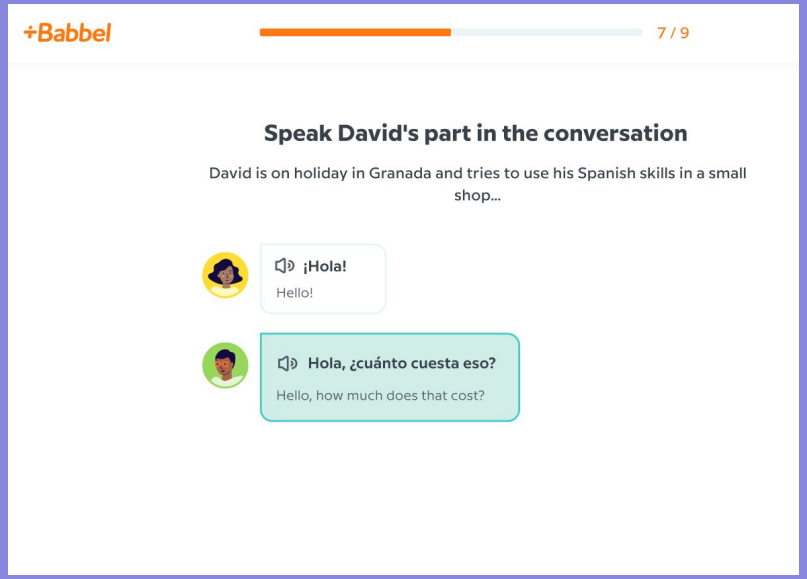


Learning reminders

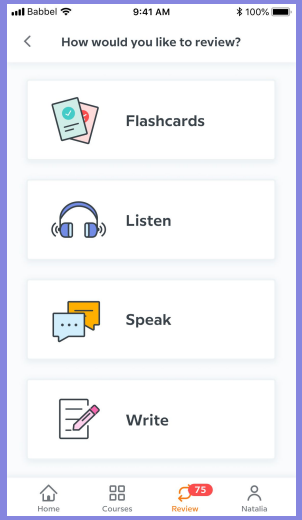


Product impressions

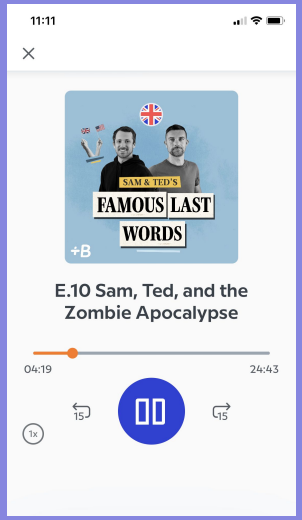
Lesson Trainers



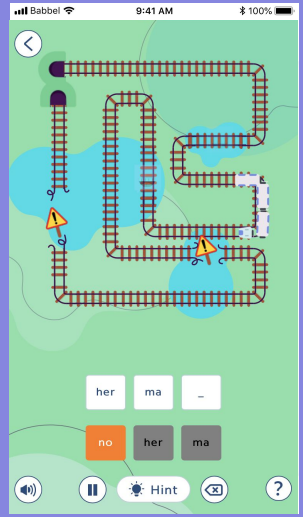
Review Vocabulary



Podcasts



Games



We are Babbel

750 people in Berlin & NYC
(and counting...)

60+ nationalities

Product Development

Build the right thing.

Build the thing right.

What good is a well-engineered solution to a problem no one has?

What good is a solution that addresses your users' problems but is broken or does not scale?

Build the right thing.

Build the thing right.

This is hard!

Photo by Jamie Haughton on Unsplash

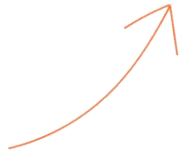
Product Development at Babbel

What we do to (hopefully) build the right thing.

What we do to (hopefully)
build the thing right.

[1]

Reading material
on the subject



Define what success looks like.

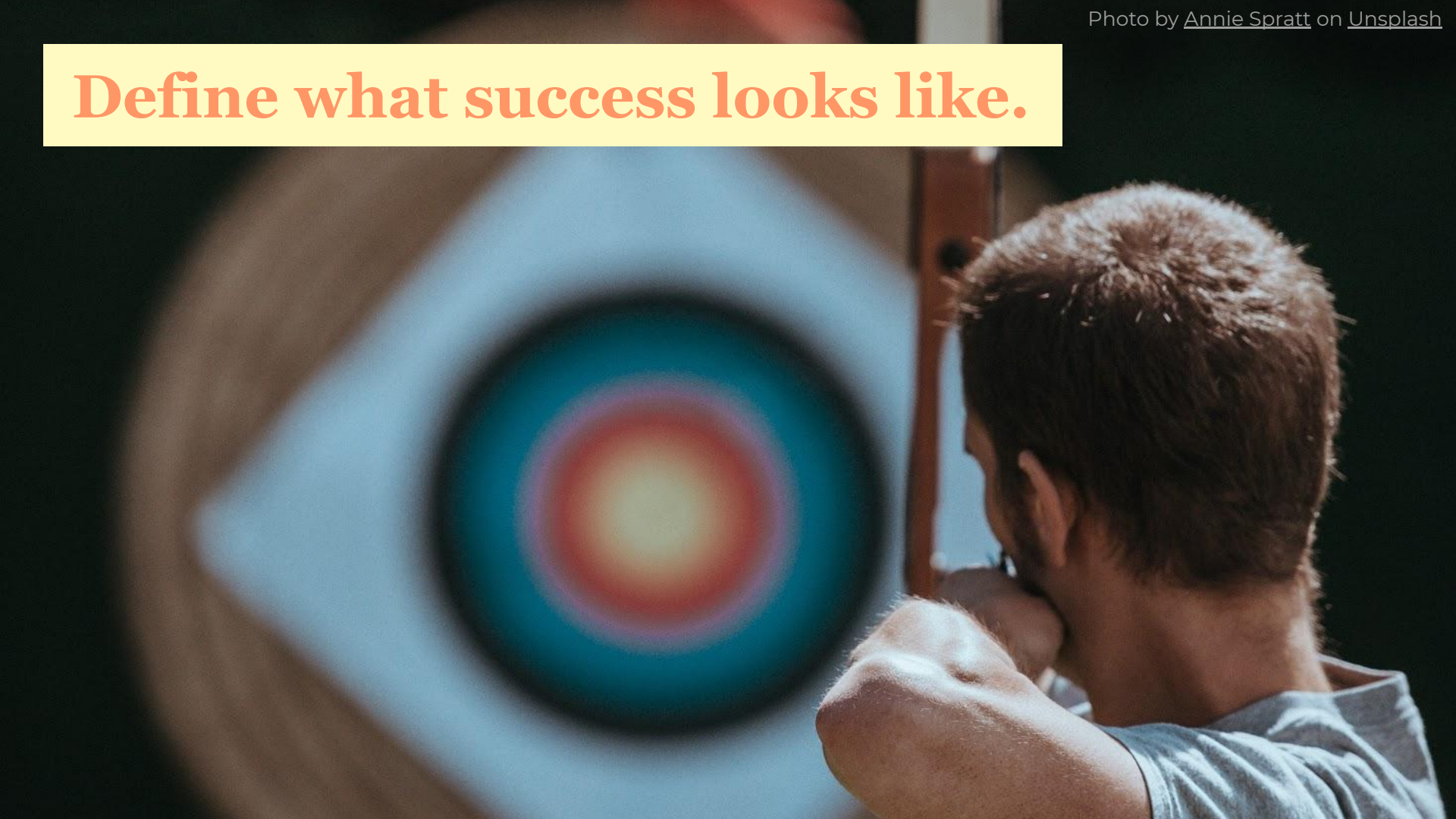


Photo by Annie Spratt on Unsplash

Create alignment.

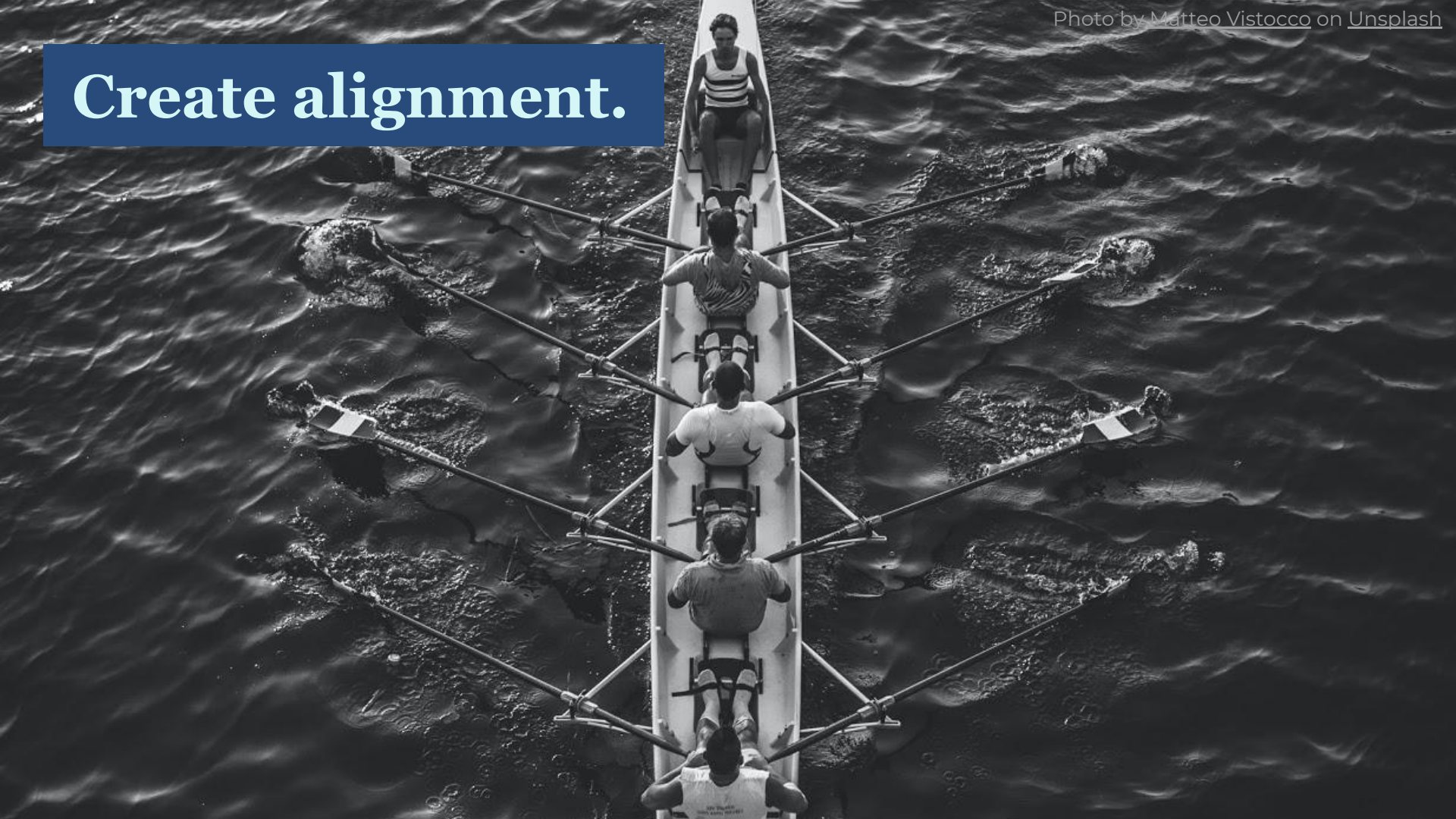


Photo by Matteo Vistocco on Unsplash

[1] [2]

Objectives and Key Results

The OKR framework was created by **Intel**’s management team in the ‘70s.

