Does Cost Team Leadership Matter?

Christina N. Snyder, CCEA

Abstract: Does cost team leadership matter? An anonymous survey of 150+ cost analysts unanimously reported that a cost-team lead's effectiveness ultimately impacts the team's products. However, there has been minimal guidance as to what defines good leadership. Using the ten behaviors identified by Google's Project Oxygen, this paper seeks to understand what skills are necessary for successful cost leadership. The findings lead to a simple conclusion that mirrors that of Project Oxygen: improving our soft skills will improve cost leader efficacy.

Introduction

The International Cost Estimating and Analysis Association (ICEAA) is a cost estimating organization built by cost estimators for cost estimators. While having a cost-specific emphasis does facilitate focus on state-of-the-art estimating techniques, it also leads our community to potentially be unaware of peripheral opportunities for professional growth. This paper seeks to capitalize on one of these peripheral knowledge areas, hypothesizing that by using lessons learned from Google's Project Oxygen we can identify leadership behaviors that will result in positive cost team outcomes. If there is consensus from our community on the behaviors of good leadership, it would establish the groundwork for future training on cost leader improvement.

This paper initiates a similar approach to survey, reflect, and update training; beginning with the question "does cost team leadership matter?" Given a lack of literature and training materials on leadership skills in the cost community, could the behaviors identified in Project Oxygen as being related to good managers translate to better cost leadership? This paper builds a foundation, expands upon, and provides context to the ten attributes that characterize great managers at Google. It shows the relevancy of Google's research to the cost estimating community and, in replicating their study, highlights the important attributes of cost leaders. It also explores the differences between the opinions of leaders and non-leaders and how the findings from our cost community compares to the Project Oxygen management ranking. The results of these findings will provide examples of how the top perceived attributes can be put into action within our work. The identified attributes should also fuel further exploration into the relationship between leadership skills and team efficacy, ideally creating new training for those growing into leadership roles.

Background - Google's Project Oxygen

A case study was conducted by Professor David A. Garvin, Alison Berkley Wagonfeld, Executive Director of the HBS California Research Center, and Senior Researcher Liz Kind for the Harvard Business Review in 2013 highlighting the behavior measurement of Google's management, why managers matter and what the best managers do1. Known for a culture of consistent improvement, Google requested their personnel analytics team internally identify opportunities for team enhancement; they thought outside the box and questioned "Do Managers Matter?" Beginning in 2009 with the Google People and Innovation Lab (PiLab), they called the effort Project Oxygen and hypothesized that a very flat organizational hierarchy like Google's "of engineers for engineers" was ideal, and that managerial roles had very little impact on

Figure 1 - Manager Quality vs. Performance
From https://www.youtube.com/watch?v=JattR1uoX7g

performance. To determine if managers matter, they wanted data to see who the highest performing managers were, who were the lowest performing, and whether it impacts the team. Figure 1 shows their scatterplot of manager performance and the team's view of the manager. In the next step they studied the quantifiable differences between the most effective and least effective managers. Teams with managers in the most effective quadrant consistently had better team morale, less turnover, and greater employee satisfaction than those with less effective managers in the bottom left quadrant. For example, retention had a stronger correlation to manager quality versus other employee metrics like seniority, performance, tenure, or promotions. To the surprise of the researchers, the data suggested that not only did mangers matter, but that good managers had a significant impact on job satisfaction, employee retention, and performance.

With sufficient data to prove the correlation between manager quality and team performance, the researchers asked the next logical question – "What do the best managers do?". They sought to understand the qualities demonstrated by top versus the lower scoring managers. During the summer of 2009, Google conducted company-wide double-blind interviews with managers to identify the skills that correlate to manager efficacy and later compared that coded data with the manager performance. After several months of data analysis, they came up with eight behaviors that were common among high-scoring managers throughout the company. In 2018, behaviors 9 and 10 were added to make ten total actionable behaviors that improve manager performance.

