

Building Scalable Communities from International Knowledge Networks



Abstract

Small organizations frequently implement knowledge networks where people use their personal uncoordinated connections to transfer information. Although small knowledge networks may be very effective, they often experience problems as they grow. One way organizations can counteract this is by developing communities of practice. Cycling Without Age (CWA) is an organization that faces issues with knowledge sharing due to a rapidly expanding network. The goal of this project was to help CWA develop a community of practice that allows for more effective knowledge transfer. We investigated CWA's knowledge network structure and analyzed their social learning group behavior in order to develop a governance structure around the network and implement a new platform.

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Building Scalable Communities from International Knowledge Networks

Knowledge management has become one of the most important considerations for modern organizations. Although there are many information management systems available, virtual knowledge networks pose an opportunity for organizations to foster internal collaboration, knowledge sharing and innovation. Research has shown virtual knowledge networks can achieve “a degree of innovative knowledge collaboration rarely seen in more traditional organizational structures.”¹ Intrigued by these possibilities, many organizations have imple-

mented internal knowledge networks; however, virtual knowledge networks can experience several problems, especially as they scale.

As knowledge networks within organizations expand, members struggle to access the full wealth of information available to them. This is why organizations must utilize a governance structure to maintain an efficient knowledge flow as they scale. By applying this structure, organizations can develop communities of practice around their knowledge networks. Communities of practice are composed of individuals who collaborate in specific domains under a defined structure. These collaborative communities, increase the quality of knowledge and efficiency of knowledge transfers by making information more streamlined and ac-

cessible. Furthermore, in order for these networks and communities to exist in a virtual space, they must be located on a platform that supports their unique functional requirements.

Cycling Without Age (CWA) is one of the organizations that faces issues with knowledge sharing due to a rapidly expanding network. The goal of this project was to help CWA develop a successful and sustainable community of practice that empowers its members and reduces the strain on the organization’s core. We accomplished this goal by investigating CWA’s current platform usage, characterizing the affiliate journey, characterizing CWA’s network structure, and iteratively designing and implementing new governance structures around improved technical systems. By the end of the project, we provided CWA with new organization structures for content on their online platform, governance structures to give their community greater stability while scaling, and an implementation plan.

Knowledge Networks and Communities of Practice Allow Individuals to Share Information and Gather Input

Groups of individuals called social learning groups often form to share knowledge and exchange expertise. There are two terms that classify the behaviors of social learning groups: knowledge networks and communities of practice.² Within knowledge networks, individuals use their connec-



Action Shot: The team is completing their CWA pilot training

tions to share information and gather input. In a pure knowledge network, there are no defined structures and the behavior of the group is purely dependent upon the connections between people. Within communities of practice, individuals collaboratively collect, share, and modify information in a specific domain under a defined structure. In a pure community of practice, there is less of an emphasis on social connections and more focus on the guidelines, shared intentions, and designated space for collaborating on knowledge.

Knowledge networks and communities of practice can be conceptualized as the two different ways a student might edit a paper (Figure 1). To illustrate the knowledge network: the student might send a copy of their first draft to a friend for suggestions and revisions. That friend might come across something in the paper that they think another student might have valuable input on and send the paper along to them. This paper can potentially be passed around to several students across multiple channels as individuals reach out to the people they know to gather more advice and expertise. This student is effectively using their knowledge network by tapping into relationships and connections to get advice and gather valuable input. To illustrate the communities of practice: that same student might also get input on their paper by going to a peer-editing class. This involves the teacher running a class where students break up into small groups, exchange papers, and have discussions about suggested changes and content. These groups might have assigned student leaders to moderate conversation and make sure

discussions are respectful, constructive, and on topic. People can move to different groups to get input from other students or talk to the teacher if they have a specific question that cannot be answered by the fellow students. Essentially everyone who comes to that class on a peer editing

day comes with the collective intention of collaborating with peers to review and edit papers with specific structure in that classroom setting, forming a kind of community of practice.

Although they are complementary in nature,

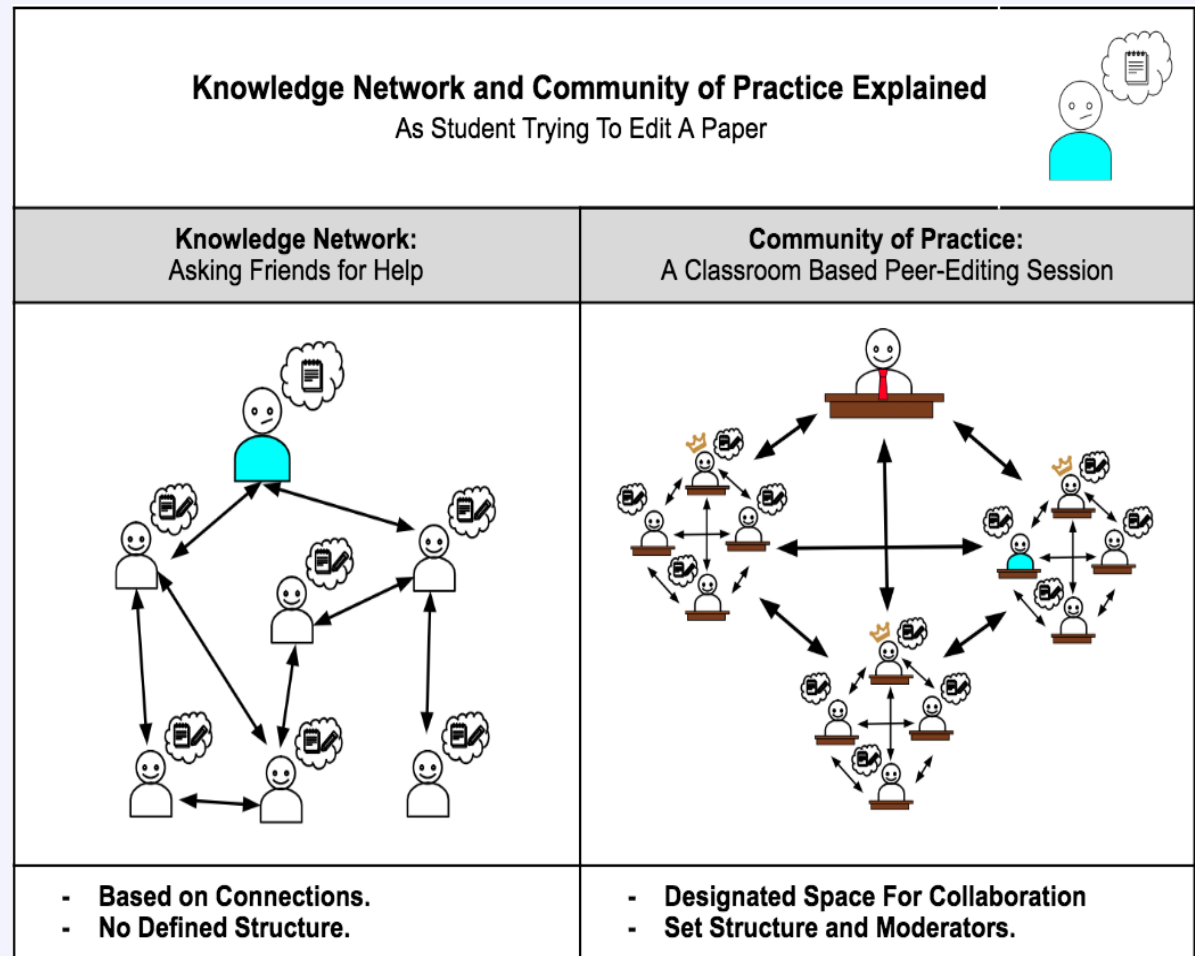


Figure 1. Example of Knowledge Network and Community of Practice

knowledge networks and communities of practice are not distinct structures. Rather they are behavioral aspects of a social learning group. Notice how even in the peer editing class, the student is still utilizing connections with peers and teachers to gather input (Figure 1). The key difference that makes this peer-editing space more of a community of practice than of a pure knowledge network is that there are set governance structures in place to moderate conversation and facilitate healthy group dynamics within a defined classroom setting.

