



GLOBAL AND DISTRIBUTED SOFTWARE DEVELOPMENT

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Integrating Agile with an Offshore Strategy

A practical kit for adopting agile methods in distributed projects and teams



[Darja Šmite](#), [Nils Brede Moe](#), and [Viktoria Stray](#)

Agile projects put teamwork, close cooperation and continuous communication among the project members in the spotlight. Offshore projects, on the contrary, are infamous for unwillingness to cooperate, communication gaps, cultural misunderstandings and injured trust among the remote parties. So, is there any way to blend the two strategies?

[Read Free Sample](#) 

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LAST UPDATED ON 2018-10-26

The following chapters are curriculum:

- Chapter 1
- Chapter 3.2-3.4
- Chapter 4.5

- <https://leanpub.com/integratingagilewithanoffshorestrategy/c/5140> 2023



UiO : University of Oslo



UiO : University of Oslo  SINTEF

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Viktoria Stray

- Associate Professor, UiO
- Senior Research Scientist, SINTEF
- PhD in Software Engineering
- Industry experience, Accenture



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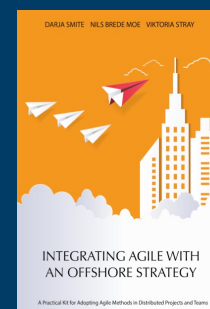
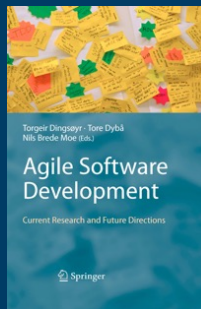


Department of Informatics, University of Oslo

Nils Brede Moe



- Chief Scientist SINTEF Digital and BTH
- Columnist E24.no
- Sourcing, innovation, agile practices, Virtual teams for 15 years
- Studies in Nordic countries, USA, China and Australia



How we work

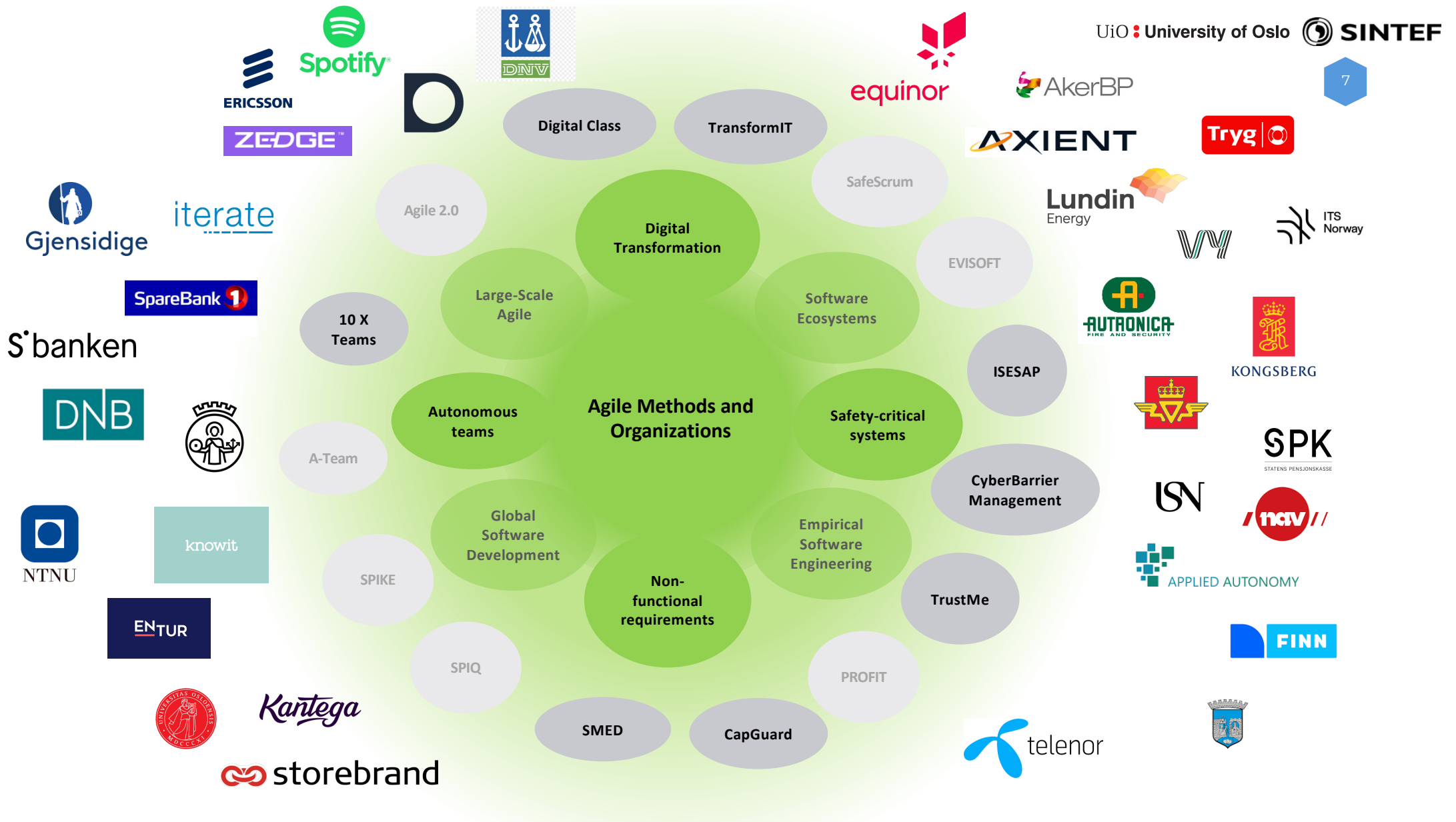




SINTEF

Digital Process Innovation

Teknologi for et bedre samfunn



Today's topics

- Motivation for Global Software Development
- Some terminology
- Intellectual capital
- Networks
- Enterprise Social Networking
- Norms
- Outsourcing and cost
- Work from anywhere



Dyrekjøpt utflaggingserfaring

Flytting av hodearbeid til lavkostland gir ikke nødvendigvis gevinst. En bedrift som forsøkte, blødde i fem år.

Jevnlig kommer meldinger om at nordiske selskap setter it-arbeidet sitt bort til land med lave timepriser. Lokomotiver som Ericsson, Hydro, DNB, Statoil og Telenor har gjort dette lenge. Mange mindre virksomheter vurderer derfor å gjøre det samme.

Hva skjer egentlig med kostnadene når kunnskapsintensivt arbeid som utvikling og drift av datasystem flyttes fra høykost- til lavkostland?

Vitenskapelige beregninger av dette var lenge mangelvare, helt til professorene Darja Šmite og Rini van Solingen nylig presenterte resultatene av et nybrottsarbeid.

Šmite er professor i programvareteknikk ved Blekinge tekniska högskola i Sverige. I tillegg er hun forsker i bistilling hos oss i Sintef. Van Solingen er deltidsprofessor ved Delft University of Technology i



Svarene viste at en nederlandsk programingeniør reelt sett kostet 47 euro per time i gjennomsnitt, mot 65 for en inder i samme jobb, til tross for at den rene timelønnen er vesentlig lavere i India. Stor gjennomtrekk av personale hos den



MOTIVATION FOR GLOBAL SOFTWARE DEVELOPMENT?



Follow the sun - Development 24/7 ☺

True or false?




00 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23



Work From Anywhere

Introducing Working From Anywhere

 Anna Lundström and Alexander Westerdahl

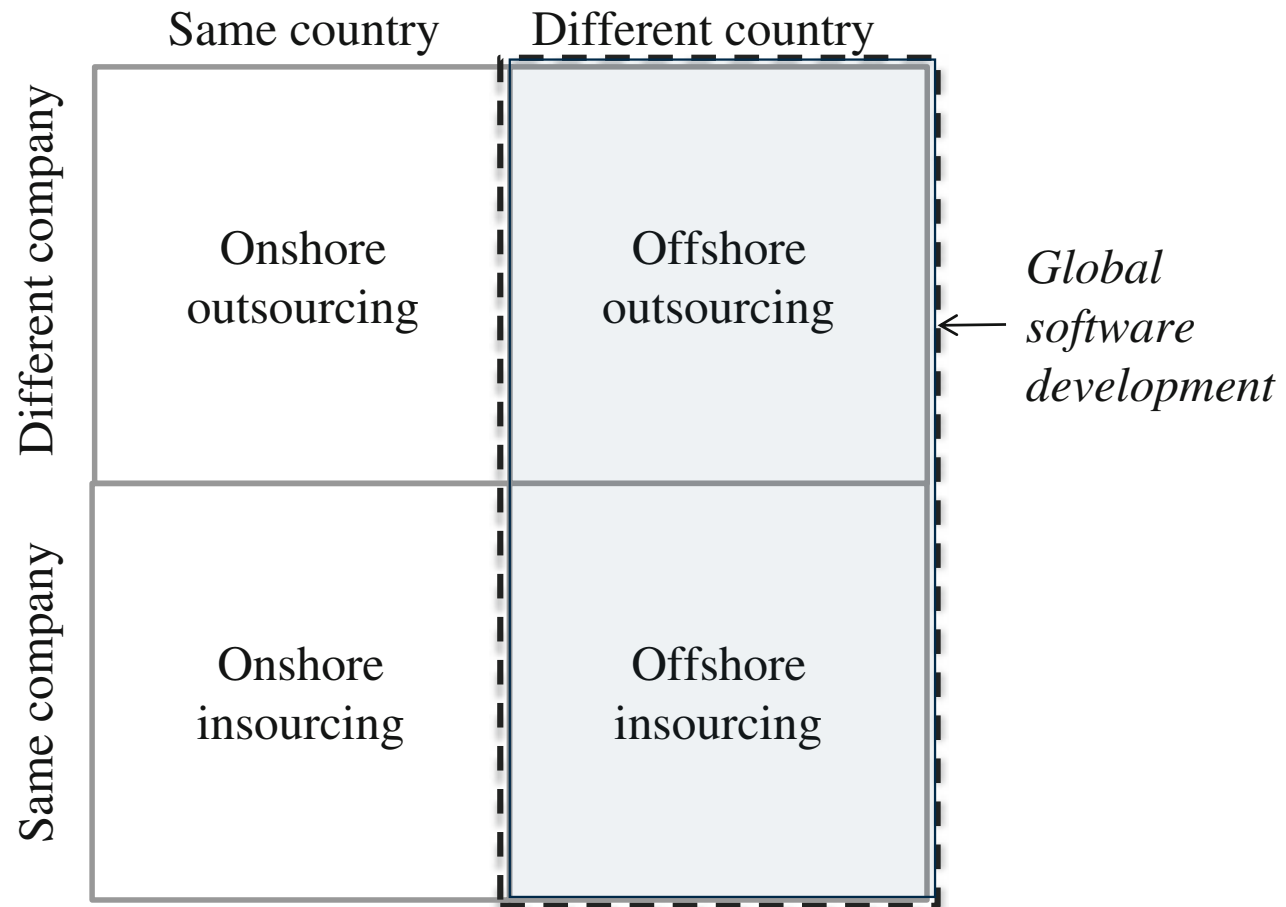


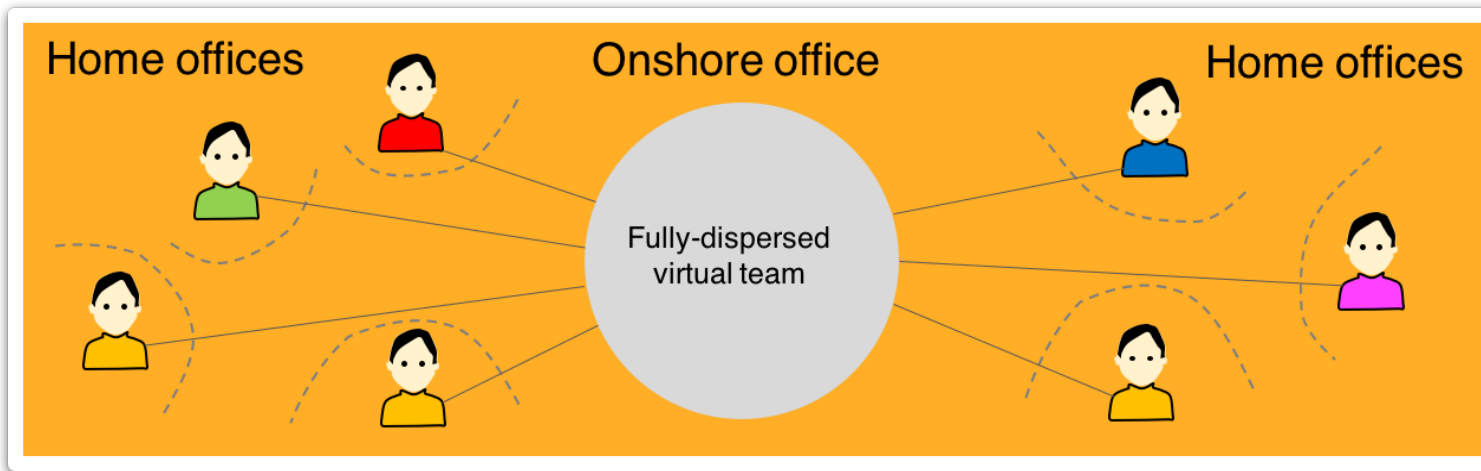
*Work isn't something you come to the office for,
it's something you **do***

My Work Mode –full time from home, from the office, or a combination of the two.