These behaviors are listed in order of frequency with which the behavior was mentioned during the interview and analysis process. The results of the data analysis were shocking to many at Google. The company that had been built by engineers and typically promoted people based on their technical expertise seemed to value "soft skills" like being a good coach, creating an inclusive team, and caring about the team members more than their technical knowledge and abilities. Laszlo Bock, senior vice president of people operations, commented, "It turns out that

Figure 2 - re:Work Google Manager Behaviors

[technical skills] that's absolutely the least important thing. It's important but pales in comparison. Much more important is just making that connection and being accessible."6

Diving into these behaviors a little deeper, this is how Google defines each behavior:

1. ***Is a good coach*** – Agree on development priorities and check in with employee regularly
2. ***Empowers the team*** – Does not micromanage
3. ***Express interest for team personally –*** Show your team you care
4. ***Is productive and results-oriented*** – Focus on priority results and deliverables
5. ***Is a good communicator*** – Set the stage for two -way dialogue
6. ***Support career development*** - Help your team grow skills for their professional development
7. ***Has a clear vision –*** Develop and share your vision for the team
8. ***Has the technical skills to advise*** – Have the expertise and technical skills to advise team
9. ***Collaborates across Google*** – Create stronger, more deliberate connections across teams
10. ***Is a strong decision maker*** - Provide guidance and act swiftly

Google uses the Project Oxygen findings to revise their annual feedback surveys, curriculum, tools, and programs to improve manager quality but not to penalize or demote. "Project Oxygen was always meant to be a developmental tool, not a performance metric" and we're pleased to see that after coaching them on these skills, "the least effective managers improve the most over time."[11]

Methodology

For the purposes of this effort to replicate Google's study, the method of collecting data was an anonymous survey shared with ICEAA members and the cost estimating community. The primary purpose of the survey was to determine if the cost community agrees that team leadership matters and what behaviors are perceived to be the most important; it uses the ten identified Google Manager Behaviors and tried to establish their ranking in regard to cost team leadership. The survey was intentionally designed to be brief to maximize participation. It also included an open-ended response field to allow respondents to include any additional behaviors that should be added in the future. The study also sought to determine if there were any differences in the perceived importance of these behaviors between leaders and non-leaders.

The survey was completed by 163 cost analysts with cost estimating experience ranging from one to 40+ years. Approximately 80% of respondents had more than 5 years of cost estimating experience and 46.6% would traditionally be considered "senior cost estimator/analysts" with over 15 years of cost estimating experience.

To explore possible differences between leaders and non-leaders with regards to behavior ranking, a self-reported assessment of their past and current roles as cost estimating team leadership is provided in the table below. An overwhelming majority - 83.4% - of respondents have at one time in their career served as the leader of a cost team with one of more analysts reporting to them,

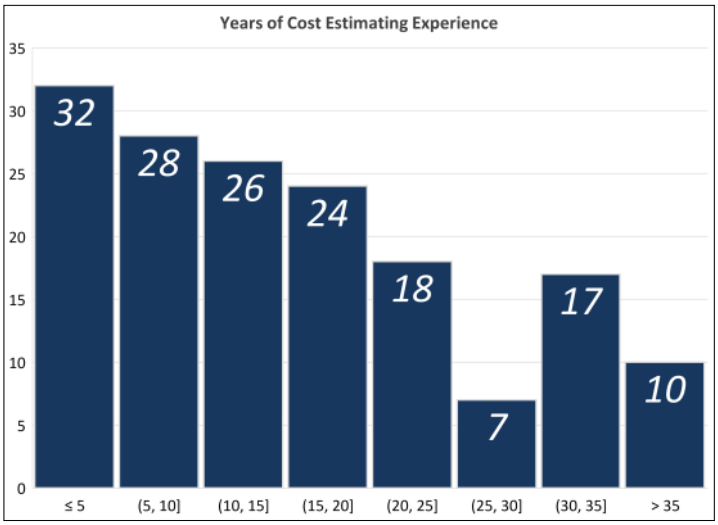

Figure 3 - Experience Histogram

	Yes	No	Yes %	No%
Have you ever served as the leader of a cost team, as in, leading the effort for a cost product with one or more analysts reporting to you?	136	27	83.4%	16.6%
Within your current company/organization are you considered leadership or management?	89	74	54.6%	45.4%

and currently 54.6% are considered leadership/ management.

With regards to the importance of leadership in cost estimating, 100% of respondents responded "True" - a cost team lead's effectiveness has an impact on the cost products generated by the team. Given this unanimous response, defining which behaviors leadership should exhibit was the next step.

