When the value increases engagement, engagement increases the value.

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Spotify Guilds

A COMMUNITY OF practice (CoP) is usually a group of people with similar skills and interests who share knowledge, make joint decisions, solve problems together, and improve a practice.[12] Communities of practice are cultivated for their potential to influence the knowledge culture[5–7] and bring value for individuals, teams, projects, and organization as the whole. Knowledge exchange in CoPs is enabled through various forms of scheduled and unscheduled social interaction, such as hallway and water-cooler conversations, meetings and conferences, brown bag lunches, newsletters, teleconferences, shared Web spaces, email lists, discussion forums, and synchronous chats.[6] Activity repertoires in different CoPs may differ significantly.[11]

Despite the assumed benefits, implementing successfully functioning CoPs is a challenge,[12] and even more so in large-scale distributed contexts. Research into CoPs in various disciplines has determined that successful CoPs highly depend on the organizational support on one hand (budget, incentives, awards, resources, and infrastructure[6]) and member engagement and regular interaction on the other.[5,9,12] Furthermore, researchers found a loop between member engagement and value creation—increased engagement helps a community to generate more value, and increased value stimulates more member engagement.[5] While much is known about organic small-scale communities (bottom-up initiatives), achieving member engagement and regular interaction, efficiently sharing knowledge, making joint decisions, and improving a practice collectively across multiple temporary separated locations may introduce significant challenges.

In this article, we report our findings from studying member engagement in large-scale distributed communities of practice at Spotify called guilds. Spotify is an innovative software company providing music streaming services, launched in 2008. It was established as a new generation agile organization with highly autonomous development teams (called squads), and a number of bottom-up coordination mechanisms, including communities of practice (guilds). Guilds at Spotify are designed beyond the formal structures and unite members with shared interests, whether leisure-related (cycling, photogra-

> » **key insights**

■ Company growth threatened the guilds culture at Spotify as the number of engineers grew from a few hundred in one location to several thousand across six geographical locations. Scaling causes detachment, difficulty building a sense of a joint community, and coordination challenges.

■ Guilds are found to provide more perspectives on problems, coordination and standardization across units, formation of knowledge alliances, forum for accessing and expanding expertise, and a sense of belonging.