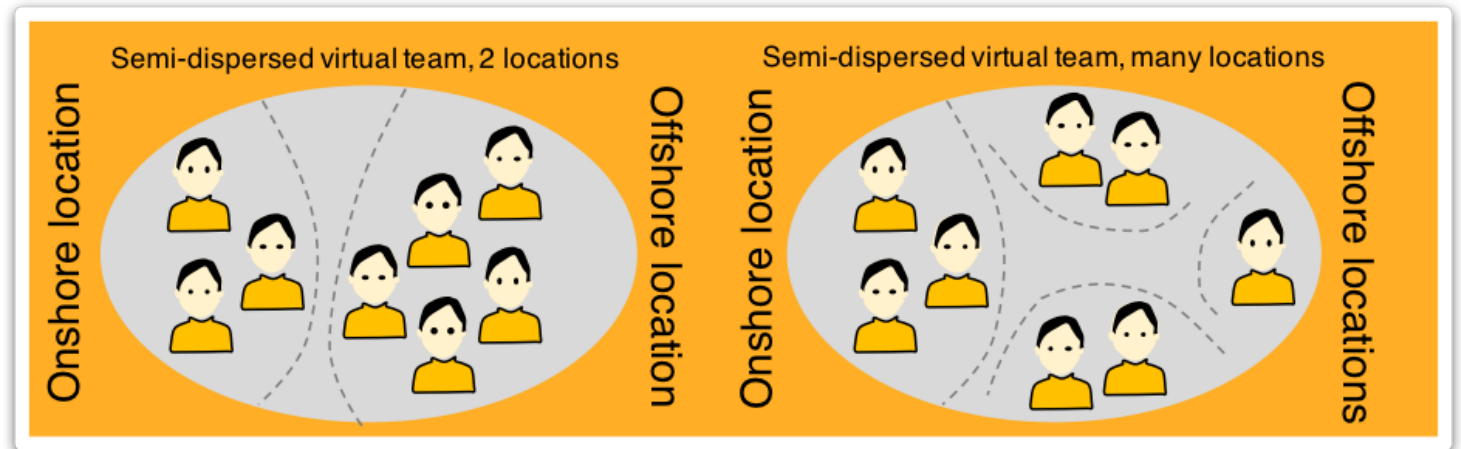
Location choices – flexibility when it comes to what country and city each employee works from

Terminology



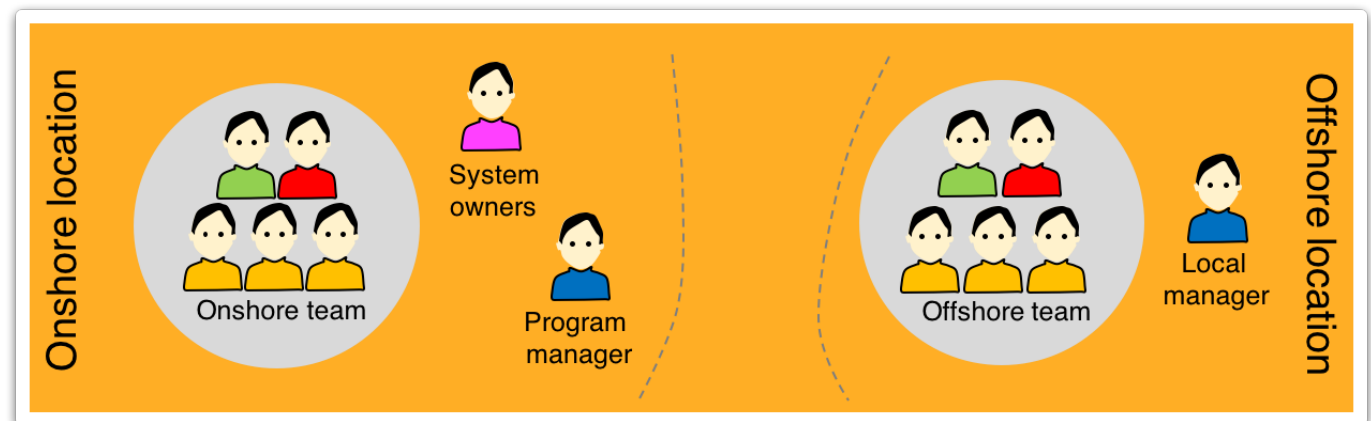
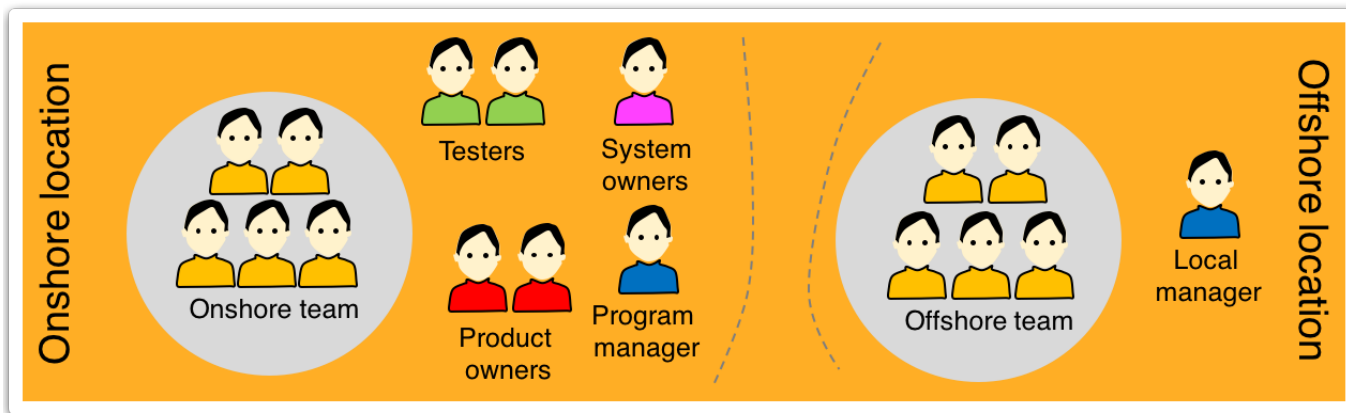


Virtual team within one country with team members teleworking from their homes



Semi-dispersed teams from two and from many locations

Which setup is best?



