Scaling Technical Work While Maintaining Quality - Leveraging Community Principles

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Abstract

Despite the promises of AI, the demand for freelance technology professionals is surging, as companies seek niche skills and the traditional profile of full-time employees is being challenged. The global gig economy generated $204 billion in 2023 and is expected to grow 17% in 2024, with the United States predicted to have more gig workers than non-gig workers by 2027 (Bursztynsky, 2023). Scaling any team while maintaining quality output is an age-old challenge. Many technical organizations have turned to freelance professionals to support their service delivery, but the gig economy model adds a new level of complexity to scaling with quality.

How do you maintain quality as you scale global delivery with freelance gig workers? At large scale, the trust-based model no longer works and, while there are lots of performance metrics and ways to monitor your workforce, this paper challenges you to think a little more creatively.

In my experience, many of these traditional monitoring methods can lead to attrition and resentment if you are not also working on building a connected community within your team. This paper aims to highlight principles from the community management discipline and how they can be applied to scaling a workforce in tandem with traditional performance measures to create a positive, motivated community who in turn organically provides you with a higher quality output.

While this paper speaks often of the gig economy and freelance workers, as that is how my organization has scaled its highly technical team, these ideas and principles can be applied to leveraging community management to scale any team.

Biography

Katherine Payson is an accomplished cybersecurity industry operations leader. She is currently the Director of Delivery Operations at Cobalt, the world's leading pentesting as a service provider. In this role, she oversees the execution of over 4,000 pentests annually, delivered by a global community of top freelance security researchers. Katherine is responsible for ensuring the quality and efficiency of Cobalt's pentesting services, helping organizations improve their security posture.

Katherine is passionate about leveraging creative tools and approaches to scaling service delivery teams. She is a strong advocate for building a diverse and inclusive workforce and is committed to fostering a positive and motivating work environment.

Katherine has over a decade's experience in the cybersecurity space and holds an MBA in Leadership.

1 Introduction

In the '80s, you would never dream of getting in a stranger's car and having them drive you from point A to point B. But here in the 2020s, Uber operates in over 70 countries and executed almost 10 billion rides in 2023. The gig economy, a labor market that relies on part-time positions filled by independent contractors, is booming. In 2024, people tend to associate gig work with app-driven work like Uber or DoorDash, but developers, programmers, graphic designers, and more have turned to side-gigs as a stream of income, largely fueled by the post-pandemic desire to work remotely.

According to McKinsey's 2022 American Opportunity Survey, 36% of employed respondents (roughly 58 million Americans) identified as independent workers. In addition, data from the world bank shows that the global gig economy accounts for up to 12% of the labor market (World Bank Group, 2023). People in the US are electing for these jobs for flexibility and ease of entry while internationally, the gig economy offers promise for women and youth in developing countries (Sharif & Zhenwei, 2023). Digital technology is enabling new solutions and opening unique opportunities for employment matching workers to tasks without many of the cumbersome requirements of hiring a large full time staff. In countries like Bangladesh, Malaysia, and Kosovo, governments are providing online gig work training to specifically support youth, women, and those in the bottom 40 percent of income distribution.

My organization, Cobalt, provides penetration testing at scale. For those not familiar, a penetration test or "pentest" is an authorized, simulated attack by a pentester against a computer system to look for vulnerabilities that could be exploited by a hacker. Every day, my team and I work with clients as they incorporate offensive security into their applications and assets. Offensive security is the practice of actively seeking out vulnerabilities and security weaknesses before a hacker exploits them. In contrast, defensive security teams are responsible for defensive measures, like monitoring, detecting, and responding to security threats. Incorporating both of these approaches is important to maintaining a good security posture.

I joined Cobalt in early 2021 after spending six years with more traditional penetration testing vendors. At a legacy pentesting provider, a customer may sign a full Statement of Work (SoW) with a hefty price tag, only to join an 8-week lead time for a skilled tester. The process is clunky, with kick off calls and requests for resources on both sides, then many months later the customer receives a PDF report that they must then take back to their dev or engineering teams and decipher to create internal tickets for fixes.

