Attractive Workplaces

What Are Engineers Looking for?

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// Competing for talents requires a conscious effort to offer an attractive workplace, which, until recently, involved increasing employee empowerment and engagement and offering opportunities for bottom-up innovation. Today, this is not sufficient, pushing tech companies to harmonize existing strategies with remote work. //

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THE TECH INDUSTRY has undergone several major transformations. From a career perspective, one key trend is the de-bureaucratization or democratization of tech companies. Originating not as a recruitment strategy but rather an attempt at dealing with competition, market complexity, and technological change rate, decision-making authority is decentralized.[1] With more authority and responsibility, employees shift from a "follow the plan" attitude to becoming active contributors in building a thriving and sustainable organization. Such shifts align with the demands of a new generation of employees that go beyond traditional material offerings (compensation, office space, and other perks). Instead, the driving forces for engagement include opportunities to develop and grow, increasing sense of belonging, and engaging in meaningful and purposeful work.[2] Employee participation and involvement have become the foundation of organizational development as well as critical factors for success.[3] So how did the abovementioned transformations impact software engineering jobs? First, contemporary software engineering has become increasingly social and focused on close cooperation and collaboration between all team members[4] and across teams in the organization.[5] Second, collaboration and autonomy have boosted innovation, making the jobs more challenging and meaningful and developers happier.[6] These trends dominated before the pandemic, and now the rules of the game have changed again. Even the most popular tech companies are challenged. The trends of increasing resignation rates in 2021[7] and developers preferring to work from home (WFH)[8] are the first signs of massive market changes. Figure 1 illustrates