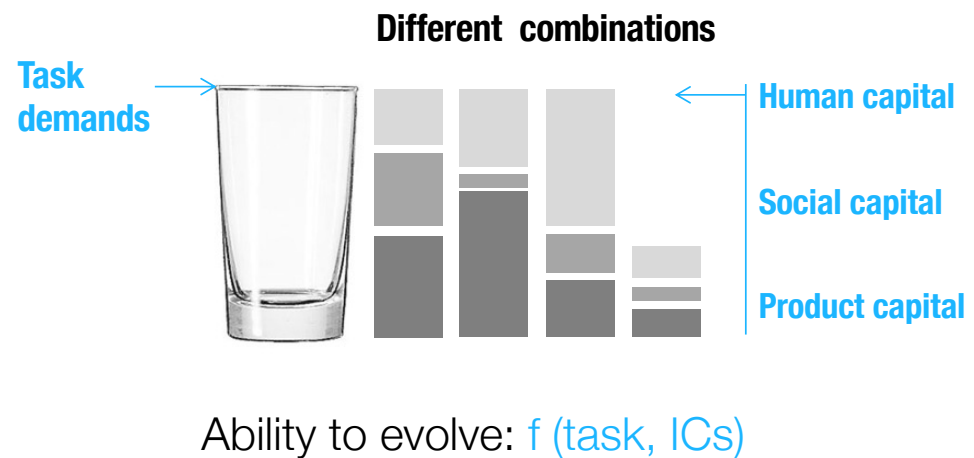
A well-working agile team in GSD

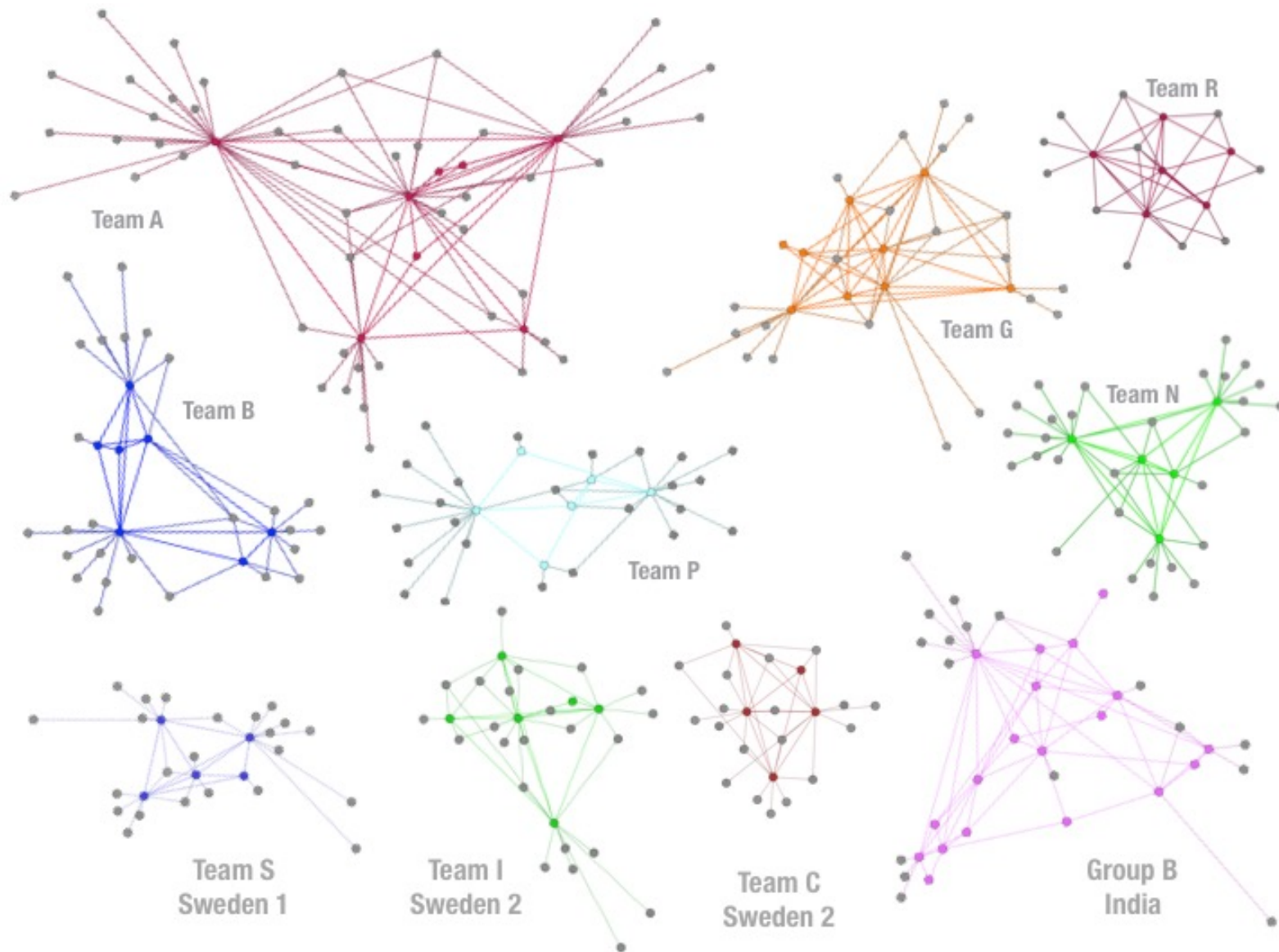
- Intellectual capital
- Turnover

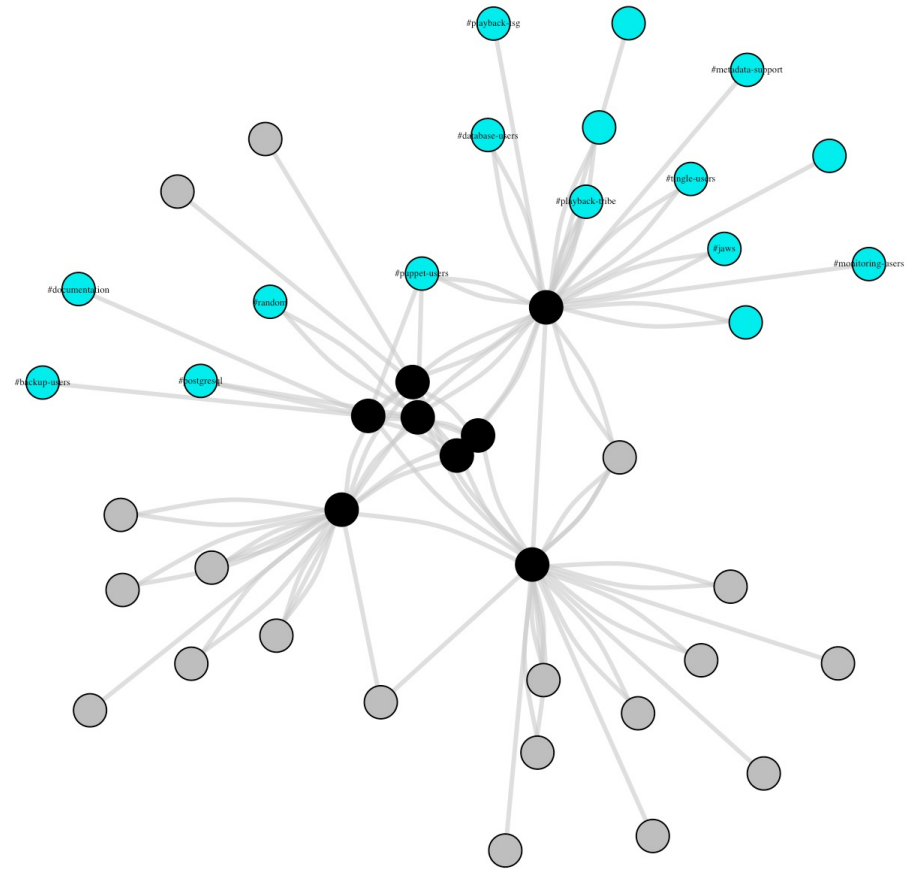
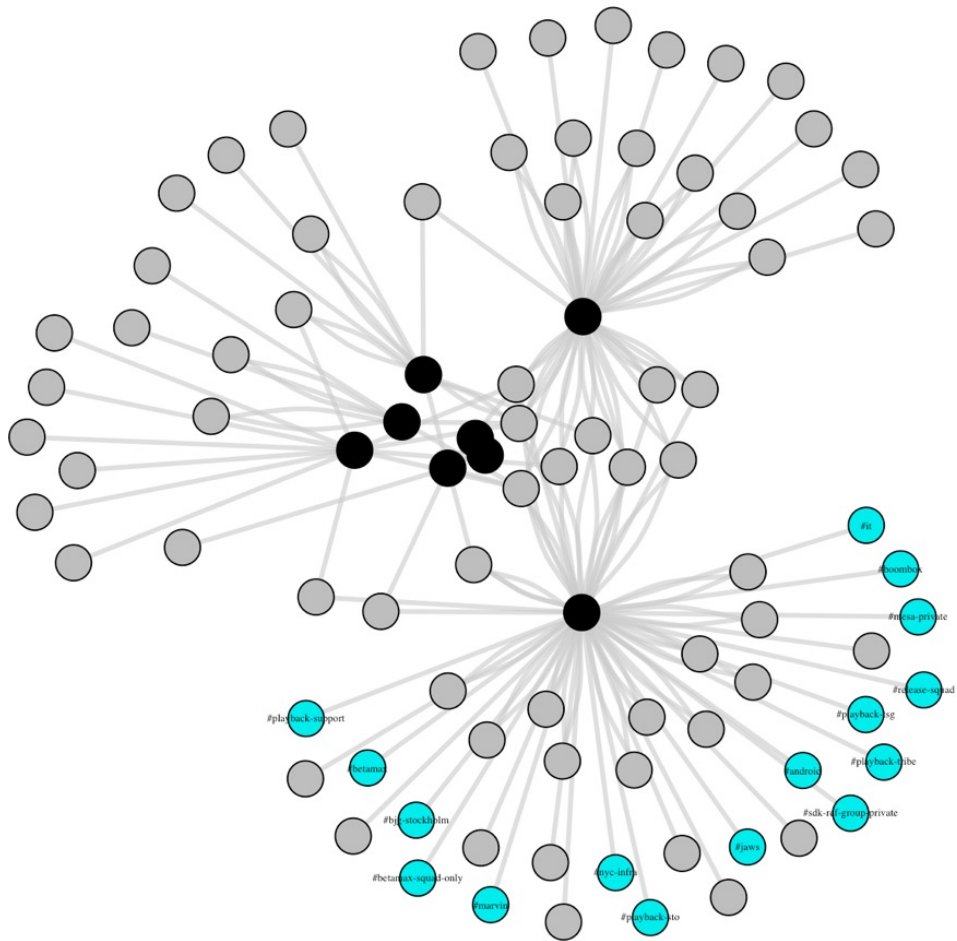
Intellectual capital

1. Good tool support and the necessary documentation (**organizational capital**),
2. Sufficient experience and expertise (**human capital**),
3. Useful connections (**social capital**).

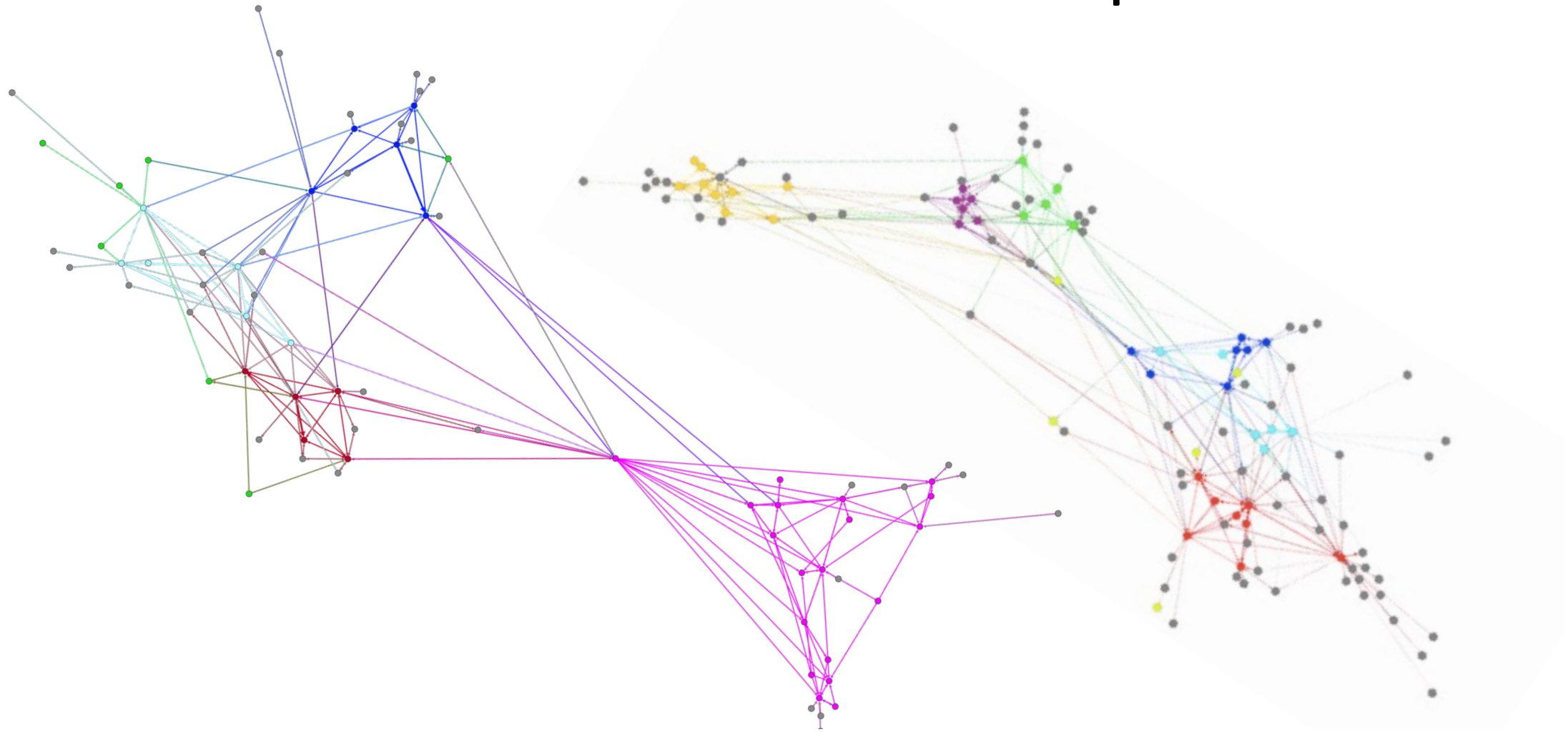
- › Intellectual capital – human capital, social capital and product/organizational capital
- › Human capital
 - › Technical skills
 - › Domain knowledge
 - › Product knowledge
 - › Creativity
- › Social capital
 - › Teamwork
 - › Networking
- › Product/Organizational capital
 - › Source code
 - › Architecture
 - › Product documentaiton
 - › Process documentation
 - › Organizational culture







Different network patterns



Awareness

- Social software
- Norms



150
years

400
offices

100
countries

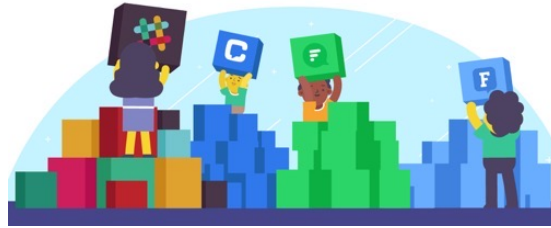
16,000
employees

Teams in Norway & Poland

- Team in Stavanger - Norway
 - 15 people
 - Development since 1992
- Team in Gdynia - Poland
 - 15 people
 - Development since 2012



Enterprise Social Networking



Four attributes:

1. send and receive messages to individual members as well as the whole or a group of members,
2. choose and show particular coworkers as their communication partners,
3. share files with other users,
4. view all the conversations that are done publicly, consisting of text messages and files shared.

Slack

2018 User Momentum

8+ MILLION
Daily Active Users

In more than
100
countries

3+ MILLION
Paid users

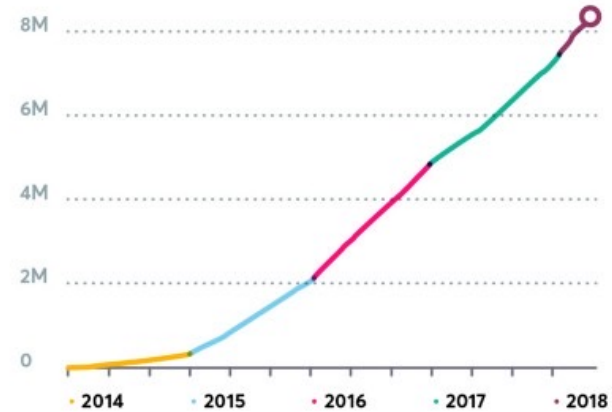
70,000+ Paid teams

500,000+ organizations use Slack

Slack's Growth

Daily Active Users

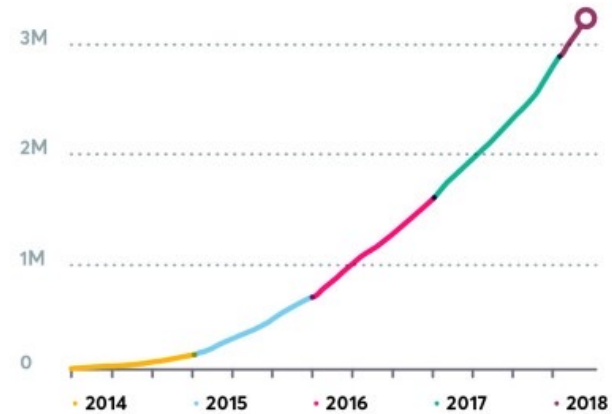
In May, we reached
8 million DAUs



May 2018
8+ Million

Paid Users

In May, we reached
3 million paid users



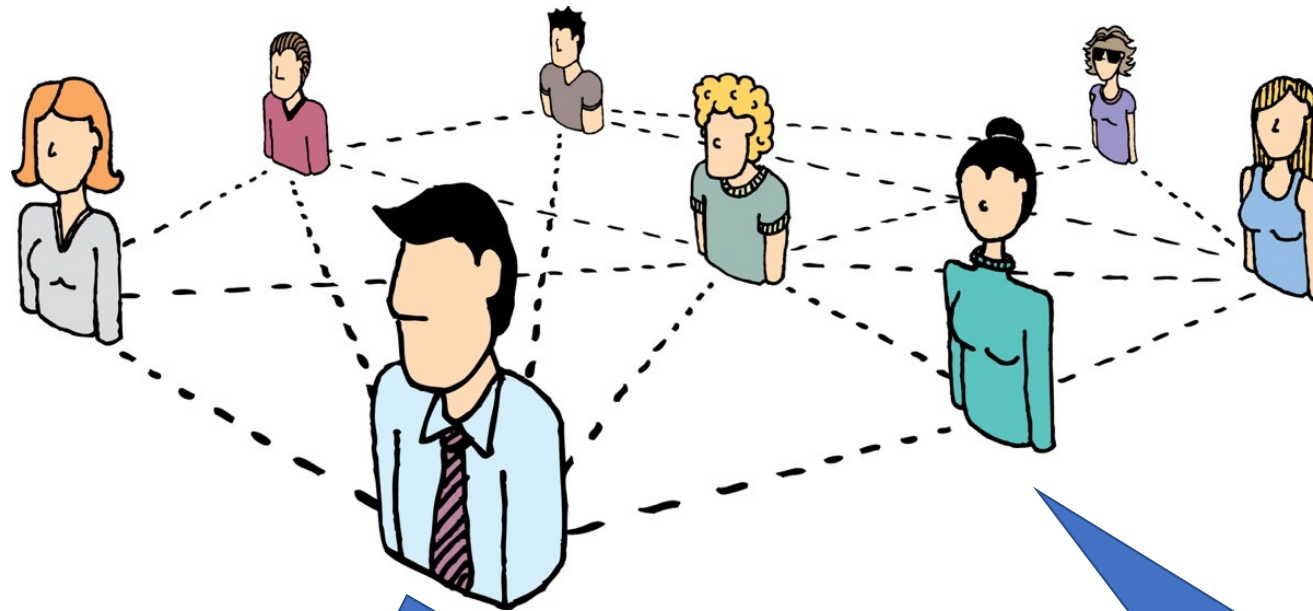
May 2018
3+ Million

The background of the slide is a dark, blurred screenshot of a Slack chat interface. It shows a channel named 'Time to Hack' with a member named 'pankaj'. There are various icons and text elements visible, such as 'Jump to', 'Threat', and '11:05'.