Cobalt does it differently: Enter Pentest as a Service, or PtaaS. PtaaS combines manual, human testing with a modern delivery platform to deploy ongoing pentest programs with integrations for ticketing systems, ease of reporting, and no wasted time on procurement. Sounds super-cool right? But how does one build a team that can deliver hundreds of tests at any given time, and start another one at any point, with just 24 hour's notice?

We have a community of about 450 highly skilled penetration testers who work from all around the world. While the gig economy is the basis for our delivery model, scaling still comes with great challenges. As you scale from 4 to 40 to 400 workers, you quickly see that the trust-based model no longer works to ensure quality standards and expectations are met. At Cobalt, managing 4 penetration testers was easy and 1 person could track their deliverables and output. At 40, things got a little tougher, so maybe 3 or 4 project managers could maintain standards, but at 400 we have had to pivot and think dynamically about how to ensure that they excel in their craft and offer our clients the top-tier experience we strive for.

You certainly need the basics in place at this scale. A good vetting system, onboarding, a solid independent contractor agreement, documented guidelines, and a clear code of conduct. However, these

things just lay the groundwork. How can you invest in your growing team members' success so they are driven to invest in yours?

Community management is fundamentally a discipline that focuses on building and maintaining relationships with a group of people who share common interests. Most communities that we think of in the business environment fall into a few categories.

- **Support**, where the goal is to improve customer support and satisfaction, reducing support costs, and allowing members to answer questions for each other.
- **Acquisition**, where the goal is to increase brand awareness, grow market share and drive sales traffic.
- **Contribution**, where the goal is to motivate and accelerate contribution of content
- **Engagement**, where the goal is to increase customer retention.

There are a few others, but because these categories mostly boil down to customer satisfaction and sales. Community Management is typically categorized as a Marketing function within an organization. However, the principles of community management can be applied to a variety of other areas, such as scaling operations, development, and technical teams.

People want a sense of belonging, social connectedness, a group that shares their own values, a sense of identity. I believe technical team leaders can draw a great deal of knowledge from the community management discipline to create these people and purpose connections and, in turn, team members will invest in the organization's success. They will pride themselves on working for you, talk about your community, put in the extra effort and bring other members up with them. Adapting community principles like creating a clear identity, utilizing rewards, actively fostering collaboration, providing clear conflict resolution and cultivating champions are invaluable tools to building a low attrition, high-quality delivery team both in the gig economy and for large internal teams.

2   Building the Foundations

More often than not, there is a skill requirement to join a community, particularly in the tech industry. For Uber, it's the ability to drive and work the app competently. For Cobalt, to be considered for a preliminary interview, an applicant must have a minimum of 4 years in the industry with strong, demonstrated abilities in penetration testing. That is then followed by a rigorous vetting process including a technical skills assessment, report writing assessment, and soft skills review.

While we have a duty to find the top talent for our customers, these barriers to entry also create a lot of strength in our community. Making it a bit more challenging to join or reach a certain status in the community creates a stronger sense of social identity and belonging for your members. Effort justification, which stems from Leon Festinger's theory of cognitive dissonance, describes a person's tendency to attribute higher value to an outcome they had to work hard to achieve (Vogl, 2016). If one has to invest more energy and time to gain membership, it can create very strong social identities and highly committed communities. In Cobalt's case, this means heavily vetting applicants, and accepting only 5% of the applications that we receive for our community each year.