■ To succeed with scaling guilds, we recommend offering diverse value-adding activities and knowledge-sharing channels both regionally and across company locations.
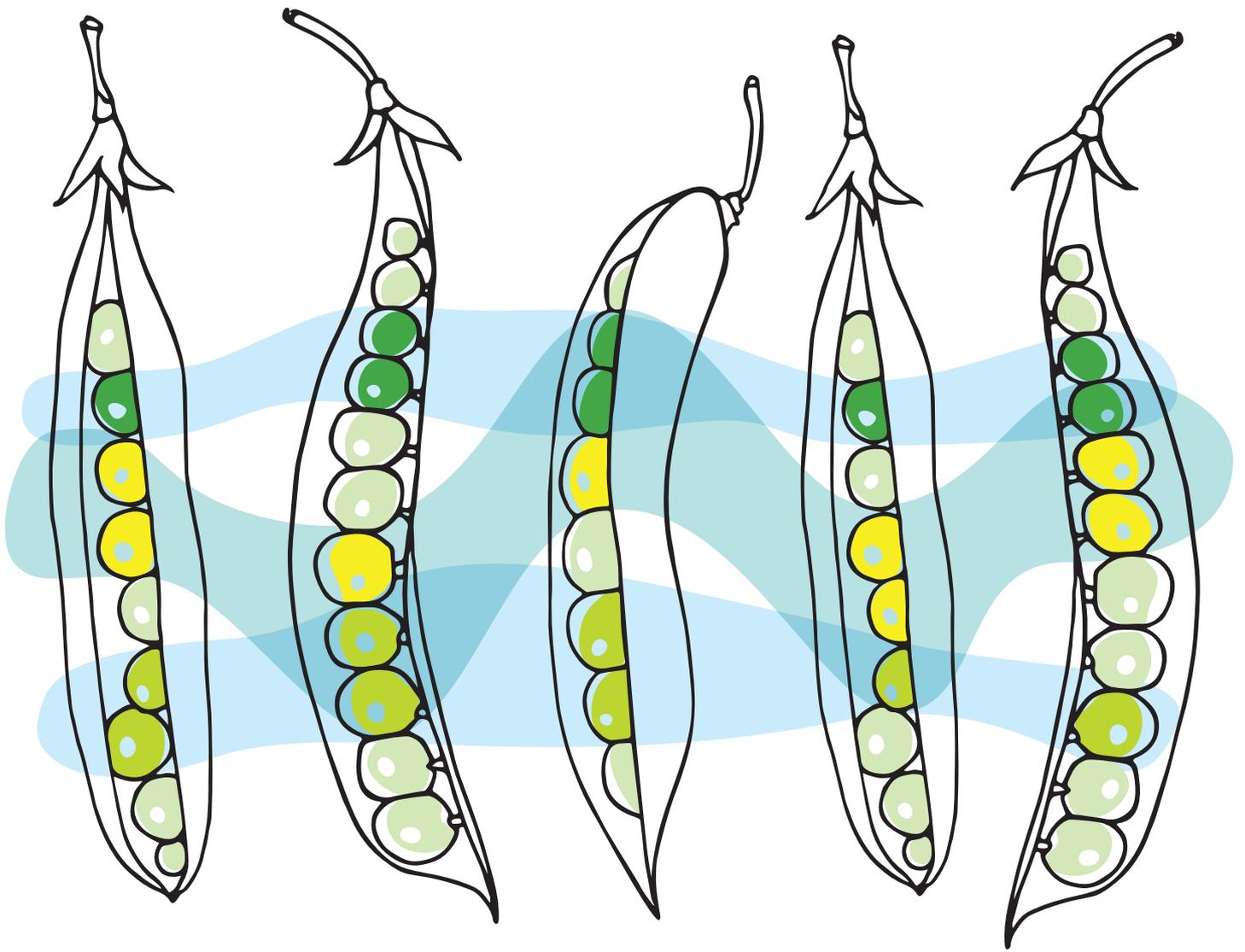
phy, or coffee drinking) or engineering-related (Web development, backend development, C++ engineering, or agile coaching). In the past 10 years, the company has grown to the size of six research and development offices in three countries and continues to flourish. Practicing C++ engineering, Web development, or any other engineering discipline probably will vary from one location to another, and between engineers with different experience levels. Further, technological and engineering advances might have a limited impact due to increased autonomy and separation of different organizational units. While guilds have successfully addressed the need for sharing knowledge and develop a joint practice when the company was small, there is a need to understand how to scale guilds, the core structures that concern cultivation of a shared practice and joint decisions across autonomous teams, in a way that promotes mutual engagement and collaboration among engineers

from different organizational units. (For more information about how the study was conducted, see the sidebar "Overview of the Study.")

Guild Members and Engagement in Guild Activities

Guilds at Spotify are very diverse. There are non-sponsored guilds, such as members that enjoy like-minded activities, and sponsored guilds, such as the four guilds selected for our study—agile coaching, C++ engineering, backend development, and Web development. Sponsored guilds have an explicit sponsor and a budget per member, while the non-sponsored guilds do not receive direct funding. All guilds have open, voluntary membership. The members are commonly the ones representing the practice, for example, 80% of the Agile guild's members are agile coaches. Additionally, each guild has 10%–20% of peripheral members that do not represent the key practitioners but are curious about the

practice. Spotify employees are free to join any guild, to follow any or none of the guild activities, and resign at any time, or remain inactive for as long as they wish. Of all Spotify employees, 60% are said to be in some capacity associated with at least one guild.

The four guilds we studied differ in size, offering a repertoire of activities and popularity (see Figure 1). Among the four guilds, only one guild involved members from only one country (C++ engineering guild) but was distributed across several locations within Sweden. Other guilds have members distributed across all Swedish and U.S. locations, and some also involved members from the U.K.