Former Intel employee **John Doerr** brought it to **Google** in early 2000’s.

Google and many other companies have been using it successfully since.

Objective

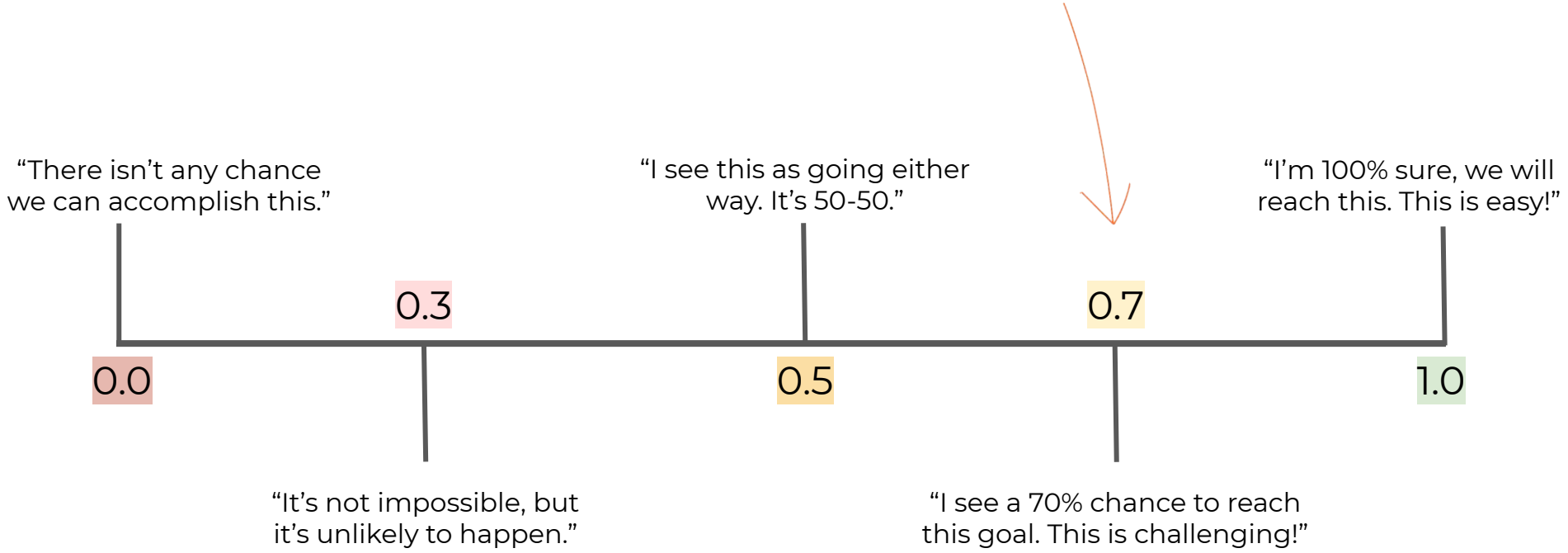
Where do we want to go?

Key Results

How do we know we're getting there?

Choose stretch goals!

Photo by Fionn Claydon on Unsplash

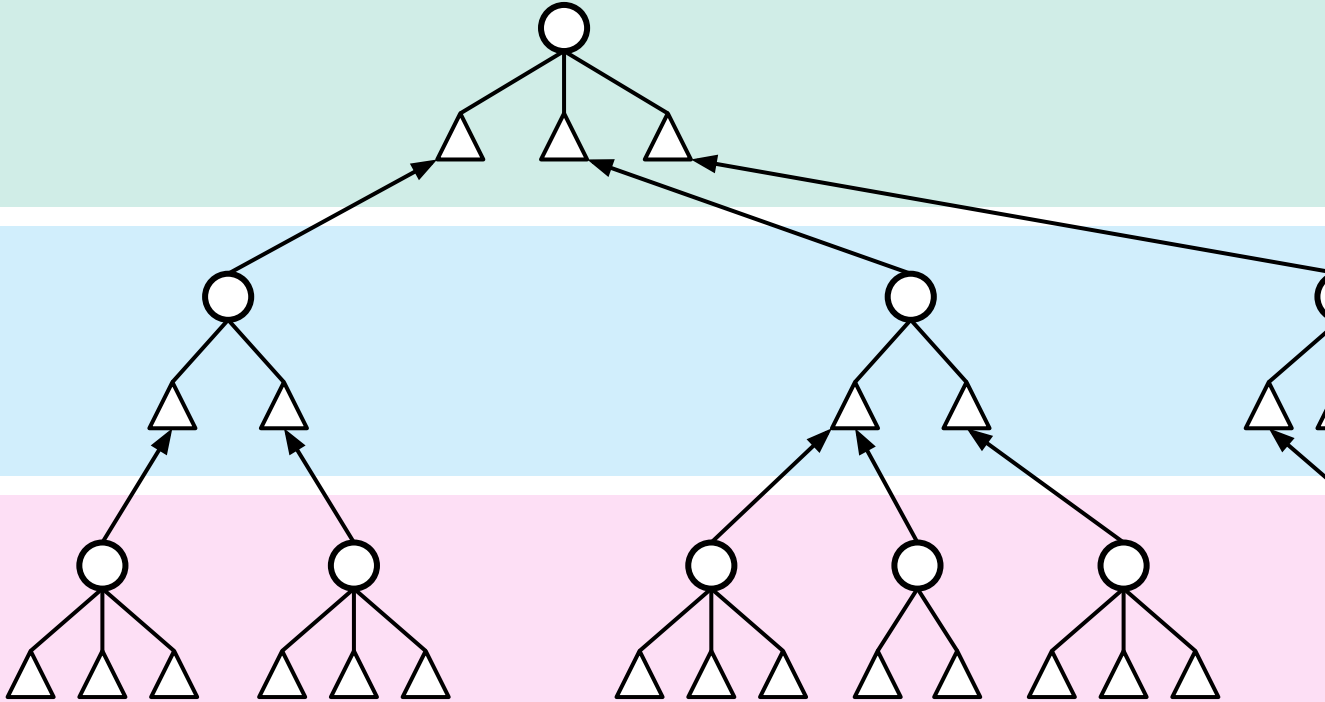

“There isn’t any chance we can accomplish this.”
“I see this as going either way. It’s 50-50.”
“I’m 100% sure, we will reach this. This is easy!”
0.3
0.7
0.0
0.5
1.0
“It’s not impossible, but it’s unlikely to happen.”
“I see a 70% chance to reach this goal. This is challenging!”

Objective Key Result

Company
OKR(s)

Department
OKR(s)

Team
OKR(s)



Examples from Babbel

Company OKR

O1: Babbel inspires me to spend more of my time learning.

KR1: x% increase in learning minutes per subscriber
KR2: y% increase in free learning minutes per lead
KR3: z% of learners using 3+ learning experiences

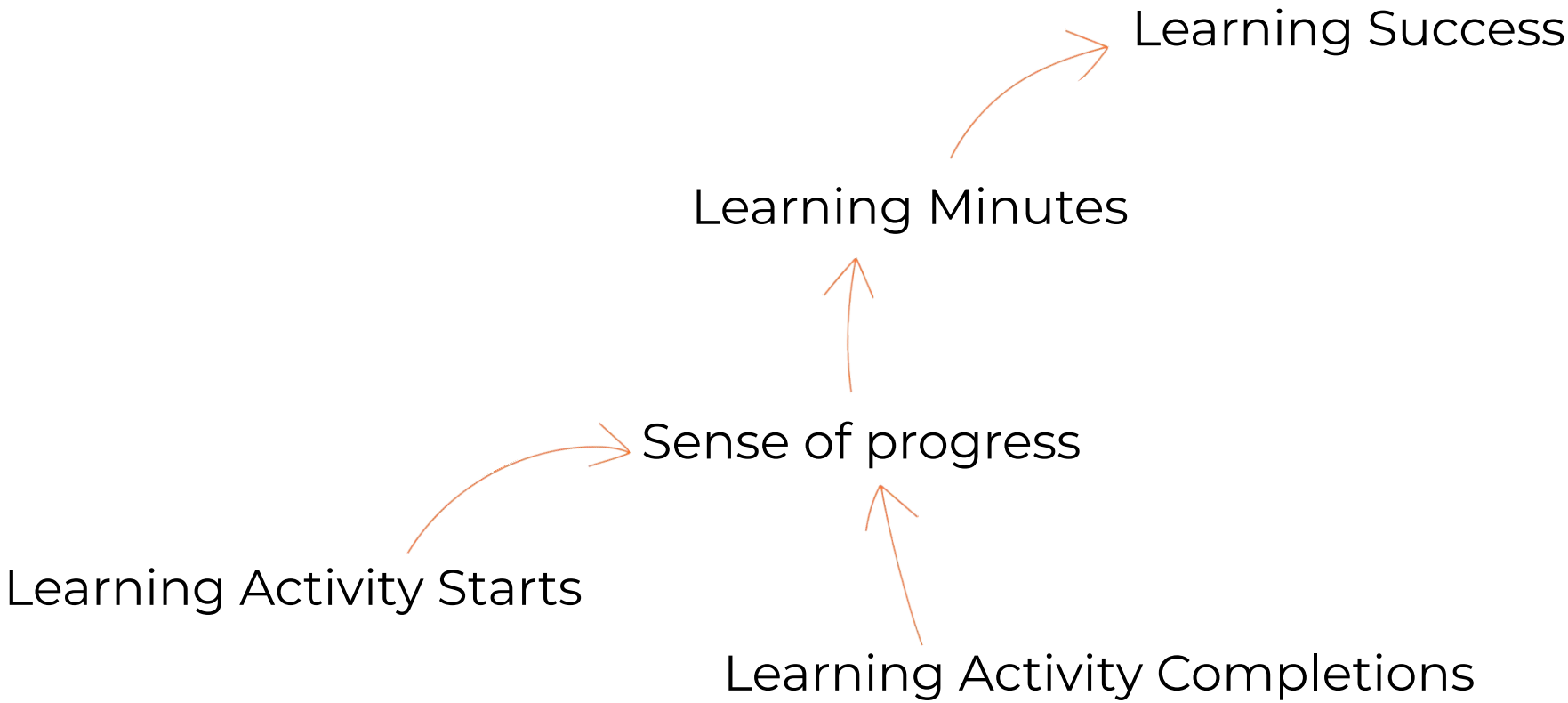
Product Group OKR

O1: Learners recognize their progress early in their journey

KR1: Increase average lesson completion rate in Week 1 by 20%
KR2: Increase the share of users who start at least 2 activities in Week 1 by 20%

Wait a minute!