The survey then asked "The following are qualities that you may value in a cost team lead. Using a Likert scale of (1-5), rate these qualities from important (1) to not important (5)". The respondents were then presented with attributes of the ten behaviors but did not specifically reference the behaviors themselves. This is similar to how Google surveys their own employees and helps by defining a specific attribute to try to reduce vagueness or different understanding the definition of the behaviors. Based on their response regarding their leadership role, respondents were presented with one of two versions of the survey: one version was

	Non-Leaders	Leaders
Q1	My team lead assigns stretch opportunities to help me develop in my career.	Leadership assigns stretch opportunities to help team develop in their careers.
Q2	My team lead communicates clear goals for the team.	Leadership communicates clear goals for the team.
Q3	My team lead gives actionable feedback on a regular basis.	Leadership gives actionable feedback on a regular basis.
Q4	My team lead provides the autonomy needed to do individual jobs (i.e., does not get involved in details that should be handled at other levels).	Leadership provides the autonomy needed to do individual jobs (i.e., does not get involved in details that should be handled at other levels).
Q5	My team lead consistently shows consideration for me as a person.	Leadership consistently shows consideration for team as people.
Q6	My team lead keeps the team focused on priorities, even when it's difficult (e.g., declining or deprioritizing other projects).	Leadership keeps the team focused on priorities, even when its difficult (e.g., declining or deprioritizing other projects).
Q7	My team lead has the technical expertise needed to review my work.	Leadership has the technical expertise to review the team's work.
Q8	The actions of my team lead show they value different perspectives brought to the team, even if it is different from their own.	The actions of leadership show they value different perspectives brought to the team, even if it is different from their own.
Q9	My team lead makes tough decisions effectively (e.g., decisions involving multiple teams, competing priorities).	Leadership makes tough decisions effectively (e.g., decisions involving multiple teams, competing priorities).
Q10	My team lead effectively collaborates across boundaries (e.g., team, organizational).	Leadership effectively collaborates across boundaries (e.g., team, organizational).

presented to those who responded that they are currently in a leadership role, while the other was presented to non-leaders.

The survey then presented the ten behaviors and had the respondents pick the top five that seemed most important to them, finally narrowing those down to the number one most important behavior. They were then presented with the five unselected behaviors and asked them to pick the least important behavior. The final question was a free response to allow respondents provide any skills not mentioned that are important qualities of cost team leaders.

Results

Initial analysis compared the survey results of leaders and non-leaders in the cost community to the Project Oxygen ranking. By calculating the average Likert scale response for each attribute, an ordinal ranking of most to least important was established for the leader and non-leader groups. Figure 4 shows not only the discrepancies between the cost community's responses and the original Google study but the differences in reactions to the attributes between leaders and non-leaders within the cost community.

While both cost groups value the importance of *clear communication of goals*, opinions of leaders and non-leaders differ in several notable actionable attributes, such as non-leaders assigning a much higher importance to leadership *having the technical expertise to review the team's work* and *giving actionalbe feedback on a regular basis* more than leaders do. Meanwhile, self-identified leaders seem to give higher significance to *leadership consistently shows consideration for*