Organizational Knowledge Networks Don't Scale Well Without Structure

A knowledge network is a collection of individuals that establish and use connections to pool information and accomplish objectives.³ These networks have made it possible for international collaboration to thrive by facilitating rapid transfers of large quantities of information unimpeded by organizational structure.

Knowledge networks can provide greater benefits to organizations than simple document databases.⁴ While some knowledge can be represented easily in a written form, other intangible expertise like the ability to adapt, share a vision, and mentor others can only be learned from experience or passed down from experienced members of an organization.⁵ This means that a document database alone cannot sufficiently support knowledge distribution within an organization because it only

captures knowledge that can be conveyed in physical forms. The communication that occurs in knowledge networks between experienced and inexperienced members of an organization allows for the transfer of intangible expertise that cannot be captured by document databases alone.

While organizations implementing knowledge networks face a number of challenges, the most significant challenge is “the ability to distinguish between significance and noise”.² Significance refers to information that is directly valuable and related to the knowledge being transferred between interactions. Noise is the surrounding chatter that occurs during social interactions that does not directly add knowledge or value to the network. While increasing the number of connections in a knowledge network creates a greater potential for significant interactions, it also increases the noise that occurs. As these networks expand, they often

begin to overflow with noise, making it more difficult for users to access significant data.

The topology of the network has a significant impact on its performance. For instance, if a network is overly centralized (see Figure 2), then the person at the center of network will be inundated with requests and unable to cope as the network scales. As their networks expand, organizations must transition towards a more decentralized approach to take pressure off of the previously centralized source of information. This allows network members to have access to this information through multiple sources. As decentralized structures scale, they allow for more efficient knowledge flow and form the foundation for sustainable, growable leadership structures that make up a community of practice.

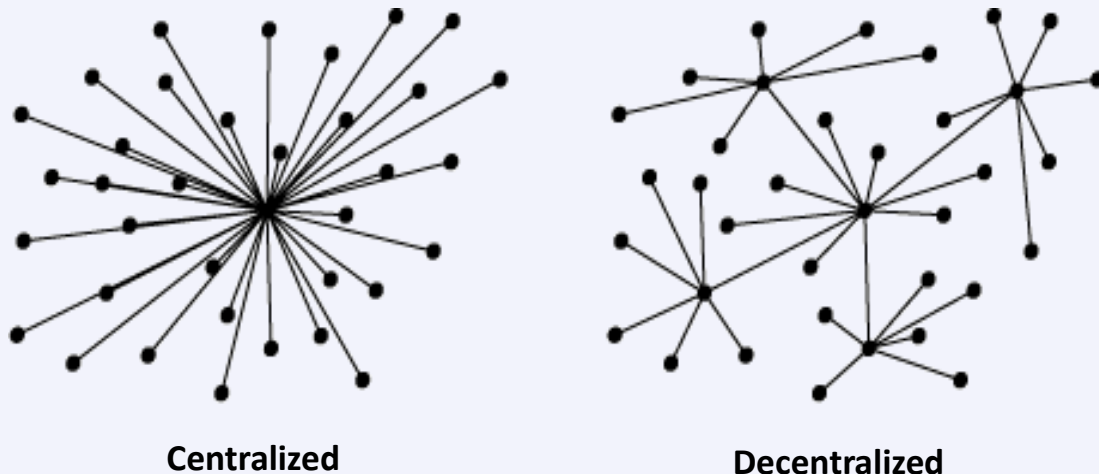


Figure 2. Knowledge Network Structures

Peer Production Communities Provide Structure that Scales as Social Learning Groups Develop

In order to transfer information efficiently as knowledge networks expand, social learning groups gradually adopt decentralized governance structures. This process develops a particular type of community of practice called a peer production community.⁶ Peer production communities often emerge from within social learning groups and lack the incentives that drive traditional organizations. These communities have particularly flat management structures and are volunteer-driven. They have two core characteristics: the decision and authority to act resides in the community members instead of a centralized manager; and the motivation to make the decision to act is not provided by economic means, nor is it prescribed by any managing body.⁷

When peer production communities successfully attract and retain voluntary community members who have diverse experiences and skill sets, they can have several advantages over traditional organizations.⁷ Developing a community that does not rely upon a single centralized leader can increase the occurrence of significant information transfers because individuals have a wide network of identifiable experts to rely upon. However, establishing effective governance in the absence of a centralized authority is not a trivial problem, especially since this system allows everyone to contribute.⁸

Collective Leadership Governs Peer Production Communities

Unlike traditional organizations, virtual social learning groups may not have explicit leaders. In recent years, there has been much research that considers leadership as an "emergent, collectively enacted phenomenon".⁹ Zhu, Kraut, and Kittur¹⁰ argue that even within formal corporate firm structures, "leadership -- which involves persuading and influencing other people to pursue a common goal -- emanates from members at all levels, not simply from elites in formal leadership roles". Furthermore, traditional leadership models do not work well for virtual communities because online participation is almost always voluntary.¹¹ Therefore, one way to establish effective governance in peer production communities is by utilizing the collective leadership as a governance structure.

As members of peer production communities contribute more and gain the community's trust, they gradually move from the community periphery to its core and become more influential in decision-making processes.⁶ These community members not only become leaders that individuals can look to for guidance, but also moderators elected by the governance structure to maintain the community. Community moderators ensure that members act responsibly, information is categorized in meaningful ways, and that community projects are being collaborated on in designated spaces. They monitor interactions between community members to reduce noise so that significant interactions do not get lost. Leaders share the workload of both

production and administrative tasks, which provides a governance structure for the social learning groups to effectively share knowledge.¹²

However, moderators in peer production communities walk a fine line when implementing governance practices as they face the risk of reducing the motivation of their members with any form of negative feedback as the members lack incentive structures to continue work like they would in a traditional firm. Zhu et al.¹⁰ found that those with administrative roles have a significant influence over community interactions. They found that when moderators gave positive feedback, community member participation increased while negative feedback discouraged community members. Therefore, community moderators have to be very conscious and careful when interacting with the community, since they have the power to significantly increase or decrease active participation.

Those in administrative roles in peer production communities face a dilemma: they are tasked with maintaining community standards and therefore must provide some community members with negative feedback when those standards are not met, but the act of providing this feedback may result in the contributor stopping work all together. Striking a balance between these different leadership approaches is crucial for organizations to maintain an effective community.

Usable Platforms that Enable Sociability and Moderation Foster Healthy Community and Network Behavior

Virtual networks and communities require a platform that sufficiently supports the knowledge sharing, communication, and mediation necessary for individuals to effectively form connections, contribute knowledge, and work collaboratively.¹³ The platform must be easy to learn, remember, and interact with in an effective and satisfying manner so that users can quickly contribute to their network and community.¹⁴ Intuitive platforms contain commands that are direct, easily located by the user, consolidated, and placed in the appropriate context.¹⁵ Once an individual has become acclimated to the site, it is crucial that the platform supports the connections that form a valuable knowledge network as well as the governance and collaboration that make a community of practice effective.