There are a lot of hidden hypotheses.


Learning Success
Learning Minutes
Sense of progress
Learning Activity Starts
Learning Activity Completions

Dual-track agile

customer feedback

domain expertise

We **generate** hypotheses from:

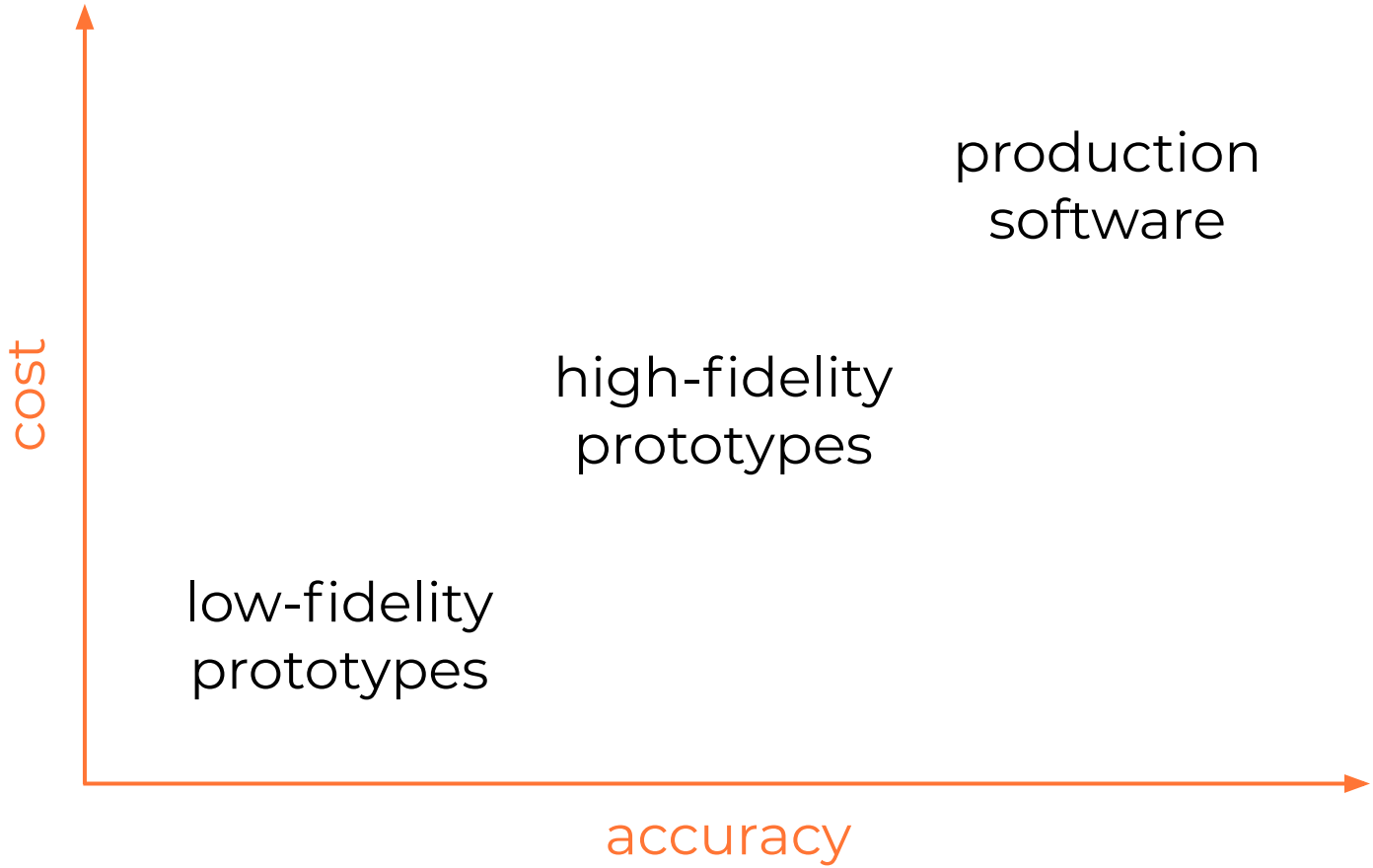
...

user interviews

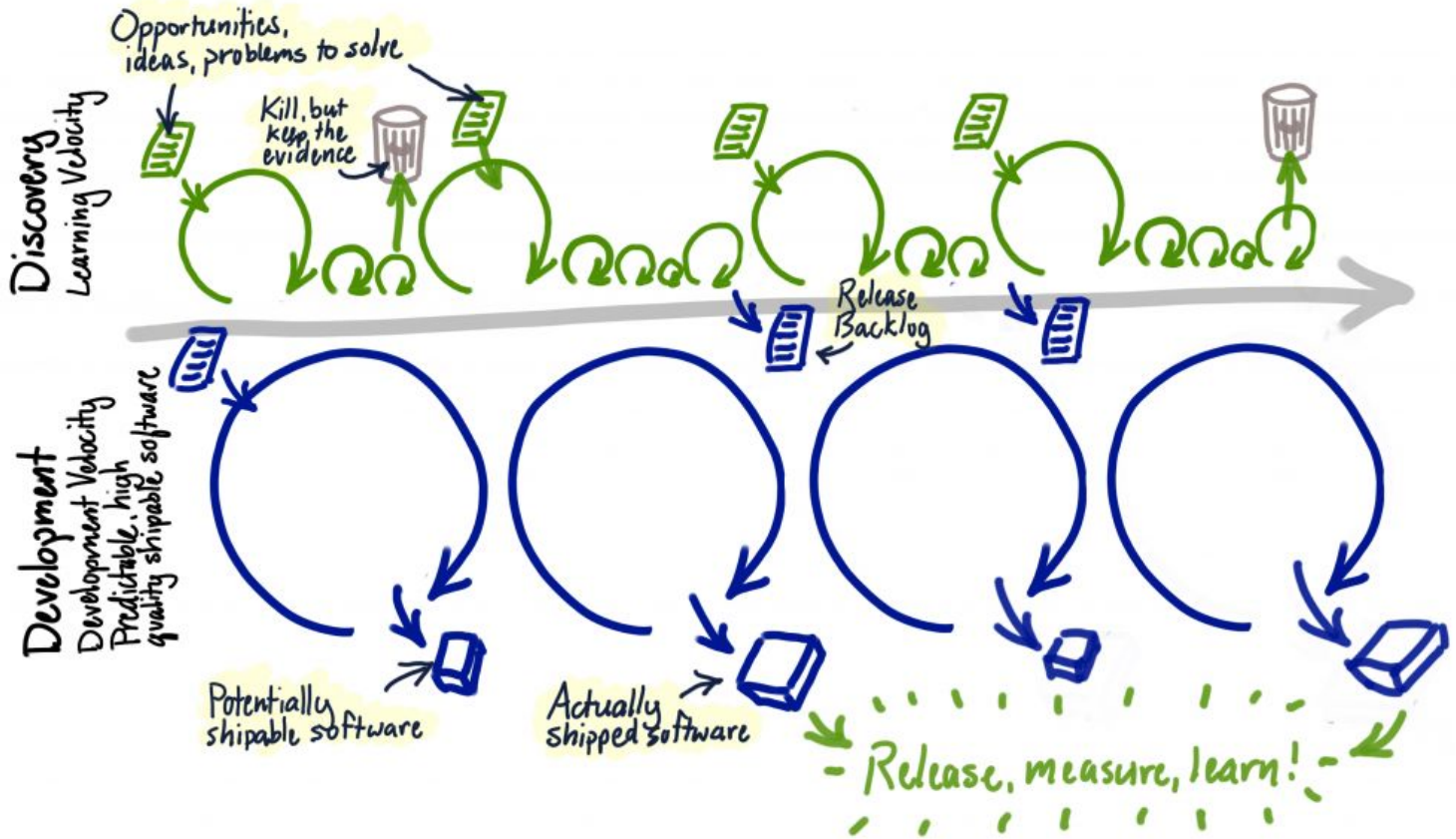
competitor analysis

market research

We **validate** hypotheses through:


production
software
high-fidelity
prototypes
low-fidelity
prototypes
cost
accuracy

[3]


Opportunities, ideas, problems to solve
Kill, but keep the evidence
Discovery
Learning Velocity
Release Backlog
Development
Development Velocity
Predictable, high quality shipable software
Potentially shipable software
Actually shipped software
Release, measure, learn!

[4] [5]

Self-organized teams

A self-organized team has the **autonomy** to choose **how to** accomplish their work, rather than being instructed by others external to the team.

Autonomy in decision-making

	Self-managed	*Self-organized*	*Self-directed*
Why?	external	external	external (may consult team)
What?	external	external (may consult team)	team
How?	external	team	team

Why?
C-level

Time spent learning correlates with learning success.

We aim to increase the learning minutes per user.

What?
Product Group

User problem: Users don't recognize they are making progress. They quit using Babbel early.

We aim to increase their activity in their first week.

How?
Team

Hypothesis: Acknowledging & celebrating small wins early in the learning journey will motivate learners to be more active in their first week.

Solution: Rewarding users with badges that acknowledge critical first steps in their journey.

Empower the team!

Photo by TK Hammonds on Unsplash

Prune dependencies.