Motivation for Slack

- Fast feedback
- Informal communication
- Transparency
- Growing the external and internal network
 - who knows what
- Reduce e-mail and the need for scheduled meetings

Team communication and coordination - Slack



[UX developer], do you have anything to add?

No, I got answers on Slack yesterday.

Many people were negative to introduce “another system” because we were already using Yammer, Wikis, Skype, and others. But, we wanted to see if we could benefit from it in our distributed work.

Stray and Moe, *Understanding coordination in global software engineering: A mixed-methods study on the use of meetings and Slack*, Journal of Systems and Software, Volume 170, 2020
<https://doi.org/10.1016/j.jss.2020.110717>

1

LANGUAGE

DIFFERENT NATIVE
LANGUAGES

3

TOO MUCH PERSONAL MODE

USE OF DIRECT MESSAGING

2

UNBALANCED ACTIVITY

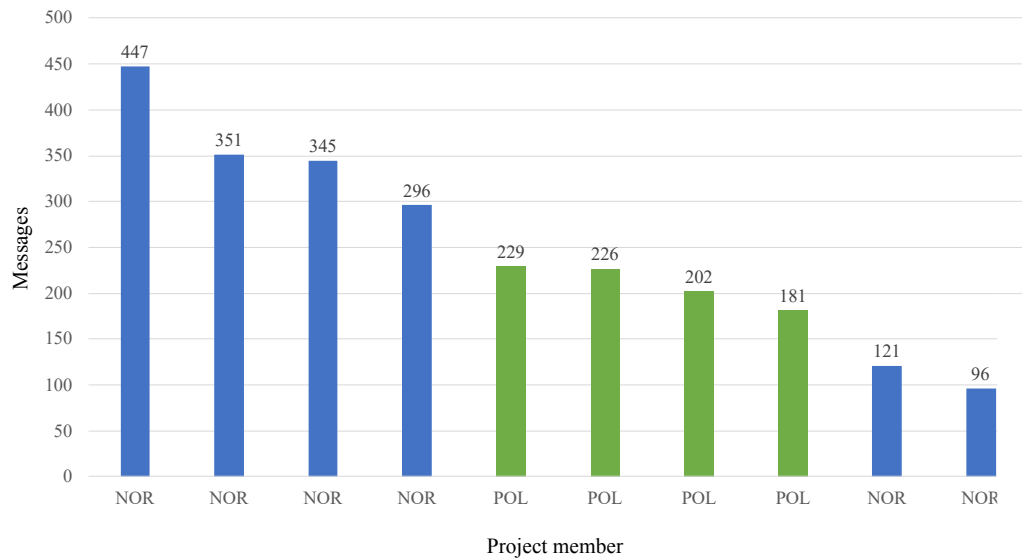
33% OF THE USERS WROTE 86%
OF THE MESSAGES

4

ESN WORKSPACE STRUCTURE

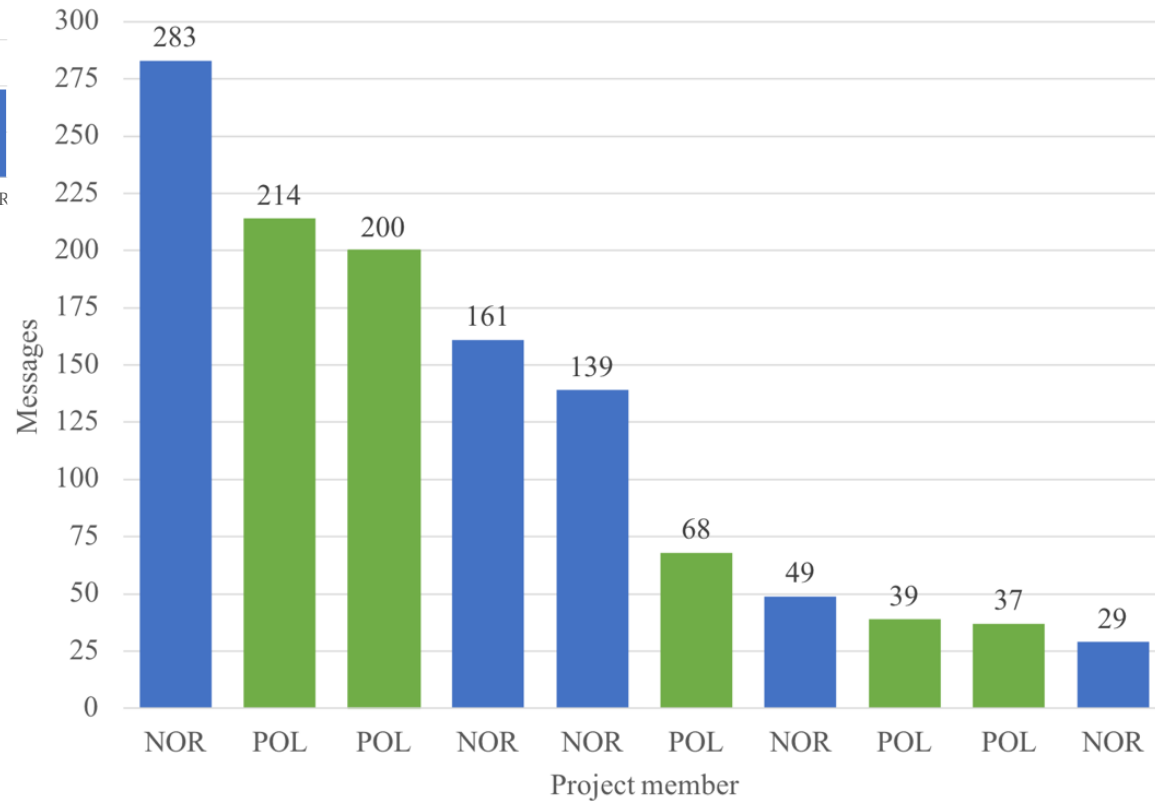
BALANCE IN NUMBER OF
CHANNELS

**Four
challenges**



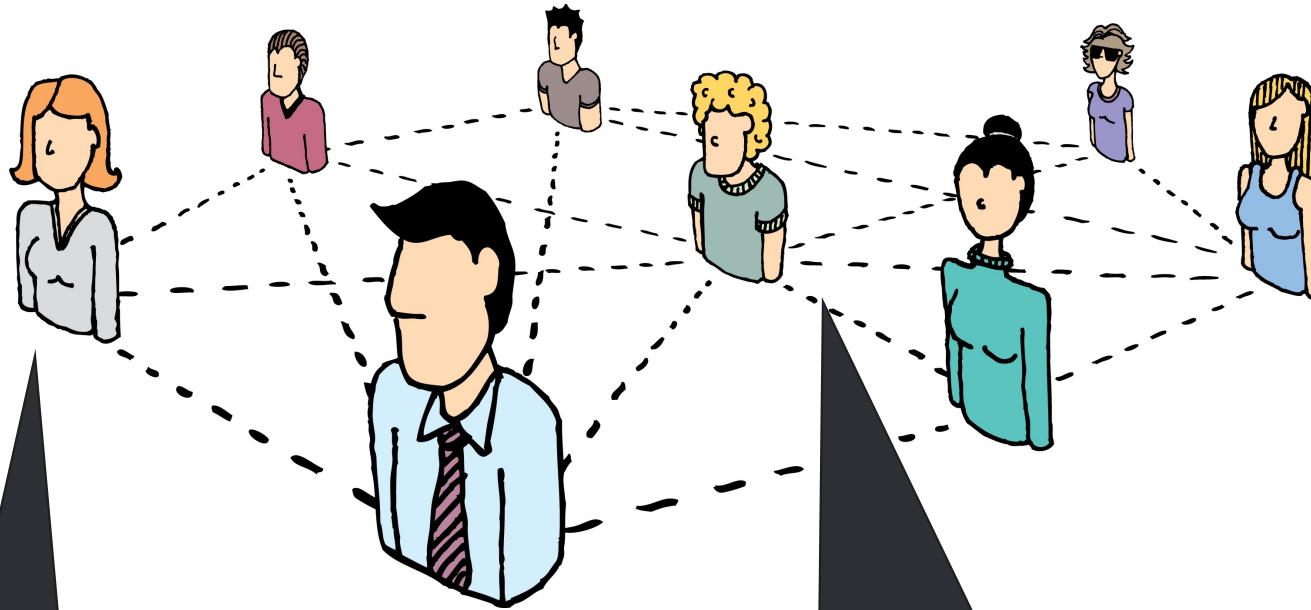
User activity across three channels

NOR = Norwegian
POL = Polish



User activity in the Back-end channel

Use of Slack



How personal we talk in open channels is kept within certain limits.

We have struggled somewhat because of language issues. Domain knowledge in combination with low language skills has made it difficult. It was a real problem that especially one person was really bad in English writing.

Some developers and testers are lacking the technical skills, so you need to help and support them.

GUIDELINES



**MORE OPEN
COMMUNICATION**



**EACH TEAM
SHOULD HAVE
A MAIN
CHANNEL**



**MORE
SEPARATE
CHANNELS**

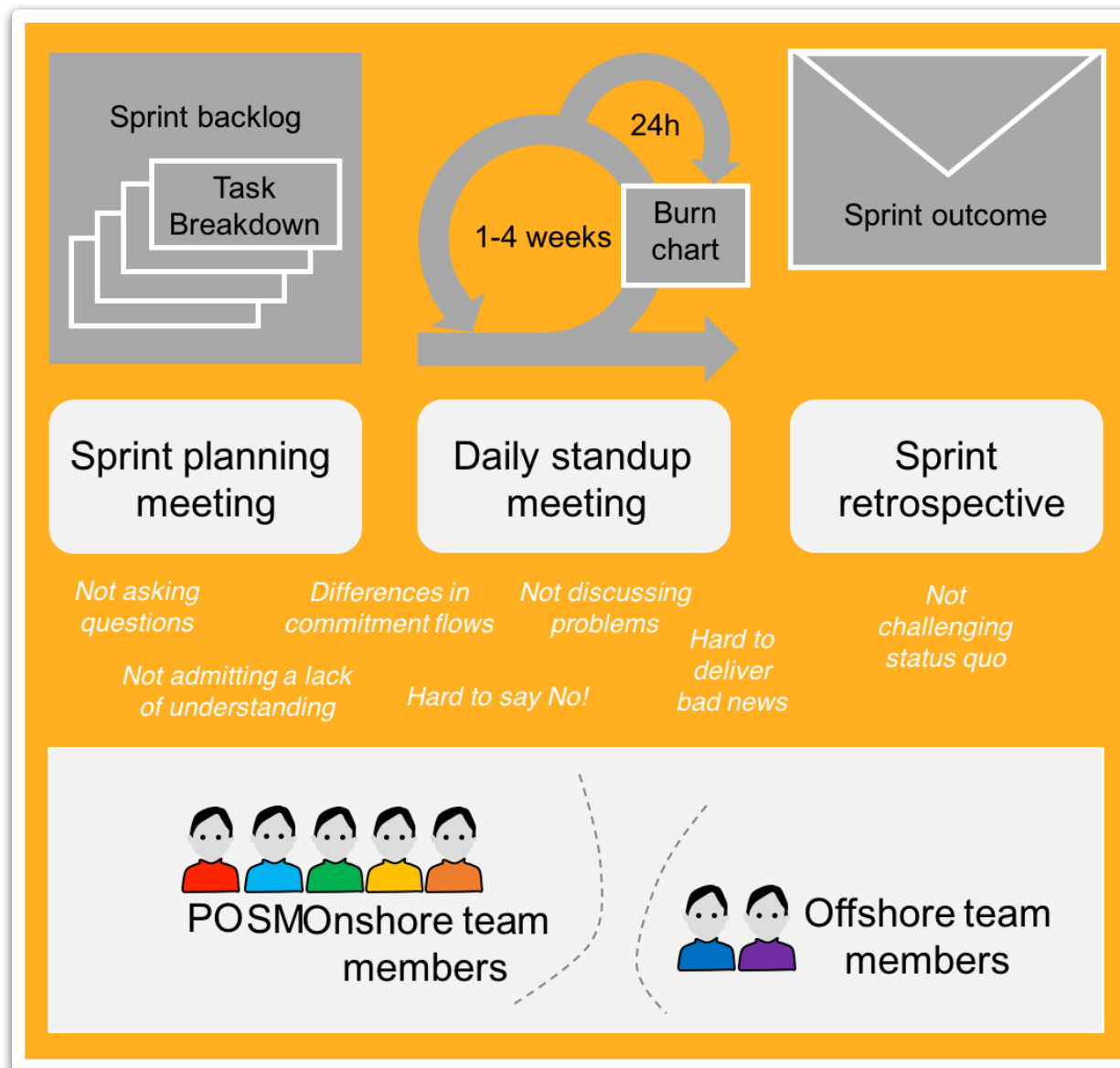


**LESS COMMUNICATION OF
FEATURES AND BUGS IN
OTHER TOOLS**

What are norms?