Most of the guilds have regular guild meetings and seminars, yearly unconferences, email groups, and Slack channels for knowledge sharing. Guild meetings serve as the venues for decision-making and exchange of ideas. Seminars are organized for knowledge sharing and learning from internal and

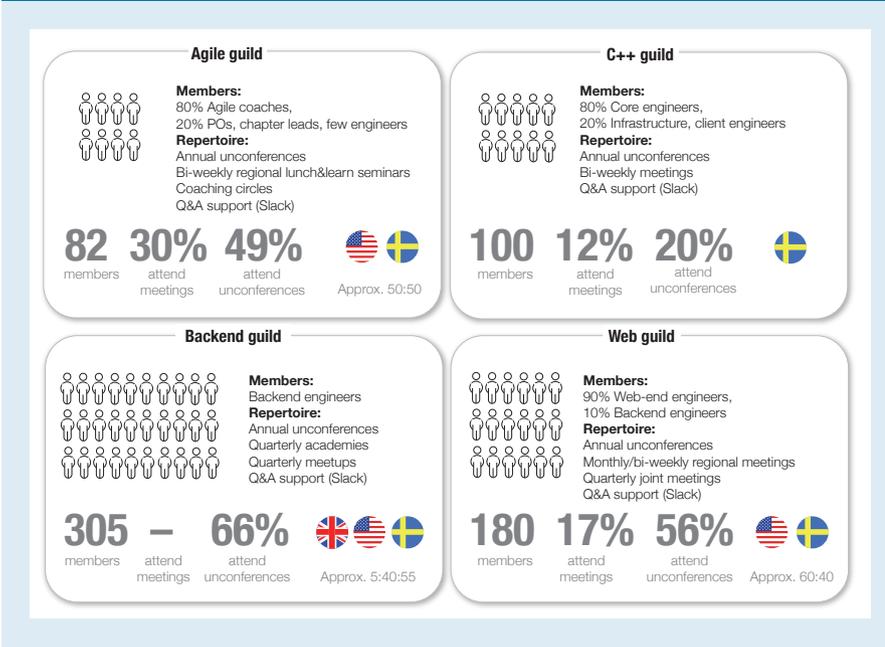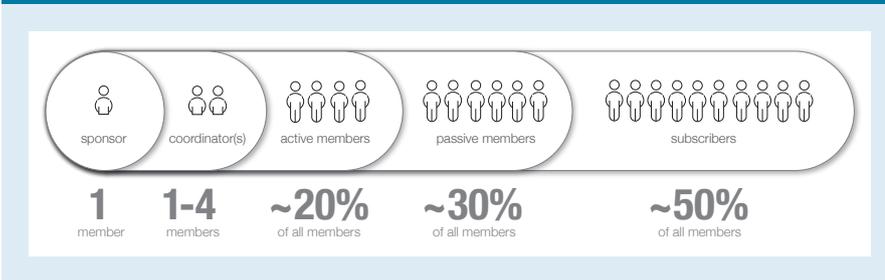## Figure 1. Overview of the guilds, members, repertoire, and engagement.

Agile guild

Members:
80% Agile coaches,
20% POs, chapter leads, few engineers
Repertoire:
Annual unconferences
Bi-weekly regional lunch&learn seminars
Coaching circles
Q&A support (Slack)

82 members **30%** attend meetings **49%** attend unconferences 🇺🇸 🇸🇪 Approx. 50:50

C++ guild

Members:
80% Core engineers,
20% Infrastructure, client engineers
Repertoire:
Annual unconferences
Bi-weekly meetings
Q&A support (Slack)

100 members **12%** attend meetings **20%** attend unconferences 🇸🇪

Backend guild

Members:
Backend engineers
Repertoire:
Annual unconferences
Quarterly academies
Quarterly meetups
Q&A support (Slack)

305 members **–** attend meetings **66%** attend unconferences 🇬🇧 🇺🇸 🇸🇪 Approx. 5:40:55

Web guild

Members:
90% Web-end engineers,
10% Backend engineers
Repertoire:
Annual unconferences
Monthly/bi-weekly regional meetings
Quarterly joint meetings
Q&A support (Slack)