Photo by Markus Winkler on Unsplash

Photo by v2osk on Unsplash

Knowledge

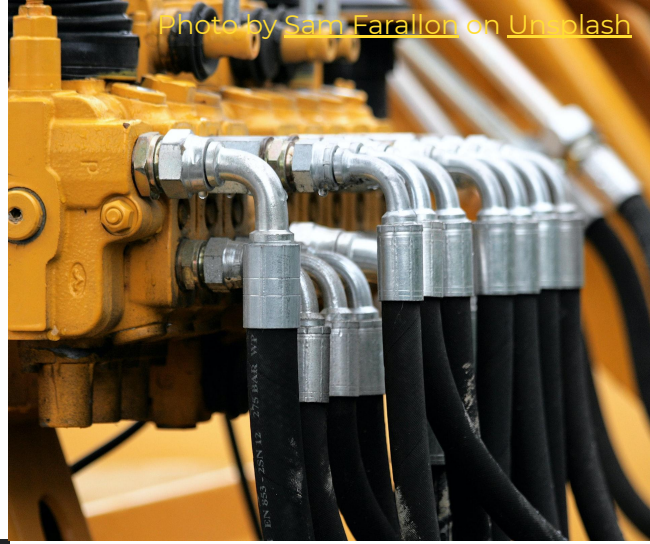
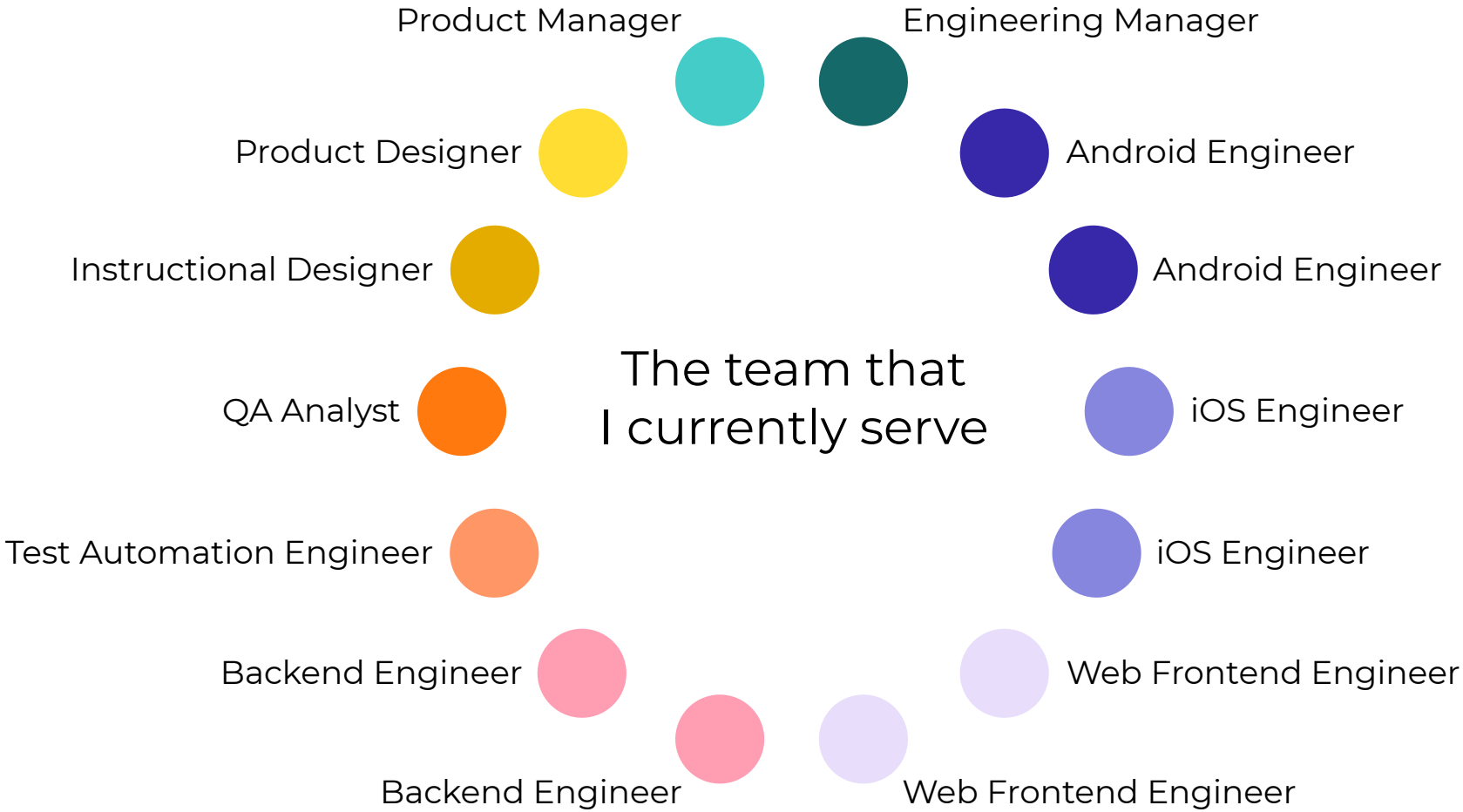