A network requires a platform with functionality that gives individuals a means to connect and form relationships.² Features like public profiles allow members to establish an identity on the platform while presence, location, and activity awareness allow users to identify other members that would be suitable contacts and prompt them to request interactions.¹³ The platform should also include synchronous (real time) and asynchronous (delayed) communication features that can support interactions among individuals (ex. instant messag-

ing, video calling, emailing, etc.)

A community requires a platform that can support collaboration and moderation and define who has control over those interactions. A community platform must include tools that allow appointed leaders in the community to protect users from potentially toxic members and ensure quality collaboration. Being able to ban users that behave inappropriately gives order to the community and fosters a sense of security and responsibility among the existing members. A platform must allow community leaders to verify content so that users know what information they can trust. Furthermore, existing leaders in the community must be able to designate different administrative privileges other users who they identify as effective leaders. This way, leadership can scale as the community expands without any intervention from a centralized authority.

Cycling Without Age is Experiencing the Problems Associated With Growing an International Knowledge Network

Our sponsor, Cycling Without Age, is currently experiencing some of the problems associated with developing a global community of practice in a virtual space. What started out as a small grassroots movement dedicated to giving the elderly bike rides in Copenhagen quickly grew into an international non-profit organization with more than 1,100 affiliate locations in 38 countries. In the past

year, their organization has grown by 386%. The organization is now struggling to distribute and receive information in an organized and effective manner. Because CWA did not establish clear knowledge sharing or governance structures as it spread globally, it is difficult for affiliates to distribute and receive information in an organized and effective manner. After taking into consideration the issues that CWA faced, we knew we needed to investigate the inherent community and network structures within CWA and identify how they could be improved. The goal of this project is to develop a sustainable community of practice within CWA's knowledge network.

Developing a Virtual Community of Practice around CWA's Knowledge Network: The Process

In order to build scalable communities from Cycling Without Age (CWA)'s current knowledge network, we framed our methodology around the research objectives in Figure 3. Investigating CWA's current platform usage (Objective 1) allowed us to better understand the functionality of the CWA platform, Podio¹, and gave us a basis for understanding the social dynamics within CWA. Characterizing CWA's social learning group structure (Objective 2) revealed the regional and global leaders within the community and how they interact. Objectives 1 and 2 informed our 3rd objective: design and implement new governance structures around improved technical systems We refined our solution by conducting focus groups, analyzing and

implementing feedback, and conducting several iterations of each governance structure.

Current Platform Usage

Our first objective was to examine the platform usage and content organization on CWA's Podio platform. To accomplish this, we compiled and coded¹¹ the data from CWA's Podio activity stream. We assigned each of the posts on the activity stream the following codes associated with the data's content: announcements, complaints, questions, and miscellaneous (see Supplemental Materials A). The questions and announcements codes were then assigned sub-codes based upon their content.

Categorizing the question codes and sub-codes in Podio revealed what information affiliates most commonly look for on the platform. In Figure 4, the question codes are separated into 3 sections: questions prompting the community for documentation (green), questions prompting the community for discussion (blue), and individuals asking to connect to others on a local level (orange). While the codes colored blue could have been answered by documentation, the posts were asking for opinions from different regions and looking for more detailed responses. We used the codes in the blue and green sections as categories for organizing content as we improved CWA's technical

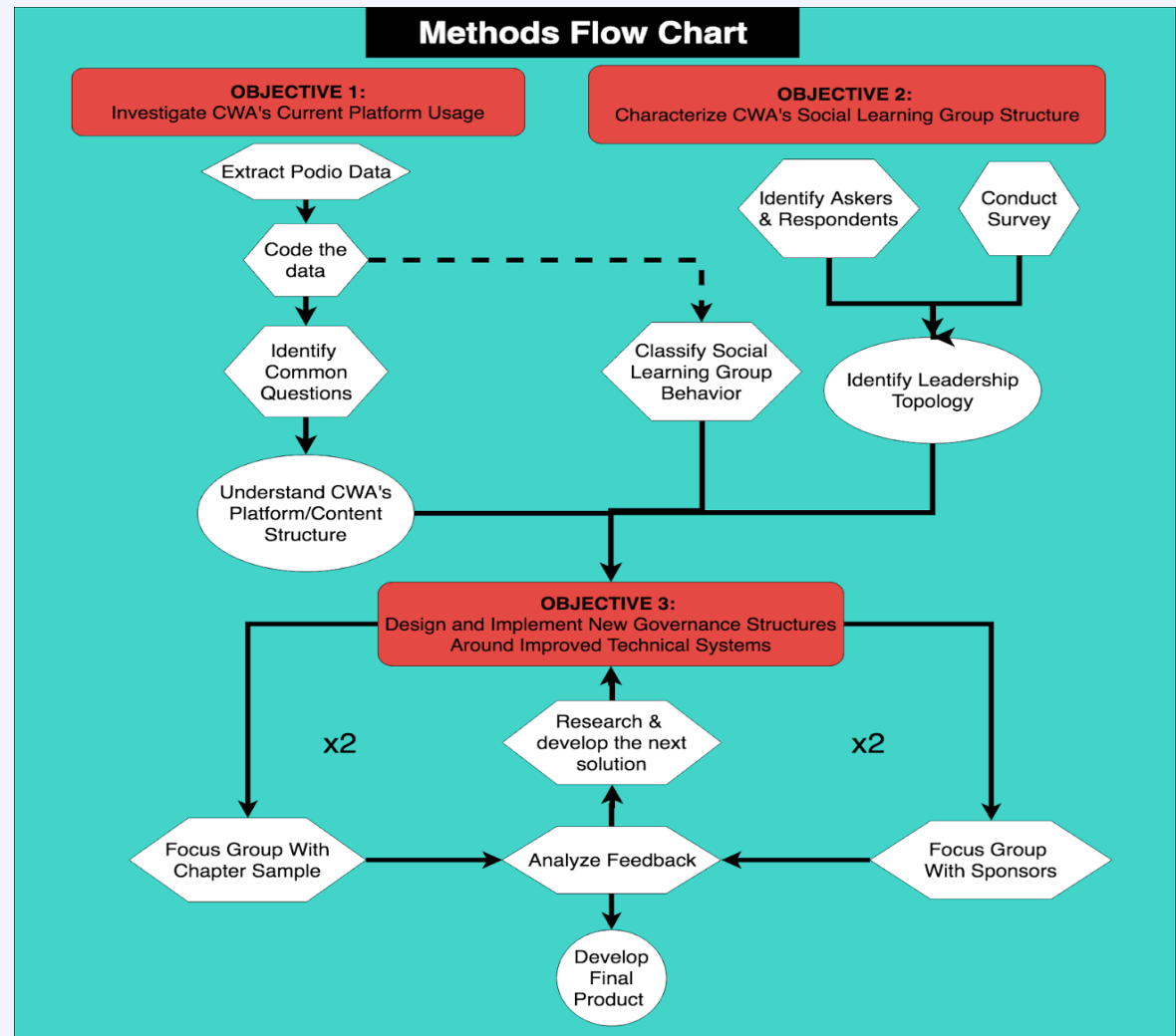


Figure 3. Methods Flow Chart - The Hexagons indicate methods while the circles indicate what we gained from each method

¹ Podio, a commonly used application among non-profit organizations, is an "enterprise social network and an online work platform" (Nielsen & Razmerita, 2014).¹⁷ It allows users to create workspaces to collaborate with their colleagues. It also offers an employee network that allows for company-wide interaction across all departments within the organization. It is designed to consolidate all the tasks of an organization into a single application. It also allows companies to customize the app based on their needs, which makes it rather unique compared to other platforms.