- Standards of proper or acceptable behavior
- Something (such as a behavior or way of doing something) that is usual or expected







Indian team members

It is confusing for us to say "No" to a Product owner or a Team lead

It is confusing for us when someone says "Yes" without implying an agreement



Swedish team members



Session mediator

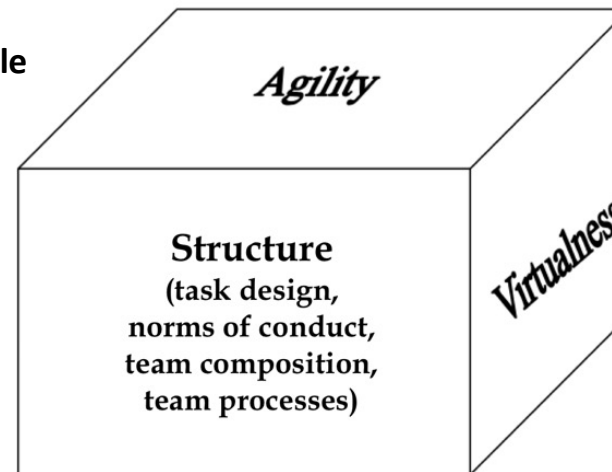
For Indians the word "Yes" by itself is more equivalent of "Hmm" or "I'm listening", while for Swedes it means "I understand", "I agree", "I accept", "I approve", and similarly for "Sure", "Fine", "OK", "I see", "No problem". Indians almost never say "No" or other negative messages, while Swedes have a direct way of communicating and are listening to what is exactly said. They rely mainly on words. No value is put on what is not said.

Virtual teams

- An important element of virtual team design is the establishment of a shared set of norms (Sharp and Ryan, 2008)

Conceptual Model of Global Agile Teams
(Sharp and Ryan, 2008)

More about norms and virtual teams in Townsend et al., 1998; Sarker et al., 2000; Oshri et al., 2007 and Glikson and Erez, 2013)



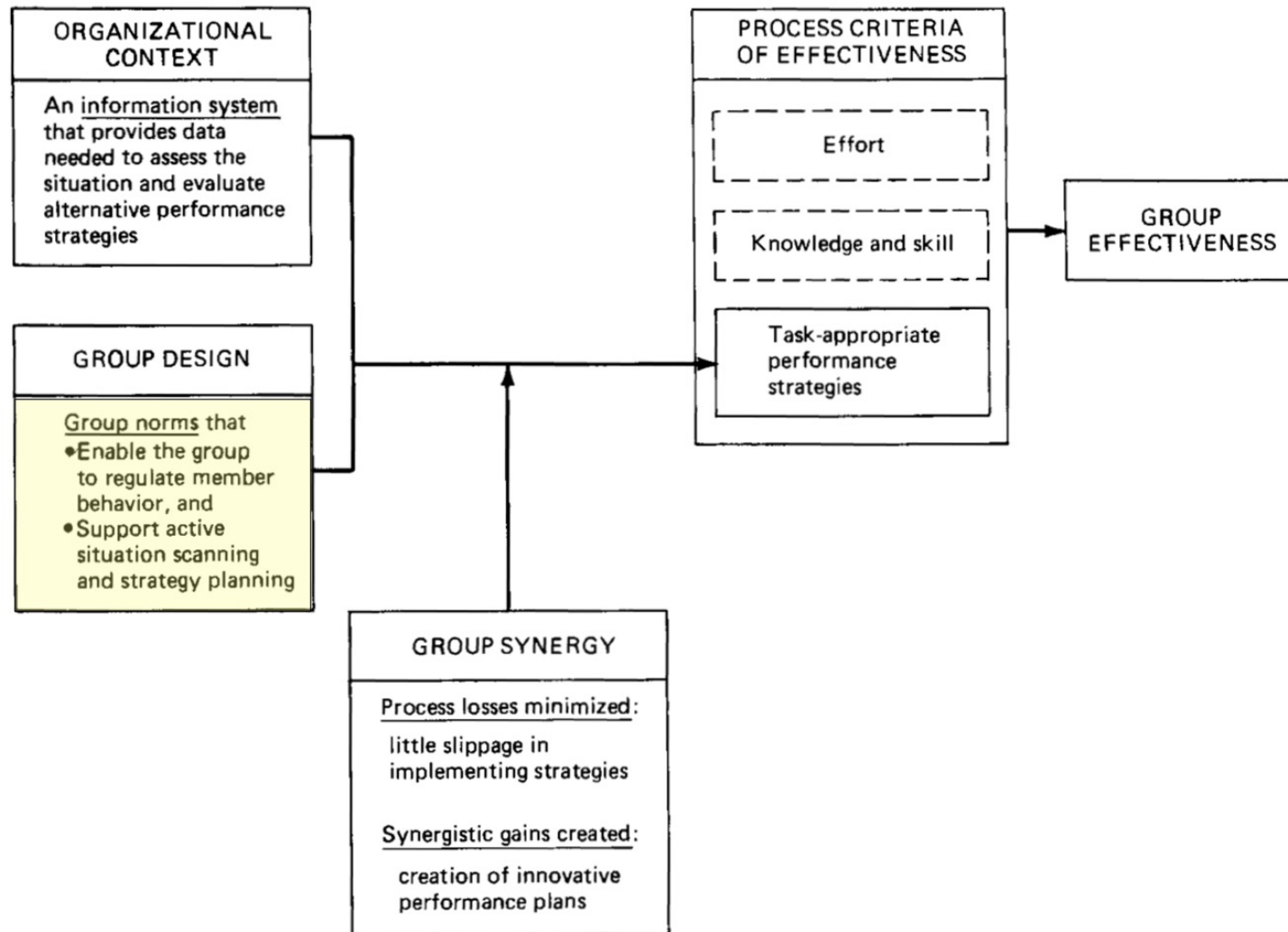
Norms are shared expectations of how to behave



Norms do not exist if they are not shared with others.

(Cialdini and Trost, 1998)

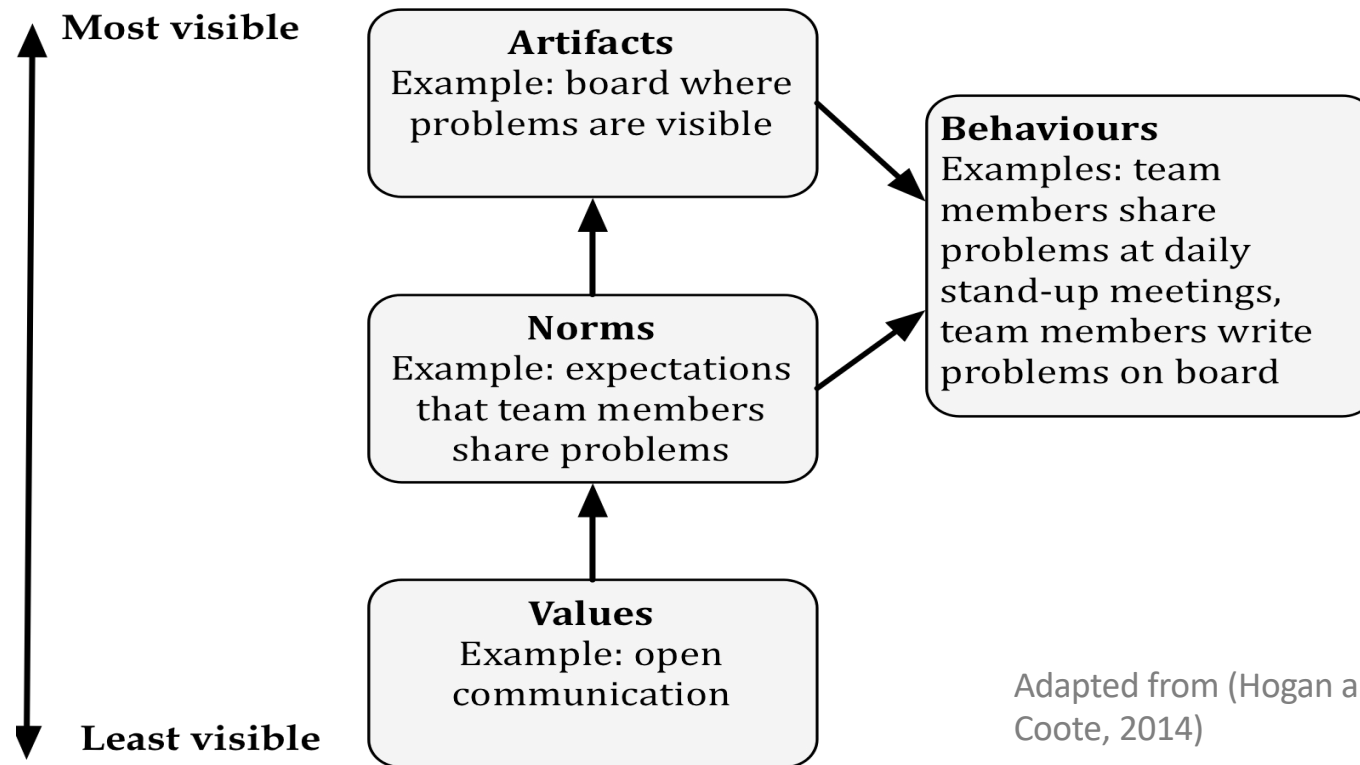
Group effectiveness (Hackman, 1987)



Example of team norms in software development teams



Visibility of values and norms



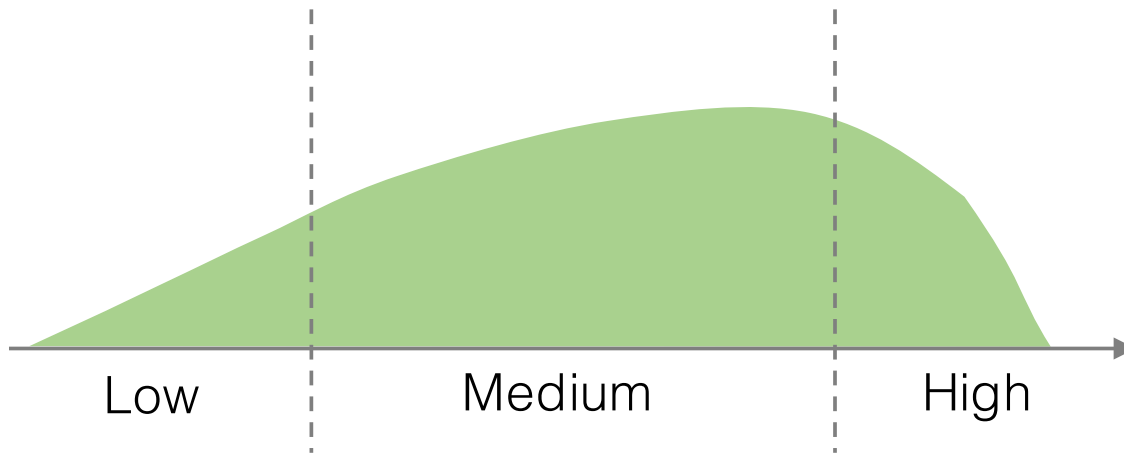
Adapted from (Hogan and Coote, 2014)

TEAM 1 WORKING AGREEMENT

1. Daily SCRUM at 9:45 am, maximum duration 15 mins. @ Team Room.
 2. Length of SPRINT → 3 weeks.
 3. Backlog grooming on every Monday at 10am, max 45 mins.
 4. Update SPRINT backlog before daily SCRUM.
 5. Effective hours → 5 hours.
 6. Team members take turns for SPRINT demo.
 7. Assign Jira ticket to yourself & update status when you start a task.
 8. Include Jira ticket ID during code check in.
 9. No taking in of new story after mid-sprint
 10. Swap unstarted story with ad-hoc story which has about the same story hours.
(Points not comparable)
1. Daily SCRUM at 9:45 AM, maximum duration 15 mins. In the team room
 2. Length of SPRING – 3 weeks
 3. Backlog grooming on every Monday at 10 AM, max 45 min
 4. Update SPRINT backlog before daily SCRUM
 5. Effective hours – 5 hours
 6. Team members take turns for SPRINT demo
 7. Assign Jira ticket to yourself and update status when you start a task
 8. Include Jira ticket ID during code check in
 9. No taking in of new story after mid-SPRINT
 10. Swap unstarted story with ad-hoc story, which has about the same story hours (Points not comparable)

CAN YOU LOOSE
MONEY IF THE
HOURLY RATE IS 50%
LOWER?