Despite the prevalent articles you may see about skilled labor shortages–particularly in the security space–competition can be high with organizations leveraging freelance workers. At Cobalt, we work with top-tier skilled individuals who are sought out by our competitors in the space. Onboarding is the first step to capturing these individuals and gaining their investment in us over our competitors. Onboarding should be an exceptional experience for both parties, it's a crucial opportunity for you to make a first impression,

and to make it more likely that community members will become highly engaged members. Think about what you want them to know, how you want them to feel being

3   Developing a sustainable Community

3.1   Clear Identity

Creating a clear sense of identity for your community is essential. It gives members a feeling of belonging, purpose, and direction–but more importantly, creates boundaries. Members know who is in, why they are in the community, and what they need to do. A well-defined identity helps people feel connected to something bigger than themselves, and builds a sense of camaraderie and shared values. It also makes your community stand out, attracting like-minded people who share your mission and goals. A clear identity also guides decision-making, ensuring that actions and initiatives align with the community's purpose and values.

By building a strong identity, you create a lively and engaged community where members feel valued, respected, and motivated to contribute their time, skills, and expertise. For Cobalt, our community's shared vision is a shared passion for securing our customers assets–and in turn making the internet safer. Our community is in a space where it is imperative that members be lifelong learners and grow as technology changes. We work to align our community, and our organization in general, with the identity of highly skilled learners, working to secure the internet.

3.2   Rewards

A key piece of maintaining engagement is rewarding contribution. Providing members with benefits that must be earned creates growth and avoids attrition. Gamification in community management is essential for scaling a workforce because it provides a structured and engaging way for members to contribute and learn. By incorporating game elements (such as points, badges, and leaderboards) community managers can motivate and retain members while encouraging them to participate actively. Gamification can also encourage a sense of community and belonging, as members work together to achieve common goals and celebrate each other's successes.

However, it is important to implement gamification genuinely and authentically to achieve lasting success. In other words, the rewards and recognition should be meaningful and directly tied to the community's goals and values. Gamification should not be used as a gimmick to manipulate or exploit members. Instead, it should be seen as a tool to enhance the community experience and empower members to make meaningful contributions. By focusing on intrinsic motivation and creating a positive and supportive environment, community managers can create a gamified community that is both engaging and sustainable.

At Cobalt, rewards come in the form of tester levels or promotions, compensation, and visibility for thought leadership from our members and swag. Gamification and reward can be a tricky line, trying to drive quality work from your community through extrinsic rewards can come off falsely. The rewards should be a symbol of proof of a member's investment and status. Swag is incredibly popular in the tech space, where someone must be a proud member of your community to wear your logo out in public at industry events and such, and be excited for others to see that they are a member. While we do have general swag at events (the most popular being a t-shirt with a giant taco on it and the tagline "will hack for tacos"), most of our community swag is tied to milestones with us. For example, "Welcome" swag at 5 tests, a backpack and an achievement coin at 100 tests along other items, and so forth. No, people don't

want another keychain flashlight with your logo on it, but community-specific swag goes a long way in rewarding hard work and dedication at Cobalt.

We tier our contractors at two levels (although we are looking to expand this further). Our most tenured top performers are Leads on our engagements. They lead the testing team for an engagement, and are responsible for ensuring that work is fairly divided, reviewing and validating the team's findings, preparing the final testing report, and providing feedback regarding the test and other members of the engagement team. While we do compensate for these responsibilities, we have found the role on its own creates desire for growth and that motivation has fostered genuine Cobalt champions.

3.3   Collaboration

Collaboration and joint decision-making are imperative to community building, because they cultivate a sense of ownership and belonging among members. When individuals feel like they have a say in the direction and development of the community, they are more likely to be engaged and invested in its success. Joint decision-making also helps ensure that the community's goals and values are aligned with the needs and interests of its members. By working together to make decisions, community members can create a space that is welcoming, inclusive, and supportive of everyone's needs.

While your organization of course has to design and execute a roadmap aligned with business and customer needs, it is imperative that your community also has opportunities to provide input on the organization's direction. This ranges from being encouraged to provide constant and regular feedback on your product and their experience using it, but also visibly involving them in decisions around broader strategy such as eliciting market trend input or competitive analysis feedback.