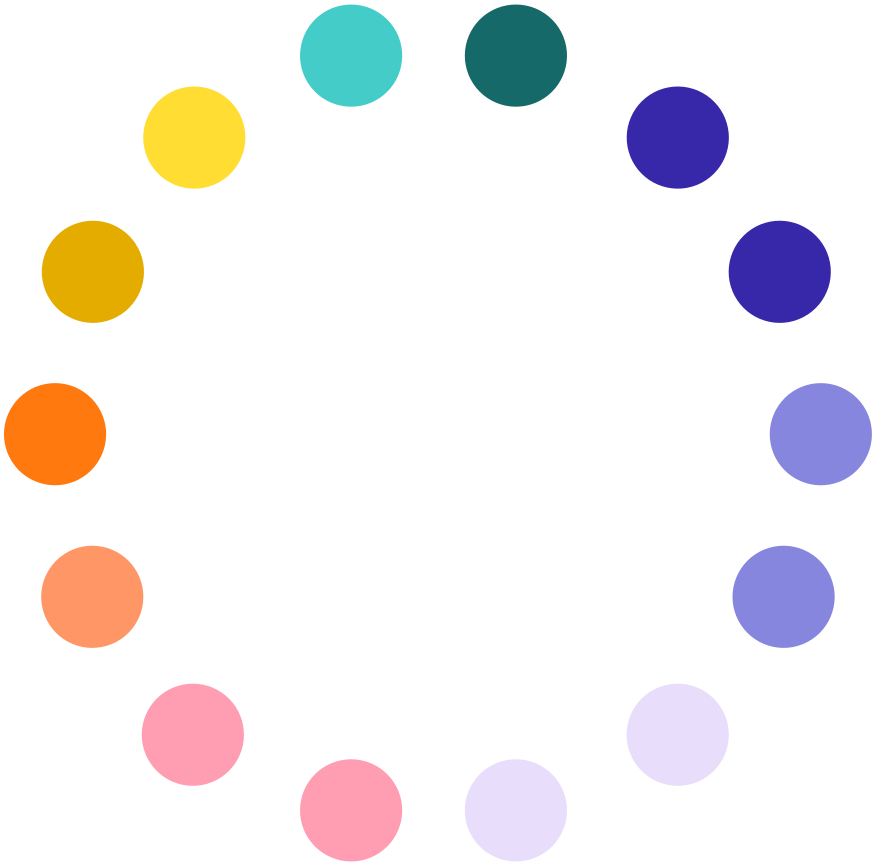
Photo by Sam Farallon on Unsplash

Skills

Photo by Ben White on Unsplash

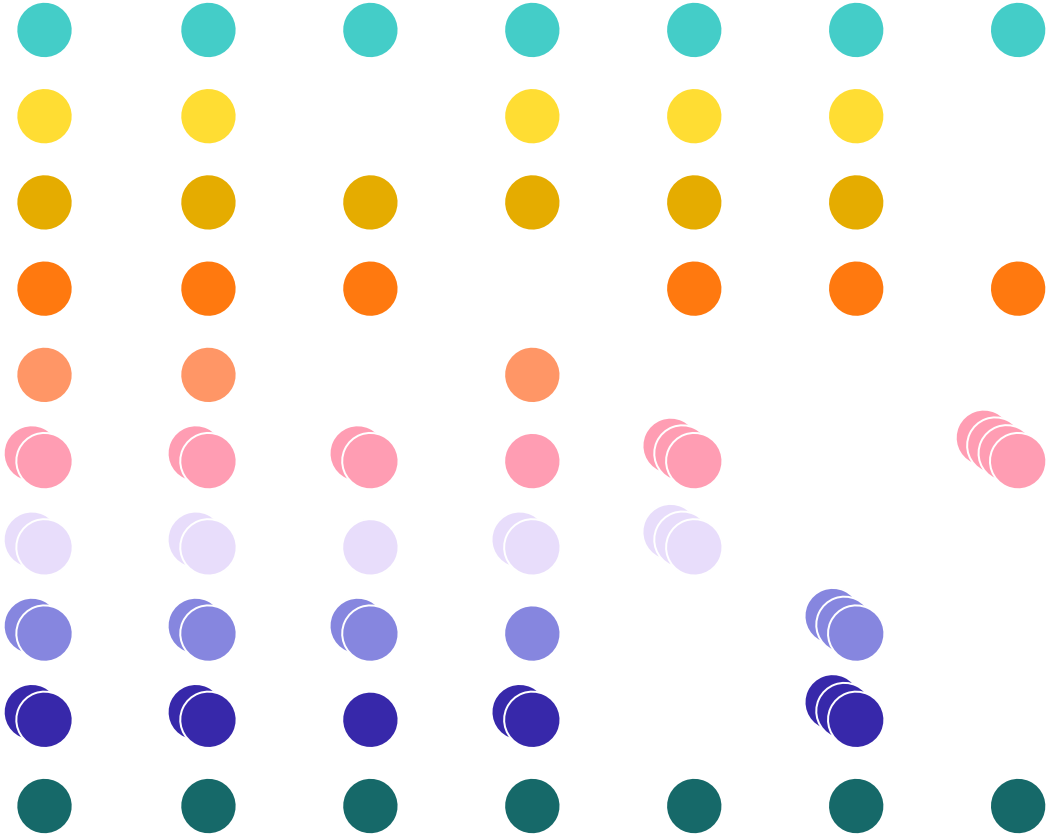
Tech

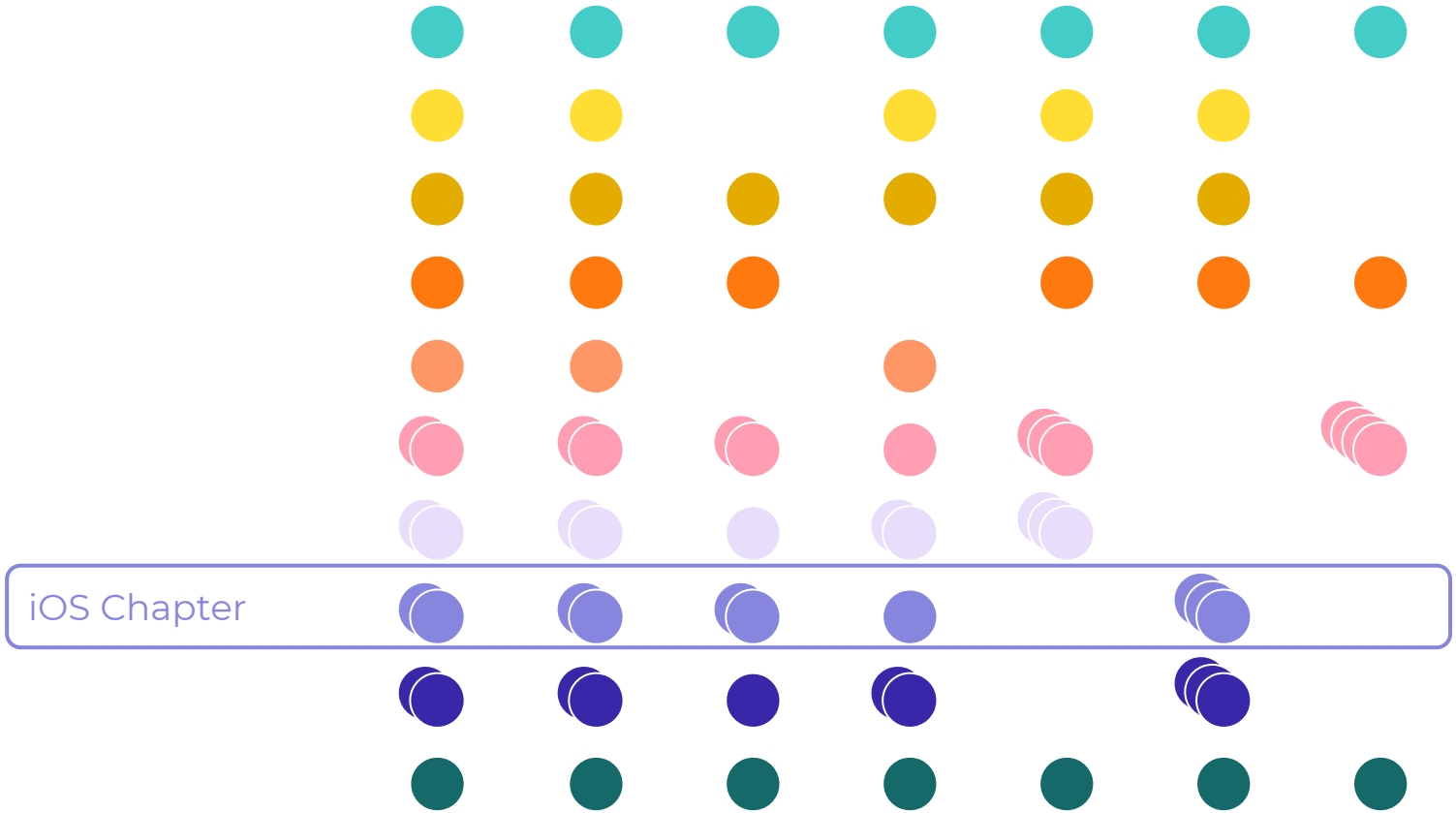

Product Manager
Engineering Manager
Product Designer
Android Engineer
Instructional Designer
Android Engineer
The team that
I currently serve
QA Analyst
iOS Engineer
Test Automation Engineer
iOS Engineer
Backend Engineer
Web Frontend Engineer
Backend Engineer
Web Frontend Engineer



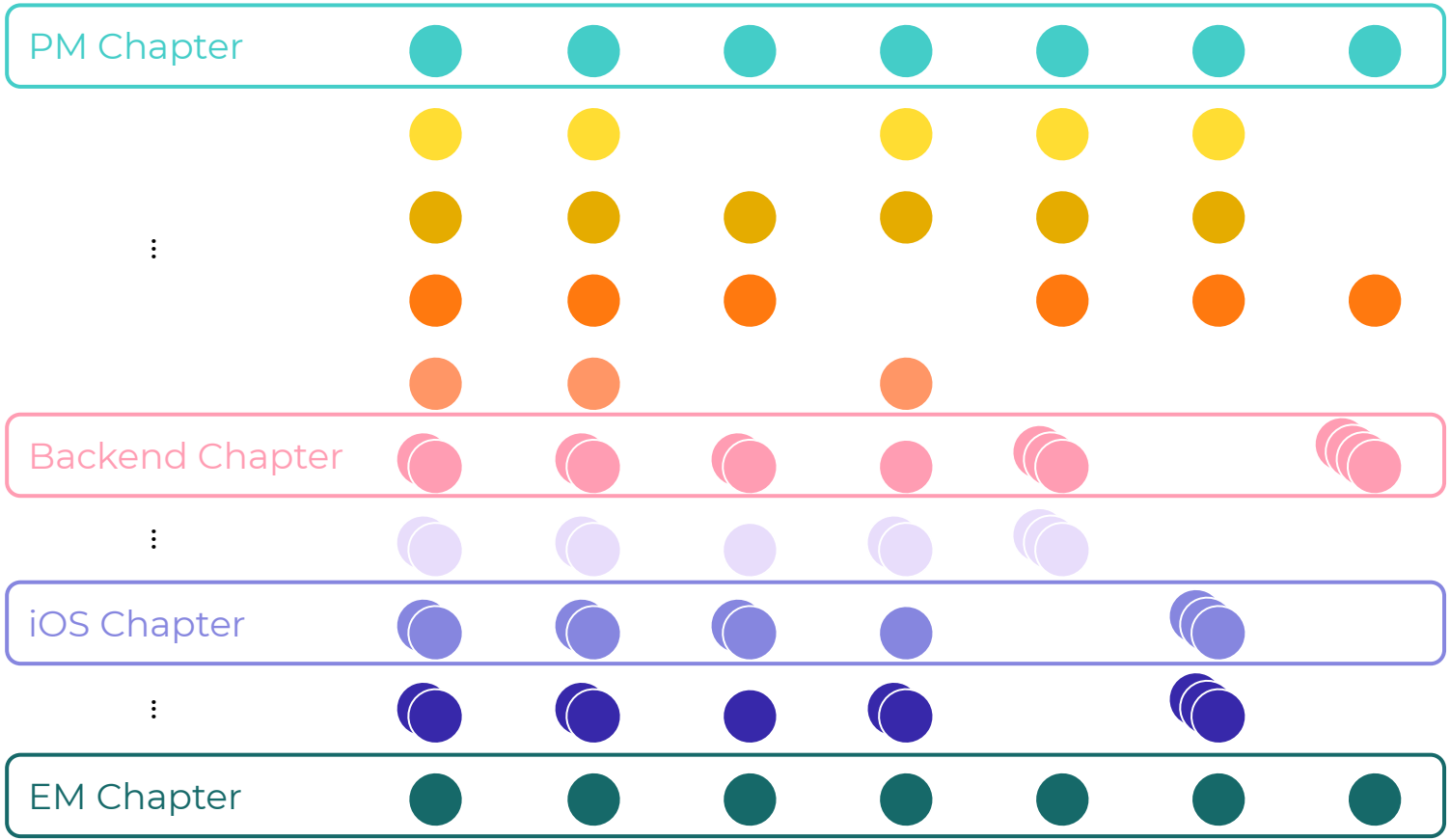
Being the only iOS engineer on a team can be lonely...

Chapters

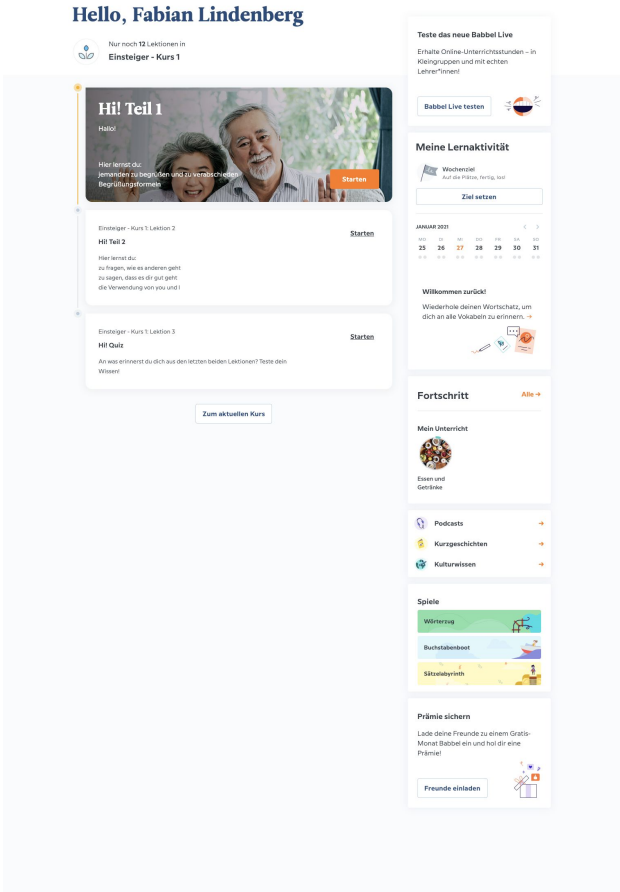




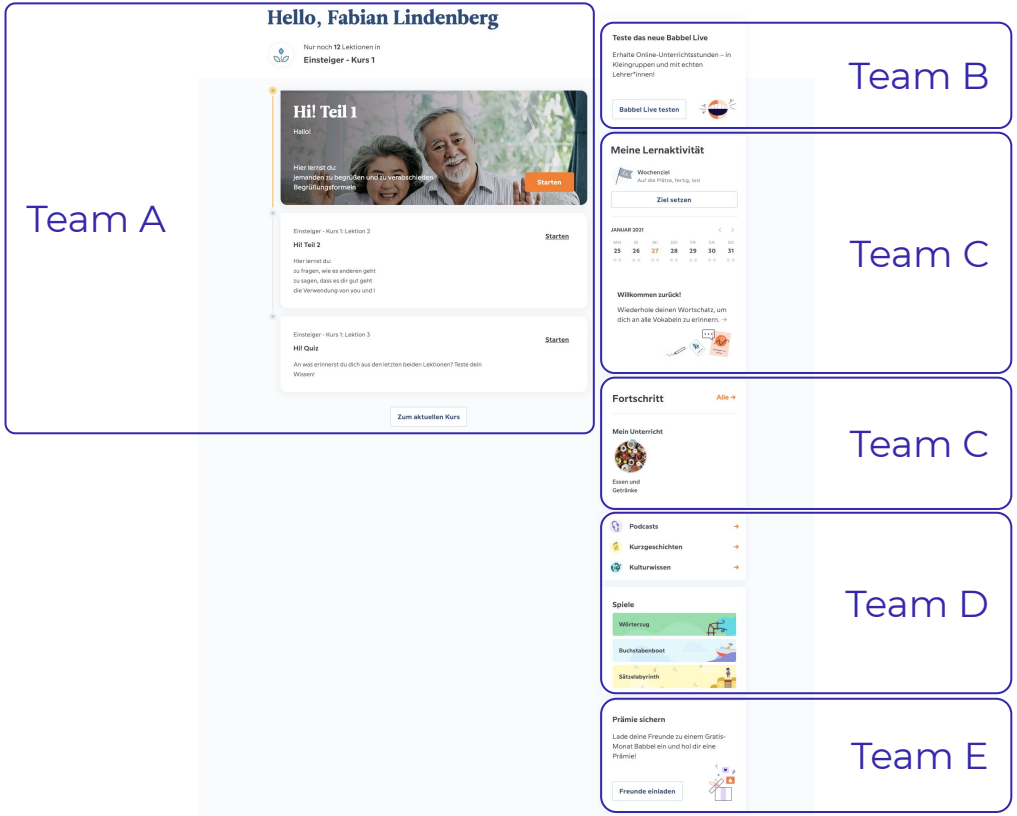
code review,
pair programming,
x-team decisions,
mentoring, ...