Desired staffing



Description of measures:

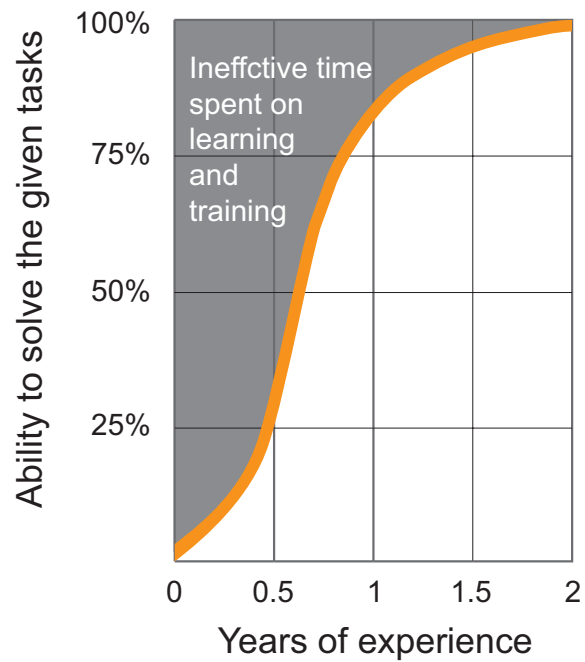
Low	1-2 years of experience
Medium	2-5 years of experience
High	over 5 years of experience

Healthy Staff Structure:

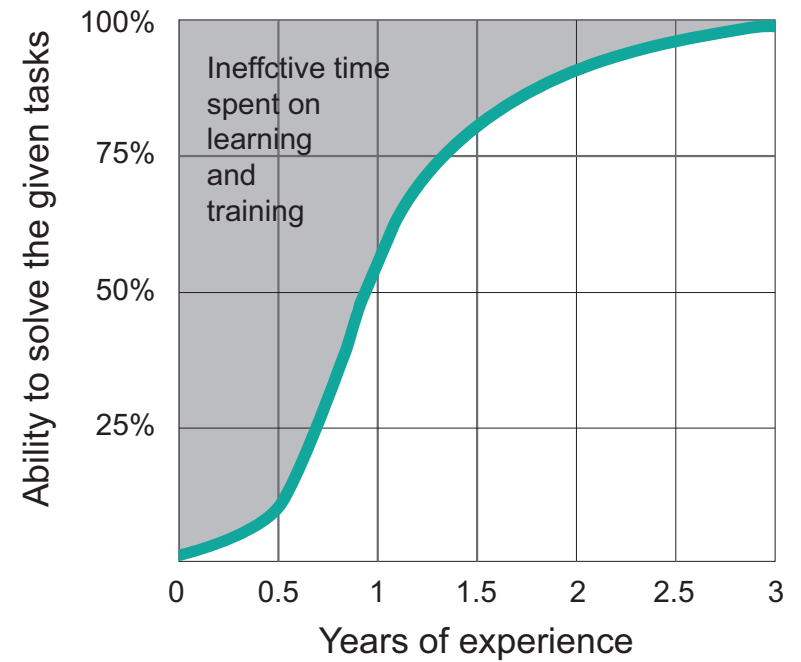
- High level of competence
- Controlled turnover
- Fresh blood / new hires

Learning curves

In-house team



Offshore team

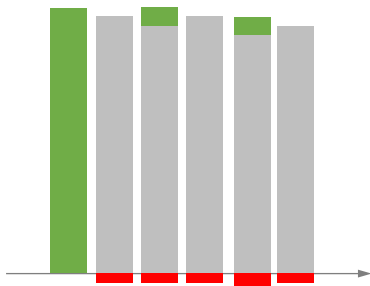


Attrition

Norbank

21% attrition in 1,5 year

Quarterly absolute data for the first 1,5 year



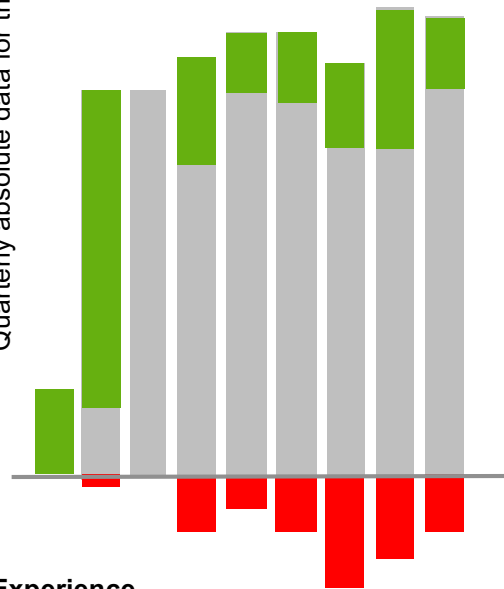
Experience

To employ 27 people at the end of 1,5 years, Storebrand has hired 33 people and lost 6 (21% turnover for the 1,5 year period)

SwedCo

34% attrition in 1,5 year
140% attrition in 3 years

Quarterly absolute data for the first 3 years



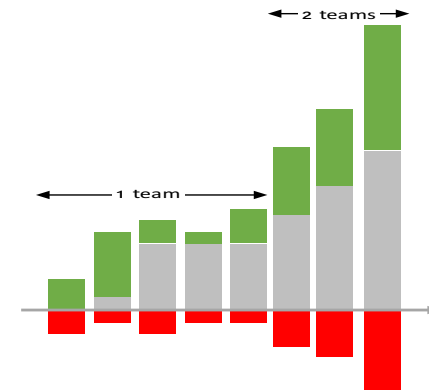
Experience

To employ 72 people at the end of year 3, SwedCo has hired 118 people and lost 58 (140% turnover for the 3 year period)

DutchCo

75% attrition in 1,5 year
54% attrition in 8 years

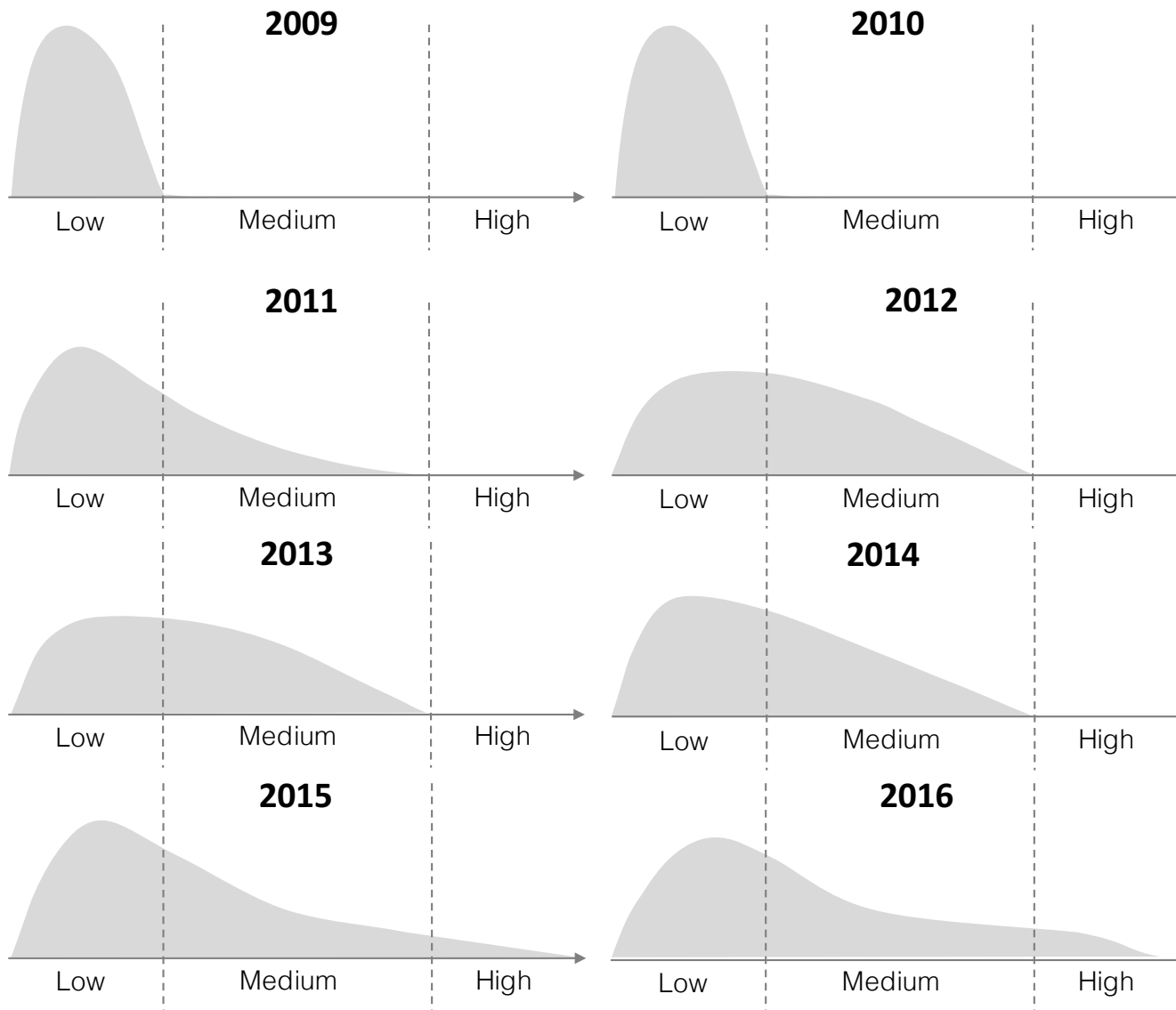
Yearly absolute data for the 8 year period



Experience

To employ 18 people at the end of year 8, DutchCo has hired 39 people and lost 21 (54% attrition for 8 year period)

■ New developers
 ■ Existing developers
 ■ Developers who left



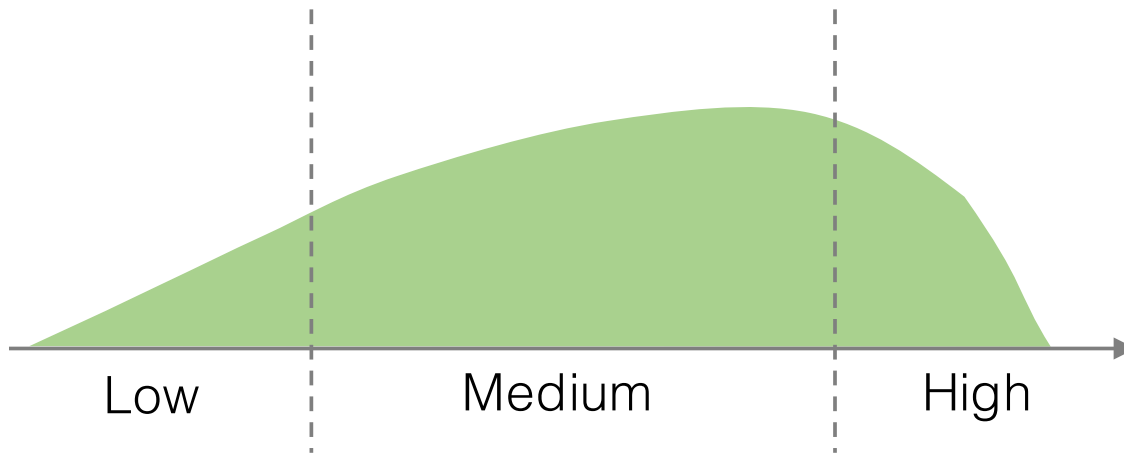
What to expect?