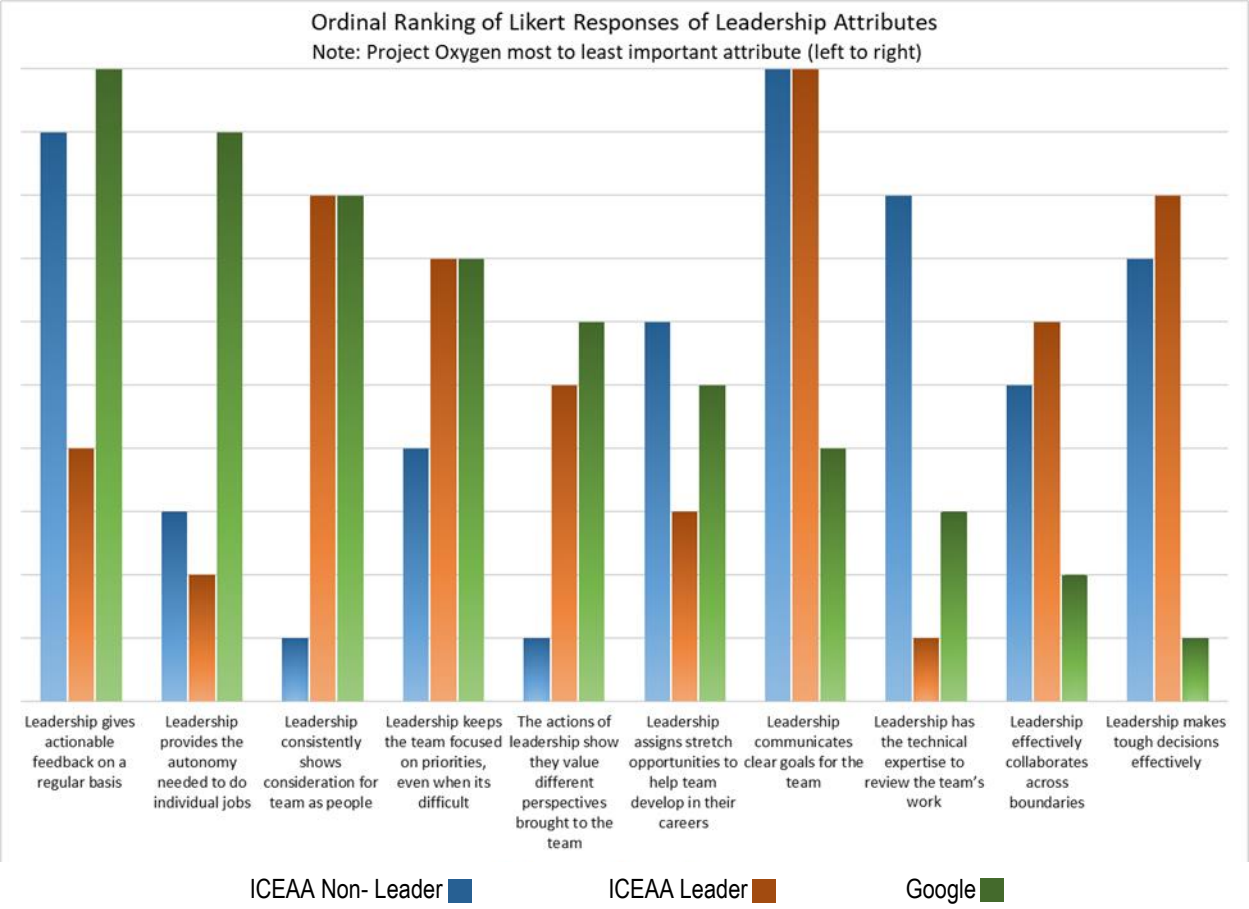

Figure 4 - Ranking of Leadership Attributes

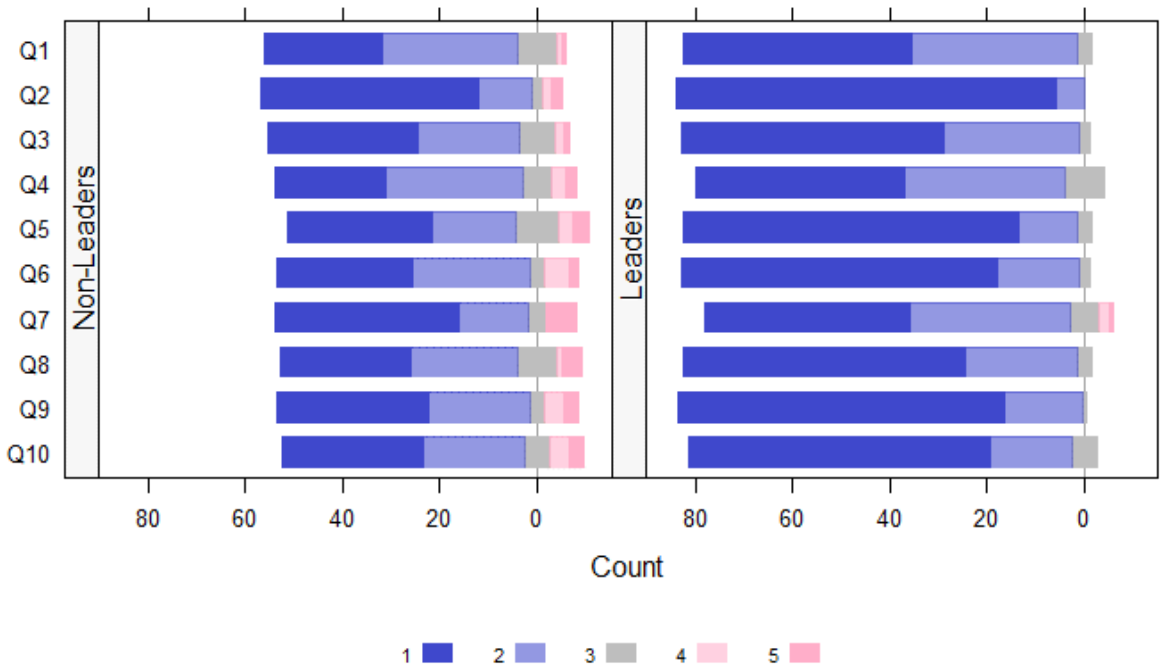

Figure 5 -Leadership Attribute Divergent Bar Chart

team as people and *the actions of leadership show they value different perspectives brought to the* team much more than the non-leaders do. Analyzing the Likert scale responses to the attributes using a divergent bar chart (Figure 5), it is apparent the only skill that leaders believed was less than neutral was *Leadership has the technical expertise to review the team's work*. Leaders otherwise seemed more likely to rank skills as a important (1) while non-leaders were much more likely to give neutral or not important (5) responses.