PM Chapter
Backend Chapter
iOS Chapter
EM Chapter

One Single Page Application …



One Single Page Application …



… but many features built and maintained by different teams.

Code stewardship
&
Inner-sourcing

We nominate one of the teams to be the **steward** for the codebase.

The steward team has the **responsibility** to

establish service-level agreements (SLAs) with consumers	&	ensure SLAs are met and component is healthy
set the component up for inner-sourcing	&	review other team's pull requests to this component

serve on-call (24x7 where necessary)

The steward team has the **authority** to

veto changes that go against their responsibilities

set and enforce coding standards

choose tooling that enables them to fulfill their responsibilities

Inner-sourcing applies best practices from open-source development within an organization.

actively invite contributions

open, asynchronous communication

provide access to all development artefacts

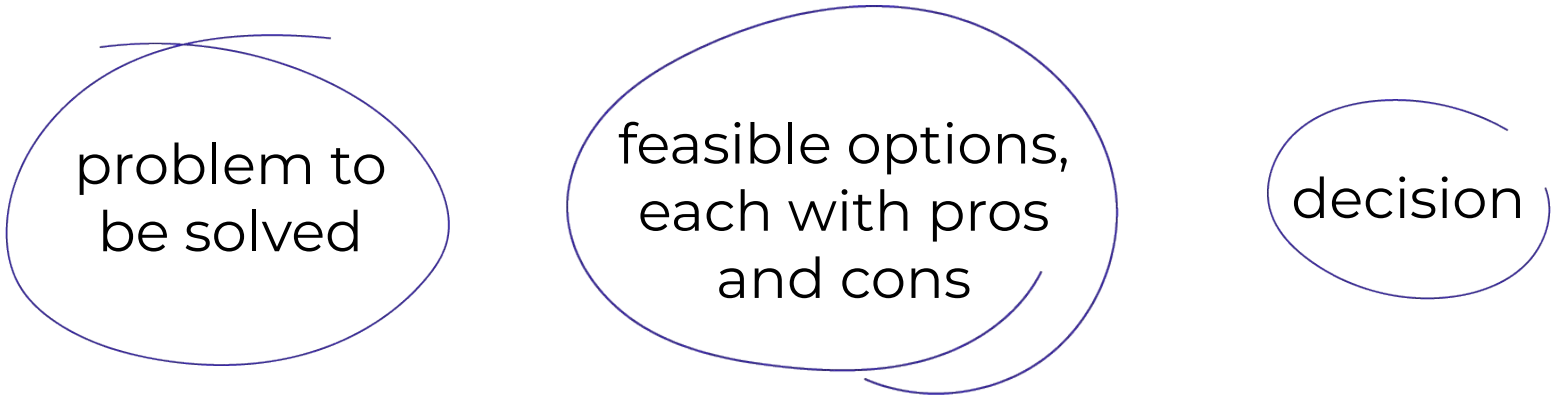
evaluate them only based on value & quality

[5] [6]

Architectural Decision Records

Some decisions have **far-reaching** or **long-lasting** impact (or both).

For such decisions, we compile
Architectural Decision Records,
which are reviewed by all affected teams.

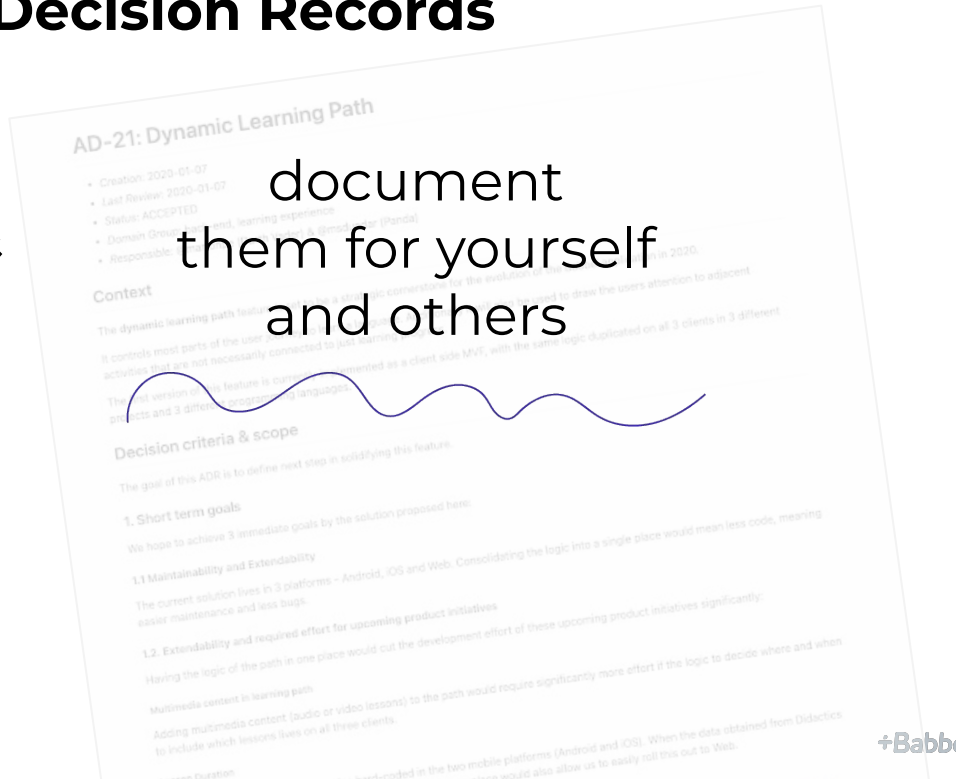


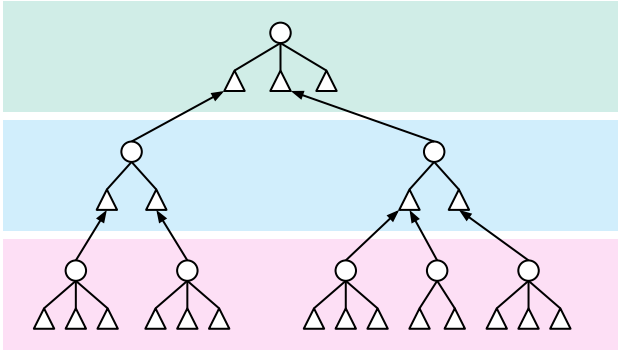
Architectural Decision Records

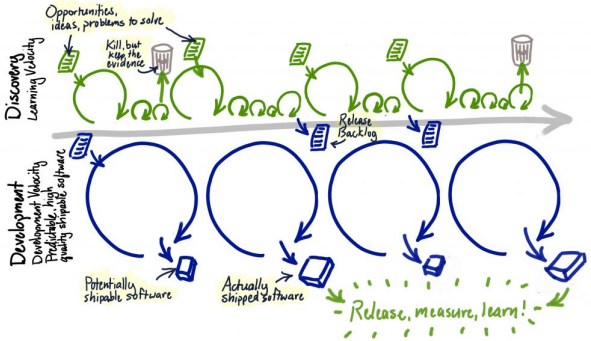
make
well-informed
decisions

&

document
them for yourself
and others







Why? C-level

Time spent learning correlates with learning success.

We aim to increase the learning minutes per user.

What? Product Group

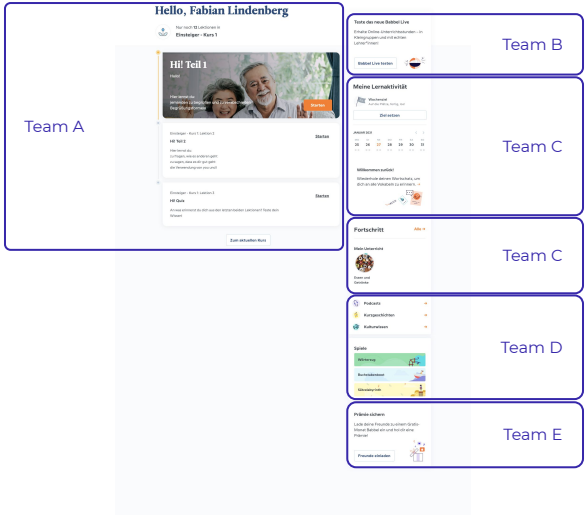
User problem: Users don't recognize they are making progress. They quit using Babbel early.

We aim to increase their activity in their first week.

How? Team

Hypothesis: Acknowledging & celebrating small wins early in the learning journey will motivate learners to be more active in their first week.

Solution: Rewarding users with badges that acknowledge critical first steps in their journey.



AD-21: Dynamic Learning Path

- Creation: 2020-01-07
- Last Review: 2020-01-07
- Status: ACCEPTED
- Domain Group: back-end, learning experience
- Responsible: @martonpe (Darth Vader) & @msdundar (Panda)

Context

The dynamic learning path feature is set to be a strategic cornerstone for the evolution of the Babbel application in 2020.

It controls most parts of the user journey to learn a language. Additionally it will also be used to draw the users attention to adjacent activities that are not necessarily connected to just learning progress.

The first version of this feature is currently implemented as a client side MVF, with the same logic duplicated on all 3 clients in 3 different projects and 3 different programming languages.

Decision criteria & scope

The goal of this ADR is to define next step in solidifying this feature.

1. Short term goals

We hope to achieve 3 immediate goals by the solution proposed here:

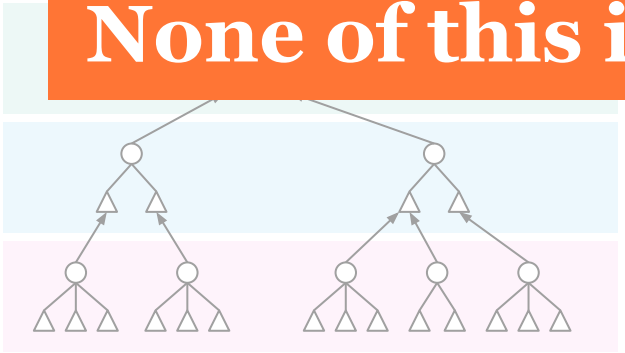
1.1 Maintainability and Extendability

The current solution lives in 3 platforms - Android, iOS and Web. Consolidating the logic into a single place would mean less code, meaning easier maintenance and less bugs.