At Cobalt, the constant feedback loop is quite easily managed through active open Slack channels for bug support and application feedback. For larger initiatives and strategy input we turn to our Pentesterr Advisory Board (PAB), which is a 12-month commitment from a selected group of community members. PAB members share and gain knowledge at monthly community meetings, obtain advanced knowledge of Cobalts plans and direction, and influence the development of our product functionality to meet the community's needs. It's also viewed as an elite group to join, and members can prove effective at the Lead tier I mentioned above. It can be very motivating to be selected to represent the community. While in our function, the members represent our community of contractors, an advisory group like this could also be done with scaled with a community of full-time employees (Although in that case, it is imperative that their day jobs allow them enough room to be effective members of your advisory board without a significant added task to their workload).

Another key note about collaboration is that you should continuously support your community in delivering quality in new ways, as technology and your space change. For example, our testers join us having shown competence in writing reports to our standard, but to support their time and create more consistency we have developed some AI for reporting tools. It offers our testers suggestions on how to improve grammar and tone but also offers input on writing the various report sections based on the findings specific to the test. This is a relatively simple use of AI, but it has gone a long way with our community as we recognize we can streamline and support a task they often find cumbersome; Hackers like to hack, not write. It also helps us further an inclusive community adding significant support for members for whom English is not their first language.

3.4   Conflict Resolution

Community management at scale does require effort and resources, and a large part of that work is effective monitoring of violators. In community management, Conflict resolution is crucial to maintaining a positive and respectful environment for all members. When conflicts arise, effective resolution strategies ensure that disagreements are addressed promptly and fairly, preventing them from escalating and damaging the community's overall dynamics. By resolving conflicts constructively, community managers can foster a sense of trust, collaboration, and inclusivity, and this allows members to feel safe and valued, which ultimately contributes to the long-term success and sustainability of the community. If members don't trust each other to follow the rules, their faith in the community and organization can quickly be lost. Just like you working with your peers, where you expect everybody is working towards the same end goals and following certain professional guidelines to do so.

At Cobalt we manage performance on a 3 strikes rule, and sanctions for those strikes are gradual. For example, small violations that may result in a tester not meeting a customer's expectations can result in a strike, but a careless code execution that harms a customer's environment or intentional malicious actions against another member will result in an immediate off-boarding from our community.For individuals, these measures may sometimes seem harsh, but you must enforce your performance expectations for the rest of the community to have faith that both you and they are operating with the same interests.

I learned this one the hard way: For a long time, Cobalt's performance management was built around escalations. So either a customer or peer community member would have to come forward with a concern for a ticket to be opened and investigated, otherwise we functioned largely on a trust model. At the time, we felt this system worked: We were addressing all concerns raised while allowing our community members space to do their jobs. We slowly started to see that this was not actually servicing our community at all. In allowing that freedom, we had actually created a fear to come forward and highlight under performers that were not contributing to our community in line with our expectations. A fear that feedback would result in inaction and that inaction could create tension among peers working together on future engagements.

We developed the strike model along with a more proactive approach to performance management. We can now look at an individual's performance statistically from a variety of data points, as well as anecdotally through anonymous peer reviews. This allows us to initiate performance conversations without peer members being put in a difficult spot. The new policy was very well received by the community, and we actually saw an increase in feedback on things from performance to product updates and beyond. Developing these policies and processes for conflict and performance management puts us all on the same page, and shows our community we are fair and invested in their individual and collective success.

3.5   Networking Adoption and Support

Particularly in the tech industry, communities are often subsets of a much larger group and network. As a community owner, we must support our members wider than our own community. For cybersecurity, that involves encouraging penetration testers to attend events and network outside of Cobalt. In-person meet-ups provide an opportunity for our members to connect, collaborate, discuss industry trends, emergent technologies, best practices, and more.