To address what respondents indicated was the most important attribute, *communicating clear goals,* the guidance can come from what Google provides to train their own managers. In their own rework training site, "Google's high-scoring managers are clear, concise, and honest in their verbal and written communications. But being a good communicator also means being an effective listener. Google encourages managers to be available for their teams and to encourage open dialogue and honest feedback."[7] The results suggest the cost estimating community would benefit from creating and implementing training that teaches rising leaders best practices in written and verbal communication as well as active and effective listening skills. This training could likely also address how to best give actionable feedback.

Figure 6 shows how many respondents chose behaviors as one of the top five responses that they deemed most important when presented with all ten Google Manager Behaviors. The data has been normalized to account for the percentage of each type of survey respondent as more leaders responded to this cost community survey than non-leaders.

The three behaviors chosen most frequently were: *is a good communicator*, *empowers the team*, and *uses the technical skills to advise*. Self-identified leaders overwhelmingly chose *being a good communicator* within their top five most important behaviors. Non-leaders valued the ability of leadership to use their *technical skills to*

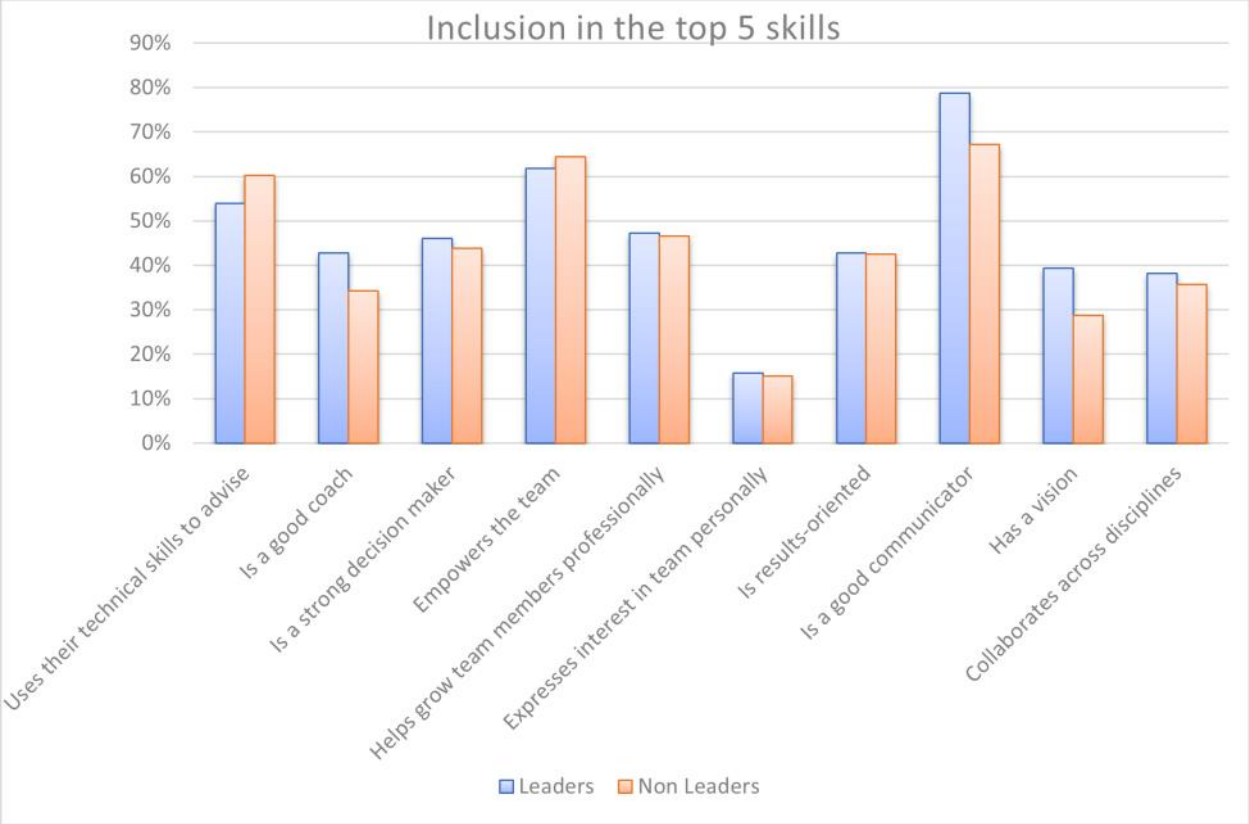

Figure 6 - Top 5 skills

advise and their ability to *empower the team* slightly more than the self-identified leaders, but otherwise the responses appear very similar between the two populations.

After selecting their top five important behaviors, they then are asked to narrow it down to the most important and least important skill. From this data, another interesting point to note is the different perceptions within the leader and non-leader groups. This difference is best highlighted by looking at the skills that have similar amounts of respondents that say it is the most important as those that say it is the least important. For examples with leaders, while ten chose *using their technical skills to advise* as the most important skill, nine believed it was the least important. Five leaders believe that *a strong decision maker* was the most important while five leaders felt it was the least important.

Non-leaders have noticeable discrepancies both in the importance of leadership being *a good coach* and being *results-oriented.* These discrepancies may be caused by different interpretations of the meaning of the behaviors and the bias of the respondent.

Overwhelmingly, the cost community believes that *expressing interest in the team personally* is the least important skill, followed by *having a vision* and *collaborating across disciplines*. For the next iteration of the survey *expressing interest in the team personally* should not be listed as a specific behavior on its own but included as an attribute into other behaviors like *being a good coach*.