180 members **17%** attend meetings **56%** attend unconferences 🇺🇸 🇸🇪 Approx. 60:40

Figure 2. Different types of members.

sponsor / coordinator(s) / active members / passive members / subscribers

1 member **1-4** members **~20%** of all members **~30%** of all members **~50%** of all members

external experts. To address distribution and inability to meet in person, many of the meetings and seminars are held regionally. This way, the Agile and the Web guilds turned into regionally divided independent sub-guilds, each with local coordinators and activities. Cross-site coordination and knowledge sharing happens primarily in the yearly unconferences, the largest and the most attended events, and in quarterly cross-site meetings, as in the case of the Web sub-guilds.

Participation in different Slack channels and guild activities varies. We detected five different types of members and identified the approximate ratio between the different types based on the numbers of members engaged in different activities and subscribed to different Slack channels, the interviewees' perception, and the characteristics of the survey respondents (see Figure 2). Similarly to Wenger et al.,[12] we identified a group of core members (sponsors and co-ordinators), active members, and peripheral members (passive members and subscribers). The latter group forms the majority of the community members, as in related studies.[12] Notably, the level of activity of individual members changes over time due to various reasons, such as, the coordinator role rotates, some active members become passive and vice versa, and those who change specialization turn into inactive users who merely subscribe to the latest news.

Perceived Benefits of Guilds

Communities are recognized for the diverse value they bring on different levels. To test the ability of the Spotify guilds to generate value for individual members and the organization as a whole, we asked guild members to select the benefits they believe their guilds create out of the list based on the work by Wenger et al.[12]

Similarly to related research,[5,12] our survey of guild members shows that guilds generate value on both organizational and individual levels (see Figure 3), and that even peripheral members benefit from the guild membership (see Figure 4). The most recognized benefits for Spotify include the ability for guilds to bring more perspectives on problems, facilitate coordination and standardization across units, and form knowledge alliances. For individuals, guilds provide access to expertise and a forum for expanding skills and expertise, a strong sense of belonging, and fun of being with colleagues. Interestingly, while many of the recognized benefits are associated with the potential decrease in unproductive work and time savings, Spotify respondents did not explicitly associate these benefits with operational efficiency that scored high in related studies.[5] This means that true benefits of the guilds are not yet well recognized or understood in the organization.

Interestingly, when analyzing responses from all guilds together, engaged members (sponsors, coordinators, and active members) have reported more benefits on average than the inactive members (passive members and subscribers, as illustrated in Figure 4). The differences in value perception among these groups were found statistically significant in both backend and Web guilds. Our findings therefore support existing research that suggests the association between value and participation.[5]

While guilds are clearly beneficial for their members, one may wonder what the role of such parallel structures is for the teams. Based on the survey results, it is fair to infer that Spotify guilds can be a great support for squads too. Guilds support the onboarding of new engineers minimizing the mentoring effort from colleagues. Guilds help to tackle problems that squads might not be able to solve alone. It also provides a network of experts to whom to turn to when help is needed. Moreover, guilds provide opportunities to network and grow professionally for members of highly cross-functional squads, who do not have local peers with the same competences.

Finally, while our study is not a full replication of a related multi-organizational survey of value creation in four

work-based communities,[5] we can still infer that Spotify guilds seem to generate more benefits than reported by the respondents in the related study (the highest score on an individual benefit was 65%, with an average of 54%, and the highest score on an organizational benefit was 57%, with an average of 44%).

Barriers to Mutual Engagement When Scaling

We found the top challenge mentioned by the surveyed members was achieving engagement and attendance in guild activities. The number of active members attending regular guild meetings account for only 20% on average, which is relatively low in percentage but not necessary when it comes to the number of people attending a meeting. Coordinators and sponsors were all in agreement that increasing engagement was important to be able to make better decisions and accomplish the guild work tasks. Some even felt stressed because they assumed the responsibility for ensuring attendance.

Lack of dedicated time. The challenge with member engagement is not new. Similarly to many other companies,[6,7] members of Spotify guilds reported having a lack of dedicated time for attending meetings and participating in the guild work.