Our community team partners heavily with our marketing team on things like content creation for and by our members, highlighting individuals through our social media accounts and of course events. We sponsor Cobalt community events at DEFCON, the industry's biggest event of the year. DEFCON is a hacker convention held every year in Las vegas, Nevada with over 30,000 attendees. It spans 3 days with a variety of talks and workshops culminating in lots of vendor sponsored events.. While this is a very high visibility event we also sponsor B-sides events that our members lead and speak at regularly. B-Sides is a global non-profit advancing information security through conferences and events to share knowledge. These are usually smaller, more local events when you can meet industry individuals in your area and learn about border cybersecurity topics. On top of those sponsorships, we encourage Cobalt Core members to reach out when they visit new cities so we can sponsor meetups and meals for Core members to get together in person.

3.6   Cultivating Community Champions

Cultivating community champions within your organization can play a large role in gaining community support on changes. These individuals are passionate about your organization and its goals, and are willing to go the extra mile to contribute to its success. By identifying and nurturing community champions, organizations can leverage their influence and expertise to drive positive change. The previously mentioned Advisory Board is one way to cultivate champions as board members are given visibility and are chosen based on the high quality they provide the organization. However, at Cobalt we recognize that we also have some organically occurring champions in our community. Individuals who are well known at events outside of our community, individuals that release interesting blogs or have a large social media following along with individuals who are very active in our slack channels and people naturally gravitate towards them as a face of the community. It's important to recognize both avenues champions can be created and recognize who those champions are.

Champions can serve as ambassadors, promoting the community and its initiatives to their networks. They can be effective support in recruiting, onboarding and feedback. However, one of the most valuable things we have driven from our champions is getting them to understand how some less favorable decisions are in the best interest of our business, and a means of ensuring that we can continue to build a thriving community.

For example, as we have scaled we launched pentester logging retention. This is a community-wide change in test requirements that means each tester has to upload their logs to Cobalt after a test ends. As you can imagine, this is a big change for our members and a significant shift away from a heavily trust-based model. However, helping our champions see that this helped us ensure that we continue to meet our enterprise customers' security demands, so that we can continue to grow up-market and bring more work to the community, helped with the greater community understanding on this. Cobalt's champions were able to shift the perspective from what could have been perceived as an invasive ask to a normal part of our process, which allows us to continue to bring them more engaging projects to work on as part of our community.

4   Establishing a Community Strategy

When you give people a genuine sense of community, it motivates them to want to get involved and contribute. Motivate enough people, and a community can help you achieve incredible scale, but how does one build a strategy towards this genuine motivation?

David Spinks who is one of the founders of Bevy, a well-known community platform, presents one of the clearest ways to think about community strategy in his book, The Business of Belonging. David outlines the three levels you should consider:

- **Business level** - How your community program will drive revenue for your company. This may differ with your goals. For example, at Cobalt's current stage of growth, this is not directly measured in revenue and the focus is on providing the customer a top-tier quality consistent experience with all of our community members. In turn, we hope this contributes to the customers renewing contracts with us and providing us with positive reviews to peers.
- **Community level** - How your community will grow and become more healthy and engaged over time. For Cobalt, this could be something like decreasing the time to a first test for new members to capture engagement faster or grow attendance on our monthly training and Q&A calls.
- **Tactical level** - The specific initiatives and improvements you work on to build a healthy, engaged community and achieve the business outcomes. At Cobalt, we try to plan this with a quarterly and yearly view, and our actions can include smaller things, like: increasing community content posted on our blog, to larger goals, like introducing a new tiering model to our community to allow more senior resources the opportunity to mentor junior members.

Each of these goals should have metrics attached to track your success. For example, increase community-authored blog posts by x number of articles in the third quarter. The next section outlines a measurement framework you can use to assess the overall health of your community and provide a broader view on how your strategy is working.