Given the nature of this exploratory survey, it was also imperative to ask if respondents believed additional important behaviors that should be included the next time. These responses are shown in full in Appendix 1 and depicted visually

in Figure 8. Of the 163 respondents, 51 mentioned additional behaviors, skills, or attributes that should be considered in the next iteration of this survey; proving there is a lot of room for "soft skills" training at ICEAA's Workshops and within ICEAA's curricula. One notable comment shows the importance of this paper and hopefully value of potential ICEAA training courses: "Skills outside of Cost. Cost team leaders who are too narrow into the field are stifling to innovation. Must be progressive and willing to deviate from the "guides" and "training" which are beyond dated (or even wrong from the start)."

Limitations and Future Work

This paper scratched the surface of an element of cost estimating that previously received very little attention from the community. However, given that all 163 respondents agreed that a cost team lead's effectiveness has an impact on the cost products generated by the team, it seems that refining the work from this initial study and implementing the findings would be worth further endeavors. Ideally, future studies would include correlating cost product/team metrics to a team's rating of their cost team leader on aspects such as delivery time, accuracy, team productivity, product credibility, or team satisfaction. This addition would provide data similar to that produced by the Project Oxygen study, to prove that the team leader quantifiably affects the team and determine the behaviors that have the most positive impact. Realistically, all cost organizations and agencies could do their own internal experimentation using the Project Oxygen method to gain their own unique insights into their leadership. In the meantime, using the feedback from this exploratory survey, training could be developed that will result in more effective leadership and therefore improve the products delivered and team satisfaction.

Though ICEAA has over 1,000 cost estimators worldwide, this survey was delivered in English and filled out primarily by North American cost analysts. ICEAA's wide variety of international support could expand the reach of a future survey. Also, with over 1,000 members of ICEAA the survey participation rate was only between 10-15% of known cost estimators. Although this was a good response rate for the initial work, hopefully future work will have a greater participation.

Though the survey asked for years of cost experience, that does not necessarily reflect the respondent's age, especially in the lower numbers.