¹¹ Coding refers to the systematic categorizing of qualitative data for analysis (Saldaña, 2015).¹⁸

platforms. We also developed a Frequently Asked Questions (FAQ) app from the most commonly asked questions in the blue section so that the community could reference and contribute to topics that most people inquire about. The orange codes inspired the development of a map that affiliates could use to connect with people in their local area.

CWA's Social Learning Group Structure

We wanted to determine whether CWA's social group was behaving as more of a knowledge network or community of practice. We knew that CWA had tried to promote the community of practice behavior by establishing several apps within Podio for finding and sharing information in

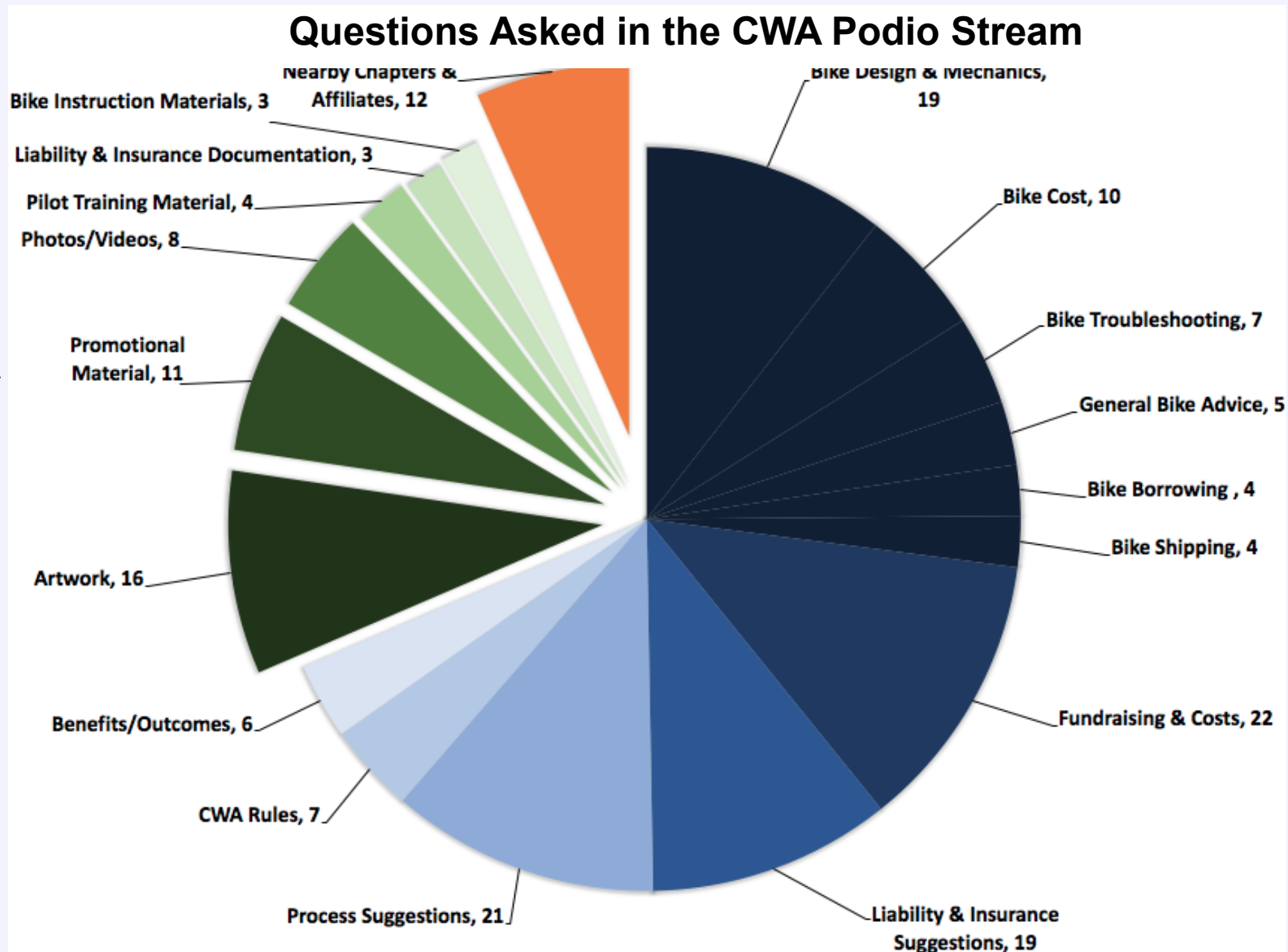


Figure 4. A display of the question sub-codes in the Podio activity stream - the Pie chart shows the number of posts that fit into each sub-code

appropriate spaces (see Supplemental Materials E). They developed a Topics app meant to be a space for the community to collaboratively work on contents and multiple apps to better categorize information and promote community collaboration. To investigate whether or not the community was actually using the guidelines laid out on the platform, we assigned community of practice or knowledge network codes to each post. A post was given the knowledge network code if people utilized their connections in the community to gather answers without utilizing the structures put in place by the

Hub¹ to establish a community of practice. A post was given a community of practice code if it referenced or added to the document databases that made that information accessible to the whole community or promoted greater collaboration.

Out of the 337 posts coded, only 9 percent of the posts fit under the community of practice category while 91 percent fit under the knowledge network category. This proved that CWA's social group structure on Podio is knowledge network heavy. It also explains why information within CWA's social group gets lost and why the Hub has felt so much

strain. Questions on CWA's online platforms are repeatedly asked, answered, and forgotten by the rest of the community as posts are buried under a constantly updating feed. As one affiliate said in our iteration 2 focus group: "It [Podio] just becomes overwhelming, and then you look at something and it's so out of date. In some ways I've lost a little bit of faith in some of it. I go, 'I won't go on there because it's just too hard'". And sometimes we've just reached out locally by email [and we've done it that way], so we've bypassed what was originally set up as a community." As the communi-

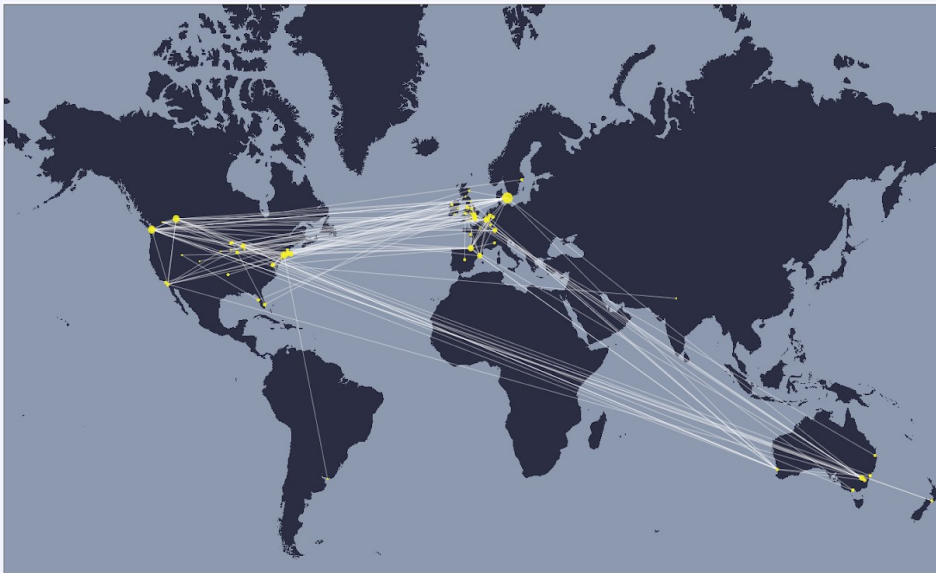


Figure 5. A portion of CWA's Current Knowledge Network - The yellow dots represent affiliates and the white lines represent connections between affiliates. The size of the dot indicates its centrality in the network