1.2. Extendability and required effort for upcoming product initiatives

Having the logic of the path in one place would cut the development effort of these upcoming product initiatives significantly:

None of this is trivial …



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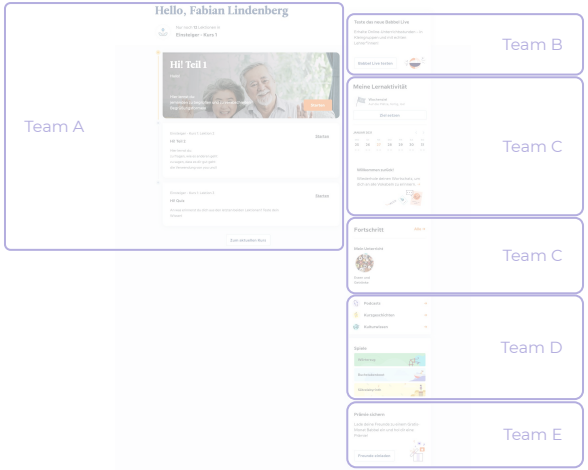
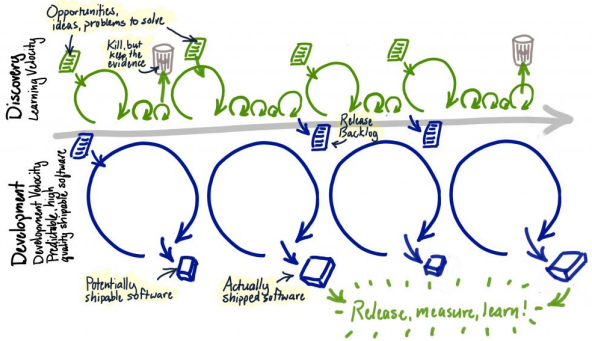


Internal teams (e.g., Infrastructure team, Office management) can contribute to Company OKRs only indirectly.



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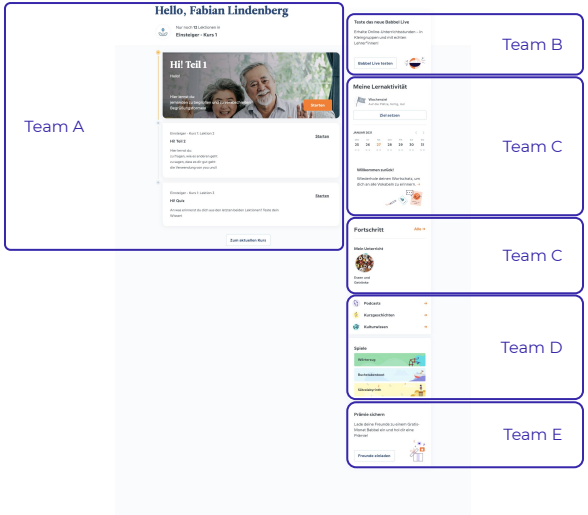


AD-21: Dynamic Learning Path

- Creation: 2020-01-07
- Last Review: 2020-01-07
- Status: ACCEPTED
- Domain (Group: back-end, learning experience
- Responsible: @mantonge (Darth Vader) & @mdundar (Panda)

Context

The dynamic learning path feature is set to be a strategic cornerstone for the evolution of the Babbel application in 2020.

It controls most parts of the user journey to learn a language. Additionally it will also be used to draw the users attention to adjacent activities that are not necessarily connected to just learning progress.

The first version of this feature is currently implemented as a client side MVF, with the same logic duplicated on all 3 clients in 3 different projects and 3 different programming languages.

Decision criteria & scope

The goal of this ADR is to define next step in solidifying this feature.

1. Short term goals

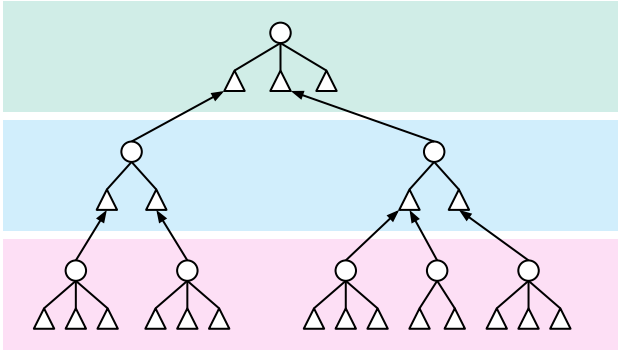
We hope to achieve 3 immediate goals by the solution proposed here:

1.1 Maintainability and Extendability

The current solution lives in 3 platforms - Android, iOS and Web. Consolidating the logic into a single place would mean less code, meaning easier maintenance and less bugs.

1.2. Extendability and required effort for upcoming product initiatives

Having the logic of the path in one place would cut the development effort of these upcoming product initiatives significantly:



Discovery work is difficult to synchronize with delivery cycles (e.g., Scrum sprints).

Why? C-level
Time spent learning correlates with learning success.
We aim to increase the learning minutes per user.

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User problem: Users don't recognize they are making progress. They quit using Babbel early.
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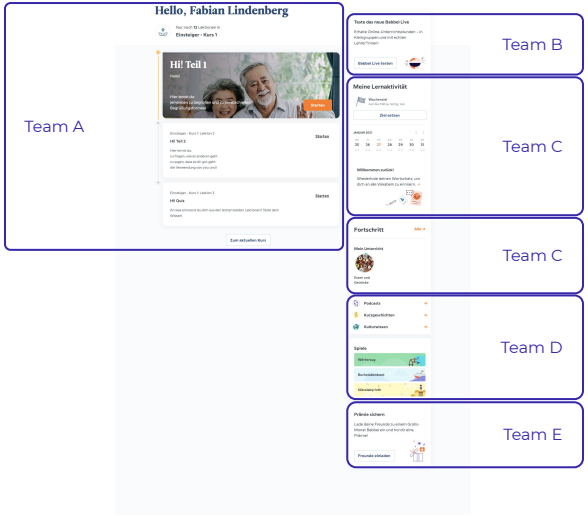

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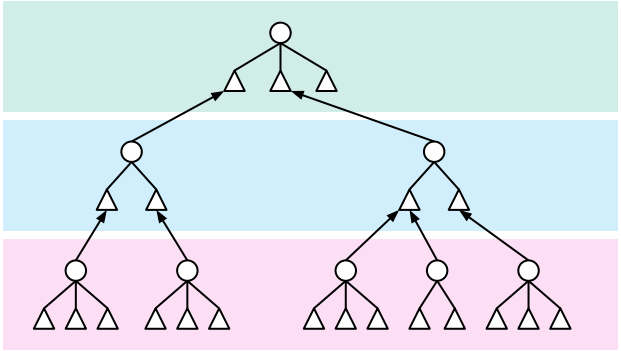
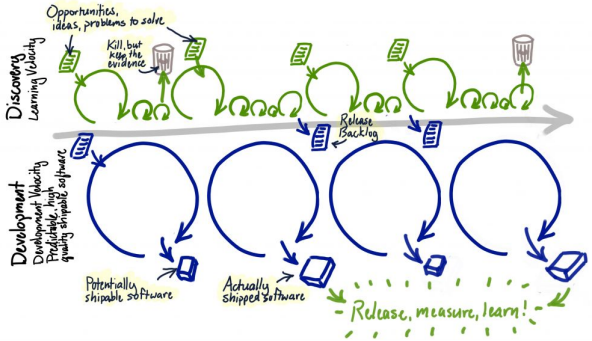
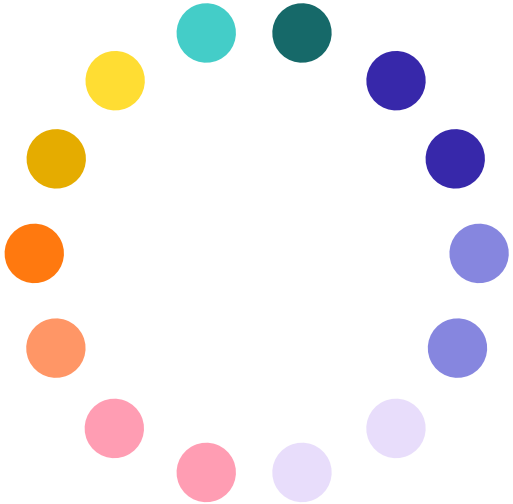
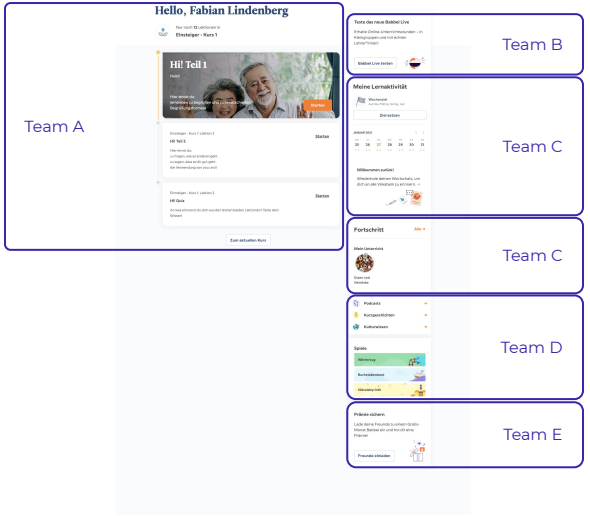




The term “Autonomy” is under defined and overused. It’s a spectrum and difficult to calibrate on an organizational scale.





AD-21: Dynamic Learning Path

- Creation: 2020-01-07
- Last Review: 2020-01-07
- Status: ACCEPTED
- Domain (Group: back-end, learning experience
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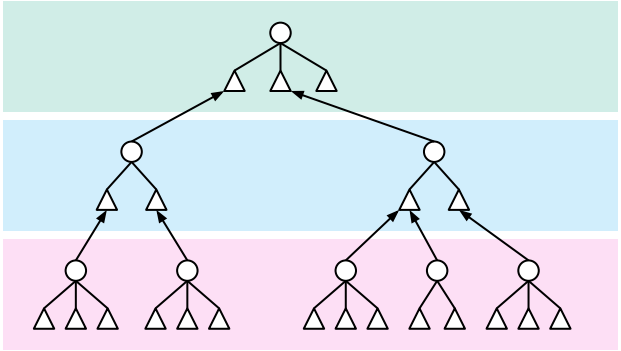