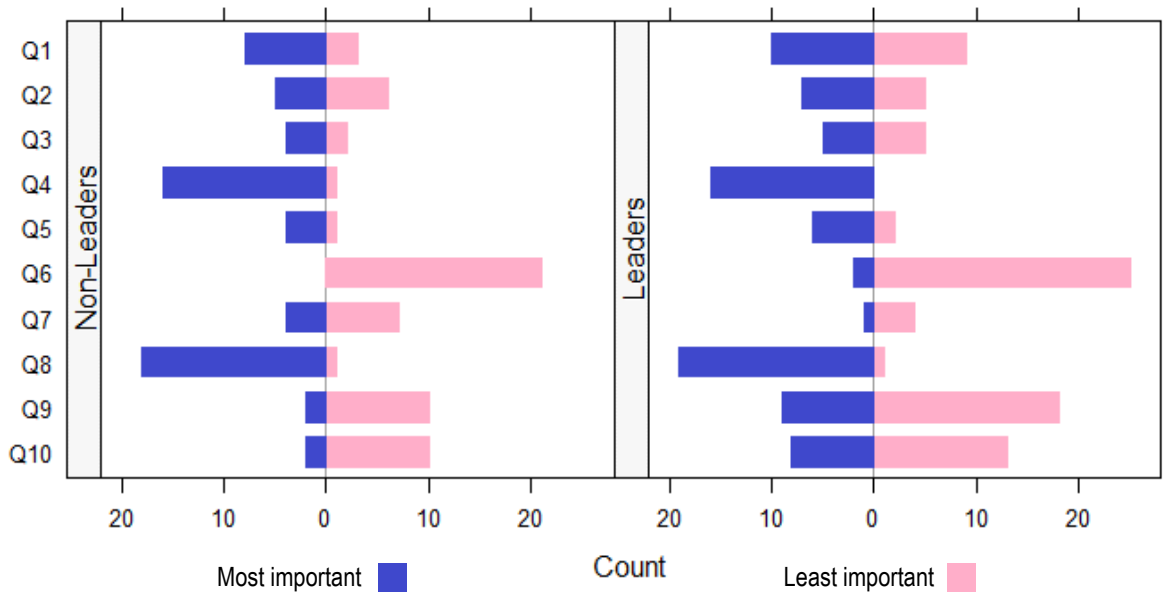

Figure 7 - Least and Most Important Skills

	Non-Leaders		Leaders	
	Most important	Least Important	Most important	Least Important
Uses their technical skills to advise	8	3	10	9
Is a good coach	5	6	7	5
Is a strong decision maker	4	2	5	5
Empowers the team	16	1	16	0
Helps grow team members professionally	4	1	6	2
Expresses interest in team personally	0	21	2	25
Is results-oriented	4	7	1	4
Is a good communicator	18	1	19	1
Has a vision	2	10	9	18
Collaborates across disciplines	2	10	8	13

If a future survey were also to ask the respondent's age, it could be determined whether younger cost estimators have the same expectations of their leadership as the more senior estimators. Similarly, "A survey by Virtuali found that 83% of millennials want fewer layers of management. This means they want managers who are easily approachable and willing to take their opinions into account."[4] Seeing if one's expectations of cost leadership is different based on age would be insightful when trying to lead and motivate a team with a diverse age set.

Figure 8 - Leadership Skills Word Cloud

Conclusion

In a survey of cost analysts, the community unanimously agreed that leadership is important to the end cost product. Even with consensus on the impact of the cost lead, the community at large does not provide guidance on or appear to value the behaviors that make an effective leader. Using the ten behaviors identified by Google's Project Oxygen, our study, even accounting for its discussed limitations, found the same results. "Soft skills" like being a good communicator, though proven to have a positive impact on team and leadership performance, have been largely overlooked by our profession. This paper established a foundation to determine the most important qualities of effective cost team leadership. While additional and more refined studies will be valuable, the responsibility is ours to now emphasize the importance of these skills and develop training/best practices for effective communication skills in leadership, a proven metric for cost team success.

Appendix 1 – Are there any skills not mentioned above that you think are important qualities of cost team leaders?