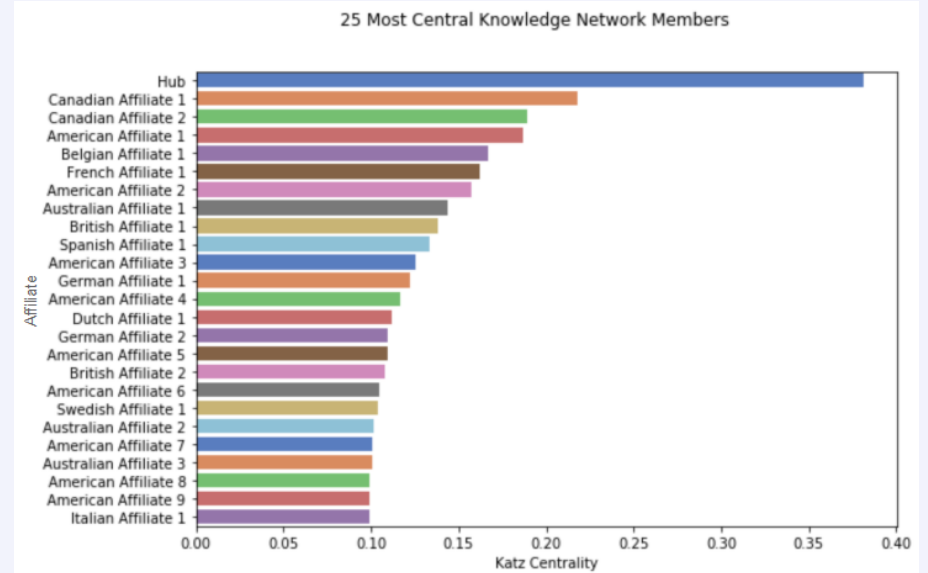


Figure 6. The 25 most central members of CWA's knowledge network - the rank is determined by the Katz Centrality¹¹. The affiliates names have been replaced with their nationality to preserve anonymity

¹ The Hub includes: Ole Kassow, Pernille Bussone, Dorte Pedersen, and Maren Warming. We also consulted Kelly Talcott (the US Captain) and Jane Hu (the Canadian Captain)

¹¹ Katz Centrality (Katz, 1953)¹⁹ is a commonly used index to measure the relative influence of an actor in a network.

ty grows, more information becomes lost and muddled within the ill-defined knowledge network. These results reinforced that identifying leaders and adding governance to the community had to be a focal point of our project so that we could develop a scalable community of practice within CWA's social learning group.

After gaining a general understanding of the content organization and social learning group structure in Podio, we identified the leaders in the whole organization in order to identify individuals who would be effective moderators for CWA's online platform. We looked specifically at the question codes from our Podio activity stream analysis and identified the askers, the respondents, and the documents associated with each question. By analyzing the question and answer threads in this manner, we identified especially active respondents on Podio that serve as social leaders within the organization.

To further our investigation, we used network analysis to identify the individuals in the organization (known as actors) and their relationships (referred to as links) (Contractor, 2012).⁹ In order to elicit CWA's knowledge network structure, we sent a survey to all affiliates asking from whom they received guidance, which mode of communication they used, and how frequently they rely on this person for guidance (see Supplemental Materials C). We augmented these results with the connections uncovered by identifying who asked and responded to questions on Podio. Using these data, we constructed a portion of CWA's knowledge network (Figure 5).

This representation of CWA's knowledge network provided us with several valuable insights. First, we were able to identify de facto leaders that are outside of the Hub by measuring their centrality in the network. By cross-checking these data with the frequent respondents from the Podio stream (Figure 6) we identified prominent leaders.

These data, however, represent only a subset of those affiliates who are leaders in the organization due to the very low response rate to our survey and because we only have online interaction data from Podio. As many chapters and localities use private and offline means of collaboration and don't engage with CWA's online presence, the data from these interactions aren't accessible to us and we miss a substantial portion of the knowledge network.

Although we don't have the complete picture of CWA's knowledge network, it's still apparent how centralized the network structure is around the Hub. This explains the strain that the Hub has been experiencing answering questions as the organization continues to grow.

Additionally, it became clear how much of the knowledge networking occurs outside of the organization's sponsored platforms. Of the 56 identified knowledge network relationships from the survey, only 11 of them used Podio or Facebook Workplace as one of their modes of communication. This was corroborated by the common practice in the community to actively avoid Podio and instead contact individuals through email or phone. As an affiliate said in a focus group, "we've just reached out local-

ly by email..., so we've bypassed what was originally set up as a community."

From our interviews and focus groups, we learned that CWA has an informal regional social hierarchy where regional 'captains' are contact points for new chapters in their area. However, the portion of the network we reconstructed doesn't have this structure as there are no identifiable sub-networks. This suggests that the people actively engaged with CWA's online presence are at the top of this social hierarchy. To confirm this, we looked at the Podio profiles of the individuals we surveyed and found that the majority of the affiliates who responded have been with the organization for over a year and already have bikes. Without new people to post questions and share expertise, the online community is less active and not as valuable to members.

Design and Implement New Governance Structures around Improved Technical Systems

The results from previous analyses informed our design of new governance structures and development of a platform conducive to a community of practice within CWA. Throughout the term, we developed new ways of organizing content and structuring CWA's online community. We refer to each one of these new developments as an iteration. By holding focus groups with the CWA Hub for each iteration, we were able to gather feedback and gain a greater understanding of whether or not