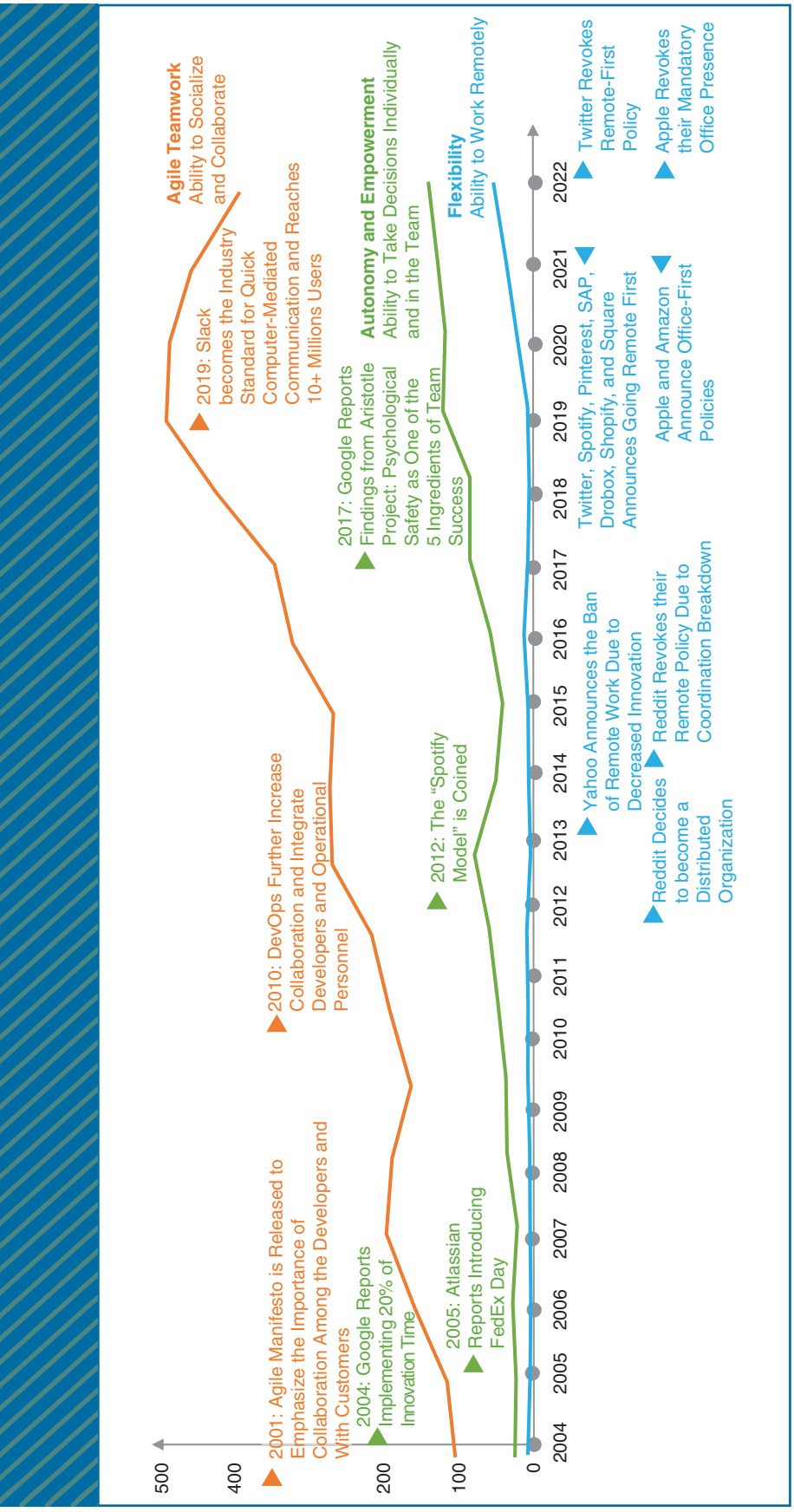

FIGURE 1. Trends focusing on agile teamwork, autonomy and empowerment and flexibility (based on the number of articles published in Scopus), and corresponding corporate policies.

three important trends in the literature: agile teamwork (focusing on social ties and collaboration), autonomy and empowerment (organizational democratization), and most recently, flexibility (the ability to work remotely).

Motivated to understand how companies can navigate these transformations and trends to retain talent, we studied the journey of SpareBank 1 Utvikling (SB1U) from having a high resignation rate to becoming one of the most innovative tech companies in Norway. We analyze their current situation as they discover the changing needs of their employees regarding remote work and readjust their strategy. The study began in 2018 when their employee turnover was high, and ended in 2022 when the company implemented policies for hybrid work to accommodate the need for developers' flexibility (Figure 2).

The Case and the Study

SB1U is a Norwegian software company owned by an alliance of banks. SB1U has used agile software development since 2012 and has worked for years on scaling the software development capacity. Therefore, hiring and retaining in-house developers was strategic. The bank has 25 software teams, each of which typically comprises five to six developers, a tester, a user experience designer, a product owner, and a team leader. The team size varies from five to 20 members. At the beginning of the study, SB1U had around 550 employees (including consultants), and at the end of the study they had 700 employees. The teams work on digital product development—including security, operation, and administration—for the web and mobile banking domains.

