Inclusive Practices and Software Project Productivity

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(The slides are available via the link in the page's sidebar.)

Q: Information overload is something we all fight constantly. Work can be a sheltering process. Deadlines hamper critical thinking for most people. How do you create room for people to digest and grow forward in their thinking related to inclusion?

A: In my extemporaneous answer to this question during the webinar, I focused primarily on my own personal experience. That said, in re-reading the question, some of the assumptions are not what I observe. For example, a lot of the work I do requires collaboration (interacting with others) on a regular basis. So, I do not find work "sheltering". Quite the opposite. I do know some programmers who do work that way but they are the exception by far. And, they tend to be phenomenal SMEs (world leading experts) at that one thing they are focused on. Over my life as a software engineer, I have had to become proficient at more and more things beyond writing code; creating and giving presentations; leading team meetings; handling and responding to SQA audits, designing interfaces, creating project plans, integrating performance portability, using GitHub Actions, etc. For each of these new skills, the "...room to digest and grow…" needed to be created and it was. Why is developing competence with inclusion and inclusive practices any different, special or unique in this regard? I don't think it is. It is yet another skill that makes anyone a better software engineer and should pretty much be developed like any other software "muscle".

Q: He (Mark) gave his personal approach & motivations but I'm curious how to create organizational guides to open others minds to inclusion. Most people work to do what they want not to just improve for the sake of improvement or participate in distractions.

A: Well, the second half of this question speaks to why I think so many people make the productivity argument for why inclusion is important. And, there is a lot of data to back that argument up. It is also why "inclusion" gets more of the focus now and why "diversity" has a lot of baggage. For me personally, I don't like having to make the productivity argument though. It certainly works but its unsatisfactory to me to have to motivate people through that. The challenge with systemic issues (like genderism and racism) is that everyone feels like its not their issue when in fact, everyone is biased by

how "normal" that particular way of being has become. They didn't create the problem(s) and so it isn't their job to expend effort to fix it. That is why I fall back on using metaphors like the microplastics example. There are plenty of other similar examples. What would happen if we as software developers all took the attitude that we will expend effort to fix only the bugs we, ourselves, created? I suspect nothing would get done. We all have the experience of using a product we didn't develop and having to dig into why its failing in some way either to wholly fix the issue or to communicate intelligently about the issue or to create a reproducer that someone else can use to fix the issue.

All that being said, I do think an organization's top tiers of management can exert pressure towards shifting culture. Without such pressure, inclusion initiatives will almost certainly fail. Even with such pressure, they can still fail. But, the ways management can move the needle include things like developing required trainings, including inclusion as a parameter in performance evaluations, speaking to inclusion topics during key meetings like all-hands meetings, recognizing efforts that have forwarded inclusion initiatives, backing up initiatives with actual funding, hiring people who are subject matter experts (SMEs) in the DEI space and giving them a significant budget and leeway to start introducing new ways of shaping the workforce, encouraging the workforce to participate in things like book clubs, etc. I see all of these kinds of things happening at Livermore Labs for example. Eventually, we really do need to develop metrics to understand the impacts of various actions. We are slowly trying to do that with various kinds of surveys (pulse surveys, stay interviews, culture surveys). We have seen modest improvements in a few metrics involving a site-wide culture survey but there is still plenty of work still to do.

Q: Can you speak to how to resolve circumstances where these guidelines conflict with one another? For instance, what if people have legitimate reasons for leaving their camera off (e.g. bad mental health days, etc)?

A: I think if you've identified a "legitimate" reason for not having a camera on, you've answered your own question. There is no reason to view any of the remarks or bullets on my slides as though they overrule or are somehow not consistent with "legitimate" behavior. If I've presented the ideas in such a way that it suggests there is no legitimate reason not to have a camera on, then I have struck the wrong tone.

Participant comment: I disagree about keeping the camera on. E.g., the current meeting most have their cameras off as a courtesy to give the focus to the speaker. In more intimate meetings, sure, try to have your camera on. But large presentations like this? Not as important.

Participant comment: I have anxiety that makes me feel uncomfortable on camera and feel uncomfortable every time a meeting organizer calls attention to how it's "better" to have cameras on.

A: Great point about large vs. small meetings. I agree.

Right, I get anxiety when a meeting leader asks for input and nobody says anything. Regarding having anxiety about being on camera, it would be interesting to understand that maybe one level deeper. Without a deeper understanding, I am inclined to ask what that person would do in an in-person meeting…not show up? Take a position way, way back in the corner? So much of our work involves teams and interacting with team members, I am wondering how anxiety from those interactions, if any, is managed?

Q: Speaking of jargon, what is LGU?

A: That use of jargon was a tad intentional…to prompt someone to ask what an LGU is. Sorry for shamefully soliciting such a question. An LGU is a "Land Grant University" (indigenous peoples might say "Land Grab University"). Read more about the Morrill Act of 1862 (yes, 1862, not 1962) and follow on acts. Today, more than 30% of STEM degrees origins from LGUs. Amazing how 150 year old congressional legislation is effecting our community even now.

Q: How *did* the Manhattan Project manifest inclusivity? I think I know of *one* community who wasn't a fan…

A: At its peak, Los Alamos had >6,000 people living there. They came from all over the US and many parts of Europe. There were different religions, different cultures and food habits, different recreational habits. They celebrated different cultural holidays, cooked different cultural dishes, honored different religious practices. Over 300 babies were born in Los Alamos during the Manhattan Project. Day care and a school was needed. They mixed both civilian and military personnel working in close proximity like never before. They worked to make the place liveable for entire families not just the scientists. Women were employed in many roles both at Los Alamos and throughout the various sites supporting the project. In various parts of the projects, a lot of Black people were employed and moved to those locations where they were needed and where there had never before been a large population of Black people. Key technical aspects of the project involved close collaborations between physicists (experimentalists and theorists), engineers, mathematicians, computers (women), etc. It is worth comparing

these inclusive practices to how the German effort to develop a nuclear weapon was managed.

Q: How do we make these practices survive shifting political / cultural winds? Lots of us are feds and we know that changes in administrations can have huge impacts on what we're allowed to do and how we're allowed to act.

Participant comment: Not sure if this is completely good or not but have language for initiatives that is politically neutral. The risk here is that you are not calling out a need directly. Eg. DEIA >>> Inclusive Workforce Development and Retention

A: The answer to this lies well outside my pay grade. I am hopeful because I work at an organization and live in a state that I think is wholly supportive of inclusion efforts and won't easily by dissuaded from pursuing them.

Q: I'm attending SC24 this year to try to get more involved with Exascale software but there doesn't seem to a focus to use this moment to include others or really address inclusion. Women have their groups at this event but the industry needs to use these events to define requirements to speed inclusion.

A: So, dialog during the webinar clarified that this question was primarily about how the HPC community and Super Computing (SC) in particular tends to be accessible only to people who already have HPC experience. There do not appear to be many opportunities (at SC anyways) for SC/HPC newbies that are there to learn more about it starting from a "no experience" state. One suggestion was for some tutorials that are half-day and cater to attendees with no experience. Seems reasonable to me though that would have to feed back to the committee managing SC because they often get many more times proposals for tutorials than they have resources to accommodate and a key question is what portion of those resources they might be willing to set aside for tutorials catering to attendees of this kind.

Resource mentioned: The blog article, The Inclusive Moment:
https://hpc-workforce-development-and-retention.github.io/hpc-wdr/jekyll/update/2023/04/08/inclusive-minute.html