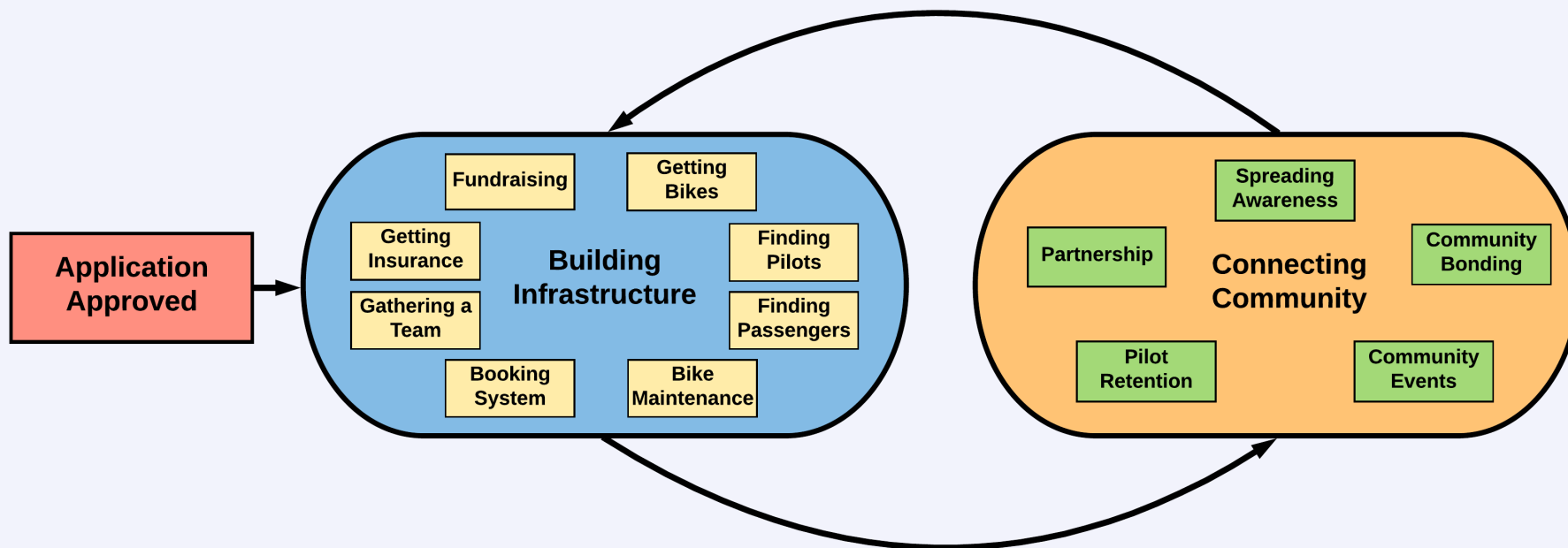


Figure 7. A General Outline of the CWA Affiliate Journey

our solution met the needs of the organization. We also presented our second iteration to groups of affiliates to investigate how community members would react to our solution and to ascertain whether or not our platform met their needs.

Iteration 1

For our first iteration, we began with an initiative to reorganize Podio that occurred in the summer of 2018. A CWA group referred to as the Guiding Team assessed how affiliates prefer to organize

their content and built a document library application in Podio. To add to this work, we first mapped out a general outline of the affiliate journey¹ (Figure 7) based on results from interviews with the Hub. We then further categorized the documentation based on the topic of the document and the stage of the chapter that we identified in the affiliate journey. To validate the categorization, we collected all the documents on the platform and compiled them into the document library application. Additionally, we developed a FAQ app that included posts for the commonly asked questions

we identified in the Podio activity stream.

Following the development of these applications, we held a focus group with the Hub where we demonstrated the document library and FAQ applications within Podio. The participants appreciated the better organization of content and the affiliate journey process that we laid out for them. They were also interested in including features such as user statistics and contribution incentives, all of which were unavailable in Podio (see Supplemental Materials F). We realized that the lack of

governance structure within Podio makes it difficult to establish effective communities of practice. This conclusion prompted us to investigate platforms that could better serve the collaborative needs of CWA.

Iteration 2

Before our development of iteration 2, we investigated platforms that would be capable of supporting both a community of practice and a

knowledge network for CWA. After reviewing the comparative analysis made by Jones & Eichstaedt¹⁶ and meeting with the Hub, we decided to investigate Facebook Workplace, Podio, Nuclino, Discourse, and Zendesk. We looked into different cri-



Action shot: The team is conducting a focus group for the Hub

¹ Affiliate journey here refers to the experience of affiliates from the moment their application is accepted to when they get their bikes and establish their chapters.

teria of these platforms such as user-friendliness, collaborative abilities, and governance structure (see Supplemental Material G for specific questions and analysis).

Our analysis showed that Discourse would be best suited to support CWA’s needs because it has moderation systems that support a community of practice, sociability features conducive to a

knowledge network, and a relatively intuitive and customizable user interface. Discourse also has the incentive systems and user statistic features that the Hub expressed interest in during the iteration 1 focus group (see Supplemental Materials I for more information about the functionality of Discourse that was applicable to CWA). Therefore, we developed a Discourse page for CWA at <https://cwa.community/> and designed features based on our findings from investigating the platform usage, affiliate journey, and network structure of CWA. We added 7 categories tailored to CWA’s needs: Announcements, Knowledge Base, Questions, Dis-

ussion, Regional, Chapters, and Site Feedback (see Figure 8 and Supplemental Materials J for specifics about each category). The Knowledge Base, Questions, and Discussion categories were designed so that affiliates could collaborate, interact, and share information that could benefit CWA affiliates across the globe. The Regional category was developed so that affiliates could ask questions and share information that would be applicable to the individuals in their region (Figure 9). The Chapters category contains descriptions of different CWA chapters and their contact information (Figure 10). It also includes a map that allows individuals to