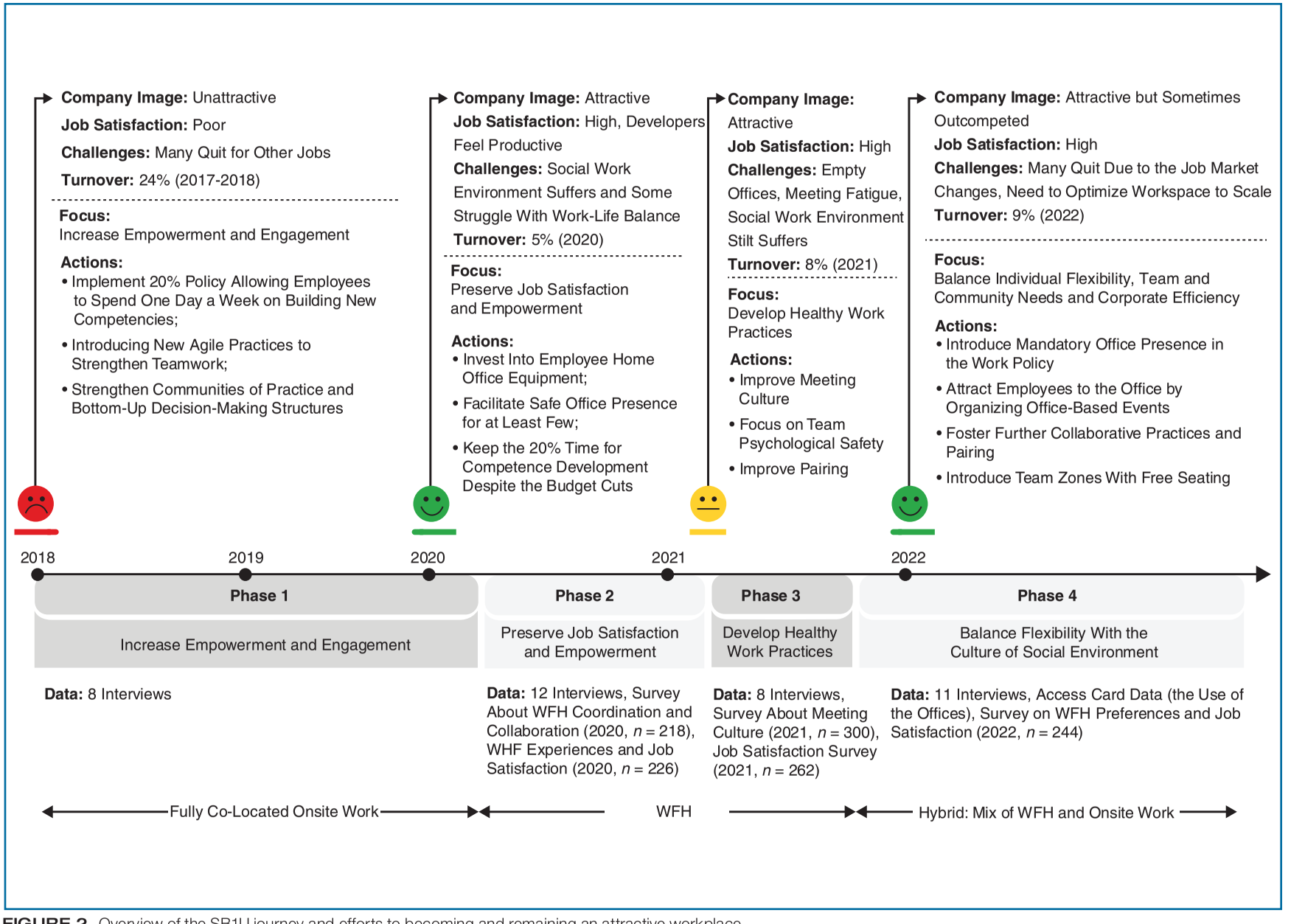

FIGURE 2. Overview of the SB1U journey and efforts to becoming and remaining an attractive workplace.

We studied SB1U because the company has been dedicated to attracting and retaining talents for many years and has transformed itself into one of the most innovative tech companies in Norway, with a top-rated mobile banking app in Apple's App Store.

Our study was longitudinal (2018–2022) and based on qualitative and quantitative data (surveys, interviews, access card records, and documents) obtained from four phases (Figure 2):

- phase 1 occurred during the prepandemic period, when most employees were co-located (except for four distributed teams)
- phases 2 and 3 occurred in the pandemic period, when employees were forced to shift to working remotely
- phase 4 occurred in the intermediate pandemic period, when the offices reopened.

Most of the interviewees and survey respondents were developers and testers, but we also interviewed human resources managers, developer managers, and team leads and received feedback on the preliminary findings from the leadership group. Furthermore, we collected documents from the case company. The interviews were coded in NVivo, using thematic analysis with predefined codes.

Our analysis is descriptive and focuses on the challenges related to attracting and retaining talents in the four phases, the actions taken to address these challenges, and the results produced by these actions.

We believe that the findings of this case study will be useful for reflection within both tech and nontech companies, and that the strategies implemented by SB1U address challenges related to job satisfaction, employee recruitment and retention, and will inspire those who face similar issues.

SB1U's Journey Toward Offering Attractive Jobs

Phase 1: Increase Empowerment and Engagement

In 2018, SB1U was blighted by poor job satisfaction and high employee turnover, and in the following two years, the employees worked hard to change its reputation.

Practices That Foster Autonomy and Commitment as the Starting Point. Autonomous teams and teamwork were at the heart of the ways of working. Teams had considerable freedom to decide how they worked, and most used a Kanban variant with elements of Scrum and coordination practices, such as backlog meetings, team meetings, and daily stand-ups. They adopted objectives and key results to guide their work as well as "Monday commitments" and "Friday wins" to strengthen teamwork. They also regularly performed team health checks with follow-ups in one-on-one conversations between team leads and individual team members. They used retrospectives to improve work practices and structured problem solving for continuous improvement.

Contemporary Architecture That Enables Empowerment as the Next Step. For some years, SB1U worked on moving away from its legacy monolithic technical architecture, which is typical for banks, toward microservice architecture. A tech lead noted:

> *We broke up one application into several applications. Then you are allowed to have teams around those applications. And then you force an organizational change.*

The modular architecture, tools, and automation were imperative for teams to have end-to-end responsibility and decision-making authority for their products, avoid handovers between teams, and be able to continuously develop software using DevOps.[9]

Innovation and Self-Development Time to Fight Turnover. At the beginning of 2018, the company had problems retaining and hiring new, qualified developers because of their high demand and because other companies offered better employment conditions (good salary and regular social and skill-building activities).