5 Measuring Success

There are two fundamental areas you should be measuring the success of your community. The first and perhaps more obvious, is a community member's skill in the applicable discipline and their ability to deliver on their contractual obligations. At Cobalt, measuring a penetration tester's performance looks like a review of their technical skills through vulnerabilities found and attack paths taken, a review of soft skills with customer interactions, and more tangible numbers like a peer review score or customer Net Promoter Score (NPS). For those not familiar, an NPS score is a market research metric that is based on a single survey question asking respondents to rate the likelihood that they would recommend a company, product, or a service to a friend or colleague. These areas are imperative and fundamental to ensuring you are delivering for your customers, but the second area you should be measuring is whether your community efforts are having impact and resulting in a more quality output?

The first step is to put a framework around your community maturity and lay a foundation for your community strategy. Every organization with a community function should have a maturity model as a way to measure their success. A maturity model will serve as a shared expectation for how your community develops, and provide a framework that allows benchmarking for the current state and identifying areas of improvement for your community practices. There are a few published frameworks for community management, but my favorite is from The Community Roundtable, previewed below. You can customize these frameworks to your organization, and weigh some areas more or less, depending on your goals. Either way, a framework allows you to perform a gap analysis and see where your efforts may be best spent.

The diagram below shows 8 competencies on the left that you can measure for your community. These are broad but could be customized for your specific community. Then the ratings from left to right articulate how these competencies progress from hierarchical organizations to those that have embraced

a networked approach to their business. Hierarchical being an ad hoc use of some of these areas to networked which would imply a full corporate strategy behind your community.

The Community Maturity Model	1 Hierarchy	2 Emergent Community	3 Community	4 Networked
Strategy	Competitive	Reciprocal	Cooperative	Interdependent
Leadership	Directive	Engaged	Influential	Inspiring
Culture	Resistant	Contributive	Supportive	Collaborative
Community Management	Absent	Encouraging	Mentoring	Empowering
Content & Programming	Structured	Responsive	Emergent	Co-created
Policies & Governance	Rigid	Restrictive	Flexible	Inclusive
Tools	Ad hoc	Defined	Integrated	Adaptive
Metrics & Measurement	Transactional	Experiential	Behavioral	Strategic

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Building a community is not a linear timeline, but rather a series of these maturity indicators or milestones that lead to a more networked organization, in this example.

For the next step, you have to ask your community about how satisfied they are with your strategy and their day-to-day life in your community. A strong indicator of this can be a simple NPS score from the group, but you can also survey around specific events or initiatives. We survey our community every other month, which provides us with a simple NPS score and allows us to ask dynamic questions based on our business needs and about our community's interests and needs. For example, we can ask how many members feel they are skilled at a new service we are looking at offering, or what kind of events our testers are planning on attending in the next 6 months and how we can support them.

And the third step is gathering some very simple measures as you're getting started, such as engagement. Measuring engagement within a community allows you to get a gauge on the level of involvement and participation of your members. This can be done by tracking various metrics, such as the number of active participants, frequency of interactions, contributions to discussions, content creation, and event attendance. By analyzing these simple metrics, you can assess the success of your efforts and also identify areas for improvement. The sooner you can start collecting this data, if you are not already, the sooner you can build a baseline to compare to your future metrics and see the value of your community strategy.

6 Conclusion

Large technical teams can significantly benefit from adopting community management principles to scale their operations and drive innovation. By fostering a sense of community among team members, organizations can create an environment where individuals feel valued, connected, and motivated to contribute their best work.

Building a successful community requires a comprehensive approach that incorporates aspects, such as effective communication, conflict resolution, community adoption and cultivating champions. By implementing these strategies, organizations can create thriving communities that drive innovation, foster collaboration, and contribute to the overall success of the organization.

Continuously evaluating and refining your community management strategy and practice is essential to adapting to the evolving needs of members, and to aligning with the organization's strategic goals. By investing in community building, organizations can unlock the potential of their members, create a sense of belonging, and position themselves as leaders in their respective industries.

Disclosure & Acknowledgement

Gemini for Google Workspace was used to proofread this document. Gemini proofread includes checks for spelling, grammar, active voice, sentence splits and conciseness.

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