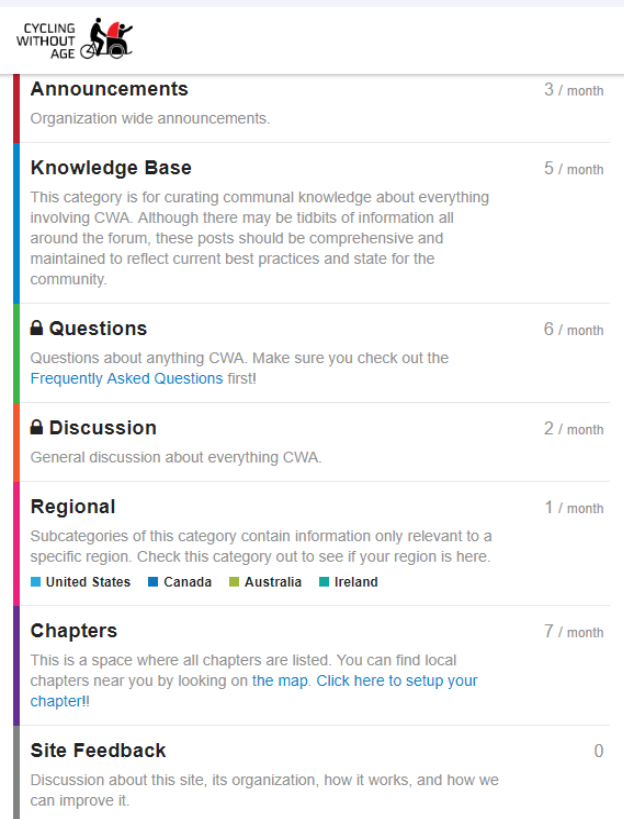


Figure 8. These are the different categories on CWA’s Discourse Page

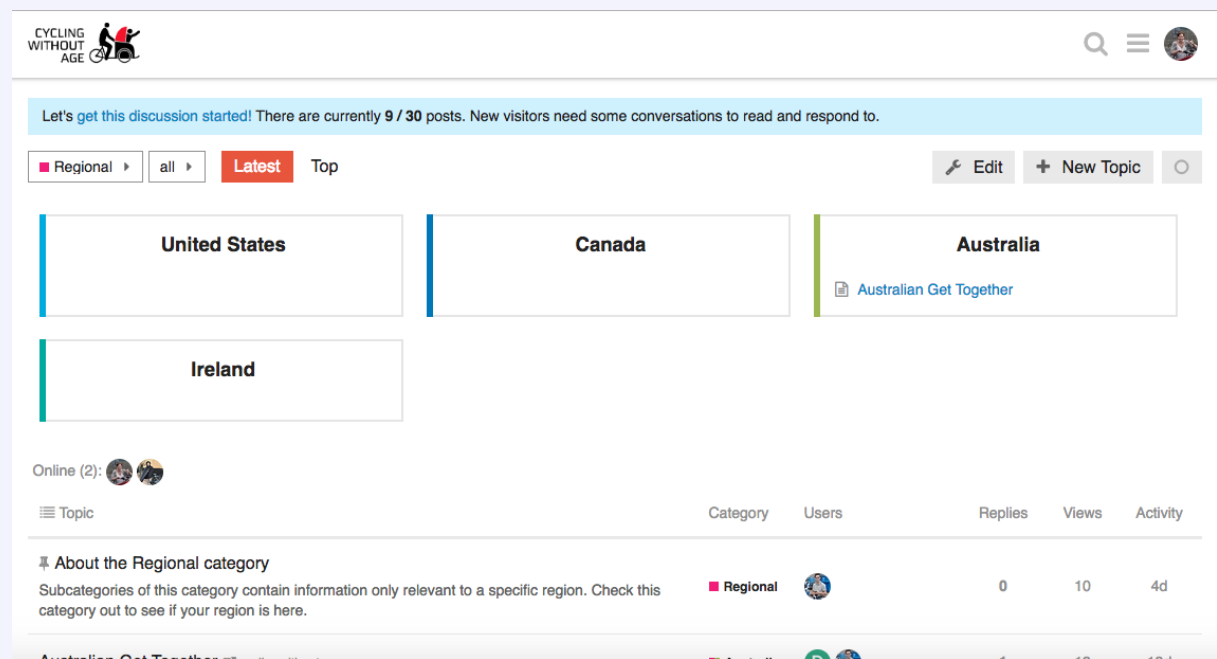


Figure 9. These are Regional categories on CWA’s discourse page

| Topic | Users | Replies | Views | Activity |
|-------------------------------|-------|---------|-------|----------|
| Western Australia | | 0 | 5 | 5d |
| ★ About the Chapters category | | 0 | 13 | 8d |
| Southington, CT | | 0 | 7 | 8d |
| Dublin, Ireland | | 0 | 12 | 12d |
| Worcester, MA | | 0 | 10 | 12d |
| Lakewood, CO | | 0 | 14 | 12d |
| Perth & Regions, AU | | 0 | 7 | 12d |
| Beaumont, Leduc County, CA | | 0 | 7 | 12d |

Figure 10. The Chapters category allows affiliates to share information about them.

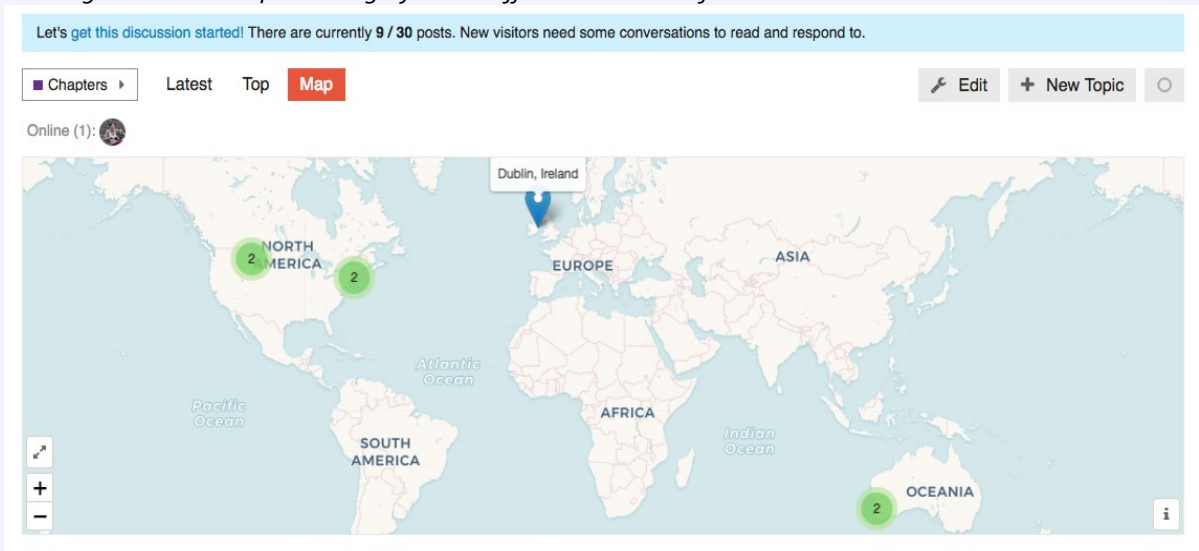


Figure 11. The Chapters category allows individuals to find affiliates near them on the map and locate information about other chapters.

locate chapters across the globe so that affiliates can find other CWA affiliates in their region (Figure 11).

During our focus group with the Hub, participants indicated that this was a significant improvement from Podio's setup. They thought the trust system and badge system could be excellent ways to motivate users to contribute and appreciated that Discourse provides comprehensive user statistics. They agreed that the categories we provided would be of great benefit to the community and reflected what they felt CWA needed. However, the Hub raised concerns regarding the integration and implementation process. They wanted to know how they could transfer users from Podio to Discourse and properly train them to use the new platform. (see Supplemental Materials File H for more information about the Hub focus group).

Additionally, we held 2 focus groups with CWA affiliates that we recruited through our guidance survey and by reaching out to the guiding team. During these affiliates focus groups, we presented the functionality of the newly developed platform and gathered feedback from individuals located in Ireland, the US, France, Belgium, Australia, and Singapore (see Supplemental Materials K for details on what we presented in these focus groups and Supplemental Materials L for our notes). During these focus groups, participants indicated that our platform had the potential to be a better tool than Podio. One feature that the participants appreciated was the Regional category because it allows users to gather information that is specific to their region. When discussing interactions on a local

knowledge base, one participant from Ireland stated, “Here, laws are different, bylaws are different, insurance is definitely different. So they need to know that it’s specific to Ireland if they’re asking these questions”. Another participant stated, “...there’s certainly a need to have a platform where after you discuss things regionally, perhaps you could share it other regions easily.” The participants also liked that this feature allowed shy people to feel more comfortable in making contributions since they’ll only be addressing a local community.

However, the participants expressed concern regarding the integration process and learning a new platform. One participant from Connecticut pointed out that “there’s definitely a learning curve, as everything else in technology”. He explained that people can be resistant to change, which might make it difficult to transfer everyone’s attention away from the currently used platforms and towards Discourse. The same participant expressed that his “biggest problem is getting to the platform,” which made it clear that we needed to develop comprehensive instructions for accessing the site once it is launched.

Participants pointed out that the platform alone will not be successful unless you have people in place to manage and take care of it. As a participant from Belgium pointed out, “you need something like this [platform] in a community of course where someone asks a question and other people share their experience and their knowledge... it could be useful that someone makes a round-up of the conclusion and publishes this in the knowledge



Action Shot: The Team is conducting a focus group with a chosen sample of Cycling Without Age affiliates.

base. To make a community working you not only need a software platform, but you also need people to manage it.” This reinforced that CWA needs to define community moderators and ensure that there are people in place to moderate the site.

Participants also emphasized the need for training materials to make the site more accessible and easier to learn. A participant from Belgium stated we would need “some best practices and guidelines on how to publish and consolidate this information... The software product itself can’t solve everything, it’s just an instrument and you will have to explain to people how to use it in the best way... If you can get a start with the kind of roles and responsibilities and guidelines, that would be an extra.” Some suggestions they had for making the platform more accessible were developing short, 2-3 minute instructional videos explaining how to use the site. Another participant recommended that we “run a pilot with this and see how we’re all getting on with it” prior to transitioning it to the whole community. Participants also suggested that pairing elderly members of CWA with individuals who have social media and technical understanding might be a good idea to encourage platform usage. A participant from Perth, Australia said, “we’ve actually got a girl that’s helping as well... She’s so good on social media, and it takes somebody like that...somebody who’s actually really tech-savvy... this could become a dedicated volunteer role or something like that.”