To address these problems, the management asked employees for suggestions. One key suggestion was scheduling time for building new competencies, similar to those offered by tech giants (20% time at Google and FedEx day at Atlassian). After initial skepticism and cost–benefit calculations, SB1U decided to test a "20% policy" (a competence day) for six months. To the company's surprise, the employee turnover soon decreased. Since then, developers can spend every Thursday learning, testing new technologies, creating new solutions, or improving common code. This day also became a day for socializing and getting to know new people. One explained:

> *It gives extra motivation. You get a bit of freedom to learn what you think is most important. Now I'm learning a testing tool that we will use here…. And the cool thing is that we gather in a room and learn together.*

The ability to spend a day on their own projects also made developers feel valued by the company, as one commented:

> *It is unique that we can use one day a week as we want. I feel my company*

appreciates my skills and supports my professional development.

Not the least, it also improved developers' well being and reduced stress, as one explained:

I think more companies should implement this practice. It gives a feeling of freedom; one day a week, you can get your head above water.

Unsurprisingly, the new 20% policy became important in attracting new developers, as none of the competitors offered similar opportunities.

Networking and Collaborative Culture. In complement to individual learning, the 20% policy increased the activity in guilds, known as *communities of practice*. Earlier, community members had problems scheduling meetings; now they could meet on Thursdays. Communities of practice or guilds include groups of people with similar skills and interests who share knowledge, make joint decisions, solve problems together, and improve a practice. A tech lead explained:

We have a security guild that often meets on Thursdays to discuss security-related topics, and we encourage others to stop by these days to learn with us.

Phase 2: Preserve Job Satisfaction and Empowerment

On Friday, 13 March 2020, all schools and kindergartens in Norway closed because of the COVID-19 virus outbreak. Social distancing was introduced as a national policy. The SB1U teams suddenly transitioned to a completely distributed, digitally mediated setup where all employees worked from home. This change had consequences for the individual job experiences and community feeling, as work became more individual. At the same time, the meaningfulness of the work at the bank remained, as the employees were reaping the benefits of their investments in empowerment and engagement. Employees reported being highly motivated during the first phase of the lockdown.

The Work Became Less Social as Collaboration Dropped. In phase 1, co-location was an important enabler for the agile organization to function and for teams to have shared values and a high level of trust. When all employees suddenly began remote work, communication and opportunities to socialize changed. According to the survey in phase 2, 34% experienced that collaboration with other units had worsened, and 78% felt that the work became less social. One example was the competence day (the 20% policy), which was now organized over Microsoft Teams. A tech lead explained:

[The competence] day was somewhat dead in the water in the beginning because it became difficult to get together. Some people continued working on their stuff, but it became very individual […]. There was little community around it. But we began restarting it now, even if it is on a video call.

Decreased Spontaneity and the Rise of Plan-Driven Interaction. An important observation was that developers previously had more informal knowledge exchanges (coffee machine conversations, over-the-shoulder inquiries, and hallway chatting). Any informal deliberations now had to be formally scheduled, which flooded the calendars. Teams organized social gatherings, such as coffee breaks, on Microsoft Teams and arranged social quizzes using specific tools to preserve the community feeling. We observed a separation between formal knowledge deliberations (such as stand-ups) and more social events (such as digital coffee breaks).

Technical Equipment. Despite the sudden transition to WFH, the necessary collaboration continued, as evident in SB1U keeping the same pace of deliveries. This was attributable to the teams that had the authority to find the best way to operate, the digital production tool chain using GitHub and Maven, and the tools for collaboration, such as Confluence, Trello, Microsoft Teams, and Slack. The first survey in 2020 revealed that the more employees relied on collaboration tools such as Slack, the more they carried out informal and nonwork-related conversations. The downside of computer-mediated communication was that many individuals chose to communicate over private channels or via direct messaging, which meant that they lost some of the informal knowledge sharing that happened when overhearing the chatter in the common areas of offices. Besides, some challenges remained, such as resolving complex issues together, which traditionally involved lengthy discussions and drawing designs and ideas on whiteboards. A developer commented:

I miss the whiteboard so much; standing and looking at people when you talk and seeing that they don't understand anything, that I have lost them, and then explaining again. That is so much easier when collocated.