Organizational support and priorities. Some respondents associated the lack of dedicated time with the lack of organizational support. Others were worried that guild work is not particularly prioritized and their individual contribution to guilds is not recognized by management. As one member explained, "Guild volunteers feel that time spent is not valued by the rest of the organization and we lose them to the tribe work that is valued."

On top of these known challenges, we found that scaling guilds introduced new barriers for mutual engagement. In what follows, we describe the main challenges of operating guilds in large-scale environment that are associated with the large size and separation between guild members.

Detachment. Respondents associated the large number of members and separation with detachment, difficulty to build a full sense of a joint com-

munity, and coordination challenges. When the community feeling is missing across sites, there is little incentive to strive for joint activities.

Fragmentation. Geographic distribution further impacts the way guilds operate. The lack of closeness and temporal distance across the U.S. and European sites challenges the ability to organize joint activities and, in some cases, has resulted in alternative guild structures—regional sub-guilds that act rather autonomously.

Difficulty to find common interests. Finally, we found that the higher the number and the diversity of guild members, the more challenging it is to find topics of mutual interest. When talking to the sponsor of the Web guild, we learned that one and the same practice can be understood differently by members from different organization-

al units or locations due to local traditions. Naturally, it has been difficult to choose discussion topics that are of relevance to everyone.

Mechanisms Fostering Engagement and Scaling

Although CoP researchers state that the majority of community members occupy peripheral roles, low member engagement in Spotify has practical negative implications. For example, the C++ engineering guild reported that not all impacted squads are represented in meetings, which makes it difficult to make good decisions about future development. Members of the Web guild complained that they fail to agree on what Web development is as a practice across the two main locations. When member who were absent in previous discussions

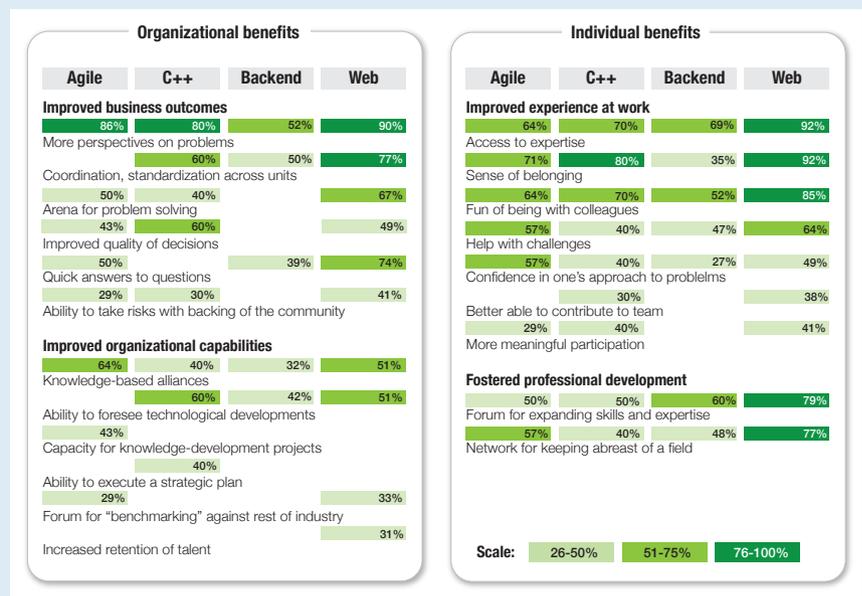**Figure 3. Heatmap of perceived individual and organizational value of the guilds.**

Figure 4. The amount of benefits reported by engaged and inactive respondents (absolute numbers and percentages).

Overview of the Study

We have performed an exploratory study of four out of eight Spotify guilds that receive organizational support (that is, sponsored guilds): Agile coaching, C++ engineering, Backend development and Web development. The selection was done to achieve a sample representing different types of active guilds with varying number of members and repertoire of activities (see general information about each of the guilds in Figure 1). The goal of our investigation was to understand what makes guilds successful. In particular, we were driven by the following research question:

How best to achieve mutual engagement and collaboration in guilds in large-scale agile organizations?