SwedCo

Staffing structure

Low <2 years; Medium 2-5 years; High 5+ years

Desired staffing

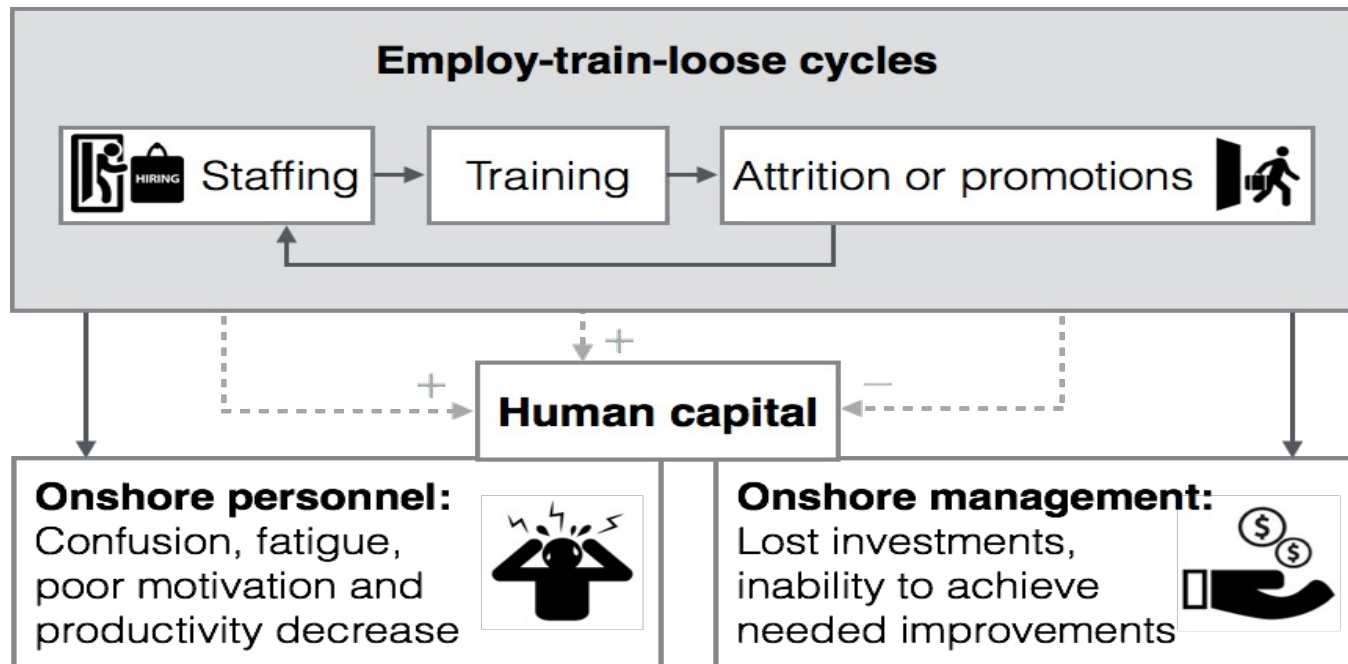


Description of measures:

Low	1-2 years of experience
Medium	2-5 years of experience
High	over 5 years of experience

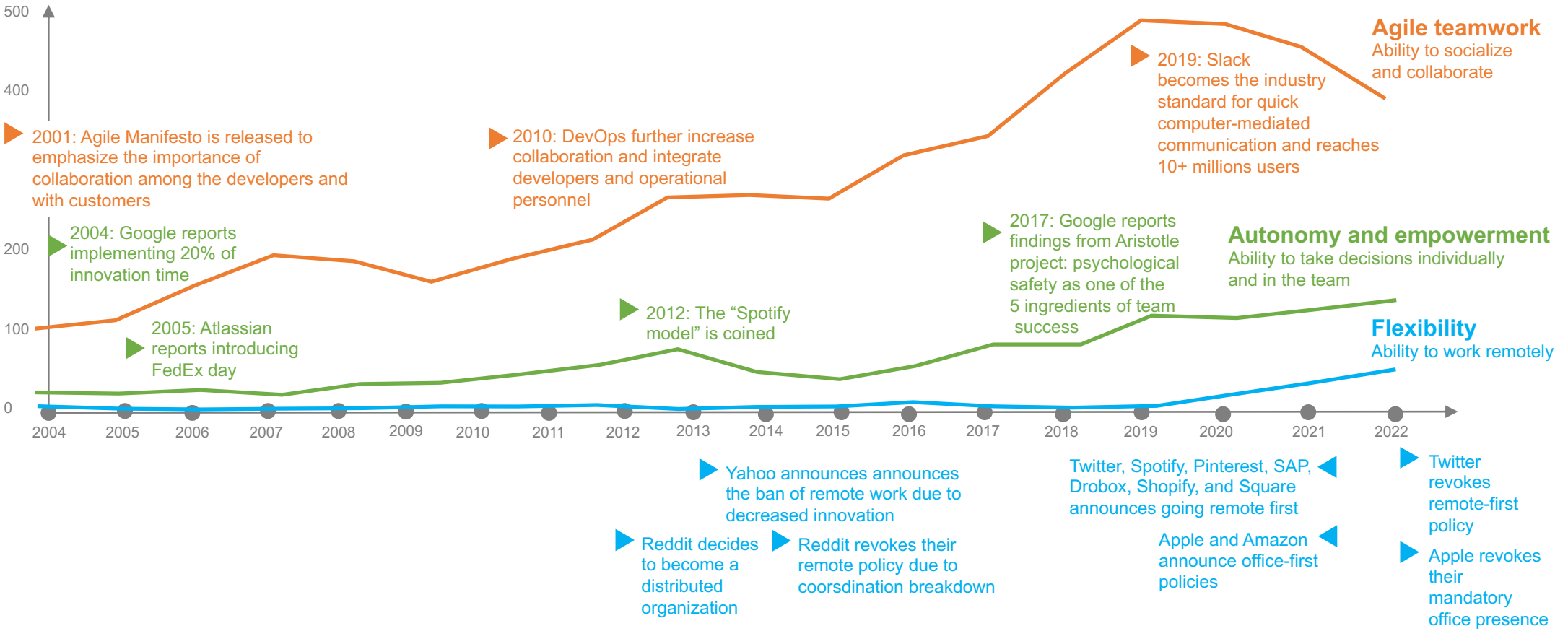
Healthy Staff Structure:

- High level of competence
- Controlled turnover
- Fresh blood / new hires



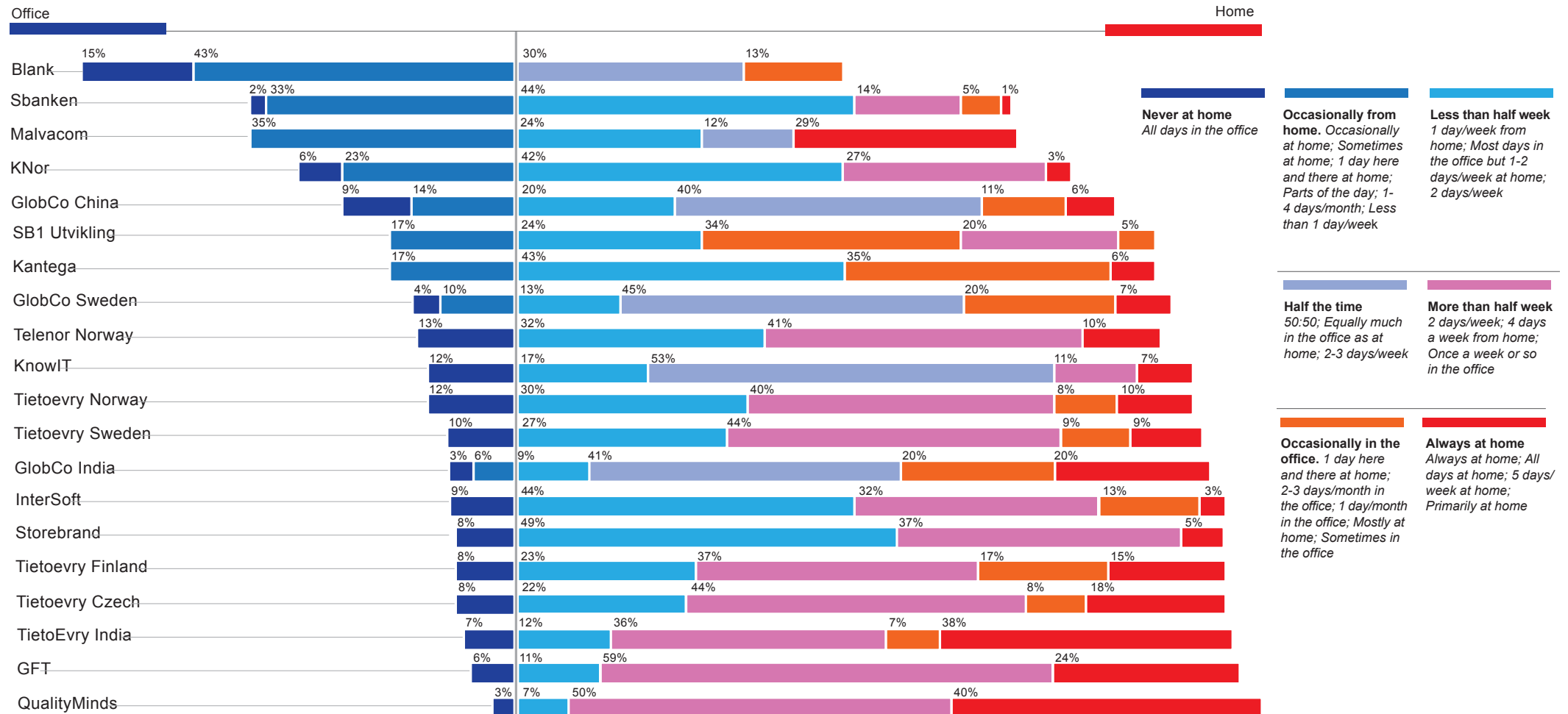


WORK FROM ANYWHERE




Many prefer hybrid work in the future

Employee preferences: How often do employees want to work from home after the pandemic?



Work From Anywhere

Introducing Working From Anywhere

 Anna Lundström and Alexander Westerdahl



*Work isn't something you come to the office for, it's something you **do***

My Work Mode –full time from home, from the office, or a combination of the two.

Location choices – flexibility when it comes to what country and city each employee works from



Use of the office

By gender



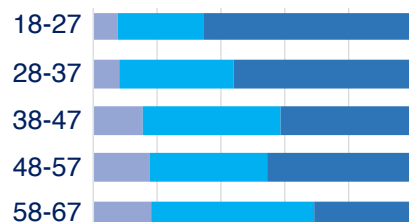
By country



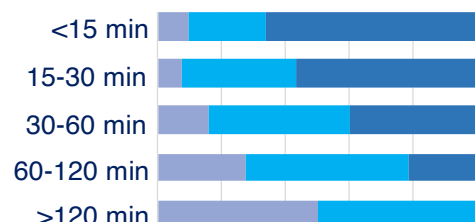
By role



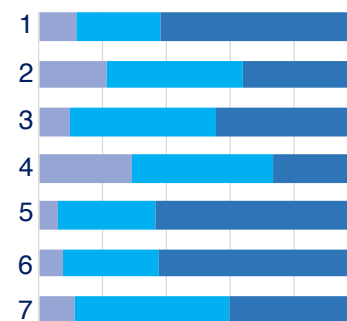
By age



By commute time



By department



Legend 1-2 days 2-3 days 4-5 days

All six factors have statistically significant correlations with the current work arrangement

Conclusion

- Office presence correlates with six selected factors
- Males are more present onsite than female
- Norwegians are more present onsite than Swedes,
- Younger people are more present than older people
- Office presence in different departments varies, managers are more present than non-managers



More efficient working from home

More efficient working onsite

Time saving due to lack of commute

Flexibility

Better working environment at home

Better ergonomics onsite

Work-Life-Balance

Social interaction

Collaboration, togetherness

Access to resources

Team cohesion

Knowledge sharing

Technology for at home comfort

1-2 days

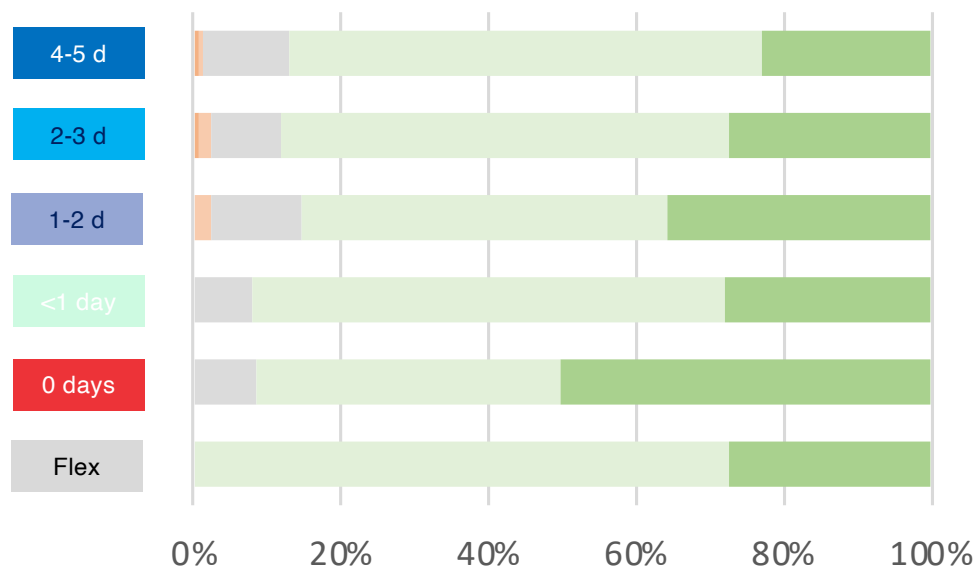
2-3 days

4-5 days



Work performance

Performance – Ability to accomplish tasks



Work rhythm and office presence do not determine work performance

Legend Very dissatisfied Dissatisfied Neither, nor Satisfied Very satisfied

Why go to the office

Comfortable workplace

Better (free) food, waffles, barista coffee

Company-paid sport activities, gym

Warmth, paid electricity

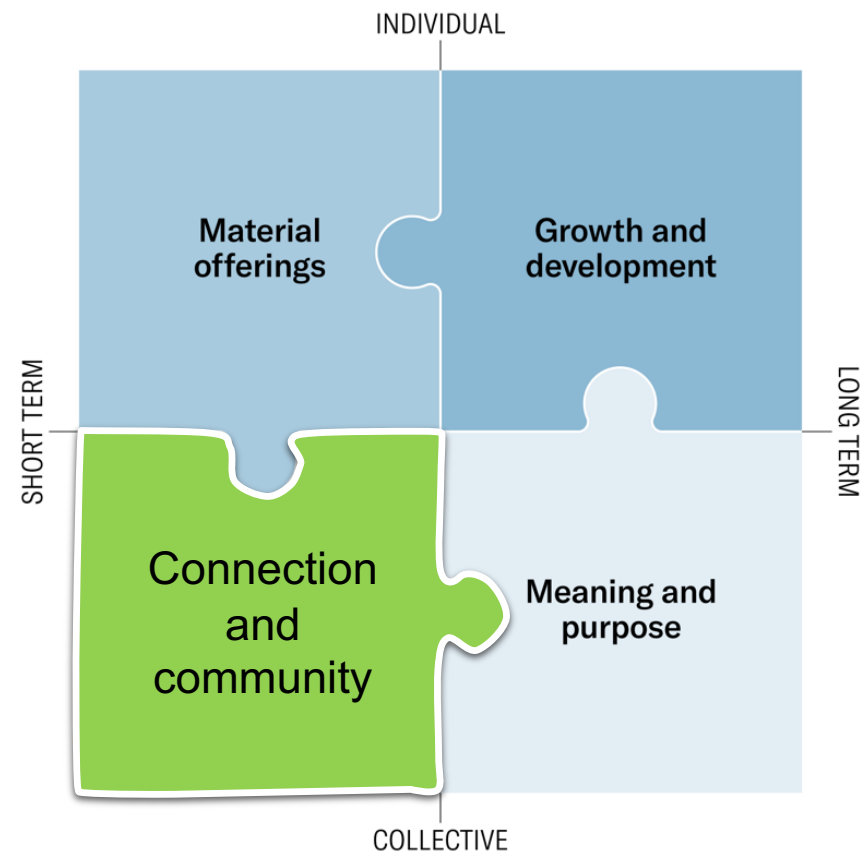
Support for commute (paid parking, subsidies commute)