Ensuring Well-Being and Ergonomics. SB1U cared for employee well-being

despite significant budget cuts in the first months of the pandemic because of uncertainty about the future economic situation. The cuts concentrated on reducing the number of consultants, whereas important practices, such as the 20% policy, were kept. In addition, SB1U launched a reimbursement program for home office equipment (€500) so that everyone could get external monitors and chairs to ensure an ergonomic setup.

Phase 3: Develop Healthy Work Practices

After dealing with the immediate challenges of setting up full-time remote work, the bank moved to developing healthy work practices. Fewer interruptions were the main WFH benefit, but developers' workday experiences and team disturbances still called for improvements.

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Managers maintained close contact with employees through regular one-on-ones, which was regarded as an important practice that helped teams sustain. One core conclusion from these sessions was that some employees did not have suitable conditions for WFH and some felt isolated. Therefore, some employees were encouraged to come to work even though the office was closed. Furthermore, they were allowed to hold physical meetings, if the task required so, in line with the social distancing safety regulations. A developer stated:

> *We have some settings where we say, "Now we need a face-to-face workshop again." So I think I have, since the COVID outbreak, been at the office four times [...]. But it is limited in a sense because we cannot fit that many in a meeting room [...]. Nevertheless, it is more effective, quite simply.*

Challenges With Online Meetings and Digital Interruptions. Many developers felt that too much time was spent in meetings. An increased number of meetings subsequently increased the number of interruptions and reduced the focused work time, which caused stress. Furthermore, high meeting load reduced employees' and teams' availability. One team member explained:

> *A problem for me is that many others are in a lot of meetings, so it is difficult to fit into their calendars. A number of key people sit in meetings all day, and when I need a meeting with them, I have to go two weeks ahead in their calendars to find a vacant slot. And then my work also gets very delayed.*

Because agile processes depend on continuous deliveries and open communication, not being able to have short, spontaneous conversations was perceived as negative. To facilitate more unscheduled meetings and effective decision making, the number of scheduled meetings had to decrease.

Healthy Meeting Culture. Researchers, together with an internal group of employees, created a survey in 2021 to better understand the meeting load and its effects. All survey respondents, independent of their meeting load, wanted more consecutive meeting-free hours. Therefore, several teams tested out reserving meeting-free time in their calendars and grouping team meetings. The latter was evidently a tradeoff between interruptions and potentially increased meeting fatigue.

Having back-to-back meetings was challenging. One employee said, "I do not have time to take breaks between meetings." One tried-out strategy was to adjust the standard calendar time from autofilled one-hour slots to 50-min slots starting at the hour. However, a shorter meeting duration did not change people's behavior, and most meetings continued over the full hour. Another attempt to set the standard meeting start time to 10 min into the hour yielded a significant improvement.

Maintaining a Healthy Level of Digital Interruptions. To further reduce the number of interruptions, some employees shielded themselves by disabling Slack notifications for specific channels or over a particular time period. In addition, the teams were encouraged to

be more reserved when answering direct messages and to use open channels. One informant said that muting notifications was something they had wanted but seldom did because they would feel guilty. Furthermore, some feared missing out on important information. One stated:

> *We use Slack so much during the day, I'm afraid of shielding myself too much.*

Increased Pairing. A final action to improve the quality of work was to encourage more pair programming. Pairing resulted in fewer interruptions, a healthier communication pattern because of constant feedback, and reduced use of pull requests. Pair programming became an important strategy for remote collaboration, as a team leader described:

> *When someone is stuck or needs someone to talk to, they call each other on Slack […]. We have done pair programming to a larger degree now than before, I would say. You do not feel that you disturb anyone. Usually [when co-located], you would have walked over [to another team member], perhaps you would feel that you disturbed [that person], and you would have had to find a quiet room.*

Another developer continued:

> *We did pair programming both with regard to quality but not the least with regard to people's need for seeing each other and "feeling" that we work together while working from home. […] it adds something positive in terms of more contact with the other team members.*

Phase 4: Balance Individual Flexibility and Team Needs

The reopening of the offices did not automatically rejuvenate the old collaborative habits at SB1U. Our analysis of access card data revealed that the highest office presence (50%–60% of the employees) was on Wednesdays (typical days for social events), and the lowest presence was on Mondays (35%–45%) and Fridays (15%–30%). A survey revealed that 83% of the employees preferred to WFH one or more days per week, and factors that motivated office presence included the ability to socially interact, being with colleagues, and tasks that required interactions. Developers stayed at home on Fridays, a day they did not expect to meet their colleagues. Reasons to WFH included long commute time, better work–life balance, a day full of online meetings, and the ability to work uninterrupted.