1. Telling the truth and doing the right thing whether it benefits you or not
2. Ability to handle conflict within the team and ability to guide client
3. Ability to include diverse perspectives
4. Ability to influence and participate in hiring of team
5. Ability to manage to scope and limit scope creep
6. Able to clearly define the requirements of the project
7. Act with personal integrity
8. An understanding of mathematics
9. Approachability. Humility. Brand new analysts have really good ideas, it's important that they have a voice. Also, important to demonstrate that it's OK to not always know the answer, and work together to find one. Being a "strong decider" often means, stubborn and not receptive, so I value the opposite and try to welcome input for the improvement of the team and our processes.
10. At our Cost Department, a CTL is the hardest job. Because we are matrixed to our program offices that have two bosses and a team handed to them. The Captain is demanding time, supervisors has requests and trainees need daily attention. Balancing every need is important and on the job training
11. Be supportive to your team members, make sure they know you have their back
12. Calmness under pressure
13. Candor and trust
14. a skill related to interfacing with the customer or translating things into requirements. I think that's a very important skill
15. Collaboration within the cost team
16. Combination of business and technical savvy
17. Creative problem solving, innovative, exceptional time management, ability to define scope and ask the hard questions of program/technical leadership, and a network of SMEs in all disciplines to provide reach-back support as necessary
18. Empathy
19. Empathy
20. Encourages open minded techniques that allow team members to think outside the box
21. Flexibility Resilience Political Savvy Influencing/ Negotiation Integrity/Character
22. Flexibility to adapt to changing circumstances. It is inevitable that the assumptions at the beginning of the estimate are changed and a leader needs to not get frustrated and keep the team from being frustrated or distracted
23. Has a backbone to stand up to pressure to change an estimate
24. Has a clear plan for achieving the team's goals
25. Having experience as a member of a cost team under multiple Cost Team Leads
26. Ownership. A team lead owns the team and the outcomes, both good and bad, of the team
27. Innovation, creative problem solving, critical thinking, curiosity
28. Integrity and Responsibility
29. Know your customer
30. Knows and balances the strengths and weaknesses of the team members
31. Leaders should treat the team with respect
32. Manages time well
33. Mentoring
34. Organized, approachable
35. Planning. The team lead needs to be able to backwards plan and work the plan in order to complete the task at quality an on time.
36. Positive attitude
37. project management
38. Providing top-cover and standing up for their team
39. Remain neutral
40. Sets individual goals for each team member.
41. Skills outside of Cost. Cost team leaders who are too narrow into the field are stifling to innovation. Must be progressive and willing to deviate from the "guides" and "training" which are beyond dated (or even wrong from the start)

42. Strong and productive relationship with the customer
43. Support team members when they fail
44. Teaches
45. team leaders need to know our business
46. Technical expertise is important, but the leadership ability through emotional intelligence is the most important.
47. The ability to effectively multi-task
48. The team leader needs to advocate for the cost team in organizations that do not place high importance or regard on the cost team. I would be happy to discuss in more detail what I have experienced in this regard
49. Transparency
50. Trusting the team to finish the activities and should be able to delegate
51. Well, the ability to communicate is mentioned, but should also include working with the customer to truly understand their goals. This could be part of the "vision" but feels a bit different

References

1. Garvin, D. A., Wagonfeld, A. B., & Kind, L. (2013). Google's Project Oxygen: Do Managers Matter? Harvard Business School publishing corporation.
2. Tran, S. K. (2017). GOOGLE: a reflection of culture, leader, and management. *International Journal of Corporate Social Responsibility*, *2*(1), 2–10. https://doi.org/10.1186/s40991-017-0021-0
3. Kalliamvakou, E., Bird, C., Zimmermann, T., Begel, A., DeLine, R., & German, D. M. (2019). What Makes a Great Manager of Software Engineers? *IEEE Transactions on Software Engineering*, *45*(1), 87–106. https://doi.org/10.1109/tse.2017.2768368
4. Impraise. (2020, October 14). Project Oxygen: 8 ways Google resuscitated management. Impraise. https://www.impraise.com/blog/project-oxygen-8-ways-google-resuscitated-management
5. re:Work. (2021). Re:Work. https://rework.withgoogle.com/
6. Google Got Rid of Its Bosses -- And Then Brought Them Back For These 10 Reasons. (2019, February 6). INC. https://www.inc.com/michael-schneider/google-didnt-always-appreciate-its-managers-now-it-relies-on-them-for-these-10-things.html
7. re:Work - Guide: Set and communicate a team vision. (2021). Re:Work. https://rework.withgoogle.com/guides/managers-set-and-communicate-a-team-vision/steps/introduction/
8. *Academy on Air: Project Oxygen: Why Managers Matter*. (2017, February 2). [Video]. YouTube. https://www.youtube.com/watch?v=JattR1uoX7g&t=922s

*For over 16 years, **Christina N. Snyder** has been a noteworthy leader in the field of cost estimating; supporting multiple DOD programs with various aspects of cost estimating, project management, and strategic planning. She received her CCE/A® certification in 2012 and is passionate about translating cost data into insights that resonate with decision makers. In addition to her daily work, she has been recognized for her extraordinary commitment to the ICEAA organization and is currently the Executive Vice President. Mrs. Snyder graduated from Virginia Tech in 2005 with a B.S. in Applied Computational Mathematics and currently resides outside of Tampa, Florida with her husband, 2 young sons, and basset hound.*