To answer this question, we explored the repertoire of guild activities, members engagement in these activities, the perceived value and benefits provided by the guilds for the organization and the individual members, what hinders and what fosters member engagement, and value creation in guild activities.

Data collection. We collected qualitative and quantitative data through interviews, observations, guild artifacts, and a survey (see the table here). We performed 11 semi-structured interviews with leaders of all guilds and four selected members of one guild. Interview questions were directed to understand a guild's purpose, repertoire of activities, perceived benefits and challenges, and member engagement. We also received guild artifacts illustrating guild activities, and quantitative information regarding guild membership, and member attendance. Further, we conducted an online survey using the Mentimeter (www.mentimeter.com) tool to elicit member perception of guild value. Respondents were required to report their affiliation with one of the four selected guilds, their location, level of engagement, and then select benefits in four categories based on the value propositions suggested in prior research:[12] improved business outcomes, improved organizational capabilities, improved experience of work, and fostered professional development. In addition, respondents were given a chance to report, in a free-text format, what helps guilds to create value, and what hinders value creation.

Data collection methods.

Data Collected	Agile Coaching	C++ Engineering	Backend Development	Web Development	Total
Interviews	1 coordination	1 sponsor	1 coordinator	1 sponsor	11
		2 coordinators		1 coordinator	
		4 members			
Artifacts	Announcement of events, Screenshots of Guild Wiki and Trello Board, Unconference program	Screenshots of Guild Wiki and Trello Board, Unconference program	Screenshots of Guild Slack and Google mailing list, Unconference program	Announcement of events, Unconference program	
Survey					
Responded	14 members	10 members	62 members	39 members	125
Invited	82 members	100 members	305 members	180 members	667
Response rate	17%	10%	20%	22%	19%

Data analysis. Our data analysis strategy was twofold. First, our descriptory analysis aimed at explaining how different guilds function and what characterizes members and their engagement in selected guilds. The member division into different types (Figure 2) emerged when analyzing calendar invitations, meeting attendance and subscriptions to channels brought up by the interviewees. Then, exploratory analysis was preformed to identify what fosters and what hinders engagement and value creation. In doing so, the first two authors performed qualitative coding of the interview transcripts and qualitative survey responses. As a result, we built a table of hindrances and enablers for each guild with a frequency of occurrence, data sources (interviews and/or the survey), and quotations that provide explanations. We relied on methodological and data source triangulation to improve the validity of our findings. This was done by comparing data gathered through different means (interviews and survey), and from different types of members (active and inactive), and by focusing on the findings emerging from several rather than a single source.

To better understand if there are any associations and what differentiates the types of membership (for example, active and inactive members) we applied descriptive statistics to depict the benefits reported by different membership groups. Notably, the membership type was self-reported by the respondents. In particular, we used Chi-square test of association. To examine the strength of associations we used Cramer's V test, which ranges in value from 0 (no association) to +1 (complete association). A value more than 0.5 indicates a strong association (guidelines according to Cohen[4]). Moreover, we performed Mann-Whitney U test,[1] a rank-based nonparametric test, to determine if there were any differences between active and inactive members on each one of the four categories of benefits proposed by Wenger et al.[12]

join later, they often bring additional information and the guild is forced to revisit past discussions again. When analyzing the differences in member engagement, we found a number of coordination mechanisms that help to scale the guild activities and foster member engagement.

Yearly unconferences: Infrequent co-located gatherings of all guild members. Unconferences[3] are loosely structured conferences emphasizing the informal exchange of ideas according to the Open Space principles[8] and last for two to four days. These are the most engaging and most beneficial guild events facilitating knowledge sharing, networking and socialization, open for all members from all locations. As one of the survey respondents explained, "The conference every year really helps set the direction for what we want to accomplish as a community in the coming year." The main weakness is that they happen only once a year, while the technology in certain areas and guilds changes very rapidly.