Iteration 3

Based on the focus groups we held for iteration two, we realized that there were two elements our final iteration needed: community guidelines and training manuals. We developed 3 different manuals: an Affiliate Discourse Guide (see Supplemental Materials M), a Community Moderator Discourse Guide (see Supplemental Materials N), and an Administrator Quick Start Guide (see Supplemental Materials O). The affiliate guide gives the CWA community information about how to interact with the platform, what the specific CWA categories are for, and the rules about interacting on the site. The affiliate guide provides a link to a New User Tips and Tricks post that helps the user understand how to properly interact with the site. This post goes over some of the basic functionality of the platform like posting, navigating the site, formatting, and replying to posts. The affiliate guide also provides the user with descriptions of each category on the site and the rules for using them. The community moderator guide provides guidelines on how a moderator should interact with and maintain users and content using functionalities built into the platform. The admin quick start guide walks through some basic structure and navigation of the platform along with some tips to help get admins up and running.

Recommendations & Conclusions

CWA is structured like a prototypical knowledge network, in which members rely exclusively on their personal connections for information. While this model works well for small groups, it doesn’t suit the needs of a growing organization. This is evident on CWA’s Podio page where affiliates’ repetitive questions, comments, and announcements are quickly buried in a constantly updating feed. CWA’s centralized network structure places a particular strain on the Hub as their limited time and resources are consumed providing the same answers to the same questions and repeatedly posting documents that affiliates can already access. As a result, new affiliates do not get the guidance that they require and frequently become lost and discouraged during the onboarding process.

The goal of this project was to develop a platform and governance structure that could support a sustainable community of practice within CWA in order to improve access to information and reduce the strain on the Hub. We identified the information that is valuable to the community and the natural leaders within the organization’s social structure. Based on the results, we designed a new platform for CWA that carried the necessary components to create a community of practice within their organization. We found the CWA community and Hub were excited about the new organization of content and the potential for greater collaboration in this online space. We developed training materials for new individuals because we recog-

nized that transitioning the community to a new online platform can be an intimidating process for affiliates. Essentially, our platform provides the foundation for CWA to build their community of practice, but without the appropriate social structure, guidelines, and content this platform will fail. People must utilize a defined social structure and collaborate in a manner that is visible and valuable to the community as a whole to be successful in this online space. CWA should teach their designated moderators what the appropriate community behaviors are so that they improve how information is disseminated in the organization.

Although we believe our project was an overall success, our research results were hindered by the limited availability, lack of engagement, and wide geographic distribution of CWA's affiliates. The Discourse platform is a good first step in developing a successful community of practice; however, more work is needed. Future research should focus on what motivates affiliates to participate in the global community and how CWA can foster greater engagement from their members in order to develop a more effective community.

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Our team has developed final recommendations for the Cycling Without Age Hub to help them integrate the CWA Discourse platform and change the dynamics of their social learning group. Our recommendations for the Hub are (for a timeline see Figure 11):

1. **Migrate Data:** The Hub should migrate the posts and documentation currently located on Podio and Facebook Workplace onto Discourse. This information should be placed in the appropriate categories to keep the original information because the posts were mostly intended to share information.
2. **Develop Training Materials:** A key factor for affiliates to feel comfortable and see the value in the platform is for them to understand how to use it. The Hub should develop simple training videos and tailor the existing guidance materials towards the demographic of CWA affiliates to help people understand Discourse.
3. **Consolidate Materials For Regional Captains:**

The Hub should reach out to the regional captains and consolidate their materials on Discourse. It will be easier to get people motivated to use the platform and see the value of having their information in that online space after some of their core knowledge has been uploaded and synthesized. The conversion should be handled centrally to maintain uniformity and avoid asking regional captains to convert all of their documents and knowledge into a platform that they do not understand and have no experience with.

site moderators from different regions who would be qualified and willing to monitor content on the site and uphold community standards. We recommend that the Hub selects these members based on their level of experience in managing regional affiliates and their technological capabilities. They can start by reaching out to the 25 members that we identified as central informants during our analysis of their network, but should also recognize that the list of individuals is not comprehensive due to a lack of sufficient data.

ment that the Hub launches a pilot with these regional leaders to clean up the platform and set up the structure for each region. After teaching these members how to navigate the site and moderate their region, the Hub needs to emphasize that the new practice for distributing and receiving information is through the site. If people embrace this practice instead of emailing and private messaging each other, then other users can have access to that information as well.

- 4. **Establish Moderators:** The Hub should select
- 5. **Conduct a Pilot With Moderators:** We recom-

- 6. **Shutdown Podio & Facebook Workplace:** Cut People off From Podio and Facebook Workplace. Give the identified moderators approximately one week to ensure everything is presented appropriately, all data is migrated, and the system is ready for the new members. This will prevent multiple platforms being used in parallel and ease data migration.
- 7. **Launch Discourse:** The Hub should launch the platform to the community as a whole and make it widely available. This launch should be accompanied by webinars to train affiliates and by making training videos available to the community as a whole.
- 8. **Encourage Local Events:** In order to foster greater affiliate participation in their online community, the Hub should encourage regional leaders to host local events or webinars introducing their local members to the platform and training them appropriately.

Suggested Implementation Plan:

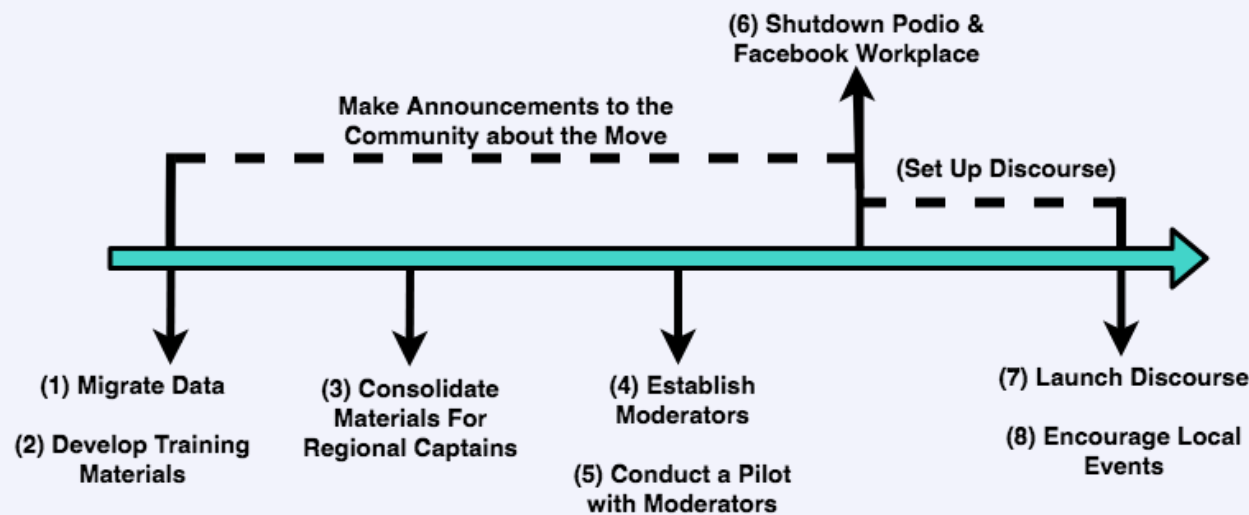


Figure 11. General Outline for the Hub's implementation of the CWA discourse site.

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Supplemental materials for this project can be found at:
<https://wpicpc.org/projects>