Socialization with friends and colleagues

Sence of belonging, community feeling

Social events

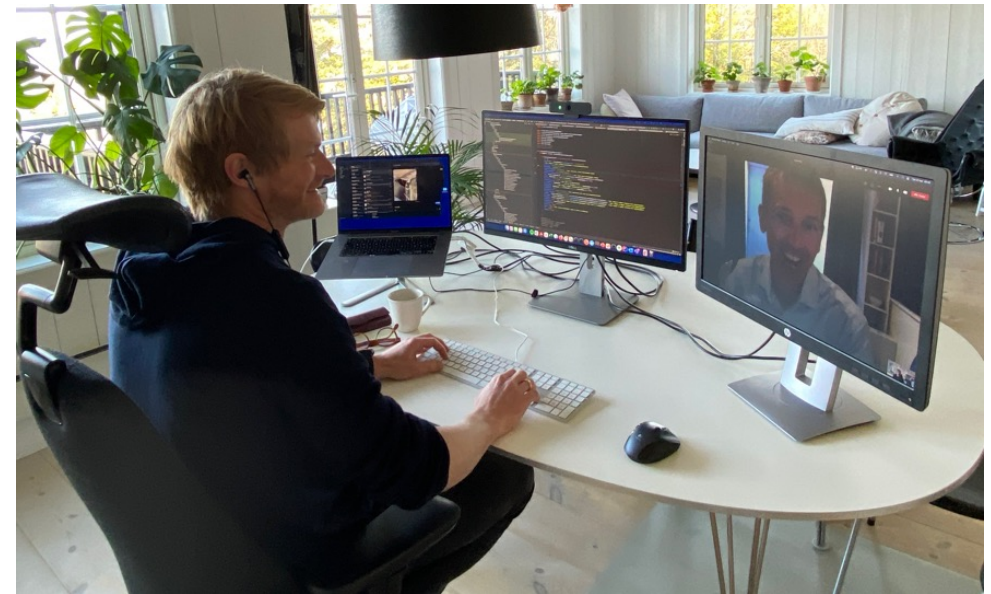
Spontaneous discussions



Spotify, Ericsson, Telenor, Knowit, Storebrand, Sparebank 1 utv

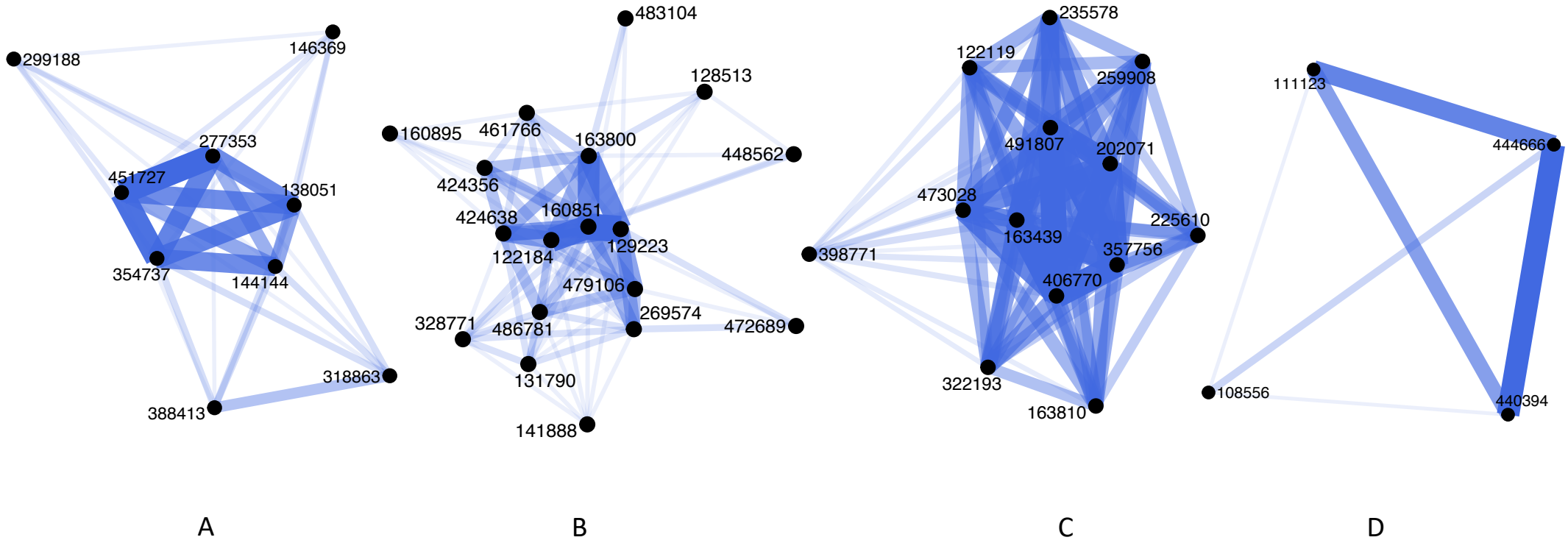


Remote parprogrammering

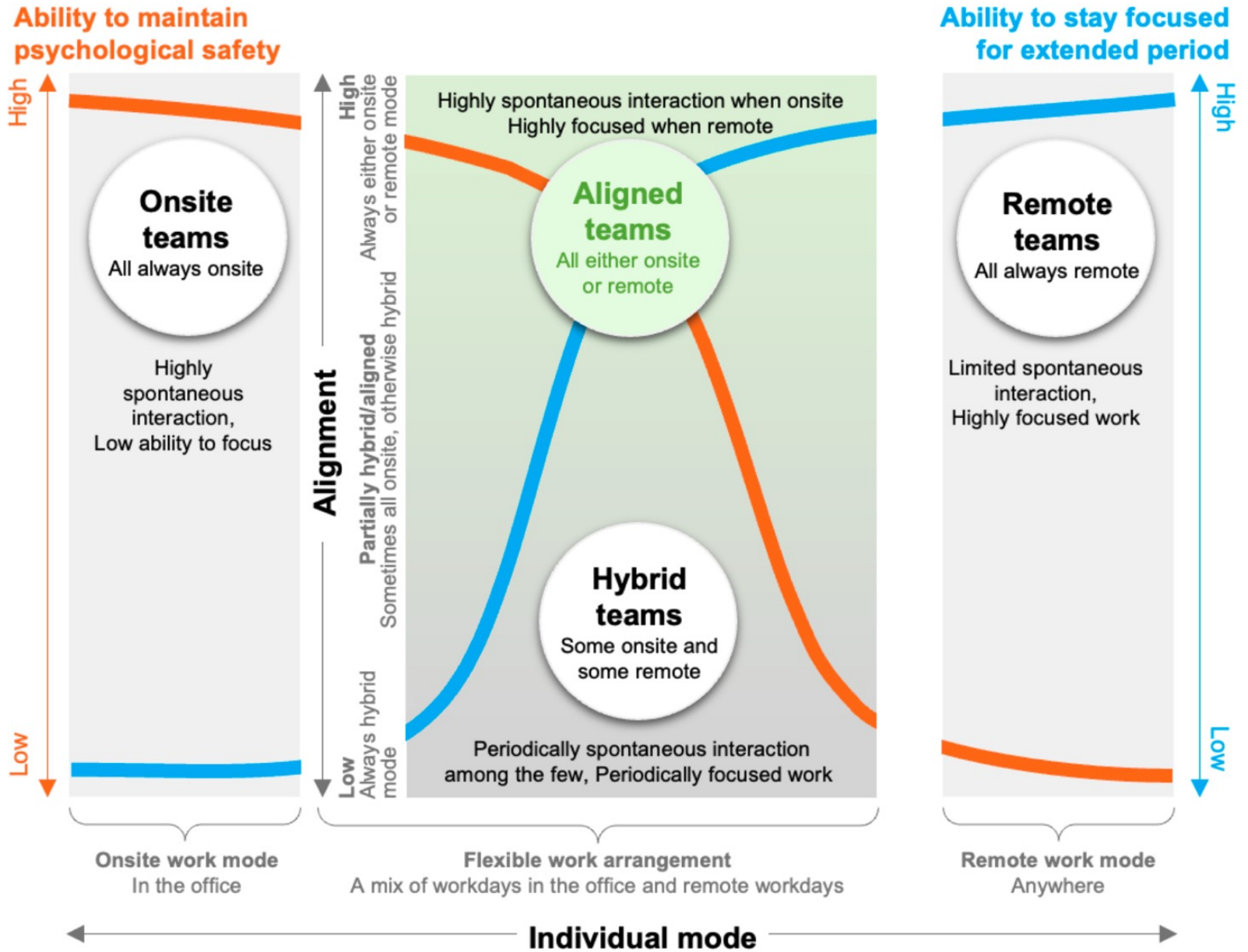




Attendance rate



Mean attendance rate does not portray co-presence or ensure collaboration





Psychological safety

Safe to be
honest

Safe to
make
mistakes

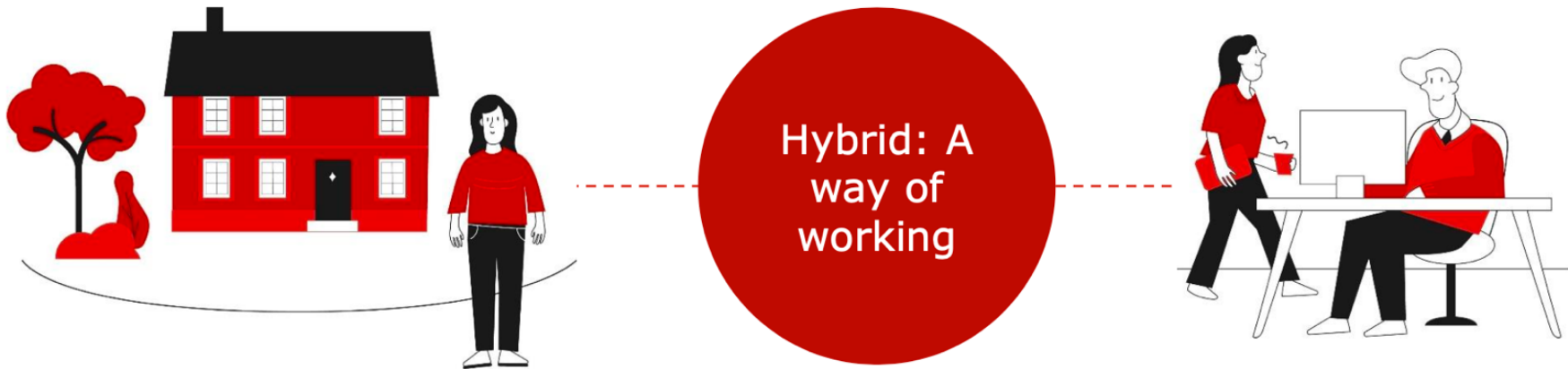
Safe to ask
for help

Valuing
each other

Tkalich, A., Smite, D., Andersen, N. H., & Moe, N. B. (2022). What happens to psychological safety when going remote?



Storebrand: Dilemmas not rules





Storebrand Tuesday

- Learn the joy of meeting people again
- Bringing buzz into the business (and the office)



Happy Friday

- Not to get more people into the Friday office, but to make the Friday office a nice place to be



The Monday

- Panta rhei...
- Monday is also a day!