Lunch and learn seminars: Regular forums with specific topics. Some guilds organize lunch and learn seminars, in which internal or external experts talk about a selected topic of interest. As one of the survey respondents noted, "Lunch and Learns [are beneficial] to know more about new things that are being tried out." Many guilds maintain a list of potential topics of interest on their Trello boards, where members can vote and prioritize the most relevant topics.

Slack channels: Electronically-mediated support forums. A lot of problems of individual guild members are solved through computer-mediated communication. For example, the biggest guild (the Backend guild) has no scheduled meetings, but has a group of volunteers, as large as 40+ members, who monitor and respond to questions posted in the guild's support channel on Slack. As a survey respondent from the Backend guild explains, "Having Slack channels to ask questions has been the most helpful [for me], as a fairly inactive participant," and a member of the Web guild explained, "Most valuable is simply chatting with other members of different Web organizations and seeing how they are solving the same problems we

face. What technologies they are using, what standards they are employing, what practices they use."

Requests for comments: Electronically mediated opinion elicitation. The Request for Comments (RFC) procedure[10] is often used for eliciting opinions regarding specific technical changes. Any individual guild member can register a change using a shared template in a central repository and send it out to all guild members for review. Elicited questions, comments, and suggestions help to improve the RFC document, which remains publicly available. RFC approach enables guilds to have asynchronous and distributed decision-making on focused technical changes.

Conclusion and Recommendations

Our study shows that maintaining successful large-scale distributed guilds and active engagement is indeed a challenge. We found that only 20% of the members regularly engage in the guild activities, while the majority merely subscribes to the latest news. In fact, organizational size and distribution became the source of multiple barriers for engagement. Having too many members, and especially temporal distance, means that scheduling joint meeting times is problematic. As a respondent noted: *"Guilds seem bloated and diluted. There could be a need for a guild-like forum on a smaller scale."* This is why regional sub-guilds emerged in response to the challenges of scale. At the same time, cross-site coordination meetings and larger socialization unconferences were recognized for their benefits. We therefore suggest that guilds in large-scale distributed environments offer both regional and cross-site activities.

Evidently, guild activities such as Spotify unconferences and meetups with external speakers require management support for covering traveling and organizational expenses. We found that management support, in fact, is very important for motivating guild members to engage in guild work. The traditional challenges such as the lack of dedicated time and the perception that the guild work is not prioritized or recognized by the organization, were also mentioned among the major barriers for engagement in

Spotify. For a large and distributed organization this means that local management in each location shall have a common recognition of the importance of the knowledge sharing culture. We therefore emphasize that mutual engagement depends on the alignment of management attitudes and support across locations.

Yet, we found that guilds are well recognized for diverse benefits both for the organization and for the individual members. As we expected, engaged members reported more benefit than the passive members, but the vast majority of respondents reported at least some. Evidently, the very membership seems to generate valuable sense of belonging and fun of being with colleagues. This is due to the motivational potential of relatedness.[2] One interesting implication of our results is that having few attendants in the regular meetings is not necessarily a sign of failure. What matters is the diversity of value-adding activities. We therefore recommend offering different activities and channels for sharing knowledge and networking.

Last but not least, we found the guilds to be very diverse in terms of how they operate,[11] their members, and what value they create. The architecture of a guild depends on the practice it deals with, who is doing the practice, and how the members are distributed. This means that standardizing the way guilds operate and having the same expectations on the guild outcomes only make sense if the guilds concern the same practice and solve the same challenges.

So, do we recommend other companies to establish CoPs or guilds? The importance of implementing such parallel structures has been debated, and they do typically occupy the backseat in agile transformations and agile method implementations. However, Spotify experience shows that domain-specific, professional guilds is an important support for the squads and squad members. Guilds help new engineers get up to speed more quickly saving time for their colleagues. Guilds provide forums to tackle shared, emerging problems and opportunities with response times much shorter than individual experts would be able to provide. Besides, guilds'

yearly events connect people across locations that would otherwise never meet. Therefore, we do recommend others consider cultivating participation culture in general and CoPs/guilds in particular. The barriers and mechanisms described in this article shall help companies—small and large—in this journey. $\blacksquare$

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