Changes in the Work Policies. The first WFH policy in SB1U stated that developers could spend two days at home and three days at the office. This could be adjusted in agreement with the team, the customers, and the manager. However, some teams struggled to agree on their work mode, and teams that did not align office presence experienced a drop in psychological safety. A new national regulation from July 2022 required a written agreement between the employees and the employer that described how many days a person can WFH. After a long internal discussion, they decided on a minimum of 50% office presence. Some developers reported being unhappy with restricted flexibility, but it became apparent that having few people in the office reduced the value of the shared physical work environment and that key people would quit if the social environment became too weak.

Further Changes in the Social Environment. From the end of 2021 and during 2022, SB1U onboarded 100 people, which made the office livelier. Previously, the bank would need to increase office capacity to accommodate growth; but because the full office capacity was not used (60% presence on peak days), this was no longer a problem. Unfortunately, this meant that most could not have their own desk anymore. Surveys showed that 78% preferred fixed zones allocated for teams. The idea was that having no personal desks and fewer seats would work because someone is always away, and seats can be borrowed nearby.

Both employees and the organization benefited from flexibility. Because each team had their own home zone, the bank now found a way to balance the individual, team, and organizational needs in the new flexible work life.

Emerging Tradeoffs

SB1U's journey to becoming an attractive workplace started by establishing continuous dialogue and conducting surveys to better understand their employees' needs. Mapping the efforts of SB1U with the core value propositions proposed in Mortensen et al.,[2] one can see that the largest investment went into establishing and strengthening the connections, community, and social environment along with increasing the opportunities for growth and development. This is evidenced in the increased teamwork orientation, enabling autonomous teamwork

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through architectural changes, supporting communities, and offering time to work on activities of free choice, which often happened in collaboration. Our findings show how these efforts increased job satisfaction and employee retention before the pandemic. Next, the forced work in isolation surfaced the employees' needs of individual flexibility (associated with material offerings[2]).

The actions taken to address the challenges faced by SB1U could be described as *supportive leadership*. Despite the temptation to "handle the crisis" using increased control, management continued to exhibit trust and support for both individual and team well being. Moreover, despite the difficult economic situation, the company remained committed to the chosen course by retaining the 20% policy and offered material support for home office equipment. However, the social environment suffered because of remote work.

SB1U is not the only company that experienced how connections and community suffer when working remotely. A Microsoft study of over 60,000 employees shows that firm-wide remote work made the collaboration network more static and siloed, with fewer ties that cut across formal business units because of asynchronous communication.[11] Santos and Ralph studied coordination in hybrid software teams and found that the feeling of attachment and cohesion in these teams was decreasing.[12] Finally, several studies found that the interest in collaborative work decreases when remotely doing it.[13,14]

With the reopening of offices, the social connections and community life were expected to improve. However, the better-than-expected personal experiences and new working habits led many to continue to WFH.

So what can we learn from this? Employee willingness to continue to WFH[8,15] may

indicate that one of the core value propositions emphasized in the past (connection and community)[2] has diminishing value in the employees' eyes. Alternatively, one factor may be the habit of WFH. We can conclude that SB1U, together with similar companies, has experienced a recent increase in turnover. The reasons for this can be manifold, including decreased collaboration, community feeling, and sense of belonging[11,12] because of the inability of the recent hires to develop meaningful relationships, delayed decisions on changing jobs during the pandemic, and aggressive actions of job hunters. SB1U and many other companies have to decide the worth of attempting to satisfy everybody by allowing full flexibility. Ironically, full flexibility results in many being dissatisfied, as those who prefer to work in a social environment with many others want everybody to be back, whereas those who prefer to WFH would rather collaborate with everybody remotely instead of being second-class citizens in a hybrid setup. SB1U chose to continue their journey focusing on strengthening teams, social connections, and community. This, however, meant introducing mandatory office presence, like some other of SB1U's competitors who force people back three to four days a week. A similar strategy was adopted by Amazon and Apple. The definitive destiny of flexibility to WFH as a value proposition at an attractive workplace is yet to be determined and requires additional research.

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