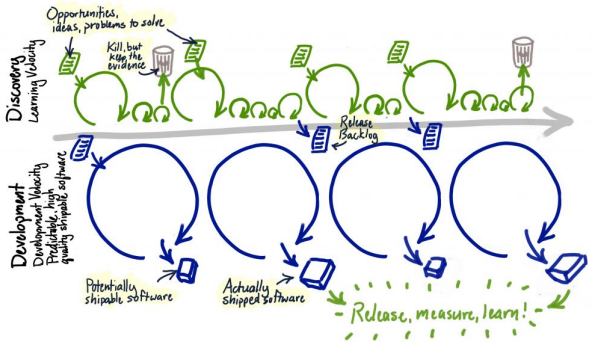

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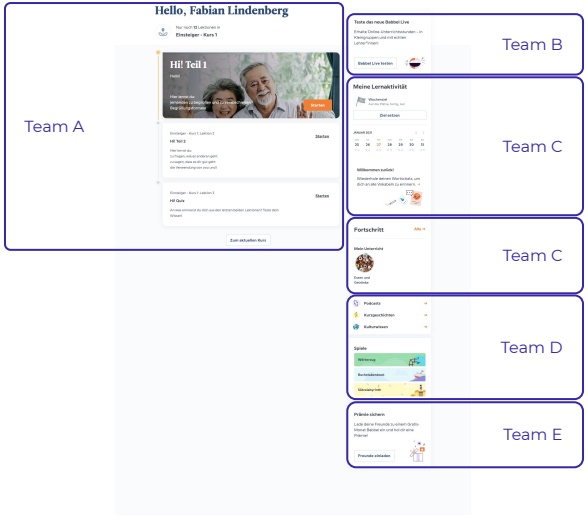
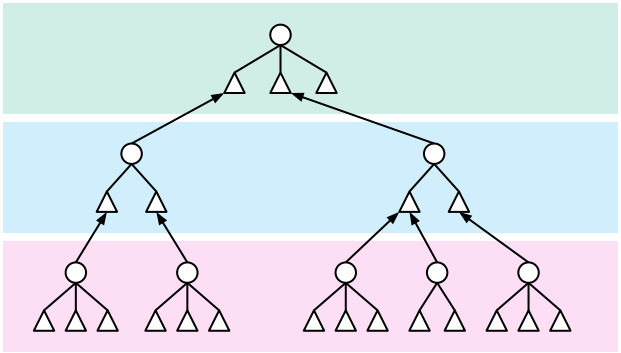
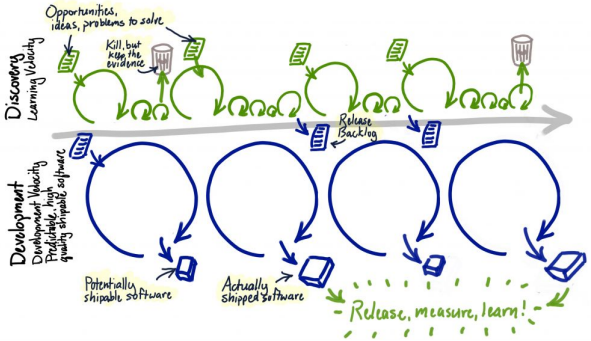
Variance in capacity or tech debt on the different platforms can lead to parallel working streams within a single team.







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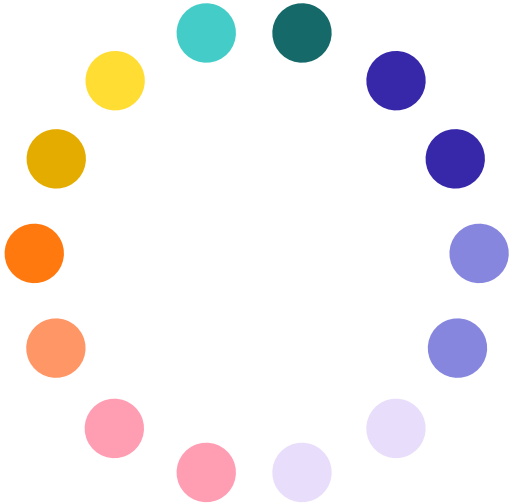

Stewardship can be perceived as a burden, especially when the work is difficult to align with the team's OKRs.

AD-21: Dynamic Learning Path

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- Last Review: 2020-01-07
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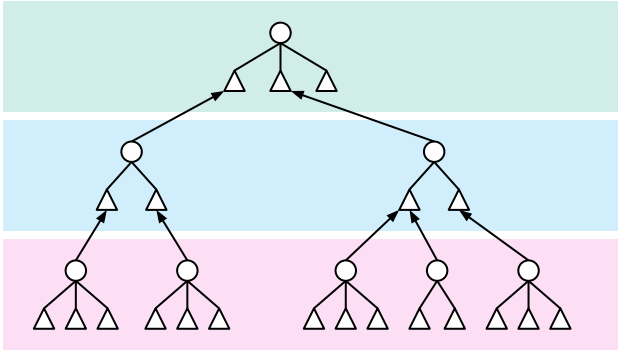

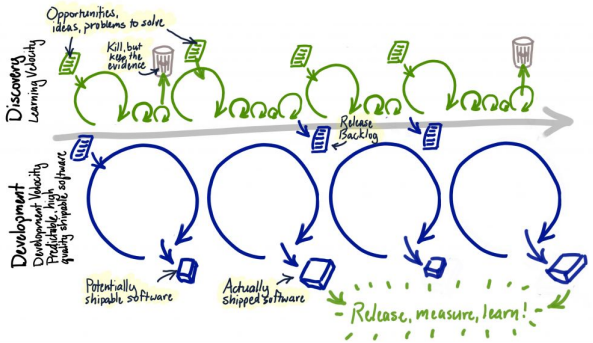

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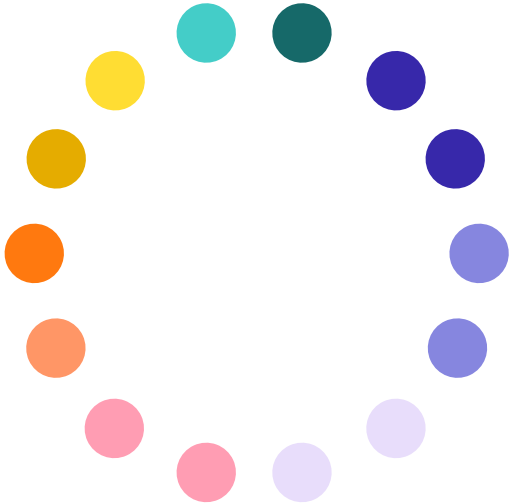
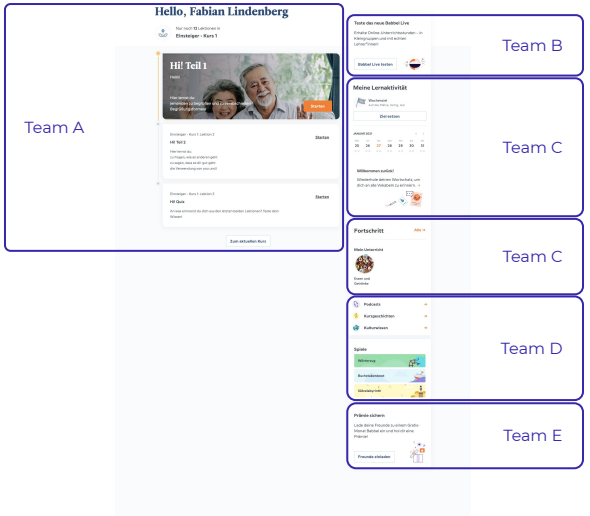
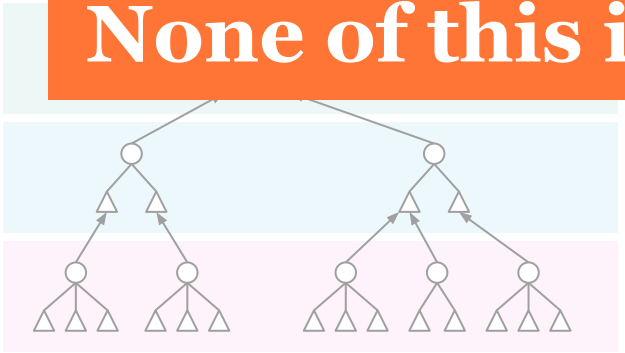




Sometimes it's not straightforward if a decision is "worth" the effort to collaboratively compile an ADR.

None of this is trivial …



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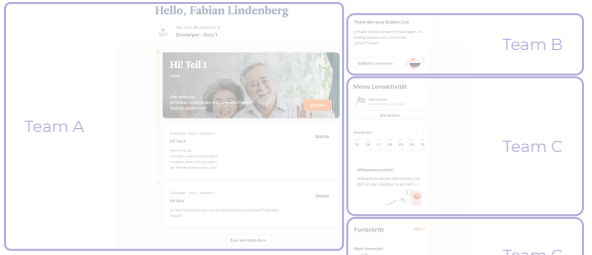
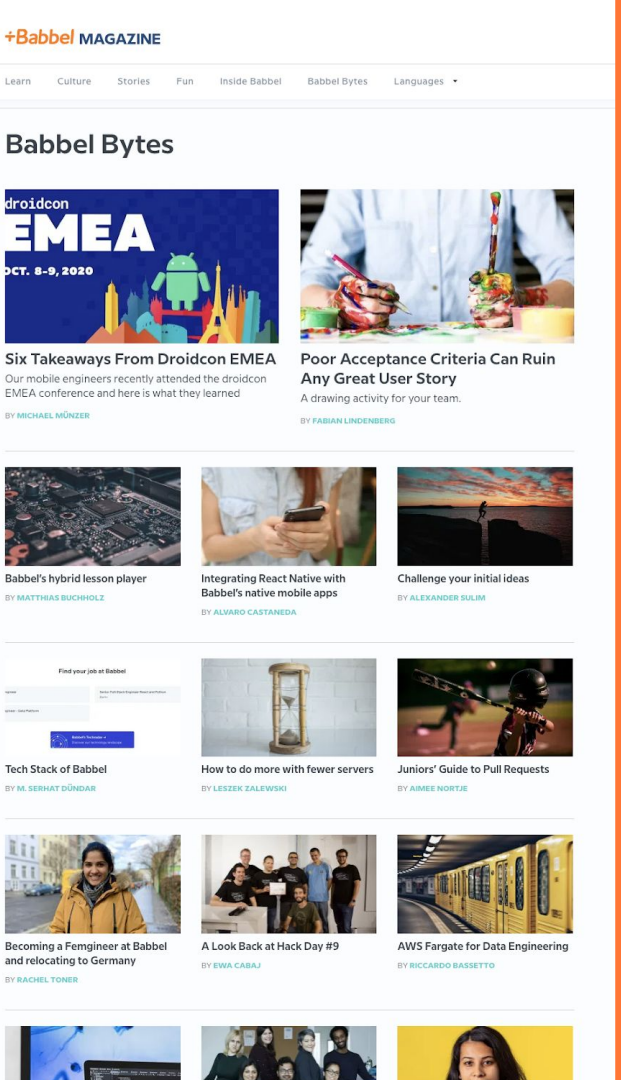


… but we're learning!



Visit our tech blog bytes.babbel.com to read more about how we're building Babbel.

[1] re:Work - Set Goals With OKRs

[2] Anthony Murphy - Alignment through OKR’s and Hypotheses

[3] Jeff Patton - Dual Track Development is not Duel Track

[4] Yvette Francino - Are Self-organizing Agile Teams Realistic?

[5] Dave Nicolette - Limits of a Self-organizing Team

[6] GitHub - An Introduction to Innersource

[7] Christian Requena - From Documentation to Empowerment

[8] Gregor Hohpe - Your Most Important Architecture Decisions Might Be The Ones You Didn't Know You Made

Obrigado
Thanks
Teşekkürler
Tack
Danke
Merci
Gracias
Grazie